



Cable Solutions for
**BUILDING
MANAGEMENT SYSTEMS**

Product Catalogue

Issue 3

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Upon failure to meet the performance specification due to manufacturing default, we will guarantee replacement, at no cost to the customer.

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SECTION - 1

PAIRED CABLES



SECTION - 1

PAIRED CABLES

PVC or HFFR sheathed cables for BUS and Interface systems

1. Application

RS-232, RS-422, RS-485, KNX(EIB)-bus, LonWorks, ModBus, M-Bus, CAN-bus, BACnet or general interface systems.

2. Basic Construction of the cables

Wire = Conductor with or without insulation. When with insulation sometimes also indicated as core.

Conductor: solid = one single rod, flexible = twisted bare or tinned copper strands, ranging from 12 to 24 AWG.

Conductor (AWG)	Configuration (n x AWG)	Configuration (n x mm)	DC Resistance (Ohm/km)
24	7 x 32	7 x 0.20	≤ 88
22	7 x 30	7 x 0.25	≤ 57.4
20	7 x 28	7 x 0.32	≤ 35.75
18	7 x 26	7 x 0.40	≤ 22.7
16	19 x 29	19 x 0.28	≤ 15.47
14	19 x 27	19 x 0.36	≤ 9.36
12	19 x 25	19 x 0.45	≤ 5.61

n = number of wires in strand

Insulation: Polyethylene (PE) or Foam PE (FPE) depending on the sheath material. All insulations are in accordance with BS EN 50290-2, good strippability and coloured. The colours are readily identifiable and are not interchangeable.

Pair = two twisted – colour coded – wires.

Individually screened pair (if applicable): one pair wrapped with an Aluminium/Polyester drain wire under the foil.

Cable core: two or more (individually screened) pairs stranded.

Good twisting (lay-length < 30 – 40D) is necessary to ensure flexibility and avoid breaking conductors.

Drain wire (only in combination with a screen): stranded tinned copper wires. In order to avoid corrosion, it is recommended that drain wires are tinned.

Screen (if applicable): Helically applied (= as a spiral) Aluminium/Polyester (Alpet) foil. For the flexibility of a cable a helically applied foil is preferred as longitudinally applied foil is more difficult to bend.

Braiding (if applicable): tinned copper wires.

Sheath: grey PVC or purple HRRF, both in accordance with BS EN 50290-2

Cable Configuration	Cable Retardancy	Low Smoke	Halogen-free (non acid, non toxic)	RoHS compliant
PE, FPE or PVC insulation and PVC Sheath	according to IEC 60332-1	No	No	Yes
PE, FPE or HFFR insulation and HFFR sheath	according to IEC 60332-3-24	according to IEC 61034-1-2	according to IEC 60754-1& 2	Yes

Operating temperature range: -25 to +75 °C

Rated Voltage: 300 Vrms

SECTION - 1

PAIRED CABLES



RS-485: Balanced digital circuit. Medium speed fieldbus interfaces. Maximum transmission speed 35 Mbit/second (normal use 1 or 0.5 Mbit/sec). Max. transmission distance is 1200 metres, 32 nodes per bus.

Cables used have mainly 24AWG conductors, one twisted pair or multi-pair and impedance of 120 Ohm.

Selsor main part numbers for RS-485 see section 1.1

RS-422: Balanced digital circuit. Medium speed data exchange. Long line modems and Daisy chain configuration. Maximum transmission speed 10 Mbit/second (normal use under 1Mbit/sec). Max. transmission distance is 1200 metres. Ten nodes per bus.

Cables used have mainly 24AWG conductors, two twisted pairs or multi-pair and impedance of 100 Ohm.

Selsor main part numbers for RS-422: see section 1.2

RS-232: Hand shake interface used for low data rates. Computer to printer or to modem or to other device. Max. speed 19.2 kbit/sec. Max. distance acc. to standard 15 m.

Cables used are 6 to 25 conductors. Long distance transmission requires low capacitance (standard calls for 2500 pF link), No impedance specified.

Selsor main part numbers for RS-232: see section 1.3

KNX is a standardised (EN 50090, ISO/IEC 14543), OSI-based network communications protocol for intelligent buildings. KNX is the successor to, and convergence of, three previous standards: the European Home Systems Protocol (EHS), BatiBUS, and the European Installation Bus (EIB or Instabus).

Selsor main part numbers for KNX cables: J3401 (quad – PVC) – J3402 (quad – HFFR) – J3403 (1 pair – PVC) – J3404 (1 pair – HFFR).

LonWorks is a networking platform specifically created to address the needs of control applications. The platform is built on a protocol created by Echelon Corporation for networking devices over media such as twisted

pair, power lines, fibre optics, and RF. It is used for the automation of various functions within buildings such as lighting and HVAC.

Selsor main part numbers for LonWorks: J3534 (PVC) – J3524 (PVC) – J3535 (HFFR) – J3525 (HFFR) – J3421 (HFFR) – J3422 (HFFR) – J3423 (HFFR) and J3424 (HFFR).

Modbus is a serial communications protocol published by Modicon in 1979 for use with its programmable logic controllers (PLCs). Simple and robust, it has since become one of the de facto standard communications protocols in the industry.

Selsor main part numbers for Modbus: J3464 (PVC) – J3521 (PVC) – J3465 (HFFR) – J3522 (HFFR).

M-Bus (Meter-Bus) is a European standard (EN 13757-2 physical and link layer, EN 13757-3 application layer) for the remote reading of gas or electricity meters. M-Bus is also usable for other types of consumption meters.

Selsor main part number for M-bus: J2225 – J3521.

Controller–area network (CAN or CAN-bus) is a vehicle bus standard designed specifically for automotive applications but now also used in other areas such as industrial automation and medical equipment. CAN bus utilizes TIA/EIA-485 cables.

Selsor main part numbers for CAN-bus: J3111 – J3011 – J3021 – J3031 – J3041 – J3121 – J3131 – J3141 and HFFR cables J3012 – J3022 – J3032 – J3042.

BACnet is a communications protocol for building automation and control networks. It was designed to allow communication of building automation and control systems for applications such as heating, ventilation, air-conditioning, lighting, access, and fire detection systems and their associated equipment.

BACnet over IP can utilize Cat 6.

Selsor main part numbers for BACnet: J2111 (PVC) – J3011 (PVC) – J3021 (PVC) – J3012 (HFFR) and J3022 (HFFR).

Non-standard cable constructions, colours, details and/or additional information are available on request.

For more details, please see the respective detailed datasheet(s).

Please note that technical specifications are subject to change without notice.

SECTION - 1.1

PAIRED CABLES, DUAL OVERALL SCREEN

24AWG and 22AWG conductors – PE or FPE insulation – PVC or HFFR sheath for TIA/EIA-485 = RS-485 applications

Product Description

1. Conductor Flexible Tinned Copper	5. Screen (if applicable) Aluminium/Polyester > 100% Coverage	Standard References TIA/EIA 485 BS EN 50290-2 IEC 60332-1 (PVC sheath) or IEC 60332-3C and IEC 61034 (only HFFR cable) IEC 60754-1 & 2 (HFFR cable) RoHS directives
2. Insulation Polyethylene (PE)	6. Braiding Tinned Copper (TC) wires	
3. Pair Two twisted wires impedance 120 Ω	7. Sheath Material Grey PVC or Purple HFFR	
4. Tinned Copper Drain Wire 24AWG (7 x 32)	Standard Put Up Length 305 or 500 metres	

Cables with 24AWG conductors – PE insulation - PVC sheath

Sensor Part Number	No. of Pairs	Coverage Braiding (%)	Overall Diameter (mm)	Mutual Capacitance (pF/m)	Weight (kg/km)
J3011	1	90	5.9	41	49
J3021	2		8.5		80.5
J3031	3		9.0		92.6
J3041	4		9.9		114.4

Cables with 24AWG conductors – PE insulation - Halogen-free (HFFR) sheath

Sensor Part Number	No. of Pairs	Coverage Braiding (%)	Overall Diameter (mm)	Mutual Capacitance (pF/m)	Weight (kg/km)
J3012	1	90	5.9	41	49
J3022	2		8.5		80.5
J3032	3		9.0	42	92.6
J3042	4		9.9		114.4

Cables with 22AWG conductors – Foam PE insulation - PVC sheath

Sensor Part Number	No. of Pairs	Coverage Braiding (%)	Overall Diameter (mm)	Mutual Capacitance (pF/m)	Weight (kg/km)
J3111	1	65	6.1	36	63.7
J3121	2		9.1	37	75.6
J3131	3		10.5	38	97
J3141	4		11.4	38	119.1

Cables with 22AWG conductors – Foam PE insulation - HFFR sheath

Sensor Part Number	No. of Pairs	Coverage Braiding (%)	Overall Diameter (mm)	Mutual Capacitance (pF/m)	Weight (kg/km)
J3112	1	65	6.1	36	63.7
J3122	2		9.1	37	75.6
J3132	3		10.5	38	97
J3142	4		11.4	38	119.1

Colour scheme

Colour scheme	Pair 1	Pair 2	Pair 3	Pair 4
Wire a (insulation colour / colour of stripe)	WHITE / blue	WHITE / orange	WHITE / green	WHITE / brown
Wire b (insulation colour / colour of stripe)	BLUE / white	ORANGE / white	GREEN / white	BROWN / white

SECTION 1.2

PAIRED CABLES

2 to 6 pairs with 24AWG conductors – FPE insulation – PVC sheath for RS-422 applications

Product Description

1. Conductor Flexible Tinned Copper	5. Screen (if applicable) Aluminium/Polyester > Wrapped around each Pair >115% Coverage	Standard References ANSI/TIA/EIA-422-B BS EN 50290-2 IEC 60332-1 Rohs directives
2. Insulation Foam Polyethylene (FPE)	6. Cable Core 2 or more individually screened pairs stranded	
3. Pair Two twisted wires	7. Sheath Material Grey PVC	
4. Drain Wire Flexible Tinned Copper	Standard Put Up Length 305 or 500 metres	

