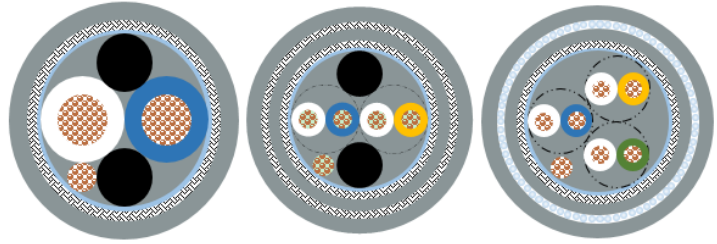


Technical Data Sheet – Low Capacitance Cable for EIA/TIA RS-232 / 422 / 485 / CANBUS

RS-232 / 422 / 485 / CANBUS

Low Capacitance Cable
ABS Type Approved



Applications

Designed for applications which are used for RS 232/422/485, CANBUS, MODBUS communication protocols. Cable applications include motion oriented machine, machine control networks, temperature controllers, control panels, machine cutting tools, auxiliary equipment, SCADA communications, etc. These cables are used in emergency evacuation / shutdown systems in building automation, offshore, oil & gas and railway applications and are flame retardant according to IEC 60332-3-22 Category A.

General Reference Standards

- IEC 60228, UL 758, IEC 60092-359, IEC 60092-351
- IEC 60754-1, IEC 60754-2, IEC 61034-2, ASTM D 2843, EN 50305, NF F63-305
- IEC 60332-1-2, IEC 60332-3A, RoHS & CE & REACH Directives
- ABS certification number: 15-HS1434725-1-PDA

Physical Characteristics	
Conductor Size	24 AWG (0.20mm ²) 22 AWG (0.34mm ²) 20 AWG (0.50mm ²) 18 AWG (0.75mm ²) 16 AWG (1.50mm ²)
Conductor Material	Stranded Tinned Copper
Insulation Material	Foamed XLPE (Electron-Beam Cross Linked Polyethylene)
Insulation Colour	White & Blue, White & Orange, White & Green, White & Brown
Shielding	Overall Foil Shield Plus Tinned Copper Braid
Drain Wire Material	Stranded Tinned Copper
Jacket Material	LSZH (SHF 1) LSZH (Low Smoke Zero Halogen) / LFH (Low Fire Hazard)
Armour (Optional)	Galvanized steel wire armour (GSWA) OR Galvanized steel wire braid armour (GSWB)
Cable Accordance to Standard	American Bureau of Shipping (ABS) Type Approval certificate # 15-HS1434725-PDA

Electrical Characteristics	
Nom. Conductor DCR @ 20°C	24 AWG = 94.2 Ω/km 22 AWG = 59.4 Ω/km 20 AWG = 36.7 Ω/km 18 AWG = 23.2 Ω/km 16 AWG = 14.6 Ω/km
Nom. Impedance @ 1MHz	120 Ω
Nom. Attenuation @ 1 MHz	2.2 dB/100 m
Nom. Inductance to Resistance ratio (L/R)	25 μH/Ω
Nom. Capacitance @ 1KHz Core to Core	46 pF/m
Nom. Capacitance @ 1KHz Core to Shield (one pair ONLY)	82 pF/m
Delay	≤ 5.2 ns/m
Voltage Rating	300 V
Dielectric Strength (AC)	1.5 kVac / 2s
Nom. Inductance @ 1kHz	1 mH/km

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Operating Temperature Range	-40°C To +90°C
Min. Bending Radius	8 X OD (Unarmoured Cables) 15 X OD (Armoured Cables)
<u>Mechanical Characteristics</u>	
Flame Retardant	IEC 60332-3A Vertical Flame IEC 60332-1-2
UV / Sun Light Resistance	UL 1581
Oil Resistance	ICEA S 73-532 IRM 902
Min. Light Transmittance	≥ 70 % as per IEC 61034-2

Insulation Resistance	≥ 1 GΩ*KM
Max. Recommended Current @ 25°C	2.1 Amps per Conductor
<u>Material Characteristics</u>	
Smoke Density ASTM D28434	Max. 40%
Halogen Acid Gas IEC 60754-1	Max. 0.5%
pH Value IEC 60754-2	≥ 4.3
Conductivity IEC 60754-2	< 10 μS/mm
Toxicity Index EN 50305 / NF F63-305 (ITC)	< 5

TABLE A

Part Code	Cable Description	Nom. Cable Diameter (mm)	Nom. Cable Weight (kg/km)
24 AWG (0.20mm²) Unarmored – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			
50011L	1 Pair 24 AWG XLPE/OS/OBS/LSZH	6.8	62
50012L	2 Pair 24 AWG XLPE/OS/OBS/LSZH	8.9	88
50013L	3 Pair 24 AWG XLPE/OS/OBS/LSZH	9.5	104
50014L	4 Pair 24 AWG XLPE/OS/OBS/LSZH	10.5	124
24 AWG (0.20mm²) Galvanized Steel Wire Armor (GSWA) – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			
50011LS	1 Pair 24 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	9.2	182
50012LS	2 Pair 24 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	11.6	258
50013LS	3 Pair 24 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	12.0	265
50014LS	4 Pair 24 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	12.8	290
24 AWG (0.20mm²) Galvanized Steel Wire Braid Armor (GSWB) – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			
50011LB	1 Pair 24 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	8.9	122
50012LB	2 Pair 24 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	10.9	173
50013LB	3 Pair 24 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	11.3	184
50014LB	4 Pair 24 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	12.3	213
22 AWG (0.34mm²) Unarmored – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			
50091L	1 Pair 22 AWG XLPE/OS/OBS/LSZH	7.0	60.0
50092L	2 Pair 22 AWG XLPE/OS/OBS/LSZH	9.5	97.6
50093L	3 Pair 22 AWG XLPE/OS/OBS/LSZH	10.0	102.7
50094L	4 Pair 22 AWG XLPE/OS/OBS/LSZH	11.0	122.1
22 AWG (0.34mm²) Galvanized Steel Wire Armor (GSWA) – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			
50091LS	1 Pair 22 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	10.0	203.6
50092LS	2 Pair 22 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	12.7	290.7
50093LS	3 Pair 22 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	13.2	305.4
50094LS	4 Pair 22 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	14.2	344.1
22 AWG (0.34mm²) Galvanized Steel Wire Braid Armor (GSWB) – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			

