

BT Cables

Railways

BT Cables Railways

BT Cables is a world leader in cable manufacturing. UK based, we offer one of the strongest support networks available in this industry. And, as the fastest growing cable manufacturer in the world, BT Cables now operate in more market sectors and countries than ever before, delivering innovative value added services alongside an extensive range of cable products.

BT Cables serves a prestigious global customer base with cabling products and world-class value added services to the following market sectors:

- Railways ● Communications ● Utilities ● Building & Industrial

With our programme of constant investment into plant and machinery, BT Cables product range is extensive and delivers quality approved products for a wide variety of applications. The company has a unique blend of business skills, industry knowledge and continuous improvement expertise to create and deliver a portfolio of innovative value added services. BT Cables portfolio has been developed with the benefit and feedback of real life customer experiences. Customers use a range of products and solutions to streamline processes, reduce overhead and logistics costs and improve the efficiency of their cable supply chain.

BT Cables manufacturing facilities and cable products are of the highest quality, but what sets us apart is the fact you can always rely on our world-class service and the fact we will deliver on time and in full, every time.

If you're looking for any of these cabling solutions, then you should talk to BT Cables:

- Trackside communications ● Signalling ● Axle counting/safety ● Low voltage power ● Optical fibre ● Hybrid cables

Visit BT Cables at www.btcables.com or email enquiries to info.btcables@bt.com or contact us on **+44 161 740 9151**

This brochure represents only a small selection of the products BT Cables can supply.



Railway/Metro Telecommunications Cable

Typical Cable Applications:

Communications in railway networks

NR/PS/TEL/00015

Compliant with Network Rail specification NR/PS/TEL/00015

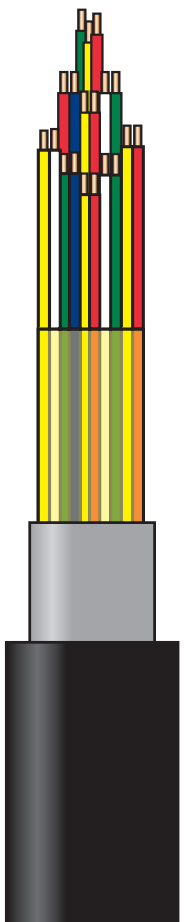
Plain copper wire of 0.63 or 0.9 mm with solid Pe insulation, twisted pair construction, petroleum jelly filled, helically stranded 10 pair units, non-hygroscopic or paper tape core wrap, black Pe sheath incorporating a longitudinally applied aluminium-copolymer tape

BTCL P/N	No. of Pairs	Conductor Diameter (mm)	Max DC Cond. Resistance (ohm/km)	Maximum Mutual Pair Capacitance (nF/km)	Min NEXT Between Pairs (in same unit) @ 1.024 MHz (dB/km)	Max Average Attenuation @ 1.024 MHz (dB/km)	Nominal Overall Diameter (mm)
10187101	2	0.63	60	79	40	18.7	10.5
10180680	20	0.63	60	79	40	18.7	18.1
10180655	50	0.63	60	75	40	18.7	24.2
10181441	100	0.63	60	75	40	18.7	29.2
10188101	2	0.90	30	81	40	14.6	11.5
10180681	20	0.90	30	81	40	14.6	21.9
10180656	50	0.90	30	85	40	14.6	30.0
10180836	100	0.90	30	81	40	14.6	37.3

Please note: The above cables are available in the range 2 - 100 pairs

Options: Steel tape armour with Pe Sheath, Halogen Free Flame Retardant (HFFR) Sheath and Steel tape armour with Halogen Free Flame Retardant Sheath (HFFR)

For Network Rail PADS to BTCL Part Number cross reference, please refer to Page 5



G7622 Type 1

Compliant with London Underground specification LUL G7622 A2 Type 1 Plain copper wire of 0.63 or 0.9 mm with cellular Pe insulation, quad construction, helically or oscillated stranded cable core, plastic tape core wrap, black Pe inner sheath incorporating a longitudinally applied aluminium-copolymer tape, violet PVC outer sheath

BTCL P/N	No. of Pairs	Conductor Diameter (mm)	Max DC Cond. Resistance (ohm/km)	Insulation Resistance (m.ohm/km)	Maximum Mutual Capacitance (nF/km)	Nominal Overall Diameter (mm)	Nominal Weight (kg/km)
10139296	8	0.63	59	1500	59	16.3	275
10148632	28	0.63	59	1500	59	20.8	480
10139297	54	0.90	29	1500	59	31.4	1150
10139298	74	0.90	29	1500	59	34.8	1460