Cables with 24AWG conductors – PE insulation - PVC sheath

Selsor Part Number	No. of Pairs	Conductor and Drain Wire (AWG)	No. of Strands x AWG	Nominal Overall Diameter (mm)	Max. DC Conductor Resistance (Ω /km)	Capacitance (pF/m)	Nominal Impedance (Ohm)	Weight (kg/km)
J3202	2	24	7 x 32	6.7	88	41	100	41.8
J3203	3		7 x 32	8.4				59.4
J3204	4		7 x 32	9.2				75.5
J3206	6		7 x 32	10.6				104.8

Colour scheme

Pair Number	Pair 1	Pair 2	Pair 3	Pair 4	Pair 5	Pair 6
Wire a	Black	Black	Black	Black	Black	Black
Wire b	Red	White	Green	Blue	Yellow	Brown

For more details, please see the respective detailed datasheet(s)



SECTION 1.3

PAIRED CABLES

1 to 8 pairs with 24AWG conductors – PVC insulation – PVC sheath for TIA/EIA-232 = RS-232 applications

Product Description

1. Conductor Flexible Tinned Copper 24AWG (7x32)	5. Tinned Copper Drain Wire 24AWG (7 x 32)	Standard References ANSI/TIA/EIA-232-F BS EN 50290-2 IEC 60332-1 RoHS directives
2. Insulation PVC	6. Screen Aluminium/Polyester > 115% Coverage	
3. Pair Two twisted wires	7. Sheath Material Grey PVC	
4. Cable Core 2 or more pairs stranded	Standard Put Up Length 305 or 500 metres	

Cables with 24AWG conductors - PVC insulation - PVC sheath - PVC sheath

Sensor Part Number	No. of Pairs	Conductor and Drain Wire (AWG)	No. of Strands x AWG	Nominal Overall Diameter (mm)	Max. DC Conductor Resistance (Ω/km)	Capacitance (pF/m)	Nominal Impedance (Ohm)	Weight (kg/km)
J3301	1	24	7 x 32	4.0	88	76	75	18
J3302	2		7 x 32	5.6				28
J3303	3		7 x 32	5.9				39
J3304	4		7 x 32	6.7				48
J3305	5		7 x 32	7.3				57
J3306	6		7 x 32	7.4				65
J3307	7		7 x 32	7.5				73
J3308	8		7 x 32	8.3				85

Colour scheme

Pair Number	Pair 1	Pair 2	Pair 3	Pair 4	Pair 5	Pair 6	Pair 7	Pair 8
Wire a	Black	Black	Black	Black	Black	Black	Black	Red
Wire b	Red	White	Green	Blue	Yellow	Brown	Orange	White

For more details, please see the respective detailed datasheet(s)

SECTION 1.4

PAIRED CABLES

0.8 mm solid bare copper conductors – PE insulation – PVC or HFFR sheath for KNX (was EIB) or general bus applications

Product Description

1. Conductor Solid Bare Copper 0.8 mm = 0.5 mm ²	5. Drain Wire 0.4 mm Tinned Copper	Standard References EN 50090 BS EN 50290-2 IEC 60332-1 (PVC sheath) or IEC 60332-3C (HFFR cable) IEC 61034 (only HFFR cable) IEC 60754-1 & 2 (HFFR cable) RoHS directives
2. Insulation Polyethylene (PE) (Black-Red-White-Green)	6. Screen Aluminium/Polyester Foil > 100% Coverage	
3. Cable Core Quad or Pair	7. Sheath Material Green PVC or Green HFFR	
4. Polyester Foil or Tape	Standard Put Up Length 305 or 500 metres	

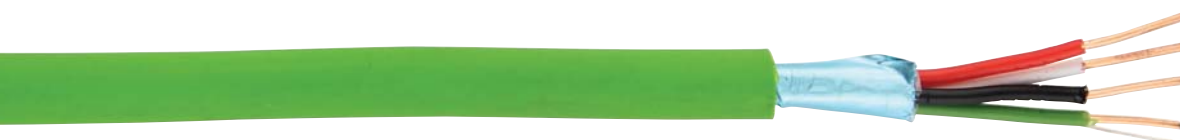
Cables with 0.8 mm conductors - PE insulation - PVC or HFFR sheath

Selsor Part Number	No. of Pairs	Lay-Up	Sheath Material	Diameter Insulation (mm)	Overall Diameter (mm)	Max. DC Conductor Resistance (Ω/km)	Capacitance (pF/m)	Weight (kg/km)
J3401	1 x 4	quad	PVC	1.45	6.1	37	≤ 100	51
J3402			HFFR	1.45	6.1			53
J3403	1 x 2	pair	PVC	1.45	5.5			37
J3404			HFFR	1.45	5.5			39

Colour scheme

Pair Number	Wire a	Wire b	Wire c	Wire d
J3401	Black	White	Red	Green
J3402				
J3403			-	-
J3404				

For more details, please see the respective detailed datasheet(s)



SECTION 1.5

PAIRED CABLES, INDIVIDUALLY SCREENED PAIRS

0.64 mm solid bare copper conductors one or two individually screened pairs or pairs with no screen – HFFR sheath for LonWorks bus applications

Product Description

1. Conductor Solid Bare Copper 0.64 mm = 0.32 mm ²	4. Tinned Copper Drain Wire two twisted wires plus drain wire wrapped with an Aluminium coated polyester foil	Standard References EN 50090 BS EN 50290-2 IEC 60332-3C IEC 61034 IEC 60754-1 & 2 RoHS directives
2. Insulation Polyethylene (PE) or Foam Polyethylene (FPE)	5. Cable core one pair or two pairs stranded	
3. Pairs with no screen Two twisted wires	7. Sheath Material Purple HFFR	
Standard Put Up Length 305 or 500 metres		

Cables with 0.64 mm conductor(s) - PE or FPE insulation - HFFR sheath

Sensor Part Number	No. of Pairs	Insulation Material	Individually Screened Pairs	Normal Overall Diameter (mm)	Max. DC Conductor Resistance (Ω/km)	Capacitance (pF/m)	Weight (kg/km)
J3421	1	PE	No	3.5	61	46	17.1
J3422	2			5.2			27.1
J3423	1		Yes	4.6			24.2
J3424	2			7.6			56.1



SECTION 1.6

PAIRED CABLES, INDIVIDUALLY SCREENED PAIRS



2 to 6 pairs with 22AWG conductors – PE insulation + PVC sheath or HFFR insulation + HFFR sheath for general interface applications

Product Description

1. Conductor Flexible Tinned Copper 22AWG(7 x 30)	5. Screen Aluminium/Polyester foil wrapped around each pair > 115% Coverage	Standard References BS EN 50290-2 IEC 60332-1 (PVC sheath) or IEC 60332-3C (HFFR cable) IEC 61034 (HFFR cable) IEC 60754-1 & 2 (HFFR cable) RoHS directives
2. Insulation Polyethylene (PE) or Halogen-free (HFFR)	6. Cable Core 2 or more individually screened pairs stranded	
3. Pair Two twisted wires	7. Sheath Material Grey PVC or Purple HFFR	
4. Tinned Copper Drain Wire 24AWG (7 x 32)	Standard Put Up Length 305 or 500 metres	

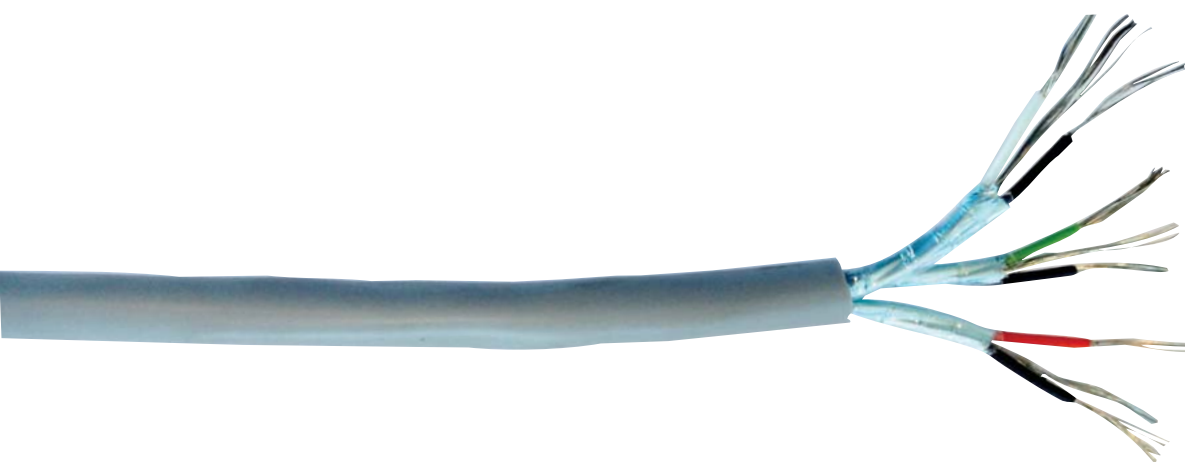
Cables with 22AWG conductors - PE or HFFR insulation - PVC or HFFR sheath

Selsor Part Number	No. of Pairs	Insulation Material	Sheath Material	Overall Diameter (mm)	Max. DC Conductor Resistance (Ω /km)	Capacitance (pF/m)	Weight (kg/km)
J3461	2	PE	PVC	6.0	57.4	90	49.9
J3462		HFFR	HFFR	6.5		90	50.8
J3464	3	PE	PVC	6.5		98	52.7
J3465		HFFR	HFFR	7.5		92	67.4
J3473	6	PE	PVC	8.9		99	104.2
J3474		HFFR	HFFR	9.5		92	115.6

Colour scheme

Part Number	Pair 1	Pair 2	Pair 3	Pair 4	Pair 5	Pair 6
J3461 and J3462	Black / Red	Green / White	-	-	-	-
J3464 and J3465		Black / White	Black / Green	-	-	-
J3473 and J3474				Black / Blue	Black / Yellow	Black / Brown

For more details, please see the respective detailed datasheet(s)



SECTION 1.7

PAIRED CABLES

One pair cables with 22 to 12AWG conductors; PE insulation – PVC sheath or HFFR insulation – HFFR sheath for general interface applications

