Multipair PVC Insulated Instrumentation Cable

BS5308 Part 2 Type 2

Collective Screen, Armoured 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). Suitable for direct buried applications.

Specifications

- In accordance with BS 5308 Part 2.
- Conductors: Stranded (Class 2) or flexible (Class 5) copper conductors to BS EN 60228.
- Insulation: PVC insulation Type TI.1 to BS EN 50363-3.
- Pair Identification: See colour code chart 2 page 4:32.
- 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 aluminium/p.e.t.p. laminated tape applied metallic side down.
- PVC bedding Type TM.1 to BS EN 50363-4-1.
- Mild galvanised steel wires to BS EN10257-1.
- 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.

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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	Min Bending Radius (fixed bend)
		mm^2	#/mm	mm	mm	mm	mm	kg/km	mm
A7-S32-0001LF	1P	0.50	16/0.2	0.60	7.00	0.90	11.4	255	100
A7-S32-0002LF	2P(Q)	0.50	16/0.2	0.60	7.90	0.90	12.3	305	100
A7-S32-0005LF	5P	0.50	16/0.2	0.60	13.10	0.90	17.9	610	150
A7-S32-0010LF	10P	0.50	16/0.2	0.60	17.20	1.25	22.9	1060	190
A7-S32-0020LF	20P	0.50	16/0.2	0.60	22.30	1.60	29.1	1800	240
A7-S32-0001TLF	1TR	0.50	16/0.2	0.60	7.30	0.90	11.7	280	100
A7-S42-0001LF	1P	0.75	24/0.2	0.60	7.30	0.90	11.7	305	100
A7-S42-0002LF	2P(Q)	0.75	24/0.2	0.60	8.30	0.90	12.9	360	110
A7-S42-0005LF	5P	0.75	24/0.2	0.60	14.30	1.25	19.8	820	160
A7-S42-0010LF	10P	0.75	24/0.2	0.60	18.70	1.60	25.3	1380	210
A7-S42-0020LF	20P	0.75	24/0.2	0.60	24.50	1.60	31.3	2080	260
A7-S42-0001TLF	1TR	0.75	24/0.2	0.60	7.70	0.90	12.1	330	100
A7-S22-0001LF	1P	1.50	7/0.53	0.60	8.30	0.90	12.9	360	110
A7-S22-0002LF	2P(Q)	1.50	7/0.53	0.60	9.70	0.90	14.3	460	120
A7-S22-0005LF	5P	1.50	7/0.53	0.60	16.40	1.25	22.1	1040	180
A7-S22-0010LF	10P	1.50	7/0.53	0.60	21.60	1.60	28.4	1610	230
A7-S22-0020LF	20P	1.50	7/0.53	0.60	28.50	1.60	35.7	2630	290
A7-S22-0001TLF	1TR	1.50	7/0.53	0.60	8.90	0.90	13.5	380	110

(Q) = Quad

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 2 and details are available upon request.

For further technical information refer to page 4:32.

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.

Technical Information for BS5308 Part 2

ELECTRICAL CHARACTERISTICS

Maximum Mutual Capacitance Values:
Maximum mutual capacitance of the pairs or adjacent cores - 250pF/m
Maximum capacitance between any core and screen - 450pF/m

MAXIMUM D.C. CONDUCTOR RESISTANCE @ 20°C

Conductor Size	Conductor Stranding	Resistance @ 20°C Maximum	
mm²	#/mm	Ω/km	
		Multi-Core	Multipair
0.5	16/0.2	39.0	39.7
0.75	24/0.2	26.0	26.5
1.5	7/0.53	12.1	12.3

MAXIMUM L/R RATIO

Conductor Size	Conductor L/R Ratio (for adjacent cores)
mm²	
0.5	25μH/Ω
0.75	25μH/Ω
1.5	40μH/Ω

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

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.