



## RAMCROil - INSTRUMENTATION Cable

For standard applications, low smoke, Halogen Free

Multi-Pair, XLPE-Insulation, Individual & Collective Screen, LSZH-Sheath

Code: MAC3303HEEXO-UL13CC

XLPE/IAM/CAM/LSZH

### Application

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.

| Construction           |                                                                                                    | 12x3x16AWG |               |
|------------------------|----------------------------------------------------------------------------------------------------|------------|---------------|
| Formation              | 12 Triads                                                                                          | Unit       | Nominal Value |
| Section                | 16AWG                                                                                              |            |               |
| Conductor              | Plain annealed copper wire, 7 strand                                                               | mm         | 1,4           |
| Insulation             | Cross Linked Polyethylene - XLPE                                                                   | mm         | 2,2           |
| Colour Code            | White, Black, Red + Numbered Tapes                                                                 |            |               |
| Construction COMM.CORE |                                                                                                    | 1C22AWG    |               |
| Formation              | 1 Core                                                                                             | Unit       | Nominal Value |
| Section                | 22AWG                                                                                              |            |               |
| Conductor              | Plain annealed copper wire, 7 strand                                                               | mm         | 0,7           |
| Insulation             | Polyvinyl chloride - PE                                                                            | mm         | 1,2           |
| Colour Code            | Orange                                                                                             |            |               |
| Individual Screen      | 0,026 mm Aluminium / PETP tape over tinned copper drain wire                                       |            |               |
| Wrapping               | at least 1 layer of plastic tape 0,023 mm                                                          |            |               |
| Collective Screen      | 0,026 mm Aluminium / PETP tape over tinned copper drain wire                                       |            |               |
| Inner Sheath           | N.A.                                                                                               |            |               |
| Armour                 | N.A.                                                                                               |            |               |
| Outer Sheath           | Thermoplastic Low Smoke, Halogen Free - LSZH - Black                                               | mm         | 24            |
| Cable Printing         | RAMCRO S.p.A. - (UL) Listed E345186 Type PLTC - 12 tr 16 - Shielded - 75°C + BATCH + METER MARKING |            |               |

### Technical Data & Standard References

|                                     |                        |                                  |            |
|-------------------------------------|------------------------|----------------------------------|------------|
| Fire Propagation:                   |                        | Construction Reference Standard: | UL 13      |
| - Test on single cable              | IEC 60332-1            | Type of Cable:                   | PLTC Cable |
| - Test on bunched cables            | IEC 60332-3            | Low Voltage Directive            | 2014/35/UE |
| - Vertical Tray Flame Test          | UL1685                 | Other References:                |            |
| Limiting Oxygen Index (LOI)         | (min 37%)              | - NEC code, sec. 725 PLTC,       |            |
| Smoke Density                       | IEC 61034              | - NEC code, sec. 727 ITC,        |            |
| Amount of halogen acid gas          | IEC 60754-1 (max 0,5%) | - UL 1685                        |            |
| Acidity (ph value) and conductivity | IEC 60754-2            | - ASTM D 1239                    |            |
| Notes                               |                        | - NF C 32-020                    |            |
|                                     |                        | - IRAM IAP                       |            |

### Electrical & Mechanical Data

|                                 |           |       |                     |                         |
|---------------------------------|-----------|-------|---------------------|-------------------------|
| Conductor Cross-section         | Nom.      | 16AWG | Temperature Range:  |                         |
| DC Resistance per core at 20° C | max Ω/km  | 13,7  | During Operation    | ° C -30° C up to +90° C |
| Insulation Resistance at 20° C  | min MΩ*km | 1000  | During Installation | ° C -5° C up to +50° C  |
| Mutual Capacitance              | max nF/km | 150   |                     |                         |
| Inductance                      | max mH/km | 1     | Min. Bending Radius | mm 8 x cable diameter   |
| Test Voltage - Core/Core        | V         | 2000  | Max Pulling Tension | N/mm2 2336              |
| Test Voltage - Core/Screen      | V         | 2000  | Weight Approx       | kg/km 1023              |
| L/R Ratio                       | max µH/Ω  | 40    |                     |                         |
| Operating Voltage               | V         | 300   |                     |                         |