Product Description

1. Conductor Flexible Tinned Copper	5. Screen (if applicable) Aluminium/Polyester > 115% Coverage	Standard References BS EN 50290-2 IEC 60332-1 (PVC sheath) IEC 60332-3c (HFFR cable) IEC 61034 (HFFR cable) IEC 60754-1 & 2 (HFFR cable) RoHS directives
2. Insulation Polyethylene (PE) or Halogen-free (HFFR)	6. Sheath Material Grey PVC or Purple HFFR	
3. Pair Two wires twisted	Standard Put Up Length 305 or 500 metres	
4. Tinned Copper Drain Wire (only with screen) 24AWG (7 x 32)		

DC Resistance 24 to 12AWG conductors

Conductor size	AWG	22	20	18	16	14	12	24
No. of strands x gauge	n x AWG	7 x 30	7 x 28	7 x 26	19 x 29	19 x 27	19 x 25	7 x 32
No. of strands x mm	n x mm	7 x 0.25	7 x 0.325	7 x 0.40	19 x 0.29	19 x 0.38	19 x 0.48	7 x 0.20
Max. DC Resistance conductor	Ω/km	57.4	35.75	22.7	15.47	9.36	5.61	88

n = number of wires in strand

One pair screened cables with PE insulation, PVC sheath

Sensor Part Number	Conductor (AWG)	Overall Diameter (mm)	Capacitance (pF/m)	Weight (kg/km)
J3501	22	4.4	75	25
J3511	20	5.0		36.4
J3521	18	5.6		43.2
J3531	16	7.9	60	75.7
J3541	14	9.0	76	104.9
J3551	12	10.2	77	124.7

One pair screened cables with HFFR insulation and HFFR sheath

Sensor Part Number	Conductor (AWG)	Overall Diameter (mm)	Capacitance (pF/m)	Weight (kg/km)
J3502	22	4.5	140	27.1
J3512	20	5.3	120	37.2
J3522	18	6.0		48.4
J3532	16	7.8	110	74.3
J3542	14	8.8		97.9
J3552	12	9.9		132.6

One pair unscreened cables with PVC insulation and PVC sheath

Sensor Part Number	Conductor (AWG)	Overall Diameter (mm)	Capacitance (pF/m)	Weight (kg/km)
J3504	22	4.0	70	19.5
J3514	20	4.3		23
J3524	18	5.1		38.6
J3534	16	6.9	50	63.3
J3544	14	8.6	108	91.8
J3554	12	9.8	115	115

One pair unscreened cables with HFFR insulation and HFFR sheath

Sensor Part Number	Conductor (AWG)	Overall Diameter (mm)	Capacitance (pF/m)	Weight (kg/km)
J3505	22	4.4	85	24.7
J3515	20	5.2	80	34.7
J3525	18	5.9		45.9
J3535	16	7.7	75	71.8
J3545	14	8.7		95.3
J3555	12	9.8		128.2

For more details, please see the respective detailed datasheet(s)



SECTION - 2

MULTI-CONDUCTOR CABLES



SECTION - 2

MULTI-CONDUCTOR CABLES

Application and Construction

1. Application

All PVC and HFFR sheathed multi-conductor cables are suitable for Building Management Systems (BMS), Sound, Audio, Security, Safety, Control and Instrumentation.

2. Basic Construction of the cables

Wire = Conductor with or without insulation. When with insulation sometimes also indicated as core.

Conductor: flexible = twisted bare or tinned copper strands, ranging from 12 to 22AWG.

Conductor (AWG)	Configuration (n x AWG)	Configuration (n x mm)	DC Resistance (Ohm/km)
22	7 x 30	7 x 0.25	≤ 57.4
20	7 x 28	7 x 0.32	≤ 35.75
18	7 x 26	7 x 0.40	≤ 22.7
16	19 x 29	19 x 0.28	≤ 15.47
14	19 x 27	19 x 0.36	≤ 9.36
12	19 x 25	19 x 0.45	≤ 5.61

n = number of wires in strand

Insulation: Polypropylene (PP) for PVC (Polyvinyl Chloride) sheathed cables and Halogen-Free (HFFR) for HFFR sheathed cables. Both insulations are in accordance with BS EN 50290-2. Good strippability and coloured insulation. The colours are readily identifiable and are not interchangeable.

Colour scheme of wires with 12 or 14AWG conductors:

black-white-red-green-brown-blue-orange-yellow-purple-grey-pink-tan.

Colour scheme of wires with ≥ 16AWG conductors:

black-red-white-green-brown-blue-orange-yellow-purple-grey-pink-tan.

Cable core: two or more wires, twisted. Good twisting (lay-length < 30 – 40D) is necessary to ensure flexibility and avoid breaking conductors.

Drain wire (only in combination with a screen): stranded tinned copper wires. In order to avoid corrosion, it is recommended that drain wires are tinned.

Screen (if applicable): Helically applied (= as a spiral) Aluminium/Polyester (Alpet) foil. For the flexibility of a cable a helically applied foil is preferred as longitudinally applied foil is more difficult to bend.

Sheath: grey PVC or purple HFFR or black UV-resistant HFFR, all in accordance with BS EN 50290-2.

Cable Configuration	Cables with PVC sheath	Halogen-Free cables
Insulation	PP acc. to BS EN 50290-2	HFFR acc. to BS EN 50290-2
Sheath	HFFR acc. to BS EN 50290-2	
Retardancy	Flame Retardant	Fire Retardant
Retardant acc. to	IEC 60332-1 / UL1581	IEC 60332-3-24 / UL1685
Low Smoke emission acc. to	Not Applicable	IEC 61034
Halogen-Free acc. to	Not Applicable	IEC 60754
RoHS compliant	Yes	Yes

Operating temperature range: -25 to +75 °C

Rated Voltage: 300 Vrms

Non-standard cable constructions, colours, details and/or additional information are available on request.

For more details, please see the respective detailed datasheet(s).

Please note that technical specifications are subject to change without notice.

SECTION - 2.1

MULTI-CONDUCTOR CABLES



PVC sheathed cables with 22AWG to 12AWG conductors for Audio, Control, Instrumentation and Building Management Systems (BMS)

Product Description

1. Conductor Stranded Bare Copper	4. Drain Wire (only with screen) 24AWG (7 x 32) Tinned Copper	Standard Put Up Length 305 or 500 metres
2. Insulation Polypropylene (PP)	5. Screen (if applicable) Aluminium/Polyester > 100% Coverage	Standard References BS EN 50290-2 IEC 60332-1 RoHS directives
3. Cable core Two or more wires stranded	7. Sheath Material Grey PVC	

No. of wires	Conductor (AWG)	Screened			Unscreened		
		Sensor Part Number	Diameter (mm)	Weight (kg/km)	Sensor Part Number	Diameter (mm)	Weight (kg/km)
2	22	J2101	3.3	16.5	J2105	3.3	14.6
3		J2111	3.5	21.4	J2115	3.5	19.7
4		J2121	3.8	26.0	J2125	3.8	23.9
6		J2141	4.5	35.7	J2145	4.5	33.6
8		J2161	4.9	45.1	J2165	4.9	43
2	20	J2221	3.5	22.0	J2225	3.4	19.7
3		J2231	3.7	28.5	J2235	3.6	26.2
4		J2241	4.1	35.4	J2245	4.0	33.1
6		J2261	5.0	49.9	J2265	4.9	47.9
8		J2281	5.4	62.9	J2285	5.3	60.6
2	18	J2301	4.0	29.6	J2305	3.9	27.3
3		J2311	4.2	39.2	J2315	4.1	36.9
4		J2321	4.6	49.4	J2325	4.55	47.2
6		J2341	5.75	70.9	J2345	5.7	68.2
8		J2361	6.0	89.5	J2365	5.9	87
2	16	J2421	4.6	37.3	J2425	4.5	35
3		J2431	4.9	50.0	J2435	4.75	47.7
4		J2441	5.3	63.5	J2445	5.25	61.1
6		J2461	6.8	91.6	J2465	6.7	89
8		J2481	7.6	120.8	J2485	7.5	118.1
2	14	J2541	6.0	57.0	J2545	5.75	53.3
3		J2551	6.5	77.9	J2555	6.35	72.5
4		J2561	6.9	102.5	J2565	6.75	97.1
6		J2581	8.6	151.0	J2585	8.4	148.2
8		J2601	9.8	197.3	J2605	9.7	194.5
2	12	J2661	6.9	85.7	J2665	6.7	79.8
3		J2671	7.4	118.1	J2675	7.2	112.1
4		J2681	8.2	151.1	J2685	8.0	145.3
6		J2701	9.8	215.5	J2705	9.6	209.7
8		J2721	10.7	279.5	J2725	10.5	273.7

For more details, please see the respective detailed datasheet(s)

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SECTION - 2.2

MULTI-CONDUCTOR CABLES

Halogen-Free (HFFR) cables with 22AWG to 12AWG conductors for Audio, Control, Instrumentation and Building Management Systems (BMS)

Product Description

1. Conductor Stranded Bare Copper	4.Screen (if applicable) Aluminium/Polyester > 100% Coverage	Standard Put Up Length 305 or 500 metres
2. Insulation HFFR	5. Ripcord	Standard References BS EN 50290-2 IEC 60332-3C IEC 61034 IEC 60754-1 & 2 RoHS directives
3. Pair (only with screen) 24AWG (7 x 32) Tinned Copper	6. Sheath Material Purple HFFR	

		Screened			Unscreened		
No. of wires	Conductor (AWG)	Sensor Part Number	Diameter (mm)	Weight (kg/km)	Sensor Part Number	Diameter (mm)	Weight (kg/km)
2	22	J2102	3.9	22.4	J2106	3.9	20.5
3		J2112	4.1	27.6	J2116	4.1	26
4		J2122	4.4	33.7	J2126	4.4	31.7
6		J2142	5.2	45.8	J2146	5.2	43.9
8		J2162	5.6	56.4	J2166	5.6	54.4
2	20	J2222	4.7	32.6	J2226	4.6	30.1
3		J2232	4.9	40.2	J2236	4.8	37.7
4		J2242	5.3	48.7	J2246	5.2	46.2
6		J2262	6.2	66.2	J2266	6.1	63.7
8		J2282	6.7	81.9	J2286	6.6	79.4
2	18	J2302	5.1	41	J2306	5	38.5
3		J2312	5.4	52.3	J2316	5.3	49.8
4		J2322	5.8	64.1	J2326	5.7	61.6
6		J2342	6.8	88.6	J2346	6.7	86.1
8		J2362	7.3	110.8	J2366	7.2	108.2
2	16	J2422	5.4	49.3	J2426	5.4	46.8
3		J2432	5.7	63.8	J2436	5.7	61.3
4		J2442	6.2	79.3	J2446	6.2	78.2
6		J2462	7.3	108.2	J2466	7.3	107
8		J2482	7.9	137	J2486	7.9	135.9
2	14	J2542	6.5	67.7	J2546	6.4	65.2
3		J2552	6.9	92.8	J2556	6.8	89.1
4		J2562	7.5	115.4	J2566	7.4	112.9
6		J2582	8.9	163.7	J2586	8.8	162.8
8		J2602	9.6	210.8	J2606	9.5	208.3
2	12	J2662	7.7	102.2	J2666	7.5	97
3		J2672	8.1	135	J2676	7.9	129.7
4		J2682	8.9	170.9	J2686	8.7	165.7
6		J2702	10.6	243.3	J2706	10.4	237.1
8		J2722	11.6	314.6	J2726	11.4	306.2

