



# INSTRUMENTATION CABLES

Multipair Individual and Overall Screen,  
Armoured and Lead Sheathed

PE/IS/OS/PVC/LC/PVC/SWA/PVC  
XLPE/IS/OS/LSZH/LC/LSZH/SWA/LSZH

## APPLICATIONS

Can be used in cable tray or conduit to connect electrical instrumentation and communication circuits in industrial process controls, refineries, oil and gas plant.  
Excellent protection against corrosion, humidity and poor vibration resistance.

## OPERATING TEMPERATURE

-20 °C to +80 °C (for general use); -40 °C to +90 °C (on request).

## MINIMUM BENDING RADIUS

20 times the outer diameter.

## CABLE CONSTRUCTION

**Conductors** Plain annealed electrolytic copper wire according to EN 60228 class 1(U) solid, class 2 (R) stranded, class 5 (F) flexible.

**Insulation** PVC, PE, XLPE or LSZH thermoplastic material.

**Twisting** The insulated cores shall be twisted in pairs for a good reduction of the electromagnetic noise.

**Individual screen** Aluminium/polyester tape, coverage >100%, aluminium in contact with tinned copper drain wire.

**Cabling** The screened pairs are cabled with suitable non hygroscopic fillers (when necessary) and wrapped with polyester tape if required.

**Overall screen** Aluminium/polyester tape, coverage >100%, aluminium in contact with tinned copper drain wire.

**Bedding** PVC or LSZH thermoplastic material.

**Lead Sheath** Lead alloy.

**Inner sheath** PE, PVC or LSZH thermoplastic material.

**Armour** Single layer of galvanized steel wires (SWA).

**Outer sheath** PVC or LSZH thermoplastic material.

## APPLICABLE STANDARDS

*Basic design* EN 50288-7 or PAS 5308

*Flame retardant* IEC 60332-1

*Fire retardant (cat. C or A according to requirements)* IEC 60332-3

*Halogen free properties (only for LSZH cables)* IEC 60754-1

*Low smoke emission (only for LSZH cables)* IEC 61034-2

## EN 50288-7 (300 V)

| Cross section (mm <sup>2</sup> ) | Diameter under armour (mm)         | Outer diameter (mm) | Weight (kg/km) |
|----------------------------------|------------------------------------|---------------------|----------------|
| 0,5 mm <sup>2</sup> stranded     | R-XLPE/IS/OS/LSZH/LC/LSZH/SWA/LSZH |                     |                |
| 1x2x0,5                          | 9,9                                | 14,6                | 566            |
| 4x2x0,5                          | 16,4                               | 21,3                | 1462           |
| 6x2x0,5                          | 19,1                               | 24,0                | 1848           |
| 12x2x0,5                         | 23,0                               | 28,7                | 2467           |
| 15x2x0,5                         | 25,3                               | 31,0                | 2894           |
| 24x2x0,5                         | 30,3                               | 36,2                | 3724           |
| 0,75 mm <sup>2</sup> stranded    | R-XLPE/IS/OS/LSZH/LC/LSZH/SWA/LSZH |                     |                |
| 1x2x0,75                         | 10,1                               | 14,8                | 585            |
| 4x2x0,75                         | 16,9                               | 21,9                | 1498           |
| 6x2x0,75                         | 19,7                               | 24,7                | 1901           |
| 12x2x0,75                        | 24,0                               | 29,7                | 2753           |
| 15x2x0,75                        | 26,4                               | 32,3                | 3103           |
| 24x2x0,75                        | 31,7                               | 37,8                | 4623           |
| 1 mm <sup>2</sup> stranded       | R-XLPE/IS/OS/LSZH/LC/LSZH/SWA/LSZH |                     |                |
| 1x2x1                            | 10,8                               | 15,4                | 659            |
| 4x2x1                            | 18,3                               | 23,2                | 1775           |
| 6x2x1                            | 20,9                               | 26,0                | 2286           |
| 12x2x1                           | 25,6                               | 31,6                | 3158           |
| 15x2x1                           | 28,2                               | 34,2                | 3682           |
| 24x2x1                           | 33,9                               | 40,1                | 4711           |
| 1,5 mm <sup>2</sup> stranded     | R-XLPE/IS/OS/LSZH/LC/LSZH/SWA/LSZH |                     |                |
| 1x2x1,5                          | 11,5                               | 16,2                | 722            |
| 4x2x1,5                          | 19,8                               | 24,9                | 2106           |
| 6x2x1,5                          | 22,9                               | 28,8                | 2470           |
| 12x2x1,5                         | 28,1                               | 34,3                | 3695           |
| 15x2x1,5                         | 31,2                               | 37,3                | 4573           |
| 24x2x1,5                         | 37,9                               | 45,1                | 5553           |

