



INSTRUMENTATION CABLES

Multipair Individual and Overall Screen, Armoured and with Hi-Pack protection

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

APPLICATIONS

This is an alternative to lead sheath and can be used in cable tray, conduit or direct burial to connect electrical instrumentation and communication circuits in industrial process controls.

This protection has lower weight and smaller diameter compared to lead sheath.

Excellent protection against corrosion, humidity, in petrochemical plants.

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.

Hi-Pack protection Aluminium tape coated with a protective plastic coating, longitudinally applied, bonded to black extruded bedding of High Density Polyethylene compound plus an additional Polyamide-Polypropylene special thermoplastic alloy.

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

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 ²) | Diameter under armour (mm) | Outer diameter (mm) | Weight (kg/km) | |
|-----------------------------------|----------------------------|---------------------|----------------|------|
| 0,5 mm ² stranded | R-XLPE/IS/OS/HIPK/SWA/LSZH | | | |
| 1x2x0,5 | 7,9 | 11,7 | 283 | |
| 4x2x0,5 | 13,1 | 17,0 | 731 | |
| 6x2x0,5 | 15,3 | 19,2 | 924 | |
| 12x2x0,5 | 18,4 | 23,0 | 1234 | |
| 15x2x0,5 | 20,2 | 24,8 | 1447 | |
| 24x2x0,5 | 24,2 | 29,0 | 1862 | |
| 0,75 mm ² stranded | R-XLPE/IS/OS/HIPK/SWA/LSZH | | | |
| 1x2x0,75 | 8,1 | 11,8 | 293 | |
| 4x2x0,75 | 13,5 | 17,5 | 749 | |
| 6x2x0,75 | 15,8 | 19,8 | 951 | |
| 12x2x0,75 | 19,2 | 23,8 | 1377 | |
| 15x2x0,75 | 21,1 | 25,8 | 1552 | |
| 24x2x0,75 | 25,4 | 30,2 | 2312 | |
| 1 mm ² stranded | R-XLPE/IS/OS/HIPK/SWA/LSZH | | | |
| 1x2x1 | 8,6 | 12,3 | 330 | |
| 4x2x1 | 14,6 | 18,6 | 888 | |
| 6x2x1 | 16,7 | 20,8 | 1143 | |
| 12x2x1 | 20,5 | 25,3 | 1579 | |
| 15x2x1 | 22,6 | 27,4 | 1841 | |
| 24x2x1 | 27,1 | 32,1 | 2356 | |
| 1,5 mm ² stranded | R-XLPE/IS/OS/HIPK/SWA/LSZH | | | |
| 1x2x1,5 | 9,2 | 13,0 | 361 | |
| 4x2x1,5 | 15,8 | 19,9 | 1053 | |
| 6x2x1,5 | 18,3 | 23,0 | 1235 | |
| 12x2x1,5 | 22,5 | 27,4 | 1848 | |
| 15x2x1,5 | 25,0 | 29,8 | 2287 | |
| 24x2x1,5 | 30,3 | 36,1 | 2777 | |
| approximate values | | | | |
| Electrical Characteristics | | | | |
| Cross section (mm ²) | 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 ²) | Diameter under armour (mm) | Outer diameter (mm) | Weight (kg/km) |
|-----------------------------------|----------------------------|---------------------|----------------|
| 0,5 mm ² solid | U-PE/IS/OS/HIPK/SWA/PVC | | |
| 2x2x0,5 | 11,3 | 15,7 | 634 |
| 5x2x0,5 | 13,8 | 18,4 | 888 |
| 10x2x0,5 | 18,2 | 23,4 | 1348 |
| 15x2x0,5 | 20,6 | 26,2 | 1586 |
| 20x2x0,5 | 23,0 | 29,2 | 2187 |
| 0,5 mm ² flexible | F-PE/IS/OS/HIPK/SWA/PVC | | |
| 2x2x0,5 | 12,6 | 17,2 | 781 |
| 5x2x0,5 | 15,5 | 20,8 | 1140 |
| 10x2x0,5 | 20,6 | 26,2 | 1586 |
| 15x2x0,5 | 23,8 | 30,2 | 2325 |
| 20x2x0,5 | 26,2 | 32,7 | 2409 |
| 1 mm ² solid | U-PE/IS/OS/HIPK/SWA/PVC | | |
| 2x2x1 | 13,3 | 17,8 | 800 |
| 5x2x1 | 16,5 | 21,8 | 1120 |
| 10x2x1 | 21,8 | 27,4 | 1841 |
| 15x2x1 | 25,3 | 31,8 | 2329 |
| 20x2x1 | 28,3 | 35,0 | 2824 |
| 1,5 mm ² stranded | R-PE/IS/OS/HIPK/SWA/PVC | | |
| 2x2x1,5 | 15,1 | 20,4 | 1077 |
| 5x2x1,5 | 18,6 | 24,0 | 1377 |
| 10x2x1,5 | 25,5 | 32,1 | 2356 |
| 15x2x1,5 | 29,1 | 35,8 | 2777 |
| 20x2x1,5 | 32,5 | 40,2 | 3675 |
| approximate values | | | |
| Electrical Characteristics | | | |
| Cross section (mm ²) | 0,5 | 1 | 1,5 |
| Capacitance (pF/m) | ≤115 | ≤115 | ≤120 |
| L/R (μH/Ohm) | ≤25 | ≤25 | ≤40 |