For more details, please see the respective detailed datasheet(s)



SECTION - 3

FIRE DETECTION AND ALARM SYSTEM CABLES



SECTION - 3

FIRE DETECTION AND ALARM SYSTEM CABLES

Bare Copper 18 to 12AWG, one pair, PVC insulation and Sheath, Screened and Unscreened

©UL Certification: type FPLR rated 105°C - ©UL listed under E339938

Application

Fire Detection and Alarm Systems

Fire Retardancy: UL 1666

Product Description

1. Conductor Solid Bare Copper	4. Tinned Copper Drain Wire (only under screen) 22AWG (7 x 30)	Standard Put Up Length 305 metres
2. Insulation PVC acc. to UL444 Black and Red	5. Screen (if applicable) Aluminium/Polyester > 100% Coverage	Standard References UL1424 UL444 UL1666 RoHS directives
3. Pair Two wires twisted	6. Sheath Material Red PVC acc. to UL444	

Sensor Part Number	No. of pairs	Conductor (AWG)	Screen	Overall Diameter (mm)	Max. DC resistance conductor (Ω /km)	Capacitance (pF/m)	Weight (kg/km)
J6001	1	18	Yes	5.9	22.7	160	19.2
J6002	1	18	No	5.8	22.7	60	16
J6003	1	16	Yes	6.1	15.47	189	28.5
J6004	1	16	No	6.0	15.47	71	25.0
J6005	1	14	Yes	7.8	9.36	160	43.0
J6006	1	14	No	7.7	9.36	69	40.0
J6007	1	12	Yes	8.7	5.61	216	66.0
J6008	1	12	No	8.6	5.61	65	63.0

Operating temperature range: -40 to +105 °C

Rated Voltage: 300 Vrms

Non-standard cable constructions, colours, details and/or additional information are available on request.

For more details, please see the respective detailed datasheet(s).

Please note that technical specifications are subject to change without notice.



SECTION - 4

FIRE RESISTANT CABLES



SECTION - 4

FIRE RESISTANT CABLES

Bare and Flexible Copper Conductors 0.75 to 4.0 mm², Silicon insulation and Halogen-free Sheath, Screened and Unscreened

1. Application

All Fire Resistant cables are suitable for Security, Safety, Control and Instrumentation with special requirements for circuit integrity in case of a fire.

2. Fire Resistance conforming with BS6387 CWZ:

Fire Resistant to BS6386, Cat. C: exposed to fire at 950°C for 3 hours

Fire Resistant to BS6387, Cat. W: exposed to fire at 650°C for 15 minutes, then exposed to fire at 650°C with water for 15 minutes

Fire Resistant to BS6387, Cat. Z: exposed to fire at 650°C for 15 minutes, then exposed to fire at 650°C with mechanical shock for 15 minutes

3. Fire Retardancy conforming with IEC 60332-3-24

4. Basic Construction of the cables

Wire = Conductor with Insulation

Conductor: solid or flexible (= stranded) bare copper wires, ranging from 0.75 to 4 mm².

For more details, please see the respective detailed datasheet(s)

Cross Section (mm ²)	Construction (n x mm)	Diameter (mm)	DC Conductor Resistance (Ohm/km)	Recommended Current (Amp)
0.75	1 x 1.0	1.0	≤ 24.5	≤ 12
1.0	1 x 1.13	1.13	≤ 18.1	≤ 18
1.5	1 x 1.4	1.4	≤ 12.1	≤ 21
2.5	1 x 1.8	1.8	≤ 7.41	≤ 30
4.0	7 x 0.85	2.55	≤ 4.61	≤ 40

n = number of wires in strand

Insulation: Silicon Rubber blends acc. to BS 7655. Good strippable and coloured insulation. The colours are not interchangeable. Colour scheme: blue – brown.

Cable core: two or more wires, twisted.

Good twisting is necessary to ensure flexibility and avoid breaking conductors.

Drain wire (only in combination with a screen): solid bare copper.

Screen (if applicable): Helically applied (= as a spiral) Aluminium/Polyester (Alpet) foil. For the flexibility of a cable a helically applied foil is preferred as longitudinally applied foil is more difficult to bend.

Sheath: red HFFR in accordance with BS EN 50290-2

Operating temperature range: -40 to +105 °C

Rated Voltage: 300 Vrms

Non-standard cable constructions, colours, details and/or additional information are available on request.

For more details, please see the respective detailed datasheet(s).

Please note that technical specifications are subject to change without notice.

SECTION - 4

FIRE RESISTANT CABLES

Product Description

1. Conductor Solid or Flexible Bare Copper	4. BC Drain Wire Bare Copper (only under screen)	Standard Put Up Length 305 or 500 metres
2. Insulation Silicon Rubber blend	5. Screen (if applicable) Aluminium/Polyester > 100% Coverage	Standard References BS 6387 CWZ BS 7655 IEC 60332-3C IEC 60754-1 & 2 RoHS directives
3. Cable core Two or three wires Twisted	7. Sheath Material Red HFFR	

Selsor Part Number	No. of wires	Conductor (mm2)	Screen	Drain Wire (mm2)	Overall Diameter (mm)	Max. DC Conductor Resistance (Ω/km)	Weight (kg/km)
J6101	2	0.75	Yes	0.75	7.5	24.5	67.0
J6102			No	-	7.4		61.7
J6103	3		Yes	0.75	7.9		83
J6104			No	-	7.8		75
J6111	2	1.0	Yes	1.0		18.1	73.4
J6112			No	-	7.7		65.5
J6113	3		Yes	1.0	8.1		93
J6114			No	-	8.0		83
J6121	2	1.5	Yes	1.5	12.1	98.1	
J6122			No	-		8.6	87.6
J6123	3		Yes	1.5		8.95	123
J6124			No	-		8.85	108
J6131	2	2.5	Yes	2.5	7.41	134.3	
J6132			No	-		9.8	119.4
J6133	3		Yes	2.5		10.3	174
J6134			No	-		10.2	151
J6141	2	4.0	Yes	4.0	4.61	197.1	
J6142			No	-		11.9	172.6
J6143	3		Yes	4.0		12.95	270
J6144			No	-		12.85	234

For more details, please see the respective detailed datasheet(s)



SECTION - 5

COAX CABLES



SECTION - 5

COAX CABLES

Application and Construction of Coax Cables for 75 Ohm Video Systems

Applications.

CCTV: Closed Circuit Television uses video cameras to transmit a signal to a specific place, on a limited set of monitors

SMATV: Satellite Master Antenna Television used to deliver signals to multiple dwelling units (e.g., apartment buildings and trailer parks).

CATV: Central Antenna Television = Cable television is a system of providing television to consumers via radio frequency signals transmitted to televisions. Nowadays also used for internet and telephone.

HDTV: High-definition television refers to video having resolution substantially higher than traditional television systems.

Telecom and networking: a number of special cable constructions.

Basic Cable Design.

Coaxial cables are designed to carry radio frequency signals of a much higher frequency than the 50 or 60 Hz used in low voltage cables. This requires special construction to prevent power losses. If an ordinary wire is used to carry high frequency signals, the wire acts as an antenna, and the high frequency signals radiate off the wire as radio waves, causing power losses. To prevent this, in coaxial cable one of the conductors is formed into a tube and encloses the other conductor. This confines the radio waves from the central conductor to the space inside the tube. To prevent the outer conductor, or shield, from radiating, it is connected to electrical ground, keeping it at a constant potential.

The dimensions and spacing of the conductors must be uniform throughout the length of the cable. Any abrupt change in the spacing of the two conductors along the cable tends to reflect radio frequency power back toward the source.

This acts as a bottleneck, reducing the amount of power reaching the destination end of the cable.

Choosing the correct 75 ohm coax cable.

Most coaxial cables for video applications have a nominal impedance of 75 ohms. Their differing electrical and physical characteristics make it important to select the correct type of cable to suit the application.

Analogue TV	RG59	Acceptable performance on cable runs < 225 metres
	RG6	Gives superior performance on cable runs < 225 metres. Used for cable runs > 225 metres but < 545 metres.
	RG11	For cable runs greater than 545 metres.
CCTV	RG59	Acceptable performance on cable runs < 225 metres
	RG6	Gives for superior performance on cable runs < 225 metres. Used for cable runs > 225 metres but < 545 metres.
	RG11	For cable runs greater than 545 metres.

This table is reference only.

Summary of Selsor Part Numbers.

Application	Tested	Speciality	RG-59	RG-6	RG-11
CCTV – PVC sheath	1000 MHz	Solid conductor	J4013	J4113	J4213
CCTV – HFFR sheath	1000 MHz	Solid conductor	J4014	J4114	J4214
CCTV	1000 MHz	Flexible conductor	J4015	J4115	J4215
CATV / SMATV	3000 MHz	Dual screen	J4011	J4111	J4211
CATV / SMATV	3000 MHz	Quad screen	J4012	J4112	J4212
HDTV – PVC sheath	4500 MHz	Dual Screen 95%	J4016	J4116	J4216
HDTV – HFFR sheath	4500 MHz	Dual Screen 95%	J4017	J4117	J4217

Operating temperature range: - 25 to +75 °C

Rated Voltage: 300 Vrms

Non-standard cable constructions, colours, details and/or additional information are available on request.