approximate values

| ELECTRICAL CHARACTERISTICS       |      |      |      |      |
|----------------------------------|------|------|------|------|
| Cross section (mm <sup>2</sup> ) | 0,5  | 0,75 | 1    | 1,5  |
| Capacitance (pF/m)               | ≤150 | ≤150 | ≤150 | ≤150 |
| L/R (μH/Ohm)                     | ≤25  | ≤25  | ≤25  | ≤40  |

## PAS 5308 (300/500 V)

| Cross section (mm <sup>2</sup> ) | Diameter under armour (mm)    | Outer diameter (mm) | Weight (kg/km) |
|----------------------------------|-------------------------------|---------------------|----------------|
| 0,5 mm <sup>2</sup> solid        | U-PE/IS/OS/PVC/LC/PVC/SWA/PVC |                     |                |
| 2x2x0,5                          | 14,1                          | 19,6                | 1267           |
| 5x2x0,5                          | 17,3                          | 23,0                | 1775           |
| 2x2x0,5                          | 22,7                          | 29,3                | 2695           |
| 15x2x0,5                         | 25,7                          | 32,7                | 3172           |
| 20x2x0,5                         | 28,7                          | 36,5                | 4374           |
| 0,5 mm <sup>2</sup> flexible     | F-PE/IS/OS/PVC/LC/PVC/SWA/PVC |                     |                |
| 2x2x0,5                          | 15,8                          | 21,5                | 1562           |
| 5x2x0,5                          | 19,4                          | 26,0                | 2280           |
| 10x2x0,5                         | 25,7                          | 32,7                | 3172           |
| 15x2x0,5                         | 29,7                          | 37,7                | 4650           |
| 20x2x0,5                         | 32,7                          | 40,9                | 4817           |
| 1 mm <sup>2</sup> solid          | U-PE/IS/OS/PVC/LC/PVC/SWA/PVC |                     |                |
| 2x2x1                            | 16,6                          | 22,3                | 1600           |
| 5x2x1                            | 20,6                          | 27,2                | 2240           |
| 10x2x1                           | 27,2                          | 34,2                | 3681           |
| 15x2x1                           | 31,6                          | 39,8                | 4658           |
| 20x2x1                           | 35,4                          | 43,8                | 5647           |
| 1,5 mm <sup>2</sup> stranded     | R-PE/IS/OS/PVC/LC/PVC/SWA/PVC |                     |                |
| 2x2x1,5                          | 18,9                          | 25,5                | 2154           |
| 5x2x1,5                          | 23,2                          | 30,0                | 2753           |
| 10x2x1,5                         | 31,9                          | 40,1                | 4711           |
| 15x2x1,5                         | 36,4                          | 44,8                | 5553           |
| 20x2x1,5                         | 40,6                          | 50,2                | 7350           |

approximate values

| Electrical Characteristics       |      |      |      |
|----------------------------------|------|------|------|
| Cross section (mm <sup>2</sup> ) | 0,5  | 1    | 1,5  |
| Capacitance (pF/m)               | ≤115 | ≤115 | ≤120 |
| L/R (μH/Ohm)                     | ≤25  | ≤25  | ≤40  |