

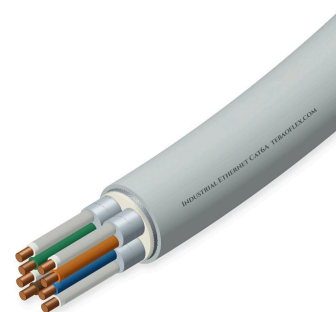


PROFINET & Industrial Ethernet cables

Industrial Ethernet Cat6A

Cat6A Industrial Ethernet Cable

IEC 61156-5/6 100 Ω 4×2 S/FTP (PiMF) 500 MHz 10GBASE-T Industrial Ethernet Cat6A cable



IEC 61156-5 / 61156-6

10GBASE-T · 500 MHz · 100 Ω

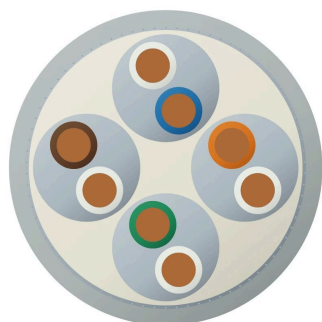
4×2 S/FTP (PiMF) · PoE++ 90 W

Application

Industrial Ethernet Cat6A is a 500 MHz 10GBASE-T (10 Gigabit/s) 4-pair S/FTP (PiMF) data cable built to IEC 61156-5 (fixed AWG 22/1 & 23/1) and IEC 61156-6 (flexible AWG 24/7 & drag-chain AWG 26/7 / 24/19), featuring individually foil-shielded pairs plus

Typical uses: 10GBASE-T industrial plant backbones, 10GigE Vision inspection systems, PoE++ (90 W) edge AI & LiDAR sensors, PROFINET / EtherNet/IP / EtherCAT cells

Construction



Cross-section, not to scale

1	Copper pair conductors	IEC 61156-5 / 61156-6
2	Cellular foam-skin PE (O2YS)	IEC 61156-5
3	Individual pair screens (PiMF)	ISO/IEC 11801 S/FTP
4	Overall EMC copper braid	IEC 61156-5 / 61156-6
5	Industrial outer sheath	EN 50363-10-2 / IEC 60332

Technical data

Typical values

Characteristic impedance Z0	100 Ω ± 5 Ω @ 100 MHz (1–500 MHz)	Max. DC loop resistance @ 20 °C	≤ 115 Ω/km (AWG 22) · ≤ 170 Ω/km (AWG 24) ·
Mutual capacitance @ 1 kHz	≈ 43 pF/m	Velocity of propagation & skew	77 % (0.77 c) · delay skew ≤ 25 ns/100m
Attenuation @ 10 / 100 / 500 MHz	5.5 / 18.0 / 41.5 dB/100m (AWG 22/23 fixed)	Coupling attenuation (EMC)	≥ 80 dB (Segregation Class d per EN 50174-2)
Operating temp. (fixed / flex)	-40 °C to +85 °C fixed · -30 °C to +75 °C	PoE++ thermal rise rating	IEEE 802.3bt Type 4 (90 W / 1.0 A per pair)
Min. bending radius (fixed / chain)	4 × D fixed · 8 × D flexing/drag-chain	Max. pulling tension	≤ 110 N
Oil & chemical resistance	EN 60811-404 · UL Oil Res I/II	Flame & halogen-free	IEC 60332-1-2 / IEC 60332-3-24 · IEC
Standards	IEC 61156-5 / IEC 61156-6 / TIA-568.2-D Cat6A		

Sizes

6 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 Ø ≈ mm	Copper kg/km	Weight ≈ kg/km	Min. bend R fixed mm
Standard Industrial Ethernet Cat6A configurations 6 sizes						
☐ Cat6A S/FTP Fixed PVC 4×2×AWG23/1	4×2×AWG23/1 (Fixed PVC)	AWG 23/1 (0.57 mm)	7.8	36	70	31
☐ Cat6A S/FTP Fixed LSZH 4×2×AWG22/1	4×2×AWG22/1 (Fixed LSZH/PROFINET)	AWG 22/1 (0.64 mm)	8.4	43	82	34
☐ Cat6A S/FTP Fixed PUR 4×2×AWG22/1	4×2×AWG22/1 (Fixed PUR)	AWG 22/1 (0.64 mm)	8.5	43	80	34
☐ Cat6A S/FTP Flex PUR 4×2×AWG24/7	4×2×AWG24/7 (Flexible PUR)	AWG 24/7 (0.22 mm²)	7.8	34	68	31
☐ Cat6A S/FTP Drag-Chain PUR 4×2×AWG24/19	4×2×AWG24/19 (Drag-Chain PUR)	AWG 24/19 (0.23 mm²)	8.2	36	74	33
☐ Cat6A S/FTP Patch/Chain PUR 4×2×AWG26/7	4×2×AWG26/7 (Compact PUR)	AWG 26/7 (0.14 mm²)	6.4	25	48	26

– Outer diameters and weights are nominal factory values subject to ±5 % manufacturing tolerance per IEC 61156-5 / IEC 61156-6 (Cat6A 500 MHz).

Impedance, capacitance & attenuation

6 sizes

Configuration	Impedance Z0	Max. DC R @ 20 °C Ω/km	Mutual C pF/m ≈	VoP %	Attenuation @ 20 °C dB/100m	Dielectric test V
4×2×AWG23/1 (Fixed PVC)	100 Ω	145.0	43.0	77	5.5 @ 10 · 18.0 @ 100 · 41.5 @ 500 MHz	1,500
4×2×AWG22/1 (Fixed LSZH/PROFINET)	100 Ω	115.0	43.0	77	5.2 @ 10 · 17.1 @ 100 · 39.2 @ 500 MHz	1,500
4×2×AWG22/1 (Fixed PUR)	100 Ω	115.0	43.0	77	5.2 @ 10 · 17.1 @ 100 · 39.2 @ 500 MHz	1,500
4×2×AWG24/7 (Flexible PUR)	100 Ω	170.0	44.0	76	6.8 @ 10 · 22.4 @ 100 · 51.0 @ 500 MHz	1,500
4×2×AWG24/19 (Drag-Chain PUR)	100 Ω	170.0	44.0	76	7.0 @ 10 · 23.0 @ 100 · 52.5 @ 500 MHz	1,500
4×2×AWG26/7 (Compact PUR)	100 Ω	285.0	45.0	76	8.4 @ 10 · 27.6 @ 100 · 62.5 @ 500 MHz	1,500

– Transmission values (characteristic impedance Z0, mutual capacitance, VoP, and attenuation) are measured at +20 °C per IEC 61156-5 / IEC 61156-6 (Cat6A 500 MHz).

Standards and approvals

- ✓ IEC 61156-5 / 61156-6
- ✓ ISO/IEC 11801 Class EA
- ✓ IEEE 802.3bt PoE++

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/cat6a-industrial-ethernet-cable



Typical values for this cable type, based on IEC 61156-5 / IEC 61156-6 (Cat6A 500 MHz). Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.