For more details, please see the respective detailed datasheet(s).

Please note that technical specifications are subject to change without notice.

SECTION - 5.1

75 OHM COAX CABLES

CCTV and Video Applications, sweep tested 1 to 1000 MHz

Product Description

1. Conductor Solid or Flexible Bare Copper	4. Sheath Material Polyvinyl Chloride (PVC) or Halogen-Free (HFFR)	Standard References IEC 61196 BS EN 50117 BS EN 50290-2 IEC 60332-1 (PVC sheath) or IEC 60332-3-24 (HFFR cable) IEC 61034 (only HFFR cable) IEC 60754-1 & 2 (HFFR cable) RoHS directives
2. Dielectric Foamed Polyethylene (FPE)	5. Standard Put Up Length 305 or 500 metres	
3. Braid Bare Copper		

Physical Characteristics

Selsor Part Number	RG-Type	Conductor (mm)	Diameter over Dielectric (mm)	Coverage braid (%)	Sheath Material	Overall Diameter (mm)	Weight (kg/km)	
J4013	RG-59	0.81	3.71	95	PVC	6.0	47.12	
J4014		19 x 0.18TC.			HFFR		48.5	
J4015					PVC		47.12	
J4113	RG-6	1.02	4.60		90	HFFR	6.8	55.5
J4114		19 x 0.22				PVC		58.2
J4115						HFFR		54.66
J4213	RG-11	1.63	7.11	90		PVC	10.0	115.9
J4214		190 x 0.34				HFFR		120
J4215						PVC		115.9

Electrical and Physical Characteristics (at 20°C)

Selsor Part Number	RG-Type	Impedance (Ω)	Max. DC Conductor Resistance (Ω/km)	Max. DC Screen Resistance (Ω/km)	Nominal Capacitance (pF/m)	Min. Return Loss 1 to 1000 MHz (dB)
J4013	RG-59	75 ± 3	33.5	10.1	53.5	20
J4014						
J4015			40			
J4113	RG-6		21.5	10.8	52.8	
J4114			30			
J4115						
J4213	RG-11		8.8	6.5	52.8	
J4214						
J4215						

Nominal Attenuation in dB/100m

MHz	5	10	50	100	200	300	400	450	550	700	750	870	1000
RG-59	1.9	2.95	6.23	8.53	11.81	15.3	16.41	18.92	21.03	22.97	24.8	26.84	27.89
RG-6	1.78	2.36	4.92	6.56	9.51	12.43	13.78	15.14	17.15	18.37	19.73	20.26	21.96
RG-11	0.99	1.51	2.96	4.27	6.23	8.27	9.51	10.31	11.51	13.45	13.95	14.87	17.06

For more details, please see the respective detailed datasheet(s)

SECTION - 5.2

75 OHM COAX CABLES - SWEPT TO 3 GHz

SMATV - CATV and Video applications, sweep tested 1 to 3000 MHz

Product Description

1. Conductor Solid Copper Covered Steel (CCS)	4. Braid 1 Aluminium	Standard Put Up Length 305 or 500 metres
2. Dielectric Foamed Polyethylene (FPE)	5. Braid 2 (Quad scrn only) Aluminium/Polyester foil 100% coverage	Standard References IEC 61196 BS EN 50117 BS EN 50290-2 IEC 60332-1 RoHS directives
3. Screen 1 Bonded Aluminium/ Polyester foil 100% coverage	6. Screen 2 (Quad scrn only) Aluminium	
	7. Braid 2 (Quad scrn only) Polyvinyl Chloride (PVC)	

Physical Characteristics

Sensor Part Number	RG-Type	Conductor (mm)	Diameter over Dielectric (mm)	Type of Screen	Coverage braid (%)	Sheath Material	Overall Diameter (mm)	Weight (kg/km)
J4011	RG-59	0.81	3.71	Dual	54	PVC	6.0	34.42
J4012				Quard	54 + 46		6.73	39.4
J4111	RG-6	1.02	4.60	Dual	60		6.8	41.32
J4112				Quard	60 + 40		7.52	49.5
J4211	RG-11	1.63	7.11	Dual	61		10.0	86.6
J4212				Quard	60 + 40		10.3	90.6

Dual Screen = Screen 1 + Braid 1

Quad Screen = Screen 1 + Braid 1 + Screen 2 + Braid 2

Electrical and Physical Characteristics (at 20°C)

Selsor Part Number	RG-Type	Impedance (Ω)	Max. DC Conductor Resistance (Ω/km)	Max. DC Screen Resistance (Ω/km)	Nominal Capacitance (pF/m)	Min. Return Loss (dB)			
						< 1000 MHz	< 2000 MHz	< 3000 MHz	
J4011	RG-59	75 ± 3	146.5	52	53	20	18	16	
J4012				26			20	20	
J4111	RG-6		92.2	30					
J4112				17					
J4211	RG-11		36.5	25					
J4212				12					

Nominal Attenuation in dB/100m

MHz	5	10	50	100	200	400	550	870	1250	1750	2150	2500	3000
RG-59	2.92	3.45	5.40	8.21	12.56	16.01	19.36	24.74	30.62	36.71	40.82	44.72	48.64
RG-6	2.2	2.48	5.15	6.6	9.56	13.12	15.45	19.69	24.25	29.26	32.88	35.88	39.83
RG-11	1.25	2.03	3.75	5.01	6.85	7.05	9.65	12.6	16.66	20.28	22.93	25.12	28.08

For more details, please see the respective detailed datasheet(s)



HDTV and HD Video applications, sweep tested 1 to 4500 MHz

Product Description

1. Conductor Solid Bare Copper	4. Braid Tinned Copper	Standard References IEC 61196 BS EN 50117 BS EN 50290-2 IEC 60332-1(PVC sheath) or IEC 60332-3C (HFFR cable) IEC 61034 (HFFR cable) IEC 60754-1 & 2 (HFFR cable) RoHS directives
2. Dielectric Foamed Polyethylene	5. Sheath Material Polyvinyl Chloride (PVC) or Halogen-free (HFFR) Colour: Orange	
3. Screen Bonded Aluminium/ Polyester foil 100% coverage	Standard Put Up Length 305 or 500 metres	

Physical Characteristics

Selsor Part Number	RG-Type	Conductor (mm)	Diameter over Dielectric (mm)	Coverage braid (%)	Sheath Material	Overall Diameter (mm)	Weight (kg/km)
J4016	RG-59	0.81	3.71	95	PVC	6.0	46.72
J4017					HFFR		48.2
J4116	RG-6	1.02	4.60		PVC	6.8	56.2
J4117					HFFR		59
J4216	RG-11	1.63	7.11		PVC	10.0	114.5
J4217					HFFR		117

Electrical and Physical Characteristics (at 20°C)

Selsor Part Number	RG-Type	Impedance (Ω)	Max. DC Conductor Resistance (Ω/km)	Max. DC Screen Resistance (Ω/km)	Nominal Capacitance (pF/m)	Min. Return Loss (dB)			
						< 1000 MHz	< 2000 MHz	< 3000 MHz	< 4500 MHz
J4016	RG-59	75 ± 3	33.5	12.5	53	23	22	16	15
J4017									
J4116	RG-6								
J4117									
J4216	RG-11								
J4217									

Nominal Attenuation in dB/100m

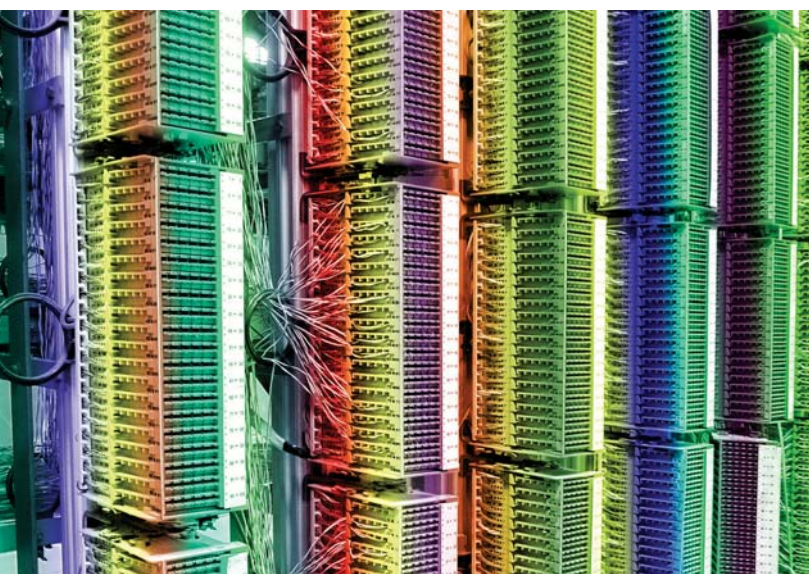
MHz	1	5	10	50	100	300	550	750	1000	2000	3000	4500
RG-59	0.98	2.07	2.95	6.23	7.55	13.68	18.83	22.23	25.96	38.24	46.13	56.50
RG-6	0.79	1.71	2.33	4.57	6.40	11.96	15.76	18.05	21.36	31.44	39.76	50.46
RG-11	0.53	1.12	1.51	2.96	4.20	7.49	10.41	12.38	14.57	21.84	27.93	35.98

For more details, please see the respective detailed datasheet(s)



SECTION - 6

CATEGORY LAN CABLES



SECTION - 6

CATEGORY LAN CABLES

Application and Construction of Category Cables for Local Area Networks and Structured Wiring System

1. Application

Horizontal or Building Wiring for one of the following categories of twisted pair cabling systems

Category	Max. data rate	Usual application	Standard(s)		
			TIA/EIA	ISO/IEC	EN
Cat 1	1 Mbps	Analogue voice	De facto, no standard issued		
Cat 2	4 Mbps	Token ring of IBM			
Cat 3	16 Mbps	Voice, 10MbE(Ethernet)	TIA/EIA 568-B		
Cat 4	20 Mbps	16 Mbps Token Ring	Was only a standard briefly		
Cat 5	100 MHz	10/100/1000 MbE	Replaced by 5e		
Cat 5e	100 MHz	155 Mbps ATM, 4/16 Mbps Token Ring	TIA/EIA 568-C-2	ISO/IEC 11806, 2nd edition IEC 61156	EN 50174-1 EN 50288
Cat 6	250 MHz	as Cat5e plus 10Gb Ethernet over ≤ 55 m.			
Cat 6a	500 MHz	As Cat 6 plus 10Gb Ethernet over 100 m.			
Cat 7	600 MHz	As Cat 6a plus supporting 100GbE	Cat 7a is not recognised in TIA/EIA-569	ISO/IEC 11801: 2002, category 7 / class F	
Cat 7a	100 MHz	CATV (862 MHz), 40GBASE-T over 50 m. 100GbE over 15 m.		ISO/IEC 11801, amendment 1 (2008) and amendment 2 (2010).	

