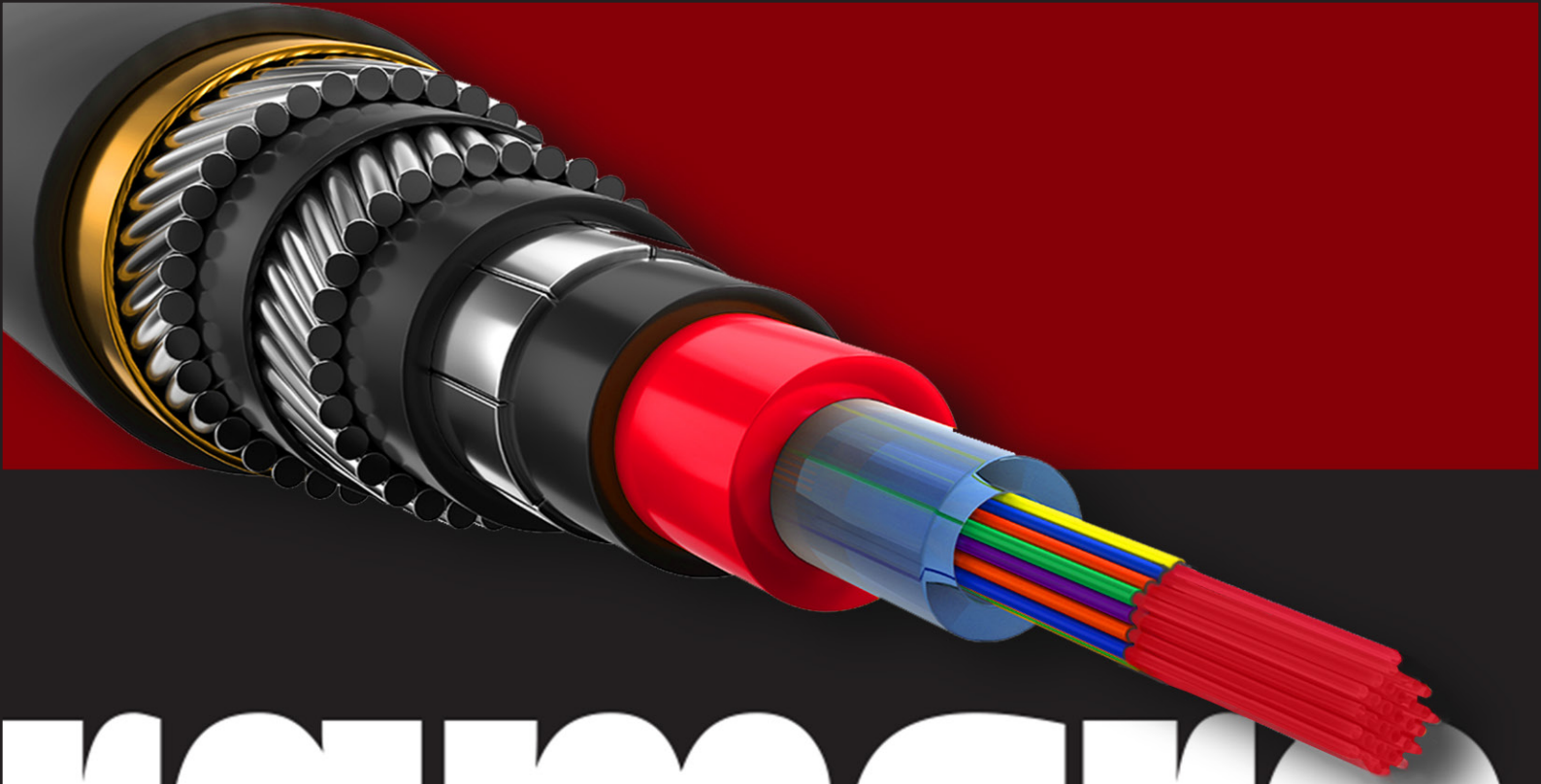


ramcro

special cables

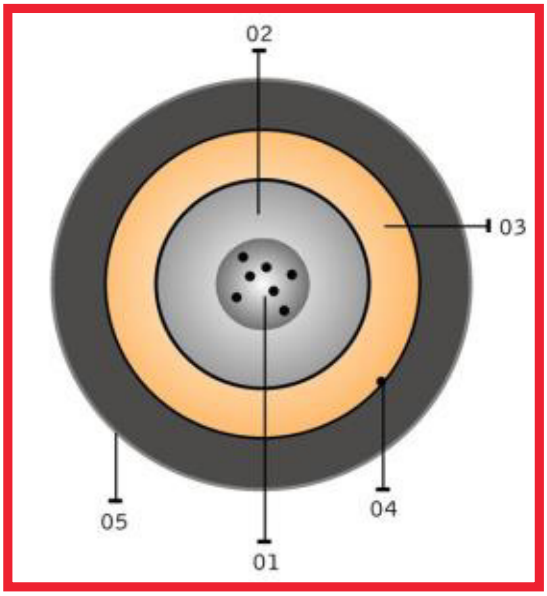
FIRE CABLES

Worlwide Preview

ADIPEC 2025

Abu Dhabi

Single Mode / Multi mode
Fiber Optic - Enhanced Fire Resistant



CONSTRUCTION

1. Fibers:
Up to 24 optical, Color coded following TIA/EIA 598 for easy identification

2. Tube:
Centrarl tube filled with Jelly and covered by a Fire Resistant Mica Tape

3. Fiberglass Reinforcement:
Dry, water swelling glass yarn is laid over the tubes to serve as peripheral strength members and to block the cable from water penetration, with overall Fiber Glass Tape.

4. Ripcord:
laid under the jacket for easy removal.

5. Sheath:
A UV-resistant, Halogen Free, Flame-Retardant (HFFR) jacket extruded over the armoring.

DESCRIPTION

- Indoor/Outdoor installation
- For installation in conduits, cable trays, ducted or directly buried
- Armored or Not Armored
- Flame and Fire retardant
- Halogen Free, Low smoke emission
- Oil and Hydrocarbon Resistant (EN 60811-404, ENI 0181)
- Available also with SHF2 Jacketing

REFERENCE STANDARD

Flame spread:	IEC 60332-1-2
Smoke opacity:	IEC 61034-2 / EN 50268-2
Smoke toxicity:	IEC 60754-1 /2 EN 50267-2-1
Spread of fire:	IEC 60332-3-22
CPR	EN 50575 Dca, s2,d2,a1
Fire resistance:	**BS 8434-2, 120min, 930°C**
	IEC 60331-25, 180min, 750°C
	EN 50200 PH120, 120min, 830°C
	EN 50200 ANNEX E, 30min, 830°C



Worlwide Preview

ADIPEC 2025

Single mode / Multi Mode

Fiber Optic - Enhanced Fire Resistant



FIRE RESISTANT CABLE

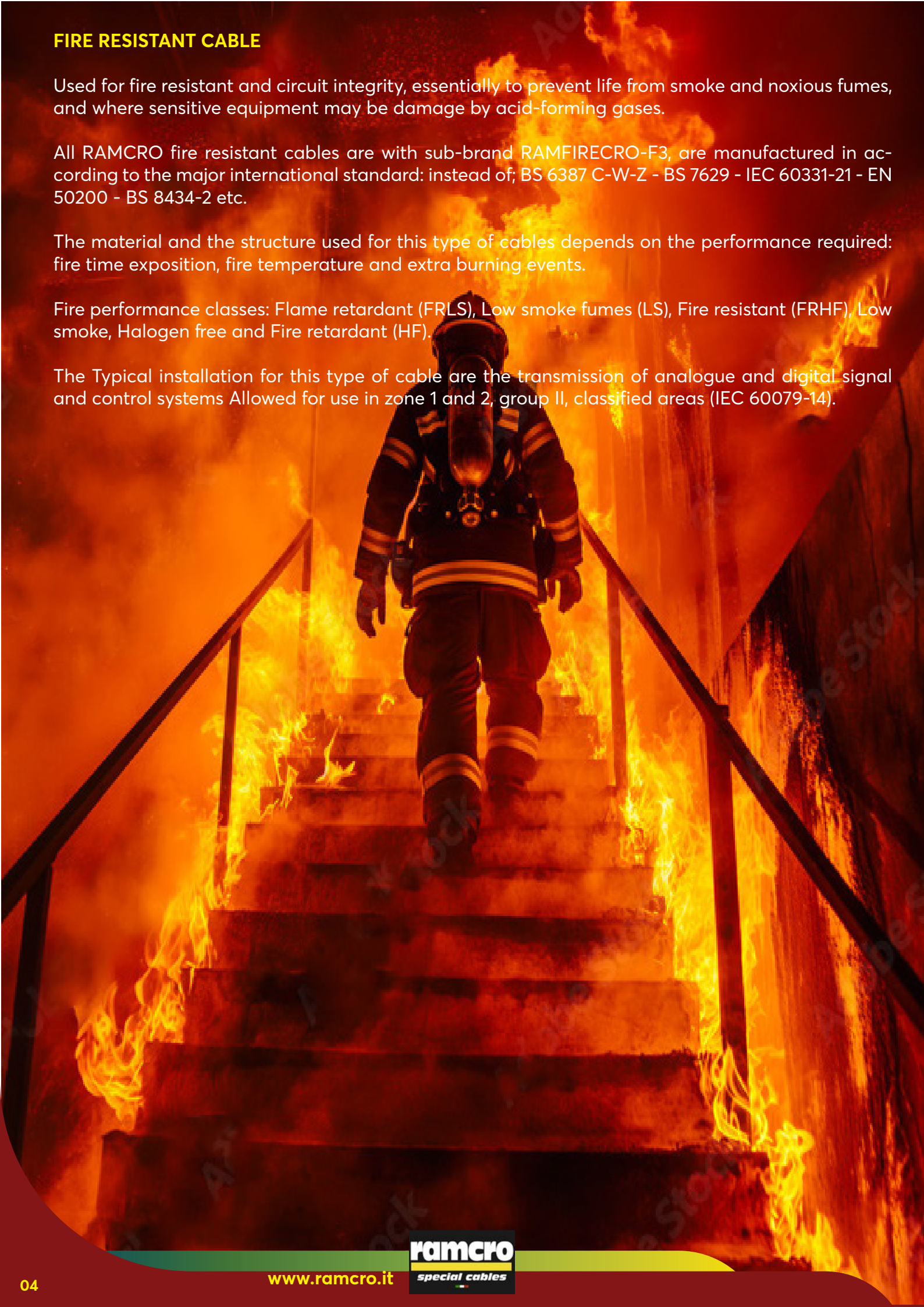
Used for fire resistant and circuit integrity, essentially to prevent life from smoke and noxious fumes, and where sensitive equipment may be damage by acid-forming gases.

All RAMCRO fire resistant cables are with sub-brand RAMFIRECRO-F3, are manufactured in according to the major international standard: instead of; BS 6387 C-W-Z - BS 7629 - IEC 60331-21 - EN 50200 - BS 8434-2 etc.

The material and the structure used for this type of cables depends on the performance required: fire time exposition, fire temperature and extra burning events.

Fire performance classes: Flame retardant (FRLS), Low smoke fumes (LS), Fire resistant (FRHF), Low smoke, Halogen free and Fire retardant (HF).

The Typical installation for this type of cable are the transmission of analogue and digital signal and control systems Allowed for use in zone 1 and 2, group II, classified areas (IEC 60079-14).



ABOUT COMPANY



Ramcro was founded in 1979, as a family Company producing Special Cables. Family Croci owns 100% of Ramcro S.p.a.. In over 42 years Ramcro successfully expanded its presence in different countries and in a few different but important segments: Oil & Gas, Fire, Railway Signal & Control, BMS, and Optical Cables.

Ramcro production capacity is 4.000 Km/Month and 50.000 Km/Year. Production dpt is 18.000 sqm, of which 3.000 sqm on stock, allowing outstanding very high flexibility in delivery, with also 1.300 sqm of offices and 750 sqm for Laboratory.

Ramcro Laboratory provides any certificates of tests run following major international specifications and it is certified ISO 17025. It is also recognized by the international body as a "Third part Laboratory". Ramcro solves any kind of technical issue in the area of the cable, assuring the Client's satisfaction thanks to high quality and personalized solutions, improving the Client's efficiency and optimizing its processes. Ramcro offers extremely flexible solutions and a complete range of services, even tailor-made, based on outstanding worldwide experience

Excellence You Can Trust: Ramcro Special Cables

At Ramcro, quality is not just a promise — it's a proven standard. With over 40 years of experience in the design and production of special cables, we are proud to be recognized as one of the few companies in the industry to operate an in-house laboratory accredited to ISO/IEC 17025.

This prestigious accreditation sets us apart. While many rely on third-party laboratories for compliance certificates, Ramcro is directly certified, ensuring the highest level of technical competence, precision, and reliability in every test we perform. Our laboratory doesn't just verify conformity — it defines it.

What does this mean for you?

Unmatched Quality Control: Every cable is tested under the strictest international standards, guaranteeing performance, safety, and durability.

Faster Time to Market: With internal testing capabilities, we reduce lead times and respond quickly to your needs.

Full Traceability & Transparency: From raw materials to final product, every step is monitored and documented with certified accuracy.

Innovation with Confidence: Our R&D team works hand-in-hand with our lab to develop cutting-edge solutions tailored to your most demanding applications.

Choose Ramcro — where certified excellence meets engineering innovation.

CERTIFICATE



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Organization of:

RAMCRO S.p.A.
Via Marzorati, 15, Nerviano, MI 20014, Italy

and hereby declares that the Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

Whereby, technical competence has been confirmed for the associated scope supplement, in the fields of:

Electrical Testing
(As detailed in the supplement)

Accreditation claims for conformity assessment activities shall only be made from the addresses referenced within this certificate and shall apply solely to those activities identified in the related scope. This Accreditation is granted subject to the Accreditation Body rules governing the Accreditation referred to above, and the Organization hereby commits to observing and complying with those rules in their entirety.

For PJLA:

Tracy Szerszen
President

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
April 07, 2025	April 07, 2025	July 31, 2027

Accreditation No.:	*Certificate No.:*
127120	L20-277

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com

Page 1 of 3

ISO/IEC 17025:2017





FIRE ALARM CABLE



FIRE RESISTANT CABLE



FIRE-RESISTANT
DATA LAN CABLE



FIBER OPTICAL
FIRE-RESISTANT CABLE

FIRE ALARM CABLE

FIRE RESISTANT CABLE

FIRE-RESISTANT DATA LAN CABLE

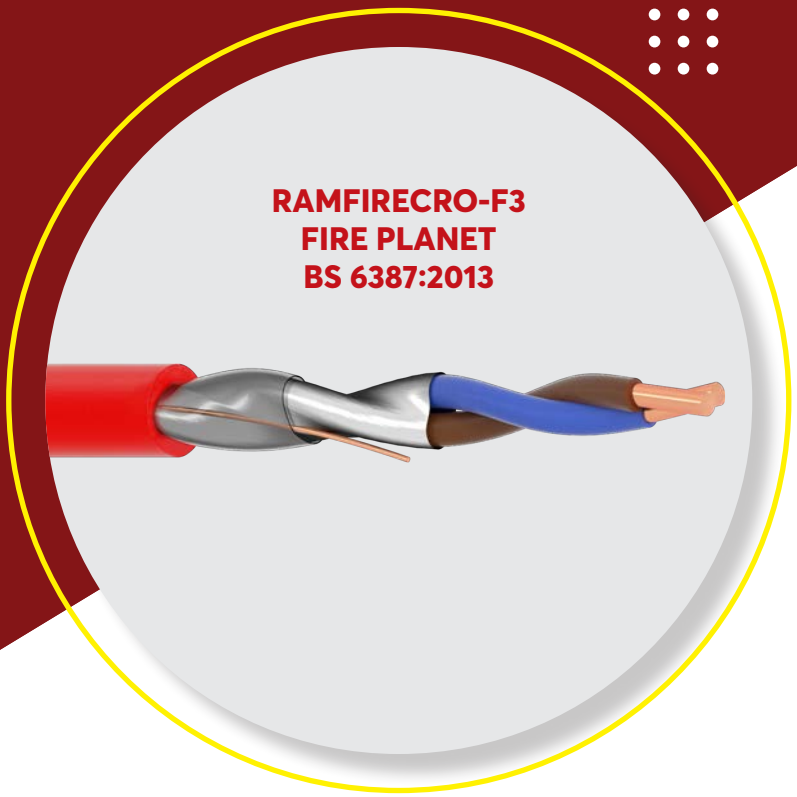
FIBER OPTICAL FIRE-RESISTANT CABLE

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Fire Planet

TYPE: SOLID

BS 6387:2013 Cat. C-W-Z



CONSTRUCTION

Multi-Core, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath.

Conductor:
Plain annealed copper wire, Solid
Insulation:
Special mix silicon rubber
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Red or White

IDENTIFICATION OF CORE

2 Core
3 Core
4 Core
up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
300/500 V

Reference Standard & Fire Performance Test

- BS 6387:2013 Cat. C-W-Z
- IEC 60754-1:2014
- EN 61034-2:2005
- EN 50200:2015 (Class PH120)
- EN 50200:2015 Annex E (30 mins)
- EN 60754-2:2014

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

568a/02

Fire Resistant

Min. Bending Radius

CABLE BEND RADIUS

8 x cable diameter

Low Smoke Halogen free

Fire Planet

LPCB 568a/02

TYPE: SOLID

BS 6387:2013 Cat. C-W-Z

CABLE PRINTING

RAMFIRECRO-F3 - FIRE PLANET – LSZH – LPCB 568a/02 –EN 60754-1:2014 – BS 6387:2013 (CWZ) – EN 50200:2015 PH120 - EN 50200:2015 ANNEX E - EN 61034-2:2005 – 300/500V – CONDxAREA + E BATCH N. + MADE IN ITALY

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAR0211HFESL-F3(IE)	2x1.00	6.1	54
SAR0311HFESP-F3(IE)	3x1.00	6.3	71
SAR0411HFESQ-F3(IE)	4x1.00	6.9	91
SAR0511HFESD-F3(IE)	5x1.00	7.8	113
SAR0711HFESD-F3(IE)	7x1.00	8.4	147
SAR1211HFESD-F3(IE)	12x1.00	11	238
SAR1911HFESD-F3(IE)	19x1.00	12.8	357
SAR0214HFESL-F3(IE)	2x1.50*	6.6*	67
SAR0314HFESP-F3(IE)	3x1.50*	6.8*	88
SAR0414HFESQ-F3(IE)	4x1.50*	7.4*	111
SAR0514HFESD-F3(IE)	5x1.50	8.3	138
SAR0714HFESD-F3(IE)	7x1.50	9	181
SAR1214HFESD-F3(IE)	12x1.50	11.8	296
SAR1914HFESD-F3(IE)	19x1.50	14.2	461
SAR0218HFESL-F3(IE)	2x2.50*	7.4*	89
SAR0318HFESP-F3(IE)	3x2.50*	7.7*	123
SAR0418HFESQ-F3(IE)	4x2.50*	8.4*	157
SAR0518HFESD-F3(IE)	5x2.50	9.2	191
SAR0718HFESD-F3(IE)	7x2.50	10.1	254
SAR1218HFESD-F3(IE)	12x2.50	13.2	418
SAR1918HFESD-F3(IE)	19x2.50	16	654

*Cables certified by LPCB BRE GLOBAL
*if the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAR___HCESL-F3(IE)

Fire Planet

TYPE: STRANDED

BS 6387:2013 Cat. C-W-Z

CONSTRUCTION

Multi-Core, Stranded CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath.

Conductor:
Plain annealed copper wire, 7 strand
Insulation:
Special mix silicon rubber
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Red or White



IDENTIFICATION OF CORE

2 Core
3 Core
4 Core
up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
300/500 V

Reference Standard & Fire Performance Test

- BS 6387:2013 Cat. C-W-Z
- IEC 60754-1:2014
- EN 61034-2:2005
- EN 50200:2015 (Class PH120)
- EN 50200:2015 Annex E (30 mins)
- EN 60754-2:2014

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

568a/02

Fire Resistant

Min. Bending Radius

CABLE
BEND RADIUS
8 x cable diameter

Low Smoke Halogen free

Fire Planet

TYPE: STRANDED

LPCB 568a/02

BS 6387:2013 Cat. C-W-Z

CABLE PRINTING

RAMFIRECRO-F3 - FIRE PLANET – LSZH – LPCB 568a/02 –EN 60754-1:2014 – BS 6387:2013 (CWZ) – EN 50200:2015 PH120 - EN 50200:2015 ANNEX E - EN 61034-2:2005 – 300/500V – CONDxAR-EA + E BATCH N. + MADE IN ITALY

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0210HFESL-F3(IE)	2x1.00	6.5	59
SAS0310HFESP-F3(IE)	3x1.00	6.6	76
SAS0410HFESQ-F3(IE)	4x1.00	7.2	95
SAS0510HFESD-F3(IE)	5x1.00	8.1	118
SAS0710HFESD-F3(IE)	7x1.00	8.8	154
SAS1210HFESD-F3(IE)	12x1.00	11.5	248
SAS0215HFESL-F3(IE)	2x1.50*	7.0*	72
SAS0315HFESP-F3(IE)	3x1.50*	7.2*	95
SAS0415HFESQ-F3(IE)	4x1.50*	8.1*	123
SAS0515HFESD-F3(IE)	5x1.50	8.8	148
SAS0715HFESD-F3(IE)	7x1.50	9.6	196
SAS1215HFESD-F3(IE)	12x1.50	12.6	319
SAS1915HFESD-F3(IE)	19x1.50	15.2	498
SAS0225HFESL-F3(IE)	2x2.50*	8.1*	101
SAS0325HFESP-F3(IE)	3x2.50*	8.3*	135
SAS0425HFESQ-F3(IE)	4x2.50*	9.1*	170
SAS0525HFESD-F3(IE)	5x2.50	9.9	207
SAS0725HFESD-F3(IE)	7x2.50	10.8	277
SAS1225HFESD-F3(IE)	12x2.50	14.7	470
SAS1925HFESD-F3(IE)	19x2.50	17.2	713
SAS0240HFESL-F3(IE)	2x4.00*	10.0*	151
SAS0340HFESP-F3(IE)	3x4.00*	10.2*	205
SAS0440HFESQ-F3(IE)	4x4.00*	11.0*	252

* Cables certified by LPCB BRE GLOBAL
* If the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAS___HCESL-F3(IE)

Standard Fire Sun

TYPE: SOLID

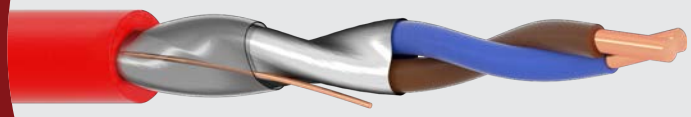
BS 7629-1:2015

CONSTRUCTION

Multi-Core, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Construction:
Plain annealed copper wire, solid
Insulation:
Special mix silicon rubber
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinned copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Red or White

RAMFIRECRO-F3
STANDARD FIRE SUN
BS 7629-1:2015



IDENTIFICATION OF CORE

2 Core
3 Core
4 Core
up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
300/500 V

Reference Standard

- BS 7629-1:2015 (Standard 60)
- BS 6387:2013 (CWZ)
- EN 50200:2015 (Class PH60**/PH120)
- EN 50200: 2015 Annex E (30 mins)
- BS 5839-1:2013 (Clause 26.2d Standard)
- EN 60754-2:2014

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

PRODUCT MARKETING LICENCE N.: 259/001

Enquiry for BASEC APPROVED cable versions

568c/02

Fire Resistant

Min. Bending Radius

8 x cable diameter

Low Smoke Halogen free

Standard Fire Sun

LPCB 568c/02

TYPE: SOLID

BS 7629-1:2015

CABLE PRINTING

RAMCRO ITALY - RAMFIRECRO-F3 STANDARD FIRE SUN - FIRE RESISTANT ELECTRIC CABLE - LSZH - 300/500V - BS 7629-1:2015 STANDARD 60 - BS 6387:2013 CWZ - CONDxAREA + E - (Year of manufacture) H - LPCB 568c/02 - MADE IN ITALY + batch n° + METER MARKING

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAR0211HFESL-F3PH120	2x1.00*	6.4*	66
SAR0311HFESP-F3PH120	3x1.00	6.5	83
SAR0411HFESQ-F3PH120	4x1.00	7.1	101
SAR0511HFESD-F3PH120	5x1.00	7.8	120
SAR0711HFESD-F3PH120	7x1.00	8.4	155
SAR1211HFESD-F3PH120	12x1.00	11.2	251
SAR1911HFESD-F3PH120	19x1.00	13	370
SAR0214HFESL-F3PH120	2x1.50*	7.3*	88
SAR0314HFESP-F3PH120	3x1.50*	7.4*	111
SAR0414HFESQ-F3PH120	4x1.50*	8.1*	137
SAR0514HFESD-F3PH120	5x1.50	8.8	162
SAR0714HFESD-F3PH120	7x1.50	9.6	211
SAR1214HFESD-F3PH120	12x1.50	12.9	342
SAR1914HFESD-F3PH120	19x1.50	15.1	510
SAR0218HFESL-F3PH120	2x2.50*	8.6*	129
SAR0318HFESP-F3PH120	3x2.50*	8.7*	166
SAR0418HFESQ-F3PH120	4x2.50*	9.6*	205
SAR0518HFESD-F3PH120	5x2.50	10.7	251
SAR0718HFESD-F3PH120	7x2.50	11.7	326
SAR1218HFESD-F3PH120	12x2.50	15.4	523
SAR1918HFESD-F3PH120	19x2.50	18.1	787

*Cables certified by LPCB BRE GLOBAL and BASEC.
** Cables certified by BASEC are EN 50200:2015 PH60
Note:If the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAR___HCESL-F3PH120

Standard Fire Sun

TYPE: STRANDED

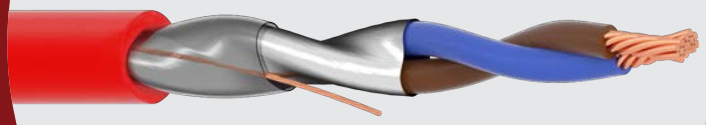
BS 7629-1:2015

CONSTRUCTION

Multi-Core, Stranded CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Construction:
Plain annealed copper wire, 7 Stands
Insulation:
Special mix silicon rubber
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinned copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Red or White

RAMFIRECRO-F3
STANDARD FIRE SUN
BS 7629-1:2015



IDENTIFICATION OF CORE

2 Core
3 Core
4 Core
up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
300/500 V

Reference Standard

- BS 7629-1:2015 (Standard 60)
- BS 6387:2013 (CWZ)
- EN 50200:2015 (Class PH30/PH120)
- EN 50200: 2015 Annex E (30 mins)
- BS 5839-1:2013 (Clause 26.2d Standard)
- EN 60754-2:2014

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

PRODUCT MARKETING LICENCE N.: 259/001

Enquiry for BASEC APPROVED cable versions

568c/02

Fire Resistant

Min. Bending Radius

8 x cable diameter

Low Smoke Halogen free

Standard Fire Sun

TYPE: STRANDED

LPCB 568c/02

BS 7629-1:2015

CABLE PRINTING

RAMCRO ITALY - RAMFIRECRO-F3 STANDARD FIRE SUN - FIRE RESISTANT ELECTRIC CABLE - LSZH - 300/500V - BS 7629-1:2015 STANDARD 60 - BS 6387:2013 CWZ - CONDxAREA + E - Year of manufacture H - LPCB 568c/02 - MADE IN ITALY + batch n° + METER MARKING

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0210HFESL-F3PH120	2x1.00*	6.4*	66
SAS0310HFESP-F3PH120	3x1.00	6.5	83
SAS0410HFESQ-F3PH120	4x1.00	7.1	101
SAS0510HFESD-F3PH120	5x1.00	7.8	120
SAS0710HFESD-F3PH120	7x1.00	8.4	155
SAS1210HFESD-F3PH120	12x1.00	11.2	251
SAS1910HFESD-F3PH120	19x1.00	13	370
SAS0215HFESL-F3PH120	2x1.50*	7.3*	88
SAS0315HFESP-F3PH120	3x1.50*	7.4*	111
SAS0415HFESQ-F3PH120	4x1.50*	8.1*	137
SAS0515HFESD-F3PH120	5x1.50	8.8	162
SAS0715HFESD-F3PH120	7x1.50	9.6	211
SAS1215HFESD-F3PH120	12x1.50	12.9	342
SAS1915HFESD-F3PH120	19x1.50	15.1	510
SAS0225HFESL-F3PH120	2x2.50*	8.6*	129
SAS0325HFESP-F3PH120	3x2.50*	8.7*	166
SAS0425HFESQ-F3PH120	4x2.50*	9.6*	205
SAS0525HFESD-F3PH120	5x2.50	10.7	251
SAS0725HFESD-F3PH120	7x2.50	11.7	326
SAS1225HFESD-F3PH120	12x2.50	15.4	523
SAS1925HFESD-F3PH120	19x2.50	18.1	787
SAS0240HFESL-F3PH120	2x4.00*	10.6*	190
SAS0340HFESP-F3PH120	3x4.00*	11.0*	250
SAS0440HFESQ-F3PH120	4x4.00*	12.0*	306
SAS0540HFESD-F3PH120	5x4.00	13.1	364

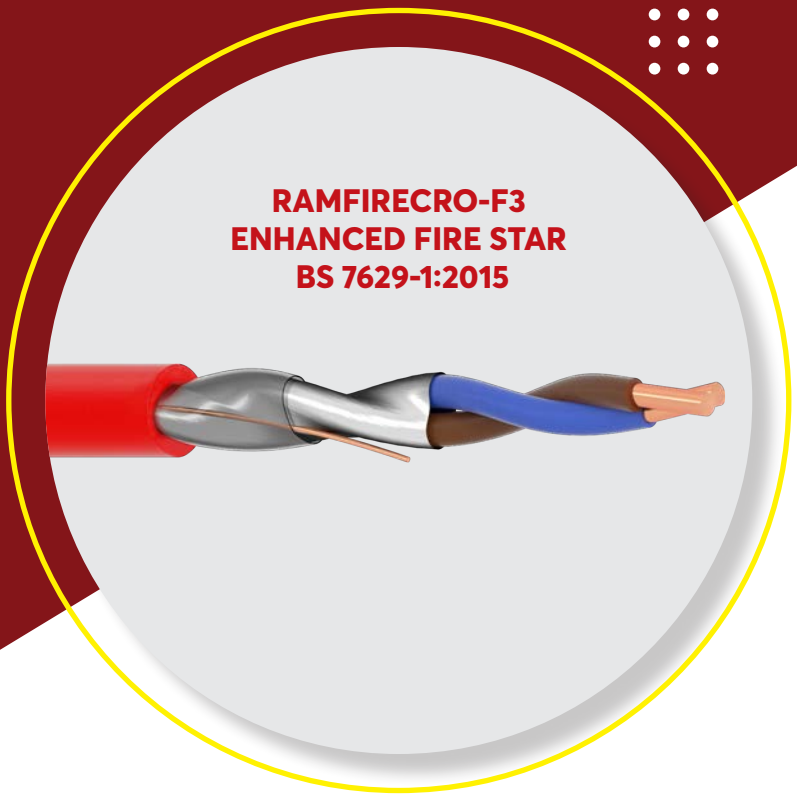
*Cables certified by LPCB BRE GLOBAL

*if the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAS___HCESL-F3PH120

Enhanced Fire Star

TYPE: SOLID

BS 7629-1:2015 - EN 50200:2015
PH 120 – BS 8434-2:2003



CONSTRUCTION

Multi-Core, Solid CU, Mica+XLPE/Silicon Rubber -Insulation, Collective Screen, LSZH-Sheath

Conductor:
Plain annealed copper wire, solid
Insulation:
MICA+XLPE & Special mix silicon rubber
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinned copper CC core (same size of conductors)
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Red or White

IDENTIFICATION OF CORE

2 Core
3 Core
4 Core
up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
300/500 V

Reference Standard

- BS 7629-1:2015 Enhanced 120
- EN 50200:2015 (Class PH120)
- BS 8434-2:2003+A2:2009 (120 mins)
- BS 5839-1:2013 (Clause 26.2e Enhanced)
- BS 6387:2013 Category CWZ
- EN 60332-3-24:2009

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

568j/01

Fire Resistant

Min. Bending Radius

CABLE BEND RADIUS

8 x cable diameter

Low Smoke Halogen free

Enhanced Fire Star

LPCB 568j/01

TYPE: SOLID

BS 7629-1:2015 - EN 50200:2015
PH 120 – BS 8434-2:2003

CABLE PRINTING

RAMCRO ITALY - RAMFIRECRO–F3 FIRE STAR - FIRE RESISTANT ELECTRIC CABLE – LSZH - 300/500V - BS 7629-1:2015 ENHANCED 120 - BS 6387:2013 CWZ - EN 60332-3-24:2009 - CONDxAREA + E - Year of Manufacturing H - LPCB 568j/01 - MADE IN ITALY - BATCH N°

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAR0211HFEOL-F3EN120	2x1.00	9.8	121
SAR0311HFEOP-F3EN120	3x1.00	10.4	152
SAR0411HFEOQ-F3EN120	4x1.00	11.7	194
SAR0511HFEOD-F3EN120	5x1.00	12.8	231
SAR0711HFEOD-F3EN120	7x1.00	14.2	304
SAR1211HFEOD-F3EN120	12x1.00	18.9	491
SAR1911HFEOD-F3EN120	19x1.00	22.6	743
SAR0214HFEOL-F3EN120	2x1.50*	10.3*	139
SAR0314HFEOP-F3EN120	3x1.50*	10.9*	178
SAR0414HFEOQ-F3EN120	4x1.50*	12.2*	226
SAR0514HFEOD-F3EN120	5x1.50	13.4	269
SAR0714HFEOD-F3EN120	7x1.50	14.8	355
SAR1214HFEOD-F3EN120	12x1.50	19.9	574
SAR1914HFEOD-F3EN120	19x1.50	23.7	871
SAR0218HFEOL-F3EN120	2x2.50*	11.3*	184
SAR0318HFEOP-F3EN120	3x2.50*	12.0*	236
SAR0418HFEOQ-F3EN120	4x2.50*	13.4*	298
SAR0518HFEOD-F3EN120	5x2.50	14.6	354
SAR0718HFEOD-F3EN120	7x2.50	16.2	467
SAR1218HFEOD-F3EN120	12x2.50	21.9	767
SAR1918HFEOD-F3EN120	19x2.50	26.1	1159

*Cables certified by LPCB BRE GLOBAL
*If the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAR___HCEOL-F3EN120

Enhanced Fire Star

TYPE: STRANDED

BS 7629-1:2015 - EN 50200:2015
PH 120 – BS 8434-2:2003

CONSTRUCTION

Multi-Core, Stranded CU, Mica+XLPE/Silicon Rubber -Insulation, Collective Screen, LSZH-Sheath

Conductor:
Plain annealed copper wire, 7 Stands
Insulation:
MICA+XLPE & Special mix silicon rubber
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinned copper CC core (same size of conductors)
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Red or White



IDENTIFICATION OF CORE

2 Core
3 Core
4 Core
up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
300/500 V

Reference Standard

- BS 7629-1:2015 Enhanced 120
- EN 50200:2015 (Class PH120)
- BS 8434-2:2003+A2:2009 (120 mins)
- BS 5839-1:2013 (Clause 26.2e Enhanced)
- BS 6387:2013 Category CWZ
- EN 60332-3-24:2009

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

568j/01

Fire Resistant

Min. Bending Radius

CABLE
BEND RADIUS
8 x cable diameter

Low Smoke Halogen free

Enhanced Fire Star

LPCB 568j/01

TYPE: STRANDED

BS 7629-1:2015 - EN 50200:2015
PH 120 – BS 8434-2:2003

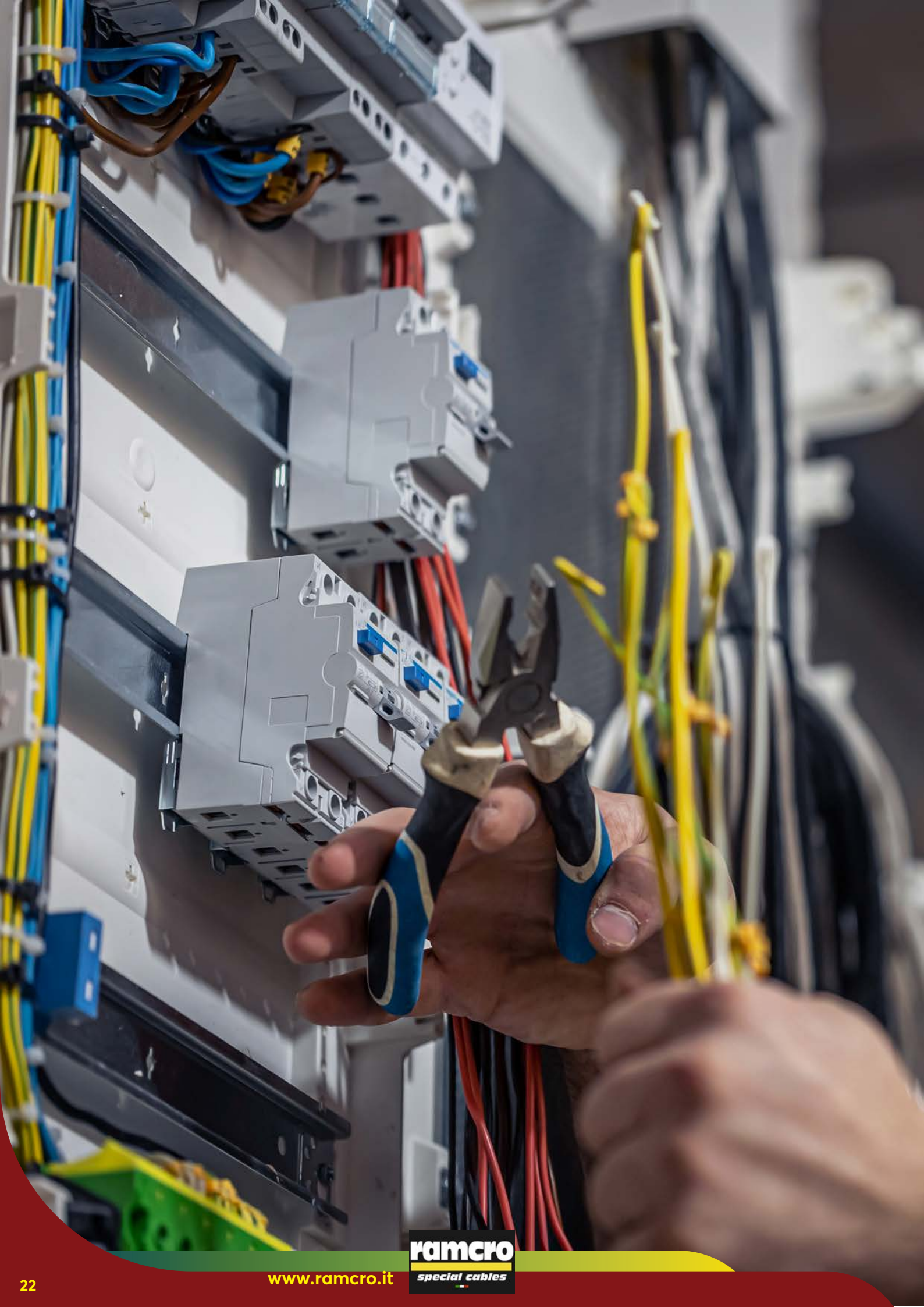
CABLE PRINTING

RAMCRO ITALY - RAMFIRECRO–F3 FIRE STAR - FIRE RESISTANT ELECTRIC CABLE – LSZH - 300/500V - BS 7629-1:2015 ENHANCED 120 - BS 6387:2013 CWZ - EN 60332-3-24:2009 - CONDxAREA + E - Year of Manufacturing H - LPCB 568j/01 - MADE IN ITALY - BATCH N°

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0210HFEOL-F3EN120	2x1.00	10.1	124
SAS0310HFEOP-F3EN120	3x1.00	10.7	158
SAS0410HFEOQ-F3EN120	4x1.00	12	200
SAS0510HFEOD-F3EN120	5x1.00	13.2	237
SAS0710HFEOD-F3EN120	7x1.00	14.6	313
SAS1210HFEOD-F3EN120	12x1.00	19.5	507
SAS1910HFEOD-F3EN120	19x1.00	23.3	768
SAS0215HFEOL-F3EN120	2x1.50*	10.6*	145
SAS0315HFEOP-F3EN120	3x1.50*	11.3*	185
SAS0415HFEOQ-F3EN120	4x1.50*	12.6*	236
SAS0515HFEOD-F3EN120	5x1.50	13.9	280
SAS0715HFEOD-F3EN120	7x1.50	15.4	370
SAS1215HFEOD-F3EN120	12x1.50	20.6	599
SAS1915HFEOD-F3EN120	19x1.50	24.6	910
SAS0225HFEOL-F3EN120	2x2.50*	11.7*	191
SAS0325HFEOP-F3EN120	3x2.50*	12.5*	246
SAS0425HFEOQ-F3EN120	4x2.50*	13.9*	311
SAS0525HFEOD-F3EN120	5x2.50	15.3	369
SAS0725HFEOD-F3EN120	7x2.50	16.9	487
SAS1225HFEOD-F3EN120	12x2.50	22.8	800
SAS1925HFEOD-F3EN120	19x2.50	27.2	1210
SAS0240HFEOL-F3EN120	2x4.00*	13.0*	258
SAS0340HFEOP-F3EN120	3x4.00*	13.8*	331
SAS0440HFEOQ-F3EN120	4x4.00*	15.4*	418
SAS0540HFEOD-3EN120	5x4.00	16.9	496

*Cables certified by LPCB BRE GLOBAL
*If the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAR__HCEOL-F3EN120

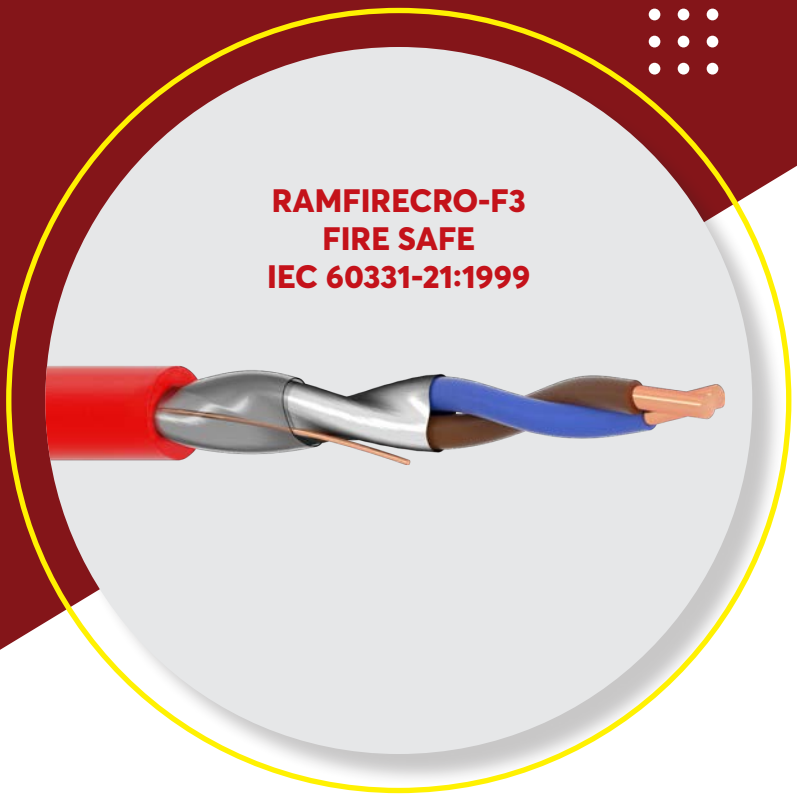




Fire Safe

TYPE: SOLID

IEC 60331-21:1999



CONSTRUCTION

Multi-Core, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Conductor:
Plain annealed copper wire, solid
Insulation:
Special mix silicon rubber
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Red or White

IDENTIFICATION OF CORE

2 Core
3 Core
4 Core
up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
300/500 V

Reference Standard

- IEC 60331-21:1999
- EN 60754-1:2014
- EN 61034-2:2005

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

Fire Resistant

Min. Bending Radius

CABLE
BEND RADIUS
8 x cable diameter

Low Smoke Halogen free

Fire Safe

TYPE: SOLID

IEC 60331-21:1999

CABLE PRINTING

RAMFIRECRO-F3 FIRE SAFE RS485 - FIRE RESISTANT CONDxAREA mmq +E - LSZH - IEC 60331-21:1999 1 1/2 H 750 -
EN 60754-1:2014 - EN 61034-2: 2005 - 300/500 V - batch n° - meter marking - MADE IN ITALY

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAR0211HFEEL-F3	2x1.00	6.8	62
SAR0311HFEEP-F3	3x1.00	7.2	80
SAR0411HFEEQ-F3	4x1.00	7.9	100
SAR0511HFEED-F3	5x1.00	9	128
SAR0711HFEED-F3	7x1.00	9.8	165
SAR1211HFEED-F3	12x1.00	12.7	264
SAR1911HFEED-F3	19x1.00	15.2	407
SAR0214HFEEL-F3	2x1.50	7.3	73
SAR0314HFEEP-F3	3x1.50	7.7	97
SAR0414HFEEQ-F3	4x1.50	8.4	122
SAR0514HFEED-F3	5x1.50	9.6	156
SAR0714HFEED-F3	7x1.50	10.4	203
SAR1214HFEED-F3	12x1.50	13.6	329
SAR1914HFEED-F3	19x1.50	16.3	508
SAR0218HFEEL-F3	2x2.50	8.1	98
SAR0318HFEEP-F3	3x2.50	8.6	131
SAR0418HFEEQ-F3	4x2.50	9.8	177
SAR0518HFEED-F3	5x2.50	10.7	213
SAR0718HFEED-F3	7x2.50	11.6	282
SAR1218HFEED-F3	12x2.50	15.7	476
SAR1918HFEED-F3	19x2.50	18.7	734

* If the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAS____HCESL-F3

Fire Safe

TYPE: STRANDED

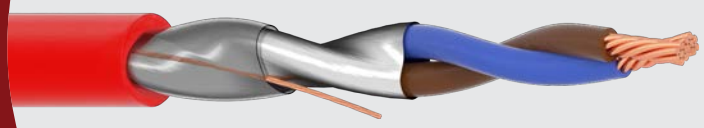
IEC 60331-21:1999

CONSTRUCTION

Multi-Core, Stranded CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Formation:
Plain annealed copper wire, 7 Stands
Insulation:
Special mix silicon rubber
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over cop-per drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Red or White

**RAMFIRECRO-F3 -
FIRE SAFE
IEC 60331-21:1999**



IDENTIFICATION OF CORE

2 Core
3 Core
4 Core
up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
300/500 V

Reference Standard

- IEC 60331-21:1999
- EN 60754-1:2014
- EN 61034-2:2005

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

Fire Resistant

Min. Bending Radius

CABLE
BEND RADIUS
8 x cable diameter

Low Smoke Halogen free

Fire Safe

TYPE: STRANDED

IEC 60331-21:1999

CABLE PRINTING

RAMFIRECRO-F3 FIRE SAFE RS485 - FIRE RESISTANT CONDxAREA mmq +E - LSZH - IEC 60331-21:1999 1 1/2 H 750 -
EN 60754-1:2014 - EN 61034-2: 2005 - 300/500 V - batch n° - meter marking - MADE IN ITALY

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0210HFEEL-F3	2x1.00	7.1	64
SAS0310HFEEP-F3	3x1.00	7.5	83
SAS0410HFEEQ-F3	4x1.00	8.2	104
SAS0510HFEED-F3	5x1.00	9.4	133
SAS0710HFEED-F3	7x1.00	10.2	172
SAS1210HFEED-F3	12x1.00	13.3	276
SAS1910HFEED-F3	19x1.00	15.9	424
SAS0215HFEEL-F3	2x1.50	7.6	77
SAS0315HFEEP-F3	3x1.50	8.1	102
SAS0415HFEEQ-F3	4x1.50	9.3	137
SAS0515HFEED-F3	5x1.50	10.1	165
SAS0715HFEED-F3	7x1.50	11	215
SAS1215HFEED-F3	12x1.50	14.8	362
SAS1915HFEED-F3	19x1.50	17.2	537
SAS0225HFEEL-F3	2x2.50	8.3	103
SAS0325HFEEP-F3	3x2.50	9.4	147
SAS0425HFEEQ-F3	4x2.50	10.3	186
SAS0525HFEED-F3	5x2.50	11.3	224
SAS0725HFEED-F3	7x2.50	12.3	297
SAS1225HFEED-F3	12x2.50	16.6	502
SAS1925HFEED-F3	19x2.50	19.8	773

*If the cables are with a WHITE outer sheath the part RAMCRO CODE will change in: SAR___HCEEL-F3

Fire Ground

TYPE: MULTI STRAND

BS 6387:2013 Cat. C-W-Z



CONSTRUCTION

Multi-Core, Multistrand CU, Silicon Rubber-Insulation, Steel Wire Armour, LSZH-Sheath.

Conductor:
Plain annealed copper wire, Multistrand
Insulation:
Special mix silicon rubber
Inner Sheath:
Thermoplastic Low Smoke, Halogen Free
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Armour:
Galvanized steel wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Red

IDENTIFICATION OF CORE

2 Core ● ● or Black Numbered
up/from 3 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
5000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
600/1000 V

Reference Standard

- BS 6387:2013 Cat. C-W-Z
- EN 60754-1:2014
- EN 61034-2:2005+A1:2013
- EN 60754-2:2014
- EN 60332-3-24:2009
- EN 60332-1-2:2004

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

Fire Resistant

Min. Bending Radius

CABLE BEND RADIUS

8 x cable diameter

Power Cable

Fire Ground

TYPE: MULTI STRAND

BS 6387:2013 Cat. C-W-Z

CABLE PRINTING

RAMFIRECRO –F3 - FIRE GROUND – LSZH - BS 6387:2013 CWZ - IEC 60332-3-24:2009 - IEC 60332-1-2:2004 - 0,6/1 kV - CONDxAREA mmq - CU/Sil/LSZH/SWA/LSZH - ARMOURED - MADE IN ITALY + BATCH N.

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSS0215AFESH-F3(FG)	2x1.50	14.2	373
SSS0315AFESP-F3(FG)	3x1.50	14.3	395
SSS0415AFESQ-F3(FG)	4x1.50	15.1	440
SSS0515AFESD-F3(FG)	5x1.50	16.6	563
SSS0225AFESH-F3(FG)	2x2.50	16.2	530
SSS0325AFESP-F3(FG)	3x2.50	16.4	566
SSS0425AFESQ-F3(FG)	4x2.50	17.3	635
SSS0525AFESD-F3(FG)	5x2.50	18.3	709
SSS0240AFESL-F3(FG)	2x4.00	17.1	592
SSS0340AFESP-F3(FG)	3x4.00	17.3	640
SSS0440AFESQ-F3(FG)	4x4.00	18.3	725
SSS0540AFESD-F3(FG)	5x4.00	19.4	815
SSS0260AFESL-F3(FG)	2x6.00	18.6	716
SSS0360AFESP-F3(FG)	3x6.00	18.8	786
SSS0460AFESQ-F3(FG)	4x6.00	20.0**	902
SSS0560AFESD-F3(FG)	5x6.00	22.0**	1132
SSS0211AFESL-F3(FG)	2x10.00	20.6**	910
SSS0311AFESP-F3(FG)	3x10.00	20.9**	1021
SSS0411AFESQ-F3(FG)	4x10.00	23.1**	1303
SSS0511AFESD-F3(FG)	5x10.00	24.6**	1492
SSS0216AFESL-F3(FG)	2x16.00	24.1**	1306
SSS0316AFESP-F3(FG)	3x16.00	24.4**	1479
SSS0416AFESQ-F3(FG)	4x16.00	26.2**	1737
SSS0516AFESD-F3(FG)	5x16.00	28.3**	2022
SSS0227AFESL-F3(FG)	2x25.00	26.1**	1627
SSS0327AFESP-F3(FG)	3x25.00	26.5**	1888
SSS0427AFESQ-F3(FG)	4x25.00	28.8**	2266
SSS0527AFESD-F3(FG)	5x25.00	31.2**	2663

** The Ramfirecro-F3 FIRE GROUND range with diameters greater than 20mm were tested in accordance with clause 17.4.2 annex L BS 7846:2015

*** If the cables are with a WHITE outer sheat the RAMCRO CODE will change in : SSS____ACESL-F3(FG)

Fire Moon Enhanced

TYPE: SOLID

EN 50200:2015 Class PH 120



CONSTRUCTION

Multi-Core, Solid or Stranded CU, Silicon Rubber -Insulation, Collective Screen, LSZH-Sheath

Conductor:
Plain annealed copper wire, Solid or stranded
Insulation:
Special mix silicon rubber
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over Tinned copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Red or White

IDENTIFICATION OF CORE

2 Core
3 Core
4 Core
up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
5000 V
Test Voltage Core-Screen:
5000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
600/1000 V

Reference Standard

- EN 50200:2015 (Class PH120)
- IEC 60754-1:2014
- EN 61034-2:2005+A1:2013

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

Fire Resistant

Min. Bending Radius

CABLE
BEND RADIUS
8 x cable diameter

Low Smoke Halogen free

Fire Moon Enhanced

TYPE: SOLID

EN 50200:2015 Class PH 120

CABLE PRINTING

RAMFIRECRO – F3 ENHANCED – FIRE MOON – LSZH - EN 50200:2015 PH120 0.6/1 kV - CONDxAREA mmq + E - Year of manufacture - BATCH N. + MADE IN ITALY + METER MARKING.

DIMENSIONAL DATA- SOLID VERSION (BARE COPPER CL.1)

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAR0211IF-WFA10210	2x1.00	8.0	81
SAR0311IF-WFA10210	3x1.00	8.5	101
SAR0411IF-WFA10210	4x1.00	9.2	124
SAR0214IF-WFA10215	2x1.50	8.7	97
SAR0214IF-WFA10215	3x1.50	9.2	124
SAR0214IF-WFA10215	4x1.50	10	153
SAR0218IF-WFA10225	2x2.50	9.7	126
SAR0218IF-WFA10225	3x2.50	10.2	166
SAR0218IF-WFA10225	4x2.50	11.1	207

DIMENSIONAL DATA- STRANDED VERSION (BARE COPPER CL.2)

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]
SAS0210IF-WFA10210	2x1.00	8.3	84	18.8
SAS0310IF-WFA10210	3x1.00	8.8	106	18.8
SAS0410IF-WFA10210	4x1.00	9.5	129	18.8
SAS0215IF-WFA10215	2x1.50	9.0	102	12.6
SAS0215IF-WFA10215	3x1.50	9.5	130	12.6
SAS0215IF-WFA10215	4x1.50	10.4	161	12.6
SAS0225IF-WFA10225	2x2.50	10.1	133	7.7
SAS0225IF-WFA10225	3x2.50	10.7	174	7.7
SAS0225IF-WFA10225	4x2.50	11.7	218	7.7

*if the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAS_____IC-WFA_____

Fire Italy

TYPE: STRANDED

EN 50200:2015 Class PH 30

CONSTRUCTION

Multi-Core, Multistrand CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Conductor:
Plain annealed copper wire, stranded
Insulation:
Special mix silicon rubber
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over Tinned copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Red or White



IDENTIFICATION OF CORE

2 Core

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
100/100 V

Reference Standard

- EN 50200:2015 (Class PH30)
- IEC 60754-1:2014
- EN 61034-2:2005+A1:2013

CPR Classification

EN 50575:2016 - C_{CA} s1b, d1, a1

Temperature Range

During Operation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

Fire Resistant

Min. Bending Radius

CABLE
BEND RADIUS

8 x cable diameter

Low Smoke Halogen free

Fire Italy

TYPE: STRANDED

EN 50200:2015 Class PH 30

CABLE PRINTING

RAMFIRECRO-F3 - FIRE ITALY - LSZH - EN 50200:2015 PH30 - IEC 61034-2:2005 - EN 60754-1:2014 - CONDxAREA sqmm + BATCH + METER MARKING + MADE IN ITALY

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0210HFESL-F3FG4	2x1.00*	7.6*	67
SAS0215HFESL-F3FG4	2x1.50*	8.6*	88
SAS0225HFESL-F3FG4	2x2.50*	10.1*	129

*if the cables are with a WHITE outer sheath the part RAMCRO CODE will change in: SAR_____HCESL-F3FG4

Fire Italy

TYPE: STRANDED

CEI 20-105; V2 - FG29OHM16 PH120



CONSTRUCTION

Multi-Conductor, Ceramizing Silicone G29, Shielded, LSZH-Sheath M16

Conductor:
Annealed red copper, Cl.5
Insulation:
Ceramizing Silicone - G29
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over Tinned copper drain wire
Outer Sheath:
Compound LSZH - M16
Sheath Colour:
Red or Purple

IDENTIFICATION OF CORE

2 Core ● ●
4 Core ● ● ○ ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 100 pF/km
Inductance:
< 1 mH/km
Operating Voltage:
100/100 V

Reference Standard

- CEI 20-105;V2
- UNI 9795
- EN 50200 PH 120
- CEI EN 60332-3-25

CPR Classification

EN 50575:2016 - C_{CA} s1b, d1, a1

Temperature Range

During Operation:
-30° C up to +180°C
Fixed Installation:
-30° C up to +75°C
During Installation:
-5° C up to +50°C

Fire Resistant

Min. Bending Radius

CABLE BEND RADIUS

8 x cable diameter

Italian Market

Fire Italy

TYPE: STRANDED

CEI 20-105; V2 - FG29OHM16

PH120

CABLE PRINTING

RAMCRO RAMFIRECRO-F3- FIRE ITALY -CEI 20-105 FG29OHM16 2x1.00 mmq EN 50200 PH120 CPR Cca s1b, d1, a1 - 100/100V Uo=400 V BATCH + MM/YY

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0250HFYSH-F3FG29	2 x 0.50	5,6	46
SAS0275HFYSH-F3FG29	2 x 0.75	6,3	57
SAS0210HFYSH-F3FG29	2 x 1.00	6,6	63
SAS0215HFYSH-F3FG29	2 x 1.50	7,6	82
SAS0225HFYSH-F3FG29	2 x 2.50	9,2	122
SAS0240HFYSH-F3FG29	2 x 4.00	10,5	163
SAS0260HFYSH-F3FG29	2 x 6.00	11,6	213
SAS0450HFYSX-F3FG29	4 x 0.50	6,2	66
SAS0475HFYSX-F3FG29	4 x 0.75	7,0	85
SAS0410HFYSX-F3FG29	4 x 1.00	7,2	96
SAS0415HXYSX-F3FG29	4 x 1.50	8,7	134
SAS0425HXYSX-F3FG29	4 x 2.50	10,5	209

EVAC CABLES for voice evacuation systems

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0250HXYSH-F3FG29	2 x 0.50	5,6	46
SAS0275HXYSH-F3FG29	2 x 0.75	6,3	57
SAS0210HXYSH-F3FG29	2 x 1.00	6,6	63
SAS0215HXYSH-F3FG29	2 x 1.50	7,6	82
SAS0225HXYSH-F3FG29	2 x 2.50	9,2	122
SAS0240HXYSH-F3FG29	2 x 4.00	10,5	163
SAS0260HXYSH-F3FG29	2 x 6.00	11,6	213
SAS0450HXYSX-F3FG29	4 x 0.50	6,2	66
SAS0475HXYSX-F3FG29	4 x 0.75	7,0	85
SAS0410HXYSX-F3FG29	4 x 1.00	7,2	96
SAS0415HXYSX-F3FG29	4 x 1.50	8,7	134
SAS0425HXYSX-F3FG29	4 x 2.50	10,5	209

Fire Italy

TYPE: STRANDED

CEI 20-105; V2 - FG29OM16 PH120

CONSTRUCTION

Multi-Conductor, Ceramizing Silicone G29 LSZH-Sheath M16

Conductor:
Annealed red copper, Cl.5
Insulation:
Ceramizing Silicone - G29
Outer Sheath:
Compound LSZH - M16
Sheath Colour:
Red or Purple



IDENTIFICATION OF CORE

2 Core
4 Core

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 100 pF/km
Inductance:
< 1 mH/km
Operating Voltage:
100/100 V

Reference Standard

- CEI 20-105;V2
- UNI 9795
- EN 50200:2015 PH120
- CEI EN 60332-3-25

CPR Classification

EN 50575:2016 - C_{CA} s1b, d1, a1

Temperature Range

During Operation:
-30°C up to +180°C
Fixed Installation:
-30°C up to +75°C
During Installation:
-5°C up to +50°C

Fire Resistant

Min. Bending Radius

CABLE
BEND RADIUS

8 x cable diameter

Italian Market

Fire Italy

TYPE: STRANDED

CEI 20-105; V2 - FG29OM16

PH120

CABLE PRINTING

RAMCRO RAMFIRECRO-F3 - FIRE ITALY - CEI 20-105 FG29OM16 CONDxAREA mmq
EN 50200:2015 PH120 CPR Cca s1b, d1, a1 - 100/100 V Uo=400 V BATCH + MM/YY

EVAC CABLES for voice evacuation systems-Red Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSS0250HFYSH-F3FG29	2 x 0.50	5,5	50
SSS0275HFYSH-F3FG29	2 x 0.75	6,2	64
SSS0210HFYSH-F3FG29	2 x 1.00	6,4	72
SSS0215HFYSH-F3FG29	2 x 1.50	7,5	99
SSS0225HFYSH-F3FG29	2 x 2.50	9,0	150
SSS0240HFYSH-F3FG29	2 x 4.00	10,4	201
SSS0260HFYSH-F3FG29	2 x 6.00	11,6	266
SSS0450HFYSX-F3FG29	4 x 0.50	6,1	68
SSS0475HFYSX-F3FG29	4 x 0.75	6,9	89
SSS0410HFYSX-F3FG29	4 x 1.00	7,1	102
SSS0415HFYSX-F3FG29	4 x 1.50	8,3	140
SSS0425HFYSX-F3FG29	4 x 2.50	10,4	230

EVAC CABLES for voice evacuation systems- Purple colour

RAMCRO CODE	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSS0250HXYSH-F3FG29	5,5	50
SSS0275HXYSH-F3FG29	6,2	64
SSS0210HXYSH-F3FG29	6,4	72
SSS0215HXYSH-F3FG29	7,5	99
SSS0225HXYSH-F3FG29	9,0	150
SSS0240HXYSH-F3FG29	10,4	201
SSS0260HXYSH-F3FG29	11,6	266
SSS0450HXYSX-F3FG29	6,1	68
SSS0475HXYSX-F3FG29	6,9	89
SSS0410HXYSX-F3FG29	7,1	102
SSS0415HXYSX-F3FG29	8,3	140
SSS0425HXYSX-F3FG29	10,4	230

Fire Italy

TYPE: STRANDED

CEI 20-105;V2 - FTE29OHM16 PH120

CONSTRUCTION

Multi-Conductor, Multiwire CU, Mica+XLPE insulation, Shielded, LSZH-Sheath

Conductor:
Annealed red copper, Cl.5
Insulation:
Mica + XLPE Tape
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over Tinned copper drain wire
Outer Sheath:
Compound LSZH
Sheath Colour:
Red or Purple

RAMFIRECRO-F3
FIRE ITALY
CEI 20-105:V2 FTE29OHM16



IDENTIFICATION OF CORE

2 Core ● ●
4 Core ● ● ○ ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 1000 MOhm*Km
Test Voltage Core-Core:
2000 V
Mutual Capacitance:
< 70 pF/km
Inductance:
< 1 mH/km
Operating Voltage:
100/100 V

Reference Standard

- CEI 20-105;V2
- UNI 9795
- CEI 20-36 PH 120
- EN 50200 PH 120
- CEI EN 60332-3-25

CPR Classification

EN 50575:2016 - C_{CA} s1b, d1, a1

Temperature Range

During Operation:
-30°C up to +180°C
Fixed Installation:
-30°C up to +75°C
During Installation:
-5°C up to +50°C

Fire Resistant

Min. Bending Radius

CABLE BEND RADIUS

8 x cable diameter

Italian Market

Fire Italy

TYPE: STRANDED

CEI 20-105;V2 - FTE29OHM16

PH120

CABLE PRINTING

RAMCRO RAMFIRECRO-F3 FIRE ITALY CEI 20-105 FTE29OHM16 CONDxAREA mmq
EN 50200:2015 PH120 CPR Cca s1b, d1, a1 - 100/100 V Uo=400 V + BATCH + MM/YY

EVAC CABLE for voice evacuation systems- Red Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0250HFYOH-F3FTE29	2x0.50	7,0	61
SAS0275HFYOH-F3FTE29	2x0.75	7,5	69
SAS0210HFYOH-F3FTE29	2x1.00	7,8	76
SAS0215HFYOH-F3FTE29	2x1.50	8,6	95
SAS0225HFYOH-F3FTE29	2x2.50	9,6	126
SAS0240HFYOH-F3FTE29	2x4.00	11,1	170
SAS0260HFYOH-F3FTE29	2x6.00	12,6	230
SAS0450HFYOX-F3FTE29	4x0.50	7,8	89
SAS0475HFYOX-F3FTE29	4x0.75	8,4	105
SAS0410HFYOX-F3FTE29	4x1.00	8,8	122
SAS0415HFYOX-F3FTE29	4x1.50	9,6	148
SAS0425HFYOX-F3FTE29	4x2.50	11,0	213

EVAC CABLE for voice evacuation systems- Purple Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0250HXYOH-F3FTE29	2x0.50	7,0	61
SAS0275HXYOH-F3FTE29	2x0.75	7,5	69
SAS0210HXYOH-F3FTE29	2x1.00	7,8	76
SAS0215HXYOH-F3FTE29	2x1.50	8,6	95
SAS0225HXYOH-F3FTE29	2x2.50	9,6	126
SAS0240HXYOH-F3FTE29	2x2.50	11,1	170
SAS0260HXYOH-F3FTE29	2x2.50	12,6	230
SAS0450HXYOX-F3FTE29	4x0.50	7,8	89
SAS0475HXYOX-F3FTE29	4x0.75	8,4	105
SAS0410HXYOX-F3FTE29	4x1.00	8,8	122
SAS0415HXYOX-F3FTE29	4x1.50	9,6	148
SAS0425HXYOX-F3FTE29	4x2.50	11,0	213

Fire Italy

TYPE: STRANDED

CEI 20-105- FTE29OM16 PH120

CONSTRUCTION

Multi-Core, Multistrand CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Conductor:
Plain annealed copper wire, Multistrand
Insulation:
Mica Tape + Cross Liked Polyetilene - XLPE
Wrapping:
at least 1 layer of plastic tape 0,023 mm

Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Red or Violet



IDENTIFICATION OF CORE

2 Core
4 Core

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
100/100 V

Reference Standard

- CEI 20-105
- UNI 9795
- CEI 20-36 PH 120
- EN 50200 PH 120
- CEI EN 60332-3-25

Temperature Range

During Operation:
-30°C up to +180°C
Fixed Installation:
-30°C up to +75°C
During Installation:
-5°C up to +50°C

Fire Resistant

Min. Bending Radius

CABLE
BEND RADIUS
8 x cable diameter

Italian Market

Fire Italy

TYPE: STRANDED

CEI 20-105; V2 - FTE29OM16

PH120

CABLE PRINTING

RAMFIRECRO–F3 - FIRE ITALY- CEI 20-105 FTE4OHM1 PH120 mmq UNI 9795 CEI 20-36/4-0 PH120 CEI EN 60332-3-25 - 100/100 V - Uo=400 V + BATCH + MM/YY

EVAC CABLE for voice evacuation systems- Red Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSS0250HFYOH-F3FTE29	2x0.50	6,9	59
SSS0275HFYOH-F3FTE29	2x0.75	7,4	67
SSS0210HFYOH-F3FTE29	2x1.00	7,7	74
SSS0215HFYOH-F3FTE29	2x1.50	8,5	93
SSS0225HFYOH-F3FTE29	2x2.50	9,5	124
SSS0240HFYOH-F3FTE29	2x4.00	11,0	168
SSS0260HFYOH-F3FTE29	2x6.00	12,5	228
SSS0450HFYOX-F3FTE29	4x0.50	7,7	87
SSS0475HFYOX-F3FTE29	4x0.75	8,3	103
SSS0410HFYOX-F3FTE29	4x1.00	8,7	120
SSS0415HFYOX-F3FTE29	4x1.50	9,5	146
SSS0425HFYOX-F3FTE29	4x2.50	10,9	211

EVAC CABLE for voice evacuation systems- Purple Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSS0250HXYOH-F3FTE29	2x0.50	6,9	59
SSS0275HXYOH-F3FTE29	2x0.75	7,4	67
SSS0210HXYOH-F3FTE29	2x1.00	7,7	74
SSS0215HXYOH-F3FTE29	2x1.50	8,5	93
SSS0225HXYOH-F3FTE29	2x2.50	9,5	124
SSS0240HXYOH-F3FTE29	2x2.50	11,0	168
SSS0260HXYOH-F3FTE29	2x2.50	12,5	228
SSS0450HXYOX-F3FTE29	4x0.50	7,7	87
SSS0475HXYOX-F3FTE29	4x0.75	8,3	103
SSS0410HXYOX-F3FTE29	4x1.00	8,7	120
SSS0415HXYOX-F3FTE29	4x1.50	9,5	146
SS0425HXYOX-F3FTE29	4x2.50	10,9	211

Fire Italy armoured

TYPE: STRANDED

CEI 20-105- FTE320HAM16 PH120



CONSTRUCTION

Multi-Core, Multistrand CU, MICA+XLPE, Collective Screen, armoured SWB, M16 LSZH-Sheath

Conductor:
Plain annealed copper wire, Multistrand
Insulation:
Mica Tape + Cross Liked Polyetilene - XLPE
Wrapping:
at least 1 layer of plastic tape
Shield:
Alu/PET tape + Tinned Drain Wire
Inner Sheath:
Thermoplastic Low Smoke, Halogen Free
Armouring:
Steel Wire Braid SWB
Outer Sheath:
Thermoplastic Low Smoke, Halogen
Sheath Colour:
Red or Violet

IDENTIFICATION OF CORE

2 Core
4 Core

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 100 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
100/100 V

Reference Standard

- CEI 20-105
- UNI 9795
- EN 50200 PH 120
- CEI EN 60332-3-25
- EN 50575:2016

Temperature Range

During Operation:
-5°C up to +50°C
Fixed Installation:
-30°C up to +75°C
During Installation:
-5°C up to +50°C

CPR Version

B2ca, s1a,d1,a1

Fire Resistant

Min. Bending Radius

CABLE
BEND RADIUS
8 x cable diameter

Italian Market

Fire Italy armoured

CEI 20-105; V2 - FTE32OHAM16

TYPE: STRANDED

PH120

CABLE PRINTING

<meterMarking> RAMCRO - FTE32OHAM16 100/100V PH120 [cond]x[sez] B2ca s1a, d1, a1 CEI UNEL 35336 - Uo=400 V - <YEAR> - RAMFIRECRO-F3 - CEI 20-105 - <batch>

EVAC CABLE for voice evacuation systems- Red Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0215WFYOH-F3FTE	2x1.50	11,5	250
SAS0225WFYOH-F3FTE	2x2.50	13,2	321
SAS0240WFYOH-F3FTE	2x4.00	14,3	370
SAS0260WFYOH-F3FTE	2x6.00	15,6	450
SAS0415WFYOH-F3FTE	4x1.50	12,3	312
SAS0425WFYOH-F3FTE	4x4.00	14,6	420

**Version unshielded available on request

EVAC CABLE for voice evacuation systems- Purple Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0215WXYSH-F3G32	2x1.50	12,3	270
SAS0225WXYSH-F3G32	2x2.50	13,6	330
SAS0240WXYSH-F3G32	2x4.00	15,1	395
SAS0260WXYSH-F3G32	2x6.00	16,6	482
SAS0415WXYSH-F3G32	4x1.50	13,6	356
SAS0425WXYSH-F3G32	4x2.50	14,7	432

250
321
370
450
312
420

Fire Italy armoured

TYPE: STRANDED

CEI 20-105- FGE32OHAM16 PH120



CONSTRUCTION

Multi-Core, Multistrand CU, Silicone Rubber, , Collective Screen, armoured SWB, M16 LSZH-Sheath

Conductor:
Plain annealed copper wire, Multistrand
Insulation:
Mica Tape + Silicon Rubber :
at least 1 layer of plastic tape
Shield:
Alu/PET tape + Tinned Drain Wire
Inner Sheath:
Thermoplastic Low Smoke, Halogen Free
Armouring:
Steel Wire Braid SWB
Outer Sheath:
Thermoplastic Low Smoke, Halogen Fre
Sheath Colour:
Red or Violet

IDENTIFICATION OF CORE

2 Core ● ●
4 Core ● ● ○ ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 100 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
100/100 V

Reference Standard

- CEI 20-105
- UNI 9795
- EN 50200 PH 120
- CEI EN 60332-3-25
- EN 50575:2016
- CEI 60332-3-25

Temperature Range

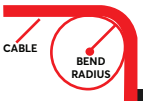
During Operation
-5°C up to +50°C
Fixed Installation:
-30°C up to +75°C
During Installation:
-5°C up to +50°C

CPR Version

B2ca, s1a,d1,a1

Fire Resistant

Min. Bending Radius



8 x cable diameter

Italian Market

Fire Italy armoured

CEI 20-105; V2 - FG32OHAM16

TYPE: STRANDED

PH120

CABLE PRINTING

<meterMarking> RAMCRO - FG32OHAM16 100/100V PH120 [cond]x[sez] B2ca s1a, d1, a1 CEI UNEL 35336 - Uo=400 V - <YEAR> - RAMFIRECRO-F3 - CEI 20-105 - <batch>

EVAC CABLE for voice evacuation systems- Red Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0215WFYSH-F3G32	2x1.50	11,5	250
SAS0225WFYOH-F3G32	2x2.50	13,2	321
SAS0240WFYOH-F3G32	2x4.00	14,3	370
SAS0260WFYOH-F3G32	2x6.00	15,6	450
SAS0415WFYOH-F3G32	4x1.50	12,3	312
SAS0425WFYOH-F3G32	4x4.00	14,6	420

**Version unshielded available on request

EVAC CABLE for voice evacuation systems- Purple Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0215WXYSH-F3G32	2x1.50	12,3	250
SAS0225WXYSH-F3G32	2x2.50	13,6	321
SAS0240WXYSH-F3G32	2x4.00	15,1	370
SAS0260WXYSH-F3G32	2x6.00	16,6	450
SAS0415WXYSH-F3G32	4x1.50	13,6	312
SAS0425WXYSH-F3G32	4x2.50	14,7	420

**Version unshielded available on request

FIRE RESISTANT CABLE

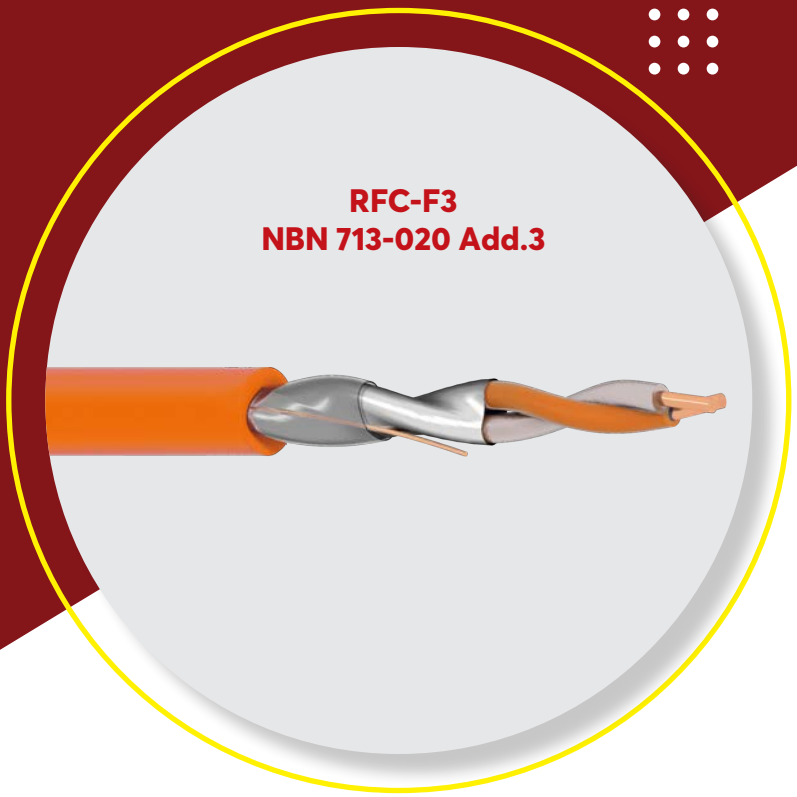




RFC - F3/RF90 - sd - sa - f1 - f2

TYPE: SOLID

NBN 713-020 Add.3



CONSTRUCTION

Multi-Pairs, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Conductor:
Plain annealed copper wire, Solid
Insulation:
Special Mix Silicon Rubber
Collective Screen:
Aluminium / PETP tape over copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Orange

IDENTIFICATION OF CORE

1 Pair:
2 Pair:
3 Pair:

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
100/100 V

Reference Standard

- NBN 713-020 Add.3
- EN 50200:2015
- NBN C 30-004 F2 FR2
- IEC 60332-21
- IEC 60332-1

On Request

- Armor in Double Steel Tape (STA)
- Armor in Steel Wire Armour (SWA)
- Conductor Multistrand, Class 5

Temperature Range

Fixed Installation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

Fire Resistant

Min. Bending Radius

CABLE BEND RADIUS

8 x cable diameter

Belgian Market

Low Smoke Halogen free

RFC - F3/RF90 - sd - sa - f1 - f2

TYPE: SOLID

NBN 713-020 Add.3

CABLE PRINTING

RFC-F3 RF90 IEC 60331-21 / NBN 713-020 Add.3 / NBN C30-004 LSZH SA-ST-SD F1-F2 1X2X0.90 mm + E SAM0109HUEL-F3(BE) - <batch> - MADE IN ITALY - Meter Marking

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAM0109HUEL-F3(BE)	1x2x0.90	5.9	44
SAM0209HUEL-F3(BE)	2x2x0.90	8.9	83
SAM0309HUEL-F3(BE)	3x2x0.90	9.5	109
SAM0509HUEL-F3(BE)	5x2x0.90	11.6	146
SAM0709HUEL-F3(BE)	7x2x0.90	13.0	174
SAM1009HUEL-F3(BE)	10x2x0.90	16.6	215
SAM1509HUEL-F3(BE)	15x2x0.90	19.4	283

RFC - F3/RF90 - sd - sa - f1 - f2

TYPE: SOLID

NBN 713-020 Add.3



CONSTRUCTION

Multi-Core, Solid CU, Silicon Rubber-Insulation, LSZH-Sheath

Conductor:
Plain annealed copper wire, Solid
Insulation:
Special Mix Silicon Rubber
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Orange

IDENTIFICATION OF CORE

In acc. to HD 308

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
300/500 V

Reference Standard

- NBN 713-020 Add.3
- EN 50200:2015
- NBN C 30-004 F2 FR2
- IEC 60332-21
- IEC 60332-1

On Request

- Armor in Double Steel Tape (STA)
- Armor in Steel Wire Armour (SWA)
- Conductor Multistrand, Class 5

Temperature Range

Fixed Installation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

Fire Resistant

Min. Bending Radius

CABLE BEND RADIUS

8 x cable diameter

Belgian Market

Low Smoke Halogen free

RFC - F3/RF90 - sd - sa - f1 - f2

TYPE: SOLID

NBN 713-020 Add.3

CABLE PRINTING

RFC-F3 RF90 IEC 60331-21 / NBN 713-020 Add.3 / NBN C30-004 LSZH SA-ST-SD F1-F2 2X1.50 mm2 SSR0214HUELL-F3(BE) - <batch> - MADE IN ITALY - Meter Marking

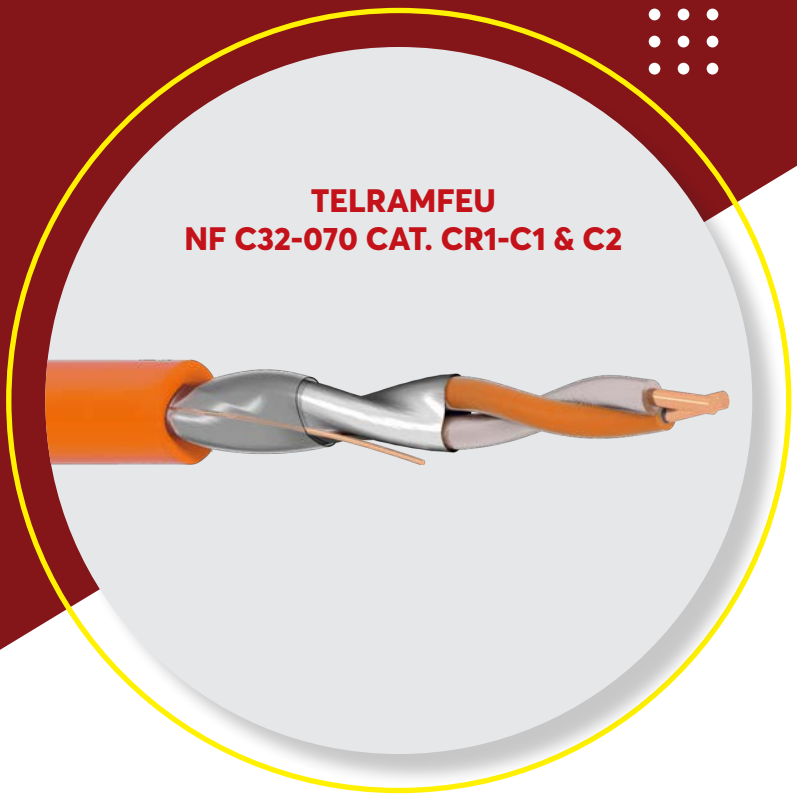
DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSR0214HUEL-F3(BE)	2x1.50	8.0	**88**
SSR0414HUEL-F3(BE)	4x1.50	9.2	**115**
SSR0514HUEL-F3(BE)	5x1.50	10.2	**139**
SSR0714HUEL-F3(BE)	7x1.50	11.2	**183**
SSR1214HUEL-F3(BE)	12x1.50	14.6	**99**
SSR1914HUEL-F3(BE)	19x1.50	17.4	**133**
SSR0218HUEL-F3(BE)	2x2.50	8.8	**174**
SSR0418HUEL-F3(BE)	4x2.50	10.1	**211**
SSR0518HUEL-F3(BE)	5x2.50	11.3	**148**
SSR0718HUEL-F3(BE)	7x2.50	12.4	**201**
SSR1218HUEL-F3(BE)	12x2.50	16.3	**263**
SSR1918HUEL-F3(BE)	19x2.50	19.4	**320**

Telramfeu

TYPE: SOLID

NF C32-070 CAT. CR1-C1 & C2



CONSTRUCTION

Multi-Core, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Conductor:
Plain annealed copper wire, Solid
Insulation:
Special Mix Silicon Rubber
Collective Screen:
Aluminium / PETP tape over copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Orange

IDENTIFICATION OF CORE

1 Pair:
2 Pair:
3 Pair:

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
100/170 V

Reference Standard

- NF C32-070 CAT. CR1-C1 & C2
- EN 50200
- NF C32-310

On Request

- Armor in Double Steel Tape (STA)
- Armor in Steel Wire Armour (SWA)
- Conductor Multistrand, Class 5

Temperature Range

Fixed Installation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

Fire Resistant

Min. Bending Radius

CABLE BEND RADIUS

8 x cable diameter

French Market

Low Smoke Halogen free

Telramfeu

TYPE: SOLID

NF C32-070 CAT. CR1-C1 & C2

CABLE PRINTING

RAMFIRECRO-F3 TELRAMFEU ARMOURED - 1X2X0.9 mm - 170/300 V - repond aux exigences du CR1/C1 - Batch - Meter Marking

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAM0109HUESX-F3TEL	1x2x0.90	5.7	44
SAM0209HUESX-F3TEL	2x2x0.90	8.7	83
SAM0309HUESX-F3TEL	3x2x0.90	9.3	109
SAM0409HUESX-F3TEL	4x2x0.90	10.6	146
SAM0509HUESX-F3TEL	5x2x0.90	11.6	174
SAM0609HUESX-F3TEL	6x2x0.90	13	215
SAM0809HUESX-F3TEL	8x2x0.90	14.7	283
SAM1009HUESX-F3TEL	10x2x0.90	17	345
SAM1209HUESX-F3TEL	12x2x0.90	17.5	395

Puissramfeu

TYPE: SOLID

NF C32-070 CAT. CR1-C1 & C2



CONSTRUCTION

Multi-Core, Solid CU, Silicon Rubber-Insulation, LSZH-Sheath

Conductor:
Plain annealed copper wire, Solid
Insulation:
Special Mix Silicon Rubber
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Orange

IDENTIFICATION OF CORE

In acc. to HD 308

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
300/500 V

Reference Standard

- NF C32-070 CAT. CR1-C1 & C2
- EN 50200
- NF C32-310

On Request

- Armor in Double Steel Tape (STA)
- Armor in Steel Wire Armour (SWA)
- Conductor Multistrand, Class 5

Temperature Range

Fixed Installation:
-30° C up to +180°C
During Installation:
-5° C up to +50°C

Fire Resistant

Min. Bending Radius

8 x cable diameter

French Market

Low Smoke Halogen free

Puissramfeu

TYPE: SOLID

NF C32-070 CAT. CR1-C1 & C2

CABLE PRINTING

Ramfirecro-F3 PUISSRAMFEU - 2x1,5 mm2 - 300/500 V - repond aux exigences du CR1/C1 - Batch - Meter Marking

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSR0214HUYSL-F3PUISS	2x1.50	6.6	88
SSR0314HUYSX-F3PUISS	3x1.50	7.4	115
SSR0414HUYSX-F3PUISS	4x1.50	8.3	139
SSR0514HUYSX-F3PUISS	5x1.50	9.1	183
SSR0218HUYSL-F3PUISS	2x2.50	8.4	99
SSR0318HUYSX-F3PUISS	3x2.50	8.9	133
SSR0418HUYSX-F3PUISS	4x2.50	10	174
SSR0518HUYSX-F3PUISS	5x2.50	10.9	211
SSS0240HUYSL-F3PUISS	2x4.00	10	148
SSS0340HUYSL-F3PUISS	3x4.00	10.6	201
SSS0440HUYSL-F3PUISS	4x4.00	11.9	263
SSS0540HUYSL-F3PUISS	5x4.00	13	320
SSS0260HUYSL-F3PUISS	2x6.00	11.4	201
SSS0360HUYSL-F3PUISS	3x6.00	12.3	285
SSS0460HUYSL-F3PUISS	4x6.00	13.6	365
SSS0560HUYSL-F3PUISS	5x6.00	15.1	455

Lancro Fire Resistant

TYPE: SOLID

EIA/TIA 568A, ISO/IEC 11801



CONSTRUCTION

Multi-Core, Solid CU, PO + Fire Resistant Tape-Insulation, Collective Screen, LSZH-Sheath

Conductor:
Plain annealed copper wire, solid
Insulation:
- PO + Fire Resistant Tape
Wrapping:
Fiber Glass Tape + at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape + Tinned Copper Braid
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Sheath Colour:
Red

IDENTIFICATION OF CORE

1 Pair:
2 Pair:
3 Pair:
4 Pair:

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
300 V

Reference Standard

- IEC 60331-21:1999
- IEC 60332-1-2:2004
- IEC 61034-2:2005
- EN 60754-1:2014
- EN 50200 PH120

Temperature Range

During Operation:
-30° C up to +180°C
During Installation:
-5° C up to +50°C

Fire Resistant

Min. Bending Radius

CABLE
BEND RADIUS

8 x cable diameter

Data LAN

Lancro Fire Resistant

TYPE: SOLID

EIA/TIA 568A, ISO/IEC 11801

CABLE PRINTING

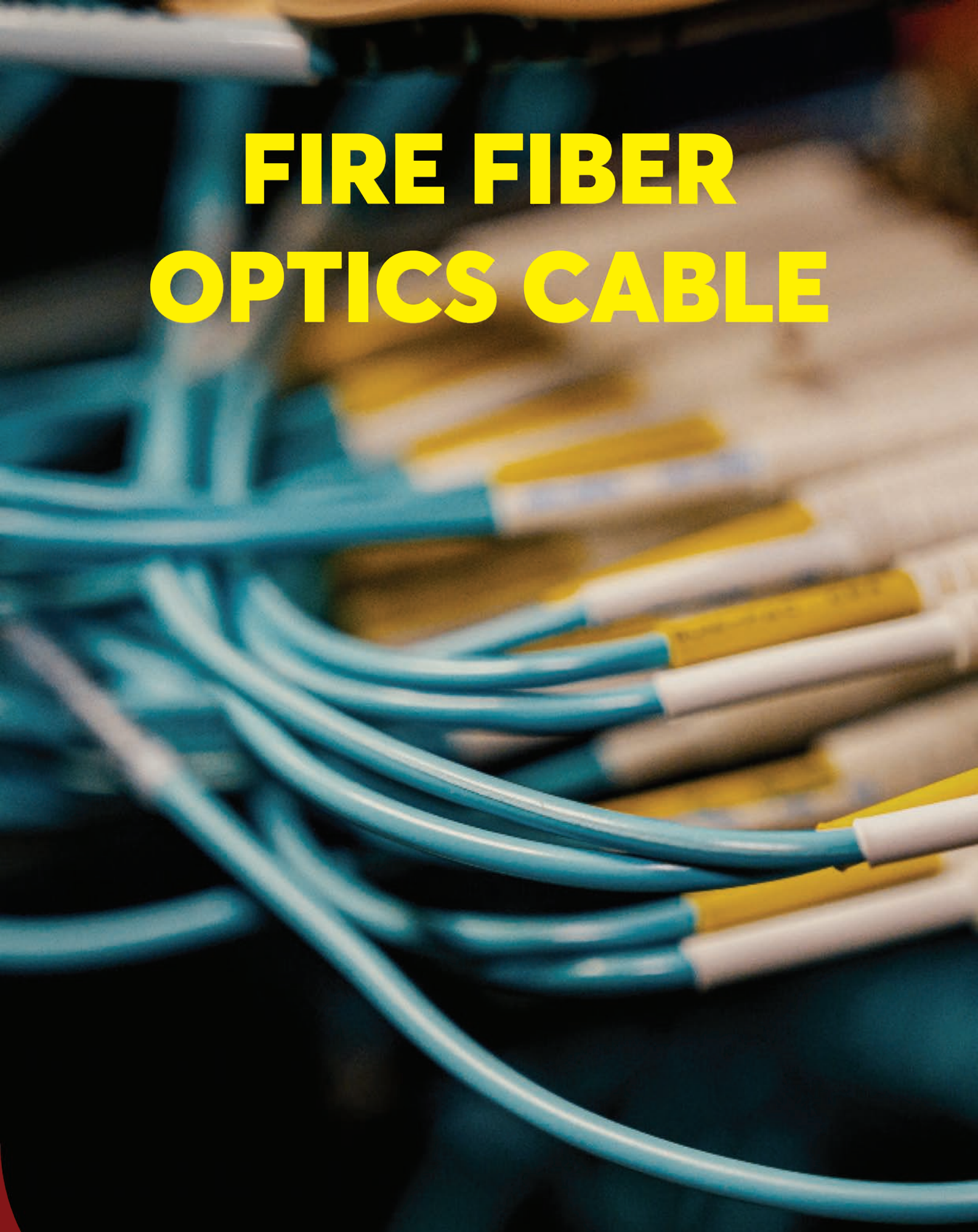
RAMFIRECRO-F3 IEC 60331 LANCRO FIRE RESISTANT IEC 60331-21:1999 - FIRE RESISTANT Data Cable Cat. 6 - CONDxAREA 4x2x23AWG + E – LSZH 90 min. 750 - IEC 60331-21:1999 – IEC 60332-1-2:2004 – EN 61034-2:2005 – EN 60754-1:2014 - 300 V - BATCH N° + METER MARKING

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAM0406HFEDX-F3CAT.6	4x2x23AWG	8,0	**85**

Frequency (MHz)	Max. Insetion Loss (dB/100 m)	Min. NEXT (dB)	Min. PSNEXT (dB)	Min. ACR (dB)	Min. PSACR (dB)	Min. ACFR (ELFEXT) (dB)
1	2.8	75.3	72.3	93	67	68
4	3.8	66.3	63.3	82	67	56
10	6	60.4	57.3	73	67	48
20	8.5	55.8	52.8	67	67	42
30	10.5	53.1	50.1	63	67	38.4
100	19.9	45.3	42.3	53	62.5	28
150	24.9	42.7	39.7	50	59.8	24.5
200	29.1	40.8	37.8	47	58	22
250	33	39.3	36.3	45	56.5	20

FIRE FIBER OPTICS CABLE

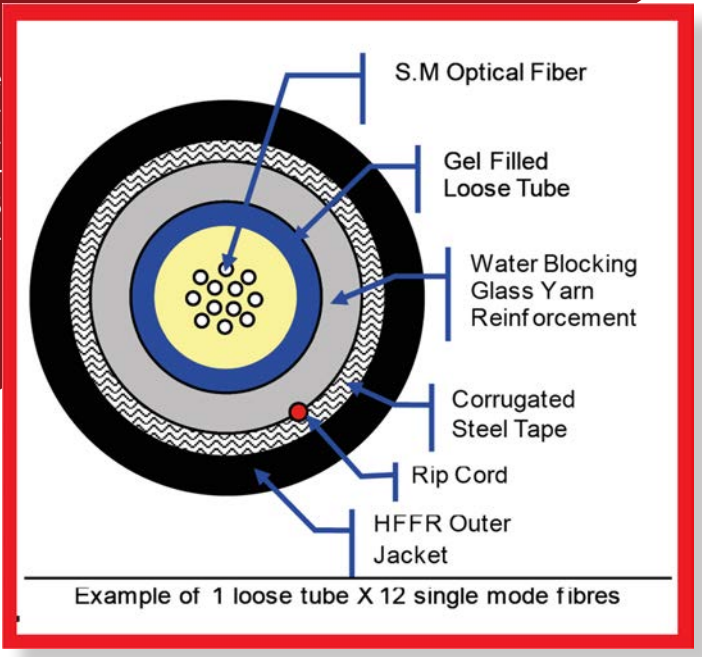




Fiber Optic
Loose Tube
SINGLE MODE 9/125 µm

DESCRIPTION

These Fiber Optic cables can incorporate up to 24 single-mode fibres. The cable is glass yarn reinforced and jacketed with Halogen Free Flame Retardant compound (HFFR). The cable is designed for indoor/outdoor applications in ducts, direct burial, or latched installations. Comply with IEC 60332- 3 & IEC 60331-25 flammability test and with halogen-free according to IEC 60754-2 Corrosively



Example of 1 loose tube X 12 single mode fibres

REFERENCE STANDARD

- IEC 60331-25:1999
- IEC 60332-1-2:2004
- EN 61034-2:2005
- EN 60754-1:2014

CONSTRUCTION

Fibers:
Up to Twenty-four single mode fibers, meeting or exceeding the ITU-T G.652/G.651 and/or IEC 60793 specifications color coded for easy identification

Tubes:
PBT tube.