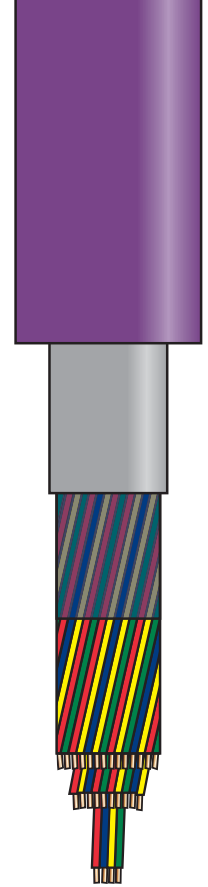
Please note: The above cables are available in the range 8 - 104 pairs

G7622 Type 2

Compliant with London Underground specifications LUL G7622 A2 Type 2, E4156 Pts 1 & 2, LUL 2-01001-002 A1 Plain copper wire of 0.63 or 0.9 mm with cellular Pe insulation, quad construction, helically or oscillated stranded cable core, plastic tape core wrap, a longitudinally applied aluminium-copolymer tape and a violet Halogen Free Flame Retardant (HFFR) sheath

BTCL P/N	No. of Pairs	Conductor Diameter (mm)	Max DC Cond. Resistance (ohm/km)	Insulation Resistance (m.ohm/km)	Maximum Mutual Capacitance (nF/km)	Nominal Overall Diameter (mm)	Nominal Weight (kg/km)
10139300	8	0.63	59	1500	59	11.5	181
10139302	28	0.63	59	1500	59	16.0	367
10139304	54	0.90	29	1500	59	26.6	1050
10139305	74	0.90	29	1500	59	30.0	1350

Please note: The above cables are available in the range 8 - 104 pairs



BR892 Brass Tape Protection

Compliant with United Kingdom Standard BR892
Telecommunications cable with additional protection for trackside use and anti-rodent protection
Helical brass tape, Pe sheath with option of PVC or Halogen Free Flame Retardant (HFFR) sheath

Brass tape protection is applied to cables manufactured in accordance with NR/PS/TEL/00015 and is supplied as an alternative to corrugated steel tape where improved flexibility of the cable is required.



Jumperwires

Typical Cable Applications:

Suitable for cross connection on distribution frames

Wire Jumper 9000

Tinned solid copper conductors, non-irradiated PVC insulation
Compliant with Network Rail Specification CW1423NR & British Telecom Specification CW1423

BTCL P/N	No. of Pairs	Conductor Diameter (mm)	Min Radial (mm)	Nom Insulated Dia (mm)	Max Average Resistance (ohms)	Insulation Resistance (Mohms/km)	Max O/All Diameter (mm)
I-0001-P050-001-00-0-0-1423	1	0.50	0.25	1.08	98	50	1.10

Insulation colours: RED with Black bands twinned with WHITE with Black bands and BLUE with Black bands twinned with YELLOW with Black bands



Limited Fire Hazard Cable

Typical Cable Applications:

Suitable for use in fire risk locations: high rise buildings, sub-surface, underground & metro systems

Plain solid copper conductors, PE insulation, unit twin construction, polyester core wrap, fire retardant tape, drain wire, electrical screen, low smoke zero halogen sheath
Compliant with British Telecom Standard CW1600

BTCL P/N	No. of Pairs	Conductor Diameter (mm)	Nom Sheath Radial (mm)	Max O/All Diameter (mm)	Max Average Resistance (ohms)	Max Average Mutual Cap (nF/km)	Capacitance Unbalance 99% of cases (pF)
I-0003-P050-001-00-T-1600	3	0.50	0.60	4.8	97.8	80	500
I-0040-P050-001-00-T-1600	40*	0.50	0.90	15.0	97.8	80	500
I-0100-P050-001-00-T-1600	100*	0.50	1.50	27.0	97.8	80	500
I-0320-P050-001-00-T-1600	320*	0.50	2.20	39.5	97.8	80	500

Note 1: * These cables contain a 1.38 mm PVC insulated Earth wire

Note 2: Available in pair range 2 - 320 pair



Trackside Signalling Cable

Typical Cable Applications:

Signalling circuits in railway networks

XP & XQ Axle Counter (with rodent protection)