2. Basic Cable Construction of the standard cables (not being patch cables)

	Cat 3	Cat 5e		Cat 6		Cat 6a		Cat 7	Cat 7a
Type	UTP	UTP	FTP	UTP	FTP	U-UTP	U-FTP	S-FTP	S-FTP
Conductor	Solid BC	Solid BC		Solid BC		Solid BC		Solid BC	Solid BC
Insulation	Polyolefin	PE		PE		Skin-foam-skin PE			
Cable core	6 to 200 pairs	4 pairs				4 Individually screened pairs			
Core wrapping	yes	no							
Drain wire	no	no	yes	no	yes	no	central drain wire		
Overall screen	no	no	foil	no	foil			Braiding	
Sheath	PVC	PVC or HFFR						HFFR	

3. Basic Cable Construction of the standard patch cables

	Cat 5e		Cat 6	
Type	UTP	FTP	UTP	FTP
Conductor	Flexible BC			
Insulation	PE		PE	
Cable core	4 pairs		4 pairs	
Core wrapping	no	yes	no	yes
Drain wire	no	yes	no	yes
Overall screen	no	foil	no	foil
Rip cord	yes			
Sheath	PVC or HFFR			

UTP = cable with unshielded twisted pairs

FTP = cable with foil screened twisted pairs

U-UTP = cable with no collective screen and no individually screened twisted pairs

U-FTP = cables with no collective screen and individually foil screened twisted pairs

S-FTP = cables with a collective braided screen and individually foil screened twisted pairs

All category cables have CE marking.
Cat 5e and Cat 6 cables are also available with UL listing.

SECTION - 6

CATEGORY LAN CABLES

4. Basic Construction of the cables

Wire = Conductor with Insulation

Insulation: With good strippability, suitable for insulation displacement and coloured.

The colours are not interchangeable.

Pair = two twisted – colour coded – wires.

General Characteristics

Product type		Cat 3	Cat 5e	Cat 6	Cat 6a	Cat 7
Max. DCR conductor	$\Omega/100m$	9.6	9.38	9.38	7.7	7.7
Impedance	Ω	100	100	100	100	100

5. Standard Colour scheme of Cat 5e – 6 – 6a and 7:

Pair number	Pair 1	Pair 2	Pair 3	Pair 4
a-wire	Blue	Orange	Green	Brown
b-wire	White with blue stripe	White with orange stripe	White with green stripe	White with brown stripe

Individually screened pair (if applicable): one pair wrapped with an Aluminium/Polyester foil.

Braiding (if applicable): tinned copper wires.

Ripcord: to ease removal of the sheath.

Sheath: PVC or Halogen-Free (HFFR).

Operating temperature range: -20 to +80 °C

Rated Voltage: 300 Vrms.

Cable Range of Selsor Cable Solutions:

Category	Cat 5e	Cat 5e	Cat 5e	Cat 5e
Type	UTP	UTP	FTP	FTP
Sheath	PVC	HFFR	PVC	HFFR
Selsor Part Number	J5501	J5502	J5504	J5505

Category	Cat 6	Cat 6	Cat 6	Cat 6
Type	UTP	UTP	FTP	FTP
Sheath	PVC	HFFR	PVC	HFFR
Selsor Part Number	J5601	J5602	J5604	J5605

Category	Cat 6a	Cat 6a	Cat 7
Type	U-UTP	U-FTP	S-FTP
Sheath	PVC	HFFR	HFFR
Selsor Part Number	J5661	J5668	J5702

Category	2 pairs	6 pairs	12 pairs	25 pairs	50 pairs	100 pairs	150 pairs	200 pairs
Cat3 - PVC	J5301	J5306	J5312	J5325	J5350	J5360	J5370	J5380

Non-standard cable constructions, colours, details and/or additional information are available on request.

For more details, please see the respective detailed datasheet(s).

Please note that technical specifications are subject to change without notice.



SECTION - 6.1

CATEGORY 5e AND 6 LAN CABLES

Cat 5e and 6 UTP and FTP cables

Physical Characteristics of Cat 5e Cables

Sensor Part Number	Type	Sheath	Overall Diameter (mm)	Weight (kg/km)
J5501	UTP	PVC	5.0	30
J5502	UTP	HFFR		29
J5504	FTP	PVC	6.3	42
J5505	FTP	HFFR		

Main Transmission Characteristics of Cat 5e cables

Frequency (MHz)	Min. Return Loss (dB/100m)	Maximum Attenuation (dB/100m)	Minimum NEXT (dB)	Maximum Time Delay (ns/100m)	Minimum PSNEXT (dB)	Minimum ELFEXT (dB)	Minimum PSELFEXT (dB)
1	20.0	2.0	65.3	570.00	62.3	64.0	61.0
4	23.0	4.1	56.3	552.00	53.3	52.0	49.0
8	24.5	5.8	51.8	546.73	84.8	45.9	42.9
10	25.0	6.5	50.3	545.38	47.3	44.0	41.0
16	25.0	8.2	47.2	543.00	44.4	39.9	36.9
20	25.0	9.3	45.8	542.05	42.5	38.0	35.0
25	24.3	10.4	44.3	541.20	41.3	35.8	33.0
31.25	23.6	11.7	42.9	540.44	39.9	34.1	31.1
62.5	21.5	17.0	38.4	538.55	35.4	28.1	25.1
100	20.1	22.0	35.3	537.60	32.3	24.0	21.0

Physical Characteristics of Cat 6 Cables

Sensor Part Number	Type	Sheath	Overall Diameter (mm)	Weight (kg/km)
J5601	UTP	PVC	6.2	42
J5602	UTP	HFFR	6.2	42
J5604	FTP	PVC	7.4	56
J5605	FTP	HFFR	7.4	54.1

Main Transmission Characteristics of Cat 6 cables

Frequency (MHz)	Return Loss (dB/100m)	Maximum Attenuation (dB/100m)	Minimum NEXT (dB)	Maximum Time Delay (ns/100m)	Minimum PSNEXT (dB)	Minimum ELFEXT (dB)	Minimum PSELFEXT (dB)
1	20.0	2.0	74.3	570.00	72.3	67.8	64.8
4	23.0	3.8	65.3	552.00	63.3	55.8	52.8
8	24.5	5.3	60.8	546.73	58.8	49.7	46.7
10	25.0	6.0	59.3	545.38	57.3	47.8	44.8
16	25.0	7.6	56.2	543.00	54.2	43.7	40.7
20	25.0	8.5	54.8	542.05	52.8	41.8	38.8
25	24.3	9.5	53.3	541.20	51.3	39.8	36.8
31.25	23.6	10.7	51.9	540.44	49.9	37.9	34.9
62.5	21.5	15.4	47.4	538.55	45.4	31.9	28.9
100	20.1	19.8	44.3	537.80	42.3	27.8	24.8
200	18.0	29.0	39.8	536.54	37.8	21.8	18.8
250	17.3	32.8	38.3	536.27	36.3	19.8	16.8

For more details, please see the respective detailed datasheet(s)

SECTION - 6.2

CATEGORY 6a, 7 AND 7a CABLES

Cat 6a U-FTP and Cat 7/7a S-FTP cables



Physical Characteristics of Cat 6a Cables

Selsor Part Number	Type	Sheath	Overall Diameter (mm)	Weight (kg/km)
J5661	U-UTP	PVC	8.3	61.2
J5668	U-FTP	HFFR	7.2	49.9

Main Transmission Characteristics of Cat 6a U-FTP cables

Frequency (MHz)	Return Loss (dB/100m)	Attenuation (dB/100m)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB)	Impedance (Ohm)
1	20.0	3.7	74.3	72.3	55.9	100 ± 15
10	25.0	5.8	59.3	57.3	47.8	
31.25	23.6	10.4	51.9	49.9	37.9	
100	20.1	19.0	44.3	42.3	27.8	
300	17.3	34.2	37.1	35.1	18.1	
500	17.3	45.2	33.8	31.8	14.0	

Physical Characteristics of Cat 7 Cables

Selsor Part Number	Type	Sheath	Overall Diameter (mm)	Weight (kg/km)
J5702	S-FTP	HFFR	7.8	67.5

Main Transmission Characteristics of Cat 7 S-FTP cables

Frequency (MHz)	Return Loss (dB/100m)	Attenuation (dB/100m)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB)	Impedance (Ohm)	
1	20.0	2.5	78	75	78.0	100 ± 15	
10	25.0	6.5			56.5		
20		8.9					
62.5	21.5	14.9	75.5	72.5	56.8	100 ± 25	
300	14.5	35.2	65.2	62.2	25.0		
600	12.5	50.1	60.7	57.7	16.0		

Main Transmission Characteristics of Cat 7a S-FTP cables

Frequency (MHz)	Return Loss (dB/100m)	Attenuation (dB/100m)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB)	Impedance (Ohm)
4	23.0	4.0	80.0	77.0	78.0	100 ± 15
10	25.0	5.8			74.3	
20		8.2			71.0	
62.5	21.5	14.6			60.6	
300	17.3	32.7	71.2	68.2	38.6	100 ± 25
600		47.1	66.7	63.7	19.6	
900		54.9	64.9	61.9	9.93	
1000	16.0	61.9	63.4	60.4	1.47	

For more details, please see the respective detailed datasheet(s)



GENERAL TECHNICAL INFORMATION

American Wire Gauge (AWG) Conductors (of bare or tinned copper)

Flexible Conductors	AWG	24	22	20	18	16	14	12
Number of strands (wires)	-	7	7	7	7	19	19	19
Gauge single strand	AWG	32	30	28	26	29	27	25
Diameter single strand	mm	0.2	0.25	0.32	0.40	0.28	0.36	0.45