Filling:
The tube is filled with water blocking, thixotropic gel to prevent the ingress of water.

Tubes Filles:
Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration. LSZH inner jacket is extruded over the yarn.

Armouring:
A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.

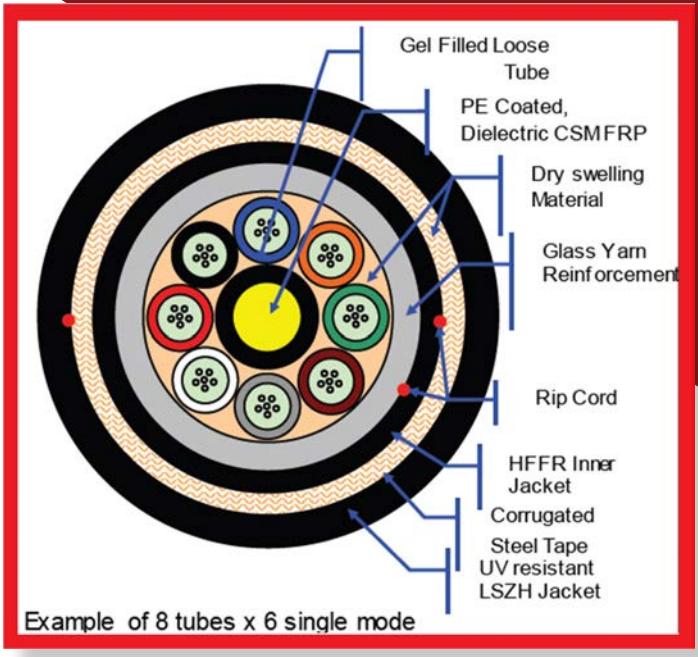
Sheath:
A UV-resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armoring.

Ripcords:
laid under the steel tape to facilitate the jacket removal.

IDENTIFICATION OF FIBERS

FIBER COLOR	FIBER NUMBER
Blue	1
Orange	2
Green	3
Brown	4
Slate	5
White	6
Red	7
Black	8
Yellow	9
Violet	10
Rose	11
Aqua	12

Fiber Optic
Multi Tube
SINGLE MODE 9/125 µm



DESCRIPTION

These Fiber Optic cables can incorporate up to 24 single mode fibers. The cable is glass yarn reinforced and jacketed with Halogen Free Flame Retardant compound (HFFR). The cable is designed for indoor/outdoor applications in ducts, direct burial or latched installations. Comply with IEC 60332- 3 & IEC 60331-25 flammability test and with halogen-free according to IEC 60754-2 Corrosively.

REFERENCE STANDARD

- IEC 60331-25:1999
- IEC 60332-1-2:2004
- EN 61034-2:2005
- EN 60754-1:2014

CONSTRUCTION

Fibers:
Up to 432 optical single mode fibers color coded for easy identification

Tubes:
PBT tube he tubes are SZ stranded around a dielectric central member

Filling:
The tube is filled with water blocking, thixotropic gel to prevent the ingress of water.

Tubes Filles:
Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration. LSZH inner jacket is extruded over the yarn.

Armouring:
A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.

Sheath:
UV resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armoring.
.

Ripcords:
laid under the steel tape to facilitate the jacket removal.

IDENTIFICATION OF FIBERS

FIBER COLOR	FIBER NUMBER
Blue	1
Orange	2
Green	3
Brown	4
Slate	5
White	6
Red	7
Black	8
Yellow	9
Violet	10
Rose	11
Aqua	12

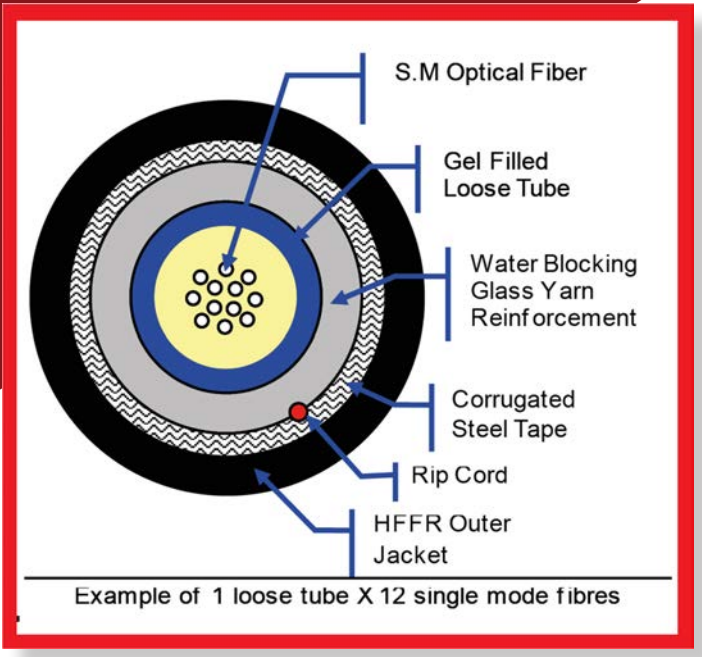
Applicable for 6 FO SM/MM unarmoured

Cert.n.568h

Fiber Optic
Loose Tube
MULTI MODE OM3 50/125 µm - 50/125 µm - 62.5/125 µm

DESCRIPTION

These Fiber Optic cables can incorporate up to 24 single-mode fibres. The cable is glass yarn reinforced and jacketed with Halogen Free Flame Retardant compound (HFFR). The cable is designed for indoor/outdoor applications in ducts, direct burial, or latched installations. Comply with IEC 60332- 3 & IEC 60331-25 flammability test and with halogen-free according to IEC 60754-2 Corrosively.



REFERENCE STANDARD

- IEC 60331-25:1999
- IEC 60332-1-2:2004
- EN 61034-2:2005
- EN 60754-1:2014

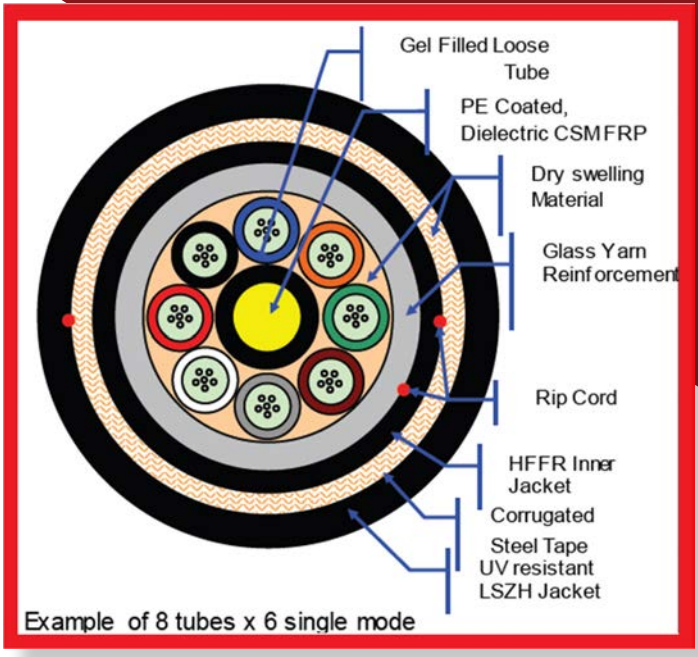
CONSTRUCTION

Fibers:
Up to Twenty-four single mode fibers, meeting or exceeding the ITU-T G.652/G.651 and/or IEC 60793 specifications color coded for easy identification
Tubes:
PBT tube.
Filling:
The tube is filled with water blocking, thixotropic gel to prevent the ingress of water
Tubes Filles:
Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration. LSZH inner jacket is extruded over the yarn.
Armouring:
A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.
Sheath:
A UV-resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armoring.
Ripcords:
laid under the steel tape to facilitate the jacket removal.

IDENTIFICATION OF FIBERS

FIBER COLOR	FIBER NUMBER
Blue	1
Orange	2
Green	3
Brown	4
Slate	5
White	6
Red	7
Black	8
Yellow	9
Violet	10
Rose	11
Aqua	12

Fiber Optic
Multi Tube
MULTI MODE OM3 50/125 µm - 50/125 µm - 62.5/125 µm



DESCRIPTION

These Fiber Optic cables can incorporate up to 24 single mode fibers. The cable is glass yarn reinforced and jacketed with Halogen Free Flame Retardant compound (HFFR). The cable is designed for indoor/outdoor applications in ducts, direct burial or latched installations. Comply with IEC 60332-3 & IEC 60331-25 flammability test and with halogen-free according to IEC 60754-2 Corrosively.

REFERENCE STANDARD

- IEC 60331-25:1999
- IEC 60332-1-2:2004
- EN 61034-2:2005
- EN 60754-1:2014

CONSTRUCTION

Fibers:
Up to 432 optical single mode fibers color coded for easy identification

Tubes:
PBT tube he tubes are SZ stranded around a dielectric central member

Filling:
The tube is filled with water blocking, thixotropic gel to prevent the ingress of water.

Tubes Filles:
Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration. LSZH inner jacket is extruded over the yarn.

Armouring:
A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.

Sheath:
UV resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armoring.
.

Ripcords:
laid under the steel tape to facilitate the jacket removal.

IDENTIFICATION OF FIBERS

FIBER COLOR	FIBER NUMBER
Blue	1
Orange	2
Green	3
Brown	4
Slate	5
White	6
Red	7
Black	8
Yellow	9
Violet	10
Rose	11
Aqua	12

Applicable for 6 FO SM/MM unarmoured

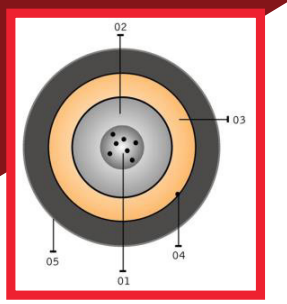
Fiber Optic - CR1-C1
XP C 93-539
Loose Tube

APPLICATIONS

- Indoor installation
- For fixed installation in ducts, tubes and trenches
- Fire resistant
- Flame and Fire retardant
- Halogen Free
- Low smoke emission – UV stabilized

REFERENCE STANDARD

IEC 60793 IEC 60794-1-2
Flame spread: IEC 60332-1-2 / NF C 32-070 C2
Smoke toxicity: IEC 60754-1 / EN 50267-2-1



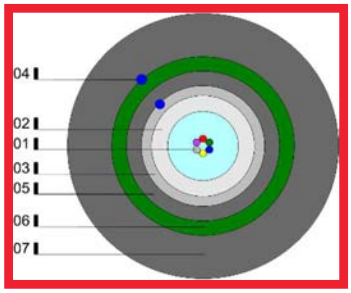
CONSTRUCTION

1 - Fibers:
Up to Twenty-four single mode fibers, meeting or exceeding the ITU-T G.652/G.651 and/or IEC 60793 specifications
Color coded following TIA/EIA 598 for easy identification
2 - Tube:
PBT tube filled with water blocking, thixotropic gel to prevent the ingress of water
3 - Tubes Filles:
Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration, with overall Fiber Glass Tape.
4 - Ripcord:
laid under the jacket for easy removal.
5 - Sheath:
A UV-resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the Fiber Glass Tape.

APPLICATIONS

- Outdoor or indoor/outdoor installation
- For installation in ducts, tubes, trenches, or directly buried
- Fire resistant
- Flame and Fire retardant
- Halogen Free
- Low smoke emission – UV stabilized
- Rodent resistant – Corrugated steel tape armor

Smoke opacity: IEC 61034-2 / EN 50268-2
Spread of fire: IEC 60332-3-24 / NF C 32-070 C1
Fire resistance: IEC 60331-25 / NF C 32-070 CR1
EN 50200 / XP C 93-539

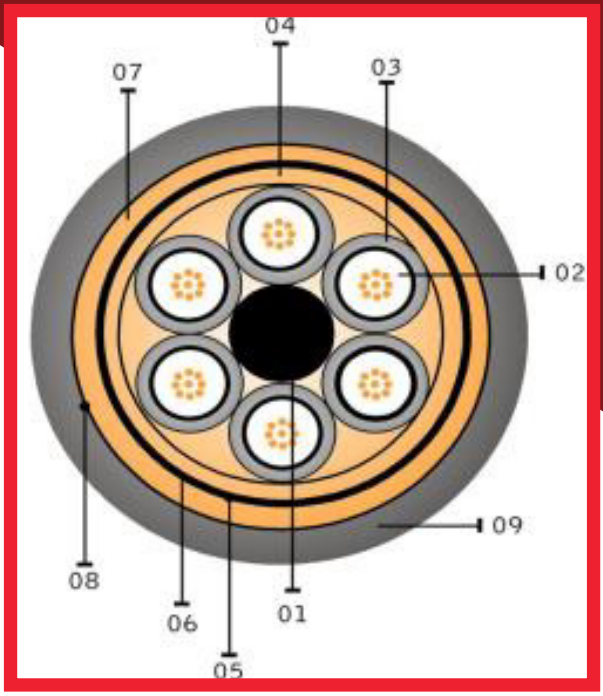


CONSTRUCTION

1 - Fibers:
Up to Twenty-four single mode fibers, meeting or exceeding the ITU-T G.652/G.651 and/or IEC 60793 specifications
Color coded following TIA/EIA 598 for easy identification
2 - Tube:
PBT tube filled with water blocking, thixotropic gel to prevent the ingress of water
3 - Tubes Filles:
Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration, with overall Fiber Glass Tape.
4 - Ripcords:
laid under the steel tape to facilitate the jacket removal.
5 - Inner Sheath:
LSZH inner jacket is extruded over the yarn.
6 - Armouring:
A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.
7 - Sheath:
A UV-resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armoring.

Code	Type of Fiber	N. Fibres	Fibres per tube	Active Tubes	Tube Diameter mm	Outer Diam. mm
FO4x9_125SMSTZA-F3XPC	UnArmoured	4	4	1	2,7	8,9
FO6x9_125SMSTZA-F3XPC	UnArmoured	6	6	1	2,7	8,9
FO12x9_125SMSTZA-F3XPC	UnArmoured	12	12	1	2,7	8,9
FO24x9_125SMSTZA-F3XPC	UnArmoured	24	24	1	2,7	8,9
FO4x9_125SMSTCSTZA-F3XPC	Armoured	4	4	1	2,7	10,0
FO6x9_125SMSTCSTZA-F3XPC	Armoured	6	6	1	2,7	10,0
FO12x9_125SMSTCSTZA-F3XPC	Armoured	12	12	1	2,7	10,0
FO24x9_125SMSTCSTZA-F3XPC	Armoured	24	6	1	2,7	10,0

Fiber Optic - CR1-C1
XP C 93-539
Multi Tube



DESCRIPTION

- Outdoor installation
- For installation in conduits, cable trays, ducted or directly buried
- Rodent resistant – Reinforced corrugated steel tape armor
- Sealing – Water-repellent barrier construction – Dry conductor
- Flame and Fire retardant
- Halogen Free
- Low smoke emission – UV stabilized

REFERENCE STANDARD

Flame spread:	IEC 60332-1-2 / NF C 32-070 C2
Smoke opacity:	IEC 61034-2 / EN 50268-2
Smoke toxicity:	IEC 60754-1 / EN 50267-2-1
Spread of fire:	IEC 60332-3-24 NF C 32-070 C1
Fire resistance:	IEC 60331-25 NF C 32-070 CR1 EN 50200 XP C 93-539

CONSTRUCTION

1 - Dielectric central member
2 - Fibers:
Up to 48 optical ITU-T G.652/G.651 and/or IEC 60793 fibers, Color coded following TIA/EIA 598 for easy identification
3 - Tubes:
PBT tube he tubes filled with water blocking, thixotropic gel to prevent the ingress of water.
4 - Tubes Filles:
Dry, water swelling glass yarn is laid over the tubes to serve as peripheral strength members and to block the cable from water penetration, with overall Fiber Glass Tape.
5 - Ripcord:
laid under the jacket for easy removal.
6 - Inner Sheath:
LSZH inner jacket is extruded over the yarn.
7 - Armouring:
A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.
8 - Ripcords:
laid under the steel tape to facilitate the jacket removal.
9 - Sheath:
A UV-resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armoring.

Code	Type of Fiber	N. Fibres	Fibres per tube	Active Tubes	Tube Diameter mm	Outer Diam. mm
FO6x9_125SMMTCSTZA-F3XPC FO6x50_125MMMTCSTZA-F3XPC	Single Mode Multi Mode	6	6	1/8	2	16,5
FO12x9_125SMMTCSTZA-F3XPC FO12x50_125MMMTCSTZA-F3XPC	Single Mode Multi Mode	12	6	2/8	2	16,5
FO24x9_125SMMTCSTZA-F3XPC FO24x50_125MMMTCSTZA-F3XPC	Single Mode Multi Mode	24	6	4/8	2	16,5
FO36x9_125SMMTCSTZA-F3XPC FO36x50_125MMMTCSTZA-F3XPC	Single Mode Multi Mode	36	6	6/8	2	16,5
FO48x9_125SMMTCSTZA-F3XPC FO48x50_125MMMTCSTZA-F3XPC	Single Mode Multi Mode	48	6	8/8	2	16,5
FO72x9_125SMMTCSTZA-F3XPC FO72x50_125MMMTCSTZA-F3XPC	Single Mode Multi Mode	72	12	6/8	2	16,5
FO96x9_125SMMTCSTZA-F3XPC FO96x50_125MMMTCSTZA-F3XPC	Single Mode Multi Mode	96	12	8/8	2	16,5
FO144x9_125SMMTCSTZA-F3XPC FO144x50_125MMMTCSTZA-F3XPC	Single Mode Multi Mode	144	24	6/8	2	16,5



FIRE ALARM CABLE



FPLR - fire alarm cable

TYPE: SOLID
E475091

UL 1424



CONSTRUCTION

Multi-Core, PVC HT 105-Insulation, unscreened or with collective screen, Hi-Performance PVC-Sheath

Conductor:
Plain annealed copper wire, Solid
Insulation:
Hi Temperature Polyvinylchloride - PVC HT 105°C
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
High-Performance Polyvinyl chloride - Hi-PVC
Sheath Colour:
Red

IDENTIFICATION OF CORE

2 Core: ● ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 25 MOhm/Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
300 V

Reference Standard

- UL 1424 (FPRL Type)
- NEC Article 760
- NEC Article 725
- UL 1666
- ASTM D 1329
- NF C 32-020
- IRAM IAP
- EN 50266-2
- IEC 60332-1
- IEC 60332-3

Temperature Range

During Operation:
-30°C up to +105°C
During Installation:
-5°C up to +50°C

E475091

Fire Resistant

Min. Bending Radius

CABLE
BEND RADIUS

8 x cable diameter

Low Smoke Halogen free

FPLR - fire alarm cable

E475091

TYPE: SOLID

UL 1424

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E475091 Type FPLR - 2 C 18AWG - Shielded - 105°C + BATCH + METER MARKING

SCREENED CABLE

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAR0204HFOCH-UL-FA	2x20AWG	3.9	20
SAR0203HFOCH-UL-FA	2x18AWG	4.3	27
SAR0202HFOCH-UL-FA	2x16AWG	4.9	38
SAR0201HFOCH-UL-FA	2x14AWG	6.2	70
SAR0251HFOCH-UL-FA	2x12AWG	7.2	90

UNSCREENED CABLE

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSR0204HFOCH-UL-FA	2x20AWG	3.8	22
SSR0203HFOCH-UL-FA	2x18AWG	4.2	29
SSR0202HFOCH-UL-FA	2x16AWG	4.8	35
SSR0201HFOCH-UL-FA	2x14AWG	6.1	75
SSR0251HFOCH-UL-FA	2x12AWG	7.1	92

FPLR - fire alarm cable

TYPE: SOLID
E475091

UL 1424



CONSTRUCTION

Multi-Core, PVC HT 105-Insulation, unscreened or with collective screen, Hi-Performance PVC-Sheath

Conductor:
Plain annealed copper wire, Solid
Insulation:
Hi Temperature Polyvinylchloride - PVC HT 105°C
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
High Performance Polyvinyl chloride - Hi-PVC
Armour:
Galvanized steel wire armour - SWA

Outer Sheath:
High-Performance Polyvinyl chloride - Hi-PVC
Sheath Colour:
Red

IDENTIFICATION OF CORE

2 Core: ● ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 25 MOhm/Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
300 V

Reference Standard

- UL 1424 (FPRL Type)
- NEC Article 760
- NEC Article 725
- UL 1666
- ASTM D 1329
- NF C 32-020
- IRAM IAP
- EN 50266-2
- IEC 60332-1
- IEC 60332-3

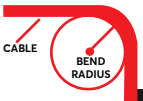
Temperature Range

During Operation:
-30°C up to +105°C
During Installation:
-5°C up to +50°C

E475091

Fire Resistant

Min. Bending Radius



8 x cable diameter

Low Smoke Halogen free

FPLR - fire alarm cable

E475091

TYPE: SOLID

UL 1424

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E475091 Type FPLR - 2 C 18AWG - Shielded - 105°C + BATCH + METER MARKING

SCREENED CABLE

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]
SAR0204AFOCH-UL-FA	2x20AWG	7.9	30	34
SAR0203AFOCH-UL-FA	2x18AWG	8.4	41	21.4
SAR0202AFOCH-UL-FA	2x16AWG	8.7	57	13.5
SAR0201AFOCH-UL-FA	2x14AWG	10.3	105	8.5
SAR0251AFOCH-UL-FA	2x12AWG	11.1	135	5.3

UNSCREENED CABLE

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]
SSR0204AFOCH-UL-FA	2x20AWG	8.1	33	34
SSR0203AFOCH-UL-FA	2x18AWG	8.5	44	21.4
SSR0202AFOCH-UL-FA	2x16AWG	8.8	52	13.5
SSR0201AFOCH-UL-FA	2x14AWG	10.4	113	8.5
SSR0251AFOCH-UL-FA	2x12AWG	11.2	138	5.3

FPLP - FPLR - fire alarm

TYPE: SOLID
E475091

UL 1424



CONSTRUCTION

Multi-Core, PLENUM PVC, unscreened or with collective screen, PLENUM PVC-Sheath

Conductor:
Plain annealed copper wire, Solid
Insulation:
Plenum Polyvinylchloride - PVC
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Plenum Polyvinylchloride - PVC
Sheath Colour:
Red

IDENTIFICATION OF CORE

2 Core: ● ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 25 MOhm/Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
300 V

Reference Standard

- FPLP-FPLR
- NEC Article 760
- NEC Article 725
- UL 910 - PLENUM
- ASTM D 1329
- NF C 32-020
- IRAM IAP
- EN 50266-2
- IEC 60332-1
- IEC 60332-3

Temperature Range

During Operation:
-30°C up to +75°C
During Installation:
-5°C up to +50°C

E475091

Fire Resistant

Min. Bending Radius

CABLE
BEND RADIUS

8 x cable diameter

Low Smoke Halogen free

FPLP - FPLR - fire alarm

E475091

TYPE: SOLID

UL 1424

CABLE PRINTING

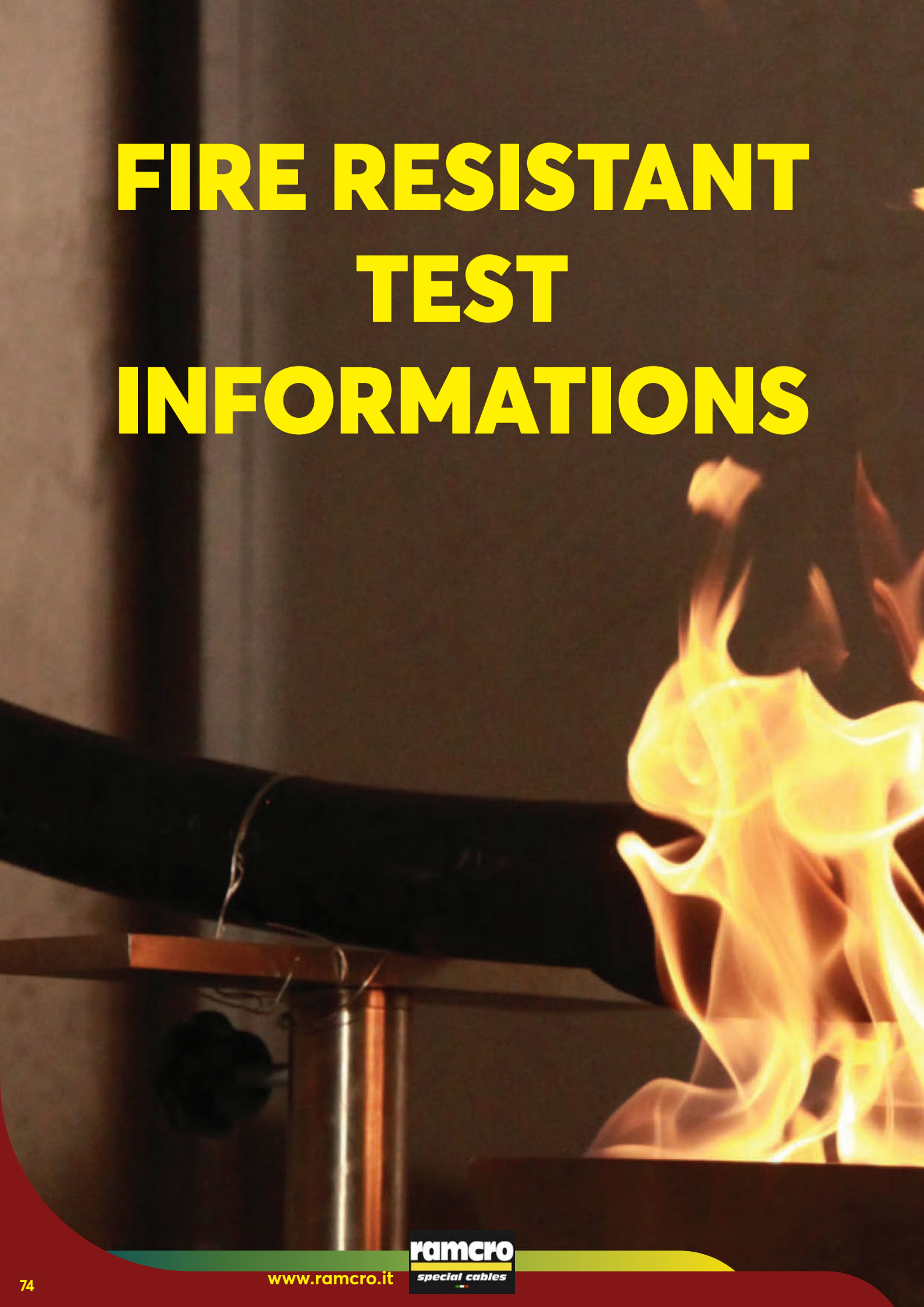
RAMCRO S.p.A. – (UL) Listed E475091 Type FPLR - 2 C 18AWG - Shielded - 75°C + BATCH + METER MARKING

SCREENED CABLE

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAR022HFOCH-UL-LP	2x22AWG	3.3	19
SAR0422HFOCX-UL-LP	4x22AWG	3.6	27
SAR0622HFOCX-UL-LP	6x22AWG	4.3	37
SAR0204HFOCH-UL-LP	2x20AWG	4.5	30
SAR0404HFOCX-UL-LP	4x20AWG	5.1	48
SAR0604HFOCX-UL-LP	6x20AWG	6	68
SAR0203HFOCH-UL-LP	2x18AWG	5	38
SAR0403HFOCX-UL-LP	4x18AWG	5.6	64
SAR0603HFOCX-UL-LP	6x18AWG	6.7	91
SAR0202HFOCH-UL-LP	2x16AWG	5.3	45
SAR0402HFOCX-UL-LP	4x16AWG	5.9	76
SAR0602HFOCX-UL-LP	6x16AWG	7.1	109
SAR0201HFOCH-UL-LP	2x14AWG	6.6	77

UNSCREENED CABLE

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSR022HFOCH-UL-LP	2x22AWG	3.2	14
SSR0422HFOCX-UL-LP	4x22AWG	3.5	22
SSR0622HFOCX-UL-LP	6x22AWG	4.2	32
SSR0204HFOCH-UL-LP	2x20AWG	4.4	25
SSR0404HFOCX-UL-LP	4x20AWG	5	43
SSR0604HFOCX-UL-LP	6x20AWG	5.9	62
SSR0203HFOCH-UL-LP	2x18AWG	4.9	33
SSR0403HFOCX-UL-LP	4x18AWG	5.5	58
SSR0603HFOCX-UL-LP	6x18AWG	6.6	85
SSR0202HFOCH-UL-LP	2x16AWG	5.2	39
SSR0402HFOCX-UL-LP	4x16AWG	5.8	71
SSR0602HFOCX-UL-LP	6x16AWG	7	103
SSR0201HFOCH-UL-LP	2x14AWG	6.5	71
SSR0401HFOCH-UL-LP	4x14AWG	7.3	126



FIRE RESISTANT TEST INFORMATIONS

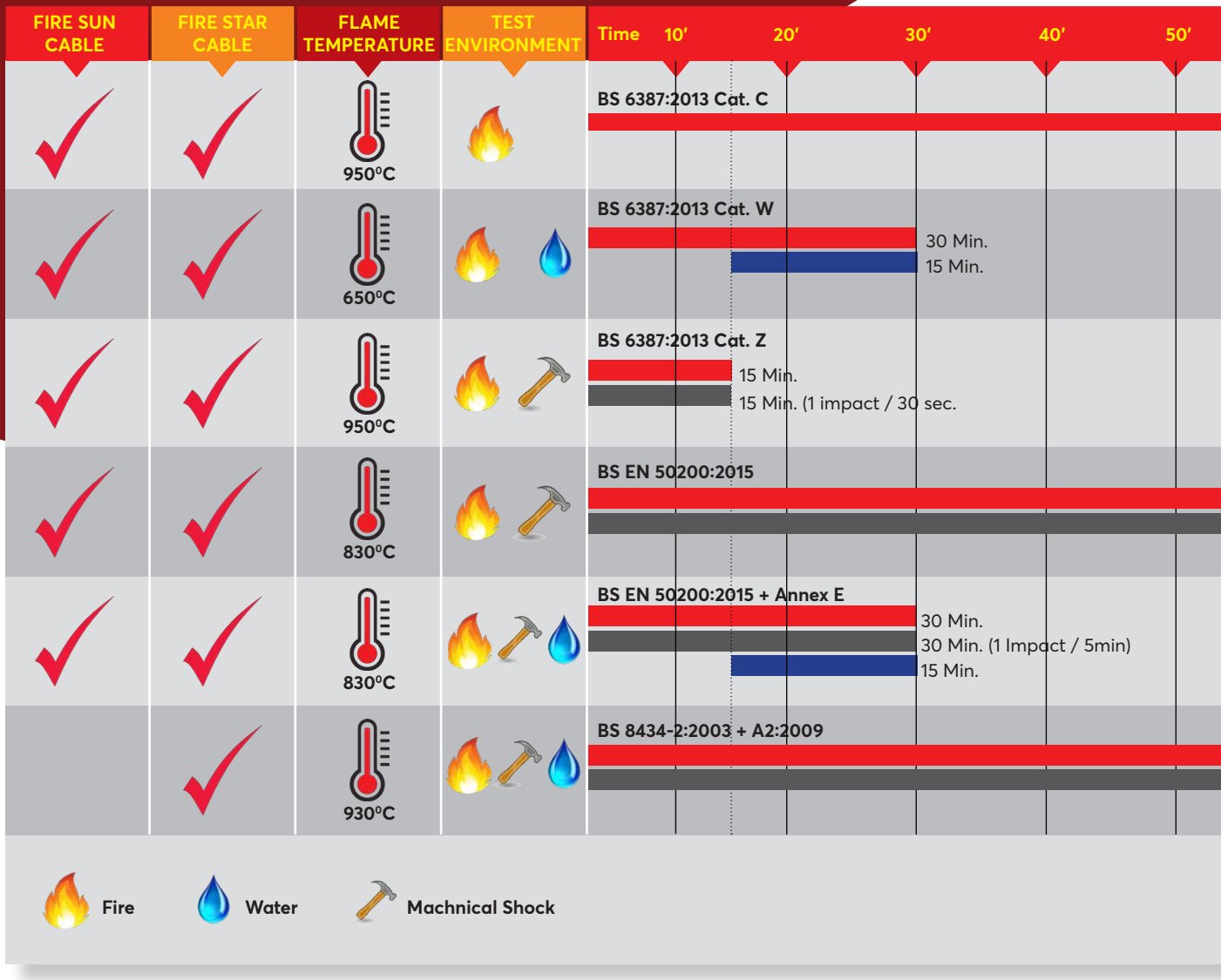


CABLE FEATURES:

In case of fire risk or to maintain circuits integrity, the Ramcro Fire special cables prevent smoke risks and other collateral problems to sensitive equipments, avoiding damage from gases. Ramcro Fire cables are produced according with all major international standards.

Product range under sub-brand RAMFIRECRO-F3 Manufactured according to:

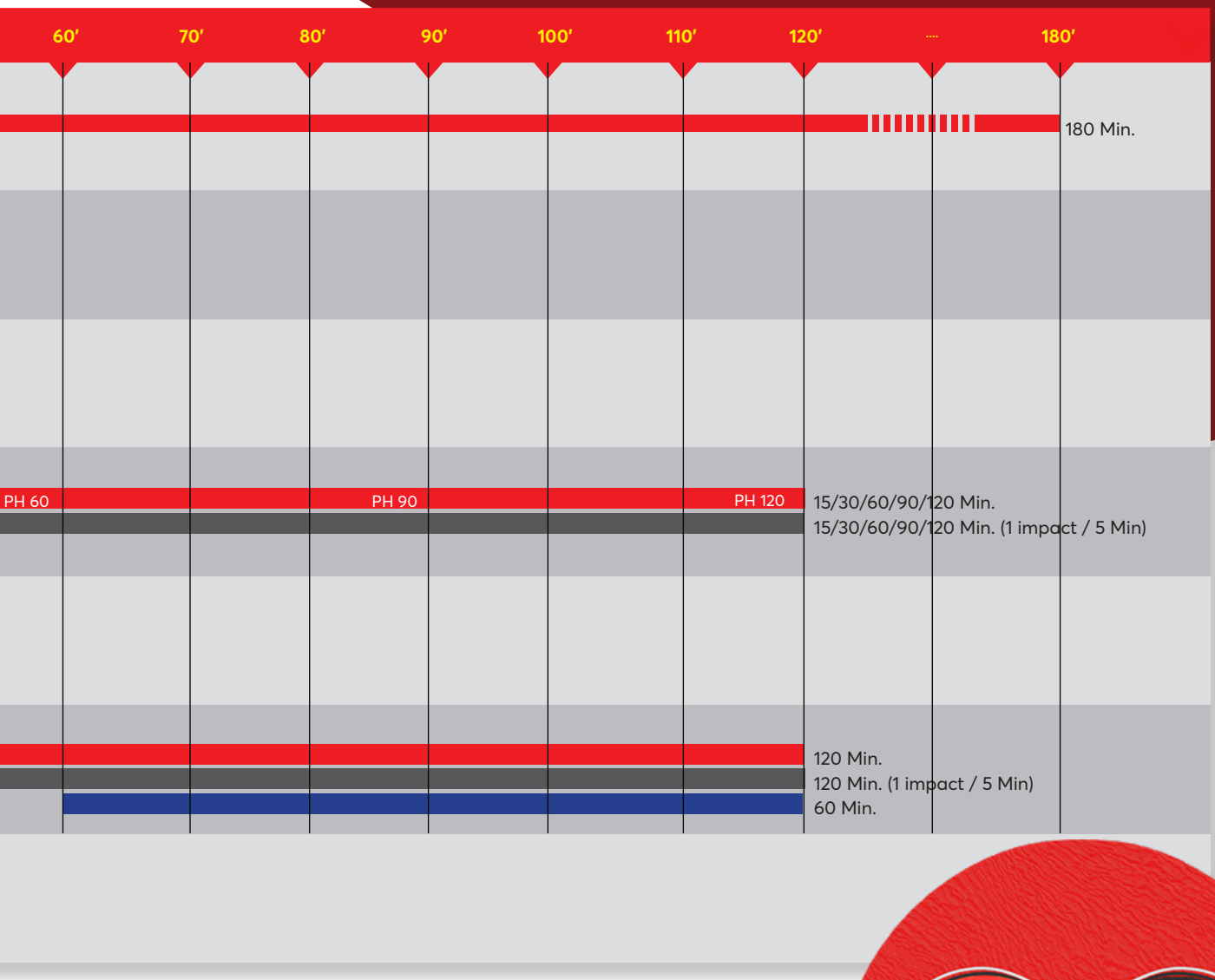
- International Electro-tecnical Commission IEC 60331-21
- British Standard BS 6387 Cat. C-W-Z
- British Standard BS 7629
- European Norms EN 50200

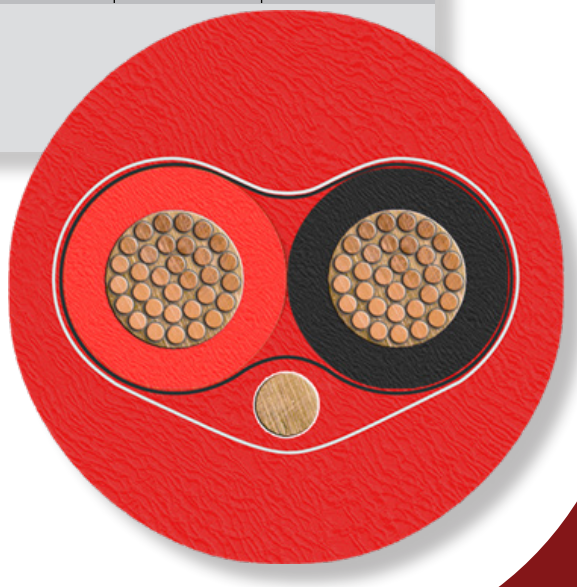


RAMCRO IN THE VERY HEART OF GREAT JOBS.

Fire Performance Classification:

- Basic Type: IEC 60331-21
- Standard Type: BS 6387 Cat. C-W-Z and BS 7629
- Enhanced Type: EN 50200 PHI20 - BS 8434-2





Fire resistant test informations



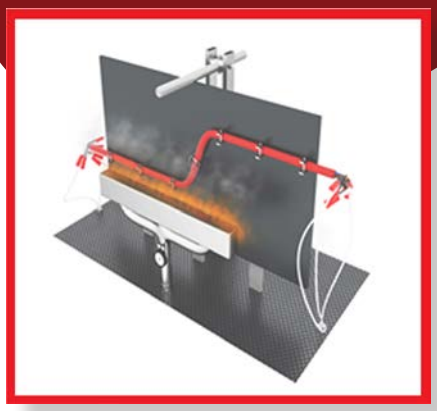
FIRE RESISTANCE (Cat. C)

The cable is exposed to fire at the 950°C for 180 minutes



FIRE AND WATER RESISTANCE (Cat. W)

The cable is exposed for 15 minutes to flame at 650°C and for additional 15 minutes to fire and water spray



FIRE RESISTANCE WITH MECHANICAL SHOCKS (Cat. Z)

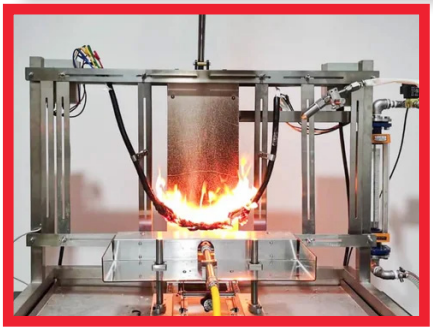
The cable is mounted on a vertical panel and shocked with a steel bar for 15 minutes while submitted to the action of a flame.



FIRE RESISTANCE (EN 50200 PH 1 5-30-60-90-120)
IEC 60331-2:2018 (Diam <20mm)
IEC 60331-1:2018 (Diam >20mm)

This test is carried out to verify the circuit integrity of cables exposed to fire at 830°C and mechanical shocks.

CLASSIFICATION	
EN 50200 PH 15	Flame exposure for 15 min
EN 50200 PH 30	Flame exposure for 30 min
EN 50200 PH 60	Flame exposure for 60 min
EN 50200 PH 90	Flame exposure for 90 min
EN 50200 PH 120	Flame exposure for 120 min



Fire resistant test informations

FIRE RESISTANCE
BS EN 50200 annex E



This test is carried out to verify circuit integrity during a fire, The cable is exposed to a flame at 830°C and mechanical shocks for 15 minutes and additional 15 minutes to flame, mechanical shocks, and water spray.

FIRE RESISTANCE
(BS 8434-2)



This test is carried out to verify circuit integrity during a fire. The cable is exposed to a flame at 930°C and mechanical shocks for 60 minutes and additional 60 minutes to flame, mechanical shocks, and water spray.

FIRE RESISTANCE
(IEC 60331-21, CEI 20-36)



This test is carried out to verify circuit integrity even during a fire. A sample of cable is held on a flame at about 750°C for a period of minimum 90 min, under rated voltage.

Fire retardant test informations

FLAME PROPAGATION TEST (IEC 60332-1)
ON A SINGLE CABLE



A 60 cm long sample of cable is vertically fixed with two clamps inside a small cabin, open on the front. The cable is subjected to the action of a flame produced by a calibrated Bunsen burner.

The application time of the flame is according to the cable diameter (60-480 seconds).

At the end of the test the burnt portion of cable must not be 50 mm close to the higher clamp

FIRE PROPAGATION TEST (IEC 60332-3)
ON BUNCHED CABLES



Samples of cables 3,5 m long in quantities required by standard are installed on a ladder inside a metallic cabinet.

They are subjected to the action of a flame at 750°C for a specific time (20 or 40 minutes).

Cables must not burn for more than 2,5 m.

"Ramcro S.p.A Lab have all the above test facilities"

CERTIFICATES

Certificates of PRODUCTS APPROVAL



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Certificate of Product Approval

Certificate Number: 568a Issue: 18

LOSS PREVENTION CERTIFICATION BOARD

LPCB

RAMCRO S.p.A.

Via Marzorati 15
20014 Nerviano
Milan
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s)

Cable Types as listed below:
Ramfirecro-F3 FIRE PLANET

Standards (see Appendix for details)

BS 6387:2013 (CWZ)
EN 60754-1:2014
EN 61034-2:2005+A2:2020
EN 50200:2015 (Class PH120)
EN 50200:2015 Annex E (30 minutes)
EN 60754-2:2014

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Obada Piracha — Certification Manager — 9 November 2023 — 27 October 2003

bre

Certificate of Product Approval 568a



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Certificate of Product Approval

Certificate Number: 568c Issue: 14

LOSS PREVENTION CERTIFICATION BOARD

LPCB

RAMCRO S.p.A.

Via Marzorati 15
20014 Nerviano MI
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s)

Cable Types as listed below:
Ramfirecro-F3 Standard FIRE SUN

Standard(s) (see Appendix for details)

BS 7629-1:2015 (Standard 60)
BS 6387:2013 (Category CWZ)
EN 50200:2015 (Class PH120)
EN 50200:2015 Annex E (30 mins)
BS 5839-1:2013 (Clause 26.2d Standard)
EN 60754-2:2014

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Obada Piracha — Certification Manager - Cables — 5 April 2022 — 1 June 2006

bre

Certificate of Product Approval 568c

CERTIFICATES

Certificates of PRODUCTS APPROVAL



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Certificate of Product Approval

Certificate Number: 568j Issue: 06

LPCB

RAMCRO S.p.A.

Via Marzorati 15
20014 Nerviano
Milan
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s)
Cable Types as listed below:
Ramfiracro-F3 FIRE STAR

Standard(s) (see Appendix for details)
BS 7629-1:2015 Enhanced 120
EN 50200:2015 (Class PH120)
BS 8434-2:2003+A2:2009 (120 mins)
BS 5839-1:2013 (Clause 26.2e Enhanced)
BS 6387:2013 Category CW2
EN 60332-3-24:2009

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Obada Piracha — Certification Scheme Manager — 15 October 2021 — 12 April 2018

bre

Page 1 of 2

Certificate of Product Approval 568j



CERTIFICATE OF COMPLIANCE

Certificate Number 20150827-E475091
Report Reference E475091-20150827
Issue Date 2015-AUGUST-27

Issued to: RAMCRO SPA
VIA MARZORATI 15
20014 NERVIANO MILANO ITALY

This is to certify that representative samples of POWER-LIMITED FIRE ALARM CABLE
Power-Limited Fire-Alarm Circuit Cable, Type FPLR

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1424 STANDARD FOR CABLES FOR POWER-LIMITED FIRE-ALARM CIRCUITS

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Page 1 of 1

FPLR UL



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Certificate of Product Approval

Certificate Number: 568h Issue: 01

LPCB

RAMCRO S.p.A.

Via Marzorati 15
20014 Nerviano
Milan
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s)
Cable Types as listed below:
6 FO Single Mode
6 FO Multi Mode
See Certificate Appendix for details

Standard(s) (see Appendix for details)
IEC 60331-25:1999
IEC 60332-1-2:2004
EN 61034-2:2005
EN 60754-1:2014

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Tony Baker — Certification Scheme Manager — 26 July 2017 — 26 July 2017

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BF1345 Rev. 0.3 Page 1 of 2 © BRE Global Ltd, 2015

Certificate of Product Approval 568h

CERTIFICATES

Certificates of COMPANY QUALITY SYSTEM



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Organization of:

RAMCRO S.p.A.
Via Marzorati, 15, Nerviano, MI 20014, Italy

and hereby declares that the Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

Whereby, technical competence has been confirmed for the associated scope supplement, in the fields of:

Electrical Testing
(As detailed in the supplement)

Accreditation claims for conformity assessment activities shall only be made from the addresses referenced within this certificate and shall apply solely to those activities identified in the related scope. This Accreditation is granted subject to the Accreditation Body rules governing the Accreditation referred to above, and the Organization hereby consents to observing and complying with those rules in their entirety.

For PJLA:

Tracy Szerszen
President

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

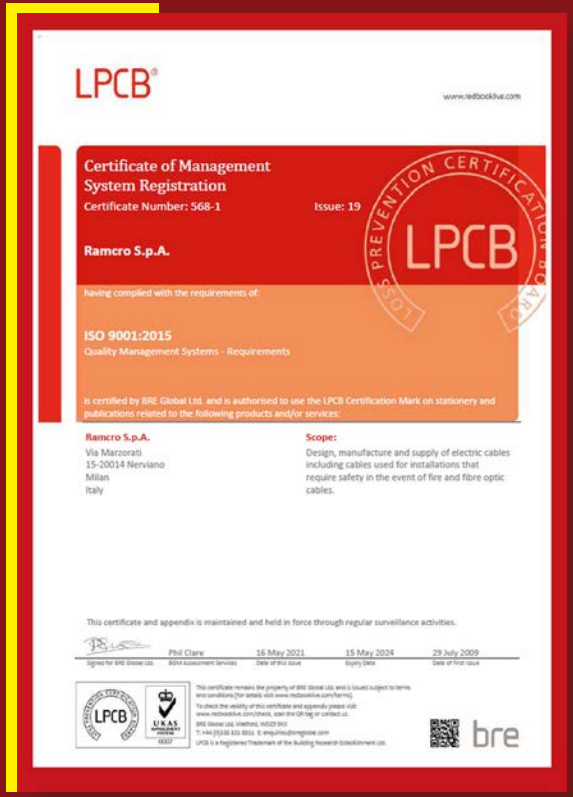
Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
April 07, 2025	April 07, 2025	July 31, 2027

Accreditation No.:	*Certificate No.:*
127120	L25-277

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com

Page 1 of 3

ISO/IEC 17025:2017



LPCB

Certificate of Management System Registration

Certificate Number: 568-1 Issue: 19

Ramcro S.p.A.

having complied with the requirements of:

ISO 9001:2015
Quality Management Systems - Requirements

is certified by BRE Global Ltd. and is authorised to use the LPCB Certification Mark on stationery and publications related to the following products and/or services:

Ramcro S.p.A.
Via Marzorati
15-20014 Nerviano
Milan
Italy

Scope:
Design, manufacture and supply of electric cables including cables used for installations that require safety in the event of fire and fibre optic cables.

This certificate and appendix is maintained and held in force through regular surveillance activities.

Phil Clare	16 May 2021	15 May 2024	29 July 2009
Signed for BRE Global Ltd.	BSM Assessment Services	Date of this issue	Expiry Date	Date of First Issue

ISO 9001:2015



RINA

CISQ is a member of IQNet

CERTIFICATO N. EMS-5716/AN
CERTIFICATE No.

SI CERTIFICA CHE IL SISTEMA DI GESTIONE AMBIENTALE DI
IT IS HEREBY CERTIFIED THAT THE ENVIRONMENTAL MANAGEMENT SYSTEM OF

RAMCRO S.P.A.

VIA MARZORATI, 15 20014 Nerviano (MI) ITALIA

NELLE SEGUENTI UNITÀ OPERATIVE / *IN THE FOLLOWING OPERATIONAL UNITS*

VIA MARZORATI, 15 20014 Nerviano (MI) ITALIA

È CONFORME ALLA NORMA / *IS IN COMPLIANCE WITH THE STANDARD*
ISO 14001:2015

PER I SEGUENTI CAMPI DI ATTIVITÀ / *FOR THE FOLLOWING FIELD(S) OF ACTIVITIES*

IAF 19

PROGETTAZIONE E PRODUZIONE DI CAVI ELETTRICI CON CONDUTTORI METALLICI PER TUTTE LE APPLICAZIONI RIVESTITI TRAMITE ESTRUSIONE DI MATERIE TERMOPLASTICHE. COMMERCIALIZZAZIONE DI CAVI IN FIBRA OTTICA.

DESIGN AND MANUFACTURE OF ELECTRIC CABLES WITH METAL CONDUCTORS FOR ALL APPLICATIONS SHEATHED BY EXTRUDED THERMOPLASTIC MATERIALS. TRADE OF FIBRE OPTIC CABLES.

Prima emissione / *First Issue*	Data decisione di rinnovo / *Renewal decision date*
23.12.2014	22.12.2020
Data scadenza / *Expiry Date*	**Data revisione / *Revision date***
22.12.2023	22.12.2020

Davide Torti
Turin Management System Certification, Head

RINA Services S.p.A.
Via Corsica 12 - 16128 Genova Italy

ISO 14001:2015



RINA

CISQ is a member of IQNet

CERTIFICATO N. OHS-2224
CERTIFICATE No.

Si certifica che il Sistema di Gestione della Sicurezza e della Salute sul luogo di lavoro di
It is hereby certified that the Occupational Health and Safety Management System of

RAMCRO S.P.A.

VIA MARZORATI, 15 20014 Nerviano (MI) ITALIA

nelle seguenti unità operative / *in the following operational units*

VIA MARZORATI, 15 20014 Nerviano (MI) ITALIA

è conforme alla norma / *is in compliance with the standard*
ISO 45001:2018
per le seguenti attività / *for the following activities*

IAF 19

PROGETTAZIONE, PRODUZIONE DI CAVI ELETTRICI CON CONDUTTORI METALLICI PER TUTTE LE APPLICAZIONI RIVESTITI TRAMITE ESTRUSIONE DI MATERIE TERMOPLASTICHE. COMMERCIALIZZAZIONE DI CAVI IN FIBRA OTTICA.

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ISO 45001:2018

CPR REGULATION

CPR Cables (Construction Products Regulation) are essential for ensuring safety in buildings. Regulated by the European Regulation 305/2011, these cables must meet specific fire reaction requirements, reducing the risk of flame propagation and the emission of toxic smoke in the event of a fire.

The CPR classification allows for the selection of the most suitable type of cable based on the installation environment, enhancing the protection of people and property.

Using cables that comply with CPR standards is therefore not only a legal obligation but also a responsible choice for designers, installers, and clients.

RAMCRO has a wide variety of CPR products developed in almost 10 years. In addition, RAMCRO is proud to communicate that it's been among the first movers (2020) in owning a CPR Test Equipment in-house in order to dedvelop our prodcuts and fit perfectly your needs

Advantages of High rated CPR Cables

High Rated classified cables offer numerous benefits, especially in environments where fire safety is a top priority. Here are the main advantages:

Reduced emission of toxic gases

This protects both people and electronic equipment, especially in sensitive environments like hospitals, schools, public offices, and critical infrastructure.

Low smoke emission

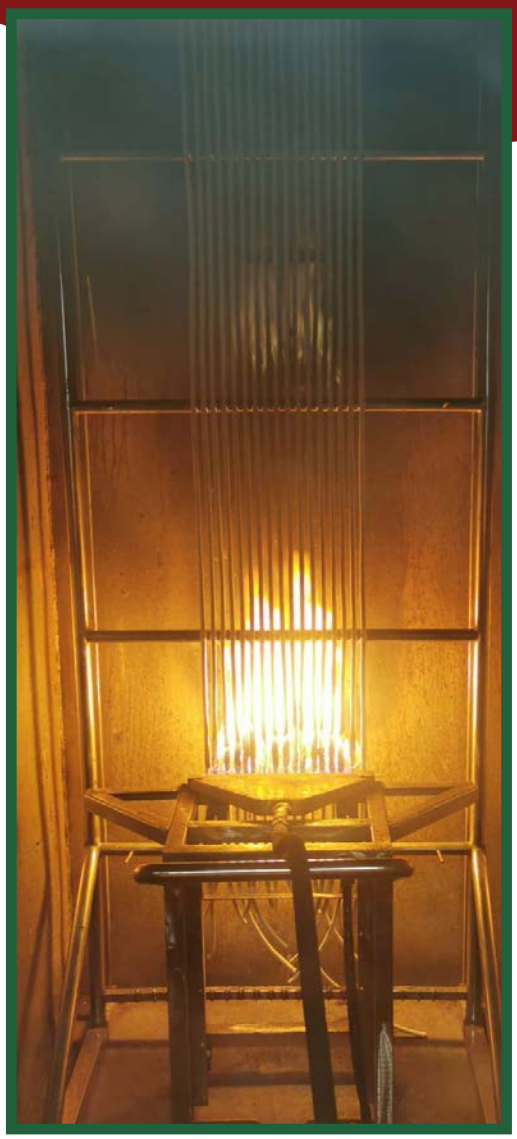
They produce very little smoke when burning, improving visibility during evacuation and reducing the risk of inhaling toxic substances.

Regulatory compliance

These cables are often legally required in public or high-occupancy buildings, ensuring compliance with European fire safety regulations.

No flaming droplets

They do not release burning droplets that could further fuel the fire or cause burns.



CPR Machine @ RAMCRO

US-AMERICAN AND BRITISH UNITS

Conversion of usual measuring units

Units for cables and wires

In the US the measurements are mainly used in AWG-numbers (AWG = American Wire Gauge).
The AWG-numbers conform the british B&S-numbers (B&S = Brown & Sharp)

AWG No.	Cross-section mm²	Diameter mm	Conductor resistance Ohm/km
1000 MCM*	507	25,4	0,035
750	380	22,0	0,047
600	304	19,7	0,059
500	254	20,7	0,07
400	203	18,9	0,09
350	178	17,3	0,10
300	152	16,0	0,12
250	127	14,6	0,14
4/0	107,20	11,68	0,18
3/0	85,00	10,40	0,23
2/0	67,50	9,27	0,29
0	53,40	8,25	0,37
1	42,40	7,35	0,47
2	33,60	6,54	0,57
3	26,70	5,83	0,71
4	21,20	5,19	0,91
5	16,80	4,62	1,12
6	13,30	4,11	1,44
7	10,60	3,67	1,78
8	8,366	3,26	2,36
9	6,63	2,91	2,77
10	5,26	2,59	3,64
11	4,15	2,30	4,44
12	3,30	2,05	5,41
13	2,62	1,83	7,02
14	2,08	1,63	8,79
15	1,65	1,45	11,20
16	1,31	1,29	14,70
17	1,04	1,15	17,80
18	0,8230	10,240	23,0
19	0,6530	0,9120	28,3
20	0,5190	0,8120	34,5
21	0,4120	0,7230	44,0
22	0,3250	0,6440	54,8
23	0,2590	0,5730	70,1
24	0,2050	0,5110	89,2
25	0,1630	0,4550	111,0
26	0,1280	0,4050	146,0
27	0,1020	0,3610	176,0
28	0,0804	0,3210	232,0
29	0,0646	0,2860	282,0
30	0,0503	0,2550	350,0
31	0,0400	0,2270	446,0
32	0,0320	0,2020	578,0
33	0,0252	0,1800	710,0
34	0,0200	0,1600	899,0
35	0,0161	0,1430	1125,0
36	0,0123	0,1270	1426,0
37	0,0100	0,1130	1800,0
38	0,00795	0,1010	2255,0
39	0,00632	0,0897	2860,0

4/0 is also stated: 0000; 1 mil = 0,001 inch = 0,0254 mm
* for bigger cross-section the sizes in MCM (circular mils)

1 CM = 1 Circ. mil. = 0,0005067 mm2
1 MCM = 1000 Circ. mils = 0,5067 mm2

General measuring units

Lengths

1 mil	= 0,0254 mm
1 in (inch)	= 25,4 mm
1 ft (foot)	= 0,3048 m
1 yd (yard)	= 0,9144 m
1 ch (chain)	= 20,1 m
1 mile (land mile)	= 1,609 km
	= 1760 yards
1 mile (nautic mile)	= 1,852 km
1 mm	= 0,039370 inches
1 m	= 39,370079 inches

Area

1 CM (circ. mil)	= 0,507 · 10^{-3} mm²
1 MCM	= 0,5067 mm²
1 sq. inch (sq. inch)	= 645,16 mm²
1 sq. ft. (sq. foot)	= 0,0929 m²
1 square yard	= 0,836 m²
1 acre	= 4047 m²
1 square mile	= 2,59 km²

Density

1 cu. in. (cubic inch)	= 16,39 cm³
1 cu. ft. (cubic foot)	= 0,0283 m³
1 cu. yd. (cubic yard)	= 0,7646 m³
1 gal. (US gallon)	= 3,785 l
1 gal. (brit gallon)	= 4,546 l
1 US pint	= 0,473 l
1 US quart	= 0,946 l
1 US barrel	= 158,8 l

Temperature

F (Fahrenheit)	= (1,8 · C) + 3°
C (Celsius)	= 0,5556 · (F–32°)

Weight

1 grain	= 64,8 mg
1 dram	= 1,77 g
1 oz (ounce)	= 28,35 g
1 lb (pound)	= 0,4536 Kp
1 stone	= 6,35 Kp
1 qu (quarter)	= 12,7 Kp
1 US-cwt (hundredweight)	= 45,36 Kp
1 US ton (short ton)	= 0,907 t
1 brit. ton (long ton)	= 1,016 t

Force

1 lb	= 4,448 N
1 brit. ton	= 9954 N
1 pdl (Poundal)	= 0,1383 N
1 kp	= 9,81 N
1 N	= 0,102 kp

Velocity

1 mile/h	= 1,609 km/h
1 Knoten	= 1,852 km/h
1 ft/s	= 0,305 m/s
1 ft/min	= 5,08 · 10^{-3} m/s

Energy

1 lb/mile	= 0,282 kg/m
1 lb/yard	= 0,496 kg/m
1 lb/foot	= 1,488 kg/m

Radiation absorbed dose

1 Gray	= 1 J/kg
1 rad	= 10^{-2} J/kg = 1 Centi Gy
	= 0,01 Gy
1 Centi	= 100 Joule
1 rad	= cJ/kg = 0,01Gy
1 Mrad	= 1 · 10^{6} cJ/kg

Pressure

1 psi (lb/sq.)	= 68,95 mbar
	= 6,895 · 10^{-3} Nmm²
1 lb/sq. ft.	= 0,478 mbar
1 pdl/sq. ft.	= 1,489 N/m²
1 in Hg	= 33,86 mbar
1 ft H2 O	= 29,89 mbar
1 in H2 O	= 2,491 mbar
1 N/mm2	= 145 psi
	= 10 bar
1 kp/mm2	= 1422 psi
1 at	= 736 Torr
	= 1 kp/cm²
1 Torr	= 1 mm Hg
1 bar	= 0,1 H Pa
1 Pa	= 1 N/m²

Density

1 lb/cu. ft.	= 16,02 kg/m³
1 lb/cu. in.	= 27,68 t/m³

Horse power

1 hp · h	= 1,0139 PS · h
	= 2,684 · 10^{6} Joule
	= 746 W · h
1 BTU (brit. therm. unit)	= 1055 Joule

Electrical units

1 ohm/1000 yd	= 1,0936 /km
1 ohm/1000 ft	= 3,28 /km
1 µF/mile	= 0,62 µF/km
1 megohm/mile	= 1,61 M/km
1 µµf/foot	= 3,28 pF/m
1 decibel/mile	= 71,5 mN/m

Power rate

1 PS	= 0,736 kW
1 kW	= 1,36 PS
1 hp	= 0,7457 kW
1 kW	= 1,31 hp

CODE-DESIGNATION

Explanations for Cables and Insulated Wires

A-	Outdoor cable
A	approved national design
AB	Outdoor cable with lighting protection
AD	Outdoor cable with differential protection
AJ-	Outdoor cable with induction protection
ASLH	self-supporting communication cables for high voltage overhead lines
B	armouring
B	spinning of textile yarn
b	armouring
(1B...)	one layer of steel tape... thickness of the steel tape in mm
(2B...)	two layers of steel tape... thickness of the steel tape in mm
BD	unit-type stranding
BLK	bare copper-conductor without insulation
BZ	bronze conductor
C	screen of copper wire braiding
C	screen of copper wire spinning
C	outer protection of jute and viscous compound
Cu	copper wire
(-Cu)	total cross-section of copper screens (mm2)
D	screen of copper wires
(D)	screen of helically applied copper wires
DM	Dieselhorst-Martin quad
Dreier	three cores in triple stranded
E	copper drain wire
E(e)	protective covering of viscous compound with embedded layer of plastic tape
e	single wire, solid
F	cable cores assembly with petrol-jelly
F	foil wrapping
F	flat cable
F	star quad for railway cable
F	star quad for phantom circuits
(F...)	flat wire armouring... thickness in mm
OF	jelly lled cable core, lling compound of hard substances
FR	flame retardant
f	flexible, ne wire stranding
ff	extra fine wire stranding
G	insulation or sheath material of rubber (NR) or (SBR)
G-	Mining cable
GJ	Mining cable with induction protection
GS	glass fibre whipping or braiding
2G	insulation or jacket of silicone rubber, (SIR)
3G	insulation or jacket of ethylene propylene rubber, (EPR)
4G	insulation or jacket of ethylene vinylacetate rubber (EVA)
5G	insulation or jacket of chloroprene rubber (CR)
6G	insulation or jacket of chlorosulphonated polyethylene
(CSM),	Hypalon
7G	insulation or jacket of Flouroelastomer (FKM)
8G	insulation or jacket of Nitrile rubber (NBR)
9G	PE-C rubber (CM)
53G	CM, chlorinated Polyethylene
H	insulation or jacket of halogen-free compound
H	Harmonized Documents
(H...)	maximal value of mutual capacitance (nF /km)
(HS)	semi-conducting tape of layer
HX	cross-linked, halogen-free polymer compound
...IMF	individual stranding element (pairs or single cores etc.) in metal foil and drain wire
IMF	several stranding elements in metalfoil and drain wire
-J	cable with green-yellow earth core
-JZ	cable with green-yellow earth core and cores with inprinted numbers
K	copper-tape
(K)	inner sheath and longitudinally folded copper tape
LA	tinsel conductor (flat copper wire stranded over the thread of synthetic fibres)
LD	corrugated aluminium sheath
Lg	in layers stranding
Li	stranded wires conductor
(L)Y	laminated sheath Al-tape and PVC-jacket
(L)2Y	laminated sheath Al-tape and PE-jacketl
2L	double enamel coating as insulation
M	plastic-sheath cable
M	lead sheath
Mz	alloyed lead sheath
(mS)	magnetic shield
N	VDE standard
(N)	in adapted to VDE standard
NC	non-corrosiv, smoke-gase
NF	natural colour
-O	cable without green-yellow earth core
-OZ	cable without green-yellow earth core and cores with imprinted numbers
ö	oil-resistant
02Y	Foam-PE, insulation (cellular PE)
Q	Steel wire braiding
(R...)	round wire, diameter in mm
RAGL-	Compensating cable for thermocoupling
RD-	Rhenomatic cable
RE	Computer cable
RG-	Coaxial cable according MIL specification
re	round, single wire
rm	round, multiwire
RS-	computer switchboard cable
S	silk whipping
S	signal cables for railways
(S...)	nominal value of mutual capacitance (nF /km)
-S	signal cable for German Railway
S-	Switchboard cable
SL	exible sheathed cable
2S	two layers of silk whipping
St	star quad for phantom circuits
St I	star quad in telephone cables for lager distance
St III	star quad in local cables
(St)	static screen
Staku	copper clad steel wire
Staku-Li	copper clad steel stranded wires
...t	termite protection
T	supporting element for overhead cable
T-	fan out cable
TF	carrier frequency of pairs or quads triple
TiC	triple in copper wire braid
TiMF	triple in metal foil
U	braiding of textile fibres
VGD	gold-plated
VN	ickel-plated VS silver-plated
VZK	galvanized VZN tinned
W	corrugated steel sheath
W	high heat resistant
W	corrugated steel sheath
X	cross-linked polyvinylchlorid (X-PVC) or other materials
XPE	cross-linked polyethylene (X-PE)
2X	cross-linked polyethylene
7X	cross-linked Ethylentetrafluorethylen (X-ETFE)
10X	cross-linked Polyvinylidenfluorid (X-PVDF)
Y	PVC, polyvinylchloride
Yu	PVC, polyvinylchloride, non-flammable, flame-retardant
Yv	PVC, polyvinylchloride, with reinforced sheath
YV	Equipment wires with tinned conductor
Yw	PVC, polyvinylchlorid, heat resistant upto 90°C
2Y	Polyethylene (PE)
2Yv	Polyethylene, reinforced sheath
02Y	Cellular polyethylene
02YS	insulation of cellular polyethylene with outer PE-skin
2YHO	insulation of air-spaced polyethylene
3Y	insulation polystyrene (PS)
4Y	insulation or jacket of polyamide (PA)
5Y	insulation or jacket of polytetrafluorethylene (PTFE)
5YX	Perfluoralkoxy (PFA)
6Y	Perfluoroethylene-propylene (FEP)
7Y	insulation or jacket of ethylentetrafluorethylen (ETFE)
8Y	insulation of polyimid (PI)
9Y	polypropylen (PP)
10Y	PVDF, Polyvinylidene fluoride
11Y	polyurethan (PUR)
12Y	TPE-E, TPE
13Y	TPE-EE, TPE on base of Polyester-Ester
31Y	TPE-S, TPE on base of Polystyrol
41Y	TPE-A, TPE on base of Polyamide
51Y	PFA, Per uor-Alkoxylalkane
71Y	ECTFE, Monochlortrifluorethylene
91Y	TPE-O, TPE on base of Polyester-Ester
-Z	core imprinted with numbers
Z	twin cable
(Z)	high-tensile braid of steel wires
(ZG)	high-tensile element of glass fibre yarn
(ZN)	high-tensile of non-metallic elements

HANDLING, STORAGE AND LAYING OF CABLES

Great care is taken in the manufacturing of cables to ensure quality at every stage.

- Handling is the next important factor to ensure that by poor workmanship and mishandling the quality does not deteriorate.
- Of course laying is generally carried out by unskilled or semi-skilled men, strict supervision should be maintained so that this material, which can be very easily damaged, is handled with great care.
- If great care during installation is observed in the handling of cables on site the life of the cables is extended.

A. CABLE INSPECTION

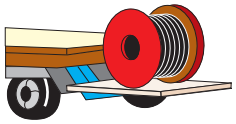
1. Inspect every cable reel for damage before accepting the shipment. Be particularly alert for cable damage if:
2. A reel is lying flat on its side
3. Several reels are stacked one over the other
4. Other freight is stacked on a reel
5. Cable drums are without planks or broken
6. Nails have been driven into reel flanges to secure shipping blocks
7. A reel flange is damaged
8. A cable covering is removed, stained or damaged
9. A cable end seal is removed or damaged. A reel has been dropped (hidden damage likely)

B. CABLE HANDLING & STORAGE

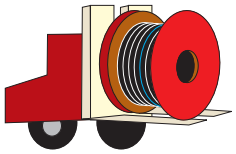
Damage to cables can occur due to the incorrect handling to which the drums and cables may be subjected; causing breakdown of the drum flanges and in exceptional cases, movement of the drum barrel takes place. Once this breakdown of the drum occurs, the cable is immediately exposed to damage. Cables damaged during handling & storage can cause service failures when the subject cable is put to use.

Thus the following is a list of Do's and Don'ts that should be followed while handling and storing the cables before it is put to use.

DO's

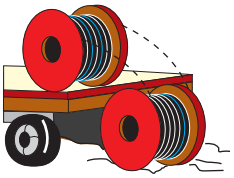


When off loading reels from a truck, lower reels carefully using a hydraulic gate, hoist or forklift truck.



If a fork lift is used, approach the reel from the flange side. Position the forks such that the reel is lifted by both reel flanges. Also Consideration should be given to, Traffic patterns during off-loading & damage dur-ing the time in storage.

DON'ts

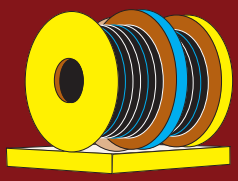


Never drop reels. If reels must be rolled, roll in opposite direction of the cable wraps to keep cable from loosening on the reel.

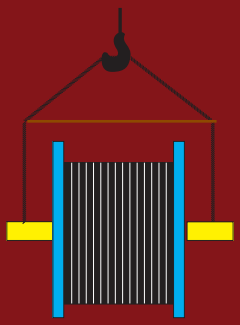


Do not allow the lift forks to contact the ca - ble. Care must be taken by the fork lift op erator not to make sudden turns or stops.

DO's

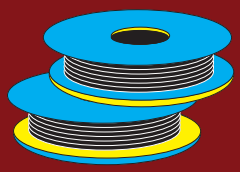


Cable reels should be stored on hard sur faces resting on the flanges edge (flanges vertical). Align reels flange to flange and, if possible, arrange so that first in is first out.

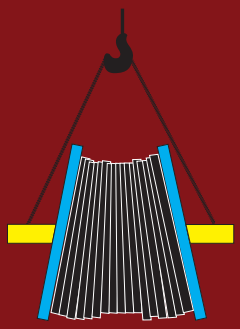


When using a hoist, install a mandrel through the reel arbor holes and attach a sling. Use a spreader bar approximately 6 inches longer than the overall reel width placed between the sling ends just above the reel flanges.

DON'ts



Multiple reels stacked on top of each other ("Pancake" storage) is not recommended for cable drums. The weight of the stack can total thousands of Kgs. creating an enormous load on the bottom reel. Also, damage to the reel and/or cable will likely occur when the reel is flipped for transit. A concentration of stress on the reel flange may cause it to break and subsequently damage the cable.



This may lead to the bending of the reel flanges and mashing the cable.

C. RECOMMENDED MINIMUM BENDING RADIUS FOR LV CABLES

Single Core: 15xD
Multicore : 12 x D
Where D= Diameter of cable in mm

D. INSTALLATION & LAYING

Mechanical stresses during installation are generally more severe than those encountered while in service. Thus careshould be taken as regards to the following while installation and laying of cables.

1. Care shall be taken during laying to avoid sharp bending, and twisting.
2. Cable shall be unwound from the drum by lifting the drum on the center.
3. Shaft supported both ends with suitable jacks / stands.
4. Under no circumstances the cable winding shall be lifted off a coil or drum lying flat at the flanges. This would cause serious twist and damages.
5. Suitable protection shall be provided to the cables against mechanical damages, it includes covers, pipes etc.

E. PRE- INSTALLATION

To ensure safety during cable installation, following shall be checked prior to installation.
1. The cable selected is proper for designed application.
2. The cable has not been damaged in transit or storage.

Review all applicable state and national codes to verify that the cable chosen is appropriate for the job. Also consult your local electricity authority. Next, you must identify any existing cable damage and prevent any further damaged from occurring. This is done through proper cable inspection, handling and storage.

F. RECOMMENDED SAFE PULLING FORCE WHENPULLED WITH PULLING EYE:

a) For Aluminum Conductors : 30 N/mm2
b) For Copper Conductor :50 N/mm2

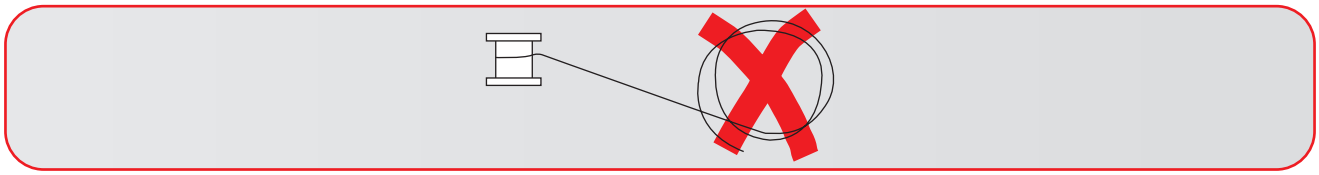
G. RECOMMENDED SAFE PULLING FORCE WITH STOCKINGS:

a) For Unarmoured Cable : P=5 D2
Where P= Pulling Force
b) For Armoured Cable : P=9 D2
Where D= Diameter of cable inmm

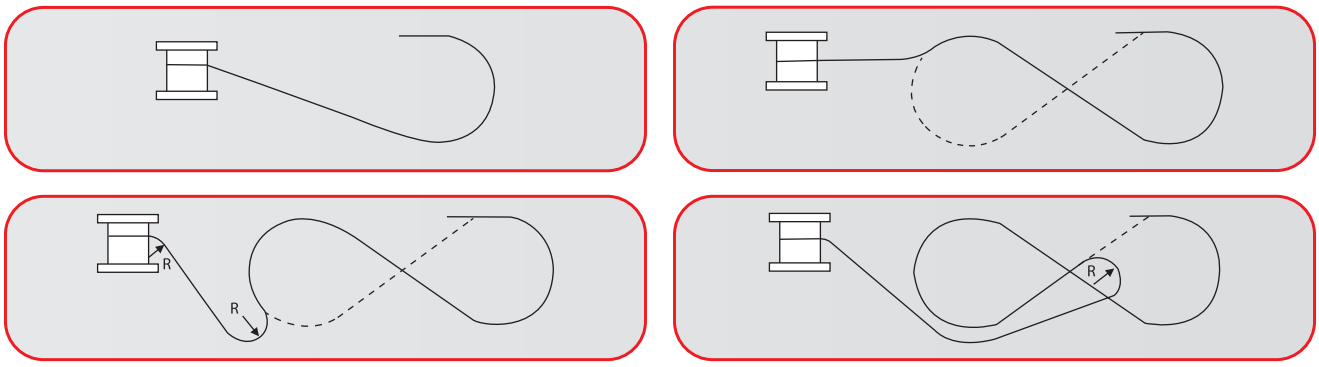
SPECIAL PRECAUTIONS FOR HANDLING / INSTALLATION OFLOW SMOKE SHEATHED CABLES

- Cables like LSF sheath needs to be handled with care during installation. While special additives are used in formulation of LSF compound to give the typical flame retardant characteristics of Zero Halogen Polymers some mechanical properties deteriorate. The following basic precautions are necessary.
- Cables should not be exposed to sunlight for consider able period before installation i.e. the temp of cables sheath should be below 45°C.
- Preferably installation is done during morning hours when the ambient temperature is low.
- Wire/ropes should not be used directly on the cable sheath for pulling.
- When pulled on cable trays/or any uneven surface, special attentions is needed to welding or unusually rough terrains.
- Rollers and bends should not have any sharpness which may damage sheath.

DO NOT ATTEMPT "COILING" OF CABLE ON THE GROUND



ON THE GROUND CABLE CAN BE FLAKED IN A FIGURE OF EIGHT FORMATION



Note: R Minimum Permissible bending radius of cable.

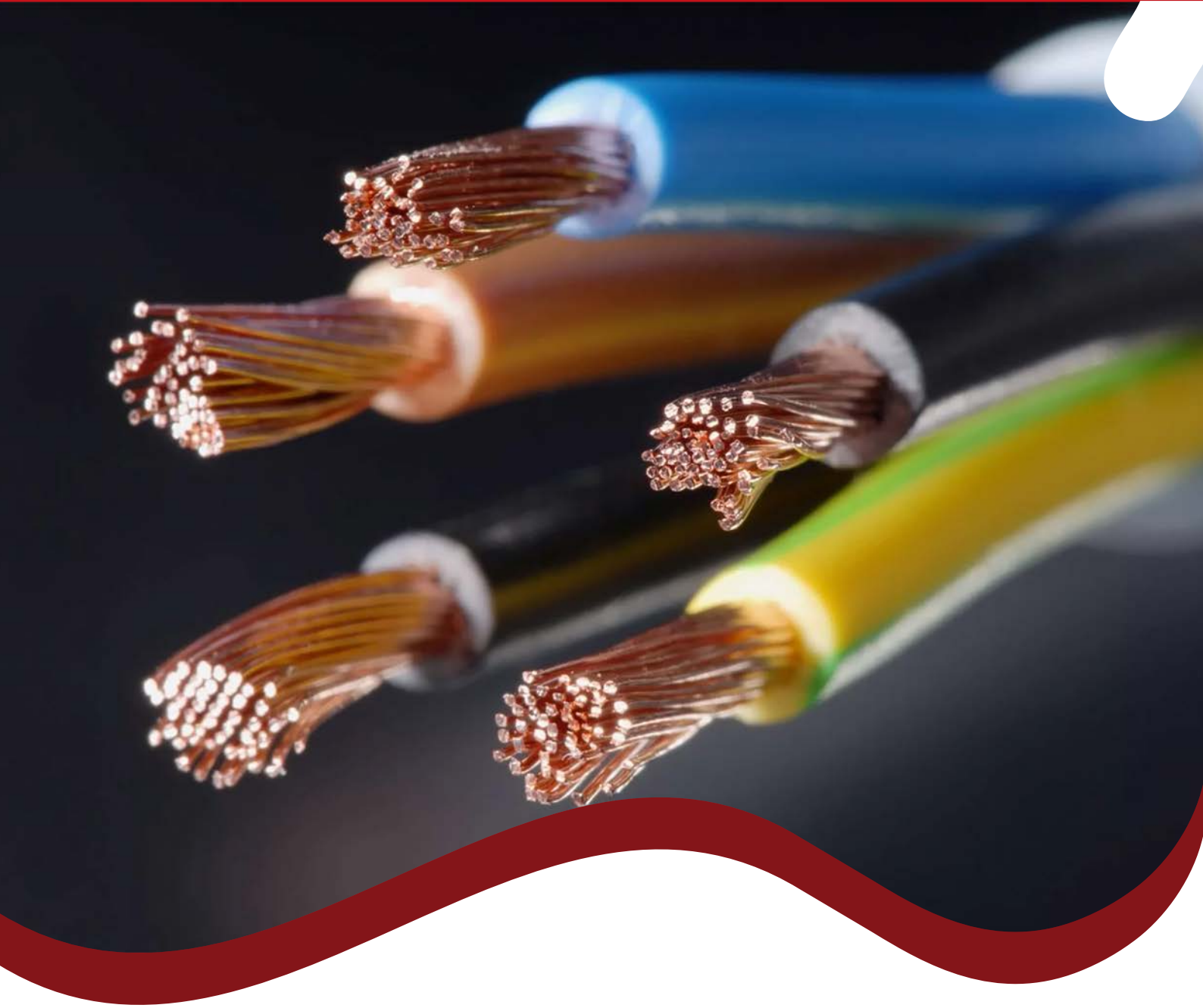
QD 06/01

Edited by RAMCRO S.p.A. on January 2023



"WE SUPPLY WORLDWIDE"





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Website: www.ramcro.com

For Website



ramcro

special cables

BMS CONTROL CABLES



ABOUT COMPANY



Ramcro was founded in 1979, as a family Company producing Special Cables. Family Croci owns 100% of Ramcro S.p.a.. In over 42 years Ramcro successfully expanded its presence in different countries and in a few different but important segments: Oil & Gas, Fire, Railway Signal & Control, BMS, and Optical Cables.

Ramcro production capacity is 4.000 Km/Month and 50.000 Km/Year. Production dpt is 18.000 sqm, of which 3.000 sqm on stock, allowing outstanding very high flexibility in delivery, with also 1.300 sqm of offices and 750 sqm for Laboratory.

Ramcro Laboratory provides any certificates of tests run following major international specifications and it is ready to be certified ISO 17025. It is also recognized by the international body as a "Third part Laboratory". Ramcro solves any kind of technical issue in the area of the cable, assuring the Client's satisfaction thanks to high quality and personalized solutions, improving the Client's efficiency and optimizing its processes. Ramcro offers extremely flexible solutions and a complete range of services, even tailor-made, based on outstanding worldwide experience

Excellence You Can Trust: Ramcro Special Cables

At Ramcro, quality is not just a promise — it's a proven standard. With over 40 years of experience in the design and production of special cables, we are proud to be recognized as one of the few companies in the industry to operate an in-house laboratory accredited to ISO/IEC 17025.

This prestigious accreditation sets us apart. While many rely on third-party laboratories for compliance certificates, Ramcro is directly certified, ensuring the highest level of technical competence, precision, and reliability in every test we perform. Our laboratory doesn't just verify conformity — it defines it.

What does this mean for you?

Unmatched Quality Control: Every cable is tested under the strictest international standards, guaranteeing performance, safety, and durability.

Faster Time to Market: With internal testing capabilities, we reduce lead times and respond quickly to your needs.

Full Traceability & Transparency: From raw materials to final product, every step is monitored and documented with certified accuracy.

Innovation with Confidence: Our R&D team works hand-in-hand with our lab to develop cutting-edge solutions tailored to your most demanding applications.

Choose Ramcro — where certified excellence meets engineering innovation.

A Laboratatory Certified ISO 17025



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

PJLA

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Organization of:

RAMCRO S.p.A.
Via Marzorati, 15, Nerviano, MI 20014, Italy

and hereby declares that the Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

Whereby, technical competence has been confirmed for the associated scope supplement, in the fields of:

Electrical Testing
(As detailed in the supplement)

Accreditation claims for conformity assessment activities shall only be made from the addresses referenced within this certificate and shall apply solely to those activities identified in the related scope. This Accreditation is granted subject to the Accreditation Body rules governing the Accreditation referred to above, and the Organization hereby commits to observing and complying with those rules in their entirety.

For PJLA:

Tracy Szerszen
President

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
April 07, 2025	April 07, 2025	July 31, 2027

Accreditation No.:	*Certificate No.:*
127120	L25-277

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com

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ISO/IEC 17025:2017




ramcro
special cables

BMS AND COMMUNICATION CABLES

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INTRODUCTION

All PVC, LSZH(FRNC) and LSF sheathed multi-conductor cables are suitable for Building Management Systems (BMS), Sound, Audio, Security, Safety, Control and Instrumentation.

Where is needed to provide the solutions for the exchange and storage of information to keep businesses encient, on top and performing, these include heating, ventilation, air conditioning as well as lighting, security systems and the operation of electric/electronic appliances.