Compliant with United Kingdom Standard (Network Rail) NR/L2/SIG/30060, in addition HFFR (XPZ) cables meet BS 6724, IEC 60754, IEC 60332-1 Tinned copper wire of 0.9 or 1.4 mm with solid Pe insulation, twisted pair construction, helically stranded cable core, plastic tape core wrap, woven glass fibre tape, Pe sheath incorporating a longitudinally applied aluminium-copolymer tape applied with overlap Options: Corrugated steel tape armour, brass tape armour, Halogen Free Flame Retardant (HFFR) sheath

BTCL P/N	No. of Pairs	Conductor Diameter (mm)	Max DC Cond. Resistance (ohm/km)	Maximum Mutual Capacitance (nF/km)	Max Average Attenuation @ 40 kHz (dB/km)	Characteristic Impedance @ 90 kHz (ohms)	Nominal Overall Diameter (mm)
XPS0902	2	0.9	30	45	2.6	135 ± 10	13.8
XPS0910	10	0.9	30	45	2.6	135 ± 10	24.7
XPS0919	19	0.9	30	45	2.6	135 ± 10	31.4
XPS1410	10	1.4	12.5	50	2.0	135 ± 10	31.4
XPS1419	19	1.4	12.5	50	2.0	135 ± 10	40.8
XQS0902**	2	0.9	30	45	2.6	135 ± 10	11.8

** Indicates Quad option

Please note: The above cables are available in the range 2 - 24 pairs

For Network Rail PADS to BTCL Part Number cross reference, please refer to Page 5

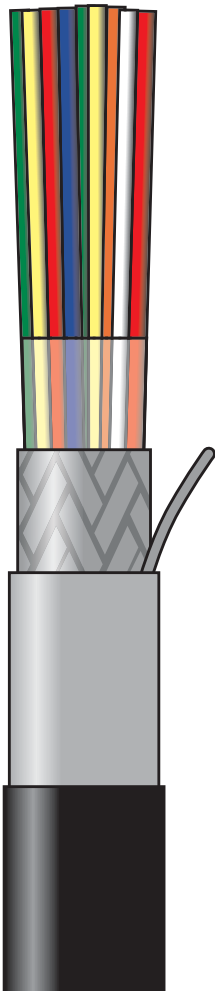
Interconnecting Cable for SSI Systems (Datalink)

Compliant with United Kingdom Standard (Network Rail) BR1932

Plain copper wire of 1.27 mm with solid Pe insulation, twisted pair construction, plastic tape core wrap, Pe sheath incorporating a longitudinally applied aluminium-copolymer tape applied with overlap

BTCL P/N	No. of Pairs	Conductor Diameter (mm)	Insulation Thickness (mm)	Nominal Cable Diameter (mm)	Resistance ohm/km	Maximum Mutual Capacitance @ 10 kHz (nF/km)	Maximum Impedance ohm @ 10MHz	Nominal Cable Weight (kg/km)
10189500	1	1.27	0.66	13.6	7.41	55	100 ± 10	136
10189501	1	1.27	0.66	18.3	7.41	55	100 ± 10	270

Options: Corrugated steel tape armour, brass tape armour, Halogen Free Flame Retardant (HFFR) sheath



Optical Fibre Telecommunications Cable

Dielectric Loose Tube

Dielectric strength member, gel filled loose tubes with 2 - 16 singlemode fibres per tube (G.652), fillers where required for cable geometry, water swellable elements of tapes or yarns, Pe inner sheath (optional), peripheral strength elements of aramid or glass, Pe outer sheath

BTCL P/N	No. of Fibres	No. of Tubes	No. of Fibres Per Tube	Cable Diameter (mm)	Min Bend Radius (mm)
E-016-SM2-L04-D-WST-PKP	16	4	4	12.5	187.5
E-032-SM2-L08-D-WST-PKP	32	4	8	12.5	187.5
E-048-SM2-L08-D-WST-PKP	48	6	8	12.5	187.5
E-096-SM2-L08-D-WST-PKP	96	12	8	17.0	255.0
E-192-SM2-L16-D-WST-PKP	192	12	16	20.0	300.0

Please note: The above cables are available in the range 8 - 256 fibres, with a double sheath option
The cables have been tested to show compliance with European Norm (EU) 187000.
501 - Max Tensile Load, 504 - Crush Values, 513 - Bend, 601 - Temperature Cycling, and 605B - Water Penetration

Metallic Loose Tube

Dielectric strength member, gel filled loose tubes with 2 - 16 singlemode fibres per tube (G.652), fillers where required for cable geometry, water swellable elements of tapes or yarns, Pe inner sheath (optional), laminated steel tape, Pe outer sheath

