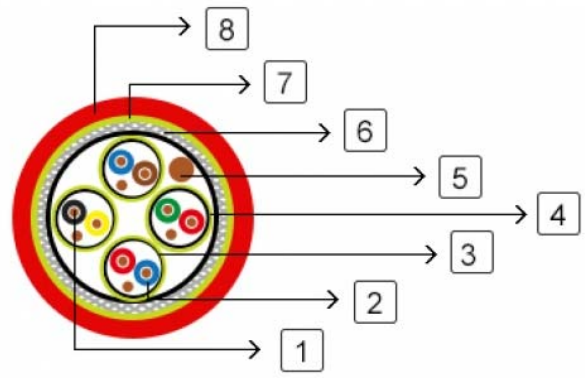
Fire Resistant RS485 Databus Cables



Application:	The cables are designed for RS485 data connections where continued functionality is required during a fire situation. This cable combines low capacitance insulation with one of the highest levels of screening to provide high speed, interference free, data transmission where continued functionality is required during a fire situation.
STANDARDS:	Basic design to EIA/TIA 485
VOLTAGE RATING:	60V

FIRE PERFORMANCE

Circuit Integrity	IEC 60331-23; BS 6387 CWZ; DIN VDE 0472-814(FE180); CEI 20-36/2-1; SS229-1; NBN C 30-004 (cat. F3); NF C32-070-2.3(CR1)
System circuit integrity	DIN 4102-12, E30 depending on lay system
Flame Retardance (Single Vertical Wire test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

CABLE CONSTRUCTION

Multipair RS 485 Overall Screened Databus Cable

Conductors: tinned copper wire, stranded according to IEC(EN) 60228 class 2.Insulation: mica glass tape wrapped with PE or PE wrapped with silicone rubber insulation.
Cabling Elements: Insulated cores are twisted to form pairs with varying lay length to minimize
crosstalk. Two pair cable had four cores laid in quad formation.
Cabling: Pairs are cabled together in concentric layers.
Overall screen: Aluminum/polyester tape with tinned copper drain wire.
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

Multipair RS 485 Overall Double Screened Databus Cable

Conductors: tinned copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: mica glass tape wrapped with PE or PE wrapped with silicone rubber insulation.
Cabling Elements: Insulated cores are twisted to form pairs with varying lay length to minimize crosstalk. Two pair cable had four cores laid in quad formation.
Cabling: Pairs are cabled together in concentric layers.
Overall screen: Aluminium/polyester tape+copper wire braid.
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

Multipair RS 485 Individual & Overall screened Databus Cable

Conductors: tinned copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: mica glass tape wrapped with PE or PE wrapped with silicone rubber insulation.
Cabling Elements: Insulated cores are twisted to form pairs with varying lay length to minimize crosstalk. Two pair cable had four cores laid in quad formation.
Cabling: Pairs are cabled together in concentric layers.
Individual Screen: Individual aluminium/polyester tape.
Overall Screen: Copper wire braid.
outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

Multipair RS 485 Overall Screened Databus Cable

Conductors: tinned copper wire, stranded according to IEC(EN) 60228 class 2.

Insulation: mica glass tape wrapped with PE or PE wrapped with silicone rubber insulation.

Cabling Elements: Insulated cores are twisted to form pairs with varying lay length to minimize crosstalk. Two pair cable had four cores laid in quad formation.

Cabling: Pairs are cabled together in concentric layers.

Overall Screen: Copper wire braid.

Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

Physical AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -20°C - +90°C

Temperature range during installation (mobile state): -5°C - +60°C

Minimum bending radius: 8 x Overall Diameter

Electrical Properties

Dielectric test	1000 V r.m.s. for 5’ (core-core)
	1000 V r.m.s. for 5’ (core-screen)
Impedance	120Ω
Capacitance	45 nF/km conductor to conductor
	90 nF/km conductor to shield