These type of cable are suitable for a lot of installations:

- **Industrial Use**
- **CCTV intrusion and access**
- **CATV Systems**
- Audio and Video Systems
- Residential

AUDIO, CONTROL & INSTRUMENTATION

MULTI-CONDUCTOR CABLE



RAMCRO BMS - Paired Cables

Application	Cond. - Size ↓	No. of pairs → SHIELDED	Sheath	1	2	3	4	5
RS-485	24 AWG		PVC	R1189	R1190	R1191	R1192	
	24 AWG		LSZH	R1318	R1319	R1320	R1321	
	22 AWG		PVC	R1080	R1295	R1296	R1297	
	22 AWG		LSZH	R1401	R1402	R1403	R1404	
RS-422	24 AWG	every pair a foil	PVC		R1382	R1383	R1384	
G.P. Bus	22 AWG	every pair a foil	PVC		R1196	R1197	R1298	R1299
	22 AWG		LSZH		R1281	R1282		
RS-232	24 AWG	Foil	PVC	R1181	R1182	R1183	R1184	R1185
Lon Works	0.64 mm	Unshielded	LSZH	R1346	R1347			
	0.64 mm	every pair a foil	LSZH	R1348	R1349			
KNX	0.8 mm	Foil	PVC	R1219	R1217			
	0.8 mm		LSZH	R1220	R1218			
Security & Alarm	18 AWG	Foil	LSZH	R1171	R1172	R1173	R1174	R1175
		Foil +Braid	LSZH	R1418	R1419	R1420	R1421	R1422

Application	No. of pairs No. of pairs	AWG Conductor size SHIELDED ↓	Sheath ↓	22	20	18	16	14
G.P.Bus	1	Yes	PVC	R1199	R1195	R1193	R1213	R1224
	1	Yes	LSZH	R1310	R1308	R1272	R1270	R1305
	1	No	PVC	R1301	R1300	R1203	R1198	R1222
	1	No	LSZH	R1311	R1309	R1271	R1307	R1306

RAMCRO BMS - Multi-Conductor Cables

Cond. Size AWG ↓	No. of conductors →		2	3	4	6	8
	Sheath	Shielded					
22	PVC	Yes	R1226	R1228	R1230	R1264	R1232
		No	R1227	R1278	R1231	R1265	R1233
	LSZH	Yes	R1741	R1743	R1745	R1747	R1749
		No	R1742	R1744	R1746	R1748	R1750
20	PVC	Yes	R1019	R1021	R1023	R1260	R1262
		No	R1020	R1022	R1024	R1261	R1263
	LSZH	Yes	R1731	R1733	R1735	R1737	R1739
		No	R1732	R1734	R1736	R1738	R1740
18	PVC	Yes	R1013	R1015	R1017	R1211	R1258
		No	R1014	R1016	R1018	R1212	R1259
	LSZH	Yes	R1721	R1723	R1725	R1727	R1729
		No	R1722	R1724	R1726	R1728	R1730
16	PVC	Yes	R1007	R1009	R1011	R1252	R1254
		No	R1008	R1010	R1012	R1253	R1255
	LSZH	Yes	R1711	R1713	R1715	R1717	R1719
		No	R1712	R1714	R1716	R1718	R1720
14	PVC	Yes	R1001	R1003	R1005	R1248	R1250
		No	R1002	R1004	R1006	R1249	R1251
	LSZH	Yes	R1701	R1703	R1705	R1707	R1709
		No	R1702	R1704	R1706	R1708	R1710
12	PVC	Yes	R1322	R1324	R1326	R1330	R1332
		No	R1323	R1325	R1327	R1331	R1333
	LSZH	Yes	R1334	R1336	R1338	R1342	R1344
		No	R1335	R1337	R1339	R1343	R1345

MULTI-CONDUCTOR CABLE

Unscreened multi-conductor cable with a PVC sheath are suitable for Building Management Systems (BMS), Sound, Audio, Security, Safety, Control and Instrumentation



CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Polyolefine - PO
Cable twisting:
Two or more wire twisted
Outher Sheath:
Polyvinyl chloride - PVC
Colour Outher Sheath:
Grey

IDENTIFICATION OF CORES

2 Core: ● ●
3 Core: ● ● ○
4 Core: ● ● ○ ●
5 Core: ● ● ○ ● ●
6 Core: ● ● ○ ● ● ●
7 Core: ● ● ○ ● ● ● ●
8 Core: ● ● ○ ● ● ● ● ●

CABLE PRINTING

RAMCRO ITALY - R_____ - AUDIO CONTROL & INSTRUMENTATION CABLE 2C 22AWG
UNSCREENED PVC 300 V 75 C IEC 60332-1/UL 1581 - RAMCRO CODE - "PROD.WEEK/YEAR" - MADE IN ITALY + BATCH + METER MARKING

ELECTRICAL DATA

Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Inductance:	< 1 mH/km
Operating Voltage:	300 V

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

CHARACTERISTICS

Building Management Systems Cable

Min. Bending Radius
8 x cable diameter

Put up lenght 305 mt

MULTI-CONDUCTOR CABLE

PVC sheathed, unscreened cables with 22AWG to 12AWG conductors

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
SSS0207HBAXH-RB	R1227	2x22AWG	3.1	13	56.7	40.0
SSS0307HBAXX-RB	R1278	3x22AWG	3.3	17	56.7	35.0
SSS0407HBAXX-RB	R1231	4x22AWG	3.6	22	56.7	45.0
SSS0607HBAXX-RB	R1265	6x22AWG	4.2	30	56.7	45.0
SSS0807HBAXX-RB	R1233	8x22AWG	4.6	38	56.7	45.0
SSS0206HBAXH-RB	R1020	2x20AWG	3.5	18	37.2	46.0
SSS0306HBAXX-RB	R1022	3x20AWG	3.7	24	37.2	47.0
SSS0406HBAXX-RB	R1024	4x20AWG	4.0	30	37.2	47.0
SSS0606HBAXX-RB	R1261	6x20AWG	4.8	42	37.2	45.0
SSS0806HBAXX-RB	R1263	8x20AWG	5.3	54	37.2	45.0
SSS0205HBAXH-RB	R1014	2x18AWG	3.9	24	22.9	52.0
SSS0305HBAXX-RB	R1016	3x18AWG	4.1	33	22.9	55.0
SSS0405HBAXX-RB	R1018	4x18AWG	4.5	42	22.9	45.0
SSS0505HBAXX-RB	R1054	5x18AWG	4.8	61	22.9	45.0
SSS0605HBAXX-RB	R1212	6x18AWG	5.4	61	22.9	50.0
SSS0705HBAXX-RB	R1239	7x18AWG	5.8	80	22.9	50.0
SSS0805HBAXX-RB	R1259	8x18AWG	6.0	78	22.9	50.0
SSS0203HBAXH-RB	R1008	2x16AWG	4.6	34	15.5	53.0
SSS0303HBAXX-RB	R1010	3x16AWG	4.9	46	15.5	56.0
SSS0403HBAXX-RB	R1012	4x16AWG	5.4	59	15.5	55.0
SSS0603HBAXX-RB	R1253	6x16AWG	6.5	85	15.5	48.0
SSS0803HBAXX-RB	R1255	8x16AWG	7.1	111	15.5	45.0
SSS0201HBAXH-RB	R1002	2x14AWG	5.5	51	9.3	51.0
SSS0301HBAXX-RB	R1004	3x14AWG	5.9	72	9.3	55.0
SSS0401HBAXX-RB	R1006	4x14AWG	6.5	93	9.3	55.0
SSS0601HBAXX-RB	R1249	6x14AWG	7.8	135	9.3	50.0
SSS0801HBAXX-RB	R1251	8x14AWG	8.7	177	9.3	50.0
SSS0252HBAXH-RB	R1323	2x12AWG	6.7	79	5.7	60.0
SSS0352HBAXX-RB	R1325	3x12AWG	7.1	112	5.7	60.0
SSS0452HBAXX-RB	R1327	4x12AWG	7.9	146	5.7	60.0
SSS0552HBAXX-RB	R1329	5x12AWG	8.1	163	5.7	60.0
SSS0652HBAXX-RB	R1331	6x12AWG	8.7	180	5.7	60.0
SSS0852HBAXX-RB	R1333	8x12AWG	9.6	214	5.7	60.0

MULTI-CONDUCTOR CABLE

Screened multi-conductor cable with a PVC sheath are suitable for Building Management Systems (BMS), Sound, Audio, Security,
Safety, Control and Instrumentation



CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Polyolefine - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire
Outher Sheath:
Polyvinyl chloride - PVC Colour Outher **Sheath:**
Grey

IDENTIFICATION OF CORES

2 Core:
3 Core:
4 Core:
5 Core:
6 Core:
7 Core:
8 Core:

CABLE PRINTING

RAMCRO ITALY - R_____ - AUDIO CONTROL & INSTRUMENTATION CABLE 2C 22AWG
SCREENED PVC 300 V 75 C IEC 60332-1/UL 1581 - RAMCRO CODE - "PROD.WEEK/YEAR" - MADE IN ITALY + BATCH + METER MARKING

ELECTRICAL DATA

Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Inductance:	< 1 mH/km
Operating Voltage:	300 V

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

CHARACTERISTICS

Building Management Systems Cable

Min. Bending Radius
8 x cable diameter

Put up lenght 305 mt

MULTI-CONDUCTOR CABLE

PVC sheathed, screened cables with 22AWG to 12AWG conductors

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
SAS0207HBAXH-RB	R1226	2x22AWG	3.2	16	56.7	78.0
SAS0307HBAXX-RB	R1228	3x22AWG	3.4	20	56.7	75.0
SAS0407HBAXX-RB	R1230	4x22AWG	3.6	24	56.7	70.0
SAS0607HBAXX-RB	R1264	6x22AWG	4.3	33	56.7	64.0
SAS0807HBAXX-RB	R1232	8x22AWG	4.7	41	56.7	60.0
SAS0206HBAXH-RB	R1019	2x20AWG	3.6	21	37.2	100.0
SAS0306HBAXX-RB	R1021	3x20AWG	3.8	26	37.2	90.0
SAS0406HBAXX-RB	R1023	4x20AWG	4.1	32	37.2	90.0
SAS0406HBAXX-RB	R1023	4x20AWG	4.1	32	37.2	90.0
SAS0606HBAXX-RB	R1260	6x20AWG	4.9	45	37.2	90.0
SAS0806HBAXX-RB	R1262	8x20AWG	5.4	57	37.2	75.0
SAS0205HBAXH-RB	R1013	2x18AWG	4.0	27	22.9	95.0
SAS0305HBAXX-RB	R1015	3x18AWG	4.2	36	22.9	90.0
SAS0405HBAXX-RB	R1017	4x18AWG	4.6	45	22.9	75.0
SAS0605HBAXX-RB	R1211	6x18AWG	5.5	64	22.9	75.0
SAS0705HBAXX-RB	R1239	7x18AWG	5.8	75	22.9	75.0
SAS0805HBAXX-RB	R1258	8x18AWG	6.0	72	22.9	75.0
SAS0203HBAXH-RB	R1007	2x16AWG	4.7	81	15.5	105.0
SAS0303HBAXX-RB	R1009	3x16AWG	5.0	49	15.5	105.0
SAS0403HBAXX-RB	R1011	4x16AWG	5.4	62	15.5	90.0
SAS0603HBAXX-RB	R1252	6x16AWG	6.5	88	15.5	80.0
SAS0803HBAXX-RB	R1254	8x16AWG	7.2	114	15.5	80.0
SAS0201HBAXH-RB	R1001	2x14AWG	5.6	54	9.3	105.0
SAS0301HBAXX-RB	R1003	3x14AWG	5.9	75	9.3	100.0
SAS0401HBAXX-RB	R1005	4x14AWG	6.5	96	9.3	98.0
SAS0501HBAXX-RB	R1209	5x14AWG	6.8	111	9.3	98.0
SAS0601HBAXX-RB	R1248	6x14AWG	7.9	139	9.3	96.0
SAS0801HBAXX-RB	R1250	8x14AWG	8.7	180	9.3	95.0
SAS0252HBAXH-RB	R1322	2x12AWG	6.8	82	5.7	105.0
SAS0352HBAXX-RB	R1324	3x12AWG	7.2	115	5.7	105.0
SAS0452HBAXX-RB	R1326	4x12AWG	8.0	149	5.7	100.0
SAS0552HBAXX-RB	R1328	5x12AWG	8.2	161	5.7	100.0
SAS0652HBAXX-RB	R1330	6x12AWG	9.7	217	5.7	100.0
SAS0852HBAXX-RB	R1332	8x12AWG	10.8	284	5.7	100.0

MULTI-CONDUCTOR CABLE

Unscreened multi-conductor cable with a LSZH(FRNC) sheath are suitable for Building Management Systems (BMS), Sound, Audio, Security, Safety, Control and Instrumentation



CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Polyolefine - PO
Cable twisting:
Two or more wire twisted
Outher Sheath:
Thermoplastic low smoke, Halogen free - LSZH(-FRNC)
Colour Outher Sheath:
Violet

IDENTIFICATION OF CORES

2 Core:
3 Core:
4 Core:
5 Core:
6 Core:
7 Core:
8 Core:

CABLE PRINTING

RAMCRO ITALY - R_____ - AUDIO CONTROL & INSTRUMENTATION CABLE 2C 22AWG SCREENED LSZH(FRNC) 300 V 75 C IEC 60332-1/UL 1581 - RAMCRO CODE - "PROD.WEEK/YEAR" - MADE IN ITALY + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Inductance:	< 1 mH/km
Operating Voltage:	300 V

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

CHARACTERISTICS

Building Management Systems Cable

Min. Bending Radius
8 x cable diameter

Put up lenght 305 mt

MULTI-CONDUCTOR CABLE

LSZH(FRNC) sheathed, unscreened cables with 22AWG to 12AWG conductors

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
SSS0207HXEDH-RB	R1742	2x22AWG	3.3	14	56.7	65.0
SSS0307HXEDX-RB	R1744	3x22AWG	3.5	18	56.7	70.0
SSS0407HXEDX-RB	R1746	4x22AWG	3.8	22	56.7	72.0
SSS0607HXEDX-RB	R1748	6x22AWG	4.5	31	56.7	75.0
SSS0807HXEDX-RB	R1750	8x22AWG	4.9	40	56.7	75.0
SSS0206HXEDH-RB	R1732	2x20AWG	3.5	17	37.2	65.0
SSS0306HXEDX-RB	R1734	3x20AWG	3.7	23	37.2	65.0
SSS0406HXEDX-RB	R1736	4x20AWG	4.0	29	37.2	68.0
SSS0506HXEDX-RB	R1753	5x20AWG	4.2	35	37.2	68.0
SSS0606HXEDX-RB	R1738	6x20AWG	4.8	41	37.2	70.0
SSS0806HXEDX-RB	R1740	8x20AWG	5.3	52	37.2	70.0
SSS0205HXEDH-RB	R1722	2x18AWG	3.9	24	22.9	65.0
SSS0305HXEDX-RB	R1724	3x18AWG	4.1	33	22.9	70.0
SSS0405HXEDX-RB	R1726	4x18AWG	4.5	42	22.9	72.0
SSS0605HXEDX-RB	R1728	6x18AWG	5.4	60	22.9	75.0
SSS0805HXEDX-RB	R1730	8x18AWG	6.0	77	22.9	75.0
SSS0203HXEDH-RB	R1712	2x16AWG	4.6	33	15.5	65.0
SSS0303HXEDX-RB	R1714	3x16AWG	4.9	45	15.5	72.0
SSS0403HXEDX-RB	R1716	4x16AWG	5.4	58	15.5	72.0
SSS0603HXEDX-RB	R1718	6x16AWG	6.5	85	15.5	74.0
SSS0803HXEDX-RB	R1720	8x16AWG	7.1	110	15.5	75.0
SSS0201HXEDH-RB	R1702	2x14AWG	5.5	51	9.3	75.0
SSS0301HXEDX-RB	R1704	3x14AWG	5.9	71	9.3	75.0
SSS0401HXEDX-RB	R1706	4x14AWG	6.5	92	9.3	77.0
SSS0601HXEDX-RB	R1708	6x14AWG	7.8	134	9.3	80.0
SSS0801HXEDX-RB	R1710	8x14AWG	8.7	176	9.3	80.0
SSS0252HXEDH-RB	R1335	2x12AWG	6.7	78	5.7	75.0
SSS0352HXEDX-RB	R1337	3x12AWG	7.1	110	5.7	76.0
SSS0452HXEDX-RB	R1339	4x12AWG	7.9	144	5.7	80.0
SSS0552HXEDX-RB	R1341	5x12AWG	8.1	151	5.7	80.0
SSS0652HXEDX-RB	R1343	6x12AWG	9.6	211	5.7	80.0
SSS0852HXEDX-RB	R1345	8x12AWG	10.7	277	5.7	80.0

MULTI-CONDUCTOR CABLE

Screened multi-conductor cable with a LSZH(FRNC) sheath are suitable for Building Management Systems (BMS), Sound, Audio, Security, Safety, Control and Instrumentation



CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Polyolefine - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire
Outher Sheath:
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Colour Outher Sheath:
Violet

IDENTIFICATION OF CORES

2 Core: ● ●
3 Core: ● ● ○
4 Core: ● ● ○ ●
5 Core: ● ● ○ ● ●
6 Core: ● ● ○ ● ● ●
7 Core: ● ● ○ ● ● ● ●
8 Core: ● ● ○ ● ● ● ● ●

CABLE PRINTING

RAMCRO ITALY - R_____ - AUDIO CONTROL & INSTRUMENTATION CABLE 2C 22AWG UNSCREENED LSZH(FRNC) 300 V 75 C IEC 60332-1/UL 1581 - RAMCRO CODE - "PROD.WEEK/YEAR" - MADE IN ITALY + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Inductance:	< 1 mH/km
Operating Voltage:	300 V

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C



CHARACTERISTICS

Building Management Systems Cable



Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



MULTI-CONDUCTOR CABLE

LSZH(FRNC) sheathed, screened cables with 22AWG to 12AWG conductors

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
SAS0207HXEDH-RB	R1741	2x22AWG	3.4	16	56.7	115.0
SAS0307HXEDX-RB	R1743	3x22AWG	3.6	21	56.7	110.0
SAS0407HXEDX-RB	R1745	4x22AWG	3.9	25	56.7	110.0
SAS0607HXEDX-RB	R1747	6x22AWG	4.6	35	56.7	105.0
SAS0807HXEDX-RB	R1749	8x22AWG	5.0	43	56.7	100.0
SAS1207HXEDX-RB	R1752	12x22AWG	6.1	73	56.7	100.0
SAS0206HXEDH-RB	R1731	2x20AWG	3.6	20	37.2	138.0
SAS0306HXEDX-RB	R1733	3x20AWG	3.8	26	37.2	140.0
SAS0406HXEDX-RB	R1735	4x20AWG	4.1	32	37.2	120.0
SAS0606HXEDX-RB	R1737	6x20AWG	4.9	44	37.2	115.0
SAS0806HXEDX-RB	R1739	8x20AWG	5.4	56	37.2	115.0
SAS0205HXEDH-RB	R1721	2x18AWG	4.0	27	22.9	150.0
SAS0305HXEDX-RB	R1723	3x18AWG	4.2	35	22.9	150.0
SAS0405HXEDX-RB	R1725	4x18AWG	4.6	45	22.9	150.0
SAS0605HXEDX-RB	R1727	6x18AWG	5.5	63	22.9	140.0
SAS0805HXEDX-RB	R1729	8x18AWG	6.0	81	22.9	135.0
SAS0203HXEDH-RB	R1711	2x16AWG	4.7	36	15.5	170.0
SAS0303HXEDX-RB	R1713	3x16AWG	5.0	48	15.5	168.0
SAS0403HXEDX-RB	R1715	4x16AWG	5.4	62	15.5	165.0
SAS0603HXEDX-RB	R1717	6x16AWG	6.5	88	15.5	150.0
SAS0803HXEDX-RB	R1719	8x16AWG	7.2	113	15.5	146.0
SAS0201HXEDH-RB	R1701	2x14AWG	5.6	54	9.3	190.0
SAS0301HXEDX-RB	R1703	3x14AWG	5.9	74	9.3	185.0
SAS0401HXEDX-RB	R1705	4x14AWG	6.5	95	9.3	183.0
SAS0601HXEDX-RB	R1707	6x14AWG	7.9	118	9.3	178.0
SAS0801HXEDX-RB	R1709	8x14AWG	8.7	140	9.3	173.0
SAS0252HXEDH-RB	R1334	2x12AWG	6.8	81	5.7	190.0
SAS0352HXEDX-RB	R1336	3x12AWG	7.2	114	5.7	190.0
SAS0452HXEDX-RB	R1338	4x12AWG	8.0	147	5.7	190.0
SAS0552HXEDX-RB	R1340	5x12AWG	8.3	165	5.7	190.0
SAS0652HXEDX-RB	R1342	6x12AWG	9.7	215	5.7	180.0
SAS0852HXEDX-RB	R1344	8x12AWG	10.8	281	5.7	176.0

MULTI-CONDUCTOR CABLE

Unscreened multi-conductor cable with a LSF sheath are suitable for Building Management Systems (BMS), Sound, Audio, Security,
Safety, Control and Instrumentation



CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Polyolefine - PO
Cable twisting:
Two or more wire twisted
Outher Sheath:
Low Smoke Fume - PVC
Colour Outher Sheath:
Grey

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C



IDENTIFICATION OF CORES

2 Core:
3 Core:
4 Core:
5 Core:
6 Core:
7 Core:
8 Core:

CHARACTERISTICS

Building Management Systems Cable



Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



CABLE PRINTING

RAMCRO ITALY - R_____- AUDIO CONTROL & INSTRUMENTATION CABLE 2C 22AWG UNSCREENED LSF
300 V 75 C IEC 60332-1/UL 1581 - RAMCRO CODE - "PROD. WEEK/YEAR" - MADE IN ITALY + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Inductance:	< 1 mH/km
Operating Voltage:	300 V

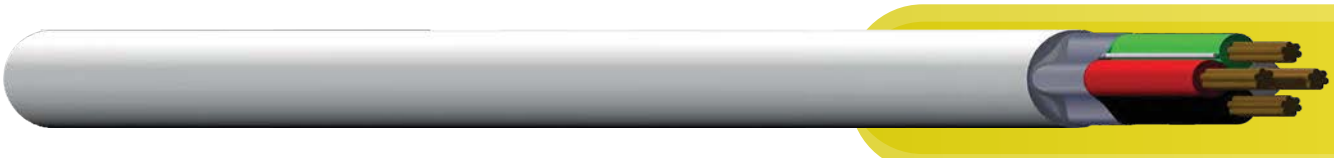
MULTI-CONDUCTOR CABLE

LSF sheathed, Unscreened cables with 22AWG to 12AWG conductors

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
SSS0207HBSXH-RB	R4060	2x22AWG	3.1	13	56.7	40.0
SSS0307HBSXX-RB	R4061	3x22AWG	3.3	17	56.7	35.0
SSS0407HBSXX-RB	R4062	4x22AWG	3.6	22	56.7	45.0
SSS0607HBSXX-RB	R4063	6x22AWG	4.2	30	56.7	45.0
SSS0807HBSXX-RB	R4064	8x22AWG	4.6	38	56.7	45.0
SSS0206HBSXH-RB	R4084	2x20AWG	3.5	18	37.2	46.0
SSS0306HBSXX-RB	R4085	3x20AWG	3.7	24	37.2	47.0
SSS0406HBSXX-RB	R4086	4x20AWG	4.0	30	37.2	47.0
SSS0606HBSXX-RB	R4087	6x20AWG	4.8	42	37.2	45.0
SSS0806HBSXX-RB	R4088	8x20AWG	5.3	54	37.2	45.0
SSS0205HBSXH-RB	R4028	2x18AWG	3.9	24	22.9	52.0
SSS0305HBSXX-RB	R4029	3x18AWG	4.1	33	22.9	55.0
SSS0405HBSXX-RB	R4030	4x18AWG	4.5	42	22.9	45.0
SSS0505HBSXX-RB	R4031	5x18AWG	4.7	53	22.9	45.0
SSS0605HBSXX-RB	R4032	6x18AWG	5.4	61	22.9	50.0
SSS0605HBSXX-RB	R4033	7x18AWG	5.7	75	22.9	50.0
SSS0805HBSXX-RB	R4034	8x18AWG	6.0	78	22.9	50.0
SSS1205HBSXX-RB	R4035	12x18AWG	7.0	95	22.9	50.0
SSS0203HBSXH-RB	R4023	2x16AWG	4.6	34	15.5	53.0
SSS0303HBSXX-RB	R4024	3x16AWG	4.9	46	15.5	56.0
SSS0403HBSXX-RB	R4025	4x16AWG	5.4	59	15.5	55.0
SSS0603HBSXX-RB	R4026	6x16AWG	6.5	85	15.5	48.0
SSS0803HBSXX-RB	R4027	8x16AWG	7.1	111	15.5	45.0
SSS0201HBSXH-RB	R4080	2x14AWG	5.5	51	9.3	51.0
SSS0301HBSXX-RB	R4082	3x14AWG	5.9	72	9.3	55.0
SSS0401HBSXX-RB	R4084	4x14AWG	6.5	93	9.3	55.0
SSS0601HBSXX-RB	R4086	6x14AWG	7.8	135	9.3	50.0
SSS0801HBSXX-RB	R4088	8x14AWG	8.7	177	9.3	50.0
SSS0252HBSXH-RB	R4052	2x12AWG	6.7	79	5.7	60.0
SSS0352HBSXX-RB	R4054	3x12AWG	7.1	112	5.7	60.0
SSS0452HBSXX-RB	R4056	4x12AWG	7.9	146	5.7	60.0
SSS0652HBSXX-RB	R4058	6x12AWG	8.7	180	5.7	60.0
SSS0852HBSXX-RB	R4057	8x12AWG	9.6	214	5.7	60.0

MULTI-CONDUCTOR CABLE

Screened multi-conductor cable with a LSF sheath are suitable for Building Management Systems (BMS), Sound, Audio, Security, Safety, Control and Instrumentation



CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Polyolefine - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire
Outher Sheath:
Low Smoke Fume - LSF Colour Outher
Sheath:
Grey

IDENTIFICATION OF CORES

2 Core: ● ●
3 Core: ● ● ○
4 Core: ● ● ○ ●
5 Core: ● ● ○ ● ●
6 Core: ● ● ○ ● ● ●
7 Core: ● ● ○ ● ● ● ●
8 Core: ● ● ○ ● ● ● ● ●

CABLE PRINTING

RAMCRO ITALY - R_____ - AUDIO CONTROL & INSTRUMENTATION CABLE 2C 22AWG SCREENED LSF
300 V 75 C IEC 60332-1/UL 1581 - RAMCRO CODE - "PROD. WEEK/YEAR" - MADE IN ITALY + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Inductance:	< 1 mH/km
Operating Voltage:	300 V

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C



CHARACTERISTICS

Building Management Systems Cable



Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



MULTI-CONDUCTOR CABLE

LSF sheathed, Unscreened cables with 22AWG to 12AWG conductors

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
SAS0207HBSXH-RB	R4133	2x22AWG	3.2	16	56.7	78.0
SAS0307HBSXX-RB	R4135	3x22AWG	3.4	20	56.7	75.0
SAS0407HBSXX-RB	R4137	4x22AWG	3.6	24	56.7	70.0
SAS0607HBSXX-RB	R4138	6x22AWG	4.3	33	56.7	64.0
SAS0807HBSXX-RB	R4139	8x22AWG	4.7	41	56.7	60.0
SAS0206HBSXH-RB	R4115	2x20AWG	3.6	21	37.2	100.0
SAS0306HBSXX-RB	R4116	3x20AWG	3.8	26	37.2	90.0
SAS0406HBSXX-RB	R4117	4x20AWG	4.1	32	37.2	90.0
SAS0606HBSXX-RB	R4118	6x20AWG	4.9	45	37.2	90.0
SAS0806HBSXX-RB	R4119	8x20AWG	5.4	57	37.2	75.0
SAS0205HBSXH-RB	R4016	2x18AWG	4.0	27	22.9	95.0
SAS0305HBSXX-RB	R4017	3x18AWG	4.2	36	22.9	90.0
SAS0405HBSXX-RB	R4018	4x18AWG	4.6	45	22.9	75.0
SAS0505HBSXX-RB	R4019	5x18AWG	4.8	45	22.9	75.0
SAS0705HBSXX-RB	R4021	6x18AWG	5.0	55	22.9	75.0
SAS0605HBSXX-RB	R4020	6x18AWG	5.5	64	22.9	75.0
SAS0805HBSXX-RB	R4022	8x18AWG	6.0	72	22.9	75.0
SAS0203HBSXH-RB	R4171	2x16AWG	4.7	81	15.5	105.0
SAS0303HBSXX-RB	R4173	3x16AWG	5.0	49	15.5	105.0
SAS0403HBSXX-RB	R4175	4x16AWG	5.4	62	15.5	90.0
SAS0603HBSXX-RB	R4177	6x16AWG	6.5	88	15.5	80.0
SAS0803HBSXX-RB	R4179	8x16AWG	7.2	114	15.5	80.0
SAS0201HBSXH-RB	R4161	2x14AWG	5.6	54	9.3	105.0
SAS0301HBSXX-RB	R4163	3x14AWG	5.9	75	9.3	100.0
SAS0401HBSXX-RB	R4165	4x14AWG	6.5	96	9.3	98.0
SAS0601HBSXX-RB	R4167	6x14AWG	7.9	139	9.3	96.0
SAS0801HBSXX-RB	R4169	8x14AWG	8.7	180	9.3	95.0
SAS0252HBSXH-RB	R4123	2x12AWG	6.8	82	5.7	105.0
SAS0352HBSXX-RB	R4124	3x12AWG	7.2	115	5.7	105.0
SAS0452HBSXX-RB	R4125	4x12AWG	8.0	149	5.7	100.0
SAS0652HBSXX-RB	R4127	6x12AWG	9.7	217	5.7	100.0
SAS0852HBSXX-RB	R4128	8x12AWG	10.8	284	5.7	100.0

MULTI-CONDUCTOR CABLE

Screened multi-conductor cable with a PVC or LSZH(FRNC) sheath are suitable for Building Management Systems (BMS), Sound, Audio, Security, Safety, Control and Instrumentation



CONSTRUCTION

Formation:
Tinned copper wire, Stranded
Insulation:
Polyolefine - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire
Outher Sheath:
Polyvinyl Chloride - PVC
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Colour Outher Sheath:
Grey - PVC
Violet - LSZH(FRNC)

IDENTIFICATION OF CORES

3 Core: ● ● ○

CABLE PRINTING

RAMCRO ITALY - R_____ - AUDIO CONTROL & INSTRUMENTATION CABLE 3C 22AWG SCREENED LSF
300 V 75 C IEC 60332-1/UL 1581 - RAMCRO CODE - "PROD. WEEK/YEAR" - MADE IN ITALY + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Inductance:	< 1 mH/km
Operating Voltage:	300 V

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C



CHARACTERISTICS

Building Management Systems Cable



Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



MULTI-CONDUCTOR CABLE

Multi Conductor Cables 22 to 18 AWG Screened PVC or LSZH(FRNC) Sheath 3 Cores

Cable with PO/SCREEN/PVC

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
SAS0305HBADX-T-RB	R1225	3x18AWG	6.0	56	23.2	75.0
SAS0306HBADX-T-RB	R1245	3x20AWG	4.9	39	38.5	75.0
SAS0307HBADX-T-RB	R1215	3x22AWG	4.7	32	57.4	75.0

Cable with PO/SCREEN/LSZH(FRNC)

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
SAS0305HXEDX-T-RB	R1410	3x18AWG	6.0	36	23.2	80.0
SAS0306HXEDX-T-RB	R1411	3x20AWG	4.9	57	38.5	80.0
SAS0307HXEDX-T-RB	R1412	3x22AWG	4.7	83	57.4	80.0



CONTROL CABLE


ramcro
special cables
www.ramcro.it

LIYY

These cables are used for power supply and control signal transmission in mechanical engineering for tooling machi- nery, for production lines and transport equipment, as well as in industrial instal- lations.
They meet the requirements of the EEC directive concerning electromagnetic compatibility (EMC), and ensure interfe- rence-free transmission providing protection against external pulses.



CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand
Insulation:
Polyvinyl chloride - PVC
Outher Sheath:
Polyvinyl chloride Flame Retardant - PVC FR
Colour Outher Sheath:
Grey RAL 7001

CABLE PRINTING

RAMCRO - LiYY 2x0.14 mm2 - 450/750V - VDE 0812 - IEC 60332 3
- EN 50575: 2014+A1:2016 CPR Class B2ca + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km

Operating Voltage:
From 0,14 mm2 to 0,75 mm2: 300/500 V
From 1,00 mm2 to 4,00 mm2: 450/750 V

PACKAGE



STANDARD REFERENCES

- VDE 0812
- IEC 60332-1
- IEC 60332-3-24

CPR CLASSIFICATION

Available in different CPR on request (B2ca, Cca,...)

IDENTIFICATION OF CORES

- In according to DIN VDE 47100
- OZ: Black Numbered
- JZ: Black Numbered + Green/Yellow

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

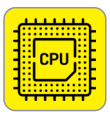


CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Control Cable



European Market



ON REQUEST

Personalized colour code and outher sheath

LIYY

From 0,14 mm² to 4,00 mm²

RAMCRO CODE	FORMATION [n° x mm²]	OUTER DIAMETER [mm]	MAX RESISTANCE AT 20°C [Ohm/km]
SSS0214HBSAC	2x0.14	3.3	154.0
SSS0414HBSAC	4x0.14	3.6	154.0
SSS0814HBSAC	8x0.14	4.5	154.0
SSS1014HBSAC	10x0.14	5.3	154.0
SSS0226HBSAC	2x0.25	3.8	83.1
SSS0426HBSAC	4x0.25	4.1	83.1
SSS0826HBSAC	8x0.25	5.4	83.1
SSS1026HBSAC	10x0.25	6.4	83.1
SSS0234HBSAC	2x0.34	3.9	57.2
SSS0434HBSAC	4x0.34	4.3	57.2
SSS0834HBSAC	8x0.34	5.7	57.2
SSS1034HBSAC	10x0.34	6.6	57.2
SSS0250HBSAC	2x0.50	4.5	40.6
SSS0450HBSAC	4x0.50	5.0	40.6
SSS0850HBSAC	8x0.50	6.9	40.6
SSS1050HBSAC	10x0.50	7.8	40.6
SSS0275HBSAC	2x0.75	4.9	27.1
SSS0475HBSAC	4x0.75	5.6	27.1
SSS0875HBSAC	8x0.75	7.5	27.1
SSS1075HBSAC	10x0.75	9.0	27.1
SSS0210HBSAC	2x1.00	5.5	20.3
SSS0410HBSAC	4x1.00	6.3	20.3
SSS0810HBSAC	8x1.00	8.6	20.3
SSS1010HBSAC	10x1.00	9.8	20.3
SSS0215HBSAC	2x1.50	6.5	13.8
SSS0415HBSAC	4x1.50	7.2	13.8
SSS0815HBSAC	8x1.50	9.8	13.8
SSS1015HBSAC	10x1.50	11.6	13.8
SSS0225HBSAC	2x2.50	7.7	8.3
SSS0425HBSAC	4x2.50	9.0	8.3
SSS0825HBSAC	8x2.50	12.5	8.3
SSS1025HBSAC	10x2.50	14.4	8.3
SSS0240HBSAC	2x4.00	9.4	5.1
SSS0440HBSAC	4x4.00	10.8	5.1
SSS0840HBSAC	8x4.00	14.5	5.1
SSS1040HBSAC	10x4.00	16.7	5.1

FROR

Suitable for connection of movable equipment or for fixed laying in areas with risk of fire.
To be used in dry or wet interiors and for occasional or temporary use outdoor. Not allowed for laying underground even if protected.



CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand
Insulation:
Polyvinyl chloride - PVC
Outher Sheath:
Polyvinyl chloride - PVC
Colour Outher Sheath:
Grey RAL 7032

CABLE PRINTING

RAMCRO - FROR 2x0.14 mm2 - 450/750V - VDE 0812 - IEC 60332-3 - EN 50575: 2014+A1:2016 CPR Class Eca + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km

Operating Voltage:
From 0,14 mm2 to 0,75 mm2: 300/500 V
From 1,00 mm2 to 4,00 mm2: 450/750 V

PACKAGE



STANDARD REFERENCES

- EN 50414
- CEI EN 60332-1-2
- CEI 20-22 II
- CEI EN 50267-2

CPR CLASSIFICATION

Available in different CPR on request (B2ca, Cca,...)

IDENTIFICATION OF CORES

In according to HD 308

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Control Cable

Italian Market

ON REQUEST

Personalized colour code and outher sheath

FROR

From 0,14 mm² to 4,00 mm²

RAMCRO CODE	FORMATION [n° x mm²]	OUTER DIAMETER [mm]	MAX RESISTANCE AT 20°C [Ohm/km]
SSS0214HAAAL	2x0.14	3.3	154.0
SSS0414HAAAG	4x0.14	3.6	154.0
SSS0814HAAAD	6x0.14	4.5	154.0
SSS1014HAAAD	10x0.14	5.3	154.0
SSS0226HAAAL	2x0.25	3.8	83.1
SSS0426HAAAG	4x0.25	4.1	83.1
SSS0826HAAAD	6x0.25	5.4	83.1
SSS1026HAAAD	10x0.25	6.4	83.1
SSS0234HAAAL	2x0.34	3.9	57.2
SSS0434HAAAG	4x0.34	4.3	57.2
SSS0834HAAAD	6x0.34	5.7	57.2
SSS1034HAAAD	10x0.34	6.6	57.2
SSS0250HAAAL	2x0.50	4.5	40.6
SSS0450HAAAG	4x0.50	5.0	40.6
SSS0850HAAAD	6x0.50	6.9	40.6
SSS1050HAAAD	10x0.50	7.8	40.6
SSS0275HAAAL	2x0.75	4.9	27.1
SSS0475HAAAG	4x0.75	5.6	27.1
SSS0875HAAAD	6x0.75	7.5	27.1
SSS1075HAAAD	10x0.75	9.0	27.1
SSS0210HAAAL	2x1.00	5.5	20.3
SSS0410HAAAG	4x1.00	6.3	20.3
SSS0810HAAAD	6x1.00	8.6	20.3
SSS1010HAAAD	10x1.00	9.8	20.3
SSS0215HAAAL	2x1.50	6.5	13.8
SSS0415HAAAG	4x1.50	7.2	13.8
SSS0815HAAAD	6x1.50	9.8	13.8
SSS1015HAAAD	10x1.50	11.6	13.8
SSS0225HAAAL	2x2.50	7.7	8.3
SSS0425HAAAG	4x2.50	9.0	8.3
SSS0825HAAAD	6x2.50	12.5	8.3
SSS1025HAAAD	10x2.50	14.4	8.3
SSS0240HAAAL	2x4.00	9.4	5.1
SSS0440HAAAG	4x4.00	10.8	5.1
SSS0840HAAAD	6x4.00	14.5	5.1
SSS1040HAAAD	10x4.00	16.7	5.1

FROR16

Suitable for connection of movable equipment or for fixed laying in areas with risk of fire.
To be used in dry or wet interiors and for occasional or temporary use outdoor. Not allowed for laying underground even if protected.



CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand
Insulation:
Polyvinyl chloride - PVC
Outher Sheath:
Polyvinyl chloride Flame Retardant - PVC FR
Colour Outher Sheath:
Grey RAL 7032

CABLE PRINTING

RAMCRO - FROR16 2x0.14 mm2 - 450/750V - VDE 0812 - IEC 60332-3 - EN 50575: 2014+A1:2016 CPR Class Cca + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km

Operating Voltage:
From 0,14 mm2 to 0,75 mm2: 300/500 V
From 1,00 mm2 to 4,00 mm2: 450/750 V

PACKAGE



STANDARD REFERENCES

- EN 50414
- CEI EN 60332-1-2
- CEI 20-22 II
- CEI EN 50267-2

CPR CLASSIFICATION

Available in different CPR on request (B2ca, Cca,...)

IDENTIFICATION OF CORES

In according to HD 308

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

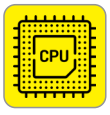


CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Control Cable



Italian Market



ON REQUEST

Personalized colour code and outher sheath

FROR16

From 0,14 mm² to 4,00 mm²

RAMCRO CODE	FORMATION [n° x mm²]	OUTER DIAMETER [mm]	MAX RESISTANCE AT 20°C [Ohm/km]
SSS0214HASAL-CPRC	2x0.14	3.3	154.0
SSS0414HASAG-CPRC	4x0.14	3.6	154.0
SSS0814HASAD-CPRC	6x0.14	4.5	154.0
SSS1014HASAD-CPRC	10x0.14	5.3	154.0
SSS0226HASAL-CPRC	2x0.25	3.8	83.1
SSS0426HASAG-CPRC	4x0.25	4.1	83.1
SSS0826HASAD-CPRC	6x0.25	5.4	83.1
SSS1026HASAD-CPRC	10x0.25	6.4	83.1
SSS0234HASAL-CPRC	2x0.34	3.9	57.2
SSS0434HASAG-CPRC	4x0.34	4.3	57.2
SSS0834HASAD-CPRC	6x0.34	5.7	57.2
SSS1034HASAD-CPRC	10x0.34	6.6	57.2
SSS0250HASAL-CPRC	2x0.50	4.5	40.6
SSS0450HASAG-CPRC	4x0.50	5.0	40.6
SSS0850HASAD-CPRC	6x0.50	6.9	40.6
SSS1050HASAD-CPRC	10x0.50	7.8	40.6
SSS0275HASAL-CPRC	2x0.75	4.9	27.1
SSS0475HASAG-CPRC	4x0.75	5.6	27.1
SSS0875HASAD-CPRC	6x0.75	7.5	27.1
SSS1075HASAD-CPRC	10x0.75	9.0	27.1
SSS0210HASAL-CPRC	2x1.00	5.5	20.3
SSS0410HASAG-CPRC	4x1.00	6.3	20.3
SSS0810HASAD-CPRC	6x1.00	8.6	20.3
SSS1010HASAD-CPRC	10x1.00	9.8	20.3
SSS0215HASAL-CPRC	2x1.50	6.5	13.8
SSS0415HASAG-CPRC	4x1.50	7.2	13.8
SSS0815HASAD-CPRC	6x1.50	9.8	13.8
SSS1015HASAD-CPRC	10x1.50	11.6	13.8
SSS0225HASAL-CPRC	2x2.50	7.7	8.3
SSS0425HASAG-CPRC	4x2.50	9.0	8.3
SSS0825HASAD-CPRC	6x2.50	12.5	8.3
SSS1025HASAD-CPRC	10x2.50	14.4	8.3
SSS0240HASAL-CPRC	2x4.00	9.4	5.1
SSS0440HASAG-CPRC	4x4.00	10.8	5.1
SSS0840HASAD-CPRC	6x4.00	14.5	5.1
SSS1040HASAD-CPRC	10x4.00	16.7	5.1

FROR16

Suitable for connection of movable equipment or for fixed laying in areas with risk of fire.
To be used in dry or wet interiors and for occasional or temporary use outdoor. Not allowed for laying underground even if protected.



CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand
Insulation:
Polyvinyl chloride - PVC
Outher Sheath:
Polyvinyl chloride Flame Retardant - PVC FR
Colour Outher Sheath:
Grey RAL 7032

CABLE PRINTING

RAMCRO - FROR16 2x0.14 mm2 - 450/750V - VDE 0812 - IEC 60332-3 - EN 50575: 2014+A1:2016 CPR Class B2ca + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km

Operating Voltage:
From 0,14 mm2 to 0,75 mm2: 300/500 V
From 1,00 mm2 to 4,00 mm2: 450/750 V

PACKAGE



STANDARD REFERENCES

- EN 50414
- CEI EN 60332-1-2
- CEI 20-22 II
- CEI EN 50267-2

CPR CLASSIFICATION

Available in different CPR on request (B2ca, Cca,...)

IDENTIFICATION OF CORES

In according to HD 308

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

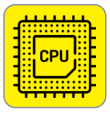


CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Control Cable



Italian Market



ON REQUEST

Personalized colour code and outher sheath

FROR16

From 0,14 mm² to 4,00 mm²

RAMCRO CODE	FORMATION [n° x mm²]	OUTER DIAMETER [mm]	MAX RESISTANCE AT 20°C [Ohm/km]
SSS0214HASAL	2x0.14	3.3	154.0
SSS0414HASAG	4x0.14	3.6	154.0
SSS0814HASAD	6x0.14	4.5	154.0
SSS1014HASAD	10x0.14	5.3	154.0
SSS0226HASAL	2x0.25	3.8	83.1
SSS0426HASAG	4x0.25	4.1	83.1
SSS0826HASAD	6x0.25	5.4	83.1
SSS1026HASAD	10x0.25	6.4	83.1
SSS0234HASAL	2x0.34	3.9	57.2
SSS0434HASAG	4x0.34	4.3	57.2
SSS0834HASAD	6x0.34	5.7	57.2
SSS1034HASAD	10x0.34	6.6	57.2
SSS0250HASAL	2x0.50	4.5	40.6
SSS0450HASAG	4x0.50	5.0	40.6
SSS0850HASAD	6x0.50	6.9	40.6
SSS1050HASAD	10x0.50	7.8	40.6
SSS0275HASAL	2x0.75	4.9	27.1
SSS0475HASAG	4x0.75	5.6	27.1
SSS0875HASAD	6x0.75	7.5	27.1
SSS1075HASAD	10x0.75	9.0	27.1
SSS0210HASAL	2x1.00	5.5	20.3
SSS0410HASAG	4x1.00	6.3	20.3
SSS0810HASAD	6x1.00	8.6	20.3
SSS1010HASAD	10x1.00	9.8	20.3
SSS0215HASAL	2x1.50	6.5	13.8
SSS0415HASAG	4x1.50	7.2	13.8
SSS0815HASAD	6x1.50	9.8	13.8
SSS1015HASAD	10x1.50	11.6	13.8
SSS0225HASAL	2x2.50	7.7	8.3
SSS0425HASAG	4x2.50	9.0	8.3
SSS0825HASAD	6x2.50	12.5	8.3
SSS1025HASAD	10x2.50	14.4	8.3
SSS0240HASAL	2x4.00	9.4	5.1
SSS0440HASAG	4x4.00	10.8	5.1
SSS0840HASAD	6x4.00	14.5	5.1
SSS1040HASAD	10x4.00	16.7	5.1

LIYCY

These cables are used for power supply and control signal transmission in mechanical engineering for tooling machi- nery, for production lines and transport equipment, as well as in industrial installations. They meet the requirements of the EEC directive concerning electromagnetic compatibility (EMC), and ensure interference-free transmission providing protection against external pulses.



CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand
Insulation:
Polyvinyl chloride - PVC
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
Tinned Copper Wire Braid
Outher Sheath:
Polyvinyl chloride Flame Retardant - PVC FR
Colour Outher Sheath:
Grey RAL 7001

CABLE PRINTING

RAMCRO - LiYCY 2x0,14 mm2 - 300/500V - VDE 0812 - IEC 60332-3 - EN 50575: 2014+A1:2016 CPR Class B2ca + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km

Operating Voltage:
From 0,14 mm2 to 0,75 mm2: 300/500 V
From 1,00 mm2 to 4,00 mm2: 450/750 V

PACKAGE



STANDARD REFERENCES

- VDE 0812
- IEC 60332-1
- IEC 60332-3-24

CPR CLASSIFICATION

Available in different CPR on request (B2ca, Cca,...)

IDENTIFICATION OF CORES

- In according to DIN VDE 47100
- **OZ:** Black Numbered
- **JZ:** Black Numbered + Green/Yellow

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

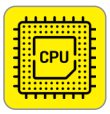


CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Control Cable



European Market



ON REQUEST

Personalized colour code and outher sheath

LIYCY

From 0,14 mm² to 4,00 mm²

RAMCRO CODE	FORMATION [n° x mm²]	OUTER DIAMETER [mm]	MAX RESISTANCE AT 20°C [Ohm/km]
STS0214HBAAC	2x0.14	3.7	154.0
STS0414HBAAC	4x0.14	4.0	154.0
STS0814HBAAC	6x0.14	4.5	154.0
STS1014HBAAC	10x0.14	5.7	154.0
STS0226HBAAC	2x0.25	4.2	83.1
STS0426HBAAC	4x0.25	4.5	83.1
STS0826HBAAC	6x0.25	5.4	83.1
STS1026HBAAC	10x0.25	6.8	83.1
STS0226HBAAC	2x0.34	4.3	57.2
STS0426HBAAC	4x0.34	4.7	57.2
STS0826HBAAC	6x0.34	5.6	57.2
STS1026HBAAC	10x0.34	7.0	57.2
STS0250HBAAC	2x0.50	4.9	40.6
STS0450HBAAC	4x0.50	5.6	40.6
STS0850HBAAC	6x0.50	6.7	40.6
STS1050HBAAC	10x0.50	8.6	40.6
STS0275HBAAC	2x0.75	5.5	27.1
STS0475HBAAC	4x0.75	6.0	27.1
STS0875HBAAC	6x0.75	7.3	27.1
STS1075HBAAC	10x0.75	9.4	27.1
STS0210HBAAC	2x1.00	5.9	20.3
STS0410HBAAC	4x1.00	6.7	20.3
STS0810HBAAC	6x1.00	7.9	20.3
STS1010HBAAC	10x1.00	10.6	20.3
STS0215HBAAC	2x1.50	6.9	13.8
STS0415HBAAC	4x1.50	7.6	13.8
STS0815HBAAC	6x1.50	9.3	13.8
STS1015HBAAC	10x1.50	12.0	13.8
STS0225HBAAC	2x2.50	6.9	8.3
STS0425HBAAC	4x2.50	9.4	8.3
STS0825HBAAC	6x2.50	11.5	8.3
STS1025HBAAC	10x2.50	14.8	8.3
STS0240HBAAC	2x4.00	9.8	5.1
STS0440HBAAC	4x4.00	11.2	5.1
STS0840HBAAC	6x4.00	13.7	5.1
STS1040HBAAC	10x4.00	17.1	5.1

FROHR2

Suitable for connection of movable equipment or for fixed laying in areas with risk of fire.
To be used in dry or wet interiors and for occasional or temporary use outdoor. Not allowed for laying underground even if protected.



CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand
Insulation:
Polyvinyl chloride - PVC
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
Tinned Copper Wire Braid
Outher Sheath:
Polyvinyl chloride - PVC Colour
Outher Sheath:
Grey RAL 7032

CABLE PRINTING

RAMCRO - FR2OH2R 2x0,14 mm2 - 300/500V - VDE 0812 - IEC 60332-3 - EN 50575: 2014+A1:2016 CPR Class Eca + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km

Operating Voltage:
From 0,14 mm2 to 0,75 mm2: 300/500 V
From 1,00 mm2 to 4,00 mm2: 450/750 V

PACKAGE



STANDARD REFERENCES

- EN 50414
- CEI EN 60332-1-2
- CEI 20-22 II
- CEI EN 50267-2

CPR CLASSIFICATION

Available in different CPR on request (B2ca, Cca,...)

IDENTIFICATION OF CORES

In according to HD 308

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

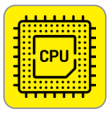


CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Control Cable



Italian Market



ON REQUEST

Personalized colour code and outher sheath
Armour in steel wire braid

FROHR2

From 0,14 mm² to 4,00 mm²

RAMCRO CODE	FORMATION [n° x mm²]	OUTER DIAMETER [mm]	MAX RESISTANCE AT 20°C [Ohm/km]
FR60214HAAAL	2x0.14	3.7	154.0
FR60414HAAAG	4x0.14	4.0	154.0
FR60814HAAAD	6x0.14	4.5	154.0
FR61014HAAAD	10x0.14	5.7	154.0
FR60226HAAAL	2x0.25	4.2	83.1
FR60426HAAAG	4x0.25	4.5	83.1
FR60826HAAAD	6x0.25	5.4	83.1
FR61026HAAAD	10x0.25	6.8	83.1
FR60234HAAAL	2x0.34	4.3	57.2
FR60434HAAAG	4x0.34	4.7	57.2
FR60834HAAAD	6x0.34	5.6	57.2
FR61034HAAAD	10x0.34	7.0	57.2
FR60250HAAAL	2x0.50	4.9	40.6
FR60450HAAAG	4x0.50	5.6	40.6
FR60850HAAAD	6x0.50	6.7	40.6
FR61050HAAAD	10x0.50	8.6	40.6
FR60275HAAAL	2x0.75	5.5	27.1
FR60475HAAAG	4x0.75	6.0	27.1
FR60875HAAAD	6x0.75	7.3	27.1
FR61075HAAAD	6x0.75	9.4	27.1
FR60210HAAAL	2x1.00	5.9	20.3
FR60410HAAAG	4x1.00	6.7	20.3
FR60810HAAAD	6x1.00	7.9	20.3
FR61010HAAAD	10x1.00	10.6	20.3
FR60215HAAAL	2x1.50	6.9	13.8
FR60415HAAAG	4x1.50	7.6	13.8
FR60815HAAAD	6x1.50	9.3	13.8
FR61015HAAAD	10x1.50	12.0	13.8
FR60225HAAAL	2x2.50	6.9	8.3
FR60425HAAAG	4x2.50	9.4	8.3
FR60825HAAAD	6x2.50	11.5	8.3
FR61025HAAAD	10x2.50	14.8	8.3
FR60240HAAAL	2x4.00	9.8	5.1
FR60440HAAAG	4x4.00	11.2	5.1
FR60840HAAAD	6x4.00	13.7	5.1
FR61040HAAAD	10x4.00	17.1	5.1

FROH2R16

Suitable for connection of movable equipment or for fixed laying in areas with risk of fire.
To be used in dry or wet interiors and for occasional or temporary use outdoor. Not allowed for laying underground even if protected.



CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand
Insulation:
Polyvinyl chloride - PVC
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
Tinned Copper Wire Braid
Outher Sheath:
Polyvinyl chloride Flame Retardant - PVC FR
Colour Outher Sheath:
Grey RAL 7032

CABLE PRINTING

RAMCRO - FROH2R16 2x0,14 mm2 - 300/500V - VDE 0812 - IEC 60332-3 - EN 50575: 2014+A1:2016 CPR Class Cca + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km

Operating Voltage:
From 0,14 mm2 to 0,75 mm2: 300/500 V
From 1,00 mm2 to 4,00 mm2: 450/750 V

PACKAGE



STANDARD REFERENCES

- EN 50414
- CEI EN 60332-1-2
- CEI 20-22 II
- CEI EN 50267-2

CPR CLASSIFICATION

Available in different CPR on request (B2ca, Cca,...)

IDENTIFICATION OF CORES

In according to HD 308

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

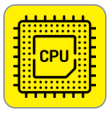


CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Control Cable



Italian Market



ON REQUEST

Personalized colour code and outher sheath
Armour in steel wire braid

FROH2R16

From 0,14 mm² to 4,00 mm²

RAMCRO CODE	FORMATION [n° x mm²]	OUTER DIAMETER [mm]	MAX RESISTANCE AT 20°C [Ohm/km]
FR60214HASAL-CPRC	2x0.14	3.7	154.0
FR60414HASAG-CPRC	4x0.14	4.0	154.0
FR60814HASAD-CPRC	6x0.14	4.5	154.0
FR61014HASAD-CPRC	10x0.14	5.7	154.0
FR60226HASAL-CPRC	2x0.25	4.2	83.1
FR60426HASAG-CPRC	4x0.25	4.5	83.1
FR60826HASAD-CPRC	6x0.25	5.4	83.1
FR61026HASAD-CPRC	10x0.25	6.8	83.1
FR60234HASAL-CPRC	2x0.34	4.3	57.2
FR60434HASAG-CPRC	4x0.34	4.7	57.2
FR60834HASAD-CPRC	6x0.34	5.6	57.2
FR61034HASAD-CPRC	10x0.34	7.0	57.2
FR60250HASAL-CPRC	2x0.50	4.9	40.6
FR60450HASAG-CPRC	4x0.50	5.6	40.6
FR60850HASAD-CPRC	6x0.50	6.7	40.6
FR61050HASAD-CPRC	10x0.50	8.6	40.6
FR60275HASAL-CPRC	2x0.75	5.5	27.1
FR60475HASAG-CPRC	4x0.75	6.0	27.1
FR60875HASAD-CPRC	6x0.75	7.3	27.1
FR61075HASAD-CPRC	10x0.75	9.4	27.1
FR60210HASAL-CPRC	2x1.00	5.9	20.3
FR60410HASAG-CPRC	4x1.00	6.7	20.3
FR60810HASAD-CPRC	6x1.00	7.9	20.3
FR61010HASAD-CPRC	10x1.00	10.6	20.3
FR60215HASAL-CPRC	2x1.50	6.9	13.8
FR60415HASAG-CPRC	4x1.50	7.6	13.8
FR60815HASAD-CPRC	6x1.50	9.3	13.8
FR61015HASAD-CPRC	10x1.50	12.0	13.8
FR60225HASAL-CPRC	2x2.50	6.9	8.3
FR60425HASAG-CPRC	4x2.50	9.4	8.3
FR60825HASAD-CPRC	6x2.50	11.5	8.3
FR61025HASAD-CPRC	10x2.50	14.8	8.3
FR60240HASAL-CPRC	2x4.00	9.8	5.1
FR60440HASAG-CPRC	4x4.00	11.2	5.1
FR60840HASAD-CPRC	6x4.00	13.7	5.1
FR61040HASAD-CPRC	10x4.00	17.1	5.1

FROH2R16

Suitable for connection of movable equipment or for fixed laying in areas with risk of fire.
To be used in dry or wet interiors and for occasional or temporary use outdoor. Not allowed for laying underground even if protected.



CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand
Insulation:
Polyvinyl chloride - PVC
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
Tinned Copper Wire Braid
Outher Sheath:
Polyvinyl chloride Flame Retardant - PVC FR
Colour Outher Sheath:
Grey RAL 7032

CABLE PRINTING

RAMCRO - FROH2R16 2x0,14 mm2 - 300/500V - VDE 0812 - IEC 60332-3 - EN 50575: 2014+A1:2016 CPR Class B2ca + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km

Operating Voltage:
From 0,14 mm2 to 0,75 mm2: 300/500 V
From 1,00 mm2 to 4,00 mm2: 450/750 V

PACKAGE



STANDARD REFERENCES

- EN 50414
- CEI EN 60332-1-2
- CEI 20-22 II
- CEI EN 50267-2

CPR CLASSIFICATION

Available in different CPR on request (B2ca, Cca,...)

IDENTIFICATION OF CORES

In according to HD 308

TEMPERATURE RANGE



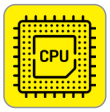
During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Control Cable



Italian Market



ON REQUEST

Personalized colour code and outher sheath
Armour in steel wire braid

FROH2R16

From 0,14 mm² to 4,00 mm²

RAMCRO CODE	FORMATION [n° x mm²]	OUTER DIAMETER [mm]	MAX RESISTANCE AT 20°C [Ohm/km]
FR60214HASAL	2x0.14	3.7	154.0
FR60414HASAG	4x0.14	4.0	154.0
FR60814HASAD	6x0.14	4.5	154.0
FR61014HASAD	10x0.14	5.7	154.0
FR60226HASAL	2x0.25	4.2	83.1
FR60426HASAG	4x0.25	4.5	83.1
FR60826HASAD	6x0.25	5.4	83.1
FR61026HASAD	10x0.25	6.8	83.1
FR60234HASAL	2x0.34	4.3	57.2
FR60434HASAG	4x0.34	4.7	57.2
FR60834HASAD	6x0.34	5.6	57.2
FR61034HASAD	10x0.34	7.0	57.2
FR60250HASAL	2x0.50	4.9	40.6
FR60450HASAG	4x0.50	5.6	40.6
FR60850HASAD	6x0.50	6.7	40.6
FR61050HASAD	10x0.50	8.6	40.6
FR60275HASAL	2x0.75	5.5	27.1
FR60475HASAG	4x0.75	6.0	27.1
FR60875HASAD	6x0.75	7.3	27.1
FR61075HASAD	10x0.75	9.4	27.1
FR60210HASAL	2x1.00	5.9	20.3
FR60410HASAG	4x1.00	6.7	20.3
FR60810HASAD	6x1.00	7.9	20.3
FR61010HASAD	10x1.00	10.6	20.3
FR60215HASAL	2x1.50	6.9	13.8
FR60415HASAG	4x1.50	7.6	13.8
FR60815HASAD	6x1.50	9.3	13.8
FR61015HASAD	10x1.50	12.0	13.8
FR60225HASAL	2x2.50	6.9	8.3
FR60425HASAG	4x2.50	9.4	8.3
FR60825HASAD	6x2.50	11.5	8.3
FR61025HASAD	10x2.50	14.8	8.3
FR60240HASAL	2x4.00	9.8	5.1
FR60440HASAG	4x4.00	11.2	5.1
FR60840HASAD	6x4.00	13.7	5.1
FR61040HASAD	10x4.00	17.1	5.1

FROHH2R

Suitable for connection of movable equipment or for fixed laying in areas with risk of fire.
To be used in dry or wet interiors and for occasional or temporary use outdoor. Not allowed for laying underground even if protected.



CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand
Insulation:
Polyvinyl chloride - PVC
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
Aluminium / PETP + Tinned Copper Braid
Outher Sheath:
Polyvinyl chloride - PVC Colour
Outher Sheath:
Grey RAL 7032

CABLE PRINTING

RAMCRO - FR2OHH2R 2x0,14 mm2 - 300/500V - VDE 0812 - IEC 60332-3 - EN 50575: 2014+A1:2016 CPR Class B2ca + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km

Operating Voltage:
From 0,14 mm2 to 0,75 mm2: 300/500 V
From 1,00 mm2 to 4,00 mm2: 450/750 V

PACKAGE



STANDARD REFERENCES

- EN 50414
- CEI EN 60332-1-2
- CEI 20-22 II
- CEI EN 50267-2

CPR CLASSIFICATION

Available in different CPR on request (B2ca, Cca,...)

IDENTIFICATION OF CORES

In according to HD 308

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

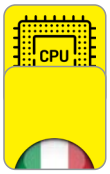


CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Control Cable



Italian Market

ON REQUEST

Personalized colour code and outher sheath
Armour in steel wire braid

FROHH2R

From 0,50 mm² to 6,00 mm²

RAMCRO CODE	FORMATION [n° x mm²]	OUTER DIAMETER [mm]	MAX RESISTANCE AT 20°C [Ohm/km]
SMS0250HAAAL	2x0.50	5.0	40.6
SMS0350HAAAG	3x0.50	5.5	40.6
SMS0450HAAAF	4x0.50	5.9	40.6
SMS0550HAAAT	5x0.50	6.5	40.6
SMS0650HAAAD	6x0.50	7.0	40.6
SMS0275HAAAL	2x0.75	5.6	27.1
SMS0375HAAAG	3x0.75	5.9	27.1
SMS0475HAAAF	4x0.75	6.6	27.1
SMS0575HAAAT	5x0.75	7.1	27.1
SMS0675HAAAD	6x0.75	7.6	27.1
SMS0210HAAAL	2x1.00	6.0	20.3
SMS0310HAAAG	3x1.00	6.5	20.3
SMS0410HAAAF	4x1.00	7.0	20.3
SMS0510HAAAT	5x1.00	7.6	20.3
SMS0610HAAAD	6x1.00	8.6	20.3
SMS0215HAAAL	2x1.50	7.0	13.8
SMS0315HAAAG	3x1.50	7.3	13.8
SMS0415HAAAF	4x1.50	8.0	13.8
SMS0515HAAAT	5x1.50	9.0	13.8
SMS0615HAAAD	6x1.50	9.8	13.8
SMS0250HAAAL	2x2.50	8.6	8.3
SMS0350HAAAG	3x2.50	9.1	8.3
SMS0450HAAAF	4x2.50	9.9	8.3
SMS0550HAAAT	5x2.50	11.1	8.3
SMS0650HAAAD	6x2.50	12.0	8.3
SMS0250HAAAL	2x4.00	9.9	5.1
SMS0350HAAAG	3x4.00	10.8	5.1
SMS0450HAAAF	4x4.00	11.8	5.1
SMS0550HAAAT	5x4.00	13.2	5.1
SMS0650HAAAD	6x4.00	14.3	5.1
SMS0250HAAAL	2x6.00	11,8	3.4
SMS0350HAAAG	3x6.00	12.9	3.4
SMS0450HAAAF	4x6.00	14.0	3.4
SMS0550HAAAT	5x6.00	15.3	3.4
SMS0650HAAAD	6x6.00	16.6	3.4

FROHH2R16

Suitable for connection of movable equipment or for fixed laying in areas with risk of fire.
To be used in dry or wet interiors and for occasional or temporary use outdoor. Not allowed for laying underground even if protected.



CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand
Insulation:
Polyvinyl chloride - PVC
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
Aluminium / PETP + Tinned Copper Braid
Outher Sheath:
Polyvinyl chloride Flame Retardant - PVC FR
Colour Outher Sheath:
Grey RAL 7032

CABLE PRINTING

RAMCRO - FROHH2R16 2x0,14 mm2 - 300/500V - VDE 0812 - IEC 60332-3 - EN 50575: 2014+A1:2016 CPR Class B2ca + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km

Operating Voltage:
From 0,14 mm2 to 0,75 mm2: 300/500 V
From 1,00 mm2 to 4,00 mm2: 450/750 V

PACKAGE



STANDARD REFERENCES

- EN 50414
- CEI EN 60332-1-2
- CEI 20-22 II
- CEI EN 50267-2

CPR CLASSIFICATION

Available in different CPR on request (B2ca, Cca,...)

IDENTIFICATION OF CORES

In according to HD 308

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

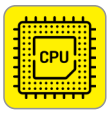


CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Control Cable



Italian Market



ON REQUEST

Personalized colour code and outher sheath
Armour in steel wire braid

FROHH2R16

From 0,50 mm² to 6,00 mm²

RAMCRO CODE	FORMATION [n° x mm²]	OUTER DIAMETER [mm]	MAX RESISTANCE AT 20°C [Ohm/km]
SMS0250HASAL-CPRC	2x0.50	5.0	40.6
SMS0350HASAG-CPRC	3x0.50	5.5	40.6
SMS0450HASAF-CPRC	4x0.50	5.9	40.6
SMS0550HASAT-CPRC	5x0.50	6.5	40.6
SMS0650HASAD-CPRC	6x0.50	7.0	40.6
SMS0250HASAL-CPRC	2x0.75	5.6	27.1
SMS0350HASAG-CPRC	3x0.75	5.9	27.1
SMS0450HASAF-CPRC	4x0.75	6.6	27.1
SMS0550HASAT-CPRC	5x0.75	7.1	27.1
SMS0650HASAD-CPRC	6x0.75	7.6	27.1
SMS0250HASAL-CPRC	2x1.00	6.0	20.3
SMS0350HASAG-CPRC	3x1.00	6.5	20.3
SMS0450HASAF-CPRC	4x1.00	7.0	20.3
SMS0550HASAT-CPRC	5x1.00	7.6	20.3
SMS0650HASAD-CPRC	6x1.00	8.6	20.3
SMS0250HASAL-CPRC	2x1.50	7.0	13.8
SMS0350HASAG-CPRC	3x1.50	7.3	13.8
SMS0450HASAF-CPRC	4x1.50	8.0	13.8
SMS0550HASAT-CPRC	5x1.50	9.0	13.8
SMS0650HASAD-CPRC	6x1.50	9.8	13.8
SMS0250HASAL-CPRC	2x2.50	8.6	8.3
SMS0350HASAG-CPRC	3x2.50	9.1	8.3
SMS0450HASAF-CPRC	4x2.50	9.9	8.3
SMS0550HASAT-CPRC	5x2.50	11.1	8.3
SMS0650HASAD-CPRC	6x2.50	12.0	8.3
SMS0250HASAL-CPRC	2x4.00	9.9	5.1
SMS0350HASAG-CPRC	3x4.00	10.8	5.1
SMS0450HASAF-CPRC	4x4.00	11.8	5.1
SMS0550HASAT-CPRC	5x4.00	13.2	5.1
SMS0650HASAD-CPRC	6x4.00	14.3	5.1
SMS0250HASAL-CPRC	2x6.00	11,8	3.4
SMS0350HASAG-CPRC	3x6.00	12.9	3.4
SMS0450HASAF-CPRC	4x6.00	14.0	3.4
SMS0550HASAT-CPRC	5x6.00	15.3	3.4
SMS0650HASAD-CPRC	6x6.00	16.6	3.4

FROHH2R16

Suitable for connection of movable equipment or for fixed laying in areas with risk of fire.
To be used in dry or wet interiors and for occasional or temporary use outdoor. Not allowed for laying underground even if protected.



CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand
Insulation:
Polyvinyl chloride - PVC
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
Aluminium / PETP + Tinned Copper Braid
Outher Sheath:
Polyvinyl chloride Flame Retardant - PVC FR
Colour Outher Sheath:
Grey RAL 7032

CABLE PRINTING

RAMCRO - FROHH2R16 2x0,14 mm2 - 300/500V - VDE 0812 - IEC 60332-3 - EN 50575: 2014+A1:2016 CPR Class B2ca + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km

Operating Voltage:
From 0,14 mm2 to 0,75 mm2: 300/500 V
From 1,00 mm2 to 4,00 mm2: 450/750 V

PACKAGE



STANDARD REFERENCES

- EN 50414
- CEI EN 60332-1-2
- CEI 20-22 II
- CEI EN 50267-2

CPR CLASSIFICATION

Available in different CPR on request (B2ca, Cca,...)

IDENTIFICATION OF CORES

In according to HD 308

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

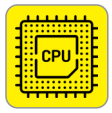


CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Control Cable



Italian Market



ON REQUEST

Personalized colour code and outher sheath
Armour in steel wire braid

FROHH2R16

From 0,50 mm² to 6,00 mm²

RAMCRO CODE	FORMATION [n° x mm²]	OUTER DIAMETER [mm]	MAX RESISTANCE AT 20°C [Ohm/km]
SMS0250HASAL	2x0.50	5.0	40.6
SMS0350HASAG	3x0.50	5.5	40.6
SMS0450HASAF	4x0.50	5.9	40.6
SMS0550HASAT	5x0.50	6.5	40.6
SMS0650HASAD	6x0.50	7.0	40.6
SMS0250HASAL	2x0.75	5.6	27.1
SMS0350HASAG	3x0.75	5.9	27.1
SMS0450HASAF	4x0.75	6.6	27.1
SMS0550HASAT	5x0.75	7.1	27.1
SMS0650HASAD	6x0.75	7.6	27.1
SMS0250HASAL	2x1.00	6.0	20.3
SMS0350HASAG	3x1.00	6.5	20.3
SMS0450HASAF	4x1.00	7.0	20.3
SMS0550HASAT	5x1.00	7.6	20.3
SMS0650HASAD	6x1.00	8.6	20.3
SMS0250HASAL	2x1.50	7.0	13.8
SMS0350HASAG	3x1.50	7.3	13.8
SMS0450HASAF	4x1.50	8.0	13.8
SMS0550HASAT	5x1.50	9.0	13.8
SMS0650HASAD	6x1.50	9.8	13.8
SMS0250HASAL	2x2.50	8.6	8.3
SMS0350HASAG	3x2.50	9.1	8.3
SMS0450HASAF	4x2.50	9.9	8.3
SMS0550HASAT	5x2.50	11.1	8.3
SMS0650HASAD	6x2.50	12.0	8.3
SMS0250HASAL	2x4.00	9.9	5.1
SMS0350HASAG	3x4.00	10.8	5.1
SMS0450HASAF	4x4.00	11.8	5.1
SMS0550HASAT	5x4.00	13.2	5.1
SMS0650HASAD	6x4.00	14.3	5.1
SMS0250HASAL	2x6.00	11,8	3.4
SMS0350HASAG	3x6.00	12.9	3.4
SMS0450HASAF	4x6.00	14.0	3.4
SMS0550HASAT	5x6.00	15.3	3.4
SMS0650HASAD	6x6.00	16.6	3.4

RS-232

Hand shake interface used for low data rates. Computer to printer or to modem or to other device. Max. speed 19.2 kbit/sec. Max. distance acc. to standard 15 m. Cables used are 6 to 25 conductors. Long distance transmission requires low capacitance (standard calls for 2500 pF link), No impedance specified.

RS-422

Balanced digital circuit. Medium speed data exchange. Long line modems and Daisy chain confi guration. Maximum transmission speed 10 Mbit/second (normal use under 1Mbit/sec). Max. transmission distance is 1200 metres. Ten nodes per bus. Cables used have mainly 24AWG conductors, two twisted pairs or multi-pair and Impedance of 100 Ohm.

RS-485

Balanced digital circuit. Medium speed fieldbus interfaces. Maximum transmission speed 35 Mbit/second (normal use 1 or 0.5 Mbit/sec).Max. transmission distance is 1200 metres, 32 nodes per bus. Cables used have mainly 24AWG conductors, one twisted pair or multi-pair and impedance of 120 Ohm.

KNX

Is a standardised (EN 50090, ISO/IEC 14543), OSI-based network communications protocol for intelligent buildings. KNX is the successor to, and convergence of, three previous standards: the European Home Systems Protocol (EHS), Bati- BUS, and the European Installation Bus (EIB or Instabus).

CATEGORY LAN

Ethernet cables are grouped into sequentially numbered categories ("cat") based on different specifications; sometimes the category is upda- ted with further clarification or testing standards LonWorks is a networking platform specifically created to address the needs of control applica- tions. The platform is built on a protocol created by Echelon Corporation for networking devices over media such as twisted pair, power lines, fibre optics, and RF. It is used for the automa- tion of various functions within buildings such as lighting and HVAC.

M- BUS (METER-BUS)

Ethernet cables are grouped into sequentially numbered categories ("cat") based on different specifications; sometimes the category is upda- ted with further clarification or testing standards LonWorks is a networking platform specifically created to address the needs of control applica- tions. The platform is built on a protocol created by Echelon Corporation for networking devices over media such as twisted pair, power lines, fibre optics, and RF. It is used for the automa- tion of various functions within buildings such as lighting and HVAC.

BACNET

is a communications protocol for building automation and control networks. It is was designed to allow communication of building automation and control systems for applications such as heating, ventilation, air-conditioning, lighting, access, and fire detection systems and their associated equipment. BACnet over IP can utilize Cat 6.

MODBUS

is a serial communications protocol published by Modicon in 1979 for use with its programmable logic controllers (PLCs). Simple and robust, it has since become one of the de facto standard com- munications protocols in the industry.

ramcro special cables

DATA LAN CABLE

MULTI-CONDUCTOR CABLE



RS-485 APPLICATIONS

Balanced digital circuit. Medium speed fieldbus interfaces. Maximum transmission speed 35 Mbit/second (normal use 1 or 0.5 Mbit/sec). Max. transmission distance is 1200 metres, 32 nodes per bus. Cables used have mainly 24AWG conductors, one twisted pair or multi-pair and impedance of 120 Ohm



CONSTRUCTION

Formation:
Tinned copper wire, Stranded
Insulation:
Polyolefine base - PO
Foam Polyetilene - FPE
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire
Braiding:
Tinned copper wire braid
Outher Sheath:
Polyvinyl Chloride - PVC
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Colour Outher Sheath:
Grey - PVC
Violet - LSZH(FRNC)

CABLE PRINTING

RAMCRO ITALY - R_____- DATA LAN CABLE - RS 485 - 1PR 24AWG SCREENED PVC
300 V 75 C IEC 60332-1/UL 1581 - RAMCRO CODE - "PROD. WEEK/YEAR" - MADE IN ITALY + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	>200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

IDENTIFICATION OF CORES

1 pair:
2 pair:
3 pair:
4 pair:

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C



CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



RS-485 APPLICATIONS

4AWG conductors, one twisted pair or multi-pair and impedance of 120 Ohm

Cable with 24AWG CONDUCTORS - FOAM PE/SCREEN (CAM+TCWB)/PVC

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MAR0108HBADX-T-RB	R1189	1x2x24AWG	5.7	38	15.46	41.0
MAR0208HBADX-T-RB	R1190	2x2x24AWG	8.4	60	15.46	41.0
MAR0308HBADX-T-RB	R1191	3x2x24AWG	8.9	73	15.46	41.0
MAR0408HBADX-T-RB	R1192	4x2x24AWG	9.7	87	15.46	41.0

Cable with 24AWG CONDUCTORS - SOLID PO/SCREEN (CAM+TCWB)/LSZH(FRNC)

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MAR0108HXEDX-T-RB	R1318	1x2x24AWG	5.6	36	15.46	41.0
MAR0208HXEDX-T-RB	R1319	2x2x24AWG	8.2	57	15.46	42.0
MAR0308HXEDX-T-RB	R1320	3x2x24AWG	8.7	69	15.46	42.0
MAR0408HXEDX-T-RB	R1321	4x2x24AWG	9.5	83	15.46	42.0

Cable with 22AWG CONDUCTORS - FOAM PE/SCREEN (CAM+TCWB)/PVC

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MAR0107HBADX-T-RB	R1080	1x2x22AWG	6.4	48	73.1	36.0
MAR0207HBADX-T-RB	R1295	2x2x22AWG	9.8	76	73.1	37.0
MAR0307HBADX-T-RB	R1296	3x2x22AWG	10.4	93	73.1	38.0
MAR0407HBADX-T-RB	R1297	4x2x22AWG	11.4	113	73.1	38.0

Cable with 22AWG CONDUCTORS - SOLID PO/SCREEN (CAM+TCWB)/LSZH(FRNC)

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MAR0107HXEDX-T-RB	R1401	1x2x22AWG	6.0	40	73.1	36.0
MAR0207HXEDX-T-RB	R1402	2x2x22AWG	9.1	66	73.1	37.0
MAR0307HXEDX-T-RB	R1403	3x2x22AWG	10.1	83	73.1	38.0
MAR0407HXEDX-T-RB	R1404	4x2x22AWG	11.0	100	73.1	38.0

Cable with 18AWG CONDUCTORS - SOLID PE/SCREEN (CAM+TCWB)/LSZH(FRNC)

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MAR0105HXEDX-T-RB	R1405	1x2x18AWG	8.9	75	90.0	32.0
MAR0205HXEDX-T-RB	R1406	2x2x18AWG	11.5	111	90.0	35.0
MAR0305HXEDX-T-RB	R1407	3x2x18AWG	13.5	138	90.0	38.0
MAR0405HXEDX-T-RB	R1408	4x2x18AWG	14.8	194	90.0	38.0

RS-422 APPLICATIONS

Balanced digital circuit. Medium speed data exchange. Long line modems and Daisy chain confi guration. Maximum transmission speed 10 Mbit/second (normal use under 1Mbit/sec). Max. transmission distance is 1200 metres. Ten nodes per bus. Cables used have mainly 24AWG conductors, two twisted pairs or multi-pair and Impedance of 100 Ohm



CONSTRUCTION

Formation:
Tinned copper wire, Stranded
Insulation:
Foam Polyetilene - FPE
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Individual Screen:
0,026 mm Aluminium / PETP tape over tinned copper drain wire
Outher Sheath:
Polyvinyl Chloride - PVC
Colour Outher Sheath:
Grey

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

IDENTIFICATION OF CORES

Pair 1: ● ●
Pair 2: ● ○
Pair 3: ● ●
Pair 4: ● ●
Pair 5: ● ●
Pair 6: ● ●

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C



CABLE PRINTING

RAMCRO ITALY - R_____- DATA LAN CABLE - RS 422 - 2PR 24AWG IND. SCREENED PVC 300 V 75 C IEC 60332-1/UL 1581 - RAMCRO CODE - "PROD.WEEK/YEAR" - MADE IN ITALY + BATCH + METER MARKING

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



ELECTRICAL DATA

Insulation Resistance @ 20°C:	>200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

RS-422 APPLICATIONS

24AWG conductors – PE insulation – PVC or LSZH(FRNC) sheath for RS-422 applications

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MAP0208HBADX-T-RB	R1382	2x2x24AWG	7.2	42	88.0	41.0
MAP0308HBADX-T-RB	R1383	3x2x24AWG	8.3	61	88.0	41.0
MAP0408HBADX-T-RB	R1384	4x2x24AWG	9.2	76	88.0	41.0
MAP0608HBADX-T-RB	R1386	6x2x24AWG	10.5	105	88.0	41.0

RS-232 APPLICATIONS

Hand shake interface used for low data rates. Computer to printer or modem or to the other device. Cables used are 4 to 25 conductors. Long distance transmission requires low capacitance (standard calls for 2500 pF link).



CONSTRUCTION

Formation:
Tinned copper wire, Stranded
Insulation:
Polyvinyl Chloride - PVC
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire
Outher Sheath:
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Colour Outher Sheath:
Violet

CABLE PRINTING

RAMCRO ITALY - R_____ - DATA LAN CABLE - RS 232 - 1PR 24AWG SCREENED PVC 300 V 75 C IEC 60332-1/UL 1581 - RAMCRO CODE - "PROD.WEEK/YEAR" - MADE IN ITALY + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	>200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

IDENTIFICATION OF CORES

Pair 1: ● ●
Pair 2: ● ○
Pair 3: ● ●
Pair 4: ● ●
Pair 5: ● ●
Pair 6: ● ●
Pair 7: ● ●
Pair 8: ● ○

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C



CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



24AWG conductors – PVC/LSZH(FRNC) insulation – PVC or LSZH(FRNC) sheath for RS-232 applications

Cable with 24AWG CONDUCTORS - PVC/PVC

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MAS0108HBAAH-T-RB	R1181	1x2x24AWG	3.7	21	88.0	135
MAS0208HBAAX-T-RB	R1182	2x2x24AWG	5.2	34	88.0	76
MAS0308HBAAX-T-RB	R1183	3x2x24AWG	5.5	41	88.0	76
MAS0408HBAAX-T-RB	R1184	4x2x24AWG	5.7	43	88.0	80
MAS0508HBAAX-T-RB	R1185	5x2x24AWG	6.5	52	88.0	80
MAS0608HBAAX-T-RB	R1186	6x2x24AWG	6.9	53	88.0	80
MAS0708HBAAX-T-RB	R1187	7x2x24AWG	6.9	59	88.0	80
MAS0808HBAAX-T-RB	R1188	8x2x24AWG	7.7	66	88.0	80

Cable with 24AWG CONDUCTORS - LSZH(FRNC)/LSZH(FRNC)

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MAS0108HXEEH-T-RB	R1640	1x2x24AWG	3.7	16	88.0	135
MAS0208HXEEX-T-RB	R1641	2x2x24AWG	5.2	27	88.0	76
MAS0308HXEEX-T-RB	R1642	3x2x24AWG	5.5	33	88.0	76
MAS0408HXEEX-T-RB	R1643	4x2x24AWG	5.7	37	88.0	80
MAS0508HXEEX-T-RB	R1644	5x2x24AWG	6.5	45	88.0	80
MAS0608HXEEX-T-RB	R1645	6x2x24AWG	6.9	48	88.0	80
MAS0708HXEEX-T-RB	R1646	7x2x24AWG	6.9	54	88.0	80
MAS0808HXEEX-T-RB	R1647	8x2x24AWG	7.7	61	88.0	80

MODBUS APPLICATIONS

Modbus is a serial communications protocol published by Modicon in 1979 for use with its pro- grammable logic controllers (PLCs). Simple and robust, its has since become one of the factor stan- dard communications protocols in the industry.



CONSTRUCTION

Formation:
Tinned copper wire, Stranded
Insulation:
Polyolefine base - PO
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire

Outher Sheath:
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Colour Outher Sheath:
Violet

CABLE PRINTING

RAMCRO ITALY - R_____ - DATA LAN CABLE - MODBUS - 2PR 22AWG IND. SCREENED PVC 300 V 75 C
IEC 60332-1/UL 1581 - RAMCRO CODE - "PROD.WEEK/ YEAR" - MADE IN ITALY + BATCH + METER MAR- KING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	>200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

IDENTIFICATION OF CORES

Pair 1: ● ●
Pair 2: ● ○
Pair 3: ● ●
Pair 4: ● ●
Pair 5: ● ●
Pair 6: ● ●
Pair 7: ● ●
Pair 8: ● ○

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Put up lenght 305 mt

MODBUS APPLICATIONS

22AWG conductors – PO insulation – PVC or LSZH(FRNC) sheath for MODBUS applications

Cable with 22AWG CONDUCTORS - PO/PVC

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MAP0207HBADH-T-RB	R1196	2x2x22AWG	5.8	36	57.4	100
MAP0307HBADX-T-RB	R1197	3x2x22AWG	6.3	50	57.4	100
MAP0607HBADX-T-RB	R1214	6x2x22AWG	8.0	83	57.4	100

Cable with 24AWG CONDUCTORS - LSZH(FRNC)/LSZH(FRNC)

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MAS0108HXEEH-T-RB	R1281	2x2x24AWG	6.3	47	57.4	150
MAS0208HXEEX-T-RB	R1282	3x2x24AWG	6.8	63	57.4	155
MAS0508HXEEX-T-RB	R1314	6x2x24AWG	9.3	110	57.4	155

M-BUS APPLICATIONS

M-BUS (Meter-Bus) is a european standard (EN 13757-2) physical and lnk layer, EN 13757-3 ap- plication layer) for the remote reading of gas or electricity meters. M-Bus is also suitable for other types of consumption meters.



CONSTRUCTION

Formation:
Tinned copper wire, Stranded
Insulation:
Thermoplastic Low Smoke, Halogen Free - LSZH(FRNC)
Polyolefine base - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Outher Sheath:
Polyvinyl chloride - PVC
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Polyolefine base - PO
Colour Outher Sheath:
Grey for PVC
Violet for LSZH (FRNC)
Black for LDPE

CABLE PRINTING

RAMCRO ITALY - R_____ - DATA LAN CABLE - M-BUS - 1PR 22AWG SCREENED PVC 300 V 75 C IEC 60332-1/UL 1581 - RAMCRO CODE - "PROD.WEEK/YEAR" - MADE IN ITALY + BATCH + METER MARKING

ELECTRICAL DATA

Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Inductance:	< 1 mH/km
Operating Voltage:	300 V

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

IDENTIFICATION OF CORES

Pair 1: ● ○

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C



CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



M-BUS APPLICATIONS

24AWG and 12AWG conductors – PO insulation – PVC or LSZH(FRNC) sheath for M-BUS applications

Cable with PO/UNSCREENED/PVC

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MSE0107HBADN-T-RB	R1301	1x2x22AWG	3.9	19	57.40	70
MSE0106HBADN-T-RB	R1300	1x2x20AWG	4.2	24	35.75	70
MSE0105HBADN-T-RB	R1203	1x2x18AWG	4.8	32	22.70	70
MSE0103HBADN-T-RB	R1198	1x2x16AWG	6.6	58	15.47	50
MSE0101HBADN-T-RB	R1222	1x2x14AWG	8.4	91	9.3	108
MSE0152HBADN-T-RB	R1302	1x2x12AWG	9.5	110	5.9	115

Cable with LSZH/UNSCREENED/LSZH

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MSE0107HXEEN-T-RB	R1311	1x2x22AWG	3.3	14	57.40	85
MSE0106HXEEN-T-RB	R1309	1x2x20AWG	3.5	17	35.75	80
MSE0105HXEEN-T-RB	R1271	1x2x18AWG	3.9	24	22.70	80
MSE0103HXEEN-T-RB	R1307	1x2x16AWG	4.6	33	15.47	75
MSE0101HXEEN-T-RB	R1306	1x2x14AWG	5.5	51	9.3	75
MSE0152HXEEN-T-RB	R1304	1x2x12AWG	6.7	78	5.9	75

Cable with PO/UNSCREENED/LDPE

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MSE0107HEDDN-T-RB	R1879	1x2x22AWG	4.2	14	57.40	70
MSE0106HEDDN-T-RB	R1878	1x2x20AWG	5.0	19	35.75	70
MSE0105HEDDN-T-RB	R1874	1x2x18AWG	5.5	25	22.70	70
MSE0103HEDDN-T-RB	R1872	1x2x16AWG	7.3	45	15.47	50
MSE0101HEDDN-T-RB	R1876	1x2x14AWG	8.4	66	9.3	108
MSE0152HEDDN-T-RB	R1880	1x2x12AWG	9.5	94	5.9	115

M-BUS APPLICATIONS

24AWG and 22AWG conductors – PO insulation – PVC or LSZH(FRNC) sheath for M-BUS applications.



CONSTRUCTION

Formation:
Tinned copper wire, Stranded

Insulation:
Polyolefine base - PO

Wrapping:
at least 1 layer of plastic tape 0,023 mm

Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire

Outher Sheath:
Thermoplastic low smoke, Halogen free - LSZH(FRNC)

CABLE PRINTING

RAMCRO ITALY - R_____ - DATA LAN CABLE - M-BUS - 1PR 22AWG UNSCREENED PVC 300 V 75 C IEC 60332-1/UL 1581 - RAMCRO CODE - "PROD.WEEK/YEAR" - MADE IN ITALY + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

IDENTIFICATION OF CORES

Pair 1: ● ○

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C



CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



M-BUS APPLICATIONS

24AWG and 12AWG conductors – PO insulation – PVC or LSZH(FRNC) sheath for M-BUS applications

Cable with 24AWG CONDUCTORS - PO/SCREENED/PVC

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MAS0107HBADN-T-RB	R1199	1x2x22AWG	4.3	25	57.40	75.0
MAS0106HBADN-T-RB	R1195	1x2x20AWG	5.1	31	35.75	75.0
MAS0105HBADN-T-RB	R1193	1x2x18AWG	5.5	42	22.70	75.0
MAS0103HBADN-T-RB	R1213	1x2x16AWG	7.5	69	15.47	60.0
MAS0101HBADN-T-RB	R1224	1x2x14AWG	8.5	94	9.3	76.0
MAS0152HBADN-T-RB	R1313	1x2x12AWG	9.3	115	5.9	77.0

Cable with 24AWG CONDUCTORS - LSZH/SCREENED/LSZH

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MAS0107HXEEN-T-RB	R1310	1x2x22AWG	3.4	17	57.40	130.0
MAS0106HXEEN-T-RB	R1308	1x2x20AWG	3.6	20	35.75	128.0
MAS0105HXEEN-T-RB	R1272	1x2x18AWG	4.0	27	22.70	125.0
MAS0103HXEEN-T-RB	R1270	1x2x16AWG	4.7	36	15.47	120.0
MAS0101HXEEN-T-RB	R1305	1x2x14AWG	5.6	54	9.3	120.0
MAS0152HXEEN-T-RB	R1303	1x2x12AWG	6.8	81	5.9	120.0

Cable with 24AWG CONDUCTORS - PO/SCREENED/LDPE

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
MAS0107HEDDN-T-RB	R1881	1x2x22AWG	4.3	19	57.40	75.0
MAS0106HEDDN-T-RB	R1877	1x2x20AWG	5.1	25	35.75	75.0
MAS0105HEDDN-T-RB	R1875	1x2x18AWG	5.5	36	22.70	75.0
MAS0103HEDDN-T-RB	R1870	1x2x16AWG	7.5	58	15.47	60.0
MAS0101HEDDN-T-RB	R1871	1x2x14AWG	8.5	78	9.3	76.0
MAS0152HEDDN-T-RB	R1873	1x2x12AWG	9.3	105	5.9	77.0

LONWORKS APPLICATIONS

22AWG conductors – PO insulation – PVC or LSZH(FRNC) sheath for LONWORKS applications



CONSTRUCTION

Formation:
Tinned copper wire, Solid
Insulation:
Polyolefine base - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire
Braiding:
Tinned copper wire braid
Outher Sheath:
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Colour Outher Sheath:
Violet

CABLE PRINTING

RAMCRO ITALY - R_____ - DATA LAN CABLE - LONWORKS - 1PR 22AWG SCREENED PVC 300 V 75 C IEC 60332-1/UL 1581 - RAMCRO CODE - "PROD.WEEK/YEAR" - MADE IN ITALY + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

IDENTIFICATION OF CORES

Pair 1:
Pair 2:

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C



CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



LONWORKS APPLICATIONS

22AWG conductors – PO insulation – PVC or LSZH(FRNC) sheath for LONWORKS applications

Cable with 24AWG CONDUCTORS - PO/UNSCREENED/LSZH(FRNC)

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
SSR0107HXEDX-RB	R1346	1x2x22AWG	3.2	13	57.4	46.0
SSR0107HXEDX-RB	R1347	2x2x22AWG	5.0	24	57.4	46.0

Cable with 24AWG CONDUCTORS - PO/SCREENED/LSZH(FRNC)

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
SAM0107HXEDX-RB	R1348	1x2x22AWG	4.9	33	57.4	46.0
SAM0207HXEDX-RB	R1349	2x2x22AWG	8.0	72	57.4	46.0

KNX OR GENERAL BUS APPLICATIONS

0.8 mm conductors – PE insulation – PVC or LSZH(FRNC) sheath for EIB applications



CONSTRUCTION

Formation:
Plain annealed copper wire, Solid
Insulation:
Polyolefine base - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire
Outher Sheath:
Polyvinyl chloride - PVC or
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Colour Outher Sheath:
Violet

CABLE PRINTING

RAMCRO ITALY - R_____ - EIB CABLE 4x0.8mm SCREENED LSZH (FRNC) - - RAMCRO CODE - "PROD. WEEK/YEAR" - MADE IN ITALY + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

IDENTIFICATION OF CORES

Pair 1: ●
Pair 2: ●
Pair 3: ○
Pair 4: ●

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



KNX OR GENERAL BUS APPLICATIONS

0.8 mm conductors – PO insulation – PVC or LSZH(FRNC) sheath for EIB applications

Cable with 24AWG CONDUCTORS - PO/SCREEN/PVC - CERTIFIED KNX REG. N. 566/16623/20

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
SAM0108HIADH-RB	☆ R1219 ☆	1x2x24AWG	5.1	38	37.0	100.0
SAM4108HIADX-RB	☆ R1217 ☆	1x4x24AWG	5.7	53	37.0	100.0

Cable with 24AWG CONDUCTORS - PO/SCREEN/LSZH(FRNC) - CERTIFIED KNX REG. N. 566/16624/20

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
SAM0108HIEDH-RB	☆ R1220 ☆	1x2x24AWG	5.1	36	37.0	100.0
SAM4108HIEDX-RB	☆ R1218 ☆	1x4x24AWG	5.7	51	37.0	100.0

Cable with 24AWG CONDUCTORS - PO/SCREEN/PE

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
SAM0108HIDDH-RB	R1901	1x2x24AWG	5.1	48	37.0	100.0
SAM4108HIDDX-RB	R1900	1x4x24AWG	5.7	33	37.0	100.0

CAT3

CAT3



CONSTRUCTION

Formation:
Plain annealed copper wire, Solid
Insulation:
Polyolefine base - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Outher Sheath:
Polyvinyl chloride - PVC or
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Colour Outher Sheath:
Violet

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

IDENTIFICATION OF CORES

Pair 1:
Pair 2:
Pair 3:
Pair 4:

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C



CABLE PRINTING

RAMCRO ITALY - R_____ - DATA LAN CABLE 4 PAIRS UTP
CAT 3 RAMCRO CODE - "PROD.WEEK/YEAR" -
MADE IN ITALY + BATCH + METER MARKING

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

CAT3

Cable with 24AWG CONDUCTORS - PO/SCREEN/PVC

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
CAT3-2P-RB	R1031	2x2x24AWG	3.6	16	96.0	66
CAT3-6P-RB	R1266	6x2x24AWG	5.5	39	96.0	66
CAT3-12P-RB	R1267	12x2x24AWG	7.4	73	96.0	66
CAT3-25P-RB	R1032	25x2x24AWG	11.8	154	96.0	66
CAT3-50P-RB	R1033	50x2x24AWG	15.5	280	96.0	66
CAT3-100P-RB	R1034	100x2x24AWG	21.6	530	96.0	66
CAT3-150P-RB	R1268	150x2x24AWG	26.8	800	96.0	66
CAT3-200P-RB	R1269	200x2x24AWG	29.4	1040	96.0	66

TECHNICAL PERFORMANCE

FREQUENCY [MHz]	MAX. ATTENUATION [dB/100m]	MAX. NEXT [dB]	MIN. RETURN LOSS [dB]	IMPEDANCE [Ohm]
1	2.6	41.3	12.0	100 ± 15
4	5.6	32.3	12.0	100 ± 15
8	8.5	27.8	12.0	100 ± 15
10	9.7	26.3	12.0	100 ± 15
16	13.1	23.3	12.0	100 ± 15

COLOR CODE

PAIR N°	PAIR COLOR	PAIR N°	PAIR COLOR	PAIR N°	PAIR COLOR
1	WHITE/BLUE	10	RED/GREY	19	YELLOW/
2	WHITE/ORANGE	11	BLACK/BLUE	20	BROWN
3	WHITE/GREEN	12	BLACK/ORANGE	21	YELLOW/GREY
4	WHITE/BROWN	13	BLACK/GREEN	22	PURPLE/BLUE
5	WHITE/GREY	14	BLACK/BROWN	23	PURPLE/OR-
6	RED/BLUE	15	BLACK/GREY	24	ANGE
7	RED/ORANGE	16	YELLOW/BLUE	25	PURPLE/GREEN
8	RED/GREEN	17	YELLOW/ORANGE		PURPLE/BROWN
9	RED/BROWN	18	YELLOW/GREEN		PURPLE/GREY

* Each group of 25 pairs, have a different color of numbered tapes

FTP UTP 5E

FTP UTP 5e



CONSTRUCTION

Formation:
Plain annealed copper wire, Solid
Insulation:
Polyolefine base - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire
Outher Sheath:
Polyvinyl chloride - PVC or
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Colour Outher Sheath:
Violet

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

IDENTIFICATION OF CORES

Pair 1:
Pair 2:
Pair 3:
Pair 4:

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

CABLE PRINTING

RAMCRO ITALY - R_____ - DATA LAN CABLE 4 PAIRS UTP CAT.5 24AWG PVC 500 MHz ISO/IEC 11801 ANSI/TIA/EIA-568 C2 IEC 60332-1/UL 1685 - RAMCRO CODE - "PROD.WEEK/YEAR" + BATCH + METER MARKING

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

FTP / UTP 5e

Cable with 24AWG CONDUCTORS - PO/SCREEN/PVC

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
UTPLEVEL5-4X2X0.22-RB	R1035	U-UTP	PVC	5.0	30	93.8
UTPLEVEL5-4X2X0.22ZA-RB	R1235	U-UTP	PVC	5.0	29	93.8
FTPLEVEL54X2X0.22-RB	R1036	U-FTP	LSZH(FRNC)	6.3	42	93.8
FTPLEVEL54X2X0.22ZA-RB	R1236	U-FTP	LSZH(FRNC)	6.3	43	93.8

Cable with 24AWG CONDUCTORS - PO/SCREEN/PVC

FREQUENCY [MHz]	MIN.RETURN LOSS [dB/100m]	MAX. ATTENUATION [dB]	MIN. NEXT [dB]	MAX. TIME DELAY [ns/100m]	MAX. PS-NEXT [dB]	MIN. ELFEXT [dB]	MIN. PSELFEXT [dB]
1	20.0	2.0	65.3	570.00	62.3	64.0	61.0
4	23.0	4.1	56.3	552.00	53.3	52.0	49.0
8	24.5	5.8	51.8	546.73	48.8	45.9	42.9
10	25.0	6.5	50.3	545.38	47.3	44.0	41.0
16	25.0	8.2	47.2	543.00	44.4	39.9	36.9
20	25.0	9.3	45.8	542.05	42.8	38.0	35.0
25	24.3	10.4	44.3	541.20	41.3	35.8	33.0
31.25	23.6	11.7	42.9	540.44	39.9	34.1	31.1
62.5	21.5	17.0	38.4	538.55	35.4	28.1	25.1
100	20.1	22.0	35.3	537.60	32.3	24.0	21.0

FTP UTP 6

24AWG and 22AWG conductors – PO insulation – PVC or LSZH(FRNC) sheath for RS-485 applications



CONSTRUCTION

Formation:
Plain annealed copper wire, 7 Strand
Insulation:
Polyolefine base - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire
Outher Sheath:
Polyvinyl chloride - PVC or
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Colour Outher Sheath:
Violet

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

IDENTIFICATION OF CORES

Pair 1:
Pair 2:
Pair 3:
Pair 4:

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

CABLE PRINTING

RAMCRO ITALY - R_____ - DATA LAN CABLE 4 PAIRS UTP
CAT.6 23AWG PVC 500 MHz ISO/IEC 11801
ANSI/TIA/EIA-568 C2 IEC 60332-1/UL 1685 - RAMCRO
CODE - "PROD.WEEK/YEAR" + BATCH + METER MARKING

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

FTP / UTP 6

Cable with 24AWG CONDUCTORS - PO/SCREEN/PVC

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
UTPLEVEL6-4X2X0.22-RB	R1037	U-UTP	PVC	6.2	42	93.8
UTPLEVEL6-4X2X0.22ZA-RB	R1237	U-UTP	LSZH(FRNC)	6.2	42	93.8
FTPLEVEL64X2X0.22-RB	R1038	U-FTP	PVC	7.4	56	93.8
FTPLEVEL64X2X0.22ZA-RB	R1238	U-FTP	LSZH(FRNC)	7.4	54	93.8

TECHNICAL PERFORMANCE

FREQUENCY [MHz]	MIN.RETURN LOSS [dB/100m]	MAX. ATTENUATION [dB]	MIN. NEXT [dB]	MAX. TIME DELAY [ns/100m]	MAX. PSNEXT [dB]	MIN. ELFEXT [dB]	MIN. PSELFEXT [dB]
1	20.0	2.0	74.3	570.00	72.3	67.8	64.8
4	23.0	3.8	65.3	552.00	63.3	55.8	52.8
8	24.5	5.3	60.8	546.73	58.8	49.7	46.7
10	25.0	6.0	59.3	545.38	57.3	47.8	44.8
16	25.0	7.6	56.2	543.00	54.2	43.7	40.7
20	25.0	8.5	54.8	542.05	52.8	41.8	38.8
25	24.3	9.5	53.3	541.20	51.3	39.8	36.8
31.25	23.6	10.7	51.9	540.44	49.9	37.9	34.9
62.5	21.5	15.4	47.4	538.55	45.4	31.9	28.9
100	20.1	19.8	44.3	537.80	42.3	27.8	24.8
200	18.0	29.0	39.8	536.54	37.8	21.8	18.8
250	17.3	32.8	38.3	536.27	36.3	19.8	16.8

FTP UTP 6A

24AWG and 22AWG conductors – PO insulation – PVC or LSZH(FRNC) sheath for RS-485 applications



CONSTRUCTION

Formation:
Plain annealed copper wire, 7 Strand
Insulation:
Polyolefine base - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire
Outher Sheath:
Polyvinyl chloride - PVC or
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Colour Outher Sheath:
Violet

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

IDENTIFICATION OF CORES

Pair 1:
Pair 2:
Pair 3:
Pair 4:

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

CABLE PRINTING

RAMCRO ITALY - R_____ - DATA LAN CABLE 4 PAIRS UTP CAT.6A 23AWG PVC 500 MHz ISO/IEC 11801 ANSI/TIA/EIA-568 C2 IEC 60332-1/UL 1685 - RAMCRO CODE - "PROD.WEEK/YEAR" + BATCH + METER MARKING

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

FTP / UTP 6A

RAMCRO CODE	PART N°	FORMATION [n° x AWG]	NOM. OUTER DIAM. [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACIT. [pF/m]
UTPLEVEL6A4X2X0.22-RB	R1055	U-UTP	PVR	7.0	160	93.8
UTPLEVEL6A4X2X0.22ZA-RB	R1200	U-UTP	LSZH(FRNR)	7.0	155	93.8
FTPLEVEL6A4X2X0.22-RB	R1056	F-UTP	PVR	7.2	200	76.9
FTPLEVEL6A4X2X0.22ZA-RB	R1052	F-UTP	LSZH(FRNR)	7.2	196	76.9
UFTPLEVEL6A4X2X0.22-RB	R1057	U-FTP	PVR	7.8	210	76.9
UFTPLEVEL6A4X2X0.22ZA-RB	R1053	U-FTP	LSZH(FRNR)	7.8	206	76.9

TECHNICAL PERFORMANCE

FREQUENCY [MHz]	MIN.RETURN LOSS [dB/100m]	MAX. ATTENUATION [dB]	MIN. NEXT [dB]	MAX. TIME DELAY [ns/100m]	MAX. PS-NEXT [dB]	MIN. ELFEXT [dB]	MIN. PSELFEXT [dB]
1	20.0	3.7	74.3	72.3	55.9	100 ± 15	61.0
10	25.0	5.8	59.3	57.3	47.8	100 ± 15	49.0
31.25	23.6	10.4	51.9	49.9	37.9	100 ± 15	42.9
100	20.1	19.0	44.3	42.3	27.8	100 ± 15	41.0
300	17.3	34.2	37.1	35.1	18.1	100 ± 25	36.9
500	17.3	45.2	33.8	31.8	14.0	100 ± 15	35.0

CAT 7

24AWG and 22AWG conductors – PO insulation – PVC or LSZH(FRNC) sheath for RS-485 applications



CONSTRUCTION

Formation:
Plain annealed copper wire, 7 Strand
Insulation:
Polyolefine base - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire
Outher Sheath:
Polyvinyl chloride - PVC or
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Colour Outher Sheath:
Violet

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

IDENTIFICATION OF CORES

Pair 1:
Pair 2:
Pair 3:
Pair 4:

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

CABLE PRINTING

RAMCRO ITALY - R_____- DATA LAN CABLE 4 PAIRS S/FTP CAT.7 23AWG PVC 500 MHz ISO/IEC 11801 ANSI/TIA/EIA-568 C2 IEC 60332-1/UL 1685 - RAMCRO CODE - "PROD.WEEK/YEAR" + BATCH + METER MARKING

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

Cat 7

RAMCRO CODE	PART N°	TYPE	SHEATH	NOM. OUTER DIAMETER [mm]	NOM. WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]
SFTPLEVEL7-RB	R1039	S-FTP	LSZH(FRNC)	7.8	68	57.9

TECHNICAL PERFORMANCE

FREQUENCY [MHz]	MIN.RETURN LOSS [dB/100m]	MAX. ATTENUATION [dB]	MIN. NEXT [dB]	MAX. TIME DELAY [ns/100m]	MAX. PS-NEXT [dB]	MIN. ELFEXT [dB]	MIN. PSELFEXT [dB]
1	100 ± 15	20.0	2.0	80	75	78	75
4	100 ± 15	23.0	3.7	80	75	78	75
10	100 ± 15	25.0	5.9	80	75	74	71
16	100 ± 15	25.0	7.4	80	75	70	67
20	100 ± 15	25.0	8.3	80	75	68	65
31.25	100 ± 15	23.6	10.4	80	75	64	61
62.5	100 ± 15	21.5	14.9	75.5	72.5	58	55
100	100 ± 15	201	19.0	72.4	69.4	64	51
200	100 ± 25	17.3	27.5	67.9	64.9	48	45
250	100 ± 25	17.3	31.0	66.5	63.5	46	43
300	100 ± 25	17.3	34.2	61.9	62.2	40	37
600	100 ± 25	17.3	50.1	60.8	57.7	38	35

CAT 7A

24AWG and 22AWG conductors – PO insulation – PVC or LSZH(FRNC) sheath for RS-485 applications



CONSTRUCTION

Formation:
Plain annealed copper wire, 7 Strand
Insulation:
Polyolefine base - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over tinne copper drain wire
Outher Sheath:
Polyvinyl chloride - PVC or
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Colour Outher Sheath:
Violet

STANDARD REFERENCES

- (BS) EN 50290-2
- IEC 60228
- IEC 60332-1 for PVC sheath
- IEC 60332-3-24 for LSZH(FRNC) sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

IDENTIFICATION OF CORES

Pair 1:
Pair 2:
Pair 3:
Pair 4:

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

CABLE PRINTING

RAMCRO ITALY - R_____ - DATA LAN CABLE 4 PAIRS S/FTP CAT.7A 23AWG PVC 500 MHz ISO/IEC 11801 ANSI/TIA/EIA-568 C2 IEC 60332-1/UL 1685 - RAMCRO CODE - "PROD.WEEK/YEAR" + BATCH + METER MARKING

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Put up lenght 305 mt



ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance:	< 150 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

Cat 7

RAMCRO CODE	PART N°	TYPE	SHEATH	NOM. OUTER DIAMETER [mm]	NOM. WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]
SFTPLEVEL7A-RB	R1201	S-FTP	LSZH(FRNR)	7.8	68	

TECHNICAL PERFORMANCE

FREQUENCY [MHz]	IMPEDANCE [OHM]	MIN. RETURN LOSS [dB/100m]	MAX. ATTENUATION [dB/100m]	MAX. TIME DELAY [ns/100m]	MIN. NEXT [dB]	MIN. PS-NEXT [dB]
4	100 ± 15	23.0	3.7	80.0	77.0	78.0
10	100 ± 15	25.0	5.9	80.0	77.0	74.3
16	100 ± 15	25.0	7.3	80.0	77.0	72.8
20	100 ± 15	25.0	8.2	80.0	77.0	71.9
31.25	100 ± 15	23.6	10.3	80.0	77.0	69.9
62.5	100 ± 15	21.5	14.6	80.0	77.0	60.6
100	100 ± 15	20.1	18.5	78.4	75.4	53.9
300	100 ± 15	17.3	32.7	71.2	68.2	38.6
600	100 ± 25	17.3	47.1	66.7	63.7	19.6
800	100 ± 25	17.3	54.9	64.9	61.9	9.93
1000	100 ± 25	16.0	61.9	63.4	60.4	1.47

DEFENCE STANDARD 61-12 PART 4 CABLE

These Multi-Core flexible cables are designed for high density wiring between components within instruments and electronic equipment. They are extensively used in aircraft, process control systems, computers, data processors, military vehicles and military equipment.