Solid Conductors	AWG	24	22	20	18	16	14	12
Diameter	mm	0.51	0.64	0.81	1.02	1.29	1.63	2.05

All Conductors	AWG	24	22	20	18	16	14	12
Cross section	mm ²	0.20	0.32	0.52	0.82	1.37	2.08	3.31
Max. DC resistance	Ω/km	88	57.4	32.16	22.7	15.47	9.36	5.61
Max. Recommended current 2 or 3 core cable	Amps	2.7	2.8	3.75	5	6.25	8	12
Max. Recommended current 4 or 5 core cable	Amps	2.2	2.25	3	4	5	6.4	9.6
Max. Recommended current 6 to 19 core cable	Amps	1.9	1.95	2.6	3.5	4.35	5.6	8.4
Max. Recommended current 20 to 36 core cable	Amps	1.35	1.4	1.65	2.5	3.12	4	6

Metric Conductors (of bare copper according to IEC 60228)

Conductors	mm ²	0.75	1.0	1.5	2.5	4.0
Max. Recommended current 2 or 3 core cable	Amps	≤ 5	≤ 5.70	≤ 6.25	≤ 8	≤ 12

Flexible Conductors, class 2	mm ²	0.055	0.22	0.50	0.75	1.0	1.5	2.5	4.0	6.0
Number of strands	-	7	7	7	7	7	7	7	7	7
Diameter single strand	mm	0.1	0.2	-	-	-	0.53	-	-	-
Max. DC resistance	Ω/km	345	86.2	36.0	24.5	18.1	12.1	7.41	4.61	3.08

Flexible Conductors, class 5	mm ²	0.055	0.22	0.50	0.75	1.0	1.5	2.5	4.0	6.0
Number of strands	-	-	-	16	24	32	30	50	56	84
Diameter single strand	mm	-	-	0.2	0.2	0.2	0.24	0.24	0.29	0.29
Max. DC resistance	Ω/km	-	-	39.0	26.0	19.5	13.3	7.98	4.95	3.30
Max. Recommended current 2 or 3 core cable	Amps	2.7	2.8	3.75	5	6.25	8	-	-	12
Max. Recommended current 4 or 5 core cable	Amps	2.2	2.25	3	4	5	6.4	-	-	9.6
Max. Recommended current 6 to 19 core cable	Amps	1.9	1.95	2.6	3.5	4.35	5.6	-	-	8.4
Max. Recommended current 20 to 36 core cable	Amps	1.35	1.4	1.65	2.5	3.12	4	-	-	6

All conductors in Selsor cables are in accordance with above mentioned tables, unless otherwise stated in the respective section and/or datasheet.

GENERAL TECHNICAL INFORMATION

Pairs: all pairs consist of two twisted wires with a lay-length < 40 D.

Cable Cores: all cable cores consist of stranded wires or pairs

Foil screens for multi-core and multi-pair cables mostly consist of an aluminium foil laminated to polyester, broadly known as Alpet. These foils are helically (as a spiral) applied with sufficient overlap to guarantee 115% or more coverage. For the flexibility of a cable a helically applied foil is to be preferred as a longitudinally applied foil is more difficult to bend.

A drain wire, contacting the aluminium side of the foil, is used for the termination of the screen and also to ground electrostatic discharges. In the case of coaxial cable, where the screen may be a foil, this foil will be applied longitudinally and will also be bonded to the dielectric.

Braided screens consist of 16 or 24 groups of strands. One set of 8 or 12 strands is woven clockwise and the other set of 8 or 12 strands anti clockwise. Strands can consist of tinned or bare copper or aluminium wires. Braided screens provide good screening efficiency and flexibility. Higher coverage provides better screening.

Sheaths: grey PVC, purple HFFR or black for PE, all in accordance with BS EN 50290-2.

Sheath	PVC	PVC	HFFR	PE
Physical properties	BS EN 50290-2-22	UL444	BS EN 50290-2-27	BS EN 50290-2-24
Retardancy	Flame	Fire	Fire	Not applicable
Retardancy acc. to	IEC 60332-1	UL1666	IEC 60332-3C	Not applicable
Low Smoke	Not applicable	Not applicable	IEC 61034	Not applicable
Halogen-free (non acid, non toxic)	Not applicable	Not applicable	IEC 60754	Not applicable
RoHS compliant	YES	YES	YES	YES
Installation **	INDOOR	INDOOR	INDOOR	OUTDOOR

** on request cables with a sheath for indoor and outdoor i.e. universal use are available

RoHS limits for hazardous substances

Substance	Max. Concentration
Lead (Pb)	0.03%
Mercury (Hg)	0.10%
Cadmium (Cd)	0.01%
Chromium 6	0.01%
PBB	0.1%
PBDE	0.1%

Unless marked otherwise, all Selsor cables do not contain restricted or hazardous substances and are compliant with the European Regulations or Directives for RoHS (Restriction of Hazardous Substances), REACH (Regulation Registration, Evaluation, Authorisation and Restriction of Chemical substances), WEEE (Waste Electrical and Electronic Equipment), ELV (End of Life Vehicles) and BFR (Brominated Flame Retardants).

Nominal Attenuation in dB/100m for RG Coaxial Cables

MHz	1	5	10	50	100	300	550	750	1000	2000	3000	4500
RG - 59	0.98	2.07	2.95	6.23	7.55	13.68	18.83	22.23	25.96	38.24	46.13	56.50
RG - 6	0.79	1.71	2.33	4.57	6.40	11.96	15.76	18.05	21.36	31.44	39.76	50.46
RG - 11	0.53	1.12	1.51	2.96	4.20	7.49	10.41	12.38	14.57	21.84	27.93	35.98

RS Protocol

	RS-232	RS-422	RS-485
Differential	no	yes	yes
Max. number of drivers Max. number of receivers	1 1	1 10	1 32
Modes of operation	full duplex	half duplex	half duplex
Network topology	point-to-point	multidrop	multidrop
Max. distance acc. to standard	15 m	1200 m	1200 m
Max. speed at 12 m. Max. speed at 1200 m.	20 kbs 1 kbs	10 Mbs 100 kbs	35 Mbs 100 kbs
Cables used	6 to 25 conductors. No impedance specified	mainly 24AWG conductors. Two pairs or more. 100 ohm	mainly 24AWG conductors. One pair or more. 120 ohm
Selsor main part numbers see	section 1.3	section 1.2	section 1.1

CONVERSIONS

Europe	USA
1 mm = 0.03937 inches	1 inch = 25,4 mm
1 m = 3.2808 feet (305 m = 1000 feet)	1 foot = 0.3048 m
1 m = 1.0936 feet	1 yard = 0.9144m
1 km = 0.6214 miles	1 mile = 1.6093 km
1 kg/km = 0.6719 lbs/1000 ft	1 lbs/1000 ft = 1.488 kg/km
1 ohm/km = 0.3048 ohm/1000 ft	1 ohm/1000 ft = 3.2808 ohm/km
1 N = 0.2248 lbs force	1 lbs force = 0.2248 N
-40 °C = -40 °F	-40 °F = -40 °C
-30 °C = -22 °F	-22 °F = -30 °C
0 °C = 32 °F	32 °F = 0 °C
60 °C = 90 °F	90 °F = -60 °C
75 °C = 167 °F	167 °F = -75 °C
90 °C = 194 °F	194 °F = -90 °C

Area Conversions

From	To	Multiply by	To	Multiply by	To	Multiply by
Circular mils	Square inches	0.0000007854	Square mils	0.7854	mm ²	0.0005067
Square inches	Circular mils	1,273.240	Square mils	1,000,000.00	mm ²	645.16
mm ²	Square inches	0.00155	Square mils	1550.01	Circular mils	1,973.53
Square feet	Square meters	0.0929				

Common Occurring Conversions

From	24	22	-	20	19/18	18	18/17	16	15/16	14	14/13	12	-	11
Cir. mils	404	640	987	1029	1481	1620	1974	2580	2961	4110	4935	6530	7896	8230
mm ²	0.205	0.324	0.5	0.521	0.75	0.821	1.0	1.371	1.5	2.082	2.5	3.309	4.0	4.170

Force, Mass and Weight Conversions

From	To	Multiply by	From	To	Multiply by
Pounds	Kilograms	0.4535	Kilograms	Pounds	2.205
Pound per 1000 ft	Kilogram per kilometre	1.488	Kilogram per kilometre	Pound per 1000 ft	0.6719
Pound per 1000 ft	Newton	4.4482	Newton	Pound-force	0.2248

GLOSSARY

Amp (A) = Ampere: The unit of electric current.

AC: Alternating current, e.g. 50 or 60 Hz AC power.

ACR: Attenuation Crosstalk Ratio. The difference between attenuation and crosstalk. Important characteristic in transmission to assure that the transmitted signal is stronger at the receiving end of the cable than are any interference signals imposed on that same pair by crosstalk from other pairs.

Alpet: aluminium foil covered with polyester.

Alu braid: braiding of woven aluminium wires

ANSI: American National Standards Institute

Attenuation: is the gradual loss in intensity of signals in electrical circuits. The unit of Attenuation is decibel (dB).

AWG: American wire gauge, is a standardized wire gauge system used since 1857 predominantly in the United States and Canada for the diameters of round, solid, nonferrous, electrically conducting wire.

Selsor: a leading manufacturer of communication cables.

B.C. = BC: Bare Copper, mostly referring to a conductor or braid.

Bending radius: the radius that a cable can be bend without any detrimental effects on transmission performance.

Braid or Braiding: is a structure or pattern formed by intertwining of commonly 16 strands of wires.

B. S.: British Standards are the standards produced by BSI Group which is incorporated under a Royal Charter (and which is formally designated as the National Standards Body (NSB) for the UK).

Cable core: two or more wires or pairs stranded. Good twisting is necessary otherwise the cable can hardly be bend and will lose performance after a few bends.

Category cables: high performance twisted pair cables for local area networking = structured wiring or cabling. Cables range from Cat 3 to Cat 7a. The higher the number, the greater the bandwidth and the better the performance.

Cat 3 Cable supports 10 Base-T Standard for bandwidths up to 10 Mbps over a maximum distance of 100 metres. They can support frequencies in the range up to 10 MHz.

