

Control and Instrumentation Cables

Multi-Core PE Insulated LSF Instrumentation Cable

## BS5308 Part 1 Type 1

Collective Screen, Unarmoured 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. Not suitable for direct buried applications (see cable type 2).

### 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 aluminium/p.e.t.p. laminated tape applied metallic side down.
- **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.

Control & Instrumentation Cables

# Multi-Core PE Insulated LSF Instrumentation Cable BS5308 Part 1 Type 1

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

Anixter Number	Number of Cores	Nominal Cond Area	Nominal Cond Stranding	Insulation Thickness	Nominal O/D	Approx Cable Weight	Min Bending Radius (fixed bend)
		mm <sup>2</sup>	#/mm	mm	mm	kg/km	mm
<b>A7BQ1-</b>							
0002L-02	2C	0.50	16/0.2	0.60	7.00	60	60
0003L-02	3C	0.50	16/0.2	0.60	7.30	65	60
0004L-02	4C	0.50	16/0.2	0.60	7.90	80	70
0006L-02	6C	0.50	16/0.2	0.60	9.30	115	80
0010L-02	10C	0.50	16/0.2	0.60	11.90	180	100
0020L-02	20C	0.50	16/0.2	0.60	14.90	320	120
0040L-02	40C	0.50	16/0.2	0.60	20.10	580	170
0080L-02	80C	0.50	16/0.2	0.60	26.30	950	220
<b>A7BS1-</b>							
0002L-02	2C	1.50	7/0.53	0.60	8.30	100	70
0003L-02	3C	1.50	7/0.53	0.60	8.90	130	80
0004L-02	4C	1.50	7/0.53	0.60	9.70	150	80
0006L-02	6C	1.50	7/0.53	0.60	11.70	190	100
0010L-02	10C	1.50	7/0.53	0.60	14.70	310	120
0020L-02	20C	1.50	7/0.53	0.60	18.70	530	150
0040L-02	40C	1.50	7/0.53	0.60	24.60	965	200
0080L-02	80C	1.50	7/0.53	0.60	33.60	1825	270

For further technical information refer to page 4:22.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19

# Technical Information for BS5308 Part 1

## ELECTRICAL CHARACTERISTICS

### MAXIMUM MUTUAL CAPACITANCE VALUES

	Conductor Size				
	0.5mm <sup>2</sup> pF/m	0.75mm <sup>2</sup> pF/m	1.0mm <sup>2</sup> pF/m	1.5mm <sup>2</sup> pF/m	2.5mm <sup>2</sup> 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 <sup>2</sup>	#/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 <sup>2</sup>	
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.