



RS-485 / RS-422 & JIS Shipboard Communication Cables

RS-422 / RS-485

RS-422/RS-485 Shielded Twisted-Pair Cable

TIA/EIA-485 & TIA/EIA-422 $120 \Omega \pm 42 \text{ pF/m}$ 1P to 8P $\times 24/22/18 \text{ AWG SF/UTP}$ shielded



TIA/EIA-485-A & TIA/EIA-422-B

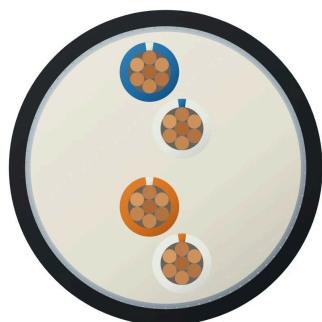
 $120 \Omega \pm 12 \Omega \cdot \leq 42 \text{ pF/m}$ 1P to 8P $\times 24 / 22 / 18 \text{ AWG}$

Application

RS-422 / RS-485 Shielded Twisted-Pair Cable is a true $120 \Omega \pm 12 \Omega$ low-capacitance ($\approx 38\text{--}42 \text{ pF/m}$) differential serial communication cable engineered for Modbus RTU, BACnet MS/TP, DMX512, solar inverter telemetry, and incremental RS-422 encoders up to 1,200

Typical uses: Modbus RTU & PLC SCADA telemetry, Solar PV inverter & tracker networks, BACnet MS/TP HVAC & DMX512 lighting, RS-422 servo & spindle encoders

Construction



Cross-section, not to scale

1	Stranded tinned copper conductors	ASTM B33 / IEC 60228
2	Cellular foamed polyethylene (FPE)	TIA/EIA-485-A
3	100 % Al/PET foil + drain wire	UL 2919 / CM / PLTC
4	High-coverage tinned copper braid	TIA/EIA-485 EMC
5	Industrial outer sheath	UL 444 / UL 13 / IEC 60332

Technical data

Typical values

Characteristic impedance Z_0 120 $\Omega \pm 12 \Omega$ at 1 MHz

DC conductor resistance @ 20 °C $\leq 78.7 \Omega/\text{km}$ (24 AWG) $\cdot \leq 48.2 \Omega/\text{km}$ (22 AWG)

Attenuation @ 1 MHz 1.97 dB/100m (24 AWG) $\cdot$ 1.64 dB/100m (22)

Operating temp. (fixed / flex) -40 °C to +80 °C fixed $\cdot$ -30 °C to +75 °C flex)

Min. bending radius $6 \times D$ fixed $\cdot 10 \times D$ flexing / drag-chain

Oil, sunlight & moisture resistance UL Sunlight Resistant $\cdot$ Oil Res I/II $\cdot$ PE

Standards TIA/EIA-485-A & TIA/EIA-422-B balanced

Mutual capacitance @ 1 kHz $\approx 38\text{--}42 \text{ pF/m}$ (core-to-core) $\cdot \approx 72 \text{ pF/m}$

Velocity of propagation (VoP) 76–78 % (0.76–0.78 c) $\cdot$ delay $\approx 4.3 \text{ ns/m}$