CONSTRUCTION PARAMETERS

Multipair RS 485 Overall Screened Databus Cable

No.of pair x	Nominal Cross Sectional Area	No./Nominal Diameter of Strands	Nominal Insulation thickness	Nominal Sheath thickness	Nominal Overall Diameter	Approx. Weight
	mm2	No/mm	mm	mm	mm	kg/km
1	0.22	7/0.2	0.55	0.40	4.6	29
2	0.22	7/0.2	0.55	0.40	8.1	60
4	0.22	7/0.2	0.55	0.40	9.6	100
1	0.50	16/0.2	0.55	0.40	5.2	44
2	0.50	16/0.2	0.55	0.40	9.3	91
4	0.50	16/0.2	0.55	0.40	11.1	158
1	0.75	24/0.2	0.55	0.40	5.6	56
2	0.75	24/0.2	0.55	0.40	10.3	117
4	0.75	24/0.2	0.55	0.40	12.2	207
1	1.00	30/0.2	0.55	0.40	5.8	61.4
2	1.00	30/0.2	0.55	0.40	10.6	128
4	1.00	30/0.2	0.55	0.40	12.5	228

Multipair RS 485 Overall Double Screened Databus Cable

No.of pair x	Nominal Cross Sectional Area	No./Nominal Diameter of Strands	Nominal Insulation thickness	Nominal Sheath thickness	Nominal Overall Diameter	Approx. Weight
	mm2	No/mm	mm	mm	mm	kg/km
1	0.22	7/0.2	0.55	0.40	5.0	45
2	0.22	7/0.2	0.55	0.40	8.6	88
4	0.22	7/0.2	0.55	0.40	10.1	134
1	0.50	16/0.2	0.55	0.40	5.6	61
2	0.50	16/0.2	0.55	0.40	9.8	124
4	0.50	16/0.2	0.55	0.40	11.5	197
1	0.75	24/0.2	0.55	0.40	6.1	75
2	0.75	24/0.2	0.55	0.40	10.7	154
4	0.75	24/0.2	0.55	0.40	12.7	250
1	1.00	30/0.2	0.55	0.40	6.3	81
2	1.00	30/0.2	0.55	0.40	11.0	166
4	1.00	30/0.2	0.55	0.40	13.0	273

Multipair RS 485 Individual & Overall screened Databus Cable

No.of pair x	Nominal Cross Sectional Area	No./Nominal Diameter of Strands	Nominal Insulation thickness	Nominal Sheath thickness	Nominal Overall Diameter	Approx. Weight
	mm2	No/mm	mm	mm	mm	kg/km

1	0.22	7/0.2	0.55	0.40	4.9	46
2	0.22	7/0.2	0.55	0.40	8.6	91
4	0.22	7/0.2	0.55	0.40	10.1	144
1	0.50	16/0.2	0.55	0.40	5.5	62
2	0.50	16/0.2	0.55	0.40	9.8	127
4	0.50	16/0.2	0.55	0.40	11.6	209
1	0.75	24/0.2	0.55	0.40	6.0	76
2	0.75	24/0.2	0.55	0.40	10.7	157
4	0.75	24/0.2	0.55	0.40	12.7	263
1	1.00	30/0.2	0.55	0.40	6.2	83
2	1.00	30/0.2	0.55	0.40	11.0	170
4	1.00	30/0.2	0.55	0.40	13.0	286

Multipair RS 485 Overall Screened Databus Cable

No.of pair x	Nominal Cross Sectional Area	No./Nominal Diameter of Strands	Nominal Insulation thickness	Nominal Sheath thickness	Nominal Overall Diameter	Approx. Weight
	mm2	No/mm	mm	mm	mm	kg/km
1	0.22	7/0.2	0.55	0.40	4.8	41
2	0.22	7/0.2	0.55	0.40	8.4	82
4	0.22	7/0.2	0.55	0.40	9.9	127
1	0.50	16/0.2	0.55	0.40	5.4	57
2	0.50	16/0.2	0.55	0.40	9.6	117
4	0.50	16/0.2	0.55	0.40	11.4	189
1	0.75	24/0.2	0.55	0.40	5.9	71
2	0.75	24/0.2	0.55	0.40	10.5	146
4	0.75	24/0.2	0.55	0.40	12.4	241
1	1.00	30/0.2	0.55	0.40	6.0	77
2	1.00	30/0.2	0.55	0.40	10.8	158
4	1.00	30/0.2	0.55	0.40	12.8	264