Cat 5/5e Cable supports 100 Base-T Standard for bandwidths up to 100 Mbps over a maximum distance of 100 metres. They can support frequencies in the range up to 100 MHz. Cat 5e cables can support 1000 Base-T as well.

Cat 6 Cable supports 1000 Base-T Standard for bandwidths up to 1000 Mbps over a maximum distance of 100 metres. Cat 6 standard can support frequencies in the range up to 250 MHz. They also support 10GE (10Gig Ethernet) bandwidth over limited distances.

Cat 6A Cable supports 10G Base-T standard for bandwidths up to 10Gbps over a maximum distance of 100 metres. Cat 6A standard can support frequencies in the range up to 500 MHz.

Cat 7 Cable supports 10G Base-T standard for bandwidths up to 10 Gbps over a maximum distance of 100 metres. Cat 7 standard can support frequencies in the range up to 600 MHz. It offers better performance and improved cross talk suppression over the Cat 6A cables.

Cat 7A Cable supports 10G Base-T standard for bandwidths up to 10 Gbps over a maximum distance of 100 metres. In addition to this, they can also support 40 Gbps bandwidth for around 50 metres and 100 Gbps bandwidth for around 15 metres. They support frequencies in the range up to 1000 MHz.

Cat 8 Cable supports frequencies in the range up to 1200 MHz. Under development. No applications yet.

CATV: Community Antenna Television, also often used to mean Cable TV. It is a system of providing television to consumers through or optical fibre cables. High-speed Internet, telephony, and similar non-television services may also be provided.

CCTV: Closed-circuit television is the use of video cameras to transmit a signal to a specific place, on a limited set of monitors.

Circuit integrity: refers to the operability of electrical circuits during a fire. It is a form of fire-resistance rating.

Coaxial Cable or coax: an electrical cable with a centre conductor surrounded by a tubular insulating layer = the dielectric, surrounded by a tubular conducting screen = the outer conductor, surrounded by an outer sheath. The term coaxial comes from the centre conductor and the outer screen sharing the same geometric axis.

Conductor: most familiar conductors are metallic. Copper or tinned copper is the most common material used for electrical wiring. Silver is also in use as a conductor and out performs copper, but is expensive.

Crosstalk (XT): any phenomenon by which a signal transmitted on one circuit of a transmission system creates an undesired effect in another circuit. Crosstalk is usually caused by undesired capacitive, inductive, or conductive coupling from one circuit (mostly a pair) to another (pair).

Current: electric current is a flow of electric charge through a medium. This flowing electric charge is typically carried by moving electrons in a conductor such as wire. The unit of current is Ampere.

DC: Direct Current.

DC Resistance: the resistance of an object is defined as the ratio of voltage across it to the direct current through it. The unit of resistance is Ohm.

Dielectric: the insulation between centre and outer conductor (screen) of coaxial cables. Mostly solid or foam (= cellular) polyethylene (PE).

Distortion: the alteration of the original shape (or other characteristic) of an object, image, sound, waveform or other form of information or representation. Distortion is usually unwanted, and often many methods are employed to minimize it in practice.

Drain wire: a conductor in contact with the foil (of a screen) in order to terminate the screen. Also referred to a Continuity Wire. The preferred drain wire is tinned copper wire(s).

Decibel (dB): is a logarithmic unit that indicates the ratio of a physical quantity (usually power or intensity) relative to a specified or implied reference level. A ratio in decibels is ten times the logarithm to base 10 of the ratio of two power quantities.

ELFEXT: the Equal-Level Far-End Crosstalk (ELFEXT) test measures Far-End Crosstalk (FEXT). FEXT is very similar to NEXT, but happens at the receiver side of the connection. Due to impedance on the line, crosstalk diminishes the signal as it gets further away from the transmitter. Because of this, FEXT is usually less detrimental to a signal than NEXT, but still important nonetheless.

EIA: Electronic Industries Association. This body ceased operations on 28 February 2011. The former sectors of EIA are the Electronic Components Association (ECA), JEDEC, Government Electronics and Information Technology Association (GEIA), and are now part of TechAmerica, Telecommunications Industry Association (TIA), and Consumer Electronics Association (CEA).

EN: European Norms maintained by CEN (European Committee for Standardization), CENELEC (European Committee for Electrotechnical Standardization) and ETSI (European Telecommunications Standards Institute).

Farad: the unit of capacitance.

FPE: Foam Polyethylene (PE) = closed cells with gas in PE in order to reduce the dielectric constant. Often used as dielectric in coaxial cables. The gas may be generated by chemical decomposition during extrusion of the insulation (chemical foaming or blowing) or by injection into the polymer melt within the extruder (physical foaming or blowing).

FAS Cables: cables for fire detection and alarm systems

Far end crosstalk (FEXT): Interference between two pairs of a cable measured at the other end of the cable from the transmitter.

FR: can mean Flame Retardant or Fire Retardant or Fire Resistant.

GLOSSARY

Flame Retardant: are cables passing the vertical wire test of IEC 60332-1 or UL 1581 VW-1).

Fire Retardant: are cables passing the bundle test of IEC 60332-2-24 or UL 1685 Vertical Tray.

Fire Resistant: are cables with a circuit integrity of a specified time.

Frequency: is the number of occurrences of a repeating event per unit time. The unit of frequency is Hertz (Hz).

G.P. Bus: General Purpose Bus Application

Headroom: in case of testing category cables this is the average of the difference between worst case margin and the specified value.

Henry (H): unit of inductance.

Hertz (Hz): unit of frequency. 1 Hz means that an event repeats once per second.

HFFR = Halogen-Free, Flame or Fire Retardant

Impedance: the ratio of voltage applied to the current is called the input impedance; the input impedance of the infinite line is called the characteristic impedance.

Insertion Loss: also referred to as attenuation, refers to the loss of signal strength at the far end of a line compared to the signal that was introduced into the line. This loss is due to the electrical resistance of the copper cable, the loss of energy through the cable insulation and the impedance caused by the connectors. Insertion loss is usually expressed in decibels dB with a minus sign. Insertion loss increases with distance and frequency. For every 6dB of loss, the original signal will be half the original amplitude.

Inductance: is the property of an electrical circuit causing voltage to be generated proportional to the rate of change in current in a circuit. This property also is called self inductance to discriminate it from mutual inductance, describing the voltage induced in one electrical circuit by the rate of change of the electric current in another circuit.

Insulation: insulations are coating applied to conductor to isolate the conductors. Insulation materials are applied to provide good strippability. The physical properties are in accordance with BS EN 50290-2.

Individually screened pair: a pair with a helically applied (= as a spiral) Aluminium/Polyester (Alpet) foil. A drain wire may also be included under the screen in Cat 7 cables.

Jacket = sheath: This is the outer protective polymer surrounding the cable core.

Lay-length: The length measured along the axis of a wire or cable required for a single strand (in stranded wire) or conductor (in cable) to make one complete turn about the axis of the conductor or cable. In a twisted pair cable, the lay length is the distance it takes for the two wires to completely twist around each other. Lay length is also known as pitch length.

Local Area Network (LAN): any communication network for connecting computers within a building or small group of buildings.

m = metre: S.I. unit of measure of length

MHz = Megahertz: 1 MHz = one million Hertz.

Near End Crosstalk (NEXT): Interference between two pairs in a cable measured at the same end of the cable as the transmitter. Operating temperature (range): the temperature range across which the cable can operate.

Polyolefin: is a polymer produced by polymerisation of a simple olefin (also called an alkene) as a monomer, for example Polyethylene or Polypropylene.

PA = Polyamide

PE = Polyethylene.

PP = Polypropylene.

PVC = Polyvinyl Chloride.

Power Sum ELFEXT (PSELFEXT): is the sum of FEXT values from 3 wire pairs as they affect the other wire pair.

Pair: two twisted – colour coded – insulated wires.

Quad: a four conductor cable core or unit, symmetrical stranded or twisted together.

Rated Temperature: the maximum continuous temperature that the cable can withstand during its lifetime. It is generally limited by the thermal aging characteristics of the plastics used to insulate and/or jacket the wire.

Rated Voltage: the maximum voltage at which a cable can operate for extended periods without undue degradation or safety hazard.

Resistance: the electrical resistance of a conductor measures its opposition to the passage of an electric current; the inverse quantity is electrical conductance, measuring how easily electricity flows along a certain path. The unit of electrical resistance is the ohm (Ω), while electrical conductance is measured in Siemens (S).

Return Loss (RL): the Return or Reflection Loss of a line is the ratio of the power reflected back from the line to the power transmitted into the line. RL is expressed in decibels (dB).

The RL of coaxial cables is the loss of signal power resulting from the reflection caused at a discontinuity in the cable. This discontinuity can be fluctuations in dimensions and/or dielectric.

Return Loss is also one of many parameters regulated by the requirements established for Category 5e and onwards cables. It is a measure of the reflected energy from a transmitted signal. The larger the value, the less energy that is reflected. Poor Return Loss figures of a circuit are quite often caused by poor termination (connectors).

Screen: a cable screen acts as a Faraday cage to reduce electrical noise from affecting the signals, and to reduce electromagnetic radiation that may interfere with other parts in a cable or other cables. The screen minimizes capacitive coupled noise from other electrical sources. For more info regarding screens: see also the Technical Information section.

Sheath: the outer covering of a cable, standard in accordance with BS EN 50290-2 and grey for PVC, purple for HFFR and black for PE.

Shield = See Screen.

SMATV = Satellite Master Antenna Television, and refers to a system that uses multiple satellite and broadcast signals to create a single integrated cable signal for distribution to a cabling network

Solid BC: one solid conductor of bare copper.

Solid TC: one solid conductor of tinned copper

T.C. = TC = Tinned Copper Conductor

TIA: the Telecommunications Industry Association is accredited by the American National Standards Institute (ANSI) to develop voluntary industry standards for a wide variety of telecommunications products.

Twisted pair: a type of wiring in which two conductors are twisted together for the purposes of cancelling out electromagnetic interference (EMI) from external sources; for instance, electromagnetic radiation from unshielded twisted pair (UTP) cables, and crosstalk between neighbouring pairs.

Volt = Voltage = unit of electric, expressed with the symbol V.

Wire = Conductor with Insulation and also referred to as a Core in some specifications.

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