



# HALLEY CABLES

# RE-m2X(St)HSAWAH-CI FE 180 90° C CU/mc/XLPE/OSCR/LSZH/SWA/LSZH

## Instrumentation Cables HFFR 500 V

XLPE insulated, collective screened, armoured, HFFR sheathed cable



### Construction:

|                     |   |
|---------------------|---|
| Conductor           | : plain annealed copper wire, stranded.   |
| Separator           | : mica tape.  |
| Insulation          | : XLPE compound.  |
| Core identification | : black / blue / red cores.   |
| Triple              | : three conductors twisted to a triple.   |
| Lay-up              | : triples laid up in layers of optimum pitch.   |
| Separator           | : polyester tape.   |
| Screen              | : AL-PES (aluminium polyester) tape over stranded tinned copper drain wire (7x0,30 mm) 0,50 mm <sup>2</sup> . |
| Inner sheath        | : HFFR (LSZH) compound.   |
| Armour              | : galvanized round steel wires.   |
| Outer sheath        | : HFFR (LSZH) compound, oil resistant, hydrocarbon resistant, UV resistant, sunlight resistant.               |
| Sheath colour       | : RAL 9005, black.  |

### Technical data and tests:

|                        |  |
|------------------------|--|
| Rated voltage          | : 500 V.   |
| Test voltage           | : Urms core-core : 2000 V;<br>Urms core-screen : 2000 V.             |
| Temperature range      | : operation : - 30° C ~ + 90° C;<br>installation : - 5° C ~ + 50° C. |
| Min. bending radius    | : 10 x D.  |
| Insulation resistance  | : min. 5000 MΩ/km.   |
| Capacitance unbalanced | : max. 500 pF/500 m (1 kHz).   |
| Inductance             | : max. 1 mH/km (1 kHz).  |

### Standards:

|                            |   |
|----------------------------|---|
| Design                     | : DIN EN 50288-7.   |
| Conductor                  | : DIN EN 60228 class 2.   |
| Insulation                 | : EN 50290-2-29.  |
| Inner/Outer sheath         | : EN 50290-2-27.  |
| Armour                     | : EN 10257-1.   |
| Flame test                 | : single cable : IEC 60332-1-2.<br>bunched : IEC 60332-3-24 (Cat. C). |
| Amount of halogen acid gas | : IEC 60754-1 (0%).   |
| Degree of acidity of gases | : IEC 60754-2 (ph>4.3; C<10 μS/mm).                                   |
| Circuit integrity          | : IEC 60331-21.   |
| Smoke density              | : IEC 61034-2 (L.T. > 60%).   |
| Oil resistant              | : ICEA S-82-552.  |
| Sunlight resistance        | : UL 1581 section 1200.   |

### Technical data and tests:

|                            |  |
|----------------------------|--|
| Conductor resistance       | : 0,50 mm <sup>2</sup> : 36,7 Ω/km;<br>0,75 mm <sup>2</sup> : 25,0 Ω/km;<br>1,0 mm <sup>2</sup> : 18,5 Ω/km;<br>1,3 mm <sup>2</sup> : 14,2 Ω/km;<br>1,5 mm <sup>2</sup> : 12,3 Ω/km.   |
| L/R (ratio) (max)          | : 0,50 mm <sup>2</sup> : 25 μH/Ω;<br>0,75 mm <sup>2</sup> : 25 μH/Ω;<br>1,0 mm <sup>2</sup> : 25 μH/Ω;<br>1,3 mm <sup>2</sup> : 40 μH/Ω;<br>1,5 mm <sup>2</sup> : 40 μH/Ω.   |
| Mutual Capacitance (1 kHz) | : <u>≤ 4 pairs</u> <u>all other pairs</u><br>0,50 mm <sup>2</sup> : max. 100 pF/m;    max. 65 pF/m;<br>0,75 mm <sup>2</sup> : max. 100 pF/m;    max. 65 pF/m;<br>1,0 mm <sup>2</sup> : max. 100 pF/m;    max. 65 pF/m;<br>1,3 mm <sup>2</sup> : max. 100 pF/m;    max. 75 pF/m;<br>1,5 mm <sup>2</sup> : max. 100 pF/m.    max. 75 pF/m. |

Any other construction available upon request.





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### Applications:

These cables are used for transmission of analogue and digital signals in instrumentation and control systems at chemistry and petrochemistry industry plants, power plants, natural gas and petroleum plants, etc... These cables fields of use are fire proof and can continue with the supply of a power for a period of 180 minutes under the existing fire conditions. These cables are used in environments which must have no corrosive gases emitted in the event of fire. In case of fire, these cables inhibit the propagation of the flames and the development of smoke is extremely low. Instrumentation cables are not allowed for direct connection to a low impedance source, e.g. public mains electricity supply. With blue sheath, it is suitable for intrinsically safe systems. The armour above the inner sheath protects the cable from mechanical shocks. These cables are recommended for direct burial. They are for indoor and outdoor installation, in dry and wet locations; on racks, trays, in conduits.

### DIMENSIONS

| No. of cores x cross section<br>mm <sup>2</sup> | Insulation thickness<br>mm | Approx. inner sheath diameter<br>mm | Armour wire diameter<br>mm | Approx. outer diameter<br>mm | Copper weight<br>kg/km | Approx. cable weight<br>kg/km |
|---|----------------------------|-------------------------------------|----------------------------|------------------------------|------------------------|-------------------------------|
| 1x3x1,5   | 0,60                       | 8,7                                 | 0,90                       | 13,4                         | 49                     | 374                           |

Any other construction available upon request.

