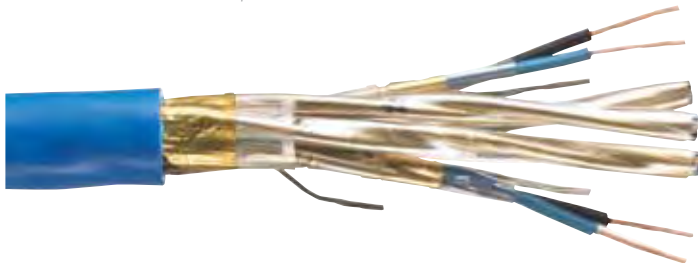


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Control and Instrumentation Cables

Multipair PE Insulated Instrumentation Cable BS5308 Part 1 Type 1

Individual and Collective Screen, Unarmoured 300/500V



Application

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Not suitable for direct buried applications (see cables types 2 and 3).

Specifications

- In accordance with BS 5308 Part 1.
- **Conductors:** Solid (Class 1), stranded (Class 2) or flexible (Class 5) copper conductors to BS EN 60228.
- **Insulation:** Polythene insulation Type 03 to BS6234.
- **Pair Identification:** Pairs will be numbered, each pair containing 1 black and 1 blue core.
- 100mm maximum pair lay length (minimum 10 twists per metre).
- **Individual Screen:** tinned copper drain wire under and in contact with aluminium/p.e.t.p. laminated tape applied metallic side down.
- **Screen Isolation Tape:** numbered p.e.t.p. tape applied over each individually screened pair.
- **Binder Tape:** p.e.t.p. tape 50% overlap.
- **Collective Screen:** tinned copper drain wire(s) under and in contact with aluminium/p.e.t.p. laminated tape applied metallic side down.
- **Outer Sheath:** PVC outer sheath Type TM.1 to BS EN 50363-4-1. In addition, outer sheath displays following characteristics:
Minimum oxygen index: 30%.
Maximum HCL Emission @ 800°C: 15%.
- Flame retardant to BS EN 60332-3-24 & IEC60332-3-24 Category C (NMV1.5).
- **Voltage Rating:** 300/500V.
- **Temperature Rating:** 65°C maximum conductor operating temperature.

Control & Instrumentation Cables
Multipair PE Insulated Instrumentation Cable
BS5308 Part 1 Type 1
 Individual & Collective Screen, Unarmoured 300/500V

Anixter Number	Number of Pairs/ Triple	Nominal Cond Area	Nominal Cond Stranding	Insulation Thickness	Nominal O/D	Approx Cable Weight	Min Bending Radius (fixed bend)
		mm ²	#/mm	mm	mm	kg/km	mm
A7-P51-0002LF	2P	0.50	16/0.20	0.60	12.00	160	100
A7-P51-0005LF	5P	0.50	16/0.20	0.60	15.20	250	130
A7-P51-0010LF	10P	0.50	16/0.20	0.60	21.10	480	170
A7-P51-0020LF	20P	0.50	16/0.20	0.60	27.30	780	220
A7-W71-0002LF	2P	0.75	24/0.20	0.60	12.80	190	110
A7-W71-0005LF	5P	0.75	24/0.20	0.60	16.30	270	140
A7-W71-0010LF	10P	0.75	24/0.20	0.60	22.70	550	190
A7-W71-0020LF	20P	0.75	24/0.20	0.60	29.80	960	240
A7-N41-0002LF	2P	1.00	1/1.13	0.60	12.80	200	110
A7-N41-0005LF	5P	1.00	1/1.13	0.60	16.20	290	130
A7-N41-0010LF	10P	1.00	1/1.13	0.60	22.60	580	190
A7-N41-0020LF	20P	1.00	1/1.13	0.60	29.80	1010	240
A7-V61-0002LF	2P	1.50	7/0.53	0.60	14.70	250	120
A7-V61-0005LF	5P	1.50	7/0.53	0.60	18.80	400	160
A7-V61-0010LF	10P	1.50	7/0.53	0.60	26.50	800	220
A7-V61-0020LF	20P	1.50	7/0.53	0.60	34.40	1400	280

N.B. The above part numbers apply to cables with blue outer sheaths. For black outer add -02, for green outer add -04. 15, 30 and 50 pair cables of the above type are also covered in BS5308 Part 1 and details are available upon request. 0.5mm² cables are also available with solid conductors (1/0.8mm). Details available upon request. For low smoke zero halogen alternative see page 4:12. For further technical information refer to page 4:22.

Technical Information for BS5308 Part 1

ELECTRICAL CHARACTERISTICS

MAXIMUM MUTUAL CAPACITANCE VALUES

	Conductor Size				
	0.5mm ² pF/m	0.75mm ² pF/m	1.0mm ² pF/m	1.5mm ² pF/m	2.5mm ² pF/m
Cables without Screens	75	75	75	85	85
Cables with Collective Screen Only except 1 pair, 2 pair and 1 triple)	75	75	75	85	85
One Pair, One Triple and Two Pair Collectively Screened and all Cables with individually Screened Pairs	115	115	115	120	120

MAXIMUM D.C. CONDUCTOR RESISTANCE @ 20°C

Conductor Size	Conductor Stranding	Resistance @ 20°C Maximum
mm ²	#/mm	Ω/km
0.5	1/0.8	36.8
0.5	16/0.2	39.7
0.75	24/0.2	26.5
1.0	1/1.13	18.4
1.5	7/0.53	12.3
2.5	7/0.67	7.56

pF/m = pico Farads per metre
 Ω/km = ohms per km
 μH/Ω = micro Henrys per ohm

MAXIMUM L/R RATIO

Conductor Size	Conductor L/R Ratio (for adjacent cores)
mm ²	
0.5	25μH/Ω
0.75	25μH/Ω
1.0	25μH/Ω
1.5	40μH/Ω
2.5	65μH/Ω

INFORMATION ON HANDLING AND USAGE AT LOW TEMPERATURES

Attention is drawn to the fact that as the temperature decreases PVC compounds become increasingly stiff and brittle, with the result that if the cable is bent quickly into a small radius, or is struck sharply at temperatures in the region of 0°C or lower, there is a risk of shattering the PVC components. To avoid the risk of damage during handling, therefore, it is desirable that the cables specified in this standard should be installed only when both the cable and the ambient temperatures are above 0°C and have been so for the previous 24 hrs, or where special precautions have been taken to maintain the cable above this temperature. However, after installation, they will operate satisfactorily at temperatures between -40°C and +65°C providing that at temperatures below 0°C they are not subject to movement or impact. The manufacturer should be consulted for precise instructions if the cable is to be stored and/or used outside these temperature limits.