

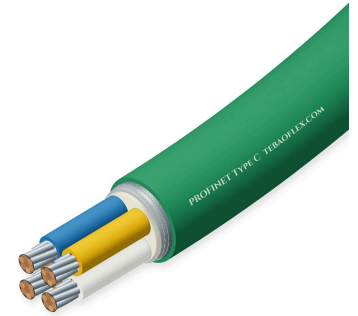


PROFINET & Industrial Ethernet cables

PROFINET Type C

Continuous-Flex Cable

IEC 61156-6 / PNO 2.142 100 Ω 2×2×AWG22/19 continuous-flex drag-chain & robot PROFINET



IEC 61156-6 / PNO Type C

2×2×AWG22/19 Drag-Chain

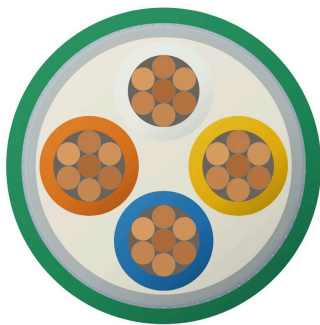
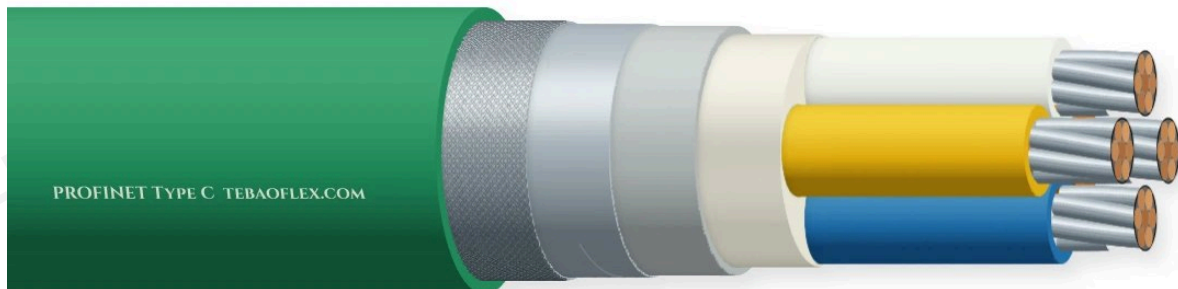
 $\geq 5\text{M Cycles} \cdot \pm 180^\circ/\text{m Torsion}$

Application

PROFINET Type C is the dynamic continuous-flex 100 Ω Cat5e Star-Quad Industrial Ethernet cable per PNO Guideline 2.142 and IEC 61156-6, engineered with 19-strand extra-fine tinned copper conductors (2×2×AWG22/19), low-friction fleece wrap, SF/UTP

Typical uses: Linear drag chains & gantry robots, 6-axis industrial robotics, AS/RS automated warehouse cranes, CNC machining centres

Construction



Cross-section, not to scale

1	19-wire extra-fine tinned copper	IEC 61156-6 / PNO Type C
2	Foam-skin polyolefin insulation	PNO 2.142 Type C
3	Short-pitch Star-Quad + slip wrap	PNO 2.142 Type C
4	Static screen (Al/PET)	IEC 61156-6 SF/UTP
5	Flex-optimized EMC braid	IEC 61156-6 SF/UTP
6	Outer sheath (PUR TPU)	EN 50363-10-2 TPU

Technical data

Typical values

Characteristic impedance Z_0 100 Ω $\pm$ 15 Ω (1 to 100 MHz)

Mutual capacitance @ 1 kHz $\approx$ 48 pF/m

Attenuation (1 / 10 / 100 MHz) 2.6 / 7.2 / 23.5 dB/100m

Operating temp. (drag-chain) -30 °C to +70 °C (+80 °C UL AWM)

Drag-chain endurance $\geq$ 5,000,000 bending cycles at $7.5 \times D$

Torsional stress (Robot variant) $\pm 180^\circ$ /m over $\geq$ 3–5 million cycles

Oil, ester & coolant resistance EN 60811-404 · UL Oil Res I/II

Max. DC loop resistance @ 20 °C $\leq$ 120 Ω /km

Velocity of propagation (VoP) $\approx$ 67 % (0.67 c) · delay $\leq$ 510 ns/100m

Operating / test voltage 300 V / 600 V UL AWM · 2.0 kV DC test

Operating temp. (fixed) -40 °C to +80 °C

Max. travel speed / acceleration 5 m/s (up to 10 m/s short stroke) · 10 m/s²

Halogen-free & flame retardant IEC 60754-1/2 · IEC 60332-1-2 · UL VW-1

Standards IEC 61156-6 / PNO Guideline 2.142 Type C

Sizes

4 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 PROFINET Type C configurations 4 sizes						
☐ PROFINET Type C Drag-Chain PUR 2×2×AWG22/19	2×2×AWG22/19 (Drag-Chain PUR)	AWG 22/19 (0.35 mm ²)	6.5	33	60	32
☐ PROFINET Type C Robot Torsion PUR 2×2×AWG22/19	2×2×AWG22/19 (Robot Torsion PUR)	AWG 22/19 (0.35 mm ²)	6.5	33	61	32
☐ PROFINET Type C Festoon PVC 2×2×AWG22/19	2×2×AWG22/19 (Festoon PVC)	AWG 22/19 (0.35 mm ²)	6.5	33	64	32
☐ PROFINET Type C Compact Drag-Chain 2×2×AWG26/19	2×2×AWG26/19 (Compact Patch)	AWG 26/19 (0.14 mm ²)	5.0	19	36	25

– Outer diameters and weights are nominal factory values subject to ± 5 % manufacturing tolerance per IEC 61156-6 / PNO Guideline 2.142 (Type C).

Impedance, capacitance & attenuation

4 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
2×2×AWG22/19 (Drag-Chain PUR)	100 Ω	120.0	48.0	67	2.6 @ 1 · 7.2 @ 10 · 23.5 @ 100 MHz	2,000
2×2×AWG22/19 (Robot Torsion PUR)	100 Ω	120.0	48.0	67	2.6 @ 1 · 7.2 @ 10 · 23.5 @ 100 MHz	2,000
2×2×AWG22/19 (Festoon PVC)	100 Ω	120.0	48.0	67	2.6 @ 1 · 7.2 @ 10 · 23.5 @ 100 MHz	2,000
2×2×AWG26/19 (Compact Patch)	100 Ω	280.0	48.0	67	4.1 @ 1 · 11.8 @ 10 · 38.0 @ 100 MHz	1,500

– Transmission values (characteristic impedance Z_0 , mutual capacitance, VoP, and attenuation) are measured at +20 °C per IEC 61156-6 / PNO Guideline 2.142 (Type C).

Standards and approvals

- ✓ IEC 61156-6
- ✓ PNO Guideline 2.142
- ✓ UL AWM 21198 / 20233

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/profinet-type-c-continuous-flex-cable



Typical values for this cable type, based on IEC 61156-6 / PNO Guideline 2.142 (Type C). Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.