

BS5308 Instrumentation Cable Part 1 Type 2

Eland Product Group **A3I**

Application

BS5308 cables are used to carry voice and data services, they also serve as the interconnection between electrical equipment and instruments, particularly in and around process plants, where transducer generated signals are transmitted through to panels, controllers and other devices.

Standards

BS5308 Part 1, BS EN/IEC 60228

Technical Data

Conductor

Class 1, 2 or 5 plain copper conductors to BS EN 60228:2005 (previously BS6360)

Pairing

Two insulated conductors uniformly twisted together with a lay not exceeding 100mm

Insulation

PE (Polyethylene) to BS6234 or XLPE (Cross Linked Polyethylene) to BS5308 for LSZH (Low Smoke Zero Halogen) cables.

Drain Wire

Tinned copper

Filler Core

Unspecified material

Screen

Individually Screened Pairs:
Aluminium/Polyester tape is applied to each pair, metallic side down and in continuous contact with a 0.5mm² tinned copper drain wire

Collectively Screened Cables:

Aluminium/Polyester tape is applied over the laid up pairs metallic side down and in continuous contact with a 0.5mm² tinned copper drain wire

Bedding

PE (Polyethylene) to BS6234

Armouring

GSWA (Galvanised Steel Wire Armour) to BS1442

Sheath

PVC (Polyvinyl Chloride) to BS7655 or LSZH (Low Smoke Zero Halogen)

Sheath Colour

Blue or Black

Voltage Rating

300/500V

Temperature Rating

Fixed: -30°C to + 70°C

Flexing: -5°C to + 50°C

Pair Identification

See Pair Identification table on page 2

Note

These cables are not suitable for direct connection to the public mains supply

Dimensions

BS5308 PT1 TY2 Collectively Screened, Armoured

Eland Part Number	No. of Pairs x Nominal Cross Sectional Area # x mm ²	Nominal No. and Nominal Diameter of Strands #/mm	Nominal Diameter Under Armour mm	Nominal Overall Diameter mm	Nominal Weight kg/Km
A3I0105CP1T2*	1 x 0.50	16/0.2	7.0	11.4	250
A3I0175CP1T2*	1 x 0.75**	24/0.2	7.3	11.7	280
A3I0110CP1T2*	1 x 1.00	1/1.13	7.4	11.8	290
A3I0115CP1T2*	1 x 1.50	7/0.53	8.3	12.9	320
A3I0205CP1T2*	2 x 0.50	16/0.2	7.9	12.3	300
A3I0275CP1T2*	2 x 0.75**	24/0.2	8.3	12.9	330
A3I0210CP1T2*	2 x 1.00	1/1.13	8.4	13.0	345
A3I0215CP1T2*	2 x 1.50	7/0.53	9.7	14.3	420

Eland Part Number	No. of Pairs x Nominal Cross Sectional Area # x mm ²	Nominal No. and Nominal Diameter of Strands #/mm	Nominal Diameter Under Armour mm	Nominal Overall Diameter mm	Nominal Weight kg/Km
A3I0505CP1T2*	5 x 0.50	16/0.2	13.1	17.9	560
A3I0575CP1T2*	5 x 0.75**	24/0.2	14.3	19.8	750
A3I0510CP1T2*	5 x 1.00	1/1.13	14.2	19.7	790
A3I0515CP1T2*	5 x 1.50	7/0.53	16.4	22.1	940
A3I1005CP1T2*	10 x 0.50	16/0.2	17.2	22.9	970
A3I1075CP1T2*	10 x 0.75**	24/0.2	18.7	25.3	1260
A3I1010CP1T2*	10 x 1.00	1/1.13	18.4	24.3	1310
A3I1015CP1T2*	10 x 1.50	7/0.53	21.6	28.4	1500
A3I2005CP1T2*	20 x 0.50	16/0.2	22.3	29.1	1640
A3I2075CP1T2*	20 x 0.75**	24/0.2	24.5	31.3	1890
A3I2010CP1T2*	20 x 1.00	1/1.13	24.4	31.2	2040
A3I2015CP1T2*	20 x 1.50	7/0.53	28.5	36.5	2500
A3I3005CP1T2*	30 x 0.50	16/0.2	26.9	33.9	1770
A3I3075CP1T2*	30 x 0.75**	24/0.2	29.5	37.5	2290
A3I3010CP1T2*	30 x 1.00	1/1.13	29.0	36.2	2180
A3I3015CP1T2*	30 x 1.50	7/0.53	34.3	42.5	3170
A3I5005CP1T2*	50 x 0.50	16/0.2	33.9	42.1	2770
A3I5075CP1T2*	50 x 0.75**	24/0.2	37.4	47.0	3620
A3I5010CP1T2*	50 x 1.00	1/1.13	37.3	45.7	3500
A3I5015CP1T2*	50 x 1.50	7/0.53	43.6	53.4	5020

*Designates the sheath colour. For Black substitute * for BK and for Blue substitute * for BL