CONSTRUCTION

Voltage Rating
Cores with 7/0.2 mm conductors:
440V r.m.s. at frequencies up to 1.6 kHz
Maximum Resistance of Conductor at 20°C
7/0.2 mm: 92 ohms/km
Temperature Rating
Fixed: -30°C to + 70°C
Flexed: -15°C to +70°C
Minimum Bending Radius
Fixed: 7.5 x overall diameter

CONSTRUCTION

Conductor
Stranded tinned copper conductor; 0.22mm^2 (7/0.2mm)
Insulation
PVC (Polyvinyl Chloride)
Screen
TCWB (Tinned Copper Wire Braid)
Sheath
PVC (Polyvinyl Chloride)
Sheath Colour
Black

Circular Conductor, PVC Insulated, PVC Sheathed, Def Stan 61/12 Part 4

NO. OF CORES	NOMINAL THICKNESS OF SHEATH mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
2	0.45	3.35	13
3	0.45	3.35	16
4	0.45	3.85	20
6	0.45	4.55	30
12	0.55	6.1	53
18	0.65	7.4	80
25	0.65	8.7	100
36	0.65	9.8	140
50	0.75	11.6	200

Circular Conductor, PVC Insulated, Collectively Screened Cores, PVC Sheathed, Def Stan 61/12 Part 4

NO. OF CORES	NOMINAL THICKNESS OF SHEATH mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
2	0.45	3.85	23
3	0.45	3.95	27
4	0.45	4.35	32
6	0.55	5.6	55
8	0.55	5.6	60
12	0.55	6.9	83
18	0.65	8.2	110
25	0.65	9.5	150
36	0.75	10.8	200
50	0.75	12.6	270

DEFENCE STANDARD 61-12 PART 4 CABLE

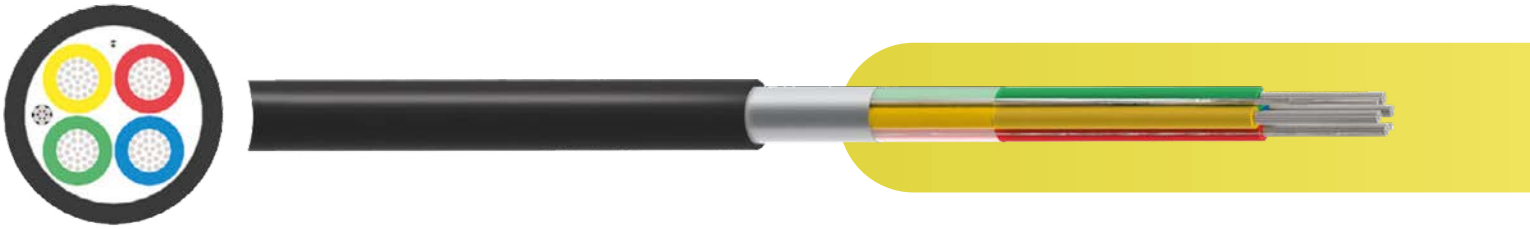
These Multi-Core flexible cables are designed for high density wiring between components within instruments and electronic equipment. They are extensively used in aircraft, process control systems, computers, data processors, military vehicles and military equipment.

Circular Conductor, PVC Insulated, Individually Screened Cores, PVC Sheathed, Def Stan 61/12 Part 4

NO. OF CORES	NOMINAL THICKNESS OF SHEATH mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
2	0.45	4.25	22
3	0.45	4.55	29
4	0.55	5.1	40
6	0.55	6.1	58
12	0.65	8.2	110
18	0.65	9.6	150
25	0.75	11.65	210
36	0.75	13.1	290
50	0.9	15.6	410

DEFENCE STANDARD 61-12 PART 4 LSZH CABLE

These multi-core flexible cables are designed for high density wiring between components within instruments and electronic equipment. They are extensively used in aircraft, process control systems, computers, data processors, military vehicles and military equipment. The LSZH construction ensures enhanced performance in the event of fire reducing the emmisions of smoke and toxic fumes making them a perfect solution for sensitive equipment areas. For installations where fire, smoke emissions and toxic fumes create a potential threat to life and equipment.



CONSTRUCTION

Voltage Rating
440V r.m.s. at frequencies up to 1.6kHz
Maximum Resistance of Conductor at 20°C
7/0.2: 92ohms/km
Temperature Rating
Fixed: -30°C to +60°C
Flexed: -15°C to +60°C
Minimum Bending Radius
Fixed: 7.5 x overall diameter

NO. OF CORES	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
2	3.7	23
3	4	27
4	4.3	32
6	5.1	60
12	6.6	83
18	7.8	110
25	9.2	150

NO. OF CORES	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
2	3.9	23
3	4.1	27
4	4.4	32
6	5.6	53
8	5.9	61
12	6.9	62
18	8.2	144
25	9.5	148

STANDARDS

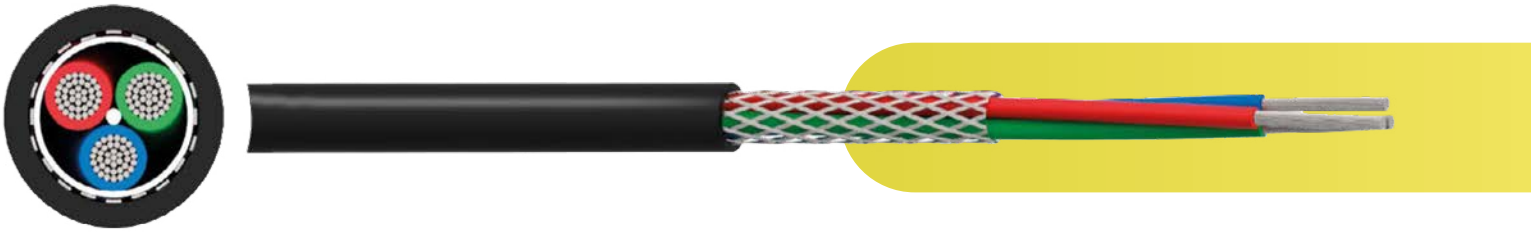
Defence Standard 61-12 Part 4, UL 1581, BS EN IEC 60574-1 BS EN IEC 60574-2, BS EN/IEC 61034-2

CONSTRUCTION

Conductor
Class 2 Stranded tinned copper conductor
Insulation
LSZH (Low Smoke Zero Halogen)
Tape
Mylar
Drain Wire
Stranded tinned copper
Screen
Al-foil (Aluminium foil)
Tape
Mylar
Rip Cord
Nylon
Sheath
LSZH (Low Smoke Zero Halogen)
Sheath Colour
Black

DEFENCE STANDARD 61-12 PART 5 CABLE

These Multi-Core flexible cables are designed for high density wiring between components and within instruments and electronic equipment. They are extensively used in aircraft, process control systems, computers, data processors, military vehicles and military equipment.



CONSTRUCTION

Voltage Rating
440V r.m.s. at frequencies up to 1.6kHz
Maximum Resistance of Conductor at 20°C
16/0.2 : 40.1 ohms/km
Current Carrying Capacity
2.5 Amps
Temperature Rating
Fixed: -30°C to +70°C
Flexed: -15°C to +70°C
Minimum Bending Radius
Fixed: 7.5 x overall diameter

CONSTRUCTION

Conductor
Class 5 flexible tinned copper conductor
Insulation
PVC (Polyvinyl Chloride)
Screen
TCWB (Tinned Copper Wire Braid)
Sheath
PVC (Polyvinyl Chloride)
Sheath Colour
Black

Circular Conductor, PVC Insulated, PVC Sheathed, Def Stan 61/12 Part 4

NO. OF CORES	NOMINAL THICKNESS OF SHEATH mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
2	0.9	5.5	34
3	0.9	5.8	42
4	0.9	6.3	54
6	0.9	7.3	75
8	0.9	8.5	96
12	0.9	9.5	120
18	0.9	11	180
25	0.9	13.1	230

Circular Conductor, PVC Insulated, Collectively Screened Cores, PVC Sheathed, Def Stan 61/12 Part 5

NO. OF CORES	NOMINAL THICKNESS OF SHEATH mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
2	0.9	6.5	69
3	0.9	6.8	79
4	0.9	7.3	92
6	0.9	8.3	120
8	0.9	8.9	140
10	0.9	9.3	165
12	0.9	10.6	190
18	0.9	12	250
25	0.9	14	320

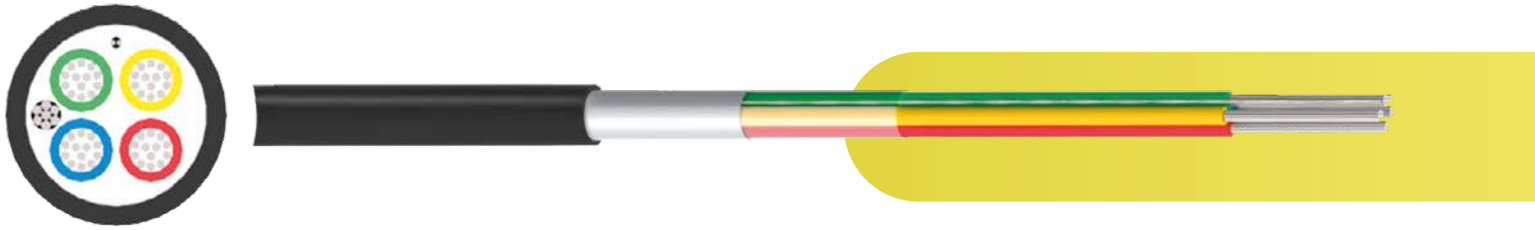
DEFENCE STANDARD 61-12 PART 5 CABLE

Circular Conductor, PVC Insulated, Individually Screened Cores, PVC Sheathed, Def Stan 61/12 Part 5

NO. OF CORES	NOMINAL THICKNESS OF SHEATH mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
2	0.9	6	47
3	0.9	6.8	60
4	0.9	7.4	75
6	0.9	8.7	110
7	0.9	8.7	120
12	0.9	11.3	190
18	0.9	13.3	270
25	0.9	15.9	360

DEFENCE STANDARD 61-12 PART 5 LSZH CABLE

These multicore flexible cables are designed for high density wiring between components within instruments and electronic equipment. They are extensively used in aircraft, process control systems, computers, data processors, military vehicles and military equipment. For installations where fire, smoke emissions and toxic fumes create a potential risk to life and equipment.



CONSTRUCTION

Voltage Rating
440V r.m.s. at frequencies up to 1.6kHz
Maximum Resistance of Conductor at 20°C
16/0.2: 40.1ohms/km
Current Carrying Capacity
2.5 Amps
Temperature Rating
Fixed: -30°C to +60°C
Flexed: -15°C to +60°C
Minimum Bending Radius
Fixed: 7.5 x overall diameter

LSZH Insulated, Foil Screen, LSZH Sheath

NO. OF CORES	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
2	4.8	45
4	6.2	60
6	7.2	81
8	8.2	104
12	9.7	132
18	12.6	198

LSZH Insulated, TCWB (Tinned Copper Wire Braid), LSZH Sheath

NO. OF CORES	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
2	6.5	66
3	6.8	76
4	7.3	90
6	8.3	114
8	8.9	135
5 Pair	11.3	179
12	10.5	183
18	12.5	256
25	14.1	321

STANDARDS

Defence Standard 61-12 Part 5, UL 1581,
BS EN IEC 60574-1/2, BS EN/IEC 61034-2

CONSTRUCTION

Conductor
Class 5 flexible Stranded tinned copper conductor
Sizes
16 strands/0.2 mm
Insulation
LSZH (Low Smoke Zero Halogen)
Tape
Mylar
Drain Wire
Stranded tinned copper
Screen
Al-foil (Aluminium foil)
Tape
Mylar
Rip Cord
Nylon
Sheath
LSZH (Low Smoke Zero Halogen)
Sheath Colour
Black

LSZH Insulated, TCWB (Tinned Copper Wire Braid), LSZH Sheath

NO. OF CORES	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
2	5.5	35
3	5.8	45
4	6.5	73
6	7.3	128
8	9.5	178
10	11	247
12	13.4	345
18	15.1	463
25	17.6	543



INDUSTRIAL & AUTOMOTIVE


ramcro
special cables
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PROFIBUS DPType

ProfiBus DP cables are suitable for communication between masters ans slaves in a ProfiBus system, cyclical exchange data with all of the slaves assigned to a master, one at a time, according to its list of assigned slaves taken from the master record. Suitable for fast and cyclical exchange data with Master and its Slaves, where the class 1 master use the bandiwith by realizing asynchronous data exchanges with the Slaves using both confirmed (read inputs, read outputs) and/or not confirmed services (freeze, sync).



CONSTRUCTION

Formation:
Bare copper solid or flexible
Insulation:
Foam polyolefin - FPE
1st overall shield:
overlapped shielding tape aluminium/polyester tape
- Coverage ≥ 100 %
2nd overall shield:
braid shield tinned copper - Coverage ≥ 65 %
Outher Sheath:
Polyvinyl Chloride - PVC
Thermoplastic low smoke, Halogen free - LSZH(FRNC)
Colour Outher Sheath:
Violet - PVC
Violet - LSZH(FRNC)

IDENTIFICATION OF CORES

2 Cores:

ELECTRICAL DATA

Nominal Impedance:	150±10% ohm
Capacitance:	≤ 30 pF/m
Transmission speed:	Up to 12Mbit/s
Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Operating Voltage:	300 V

STANDARD REFERENCES

- DIN EN 61784-1
- DIN EN 61158
- NETBUS L2/F.I.P.(Factor,Instrumentation,Protocol)
- PROFIBUS® DP (DIN 19245)
- RS 485
- IEC 60332-1-2 for PVC sheath
- IEC 60754-1&2 for LSZH(FRNC) sheath
- IEC 61034 for LSZH(FRNC) sheath

CHARACTERISTICS

Building Management Systems Cable

Min. Bending Radius
10 x cable diameter

Put up lenght 305 mt

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +50°C

Cable with FPE/DoubleSCREEN/PVC

RAMCRO CODE	Copper Class	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
MRT0122HXA4X-DP	Solid	1x2x22AWG	8	65	55.4	30.0
SDS0107HXA4X-DP	Flexible	1x2x22AWG	8	65	55.4	30.0

Cable with FPE/DoubleSCREEN/LSZH(FRNC)

RAMCRO CODE	Copper Class	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
MRT0122HXE4X-DP	Solid	1x2x22AWG	8	65	55.4	30.0
SDS0107HXE4X-DP	Flexible	1x2x22AWG	8	65	55.4	30.0

ETHER CAT.Type

This range of cables accommodates any application, including drag-chain applications involving up to 20 million alternating bending cycles. Not only that, but EtherCAT and fieldbus cables also enable secure data transmission that is optimized for industrial applications and harsh environmental conditions. Fully tested, the cables feature a high-quality 360° shield connection for optimum electromagnetic compatibility.



CONSTRUCTION

Formation:
Bare copper solid
Tinned copper flexible
Insulation:
Polyolefin - PE
1st overall shield:
Overlapped shielding tape aluminium tape
- Coverage 2nd overall shield:
Braid shield tinned copper - Coverage ≥ 85%
Outher Sheath:
Polyvinyl Chloride - PVC
Colour Outher Sheath:
Green

IDENTIFICATION OF CORES

4 Cores: ○ ● ● ●

ELECTRICAL DATA

Nominal Impedance:	100±15% ohm
Capacitance:	≤ 60 pF/m
Transmission speed:	Up to 100Mbit/s
Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	3000 V
Test Voltage Core-Screen:	3000 V
Operating Voltage:	1000 V

STANDARD REFERENCES

- DIN VDE 0295, IEC 60228 or CEI 20-29
- 1581, 758(UL); C22.2 n° 210(CSA)
- IEC 61156-3(EU);
- CEI EN 50288-2-1(EU); EIA/TIA 568-B.2
- ISO/IEC 11801-1 (CL. D)

CHARACTERISTICS

Building Management Systems Cable



Min. Bending Radius
10 x cable diameter



Put up lenght 305 mt



TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +80°C



Cable with PE/DoubleSCREEN/PVC

RAMCRO CODE	Copper Class	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
SDS4107HIADX-T-ETC	Tinned / Flexible	1x4x22AWG	6,5	63	55,4	< 60,0
MRT4122HIADX-ETC	Bare / Solid	1x4x22AWG	6,5	63	55,4	< 60,0

ETHERNETType

Ethernet cables are standard wires that connect computers to a network. These cables are specifically designed to facilitate easy communication between disparate electronic equipment. These electronic devices can either be fax machines, printers, scanners, or personal computers. An Ethernet cable facilitates communication between the internet servers and your personal computer. The cable provides stable internet connection. This means that you can work all day and download and upload your files without stress.



CONSTRUCTION

Formation:
Bare copper solid or flexible
Insulation:
Foam polyolefin - FPE
1st overall shield:
Overlapped shielding tape aluminium/polyester tape
- Coverage ≥ 100 %
2nd overall shield:
Braid shield tinned copper - Coverage ≥ 85%
Outher Sheath:
Polyvinyl Chloride - PVC
Colour Outher Sheath:
Green

IDENTIFICATION OF CORES

2 Cores: ○ ● ○ ●

ELECTRICAL DATA

Nominal Impedance:	100±15% ohm
Capacitance:	≤ 44 pF/m, ≤ 50 pF/m
Transmission speed:	Up to 10Gbit/s
Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	500 V / 2000 V
Test Voltage Core-Screen:	500 V / 2000 V
Operating Voltage:	30 V / 300 V

STANDARD REFERENCES

- DIN VDE 0295, IEC 60228 or CEI 20-29
- 1581, 444, 758(UL); C22.2 n° 210(CSA); ANSI/ TIA/EIA 568-B.2-1;
- IEC EN 61156-5(EU); ISO/IEC 11801-1 (CL.F)
- 1581, 758(UL); C22.2 n° 210(CSA); IEC 61156-3(EU); CEI EN
- 50288-2-1(EU); EIA/TIA 568-B.2; ISO/IEC 11801-1 (CL.D)

CHARACTERISTICS

Building Management Systems Cable



Min. Bending Radius
10 x cable diameter



Put up lenght 305 mt



TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +80°C



RAMCRO CODE	Copper Class	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
MRT0408HIA4X-ETN	Solid	4x2x24AWG	6,3	54	90	< 44,0

Cable with FPE/DoubleSCREEN/PVC - 300 V

RAMCRO CODE	Copper Class	FORMATION [n° x AWG]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
MRT0208HIA4X-ETN	Solid	2x2x24AWG	5,8	42	90	< 44,0

CANOPENType

The CANopen has been standardized since late 2002 as CENELEC EN 50325-4. It is now well established in a various industrial communication areas including manufacturing, transport systems, maritime electronics, medical devices, and building automation. CANopen enables communications between devices from different manufacturers and ensures compatibility between and interchangeability of these devices.



CONSTRUCTION

Formation:
Bare copper solid or flexible
Insulation:
Foam polyolefin - FPE / Polyolefin - PE
1st overall shield:
Overlapped shielding tape aluminium/polyester tape
- Coverage ≥ 100 %
2nd overall shield:
braid shield tinned copper - Coverage ≥ 85% (+ drain wire if required)
Outher Sheath:
Polyvinyl Chloride - PVC
Colour Outher Sheath:
Violet

IDENTIFICATION OF CORES

DIN 47100

ELECTRICAL DATA

Nominal Impedance:	120±15% ohm
Capacitance:	≤ 50 pF/m
Transmission speed:	Up to 1Mbit/s
Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	500 V
Test Voltage Core-Screen:	2000 V
Operating Voltage:	30 V or 300 V

STANDARD REFERENCES

- DIN VDE 0295, IEC 60228 or CEI 20-29
- 1581, 758(UL); C22.2 n° 210(CSA); ISO 11898; RS 485

CHARACTERISTICS

Building Management Systems Cable

Min. Bending Radius
10 x cable diameter

Put up lenght 305 mt

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +80°C

Cable with PE/SCREEN/PVC - 30 V

RAMCRO CODE	Copper Class	FORMATION [n° x Sec.]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
MSS0106HXADC-COP	Solid	1x2x20AWG	6,7	65	43,6	<50
STS0334HXADC-COP	Flexible	1x2x0,34+1x0,34	6,9	70	55,4	<50
MSS4134HXADC-COP	Flexible	1x4x0,34	6,8	66	55,4	<50
MSS0234HXADC-COP	Flexible	2x2x0,34	7	71	55,4	<50

Cable with FPE/SCREEN/PVC - 300 V

RAMCRO CODE	Copper Class	FORMATION [n° x mm2]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
MSS0122HXA4C-COP	Flexible	1x2x0,22	5,9	44	90	<50

CANBUSType

Controller Area Network Cables are suitable for a complete support for automotive and industrial applications. These cables help the combination straightforward intuitive CAN API with support for an extensible range of external and on-chip CAN controllers.



CONSTRUCTION

Formation:
Bare copper solid or flexible
Insulation:
Foam polyolefin - FPE
Outher Sheath:
Polyvinyl Chloride - PVC
Colour Outher Sheath:
Violet

STANDARD REFERENCES

- DIN VDE 0295, IEC 60228 or CEI 20-29
- 1581, 758(UL); C22.2 n° 210(CSA); ISO 11898; RS 485

CHARACTERISTICS

Building Management Systems Cable



Min. Bending Radius
10 x cable diameter



Put up lenght 305 mt



IDENTIFICATION OF CORES

DIN 47100

ELECTRICAL DATA

Nominal Impedance:	100±15% ohm
Capacitance:	≤ 50 pF/m
Transmission speed:	Up to 1Mbit/s
Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	500 V / 2000 V
Operating Voltage:	30 V / 300 V

TEMPERATURE RANGE

During Operation:
-30° C up to +80°C
During Installation:
-5° C up to +80°C



Cable with PE/PVC - 30 V

RAMCRO CODE	Copper Class	FORMATION [n° x Sec.]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
MSE0106HXADC-COP	Solid	1x2x20AWG	6,3	65	43,6	<50
SSS0334HXADC-COP	Flexible	1x2x0,34+1x0,34	6,5	70	55,4	<50
MSE4134HXADC-COP	Flexible	1x4x0,34	6,4	66	55,4	<50
MSE0234HXADC-COP	Flexible	2x2x0,34	6,6	71	55,4	<50

Cable with FPE/PVC - 300 V

RAMCRO CODE	Copper Class	FORMATION [n° x mm2]	NOM. OUTER DIAMETER [mm]	NOM WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]	NOM. CAPACITANCE [pF/m]
MSE0122HXA4C-COP	Flexible	1x2x0,22	5,5	44	90	<50

NOTES



UL CABLES

UL 444 - COMMUNICATION



UL 444

Communication Cable (CM, CMR, CMX, CMX OUTDOOR, CMX OUTDOOR – CMR)

Designed for use in telecommunications and data transmission systems, including voice, video, and signal control applications in commercial and residential environments.



CONSTRUCTION

Formation:
Plained Annealed Copper Wire, Stranded from 30 to 6 AWG
Fire Protection Tape (Optional)

Insulation:
High-Temperature Polyvinyl Chloride (PVC)

Fillers (Optional)

Wrapping (Optional):
at least 1 layer of plastic tape (Optional)

Screen:
Aluminium/PETP tape over copper drain wire

Braid (optional):
Tinned or bare copper or aluminum braid

Armouring Protection (optional):
Steel Wire Armouring (SWA)

Outer sheath:
High-Temperature Polyvinyl Chloride (PVC)

Colour Outer Sheath:
Any color

ELECTRICAL DATA

Operating Voltage:	300 V
Impedance:	100 Ω (typical for data cables)
Capacitance:	≤ 50 pF/ft (for twisted pair data cables)

IDENTIFICATION OF CORES

Black and White Numbered ●○

STANDARD REFERENCES

- UL 444
- ASTM B3/B33
- CSA 22.2 No. 214
- NEC art. 800
- UL 1581 (Sun. Res; VW1)
- UL 910

ON REQUEST

- Sunlight Resistant
- UL 1666 (Rizer Test)
- UL 1685
- VW-1
- Armouring and/or Braid

TEMPERATURE RANGE

Fixed Installation:
- 30°C up to +105°C
During Installation:
- 5°C up to +50°C
Insulation Operation:
- 30°C up to +105°C

CHARACTERISTICS

- High Flexibility
- Flame retardant characteristics
- Multiple Conductors
- Sunlight & Moisture Resistant
- Common in **structured cabling systems**, such as **Category 5e, 6, 6A** cables used in LANs, telephone wiring, and building automation systems

UL 444

Communication Cable (CM, CMR, CMX, CMX OUTDOOR, CMX OUTDOOR – CMR, CMG)

Designed for use in telecommunications and data transmission systems, including voice, video, and signal control applications in commercial and residential environments.



CONSTRUCTION

Formation:
Plained Annealed Copper Wire, Stranded from 30 to 6 AWG
Fire Protection Tape (Optional)

Insulation:
Cross-lynked Poliolefine (XLPE)

Fillers (Optional)

Wrapping (Optional):
at least 1 layer of plastic tape

Screen:
Aluminium/PETP tape over copper train wire

Braid (optional):
Tinned or bare copper or aluminum braid

Armouring Protection (optional):
Steel Wire Armouring (SWA)

Outer sheath:
Low Smoke Zero Halogen Poliolefine (LSZH)

Colour Outer Sheath:
Any color

ELECTRICAL DATA

Operating Voltage:	300 V
Impedance:	100 Ω (typical for data cables)
Capacitance:	≤ 50 pF/ft (for twisted pair data cables)

IDENTIFICATION OF CORES

Black and White Numbered ●○

STANDARD REFERENCES

- UL 444
- ASTM B3/B33
- CSA 22.2 No. 214
- NEC art. 800
- UL 1581
- UL 910

ON REQUEST

TEMPERATURE RANGE

Fixed Installation:
- 30°C up to +105°C
During Installation:
- 5°C up to +50°C
Insulation Operation:
- 30°C up to +105°C



CHARACTERISTICS





- High Flexibility
- Flame retardant characteristics
- Multiple Conductors
- Sunlight & Moisture Resistant
- Common in **structured cabling systems**, such as **Category 5e, 6, 6A** cables used in LANs, telephone wiring, and building automation systems



FIRE RESISTANT TEST INFORMATIONS

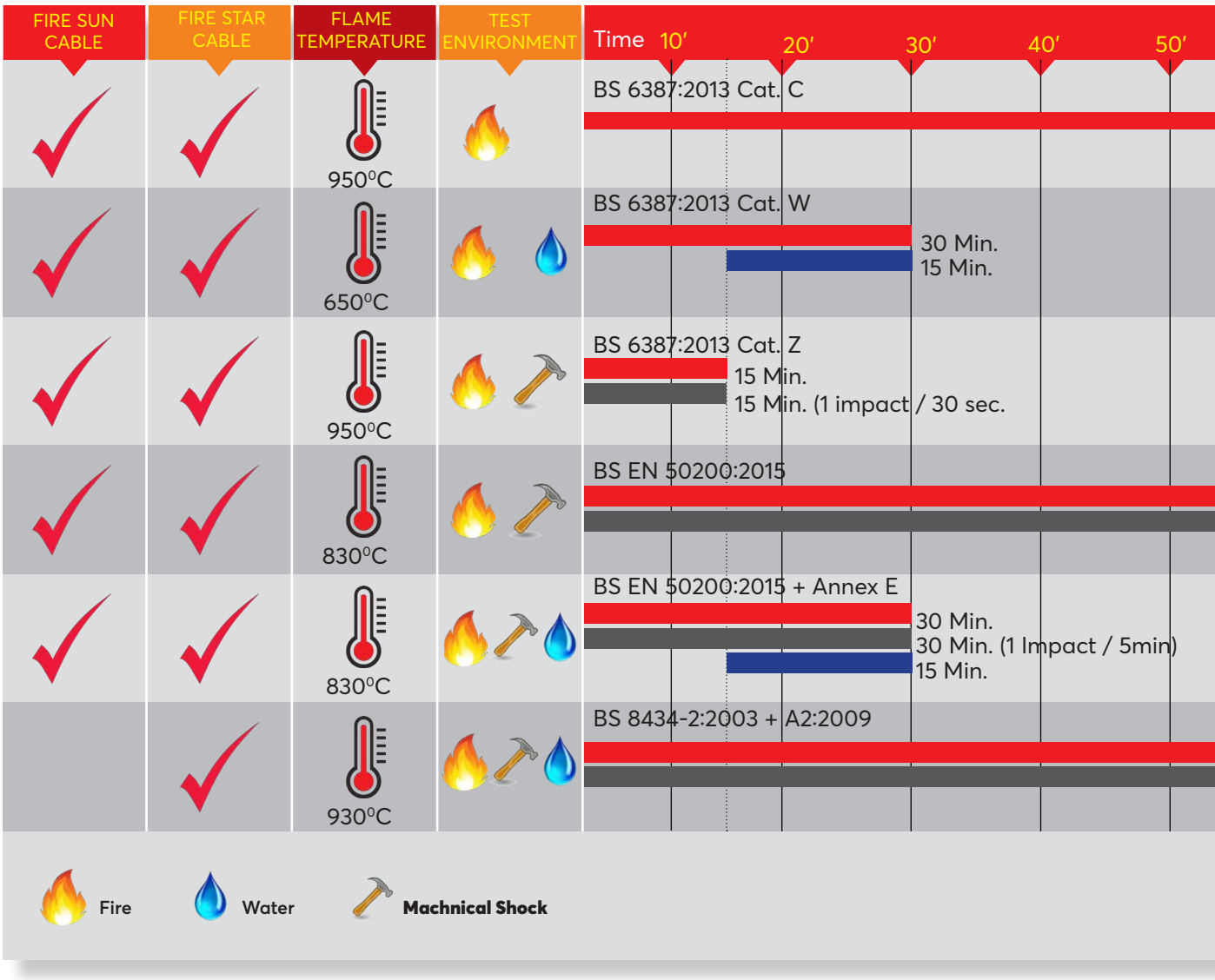


FIRE RESISTANT TEST INFORMATION

In case of fire risk or to maintain circuits integrity, the Ramcro Fire special cables prevent smoke risks and other collateral problems to sensitive equipments, avoiding damage from gases. Ramcro Fire cables are produced according with all major international standards.

Product range under sub-brand RAMFIRECRO-F3 Manufactured according to:

- International Electro-tecnical Commission IEC 60331-21
- British Standard BS 6387 Cat. C-W-Z
- British Standard BS 7629
- European Norms EN 50200

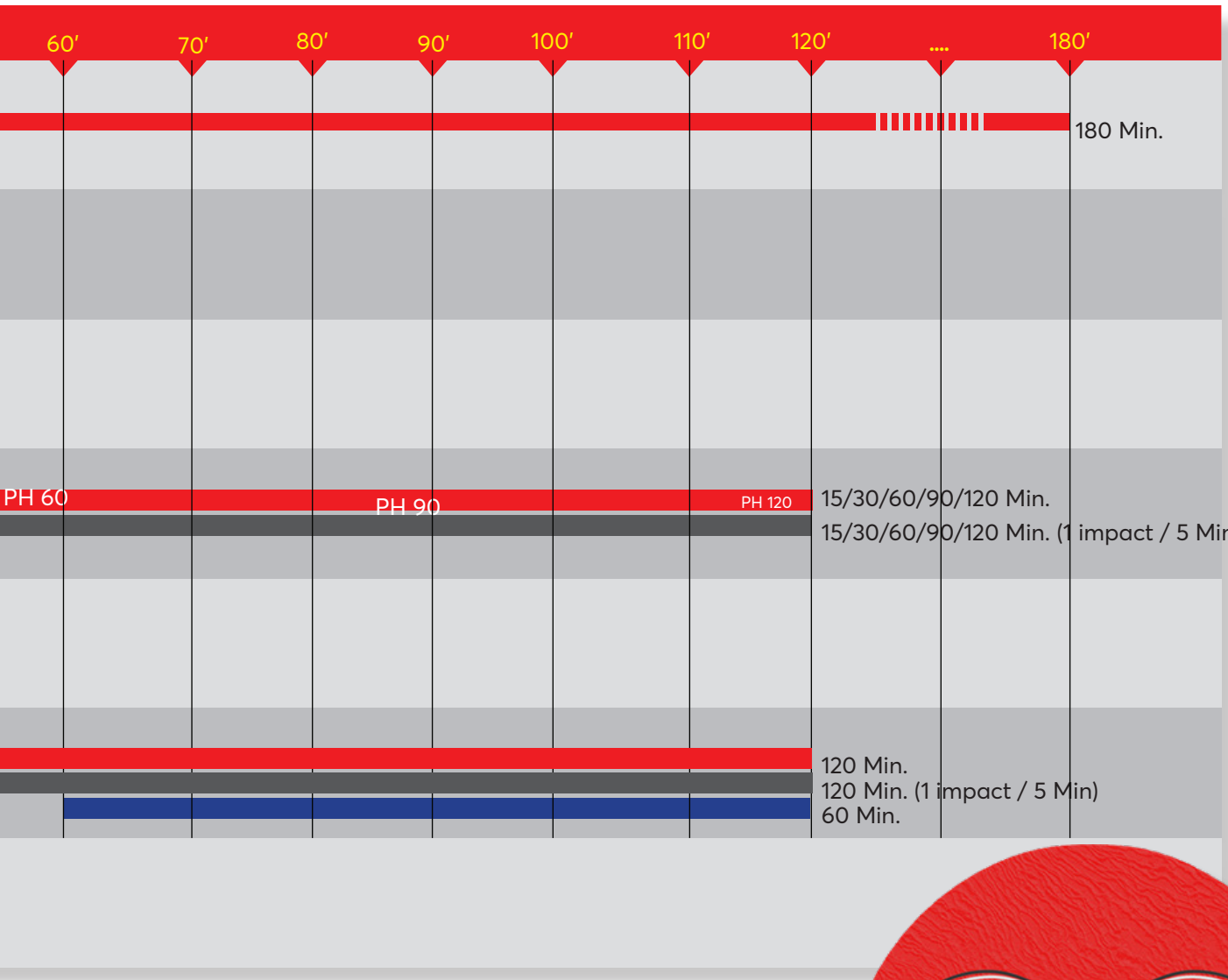


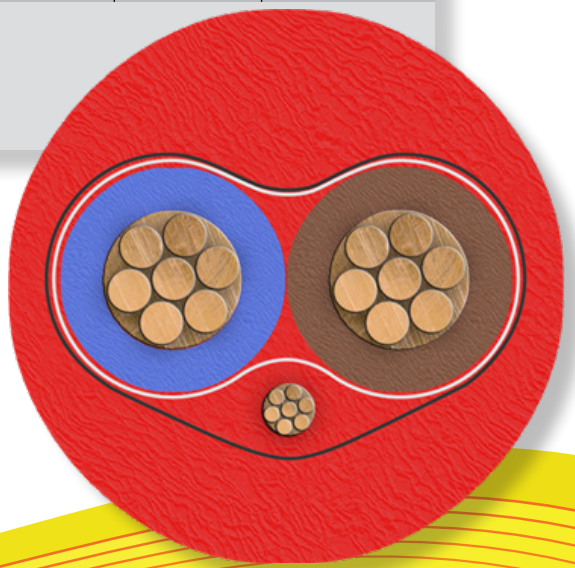
RAMCRO IN THE VERY HEART OF GREAT JOBS.

FIRE RESISTANT TEST INFORMATION

Fire Performance Classification:

- Basic Type: IEC 60331-21
- Standard Type: BS 6387 Cat. C-W-Z and BS 7629
- Enhanced Type: EN 50200 PHI20 - BS 8434-2





FIRE RESISTANT TEST INFORMATION



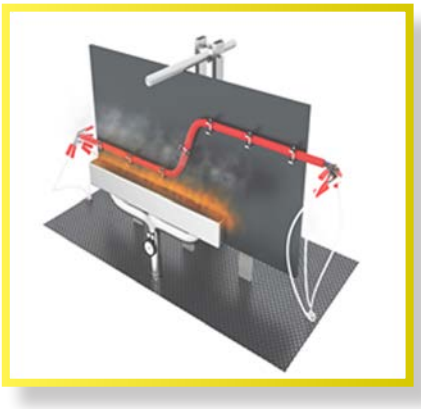
FIRE RESISTANCE (Cat. C)

The cable is exposed to fire at the 950°C for 180 minutes



FIRE AND WATER RESISTANCE (Cat. W)

The cable is exposed for 15 minutes to flame at 650°C and for additional 15 minutes to fire and water spray



FIRE RESISTANCE WITH MECHANICAL SHOCKS (Cat. Z)

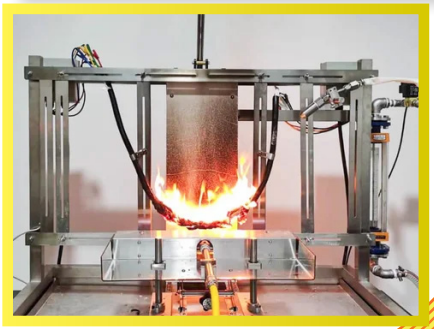
The cable is mounted on a vertical panel and shocked with a steel bar for 15 minutes while submitted to the action of a flame.



FIRE RESISTANCE (EN 50200 PH 1 5-30-60-90-120)
IEC 60331-2:2018 (Diam <20mm)
IEC 60331-1:2018 (Diam >20mm)

This test is carried out to verify the circuit integrity of cables exposed to fire at 830°C and mechanical shocks.

CLASSIFICATION	
EN 50200 PH 15	Flame exposure for 15 min
EN 50200 PH 30	Flame exposure for 30 min
EN 50200 PH 60	Flame exposure for 60 min
EN 50200 PH 90	Flame exposure for 90 min
EN 50200 PH 120	Flame exposure for 120 min



FIRE RESISTANT TEST INFORMATION

FIRE RESISTANCE
BS EN 50200 annex E



This test is carried out to verify circuit integrity during a fire, The cable is exposed to a flame at 830°C and mechanical shocks for 15 minutes and additional 15 minutes to flame, mechanical shocks, and water spray.

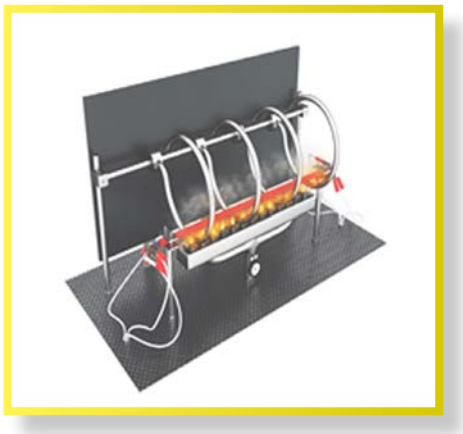
FIRE RESISTANCE
(BS 8434-2)





This test is carried out to verify circuit integrity during a fire. The cable is exposed to a flame at 930°C and mechanical shocks for 60 minutes and additional 60 minutes to flame, mechanical shocks, and water spray.

FIRE RESISTANCE
(IEC 60331-21, CEI 20-36)



This test is carried out to verify circuit integrity even during a fire. A sample of cable is held on a flame at about 750°C for a period of minimum 90 min, under rated voltage.

FIRE RETARDANT TEST INFORMATION

FLAME PROPAGATION TEST (IEC 60332-1)

ON A SINGLE CABLE



A 60 cm long sample of cable is vertically fixed with two clamps inside a small cabin, open on the front. The cable is subjected to the action of a flame produced by a calibrated Bunsen burner.

The application time of the flame is according to the cable diameter (60-480 seconds).

At the end of the test the burnt portion of cable must not be 50 mm close to the higher clamp

FIRE PROPAGATION TEST (IEC 60332-3)

ON BUNCHED CABLES



Samples of cables 3,5 m long in quantities required by standard are installed on a ladder inside a metallic cabinet.

They are subjected to the action of a flame at 750°C for a specific time (20 or 40 minutes).

Cables must not burn for more than 2,5 m.

"Ramcro S.p.A Lab have all the above test facilities"

PRODUCT CERTIFICATES


LPCB®

www.redbooklive.com

Certificate of Product Approval

Certificate Number: 568a Issue: 18

RAMCRO S.p.A.

Via Marzorati 15
20014 Nerviano
Milan
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s)

Cable Types as listed below:
Ramfirecro-F3 FIRE PLANET

Standards (see Appendix for details)

BS 6387:2013 (CWZ)
EN 60754-1:2014
EN 61034-2:2005+A2:2020
EN 50200:2015 (Class PH120)
EN 50200:2015 Annex E (30 minutes)
EN 60754-2:2014

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Obada Piracha — Certification Manager — 9 November 2023 — 27 October 2003

Certificate of Product Approval 568a

"Few of our **PRODUCTS APPROVAL CERTIFICATES...**"


LPCB®

www.redbooklive.com

Certificate of Product Approval

Certificate Number: 568c Issue: 14

RAMCRO S.p.A.

Via Marzorati 15
20014 Nerviano MI
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s)

Cable Types as listed below:
Ramfirecro-F3 Standard FIRE SUN

Standard(s) (see Appendix for details)

BS 7629-1:2015 (Standard 60)
BS 6387:2013 (Category CWZ)
EN 50200:2015 (Class PH120)
EN 50200:2015 Annex E (30 mins)
BS 5839-1:2013 (Clause 26.2d Standard)
EN 60754-2:2014

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Obada Piracha — Certification Manager – Cables — 5 April 2022 — 1 June 2006

Certificate of Product Approval 568c

PRODUCT CERTIFICATES

Certificates of PRODUCTS APPROVAL


LPCB

www.redbooklive.com

Certificate of Product Approval

Certificate Number: 568j Issue: 06

RAMCRO S.p.A.

Via Marzorati 15
20014 Nerviano
Milan
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s)

Cable Types as listed below:
Ramfirecro-F3 FIRE STAR

Standard(s) (see Appendix for details)

BS 7629-1:2015 Enhanced 120
EN 50200:2015 (Class PH120)
BS 8434-2:2003+A2:2009 (120 mins)
BS 5839-1:2013 (Clause 26.2e Enhanced)
BS 6387:2013 Category CWZ
EN 60332-3-24:2009

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Obada Piracha — Certification Scheme Manager — 15 October 2021 — Date of Issue — 12 April 2018 — Date of First Issue

bre

Page 1 of 2

Certificate of Product Approval 568j

"Few of our **PRODUCTS APPROVAL CERTIFICATES...**"


CERTIFICATE OF COMPLIANCE

Certificate Number 20150827-E475091
Report Reference E475091-20150827
Issue Date 2015-AUGUST-27

Issued to: RAMCRO SPA
VIA MARZORATI 15
20014 NERVIANO MILANO ITALY

This is to certify that representative samples of: POWER-LIMITED FIRE ALARM CABLE
Power-Limited Fire-Alarm Circuit Cable, Type FPLR

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1424 STANDARD FOR CABLES FOR POWER-LIMITED FIRE-ALARM CIRCUITS

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Page 1 of 1

FPLR UL


LPCB

www.redbooklive.com

Certificate of Product Approval

Certificate Number: 568h Issue: 01

RAMCRO S.p.A.

Via Marzorati 15
20014 Nerviano
Milan
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s)

Cable Types as listed below:
6 FO Single Mode
6 FO Multi Mode
See Certificate Appendix for details

Standard(s) (see Appendix for details)

IEC 60331-25:1999
IEC 60332-1-2:2004
EN 61034-2:2005
EN 60754-1:2014

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Tony Baker — Certification Scheme Manager — 26 July 2017 — Date of Issue — 26 July 2017 — Date of First Issue

bre

Page 1 of 2

Certificate of Product Approval 568h

COMPANY CERTIFICATES

Certificates of COMPANY QUALITY SYSTEM



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Organization of:

RAMCRO S.p.A.
Via Marzorati, 15, Nerviano, MI 20014, Italy

and hereby declares that the Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

Whereby, technical competence has been confirmed for the associated scope supplement, in the fields of:

Electrical Testing
(As detailed in the supplement)

Accreditation claims for conformity assessment activities shall only be made from the addresses referenced within this certificate and shall apply solely to those activities identified in the related scope. This Accreditation is granted subject to the Accreditation Body rules governing the Accreditation referred to above, and the Organization hereby commits to observing and complying with those rules in their entirety.

For PJLA:

Tracy Szerszen
President

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:	Issue Date:	Expiration Date:
April 07, 2025	April 07, 2025	July 31, 2027

Accreditation No.:	Certificate No.:
127120	L25-277

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com

Page 1 of 3

ISO/IEC 17025:2017



LPCB

www.redbooklive.com

Certificate of Management System Registration

Certificate Number: 568-1 **Issue: 19**

Ramcro S.p.A.

having complied with the requirements of:

ISO 9001:2015
Quality Management Systems - Requirements

is certified by BRE Global Ltd. and is authorised to use the LPCB Certification Mark on stationery and publications related to the following products and/or services:

Ramcro S.p.A.
Via Marzorati
15-20014 Nerviano
Milan
Italy

Scope:
Design, manufacture and supply of electric cables including cables used for installations that require safety in the event of fire and fibre optic cables.

This certificate and appendix is maintained and held in force through regular surveillance activities.

Signed for BRE Global Ltd.	BSIA Assessment Services	Date of this issue	Expiry Date	Date of First Issue
Phil Clare		16 May 2021	15 May 2024	29 July 2009

ISO 9001:2015



RINA

CISQ is a member of IQNet

CERTIFICATO N. **EMS-5716/AN**
CERTIFICATE No.

SI CERTIFICA CHE IL SISTEMA DI GESTIONE AMBIENTALE DI
IT IS HEREBY CERTIFIED THAT THE ENVIRONMENTAL MANAGEMENT SYSTEM OF

RAMCRO S.P.A.

VIA MARZORATI, 15 20014 Nerviano (MI) ITALIA

NELLE SEGUENTI UNITÀ OPERATIVE / *IN THE FOLLOWING OPERATIONAL UNITS*

VIA MARZORATI, 15 20014 Nerviano (MI) ITALIA

Per informazioni sulla validità del certificato, visitare il sito www.rina.org
For information concerning validity of the certificate, you can visit the site www.rina.org

È CONFORME ALLA NORMA / *IS IN COMPLIANCE WITH THE STANDARD*
ISO 14001:2015

IAF 19

PER I SEGUENTI CAMPI DI ATTIVITÀ / *FOR THE FOLLOWING FIELD(S) OF ACTIVITIES*

PROGETTAZIONE E PRODUZIONE DI CAVI ELETTRICI CON CONDUTTORI METALLICI PER TUTTE LE APPLICAZIONI RIVESTITI TRAMITE ESTRUSIONE DI MATERIE TERMOPLASTICHE. COMMERCIALIZZAZIONE DI CAVI IN FIBRA OTTICA.

DESIGN AND MANUFACTURE OF ELECTRIC CABLES WITH METAL CONDUCTORS FOR ALL APPLICATIONS SHEATHED BY EXTRUDED THERMOPLASTIC MATERIALS. TRADE OF FIBRE OPTIC CABLES.

Prima emissione / *First Issue*	Data decisione di rinnovo / *Renewal decision date*
23.12.2014	22.12.2020
Data scadenza / *Expiry Date*	**Data revisione / *Revision date***
22.12.2023	22.12.2020

Davide Torti
Turin Management System Certification, Head

RINA Services S.p.A.
Via Corsica 12 - 16128 Genova, Italy

ISO 14001:2015



RINA

CISQ is a member of IQNet

CERTIFICATO N. **OHS-2224**
CERTIFICATE No.

Si certifica che il Sistema di Gestione della Sicurezza e della Salute sul luogo di lavoro di
It is hereby certified that the Occupational Health and Safety Management System of

RAMCRO S.P.A.

VIA MARZORATI, 15 20014 Nerviano (MI) ITALIA

nelle seguenti unità operative / *in the following operational units*

VIA MARZORATI, 15 20014 Nerviano (MI) ITALIA

Per informazioni sulla validità del certificato, visitare il sito www.rina.org
For information concerning validity of the certificate, you can visit the site www.rina.org

è conforme alla norma / *is in compliance with the standard*
ISO 45001:2018
per le seguenti attività / *for the following activities*

IAF 19

PROGETTAZIONE, PRODUZIONE DI CAVI ELETTRICI CON CONDUTTORI METALLICI PER TUTTE LE APPLICAZIONI RIVESTITI TRAMITE ESTRUSIONE DI MATERIE TERMOPLASTICHE. COMMERCIALIZZAZIONE DI CAVI IN FIBRA OTTICA.

DESIGN AND MANUFACTURE OF ELECTRIC CABLES WITH METAL CONDUCTORS FOR ALL APPLICATIONS SHEATHED BY EXTRUDED THERMOPLASTIC MATERIALS. TRADE OF FIBRE OPTIC CABLES.

Prima emissione / *First Issue*	Data decisione di rinnovo / *Renewal decision date*
23.12.2014	22.12.2020
Data scadenza / *Expiry Date*	**Data revisione / *Revision date***
22.12.2023	22.12.2020

Davide Torti
Turin Management System Certification, Head

RINA Services S.p.A.
Via Corsica 12 - 16128 Genova, Italy

ISO 45001:2018

CPR REGULATION

CPR Cables (Construction Products Regulation) are essential for ensuring safety in buildings. Regulated by the European Regulation 305/2011, these cables must meet specific fire reaction requirements, reducing the risk of flame propagation and the emission of toxic smoke in the event of a fire.

The CPR classification allows for the selection of the most suitable type of cable based on the installation environment, enhancing the protection of people and property.

Using cables that comply with CPR standards is therefore not only a legal obligation but also a responsible choice for designers, installers, and clients.

RAMCRO has a wide variety of CPR products developed in almost 10 years. In addition, RAMCRO is proud to communicate that it's been among the first movers (2020) in owning a CPR Test Equipment in-house in order to dedvelop our prodcuts and fit perfectly your needs

Advantages of High rated CPR Cables

High Rated classified cables offer numerous benefits, especially in environments where fire safety is a top priority. Here are the main advantages:

Reduced emission of toxic gases

This protects both people and electronic equipment, especially in sensitive environments like hospitals, schools, public offices, and critical infrastructure.

Low smoke emission

They produce very little smoke when burning, improving visibility during evacuation and reducing the risk of inhaling toxic substances.

Regulatory compliance

These cables are often legally required in public or high-occupancy buildings, ensuring compliance with European fire safety regulations.

No flaming droplets

They do not release burning droplets that could further fuel the fire or cause burns.



CPR Machine @ RAMCRO

US-AMERICAN AND BRITISH UNITS

Conversion of usual measuring units

Units for cables and wires

In the US the measurements are mainly used in AWG-numbers (AWG = American Wire Gauge).
The AWG-numbers conform the british B&S-numbers (B&S = Brown & Sharp)

AWG No.	Cross-section mm²	Diameter mm	Cond. Res. Ohm/km
1000 MCM*	507	25,4	0,035
750	380	22,0	0,047
600	304	19,7	0,059
500	254	20,7	0,07
400	203	18,9	0,09
350	178	17,3	0,10
300	152	16,0	0,12
250	127	14,6	0,14
4/0	107,20	11,68	0,18
3/0	85,00	10,40	0,23
2/0	67,50	9,27	0,29
0	53,40	8,25	0,37
1	42,40	7,35	0,47
2	33,60	6,54	0,57
3	26,70	5,83	0,71
4	21,20	5,19	0,91
5	16,80	4,62	1,12
6	13,30	4,11	1,44
7	10,60	3,67	1,78
8	8,366	3,26	2,36
9	6,63	2,91	2,77
10	5,26	2,59	3,64
11	4,15	2,30	4,44
12	3,30	2,05	5,41
13	2,62	1,83	7,02
14	2,08	1,63	8,79
15	1,65	1,45	11,20
16	1,31	1,29	14,70
17	1,04	1,15	17,80
18	0,8230	10,240	23,0
19	0,6530	0,9120	28,3
20	0,5190	0,8120	34,5
21	0,4120	0,7230	44,0
22	0,3250	0,6440	54,8
23	0,2590	0,5730	70,1
24	0,2050	0,5110	89,2
25	0,1630	0,4550	111,0
26	0,1280	0,4050	146,0
27	0,1020	0,3610	176,0
28	0,0804	0,3210	232,0
29	0,0646	0,2860	282,0
30	0,0503	0,2550	350,0
31	0,0400	0,2270	446,0
32	0,0320	0,2020	578,0
33	0,0252	0,1800	710,0
34	0,0200	0,1600	899,0
35	0,0161	0,1430	1125,0
36	0,0123	0,1270	1426,0
37	0,0100	0,1130	1800,0
38	0,00795	0,1010	2255,0
39	0,00632	0,0897	2860,0

4/0 is also stated: 0000; 1 mil = 0,001 inch = 0,0254 mm
* for bigger cross-section the sizes in MCM (circular mils)

1 CM = 1 Circ. mil. = 0,0005067 mm2
1 MCM = 1000 Circ. mils = 0,5067 mm2

General measuring units

Lengths

1 mil	= 0,0254 mm
1 in (inch)	= 25,4 mm
1 ft (foot)	= 0,3048 m
1 yd (yard)	= 0,9144 m
1 ch (chain)	= 20,1 m
1 mile (land mile)	= 1,609 km
	= 1760 yards
1 mile (nautic mile)	= 1,852 km
1 mm	= 0,039370 inches
1 m	= 39,370079 inches

Area

1 CM (circ. mil)	= 0,507 · 10^{-3} mm²
1 MCM	= 0,5067 mm²
1 sq. inch (sq. inch)	= 645,16 mm²
1 sq. ft. (sq. foot)	= 0,0929 m²
1 square yard	= 0,836 m²
1 acre	= 4047 m²
1 square mile	= 2,59 km²

Density

1 cu. in. (cubic inch)	= 16,39 cm³
1 cu. ft. (cubic foot)	= 0,0283 m³
1 cu. yd. (cubic yard)	= 0,7646 m³
1 gal. (US gallon)	= 3,785 l
1 gal. (brit gallon)	= 4,546 l
1 US pint	= 0,473 l
1 US quart	= 0,946 l
1 US barrel	= 158,8 l

Temperature

F (Fahrenheit)	= (1,8 · C) + 3°
C (Celsius)	= 0,5556 · (F−32°)

Weight

1 grain	= 64,8 mg
1 dram	= 1,77 g
1 oz (ounce)	= 28,35 g
1 lb (pound)	= 0,4536 Kp
1 stone	= 6,35 Kp
1 qu (quarter)	= 12,7 Kp
1 US-cwt (hundredweight)	= 45,36 Kp
1 US ton (short ton)	= 0,907 t
1 brit. ton (long ton)	= 1,016 t

Force

1 lb	= 4,448 N
1 brit. ton	= 9954 N
1 pdl (Poundal)	= 0,1383 N
1 kp	= 9,81 N
1 N	= 0,102 kp

Velocity

1 mile/h	= 1,609 km/h
1 Knoten	= 1,852 km/h
1 ft/s	= 0,305 m/s
1 ft/min	= 5,08 · 10^{-3} m/s

Energy

1 lb/mile	= 0,282 kg/m
1 lb/yard	= 0,496 kg/m
1 lb/foot	= 1,488 kg/m

Radiation absorbed dose

1 Gray	= 1 J/kg
1 rad	= 10^{-2}J/kg = 1 Centi Gy
	= 0,01 Gy
1 Centi	= 100 Joule
1 rad	= cJ/kg = 0,01Gy
1 Mrad	= 1 · 10^{6} cJ/kg

Pressure

1 psi (lb/sq.)	= 68,95 mbar
	= 6,895 · 10^{-3} Nmm²
1 lb/sq. ft.	= 0,478 mbar
1 pdl/sq. ft.	= 1,489 N/m²
1 in Hg	= 33,86 mbar
1 ft H2 O	= 29,89 mbar
1 in H2 O	= 2,491 mbar
1 N/mm2	= 145 psi
	= 10 bar
1 kp/mm2	= 1422 psi
1 at	= 736 Torr
	= 1 kp/cm²
1 Torr	= 1 mm Hg
1 bar	= 0,1 H Pa
1 Pa	= 1 N/m²

Density

1 lb/cu. ft.	= 16,02 kg/m³
1 lb/cu. in.	= 27,68 t/m³

Horse power

1 hp · h	= 1,0139 PS · h
	= 2,684 · 10^{6} Joule
	= 746 W · h
1 BTU (brit. therm. unit)	= 1055 Joule
1 hp	= 0,7457 kW
1 kW	= 1,31 hp

Electrical units

1 ohm/1000 yd	= 1,0936 /km
1 ohm/1000 ft	= 3,28 /km
1 µF/mile	= 0,62 µF/km
1 megohm/mile	= 1,61 M/km
1 µµf/foot	= 3,28 pF/m
1 decibel/mile	= 71,5 mN/m

Power rate

1 PS	= 0,736 kW
1 kW	= 1,36 PS

CODE-DESIGNATION

Explanations for Cables and Insulated Wires

A-	Outdoor cable
A	approved national design
AB	Outdoor cable with lighting protection
AD	Outdoor cable with differential protection
AJ-	Outdoor cable with induction protection
ASLH	self-supporting communication cables for high voltage overhead lines
B	armouring
B	spinning of textile yarn
b	armouring
(1B...)	one layer of steel tape... thickness of the steel tape in mm
(2B...)	two layers of steel tape... thickness of the steel tape in mm
BD	unit-type stranding
BLK	bare copper-conductor without insulation
BZ	bronze conductor
C	screen of copper wire braiding
C	screen of copper wire spinning
C	outer protection of jute and viscous compound
Cu	copper wire
(-Cu)	total cross-section of copper screens (mm2)
D	screen of copper wires
(D)	screen of helically applied copper wires
DM	Dieselhorst-Martin quad
Dreier	three cores in triple stranded
E	copper drain wire
E(e)	protective covering of viscous compound with embedded layer of plastic tape
e	single wire, solid
F	cable cores assembly with petrol-jelly
F	foil wrapping
F	Flat cable
F	star quad for railway cable
F	star quad for phantom circuits
(F...)	flat wire armouring... thickness in mm
OF	jelly lled cable core, lling compound of hard substances
FR	flame retardant
f	exible, fine wire stranding
ff	extra fine wire stranding
G	insulation or sheath material of rubber (NR) or (SBR)
G-	Mining cable
GJ	Mining cable with induction protection
GS	glass fibre whipping or braiding
2G	insulation or jacket of silicone rubber, (SIR)
3G	insulation or jacket of ethylene propylene rubber, (EPR)
4G	insulation or jacket of ethylene vinylacetate rubber (EVA)
5G	insulation or jacket of chloroprene rubber (CR)
6G	insulation or jacket of chlorosulphonated polyethylene
(CSM),	Hypalon
7G	insulation or jacket of Flouroelastomer (FKM)
8G	insulation or jacket of Nitrile rubber (NBR)
9G	PE-C rubber (CM)
53G	CM, chlorinated Polyethylene
H	insulation or jacket of halogen-free compound
H	Harmonized Documents
(H...)	maximal value of mutual capacitance (nF /km)
(HS)	semi-conducting tape of layer
HX	cross-linked, halogen-free polymer compound
...IMF	individual stranding element (pairs or single cores etc.) in metal foil and drain wire
IMF	several stranding elements in metalfoil and drain wire
-J	cable with green-yellow earth core
-JZ	cable with green-yellow earth core and cores with inprinted numbers
K	copper-tape
(K)	inner sheath and longitudinally folded copper tape
LA	tinsel conductor (flat copper wire stranded over the thread of synthetic fibres)
LD	corrugated aluminium sheath
Lg	in layers stranding
Li	stranded wires conductor
(L)Y	laminated sheath Al-tape and PVC-jacket
(L)2Y	laminated sheath Al-tape and PE-jacketl
2L	double enamel coating as insulation
M	plastic-sheath cable
M	lead sheath
Mz	alloyed lead sheath
(mS)	magnetic shield
N	VDE standard
(N)	in adapted to VDE standard
NC	non-corrosiv, smoke-gase
NF	natural colour
-O	cable without green-yellow earth core
-OZ	cable without green-yellow earth core and cores with imprinted numbers
ö	oil-resistant
02Y	Foam-PE, insulation (cellular PE)
Q	Steel wire braiding
(R...)	round wire, diameter in mm
RAGL-	Compensating cable for thermocoupling
RD-	Rhenomatic cable
RE	Computer cable
RG-	Coaxial cable according MIL specification
re	round, single wire
rm	round, multiwire
RS-	computer switchboard cable
S	silk whipping
S	signal cables for railways
(S...)	nominal value of mutual capacitance (nF /km)
-S	signal cable for German Railway
S-	Switchboard cable
SL	flexible sheathed cable
2S	two layers of silk whipping
St	star quad for phantom circuits
St I	star quad in telephone cables for lager distance
St III	star quad in local cables
(St)	static screen
Staku	copper clad steel wire
Staku-Li	copper clad steel stranded wires
...t	termite protection
T	supporting element for overhead cable
T-	fan out cable
TF	carrier frequency of pairs or quads triple
TiC	triple in copper wire braid
TiMF	triple in metal foil
U	braiding of textile fibres
VGD	gold-plated
VN	ickel-plated VS silver-plated
VZK	galvanized VZN tinned
W	corrugated steel sheath
W	high heat resistant
W	corrugated steel sheath
X	cross-linked polyvinylchlorid (X-PVC) or other materials
XPE	cross-linked polyethylene (X-PE)
2X	cross-linked polyethylene
7X	cross-linked Ethylentetrafluorethylen (X-ETFE)
10X	cross-linked Polyvinylidenfluorid (X-PVDF)
Y	PVC, polyvinylchloride
Yu	PVC, polyvinylchloride, non-flammable, flame-retardant
Yv	PVC, polyvinylchloride, with reinforced sheath
YV	Equipment wires with tinned conductor
Yw	PVC, polyvinylchlorid, heat resistant upto 90°C
2Y	Polyethylene (PE)
2Yv	Polyethylene, reinforced sheath
02Y	Cellular polyethylene
02YS	insulation of cellular polyethylene with outer PE-skin
2YHO	insulation of air-spaced polyethylene
3Y	insulation polystyrene (PS), Styroflex
4Y	insulation or jacket of polyamide (PA)
5Y	insulation or jacket of polytetrafluorethylene (PTFE)
5YX	Perfluoralkoxy (PFA)
6Y	Perfluoroethylene-propylene (FEP)
7Y	insulation or jacket of ethylentetrafluorethylen (ETFE)
8Y	insulation of polyimid (PI)
9Y	polypropylen (PP)
10Y	PVDF, Polyvinylidene fluoride
11Y	polyurethan (PUR)
12Y	TPE-E, TPE
13Y	TPE-EE, TPE on base of Polyester-Ester
31Y	TPE-S, TPE on base of Polystyrol
41Y	TPE-A, TPE on base of Polyamide
51Y	PFA, Per uor-Alkoxylalkane
71Y	ECTFE, Monochlortrifluorethylene
91Y	TPE-O, TPE on base of Polyester-Ester
-Z	core imprinted with numbers
Z	twin cable
(Z)	high-tensile braid of steel wires
(ZG)	high-tensile element of glass fibre yarn
(ZN)	high-tensile of non-metallic elements

HANDLING, STORAGE AND LAYING OF CABLES

Great care is taken in the manufacturing of cables to ensure quality at every stage.

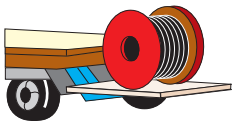
- Handling is the next important factor to ensure that by poor workmanship and mishandling the quality does not deteriorate.
- Of course laying is generally carried out by unskilled or semi-skilled men, strict supervision should be maintained so that this
  material, which can be very easily damaged, is handled with great care.
- If great care during installation is observed in the handling of cables on site the life of the cables is extended.

A. CABLE INSPECTION
1. Inspect every cable reel for damage before accepting the shipment. Be particularly alert for cable damage if:
2. A reel is lying flat on its side
3. Several reels are stacked one over the other
4. Other freight is stacked on a reel
5. Cable drums are without planks or broken
6. Nails have been driven into reel flanges to secure shipping blocks
7. A reel flange is damaged
8. A cable covering is removed, stained or damaged
9. A cable end seal is removed or damaged. A reel has been dropped (hidden damage likely)

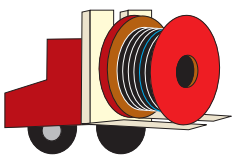
B. CABLE HANDLING & STORAGE
Damage to cables can occur due to the incorrect handling to which the drums and cables may be subjected; causing breakdown of the drum flanges and in exceptional cases, movement of the drum barrel takes place. Once this breakdown of the drum occurs, the cable is immediately exposed to damage. Cables damaged during handling & storage can cause service failures when the subject cable is put to use.

Thus the following is a list of Do's and Don'ts that should be followed while handling and storing the cables before it is put to use.

DO's

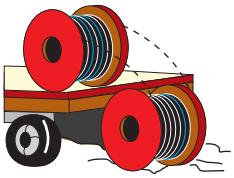


When off loading reels from a truck, lower reels carefully using a hydraulic gate, hoist or forklift truck.

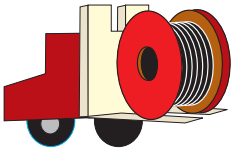


If a fork lift is used, approach the reel from the flange side. Position the forks such that the reel is lifted by both reel flanges. Also Consideration should be given to, Traffic patterns during off-loading & damage dur-ing the time in storage.

DON'ts



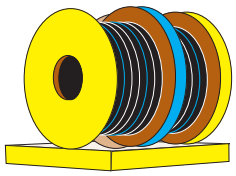
Never drop reels. If reels must be rolled, roll in opposite direction of the cable wraps to keep cable from loosening on the reel.



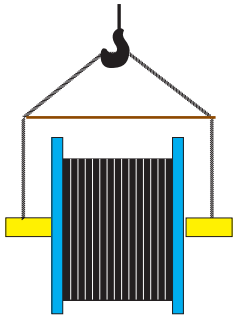
Do not allow the lift forks to contact the ca - ble. Care must be taken by the fork lift op erator not to make sudden turns or stops.

HANDLING, STORAGE AND LAYING OF CABLES

DO's

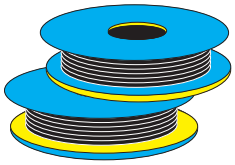


Cable reels should be stored on hard sur faces resting on the flanges edge (flanges vertical). Align reels flange to flange and, if possible, arrange so that first in is first out.

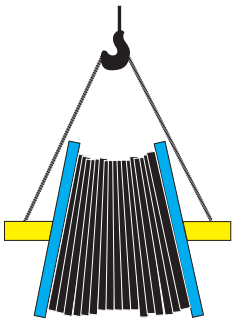


When using a hoist, install a mandrel through the reel arbor holes and attach a sling. Use a spreader bar approximately 6 inches longer than the overall reel width placed between the sling ends just above the reel flanges.

DON'ts



Multiple reels stacked on top of each other ("Pancake" storage) is not recommended for cable drums. The weight of the stack can total thousands of Kgs. creating an enormous load on the bottom reel. Also, damage to the reel and/or cable will likely occur when the reel is flipped for transit. A concentration of stress on the reel flange may cause it to break and subsequently damage the cable.



This may lead to the bending of the reel flanges and mashing the cable.

C. RECOMMENDED MINIMUM BENDING RADIUS FOR LV CABLES

Single Core: 15xD
Multicore : 12 x D
Where D= Diameter of cable in mm

D. INSTALLATION & LAYING

Mechanical stresses during installation are generally more severe than those encountered while in service. Thus careshould be taken as regards to the following while installation and laying of cables.

1. Care shall be taken during laying to avoid sharp bending, and twisting.
2. Cable shall be unwound from the drum by lifting the drum on the center.
3. Shaft supported both ends with suitable jacks / stands.
4. Under no circumstances the cable winding shall be lifted off a coil or drum lying flat at the flanges. This would cause serious twist and damages.
5. Suitable protection shall be provided to the cables against mechanical damages, it includes covers, pipes etc.

E. PRE- INSTALLATION

To ensure safety during cable installation, following shall be checked prior to installation.
1. The cable selected is proper for designed application.
2. The cable has not been damaged in transit or storage.

Review all applicable state and national codes to verify that the cable chosen is appropriate for the job. Also consult your local electricity authority. Next, you must identify any existing cable damage and prevent any further damaged from occurring. This is done through proper cable inspection, handling and storage.

HANDLING, STORAGE AND LAYING OF CABLES

F. RECOMMENDED SAFE PULLING FORCE WHENPULLED WITH PULLING EYE:

a) For Aluminum Conductors : 30 N/mm2
b) For Copper Conductor :50 N/mm2

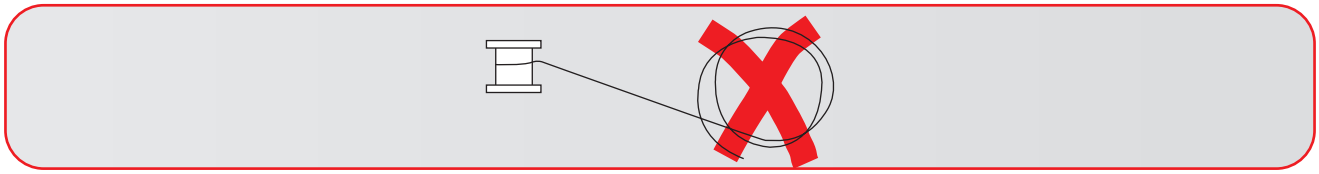
G. RECOMMENDED SAFE PULLING FORCE WITH STOCKINGS:

a) For Unarmoured Cable : P=5 D2
Where P= Pulling Force
b) For Armoured Cable : P=9 D2
Where D= Diameter of cable inmm

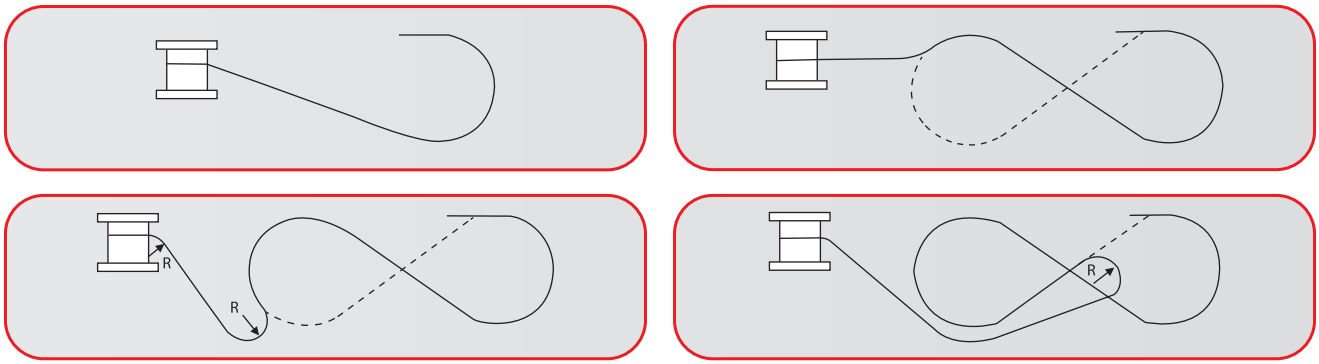
SPECIAL PRECAUTIONS FOR HANDLING / INSTALLATION OFLOW SMOKE SHEATHED CABLES

Cables like LSF sheath needs to be handled with care during installation. While special additives are used in formulation of
LSF compound to give the typical flame retardant characteristics of Zero Halogen Polymers some mechanical properties deteriorate. The following basic precautions are necessary.
Cables should not be exposed to sunlight for consider able period before installation i.e. the temp of cables sheath should be below 45°C.
Preferably installation is done during morning hours when the ambient temperature is low.
Wire/ropes should not be used directly on the cable sheath for pulling.
When pulled on cable trays/or any uneven surface, special attentions is needed to welding or unusually rough terrains.
Rollers and bends should not have any sharpness which may damage sheath.

DO NOT ATTEMPT "COILING" OF CABLE ON THE GROUND



ON THE GROUND CABLE CAN BE FLAKED IN A FIGURE OF EIGHT FORMATION



Note: R Minimum Permissible bending radius of cable.

QD 06/01

Edited by RAMCRO S.p.A. on January 2023




"WE SUPPLY
WORLDWIDE"


MARIAE
NASCENTI





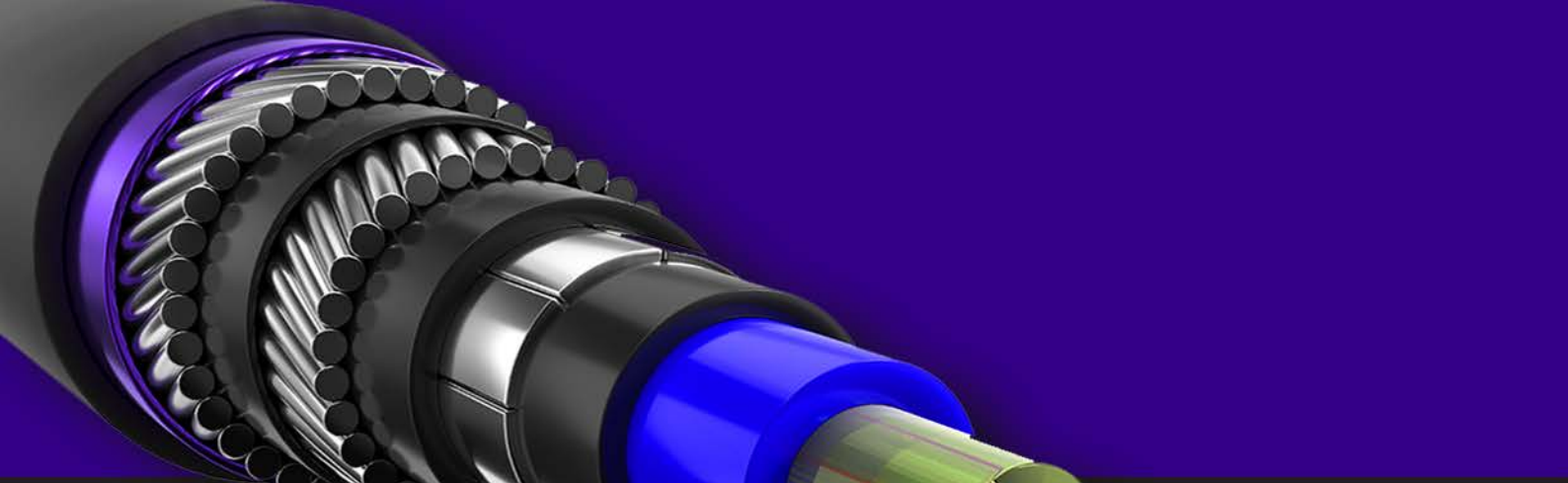
ramcro
special cables

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For Website

October 2025



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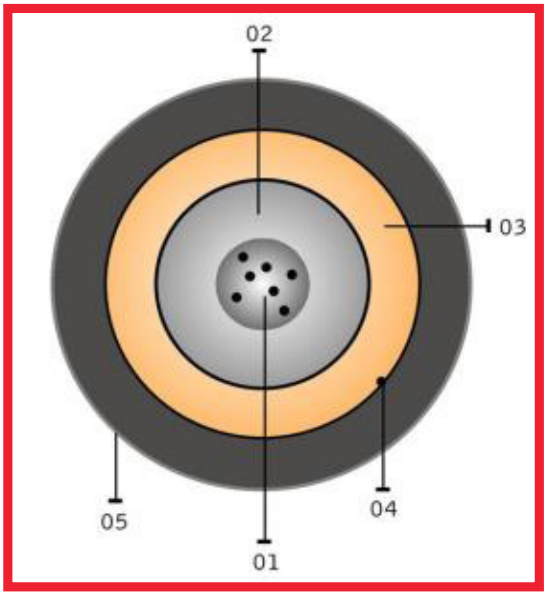
INSTRUMENTATION CABLES

Worlwide Preview

ADIPEC 2025

Abu Dhabi

Single Mode / Multi mode
Fiber Optic - Enhanced Fire Resistant



CONSTRUCTION

1. Fibers:
Up to 24 optical, Color coded following TIA/EIA 598 for easy identification
2. Tube:
Centrarl tube filled with Jelly and covered by a Fire Resistant Mica Tape
3. Fiberglass Reinforcement:
Dry, water swelling glass yarn is laid over the tubes to serve as peripheral strength members and to block the cable from water penetration, with overall Fiber Glass Tape.
4. Ripcord:
laid under the jacket for easy removal.
5. Sheath:
A UV-resistant, Halogen Free, Flame-Retardant (HFFR) jacket extruded over the armoring.

DESCRIPTION

- Indoor/Outdoor installation
- For installation in conduits, cable trays, ducted or directly buried
- Armored or Not Armored
- Flame and Fire retardant
- Halogen Free, Low smoke emission
- Oil and Hydrocarbon Resistant (EN 60811-404, ENI 0181)
- Available also with SHF2 Jacketing

REFERENCE STANDARD

Flame spread:	IEC 60332-1-2
Smoke opacity:	IEC 61034-2 / EN 50268-2
Smoke toxicity:	IEC 60754-1 /2 EN 50267-2-1
Spread of fire:	IEC 60332-3-22
CPR	EN 50575 Dca, s2,d2,a1
Fire resistance:	**BS 8434-2, 120min, 930°C**
	IEC 60331-25, 180min, 750°C
	EN 50200 PH120, 120min, 830°C
	EN 50200 ANNEX E, 30min, 830°C

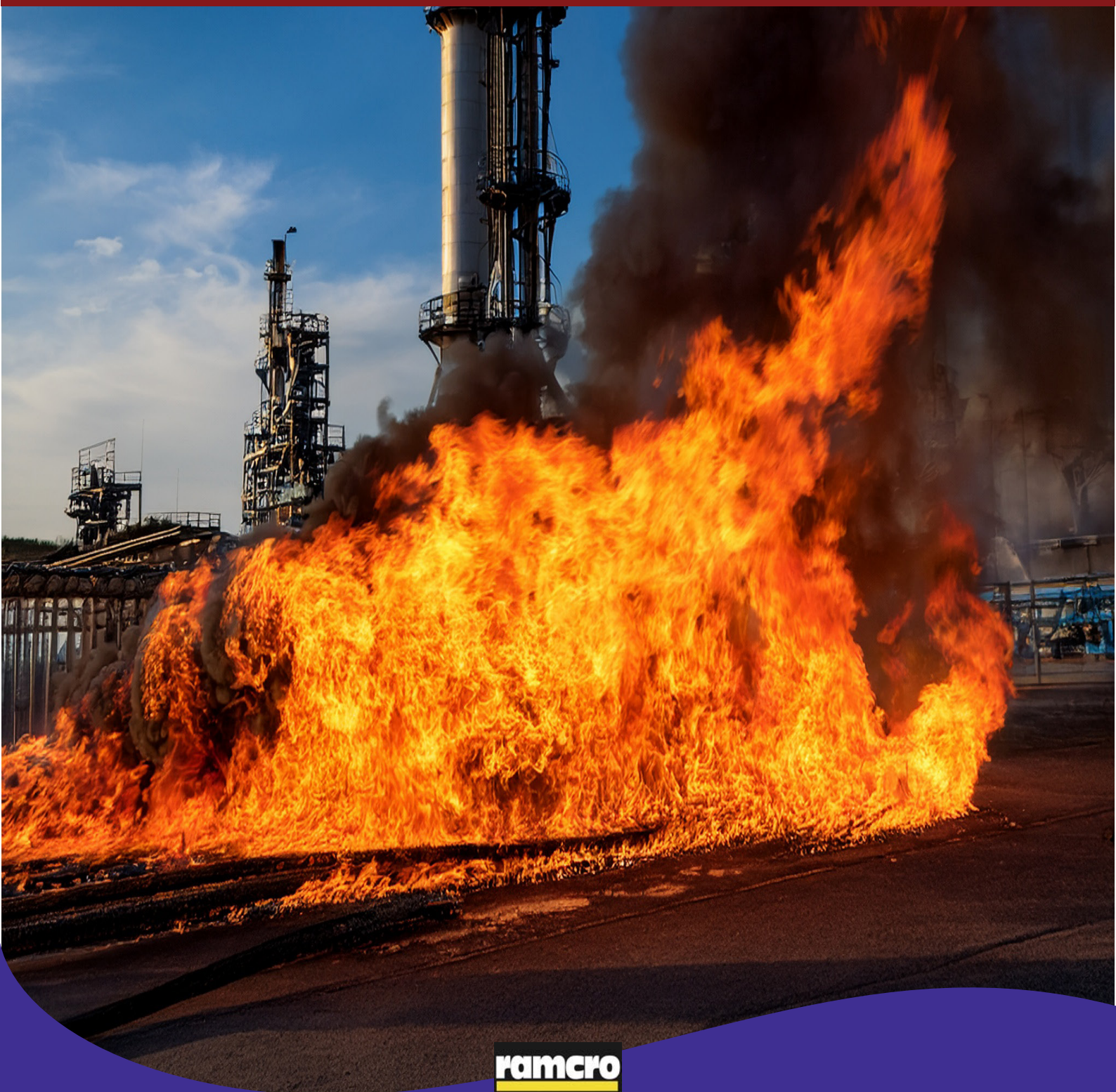


Worlwide Preview

ADIPEC 2025

Single mode / Multi Mode

Fiber Optic - Enhanced Fire Resistant



ramcro special cables

www.ramcro.it



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ABOUT C







Ramcro was founded in 1979, as a family Company producing Special Cables. Family Croci owns 100% of Ramcro S.p.a.. In over 42 years Ramcro successfully expanded its presence in different countries and in a few different but important segments: Oil & Gas, Fire, Railway Signal & Control, BMS, avnd Optical Cables.

Ramcro production capacity is 4.000 Km/Month and 50.000 Km/Year. Production dpt is 18.000 sqm, of which 3.000 sqm on stock, allowing outstanding very high flexibility in delivery, with also 1.300 sqm of offices and 750 sqm for Laboratory.

Ramcro Laboratory provides any certificates of tests run following major international specifications and it is ready to be certified ISO 17025. It is also recognized by the international body as a "Third part Laboratory". Ramcro solves any kind of technical issue in the area of the cable, assuring the Client's satisfaction thanks to high quality and personalized solutions, improving the Client's efficiency and optimizing its processes. Ramcro offers extremely flexible solutions and a complete range of services, even tailor-made, based on outstanding worldwide experience.

OMPANY

Excellence You Can Trust: Ramcro Special Cables

At Ramcro, quality is not just a promise — it's a proven standard. With over 40 years of experience in the design and production of special cables, we are proud to be recognized as one of the few companies in the industry to operate an in-house laboratory accredited to ISO/IEC 17025.

This prestigious accreditation sets us apart. While many rely on third-party laboratories for compliance certificates, Ramcro is directly certified, ensuring the highest level of technical competence, precision, and reliability in every test we perform. Our laboratory doesn't just verify conformity — it defines it.

What does this mean for you?

Unmatched Quality Control: Every cable is tested under the strictest international standards, guaranteeing performance, safety, and durability.

Faster Time to Market: With internal testing capabilities, we reduce lead times and respond quickly to your needs.

Full Traceability & Transparency: From raw materials to final product, every step is monitored and documented with certified accuracy.

Innovation with Confidence: Our R&D team works hand-in-hand with our lab to develop cutting-edge solutions tailored to your most demanding applications.

Choose Ramcro — where certified excellence meets engineering innovation.

A Laboratatory Certified ISO 17025



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Organization of:

RAMCRO S.p.A.
Via Marzorati, 15, Nerviano, MI 20014, Italy

and hereby declares that the Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

Whereby, technical competence has been confirmed for the associated scope supplement, in the fields of:

Electrical Testing
(As detailed in the supplement)

Accreditation claims for conformity assessment activities shall only be made from the addresses referenced within this certificate and shall apply solely to those activities identified in the related scope. This Accreditation is granted subject to the Accreditation Body rules governing the Accreditation referred to above, and the Organization hereby commits to observing and complying with those rules in their entirety.

For PJLA:

Tracy Szerszen
President

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:	Issue Date:	Expiration Date:
April 07, 2025	April 07, 2025	July 31, 2027

Accreditation No.:	Certificate No.:
127120	L25-277

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com

Page 1 of 3

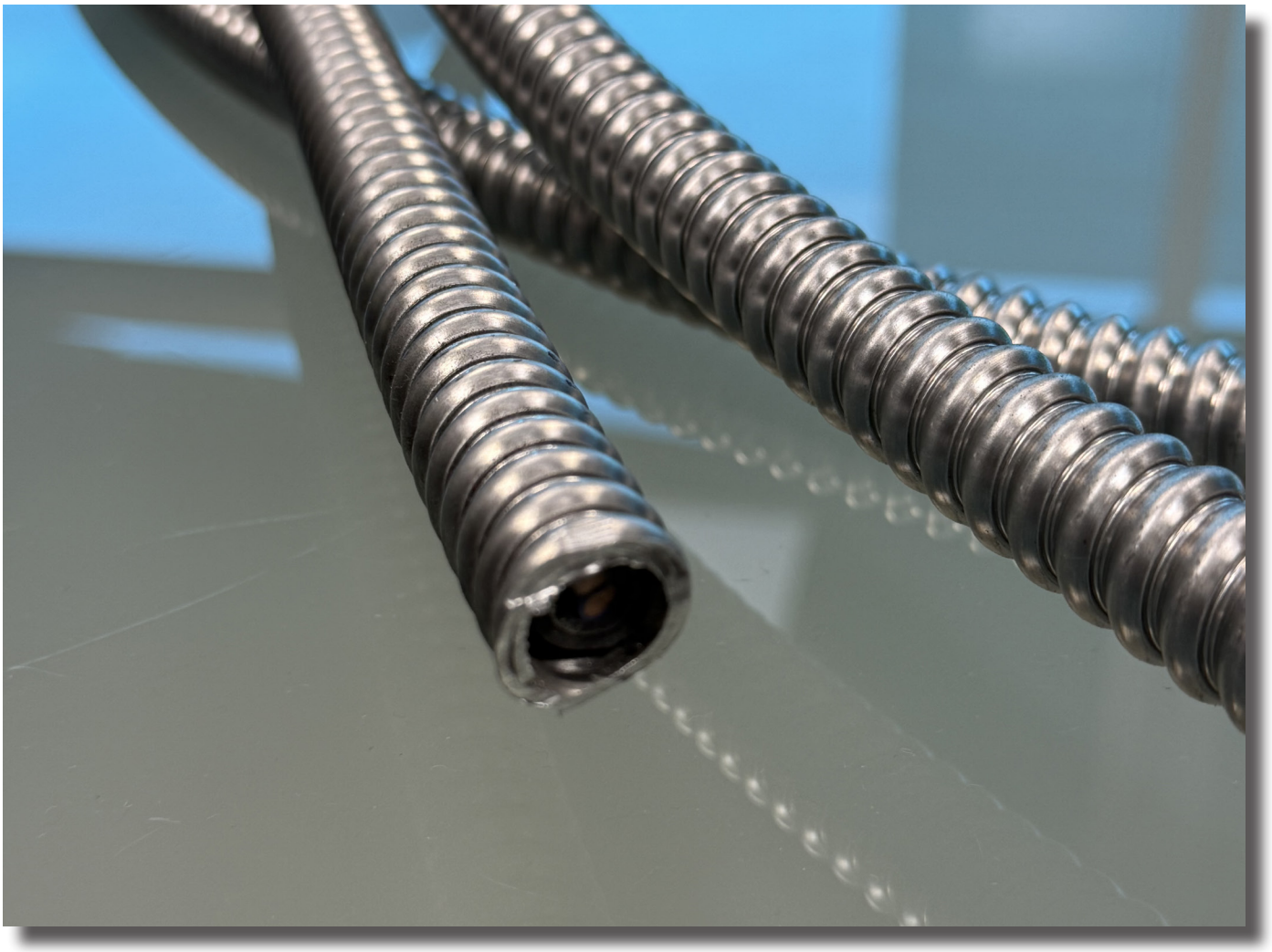
ISO/IEC 17025:2017



In 2025, Ramcro S.p.A. proudly expanded its production capabilities with the installation of a state-of-the-art Interlock Armoring Machine (AIA). This strategic investment places Ramcro among a select group of European manufacturers capable of performing this advanced cable armoring process.

The new AIA machine is designed to work with copper, steel, and aluminum tapes, enabling the production of cables that combine high mechanical and UV protection with exceptional flexibility. This opens the door to new cable designs tailored for demanding industrial environments, infrastructure applications, and specialized installations.

With this addition, Ramcro reinforces its commitment to innovation, quality, and technical excellence, offering customers cutting-edge solutions that meet the highest standards of performance and reliability.



A Strategic Leap Forward for Ramcro S.p.A.

Armor Type	Mechanical Protection	Flexibility	UV Resistance	Typical Applications
SWA Galvanized steel wires	● ● ● ●	● ●	● ●	Underground power cables; Industrial environments
SWB Braided steel wires	● ● ●	● ● ● ●	● ●	Control cables; Vibration-prone areas
STA Steel Tape Armour	● ● ●	● ● ●	● ● ● ●	Fixed installations; Impact protection
Interlock Armour Shaped metal tape (Copper, Steel, Alumi-num)	● ● ● ●	● ● ● ●	● ● ● ●	Industrial settings; Tray installations. Used also as Metallic Jacket
Corrugated Armor Corrugated metal tube	● ● ● ●	●	● ● ● ●	Harsh environments; Crush resistance

"RAMCRO, SPECIAL CABLES FOR SPECIAL NEEDS"



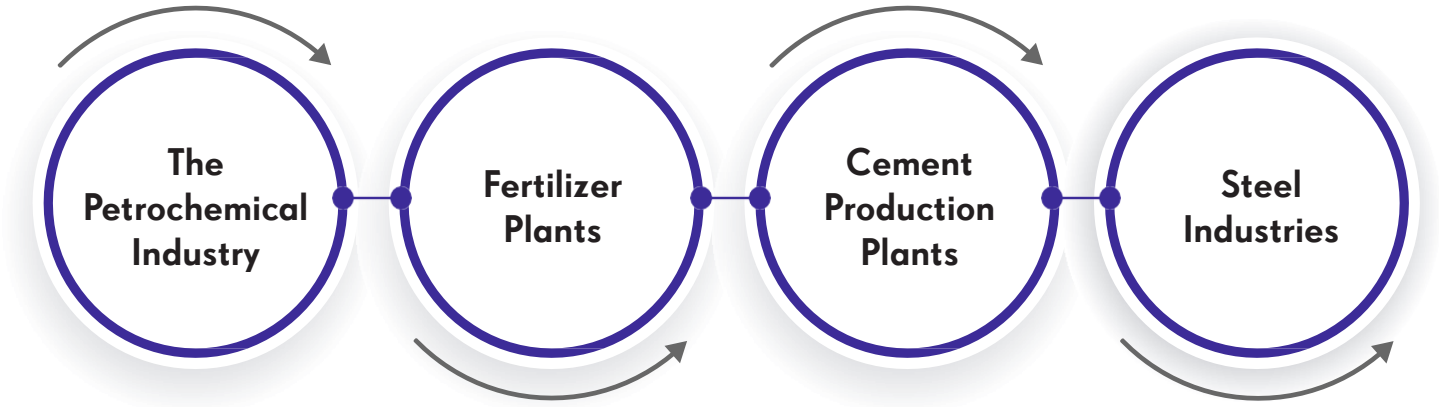


INSTRUMENTATION CABLE

Guide line for Instrumentation Cable Selection Process

An instrumentation cable plays a critical role in various manufacturing and processing projects. It is not easy to observe and control electricity systems and their supplementary processes without this cable. It transmits low-energy signals that you can use to regulate or keep an eye on various crucial functions that rely on electronic circuits.

