

Multipair/Triple XLPE Insulated LSF Instrumentation Cable - Fire Resistant BS5308 Part 1 Type 2 – LSF and Fire Resistant

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). For use when fire resistance and circuit integrity is essential and where life may be endangered by smoke and noxious fumes, and where sensitive equipment may be damaged by acid forming gases.

Specifications

- Generally in accordance with BS 5308, but with the addition of fire properties relevant to IEC60331. Also meets relevant Cooper Energy Services specifications.
- **Conductors:** Stranded (Class 2) copper conductors to BS EN 60228.
- **Insulation:** Mica Glass Tape, XLPE Type GP8 to BS7655.
- **Pairs/Triples Identification:** See colour code chart 2 on page 4:32. These cables are colour coded in accordance with BS5308 Part 2.
- 100mm maximum pair lay length (minimum 10 twists per metre).
- **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. tape applied metallic side down.
- Black LSF inner sheath Type LTS1 to BS7655.
- Mild galvanised steel wires to BS EN10257-1.
- **Outer Sheath:** Black or blue LSF outer sheath Type LTS1 to BS7655.
- Flame retardant to BS EN 60332-3-22 & IEC60332-3-22 Category A (NMV7).
- Fire resistant to IEC60331 (750°C for 3 hours).
- **Voltage Rating:** 300/500V.
- **Temperature Rating:** 90°C maximum conductor operating temperature.

Multipair/triple XLPE insulated LSF Instrumentation Cable - Fire Resistant BS5308 Part 1 Type 2 – LSF & Fire Resistant

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

Anixter Number	Number of Pairs/Triple	Nominal Cond Area	Nominal Cond Stranding	Insulation Thickness	Nominal Diameter Under Armour	Armour Wire Diameter	Nominal O/D	Approx Cable Weight	Minimum Bending Radius (fixed bend)
		mm ²	#/mm						
A12AG1-0001L-02	1P	1.5	7/0.53	0.6	8.7	0.9	13.3	334	160
A12AG1-0001L-06	1P	1.5	7/0.53	0.6	8.7	0.9	13.3	334	160
A12AG1-0002L-02	2P(Q)	1.5	7/0.53	0.6	10.1	0.9	14.7	418	177
A12AG1-0002L-06	2P(Q)	1.5	7/0.53	0.6	10.1	0.9	14.7	418	177
A12AG1-0005L-02	5P	1.5	7/0.53	0.6	17.7	1.6	20.9	1127	291
A12AG1-0005L-06	5P	1.5	7/0.53	0.6	17.7	1.6	20.9	1127	291
A12AG1-0010L-02	10P	1.5	7/0.53	0.6	24.0	1.6	31.0	1694	372
A12AG1-0010L-06	10P	1.5	7/0.53	0.6	24.0	1.6	31.0	1694	372
A12AG1-0001TL-02	1T	1.5	7/0.53	0.6	9.2	0.9	13.8	373	166
A12AG1-0001TL-06	1T	1.5	7/0.53	0.6	9.2	0.9	13.8	373	166
A12AG2-0001L-02	1	2.5	7/0.67	0.7	10.0	0.9	14.6	398	175
A12AG2-0001L-06	1	2.5	7/0.67	0.7	10.0	0.9	14.6	398	175
A12AG2-0002L-02	2(Q)	2.5	7/0.67	0.7	11.8	0.9	16.6	533	199
A12AG2-0002L-06	2(Q)	2.5	7/0.67	0.7	11.8	0.9	16.6	533	199
A12AG2-0005L-02	5	2.5	7/0.67	0.7	20.9	1.6	27.7	1427	333
A12AG2-0005L-06	5	2.5	7/0.67	0.7	20.9	1.6	27.7	1427	333

N.B: -02 denotes Black outer sheath colour

-06 denotes Blue outer sheath colour

Q = Quad

Also available in individually and collectively screened versions. Details upon request.

For further technical information for BS5308 Part 1 electrical characteristics refer to page 4:22. For BS5308 Part 2 colour coding refer to page 4:32.

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.

Technical Information for BS5308 Part 2

IDENTIFICATION OF PAIRS

Two-pair unscreened and collectively screened cables shall be laid up in quad formation and colour coded in clockwise order of rotation: blue, green, orange, brown.

All other unscreened or collectively screened cables up to 50 pair shall be colour coded as given in colour code chart 2 below:

COLOUR CODE CHART 2

Pair Number	a-Wire	b-Wire	Pair Number	a-Wire	b-Wire
1	White	Blue	26	RED-Blue	Blue
2	White	Orange	27	RED-Blue	Orange
3	White	Green	28	RED-Blue	Green
4	White	Brown	29	RED-Blue	Brown
5	White	Grey	30	RED-Blue	Grey
6	Red	Blue	31	BLUE-Black	Blue
7	Red	Orange	32	BLUE-Black	Orange
8	Red	Green	33	BLUE-Black	Green
9	Red	Brown	34	BLUE-Black	Brown
10	Red	Grey	35	BLUE-Black	Grey
11	Black	Blue	36	YELLOW-Blue	Blue
12	Black	Orange	37	YELLOW-Blue	Orange
13	Black	Green	38	YELLOW-Blue	Green
14	Black	Brown	39	YELLOW-Blue	Brown
15	Black	Grey	40	YELLOW-Blue	Grey
16	Yellow	Blue	41	WHITE-Orange	Blue
17	Yellow	Orange	42	WHITE-Orange	Orange
18	Yellow	Green	43	WHITE-Orange	Green
19	Yellow	Brown	44	WHITE-Orange	Brown
20	Yellow	Grey	45	WHITE-Orange	Grey
21	WHITE-Blue	Blue	46	ORANGE-Red	Blue
22	WHITE-Blue	Orange	47	ORANGE-Red	Orange
23	WHITE-Blue	Green	48	ORANGE-Red	Green
24	WHITE-Blue	Brown	49	ORANGE-Red	Brown
25	WHITE-Blue	Grey	50	ORANGE-Red	Grey

Single triple cables will be identified white, blue, orange.