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Part Code	Cable Description	Nom. Cable Diameter (mm)	Nom. Cable Weight (kg/km)
50091LB	1 Pair 22 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	9.3	131.4
50092LB	2 Pair 22 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	11.9	196.3
50093LB	3 Pair 22 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	12.4	206.4
50094LB	4 Pair 22 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	13.4	237.5
20 AWG (0.50mm²) Unarmored – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			
50061L	1 Pair 20 AWG XLPE/OS/OBS/LSZH	7.9	75.4
50062L	2 Pair 20 AWG XLPE/OS/OBS/LSZH	11.3	131.2
50063L	3 Pair 20 AWG XLPE/OS/OBS/LSZH	11.9	140.9
50064L	4 Pair 20 AWG XLPE/OS/OBS/LSZH	13.1	169.2
20 AWG (0.50mm²) Galvanized Steel Wire Armor (GSA) – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			
50061LS	1 Pair 20 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	10.9	236.0
50062LS	2 Pair 20 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	14.6	361.2
50063LS	3 Pair 20 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	15.2	383.3
50064LS	4 Pair 20 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	16.4	436.4
20 AWG (0.50mm²) Galvanized Steel Wire Braid Armor (GSWB) – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			
50061LB	1 Pair 20 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	10.2	155.7
50062LB	2 Pair 20 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	13.8	250.6
50063LB	3 Pair 20 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	14.5	268.4
50064LB	4 Pair 20 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	15.7	312.2
18 AWG (0.75mm²) Unarmored – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			
50071L	1 Pair 18 AWG XLPE/OS/OBS/LSZH	9.2	99.4
50072L	2 Pair 18 AWG XLPE/OS/OBS/LSZH	13.2	175.5
50073L	3 Pair 18 AWG XLPE/OS/OBS/LSZH	13.9	185.5
50074L	4 Pair 18 AWG XLPE/OS/OBS/LSZH	15.3	224.8
18 AWG (0.75mm²) Galvanized Steel Wire Armor (GSA) – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			
50071LS	1 Pair 18 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	12.3	285.6
50072LS	2 Pair 18 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	16.5	443.4
50073LS	3 Pair 18 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	17.2	468.5
50074LS	4 Pair 18 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	18.7	538.5
18 AWG (0.75mm²) Galvanized Steel Wire Braid Armor (GSWB) – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			
50071LB	1 Pair 18 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	11.6	194.8
50072LB	2 Pair 18 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	15.7	318.9
50073LB	3 Pair 18 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	16.5	336.6
50074LB	4 Pair 18 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	18.0	393.8
16 AWG (1.5mm²) Unarmored – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			
50081L	1 Pair 16 AWG XLPE/OS/OBS/LSZH	10.0	123.0
50082L	2 Pair 16 AWG XLPE/OS/OBS/LSZH	15.3	235.7
50083L	3 Pair 16 AWG XLPE/OS/OBS/LSZH	16.2	249.9
50084L	4 Pair 16 AWG XLPE/OS/OBS/LSZH	17.9	306.5
16 AWG (1.5mm²) Galvanized Steel Wire Armor (GSA) – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			
50081LS	1 Pair 16 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	13.2	326.6
50082LS	2 Pair 16 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	18.8	550.3
50083LS	3 Pair 16 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	19.7	583.2

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Part Code	Cable Description	Nom. Cable Diameter (mm)	Nom. Cable Weight (kg/km)
50084LS	4 Pair 16 AWG XLPE/OS/OBS/LSZH/SWA/LSZH	21.5	677.8
16 AWG (1.5mm²) Galvanized Steel Wire Braid Armor (GSWB) – XLPE / SHIELDED / LOW SMOKE ZERO HALOGEN			
50081LB	1 Pair 16 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	12.5	228.0
50082LB	2 Pair 16 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	18.0	405.8
50083LB	3 Pair 16 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	18.9	429.5
50084LB	4 Pair 16 AWG XLPE/OS/OBS/LSZH/SWB/LSZH	20.7	509.4

Sheath / Jacket Colour

Colour	Colour Code
1) Chrome (Grey)	060
2) Black	010
3) Blue	006

Put-up Length

Put-up Length	Put-up Length Code
1) 305 Meters	305M
2) 500 Meters*	500M
3) 1000 Meters*	1000M

*Applicable only for certain part codes, please check with Belden for more information.

Stock Code Selection Procedure:

