

Instrumentation Cable

Flame Retardant

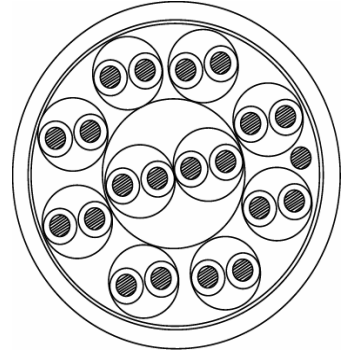
BS 5308 Part 1 Type 1

Single & Multi-Pair, PE-Insulation, Collective Screen, PVC-Sheath

70° / 300/500 V

Construction

Conductor	Plain, annealed copper, sizes:0.5mm ² solid, 1.0mm ² solid, 0.5mm ² flexible, 0.75mm ² flexible or 1.5mm ² stranded
Insulation	Polyethylene PE
Colour code	According to BS 5308 PART 1 TABLE 12
Wrapping	At least 1 layer of plastic tape
Collective Screen	24µm aluminium / PETP tape over tinned copper drain wire, 0.5mm ²
Outer sheath	Polyvinyl chloride PVC
Cable marking	BTCI BS 5308 Part 1 Type 1 No & Size of units FRRT



Technical Data

Flame Retardant to:	IEC 60 332-3 Cat C	Temperature range:	- 40°C up to + 70°C (during operation)
Outer sheath:			
Amount of HCL:	Max. 17% (BS 6425-1)		- 0°C to +50°C (during installation)
Oxygen Index (LOI):	Min.30% (IEC 60332-3 annex B)	Min. bending radius:	6 x cable Ø
Temperature Index (TI):	Min. 260°C (ASTM-D-2863)		
U.V. resistance:	(UL 1581 section 1200)		
Oil resistance:	(ICEA S-82-552)		

Electrical data at 20°C

Character	Unit	Values					
		0.5 solid	1.0 solid	0.5 flexible	0.75 flexible	1.5 stranded	
Conductor size	Nom.	Mm ²	0.5 solid	1.0 solid	0.5 flexible	0.75 flexible	1.5 stranded
Conductor resistance	Max.	Ω/km	36.8	18.4	39.7	26.5	12.3
Insulation resistance	Min.	MΩ x km	5000				
Mutual capacitance at 0.8 resp. 1 kHz	Max.	nF/km	115				
One pair and two pair			75				
All other cables			250				
Capacitance unbalance at 1 kHz	Max.	pF/250 m	25				
L/R (ratio)	Max.	µH/Ω	40				
Test voltage Ums core : core		V	1000				
Ums core : screen		V	1000				
Rated voltage Uo / U	Max.	V	300/500				

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Geometrical data

No. of pairs	RT of Insulation Nom. (mm)	RT of Outer Sheath Nom. (mm)	Overall Diameter Approx. (mm)	Weight Approx. (kg/km)
0.5mm² (1/0.8)				
1	0.5	0.8	5.5	35
2 q	0.5	0.8	6.8	55
5	0.5	1.1	10.9	125
10	0.5	1.2	14.4	215
15	0.5	1.2	16.5	300
20	0.5	1.3	18.8	385
30	0.5	1.3	22.3	545
50	0.5	1.5	28.5	875
1.0mm² (1/1.13)				
1	0.6	0.8	6.6	50
2 q	0.6	0.8	8.0	80
5	0.6	1.2	13.5	205
10	0.6	1.2	17.7	350
15	0.6	1.3	20.6	495
20	0.6	1.5	23.8	670
30	0.6	1.5	28.4	975
50	0.6	2.0	36.6	1580
0.5mm² (16/0.2)				
1	0.6	0.8	6.2	45
2 q	0.6	0.8	7.6	60
5	0.6	1.1	12.4	145
10	0.6	1.2	16.5	245
15	0.6	1.3	19.2	345
20	0.6	1.3	21.7	435
30	0.6	1.5	26.4	640
50	0.6	1.7	33.4	1010
0.75mm² (24/0.2)				
1	0.6	0.8	6.7	50
2 q	0.6	0.9	8.4	75
5	0.6	1.2	13.8	185
10	0.6	1.3	18.4	325
15	0.6	1.5	21.1	445
20	0.6	1.5	24.4	595
30	0.6	1.7	29.5	835
50	0.6	2.0	37.6	1385
1.5mm² (7/0.53)				
1	0.6	0.8	7.5	70
2 q	0.6	0.9	9.3	120
5	0.6	1.2	15.6	280
10	0.6	1.3	20.9	515
15	0.6	1.5	24.6	740
20	0.6	1.5	27.8	940
30	0.6	1.7	33.7	1380
50	0.6	2.0	43.0	2245

RT = Radial thickness

q = 2 pairs are twisted in quad formation

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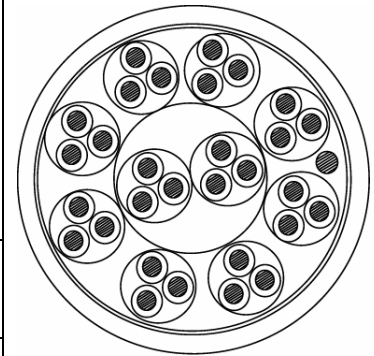
BS 5308 Part 1 Type 1

Single & Multi-Triple, PE-Insulation, Collective Screen, PVC-Sheath

70° / 300/500 V

Construction

Conductor	Plain, annealed copper, sizes:0.5mm ² , 1.0mm ² solid, 0.5mm ² flexible, 0.75mm ² flexible or 1.5mm ² stranded
Insulation	Polyethylene PE
Colour code	Black/ Blue/Green
Wrapping	With numbered tape under separator tape of the pair screen
Colective Screen	At least 1 layer of plastic tape
Outer sheath	24µm aluminium / PETP tape over tinned copper drain wire, 0.5mm ²
Cable marking	Polyvinyl chloride PVC
	BTCI BS 5308 Part 1 Type 1 No & Size of units FRRT



Technical Data

Flame Retardant to:	IEC 60 332-3 Cat C	Temperature range:	- 40°C up to + 70°C (during operation)
Outer sheath:			
Amount of HCL:	Max. 17% (BS 6425-1)		- 0°C to +50°C (during installation)
Oxygen Index (LOI):	Min.30% (IEC 60332-3 annex B)	Min. bending radius:	6 x cable Ø
Temperature Index (TI):	Min. 260°C (ASTM-D-2863)		
U.V. resistance:	(UL 1581 section 1200)		
Oil resistance:	(ICEA S-82-552)		

Electrical data at 20°C

Character	Unit	Values					
		0.5 solid	1.0 solid	0.5 flexible	0.75 flexible	1.5 stranded	
Conductor size	Nom.	mm ²					
Conductor resistance	Max.	Ω/km	36.8	18.4	39.7	26.5	12.3
Insulation resistance	Min.	MΩ x km	5000				
Mutual capacitance at 0.8 resp. 1 kHz	Max.	nF/km	115				115
One pair and two pair			75				85
All other cables							
Capacitance unbalance at 1 kHz	Max.	pF/250 m	250				
L/R (ratio)	Max.	µH/Ω	25				40
Test voltage Ums core : core		V	1000				
Ums core : screen		V	1000				
Rated voltage Uo / U	Max.	V	300/500				

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Dimensional data

No. of Triples	RT of Insulation	RT of Outer Sheath	Overall Diameter	Weight
	Nom. (mm)	Nom. (mm)	Approx. (mm)	Approx. (kg/km).
0.5mm ² (1/0.8)				
1	0.5	0.8	5.8	48
2	0.5	0.9	9.6	72
5	0.5	1.1	12.0	175
10	0.5	1.2	16.4	310
15	0.5	1.3	18.8	385
20	0.5	1.3	21.2	552
30	0.5	1.5	25.8	875
50	0.5	1.7	32.7	1312
1.0mm ² (1/1.13)				
1	0.6	0.8	6.9	75
2	0.6	1.1	12.0	160
5	0.6	1.2	14.9	270
10	0.6	1.3	20.5	540
15	0.6	1.5	23.8	705
20	0.6	1.5	26.9	945
30	0.6	1.7	32.6	1580
50	0.6	2.2	42.0	2370
0.5mm ² (16/0.2)				
1	0.6	0.8	6.5	48
2	0.6	1.1	11.3	72
5	0.6	1.2	13.6	175
10	0.6	1.3	19.1	310
15	0.6	1.3	21.6	392
20	0.6	1.5	25.0	552
30	0.6	1.7	30.3	881
50	0.6	2.0	38.5	1320
0.75mm ² (24/0.2)				
1	0.6	0.8	7.1	64
2	0.6	1.2	12.5	93
5	0.6	1.2	15.3	250
10	0.6	1.3	21.0	442
15	0.6	1.5	24.4	614
20	0.6	1.5	27.6	835
30	0.6	1.7	33.5	1300
50	0.6	2.2	43.1	1950
1.5mm (7/0.53)				
1	0.6	0.8	7.9	105
2	0.6	1.2	13.5	210
5	0.6	1.2	17.3	404
10	0.6	1.5	24.4	760
15	0.6	1.5	27.8	900
20	0.6	1.7	32.0	1380
30	0.6	2.0	38.9	2204
50	0.6	2.2	49.3	3306

RT = Radial thickness

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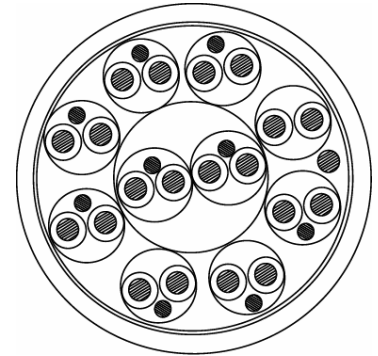
BS 5308 Part 1 Type 1

Multi-Pair, PE-Insulation, Individual & Collective Screen, PVC-Sheath

70° / 300/500 V

Construction

Conductor	Plain, annealed copper, sizes: 0.5mm ² solid, 1.0mm ² solid, 0.5mm ² flexible, 0.75mm ² flexible or 1.5mm ² stranded
Insulation	Polyethylene PE
Colour code	Black/ Blue With numbered tape under separator tape of the pair screen
Triple screen	24µm aluminium / PETP tape over tinned copper drain wire, 0.5mm ²
Wrapping	At least 1 layer of plastic tape
Collective Screen	24µm aluminium / PETP tape over tinned copper drain wire, 0.5mm ²
Outer sheath	Polyvinyl chloride PVC
Cable marking	BTCI BS 5308 Part 1 Type 1 No & Size of units FRRT



Technical Data

Flame Retardant to:	IEC 60 332-3 Cat C	Temperature range:	- 40°C up to + 70°C (during operation)
Outer sheath:			
Amount of HCL:	Max. 17% (BS 6425-1)		- 5°C to +50°C (during installation)
Oxygen Index (LOI):	Min.30% (IEC 60332-3 annex B)	Min. bending radius:	6 x cable Ø
Temperature Index (TI):	Min. 260°C (ASTM-D-2863)		
U.V. resistance:	(UL 1581 section 1200)		
Oil resistance:	(ICEA S-82-552)		

Electrical data at 20°C

Character	Unit	Values				
		0.5 solid	1.0 solid	0.5 flexible	0.75 flexible	1.5 stranded
Conductor size	Nom. mm ²	0.5 solid	1.0 solid	0.5 flexible	0.75 flexible	1.5 stranded
Conductor resistance	Max. Ω/km	36.8	18.4	39.7	26.5	12.3
Insulation resistance	Min. MΩ x km	5000				
Mutual capacitance at 0.8 resp. 1 kHz	Max. nF/km	115				
Capacitance unbalance at 1 kHz	Max. pF/250 m	250				
L/R (ratio)	Max. µH/Ω	25				40
Test voltage U _{ms core} : core	V	1000				
U _{ms core} : screen	V	1000				
Rated voltage U _o / U	Max. V	300/500				

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BS 5308 Part 1 Type 1

Multi-Pair, PE-Insulation, Individual & Collective Screen, PVC-Sheath

70° / 300/500 V

Dimensional data

No. of Pairs	RT of Insulation		RT of Outer Sheath		Overall Diameter		Weight	
		Nom. (mm)		Nom. (mm)		Approx. (mm)		Approx. (kg/km).
0.5mm ² (1/0.8)								
2		0.5		0.9		9.7		95
5		0.5		1.2		13.0		180
10		0.5		1.2		16.9		310
15		0.5		1.3		19.7		440
20		0.5		1.3		22.3		560
30		0.5		1.5		27.1		820
50		0.5		2.0		35.0		1370
1.0mm ² (1/1.13)								
2		0.6		1.1		11.9		135
5		0.6		1.2		15.4		250
10		0.6		1.3		20.5		450
15		0.6		1.5		24.1		675
20		0.6		1.7		27.7		875
30		0.6		2.0		33.7		1290
50		0.6		2.2		42.5		2055
0.5mm ² (16/0.2)								
2		0.6		1.1		11.2		110
5		0.6		1.2		14.5		200
10		0.6		1.3		19.3		350
15		0.6		1.5		22.6		510
20		0.6		1.5		25.7		620
30		0.6		1.7		31.0		895
50		0.6		2.2		39.9		1535
0.75mm ² (24/0.2)								
2		0.6		1.1		12.1		128
5		0.6		1.2		15.7		238
10		0.6		1.3		20.9		421
15		0.6		1.5		24.6		614
20		0.6		1.5		27.9		806
30		0.6		2.0		34.4		1188
50		0.6		2.2		43.5		1880
0.5mm (7/0.53)								
2		0.6		1.2		13.6		180
5		0.6		1.3		17.7		340
10		0.6		1.5		23.9		635
15		0.6		1.7		28.0		915
20		0.6		2.0		31.7		1165
30		0.6		2.2		38.6		1725
50		0.6		2.2		48.9		2770

RT = Radial thickness

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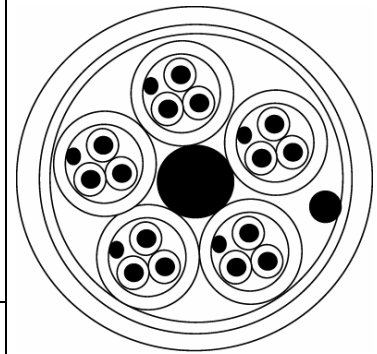
BS 5308 Part 1 Type 1

Multi-Triple, PE-Insulation, Individual & Collective Screen, PVC-Sheath

70° / 300/500 V

Construction

Conductor	Plain, annealed copper, sizes: 0.5mm ² solid, 1.0mm ² solid, 0.5mm ² flexible, 0.75mm ² flexible or 1.5mm ² stranded
Insulation	Polyethylene PE
Colour code	Black/ Blue/ Green With numbered tape under separator tape of the triple screen
Triple screen	24µm aluminium / PETP tape over tinned copper drain wire, 0.5mm ²
Wrapping	At least 1 layer of plastic tape
Colective Screen	24µm aluminium / PETP tape over tinned copper drain wire, 0.5mm ²
Outer sheath	Polyvinyl chloride PVC
Cable marking	BTCI BS 5308 Part 1 Type 1 No & Size of units FRRT



Technical Data

Flame Retardant to:	IEC 60 332-3 Cat C	Temperature range:	- 40°C up to + 70°C (during operation)
Outer sheath:			
Amount of HCL:	Max. 17% (BS 6425-1)		- 5°C to +50°C (during installation)
Oxygen Index (LOI):	Min.30% (IEC 60332-3 annex B)	Min. bending radius:	6 x cable Ø
Temperature Index (TI):	Min. 260°C (ASTM-D-2863)		
U.V. resistance:	(UL 1581 section 1200)		
Oil resistance:	(ICEA S-82-552)		

Electrical data at 20°C

Character	Unit	Values				
		0.5 solid	1.0 solid	0.5 flexible	0.75 flexible	1.5 stranded
Conductor size	Nom. mm ²	0.5 solid	1.0 solid	0.5 flexible	0.75 flexible	1.5 stranded
Conductor resistance	Max. Ω/km	36.8	18.4	39.7	26.5	12.3
Insulation resistance	Min. MΩ x km	5000				
Mutual capacitance at 0.8 resp. 1 kHz	Max. nF/km	115				115
Capacitance unbalance at 1 kHz	Max. pF/250 m	250				
L/R (ratio)	Max. µH/Ω	25				40
Test voltage U _{ms} core : core	V	1000				
U _{ms} core : screen	V	1000				
Rated voltage U _o / U	Max. V	300/500				

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Multi-Triple, PE-Insulation, Individual & Collective Screen, PVC-Sheath

70° / 300/500 V

Dimensional data

No. of Triples	RT of Insulation Nom. (mm)	RT of Outer Sheath Nom. (mm)	Overall Diameter Approx. (mm)	Weight Approx. (kg/km)	Part No.
0.5mm ² (1/0.8)					
2	0.5	1.1	11.0	126	
5	0.5	1.2	14.1	230	
10	0.5	1.3	19.4	420	
15	0.5	1.3	22.0	530	
20	0.5	1.5	25.4	815	
30	0.5	1.7	30.8	1290	
50	0.5	2.0	39.2	2040	
1.0mm ² (1/1.13)					
2	0.6	1.2	13.3	180	
5	0.6	1.2	16.8	374	
10	0.6	1.5	23.8	675	
15	0.6	1.5	27.0	830	
20	0.6	1.7	31.1	1290	
30	0.6	2.0	37.8	1998	
50	0.6	2.2	47.9	3082	
0.5mm ² (16/0.2)					
2	0.6	1.2	12.5	130	
5	0.6	1.2	15.9	275	
10	0.6	1.3	21.8	410	
15	0.6	1.5	25.4	545	
20	0.6	1.7	29.2	645	
30	0.6	2.0	35.4	1360	
50	0.6	2.2	44.8	2140	
0.75mm ² (24/0.2)					
2	0.6	1.2	13.5	158	
5	0.6	1.2	17.2	290	
10	0.6	1.5	24.3	496	
15	0.6	1.5	27.6	890	
20	0.6	1.7	31.8	1498	
30	0.6	2.0	38.6	1800	
50	0.6	2.2	49.0	2820	
1.5mm (7/0.53)					
2	0.6	1.2	15.0	190	
5	0.6	1.3	19.4	398	
10	0.6	1.5	27.2	720	
15	0.6	1.7	31.4	1380	
20	0.6	2.0	36.3	1725	
30	0.6	2.2	43.8	2690	
50	0.6	2.2	55.2	4155	

RT = Radial thickness

BS 5308 Part 1

A) Identification of Collectively screened pairs

Two pair unscreened or overall screened cables are colour coded in clockwise order of rotation: black, blue, Green,Brown.

All other cables up to 50 pairs conform to the coding of following table:

Pair No	a-wire	b-wire	Pair No	a-wire	b-wire
1	black	blue	26	white	yellow
2	black	green	27	red	yellow
3	blue	green	28	orange	yellow
4	black	brown	29	black	grey
5	blue	brown	30	blue	grey
6	green	brown	31	green	grey
7	black	white	32	brown	grey
8	blue	white	33	white	grey
9	green	white	34	red	grey
10	brown	white	35	orange	grey
11	black	red	36	yellow	grey
12	blue	red	37	black	violet
13	green	red	38	blue	violet
14	brown	red	39	green	violet
15	white	red	40	brown	violet
16	black	orange	41	white	violet
17	blue	orange	42	red	violet
18	green	orange	43	orange	violet
19	brown	orange	44	yellow	violet
20	white	orange	45	grey	violet
21	red	orange	46	black	turquoise
22	black	yellow	47	blue	turquoise
23	blue	yellow	48	green	turquoise
24	green	yellow	49	brown	turquoise
25	brown	yellow	50	white	turquoise

B) Identification of individually screened pairs

Screened pairs are identified by numbered tape under the separator tapes of the pair screens.

Each pair has one black and one blue core.

Each triple with either collective screen or individual triple screens shall be one black, one blue and one green.

Clients specific pair triple colour coding available on request.