Operating / test voltage 300 V (UL CM / CL2 / PLTC) $\cdot$ 1.5 kV AC

Storage temperature -40 °C to +80 °C

Shield coverage 100 % Al/PET foil + ≥ 90 % tinned copper

Flame retardancy UL 1685 CM / FT4 / PLTC $\cdot$ IEC 60332-1-2 &

Sizes

7 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Configuration	Conductor size	Outer $\varnothing \approx$ mm	Copper kg/km	Weight $\approx$ kg/km	Min. bend R fixed mm
Standard RS-422 / RS-485 configurations 7 sizes						
☐ RS-485 1P $\times$ 24 AWG (0.22 mm ²) Foil+Braid (9841 eq.)	1 $\times$ 2 $\times$ 24 AWG + Drain	24 AWG (0.22 mm ²)	5.9	22	50	35
☐ RS-422/485 2P $\times$ 24 AWG (0.22 mm ²) Foil+Braid (9842 eq.)	2 $\times$ 2 $\times$ 24 AWG + Drain	24 AWG (0.22 mm ²)	8.6	36	82	52
☐ RS-422/485 4P $\times$ 24 AWG (0.22 mm ²) Foil+Braid (9844 eq.)	4 $\times$ 2 $\times$ 24 AWG + Drain	24 AWG (0.22 mm ²)	9.9	56	118	59
☐ RS-485 1P $\times$ 22 AWG (0.34 mm ²) PLTC (3105A eq.)	1 $\times$ 2 $\times$ 22 AWG + Drain	22 AWG (0.34 mm ²)	7.2	28	66	43
☐ RS-485 1.5P (1P + 1C GND) $\times$ 22 AWG (3106A eq.)	1 $\times$ 2 + 1 $\times$ 22 AWG + Drain	22 AWG (0.34 mm ²)	7.6	33	74	46
☐ RS-422/485 2P $\times$ 22 AWG (0.34 mm ²) PLTC (3107A eq.)	2 $\times$ 2 $\times$ 22 AWG + Drain	22 AWG (0.34 mm ²)	9.0	44	96	54
☐ RS-485 Heavy-Trunk 1P $\times$ 18 AWG (0.80 mm ²) Outdoor PE	1 $\times$ 2 $\times$ 18 AWG + Drain	18 AWG (0.80 mm ²)	8.8	48	98	53

– Outer diameters and weights are nominal factory values subject to ± 5 % manufacturing tolerance per TIA/EIA-485-A / TIA/EIA-422-B (120 Ω Low-Capacitance Bus).

Impedance, capacitance & attenuation

7 sizes

Configuration	Impedance Z_0	Max. DC R @ 20 °C Ω/km	Mutual C pF/m $\approx$	VoP %	Attenuation @ 20 °C dB/100m	Dielectric test V
1 $\times$ 2 $\times$ 24 AWG + Drain	120 Ω	157.4	42.0	76	1.97 @ 1 $\cdot$ 6.2 @ 10 MHz	1,500
2 $\times$ 2 $\times$ 24 AWG + Drain	120 Ω	157.4	42.0	76	1.97 @ 1 $\cdot$ 6.2 @ 10 MHz	1,500
4 $\times$ 2 $\times$ 24 AWG + Drain	120 Ω	157.4	42.0	76	1.97 @ 1 $\cdot$ 6.2 @ 10 MHz	1,500
1 $\times$ 2 $\times$ 22 AWG + Drain	120 Ω	96.4	36.0	78	1.64 @ 1 $\cdot$ 5.0 @ 10 MHz	1,500
1 $\times$ 2 + 1 $\times$ 22 AWG + Drain	120 Ω	96.4	36.0	78	1.64 @ 1 $\cdot$ 5.0 @ 10 MHz	1,500
2 $\times$ 2 $\times$ 22 AWG + Drain	120 Ω	96.4	36.0	78	1.64 @ 1 $\cdot$ 5.0 @ 10 MHz	1,500
1 $\times$ 2 $\times$ 18 AWG + Drain	120 Ω	42.0	38.0	78	1.05 @ 1 $\cdot$ 3.3 @ 10 MHz	2,000

– Transmission values (characteristic impedance Z_0 , mutual capacitance, VoP, and attenuation) are measured at +20 °C per TIA/EIA-485-A / TIA/EIA-422-B (120 Ω Low-Capacitance Bus).

Standards and approvals

- ✓ TIA/EIA-485-A / 422-B
- ✓ UL AWM 2919 / CM / PLTC
- ✓ IEC 60332-1-2 / CE

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

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Email

info@tebaoflex.com

Web

tebaoflex.com/cables/rs-422-rs-485-shielded-twisted-pair-cable



Typical values for this cable type, based on TIA/EIA-485-A / TIA/EIA-422-B (120 Ω Low-Capacitance Bus). Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.