**0.75mm² conductor generally to BS5308 Part 1

BS5308 PT1 TY2 Individually and Collectively Screened, Armoured

Eland Part Number	No. of Pairs x Nominal Cross Sectional Area # x mm ²	Nominal No. and Nominal Diameter of Strands #/mm	Nominal Diameter Under Armour mm	Nominal Overall Diameter mm	Nominal Weight kg/Km
A3I0205IP1T2*	2 x 0.50	16/0.2	12.0	16.8	460
A3I0275IP1T2*	2 x 0.75**	24/0.2	12.8	17.6	500
A3I0210IP1T2*	2 x 1.00	1/1.13	12.8	17.6	515
A3I0215IP1T2*	2 x 1.50	7/0.53	14.7	20.4	730
A3I0505IP1T2*	5 x 0.50	16/0.2	15.2	20.9	760
A3I0575IP1T2*	5 x 0.75**	24/0.2	16.3	22.0	920
A3I0510IP1T2*	5 x 1.00	1/1.13	16.2	21.9	950
A3I0515IP1T2*	5 x 1.50	7/0.53	18.8	25.4	1180
A3I1005IP1T2*	10 x 0.50	16/0.2	21.1	27.9	1300
A3I1075IP1T2*	10 x 0.75**	24/0.2	22.6	29.5	1610
A3I1010IP1T2*	10 x 1.00	1/1.13	22.6	29.4	1330
A3I1015IP1T2*	10 x 1.50	7/0.53	26.5	33.5	1820
A3I2005IP1T2*	20 x 0.50	16/0.2	27.3	34.3	1870
A3I2075IP1T2*	20 x 0.75**	24/0.2	29.8	37.8	2420
A3I2010IP1T2*	20 x 1.00	1/1.13	29.8	37.8	2540
A3I2015IP1T2*	20 x 1.50	7/0.53	34.4	42.6	3030
A3I3005IP1T2*	30 x 0.50	16/0.2	32.3	40.5	2400
A3I3075IP1T2*	30 x 0.75**	24/0.2	35.9	43.9	3130
A3I3010IP1T2*	30 x 1.00	1/1.13	35.4	43.8	2900
A3I3015IP1T2*	30 x 1.50	7/0.53	41.0	50.8	4050
A3I5005IP1T2*	50 x 0.50	16/0.2	41.7	51.5	3930
A3I5075IP1T2*	50 x 0.75**	24/0.2	45.0	55.0	4920
A3I5010IP1T2*	50 x 1.00	1/1.13	44.9	54.9	4800
A3I5015IP1T2*	50 x 1.50	7/0.53	52.2	62.6	5960

*Designates the sheath colour. For Black substitute * for BK and for Blue substitute * for BL

**0.75mm² conductor generally to BS5308 Part 1

Electrical Characteristics

Mutual Capacitance (picofarads per metre) and Resistance Values (ohms per kilometre)

Nominal Cross Sectional Area (Nominal No. and Nominal Diameter of Strands) mm ² (#/mm)	Capacitance at 1kHz pF/m		Maximum Resistance of Conductor at 20°C ohms/Km	L/R Ratio Maximum Value microH/ohm
	Cables with only Collective Screens (Except One Pair and Two Pair)	One Pair and Two Pair Cables Collectively Screened and all Cables with Individually Screened Pairs		
0.50 (16/0.2)	75	115	39.0	25
0.75 (24/0.2)*	75	115	24.5	25
1.00 (1/1.13)	75	115	18.1	25
1.50 (7/0.53)	85	115	12.1	40

*0.75mm² conductor generally to BS5308 Part 1

Pair Identification

Pair Number	Element A	Element B	Pair Number	Element A	Element B	Pair Number	Element A	Element B
1	Black	Blue	19	Brown	Orange	36	Yellow	Grey
2	Black	Green	20	White	Orange	37	Black	Violet
3	Blue	Green	21	Red	Orange	38	Blue	Violet
4	Black	Brown	22	Black	Yellow	39	Green	Violet
5	Blue	Brown	23	Blue	Yellow	40	Brown	Violet
6	Green	Brown	24	Green	Yellow	41	White	Violet
7	Black	White	25	Brown	Yellow	42	Red	Violet
8	Blue	White	26	White	Yellow	43	Orange	Violet
9	Green	White	27	Red	Yellow	44	Yellow	Violet
10	Brown	White	28	Orange	Yellow	45	Grey	Violet
11	Black	Red	29	Black	Grey	46	Black	Turquoise
12	Blue	Red	30	Blue	Grey	47	Blue	Turquoise
13	Green	Red	31	Green	Grey	48	Green	Turquoise
14	Brown	Red	32	Brown	Grey	49	Brown	Turquoise
15	White	Red	33	White	Grey	50	White	Turquoise
16	Black	Orange	34	Red	Grey	Single Quad (2 Pairs)	Black, Blue, Green, Brown	
17	Blue	Orange	35	Orange	Grey			

Note: Two pair cables shall be supplied in Quad formation and colour coded: Black, Blue, Green and Brown. All other cables up to 50 pairs shall conform to the coding in the table above.

The information contained within this datasheet is for guidance only. When selecting accessories such as cleats, glands, etc please note that actual cable dimensions may vary due to manufacturing tolerances.