

Control and Instrumentation Cables

Multi-Core PE Insulated LSF Instrumentation Cable

BS5308 Part 1 Type 2

Collective Screen, Armoured 300/500V Low Smoke Zero Halogen



Application

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Especially for use in areas where fire would create dense smoke and toxic fumes causing a major threat to life and equipment. Suitable for direct buried applications.

Specifications

- Generally in accordance with BS 5308 Part 1.
- **Conductors:** Stranded (Class 2) or flexible (Class 5) copper conductors to BS EN 60228.
- **Insulation:** Polythene insulation Type 03 to BS6234.
- **Core Identification:**
Up to forty cores - cores will be numbered in black ink on yellow cores.
Up to eighty cores - First forty cores will be numbered 1-40 in black ink on yellow cores. Remaining will be numbered 1-40 in yellow ink on black cores.
- **Binder Tape:** p.e.t.p. tape 50% overlap.
- **Collective Screen:** tinned copper drain wire(s) under and in contact with aluminum/p.e.t.p. laminated tape applied metallic side down.
- LSF inner sheath to BS6724.
- Mild galvanised steel wires to BS EN10257-1.
- **Outer Sheath:** Black LSF outer sheath to BS6724.
- 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.

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Anixter Number	Number of Cores	Nominal Cond Area	Nominal Cond Stranding	Insulation Thickness	Nominal Diameter Under Armour	Armour Wire Diameter	Nominal O/D	Approx Cable Weight	Min Bending Radius (fixed bend)
		mm ²	#/mm						
A7BQ2-									
0002L-02	2C	0.50	16/0.2	0.60	7.00	0.90	11.40	265	100
0003L-02	3C	0.50	16/0.2	0.60	7.30	0.90	11.70	295	100
0004L-02	4C	0.50	16/0.2	0.60	7.90	0.90	12.30	325	100
0006L-02	6C	0.50	16/0.2	0.60	9.30	0.90	13.90	380	120
0010L-02	10C	0.50	16/0.2	0.60	11.90	0.90	16.70	525	140
0020L-02	20C	0.50	16/0.2	0.60	14.90	1.25	20.60	880	170
0040L-02	40C	0.50	16/0.2	0.60	20.10	1.60	26.70	1450	220
0080L-02	80C	0.50	16/0.2	0.60	26.30	1.60	33.30	2070	270
A7BS2-									
0002L-02	2C	1.50	7/0.53	0.60	8.30	0.90	12.9	370	100
0003L-02	3C	1.50	7/0.53	0.60	8.90	0.90	13.50	385	110
0004L-02	4C	1.50	7/0.53	0.60	9.70	0.90	14.30	470	120
0006L-02	6C	1.50	7/0.53	0.60	11.70	0.90	16.30	520	140
0010L-02	10C	1.50	7/0.53	0.60	14.70	1.25	20.40	710	170
0020L-02	20C	1.50	7/0.53	0.60	18.70	1.60	25.30	1210	210
0040L-02	40C	1.50	7/0.53	0.60	24.60	1.60	31.60	2040	260
0080L-02	80C	1.50	7/0.53	0.60	33.60	2.00	41.80	3120	340

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.