



# 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* 50228-7 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				
<b>ELECTRICAL CHARACTERISTICS</b>				
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			
<b>Electrical Characteristics</b>			
Cross section (mm <sup>2</sup> )	0,5	1	1,5
Capacitance (pF/m)	≤115	≤115	≤120
L/R (μH/Ohm)	≤25	≤25	≤40