BTCL P/N	No. of Fibres	No. of Tubes	No. of Fibres Per Tube	Cable Diameter (mm)	Min Bend Radius (mm)
E-016-SM2-L04-D-WST-PESP	16	4	4	13.0	260.0
E-032-SM2-L08-D-WST-PESP	32	4	8	13.0	260.0
E-048-SM2-L08-D-WST-PESP	48	6	8	13.0	260.0
E-096-SM2-L08-D-WST-PESP	96	12	8	18.0	360.0
E-192-SM2-L16-D-WST-PESP	192	12	16	21.0	420.0

Please note: The above cables are available in the range 8 - 256 fibres, with a double sheath option
The cables have been tested to show compliance with European Norm (EU) 187000.
501 - Max Tensile Load, 504 - Crush Values, 513 - Bend, 601 - Temperature Cycling, and 605B - Water Penetration



Network Rail PADS Database Cross-Reference

Axle Counter: NR/L2/SIG/30060

PADS Ref. No.	BTCL P/N
006/170007	XPS0902
006/170008	XPS0910
006/170009	XPS0912
006/170034	XPS0919
006/170035	XPS0924
006/170036	XPS1402
006/170037	XPS1410
006/170038	XPS1412
006/170039	XPS1419
006/170040	XPS1424
006/170021	XQS0902 **
006/170050	XQS1402 **
006/170023	XPZ0902
006/170024	XPZ0910
006/170025	XPZ0912
006/170026	XPZ0919
006/170027	XPZ0924
006/170028	XPZ1402
006/170029	XPZ1410
006/170030	XPZ1412
006/170031	XPZ1419
006/170032	XPZ1424
006/170053	XQZ0902 **
006/170033	XQZ1402 **

Copper Unit Twin Telecom: NR/PS/TEL/00015

	PADS Ref. No.	Pair/Cdr	BTCL P/N	PADS Ref. No.	Pair/Cdr	BTCL P/N
Duct PE	006/168001	2/0.63 **	10187101	006/168051	2/0.9 **	10188101
	006/168002	5/0.63	10187102	006/168052	5/0.9	10188102
	006/168003	10/0.63	10187103	006/168053	10/0.9	10188103
	006/168004	20/0.63	10180680	006/168054	20/0.9	10188104
	006/168005	30/0.63	10187104	006/168055	30/0.9	10188105
	006/168006	50/0.63	10187105	006/168056	50/0.9	10188106
	006/168007	75/0.63	10187106	006/168057	75/0.9	10188107
	006/168008	100/0.63	10181441	006/168058	100/0.9	10188108
Armoured PE	006/168011	2/0.63 **	10181083	006/168061	2/0.9 **	10180703
	006/168012	5/0.63	10187107	006/168062	5/0.9	10181572
	006/168013	10/0.63	10180976	006/168063	10/0.9	10181062
	006/168014	20/0.63	10180704	006/168064	20/0.9	10181078
	006/168015	30/0.63	10187108	006/168065	30/0.9	10180702
	006/168016	50/0.63	10181181	006/168066	50/0.9	10180701
	006/168017	75/0.63	10187109	006/168067	75/0.9	10181521
	006/168018	100/0.63	10180836	006/168068	100/0.9	10180705
Duct LSZH/HFFR	006/168021	2/0.63 **	10187110	006/168071	2/0.9 **	10188109
	006/168022	5/0.63	10187111	006/168072	5/0.9	10188110
	006/168023	10/0.63	10187112	006/168073	10/0.9	10188111
	006/168024	20/0.63	10180865	006/168074	20/0.9	10188112
	006/168025	30/0.63	10181531	006/168075	30/0.9	10188113
	006/168026	50/0.63	10187113	006/168076	50/0.9	10188114
	006/168027	75/0.63	10187114	006/168077	75/0.9	10188115
	006/168028	100/0.63	10187115	006/168078	100/0.9	10188116
Armoured LSZH	006/168031	2/0.63 **	10187116	006/168081	2/0.9 **	10188117
	006/168032	5/0.63	10187117	006/168082	5/0.9	10180973
	006/168033	10/0.63	10187118	006/168083	10/0.9	10180974
	006/168034	20/0.63	10187119	006/168084	20/0.9	10180975
	006/168035	30/0.63	10187120	006/168085	30/0.9	10188118
	006/168036	50/0.63	10187121	006/168086	50/0.9	10180991
	006/168037	75/0.63	10187122	006/168087	75/0.9	10188119
	006/168038	100/0.63	10187123	006/168088	100/0.9	10188120

** Indicates Quad cable

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