State-of-the-art wireless transmission mediums have simplified signal broadcasts. People are accustomed to transmitting and receiving information wirelessly. Most of us lack meaningful knowledge on shielded instrument cable because we live in a world where wireless transmissions are trending. This cable transmits signals in electric circuits and is pertinent across various industries, including;



This post provides some meaningful information you ought to know, including types of instrumentation cables. Are you keen to find the best signal-transmitting wire that offers protection against interruption and interference? This is the best place to be.

What is an instrumentation cable?

An instrumentation cable is a cable that consists of several conductors whose purpose is to convey low-energy electric signals. Cables and electrical wires take up a plethora of responsibilities in various industrial applications. For example, they transmit electrical power, signals, or data. Generally, a cable is structured depending on its intended application and is equipped with different forms of protective elements.

Instrumentation cable manufacturers build these cable types to offer adequate shielding against any form of external signal interference. Their core function is to monitor and regulate various electric systems and their associated processes. Essentially, they assist in facilitating the smooth functioning of different industrial processes. It is also crucial to note that these cable types are typically applicable in microprocessor grounded and computer-based instrumented systems.



These cables come in handy in many control and communication applications because they are immune to external interruptions and interferences. They come in handy in process regulation, relay of analog or digital signals, voice transmissions, signal relays, and control circuitry. It would be best to settle for a flexible instrumentation cable due to the nature of its applications. This is the best cable to go for if you desire a signal transmission cable for the process, petrochemical, fertilizer and steel industries.

What is an instrumentation cable?

Typically, instrumentation cables are applicable in a wide array of industries. They are suited for harsh environments and have outstanding electrical, thermal, and corporeal features. However, they come in different assortments depending on insulation material and mode of shielding. Here is a comprehensive outline of different instrumentation cable types;

(1) PVC instrument cable (individual and overall shielded variants)

As the name suggests, this cable variation comprises a Polyvinyl Chloride (PVC) outer coating. PVC is arguably the most popular thermoplastic insulation material owing to its impeccable features. The material is characteristically resistant to fire, any form of scrape, and moisture. The cable's conductor material is copper, which is known for its top- notch electrical conductivity. More importantly, it meets several essential cable construction standards, including BS- EN-50288.

(2) XLPE instrument cable (individual and overall shielded variants)

The XLPE instrumentation cable is constructed with top-of-the-line thermal and moisture resistant cross-linked polyethene material. This type of insulation material features strong molecular three-dimensional bond structures. The wire can withstand any form of external adversity, including exposure to UV rays and oil. Like the PVC instrumentation cable, the cable's construction consists of highly flexible stranded copper conductors for maximum electrical conductivity.

Regardless of the instrumentation cable types you opt for. You have to remember that there are different shielding methods. The shielding variations for this type of cable include;

(3) Overall Shielded Pairs/Triads

(4) Individual Shielded Pairs/Triads

What is the difference between instrumentation cable and control cable?

Most people, especially those that lack electrical cable expertise, confuse an instrumentation-type cable with a control cable. This confusion often arises because control wires belong to the instrumentation cable family. It is important to remember that there are some vital differences between these two cables when shopping for an ideal option.

The core difference between these cables rests in their usage. Control cables are typically helpful in situations that require larger wires that can withstand colossal electrical currents. Unlike KVV cables, instrumentation-type cables have a smaller diameter and have stranded conductors that guarantee maximum flexibility. Consequently, it is advisable to go for a flexible instrumentation cable if you intend to perform wiring applications that require maximum flexibility.

Also, instrumentation cables have shields to stop any electromagnetic interference that might impair their functionality. Generally, there are two types of shielding that cable manufacturers use: foil-type shielding and braid-type shielding. Unlike a control cable whose circuit does not require shielding, a shielded instrumentation cable is vital for all instrumentation applications.

Which instrumentation cable is ideal for the chemical and fertilizer industry

Apart from the instrumentation cable size, you ought to consider the cable type when selecting an ideal choice. Most people find it challenging to pick out the perfect option for the chemical and fertilizer industry. Typically, cables used in these industries face several hazards. There are two types of instrumentation cables, namely, PVC and XLPE. So, which is the ideal instrument cable option for the chemical and fertilizer industry?

It would be best to use a PVC instrument cable for such environments. Polyvinyl Chloride is a thermoplastic material generated through the polymerization process. This process produces insulation material resistant to flames, fires, repeated abrasions and moisture.

PVC is also known for being lightweight, resistant to corrosion, weathering and chemicals. Consequently, a PVC insulated cable is the ideal option for the Chemical and fertilizer industries. However, you need to check the instrumentation cable specification and ensure that it suits your specific application.

Nyloram (Alternate of Lead Sheathed cable)

- The use of low voltage cables in petrochemical field and refineries, is playing, in recent years, a large share of the market of cables. The use of electrical cables, in a typical petrochemical plant, can reach lengths of up to 4000 km, and these cables must ensure a high efficiency and a resistance to breakage and chemical agents. If these features are not guaranteed, te safety of entire system could be put at risk.
- The main international regulatory bodies have written standards, refer to these types of cables, eliminating the chemical and the mechanical problem introducing the lead covering. Unfortunately this is not enough. What we are experiencing now is a time when the markets are trying to economize and to make an impact as much as possible "clean" on environment, condemning all hazardous substances to a short life.
- Lead is, as we all have learned over years, very strong material, but also very polluting when directly buried, and no long disposable because need to be recycled.
- In this way a number of oil Companies and governments are already demanding lead-free cables for both new projects and upgrades.
- Usually, a lead inner sheath is used as a protection against hydrocarbon (gasoline, diesel fuel and motor oil) and as a moisture barrier.
- The drawback of the lead sheath is mainly its heavy weight and potential health danger.
- Nowadays an alternative exists to get a lighter, healthier cable without loose protection capability.



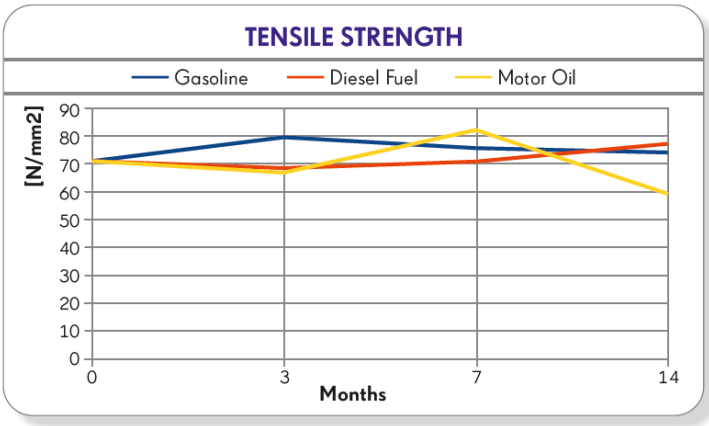
That is possible using a polyamide inner sheath. Polyamide has a good chemical resistance against hydrocarbon (comparable to lead), greater mechanical characteristics (specially against lateral compression (crush)) and less weight.

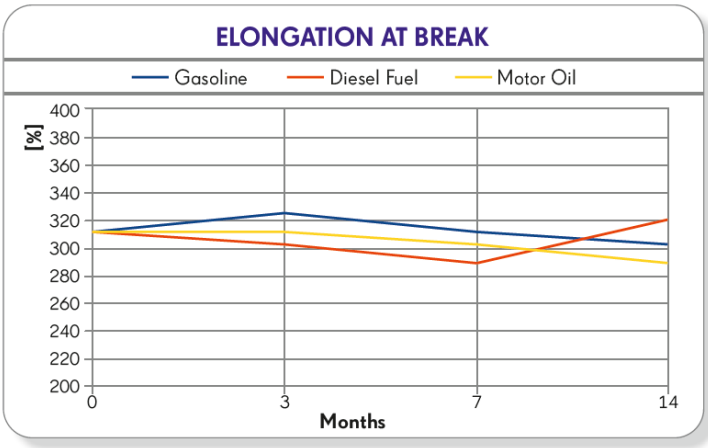
TESTS:

RAMCRO has conducted tests to verify mechanical behaviour of polyamide after some days of immersion in hydrocarbon. Some samples were immerged into the following fluid

- Gasoline
- Diesel Fuel
- Motor Oil

At interval of 3, 7, 14 months part of the samples were removed from the fluids, a dumbell specimen was cutted from the polyamide sheath and tested for tensile strength and elongation. The results are shown in the following diagrams:





Conclusions:

As shown, polyamide show good behaviour against hydrocarbons often present in petrochemical plant. As additional protection against water, a moisture barrier is usually used made by an aluminium tape bonded to the inner sheath and with the region of overlap bonded as well.



Cable indications for RAMCROIL VAP-GAS BARRIER Fully Filled in according to IEC 60079-14

- This standard contains specific requirements for the design, selection, installation and initial verification of electrical instal- lations in, or associated with, places where explosive atmospheres.
- When the equipment must also be suitable for other critical environmental conditions, for example the possibility of entry of water and possibility of corrosion, can be necessary requirements additional protection.
- The requirements set by the standard apply only in the case of use of the equipment in standard atmospheric conditions, as defined by the IEC EN 60079-0; in the case of different weather conditions it may take additional precautions.
- This standard replaces the IEC 60079-14: 2010-02 which remains applicable until 02/01/2017 and constitutes a technical revision.

The indications about the cable must be as the follow:

1. The cable entry system

Shall comply with the IEC 60079-1 indications

Cable entry device in compliance with IEC 79-1 "Construction and verification test of flameproof enclosures of electrical apparatus" and particular type of cable intended for use with that device.

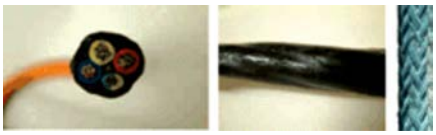
On condition the cable gland is not certified as part of the equipment but tested and certified as a separate component and the used cable is substantially compact and circular the selection chart above taken from section 10 of EN/ IEC60079- 1 can be used.

2. Cable construction

Should be Round

In order to comply with IEC installation standards, cable glands using elastomeric sealing rings as a means of maintaining the Flameproof protection method can only be used if the cable selected is:

"Substantially compact and circular with an extruded bedding, and if any fillers are used they are Non-Hygroscopic" This is clearly not always the case with cables used in hazardous areas.

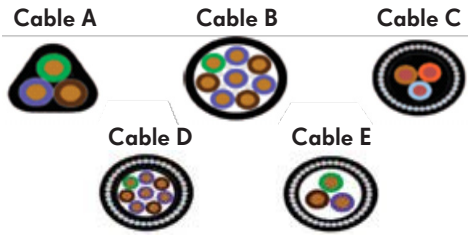


But the cable must play a part in the safety of the installation,
even in the case of indirect cable entry, when gas migration must be avoided.

e.g., where cables run acr oss two zones, or indeed from a hazardous area into a safe area.

3. Sample iec cable configurations

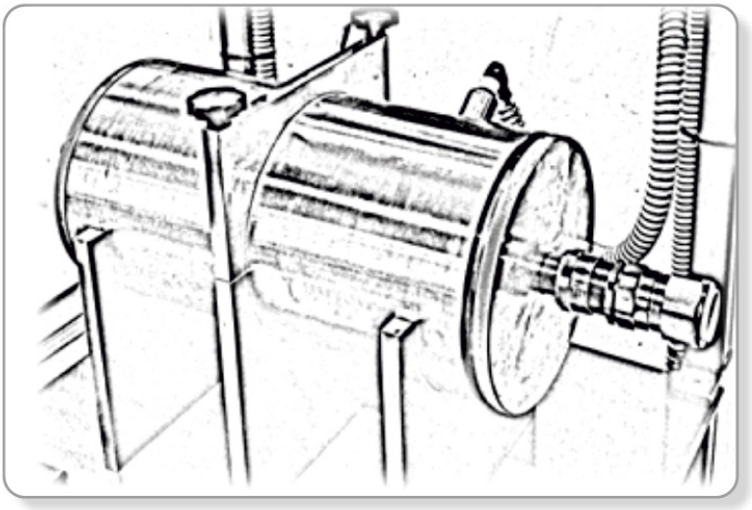
Which type is suitable for use with Flameproof Ex d equipment when a cable gland with an elastomeric sealing ring would be considered?



Thermoset, thermosetting or elastomeric cable which is substantially compact and circular, has extruded bedding and fillers, if any, are non-hygroscopic, may utilize flameproof cable entry devices, incorporating a sealing ring selected in ac- cordance with figure 1

Cable indications for RAMCROIL VAP-GAS BARRIER Fully Filled in according to IEC 60079-14

- Cable A is not suitable to apply a Flameproof sealing ring as this cable is the incorrect shape, and unless the cable is round the sealing ring will not be able to make an effective seal on the cable.
- Cables B, D & E are not suitable to apply a Flameproof sealing ring, as the white areas represent a gap or void in the cable whereby there is either no inner cable sheath, or extruded bedding, or suitable fillers are absent. In this case no protection to the interstices of the cable can be offered by a sealing ring.
- Cable C is the only one of the five sample cables illustrated which could be selected as correctly meeting the IEC 60079-14 criteria, as it has an extruded inner cable bedding and there is no gas migration path between the conductors.
- Equally, if the cable is not adequately filled, and allows the passage of air or gas to flow along the cable length then there would be no protection to the inner part of the cable when an elastomeric sealing ring is used.
- In this case a compound barrier type cable gland is the only safe solution and this is needed to maintain the integrity of the equipment as explained above, and prevent gas migration from equipment to equipment, or hazardous areas to safe areas.
- Now a new addition to the Annex E inside the IEC/EN 60079-14, provides a test method that can confirm the appropriate- ness of the combination cable with strain relief with sealing ring. This appendix describes the verification process cables for tightness to prevent "leakage" of gases between the cores and the eventual transfer of the flame blast through cable.
- The test is carried out on a sample of cable length 0.5 m that attaches to a completely closed and sealed housing volume 5 l (± 2 liters), under conditions of stable ambient temperature. It is believed that the particular pattern satisfied if the initial pressure of 0.3 kPa within housing is reduced by less than 0.15 kPa within 5 s. The housing must be sealed effectively to reduce pressure losses through the casing bands.
- Ex-Agency provided a laboratory for the described test method and has already conducted several tests for the end Users.



Laboratory testing Ex 'd' entries with sealing ring and cable Ex- Area according to Appendix E of the fifth edition of IEC 60079-14.

ramcro

special cables





EN 50288-7 90 V/ 300 V / 500 V

EN 50288-7:2005

RE-2Y(St)Y



These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Not suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Poliolefin Base FR - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outher Sheath:
Polyvinyl Chloride FR - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

STANDARD REFERENCES

- EN 50288-7
- EN 60228
- EN 50288-1
- HD 383
- EN 50290-2
- IEC 60331-1
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ON REQUEST

- Low Smoke Zero Halogen
- GAS-STOP in according to EN 60079-14 ANNEX E
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant

ELECTRICAL DATA

IInsulation Resistance @ 20°C: MOhm*Km	> 1000
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	90/300/500 V

IDENTIFICATION OF CORES

Pair: ○ ●

RE-2Y(St)Y - 90V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Not suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0150HDADN-RE9	1x2x0,50	6,6	48	37,5
MAS0250HDADN-RE9	2x2x0,50	9,8	87	37,5
MAS0450HDADN-RE9	4x2x0,50	11,4	136	37,5
MAS0650HDADN-RE9	6x2x0,50	13,8	191	37,5
MAS0850HDADN-RE9	8x2x0,50	15,3	241	37,5
MAS1050HDADN-RE9	10x2x0,50	17,9	303	37,5
MAS1250HDADN-RE9	12x2x0,50	18,6	346	37,5
MAS1650HDADN-RE9	16x2x0,50	20,8	442	37,5
MAS2050HDADN-RE9	20x2x0,50	23,5	547	37,5
MAS2450HDADN-RE9	24x2x0,50	26,0	652	37,5
MAS0175HDADN-RE9	1x2x0,75	7,0	56	25.5
MAS0275HDADN-RE9	2x2x0,75	10,4	102	25.5
MAS0475HDADN-RE9	4x2x0,75	12,2	163	25.5
MAS0675HDADN-RE9	6x2x0,75	14,8	231	25.5
MAS0875HDADN-RE9	8x2x0,75	16,4	293	25.5
MAS1075HDADN-RE9	10x2x0,75	19,2	368	25.5
MAS1275HDADN-RE9	12x2x0,75	19,9	422	25.5
MAS1675HDADN-RE9	16x2x0,75	22,2	543	25.5
MAS2075HDADN-RE9	20x2x0,75	25,2	673	25.5
MAS2475HDADN-RE9	24x2x0,75	28,0	804	25.5
MAS0110HDADN-RE9	1x2x1,00	7,3	64	18.8
MAS0210HDADN-RE9	2x2x1,00	11	119	18.8
MAS0410HDADN-RE9	4x2x1,00	13	193	18.8
MAS0610HDADN-RE9	6x2x1,00	15,7	276	18.8
MAS0810HDADN-RE9	8x2x1,00	17,5	351	18.8
MAS1010HDADN-RE9	10x2x1,00	20,4	442	18.8
MAS1210HDADN-RE9	12x2x1,00	21,2	509	18.8
MAS1610HDADN-RE9	16x2x1,00	23,7	657	18.8
MAS2010HDADN-RE9	20x2x1,00	26,9	815	18.8
MAS2410HDADN-RE9	24x2x1,00	29,9	975	18.8
MAS0115HDADN-RE9	1x2x1,50	7,9	78	12.6
MAS0215HDADN-RE9	2x2x1,50	12,0	147	12.6
MAS0415HDADN-RE9	4x2x1,50	14,1	245	12.6
MAS0615HDADN-RE9	6x2x1,50	17,2	352	12.6
MAS0815HDADN-RE9	8x2x1,50	19,1	452	12.6
MAS1015HDADN-RE9	10x2x1,50	22,4	568	12.6
MAS1215HDADN-RE9	12x2x1,50	23,2	658	12.6
MAS1615HDADN-RE9	16x2x1,50	26,0	853	12.6
MAS2015HDADN-RE9	20x2x1,50	29,5	1060	12.6
MAS2415HDADN-RE9	24x2x1,50	32,7	1269	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)Y - 1x2x2,5 mm2 - 90V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

RE-2Y(St)Y - 300V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Not suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0150HDADN-RE3	1x2x0,50	5,6	40	37,5
MAS0250HDADN-RE3	2x2x0,50	8,2	70	37,5
MAS0450HDADN-RE3	4x2x0,50	9,5	107	37,5
MAS0650HDADN-RE3	6x2x0,50	11,9	164	37,5
MAS0850HDADN-RE3	8x2x0,50	13,1	202	37,5
MAS1050HDADN-RE3	10x2x0,50	16,1	245	37,5
MAS1250HDADN-RE3	12x2x0,50	15,6	278	37,5
MAS1650HDADN-RE3	16x2x0,50	17,4	356	37,5
MAS2050HDADN-RE3	20x2x0,50	20,1	465	37,5
MAS2450HDADN-RE3	24x2x0,50	22,1	542	37,5
MAS0175HDADN-RE3	1x2x0,75	5,9	47	25.5
MAS0275HDADN-RE3	2x2x0,75	8,8	83	25.5
MAS0475HDADN-RE3	4x2x0,75	10,2	130	25.5
MAS0675HDADN-RE3	6x2x0,75	12,8	200	25.5
MAS0875HDADN-RE3	8x2x0,75	14,1	248	25.5
MAS1075HDADN-RE3	10x2x0,75	16,2	302	25.5
MAS1275HDADN-RE3	12x2x0,75	17,0	354	25.5
MAS1675HDADN-RE3	16x2x0,75	19,4	477	25.5
MAS2075HDADN-RE3	20x2x0,75	21,7	577	25.5
MAS2475HDADN-RE3	24x2x0,75	23,9	676	25.5
MAS0110HDADN-RE3	1x2x1,00	6,7	58	18.8
MAS0210HDADN-RE3	2x2x1,00	10,1	105	18.8
MAS0410HDADN-RE3	4x2x1,00	12,3	186	18.8
MAS0610HDADN-RE3	6x2x1,00	14,7	257	18.8
MAS0810HDADN-RE3	8x2x1,00	16,2	322	18.8
MAS1010HDADN-RE3	10x2x1,00	19,5	434	18.8
MAS1210HDADN-RE3	12x2x1,00	20,2	495	18.8
MAS1610HDADN-RE3	16x2x1,00	22,4	623	18.8
MAS2010HDADN-RE3	20x2x1,00	25,1	757	18.8
MAS2410HDADN-RE3	24x2x1,00	27,6	889	18.8
MAS0115HDADN-RE3	1x2x1,50	6,8	67	12.6
MAS0215HDADN-RE3	2x2x1,50	10,3	122	12.6
MAS0415HDADN-RE3	4x2x1,50	12,6	221	12.6
MAS0615HDADN-RE3	6x2x1,50	15,0	309	12.6
MAS0815HDADN-RE3	8x2x1,50	16,8	399	12.6
MAS1015HDADN-RE3	10x2x1,50	20,0	520	12.6
MAS1215HDADN-RE3	12x2x1,50	20,6	597	12.6
MAS1615HDADN-RE3	16x2x1,50	22,9	759	12.6
MAS2015HDADN-RE3	20x2x1,50	25,7	927	12.6
MAS2415HDADN-RE3	24x2x1,50	28,3	1092	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)Y - 1x2x2,5 mm2 - 300V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016
CPR Class B2ca <batch> <MeterMarking>

RE-2Y(St)Y - 500V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Not suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0175HDADN-RE5	1x2x0,75	5,9	47	22.5
MAS0275HDADN-RE5	2x2x0,75	8,8	83	22.5
MAS0475HDADN-RE5	4x2x0,75	10,2	130	22.5
MAS0675HDADN-RE5	6x2x0,75	12,8	200	22.5
MAS0875HDADN-RE5	8x2x0,75	14,1	248	22.5
MAS1075HDADN-RE5	10x2x0,75	16,2	302	22.5
MAS1275HDADN-RE5	12x2x0,75	17,0	354	22.5
MAS1675HDADN-RE5	16x2x0,75	19,4	477	22.5
MAS2075HDADN-RE5	20x2x0,75	21,7	577	22.5
MAS2475HDADN-RE5	24x2x0,75	23,9	676	22.5
MAS0110HDADN-RE5	1x2x1,00	6,7	58	18.8
MAS0210HDADN-RE5	2x2x1,00	10,1	105	18.8
MAS0410HDADN-RE5	4x2x1,00	12,3	186	18.8
MAS0610HDADN-RE5	6x2x1,00	14,7	257	18.8
MAS0810HDADN-RE5	8x2x1,00	16,2	322	18.8
MAS1010HDADN-RE5	10x2x1,00	19,5	434	18.8
MAS1210HDADN-RE5	12x2x1,00	20,2	495	18.8
MAS1610HDADN-RE5	16x2x1,00	22,4	623	18.8
MAS2010HDADN-RE5	20x2x1,00	25,1	757	18.8
MAS2410HDADN-RE5	24x2x1,00	27,6	889	18.8
MAS0115HDADN-RE5	1x2x1,50	6,8	67	12.6
MAS0215HDADN-RE5	2x2x1,50	10,3	122	12.6
MAS0415HDADN-RE5	4x2x1,50	12,6	221	12.6
MAS0615HDADN-RE5	6x2x1,50	15,0	309	12.6
MAS0815HDADN-RE5	8x2x1,50	16,8	399	12.6
MAS1015HDADN-RE5	10x2x1,50	20,0	520	12.6
MAS1215HDADN-RE5	12x2x1,50	20,6	597	12.6
MAS1615HDADN-RE5	16x2x1,50	22,9	759	12.6
MAS2015HDADN-RE5	20x2x1,50	25,7	927	12.6
MAS2415HDADN-RE5	24x2x1,50	28,3	1092	12.6
MAS0125HDADN-RE5	1x2x2,50	6,8	67	7.7
MAS0225HDADN-RE5	2x2x2,50	10,3	122	7.7
MAS0425HDADN-RE5	4x2x2,50	12,6	221	7.7
MAS0625HDADN-RE5	6x2x2,50	15,0	309	7.7
MAS0825HDADN-RE5	8x2x2,50	16,8	399	7.7
MAS1025HDADN-RE5	10x2x2,50	20,0	520	7.7
MAS1225HDADN-RE5	12x2x2,50	20,6	597	7.7
MAS1625HDADN-RE5	16x2x2,50	22,9	759	7.7
MAS2025HDADN-RE5	20x2x2,50	25,7	927	7.7
MAS2425HDADN-RE5	24x2x2,50	28,3	1092	7.7

CABLE PRINTING

RAMCRO - RE-2Y(St)Y - 1x2x2,5 mm2 - 500V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016
CPR Class B2ca <batch> <MeterMarking>

EN 50288-7:2005

RE-2Y(St)Y-Pimf



These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Not suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Poliolefin Base FR - PO
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outher Sheath:
Polyvinyl Chloride FR - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

STANDARD REFERENCES

- EN 50288-7
- EN 60228
- EN 50288-1
- HD 383
- EN 50290-2
- IEC 60331-1
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ON REQUEST

- Low Smoke Zero Halogen
- GAS-STOP in according to EN 60079-14 ANNEX E
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant

ELECTRICAL DATA

IInsulation Resistance @ 20°C: MOhm*Km	> 1000
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	90/300/500 V

IDENTIFICATION OF CORES

Pair: ○ ● + Yellow Numbered Tapes

RE-2Y(St)Y-Pimf - 90V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Not suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0250HDADN-RE9	2x2x0,50	6,5	58	37.5
MAC0450HDADN-RE9	4x2x0,50	7,5	93	37.5
MAC0650HDADN-RE9	6x2x0,50	8,9	132	37.5
MAC0850HDADN-RE9	8x2x0,50	9,8	167	37.5
MAC1050HDADN-RE9	10x2x0,50	11,4	207	37.5
MAC1250HDADN-RE9	12x2x0,50	11,8	239	37.5
MAC1650HDADN-RE9	16x2x0,50	13,1	308	37.5
MAC2050HDADN-RE9	20x2x0,50	14,7	380	37.5
MAC2450HDADN-RE9	24x2x0,50	16,3	453	37.5
MAC0275HDADN-RE9	2x2x0,75	7,2	72	25.5
MAC0475HDADN-RE9	4x2x0,75	8,3	117	25.5
MAC0675HDADN-RE9	6x2x0,75	10,0	167	25.5
MAC0875HDADN-RE9	8x2x0,75	11,0	213	25.5
MAC1075HDADN-RE9	10x2x0,75	12,8	265	25.5
MAC1275HDADN-RE9	12x2x0,75	13,2	307	25.5
MAC1675HDADN-RE9	16x2x0,75	14,7	396	25.5
MAC2075HDADN-RE9	20x2x0,75	16,6	490	25.5
MAC2475HDADN-RE9	24x2x0,75	18,4	584	25.5
MAC0210HDADN-RE9	2x2x1,00	8,3	92	18.8
MAC0410HDADN-RE9	4x2x1,00	9,7	154	18.8
MAC0610HDADN-RE9	6x2x1,00	11,6	220	18.8
MAC0810HDADN-RE9	8x2x1,00	12,9	282	18.8
MAC1010HDADN-RE9	10x2x1,00	15	353	18.8
MAC1210HDADN-RE9	12x2x1,00	15,5	409	18.8
MAC1610HDADN-RE9	16x2x1,00	17,3	531	18.8
MAC2010HDADN-RE9	20x2x1,00	19,6	658	18.8
MAC2410HDADN-RE9	24x2x1,00	21,7	786	18.8
MAC0215HDADN-RE9	2x2x1,50	9,2	118	12.6
MAC0415HDADN-RE9	4x2x1,50	10,8	200	12.6
MAC0615HDADN-RE9	6x2x1,50	13,1	289	12.6
MAC0815HDADN-RE9	8x2x1,50	14,5	373	12.6
MAC1015HDADN-RE9	10x2x1,50	16,9	466	12.6
MAC1215HDADN-RE9	12x2x1,50	17,5	543	12.6
MAC1615HDADN-RE9	16x2x1,50	19,6	707	12.6
MAC2015HDADN-RE9	20x2x1,50	22,2	878	12.6
MAC2415HDADN-RE9	24x2x1,50	24,6	1050	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)Y - Pimf - 1x2x2,5 mm2 - 90V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

RE-2Y(St)Y-Pimf - 300V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Not suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0250HDADN-RE3	2x2x0,50	6,9	62	37.5
MAC0450HDADN-RE3	4x2x0,50	8,0	99	37.5
MAC0650HDADN-RE3	6x2x0,50	9,6	140	37.5
MAC0850HDADN-RE3	8x2x0,50	10,6	177	37.5
MAC1050HDADN-RE3	10x2x0,50	12,2	221	37.5
MAC1250HDADN-RE3	12x2x0,50	12,7	254	37.5
MAC1650HDADN-RE3	16x2x0,50	14,1	327	37.5
MAC2050HDADN-RE3	20x2x0,50	15,9	404	37.5
MAC2450HDADN-RE3	24x2x0,50	17,6	480	37.5
MAC0275HDADN-RE3	2x2x0,75	7,6	76	25.5
MAC0475HDADN-RE3	4x2x0,75	8,8	123	25.5
MAC0675HDADN-RE3	6x2x0,75	10,6	176	25.5
MAC0875HDADN-RE3	8x2x0,75	11,7	224	25.5
MAC1075HDADN-RE3	10x2x0,75	13,6	279	25.5
MAC1275HDADN-RE3	12x2x0,75	14,1	323	25.5
MAC1675HDADN-RE3	16x2x0,75	15,7	417	25.5
MAC2075HDADN-RE3	20x2x0,75	17,7	516	25.5
MAC2475HDADN-RE3	24x2x0,75	19,6	615	25.5
MAC0210HDADN-RE3	2x2x1,00	8,3	92	18.8
MAC0410HDADN-RE3	4x2x1,00	9,7	154	18.8
MAC0610HDADN-RE3	6x2x1,00	11,6	220	18.8
MAC0810HDADN-RE3	8x2x1,00	12,9	282	18.8
MAC1010HDADN-RE3	10x2x1,00	15	353	18.8
MAC1210HDADN-RE3	12x2x1,00	15,5	409	18.8
MAC1610HDADN-RE3	16x2x1,00	17,3	531	18.8
MAC2010HDADN-RE3	20x2x1,00	19,6	658	18.8
MAC2410HDADN-RE3	24x2x1,00	21,7	786	18.8
MAC0215HDADN-RE3	2x2x1,50	9,6	122	12.6
MAC0415HDADN-RE3	4x2x1,50	11,2	206	12.6
MAC0615HDADN-RE3	6x2x1,50	13,6	298	12.6
MAC0815HDADN-RE3	8x2x1,50	15,0	383	12.6
MAC1015HDADN-RE3	10x2x1,50	17,5	480	12.6
MAC1215HDADN-RE3	12x2x1,50	18,2	559	12.6
MAC1615HDADN-RE3	16x2x1,50	20,3	727	12.6
MAC2015HDADN-RE3	20x2x1,50	23,0	903	12.6
MAC2415HDADN-RE3	24x2x1,50	25,5	1080	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)Y-Pimf - 1x2x2,5 mm2 - 300V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

RE-2Y(St)Y-Pimf - 500V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Not suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0275HDADN-RE5	2x2x0,75	7,9	78	37.5
MAC0475HDADN-RE5	4x2x0,75	9,2	128	37.5
MAC0675HDADN-RE5	6x2x0,75	11,1	182	37.5
MAC0875HDADN-RE5	8x2x0,75	12,2	232	37.5
MAC1075HDADN-RE5	10x2x0,75	14,2	290	37.5
MAC1275HDADN-RE5	12x2x0,75	14,7	335	37.5
MAC1675HDADN-RE5	16x2x0,75	16,4	432	37.5
MAC2075HDADN-RE5	20x2x0,75	18,5	535	37.5
MAC2475HDADN-RE5	24x2x0,75	20,5	638	37.5
MAC0210HDADN-RE5	2x2x1,00	8,6	96	25.5
MAC0410HDADN-RE5	4x2x1,00	10,1	159	25.5
MAC0610HDADN-RE5	6x2x1,00	12,1	228	25.5
MAC0810HDADN-RE5	8x2x1,00	13,4	292	25.5
MAC1010HDADN-RE5	10x2x1,00	15,6	365	25.5
MAC1210HDADN-RE5	12x2x1,00	16,2	423	25.5
MAC1610HDADN-RE5	16x2x1,00	18,1	549	25.5
MAC2010HDADN-RE5	20x2x1,00	20,4	680	25.5
MAC2410HDADN-RE5	24x2x1,00	22,7	812	25.5
MAC0215HDADN-RE5	2x2x1,50	9,4	120	18.8
MAC0415HDADN-RE5	4x2x1,50	11,0	204	18.8
MAC0615HDADN-RE5	6x2x1,50	13,3	294	18.8
MAC0815HDADN-RE5	8x2x1,50	14,8	378	18.8
MAC1015HDADN-RE5	10x2x1,50	17,3	474	18.8
MAC1215HDADN-RE5	12x2x1,50	17,9	552	18.8
MAC1615HDADN-RE5	16x2x1,50	20,0	718	18.8
MAC2015HDADN-RE5	20x2x1,50	22,6	892	18.8
MAC2415HDADN-RE5	24x2x1,50	25,1	1066	18.8
MAC0225HDADN-RE5	2x2x2,50	11,5	176	12.6
MAC0425HDADN-RE5	4x2x2,50	13,5	306	12.6
MAC0625HDADN-RE5	6x2x2,50	16,4	446	12.6
MAC0825HDADN-RE5	8x2x2,50	18,3	577	12.6
MAC1025HDADN-RE5	10x2x2,50	21,4	724	12.6
MAC1225HDADN-RE5	12x2x2,50	22,2	847	12.6
MAC1625HDADN-RE5	16x2x2,50	24,8	1106	12.6
MAC2025HDADN-RE5	20x2x2,50	28,2	1377	12.6
MAC2425HDADN-RE5	24x2x2,50	31,3	1649	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)Y-Pimf - 1x2x2,5 mm2 - 500V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

EN 50288-7:2005

RE-2Y(St)YRY



These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Poliolefin Base FR - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride FR - PVC
Armour:
Galvanized Steel Wires Armour
Outer Sheath:
Polyvinyl chloride FR - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

STANDARD REFERENCES

- EN 50288-7
- EN 60228
- EN 50288-1
- HD 383
- EN 50290-2
- IEC 60331-1
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ON REQUEST

- Low Smoke Zero Halogen
- GAS-STOP in according to EN 60079-14 ANNEX E
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- SWB or STA armour

ELECTRICAL DATA

IInsulation Resistance @ 20°C: MOhm*Km	> 1000
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	90/300/500 V

IDENTIFICATION OF CORES

Pair: ○ ●

RE-2Y(St)YRY - 90V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0150ADADN-RE9	1x2x0,50	8,8	155	37,5
MAS0250ADADN-RE9	2x2x0,50	10,6	215	37,5
MAS0450ADADN-RE9	4x2x0,50	11,6	266	37,5
MAS0650ADADN-RE9	6x2x0,50	13,1	328	37,5
MAS0850ADADN-RE9	8x2x0,50	14,0	377	37,5
MAS1050ADADN-RE9	10x2x0,50	15,5	455	37,5
MAS1250ADADN-RE9	12x2x0,50	15,9	479	37,5
MAS1650ADADN-RE9	16x2x0,50	17,2	565	37,5
MAS2050ADADN-RE9	20x2x0,50	18,8	661	37,5
MAS2450ADADN-RE9	24x2x0,50	21,1	861	37,5
MAS0175ADADN-RE9	1x2x0,75	9,2	171	25.5
MAS0275ADADN-RE9	2x2x0,75	11,4	245	25.5
MAS0475ADADN-RE9	4x2x0,75	12,5	308	25.5
MAS0675ADADN-RE9	6x2x0,75	14,2	387	25.5
MAS0875ADADN-RE9	8x2x0,75	15,2	450	25.5
MAS1075ADADN-RE9	10x2x0,75	16,9	535	25.5
MAS1275ADADN-RE9	12x2x0,75	17,4	581	25.5
MAS1675ADADN-RE9	16x2x0,75	18,9	692	25.5
MAS2075ADADN-RE9	20x2x0,75	21,5	924	25.5
MAS2475ADADN-RE9	24x2x0,75	23,3	1057	25.5
MAS0110ADADN-RE9	1x2x1,00	9,9	196	18.8
MAS0210ADADN-RE9	2x2x1,00	12,5	289	18.8
MAS0410ADADN-RE9	4x2x1,00	13,9	374	18.8
MAS0610ADADN-RE9	6x2x1,00	15,9	477	18.8
MAS0810ADADN-RE9	8x2x1,00	17,2	560	18.8
MAS1010ADADN-RE9	10x2x1,00	19,3	672	18.8
MAS1210ADADN-RE9	12x2x1,00	19,8	734	18.8
MAS1610ADADN-RE9	16x2x1,00	22,4	995	18.8
MAS2010ADADN-RE9	20x2x1,00	24,7	1174	18.8
MAS2410ADADN-RE9	24x2x1,00	26,8	1350	18.8
MAS0115ADADN-RE9	1x2x1,50	10,5	221	12.6
MAS0215ADADN-RE9	2x2x1,50	13,5	338	12.6
MAS0415ADADN-RE9	4x2x1,50	15,2	448	12.6
MAS0615ADADN-RE9	6x2x1,50	17,4	581	12.6
MAS0815ADADN-RE9	8x2x1,50	18,9	690	12.6
MAS1015ADADN-RE9	10x2x1,50	22,1	944	12.6
MAS1215ADADN-RE9	12x2x1,50	22,7	1031	12.6
MAS1615ADADN-RE9	16x2x1,50	24,8	1242	12.6
MAS2015ADADN-RE9	20x2x1,50	27,4	1477	12.6
MAS2415A DADN-RE9	24x2x1,50	29,8	1709	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)Y - 1x2x2,5 mm2 - 90V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <Meter-Marking>

RE-2Y(St)YRY - 300V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0150ADADN-RE5	1x2x0,50	9,0	163	37,5
MAS0250ADADN-RE5	2x2x0,50	11,1	229	37,5
MAS0450ADADN-RE5	4x2x0,50	12,2	283	37,5
MAS0650ADADN-RE5	6x2x0,50	13,7	351	37,5
MAS0850ADADN-RE5	8x2x0,50	14,7	404	37,5
MAS1050ADADN-RE5	10x2x0,50	16,4	478	37,5
MAS1250ADADN-RE5	12x2x0,50	16,8	515	37,5
MAS1650ADADN-RE5	16x2x0,50	18,2	607	37,5
MAS2050ADADN-RE5	20x2x0,50	20,0	713	37,5
MAS2450ADADN-RE5	24x2x0,50	22,4	928	37,5
MAS0175ADADN-RE5	1x2x0,75	9,5	178	25.5
MAS0275ADADN-RE5	2x2x0,75	11,8	258	25.5
MAS0475ADADN-RE5	4x2x0,75	13,1	327	25.5
MAS0675ADADN-RE5	6x2x0,75	14,8	411	25.5
MAS0875ADADN-RE5	8x2x0,75	15,9	478	25.5
MAS1075ADADN-RE5	10x2x0,75	17,8	570	25.5
MAS1275ADADN-RE5	12x2x0,75	18,3	619	25.5
MAS1675ADADN-RE5	16x2x0,75	20,0	738	25.5
MAS2075ADADN-RE5	20x2x0,75	22,7	986	25.5
MAS2475ADADN-RE5	24x2x0,75	24,6	1128	25.5
MAS0110ADADN-RE5	1x2x1,00	9,9	196	18.8
MAS0210ADADN-RE5	2x2x1,00	12,5	289	18.8
MAS0410ADADN-RE5	4x2x1,00	13,9	374	18.8
MAS0610ADADN-RE5	6x2x1,00	15,9	477	18.8
MAS0810ADADN-RE5	8x2x1,00	17,2	560	18.8
MAS1010ADADN-RE5	10x2x1,00	19,3	672	18.8
MAS1210ADADN-RE5	12x2x1,00	19,8	734	18.8
MAS1610ADADN-RE5	16x2x1,00	22,4	995	18.8
MAS2010ADADN-RE5	20x2x1,00	24,7	1174	18.8
MAS2410ADADN-RE5	24x2x1,00	26,8	1350	18.8
MAS0115ADADN-RE5	1x2x1,50	10,7	228	12.6
MAS0215ADADN-RE5	2x2x1,50	13,9	349	12.6
MAS0415ADADN-RE5	4x2x1,50	15,6	463	12.6
MAS0615ADADN-RE5	6x2x1,50	17,9	601	12.6
MAS0815ADADN-RE5	8x2x1,50	19,4	714	12.6
MAS1015ADADN-RE5	10x2x1,50	22,7	977	12.6
MAS1215ADADN-RE5	12x2x1,50	23,4	1068	12.6
MAS1615ADADN-RE5	16x2x1,50	25,6	1286	12.6
MAS2015ADADN-RE5	20x2x1,50	28,3	1530	12.6
MAS2415ADADN-RE5	24x2x1,50	30,9	1771	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)Y-Pimf - 1x2x2,5 mm2 - 300V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

RE-2Y(St)YRY - 500V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Not suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0175HDADN-RE5	1x2x0,75	9,6	184	22.5
MAS0275HDADN-RE5	2x2x0,75	12,1	268	22.5
MAS0475HDADN-RE5	4x2x0,75	13,4	340	22.5
MAS0675HDADN-RE5	6x2x0,75	15,3	429	22.5
MAS0875HDADN-RE5	8x2x0,75	16,5	499	22.5
MAS1075HDADN-RE5	10x2x0,75	18,5	595	22.5
MAS1275HDADN-RE5	12x2x0,75	19,0	646	22.5
MAS1675HDADN-RE5	16x2x0,75	21,4	878	22.5
MAS2075HDADN-RE5	20x2x0,75	23,6	1030	22.5
MAS2475HDADN-RE5	24x2x0,75	25,6	1180	22.5
MAS0110HDADN-RE5	1x2x1,00	10,1	202	18.8
MAS0210HDADN-RE5	2x2x1,00	12,9	300	18.8
MAS0410HDADN-RE5	4x2x1,00	14,3	388	18.8
MAS0610HDADN-RE5	6x2x1,00	16,4	496	18.8
MAS0810HDADN-RE5	8x2x1,00	17,7	582	18.8
MAS1010HDADN-RE5	10x2x1,00	20	700	18.8
MAS1210HDADN-RE5	12x2x1,00	21,3	870	18.8
MAS1610HDADN-RE5	16x2x1,00	23,2	1036	18.8
MAS2010HDADN-RE5	20x2x1,00	25,6	1223	18.8
MAS2410HDADN-RE5	24x2x1,00	27,8	1408	18.8
MAS0115HDADN-RE5	1x2x1,50	10,6	225	12.6
MAS0215HDADN-RE5	2x2x1,50	13,7	344	12.6
MAS0415HDADN-RE5	4x2x1,50	15,4	456	12.6
MAS0615HDADN-RE5	6x2x1,50	17,7	592	12.6
MAS0815HDADN-RE5	8x2x1,50	19,2	703	12.6
MAS1015HDADN-RE5	10x2x1,50	22,4	962	12.6
MAS1215HDADN-RE5	12x2x1,50	23,1	1051	12.6
MAS1615HDADN-RE5	16x2x1,50	25,2	1267	12.6
MAS2015HDADN-RE5	20x2x1,50	27,9	1506	12.6
MAS2415HDADN-RE5	24x2x1,50	30,4	1743	12.6
MAS0125HDADN-RE5	1x2x2,50	11,9	281	7.7
MAS0225HDADN-RE5	2x2x2,50	15,9	448	7.7
MAS0425HDADN-RE5	4x2x2,50	18,0	617	7.7
MAS0625HDADN-RE5	6x2x2,50	21,7	925	7.7
MAS0825HDADN-RE5	8x2x2,50	23,6	1104	7.7
MAS1025HDADN-RE5	10x2x2,50	26,8	1338	7.7
MAS1225HDADN-RE5	12x2x2,50	27,6	1476	7.7
MAS1625HDADN-RE5	16x2x2,50	30,3	1803	7.7
MAS2025HDADN-RE5	20x2x2,50	35,3	2550	7.7
MAS2425HDADN-RE5	24x2x2,50	38,5	2945	7.7

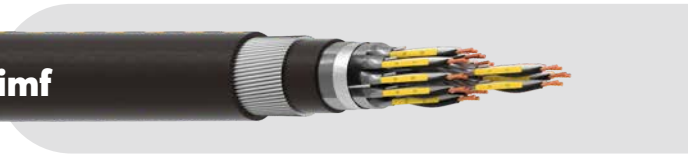
CABLE PRINTING

RAMCRO - RE-2Y(St)Y - 1x2x2,5 mm2 - 500V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016
CPR Class B2ca <batch> <MeterMarking>

EN 50288-7:2005

RE-2Y(St)YRY-Pimf

RAMCRO - EN 50288-7 RE-2Y(St)Y-Pimf



These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Poliolefin Base FR - PO
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride FR - PVC
Armour:
Galvanized Steel Wires Armour
Outer Sheath:
Polyvinyl chloride FR - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

STANDARD REFERENCES

- EN 50288-7
- EN 60228
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ON REQUEST

- Low Smoke Zero Halogen
- GAS-STOP in according to EN 60079-14 ANNEX E
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- SWB or STA armour

ELECTRICAL DATA

IInsulation Resistance @ 20°C: MOhm*Km	> 1000
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	90/300/500 V

IDENTIFICATION OF CORES

Pair: ○ ● + Yellow Numbered Tapes

RE-2Y(St)YRY - 90V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0250ADADN-RE9	2x2x0,50	10,9	230	37.5
MAC0450ADADN-RE9	4x2x0,50	12,0	289	37.5
MAC0650ADADN-RE9	6x2x0,50	13,5	361	37.5
MAC0850ADADN-RE9	8x2x0,50	14,5	417	37.5
MAC1050ADADN-RE9	10x2x0,50	16,1	495	37.5
MAC1250ADADN-RE9	12x2x0,50	16,5	537	37.5
MAC1650ADADN-RE9	16x2x0,50	17,9	638	37.5
MAC2050ADADN-RE9	20x2x0,50	19,7	752	37.5
MAC2450ADADN-RE9	24x2x0,50	22,0	974	37.5
MAC0275ADADN-RE9	2x2x0,75	11,7	260	25.5
MAC0475ADADN-RE9	4x2x0,75	12,9	332	25.5
MAC0675ADADN-RE9	6x2x0,75	14,6	420	25.5
MAC0875ADADN-RE9	8x2x0,75	15,7	491	25.5
MAC1075ADADN-RE9	10x2x0,75	17,6	586	25.5
MAC1275ADADN-RE9	12x2x0,75	18,1	639	25.5
MAC1675ADADN-RE9	16x2x0,75	19,6	767	25.5
MAC2075ADADN-RE9	20x2x0,75	22,4	1021	25.5
MAC2475ADADN-RE9	24x2x0,75	24,2	1171	25.5
MAC0210ADADN-RE9	2x2x1,00	12,8	306	18.8
MAC0410ADADN-RE9	4x2x1,00	14,3	400	18.8
MAC0610ADADN-RE9	6x2x1,00	16,4	514	18.8
MAC0810ADADN-RE9	8x2x1,00	17,7	607	18.8
MAC1010ADADN-RE9	10x2x1,00	19,9	730	18.8
MAC1210ADADN-RE9	12x2x1,00	21,2	906	18.8
MAC1610ADADN-RE9	16x2x1,00	23,2	1085	18.8
MAC2010ADADN-RE9	20x2x1,00	25,5	1285	18.8
MAC2410ADADN-RE9	24x2x1,00	27,8	1482	18.8
MAC0215ADADN-RE9	2x2x1,50	13,9	354	12.6
MAC0415ADADN-RE9	4x2x1,50	15,5	475	12.6
MAC0615ADADN-RE9	6x2x1,50	17,9	619	12.6
MAC0815ADADN-RE9	8x2x1,50	19,4	737	12.6
MAC1015ADADN-RE9	10x2x1,50	22,7	1006	12.6
MAC1215ADADN-RE9	12x2x1,50	23,3	1103	12.6
MAC1615ADADN-RE9	16x2x1,50	25,5	1334	12.6
MAC2015ADADN-RE9	20x2x1,50	28,2	1589	12.6
MAC2415HDADN-RE9	24x2x1,50	30,8	1842	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)Y - Pimf - 1x2x2,5 mm2 - 90V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016

RE-2Y(St)YRY-Pimf - 300V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0250ADADN-RE3	2x2x0,50	11,4	244	37.5
MAC0450ADADN-RE3	4x2x0,50	12,6	306	37.5
MAC0650ADADN-RE3	6x2x0,50	14,2	384	37.5
MAC0850ADADN-RE3	8x2x0,50	15,2	445	37.5
MAC1050ADADN-RE3	10x2x0,50	17,0	529	37.5
MAC1250ADADN-RE3	12x2x0,50	17,5	573	37.5
MAC1650ADADN-RE3	16x2x0,50	19,0	682	37.5
MAC2050ADADN-RE3	20x2x0,50	21,6	911	37.5
MAC2450ADADN-RE3	24x2x0,50	23,4	1041	37.5
MAC0275ADADN-RE3	2x2x0,75	12,1	273	25.5
MAC0475ADADN-RE3	4x2x0,75	13,4	350	25.5
MAC0675ADADN-RE3	6x2x0,75	15,3	444	25.5
MAC0875ADADN-RE3	8x2x0,75	16,5	519	25.5
MAC1075ADADN-RE3	10x2x0,75	18,5	622	25.5
MAC1275ADADN-RE3	12x2x0,75	19,0	678	25.5
MAC1675ADADN-RE3	16x2x0,75	21,4	919	25.5
MAC2075ADADN-RE3	20x2x0,75	23,6	1082	25.5
MAC2475ADADN-RE3	24x2x0,75	25,6	1243	25.5
MAC0210ADADN-RE3	2x2x1,00	12,8	306	18.8
MAC0410ADADN-RE3	4x2x1,00	14,3	400	18.8
MAC0610ADADN-RE3	6x2x1,00	16,4	514	18.8
MAC0810ADADN-RE3	8x2x1,00	17,7	607	18.8
MAC1010ADADN-RE3	10x2x1,00	19,9	730	18.8
MAC1210ADADN-RE3	12x2x1,00	21,2	906	18.8
MAC1610ADADN-RE3	16x2x1,00	23,2	1085	18.8
MAC2010ADADN-RE3	20x2x1,00	25,5	1285	18.8
MAC2410ADADN-RE3	24x2x1,00	27,8	1482	18.8
MAC0215ADADN-RE3	2x2x1,50	14,2	365	12.6
MAC0415ADADN-RE3	4x2x1,50	15,9	490	12.6
MAC0615ADADN-RE3	6x2x1,50	18,4	639	12.6
MAC0815ADADN-RE3	8x2x1,50	20,0	762	12.6
MAC1015ADADN-RE3	10x2x1,50	23,4	1040	12.6
MAC1215ADADN-RE3	12x2x1,50	24,0	1140	12.6
MAC1615ADADN-RE3	16x2x1,50	26,3	1378	12.6
MAC2015ADADN-RE3	20x2x1,50	29,1	1643	12.6
MAC2415ADADN-RE3	24x2x1,50	33,4	2267	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)YRY-Pimf - 1x2x2,5 mm2 - 300V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575:2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

EN 50288-7:2005

RE-2Y(St)YRY - 500V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Not suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0275ADADN-RE5	2x2x0,75	12,4	283	37.5
MAC0475ADADN-RE5	4x2x0,75	13,8	363	37.5
MAC0675ADADN-RE5	6x2x0,75	15,8	462	37.5
MAC0875ADADN-RE5	8x2x0,75	17,0	540	37.5
MAC1075ADADN-RE5	10x2x0,75	19,1	647	37.5
MAC1275ADADN-RE5	12x2x0,75	19,6	705	37.5
MAC1675ADADN-RE5	16x2x0,75	22,2	957	37.5
MAC2075ADADN-RE5	20x2x0,75	24,4	1127	37.5
MAC2475ADADN-RE5	24x2x0,75	26,5	1295	37.5
MAC0210ADADN-RE5	2x2x1,00	13,2	317	25.5
MAC0410ADADN-RE5	4x2x1,00	14,7	415	25.5
MAC0610ADADN-RE5	6x2x1,00	16,9	533	25.5
MAC0810ADADN-RE5	8x2x1,00	18,3	630	25.5
MAC1010ADADN-RE5	10x2x1,00	21,3	865	25.5
MAC1210ADADN-RE5	12x2x1,00	21,9	941	25.5
MAC1610ADADN-RE5	16x2x1,00	23,9	1127	25.5
MAC2010ADADN-RE5	20x2x1,00	26,4	1335	25.5
MAC2410ADADN-RE5	24x2x1,00	28,8	1540	25.5
MAC0215ADADN-RE5	2x2x1,50	14,0	360	18.8
MAC0415ADADN-RE5	4x2x1,50	15,8	483	18.8
MAC0615ADADN-RE5	6x2x1,50	18,2	630	18.8
MAC0815ADADN-RE5	8x2x1,50	19,7	751	18.8
MAC1015ADADN-RE5	10x2x1,50	23,1	1025	18.8
MAC1215ADADN-RE5	12x2x1,50	23,7	1124	18.8
MAC1615ADADN-RE5	16x2x1,50	26,0	1358	18.8
MAC2015ADADN-RE5	20x2x1,50	28,7	1619	18.8
MAC2415ADADN-RE5	24x2x1,50	32,1	2041	18.8
MAC0225ADADN-RE5	2x2x2,50	16,2	466	12.6
MAC0425ADADN-RE5	4x2x2,50	18,4	647	12.6
MAC0625ADADN-RE5	6x2x2,50	22,2	971	12.6
MAC0825ADADN-RE5	8x2x2,50	24,1	1160	12.6
MAC1025ADADN-RE5	10x2x2,50	27,4	1409	12.6
MAC1225ADADN-RE5	12x2x2,50	28,2	1558	12.6
MAC1625ADADN-RE5	16x2x2,50	31,1	1907	12.6
MAC2025ADADN-RE5	20x2x2,50	36,2	2688	12.6
MAC2425ADADN-RE5	24x2x2,50	39,4	3109	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)YRY-Pimf - 1x2x2,5 mm2 - 500V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

EN 50288-7:2005

RE-2Y(St)YMYRY



These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Poliolefin Base FR - PO
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride FR - PVC
Armour:
Galvanized Steel Wires Armour
Outer Sheath:
Polyvinyl chloride FR - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

STANDARD REFERENCES

- EN 50288-7
- EN 60228
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ON REQUEST

- Low Smoke Zero Halogen
- GAS-STOP in according to EN 60079-14 ANNEX E
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- SWB or STA armour

ELECTRICAL DATA

IInsulation Resistance @ 20°C: MOhm*Km	> 1000
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	90/300/500 V

IDENTIFICATION OF CORES

Pair: ○ ●

RE-2Y(St)YMYRY - 90V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0150ADADN-RE9LC	1x2x0,50	13,8	553	37,5
MAS0250ADADN-RE9LC	2x2x0,50	15,7	695	37,5
MAS0450ADADN-RE9LC	4x2x0,50	16,7	788	37,5
MAS0650ADADN-RE9LC	6x2x0,50	18,1	911	37,5
MAS0850ADADN-RE9LC	8x2x0,50	19,0	998	37,5
MAS1050ADADN-RE9LC	10x2x0,50	21,7	1266	37,5
MAS1250ADADN-RE9LC	12x2x0,50	22,1	1320	37,5
MAS1650ADADN-RE9LC	16x2x0,50	23,4	1470	37,5
MAS2050ADADN-RE9LC	20x2x0,50	25,1	1646	37,5
MAS2450ADADN-RE9LC	24x2x0,50	26,8	1890	37,5
MAS0175ADADN-RE9LC	1x2x0,75	14,2	588	25.5
MAS0275ADADN-RE9LC	2x2x0,75	16,4	755	25.5
MAS0475ADADN-RE9LC	4x2x0,75	17,6	869	25.5
MAS0675ADADN-RE9LC	6x2x0,75	19,2	1017	25.5
MAS0875ADADN-RE9LC	8x2x0,75	21,4	1257	25.5
MAS1075ADADN-RE9LC	10x2x0,75	23,2	1428	25.5
MAS1275ADADN-RE9LC	12x2x0,75	23,6	1496	25.5
MAS1675ADADN-RE9LC	16x2x0,75	25,1	1681	25.5
MAS2075ADADN-RE9LC	20x2x0,75	27,2	1974	25.5
MAS2475ADADN-RE9LC	24x2x0,75	29,0	2189	25.5
MAS0110ADADN-RE9LC	1x2x1,00	15	644	18.8
MAS0210ADADN-RE9LC	2x2x1,00	17,6	850	18.8
MAS0410ADADN-RE9LC	4x2x1,00	19	995	18.8
MAS0610ADADN-RE9LC	6x2x1,00	22,1	1320	18.8
MAS0810ADADN-RE9LC	8x2x1,00	23,4	1464	18.8
MAS1010ADADN-RE9LC	10x2x1,00	25,5	1680	18.8
MAS1210ADADN-RE9LC	12x2x1,00	26,1	1769	18.8
MAS1610ADADN-RE9LC	16x2x1,00	28,1	2086	18.8
MAS2010ADADN-RE9LC	20x2x1,00	30,6	2459	18.8
MAS2410ADADN-RE9LC	24x2x1,00	34,3	3117	18.8
MAS0115ADADN-RE9LC	1x2x1,50	15,6	696	12.6
MAS0215ADADN-RE9LC	2x2x1,50	18,6	941	12.6
MAS0415ADADN-RE9LC	4x2x1,50	21,4	1254	12.6
MAS0615ADADN-RE9LC	6x2x1,50	23,7	1498	12.6
MAS0815ADADN-RE9LC	8x2x1,50	25,1	1677	12.6
MAS1015ADADN-RE9LC	10x2x1,50	27,8	2019	12.6
MAS1215ADADN-RE9LC	12x2x1,50	28,4	2136	12.6
MAS1615ADADN-RE9LC	16x2x1,50	30,7	2533	12.6
MAS2015ADADN-RE9LC	20x2x1,50	34,9	3280	12.6
MAS2415A DADN-RE9LC	24x2x1,50	38,0	3822	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)YMYRY- 1x2x2,5 mm2 - 90V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

RE-2Y(St)YMYRY - 300V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0150ADADN-RE3LC	1x2x0,50	14,1	573	37,5
MAS0250ADADN-RE3LC	2x2x0,50	16,1	728	37,5
MAS0450ADADN-RE3LC	4x2x0,50	17,2	829	37,5
MAS0650ADADN-RE3LC	6x2x0,50	18,8	963	37,5
MAS0850ADADN-RE3LC	8x2x0,50	20,9	1187	37,5
MAS1050ADADN-RE3LC	10x2x0,50	22,6	1343	37,5
MAS1250ADADN-RE3LC	12x2x0,50	23,0	1401	37,5
MAS1650ADADN-RE3LC	16x2x0,50	24,5	1564	37,5
MAS2050ADADN-RE3LC	20x2x0,50	26,5	1830	37,5
MAS2450ADADN-RE3LC	24x2x0,50	28,1	2021	37,5
MAS0175ADADN-RE3LC	1x2x0,75	14,5	608	25.5
MAS0275ADADN-RE3LC	2x2x0,75	16,9	788	25.5
MAS0475ADADN-RE3LC	4x2x0,75	18,1	910	25.5
MAS0675ADADN-RE3LC	6x2x0,75	21,1	1200	25.5
MAS0875ADADN-RE3LC	8x2x0,75	22,2	1322	25.5
MAS1075ADADN-RE3LC	10x2x0,75	24,1	1507	25.5
MAS1275ADADN-RE3LC	12x2x0,75	24,6	1579	25.5
MAS1675ADADN-RE3LC	16x2x0,75	26,4	1852	25.5
MAS2075ADADN-RE3LC	20x2x0,75	28,4	2092	25.5
MAS2475ADADN-RE3LC	24x2x0,75	30,5	2411	25.5
MAS0110ADADN-RE3LC	1x2x1,00	15	644	18.8
MAS0210ADADN-RE3LC	2x2x1,00	17,6	850	18.8
MAS0410ADADN-RE3LC	4x2x1,00	19	995	18.8
MAS0610ADADN-RE3LC	6x2x1,00	22,1	1320	18.8
MAS0810ADADN-RE3LC	8x2x1,00	23,4	1464	18.8
MAS1010ADADN-RE3LC	10x2x1,00	25,5	1680	18.8
MAS1210ADADN-RE3LC	12x2x1,00	26,1	1769	18.8
MAS1610ADADN-RE3LC	16x2x1,00	28,1	2086	18.8
MAS2010ADADN-RE3LC	20x2x1,00	20,6	2459	18.8
MAS2410ADADN-RE3LC	24x2x1,00	34,3	3117	18.8
MAS0115ADADN-RE3LC	1x2x1,50	15,8	711	12.6
MAS0215ADADN-RE3LC	2x2x1,50	18,9	967	12.6
MAS0415ADADN-RE3LC	4x2x1,50	21,8	1289	12.6
MAS0615ADADN-RE3LC	6x2x1,50	24,2	1543	12.6
MAS0815ADADN-RE3LC	8x2x1,50	25,7	1729	12.6
MAS1015ADADN-RE3LC	10x2x1,50	28,4	2084	12.6
MAS1215ADADN-RE3LC	12x2x1,50	29,1	2205	12.6
MAS1615ADADN-RE3LC	16x2x1,50	33,1	2976	12.6
MAS2015ADADN-RE3LC	20x2x1,50	36,4	3540	12.6
MAS2415ADADN-RE3LC	24x2x1,50	39,0	3952	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)YMYRY- 1x2x2,5 mm2 - 90V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

RE-2Y(St)YRY - 500V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Not suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0175HDADN-RE5LC	1x2x0,75	14,7	622	22.5
MAS0275HDADN-RE5LC	2x2x0,75	17,2	812	22.5
MAS0475HDADN-RE5LC	4x2x0,75	18,5	940	22.5
MAS0675HDADN-RE5LC	6x2x0,75	21,5	1241	22.5
MAS0875HDADN-RE5LC	8x2x0,75	22,7	1369	22.5
MAS1075HDADN-RE5LC	10x2x0,75	24,7	1564	22.5
MAS1275HDADN-RE5LC	12x2x0,75	25,2	1640	22.5
MAS1675HDADN-RE5LC	16x2x0,75	27,1	1924	22.5
MAS2075HDADN-RE5LC	20x2x0,75	29,3	2176	22.5
MAS2475HDADN-RE5LC	24x2x0,75	33,1	2870	22.5
MAS0110HDADN-RE5LC	1x2x1,00	15,2	659	18.8
MAS0210HDADN-RE5LC	2x2x1,00	17,9	876	18.8
MAS0410HDADN-RE5LC	4x2x1,00	19,4	1026	18.8
MAS0610HDADN-RE5LC	6x2x1,00	22,7	1364	18.8
MAS0810HDADN-RE5LC	8x2x1,00	24	1514	18.8
MAS1010HDADN-RE5LC	10x2x1,00	26,4	1814	18.8
MAS1210HDADN-RE5LC	12x2x1,00	27	1908	18.8
MAS1610HDADN-RE5LC	16x2x1,00	28,9	2165	18.8
MAS2010HDADN-RE5LC	20x2x1,00	33,1	2914	18.8
MAS2410HDADN-RE5LC	24x2x1,00	35,7	3285	18.8
MAS0115HDADN-RE5LC	1x2x1,50	15,7	705	12.6
MAS0215HDADN-RE5LC	2x2x1,50	18,8	955	12.6
MAS0415HDADN-RE5LC	4x2x1,50	21,6	1273	12.6
MAS0615HDADN-RE5LC	6x2x1,50	23,9	1523	12.6
MAS0815HDADN-RE5LC	8x2x1,50	25,4	1706	12.6
MAS1015HDADN-RE5LC	10x2x1,50	28,1	2055	12.6
MAS1215HDADN-RE5LC	12x2x1,50	28,8	2174	12.6
MAS1615HDADN-RE5LC	16x2x1,50	31,1	2579	12.6
MAS2015HDADN-RE5LC	20x2x1,50	35,8	3388	12.6
MAS2415HDADN-RE5LC	24x2x1,50	38,5	3894	12.6
MAS0125HDADN-RE5LC	1x2x2,50	17,0	817	7.7
MAS0225HDADN-RE5LC	2x2x2,50	22,1	1290	7.7
MAS0425HDADN-RE5LC	4x2x2,50	24,2	1562	7.7
MAS0625HDADN-RE5LC	6x2x2,50	27,4	1984	7.7
MAS0825HDADN-RE5LC	8x2x2,50	29,3	2250	7.7
MAS1025HDADN-RE5LC	10x2x2,50	34,3	3102	7.7
MAS1225HDADN-RE5LC	12x2x2,50	35,5	3339	7.7
MAS1625HDADN-RE5LC	16x2x2,50	38,5	3948	7.7
MAS2025HDADN-RE5LC	20x2x2,50	42,1	4658	7.7
MAS2425HDADN-RE5LC	24x2x2,50	45,5	5375	7.7

CABLE PRINTING

RAMCRO - RE-2Y(St)YMYRY- 1x2x2,5 mm2 - 90V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

EN 50288-7:2005

RE-2Y(St)YMYRY-Pimf

RAMCRO - EN 50288-7 RE-2Y(St)Y-Pimf



These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Poliolefin Base FR - PO
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride FR - PVC
Chemical Protection:
Lead Cover
Armour:
Galvanized Steel Wires Armour
Outer Sheath:
Polyvinyl chloride FR - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ELECTRICAL DATA

IInsulation Resistance @ 20°C: MOhm*Km	> 1000
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	90/300/500 V

STANDARD REFERENCES

- EN 50288-7
- EN 60228
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

ATEX

ON REQUEST

- Low Smoke Zero Halogen
- GAS-STOP in according to EN 60079-14 ANNEX E
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- SWB or STA armour

IDENTIFICATION OF CORES

Pair: ○ ● + Yellow Numbered Tapes

RE-2Y(St)YMYRY-Pimf - 90V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0275HDADN-RE9LC	2x2x0,75	16,0	725	37.5
MAC0475HDADN-RE9LC	4x2x0,75	17,1	832	37.5
MAC0675HDADN-RE9LC	6x2x0,75	18,6	970	37.5
MAC0875HDADN-RE9LC	8x2x0,75	20,0	1095	37.5
MAC1075HDADN-RE9LC	10x2x0,75	22,4	1358	37.5
MAC1275HDADN-RE9LC	12x2x0,75	22,8	1422	37.5
MAC1675HDADN-RE9LC	16x2x0,75	24,2	1597	37.5
MAC2075HDADN-RE9LC	20x2x0,75	25,9	1800	37.5
MAC2475HDADN-RE9LC	24x2x0,75	27,7	2073	37.5
MAC0210HDADN-RE9LC	2x2x1,00	16,7	785	25.5
MAC0410HDADN-RE9LC	4x2x1,00	18,0	912	25.5
MAC0610HDADN-RE9LC	6x2x1,00	20,9	1205	25.5
MAC0810HDADN-RE9LC	8x2x1,00	21,9	1332	25.5
MAC1010HDADN-RE9LC	10x2x1,00	23,8	1521	25.5
MAC1210HDADN-RE9LC	12x2x1,00	24,3	1599	25.5
MAC1610HDADN-RE9LC	16x2x1,00	25,9	1809	25.5
MAC2010HDADN-RE9LC	20x2x1,00	28,1	2131	25.5
MAC2410HDADN-RE9LC	24x2x1,00	30,1	2459	25.5
MAC0215HDADN-RE9LC	2x2x1,50	17,9	883	18.8
MAC0415HDADN-RE9LC	4x2x1,50	19,4	1042	18.8
MAC0615HDADN-RE9LC	6x2x1,50	22,6	1388	18.8
MAC0815HDADN-RE9LC	8x2x1,50	23,9	1548	18.8
MAC1015HDADN-RE9LC	10x2x1,50	26,2	1783	18.8
MAC1215HDADN-RE9LC	12x2x1,50	26,9	1959	18.8
MAC1615HDADN-RE9LC	16x2x1,50	28,9	2234	18.8
MAC2015HDADN-RE9LC	20x2x1,50	32,2	2807	18.8
MAC2415HDADN-RE9LC	24x2x1,50	35,7	3390	18.8
MAC0225HDADN-RE9LC	2x2x2,50	18,9	974	12.6
MAC0425HDADN-RE9LC	4x2x2,50	21,8	1304	12.6
MAC0625HDADN-RE9LC	6x2x2,50	24,1	1567	12.6
MAC0825HDADN-RE9LC	8x2x2,50	25,6	1762	12.6
MAC1025HDADN-RE9LC	10x2x2,50	28,4	2125	12.6
MAC1225HDADN-RE9LC	12x2x2,50	29,0	2255	12.6
MAC1625HDADN-RE9LC	16x2x2,50	32,2	2849	12.6
MAC2025HDADN-RE9LC	20x2x2,50	36,4	3624	12.6
MAC2425HDADN-RE9LC	24x2x2,50	38,9	4053	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)YMYRY- 1x2x2,5 mm2 - 90V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

RE-2Y(St)YMYRY-Pimf - 300V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0250HDADN-RE3LC	2x2x0,50	16,5	758	37.5
MAC0450HDADN-RE3LC	4x2x0,50	17,6	872	37.5
MAC0650HDADN-RE3LC	6x2x0,50	19,3	1022	37.5
MAC0850HDADN-RE3LC	8x2x0,50	21,5	1263	37.5
MAC1050HDADN-RE3LC	10x2x0,50	23,2	1436	37.5
MAC1250HDADN-RE3LC	12x2x0,50	23,7	1504	37.5
MAC1650HDADN-RE3LC	16x2x0,50	25,2	1692	37.5
MAC2050HDADN-RE3LC	20x2x0,50	27,3	1987	37.5
MAC2450HDADN-RE3LC	24x2x0,50	29,1	2204	37.5
MAC0275HDADN-RE3LC	2x2x0,75	17,2	818	25.5
MAC0475HDADN-RE3LC	4x2x0,75	18,5	953	25.5
MAC0675HDADN-RE3LC	6x2x0,75	21,5	1263	25.5
MAC0875HDADN-RE3LC	8x2x0,75	22,7	1397	25.5
MAC1075HDADN-RE3LC	10x2x0,75	24,7	1600	25.5
MAC1275HDADN-RE3LC	12x2x0,75	25,2	1683	25.5
MAC1675HDADN-RE3LC	16x2x0,75	27,1	1982	25.5
MAC2075HDADN-RE3LC	20x2x0,75	29,3	2249	25.5
MAC2475HDADN-RE3LC	24x2x0,75	33,1	2958	25.5
MAC0210HDADN-RE3LC	2x2x1,00	17,9	883	18.8
MAC0410HDADN-RE3LC	4x2x1,00	19,4	1042	18.8
MAC0610HDADN-RE3LC	6x2x1,00	22,6	1388	18.8
MAC0810HDADN-RE3LC	8x2x1,00	23,9	1548	18.8
MAC1010HDADN-RE3LC	10x2x1,00	26,2	1783	18.8
MAC1210HDADN-RE3LC	12x2x1,00	26,9	1959	18.8
MAC1610HDADN-RE3LC	16x2x1,00	28,9	2234	18.8
MAC2010HDADN-RE3LC	20x2x1,00	32,2	2807	18.8
MAC2410HDADN-RE3LC	24x2x1,00	35,7	3390	18.8
MAC0215HDADN-RE3LC	2x2x1,50	19,3	999	12.6
MAC0415HDADN-RE3LC	4x2x1,50	22,2	1339	12.6
MAC0615HDADN-RE3LC	6x2x1,50	24,6	1611	12.6
MAC0815HDADN-RE3LC	8x2x1,50	26,4	1887	12.6
MAC1015HDADN-RE3LC	10x2x1,50	29,1	2190	12.6
MAC1215HDADN-RE3LC	12x2x1,50	30,0	2410	12.6
MAC1615HDADN-RE3LC	16x2x1,50	33,8	3136	12.6
MAC2015HDADN-RE3LC	20x2x1,50	37,3	3738	12.6
MAC2415HDADN-RE3LC	24x2x1,50	40,1	4298	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)YMYRY-Pimf - 1x2x2,5 mm2 - 300V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

EN 50288-7:2005

RE-2Y(St)YMYRY-Pimf - 500V

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0275HDADN-RE5LC	2x2x0,75	17,5	842	37.5
MAC0475HDADN-RE5LC	4x2x0,75	18,9	983	37.5
MAC0675HDADN-RE5LC	6x2x0,75	22,0	1303	37.5
MAC0875HDADN-RE5LC	8x2x0,75	23,2	1444	37.5
MAC1075HDADN-RE5LC	10x2x0,75	25,3	1657	37.5
MAC1275HDADN-RE5LC	12x2x0,75	25,9	1743	37.5
MAC1675HDADN-RE5LC	16x2x0,75	27,9	2055	37.5
MAC2075HDADN-RE5LC	20x2x0,75	30,3	2421	37.5
MAC2475HDADN-RE5LC	24x2x0,75	34,0	3069	37.5
MAC0210HDADN-RE5LC	2x2x1,00	18,3	908	25.5
MAC0410HDADN-RE5LC	4x2x1,00	21	1204	25.5
MAC0610HDADN-RE5LC	6x2x1,00	23,1	1432	25.5
MAC0810HDADN-RE5LC	8x2x1,00	24,5	1598	25.5
MAC1010HDADN-RE5LC	10x2x1,00	27,1	1920	25.5
MAC1210HDADN-RE5LC	12x2x1,00	27,6	2027	25.5
MAC1610HDADN-RE5LC	16x2x1,00	29,9	2398	25.5
MAC2010HDADN-RE5LC	20x2x1,00	33,9	3106	25.5
MAC2410HDADN-RE5LC	24x2x1,00	36,9	3616	25.5
MAC0215HDADN-RE5LC	2x2x1,50	19,1	988	18.8
MAC0415HDADN-RE5LC	4x2x1,50	22,0	1323	18.8
MAC0615HDADN-RE5LC	6x2x1,50	24,4	1591	18.8
MAC0815HDADN-RE5LC	8x2x1,50	26,0	1791	18.8
MAC1015HDADN-RE5LC	10x2x1,50	28,8	2161	18.8
MAC1215HDADN-RE5LC	12x2x1,50	29,4	2294	18.8
MAC1615HDADN-RE5LC	16x2x1,50	33,5	3095	18.8
MAC2015HDADN-RE5LC	20x2x1,50	36,9	3687	18.8
MAC2415HDADN-RE5LC	24x2x1,50	39,7	4239	18.8
MAC0225HDADN-RE5LC	2x2x2,50	22,4	1326	12.6
MAC0425HDADN-RE5LC	4x2x2,50	24,6	1616	12.6
MAC0625HDADN-RE5LC	6x2x2,50	27,9	2061	12.6
MAC0825HDADN-RE5LC	8x2x2,50	30,0	2431	12.6
MAC1025HDADN-RE5LC	10x2x2,50	34,9	3230	12.6
MAC1225HDADN-RE5LC	12x2x2,50	36,4	3585	12.6
MAC1625HDADN-RE5LC	16x2x2,50	39,2	4130	12.6
MAC2025HDADN-RE5LC	20x2x2,50	43,1	5008	12.6
MAC2425HDADN-RE5LC	24x2x2,50	46,8	5700	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)YMYRY-Pimf - 1x2x2,5 mm2 - 500V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

EN 50288-7:2005

RE 2Y(St)Y4YRY - Nylon Cover



These c bles are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. pe rochemical industry etc.). Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Poliolefin Base FR - PO
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride FR - PVC
Chemical Protection:
Nylon Cover
Armour:
Galvanized Steel Wires Armour
Outer Sheath:
Polyvinyl chloride FR - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ELECTRICAL DATA

IInsulation Resistance @ 20°C: MOhm*Km	> 1000
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	90/300/500 V

STANDARD REFERENCES

- EN 50288-7
- EN 60228
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

ATEX

ON REQUEST

- Low Smoke Zero Halogen
- GAS-STOP in according to EN 60079-14 ANNEX E
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- SWB or STA armour

IDENTIFICATION OF CORES

Pair: ○ ●

RE-2Y(St)Y4YRY - 90V - Nylon Cover

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0150ADADN-RE9NC	1x2x0,50	13,8	553	37,5
MAS0250ADADN-RE9NC	2x2x0,50	15,7	695	37,5
MAS0450ADADN-RE9NC	4x2x0,50	16,7	788	37,5
MAS0650ADADN-RE9NC	6x2x0,50	18,1	911	37,5
MAS0850ADADN-RE9NC	8x2x0,50	19,0	998	37,5
MAS1050ADADN-RE9NC	10x2x0,50	21,7	1266	37,5
MAS1250ADADN-RE9NC	12x2x0,50	22,1	1320	37,5
MAS1650ADADN-RE9NC	16x2x0,50	23,4	1470	37,5
MAS2050ADADN-RE9NC	20x2x0,50	25,1	1646	37,5
MAS2450ADADN-RE9NC	24x2x0,50	26,8	1890	37,5
MAS0175ADADN-RE9NC	1x2x0,75	14,2	588	25.5
MAS0275ADADN-RE9NC	2x2x0,75	16,4	755	25.5
MAS0475ADADN-RE9NC	4x2x0,75	17,6	869	25.5
MAS0675ADADN-RE9NC	6x2x0,75	19,2	1017	25.5
MAS0875ADADN-RE9NC	8x2x0,75	21,4	1257	25.5
MAS1075ADADN-RE9NC	10x2x0,75	23,2	1428	25.5
MAS1275ADADN-RE9NC	12x2x0,75	23,6	1496	25.5
MAS1675ADADN-RE9NC	16x2x0,75	25,1	1681	25.5
MAS2075ADADN-RE9NC	20x2x0,75	27,2	1974	25.5
MAS2475ADADN-RE9NC	24x2x0,75	29,0	2189	25.5
MAS0110ADADN-RE9NC	1x2x1,00	15	644	18.8
MAS0210ADADN-RE9NC	2x2x1,00	17,6	850	18.8
MAS0410ADADN-RE9NC	4x2x1,00	19	995	18.8
MAS0610ADADN-RE9NC	6x2x1,00	22,1	1320	18.8
MAS0810ADADN-RE9NC	8x2x1,00	23,4	1464	18.8
MAS1010ADADN-RE9NC	10x2x1,00	25,5	1680	18.8
MAS1210ADADN-RE9NC	12x2x1,00	26,1	1769	18.8
MAS1610ADADN-RE9NC	16x2x1,00	28,1	2086	18.8
MAS2010ADADN-RE9NC	20x2x1,00	30,6	2459	18.8
MAS2410ADADN-RE9NC	24x2x1,00	34,3	3117	18.8
MAS0115ADADN-RE9NC	1x2x1,50	15,6	696	12.6
MAS0215ADADN-RE9NC	2x2x1,50	18,6	941	12.6
MAS0415ADADN-RE9NC	4x2x1,50	21,4	1254	12.6
MAS0615ADADN-RE9NC	6x2x1,50	23,7	1498	12.6
MAS0815ADADN-RE9NC	8x2x1,50	25,1	1677	12.6
MAS1015ADADN-RE9NC	10x2x1,50	27,8	2019	12.6
MAS1215ADADN-RE9NC	12x2x1,50	28,4	2136	12.6
MAS1615ADADN-RE9NC	16x2x1,50	30,7	2533	12.6
MAS2015ADADN-RE9NC	20x2x1,50	34,9	3280	12.6
MAS2415A DADN-RE9NC	24x2x1,50	38,0	3822	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)Y4MYRY- 1x2x2,5 mm2 - 90V - EN 50288-7
IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class
B2ca <batch> <MeterMarking>

RE-2Y(St)Y4YRY - 300V - Nylon Cover

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0150ADADN-RE3NC	1x2x0,50	14,1	573	37,5
MAS0250ADADN-RE3NC	2x2x0,50	16,1	728	37,5
MAS0450ADADN-RE3NC	4x2x0,50	17,2	829	37,5
MAS0650ADADN-RE3NC	6x2x0,50	18,8	963	37,5
MAS0850ADADN-RE3NC	8x2x0,50	20,9	1187	37,5
MAS1050ADADN-RE3NC	10x2x0,50	22,6	1343	37,5
MAS1250ADADN-RE3NC	12x2x0,50	23,0	1401	37,5
MAS1650ADADN-RE3NC	16x2x0,50	24,5	1564	37,5
MAS2050ADADN-RE3NC	20x2x0,50	26,5	1830	37,5
MAS2450ADADN-RE3NC	24x2x0,50	28,1	2021	37,5
MAS0175ADADN-RE3NC	1x2x0,75	14,5	608	25.5
MAS0275ADADN-RE3NC	2x2x0,75	16,9	788	25.5
MAS0475ADADN-RE3NC	4x2x0,75	18,1	910	25.5
MAS0675ADADN-RE3NC	6x2x0,75	21,1	1200	25.5
MAS0875ADADN-RE3NC	8x2x0,75	22,2	1322	25.5
MAS1075ADADN-RE3NC	10x2x0,75	24,1	1507	25.5
MAS1275ADADN-RE3NC	12x2x0,75	24,6	1579	25.5
MAS1675ADADN-RE3NC	16x2x0,75	26,4	1852	25.5
MAS2075ADADN-RE3NC	20x2x0,75	28,4	2092	25.5
MAS2475ADADN-RE3NC	24x2x0,75	30,5	2411	25.5
MAS0110ADADN-RE3NC	1x2x1,00	15	644	18.8
MAS0210ADADN-RE3NC	2x2x1,00	17,6	850	18.8
MAS0410ADADN-RE3NC	4x2x1,00	19	995	18.8
MAS0610ADADN-RE3NC	6x2x1,00	22,1	1320	18.8
MAS0810ADADN-RE3NC	8x2x1,00	23,4	1464	18.8
MAS1010ADADN-RE3NC	10x2x1,00	25,5	1680	18.8
MAS1210ADADN-RE3NC	12x2x1,00	26,1	1769	18.8
MAS1610ADADN-RE3NC	16x2x1,00	28,1	2086	18.8
MAS2010ADADN-RE3NC	20x2x1,00	20,6	2459	18.8
MAS2410ADADN-RE3NC	24x2x1,00	34,3	3117	18.8
MAS0115ADADN-RE3NC	1x2x1,50	15,8	711	12.6
MAS0215ADADN-RE3NC	2x2x1,50	18,9	967	12.6
MAS0415ADADN-RE3NC	4x2x1,50	21,8	1289	12.6
MAS0615ADADN-RE3NC	6x2x1,50	24,2	1543	12.6
MAS0815ADADN-RE3NC	8x2x1,50	25,7	1729	12.6
MAS1015ADADN-RE3NC	10x2x1,50	28,4	2084	12.6
MAS1215ADADN-RE3NC	12x2x1,50	29,1	2205	12.6
MAS1615ADADN-RE3NC	16x2x1,50	33,1	2976	12.6
MAS2015ADADN-RE3NC	20x2x1,50	36,4	3540	12.6
MAS2415ADADN-RE3NC	24x2x1,50	39,0	3952	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)Y4MYRY- 1x2x2,5 mm2 - 90V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

RE-2Y(St)Y4YRY - 500V - Nylon Cover

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0175HDADN-RE5NC	1x2x0,75	14,7	622	22.5
MAS0275HDADN-RE5NC	2x2x0,75	17,2	812	22.5
MAS0475HDADN-RE5NC	4x2x0,75	18,5	940	22.5
MAS0675HDADN-RE5NC	6x2x0,75	21,5	1241	22.5
MAS0875HDADN-RE5NC	8x2x0,75	22,7	1369	22.5
MAS1075HDADN-RE5NC	10x2x0,75	24,7	1564	22.5
MAS1275HDADN-RE5NC	12x2x0,75	25,2	1640	22.5
MAS1675HDADN-RE5NC	16x2x0,75	27,1	1924	22.5
MAS2075HDADN-RE5NC	20x2x0,75	29,3	2176	22.5
MAS2475HDADN-RE5NC	24x2x0,75	33,1	2870	22.5
MAS0110HDADN-RE5NC	1x2x1,00	15,2	659	18.8
MAS0210HDADN-RE5NC	2x2x1,00	17,9	876	18.8
MAS0410HDADN-RE5NC	4x2x1,00	19,4	1026	18.8
MAS0610HDADN-RE5NC	6x2x1,00	22,7	1364	18.8
MAS0810HDADN-RE5NC	8x2x1,00	24	1514	18.8
MAS1010HDADN-RE5NC	10x2x1,00	26,4	1814	18.8
MAS1210HDADN-RE5NC	12x2x1,00	27	1908	18.8
MAS1610HDADN-RE5NC	16x2x1,00	28,9	2165	18.8
MAS2010HDADN-RE5NC	20x2x1,00	33,1	2914	18.8
MAS2410HDADN-RE5NC	24x2x1,00	35,7	3285	18.8
MAS0115HDADN-RE5NC	1x2x1,50	15,7	705	12.6
MAS0215HDADN-RE5NC	2x2x1,50	18,8	955	12.6
MAS0415HDADN-RE5NC	4x2x1,50	21,6	1273	12.6
MAS0615HDADN-RE5NC	6x2x1,50	23,9	1523	12.6
MAS0815HDADN-RE5NC	8x2x1,50	25,4	1706	12.6
MAS1015HDADN-RE5NC	10x2x1,50	28,1	2055	12.6
MAS1215HDADN-RE5NC	12x2x1,50	28,8	2174	12.6
MAS1615HDADN-RE5NC	16x2x1,50	31,1	2579	12.6
MAS2015HDADN-RE5NC	20x2x1,50	35,8	3388	12.6
MAS2415HDADN-RE5NC	24x2x1,50	38,5	3894	12.6
MAS0125HDADN-RE5NC	1x2x2,50	17,0	817	7.7
MAS0225HDADN-RE5NC	2x2x2,50	22,1	1290	7.7
MAS0425HDADN-RE5NC	4x2x2,50	24,2	1562	7.7
MAS0625HDADN-RE5NC	6x2x2,50	27,4	1984	7.7
MAS0825HDADN-RE5NC	8x2x2,50	29,3	2250	7.7
MAS1025HDADN-RE5NC	10x2x2,50	34,3	3102	7.7
MAS1225HDADN-RE5NC	12x2x2,50	35,5	3339	7.7
MAS1625HDADN-RE5NC	16x2x2,50	38,5	3948	7.7
MAS2025HDADN-RE5NC	20x2x2,50	42,1	4658	7.7
MAS2425HDADN-RE5NC	24x2x2,50	45,5	5375	7.7

CABLE PRINTING

RAMCRO - RE-2Y(St)Y4MYRY- 1x2x2,5 mm2 - 90V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

EN 50288-7:2005

RE-2Y(St)Y4YRY-Pimf



These c bles are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. pe rochemical industry etc.). Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Poliolefin Base FR - PO
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride FR - PVC
Chemical Protection:
Nylon Cover
Armour:
Galvanized Steel Wires Armour
Outer Sheath:
Polyvinyl chloride - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ELECTRICAL DATA

IInsulation Resistance @ 20°C: MOhm*Km	> 1000
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	90/300/500 V

STANDARD REFERENCES

- EN 50288-7
- EN 60228
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

ATEX

ON REQUEST

- Low Smoke Zero Halogen
- GAS-STOP in according to EN 60079-14 ANNEX E
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- SWB or STA armour

IDENTIFICATION OF CORES

Pair: ○ ● + Yellow Numbered Tapes

RE-2Y(St)Y4YRY-Pimf - 90V - Nylon Cover

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0275HDADN-RE9NC	2x2x0,75	16,0	725	37.5
MAC0475HDADN-RE9NC	4x2x0,75	17,1	832	37.5
MAC0675HDADN-RE9NC	6x2x0,75	18,6	970	37.5
MAC0875HDADN-RE9NC	8x2x0,75	20,0	1095	37.5
MAC1075HDADN-RE9NC	10x2x0,75	22,4	1358	37.5
MAC1275HDADN-RE9NC	12x2x0,75	22,8	1422	37.5
MAC1675HDADN-RE9NC	16x2x0,75	24,2	1597	37.5
MAC2075HDADN-RE9NC	20x2x0,75	25,9	1800	37.5
MAC2475HDADN-RE9NC	24x2x0,75	27,7	2073	37.5
MAC0210HDADN-RE9NC	2x2x1,00	16,7	785	25.5
MAC0410HDADN-RE9NC	4x2x1,00	18,0	912	25.5
MAC0610HDADN-RE9NC	6x2x1,00	20,9	1205	25.5
MAC0810HDADN-RE9NC	8x2x1,00	21,9	1332	25.5
MAC1010HDADN-RE9NC	10x2x1,00	23,8	1521	25.5
MAC1210HDADN-RE9NC	12x2x1,00	24,3	1599	25.5
MAC1610HDADN-RE9NC	16x2x1,00	25,9	1809	25.5
MAC2010HDADN-RE9NC	20x2x1,00	28,1	2131	25.5
MAC2410HDADN-RE9NC	24x2x1,00	30,1	2459	25.5
MAC0215HDADN-RE9NC	2x2x1,50	17,9	883	18.8
MAC0415HDADN-RE9NC	4x2x1,50	19,4	1042	18.8
MAC0615HDADN-RE9NC	6x2x1,50	22,6	1388	18.8
MAC0815HDADN-RE9NC	8x2x1,50	23,9	1548	18.8
MAC1015HDADN-RE9NC	10x2x1,50	26,2	1783	18.8
MAC1215HDADN-RE9NC	12x2x1,50	26,9	1959	18.8
MAC1615HDADN-RE9NC	16x2x1,50	28,9	2234	18.8
MAC2015HDADN-RE9NC	20x2x1,50	32,2	2807	18.8
MAC2415HDADN-RE9NC	24x2x1,50	35,7	3390	18.8
MAC0225HDADN-RE9NC	2x2x2,50	18,9	974	12.6
MAC0425HDADN-RE9NC	4x2x2,50	21,8	1304	12.6
MAC0625HDADN-RE9NC	6x2x2,50	24,1	1567	12.6
MAC0825HDADN-RE9NC	8x2x2,50	25,6	1762	12.6
MAC1025HDADN-RE9NC	10x2x2,50	28,4	2125	12.6
MAC1225HDADN-RE9NC	12x2x2,50	29,0	2255	12.6
MAC1625HDADN-RE9NC	16x2x2,50	32,2	2849	12.6
MAC2025HDADN-RE9NC	20x2x2,50	36,4	3624	12.6
MAC2425HDADN-RE9NC	24x2x2,50	38,9	4053	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)Y4YRY-Pimf - 1x2x2,5 mm2 - 90V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

RE-2Y(St)Y4YRY-Pimf - 300V - Nylon Cover

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0250HDADN-RE3NC	2x2x0,50	16,5	758	37.5
MAC0450HDADN-RE3NC	4x2x0,50	17,6	872	37.5
MAC0650HDADN-RE3NC	6x2x0,50	19,3	1022	37.5
MAC0850HDADN-RE3NC	8x2x0,50	21,5	1263	37.5
MAC1050HDADN-RE3NC	10x2x0,50	23,2	1436	37.5
MAC1250HDADN-RE3NC	12x2x0,50	23,7	1504	37.5
MAC1650HDADN-RE3NC	16x2x0,50	25,2	1692	37.5
MAC2050HDADN-RE3NC	20x2x0,50	27,3	1987	37.5
MAC2450HDADN-RE3NC	24x2x0,50	29,1	2204	37.5
MAC0275HDADN-RE3NC	2x2x0,75	17,2	818	25.5
MAC0475HDADN-RE3NC	4x2x0,75	18,5	953	25.5
MAC0675HDADN-RE3NC	6x2x0,75	21,5	1263	25.5
MAC0875HDADN-RE3NC	8x2x0,75	22,7	1397	25.5
MAC1075HDADN-RE3NC	10x2x0,75	24,7	1600	25.5
MAC1275HDADN-RE3NC	12x2x0,75	25,2	1683	25.5
MAC1675HDADN-RE3NC	16x2x0,75	27,1	1982	25.5
MAC2075HDADN-RE3NC	20x2x0,75	29,3	2249	25.5
MAC2475HDADN-RE3NC	24x2x0,75	33,1	2958	25.5
MAC0210HDADN-RE3NC	2x2x1,00	17,9	883	18.8
MAC0410HDADN-RE3NC	4x2x1,00	19,4	1042	18.8
MAC0610HDADN-RE3NC	6x2x1,00	22,6	1388	18.8
MAC0810HDADN-RE3NC	8x2x1,00	23,9	1548	18.8
MAC1010HDADN-RE3NC	10x2x1,00	26,2	1783	18.8
MAC1210HDADN-RE3NC	12x2x1,00	26,9	1959	18.8
MAC1610HDADN-RE3NC	16x2x1,00	28,9	2234	18.8
MAC2010HDADN-RE3NC	20x2x1,00	32,2	2807	18.8
MAC2410HDADN-RE3NC	24x2x1,00	35,7	3390	18.8
MAC0215HDADN-RE3NC	2x2x1,50	19,3	999	12.6
MAC0415HDADN-RE3NC	4x2x1,50	22,2	1339	12.6
MAC0615HDADN-RE3NC	6x2x1,50	24,6	1611	12.6
MAC0815HDADN-RE3NC	8x2x1,50	26,4	1887	12.6
MAC1015HDADN-RE3NC	10x2x1,50	29,1	2190	12.6
MAC1215HDADN-RE3NC	12x2x1,50	30,0	2410	12.6
MAC1615HDADN-RE3NC	16x2x1,50	33,8	3136	12.6
MAC2015HDADN-RE3NC	20x2x1,50	37,3	3738	12.6
MAC2415HDADN-RE3NC	24x2x1,50	40,1	4298	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)Y4YRY-Pimf - 1x2x2,5 mm2 - 300V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

RE-2Y(St)Y4YRY-Pimf - 500V - Nylon Cover

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0275HDADN-RE5NC	2x2x0,75	17,5	842	37.5
MAC0475HDADN-RE5NC	4x2x0,75	18,9	983	37.5
MAC0675HDADN-RE5NC	6x2x0,75	22,0	1303	37.5
MAC0875HDADN-RE5NC	8x2x0,75	23,2	1444	37.5
MAC1075HDADN-RE5NC	10x2x0,75	25,3	1657	37.5
MAC1275HDADN-RE5NC	12x2x0,75	25,9	1743	37.5
MAC1675HDADN-RE5NC	16x2x0,75	27,9	2055	37.5
MAC2075HDADN-RE5NC	20x2x0,75	30,3	2421	37.5
MAC2475HDADN-RE5NC	24x2x0,75	34,0	3069	37.5
MAC0210HDADN-RE5NC	2x2x1,00	18,3	908	25.5
MAC0410HDADN-RE5NC	4x2x1,00	21	1204	25.5
MAC0610HDADN-RE5NC	6x2x1,00	23,1	1432	25.5
MAC0810HDADN-RE5NC	8x2x1,00	24,5	1598	25.5
MAC1010HDADN-RE5NC	10x2x1,00	27,1	1920	25.5
MAC1210HDADN-RE5NC	12x2x1,00	27,6	2027	25.5
MAC1610HDADN-RE5NC	16x2x1,00	29,9	2398	25.5
MAC2010HDADN-RE5NC	20x2x1,00	33,9	3106	25.5
MAC2410HDADN-RE5NC	24x2x1,00	36,9	3616	25.5
MAC0215HDADN-RE5NC	2x2x1,50	19,1	988	18.8
MAC0415HDADN-RE5NC	4x2x1,50	22,0	1323	18.8
MAC0615HDADN-RE5NC	6x2x1,50	24,4	1591	18.8
MAC0815HDADN-RE5NC	8x2x1,50	26,0	1791	18.8
MAC1015HDADN-RE5NC	10x2x1,50	28,8	2161	18.8
MAC1215HDADN-RE5NC	12x2x1,50	29,4	2294	18.8
MAC1615HDADN-RE5NC	16x2x1,50	33,5	3095	18.8
MAC2015HDADN-RE5NC	20x2x1,50	36,9	3687	18.8
MAC2415HDADN-RE5NC	24x2x1,50	39,7	4239	18.8
MAC0225HDADN-RE5NC	2x2x2,50	22,4	1326	12.6
MAC0425HDADN-RE5NC	4x2x2,50	24,6	1616	12.6
MAC0625HDADN-RE5NC	6x2x2,50	27,9	2061	12.6
MAC0825HDADN-RE5NC	8x2x2,50	30,0	2431	12.6
MAC1025HDADN-RE5NC	10x2x2,50	34,9	3230	12.6
MAC1225HDADN-RE5NC	12x2x2,50	36,4	3585	12.6
MAC1625HDADN-RE5NC	16x2x2,50	39,2	4130	12.6
MAC2025HDADN-RE5NC	20x2x2,50	43,1	5008	12.6
MAC2425HDADN-RE5NC	24x2x2,50	46,8	5700	12.6

CABLE PRINTING

RAMCRO - RE-2Y(St)Y4YRY-Pimf - 1x2x2,5 mm2 - 500V - EN 50288-7 IEC 60332-3 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

ramcro

special cables




PAS 5308-1:2009

PAS 5308-1:2009 Part 1 Type 1

PE/CAM/PVC

RAMCRO - PAS 5308-1:2009 PART1 TYPE1



BS 5308 cables are designed to carry communication and control signals in a variety of installation types including those found in the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. Part 1 Type 1 cables are generally designed for indoor use and in environments where mechanical protection is not required.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Polyetilene FR - PE acc. to BS 6234
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Polyvinyl chloride FR - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

STANDARD REFERENCES

- PAS 5308-1:2009 Part 1 Type 1
- BS EN 60228
- BS 6234
- BS 50363
- IEC 60331-2
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ON REQUEST

- Low Smoke Zero Halogen
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- Fire Resistant Version: Silicon or Mica + XLPE
- SWB or STA armour

CABLE PRINTING

RAMCRO - 300/500 V - PAS 5308 - PT1 TY1 - 1x2x0,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

IDENTIFICATION OF CORES

In according to PAS 5308-1:2009

PE/CAM/PVC

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including those found in the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. Part 1 Type 1 cables are generally designed for indoor use and in environments where mechanical protection is not required.

RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0150HEADX-OIL	1x2x0,50	5,6	40	37,5
MAS0250HEADX-OIL	2x2x0,50	8,2	70	37,5
MAS0450HEADX-OIL	4x2x0,50	9,5	107	37,5
MAS0650HEADX-OIL	6x2x0,50	11,9	164	37,5
MAS0850HEADX-OIL	8x2x0,50	13,1	202	37,5
MAS1050HEADX-OIL	10x2x0,50	16,1	245	37,5
MAS1250HEADX-OIL	12x2x0,50	15,6	278	37,5
MAS1650HEADX-OIL	16x2x0,50	17,4	356	37,5
MAS2450HEADX-OIL	24x2x0,50	22,1	542	37,5
MAS0175HEADX-OIL	1x2x0,75	5,9	47	25.5
MAS0275HEADX-OIL	2x2x0,75	8,8	83	25.5
MAS0475HEADX-OIL	4x2x0,75	10,2	130	25.5
MAS0675HEADX-OIL	6x2x0,75	12,8	200	25.5
MAS0875HEADX-OIL	8x2x0,75	14,1	248	25.5
MAS1075HEADX-OIL	10x2x0,75	16,2	302	25.5
MAS1275HEADX-OIL	12x2x0,75	17	354	25.5
MAS1675HEADX-OIL	16x2x0,75	19,4	477	25.5
MAS2475HEADX-OIL	24x2x0,75	23,9	676	25.5
MAS0110HEADX-OIL	1x2x1,00	6,7	58	18.8
MAS0210HEADX-OIL	2x2x1,00	10,1	105	18.8
MAS0410HEADX-OIL	4x2x1,00	12,3	186	18.8
MAS0610HEADX-OIL	6x2x1,00	14,7	257	18.8
MAS0810HEADX-OIL	8x2x1,00	16,2	322	18.8
MAS1010HEADX-OIL	10x2x1,00	19,5	434	18.8
MAS1210HEADX-OIL	12x2x1,00	20,2	495	18.8
MAS1610HEADX-OIL	16x2x1,00	22,4	623	18.8
MAS2410HEADX-OIL	24x2x1,00	27,6	889	18.8
MAS0115HEADX-OIL	1x2x1,50	6,8	67	12.6
MAS0215HEADX-OIL	2x2x1,50	10,3	122	12.6
MAS0415HEADX-OIL	4x2x1,50	12,6	221	12.6
MAS0615HEADX-OIL	6x2x1,50	15	309	12.6
MAS0815HEADX-OIL	8x2x1,50	16,8	399	12.6
MAS1015HEADX-OIL	10x2x1,50	20	520	12.6
MAS1215HEADX-OIL	12x2x1,50	20,6	597	12.6
MAS1615HEADX-OIL	16x2x1,50	22,9	759	12.6
MAS2415HEADX-OIL	24x2x1,50	28,3	1092	12.6
MAS0125HEADX-OIL	1x2x2,50	7,7	90	7.7
MAS0225HEADX-OIL	2x2x2,50	12,3	187	7.7
MAS0425HEADX-OIL	4x2x2,50	14,3	312	7.7
MAS0625HEADX-OIL	6x2x2,50	17,4	451	7.7
MAS0825HEADX-OIL	8x2x2,50	19,8	605	7.7
MAS1025HEADX-OIL	10x2x2,50	22,8	743	7.7
MAS1225HEADX-OIL	12x2x2,50	23,6	861	7.7
MAS1625HEADX-OIL	16x2x2,50	26,2	1106	7.7
MAS2425HEADX-OIL	24x2x2,50	32,8	1622	7.7

PAS 5308-1:2009 Part 1 Type 1

PE/IAM/CAM/PVC

RAMCRO - PAS 5308-1:2009 PART1 TYPE1



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CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Polyetilene FR - PE acc. to BS 6234
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Polyvinyl chloride FR - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

STANDARD REFERENCES

- PAS 5308-1:2009 Part 1 Type 1
- BS EN 60228
- BS 6234
- BS 50363
- IEC 60331-2
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ON REQUEST

- Low Smoke Zero Halogen
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- Fire Resistant Version: Silicon or Mica + XLPE

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

CABLE PRINTING

RAMCRO - 300/500 V - PAS 5308 - PT1 TY1 - 1x2x0,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

IDENTIFICATION OF CORES

In according to PAS 5308-1:2009

PE/IAM/CAM/PVC

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including those found in the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. Part 1 Type 1 cables are generally designed for indoor use and in environments where mechanical protection is not required.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0250HEADX-OIL	2x2x0,50	8,5	83	37,5
MAC0450HEADX-OIL	4x2x0,50	9,8	131	37,5
MAC0650HEADX-OIL	6x2x0,50	12,3	201	37,5
MAC0850HEADX-OIL	8x2x0,50	13,5	250	37,5
MAC1050HEADX-OIL	10x2x0,50	15,6	305	37,5
MAC1250HEADX-OIL	12x2x0,50	16,1	350	37,5
MAC1650HEADX-OIL	16x2x0,50	18,1	454	37,5
MAC2450HEADX-OIL	24x2x0,50	22,9	685	37,5
MAC0275HEADX-OIL	2x2x0,75	9,1	96	25.5
MAC0475HEADX-OIL	4x2x0,75	10,5	154	25.5
MAC0675HEADX-OIL	6x2x0,75	13,2	236	25.5
MAC0875HEADX-OIL	8x2x0,75	14,5	296	25.5
MAC1075HEADX-OIL	10x2x0,75	17	371	25.5
MAC1275HEADX-OIL	12x2x0,75	17,5	427	25.5
MAC1675HEADX-OIL	16x2x0,75	20	574	25.5
MAC2475HEADX-OIL	24x2x0,75	24,7	820	25.5
MAC0210HEADX-OIL	2x2x1,00	10,3	116	18.8
MAC0410HEADX-OIL	4x2x1,00	12,6	214	18.8
MAC0610HEADX-OIL	6x2x1,00	15,1	298	18.8
MAC0810HEADX-OIL	8x2x1,00	16,8	384	18.8
MAC1010HEADX-OIL	10x2x1,00	20,1	502	18.8
MAC1210HEADX-OIL	12x2x1,00	20,7	576	18.8
MAC1610HEADX-OIL	16x2x1,00	23	730	18.8
MAC2410HEADX-OIL	24x2x1,00	28,4	1046	18.8
MAC0215HEADX-OIL	2x2x1,50	10,5	136	12.6
MAC0415HEADX-OIL	4x2x1,50	12,9	249	12.6
MAC0615HEADX-OIL	6x2x1,50	15,4	349	12.6
MAC0815HEADX-OIL	8x2x1,50	17,2	453	12.6
MAC1015HEADX-OIL	10x2x1,50	20,5	588	12.6
MAC1215HEADX-OIL	12x2x1,50	21,2	678	12.6
MAC1615HEADX-OIL	16x2x1,50	23,5	867	12.6
MAC2415HEADX-OIL	24x2x1,50	29,1	1252	12.6
MAC0215HEADX-OIL	2x2x,50	12,6	202	7.7
MAC0415HEADX-OIL	4x2x,50	14,6	339	7.7
MAC0615HEADX-OIL	6x2x,50	17,8	492	7.7
MAC0815HEADX-OIL	8x2x,50	20,2	660	7.7
MAC1015HEADX-OIL	10x2x,50	23,4	812	7.7
MAC1215HEADX-OIL	12x2x,50	24,2	942	7.7
MAC1615HEADX-OIL	16x2x,50	26,9	1213	7.7
MAC2415HEADX-OIL	24x2x2,50	33,6	1782	7.7

PAS 5308-1:2009 Part 1 Type 2

PE/CAM/PE/SWA/PVC



BS 5308 cables are designed to carry communication and control signals in a variety of installation types including those found in the petrochemical industry. The signals can be of analogue, data or voice types and from a variety of transducers such as pressure, proximity or microphone.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Polyetilene FR - PE acc. to BS 6234
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyetilene - PE
Armour:
Galvanized Steel Wire Armour
Outer Sheath:
Polyvinyl chloride FR - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

STANDARD REFERENCES

- PAS 5308-1:2009 Part 1 Type 2
- BS EN 60228
- BS 6234
- BS 50363
- IEC 60331-2
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ON REQUEST

- Low Smoke Zero Halogen
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- Fire Resistant Version: Silicon or Mica + XLPE
- SWB or STA armour

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

CABLE PRINTING

RAMCRO - 300/500 V - PAS 5308 - PT1 TY2 - 1x2x0,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

IDENTIFICATION OF CORES

In according to PAS 5308-1:2009

PAS 5308-1:2009 Part 1 Type 2

PE/CAM/PVC/SWA/PVC

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including those found in the petrochemical industry. The signals can be of analogue, data or voice types and from a variety of transducers such as pressure, proximity or microphone. Part 1 Type 2 cables are designed where a greater degree of mechanical protection is required or where there is direct burial at a suitable depth. Collectively and individually screened pairs are available within the range.

RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0150AEADX-OIL	1x2x0,50	10,2	196	37,5
MAS0250AEADX-OIL	2x2x0,50	12,8	283	37,5
MAS0450AEADX-OIL	4x2x0,50	14,1	347	37,5
MAS0650AEADX-OIL	6x2x0,50	16,7	466	37,5
MAS0850AEADX-OIL	8x2x0,50	17,9	529	37,5
MAS1050AEADX-OIL	10x2x0,50	20,7	727	37,5
MAS1250AEADX-OIL	12x2x0,50	21,2	774	37,5
MAS1650AEADX-OIL	16x2x0,50	23,3	919	37,5
MAS2450AEADX-OIL	24x2x0,50	29,1	1410	37,5
MAS0175AEADX-OIL	1x2x0,75	10,5	211	25.5
MAS0275AEADX-OIL	2x2x0,75	13,4	309	25.5
MAS0475AEADX-OIL	4x2x0,75	15	394	25.5
MAS0675AEADX-OIL	6x2x0,75	17,6	521	25.5
MAS0875AEADX-OIL	8x2x0,75	18,9	597	25.5
MAS1075AEADX-OIL	10x2x0,75	21,9	817	25.5
MAS1275AEADX-OIL	12x2x0,75	22,9	902	25.5
MAS1675AEADX-OIL	16x2x0,75	26,2	1238	25.5
MAS2475AEADX-OIL	24x2x0,75	30,8	1607	25.5
MAS0110AEADX-OIL	1x2x1,00	11,3	238	18.8
MAS0210AEADX-OIL	2x2x1,00	14,6	357	18.8
MAS0410AEADX-OIL	4x2x1,00	17,1	497	18.8
MAS0610AEADX-OIL	6x2x1,00	20,4	729	18.8
MAS0810AEADX-OIL	8x2x1,00	21,9	836	18.8
MAS1010AEADX-OIL	10x2x1,00	26,3	1198	18.8
MAS1210AEADX-OIL	12x2x1,00	26,9	1281	18.8
MAS1610AEADX-OIL	16x2x1,00	29,3	1501	18.8
MAS2410AEADX-OIL	24x2x1,00	35,6	2175	18.8
MAS0115AEADX-OIL	1x2x1,50	11,4	250	12.6
MAS0215AEADX-OIL	2x2x1,50	15,1	387	12.6
MAS0415AEADX-OIL	4x2x1,50	17,4	538	12.6
MAS0615AEADX-OIL	6x2x1,50	20,7	790	12.6
MAS0815AEADX-OIL	8x2x1,50	22,6	941	12.6
MAS1015AEADX-OIL	10x2x1,50	26,8	1301	12.6
MAS1215AEADX-OIL	12x2x1,50	27,4	1401	12.6
MAS1615AEADX-OIL	16x2x1,50	29,9	1656	12.6
MAS2415AEADX-OIL	24x2x1,50	36,3	2407	12.6
MAS0115AEADX-OIL	1x2x2,50	12,3	292	7.7
MAS0215AEADX-OIL	2x2x2,50	17,1	498	7.7
MAS0415AEADX-OIL	4x2x2,50	20,0	774	7.7
MAS0615AEADX-OIL	6x2x2,50	23,2	1010	7.7
MAS0815AEADX-OIL	8x2x2,50	26,5	1379	7.7
MAS1015AEADX-OIL	10x2x2,50	29,8	1638	7.7
MAS1215AEADX-OIL	12x2x2,50	30,6	1784	7.7
MAS1615AEADX-OIL	16x2x2,50	34,2	2335	7.7
MAS2415AEADX-OIL	24x2x2,50	40,9	3147	7.7

PAS 5308-1:2009 Part 1 Type 2

PE/IAM/CAM/PVC/SWA/PVC



BS 5308 cables are designed to carry communication and control signals in a variety of installation types including those found in the petrochemical industry. The signals can be of analogue, data or voice types and from a variety of transducers such as pressure, proximity or microphone. Part 1 Type 2 cables are designed where a greater degree of mechanical protection is required or where there is direct burial at a suitable depth. Collectively and individually screened pairs are available within the range.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Polyetilene FR - PE acc. to BS 6234
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyetilene - PE
Armour:
Galvanized Steel Wire Armour
Outer Sheath:
Polyvinyl chloride FR - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

STANDARD REFERENCES

- PAS 5308-1:2009 Part 1 Type 2
- BS EN 60228
- BS 6234
- BS 50363
- IEC 60331-2
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ON REQUEST

- Low Smoke Zero Halogen
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- Fire Resistant Version: Silicon or Mica + XLPE
- SWB or STA armour

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

CABLE PRINTING

RAMCRO - 300/500 V - PAS 5308 - PT1 TY2 - 1x2x0,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

IDENTIFICATION OF CORES

In according to PAS 5308-1:2009

PE/IAM/CAM/PVC

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including those found in the petrochemical industry. The signals can be of analogue, data or voice types and from a variety of transducers such as pressure, proximity or microphone. Part 1 Type 2 cables are designed where a greater degree of mechanical protection is required or where there is direct burial at a suitable depth. Collectively and individually screened pairs are available within the range.

RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0250AEADX-OIL	2x2x0,50	8,5	83	37,5
MAC0450AEADX-OIL	4x2x0,50	9,8	131	37,5
MAC0650AEADX-OIL	6x2x0,50	12,3	201	37,5
MAC0850AEADX-OIL	8x2x0,50	13,5	250	37,5
MAC1050AEADX-OIL	10x2x0,50	15,6	305	37,5
MAC1250AEADX-OIL	12x2x0,50	16,1	350	37,5
MAC1650AEADX-OIL	16x2x0,50	18,1	454	37,5
MAC2450AEADX-OIL	24x2x0,50	22,9	685	37,5
MAC0275AEADX-OIL	2x2x0,75	9,1	96	25.5
MAC0475AEADX-OIL	4x2x0,75	10,5	154	25.5
MAC0675AEADX-OIL	6x2x0,75	13,2	236	25.5
MAC0875AEADX-OIL	8x2x0,75	14,5	296	25.5
MAC1075AEADX-OIL	10x2x0,75	17	371	25.5
MAC1275AEADX-OIL	12x2x0,75	17,5	427	25.5
MAC1675AEADX-OIL	16x2x0,75	20	574	25.5
MAC2475AEADX-OIL	24x2x0,75	24,7	820	25.5
MAC0210AEADX-OIL	2x2x1,00	10,3	116	18.8
MAC0410AEADX-OIL	4x2x1,00	12,6	214	18.8
MAC0610AEADX-OIL	6x2x1,00	15,1	298	18.8
MAC0810AEADX-OIL	8x2x1,00	16,8	384	18.8
MAC1010AEADX-OIL	10x2x1,00	20,1	502	18.8
MAC1210AEADX-OIL	12x2x1,00	20,7	576	18.8
MAC1610AEADX-OIL	16x2x1,00	23	730	18.8
MAC2410AEADX-OIL	24x2x1,00	28,4	1046	18.8
MAC0215AEADX-OIL	2x2x1,50	10,5	136	12.6
MAC0415AEADX-OIL	4x2x1,50	12,9	249	12.6
MAC0615AEADX-OIL	6x2x1,50	15,4	349	12.6
MAC0815AEADX-OIL	8x2x1,50	17,2	453	12.6
MAC1015AEADX-OIL	10x2x1,50	20,5	588	12.6
MAC1215AEADX-OIL	12x2x1,50	21,2	678	12.6
MAC1615AEADX-OIL	16x2x1,50	23,5	867	12.6
MAC2415AEADX-OIL	24x2x1,50	29,1	1252	12.6
MAC0215AEADX-OIL	2x2x,50	12,6	202	7.7
MAC0415AEADX-OIL	4x2x,50	14,6	339	7.7
MAC0615AEADX-OIL	6x2x,50	17,8	492	7.7
MAC0815AEADX-OIL	8x2x,50	20,2	660	7.7
MAC1015AEADX-OIL	10x2x,50	23,4	812	7.7
MAC1215AEADX-OIL	12x2x,50	24,2	942	7.7
MAC1615AEADX-OIL	16x2x,50	26,9	1213	7.7
MAC2415AEADX-OIL	24x2x2,50	33,6	1782	7.7

PAS 5308-1:2009 Part 1 Type 3

PE/CAM/PVC/Pb/PVC/SWA/PVC



BS 5308 cables are designed to carry communication and control signals in a variety of installation types including those found in the petrochemicals industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity and microphone. Part 1 Type 3 cables are generally designed where a greater degree of mechanical and chemical protection is required or direct burial at a suitable depth.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Polyetilene FR - PE acc. to BS 6234
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyetilene FR - PE
Chemical Protection:
Lead Cover
Inner Sheath:
Polyvinyl chloride FR - PVC
Armour:
Galvanized Steel Wire Armour
Outer Sheath:
Polyvinyl chloride FR - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

STANDARD REFERENCES

- PAS 5308-1:2009 Part 1 Type 3
- BS EN 60228
- BS 6234
- BS 50363
- IEC 60331-2
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

ON REQUEST

- Low Smoke Zero Halogen
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- Fire Resistant Version: Silicon or Mica + XLPE
- SWB or STA armour

CABLE PRINTING

RAMCRO - 300/500 V - PAS 5308 - PT1 TY3 - 1x2x0,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

IDENTIFICATION OF CORES

In according to PAS 5308-1:2009

PE/CAM/PVC/Pb/PVC/SWA/PVC

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including those found in the petrochemicals industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity and microphone. Part 1 Type 3 cables are generally designed where a greater degree of mechanical and chemical protection is required or direct burial at a suitable depth.

RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0150AEADX-OILLC	1x2x0,50	15,2	648	37,5
MAS0250AEADX-OILLC	2x2x0,50	17,8	851	37,5
MAS0450AEADX-OILLC	4x2x0,50	20,0	1079	37,5
MAS0650AEADX-OILLC	6x2x0,50	23,0	1350	37,5
MAS0850AEADX-OILLC	8x2x0,50	24,2	1473	37,5
MAS1050AEADX-OILLC	10x2x0,50	27,2	1880	37,5
MAS1250AEADX-OILLC	12x2x0,50	27,7	1955	37,5
MAS1650AEADX-OILLC	16x2x0,50	29,8	2206	37,5
MAS2450AEADX-OILLC	24x2x0,50	36,3	3248	37,5
MAS0175AEADX-OILLC	1x2x0,75	15,5	678	25.5
MAS0275AEADX-OILLC	2x2x0,75	18,4	902	25.5
MAS0475AEADX-OILLC	4x2x0,75	21,1	1180	25.5
MAS0675AEADX-OILLC	6x2x0,75	23,9	1451	25.5
MAS0875AEADX-OILLC	8x2x0,75	26,1	1733	25.5
MAS1075AEADX-OILLC	10x2x0,75	28,4	2035	25.5
MAS1275AEADX-OILLC	12x2x0,75	29,4	2165	25.5
MAS1675AEADX-OILLC	16x2x0,75	32,0	2580	25.5
MAS2475AEADX-OILLC	24x2x0,75	38,0	3556	25.5
MAS0110AEADX-OILLC	1x2x1,00	16,3	739	18.8
MAS0210AEADX-OILLC	2x2x1,00	20,9	1142	18.8
MAS0410AEADX-OILLC	4x2x1,00	23,4	1402	18.8
MAS0610AEADX-OILLC	6x2x1,00	26,7	1791	18.8
MAS0810AEADX-OILLC	8x2x1,00	28,4	2051	18.8
MAS1010AEADX-OILLC	10x2x1,00	32,1	2546	18.8
MAS1210AEADX-OILLC	12x2x1,00	33,6	2856	18.8
MAS1610AEADX-OILLC	16x2x1,00	36,5	3355	18.8
MAS2410AEADX-OILLC	24x2x1,00	42,2	4280	18.8
MAS0215AEADX-OILLC	2x2x1,50	21,2	1177	12.6
MAS0415AEADX-OILLC	4x2x1,50	23,7	1457	12.6
MAS0615AEADX-OILLC	6x2x1,50	27,2	1943	12.6
MAS0815AEADX-OILLC	8x2x1,50	29,1	2192	12.6
MAS1015AEADX-OILLC	10x2x1,50	33,4	2864	12.6
MAS1215AEADX-OILLC	12x2x1,50	34,2	3021	12.6
MAS1615AEADX-OILLC	16x2x1,50	37,1	3545	12.6
MAS2415AEADX-OILLC	24x2x1,50	43,1	4679	12.6
MAS0115AEADX-OILLC	1x2x2,50	17,3	838	7.7
MAS0215AEADX-OILLC	2x2x2,50	23,4	1401	7.7
MAS0415AEADX-OILLC	4x2x2,50	26,3	1817	7.7
MAS0615AEADX-OILLC	6x2x2,50	29,8	2294	7.7
MAS0815AEADX-OILLC	8x2x2,50	33,2	2960	7.7
MAS1015AEADX-OILLC	10x2x2,50	37,0	3523	7.7
MAS1215AEADX-OILLC	12x2x2,50	37,8	3718	7.7
MAS1615AEADX-OILLC	16x2x2,50	40,8	4359	7.7
MAS2415AEADX-OILLC	24x2x2,50	48,3	5910	7.7

PAS 5308-1:2009 Part 1 Type 3

PE/IAM/CAM/PVC/Pb/PVC/SWA/PVC



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CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Polyetilene FR - PE acc. to BS 6234
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyetilene FR - PE
Armour:
Galvanized Steel Wire Armour
Outer Sheath:
Polyvinyl chloride FR - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

STANDARD REFERENCES

- PAS 5308-1:2009 Part 1 Type 3
- BS EN 60228
- BS 6234
- BS 50363
- IEC 60331-2
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ON REQUEST

- Low Smoke Zero Halogen
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Nylon Cover
- UV Resistant
- Fire Resistant Version: Silicon or Mica + XLPE
- SWB or STA armour

CABLE PRINTING

RAMCRO - 300/500 V - PAS 5308 - PT1 TY3 - 1x2x0,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

IDENTIFICATION OF CORES

In according to PAS 5308-1:2009

PAS 5308-1:2009 Part 1 Type 3

PE/IAM/CAM/PVC/Pb/PVC/SWA/PVC

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RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0250AEADX-OILLC	2x2x0,50	18,1	884	37,5
MAC0450AEADX-OILLC	4x2x0,50	20,7	1159	37,5
MAC0650AEADX-OILLC	6x2x0,50	23,4	1426	37,5
MAC0850AEADX-OILLC	8x2x0,50	24,6	1566	37,5
MAC1050AEADX-OILLC	10x2x0,50	27,8	2000	37,5
MAC1250AEADX-OILLC	12x2x0,50	28,3	2091	37,5
MAC1650AEADX-OILLC	16x2x0,50	30,7	2464	37,5
MAC2450AEADX-OILLC	24x2x0,50	37,1	3508	37,5
MAC0275AEADX-OILLC	2x2x0,75	18,7	935	25.5
MAC0475AEADX-OILLC	4x2x0,75	21,4	1234	25.5
MAC0675AEADX-OILLC	6x2x0,75	24,3	1526	25.5
MAC0875AEADX-OILLC	8x2x0,75	26,5	1830	25.5
MAC1075AEADX-OILLC	10x2x0,75	29,4	2196	25.5
MAC1275AEADX-OILLC	12x2x0,75	29,9	2301	25.5
MAC1675AEADX-OILLC	16x2x0,75	33,5	2949	25.5
MAC2475AEADX-OILLC	24x2x0,75	38,9	3816	25.5
MAC0210AEADX-OILLC	2x2x1,00	21,2	1179	18.8
MAC0410AEADX-OILLC	4x2x1,00	23,7	1460	18.8
MAC0610AEADX-OILLC	6x2x1,00	27,3	1948	18.8
MAC0810AEADX-OILLC	8x2x1,00	29,2	2198	18.8
MAC1010AEADX-OILLC	10x2x1,00	33,5	2872	18.8
MAC1210AEADX-OILLC	12x2x1,00	34,3	3030	18.8
MAC1610AEADX-OILLC	16x2x1,00	37,2	3555	18.8
MAC2410AEADX-OILLC	24x2x1,00	43,2	4694	18.8
MAC0215AEADX-OILLC	2x2x1,50	21,4	1213	12.6
MAC0415AEADX-OILLC	4x2x1,50	24,0	1515	12.6
MAC0615AEADX-OILLC	6x2x1,50	27,6	2028	12.6
MAC0815AEADX-OILLC	8x2x1,50	29,6	2298	12.6
MAC1015AEADX-OILLC	10x2x1,50	34,1	3019	12.6
MAC1215AEADX-OILLC	12x2x1,50	34,8	3177	12.6
MAC1615AEADX-OILLC	16x2x1,50	37,7	3744	12.6
MAC2415AEADX-OILLC	24x2x1,50	43,9	4970	12.6
MAC0225AEADX-OILLC	2x2x,50	23,7	1439	7.7
MAC0425AEADX-OILLC	4x2x,50	26,6	1877	7.7
MAC0625AEADX-OILLC	6x2x,50	30,2	2379	7.7
MAC0825AEADX-OILLC	8x2x,50	33,6	3042	7.7
MAC1025AEADX-OILLC	10x2x,50	37,6	3663	7.7
MAC1225AEADX-OILLC	12x2x,50	38,4	3876	7.7
MAC1625AEADX-OILLC	16x2x,50	41,5	4561	7.7
MAC2425AEADX-OILLC	24x2x2,50	49,4	6231	7.7

ramcro

special cables





PAS 5308-2:2009

PAS 5308-2:2009 Part 2 Type 1

PVC/CAM/PVC



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CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Polyvinyl chloride FR - PVC acc. to EN 50363-3
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Polyvinyl chloride FR - PVC acc. to EN 50363-3
Colour Outher Sheath:
Blue (IS), Black (NIS)

STANDARD REFERENCES

- PAS 5308-2:2009 Part 2 Type 1
- BS EN 60228
- BS 6234
- BS 50363
- IEC 60331-2
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ON REQUEST

- Low Smoke Zero Halogen
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

CABLE PRINTING

RAMCRO - 300/500 V - PAS 5308 - PT2 TY1 - 1x2x0,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

IDENTIFICATION OF CORES

In according to PAS 5308-2:2009

PAS 5308-2:2009 Part 2 Type 1

PVC/CAM/PVC

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RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0150HEAAX-OIL	1x2x0,50	5,6	43	37,5
MAS0250HEAAX-OIL	2x2x0,50	7,6	71	37,5
MAS0450HEAAX-OIL	4x2x0,50	9,1	117	37,5
MAS0650HEAAX-OIL	6x2x0,50	10,8	163	37,5
MAS0850HEAAX-OIL	8x2x0,50	12,4	224	37,5
MAS1050HEAAX-OIL	10x2x0,50	14,3	273	37,5
MAS1250HEAAX-OIL	12x2x0,50	14,8	312	37,5
MAS1650HEAAX-OIL	16x2x0,50	16,3	396	37,5
MAS2450HEAAX-OIL	24x2x0,50	20,9	611	37,5
MAS0175HEAAX-OIL	1x2x0,75	5,9	50	25.5
MAS0275HEAAX-OIL	2x2x0,75	8,4	88	25.5
MAS0475HEAAX-OIL	4x2x0,75	9,7	142	25.5
MAS0675HEAAX-OIL	6x2x0,75	12,2	218	25.5
MAS0875HEAAX-OIL	8x2x0,75	13,4	273	25.5
MAS1075HEAAX-OIL	10x2x0,75	15,4	334	25.5
MAS1275HEAAX-OIL	12x2x0,75	15,9	384	25.5
MAS1675HEAAX-OIL	16x2x0,75	17,8	500	25.5
MAS2475HEAAX-OIL	24x2x0,75	22,6	754	25.5
MAS0110HEAAX-OIL	1x2x1,00	6,7	63	18.8
MAS0210HEAAX-OIL	2x2x1,00	9,6	112	18.8
MAS0410HEAAX-OIL	4x2x1,00	11,3	191	18.8
MAS0610HEAAX-OIL	6x2x1,00	14,0	284	18.8
MAS0810HEAAX-OIL	8x2x1,00	15,4	358	18.8
MAS1010HEAAX-OIL	10x2x1,00	17,9	449	18.8
MAS1210HEAAX-OIL	12x2x1,00	19,1	548	18.8
MAS1610HEAAX-OIL	16x2x1,00	21,2	697	18.8
MAS2410HEAAX-OIL	24x2x1,00	26,1	1002	18.8
MAS0115HEAAX-OIL	1x2x1,50	6,8	71	12.6
MAS0215HEAAX-OIL	2x2x1,50	9,8	129	12.6
MAS0415HEAAX-OIL	4x2x1,50	12,0	236	12.6
MAS0615HEAAX-OIL	6x2x1,50	14,3	333	12.6
MAS0815HEAAX-OIL	8x2x1,50	15,7	423	12.6
MAS1015HEAAX-OIL	10x2x1,50	18,4	530	12.6
MAS1215HEAAX-OIL	12x2x1,50	19,6	645	12.6
MAS1615HEAAX-OIL	16x2x1,50	21,7	826	12.6
MAS2415HEAAX-OIL	24x2x1,50	26,8	1193	12.6
MAS0125HEAAX-OIL	1x2x2,50	7,7	96	7.7
MAS0225HEAAX-OIL	2x2x2,50	11,3	183	7.7
MAS0425HEAAX-OIL	4x2x2,50	13,6	330	7.7
MAS0625HEAAX-OIL	6x2x2,50	16,3	471	7.7
MAS0825HEAAX-OIL	8x2x2,50	18,2	614	7.7
MAS1025HEAAX-OIL	10x2x2,50	21,7	791	7.7
MAS1225HEAAX-OIL	12x2x2,50	22,4	920	7.7
MAS1625HEAAX-OIL	16x2x2,50	24,8	1186	7.7
MAS2425HEAAX-OIL	24x2x2,50	30,8	1729	7.7

PAS 5308-2:2009 Part 2 Type 1

PVC/IAM/CAM/PVC



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CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Polyvinyl chloride FR- PVC acc. to EN 50363-3
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Polyvinyl chloride FR - PVC acc. to EN 50363-3
Colour Outher Sheath:
Blue (IS), Black (NIS)

STANDARD REFERENCES

- PAS 5308-2:2009 Part 2 Type 1
- BS EN 60228
- BS 6234
- BS 50363
- IEC 60331-2
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ON REQUEST

- Low Smoke Zero Halogen
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant

CABLE PRINTING

RAMCRO - 300/500 V - PAS 5308 - PT2 TY1 - 1x2x0,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

IDENTIFICATION OF CORES

In according to PAS 5308-2:2009

PVC/IAM/CAM/PVC

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. Part 2 Type 1 cables are generally designed for indoor use and in environments where mechanical protection is not required.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0250HEAAX-OIL	2x2x0,50	8,1	87	37,5
MAC0450HEAAX-OIL	4x2x0,50	9,3	142	37,5
MAC0650HEAAX-OIL	6x2x0,50	11,3	205	37,5
MAC0850HEAAX-OIL	8x2x0,50	12,9	272	37,5
MAC1050HEAAX-OIL	10x2x0,50	14,8	333	37,5
MAC1250HEAAX-OIL	12x2x0,50	15,3	384	37,5
MAC1650HEAAX-OIL	16x2x0,50	17,1	500	37,5
MAC2450HEAAX-OIL	24x2x0,50	21,7	754	37,5
MAC0275HEAAX-OIL	2x2x0,75	8,6	101	25.5
MAC0475HEAAX-OIL	4x2x0,75	10	166	25.5
MAC0675HEAAX-OIL	6x2x0,75	12,6	255	25.5
MAC0875HEAAX-OIL	8x2x0,75	13,8	321	25.5
MAC1075HEAAX-OIL	10x2x0,75	15,9	394	25.5
MAC1275HEAAX-OIL	12x2x0,75	16,6	465	25.5
MAC1675HEAAX-OIL	16x2x0,75	19	625	25.5
MAC2475HEAAX-OIL	24x2x0,75	23,4	898	25.5
MAC0210HEAAX-OIL	2x2x1,00	9,8	126	18.8
MAC0410HEAAX-OIL	4x2x1,00	12	231	18.8
MAC0610HEAAX-OIL	6x2x1,00	14,3	324	18.8
MAC0810HEAAX-OIL	8x2x1,00	15,8	412	18.8
MAC1010HEAAX-OIL	10x2x1,00	19	546	18.8
MAC1210HEAAX-OIL	12x2x1,00	19,7	629	18.8
MAC1610HEAAX-OIL	16x2x1,00	21,8	804	18.8
MAC2410HEAAX-OIL	24x2x1,00	26,9	1161	18.8
MAC0215HEAAX-OIL	2x2x1,50	10	143	12.6
MAC0415HEAAX-OIL	4x2x1,50	12,3	264	12.6
MAC0615HEAAX-OIL	6x2x1,50	14,6	373	12.6
MAC0815HEAAX-OIL	8x2x1,50	16,1	476	12.6
MAC1015HEAAX-OIL	10x2x1,50	19,5	627	12.6
MAC1215HEAAX-OIL	12x2x1,50	20,1	726	12.6
MAC1615HEAAX-OIL	16x2x1,50	22,3	932	12.6
MAC2415HEAAX-OIL	24x2x1,50	27,5	1352	12.6
MAC0215HEAAX-OIL	2x2x,50	12	210	7.7
MAC0415HEAAX-OIL	4x2x,50	13,9	358	7.7
MAC0615HEAAX-OIL	6x2x,50	16,9	520	7.7
MAC0815HEAAX-OIL	8x2x,50	19,2	698	7.7
MAC1015HEAAX-OIL	10x2x,50	22,1	859	7.7
MAC1215HEAAX-OIL	12x2x,50	22,9	1000	7.7
MAC1615HEAAX-OIL	16x2x,50	25,4	1293	7.7
MAC2415HEAAX-OIL	24x2x2,50	31,7	1904	7.7

PAS 5308-2:2009 Part 2 Type 2

PVC/CAM/PVC/SWA/PVC



BS 5308 cables are designed to carry communication and control signals in a variety of installation types including the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. Part 2 Type 1 cables are generally designed for indoor use and in environments where mechanical protection is not required.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Polyvinyl chloride FR- PVC acc. to EN 50363-3
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride FR - PVC acc. to EN 50363-3
Armour:
Galvanized Steel Wire Armour
Outer Sheath:
Polyvinyl chloride FR- PVC acc. to EN 50363-3
Colour Outher Sheath:
Blue (IS), Black (NIS)

STANDARD REFERENCES

- PAS 5308-2:2009 Part 2 Type 1
- BS EN 60228
- BS 6234
- BS 50363
- IEC 60331-2
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ON REQUEST

- Low Smoke Zero Halogen
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- SWB or STA armour

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

CABLE PRINTING

RAMCRO - 300/500 V - PAS 5308 - PT2 TY2 - 1x2x0,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

IDENTIFICATION OF CORES

In according to PAS 5308-2:2009

PVC/CAM/PVC/SWA/PVC

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. Part 2 Type 1 cables are generally designed for indoor use and in environments where mechanical protection is not required.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0150AEAAX-OIL	1x2x0,50	10,2	200	37,5
MAS0250AEAAX-OIL	2x2x0,50	12,2	271	37,5
MAS0450AEAAX-OIL	4x2x0,50	13,6	348	37,5
MAS0650AEAAX-OIL	6x2x0,50	15,5	439	37,5
MAS0850AEAAX-OIL	8x2x0,50	17,2	537	37,5
MAS1050AEAAX-OIL	10x2x0,50	20	733	37,5
MAS1250AEAAX-OIL	12x2x0,50	20,4	786	37,5
MAS1650AEAAX-OIL	16x2x0,50	22	914	37,5
MAS2450AEAAX-OIL	24x2x0,50	27,7	1424	37,5
MAS0175AEAAX-OIL	1x2x0,75	10,5	214	25.5
MAS0275AEAAX-OIL	2x2x0,75	13	305	25.5
MAS0475AEAAX-OIL	4x2x0,75	14,3	388	25.5
MAS0675AEAAX-OIL	6x2x0,75	17	525	25.5
MAS0875AEAAX-OIL	8x2x0,75	18,2	607	25.5
MAS1075AEAAX-OIL	10x2x0,75	21,1	825	25.5
MAS1275AEAAX-OIL	12x2x0,75	21,6	891	25.5
MAS1675AEAAX-OIL	16x2x0,75	23,7	1073	25.5
MAS2475AEAAX-OIL	24x2x0,75	29,6	1641	25.5
MAS0110AEAAX-OIL	1x2x1,00	11,3	243	18.8
MAS0210AEAAX-OIL	2x2x1,00	14,1	354	18.8
MAS0410AEAAX-OIL	4x2x1,00	16,1	480	18.8
MAS0610AEAAX-OIL	6x2x1,00	18,7	630	18.8
MAS0810AEAAX-OIL	8x2x1,00	21	849	18.8
MAS1010AEAAX-OIL	10x2x1,00	23,8	1025	18.8
MAS1210AEAAX-OIL	12x2x1,00	25,9	1300	18.8
MAS1610AEAAX-OIL	16x2x1,00	28	1519	18.8
MAS2410AEAAX-OIL	24x2x1,00	34,1	2226	18.8
MAS0115AEAAX-OIL	1x2x1,50	11,4	255	12.6
MAS0215AEAAX-OIL	2x2x1,50	14,4	375	12.6
MAS0415AEAAX-OIL	4x2x1,50	16,8	539	12.6
MAS0615AEAAX-OIL	6x2x1,50	20	793	12.6
MAS0815AEAAX-OIL	8x2x1,50	21,4	923	12.6
MAS1015AEAAX-OIL	10x2x1,50	24,2	1118	12.6
MAS1215AEAAX-OIL	12x2x1,50	26,4	1412	12.6
MAS1615AEAAX-OIL	16x2x1,50	28,5	1666	12.6
MAS2415AEAAX-OIL	24x2x1,50	34,7	2445	12.6
MAS0115AEAAX-OIL	1x2x2,50	12,3	298	7.7
MAS0215AEAAX-OIL	2x2x2,50	16,1	471	7.7
MAS0415AEAAX-OIL	4x2x2,50	18,4	669	7.7
MAS0615AEAAX-OIL	6x2x2,50	22	987	7.7
MAS0815AEAAX-OIL	8x2x2,50	24	1196	7.7
MAS1015AEAAX-OIL	10x2x2,50	28,4	1629	7.7
MAS1215AEAAX-OIL	12x2x2,50	29,4	1799	7.7
MAS1615AEAAX-OIL	16x2x2,50	31,8	2152	7.7
MAS2415AEAAX-OIL	24x2x2,50	38,8	3149	7.7

PAS 5308-2:2009 Part 2 Type 2

PVC/IAM/CAM/PVC/SWA/PVC



BS 5308 cables are designed to carry communication and control signals in a variety of installation types including the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. Part 2 Type 1 cables are generally designed for indoor use and in environments where mechanical protection is not required.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Polyvinyl chloride FR - PVC acc. to EN 50363-3
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride FR - PVC acc. to EN 50363-3
Armour:
Galvanized Steel Wire Armour
Outer Sheath:
Polyvinyl chloride FR - PVC acc. to EN 50363-3
Colour Outher Sheath:
Blue (IS), Black (NIS)

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

STANDARD REFERENCES

- PAS 5308-2:2009 Part 2 Type 1
- BS EN 60228
- BS 6234
- BS 50363
- IEC 60331-2
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

ATEX

ON REQUEST

- Low Smoke Zero Halogen
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- SWB or STA armour

CABLE PRINTING

RAMCRO - 300/500 V - PAS 5308 - PT2 TY2 - 1x2x0,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

IDENTIFICATION OF CORES

In according to PAS 5308-2:2009

PVC/IAM/CAM/PVC/SWA/PVC

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. Part 2 Type 1 cables are generally designed for indoor use and in environments where mechanical protection is not required.

RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0250AEAAX-OIL	2x2x0,50	12,7	298	37,5
MAC0450AEAAX-OIL	4x2x0,50	13,9	380	37,5
MAC0650AEAAX-OIL	6x2x0,50	16,1	494	37,5
MAC0850AEAAX-OIL	8x2x0,50	17,7	595	37,5
MAC1050AEAAX-OIL	10x2x0,50	20,5	808	37,5
MAC1250AEAAX-OIL	12x2x0,50	21	873	37,5
MAC1650AEAAX-OIL	16x2x0,50	23	1053	37,5
MAC2450AEAAX-OIL	24x2x0,50	28,5	1595	37,5
MAC0275AEAAX-OIL	2x2x0,75	13,2	323	25.5
MAC0475AEAAX-OIL	4x2x0,75	14,6	419	25.5
MAC0675AEAAX-OIL	6x2x0,75	17,4	571	25.5
MAC0875AEAAX-OIL	8x2x0,75	18,6	665	25.5
MAC1075AEAAX-OIL	10x2x0,75	21,6	901	25.5
MAC1275AEAAX-OIL	12x2x0,75	22,5	1004	25.5
MAC1675AEAAX-OIL	16x2x0,75	24,9	1233	25.5
MAC2475AEAAX-OIL	24x2x0,75	30,4	1812	25.5
MAC0210AEAAX-OIL	2x2x1,00	14,4	374	18.8
MAC0410AEAAX-OIL	4x2x1,00	16,8	535	18.8
MAC0610AEAAX-OIL	6x2x1,00	20	786	18.8
MAC0810AEAAX-OIL	8x2x1,00	21,5	915	18.8
MAC1010AEAAX-OIL	10x2x1,00	24,9	1154	18.8
MAC1210AEAAX-OIL	12x2x1,00	26,5	1400	18.8
MAC1610AEAAX-OIL	16x2x1,00	28,6	1648	18.8
MAC2410AEAAX-OIL	24x2x1,00	34,9	2418	18.8
MAC0215AEAAX-OIL	2x2x1,50	14,6	395	12.6
MAC0415AEAAX-OIL	4x2x1,50	17,1	574	12.6
MAC0615AEAAX-OIL	6x2x1,50	20,3	844	12.6
MAC0815AEAAX-OIL	8x2x1,50	21,8	990	12.6
MAC1015AEAAX-OIL	10x2x1,50	26,3	1391	12.6
MAC1215AEAAX-OIL	12x2x1,50	26,9	1512	12.6
MAC1615AEAAX-OIL	16x2x1,50	29,3	1809	12.6
MAC2415AEAAX-OIL	24x2x1,50	35,5	2637	12.6
MAC0215AEAAX-OIL	2x2x,50	16,8	512	7.7
MAC0415AEAAX-OIL	4x2x,50	18,7	704	7.7
MAC0615AEAAX-OIL	6x2x,50	22,8	1065	7.7
MAC0815AEAAX-OIL	8x2x,50	26	1451	7.7
MAC1015AEAAX-OIL	10x2x,50	29,1	1731	7.7
MAC1215AEAAX-OIL	12x2x,50	29,9	1899	7.7
MAC1615AEAAX-OIL	16x2x,50	33,2	2472	7.7
MAC2415AEAAX-OIL	24x2x2,50	39,9	3387	7.7

PAS 5308-2:2009 Part 2 Type 3

PVC/CAM/PVC/Pb/PVC/SWA/PVC



BS 5308 cables are designed to carry communication and control signals in a variety of installation types including the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. Part 2 Type 1 cables are generally designed for indoor use and in environments where mechanical protection is not required.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Polyvinyl chloride FR - PVC acc. to EN 50363-3
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride FR - PVC acc. to EN 50363-3
Chemical Protection:
Lead Cover
Armour:
Galvanized Steel Wire Armour
Outer Sheath:
Polyvinyl chloride FR - PVC acc. to EN 50363-3
Colour Outher Sheath:
Blue (IS), Black (NIS)

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

STANDARD REFERENCES

- PAS 5308-2:2009 Part 2 Type 1
- BS EN 60228
- BS 6234
- BS 50363
- IEC 60331-2
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

ATEX

ON REQUEST

- Low Smoke Zero Halogen
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- SWB or STA armour

CABLE PRINTING

RAMCRO - 300/500 V - PAS 5308 - PT2 TY3 - 1x2x0,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

IDENTIFICATION OF CORES

In according to PAS 5308-2:2009

PVC/CAM/PVC/Pb/PVC/SWA/PVC

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. Part 2 Type 1 cables are generally designed for indoor use and in environments where mechanical protection is not required.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0150AEAAX-OILLC	1x2x0,50	15,2	652	37,5
MAS0250AEAAX-OILLC	2x2x0,50	17,2	813	37,5
MAS0450AEAAX-OILLC	4x2x0,50	18,6	953	37,5
MAS0650AEAAX-OILLC	6x2x0,50	21,6	1252	37,5
MAS0850AEAAX-OILLC	8x2x0,50	23,5	1448	37,5
MAS1050AEAAX-OILLC	10x2x0,50	26,3	1775	37,5
MAS1250AEAAX-OILLC	12x2x0,50	26,7	1851	37,5
MAS1650AEAAX-OILLC	16x2x0,50	28,5	2138	37,5
MAS2450AEAAX-OILLC	24x2x0,50	34,5	3062	37,5
MAS0175AEAAX-OILLC	1x2x0,75	15,5	682	25.5
MAS0275AEAAX-OILLC	2x2x0,75	18	880	25.5
MAS0475AEAAX-OILLC	4x2x0,75	20,2	1129	25.5
MAS0675AEAAX-OILLC	6x2x0,75	23,3	1423	25.5
MAS0875AEAAX-OILLC	8x2x0,75	24,5	1565	25.5
MAS1075AEAAX-OILLC	10x2x0,75	27,6	1998	25.5
MAS1275AEAAX-OILLC	12x2x0,75	28,1	2091	25.5
MAS1675AEAAX-OILLC	16x2x0,75	30,2	2382	25.5
MAS2475AEAAX-OILLC	24x2x0,75	36,8	3511	25.5
MAS0110AEAAX-OILLC	1x2x1,00	16,3	745	18.8
MAS0210AEAAX-OILLC	2x2x1,00	20	1088	18.8
MAS0410AEAAX-OILLC	4x2x1,00	22,4	1334	18.8
MAS0610AEAAX-OILLC	6x2x1,00	25,9	1759	18.8
MAS0810AEAAX-OILLC	8x2x1,00	27,5	2019	18.8
MAS1010AEAAX-OILLC	10x2x1,00	30,3	2339	18.8
MAS1210AEAAX-OILLC	12x2x1,00	31,7	2628	18.8
MAS1610AEAAX-OILLC	16x2x1,00	34,8	3172	18.8
MAS2410AEAAX-OILLC	24x2x1,00	40,7	4242	18.8
MAS0115AEAAX-OILLC	1x2x1,50	16,4	762	12.6
MAS0215AEAAX-OILLC	2x2x1,50	20,3	1120	12.6
MAS0415AEAAX-OILLC	4x2x1,50	23,1	1427	12.6
MAS0615AEAAX-OILLC	6x2x1,50	26,3	1833	12.6
MAS0815AEAAX-OILLC	8x2x1,50	27,9	2113	12.6
MAS1015AEAAX-OILLC	10x2x1,50	30,9	2542	12.6
MAS1215AEAAX-OILLC	12x2x1,50	33	2953	12.6
MAS1615AEAAX-OILLC	16x2x1,50	35,7	3394	12.6
MAS2415AEAAX-OILLC	24x2x1,50	41,3	4500	12.6
MAS0115AEAAX-OILLC	1x2x2,50	17,3	844	7.7
MAS0215AEAAX-OILLC	2x2x2,50	22,2	1313	7.7
MAS0415AEAAX-OILLC	4x2x2,50	24,7	1640	7.7
MAS0615AEAAX-OILLC	6x2x2,50	28,5	2208	7.7
MAS0815AEAAX-OILLC	8x2x2,50	30,7	2609	7.7
MAS1015AEAAX-OILLC	10x2x2,50	35,6	3355	7.7
MAS1215AEAAX-OILLC	12x2x2,50	36,6	3655	7.7
MAS1615AEAAX-OILLC	16x2x2,50	39,2	4185	7.7
MAS2415AEAAX-OILLC	24x2x2,50	45,6	5581	7.7

PAS 5308-2:2009 Part 2 Type 3

PVC/IAM/CAM/PVC/Pb/PVC/SWA/PVC



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CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded acc. to HD 383
Insulation:
Polyvinyl chloride FR - PVC acc. to EN 50363-3
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride FR - PVC acc. to EN 50363-3
Chemical Protection:
Lead Cover
Armour:
Galvanized Steel Wire Armour
Outer Sheath:
Polyvinyl chloride FR - PVC
Colour Outher Sheath:
Blue (IS), Black (NIS)

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

STANDARD REFERENCES

- PAS 5308-2:2009 Part 2 Type 1
- BS EN 60228
- BS 6234
- BS 50363
- IEC 60331-2
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

ON REQUEST

- Low Smoke Zero Halogen
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- SWB or STA armour
- Nylon Cover

CABLE PRINTING

RAMCRO - 300/500 V - PAS 5308 - PT2 TY3 - 1x2x0,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca <batch> <MeterMarking>

IDENTIFICATION OF CORES

In according to PAS 5308-2:2009

PVC/IAM/CAM/PVC/Pb/PVC/SWA/PVC

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. Part 2 Type 1 cables are generally designed for indoor use and in environments where mechanical protection is not required.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0250AEAAX-OILLC	2x2x0,50	17,7	862	37,5
MAC0450AEAAX-OILLC	4x2x0,50	19,8	1109	37,5
MAC0650AEAAX-OILLC	6x2x0,50	22,4	1357	37,5
MAC0850AEAAX-OILLC	8x2x0,50	24	1539	37,5
MAC1050AEAAX-OILLC	10x2x0,50	26,8	1890	37,5
MAC1250AEAAX-OILLC	12x2x0,50	27,5	2057	37,5
MAC1650AEAAX-OILLC	16x2x0,50	29,5	2348	37,5
MAC2450AEAAX-OILLC	24x2x0,50	35,7	3360	37,5
MAC0275AEAAX-OILLC	2x2x0,75	18,2	912	25.5
MAC0475AEAAX-OILLC	4x2x0,75	20,9	1208	25.5
MAC0675AEAAX-OILLC	6x2x0,75	23,7	1497	25.5
MAC0875AEAAX-OILLC	8x2x0,75	24,9	1656	25.5
MAC1075AEAAX-OILLC	10x2x0,75	28,1	2115	25.5
MAC1275AEAAX-OILLC	12x2x0,75	29	2265	25.5
MAC1675AEAAX-OILLC	16x2x0,75	31,6	2719	25.5
MAC2475AEAAX-OILLC	24x2x0,75	37,6	3766	25.5
MAC0210AEAAX-OILLC	2x2x1,00	20,3	1123	18.8
MAC0410AEAAX-OILLC	4x2x1,00	23,1	1432	18.8
MAC0610AEAAX-OILLC	6x2x1,00	26,3	1841	18.8
MAC0810AEAAX-OILLC	8x2x1,00	28	2123	18.8
MAC1010AEAAX-OILLC	10x2x1,00	31,6	2635	18.8
MAC1210AEAAX-OILLC	12x2x1,00	33,1	2967	18.8
MAC1610AEAAX-OILLC	16x2x1,00	35,8	3411	18.8
MAC2410AEAAX-OILLC	24x2x1,00	41,5	4525	18.8
MAC0215AEAAX-OILLC	2x2x1,50	20,9	1182	12.6
MAC0415AEAAX-OILLC	4x2x1,50	23,4	1484	12.6
MAC0615AEAAX-OILLC	6x2x1,50	26,6	1915	12.6
MAC0815AEAAX-OILLC	8x2x1,50	28,3	2217	12.6
MAC1015AEAAX-OILLC	10x2x1,50	32,1	2754	12.6
MAC1215AEAAX-OILLC	12x2x1,50	33,5	3106	12.6
MAC1615AEAAX-OILLC	16x2x1,50	36,5	3689	12.6
MAC2415AEAAX-OILLC	24x2x1,50	42,1	4782	12.6
MAC0225AEAAX-OILLC	2x2x,50	23,1	1402	7.7
MAC0425AEAAX-OILLC	4x2x,50	25,9	1837	7.7
MAC0625AEAAX-OILLC	6x2x,50	29,3	2332	7.7
MAC0825AEAAX-OILLC	8x2x,50	31,8	2796	7.7
MAC1025AEAAX-OILLC	10x2x,50	36,3	3590	7.7
MAC1225AEAAX-OILLC	12x2x,50	37,1	3810	7.7
MAC1625AEAAX-OILLC	16x2x,50	40	4494	7.7
MAC2425AEAAX-OILLC	24x2x2,50	47,1	5986	7.7

ramcro

special cables





IEC 60502

IEC 60502-1

PVC/Unscreened/PVC



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for indoor applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand
Insulation:
Polyvinyl chloride - PVC
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Outer Sheath:
Polyvinyl chloride - PVC
Colour Outher Sheath:
Black

STANDARD REFERENCES

- IEC 60502
- IEC 60228
- IEC 60811
- IEC 60754-1
- IEC 60754-2
- IEC 60331-1
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +70°C*

*The higher temperature can be manage on Request.

ON REQUEST

- Low Smoke Zero Halogen
- GAS-STOP in according to EN 60079-14 ANNEX E
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	5000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	600/1000 V

CABLE PRINTING

RAMCRO - 0,6/1 kV - IEC 60502 - 10x2,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca + BATCH + METER MARKING

IDENTIFICATION OF CORES

Core: Black Numbered

PVC/Unscreened/PVC

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for indoor applications.

RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SSS0210HEAAD-1000V	2x1	7.2	84	20.3
SSS0310HEAAD-1000V	3x1	7.3	98	20.3
SSS0510HEAAD-1000V	5x1	8.8	142	20.3
SSS0710HEAAD-1000V	7x1	9.6	182	20.3
SSS1210HEAAD-1000V	12x1	12.7	294	20.3
SSS1910HEAAD-1000V	19x1	15	436	20.3
SSS2410HEAAD-1000V	24x1	17.7	549	20.3
SSS0215HEAAD-1000V	2x1.5	7.9	105	13.8
SSS0315HEAAD-1000V	3x1.5	8	123	13.8
SSS0515HEAAD-1000V	5x1.5	9.7	180	13.8
SSS0715HEAAD-1000V	7x1.5	10.6	232	13.8
SSS1215HEAAD-1000V	12x1.5	14.1	377	13.8
SSS1915HEAAD-1000V	19x1.5	16.7	562	13.8
SSS2415HEAAD-1000V	24x1.5	19.7	709	13.8
SSS0225HEAAD-1000V	2x2.5	8.8	140	8.3
SSS0325HEAAD-1000V	3x2.5	9	168	8.3
SSS0525HEAAD-1000V	5x2.5	10.8	249	8.3
SSS0725HEAAD-1000V	7x2.5	11.9	325	8.3
SSS1225HEAAD-1000V	12x2.5	15.9	532	8.3
SSS1925HEAAD-1000V	19x2.5	18.8	800	8.3
SSS2425HEAAD-1000V	24x2.5	22.3	1010	8.3
SSS0240HEAAD-1000V	2x4	10.2	195	5.1
SSS0340HEAAD-1000V	3x4	10.4	237	5.1
SSS0540HEAAD-1000V	5x4	12.7	353	5.1
SSS0740HEAAD-1000V	7x4	13.9	464	5.1
SSS1240HEAAD-1000V	12x4	18.8	764	5.1
SSS1940HEAAD-1000V	19x4	22.2	1155	5.1
SSS2440HEAAD-1000V	24x4	26.4	1460	5.1
SSS0260HEAAD-1000V	2x6	11.9	276	3.4
SSS0360HEAAD-1000V	3x6	12.1	339	3.4
SSS0560HEAAD-1000V	5x6	14.8	510	3.4
SSS0760HEAAD-1000V	7x6	16.3	674	3.4
SSS1260HEAAD-1000V	12x6	22.1	1116	3.4
SSS1960HEAAD-1000V	19x6	26.2	1697	3.4
SSS2460HEAAD-1000V	24x6	31.2	2146	3.4
SSS0211HEAAD-1000V	2x10	14.5	432	2.0
SSS0311HEAAD-1000V	3x10	14.8	538	2.0
SSS0511HEAAD-1000V	5x10	18.2	818	2.0
SSS0711HEAAD-1000V	7x10	20	1089	2.0
SSS1211HEAAD-1000V	12x10	27.2	1811	2.0
SSS1911HEAAD-1000V	19x10	32.4	2769	2.0
SSS2411HEAAD-1000V	24x10	38.6	3504	

IEC 60502-1

PVC/Unscreened/PVC/SWA/PVC



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand
Insulation:
Polyvinyl chloride - PVC
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Inner Sheath:
Polyvinyl chloride - PVC
Armour:
Galvanized Steel Wire Armour
Outer Sheath:
Polyvinyl chloride - PVC
Colour Outher Sheath:
Black

STANDARD REFERENCES

- EC 60502
- IEC 60228
- IEC 60811
- IEC 60754-1
- IEC 60754-2
- IEC 60331-1
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
14 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +70°C*

*The higher temperature can be manage on Request.

ON REQUEST

- Low Smoke Zero Halogen
- GAS-STOP in according to EN 60079-14 ANNEX E
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	5000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	600/1000 V

CABLE PRINTING

RAMCRO - 0,6/1 kV - IEC 60502 - 10x2,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca + BATCH + METER MARKING

IDENTIFICATION OF CORES

Core: Black Numbered

PVC/Unscreened/PVC/SWA/PVC

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SSS0210AEAAD-1000V	2x1	11	256	20.3
SSS0310AEAAD-1000V	3x1	11.1	272	20.3
SSS0510AEAAD-1000V	5x1	13	363	20.3
SSS0710AEAAD-1000V	7x1	13.8	419	20.3
SSS1210AEAAD-1000V	12x1	17.3	617	20.3
SSS1910AEAAD-1000V	19x1	20.2	912	20.3
SSS2410AEAAD-1000V	24x1	23.3	1128	20.3
SSS0215AEAAD-1000V	2x1.5	11.7	289	13.8
SSS0315AEAAD-1000V	3x1.5	12.3	329	13.8
SSS0515AEAAD-1000V	5x1.5	13.9	419	13.8
SSS0715AEAAD-1000V	7x1.5	14.8	489	13.8
SSS1215AEAAD-1000V	12x1.5	18.6	729	13.8
SSS1915AEAAD-1000V	19x1.5	22.3	1113	13.8
SSS2415AEAAD-1000V	24x1.5	26	1482	13.8
SSS0225AEAAD-1000V	2x2.5	13	361	8.3
SSS0325AEAAD-1000V	3x2.5	13.2	392	8.3
SSS0525AEAAD-1000V	5x2.5	15	511	8.3
SSS0725AEAAD-1000V	7x2.5	16	608	8.3
SSS1225AEAAD-1000V	12x2.5	21.1	1032	8.3
SSS1925AEAAD-1000V	19x2.5	24.4	1410	8.3
SSS2425AEAAD-1000V	24x2.5	29	1907	8.3
SSS0240AEAAD-1000V	2x4	14.4	445	5.1
SSS0340AEAAD-1000V	3x4	14.6	491	5.1
SSS0540AEAAD-1000V	5x4	17.3	676	5.1
SSS0740AEAAD-1000V	7x4	18.5	812	5.1
SSS1240AEAAD-1000V	12x4	24.3	1371	5.1
SSS1940AEAAD-1000V	19x4	28.9	2050	5.1
SSS2440AEAAD-1000V	24x4	33.8	2702	5.1
SSS0260AEAAD-1000V	2x6	16.1	559	3.4
SSS0360AEAAD-1000V	3x6	16.3	627	3.4
SSS0560AEAAD-1000V	5x6	20.1	983	3.4
SSS0760AEAAD-1000V	7x6	21.5	1186	3.4
SSS1260AEAAD-1000V	12x6	28.7	2005	3.4
SSS1960AEAAD-1000V	19x6	33.7	2933	3.4
SSS2460AEAAD-1000V	24x6	38.5	3574	3.4
SSS0211AEAAD-1000V	2x10	19.8	896	2
SSS0311AEAAD-1000V	3x10	20.1	1010	2
SSS0511AEAAD-1000V	5x10	23.8	1411	2
SSS0711AEAAD-1000V	7x10	26.3	1872	2
SSS1211AEAAD-1000V	12x10	34.6	3086	2
SSS1911AEAAD-1000V	19x10	39.7	4245	2
SSS2411AEAAD-1000V	24x10	45.8	5216	

IEC 60502-1

PVC/Unscreened/PVC/Pb/PVC/SWA/PVC



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand
Insulation:
Polyvinyl chloride - PVC
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Inner Sheath:
Polyvinyl chloride - PVC
Chemical Protection:
Lead Cover
Armour:
Galvanized Steel Wire Armour
Separation Sheath:
Polyvinyl chloride - PVC
Outer Sheath:
Polyvinyl chloride - PVC
Colour Outher Sheath:
Black

STANDARD REFERENCES

- EC 60502
- IEC 60228
- IEC 60811
- IEC 60754-1
- IEC 60754-2
- IEC 60331-1
- IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
20 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +70°C*

*The higher temperature can be manage on Request.

ON REQUEST

- Low Smoke Zero Halogen
- GAS-STOP in according to EN 60079-14 ANNEX E
- High Performance Polyvinyl chloride - Hi-PVC
- Oil Resistant Sheath
- Personalized Colour Code
- UV Resistant
- SWB or STA armour

CABLE PRINTING

RAMCRO - 0,6/1 kV - IEC 60502 - 10x2,5 mm2 - IEC 60332-1 - EN 50575: 2014+A1:2016 CPR Class B2ca + BATCH + METER MARKING

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	5000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	600/1000 V

IDENTIFICATION OF CORES

Core: Black Numbered

PVC/Unscreened/PVC/Pb/PVC/SWA/PVC

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SSS0210AEAAD-1000VLC	2x1	16.1	758	20.3
SSS0310AEAAD-1000VLC	3x1	16.2	780	20.3
SSS0510AEAAD-1000VLC	5x1	18.1	950	20.3
SSS0710AEAAD-1000VLC	7x1	18.9	1041	20.3
SSS1210AEAAD-1000VLC	12x1	23.5	1542	20.3
SSS1910AEAAD-1000VLC	19x1	26.5	1983	20.3
SSS2410AEAAD-1000VLC	24x1	29.7	2434	20.3
SSS0215AEAAD-1000VLC	2x1.5	16.8	821	13.8
SSS0315AEAAD-1000VLC	3x1.5	17.3	885	13.8
SSS0515AEAAD-1000VLC	5x1.5	18.9	1044	13.8
SSS0715AEAAD-1000VLC	7x1.5	21	1290	13.8
SSS1215AEAAD-1000VLC	12x1.5	24.9	1721	13.8
SSS1915AEAAD-1000VLC	19x1.5	28.7	2366	13.8
SSS2415AEAAD-1000VLC	24x1.5	31.9	2843	13.8
SSS0225AEAAD-1000VLC	2x2.5	18.1	949	8.3
SSS0325AEAAD-1000VLC	3x2.5	18.2	988	8.3
SSS0525AEAAD-1000VLC	5x2.5	21.3	1324	8.3
SSS0725AEAAD-1000VLC	7x2.5	22.3	1471	8.3
SSS1225AEAAD-1000VLC	12x2.5	27.6	2224	8.3
SSS1925AEAAD-1000VLC	19x2.5	31.1	2862	8.3
SSS2425AEAAD-1000VLC	24x2.5	36.4	3794	8.3
SSS0240AEAAD-1000VLC	2x4	20.2	1199	5.1
SSS0340AEAAD-1000VLC	3x4	20.8	1284	5.1
SSS0540AEAAD-1000VLC	5x4	23.5	1599	5.1
SSS0740AEAAD-1000VLC	7x4	24.7	1796	5.1
SSS1240AEAAD-1000VLC	12x4	31	2820	5.1
SSS1940AEAAD-1000VLC	19x4	36.3	3934	5.1
SSS2440AEAAD-1000VLC	24x4	40.6	4745	5.1
SSS0260AEAAD-1000VLC	2x6	22.3	1423	3.4
SSS0360AEAAD-1000VLC	3x6	22.5	1503	3.4
SSS0560AEAAD-1000VLC	5x6	26.3	2046	3.4
SSS0760AEAAD-1000VLC	7x6	28	2399	3.4
SSS1260AEAAD-1000VLC	12x6	35.9	3776	3.4
SSS1960AEAAD-1000VLC	19x6	40.4	4965	3.4
SSS2460AEAAD-1000VLC	24x6	45.5	6025	3.4
SSS0211AEAAD-1000VLC	2x10	26	1943	2
SSS0311AEAAD-1000VLC	3x10	26.3	2072	2
SSS0511AEAAD-1000VLC	5x10	30.2	2742	2
SSS0711AEAAD-1000VLC	7x10	33.1	3456	2
SSS1211AEAAD-1000VLC	12x10	41.4	5176	2
SSS1911AEAAD-1000VLC	19x10	47.1	6835	2
SSS2411AEAAD-1000VLC	24x10	53.6	8510	

ramcro

special cables





UL Cables

UL 13 - PLTC Cable

PVC 105°C - Overall Screened



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Hi Temperature Polyvinylchloride - PVC HT 105°C
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Polyvinyl chloride - PVC
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +150°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 90°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

PVC 105°C - Overall Screened

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0106HEACN-UL13	1x2x20AWG	5,7	44	34.6
MAS0206HEACN-UL13	2x2x20AWG	7,6	71	34.6
MAS0406HEACN-UL13	4x2x20AWG	8,7	110	34.6
MAS0606HEACN-UL13	6x2x20AWG	14,1	273	34.6
MAS0806HEACN-UL13	8x2x20AWG	15,0	321	34.6
MAS1006HEACN-UL13	10x2x20AWG	16,7	380	34.6
MAS1206HEACN-UL13	12x2x20AWG	17,2	419	34.6
MAS1606HEACN-UL13	16x2x20AWG	18,6	506	34.6
MAS2406HEACN-UL13	24x2x20AWG	22,1	690	34.6
MAS0105HEACN-UL13	1x2x18AWG	6,2	55	21.8
MAS0205HEACN-UL13	2x2x18AWG	8,3	90	21.8
MAS0405HEACN-UL13	4x2x18AWG	9,6	143	21.8
MAS0605HEACN-UL13	6x2x18AWG	15,2	333	21.8
MAS0805HEACN-UL13	8x2x18AWG	16,3	397	21.8
MAS1005HEACN-UL13	10x2x18AWG	18,2	473	21.8
MAS1205HEACN-UL13	12x2x18AWG	18,7	528	21.8
MAS1605HEACN-UL13	16x2x18AWG	20,3	646	21.8
MAS2405HEACN-UL13	24x2x18AWG	24,3	895	21.8
MAS0105HEACN-UL13	1x2x16AWG	6,8	69	13.7
MAS0205HEACN-UL13	2x2x16AWG	9,2	116	13.7
MAS0405HEACN-UL13	4x2x16AWG	14,5	319	13.7
MAS0605HEACN-UL13	6x2x16AWG	16,6	419	13.7
MAS0805HEACN-UL13	8x2x16AWG	17,9	507	13.7
MAS1005HEACN-UL13	10x2x16AWG	20,1	610	13.7
MAS1205HEACN-UL13	12x2x16AWG	20,6	687	13.7
MAS1605HEACN-UL13	16x2x16AWG	22,5	853	13.7
MAS2405HEACN-UL13	24x2x16AWG	27,6	1233	13.7
MAS0101HEACN-UL13	1x2x14AWG	8,0	95	8.6
MAS0201HEACN-UL13	2x2x14AWG	14,9	297	8.6
MAS0401HEACN-UL13	4x2x14AWG	16,7	434	8.6
MAS0601HEACN-UL13	6x2x14AWG	19,3	583	8.6
MAS0801HEACN-UL13	8x2x14AWG	20,9	717	8.6
MAS1001HEACN-UL13	10x2x14AWG	23,7	868	8.6
MAS1201HEACN-UL13	12x2x14AWG	24,4	988	8.6
MAS1601HEACN-UL13	16x2x14AWG	27,3	1279	8.6
MAS2401HEACN-UL13	24x2x14AWG	33,0	1810	8.6
MAS0152HEACN-UL13	1x2x12AWG	8,9	128	5.4
MAS0252HEACN-UL13	2x2x12AWG	16,3	374	5.4
MAS0452HEACN-UL13	4x2x12AWG	18,5	569	5.4
MAS0652HEACN-UL13	6x2x12AWG	21,5	779	5.4
MAS0852HEACN-UL13	8x2x12AWG	23,4	971	5.4
MAS1052HEACN-UL13	10x2x12AWG	27,2	1220	5.4
MAS1252HEACN-UL13	12x2x12AWG	28,0	1396	5.4
MAS1652HEACN-UL13	16x2x12AWG	30,8	1768	5.4
MAS2452HEACN-UL13	24x2x12AWG	38,0	2580	5.4

UL 13 - PLTC Cable

PVC 105°C - Individual and Collective Screened



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Hi Temperature Polyvinylchloride - PVC HT 105°C
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Polyvinyl chloride - PVC
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +150°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 90°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

PVC 105°C - Individual Screened

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0206HEACN-UL13	2x2x20AWG	7,8	80	34.6
MAC0406HEACN-UL13	4x2x20AWG	9,0	126	34.6
MAC0606HEACN-UL13	6x2x20AWG	14,4	301	34.6
MAC0806HEACN-UL13	8x2x20AWG	15,5	356	34.6
MAC1006HEACN-UL13	10x2x20AWG	17,2	424	34.6
MAC1206HEACN-UL13	12x2x20AWG	17,7	471	34.6
MAC1606HEACN-UL13	16x2x20AWG	19,2	574	34.6
MAC2006HEACN-UL13	20x2x20AWG	21,1	683	34.6
MAC2406HEACN-UL13	24x2x20AWG	22,8	790	34.6
MAC0205HEACN-UL13	2x2x18AWG	8,6	100	21.8
MAC0405HEACN-UL13	4x2x18AWG	13,7	280	21.8
MAC0605HEACN-UL13	6x2x18AWG	15,5	364	21.8
MAC0805HEACN-UL13	8x2x18AWG	16,7	438	21.8
MAC1005HEACN-UL13	10x2x18AWG	18,7	524	21.8
MAC1205HEACN-UL13	12x2x18AWG	19,2	587	21.8
MAC1605HEACN-UL13	16x2x18AWG	20,9	725	21.8
MAC2005HEACN-UL13	20x2x18AWG	23,1	868	21.8
MAC2405HEACN-UL13	24x2x18AWG	25,6	1044	21.8
MAC0205HEACN-UL13	2x2x16AWG	9,5	126	13.7
MAC0405HEACN-UL13	4x2x16AWG	14,8	341	13.7
MAC0605HEACN-UL13	6x2x16AWG	16,9	450	13.7
MAC0805HEACN-UL13	8x2x16AWG	18,3	548	13.7
MAC1005HEACN-UL13	10x2x16AWG	20,6	661	13.7
MAC1205HEACN-UL13	12x2x16AWG	21,1	747	13.7
MAC1605HEACN-UL13	16x2x16AWG	23,1	931	13.7
MAC2005HEACN-UL13	20x2x16AWG	26,1	1157	13.7
MAC2405HEACN-UL13	24x2x16AWG	28,4	1350	13.7
MAC0201HEACN-UL13	2x2x14AWG	15,1	310	8.6
MAC0401HEACN-UL13	4x2x14AWG	17	458	8.6
MAC0601HEACN-UL13	6x2x14AWG	19,6	618	8.6
MAC0801HEACN-UL13	8x2x14AWG	21,3	763	8.6
MAC1001HEACN-UL13	10x2x14AWG	24,2	926	8.6
MAC1201HEACN-UL13	12x2x14AWG	24,9	1055	8.6
MAC1601HEACN-UL13	16x2x14AWG	27,9	1368	8.6
MAC2001HEACN-UL13	20x2x14AWG	30,9	1657	8.6
MAC2401HEACN-UL13	24x2x14AWG	33,8	1942	8.6
MAC0252HEACN-UL13	2x2x12AWG	16,6	388	5.4
MAC0452HEACN-UL13	4x2x12AWG	18,8	596	5.4
MAC0652HEACN-UL13	6x2x12AWG	21,9	818	5.4
MAC0852HEACN-UL13	8x2x12AWG	23,8	1022	5.4
MAC1052HEACN-UL13	10x2x12AWG	27,7	1285	5.4
MAC1252HEACN-UL13	12x2x12AWG	28,5	1473	5.4
MAC1652HEACN-UL13	16x2x12AWG	31,4	1868	5.4
MAC2052HEACN-UL13	20x2x12AWG	35,4	2321	5.4
MAC2452HEACN-UL13	24x2x12AWG	38,7	2729	5.4

UL 13 - PLTC Cable

PVC 105°C - Collective Screened with Amour



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Hi Temperature Polyvinylchloride - PVC HT 105°C
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride - PVC
Armour:
Galvanized Steel Wire Armour
Outer Sheath:
Polyvinyl chloride - PVC
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
14 x Cable Diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +150°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 90°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

PVC 105°C - Collective Screened with Amour

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0106AEACN-UL13	1x2x20AWG	9,3	174	34.6
MAS0206AEACN-UL13	2x2x20AWG	15,2	380	34.6
MAS0406AEACN-UL13	4x2x20AWG	16,3	451	34.6
MAS0606AEACN-UL13	6x2x20AWG	18,4	567	34.6
MAS0806AEACN-UL13	8x2x20AWG	19,4	636	34.6
MAS1006AEACN-UL13	10x2x20AWG	21,0	730	34.6
MAS1206AEACN-UL13	12x2x20AWG	21,5	778	34.6
MAS1606AEACN-UL13	16x2x20AWG	24,1	1041	34.6
MAS2406AEACN-UL13	24x2x20AWG	28,8	1493	34.6
MAS0105AEACN-UL13	1x2x18AWG	13,5	310	21.8
MAS0205AEACN-UL13	2x2x18AWG	15,9	420	21.8
MAS0405AEACN-UL13	4x2x18AWG	17,2	511	21.8
MAS0605AEACN-UL13	6x2x18AWG	19,5	650	21.8
MAS0805AEACN-UL13	8x2x18AWG	20,6	738	21.8
MAS1005AEACN-UL13	10x2x18AWG	23,2	960	21.8
MAS1205AEACN-UL13	12x2x18AWG	24,2	1065	21.8
MAS1605AEACN-UL13	16x2x18AWG	26,4	1265	21.8
MAS2405AEACN-UL13	24x2x18AWG	31,0	1774	21.8
MAS0105AEACN-UL13	1x2x16AWG	14,1	341	13.7
MAS0205AEACN-UL13	2x2x16AWG	16,9	474	13.7
MAS0405AEACN-UL13	4x2x16AWG	18,8	623	13.7
MAS0605AEACN-UL13	6x2x16AWG	20,9	766	13.7
MAS0805AEACN-UL13	8x2x16AWG	22,9	984	13.7
MAS1005AEACN-UL13	10x2x16AWG	26,1	1220	13.7
MAS1205AEACN-UL13	12x2x16AWG	26,7	1313	13.7
MAS1605AEACN-UL13	16x2x16AWG	29,3	1670	13.7
MAS2405AEACN-UL13	24x2x16AWG	34,8	2273	13.7
MAS0101AEACN-UL13	1x2x14AWG	15,6	415	8.6
MAS0201AEACN-UL13	2x2x14AWG	19,2	608	8.6
MAS0401AEACN-UL13	4x2x14AWG	21,0	783	8.6
MAS0601AEACN-UL13	6x2x14AWG	24,8	1135	8.6
MAS0801AEACN-UL13	8x2x14AWG	26,9	1351	8.6
MAS1001AEACN-UL13	10x2x14AWG	30,4	1726	8.6
MAS1201AEACN-UL13	12x2x14AWG	31,1	1870	8.6
MAS1601AEACN-UL13	16x2x14AWG	34,0	2262	8.6
MAS2401AEACN-UL13	24x2x14AWG	41,1	3272	8.6
MAS0152AEACN-UL13	1x2x12AWG	16,5	476	5.4
MAS0252AEACN-UL13	2x2x12AWG	20,7	716	5.4
MAS0452AEACN-UL13	4x2x12AWG	23,5	1063	5.4
MAS0652AEACN-UL13	6x2x12AWG	27,5	1431	5.4
MAS0852AEACN-UL13	8x2x12AWG	30,1	1819	5.4
MAS1052AEACN-UL13	10x2x12AWG	33,9	2199	5.4
MAS1252AEACN-UL13	12x2x12AWG	36,0	2646	5.4
MAS1652AEACN-UL13	16x2x12AWG	38,8	3135	5.4
MAS2452AEACN-UL13	24x2x12AWG	46,5	4312	5.4

UL 13 - PLTC Cable

PVC 105°C - Individual and Collective Screened with Armour



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Hi Temperature Polyvinylchloride - PVC HT 105°C
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride - PVC
Armour:
Galvanized Steel Wire Armour
Outer Sheath:
Polyvinyl chloride - PVC
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
14 x Cable Diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +150°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 90°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

PVC 105°C - Individual and Collective Screened with Armour

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0206AEACN-UL13	2x2x20AWG	15,5	396	34.6
MAC0406AEACN-UL13	4x2x20AWG	16,6	477	34.6
MAC0606AEACN-UL13	6x2x20AWG	18,8	604	34.6
MAC0806AEACN-UL13	8x2x20AWG	19,8	681	34.6
MAC1006AEACN-UL13	10x2x20AWG	21,6	786	34.6
MAC1206AEACN-UL13	12x2x20AWG	22,7	944	34.6
MAC1606AEACN-UL13	16x2x20AWG	24,7	1126	34.6
MAC2006AEACN-UL13	20x2x20AWG	27,1	1324	34.6
MAC2406AEACN-UL13	24x2x20AWG	29,6	1620	34.6
MAC0205AEACN-UL13	2x2x18AWG	16,2	438	21.8
MAC0405AEACN-UL13	4x2x18AWG	18,0	568	21.8
MAC0605AEACN-UL13	6x2x18AWG	19,9	690	21.8
MAC0805AEACN-UL13	8x2x18AWG	21,0	789	21.8
MAC1005AEACN-UL13	10x2x18AWG	24,2	1063	21.8
MAC1205AEACN-UL13	12x2x18AWG	24,8	1140	21.8
MAC1605AEACN-UL13	16x2x18AWG	27,0	1362	21.8
MAC2005AEACN-UL13	20x2x18AWG	29,8	1706	21.8
MAC2405AEACN-UL13	24x2x18AWG	32,3	1970	21.8
MAC0205AEACN-UL13	2x2x16AWG	17,1	492	13.7
MAC0405AEACN-UL13	4x2x16AWG	19,1	651	13.7
MAC0605AEACN-UL13	6x2x16AWG	21,3	806	13.7
MAC0805AEACN-UL13	8x2x16AWG	23,3	1037	13.7
MAC1005AEACN-UL13	10x2x16AWG	26,6	1287	13.7
MAC1205AEACN-UL13	12x2x16AWG	27,2	1390	13.7
MAC1605AEACN-UL13	16x2x16AWG	29,9	1770	13.7
MAC2005AEACN-UL13	20x2x16AWG	32,8	2099	13.7
MAC2405AEACN-UL13	24x2x16AWG	36,4	2616	13.7
MAC0201AEACN-UL13	2x2x14AWG	19,4	627	8.6
MAC0401AEACN-UL13	4x2x14AWG	21,3	814	8.6
MAC0601AEACN-UL13	6x2x14AWG	25,7	1217	8.6
MAC0801AEACN-UL13	8x2x14AWG	27,4	1411	8.6
MAC1001AEACN-UL13	10x2x14AWG	30,9	1802	8.6
MAC1201AEACN-UL13	12x2x14AWG	31,7	1957	8.6
MAC1601AEACN-UL13	16x2x14AWG	35,1	2419	8.6
MAC2001AEACN-UL13	20x2x14AWG	39,0	3031	8.6
MAC2401AEACN-UL13	24x2x14AWG	41,8	3437	8.6
MAC0252AEACN-UL13	2x2x12AWG	20,9	737	5.4
MAC0452AEACN-UL13	4x2x12AWG	24,3	1136	5.4
MAC0652AEACN-UL13	6x2x12AWG	27,9	1482	5.4
MAC0852AEACN-UL13	8x2x12AWG	30,6	1886	5.4
MAC1052AEACN-UL13	10x2x12AWG	34,9	2328	5.4
MAC1252AEACN-UL13	12x2x12AWG	36,6	2746	5.4
MAC1652AEACN-UL13	16x2x12AWG	39,4	3262	5.4
MAC2052AEACN-UL13	20x2x12AWG	43,5	3885	5.4
MAC2452AEACN-UL13	24x2x12AWG	47,3	4496	5.4

UL 13 - PLTC Cable

XLPE - Overall Screened



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Cross Linked Polyetilene - XLPE
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
8 x Cable Diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-40° C up to +75°C
Insulation Operation:
-40° C up to +90°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 75°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

XLPE - Overall Screened

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0106HEEXN-UL13	1x2x20AWG	5,7	41	34.6
MAS0206HEEXN-UL13	2x2x20AWG	7,9	67	34.6
MAS0406HEEXN-UL13	4x2x20AWG	9,1	102	34.6
MAS0606HEEXN-UL13	6x2x20AWG	14,6	258	34.6
MAS0806HEEXN-UL13	8x2x20AWG	15,6	302	34.6
MAS1006HEEXN-UL13	10x2x20AWG	17,4	357	34.6
MAS1206HEEXN-UL13	12x2x20AWG	17,9	392	34.6
MAS1606HEEXN-UL13	16x2x20AWG	19,4	472	34.6
MAS2406HEEXN-UL13	24x2x20AWG	23,1	639	34.6
MAS0105HEEXN-UL13	1x2x18AWG	6,2	51	21.8
MAS0205HEEXN-UL13	2x2x18AWG	8,7	85	21.8
MAS0405HEEXN-UL13	4x2x18AWG	13,9	246	21.8
MAS0605HEEXN-UL13	6x2x18AWG	15,8	316	21.8
MAS0805HEEXN-UL13	8x2x18AWG	17,0	375	21.8
MAS1005HEEXN-UL13	10x2x18AWG	19,0	447	21.8
MAS1205HEEXN-UL13	12x2x18AWG	19,5	497	21.8
MAS1605HEEXN-UL13	16x2x18AWG	21,3	606	21.8
MAS2405HEEXN-UL13	24x2x18AWG	26,0	868	21.8
MAS0105HEEXN-UL13	1x2x16AWG	6,8	64	13.7
MAS0205HEEXN-UL13	2x2x16AWG	13,5	220	13.7
MAS0405HEEXN-UL13	4x2x16AWG	15,1	305	13.7
MAS0605HEEXN-UL13	6x2x16AWG	17,2	400	13.7
MAS0805HEEXN-UL13	8x2x16AWG	18,6	482	13.7
MAS1005HEEXN-UL13	10x2x16AWG	21,0	580	13.7
MAS1205HEEXN-UL13	12x2x16AWG	21,6	651	13.7
MAS1605HEEXN-UL13	16x2x16AWG	23,6	805	13.7
MAS2405HEEXN-UL13	24x2x16AWG	29,0	1001	13.7
MAS0101HEEXN-UL13	1x2x14AWG	7,6	85	8.6
MAS0201HEEXN-UL13	2x2x14AWG	14,8	272	8.6
MAS0401HEEXN-UL13	4x2x14AWG	16,6	394	8.6
MAS0601HEEXN-UL13	6x2x14AWG	19,1	526	8.6
MAS0801HEEXN-UL13	8x2x14AWG	20,8	645	8.6
MAS1001HEEXN-UL13	10x2x14AWG	23,5	782	8.6
MAS1201HEEXN-UL13	12x2x14AWG	24,2	887	8.6
MAS1601HEEXN-UL13	16x2x14AWG	27,1	1147	8.6
MAS2401HEEXN-UL13	24x2x14AWG	32,8	1619	8.6
MAS0152HEEXN-UL13	1x2x12AWG	8,5	116	5.4
MAS0252HEEXN-UL13	2x2x12AWG	16,4	346	5.4
MAS0452HEEXN-UL13	4x2x12AWG	18,5	524	5.4
MAS0652HEEXN-UL13	6x2x12AWG	21,5	715	5.4
MAS0852HEEXN-UL13	8x2x12AWG	23,4	890	5.4
MAS1052HEEXN-UL13	10x2x12AWG	27,2	1119	5.4
MAS1252HEEXN-UL13	12x2x12AWG	28,0	1278	5.4
MAS1652HEEXN-UL13	16x2x12AWG	30,8	1616	5.4
MAS2452HEEXN-UL13	24x2x12AWG	38,0	2355	5.4

UL 13 - PLTC Cable

XLPE - Individual and Collective Screened



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Cross Linked Polyetilene - XLPE
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
8 x Cable Diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-40° C up to +75°C
Insulation Operation:
-40° C up to +90°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 75°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

XLPE - Individual Screened

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685.

RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0206HEEXN-UL13	2x2x20AWG	8,2	76	34.6
MAC0406HEEXN-UL13	4x2x20AWG	9,4	118	34.6
MAC0606HEEXN-UL13	6x2x20AWG	15,0	286	34.6
MAC0806HEEXN-UL13	8x2x20AWG	16,1	338	34.6
MAC1006HEEXN-UL13	10x2x20AWG	18,0	402	34.6
MAC1206HEEXN-UL13	12x2x20AWG	18,4	444	34.6
MAC1606HEEXN-UL13	16x2x20AWG	20,0	539	34.6
MAC2006HEEXN-UL13	20x2x20AWG	22,1	640	34.6
MAC2406HEEXN-UL13	24x2x20AWG	23,9	739	34.6
MAC0205HEEXN-UL13	2x2x18AWG	9,0	95	21.8
MAC0405HEEXN-UL13	4x2x18AWG	14,2	268	21.8
MAC0605HEEXN-UL13	6x2x18AWG	16,1	348	21.8
MAC0805HEEXN-UL13	8x2x18AWG	17,4	416	21.8
MAC1005HEEXN-UL13	10x2x18AWG	19,5	498	21.8
MAC1205HEEXN-UL13	12x2x18AWG	20,1	557	21.8
MAC1605HEEXN-UL13	16x2x18AWG	21,9	684	21.8
MAC2005HEEXN-UL13	20x2x18AWG	24,2	818	21.8
MAC2405HEEXN-UL13	24x2x18AWG	26,8	985	21.8
MAC0205HEEXN-UL13	2x2x16AWG	13,8	232	13.7
MAC0405HEEXN-UL13	4x2x16AWG	15,4	327	13.7
MAC0605HEEXN-UL13	6x2x16AWG	17,6	431	13.7
MAC0805HEEXN-UL13	8x2x16AWG	19,1	523	13.7
MAC1005HEEXN-UL13	10x2x16AWG	21,5	630	13.7
MAC1205HEEXN-UL13	12x2x16AWG	22,1	710	13.7
MAC1605HEEXN-UL13	16x2x16AWG	24,2	883	13.7
MAC2005HEEXN-UL13	20x2x16AWG	27,3	1098	13.7
MAC2405HEEXN-UL13	24x2x16AWG	29,8	1279	13.7
MAC0201HEEXN-UL13	2x2x14AWG	15,0	285	8.6
MAC0401HEEXN-UL13	4x2x14AWG	16,9	418	8.6
MAC0601HEEXN-UL13	6x2x14AWG	19,5	562	8.6
MAC0801HEEXN-UL13	8x2x14AWG	21,2	692	8.6
MAC1001HEEXN-UL13	10x2x14AWG	24	839	8.6
MAC1201HEEXN-UL13	12x2x14AWG	24,8	955	8.6
MAC1601HEEXN-UL13	16x2x14AWG	27,7	1236	8.6
MAC2001HEEXN-UL13	20x2x14AWG	30,7	1495	8.6
MAC2401HEEXN-UL13	24x2x14AWG	33,6	1751	8.6
MAC0252HEEXN-UL13	2x2x12AWG	16,6	361	5.4
MAC0452HEEXN-UL13	4x2x12AWG	18,8	551	5.4
MAC0652HEEXN-UL13	6x2x12AWG	21,9	754	5.4
MAC0852HEEXN-UL13	8x2x12AWG	23,9	941	5.4
MAC1052HEACN-UL13	10x2x12AWG	27,7	1183	5.4
MAC1252HEEXN-UL13	12x2x12AWG	28,6	1355	5.4
MAC1652HEEXN-UL13	16x2x12AWG	31,4	1716	5.4
MAC2052HEEXN-UL13	20x2x12AWG	35,5	2131	5.4
MAC2452HEEXN-UL13	24x2x12AWG	38,8	2504	5.4

UL 13 - PLTC Cable

XLPE - Collective Screened with Armour



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Cross Linked Polyetilene - XLPE
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Armour:
Galvanized Steel Wires Armour
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
14 x Cable Diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-40° C up to +75°C
Insulation Operation:
-40° C up to +90°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 75°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

XLPE - Collective Screened with Armour

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0106AEEXN-UL13	1x2x20AWG	9,3	169	34.6
MAS0206AEEXN-UL13	2x2x20AWG	15,5	375	34.6
MAS0406AEEXN-UL13	4x2x20AWG	16,7	443	34.6
MAS0606AEEXN-UL13	6x2x20AWG	18,9	556	34.6
MAS0806AEEXN-UL13	8x2x20AWG	19,9	622	34.6
MAS1006AEEXN-UL13	10x2x20AWG	22,4	813	34.6
MAS1206AEEXN-UL13	12x2x20AWG	22,9	860	34.6
MAS1606AEEXN-UL13	16x2x20AWG	25,5	1050	34.6
MAS2406AEEXN-UL13	24x2x20AWG	29,9	1462	34.6
MAS0105AEEXN-UL13	1x2x18AWG	13,5	297	21.8
MAS0205AEEXN-UL13	2x2x18AWG	16,3	415	21.8
MAS0405AEEXN-UL13	4x2x18AWG	18,2	529	21.8
MAS0605AEEXN-UL13	6x2x18AWG	20,1	638	21.8
MAS0805AEEXN-UL13	8x2x18AWG	21,3	722	21.8
MAS1005AEEXN-UL13	10x2x18AWG	24,5	981	21.8
MAS1205AEACN-UL13	12x2x18AWG	25,6	1078	21.8
MAS1605AEEXN-UL13	16x2x18AWG	27,3	1237	21.8
MAS2405AEEXN-UL13	24x2x18AWG	32,7	1789	21.8
MAS0105AEEXN-UL13	1x2x16AWG	14,1	327	13.7
MAS0205AEEXN-UL13	2x2x16AWG	17,8	496	13.7
MAS0405AEEXN-UL13	4x2x16AWG	19,4	613	13.7
MAS0605AEEXN-UL13	6x2x16AWG	21,5	752	13.7
MAS0805AEEXN-UL13	8x2x16AWG	24,1	1006	13.7
MAS1005AEEXN-UL13	10x2x16AWG	27,0	1202	13.7
MAS1205AEEXN-UL13	12x2x16AWG	27,6	1290	13.7
MAS1605AEEXN-UL13	16x2x16AWG	30,3	1643	13.7
MAS2405AEEXN-UL13	24x2x16AWG	37,0	2430	13.7
MAS0101AEEXN-UL13	1x2x14AWG	15,2	382	8.6
MAS0201AEEXN-UL13	2x2x14AWG	19,1	574	8.6
MAS0401AEEXN-UL13	4x2x14AWG	20,9	733	8.6
MAS0601AEEXN-UL13	6x2x14AWG	24,7	1064	8.6
MAS0801AEEXN-UL13	8x2x14AWG	26,8	1262	8.6
MAS1001AEEXN-UL13	10x2x14AWG	30,2	1617	8.6
MAS1201AEEXN-UL13	12x2x14AWG	30,9	1747	8.6
MAS1601AEEXN-UL13	16x2x14AWG	33,8	2105	8.6
MAS2401AEEXN-UL13	24x2x14AWG	40,8	3045	8.6
MAS0152AEEXN-UL13	1x2x12AWG	16,1	440	5.4
MAS0252AEEXN-UL13	2x2x12AWG	20,7	681	5.4
MAS0452AEEXN-UL13	4x2x12AWG	23,5	1008	5.4
MAS0652AEEXN-UL13	6x2x12AWG	27,6	1353	5.4
MAS0852AEEXN-UL13	8x2x12AWG	30,2	1723	5.4
MAS1052AEEXN-UL13	10x2x12AWG	33,9	2080	5.4
MAS1252AEEXN-UL13	12x2x12AWG	36,1	2506	5.4
MAS1652AEEXN-UL13	16x2x12AWG	38,8	2960	5.4
MAS2452AEEXN-UL13	24x2x12AWG	46,6	4057	5.4

UL 13 - PLTC Cable

XLPE - Individual and Collective Screened with Armour



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Cross Linked Polyetilene - XLPE
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Armour:
Galvanized Steel Wires Armour
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
14 x Cable Diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-40° C up to +75°C
Insulation Operation:
-40° C up to +90°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 75°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

XLPE - Individual and Collective Screened with Armour

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0206AEEXN-UL13	2x2x20AWG	15,8	391	34.6
MAC0406AEEXN-UL13	4x2x20AWG	17,1	469	34.6
MAC0606AEEXN-UL13	6x2x20AWG	19,3	593	34.6
MAC0806AEEXN-UL13	8x2x20AWG	20,4	668	34.6
MAC1006AEEXN-UL13	10x2x20AWG	23,0	873	34.6
MAC1206AEEXN-UL13	12x2x20AWG	23,5	928	34.6
MAC1606AEEXN-UL13	16x2x20AWG	26,1	1136	34.6
MAC2006AEEXN-UL13	20x2x20AWG	28,8	1427	34.6
MAC2406AEEXN-UL13	24x2x20AWG	30,7	1590	34.6
MAC0205AEEXN-UL13	2x2x18AWG	16,6	433	21.8
MAC0405AEEXN-UL13	4x2x18AWG	18,5	558	21.8
MAC0605AEEXN-UL13	6x2x18AWG	20,5	679	21.8
MAC0805AEEXN-UL13	8x2x18AWG	22,4	873	21.8
MAC1005AEEXN-UL13	10x2x18AWG	25,6	1081	21.8
MAC1205AEEXN-UL13	12x2x18AWG	26,1	1154	21.8
MAC1605AEEXN-UL13	16x2x18AWG	28,0	1334	21.8
MAC2005AEEXN-UL13	20x2x18AWG	30,9	1677	21.8
MAC2405AEEXN-UL13	24x2x18AWG	33,6	1934	21.8
MAC0205AEEXN-UL13	2x2x16AWG	18,1	514	13.7
MAC0405AEEXN-UL13	4x2x16AWG	19,7	642	13.7
MAC0605AEEXN-UL13	6x2x16AWG	22,7	894	13.7
MAC0805AEEXN-UL13	8x2x16AWG	24,6	1060	13.7
MAC1005AEEXN-UL13	10x2x16AWG	27,6	1269	13.7
MAC1205AEEXN-UL13	12x2x16AWG	28,9	1500	13.7
MAC1605AEEXN-UL13	16x2x16AWG	31,0	1744	13.7
MAC2005AEEXN-UL13	20x2x16AWG	34,1	2065	13.7
MAC2405AEEXN-UL13	24x2x16AWG	37,8	2581	13.7
MAC0201AEEXN-UL13	2x2x14AWG	19,4	593	8.6
MAC0401AEEXN-UL13	4x2x14AWG	21,2	764	8.6
MAC0601AEEXN-UL13	6x2x14AWG	25,6	1144	8.6
MAC0801AEEXN-UL13	8x2x14AWG	27,3	1322	8.6
MAC1001AEEXN-UL13	10x2x14AWG	30,8	1694	8.6
MAC1201AEEXN-UL13	12x2x14AWG	31,5	1834	8.6
MAC1601AEEXN-UL13	16x2x14AWG	35,0	2260	8.6
MAC2001AEEXN-UL13	20x2x14AWG	38,8	2838	8.6
MAC2401AEEXN-UL13	24x2x14AWG	41,6	3212	8.6
MAC0252AEEXN-UL13	2x2x12AWG	20,9	701	5.4
MAC0452AEEXN-UL13	4x2x12AWG	24,3	1081	5.4
MAC0652AEEXN-UL13	6x2x12AWG	28,7	1537	5.4
MAC0852AEEXN-UL13	8x2x12AWG	30,6	1790	5.4
MAC1052AEEXN-UL13	10x2x12AWG	35,0	2207	5.4
MAC1252AEEXN-UL13	12x2x12AWG	36,6	2607	5.4
MAC1652AEEXN-UL13	16x2x12AWG	39,5	3088	5.4
MAC2052AEEXN-UL13	20x2x12AWG	43,5	3672	5.4
MAC2452AEEXN-UL13	24x2x12AWG	47,4	4242	5.4

UL 13 - PLTC Cable

SIL - Overall Screened



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Special Mix Silicon Rubber - SIL
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, sec. 725 PLTC,
- NEC code, sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
14 x Cable Diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-40° C up to +75°C
Insulation Operation:
-40° C up to +90°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 75°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

SIL - Overall Screened

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0106HEESN-UL13	1x2x20AWG	6,9	58	34.6
MAS0206HEESN-UL13	2x2x20AWG	9,2	95	34.6
MAS0406HEESN-UL13	4x2x20AWG	14,5	270	34.6
MAS0606HEESN-UL13	6x2x20AWG	16,6	350	34.6
MAS0806HEESN-UL13	8x2x20AWG	17,8	418	34.6
MAS1006HEESN-UL13	10x2x20AWG	20,1	499	34.6
MAS1206HEESN-UL13	12x2x20AWG	20,6	556	34.6
MAS1606HEESN-UL13	16x2x20AWG	22,5	683	34.6
MAS2406HEESN-UL13	24x2x20AWG	27,6	981	34.6
MAS0105HEESN-UL13	1x2x18AWG	7,4	69	21.8
MAS0205HEESN-UL13	2x2x18AWG	13,8	227	21.8
MAS0405HEESN-UL13	4x2x18AWG	15,4	315	21.8
MAS0605HEESN-UL13	6x2x18AWG	17,6	414	21.8
MAS0805HEESN-UL13	8x2x18AWG	19,1	500	21.8
MAS1005HEESN-UL13	10x2x18AWG	21,5	601	21.8
MAS1205HEESN-UL13	12x2x18AWG	22,1	676	21.8
MAS1605HEESN-UL13	16x2x18AWG	24,2	837	21.8
MAS2405HEESN-UL13	24x2x18AWG	29,8	1210	21.8
MAS0105HEESN-UL13	1x2x16AWG	8,0	84	13.7
MAS0205HEESN-UL13	2x2x16AWG	14,7	264	13.7
MAS0405HEESN-UL13	4x2x16AWG	16,5	380	13.7
MAS0605HEESN-UL13	6x2x16AWG	19,0	506	13.7
MAS0805HEESN-UL13	8x2x16AWG	20,6	619	13.7
MAS1005HEESN-UL13	10x2x16AWG	23,3	748	13.7
MAS1205HEESN-UL13	12x2x16AWG	24,0	848	13.7
MAS1605HEESN-UL13	16x2x16AWG	26,8	1095	13.7
MAS2405HEESN-UL13	24x2x16AWG	32,5	1541	13.7
MAS0101HEESN-UL13	1x2x14AWG	8,8	107	8.6
MAS0201HEESN-UL13	2x2x14AWG	15,8	318	8.6
MAS0401HEESN-UL13	4x2x14AWG	17,9	475	8.6
MAS0601HEESN-UL13	6x2x14AWG	20,7	644	8.6
MAS0801HEESN-UL13	8x2x14AWG	22,5	798	8.6
MAS1001HEESN-UL13	10x2x14AWG	26,1	1003	8.6
MAS1201HEESN-UL13	12x2x14AWG	26,9	1142	8.6
MAS1601HEESN-UL13	16x2x14AWG	29,6	1437	8.6
MAS2401HEESN-UL13	24x2x14AWG	36,4	2091	8.6
MAS0152HEESN-UL13	1x2x12AWG	8,8	107	5.4
MAS0252HEESN-UL13	2x2x12AWG	15,8	318	5.4
MAS0452HEESN-UL13	4x2x12AWG	17,9	475	5.4
MAS0652HEESN-UL13	6x2x12AWG	20,7	644	5.4
MAS0852HEESN-UL13	8x2x12AWG	22,5	798	5.4
MAS1052HEESN-UL13	10x2x12AWG	26,1	1003	5.4
MAS1252HEESN-UL13	12x2x12AWG	26,9	1142	5.4
MAS1652HEESN-UL13	16x2x12AWG	29,6	1437	5.4
MAS2452HEESN-UL13	24x2x12AWG	36,4	2091	5.4

UL 13 - PLTC Cable

SIL - Individual and Overall Screened



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Special Mix Silicon Rubber - SIL
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
14 x Cable Diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-40° C up to +75°C
Insulation Operation:
-40° C up to +90°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 75°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

SIL - Individual and Overall Screened

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0206HEESN-UL13	2x2x20AWG	9,5	105	34.6
MAC0406HEESN-UL13	4x2x20AWG	14,8	292	34.6
MAC0606HEESN-UL13	6x2x20AWG	16,9	381	34.6
MAC0806HEESN-UL13	8x2x20AWG	18,2	458	34.6
MAC1006HEESN-UL13	10x2x20AWG	20,5	549	34.6
MAC1206HEESN-UL13	12x2x20AWG	21,1	616	34.6
MAC1606HEESN-UL13	16x2x20AWG	23,1	760	34.6
MAC2006HEESN-UL13	20x2x20AWG	26,0	944	34.6
MAC2406HEESN-UL13	24x2x20AWG	28,3	1096	34.6
MAC0205HEESN-UL13	2x2x18AWG	14,0	240	21.8
MAC0405HEESN-UL13	4x2x18AWG	15,6	339	21.8
MAC0605HEESN-UL13	6x2x18AWG	18,0	449	21.8
MAC0805HEESN-UL13	8x2x18AWG	19,5	546	21.8
MAC1005HEESN-UL13	10x2x18AWG	22,0	658	21.8
MAC1205HEESN-UL13	12x2x18AWG	22,6	743	21.8
MAC1605HEESN-UL13	16x2x18AWG	24,8	925	21.8
MAC2005HEESN-UL13	20x2x18AWG	28,0	1150	21.8
MAC2405HEESN-UL13	24x2x18AWG	30,5	1340	21.8
MAC0205HEESN-UL13	2x2x16AWG	14,9	277	13.7
MAC0405HEESN-UL13	4x2x16AWG	16,7	404	13.7
MAC0605HEESN-UL13	6x2x16AWG	19,3	541	13.7
MAC0805HEESN-UL13	8x2x16AWG	21,0	665	13.7
MAC1005HEESN-UL13	10x2x16AWG	23,8	805	13.7
MAC1205HEESN-UL13	12x2x16AWG	24,5	915	13.7
MAC1605HEESN-UL13	16x2x16AWG	27,4	1183	13.7
MAC2005HEESN-UL13	20x2x16AWG	30,4	1429	13.7
MAC2405HEESN-UL13	24x2x16AWG	33,2	1672	13.7
MAC0201HEESN-UL13	2x2x14AWG	16,1	333	8.6
MAC0401HEESN-UL13	4x2x14AWG	18,1	502	8.6
MAC0601HEESN-UL13	6x2x14AWG	21,1	683	8.6
MAC0801HEESN-UL13	8x2x14AWG	22,9	848	8.6
MAC1001HEESN-UL13	10x2x14AWG	26,6	1067	8.6
MAC1201HEESN-UL13	12x2x14AWG	27,4	1217	8.6
MAC1601HEESN-UL13	16x2x14AWG	30,1	1537	8.6
MAC2001HEESN-UL13	20x2x14AWG	33,5	1866	8.6
MAC2401HEESN-UL13	24x2x14AWG	37,2	2239	8.6
MAC0252HEESN-UL13	2x2x12AWG	17,5	412	5.4
MAC0452HEESN-UL13	4x2x12AWG	19,9	644	5.4
MAC0652HEESN-UL13	6x2x12AWG	23,2	889	5.4
MAC0852HEESN-UL13	8x2x12AWG	25,9	1149	5.4
MAC1052HEESN-UL13	10x2x12AWG	29,5	1403	5.4
MAC1252HEESN-UL13	12x2x12AWG	30,4	1614	5.4
MAC1652HEESN-UL13	16x2x12AWG	33,5	2055	5.4
MAC2052HEESN-UL13	20x2x12AWG	37,9	2555	5.4
MAC2452HEESN-UL13	24x2x12AWG	41,5	3010	5.4

UL 13 - PLTC Cable

SIL - Overall Screened with Armour



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Special Mix Silicon Rubber - SIL
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Armour:
Galvanized Steel Wires Armour
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
14 x Cable Diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-40° C up to +75°C
Insulation Operation:
-40° C up to +90°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 75°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

SIL - Overall Screened with Armour

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0106AEESN-UL13	1x2x20AWG	14,3	324	34.6
MAS0206AEESN-UL13	2x2x20AWG	16,9	440	34.6
MAS0406AEESN-UL13	4x2x20AWG	18,8	567	34.6
MAS0606AEESN-UL13	6x2x20AWG	20,9	688	34.6
MAS0806AEESN-UL13	8x2x20AWG	22,9	885	34.6
MAS1006AEESN-UL13	10x2x20AWG	26,1	1095	34.6
MAS1206AEESN-UL13	12x2x20AWG	26,7	1169	34.6
MAS1606AEESN-UL13	16x2x20AWG	29,2	1484	34.6
MAS2406AEESN-UL13	24x2x20AWG	34,8	1998	34.6
MAS0105AEESN-UL13	1x2x18AWG	15,0	361	21.8
MAS0205AEESN-UL13	2x2x18AWG	18,1	508	21.8
MAS0405AEESN-UL13	4x2x18AWG	19,7	629	21.8
MAS0605AEESN-UL13	6x2x18AWG	22,6	876	21.8
MAS0805AEESN-UL13	8x2x18AWG	24,6	1036	21.8
MAS1005AEESN-UL13	10x2x18AWG	27,5	1239	21.8
MAS1205AEESN-UL13	12x2x18AWG	28,8	1464	21.8
MAS1605AEESN-UL13	16x2x18AWG	30,9	1696	21.8
MAS2405AEESN-UL13	24x2x18AWG	37,8	2510	21.8
MAS0105AEESN-UL13	1x2x16AWG	15,6	393	13.7
MAS0205AEESN-UL13	2x2x16AWG	19,0	564	13.7
MAS0405AEESN-UL13	4x2x16AWG	20,8	716	13.7
MAS0605AEESN-UL13	6x2x16AWG	24,5	1039	13.7
MAS0805AEESN-UL13	8x2x16AWG	26,6	1230	13.7
MAS1005AEESN-UL13	10x2x16AWG	30,0	1577	13.7
MAS1205AEESN-UL13	12x2x16AWG	30,7	1699	13.7
MAS1605AEESN-UL13	16x2x16AWG	33,6	2044	13.7
MAS2405AEESN-UL13	24x2x16AWG	40,5	2954	13.7
MAS0101AEESN-UL13	1x2x14AWG	16,4	438	8.6
MAS0201AEESN-UL13	2x2x14AWG	20,1	642	8.6
MAS0401AEESN-UL13	4x2x14AWG	22,9	943	8.6
MAS0601AEESN-UL13	6x2x14AWG	26,8	1259	8.6
MAS0801AEESN-UL13	8x2x14AWG	29,3	1600	8.6
MAS1001AEESN-UL13	10x2x14AWG	32,9	1928	8.6
MAS1201AEESN-UL13	12x2x14AWG	33,7	2094	8.6
MAS1601AEESN-UL13	16x2x14AWG	37,6	2730	8.6
MAS2401AEESN-UL13	24x2x14AWG	45,0	3725	8.6
MAS0152AEESN-UL13	1x2x12AWG	17,8	527	5.4
MAS0252AEESN-UL13	2x2x12AWG	21,6	750	5.4
MAS0452AEESN-UL13	4x2x12AWG	25,6	1198	5.4
MAS0652AEESN-UL13	6x2x12AWG	29,6	1661	5.4
MAS0852AEESN-UL13	8x2x12AWG	32,2	1996	5.4
MAS1052AEESN-UL13	10x2x12AWG	37,1	2603	5.4
MAS1252AEESN-UL13	12x2x12AWG	38,0	2839	5.4
MAS1652AEESN-UL13	16x2x12AWG	41,0	3380	5.4
MAS2452AEESN-UL13	24x2x12AWG	49,3	4667	5.4

UL 13 - PLTC Cable

SIL - Individual and Overall Screened with Armour



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Special Mix Silicon Rubber - SIL
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Armour:
Galvanized Steel Wires Armour
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
14 x Cable Diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-40° C up to +75°C
Insulation Operation:
-40° C up to +90°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 75°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

SIL - Individual and Overall Screened with Armour

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0206AEESN-UL13	2x2x20AWG	17,1	457	34.6
MAC0406AEESN-UL13	4x2x20AWG	19,1	595	34.6
MAC0606AEESN-UL13	6x2x20AWG	21,2	727	34.6
MAC0806AEESN-UL13	8x2x20AWG	23,3	937	34.6
MAC1006AEESN-UL13	10x2x20AWG	26,6	1160	34.6
MAC1206AEESN-UL13	12x2x20AWG	27,2	1243	34.6
MAC1606AEESN-UL13	16x2x20AWG	29,8	1582	34.6
MAC2006AEESN-UL13	20x2x20AWG	32,8	1867	34.6
MAC2406AEESN-UL13	24x2x20AWG	36,4	2338	34.6
MAC0205AEESN-UL13	2x2x18AWG	18,3	527	21.8
MAC0405AEESN-UL13	4x2x18AWG	20,0	660	21.8
MAC0605AEESN-UL13	6x2x18AWG	23,0	921	21.8
MAC0805AEESN-UL13	8x2x18AWG	25,5	1126	21.8
MAC1005AEESN-UL13	10x2x18AWG	28,7	1443	21.8
MAC1205AEESN-UL13	12x2x18AWG	29,4	1549	21.8
MAC1605AEESN-UL13	16x2x18AWG	31,5	1805	21.8
MAC2005AEESN-UL13	20x2x18AWG	36,0	2377	21.8
MAC2405AEESN-UL13	24x2x18AWG	38,5	2672	21.8
MAC0205AEESN-UL13	2x2x16AWG	19,2	583	13.7
MAC0405AEESN-UL13	4x2x16AWG	21,1	747	13.7
MAC0605AEESN-UL13	6x2x16AWG	24,9	1085	13.7
MAC0805AEESN-UL13	8x2x16AWG	27,0	1288	13.7
MAC1005AEESN-UL13	10x2x16AWG	30,5	1651	13.7
MAC1205AEESN-UL13	12x2x16AWG	31,2	1785	13.7
MAC1605AEESN-UL13	16x2x16AWG	34,2	2153	13.7
MAC2005AEESN-UL13	20x2x16AWG	38,4	2757	13.7
MAC2405AEESN-UL13	24x2x16AWG	41,2	3117	13.7
MAC0201AEESN-UL13	2x2x14AWG	20,4	662	8.6
MAC0401AEESN-UL13	4x2x14AWG	23,2	977	8.6
MAC0601AEESN-UL13	6x2x14AWG	27,1	1309	8.6
MAC0801AEESN-UL13	8x2x14AWG	29,7	1666	8.6
MAC1001AEESN-UL13	10x2x14AWG	33,4	2010	8.6
MAC1201AEESN-UL13	12x2x14AWG	34,2	2188	8.6
MAC1601AEESN-UL13	16x2x14AWG	38,2	2854	8.6
MAC2001AEESN-UL13	20x2x14AWG	41,6	3324	8.6
MAC2401AEESN-UL13	24x2x14AWG	45,7	3905	8.6
MAC0252AEESN-UL13	2x2x12AWG	22,5	872	5.4
MAC0452AEESN-UL13	4x2x12AWG	25,9	1236	5.4
MAC0652AEESN-UL13	6x2x12AWG	30,0	1717	5.4
MAC0852AEESN-UL13	8x2x12AWG	32,7	2068	5.4
MAC1052AEESN-UL13	10x2x12AWG	37,6	2695	5.4
MAC1252AEESN-UL13	12x2x12AWG	38,5	2944	5.4
MAC1652AEESN-UL13	16x2x12AWG	41,6	3515	5.4
MAC2052AEESN-UL13	20x2x12AWG	46,5	4253	5.4
MAC2452AEESN-UL13	24x2x12AWG	50,1	4863	5.4

UL 13 - PLTC Cable

Mica Tape + XLPE Overall Screened



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Mica Tape + Cross Liked Polyetilene - XLPE
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
14 x Cable Diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-40° C up to +75°C
Insulation Operation:
-40° C up to +90°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 75°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

Mica Tape + XLPE Overall Screened

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0106HEEON-UL13	1x2x20AWG	7,5	66	34.6
MAS0206HEEON-UL13	2x2x20AWG	14,4	229	34.6
MAS0406HEEON-UL13	4x2x20AWG	16,1	312	34.6
MAS0606HEEON-UL13	6x2x20AWG	18,6	406	34.6
MAS0806HEEON-UL13	8x2x20AWG	20,1	487	34.6
MAS1006HEEON-UL13	10x2x20AWG	22,8	584	34.6
MAS1206HEEON-UL13	12x2x20AWG	23,5	651	34.6
MAS1606HEEON-UL13	16x2x20AWG	26,2	833	34.6
MAS2406HEEON-UL13	24x2x20AWG	31,7	1152	34.6
MAS0105HEEON-UL13	1x2x18AWG	7,9	76	21.8
MAS0205HEEON-UL13	2x2x18AWG	15,2	256	21.8
MAS0405HEEON-UL13	4x2x18AWG	17,1	357	21.8
MAS0605HEEON-UL13	6x2x18AWG	19,7	471	21.8
MAS0805HEEON-UL13	8x2x18AWG	21,4	569	21.8
MAS1005HEEON-UL13	10x2x18AWG	24,3	685	21.8
MAS1205HEEON-UL13	12x2x18AWG	25,6	802	21.8
MAS1605HEEON-UL13	16x2x18AWG	28,0	989	21.8
MAS2405HEEON-UL13	24x2x18AWG	34,0	1379	21.8
MAS0105HEEON-UL13	1x2x16AWG	37,4	1754	13.7
MAS0205HEEON-UL13	2x2x16AWG	16,1	294	13.7
MAS0405HEEON-UL13	4x2x16AWG	18,2	422	13.7
MAS0605HEEON-UL13	6x2x16AWG	21,2	563	13.7
MAS0805HEEON-UL13	8x2x16AWG	23,1	688	13.7
MAS1005HEEON-UL13	10x2x16AWG	26,8	866	13.7
MAS1205HEEON-UL13	12x2x16AWG	27,6	976	13.7
MAS1605HEEON-UL13	16x2x16AWG	30,3	1214	13.7
MAS2405HEEON-UL13	24x2x16AWG	37,4	1754	13.7
MAS0101HEEON-UL13	1x2x14AWG	9,3	113	8.6
MAS0201HEEON-UL13	2x2x14AWG	17,4	349	8.6
MAS0401HEEON-UL13	4x2x14AWG	19,7	518	8.6
MAS0601HEEON-UL13	6x2x14AWG	23	701	8.6
MAS0801HEEON-UL13	8x2x14AWG	25,7	898	8.6
MAS1001HEEON-UL13	10x2x14AWG	29,2	1090	8.6
MAS1201HEEON-UL13	12x2x14AWG	30,1	1238	8.6
MAS1601HEEON-UL13	16x2x14AWG	33,2	1556	8.6
MAS2401HEEON-UL13	24x2x14AWG	41,1	2260	8.6
MAS0152HEEON-UL13	1x2x12AWG	14,1	261	5.4
MAS0252HEEON-UL13	2x2x12AWG	18,9	426	5.4
MAS0452HEEON-UL13	4x2x12AWG	21,6	653	5.4
MAS0652HEEON-UL13	6x2x12AWG	25,9	929	5.4
MAS0852HEEON-UL13	8x2x12AWG	28,3	1156	5.4
MAS1052HEEON-UL13	10x2x12AWG	32,3	1409	5.4
MAS1252HEEON-UL13	12x2x12AWG	33,4	1613	5.4
MAS1652HEEON-UL13	16x2x12AWG	37,3	2090	5.4
MAS2452HEEON-UL13	24x2x12AWG	46,2	3044	5.4

UL 13 - PLTC Cable

Mica Tape + XLPE Individual and Overall Screened



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Mica Tape + Cross Liked Polyetilene - XLPE
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
14 x Cable Diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-40° C up to +75°C
Insulation Operation:
-40° C up to +90°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 75°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

Mica Tape + XLPE Individual and Overall Screened

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0206HEEON-UL13	2x2x20AWG	14,6	242	34.6
MAC0406HEEON-UL13	4x2x20AWG	16,4	337	34.6
MAC0606HEEON-UL13	6x2x20AWG	19,0	441	34.6
MAC0806HEEON-UL13	8x2x20AWG	20,6	533	34.6
MAC1006HEEON-UL13	10x2x20AWG	23,3	641	34.6
MAC1206HEEON-UL13	12x2x20AWG	24,0	719	34.6
MAC1606HEEON-UL13	16x2x20AWG	26,8	923	34.6
MAC2006HEEON-UL13	20x2x20AWG	29,7	1105	34.6
MAC2406HEEON-UL13	24x2x20AWG	32,5	1284	34.6
MAC0205HEEON-UL13	2x2x18AWG	15,4	269	21.8
MAC0405HEEON-UL13	4x2x18AWG	17,4	382	21.8
MAC0605HEEON-UL13	6x2x18AWG	20,1	506	21.8
MAC0805HEEON-UL13	8x2x18AWG	21,9	615	21.8
MAC1005HEEON-UL13	10x2x18AWG	24,8	743	21.8
MAC1205HEEON-UL13	12x2x18AWG	26,1	870	21.8
MAC1605HEEON-UL13	16x2x18AWG	28,6	1078	21.8
MAC2005HEEON-UL13	20x2x18AWG	31,8	1296	21.8
MAC2405HEEON-UL13	24x2x18AWG	35,3	1554	21.8
MAC0205HEEON-UL13	2x2x16AWG	16,4	309	13.7
MAC0405HEEON-UL13	4x2x16AWG	18,5	449	13.7
MAC0605HEEON-UL13	6x2x16AWG	21,6	602	13.7
MAC0805HEEON-UL13	8x2x16AWG	23,5	739	13.7
MAC1005HEEON-UL13	10x2x16AWG	27,3	930	13.7
MAC1205HEEON-UL13	12x2x16AWG	28,1	1052	13.7
MAC1605HEEON-UL13	16x2x16AWG	30,9	1314	13.7
MAC2005HEEON-UL13	20x2x16AWG	34,9	1629	13.7
MAC2405HEEON-UL13	24x2x16AWG	38,1	1903	13.7
MAC0201HEEON-UL13	2x2x14AWG	17,6	364	8.6
MAC0401HEEON-UL13	4x2x14AWG	20,0	545	8.6
MAC0601HEEON-UL13	6x2x14AWG	23,4	740	8.6
MAC0801HEEON-UL13	8x2x14AWG	26,1	950	8.6
MAC1001HEEON-UL13	10x2x14AWG	29,8	1154	8.6
MAC1201HEEON-UL13	12x2x14AWG	30,7	1314	8.6
MAC1601HEEON-UL13	16x2x14AWG	33,8	1655	8.6
MAC2001HEEON-UL13	20x2x14AWG	38,2	2055	8.6
MAC2401HEEON-UL13	24x2x14AWG	41,9	2409	8.6
MAC0252HEEON-UL13	2x2x12AWG	19,2	442	5.4
MAC0452HEEON-UL13	4x2x12AWG	21,9	682	5.4
MAC0652HEEON-UL13	6x2x12AWG	26,3	973	5.4
MAC0852HEEON-UL13	8x2x12AWG	28,7	1213	5.4
MAC1052HEEON-UL13	10x2x12AWG	32,8	1480	5.4
MAC1252HEEON-UL13	12x2x12AWG	33,9	1697	5.4
MAC1652HEEON-UL13	16x2x12AWG	37,9	2201	5.4
MAC2052HEEON-UL13	20x2x12AWG	42,4	2678	5.4
MAC2452HEEON-UL13	24x2x12AWG	47,0	3208	5.4

UL 13 - PLTC Cable

Mica Tape + XLPE Overall Screened with Armour



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread flame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Mica Tape + Cross Liked Polyetilene - XLPE
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Armour:
Galvanized Steel Wires Amour
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
14 x Cable Diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-40° C up to +75°C
Insulation Operation:
-40° C up to +90°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 75°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

Mica Tape + XLPE Individual and Overall Screened

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAS0106AEEON-UL13	1x2x20AWG	15,1	354	34.6
MAS0206AEEON-UL13	2x2x20AWG	18,7	512	34.6
MAS0406AEEON-UL13	4x2x20AWG	20,5	621	34.6
MAS0606AEEON-UL13	6x2x20AWG	24,1	897	34.6
MAS0806AEEON-UL13	8x2x20AWG	26,2	1042	34.6
MAS1006AEEON-UL13	10x2x20AWG	29,5	1340	34.6
MAS1206AEEON-UL13	12x2x20AWG	30,2	1420	34.6
MAS1606AEEON-UL13	16x2x20AWG	33,0	1675	34.6
MAS2406AEEON-UL13	24x2x20AWG	39,7	2420	34.6
MAS0105AEEON-UL13	1x2x18AWG	15,6	378	21.8
MAS0205AEEON-UL13	2x2x18AWG	19,5	554	21.8
MAS0405AEEON-UL13	4x2x18AWG	21,4	682	21.8
MAS0605AEEON-UL13	6x2x18AWG	25,8	1021	21.8
MAS0805AEEON-UL13	8x2x18AWG	27,5	1156	21.8
MAS1005AEEON-UL13	10x2x18AWG	31,1	1488	21.8
MAS1205AEEON-UL13	12x2x18AWG	32,3	1635	21.8
MAS1605AEEON-UL13	16x2x18AWG	36,1	2120	21.8
MAS2405AEEON-UL13	24x2x18AWG	42,0	2709	21.8
MAS0105AEEON-UL13	1x2x16AWG	16,2	410	13.7
MAS0205AEEON-UL13	2x2x16AWG	20,4	610	13.7
MAS0405AEEON-UL13	4x2x16AWG	23,2	871	13.7
MAS0605AEEON-UL13	6x2x16AWG	27,2	1150	13.7
MAS0805AEEON-UL13	8x2x16AWG	29,8	1452	13.7
MAS1005AEEON-UL13	10x2x16AWG	33,5	1743	13.7
MAS1205AEEON-UL13	12x2x16AWG	34,3	1866	13.7
MAS1605AEEON-UL13	16x2x16AWG	38,3	2426	13.7
MAS2405AEEON-UL13	24x2x16AWG	45,9	3261	13.7
MAS0101AEEON-UL13	1x2x14AWG	16,9	453	8.6
MAS0201AEEON-UL13	2x2x14AWG	21,7	688	8.6
MAS0401AEEON-UL13	4x2x14AWG	25,8	1072	8.6
MAS0601AEEON-UL13	6x2x14AWG	29,8	1472	8.6
MAS0801AEEON-UL13	8x2x14AWG	32,4	1743	8.6
MAS1001AEEON-UL13	10x2x14AWG	37,3	2288	8.6
MAS1201AEEON-UL13	12x2x14AWG	38,2	2458	8.6
MAS1601AEEON-UL13	16x2x14AWG	41,2	2871	8.6
MAS2401AEEON-UL13	24x2x14AWG	49,6	3900	8.6
MAS0152AEEON-UL13	1x2x12AWG	18,4	539	5.4
MAS0252AEEON-UL13	2x2x12AWG	24,4	938	5.4
MAS0452AEEON-UL13	4x2x12AWG	27,6	1255	5.4
MAS0652AEEON-UL13	6x2x12AWG	32,6	1789	5.4
MAS0852AEEON-UL13	8x2x12AWG	36,3	2319	5.4
MAS1052AEEON-UL13	10x2x12AWG	40,4	2722	5.4
MAS1252AEEON-UL13	12x2x12AWG	41,4	2950	5.4
MAS1652AEEON-UL13	16x2x12AWG	45,9	3612	5.4
MAS2452AEEON-UL13	24x2x12AWG	55,8	5014	5.4

UL 13 - PLTC Cable

Mica Tape + XLPE Individual Overall Screened with Armour



These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread fame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Stranded
Insulation:
Mica Tape + Cross Liked Polyetilene - XLPE
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Armour:
Galvanized Steel Wires Amour
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Black

STANDARD REFERENCES

- UL 13 PLTC Type
- ASTM B3 / B33
- NEC code, Sec. 725 PLTC,
- NEC code, Sec. 727 ITC,
- UL 1685
- ASTM D 1239
- NF C 32-020
- IRAM IAP

CHARACTERISTICS

Min. Bending Radius
14 x Cable Diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-40° C up to +75°C
Insulation Operation:
-40° C up to +90°C

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E345186 Type PLTC - 1 pr 20 - Shielded - 75°C + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ○ ●

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300 V

Mica Tape + XLPE Individual Overall Screened with Armour

These cables are designed to connect electronic instrumentation, analog and digital signal circuits. This cable does not spread flame to the top of the tray in the Vertical-Tray Flame Test in UL 1685. Suitable for direct burial applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
MAC0206AEEON-UL13	2x2x20AWG	19,0	543	34.6
MAC0406AEEON-UL13	4x2x20AWG	20,8	674	34.6
MAC0606AEEON-UL13	6x2x20AWG	24,5	976	34.6
MAC0806AEEON-UL13	8x2x20AWG	26,6	1145	34.6
MAC1006AEEON-UL13	10x2x20AWG	30,1	1470	34.6
MAC1206AEEON-UL13	12x2x20AWG	30,7	1572	34.6
MAC1606AEEON-UL13	16x2x20AWG	33,6	1873	34.6
MAC2006AEEON-UL13	20x2x20AWG	37,8	2406	34.6
MAC2406AEEON-UL13	24x2x20AWG	40,5	2698	34.6
MAC0205AEEON-UL13	2x2x18AWG	19,8	585	21.8
MAC0405AEEON-UL13	4x2x18AWG	21,7	738	21.8
MAC0605AEEON-UL13	6x2x18AWG	26,2	1105	21.8
MAC0805AEEON-UL13	8x2x18AWG	27,9	1264	21.8
MAC1005AEEON-UL13	10x2x18AWG	31,6	1625	21.8
MAC1205AEEON-UL13	12x2x18AWG	32,9	1796	21.8
MAC1605AEEON-UL13	16x2x18AWG	36,7	2334	21.8
MAC2005AEEON-UL13	20x2x18AWG	39,9	2683	21.8
MAC2405AEEON-UL13	24x2x18AWG	43,3	3085	21.8
MAC0205AEEON-UL13	2x2x16AWG	20,7	644	13.7
MAC0405AEEON-UL13	4x2x16AWG	23,6	935	13.7
MAC0605AEEON-UL13	6x2x16AWG	27,6	1242	13.7
MAC0805AEEON-UL13	8x2x16AWG	30,2	1575	13.7
MAC1005AEEON-UL13	10x2x16AWG	34,0	1895	13.7
MAC1205AEEON-UL13	12x2x16AWG	36,2	2285	13.7
MAC1605AEEON-UL13	16x2x16AWG	39,0	2663	13.7
MAC2005AEEON-UL13	20x2x16AWG	42,9	3144	13.7
MAC2405AEEON-UL13	24x2x16AWG	46,7	3611	13.7
MAC0201AEEON-UL13	2x2x14AWG	22,7	826	8.6
MAC0401AEEON-UL13	4x2x14AWG	26,1	1141	8.6
MAC0601AEEON-UL13	6x2x14AWG	30,2	1574	8.6
MAC0801AEEON-UL13	8x2x14AWG	32,9	1875	8.6
MAC1001AEEON-UL13	10x2x14AWG	37,8	2456	8.6
MAC1201AEEON-UL13	12x2x14AWG	38,7	2655	8.6
MAC1601AEEON-UL13	16x2x14AWG	41,9	3126	8.6
MAC2001AEEON-UL13	20x2x14AWG	46,8	3766	8.6
MAC2401AEEON-UL13	24x2x14AWG	50,4	4277	8.6
MAC0252AEEON-UL13	2x2x12AWG	24,7	981	5.4
MAC0452AEEON-UL13	4x2x12AWG	28,0	1332	5.4
MAC0652AEEON-UL13	6x2x12AWG	33,0	1904	5.4
MAC0852AEEON-UL13	8x2x12AWG	36,8	2470	5.4
MAC1052AEEON-UL13	10x2x12AWG	40,9	2910	5.4
MAC1252AEEON-UL13	12x2x12AWG	42,0	3171	5.4
MAC1652AEEON-UL13	16x2x12AWG	46,5	3901	5.4
MAC2052AEEON-UL13	20x2x12AWG	50,9	4567	5.4
MAC2452AEEON-UL13	24x2x12AWG	56,6	5442	5.4

UL 1277 Tray Cables (UL44)

TC, TC-ER (Exposed Run), TC-ER-JP (Joint Purpose), TC-OF-ER (Optical Fiber, Exposed Run)

The product is a multi-conductor, 600V, 90°C, UL listed, UV and oil-resistant flexible tray cable. The cable can be used without conduit (exposed runs). Recommended applications are intended for use in accordance with Article 336 and other applicable parts of the National Electrical Code (NEC), ANSI/NFPA 70 in cable trays, in raceways, and wherever supported in outdoor locations by a messenger wire.

Under UL 1277 Standard, Ramcro can propose a wide portfolio of solutions ranging from Hazardous Locations or Exposed Run applications, to solutions which foresee Fiber Optics.

CONSTRUCTION

Formation:
14 AWG to 1000 kcmil annealed stranded Copper/Aluminum conductor

Insulation:
Cross-linked Polyethylene as per UL 44 (Thermoset)

Wrapping:
at least 1 layer of plastic tape

Collective Screen (Optional):
Aluminium / PETP tape over copper drain wire

Outher Sheath:
- Polyvinyl Chloride FR - PVC
-

Outher Sheath Color:
Black

STANDARD REFERENCES

- UL 44
- UL 1277
- CSA C22.2 No. 230
- CSA C22.2 No. 239
- CIC
- UL 1581
- UL 2556
- ASTM B3
- ASTM B8
- ASTM B33
- NFPA 70 (National Electrical Code)

CHARACTERISTICS

Min. Bending Radius
12 x cable diameter



Hazardous Area Classification (Optional)
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +90° C
Fixed Installation:
-30° C up to +90°C Dry/wet
Insulation Operation:
-30° C up to +90°C



ON REQUEST

- Sunlight Resistant
- Oil Resistant
- Direct Burial
- FT4
- Hazardous Location
- -40°C
- Exposed Run (-ER)
- VW-1
- Available in multi-Core constructions
- Shielded & Unshielded options available
- Available with CIC & CIC-ER options

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	600/1000/2000 V

IDENTIFICATION OF CORES

- 3 Conductors: ● Black ○ White ● Green
- 4 Conductors: ● Black ○ White ● Red ● Green

TC, TC-ER (Exposed Run), TC-ER-JP (Joint Purpose), TC-OF-ER (Optical Fiber, Exposed Run)

Multicore insulated color-coded cores with Bare conductor (optional), binded and covered with high performance PVC or CSPE Jacket.

FORMATION (AWG)*	No. of Corses*	OVERALL DIAMETER (mm)	MAX RESISTANCE CONDUCTOR AT 20ºC (Ohm/km)
14	3	10.2	8.62
12	3	11.2	5.43
10	3	12.5	3.41
8	3	16.5	2.14
6	3	18.3	1.35
4	3	21.9	0.848
3	3	23.4	0.673
2	3	25.1	0.534
1	3	28.2	0.423
14	4	11.1	8.62
12	4	12.2	5.43
10	4	14.4	3.41
8	4	18.1	2.14
6	4	20.0	1.35
4	4	24.0	0.848
3	4	25.7	0.673
2	4	27.6	0.534
1	4	31.0	0.423

*Additional formations/number of conductors available

CABLE PRINTING

In example: RAMCRO S.p.A. - (UL) Listed E491205 XHHW TYPE TC 600V Sun Res FT4 oil res Dir Bur <month>/<year> <batch>

UL 1277 Tray Cables (UL83)

TC, TC-ER (Exposed Run), TC-ER-JP (Joint Purpose), TC-OF-ER (Optical Fiber, Exposed Run)

The product is a multi-conductor, 600V, 90°C, UL listed, UV and oil-resistant flexible tray cable. The cable can be used without conduit (exposed runs). Recommended applications are intended for use in accordance with Article 336 and other applicable parts of the National Electrical Code (NEC), ANSI/NFPA 70 in cable trays, in raceways, and wherever supported in outdoor locations by a messenger wire.

Under UL 1277 Standard, Ramcro can propose a wide portfolio of solutions ranging from Hazardous Locations or Exposed Run applications, to solutions which foresee Fiber Optics.

CONSTRUCTION

Formation:
14 AWG to 1000 kcmil annealed stranded Copper/Aluminum conductor

Insulation:
Polyvinyl Chloride (PVC) Insulation. + Nylon Jacket as per UL 83. (Thermoplastic)

Wrapping:
at least 1 layer of plastic tape

Collective Screen (Optional):
Aluminium / PETP tape over copper drain wire

Outher Sheath:
Polyvinyl Chloride FR - PVC

Outher Sheath Color:
Black

STANDARD REFERENCES

- UL 83
- UL 1277
- CSA C22.2 No. 230
- CSA C22.2 No. 239
- CIC
- UL 1581
- UL 2556
- ASTM B3
- ASTM B8
- ASTM B33
- NFPA 70 (National Electrical Code)

CHARACTERISTICS

Min. Bending Radius
12 x cable diameter



Hazardous Area Classification (Optional)
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +90° C
Fixed Installation:
-30° C up to +90°C Dry/wet
Insulation Operation:
-30° C up to +90°C



ON REQUEST

- Sunlight Resistant
- Oil Resistant.
- Direct Burial
- FT4
- Hazardous Location
- -40°C
- Exposed Run (-ER)
- VW-1
- Available in multi-Core constructions
- Shielded & Unshielded options available
- Available with CIC & CIC-ER options

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	600/1000/2000 V

IDENTIFICATION OF CORES

- 3 Conductors: ● Black ○ White ● Green
- 4 Conductors: ● Black ○ White ● Red ● Green

UL 1277 Tray Cables (UL83)

TC, TC-ER (Exposed Run), TC-ER-JP (Joint Purpose), TC-OF-ER (Optical Fiber, Exposed Run)

Multicore insulated color-coded cores with Bare conductor (optional), binded and covered with high performance PVC or CSPE Jacket.

FORMATION (AWG)*	No. of Corses*	OVERALL DIAMETER (mm)	MAX RESISTANCE CONDUCTOR AT 20ºC (Ohm/km)
14	3	9.1	8.62
12	3	10.1	5.43
10	3	12.0	3.41
8	3	15.6	2.14
6	3	17.4	1.35
4	3	22.2	0.848
3	3	23.7	0.673
2	3	25.5	0.534
1	3	28.7	0.423
14	4	9.8	8.62
12	4	11.0	5.43
10	4	13.9	3.41
8	4	17.1	2.14
6	4	19.0	1.35
4	4	24.3	0.848
3	4	26.0	0.673
2	4	28.0	0.534
1	4	31.5	0.423

*Additional formations/number of conductors available

CABLE PRINTING

In example: RAMCRO S.p.A. - (UL) Listed E491205 THHN TYPE TC 600V Sun Res FT4 oil res Dir Bur <month>/<year> <batch>

UL 1277 Tray Cables (UL66)

TC, TC-ER (Exposed Run), TC-ER-JP (Joint Purpose), TC-OF-ER (Optical Fiber, Exposed Run)

The product is a multi-conductor, 600V, 90°C, UL listed, UV and oil-resistant flexible tray cable. The cable can be used without conduit (exposed runs). Recommended applications are intended for use in accordance with Article 336 and other applicable parts of the National Electrical Code (NEC), ANSI/NFPA 70 in cable trays, in raceways, and wherever supported in outdoor locations by a messenger wire.

Under UL 1277 Standard, Ramcro can propose a wide portfolio of solutions ranging from Hazardous Locations or Exposed Run applications, to solutions which foresee Fiber Optics.

CONSTRUCTION

Formation:
14 AWG to 1000 kcmil annealed stranded Copper/Aluminum conductor

Insulation:
Polyvinyl Chloride (PVC) Insulation. + Nylon Jacket as per UL 66. (Thermoplastic)

Wrapping:
at least 1 layer of plastic tape

Collective Screen (Optional):
Aluminium / PETP tape over copper drain wire

Outher Sheath:
Polyvinyl Chloride FR - PVC

Outher Sheath Color:
Black

STANDARD REFERENCES

- UL 66
- UL 1277
- CSA C22.2 No. 230
- CSA C22.2 No. 239
- CIC
- UL 1581
- UL 2556
- ASTM B3
- ASTM B8
- ASTM B33
- NFPA 70 (National Electrical Code)

CHARACTERISTICS

Min. Bending Radius
12 x cable diameter



Hazardous Area Classification (Optional)
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +90° C
Fixed Installation:
-30° C up to +90°C Dry/wet
Insulation Operation:
-30° C up to +90°C



ON REQUEST

- Sunlight Resistant
- Oil Resistant
- Direct Burial
- FT4
- Hazardous Location
- -40°C
- Exposed Run (-ER)
- VW-1
- Available in multi-Core constructions
- Shielded & Unshielded options available
- Available with CIC & CIC-ER options
- Cores with TFFN & TFN Construction can be availed complying UL 66

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	600/1000/2000 V

IDENTIFICATION OF CORES

- 3 Conductors: ● Black ○ White ● Green
- 4 Conductors: ● Black ○ White ● Red ● Green
- 5 Conductors: ● Black with White Numbers

UL 1277 Tray Cables (UL66)

TC, TC-ER (Exposed Run), TC-ER-JP (Joint Purpose), TC-OF-ER (Optical Fiber, Exposed Run)

Multicore insulated color-coded cores with Bare conductor (optional), binded and covered with high performance PVC or CSPE Jacket.

FORMATION (AWG)*	No. of Corses*	OVERALL DIAMETER (mm)	MAX RESISTANCE CONDUCTOR AT 20ºC (Ohm/km)
18	3	7.6	21.84
18	4	8.2	21.84
18	5	8.8	21.84
18	6	9.5	21.84
18	7	9.5	21.84
18	8	10.1	21.84
18	9	11.0	21.84
18	10	11.7	21.84
18	11	12.0	21.84
18	12	12.0	21.84
18	13	12.6	21.84
18	14	12.6	21.84
18	15	14.0	21.84
18	16	14.0	21.84
18	17	14.6	21.84
18	18	14.6	21.84
18	19	14.6	21.84
18	20	15.0	21.84
16	3	8.3	13.71
16	4	8.9	13.71
16	5	9.6	13.71
16	6	10.4	13.71
16	7	10.4	13.71
16	8	11.1	13.71
16	9	12.1	13.71
16	10	12.9	13.71
16	11	14.1	13.71
16	12	14.1	13.71
16	13	14.7	13.71
16	14	14.7	13.71
16	15	15.4	13.71
16	16	15.4	13.71
16	17	16.2	13.71
16	18	16.2	13.71
16	19	16.2	13.71
16	20	16.6	13.71

*Additional formations/number of conductors available

CABLE PRINTING

In example: RAMCRO S.p.A. - (UL) Listed E491205 TFN TYPE TC 600V Sun Res FT4 oil res Dir Bur <month>/<year> <batch>

UL 2277 Wind Turbine TC

WTTC Wind Turbine Tray Cables

The product is a multi-conductor, 1000V, 90°C, UL listed, UV and oil-resistant flexible tray cable designed for wind turbine and industrial control applications.

It is suitable for exposed runs without conduit when marked WTTC-ER, and its reduced outer diameter allows for easier handling and installation in tight or confined spaces.

These cables are ideal for use in machine tools, wind turbine generator, control systems, assembly lines, CNC machining centres, bottling equipment, data processing systems, and for interconnections between control panels and machinery, in accordance with NEC Article 336 and UL 2277.

CONSTRUCTION

Formation:
14 AWG to 1000 kcmil annealed Copper/Aluminum conductor

Insulation:
a) Polyvinyl Chloride (PVC) Insulation.
b) Polyvinyl Chloride (PVC) Insulation. + Nylon Jacket
c) Cross-linked Polyethylene

Wrapping:
at least 1 layer of plastic tape

Collective Screen (Optional):
Aluminium / PETP tape over copper drain wire

Armouring (Optional)

Outher Sheath:
Polyvinyl Chloride FR - PVC

STANDARD REFERENCES

- UL 83
- UL 66
- UL 44
- UL 1277
- CSA C22.2 No. 230
- CSA C22.2 No. 239
- CIC
- UL 1581
- UL 2556
- ASTM B3
- ASTM B8
- ASTM B33
- NFPA 70 (National Electrical Code

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Hazardous Area Classification (Optional)
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +90° C
Fixed Installation:
+90°C Dry/Wet
Insulation Operation:
-30° C up to +90°C



ON REQUEST

- Wet, Damp and Dry Locations
- Sunlight Resistant
- FT4
- Hazardoius Location (-HL)
- -40°C
- Exposed Run (-ER)
- VW-1Resistant
- CIC & CIC-ER
- TFFN & TFN Construction acc. to UL 66

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	1000 V

WTTC Wind Turbine Tray Cables

Multicore insulated color-coded cores with Bare conductor (optional), binded and covered with high performance PVC Jacket.

FORMATION (mm^2)	No. of Corses	OVERALL DIAMETER (mm)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
3x16 AWG	3	8.66	13.72
3x14 AWG	3	9.78	8.63
3x12 AWG	3	11.05	5.46
3x10 AWG	3	13.44	3.42
3x8 AWG	3	18.57	2.14
3x6 AWG	3	21.06	1.35
3x4 AWG	3	25.86	0.85
3x2 AWG	3	30.23	0.53
4x16 AWG	4	9.78	13.72
4x14 AWG	4	10.57	8.63
4x12 AWG	4	11.99	5.46
4x10 AWG	4	15.14	3.42
4x8 AWG	4	19.96	2.14
4x6 AWG	4	23.75	1.35
4x4 AWG	4	27.94	0.85
4x2 AWG	4	33.02	0.53
5x16 AWG	5	10.06	13.72
5x14 AWG	5	11.43	8.63
5x12 AWG	5	12.75	5.46
5x10 AWG	5	16.69	3.42
5x8 AWG	5	22	2.14
7x16 AWG	7	10.97	13.72

CABLE PRINTING

In example: RAMCRO S.p.A. - (UL) Listed THHN/THWN-2 TYPE WTTC 600V sun res FT4 oil res Dir Bur <month>/<year> <batch>

UL 1569 Metal Clad (MC)

Metal Clad (MC) Cables

This specification covers light weight aluminium interlocked armor Type MC cable with Aluminium or Copper conducors.
These cables are perfect in both Dry and WET applications at permissible voltage of 600 up to 2000 V.

These cables are suitable for use in branch, feeders and service power distribution; in commercial, industrial, institutional, and multi residential buildings, Power, lighting, control and signalling application in accordance with Article 330 and other applicable parts of the National Electrical Code, NFPA 70 and in accordance with Article 330 of the Standard for Electrical Installations, NOM-001-SEDE.

CONSTRUCTION

Formation:
14 AWG to 1000 kcmil annealed Copper/Aluminum conductor

Insulation:
a)Polyvinyl Chloride (PVC) Insulation. + Nylon Jacket
b)Cross-linked Polyethylene

Wrapping:
at least 1 layer of plastic tape

Collective Screen (Optional):
Aluminium / PETP tape over copper drain wire

Armouring:
a) Aluminium interlocked Armor over laid up cores
b) Stainless steel
c) Copper-cladded aluminium armour.

Outher Sheath (Optional):
Polyvinyl Chloride FR - PVC

STANDARD REFERENCES

- UL 83
- UL 44
- UL 66
- TECK90 (CSA C22.2 No. 131)
- CSA C22.2 No. 123 – Metal Sheathed Cables
- UL 1569
- UL 1581
- Ul 2225
- UL 2556
- ASTM B3
- ASTM B8
- ASTM B33
- NFPA 70 (National Electrical Code)

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



Hazardous Area Classification (Optional)
IEC Zone 1 - Group 2

TEMPERATURE RANGE

During Installation:
-5° C up to +90° C
Fixed Installation:
-20° C up to +90°C
Insulation Operation:
-30° C up to +90°C



ON REQUEST

- Sunlight Resistant
- Oil Resistant I & II
- Direct Burial
- Hazardous Location
- FT4
- IEEE 1202
- CT
- CIC
- CIC-ER

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	600/2000 V

IDENTIFICATION OF CORES

- 2 Conductors: ● Black ○ White
- 3 Conductors: ● Black ○ White ● Red
- 4 Conductors: ● Black ○ White ● Red ● Blue
- Grounding: ● Green

Metal Clad (MC) Cables

Multicore insulated color-coded Polyvinyl chloride (PVC) Nylon or XLPE Jacketed phase conductors cabled with Bare conductor (optional), binded and Armored with Aluminum Interlocked armor (or any alternative), covered with FR-PVC Jacket (optional) rated for 90°C in dry or wet locations as per UL 1569, UL 83, UL 44 or UL 66

FORMATION (mm^2)	No. of Cores (Phase + Grounding)	OVERALL DIAMETER (mm)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
2x14+14 AWG	2+1	11.9	8.62
3x14+14 AWG	3+1	12.5	8.62
4x14+14 AWG	4+1	13.1	8.62
2x12+12 AWG	2+1	12.8	5.42
3x12+12 AWG	3+1	13.6	5.42
4x12+12 AWG	4+1	14.4	5.42
2x10+10 AWG	2+1	14.5	3.41
3x10+10 AWG	3+1	15.5	3.41
4x10+10 AWG	4+1	16.6	3.41
2x8+10 AWG	2+1	17.1	2.14
3x8+10 AWG	3+1	18.6	2.14
4x8+10 AWG	4+1	20.2	2.14
2x6+8 AWG	2+1	21.3	1.35
3x6+8 AWG	3+1	22	1.35
4x6+8 AWG	4+1	23.9	1.35
2x4+8 AWG	2+1	24.1	0.85
3x4+8 AWG	3+1	27.3	0.85
4x4+8 AWG	4+1	28.7	0.85
2x3+6 AWG	2+1	25.7	0.67
3x3+6 AWG	3+1	28	0.67
4x3+6 AWG	4+1	30.6	0.67
2x2+6 AWG	2+1	27.4	0.53
3x2+6 AWG	3+1	30	0.53
4x2+6 AWG	4+1	32.8	0.53
2x1+6 AWG	2+1	30.9	0.42
3x1+6 AWG	3+1	33.9	0.42
4x1+6 AWG	4+1	37.2	0.42

CABLE PRINTING

In example: RAMCRO S.p.A. - (UL) Listed THHN/THWN-2 TYPE MC 600V Dir Bur <month>/<year> <batch>

UL 1263 Irrigation Cable

Type IR Cable

This specification covers type irrigation cable with soft annealed copper stranded conductor, insulated with PE or XLPE, cabled utilizing a PVC inner jacket and an aluminium shield bonded to a PE outer jacket offering excellent mechanical strength and moisture resistance in accordance with NEC Article 675. Cable is conforming to UL 1263. These cables are designed to operate in electric motor driven irrigation systems, landscape lighting or sprinkler systems with a 600V application and are rated 75°C or 90°C. They offer excellent mechanical strength, moisture resistance, and UV protection.

CONSTRUCTION

Formation:
14 AWG to 4/0AWG annealed Copper conductor

Insulation:
a) Polyvinyl Chloride (PVC) Insulation. Nylon Jacket over insulation
b) Cross-lynked Polyethylene (XLPE)
c) Polyethylene (PE)

Wrapping:
at least 1 layer of plastic tape

Shield:
Corrugated Aluminium

Inner Sheath (Optional):
Polyvinyl Chloride (PVC)

Armouring (Optional):
Corrugated Aluminium

Outher Sheath:
a) Polyvinyl Chloride (PVC)
b) Polyethylene (PE)

TEMPERATURE RANGE



During Installation:
-5° C up to +90° C
Fixed Installation:
-20° C up to +90°C
Insulation Operation:
-30° C up to +90°C

ELECTRICAL DATA

Insulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	600 V

STANDARD REFERENCES

- UL 1263
- UL 2556
- ASTM B3
- ASTM B8
- ASTM B33
- NFPA 70 (National Electrical Code)

CHARACTERISTICS



Min. Bending Radius
8 x cable diameter

Hazardous Area Classification (Optional)
IEC Zone 1 - Group 2

ON REQUEST

- Sunlight Resistant
- Oil Resistant I & II
- Direct Burial
- Hazardous Location
- FT4
- IEEE 1202
- CT
- CIC
- CIC-ER

IDENTIFICATION OF CORES

- 4C: Black, Blue, Red, Green w/yellow tracer
- 10C: Black, Blue, Red, Green w/Yellow tracer, Brown, Orange, Yellow, Purple, Pink, White
- 11C: Black, Blue, Red, Green w/Yellow tracer, Brown, Orange, Yellow, Purple, Pink, White, Yellow w/Red tracer

UL 1263 Irrigation Cable

Type IR Cable

Multicore insulated color-coded Polyvinyl chloride (PVC) Nylon or XLPE Jacketed phase conductors cabled, covered with FR-PVC Jacket (optional) rated for 90°C in dry or wet locations as per UL UL 1263

FORMATION (mm^2)	OVERALL DIAMETER (mm)	MAX RESISTANCE CONDUCTOR AT 20ºC (Ohm/km)
4X14 AWG	12,9	197
4X12 AWG + 7X16 AWG	17,2	398
4X12 AWG + 7X14 AWG	18,2	463
4X10 AWG + 7X14 AWG	19,9	564
4X14 AWG + 6X18 AWG	16,7	289
4X12 AWG + 6X14 AWG	18,0	432
4X10 AWG + 6X14 AWG	19,7	535

CABLE PRINTING

In example: RAMCRO S.p.A. - (UL) Listed TYPE IR 600V <month>/<year> <batch>

UL 1309 Marine Shipboard

X110, X110P



The UL 1309 single-conductor marine shipboard cable is intended for use in fixed wiring installations aboard commercial and military vessels. It is suitable for power, lighting, control, and instrumentation circuits in both dry and wet locations. The cable is engineered to withstand exposure to oil, moisture, vibration, and high temperatures, making it ideal for engine rooms, control panels, and other critical shipboard systems. Its low-smoke, zero-halogen (LSZH) construction enhances safety by minimizing toxic emissions in case of fire, supporting compliance with international marine safety regulations.

CONSTRUCTION

Formation:
12 AWG to 1000kcmil annealed Copper conductor

Insulation:
Cross-linked Polyethylene (XLPE) X110/X110P

Wrapping:
at least 1 layer of plastic tape

Inner Sheath (Optional):
Polyvinyl Chloride (PVC)

Armouring (Optional):
Corrugated Aluminium

Outer Sheath:
a) Polyvinyl Chloride (PVC)
b) Polyethylene (PE)

STANDARD REFERENCES

- UL 1309
- IEEE 1580-2010
- CSA C22.2 No. 245.

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



TEMPERATURE RANGE

During Installation:
-5° C up to +90° C
Fixed Installation:
-20° C up to +110°C



ON REQUEST

- ST1
- -40°C

ELECTRICAL DATA

Operating Voltage:	2000 V

UL 4 Armoured Cable

ACHH, ACTH, ACTHH, CT USE

The UL 4 (Armoured Cable) cable types ACHH, ACTH, and ACTHH are designed for electrical applications in commercial and industrial environments where high mechanical protection and operational reliability are required. These armoured cables, compliant with UL 4 (Armoured Cable) standards, are intended for use in branch and feeder circuits, both exposed and concealed, as specified by the National Electrical Code (NEC). They are rated for voltages up to 600 V and operating temperatures up to 75 °C for ACTH and 90 °C for ACHH and ACTHH, depending on the insulation type used.

CONSTRUCTION

Formation:
14 AWG to 1 AWG annealed Copper conductor/ Aluminium

Insulation:
a) Polyvinyl Chloride (PVC) Insulation. Nylon Jacket over insulation
b) Polyvinyl Chloride (PVC) Insulation
c) Cross-linked Polyethylene (XLPE)

Armouring:
Interlocked Armouring

Outer Jacket (optional):
a) Polyvinyl Chloride (PVC)
b) Chlorinated Polyethylene
c) Low Smoke Zero Halogen

STANDARD REFERENCES

- UL 4
- UL 1685
- IEEE 1202
- CSA 22.2 No.123

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter



TEMPERATURE RANGE

During Installation:
-5° C up to +90° C
Fixed Installation:
-20° C up to +110°C



ELECTRICAL DATA

Operating Voltage:	600 V

UL 44 Thermoset Wires

RHH, RHW, RHW-2, SIS, R90, RW90, RW75, XHH, XHHW, XHHW-2



Cable compliant with UL 44 are designed for use in industrial, commercial, and residential electrical installations. They are suitable for power and control circuits in both dry and wet locations and can be installed in conduits, trays, raceways, or directly buried, depending on the type. They offer high performance in terms of thermal, mechanical, and chemical resistance.
Single-core cables with copper/Aluminum conductors (solid or stranded), insulated with thermoset materials. Designed to withstand harsh environmental conditions, they offer high performance in electrical insulation, flame resistance, and long-term durability. Available in various configurations to meet installation needs in dry, wet, or corrosive environments.

CONSTRUCTION

Formation:
14 AWG to 1000kcmil annealed Copper conductor

Insulation:
Cross-linked Polyethylene (XLPE)

STANDARD REFERENCES

- UL 44
- CSA C22.2 No. 38
- UL 1581
- NFPA 70 (National Electrical Code)

TEMPERATURE RANGE

During Installation:
-5° C up to +90° C
Fixed Installation:
-20° C up to +90°C

CHARACTERISTICS

Min. Bending Radius
10 x cable diameter

ELECTRICAL DATA

Operating Voltage: 600/1000/2000 V

ON REQUEST

- Dry and Wet Applications
- FT4
- Sunlight Resistant
- FT1
- VW-1
- -40°C

Main Formation (AWG / Kcmil)	OVERALL DIAMETER (mm)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
14	3,5	25,5
12	3,9	37,0
10	4,6	56,8
8	6,1	93,1
6	7,1	142,0
4	8,3	217,1
2	9,8	335,3
1/0	12,4	531,8
2/0	13,6	667,8
3/0	14,9	832,7
4/0	16,4	1038,1
250	18,1	1236,8

UL 66

TFN, TFFN



UL 66 cables are designed for indoor use in industrial and commercial environments where high electrical and mechanical reliability is required. They are commonly used for internal wiring of electrical and electronic equipment, control and automation systems, electrical panels HVAC's (heating, ventilation and air conditioning) systems. Thanks to their high temperature resistance and good flexibility, UL 66 cables are an ideal solution for both fixed and mobile installation in protected environments.

CONSTRUCTION

Formation:
16 AWG to 18kcmil annealed Copper conductor

Insulation:
Polyvinyl Chloride (PVC) Insulation. Nylon Jacket over insulation

STANDARD REFERENCES

- UL 66
- CSA C22.2 No. 38
- UL 1581
- NFPA 70 (National Electrical Code)

TEMPERATURE RANGE

During Installation:
-5° C up to +90° C
Fixed Installation:
-20° C up to +90°C

CHARACTERISTICS

Min. Bending Radius
10 x cable diameter

ELECTRICAL DATA

Operating Voltage: 600 V

ON REQUEST

- Dry and Wet Applications
- VW-1
- Gasoline Resistance
- Oil Resistant

Main Formation (AWG / Kcmil)	OVERALL DIAMETER (mm)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
TFN CABLE		
18	2	10,6
18	2,2	11,3
16	2,3	15,6
16	2,5	16,3
TFFN CABLE		
18	2,2	23,4
16	2,6	14,6

UL 83 Thermoplastic

THHN, THWN, THWN-2, THW, THW-2, TW, TW75, TWN75, TWU, T90



UL 83 cables are designed for indoor use in industrial and commercial environments where high electrical and mechanical reliability is required. They are commonly used for internal wiring of electrical and electronic equipment, control and automation systems, electrical panels HVAC's (heating, ventilation and air conditioning) systems. Thanks to their high temperature resistance and good flexibility, UL 83 cables are an ideal solution for both fixed and mobile installation in protected environments.

CONSTRUCTION

Formation:
14 AWG to 1000kcmil annealed Copper conductor

Insulation:
Polyvinyl Chloride (PVC) Insulation. Nylon Jacket over insulation

STANDARD REFERENCES

- UL 83
- UL 1581
- CSA C22.2 No. 75
- NFPA 70 (National Electrical Code)

TEMPERATURE RANGE

During Installation:
-5° C up to +90° C
Fixed Installation:
-20° C up to +90°C Dry / 75°C Wet
Insulation Operation:
0° C up to +90°C

CHARACTERISTICS

Min. Bending Radius
10 x cable diameter

ELECTRICAL DATA

Operating Voltage: 600 V

ON REQUEST

- Dry and Wet Applications
- VW-1
- Sunlight Resistant
- Oil Resistant
- FT1
- Cable Tray
- Gasoline Resistant
- Petroleum Resistant

Main Formation (AWG / Kcmil)	OVERALL DIAMETER (mm)	MAX RESISTANCE CONDUCTOR AT 20ºC (Ohm/km)
14	3,5	28,9
12	3,9	40,9
10	4,5	61,6
8	6,1	102,2
6	7,9	167,2
4	9,1	246,2
2	10,6	370,2
1/0	13,7	596,2
2/0	14,9	738,6
3/0	16,2	910,4
4/0	17,6	1123,6
250	19,7	1350,0

ramcro

special cables





NF M 87-202

NF M87-202 EGSF

Collectively Screened, Unarmoured



These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Solid or Stranded to UTE C 32-014
Insulation:
Polyvinyl Chloride - PVC to NF C 32-020
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Polyvinyl chloride - PVC, Oil Resistant acc. to NF C 32-020
Colour Outher Sheath:
Blue

STANDARD REFERENCES

- NF M 87-202
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

Oil Resistant, Hydrocarbon Resistant

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

CABLE PRINTING

1 IP 15 EGSF NF M87-202 - RAMCRO 2019 + BATCH + METER MARKING

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

IDENTIFICATION OF CORES

Pair:
Triad:
Quad:

NF M87-202 EGSF

Collectively Screened, Unarmoured

These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SAM0108HDPAK-EGSF	1x2x0,50	4,8	32	37.5
SAM3708HDPAX-EGSF	1x3x0,50	5,0	40	37.5
SAM0208HDPAK-EGSF	2x2x0,50	6,4	53	37.5
SAM3808HDPAX-EGSF	2x3x0,50	7,4	71	37.5
SAM0308HDPAK-EGSF	3x2x0,50	6,8	69	37.5
SAM3108HDPAX-EGSF	3x3x0,50	7,8	94	37.5
SAM0708HDPAK-EGSF	7x2x0,50	8,7	132	37.5
SAM7108HDPAX-EGSF	7x3x0,50	10,2	188	37.5
SAM1208HDPAK-EGSF	12x2x0,50	11,4	214	37.5
SAM3308HDPAX-EGSF	12x3x0,50	13,5	307	37.5
SAM1908HDPAK-EGSF	19x2x0,50	13,3	320	37.5
SAM7408HDPAX-EGSF	19x3x0,50	16,3	479	37.5
SAM2708HDPAK-EGSF	27x2x0,50	16,4	458	37.5
SAM8108HDPAX-EGSF	27x3x0,50	19,9	682	37.5
MAS0108HDPAK-EGSF	1x2x0,88	5,7	46	22.3
MAS3708HDPAX-EGSF	1x3x0,88	6,0	59	22.3
MAS0208HDPAK-EGSF	2x2x0,88	7,8	78	22.3
MAS3808HDPAX-EGSF	2x3x0,88	9,1	107	22.3
MAS0308HDPAK-EGSF	3x2x0,88	8,3	103	22.3
MAS3108HDPAX-EGSF	3x3x0,88	9,7	144	22.3
MAS0708HDPAK-EGSF	7x2x0,88	10,8	208	22.3
MAS7108HDPAX-EGSF	7x3x0,88	12,8	298	22.3
MAS1208HDPAK-EGSF	12x2x0,88	14,7	354	22.3
MAS3308HDPAX-EGSF	12x3x0,88	17,4	509	22.3
MAS1908HDPAK-EGSF	19x2x0,88	17,2	532	22.3
MAS7408HDPAX-EGSF	19x3x0,88	20,9	792	22.3
MAS2708HDPAK-EGSF	27x2x0,88	21,1	758	22.3
MAS8108HDPAX-EGSF	27x3x0,88	25,6	1124	22.3
MAS0115HDPAK-EGSF	1x2x1,50	6,4	62	12.6
MAS3715HDPAX-EGSF	1x3x1,50	6,7	82	12.6
MAS0215HDPAK-EGSF	2x2x1,50	8,8	108	12.6
MAS3815HDPAX-EGSF	2x3x1,50	10,4	152	12.6
MAS0315HDPAK-EGSF	3x2x1,50	9,4	148	12.6
MAS3115HDPAX-EGSF	3x3x1,50	11,0	210	12.6
MAS0715HDPAK-EGSF	7x2x1,50	12,4	307	12.6
MAS7115HDPAX-EGSF	7x3x1,50	15,1	460	12.6
MAS1215HDPAK-EGSF	12x2x1,50	16,9	524	12.6
MAS3315HDPAX-EGSF	12x3x1,50	20,4	781	12.6
MAS1915HDPAK-EGSF	19x2x1,50	20,2	816	12.6
MAS7415HDPAX-EGSF	19x3x1,50	24,5	1212	12.6
MAS2715HDPAK-EGSF	27x2x1,50	24,7	1159	12.6
MAS8115HDPAX-EGSF	27x3x1,50	29,4	1689	12.6

NF M87-202 EISF

Individual Screened, Unarmoured

RAMCRO - NF M 87-202 EISF



These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Solid or Stranded to UTE C 32-014
Insulation:
Polyvinyl Chloride - PVC to NF C 32-020
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Individual Sheath:
Polyvinyl Chloride - PVC to NF C 32-020
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Polyvinyl chloride - PVC, Oil Resistant acc. to NF C 32-020
Colour Outher Sheath:
Blue

STANDARD REFERENCES

- NF M 87-202
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

Oil Resistant, Hydrocarbon Resistant

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

CABLE PRINTING

1 IP 15 EISF NF M87-202 - RAMCRO 2019 + BATCH + METER MARKING

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

IDENTIFICATION OF CORES

Pair:
Triad:
Quad:

NF M87-202 EISF

Individual Screened, Unarmoured

These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SAM0108HDPAK-EISF	1x2x0,50	5,7	47	37.5
SAM3708HDPAX-EISF	1x3x0,50	6,0	55	37.5
SAM0208HDPAK-EISF	2x2x0,50	9,7	87	37.5
SAM3808HDPAX-EISF	2x3x0,50	10,2	104	37.5
SAM0308HDPAK-EISF	3x2x0,50	10,3	114	37.5
SAM3108HDPAX-EISF	3x3x0,50	10,8	139	37.5
SAM0708HDPAK-EISF	7x2x0,50	14,1	240	37.5
SAM7108HDPAX-EISF	7x3x0,50	14,8	295	37.5
SAM1208HDPAK-EISF	12x2x0,50	19,1	404	37.5
SAM3308HDPAX-EISF	12x3x0,50	20,0	499	37.5
SAM1908HDPAK-EISF	19x2x0,50	22,8	618	37.5
SAM7408HDPAX-EISF	19x3x0,50	24,0	767	37.5
SAM2708HDPAK-EISF	27x2x0,50	27,4	846	37.5
SAM8108HDPAX-EISF	27x3x0,50	28,8	1057	37.5
MAS0108HDPAK-EISF	1x2x0,88	6,6	63	22.3
MAS3708HDPAX-EISF	1x3x0,88	6,9	76	22.3
MAS0208HDPAK-EISF	2x2x0,88	11,5	119	22.3
MAS3808HDPAX-EISF	2x3x0,88	12,1	146	22.3
MAS0308HDPAK-EISF	3x2x0,88	12,3	158	22.3
MAS3108HDPAX-EISF	3x3x0,88	12,9	198	22.3
MAS0708HDPAK-EISF	7x2x0,88	16,8	337	22.3
MAS7108HDPAX-EISF	7x3x0,88	17,7	428	22.3
MAS1208HDPAK-EISF	12x2x0,88	23,3	591	22.3
MAS3308HDPAX-EISF	12x3x0,88	24,5	749	22.3
MAS1908HDPAK-EISF	19x2x0,88	27,4	875	22.3
MAS7408HDPAX-EISF	19x3x0,88	28,9	1121	22.3
MAS2708HDPAK-EISF	27x2x0,88	33	1207	22.3
MAS8108HDPAX-EISF	27x3x0,88	34,9	1553	22.3
MAS0115HDPAK-EISF	1x2x1,50	7,3	80	12.6
MAS3715HDPAX-EISF	1x3x1,50	7,7	101	12.6
MAS0215HDPAK-EISF	2x2x1,50	12,9	153	12.6
MAS3815HDPAX-EISF	2x3x1,50	13,6	196	12.6
MAS0315HDPAK-EISF	3x2x1,50	14,1	221	12.6
MAS3115HDPAX-EISF	3x3x1,50	14,9	284	12.6
MAS0715HDPAK-EISF	7x2x1,50	19,2	467	12.6
MAS7115HDPAX-EISF	7x3x1,50	20,3	612	12.6
MAS1215HDPAK-EISF	12x2x1,50	26	785	12.6
MAS3315HDPAX-EISF	12x3x1,50	27,5	1033	12.6
MAS1915HDPAK-EISF	19x2x1,50	30,7	1175	12.6
MAS7415HDPAX-EISF	19x3x1,50	32,5	1563	12.6
MAS2715HDPAK-EISF	27x2x1,50	37,1	1628	12.6
MAS8115HDPAX-EISF	27x3x1,50	39,3	2177	12.6

NF M87-202 EGFA

Collectively Screened, Armoured



These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Solid or Stranded acc. to UTE C 32-014
Insulation:
Polyvinyl Chloride - PVC to NF C 32-020
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride - PVC acc. to NF C 32-020
Armour:
Double Steel Tape Armour
Outer Sheath:
Polyvinyl chloride - PVC, Oil Resistant acc. to NF C 32-020
Colour Outher Sheath:
Blue

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

STANDARD REFERENCES

- NF M 87-202
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

Oil Resistant, Hydrocarbon Resistant

CABLE PRINTING

1 IP 15 EGFA NF M87-202 - RAMCRO 2019 + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair:
Triad:
Quad:

NF M87-202 EGFA

Collectively Screened, Armoured

These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SAM0108TDPAK-EGFA	1x2x0,50	8,0	128	37.5
SAM3708TDPAX-EGFA	1x3x0,50	8,2	138	37.5
SAM0208TDPAK-EGFA	2x2x0,50	9,6	165	37.5
SAM3808TDPAX-EGFA	2x3x0,50	10,6	194	37.5
SAM0308TDPAK-EGFA	3x2x0,50	9,9	184	37.5
SAM3108TDPAX-EGFA	3x3x0,50	11,0	221	37.5
SAM0708TDPAK-EGFA	7x2x0,50	11,9	280	37.5
SAM7108TDPAX-EGFA	7x3x0,50	13,4	352	37.5
SAM1208TDPAK-EGFA	12x2x0,50	14,6	390	37.5
SAM3308TDPAX-EGFA	12x3x0,50	17,1	523	37.5
SAM1908TDPAK-EGFA	19x2x0,50	16,9	534	37.5
SAM7408TDPAX-EGFA	19x3x0,50	19,8	731	37.5
SAM2708TDPAK-EGFA	27x2x0,50	20,0	713	37.5
SAM8108TDPAX-EGFA	27x3x0,50	23,5	983	37.5
MAS0108TDPAK-EGFA	1x2x0,88	8,9	150	22.3
MAS3708TDPAX-EGFA	1x3x0,88	9,2	166	22.3
MAS0208TDPAK-EGFA	2x2x0,88	11,0	204	22.3
MAS3808TDPAX-EGFA	2x3x0,88	12,3	258	22.3
MAS0308TDPAK-EGFA	3x2x0,88	11,5	246	22.3
MAS3108TDPAX-EGFA	3x3x0,88	12,9	302	22.3
MAS0708TDPAK-EGFA	7x2x0,88	14	378	22.3
MAS7108TDPAX-EGFA	7x3x0,88	16,4	506	22.3
MAS1208TDPAK-EGFA	12x2x0,88	18,3	587	22.3
MAS3308TDPAX-EGFA	12x3x0,88	21,0	777	22.3
MAS1908TDPAK-EGFA	19x2x0,88	20,8	797	22.3
MAS7408TDPAX-EGFA	19x3x0,88	24,5	1114	22.3
MAS2708TDPAK-EGFA	27x2x0,88	24,7	1082	22.3
MAS8108TDPAX-EGFA	27x3x0,88	29,5	1537	22.3
MAS0115TDPAK-EGFA	1x2x1,50	9,5	173	12.6
MAS3715TDPAX-EGFA	1x3x1,50	9,9	197	12.6
MAS0215TDPAK-EGFA	2x2x1,50	12	258	12.6
MAS3815TDPAX-EGFA	2x3x1,50	13,5	317	12.6
MAS0315TDPAK-EGFA	3x2x1,50	12,6	302	12.6
MAS3115TDPAX-EGFA	3x3x1,50	14,2	382	12.6
MAS0715TDPAK-EGFA	7x2x1,50	15,9	510	12.6
MAS7115TDPAX-EGFA	7x3x1,50	18,6	697	12.6
MAS1215TDPAK-EGFA	12x2x1,50	20,4	784	12.6
MAS3315TDPAX-EGFA	12x3x1,50	24,0	1097	12.6
MAS1915TDPAK-EGFA	19x2x1,50	23,8	1129	12.6
MAS7415TDPAX-EGFA	19x3x1,50	28,4	1609	12.6
MAS2715TDPAK-EGFA	27x2x1,50	28,7	1560	12.6
MAS8115TDPAX-EGFA	27x3x1,50	33,4	2164	12.6

NF M87-202 EIFA

Collectively Screened, Armoured



These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Solid or Stranded acc. to UTE C 32-014
Insulation:
Polyvinyl Chloride - PVC to NF C 32-020
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Individual Sheath:
Polyvinyl Chloride - PVC to NF C 32-020
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride - PVC acc. to NF C 32-020
Armour:
Double Steel Tape Armour
Outer Sheath:
Polyvinyl chloride - PVC, Oil Resistant acc. to NF C 32-020
Colour Outher Sheath:
Blue

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

STANDARD REFERENCES

- NF M 87-202
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

Oil Resistant, Hydrocarbon Resistant

CABLE PRINTING

1 IP 15 EGFA NF M87-202 - RAMCRO 2019 + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair:
Triad:
Quad:

NF M87-202 EIFA

Collectively Screened, Armoured

These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SAI0108TDPAK-EIFA	1x2x0,50	8,9	153	37.5
SAI3708TDPAX-EIFA	1x3x0,50	9,2	164	37.5
SAI0208TDPAK-EIFA	2x2x0,50	12,9	247	37.5
SAI3808TDPAX-EIFA	2x3x0,50	13,4	270	37.5
SAI0308TDPAK-EIFA	3x2x0,50	13,5	282	37.5
SAI3108TDPAX-EIFA	3x3x0,50	14,0	312	37.5
SAI0708TDPAK-EIFA	7x2x0,50	17,7	470	37.5
SAI7108TDPAX-EIFA	7x3x0,50	18,4	535	37.5
SAI1208TDPAK-EIFA	12x2x0,50	22,7	705	37.5
SAI3308TDPAX-EIFA	12x3x0,50	23,6	820	37.5
SAI1908TDPAK-EIFA	19x2x0,50	26,4	982	37.5
SAI7408TDPAX-EIFA	19x3x0,50	27,6	1147	37.5
SAI2708TDPAK-EIFA	27x2x0,50	31,4	1307	37.5
SAI8108TDPAX-EIFA	27x3x0,50	32,8	1546	37.5
MAS0108TDPAK-EIFA	1x2x0,88	9,8	179	22.3
MAS3708TDPAX-EIFA	1x3x0,88	10,1	195	22.3
MAS0208TDPAK-EIFA	2x2x0,88	14,7	299	22.3
MAS3808TDPAX-EIFA	2x3x0,88	15,3	333	22.3
MAS0308TDPAK-EIFA	3x2x0,88	15,9	363	22.3
MAS3108TDPAX-EIFA	3x3x0,88	16,5	411	22.3
MAS0708TDPAK-EIFA	7x2x0,88	20,4	603	22.3
MAS7108TDPAX-EIFA	7x3x0,88	21,3	707	22.3
MAS1208TDPAK-EIFA	12x2x0,88	26,9	958	22.3
MAS3308TDPAX-EIFA	12x3x0,88	28,5	1160	22.3
MAS1908TDPAK-EIFA	19x2x0,88	31,4	1333	22.3
MAS7408TDPAX-EIFA	19x3x0,88	32,9	1608	22.3
MAS2708TDPAK-EIFA	27x2x0,88	37,0	1760	22.3
MAS8108TDPAX-EIFA	27x3x0,88	38,9	2135	22.3
MAS0115TDPAK-EIFA	1x2x1,50	10,5	203	12.6
MAS3715TDPAX-EIFA	1x3x1,50	10,9	228	12.6
MAS0215TDPAK-EIFA	2x2x1,50	16,5	364	12.6
MAS3815TDPAX-EIFA	2x3x1,50	17,2	416	12.6
MAS0315TDPAK-EIFA	3x2x1,50	17,7	450	12.6
MAS3115TDPAX-EIFA	3x3x1,50	18,5	523	12.6
MAS0715TDPAK-EIFA	7x2x1,50	22,8	768	12.6
MAS7115TDPAX-EIFA	7x3x1,50	23,9	934	12.6
MAS1215TDPAK-EIFA	12x2x1,50	30	1219	12.6
MAS3315TDPAX-EIFA	12x3x1,50	31,6	1489	12.6
MAS1915TDPAK-EIFA	19x2x1,50	34,7	1690	12.6
MAS7415TDPAX-EIFA	19x3x1,50	36,5	2104	12.6
MAS2715TDPAK-EIFA	27x2x1,50	41,1	2245	12.6
MAS8115TDPAX-EIFA	27x3x1,50	43,3	2827	12.6

NF M87-202 EGPF

Instrumentation Cable 300/500V



These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Solid or Stranded acc. to UTE C 32-014
Insulation:
Polyvinyl Chloride - PVC to NF C 32-020
Wrapping:
At least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride - PVC acc. to NF C 32-020
Chemical Protection:
Lead Cover
Armour:
Double Steel Tape Armour
Outer Sheath:
Polyvinyl chloride - PVC, Oil Resistant acc. to NF C 32-020
Colour Outher Sheath:
Blue

STANDARD REFERENCES

- NF M 87-202
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

Oil Resistant, Hydrocarbon Resistant

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

CABLE PRINTING

1 IP 15 EGFA NF M87-202 - RAMCRO 2019 + BATCH + METER MARKING

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

IDENTIFICATION OF CORES

Pair:
Triad:
Quad:

Instrumentation Cable 300/500V

These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SAM0108TDPAK-EGPF	1x2x0,50	12,8	493	37.5
SAM3708TDPAX-EGPF	1x3x0,50	13,0	513	37.5
SAM0208TDPAK-EGPF	2x2x0,50	14,4	601	37.5
SAM3808TDPAX-EGPF	2x3x0,50	15,4	674	37.5
SAM0308TDPAK-EGPF	3x2x0,50	14,7	637	37.5
SAM3108TDPAX-EGPF	3x3x0,50	16,2	736	37.5
SAM0708TDPAK-EGPF	7x2x0,50	17,1	823	37.5
SAM7108TDPAX-EGPF	7x3x0,50	19,0	984	37.5
SAM1208TDPAK-EGPF	12x2x0,50	20,2	1076	37.5
SAM3308TDPAX-EGPF	12x3x0,50	22,3	1289	37.5
SAM1908TDPAK-EGPF	19x2x0,50	22,1	1294	37.5
SAM7408TDPAX-EGPF	19x3x0,50	25,2	1701	37.5
SAM2708TDPAK-EGPF	27x2x0,50	25,4	1691	37.5
SAM8108TDPAX-EGPF	27x3x0,50	29,5	2244	37.5
MAS0108TDPAK-EGPF	1x2x0,88	13,7	556	22.3
MAS3708TDPAX-EGPF	1x3x0,88	14,0	585	22.3
MAS0208TDPAK-EGPF	2x2x0,88	16,2	718	22.3
MAS3808TDPAX-EGPF	2x3x0,88	17,5	820	22.3
MAS0308TDPAK-EGPF	3x2x0,88	16,7	769	22.3
MAS3108TDPAX-EGPF	3x3x0,88	18,1	889	22.3
MAS0708TDPAK-EGPF	7x2x0,88	19,6	1038	22.3
MAS7108TDPAX-EGPF	7x3x0,88	21,6	1240	22.3
MAS1208TDPAK-EGPF	12x2x0,88	23,5	1408	22.3
MAS3308TDPAX-EGPF	12x3x0,88	26,4	1804	22.3
MAS1908TDPAK-EGPF	19x2x0,88	26,2	1815	22.3
MAS7408TDPAX-EGPF	19x3x0,88	30,5	2420	22.3
MAS2708TDPAK-EGPF	27x2x0,88	30,7	2400	22.3
MAS8108TDPAX-EGPF	27x3x0,88	35,9	3322	22.3
MAS0115TDPAK-EGPF	1x2x1,50	14,3	608	12.6
MAS3715TDPAX-EGPF	1x3x1,50	14,7	648	12.6
MAS0215TDPAK-EGPF	2x2x1,50	17,2	806	12.6
MAS3815TDPAX-EGPF	2x3x1,50	19,1	956	12.6
MAS0315TDPAK-EGPF	3x2x1,50	17,8	876	12.6
MAS3115TDPAX-EGPF	3x3x1,50	19,8	1052	12.6
MAS0715TDPAK-EGPF	7x2x1,50	21,1	1226	12.6
MAS7115TDPAX-EGPF	7x3x1,50	24,0	1610	12.6
MAS1215TDPAK-EGPF	12x2x1,50	25,8	1784	12.6
MAS3315TDPAX-EGPF	12x3x1,50	30,0	2378	12.6
MAS1915TDPAK-EGPF	19x2x1,50	29,8	2399	12.6
MAS7415TDPAX-EGPF	19x3x1,50	34,6	3224	12.6
MAS2715TDPAK-EGPF	27x2x1,50	34,9	3188	12.6
MAS8115TDPAX-EGPF	27x3x1,50	40,0	4298	12.6

NF M87-202 EIPF

Instrumentation Cable 300/500V



These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Solid or Stranded acc. to UTE C 32-014
Insulation:
Polyvinyl Chloride - PVC to NF C 32-020
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Individual Sheath:
Polyvinyl Chloride - PVC to NF C 32-020
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Polyvinyl chloride - PVC acc. to NF C 32-020
Chemical Protection:
Lead Cover
Armour:
Double Steel Tape Armour
Outer Sheath:
Polyvinyl chloride - PVC, Oil Resistant acc. to NF C 32-020
Colour Outher Sheath:
Blue

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 25 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

STANDARD REFERENCES

- NF M 87-202
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

Oil Resistant, Hydrocarbon Resistant

CABLE PRINTING

1 IP 15 EGFA NF M87-202 - RAMCRO 2019 + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair:
Triad:
Quad:

Instrumentation Cable 300/500V

These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SAM0108TDPAK-EGPF	1x2x0,50	13,7	561	37.5
SAM3708TDPAX-EGPF	1x3x0,50	14,0	583	37.5
SAM0208TDPAK-EGPF	2x2x0,50	18,1	837	37.5
SAM3808TDPAX-EGPF	2x3x0,50	19,0	901	37.5
SAM0308TDPAK-EGPF	3x2x0,50	19,1	921	37.5
SAM3108TDPAX-EGPF	3x3x0,50	19,6	973	37.5
SAM0708TDPAK-EGPF	7x2x0,50	22,9	1270	37.5
SAM7108TDPAX-EGPF	7x3x0,50	23,6	1366	37.5
SAM1208TDPAK-EGPF	12x2x0,50	28,7	1934	37.5
SAM3308TDPAX-EGPF	12x3x0,50	29,6	2093	37.5
SAM1908TDPAK-EGPF	19x2x0,50	33,0	2549	37.5
SAM7408TDPAX-EGPF	19x3x0,50	34,2	2781	37.5
SAM2708TDPAK-EGPF	27x2x0,50	37,8	3232	37.5
SAM8108TDPAX-EGPF	27x3x0,50	39,4	3672	37.5
MAS0108TDPAK-EGPF	1x2x0,88	14,6	627	22.3
MAS3708TDPAX-EGPF	1x3x0,88	14,9	657	22.3
MAS0208TDPAK-EGPF	2x2x0,88	20,3	994	22.3
MAS3808TDPAX-EGPF	2x3x0,88	20,9	1056	22.3
MAS0308TDPAK-EGPF	3x2x0,88	21,1	1078	22.3
MAS3108TDPAX-EGPF	3x3x0,88	21,7	1155	22.3
MAS0708TDPAK-EGPF	7x2x0,88	25,8	1610	22.3
MAS7108TDPAX-EGPF	7x3x0,88	26,7	1757	22.3
MAS1208TDPAK-EGPF	12x2x0,88	33,5	2548	22.3
MAS3308TDPAX-EGPF	12x3x0,88	34,7	2794	22.3
MAS1908TDPAK-EGPF	19x2x0,88	37,8	3253	22.3
MAS7408TDPAX-EGPF	19x3x0,88	39,5	3733	22.3
MAS2708TDPAK-EGPF	27x2x0,88	44,2	4345	22.3
MAS8108TDPAX-EGPF	27x3x0,88	46,1	4847	22.3
MAS0115TDPAK-EGPF	1x2x1,50	15,3	681	12.6
MAS3715TDPAX-EGPF	1x3x1,50	16,1	737	12.6
MAS0215TDPAK-EGPF	2x2x1,50	21,7	1105	12.6
MAS3815TDPAX-EGPF	2x3x1,50	22,4	1189	12.6
MAS0315TDPAK-EGPF	3x2x1,50	22,9	1247	12.6
MAS3115TDPAX-EGPF	3x3x1,50	23,7	1363	12.6
MAS0715TDPAK-EGPF	7x2x1,50	28,8	2001	12.6
MAS7115TDPAX-EGPF	7x3x1,50	29,9	2219	12.6
MAS1215TDPAK-EGPF	12x2x1,50	36,4	3050	12.6
MAS3315TDPAX-EGPF	12x3x1,50	37,9	3412	12.6
MAS1915TDPAK-EGPF	19x2x1,50	41,3	3932	12.6
MAS7415TDPAX-EGPF	19x3x1,50	43,7	4648	12.6
MAS2715TDPAK-EGPF	27x2x1,50	48,5	5262	12.6
MAS8115TDPAX-EGPF	27x3x1,50	50,9	6173	12.6

ramcro

special cables





NF M87-202 CR1-C1

NF M87-202 EGSF - CR1-C1

Collectively Screened, Unarmoured



These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Solid or Stranded to UTE C 32-014
Insulation:
Special Mix Silicon Rubber - SIL
Wrapping:
At least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Orange

STANDARD REFERENCES

- NF M 87-202
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

Oil Resistant, Hydrocarbon Resistant

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

CABLE PRINTING

1 IP 15 EGSF NF M87-202 CR1-C1 - RAMCRO 2019 + BATCH + METER MARKING

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

IDENTIFICATION OF CORES

Pair:
Triad:
Quad:

NF M87-202 EGSF - CR1-C1

Collectively Screened, Unarmoured

These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SAM0108TUESK-EGSF	1x2x0,50	6,1	46	37.5
SAM3708TUESX-EGSF	1x3x0,50	6,5	59	37.5
SAM0208TUESK-EGSF	2x2x0,50	8,3	78	37.5
SAM3808TUESX-EGSF	2x3x0,50	10,0	107	37.5
SAM0308TUESK-EGSF	3x2x0,50	8,8	102	37.5
SAM3108TUESX-EGSF	3x3x0,50	10,6	142	37.5
SAM0708TUESK-EGSF	7x2x0,50	11,6	201	37.5
SAM7108TUESX-EGSF	7x3x0,50	14,5	303	37.5
SAM1208TUESK-EGSF	12x2x0,50	15,8	345	37.5
SAM3308TUESX-EGSF	12x3x0,50	19,6	513	37.5
SAM1908TUESK-EGSF	19x2x0,50	18,9	531	37.5
SAM7408TUESX-EGSF	19x3x0,50	23,4	787	37.5
SAM2708TUESK-EGSF	27x2x0,50	23,1	752	37.5
SAM8108TUESX-EGSF	27x3x0,50	28,2	1084	37.5
MAS0108TUESK-EGSF	1x2x0,88	6,9	61	22.3
MAS3708TUESX-EGSF	1x3x0,88	7,3	78	22.3
MAS0208TUESK-EGSF	2x2x0,88	9,5	103	22.3
MAS3808TUESX-EGSF	2x3x0,88	11,4	143	22.3
MAS0308TUESK-EGSF	3x2x0,88	10	138	22.3
MAS3108TUESX-EGSF	3x3x0,88	12,1	195	22.3
MAS0708TUESK-EGSF	7x2x0,88	13,3	280	22.3
MAS7108TUESX-EGSF	7x3x0,88	16,6	421	22.3
MAS1208TUESK-EGSF	12x2x0,88	18,5	497	22.3
MAS3308TUESX-EGSF	12x3x0,88	22,9	738	22.3
MAS1908TUESK-EGSF	19x2x0,88	21,8	742	22.3
MAS7408TUESX-EGSF	19x3x0,88	26,9	1104	22.3
MAS2708TUESK-EGSF	27x2x0,88	26,6	1054	22.3
MAS8108TUESX-EGSF	27x3x0,88	32,5	1530	22.3
MAS0115TUESK-EGSF	1x2x1,50	6,4	50	12.6
MAS3715TUESX-EGSF	1x3x1,50	6,7	63	12.6
MAS0215TUESK-EGSF	2x2x1,50	8,7	83	12.6
MAS3815TUESX-EGSF	2x3x1,50	10,4	114	12.6
MAS0315TUESK-EGSF	3x2x1,50	9,2	109	12.6
MAS3115TUESX-EGSF	3x3x1,50	11,1	152	12.6
MAS0715TUESK-EGSF	7x2x1,50	12,1	216	12.6
MAS7115TUESX-EGSF	7x3x1,50	15,1	324	12.6
MAS1215TUESK-EGSF	12x2x1,50	16,5	369	12.6
MAS3315TUESX-EGSF	12x3x1,50	20,5	550	12.6
MAS1915TUESK-EGSF	19x2x1,50	19,8	569	12.6
MAS7415TUESX-EGSF	19x3x1,50	24,5	845	12.6
MAS2715TUESK-EGSF	27x2x1,50	24,2	807	12.6
MAS8115TUESX-EGSF	27x3x1,50	29,6	1165	

NF M87-202 EISF - CR1-C1

Individual Screened, Unarmoured



These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Solid or Stranded to UTE C 32-014
Insulation:
Special Mix Silicon Rubber - SIL
Individual Sheath:
Polyvinyl Chloride - PVC to NF C 32-020
Wrapping:
At least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Orange

STANDARD REFERENCES

- NF M 87-202
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

Oil Resistant, Hydrocarbon Resistant

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

CABLE PRINTING

1 IP 15 EISF NF M87-202 CR1-C1 - RAMCRO 2019 + BATCH + METER MARKING

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

IDENTIFICATION OF CORES

Pair:
Triad:
Quad:

NF M87-202 EISF - CR1-C1

Individual Screened, Unarmoured

These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SAM0108TUESK-EISF	1x2x0,50	7,1	65	37.5
SAM3708TUESX-EISF	1x3x0,50	7,4	78	37.5
SAM0208TUESK-EISF	2x2x0,50	12,4	124	37.5
SAM3808TUESX-EISF	2x3x0,50	13,1	150	37.5
SAM0308TUESK-EISF	3x2x0,50	13,2	164	37.5
SAM3108TUESX-EISF	3x3x0,50	14,3	216	37.5
SAM0708TUESK-EISF	7x2x0,50	18,5	364	37.5
SAM7108TUESX-EISF	7x3x0,50	19,6	451	37.5
SAM1208TUESK-EISF	12x2x0,50	25,1	610	37.5
SAM3308TUESX-EISF	12x3x0,50	26,5	760	37.5
SAM1908TUESK-EISF	19x2x0,50	29,6	896	37.5
SAM7408TUESX-EISF	19x3x0,50	31,3	1129	37.5
SAM2708TUESK-EISF	27x2x0,50	35,8	1230	37.5
SAM8108TUESX-EISF	27x3x0,50	37,9	1559	37.5
MAS0108TUESK-EISF	1x2x0,88	7,8	81	22.3
MAS3708TUESX-EISF	1x3x0,88	8,2	100	22.3
MAS0208TUESK-EISF	2x2x0,88	14,3	169	22.3
MAS3808TUESX-EISF	2x3x0,88	15,1	207	22.3
MAS0308TUESK-EISF	3x2x0,88	15,2	222	22.3
MAS3108TUESX-EISF	3x3x0,88	16,1	278	22.3
MAS0708TUESK-EISF	7x2x0,88	20,8	464	22.3
MAS7108TUESX-EISF	7x3x0,88	22,0	590	22.3
MAS1208TUESK-EISF	12x2x0,88	28,3	781	22.3
MAS3308TUESX-EISF	12x3x0,88	29,9	995	22.3
MAS1908TUESK-EISF	19x2x0,88	33,4	1158	22.3
MAS7408TUESX-EISF	19x3x0,88	35,3	1492	22.3
MAS2708TUESK-EISF	27x2x0,88	40,4	1597	22.3
MAS8108TUESX-EISF	27x3x0,88	42,8	2070	22.3
MAS0115TUESK-EISF	1x2x1,50	8,6	101	12.6
MAS3715TUESX-EISF	1x3x1,50	9,0	128	12.6
MAS0215TUESK-EISF	2x2x1,50	15,8	211	12.6
MAS3815TUESX-EISF	2x3x1,50	16,7	266	12.6
MAS0315TUESK-EISF	3x2x1,50	16,8	281	12.6
MAS3115TUESX-EISF	3x3x1,50	17,8	362	12.6
MAS0715TUESK-EISF	7x2x1,50	23,4	619	12.6
MAS7115TUESX-EISF	7x3x1,50	24,8	806	12.6
MAS1215TUESK-EISF	12x2x1,50	31,4	1005	12.6
MAS3315TUESX-EISF	12x3x1,50	33,3	1322	12.6
MAS1915TUESK-EISF	19x2x1,50	37,1	1504	12.6
MAS7415TUESX-EISF	19x3x1,50	39,4	2000	12.6
MAS2715TUESK-EISF	27x2x1,50	45	2084	12.6
MAS8115TUESX-EISF	27x3x1,50	47,8	2786	

NF M87-202 EGFA - CR1-C1

Collectively Screened, Armoured

RAMCRO - NF M 87-202 CR1-C1 EGFA



These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Solid or Stranded acc. to UTE C 32-014
Insulation:
Special Mix Silicon Rubber - SIL
Wrapping:
At least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Armour:
Double Steel Tape Armour
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Orange

STANDARD REFERENCES

- NF M 87-202
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

Oil Resistant, Hydrocarbon Resistant

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

CABLE PRINTING

1 IP 15 EGFA NF M87-202 - RAMCRO 2019 + BATCH + METER MARKING

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

IDENTIFICATION OF CORES

Pair:
Triad:
Quad:

NF M87-202 EGFA - CR1-C1

Collectively Screened, Armoured

These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SAM0108TUESK-EGFA	1x2x0,50	9,3	158	37.5
SAM3708TUESX-EGFA	1x3x0,50	9,7	174	37.5
SAM0208TUESK-EGFA	2x2x0,50	11,5	224	37.5
SAM3808TUESX-EGFA	2x3x0,50	13,1	270	37.5
SAM0308TUESK-EGFA	3x2x0,50	12,0	253	37.5
SAM3108TUESX-EGFA	3x3x0,50	13,8	313	37.5
SAM0708TUESK-EGFA	7x2x0,50	14,8	382	37.5
SAM7108TUESX-EGFA	7x3x0,50	18,0	535	37.5
SAM1208TUESK-EGFA	12x2x0,50	19,4	594	37.5
SAM3308TUESX-EGFA	12x3x0,50	23,2	813	37.5
SAM1908TUESK-EGFA	19x2x0,50	22,5	822	37.5
SAM7408TUESX-EGFA	19x3x0,50	27,0	1146	37.5
SAM2708TUESK-EGFA	27x2x0,50	26,7	1107	37.5
SAM8108TUESX-EGFA	27x3x0,50	32,1	1544	37.5
MAS0108TUESK-EGFA	1x2x0,88	10,1	180	22.3
MAS3708TUESX-EGFA	1x3x0,88	10,5	201	22.3
MAS0208TUESK-EGFA	2x2x0,88	12,6	261	22.3
MAS3808TUESX-EGFA	2x3x0,88	14,5	322	22.3
MAS0308TUESK-EGFA	3x2x0,88	13,2	302	22.3
MAS3108TUESX-EGFA	3x3x0,88	15,3	382	22.3
MAS0708TUESK-EGFA	7x2x0,88	16,9	497	22.3
MAS7108TUESX-EGFA	7x3x0,88	20,1	680	22.3
MAS1208TUESK-EGFA	12x2x0,88	22,1	783	22.3
MAS3308TUESX-EGFA	12x3x0,88	26,5	1090	22.3
MAS1908TUESK-EGFA	19x2x0,88	25,3	1078	22.3
MAS7408TUESX-EGFA	19x3x0,88	30,9	1540	22.3
MAS2708TUESK-EGFA	27x2x0,88	30,6	1484	22.3
MAS8108TUESX-EGFA	27x3x0,88	36,5	2051	22.3
MAS0115TUESK-EGFA	1x2x1,50	10,8	206	12.6
MAS3715TUESX-EGFA	1x3x1,50	11,3	248	12.6
MAS0215TUESK-EGFA	2x2x1,50	13,8	309	12.6
MAS3815TUESX-EGFA	2x3x1,50	16,3	406	12.6
MAS0315TUESK-EGFA	3x2x1,50	14,4	366	12.6
MAS3115TUESX-EGFA	3x3x1,50	17,6	511	12.6
MAS0715TUESK-EGFA	7x2x1,50	18,9	654	12.6
MAS7115TUESX-EGFA	7x3x1,50	22,6	904	12.6
MAS1215TUESK-EGFA	12x2x1,50	24,4	1020	12.6
MAS3315TUESX-EGFA	12x3x1,50	29,8	1454	12.6
MAS1915TUESK-EGFA	19x2x1,50	28,9	1483	12.6
MAS7415TUESX-EGFA	19x3x1,50	34,4	2058	12.6
MAS2715TUESK-EGFA	27x2x1,50	34	1978	12.6
MAS8115TUESX-EGFA	27x3x1,50	40,8	2765	

NF M87-202 EIFA - CR1-C1

Collectively Screened, Armoured



These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Solid or Stranded acc. to UTE C 32-014
Insulation:
Special Mix Silicon Rubber - SIL
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Armour:
Double Steel Tape Armour
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Orange

STANDARD REFERENCES

- NF M 87-202
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

Oil Resistant, Hydrocarbon Resistant

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

CABLE PRINTING

1 IP 15 EGFA NF M87-202 - RAMCRO 2019 + BATCH + METER MARKING

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

IDENTIFICATION OF CORES

Pair:
Triad:
Quad:

NF M87-202 EIFA - CR1-C1

Collectively Screened, Armoured

These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SAI0108TUESK-EIFA	1x2x0,50	10,3	187	37.5
SAI3708TUESX-EIFA	1x3x0,50	10,6	204	37.5
SAI0208TUESK-EIFA	2x2x0,50	16,0	332	37.5
SAI3808TUESX-EIFA	2x3x0,50	16,7	366	37.5
SAI0308TUESK-EIFA	3x2x0,50	16,8	382	37.5
SAI3108TUESX-EIFA	3x3x0,50	17,9	449	37.5
SAI0708TUESK-EIFA	7x2x0,50	22,1	655	37.5
SAI7108TUESX-EIFA	7x3x0,50	23,2	756	37.5
SAI1208TUESK-EIFA	12x2x0,50	29,1	1028	37.5
SAI3308TUESX-EIFA	12x3x0,50	30,5	1198	37.5
SAI1908TUESK-EIFA	19x2x0,50	33,6	1388	37.5
SAI7408TUESX-EIFA	19x3x0,50	35,3	1646	37.5
SAI2708TUESK-EIFA	27x2x0,50	39,8	1816	37.5
SAI8108TUESX-EIFA	27x3x0,50	41,9	2176	37.5
MAS0108TUESK-EIFA	1x2x0,88	11,0	211	22.3
MAS3708TUESX-EIFA	1x3x0,88	11,4	245	22.3
MAS0208TUESK-EIFA	2x2x0,88	17,9	402	22.3
MAS3808TUESX-EIFA	2x3x0,88	18,7	450	22.3
MAS0308TUESK-EIFA	3x2x0,88	18,8	467	22.3
MAS3108TUESX-EIFA	3x3x0,88	19,7	534	22.3
MAS0708TUESK-EIFA	7x2x0,88	24,4	793	22.3
MAS7108TUESX-EIFA	7x3x0,88	25,6	934	22.3
MAS1208TUESK-EIFA	12x2x0,88	32,3	1251	22.3
MAS3308TUESX-EIFA	12x3x0,88	33,9	1489	22.3
MAS1908TUESK-EIFA	19x2x0,88	37,4	1705	22.3
MAS7408TUESX-EIFA	19x3x0,88	39,3	2069	22.3
MAS2708TUESK-EIFA	27x2x0,88	44,4	2252	22.3
MAS8108TUESX-EIFA	27x3x0,88	46,8	2762	22.3
MAS0115TUESK-EIFA	1x2x1,50	11,8	251	12.6
MAS3715TUESX-EIFA	1x3x1,50	12,2	283	12.6
MAS0215TUESK-EIFA	2x2x1,50	19,4	463	12.6
MAS3815TUESX-EIFA	2x3x1,50	20,3	530	12.6
MAS0315TUESK-EIFA	3x2x1,50	20,4	547	12.6
MAS3115TUESX-EIFA	3x3x1,50	21,4	641	12.6
MAS0715TUESK-EIFA	7x2x1,50	27	984	12.6
MAS7115TUESX-EIFA	7x3x1,50	28,8	1217	12.6
MAS1215TUESK-EIFA	12x2x1,50	35,4	1521	12.6
MAS3315TUESX-EIFA	12x3x1,50	37,3	1865	12.6
MAS1915TUESK-EIFA	19x2x1,50	41,1	2107	12.6
MAS7415TUESX-EIFA	19x3x1,50	43,4	2637	12.6
MAS2715TUESK-EIFA	27x2x1,50	49	2809	12.6
MAS8115TUESX-EIFA	27x3x1,50	51,8	3553	

NF M87-202 EGPF - CR1-C1

Instrumentation Cable 300/500V



These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Solid or Stranded acc. to UTE C 32-014
Insulation:
Special Mix Silicon Rubber - SIL
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Chemical Protection:
Lead Cover
Armour:
Double Steel Tape Armour
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Orange

STANDARD REFERENCES

- NF M 87-202
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

Oil Resistant, Hydrocarbon Resistant

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

CABLE PRINTING

1 IP 15 EGFA NF M87-202 - RAMCRO 2019 + BATCH + METER MARKING

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

IDENTIFICATION OF CORES

Pair:
Triad:
Quad:

Instrumentation Cable 300/500V

These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SAM0108TUESK-EGPF	1x2x0,50	14,1	581	37.5
SAM3708TUESX-EGPF	1x3x0,50	14,5	611	37.5
SAM0208TUESK-EGPF	2x2x0,50	16,7	747	37.5
SAM3808TUESX-EGPF	2x3x0,50	18,7	886	37.5
SAM0308TUESK-EGPF	3x2x0,50	17,2	799	37.5
SAM3108TUESX-EGPF	3x3x0,50	19,4	957	37.5
SAM0708TUESK-EGPF	7x2x0,50	20,4	1073	37.5
SAM7108TUESX-EGPF	7x3x0,50	23,2	1337	37.5
SAM1208TUESK-EGPF	12x2x0,50	24,8	1534	37.5
SAM3308TUESX-EGPF	12x3x0,50	29,2	2046	37.5
SAM1908TUESK-EGPF	19x2x0,50	28,5	2021	37.5
SAM7408TUESX-EGPF	19x3x0,50	33,6	2712	37.5
SAM2708TUESK-EGPF	27x2x0,50	33,3	2657	37.5
SAM8108TUESX-EGPF	27x3x0,50	38,7	3577	37.5
MAS0108TUESK-EGPF	1x2x0,88	14,9	635	22.3
MAS3708TUESX-EGPF	1x3x0,88	15,3	674	22.3
MAS0208TUESK-EGPF	2x2x0,88	17,8	834	22.3
MAS3808TUESX-EGPF	2x3x0,88	20,1	1002	22.3
MAS0308TUESK-EGPF	3x2x0,88	18,8	922	22.3
MAS3108TUESX-EGPF	3x3x0,88	20,9	1096	22.3
MAS0708TUESK-EGPF	7x2x0,88	22,1	1248	22.3
MAS7108TUESX-EGPF	7x3x0,88	25,5	1656	22.3
MAS1208TUESK-EGPF	12x2x0,88	27,7	1934	22.3
MAS3308TUESX-EGPF	12x3x0,88	33,1	2627	22.3
MAS1908TUESK-EGPF	19x2x0,88	31,7	2449	22.3
MAS7408TUESX-EGPF	19x3x0,88	37,3	3387	22.3
MAS2708TUESK-EGPF	27x2x0,88	37,0	3312	22.3
MAS8108TUESX-EGPF	27x3x0,88	43,7	4535	22.3
MAS0115TUESK-EGPF	1x2x1,50	16	710	12.6
MAS3715TUESX-EGPF	1x3x1,50	16,5	761	12.6
MAS0215TUESK-EGPF	2x2x1,50	19,4	953	12.6
MAS3815TUESX-EGPF	2x3x1,50	21,5	1134	12.6
MAS0315TUESK-EGPF	3x2x1,50	20	1041	12.6
MAS3115TUESX-EGPF	3x3x1,50	22,8	1294	12.6
MAS0715TUESK-EGPF	7x2x1,50	24,3	1573	12.6
MAS7115TUESX-EGPF	7x3x1,50	28,6	2111	12.6
MAS1215TUESK-EGPF	12x2x1,50	30,4	2312	12.6
MAS3315TUESX-EGPF	12x3x1,50	36,2	3237	12.6
MAS1915TUESK-EGPF	19x2x1,50	35,1	3107	12.6
MAS7415TUESX-EGPF	19x3x1,50	41,0	4234	12.6
MAS2715TUESK-EGPF	27x2x1,50	40,6	4130	12.6
MAS8115TUESX-EGPF	27x3x1,50	48,2	5691	

NF M87-202 EIPF - CR1-C1

Instrumentation Cable 300/500V



These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

CONSTRUCTION

Formation:
Plain annealed copper wire, Solid or Stranded acc. to UTE C 32-014
Insulation:
Special Mix Silicon Rubber - SIL
Individual Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Individual Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Inner Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Chemical Protection:
Lead Cover
Armour:
Double Steel Tape Armour
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free - LSZH
Colour Outher Sheath:
Orange

TEMPERATURE RANGE

During Installation:
-5° C up to +50° C
Fixed Installation:
-30° C up to +80°C
Insulation Operation:
-30° C up to +90°C

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 200 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	300/500 V

STANDARD REFERENCES

- NF M 87-202
- UTE C 32-014
- NF C 32-020
- BS EN/IEC 60331-21
- BS EN/IEC 60332-1
- BS EN/IEC 60332-3-24

CHARACTERISTICS

Min. Bending Radius
8 x cable diameter

Hazardous Area Classification
IEC Zone 1 - Group 2

Oil Resistant, Hydrocarbon Resistant

CABLE PRINTING

1 IP 15 EGFA NF M87-202 - RAMCRO 2019 + BATCH + METER MARKING

IDENTIFICATION OF CORES

Pair: ● ○
Triad: ● ○ ●
Quad: ● ○ ● ●

Instrumentation Cable 300/500V

These cables are designed for safe use in petroleum and petrochemical units particularly for the transmission of AC or DC analogue signals. Suitable for aliphatic hydrocarbons resistance applications.

RAMCRO CODE	FORMATION (mm^2)	OVERALL DIAMETER (mm)	APPROX. CABLE WEIGHT (kg/km)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
SAM0108TUESK-EIPF	1x2x0,50	15,1	653	37.5
SAM3708TUESX-EIPF	1x3x0,50	15,8	699	37.5
SAM0208TUESK-EIPF	2x2x0,50	21,2	1046	37.5
SAM3808TUESX-EIPF	2x3x0,50	21,9	1110	37.5
SAM0308TUESK-EIPF	3x2x0,50	22,0	1132	37.5
SAM3108TUESX-EIPF	3x3x0,50	23,1	1248	37.5
SAM0708TUESK-EIPF	7x2x0,50	27,7	1812	37.5
SAM7108TUESX-EIPF	7x3x0,50	29,2	1993	37.5
SAM1208TUESK-EIPF	12x2x0,50	35,5	2778	37.5
SAM3308TUESX-EIPF	12x3x0,50	36,9	3031	37.5
SAM1908TUESK-EIPF	19x2x0,50	40,2	3527	37.5
SAM7408TUESX-EIPF	19x3x0,50	42,3	3933	37.5
SAM2708TUESK-EIPF	27x2x0,50	47,2	4691	37.5
SAM8108TUESX-EIPF	27x3x0,50	49,3	5197	37.5
MAS0108TUESK-EIPF	1x2x0,88	16,2	725	22.3
MAS3708TUESX-EIPF	1x3x0,88	16,6	766	22.3
MAS0208TUESK-EIPF	2x2x0,88	23,1	1200	22.3
MAS3808TUESX-EIPF	2x3x0,88	24,1	1359	22.3
MAS0308TUESK-EIPF	3x2x0,88	24,2	1383	22.3
MAS3108TUESX-EIPF	3x3x0,88	25,1	1490	22.3
MAS0708TUESK-EIPF	7x2x0,88	30,4	2089	22.3
MAS7108TUESX-EIPF	7x3x0,88	32,0	2325	22.3
MAS1208TUESK-EIPF	12x2x0,88	38,9	3302	22.3
MAS3308TUESX-EIPF	12x3x0,88	40,5	3642	22.3
MAS1908TUESK-EIPF	19x2x0,88	44,6	4268	22.3
MAS7408TUESX-EIPF	19x3x0,88	46,7	4910	22.3
MAS2708TUESK-EIPF	27x2x0,88	52,0	5627	22.3
MAS8108TUESX-EIPF	27x3x0,88	54,6	6491	22.3
MAS0115TUESK-EIPF	1x2x1,50	17	787	12.6
MAS3715TUESX-EIPF	1x3x1,50	17,4	839	12.6
MAS0215TUESK-EIPF	2x2x1,50	24,8	1405	12.6
MAS3815TUESX-EIPF	2x3x1,50	25,7	1516	12.6
MAS0315TUESK-EIPF	3x2x1,50	25,8	1539	12.6
MAS3115TUESX-EIPF	3x3x1,50	26,8	1680	12.6
MAS0715TUESK-EIPF	7x2x1,50	33,6	2558	12.6
MAS7115TUESX-EIPF	7x3x1,50	35,0	2842	12.6
MAS1215TUESK-EIPF	12x2x1,50	42,4	3809	12.6
MAS3315TUESX-EIPF	12x3x1,50	44,5	4415	12.6
MAS1915TUESK-EIPF	19x2x1,50	48,5	5072	12.6
MAS7415TUESX-EIPF	19x3x1,50	51,0	5931	12.6
MAS2715TUESK-EIPF	27x2x1,50	56,8	6706	12.6
MAS8115TUESX-EIPF	27x3x1,50	59,6	7677	

ramcro

special cables





HI-TEMPERATURE CABLE

HI-TEMPERATURE CABLES

Flororam & Siloram

RAMCRO - HI TEMPERATURE CABLE



These high temperature cables are designed to work in many areas where extreme temperatures accur and is exceptionally stable to oil, fat, acid, alkali, and solvents. Furthermore florurate flexible cable are sun and weather resistant.

CONSTRUCTION

Formation:
Tinned Copper Conductor, Stranded Nickel-Plated Copper
Insulation:
FEP-MFA-PFA-ETFE or Special Mix Silicon Rubber
Collective Screen:
Tinned Copper Wire Braid (90% Coverage)
Outer Sheath:
FEP, MFA, PFA, EFTE or Special Mix Silicon Rubber
Colour Outher Sheath:
Black

STANDARD REFERENCES

- IEC 60288
- IEC 60811
- IEC 60754-1
- IEC 60754-2
- IEC 60332-1
- DIN VDE 0472 p. 804
- UL 13

CHARACTERISTICS

Min. Bending Radius
14 x cable diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

Installation Temperature:
-5° C up to +50° C
Bare Copper Conductor:
-30° C up to +130° C
Tinned / Silver Copper Conductor:
-30° C up to +180° C
Nikel-Plated Copper Conductor:
-30° C up to +260°C

CABLE PRINTING

On Request

IDENTIFICATION OF CORES

Core:

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 5000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	600 V

Flororam & Siloram

These high temperature cables are designed to work in many areas where extreme temperatures accur and is exceptionally stable to oil, fat, acid, alkali, and solvents. Furthermore forurate fexible cable are sun and weather resistant.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
STS0226HEVVX-HT	2x0.25	3	66.3
STS0426HEVVX-HT	4x0.25	3.4	66.3
STS0250HEVVX-HT	2x0.50	3.9	36.36
STS0450HEVVX-HT	4x0.50	4.5	36.36
STS0275HEVVX-HT	2x0.75	4.2	24.8
STS0475HEVVX-HT	4x0.75	4.8	24.8
STS0210HEVVX-HT	2x1.00	4.7	18.3
STS0410HEVVX-HT	4x1.00	5.4	18.3
STS0215HEVVX-HT	2x1.50	5.3	12.42
STS0415HEVVX-HT	4x1.50	6.1	12.42
STS0225HEVVX-HT	2x2.50	6.4	7.56
STS0425HEVVX-HT	4x2.50	7.4	7.56
STS0240HEVVX-HT	2x4.00	7.4	4.2
STS0440HEVVX-HT	4x4.00	8.7	4.2
STS0260HEVVX-HT	2x6.00	8.3	3.6
STS0460HEVVX-HT	4x6.00	9.7	3.6

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
STS0226HEVVX-HT	2x0.25	4.6	66.3
STS0426HEVVX-HT	4x0.25	5.3	66.3
STS0250HEVVX-HT	2x0.50	5.5	36.36
STS0450HEVVX-HT	4x0.50	6.3	36.36
STS0275HEVVX-HT	2x0.75	6.2	24.8
STS0475HEVVX-HT	4x0.75	7.3	24.8
STS0210HEVVX-HT	2x1.00	7.1	18.3
STS0410HEVVX-HT	4x1.00	8.2	18.3
STS0215HEVVX-HT	2x1.50	7.7	12.42
STS0415HEVVX-HT	4x1.50	8.9	12.42
STS0225HEVVX-HT	2x2.50	9	7.56
STS0425HEVVX-HT	4x2.50	10.6	7.56
STS0240HEVVX-HT	2x4.00	11	4.2
STS0440HEVVX-HT	4x4.00	13.2	4.2
STS0260HEVVX-HT	2x6.00	12.3	3.6
STS0460HEVVX-HT	4x6.00	14.74.	3.6

Flororam & Siloram

RAMCRO - HI TEMPERATURE CABLE



These high temperature cables are designed to work in many areas where extreme temperatures accur and is exceptionally stable to oil, fat, acid, alkali, and solvents. Furthermore forurate fexible cable are sun and weather resistant.

CONSTRUCTION

Formation:
Tinned Copper Conductor, Stranded
Nickel-Plated Copper
Insulation:
FEP-MFA-PFA-ETFE or Special Mix Silicon Rubber
Collective Screen:
Tinned Copper Wire Braid (90% Coverage)
Inner Sheath:
FEP, MFA, PFA, EFTE or Special Mix Silicon Rubber
Armour:
Galvanized Steel Wire Braid
Outer Sheath:
FEP, MFA, PFA, EFTE or Special Mix Silicon Rubber
Colour Outher Sheath:
Black

STANDARD REFERENCES

- IEC 60288
- IEC 60811
- IEC 60754-1
- IEC 60754-2
- IEC 60332-1
- DIN VDE 0472 p. 804
- UL 13

CHARACTERISTICS

Min. Bending Radius
14 x cable diameter

Hazardous Area Classification
NEC Class I Div. II
IEC Zone 1 - Group 2

TEMPERATURE RANGE

Installation Temperature:
-5° C up to +50° C
Bare Copper Conductor:
-30° C up to +130° C
Tinned / Silver Copper Conductor:
-30° C up to +180° C
Nikel-Plated Copper Conductor:
-30° C up to +260°C

CABLE PRINTING

On Request

IDENTIFICATION OF CORES

Pair:

ELECTRICAL DATA

IInsulation Resistance @ 20°C:	> 1000 MOhm*Km
Test Voltage Core-Core:	2000 V
Test Voltage Core-Screen:	2000 V
Mutual Capacitance between conductors:	< 250 nF/km
Inductance:	< 1 mH/km
Operating Voltage:	600 V

Flororam & Siloram

These high temperature cables are designed to work in many areas where extreme temperatures accur and is exceptionally stable to oil, fat, acid, alkali, and solvents. Furthermore forurate fexible cable are sun and weather resistant.

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
STS0226WEVVX-HT	2x0.25	4.6	66.3
STS0426WEVVX-HT	4x0.25	5	66.3
STS0250WEVVX-HT	2x0.50	5.5	36.36
STS0450WEVVX-HT	4x0.50	6.1	36.36
STS0275WEVVX-HT	2x0.75	5.8	24.8
STS0475WEVVX-HT	4x0.75	6.4	24.8
STS0210WEVVX-HT	2x1.00	6.5	18.3
STS0410WEVVX-HT	4x1.00	7.2	18.3
STS0215WEVVX-HT	2x1.50	7.1	12.42
STS0415WEVVX-HT	4x1.50	7.9	12.42
STS0225WEVVX-HT	2x2.50	8.2	7.56
STS0425WEVVX-HT	4x2.50	9.2	7.56
STS0240WEVVX-HT	2x4.00	9.2	4.2
STS0440WEVVX-HT	4x4.00	10.5	4.2
STS0260WEVVX-HT	2x6.00	10.1	3.6
STS0460WEVVX-HT	4x6.00	11.5	3.6

RAMCRO CODE	FORMATION (mm²)	OVERALL DIAMETER (mm)	MAX RESISTANCE CONDUCTOR AT 20°C (Ohm/km)
STS0226WEVVX-HT	2x0.25	7.6	66.3
STS0426WEVVX-HT	4x0.25	8.3	66.3
STS0250WEVVX-HT	2x0.50	8.5	36.36
STS0450WEVVX-HT	4x0.50	9.3	36.36
STS0275WEVVX-HT	2x0.75	9.2	24.8
STS0475WEVVX-HT	4x0.75	10.5	24.8
STS0210WEVVX-HT	2x1.00	10.1	18.3
STS0410WEVVX-HT	4x1.00	11.4	18.3
STS0215WEVVX-HT	2x1.50	10.7	12.42
STS0415WEVVX-HT	4x1.50	12.3	12.42
STS0225WEVVX-HT	2x2.50	12.4	7.56
STS0425WEVVX-HT	4x2.50	14.4	7.56
STS0240WEVVX-HT	2x4.00	14.8	4.2
STS0440WEVVX-HT	4x4.00	17.6	4.2
STS0260WEVVX-HT	2x6.00	16.5	3.6
STS0460WEVVX-HT	4x6.00	19.5	3.6

THERMOCOUPLE CABLES

With conductor materials such as nickel or chromium, thermocouple & compensating cables are used for temperature sensing in industrial processes.

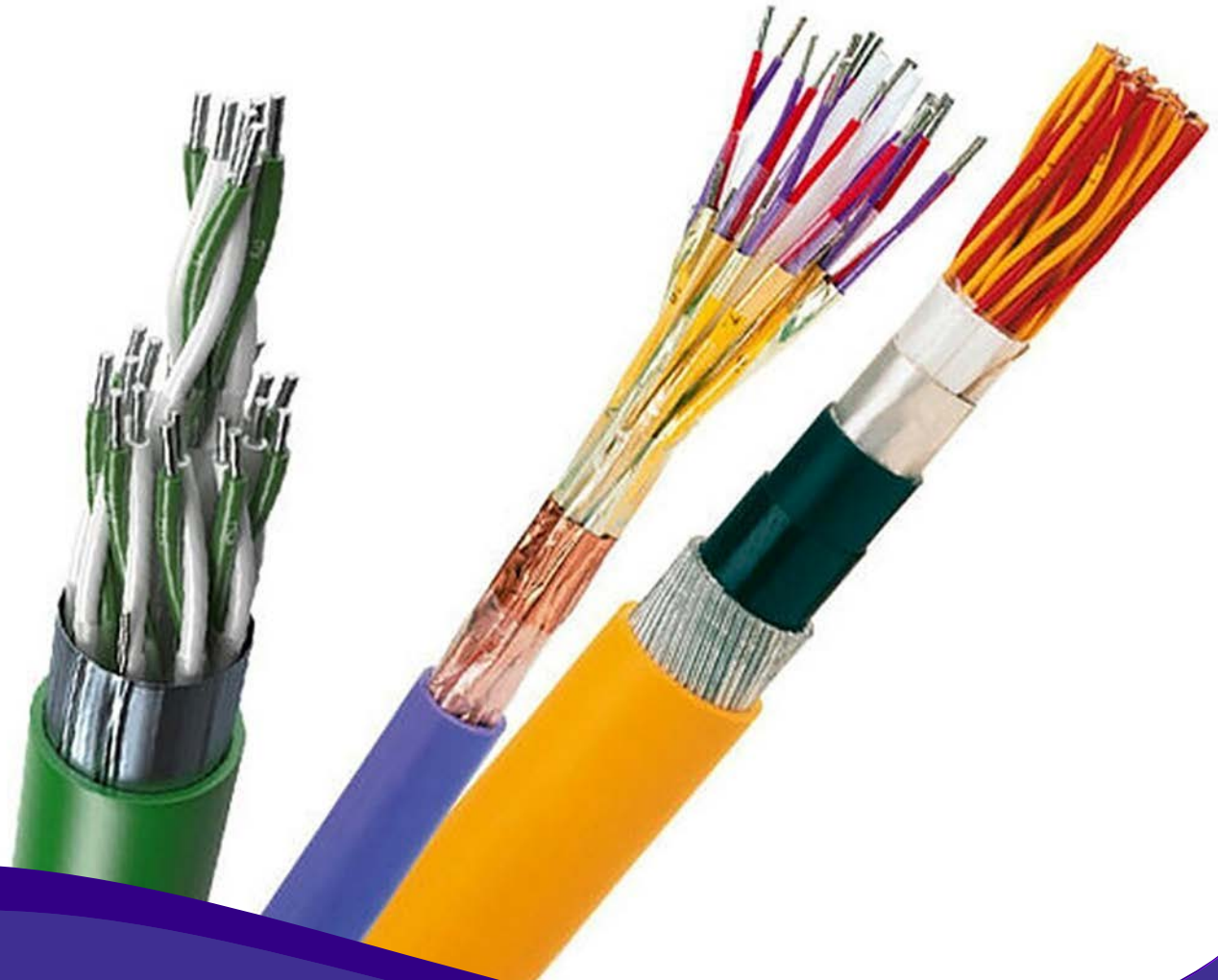
- Conductor material according to the requirements of the IEC 60584-3 standard
- Design: solid, stranded or ~ exible
- Sizes: 0.5 mm2 up to 1.5 mm2

Criteria for the choice of type, design or size of conductor are:
- The type of thermoelement used
- The E.M.F-tolerances
- The ~ exibility

Solid conductors are used in most cases.

CHARACTERISTICS

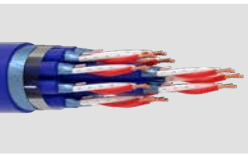
- Characteristics
- Reduced fame propagation
- Oil resistant
- Sunlight resistant
- Indoor and outdoor installation
- On racks, trays, in conduits
- Not for direct burial
- Blue for intrinsically safe systems available



THERMOCOUPLE CABLES

Thermosensitive Applications

RAMCRO - THERMOCOUPLES



These cables are use for connections of different types of thermocouple cables in control process in oil and gas industries also ready for thermo-sensitive detection systems. Armoured cables are suitable for direct burial applications

CONSTRUCTION

Formation:
Solid (class 1), Stranded (class 2), Flexible (class 5)
Insulation:
XLPE, PVC, PE, EFTE, FEP, MFA, PFA and PTFE
Screen:
Individual or Collective
Inner Sheath:
XLPE, PVC, PE, EFTE, FEP, MFA, PFA and PTFE
Armour:
Galvanized Steel Wire Braid
Outer Sheath:
XLPE, PVC, PE, EFTE, FEP, MFA, PFA and PTFE
Colour Outher Sheath:
On Request

STANDARD REFERENCES

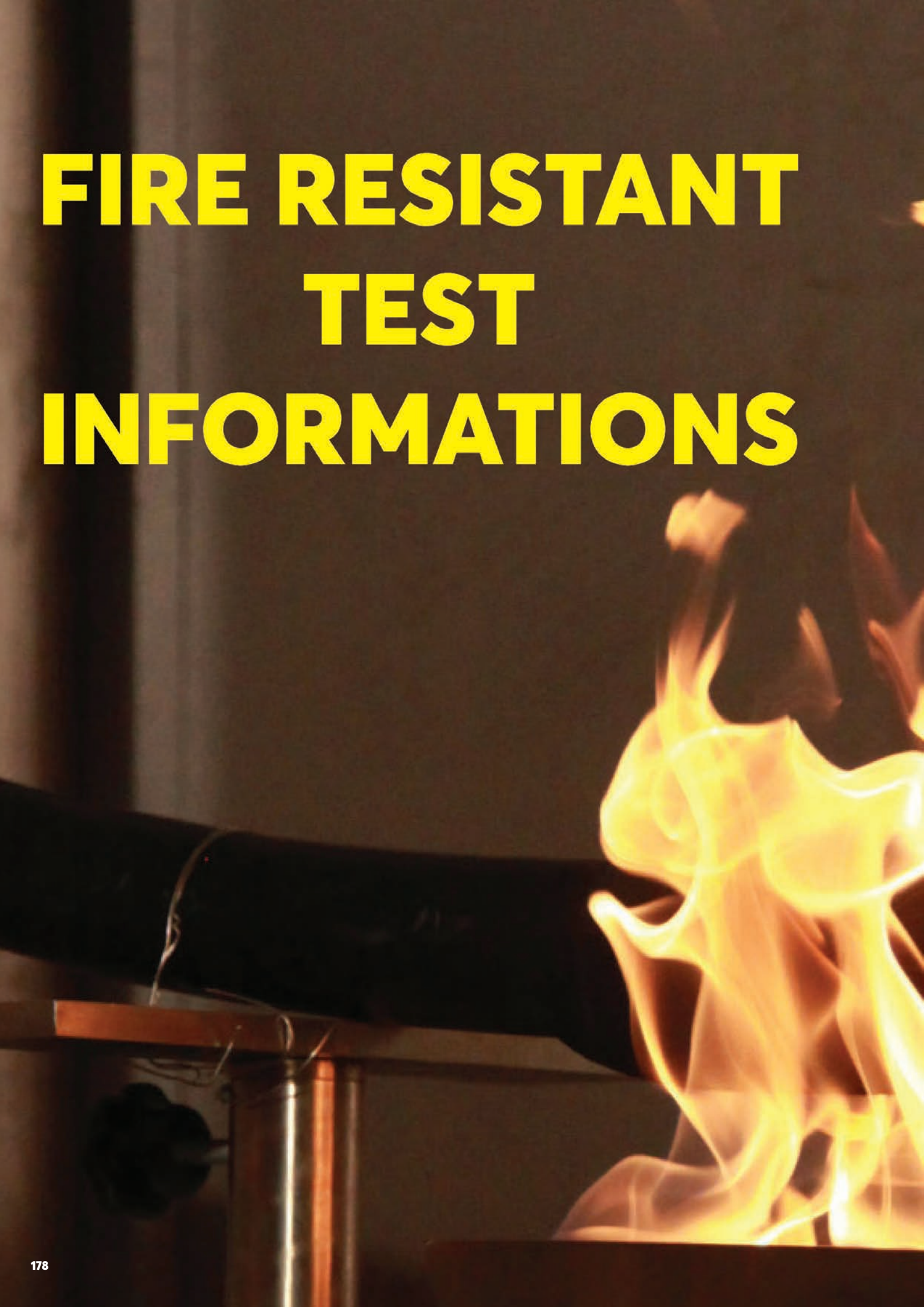
IEC 584-3
BS 4937 P30
BS 1843
ANSI MC96.1

TYPE OF THERMOCOUPLE

Type	Alloys	IEC 584-3 BS 4937 P30	BS 1843	ANSI MC96.1
K	Chromel Alumel	+ -	+ -	+ -
J	Iron Con-stantan	+ -	+ -	+ -
N	Nicrosil Nisil	+ -	+ -	+ -
R	Pt 13% Rh Pure Pt	+ -	+ -	Not defined
S	Pt 10% Rh Pure Pt	Not defined	+ -	Not defined
T	Copper Constantan	+ -	+ -	+ -
E	Chromel Constantan	+ -	+ -	+ -

IDENTIFICATION OF CORES

Type	Temperature range ° C (continuous)	Temperature range ° C (short term)	Tolerance class one (° C)	Tolerance class two (° C)
K	0 to +1100	-180 to +1300	± 1.5 between -40 °C and 375 °C ± 0.004xT between 375 °C and 1000 °C	± 2.5 between -40 °C and 333 °C ± 0.0075xT between 333 °C and 1200 °C
J	0 to +700	-180 to +800	± 1.5 between -40 °C and 375 °C ± 0.004xT between 375 °C and 750 °C	± 2.5 between -40 °C and 333 °C ± 0.0075xT between 333 °C and 750 °C
N	0 to +1100	-270 to +1300	± 1.5 between -40 °C and 375 °C ± 0.004xT between 375 °C and 1000 °C	± 2.5 between -40 °C and 333 °C ± 0.0075xT between 333 °C and 1200 °C
R	0 to +1600	-50 to +1700	± 1.0 between 0 °C and 1100 °C ± [1+0.003x(T-1100)] between 1100 °C and 1600 °C	± 1.5 between 0 °C and 600 °C ± 0.0025xT between 600 °C and 1600 °C
S	0 to +1600	-50 to +1750	± 1.0 between 0 °C and 1100 °C ± [1+0.003x(T-1100)] between 1100 °C and 1600 °C	± 1.5 between 0 °C and 600 °C ± 0.0025xT between 600 °C and 1600 °C
T	-185 to +300	-250 to +400	± 0.5 between -40 °C and 125 °C ± 0.004xT between 125 °C and 350 °C	± 1.0 between -40 °C and 133 °C ± 0.0075xT between 133 °C and 350 °C
N	0 to +800	-40 to +900	± 1.5 between -40 °C and 375 °C ± 0.004xT between 375 °C and 800 °C	± 2.5 between -40 °C and 333 °C ± 0.0



FIRE RESISTANT TEST INFORMATIONS

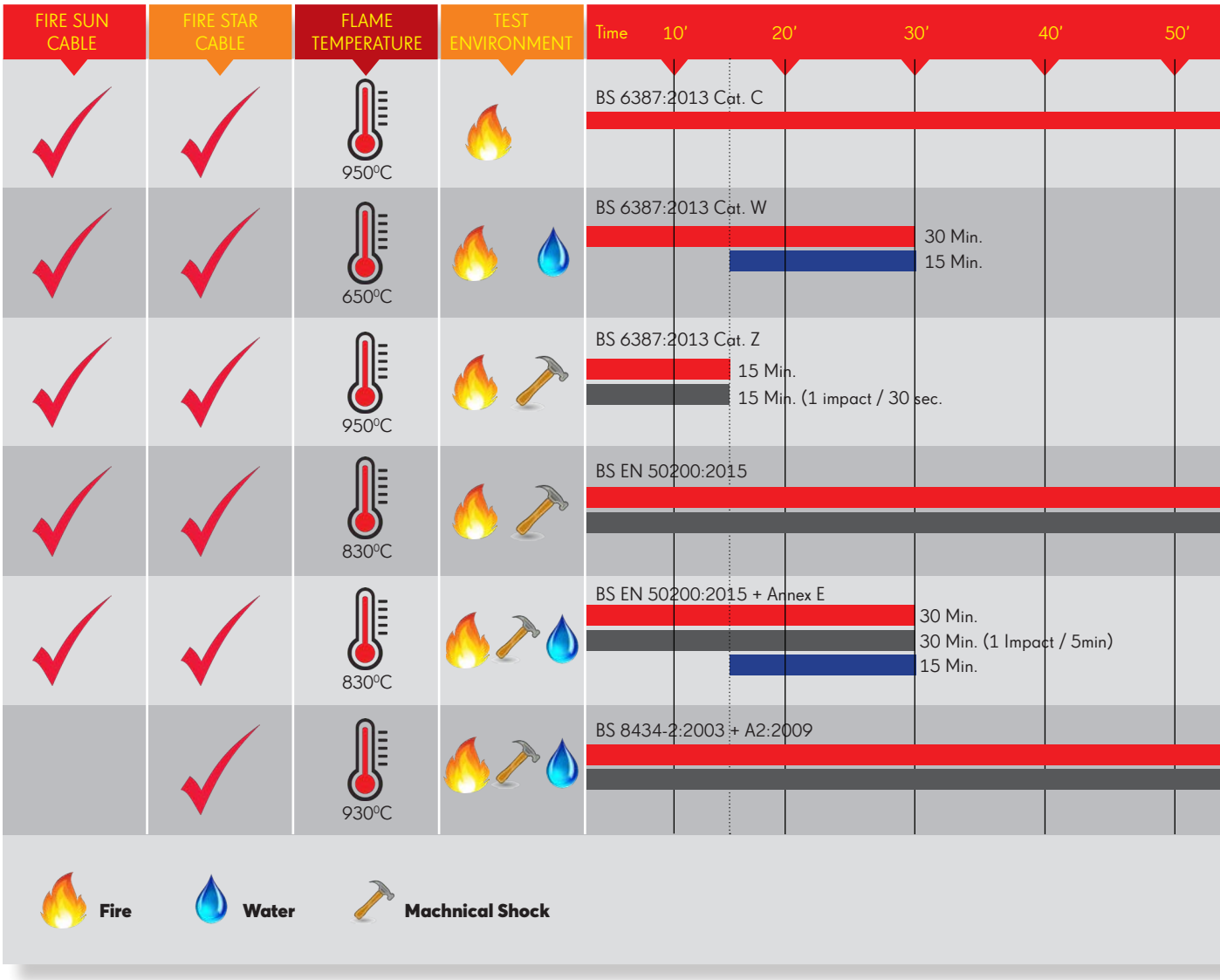


FIRE RESISTANT TEST INFORMATION

In case of fire risk or to maintain circuits integrity, the Ramcro Fire special cables prevent smoke risks and other collateral problems to sensitive equipments, avoiding damage from gases. Ramcro Fire cables are produced according with all major international standards.

Product range under sub-brand RAMFIRECRO-F3 Manufactured according to:

- International Electro-tecnical Commission IEC 60331-21
- British Standard BS 6387 Cat. C-W-Z
- British Standard BS 7629
- European Norms EN 50200

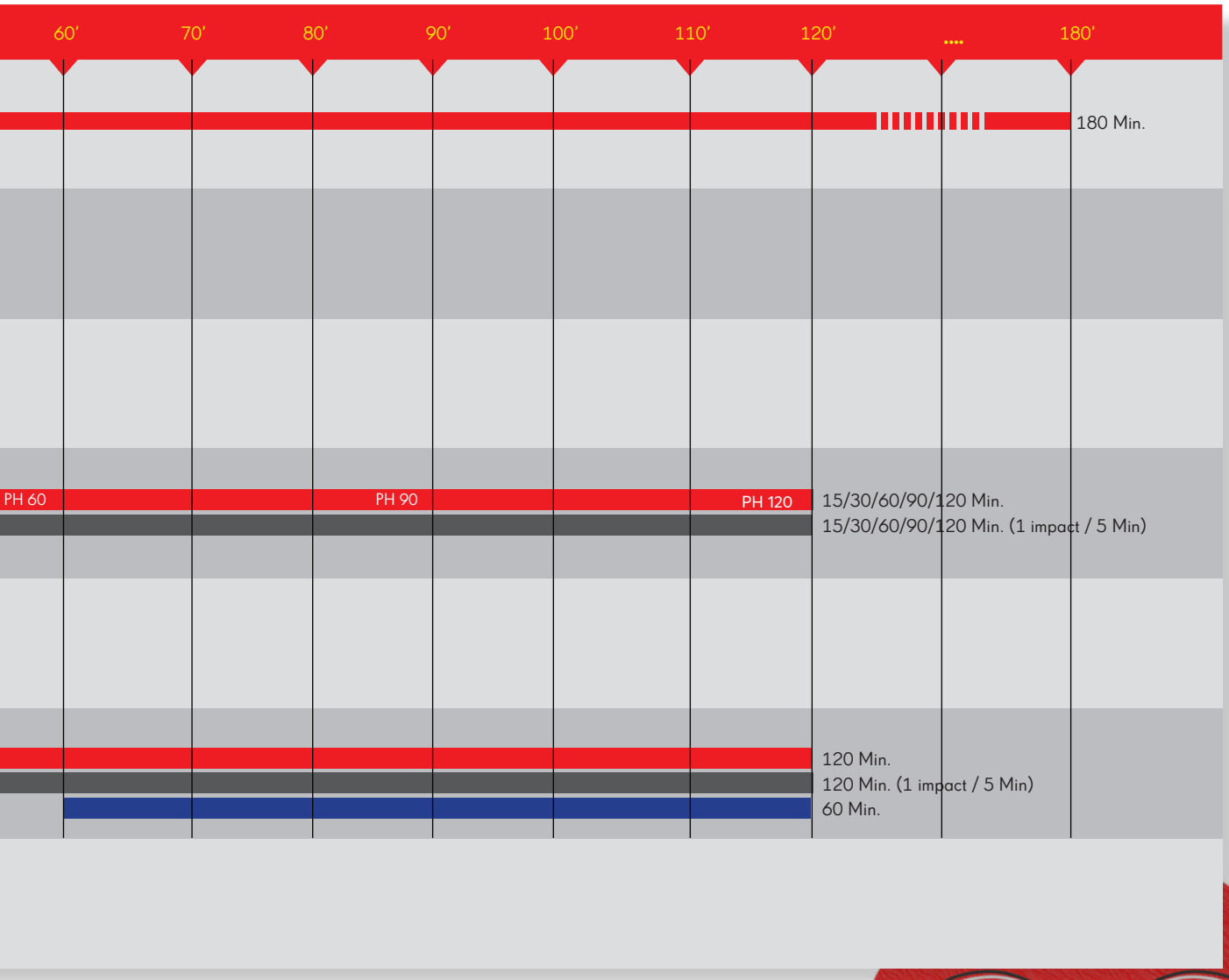


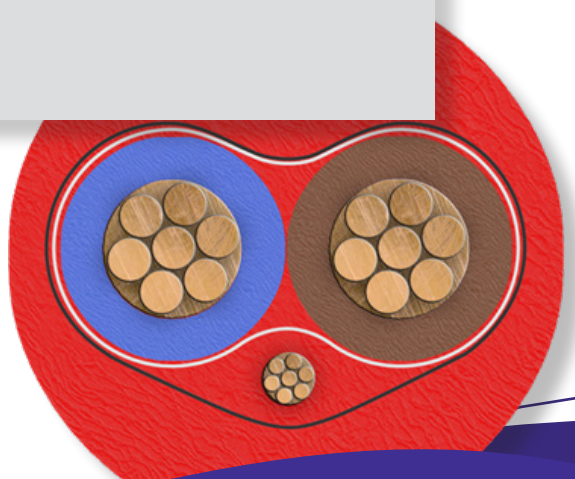
RAMCRO IN THE VERY HEART OF GREAT JOBS.

FIRE RESISTANT TEST INFORMATION

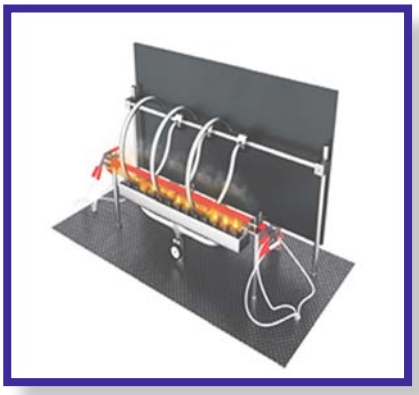
Fire Performance Classification:

- Basic Type: IEC 60331-21
- Standard Type: BS 6387 Cat. C-W-Z and BS 7629
- Enhanced Type: EN 50200 PHI20 - BS 8434-2





FIRE RESISTANT TEST INFORMATION



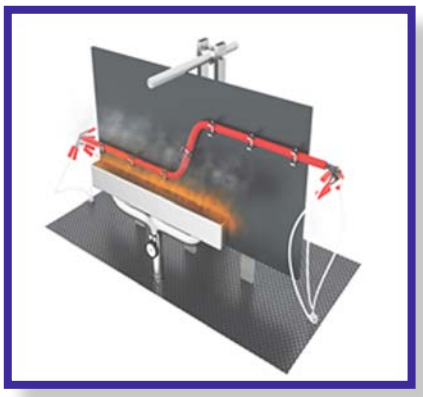
FIRE RESISTANCE (Cat. C)

The cable is exposed to fire at the 950°C for 180 minutes



FIRE AND WATER RESISTANCE (Cat. W)

The cable is exposed for 15 minutes to flame at 650°C and for additional 15 minutes to fire and water spray



FIRE RESISTANCE WITH MECHANICAL SHOCKS (Cat. Z)

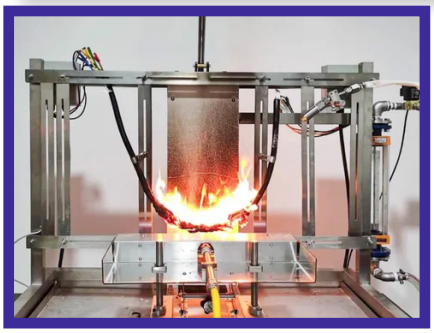
The cable is mounted on a vertical panel and shocked with a steel bar for 15 minutes while submitted to the action of a flame.



FIRE RESISTANCE (EN 50200 PH 1 5-30-60-90-120)
IEC 60331-2:2018 (Diam <20mm)
IEC 60331-1:2018 (Diam >20mm)

This test is carried out to verify the circuit integrity of cables exposed to fire at 830°C and mechanical shocks.

CLASSIFICATION	
EN 50200 PH 15	Flame exposure for 15 min
EN 50200 PH 30	Flame exposure for 30 min
EN 50200 PH 60	Flame exposure for 60 min
EN 50200 PH 90	Flame exposure for 90 min
EN 50200 PH 120	Flame exposure for 120 min



FIRE RESISTANT TEST INFORMATION

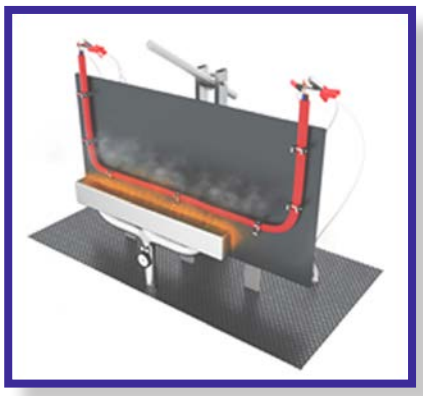
FIRE RESISTANCE
BS EN 50200 annex E



This test is carried out to verify circuit integrity during a fire, The cable is exposed to a flame at 830°C and mechanical shocks for 15 minutes and additional 15 minutes to flame, mechanical shocks, and water spray.

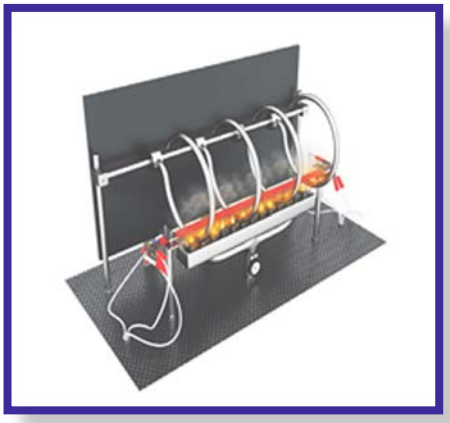
FIRE RESISTANCE
(BS 8434-2)





This test is carried out to verify circuit integrity during a fire. The cable is exposed to a flame at 930°C and mechanical shocks for 60 minutes and additional 60 minutes to flame, mechanical shocks, and water spray.

FIRE RESISTANCE
(IEC 60331-21, CEI 20-36)

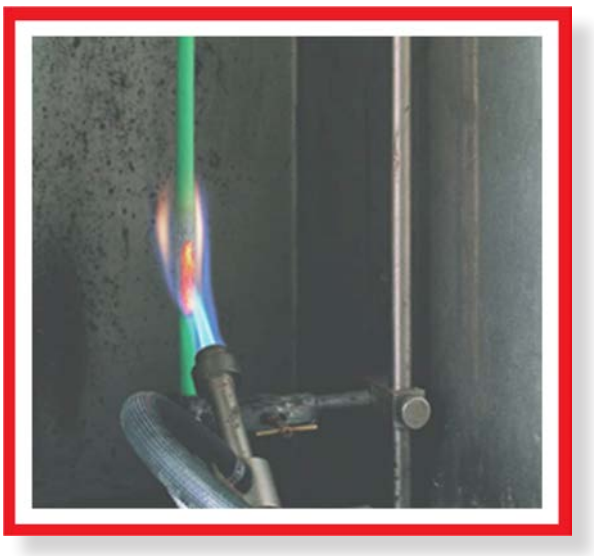


This test is carried out to verify circuit integrity even during a fire. A sample of cable is held on a flame at about 750°C for a period of minimum 90 min, under rated voltage.

FIRE RETARDANT TEST INFORMATION

FLAME PROPAGATION TEST (IEC 60332-1)

ON A SINGLE CABLE



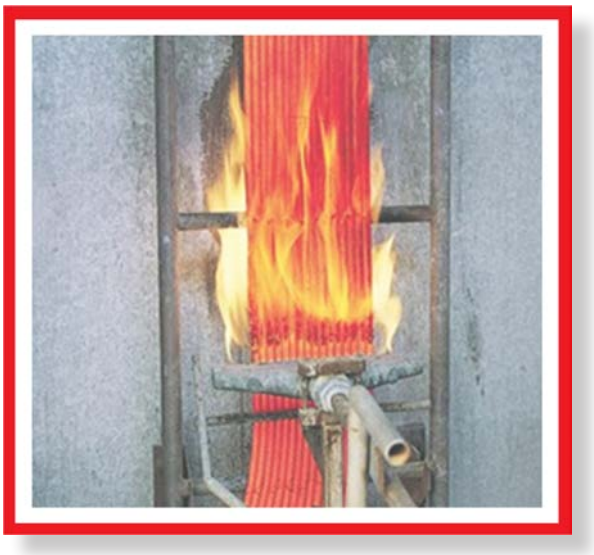
A 60 cm long sample of cable is vertically fixed with two clamps inside a small cabin, open on the front. The cable is subjected to the action of a flame produced by a calibrated Bunsen burner.

The application time of the flame is according to the cable diameter (60-480 seconds).

At the end of the test the burnt portion of cable must not be 50 mm close to the higher clamp

FIRE PROPAGATION TEST (IEC 60332-3)

ON BUNCHED CABLES



Samples of cables 3,5 m long in quantities required by standard are installed on a ladder inside a metallic cabinet.

They are subjected to the action of a flame at 750°C for a specific time (20 or 40 minutes).

Cables must not burn for more than 2,5 m.

"Ramcro S.p.A Lab have all the above test facilities"



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Certificate of Product Approval

Certificate Number: 568a Issue: 18

RAMCRO S.p.A.

Via Marzorati 15
20014 Nerviano
Milan
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s)

Cable Types as listed below:
Ramfirecro-F3 FIRE PLANET

Standards (see Appendix for details)

BS 6387:2013 (CWZ)
EN 60754-1:2014
EN 61034-2:2005+A2:2020
EN 50200:2015 (Class PH120)
EN 50200:2015 Annex E (30 minutes)
EN 60754-2:2014

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Obada Piracha — Certification Manager — 9 November 2023 — 27 October 2003

bre

Certificate of Product Approval 568a

"Few of our **PRODUCTS APPROVAL CERTIFICATES...**"



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Certificate of Product Approval

Certificate Number: 568c Issue: 14

RAMCRO S.p.A.

Via Marzorati 15
20014 Nerviano MI
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s)

Cable Types as listed below:
Ramfirecro-F3 Standard FIRE SUN

Standard(s) (see Appendix for details)

BS 7629-1:2015 (Standard 60)
BS 6387:2013 (Category CWZ)
EN 50200:2015 (Class PH120)
EN 50200:2015 Annex E (30 mins)
BS 5839-1:2013 (Clause 26.2d Standard)
EN 60754-2:2014

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Obada Piracha — Certification Manager - Cables — 5 April 2022 — 1 June 2006

bre

Certificate of Product Approval 568c

PRODUCT CERTIFICATES

Certificates of PRODUCTS APPROVAL



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Certificate of Product Approval

Certificate Number: 568j Issue: 06

RAMCRO S.p.A.

Via Marzorati 15
20014 Nerviano
Milan
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s)
Cable Types as listed below:
Ramfirecro-F3 FIRE STAR

Standard(s) (see Appendix for details)
BS 7629-1:2015 Enhanced 120
EN 50200:2015 (Class PH120)
BS 8434-2:2003+A2:2009 (120 mins)
BS 5839-1:2013 (Clause 26.2e Enhanced)
BS 6387:2013 Category CWZ
EN 60332-3-24:2009

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Obada Piracha — Certification Scheme Manager — 15 October 2021 — 12 April 2018

bre

Certificate of Product Approval 568j

"Few of our PRODUCTS APPROVAL CERTIFICATES..."



CERTIFICATE OF COMPLIANCE

Certificate Number 20150827-E475091
Report Reference E475091-20150827
Issue Date 2015-AUGUST-27

Issued to: RAMCRO SPA
VIA MARZORATI 15
20014 NERVIANO MILANO ITALY

This is to certify that representative samples of POWER-LIMITED FIRE ALARM CABLE
Power-Limited Fire-Alarm Circuit Cable, Type FPLR

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1424 STANDARD FOR CABLES FOR POWER-LIMITED FIRE-ALARM CIRCUITS
Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Page 1 of 1

FPLR UL



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Certificate of Product Approval

Certificate Number: 568h Issue: 01

RAMCRO S.p.A.

Via Marzorati 15
20014 Nerviano
Milan
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s)
Cable Types as listed below:
6 FO Single Mode
6 FO Multi Mode
See Certificate Appendix for details

Standard(s) (see Appendix for details)
IEC 60331-25:1999
IEC 60332-1-2:2004
EN 61034-2:2005
EN 60754-1:2014

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Tony Baker — Certification Scheme Manager — 26 July 2017 — 26 July 2017

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Certificate of Product Approval 568h

COMPANY CERTIFICATES

Certificates of COMPANY QUALITY SYSTEM



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Organization of:

RAMCRO S.p.A.
Via Marzorati, 15, Nerviano, MI 20014, Italy

and hereby declares that the Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

Whereby, technical competence has been confirmed for the associated scope supplement, in the fields of:

Electrical Testing
(As detailed in the supplement)

Accreditation claims for conformity assessment activities shall only be made from the addresses referenced within this certificate and shall apply solely to those activities identified in the related scope. This Accreditation is granted subject to the Accreditation Body rules governing the Accreditation referred to above, and the Organization hereby commits to observing and complying with those rules in their entirety.

For PJLA:

Tracy Szerszen
President

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

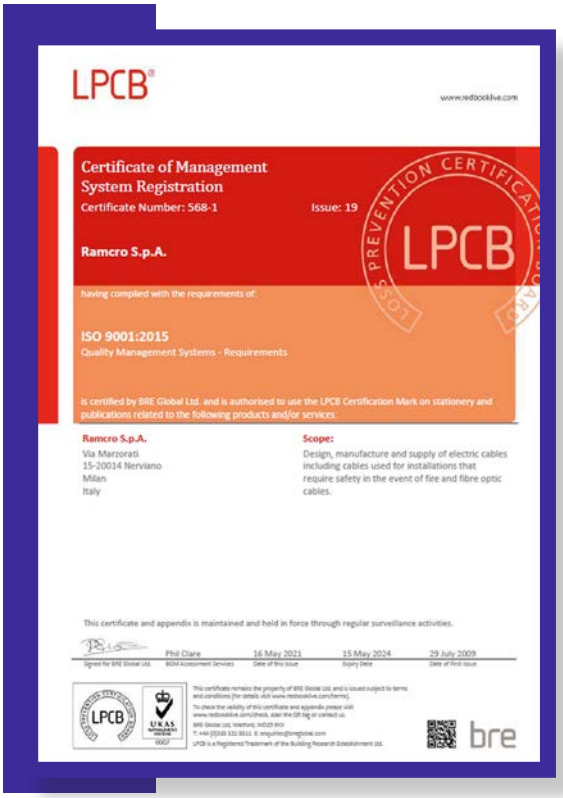
Initial Accreditation Date:	Issue Date:	Expiration Date:
April 07, 2025	April 07, 2025	July 31, 2027

Accreditation No.:	Certificate No.:
127120	L25-277

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com

Page 1 of 3

ISO/IEC 17025:2017



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www.redbooklive.com

Certificate of Management System Registration

Certificate Number: 568-1 Issue: 19

Ramcro S.p.A.

having complied with the requirements of:

ISO 9001:2015
Quality Management Systems - Requirements

is certified by BRE Global Ltd. and is authorised to use the LPCB Certification Mark on stationery and publications related to the following products and/or services:

Ramcro S.p.A.
Via Marzorati
15-20014 Nerviano
Milan
Italy

Scope:
Design, manufacture and supply of electric cables including cables used for installations that require safety in the event of fire and fibre optic cables.

This certificate and appendix is maintained and held in force through regular surveillance activities.

Signed for BRE Global Ltd.	Phil Clare, BSIA Assessment Services	16 May 2021 Date of this Issue	15 May 2024 Expiry Date	29 July 2009 Date of First Issue

ISO 9001:2015



RINA

CISQ is a member of IQNet

CERTIFICATO N. / *CERTIFICATE No.* EMS-5716/AN

SI CERTIFICA CHE IL SISTEMA DI GESTIONE AMBIENTALE DI
IT IS HEREBY CERTIFIED THAT THE ENVIRONMENTAL MANAGEMENT SYSTEM OF

RAMCRO S.P.A.

VIA MARZORATI, 15 20014 Nerviano (MI) ITALIA

NELLE SEGUENTI UNITÀ OPERATIVE / *IN THE FOLLOWING OPERATIONAL UNITS*

VIA MARZORATI, 15 20014 Nerviano (MI) ITALIA

È CONFORME ALLA NORMA / *IS IN COMPLIANCE WITH THE STANDARD*

ISO 14001:2015

IAF:19

PER I SEGUENTI CAMPI DI ATTIVITÀ / *FOR THE FOLLOWING FIELD(S) OF ACTIVITIES*

PROGETTAZIONE E PRODUZIONE DI CAVI ELETTRICI CON CONDUTTORI METALLICI PER TUTTE LE APPLICAZIONI RIVESTITI TRAMITE ESTRUSIONE DI MATERIE TERMOPLASTICHE. COMMERCIALIZZAZIONE DI CAVI IN FIBRA OTTICA.

DESIGN AND MANUFACTURE OF ELECTRIC CABLES WITH METAL CONDUCTORS FOR ALL APPLICATIONS SHEATHED BY EXTRUDED THERMOPLASTIC MATERIALS. TRADE OF FIBRE OPTIC CABLES.

Prima emissione / *First Issue*	Data decisione di rinnovo / *Renewal decision date*
23.12.2014	22.12.2020
Data scadenza / *Expiry Date*	**Data revisione / *Revision date***
22.12.2023	22.12.2020

Davide Torti
Turin Management System Certification, Head

RINA Services S.p.A.
Via Corsica 12 - 16128 Genova Italy

ISO 14001:2015



RINA

CISQ is a member of IQNet

CERTIFICATO N. / *CERTIFICATE No.* OHS-2224

Si certifica che il Sistema di Gestione della Sicurezza e della Salute sul luogo di lavoro di
It is hereby certified that the Occupational Health and Safety Management System of

RAMCRO S.P.A.

VIA MARZORATI, 15 20014 Nerviano (MI) ITALIA

nelle seguenti unità operative / *in the following operational units*

VIA MARZORATI, 15 20014 Nerviano (MI) ITALIA

è conforme alla norma / *is in compliance with the standard*

ISO 45001:2018

per le seguenti attività / *for the following activities*

IAF:19

PROGETTAZIONE, PRODUZIONE DI CAVI ELETTRICI CON CONDUTTORI METALLICI PER TUTTE LE APPLICAZIONI RIVESTITI TRAMITE ESTRUSIONE DI MATERIE TERMOPLASTICHE. COMMERCIALIZZAZIONE DI CAVI IN FIBRA OTTICA.

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ISO 45001:2018

CPR REGULATION

CPR Cables (Construction Products Regulation) are essential for ensuring safety in buildings. Regulated by the European Regulation 305/2011, these cables must meet specific fire reaction requirements, reducing the risk of flame propagation and the emission of toxic smoke in the event of a fire.

The CPR classification allows for the selection of the most suitable type of cable based on the installation environment, enhancing the protection of people and property.

Using cables that comply with CPR standards is therefore not only a legal obligation but also a responsible choice for designers, installers, and clients.

RAMCRO has a wide variety of CPR products developed in almost 10 years. In addition, RAMCRO is proud to communicate that it's been among the first movers (2020) in owning a CPR Test Equipment in-house in order to dedvelop our prodcuts and fit perfectly your needs

Advantages of High rated CPR Cables

High Rated classified cables offer numerous benefits, especially in environments where fire safety is a top priority. Here are the main advantages:

Reduced emission of toxic gases

This protects both people and electronic equipment, especially in sensitive environments like hospitals, schools, public offices, and critical infrastructure.

Low smoke emission

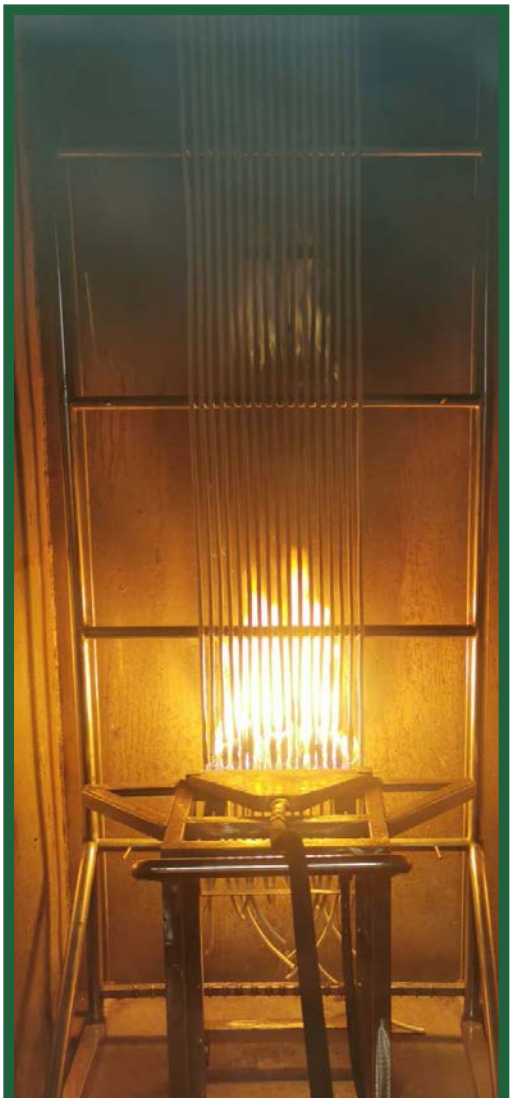
They produce very little smoke when burning, improving visibility during evacuation and reducing the risk of inhaling toxic substances.

Regulatory compliance

These cables are often legally required in public or high-occupancy buildings, ensuring compliance with European fire safety regulations.

No flaming droplets

They do not release burning droplets that could further fuel the fire or cause burns.



US-AMERICAN AND BRITISH UNITS

Conversion of usual measuring units

Units for cables and wires

In the US the measurements are mainly used in AWG-numbers (AWG = American Wire Gauge).

The AWG-numbers conform the british B&S-numbers (B&S = Brown & Sharp)

AWG No.	Cross-section mm²	Diameter mm	Cond. Res. Ohm/km
1000 MCM*	507	25,4	0,035
750	380	22,0	0,047
600	304	19,7	0,059
500	254	20,7	0,07
400	203	18,9	0,09
350	178	17,3	0,10
300	152	16,0	0,12
250	127	14,6	0,14
4/0	107,20	11,68	0,18
3/0	85,00	10,40	0,23
2/0	67,50	9,27	0,29
0	53,40	8,25	0,37
1	42,40	7,35	0,47
2	33,60	6,54	0,57
3	26,70	5,83	0,71
4	21,20	5,19	0,91
5	16,80	4,62	1,12
6	13,30	4,11	1,44
7	10,60	3,67	1,78
8	8,366	3,26	2,36
9	6,63	2,91	2,77
10	5,26	2,59	3,64
11	4,15	2,30	4,44
12	3,30	2,05	5,41
13	2,62	1,83	7,02
14	2,08	1,63	8,79
15	1,65	1,45	11,20
16	1,31	1,29	14,70
17	1,04	1,15	17,80
18	0,8230	10,240	23,0
19	0,6530	0,9120	28,3
20	0,5190	0,8120	34,5
21	0,4120	0,7230	44,0
22	0,3250	0,6440	54,8
23	0,2590	0,5730	70,1
24	0,2050	0,5110	89,2
25	0,1630	0,4550	111,0
26	0,1280	0,4050	146,0
27	0,1020	0,3610	176,0
28	0,0804	0,3210	232,0
29	0,0646	0,2860	282,0
30	0,0503	0,2550	350,0
31	0,0400	0,2270	446,0
32	0,0320	0,2020	578,0
33	0,0252	0,1800	710,0
34	0,0200	0,1600	899,0
35	0,0161	0,1430	1125,0
36	0,0123	0,1270	1426,0
37	0,0100	0,1130	1800,0
38	0,00795	0,1010	2255,0
39	0,00632	0,0897	2860,0

4/0 is also stated: 0000; 1 mil = 0,001 inch = 0,0254 mm

* for bigger cross-section the sizes in MCM (circular mils)

1 CM = 1 Circ. mil. = 0,0005067 mm2

1 MCM = 1000 Circ. mils = 0,5067 mm2

General measuring units

Lengths

1 mil	= 0,0254 mm
1 in (inch)	= 25,4 mm
1 ft (foot)	= 0,3048 m
1 yd (yard)	= 0,9144 m
1 ch (chain)	= 20,1 m
1 mile (land mile)	= 1,609 km
	= 1760 yards
1 mile (nautic mile)	= 1,852 km
1 mm	= 0,039370 inches
1 m	= 39,370079 inches

Area

1 CM (circ. mil)	= $0{,}507 \cdot 10^{-3}$ mm²
1 MCM	= 0,5067 mm²
1 sq. inch (sq. inch)	= 645,16 mm²
1 sq. ft. (sq. foot)	= 0,0929 m²
1 square yard	= 0,836 m²
1 acre	= 4047 m²
1 square mile	= 2,59 km²

Density

1 cu. in. (cubic inch)	= 16,39 cm³
1 cu. ft. (cubic foot)	= 0,0283 m³
1 cu. yd. (cubic yard)	= 0,7646 m³
1 gal. (US gallon)	= 3,785 l
1 gal. (brit gallon)	= 4,546 l
1 US pint	= 0,473 l
1 US quart	= 0,946 l
1 US barrel	= 158,8 l

Temperature

F (Fahrenheit)	= (1,8 · C) + 3°
C (Celsius)	= 0,5556 · (F–32°)

Weight

1 grain	= 64,8 mg
1 dram	= 1,77 g
1 oz (ounce)	= 28,35 g
1 lb (pound)	= 0,4536 Kp
1 stone	= 6,35 Kp
1 qu (quarter)	= 12,7 Kp
1 US-cwt (hundredweight)	= 45,36 Kp
1 US ton (short ton)	= 0,907 t
1 brit. ton (long ton)	= 1,016 t

Force

1 lb	= 4,448 N
1 brit. ton	= 9954 N
1 pdl (Poundal)	= 0,1383 N
1 kp	= 9,81 N
1 N	= 0,102 kp

Velocity

1 mile/h	= 1,609 km/h
1 Knoten	= 1,852 km/h
1 ft/s	= 0,305 m/s
1 ft/min	= $5{,}08 \cdot 10^{-3}$ m/s

Energy

1 lb/mile	= 0,282 kg/m
1 lb/yard	= 0,496 kg/m
1 lb/foot	= 1,488 kg/m

Radiation absorbed dose

1 Gray	= 1 J/kg
1 rad	= 10^{-2} J/kg = 1 Centi Gy
	= 0,01 Gy
1 Centi	= 100 Joule
1 rad	= cJ/kg = 0,01Gy
1 Mrad	= $1 \cdot 10^{6}$ cJ/kg

Pressure

1 psi (lb/sq.)	= 68,95 mbar
	= $6{,}895 \cdot 10^{-3}$ Nmm²
1 lb/sq. ft.	= 0,478 mbar
1 pdl/sq. ft.	= 1,489 N/m²
1 in Hg	= 33,86 mbar
1 ft H2 O	= 29,89 mbar
1 in H2 O	= 2,491 mbar
1 N/mm2	= 145 psi
	= 10 bar
1 kp/mm2	= 1422 psi
1 at	= 736 Torr
	= 1 kp/cm²
1 Torr	= 1 mm Hg
1 bar	= 0,1 H Pa
1 Pa	= 1 N/m²

Density

1 lb/cu. ft.	= 16,02 kg/m³
1 lb/cu. in.	= 27,68 t/m³

Horse power

1 hp · h	= 1,0139 PS · h
	= $2{,}684 \cdot 10^{6}$ Joule
	= 746 W · h
1 BTU (brit. therm. unit)	= 1055 Joule
1 hp	= 0,7457 kW
1 kW	= 1,31 hp

Electrical units

1 ohm/1000 yd	= 1,0936 /km
1 ohm/1000 ft	= 3,28 /km
1 µF/mile	= 0,62 µF/km
1 megohm/mile	= 1,61 M/km
1 µµf/foot	= 3,28 pF/m
1 decibel/mile	= 71,5 mN/m

Power rate

1 PS	= 0,736 kW
1 kW	= 1,36 PS

CODE-DESIGNATION

Explanations for Cables and Insulated Wires

A-	Outdoor cable
A	approved national design
AB	Outdoor cable with lighting protection
AD	Outdoor cable with differential protection
AJ-	Outdoor cable with induction protection
ASLH	self-supporting communication cables for high voltage overhead lines
B	armouring
B	spinning of textile yarn
b	armouring
(1B...)	one layer of steel tape... thickness of the steel tape in mm
(2B...)	two layers of steel tape... thickness of the steel tape in mm
BD	unit-type stranding
BLK	bare copper-conductor without insulation
BZ	bronze conductor
C	screen of copper wire braiding
C	screen of copper wire spinning
C	outer protection of jute and viscous compound
Cu	copper wire
(-Cu)	total cross-section of copper screens (mm2)
D	screen of copper wires
(D)	screen of helically applied copper wires
DM	Dieselhorst-Martin quad
Dreier	three cores in triple stranded
E	copper drain wire
E(e)	protective covering of viscous compound with embedded layer of plastic tape
e	single wire, solid
F	cable cores assembly with petrol-jelly
F	foil wrapping
F	Flat cable
F	star quad for railway cable
F	star quad for phantom circuits
(F...)	flat wire armouring... thickness in mm
OF	jelly lled cable core, lling compound of hard substances
FR	flame retardant
f	exible, fine wire stranding
ff	extra fine wire stranding
G	insulation or sheath material of rubber (NR) or (SBR)
G-	Mining cable
GJ	Mining cable with induction protection
GS	glass fibre whipping or braiding
2G	insulation or jacket of silicone rubber, (SIR)
3G	insulation or jacket of ethylene propylene rubber, (EPR)
4G	insulation or jacket of ethylene vinylacetate rubber (EVA)
5G	insulation or jacket of chloroprene rubber (CR)
6G	insulation or jacket of chlorosulphonated polyethylene
(CSM),	Hypalon
7G	insulation or jacket of Flouroelastomer (FKM)
8G	insulation or jacket of Nitrile rubber (NBR)
9G	PE-C rubber (CM)
53G	CM, chlorinated Polyethylene
H	insulation or jacket of halogen-free compound
H	Harmonized Documents
(H...)	maximal value of mutual capacitance (nF /km)
(HS)	semi-conducting tape of layer
HX	cross-linked, halogen-free polymer compound
...IMF	individual stranding element (pairs or single cores etc.) in metal foil and drain wire
IMF	several stranding elements in metalfoil and drain wire
-J	cable with green-yellow earth core
-JZ	cable with green-yellow earth core and cores with inprinted numbers
K	copper-tape
(K)	inner sheath and longitudinally folded copper tape
LA	tinsel conductor (flat copper wire stranded over the thread of synthetic fibres)
LD	corrugated aluminium sheath
Lg	in layers stranding
Li	stranded wires conductor
(L)Y	laminated sheath Al-tape and PVC-jacket
(L)2Y	laminated sheath Al-tape and PE-jacketl
2L	double enamel coating as insulation
M	plastic-sheath cable
M	lead sheath
Mz	alloyed lead sheath
(mS)	magnetic shield
N	VDE standard
(N)	in adapted to VDE standard
NC	non-corrosiv, smoke-gase
NF	natural colour
-O	cable without green-yellow earth core
-OZ	cable without green-yellow earth core and cores with imprinted numbers
ö	oil-resistant
02Y	Foam-PE, insulation (cellular PE)
Q	Steel wire braiding
(R...)	round wire, diameter in mm
RAGL-	Compensating cable for thermocoupling
RD-	Rhenomatic cable
RE	Computer cable
RG-	Coaxial cable according MIL specification
re	round, single wire
rm	round, multiwire
RS-	computer switchboard cable
S	silk whipping
S	signal cables for railways
(S...)	nominal value of mutual capacitance (nF /km)
-S	signal cable for German Railway
S-	Switchboard cable
SL	flexible sheathed cable
2S	two layers of silk whipping
St	star quad for phantom circuits
St I	star quad in telephone cables for lager distance
St III	star quad in local cables
(St)	static screen
Staku	copper clad steel wire
Staku-Li	copper clad steel stranded wires
...t	termite protection
T	supporting element for overhead cable
T-	fan out cable
TF	carrier frequency of pairs or quads triple
TiC	triple in copper wire braid
TiMF	triple in metal foil
U	braiding of textile fibres
VGD	gold-plated
VN	ickel-plated VS silver-plated
VZK	galvanized VZN tinned
W	corrugated steel sheath
W	high heat resistant
W	corrugated steel sheath
X	cross-linked polyvinylchlorid (X-PVC) or other materials
XPE	cross-linked polyethylene (X-PE)
2X	cross-linked polyethylene
7X	cross-linked Ethylentetrafluorethylen (X-ETFE)
10X	cross-linked Polyvinylidenfluorid (X-PVDF)
Y	PVC, polyvinylchloride
Yu	PVC, polyvinylchloride, non-flammable, flame-retardant
Yv	PVC, polyvinylchloride, with reinforced sheath
YV	Equipment wires with tinned conductor
Yw	PVC, polyvinylchlorid, heat resistant upto 90°C
2Y	Polyethylene (PE)
2Yv	Polyethylene, reinforced sheath
02Y	Cellular polyethylene
02YS	insulation of cellular polyethylene with outer PE-skin
2YHO	insulation of air-spaced polyethylene
3Y	insulation polystyrene (PS), Styroflex
4Y	insulation or jacket of polyamide (PA)
5Y	insulation or jacket of polytetrafluorethylene (PTFE)
5YX	Perfluoralkoxy (PFA)
6Y	Perfluoroethylene-propylene (FEP)
7Y	insulation or jacket of ethylentetrafluorethylen (ETFE)
8Y	insulation of polyimid (PI)
9Y	polypropylen (PP)
10Y	PVDF, Polyvinylidene fluoride
11Y	polyurethan (PUR)
12Y	TPE-E, TPE
13Y	TPE-EE, TPE on base of Polyester-Ester
31Y	TPE-S, TPE on base of Polystyrol
41Y	TPE-A, TPE on base of Polyamide
51Y	PFA, Per uor-Alkoxylalkane
71Y	ECTFE, Monochlortrifluorethylene
91Y	TPE-O, TPE on base of Polyester-Ester
-Z	core imprinted with numbers
Z	twin cable
(Z)	high-tensile braid of steel wires
(ZG)	high-tensile element of glass fibre yarn
(ZN)	high-tensile of non-metallic elements

HANDLING, STORAGE AND LAYING OF CABLES

Great care is taken in the manufacturing of cables to ensure quality at every stage.

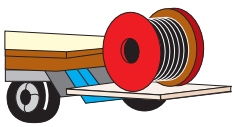
- Handling is the next important factor to ensure that by poor workmanship and mishandling the quality does not deteriorate.
- Of course laying is generally carried out by unskilled or semi-skilled men, strict supervision should be maintained so that this
  material, which can be very easily damaged, is handled with great care.
- If great care during installation is observed in the handling of cables on site the life of the cables is extended.

A. CABLE INSPECTION
1. Inspect every cable reel for damage before accepting the shipment. Be particularly alert for cable damage if:
2. A reel is lying flat on its side
3. Several reels are stacked one over the other
4. Other freight is stacked on a reel
5. Cable drums are without planks or broken
6. Nails have been driven into reel flanges to secure shipping blocks
7. A reel flange is damaged
8. A cable covering is removed, stained or damaged
9. A cable end seal is removed or damaged. A reel has been dropped (hidden damage likely)

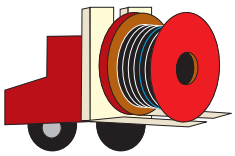
B. CABLE HANDLING & STORAGE
Damage to cables can occur due to the incorrect handling to which the drums and cables may be subjected; causing breakdown of the drum flanges and in exceptional cases, movement of the drum barrel takes place. Once this breakdown of the drum occurs, the cable is immediately exposed to damage. Cables damaged during handling & storage can cause service failures when the subject cable is put to use.

Thus the following is a list of Do's and Don'ts that should be followed while handling and storing the cables before it is put to use.

DO's

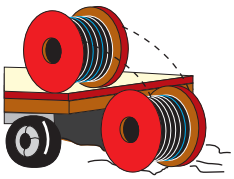


When off loading reels from a truck, lower reels carefully using a hydraulic gate, hoist or forklift truck.

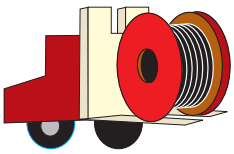


If a fork lift is used, approach the reel from the flange side. Position the forks such that the reel is lifted by both reel flanges. Also Consideration should be given to, Traffic patterns during off-loading & damage dur-ing the time in storage.

DON'ts



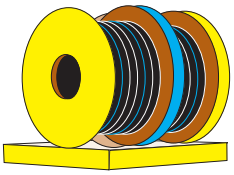
Never drop reels. If reels must be rolled, roll in opposite direction of the cable wraps to keep cable from loosening on the reel.



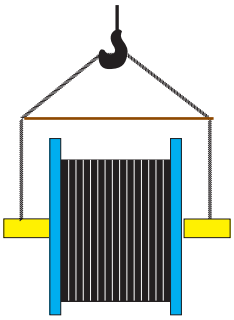
Do not allow the lift forks to contact the ca - ble. Care must be taken by the fork lift op erator not to make sudden turns or stops.

HANDLING, STORAGE AND LAYING OF CABLES

DO's

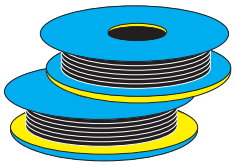


Cable reels should be stored on hard sur faces resting on the flanges edge (flanges vertical). Align reels flange to flange and, if possible, arrange so that first in is first out.

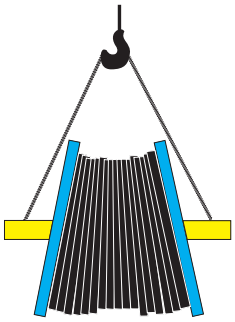


When using a hoist, install a mandrel through the reel arbor holes and attach a sling. Use a spreader bar approximately 6 inches longer than the overall reel width placed between the sling ends just above the reel flanges.

DON'ts



Multiple reels stacked on top of each other ("Pancake" storage) is not recommended for cable drums. The weight of the stack can total thousands of Kgs. creating an enormous load on the bottom reel. Also, damage to the reel and/or cable will likely occur when the reel is flipped for transit. A concentration of stress on the reel flange may cause it to break and subsequently damage the cable.



This may lead to the bending of the reel flanges and mashing the cable.

C. RECOMMENDED MINIMUM BENDING RADIUS FOR LV CABLES

Single Core: 15xD
Multicore : 12 x D
Where D= Diameter of cable in mm

D. INSTALLATION & LAYING

Mechanical stresses during installation are generally more severe than those encountered while in service. Thus careshould be taken as regards to the following while installation and laying of cables.

1. Care shall be taken during laying to avoid sharp bending, and twisting.
2. Cable shall be unwound from the drum by lifting the drum on the center.
3. Shaft supported both ends with suitable jacks / stands.
4. Under no circumstances the cable winding shall be lifted off a coil or drum lying flat at the flanges. This would cause serious twist and damages.
5. Suitable protection shall be provided to the cables against mechanical damages, it includes covers, pipes etc.

E. PRE- INSTALLATION

To ensure safety during cable installation, following shall be checked prior to installation.
1. The cable selected is proper for designed application.
2. The cable has not been damaged in transit or storage.

Review all applicable state and national codes to verify that the cable chosen is appropriate for the job. Also consult your local electricity authority. Next, you must identify any existing cable damage and prevent any further damaged from occurring. This is done through proper cable inspection, handling and storage.

HANDLING, STORAGE AND LAYING OF CABLES

F. RECOMMENDED SAFE PULLING FORCE WHENPULLED WITH PULLING EYE:

a) For Aluminum Conductors : 30 N/mm2
b) For Copper Conductor :50 N/mm2

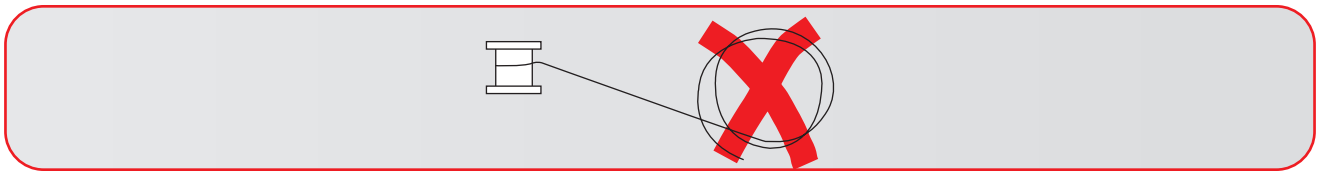
G. RECOMMENDED SAFE PULLING FORCE WITH STOCKINGS:

a) For Unarmoured Cable : P=5 D2
Where P= Pulling Force
b) For Armoured Cable : P=9 D2
Where D= Diameter of cable inmm

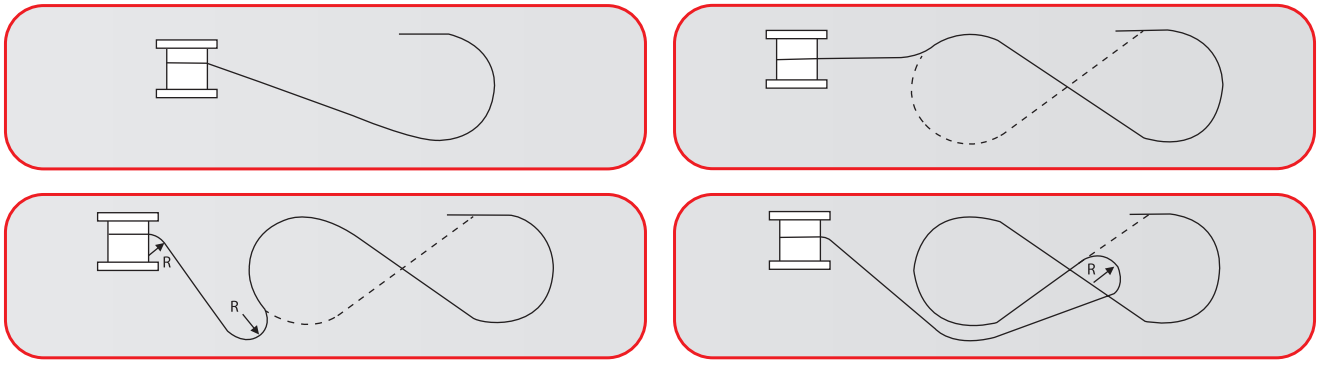
SPECIAL PRECAUTIONS FOR HANDLING / INSTALLATION OFLOW SMOKE SHEATHED CABLES

Cables like LSF sheath needs to be handled with care during installation. While special additives are used in formulation of
LSF compound to give the typical flame retardant characteristics of Zero Halogen Polymers some mechanical properties deteriorate. The following basic precautions are necessary.
Cables should not be exposed to sunlight for consider able period before installation i.e. the temp of cables sheath should be below 45°C.
Preferably installation is done during morning hours when the ambient temperature is low.
Wire/ropes should not be used directly on the cable sheath for pulling.
When pulled on cable trays/or any uneven surface, special attentions is needed to welding or unusually rough terrains.
Rollers and bends should not have any sharpness which may damage sheath.

DO NOT ATTEMPT "COILING" OF CABLE ON THE GROUND



ON THE GROUND CABLE CAN BE FLAKED IN A FIGURE OF EIGHT FORMATION



Note: R Minimum Permissible bending radius of cable.

QD 06/01

Edited by RAMCRO S.p.A. on January 2023



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MARIAE
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Nov. 2025