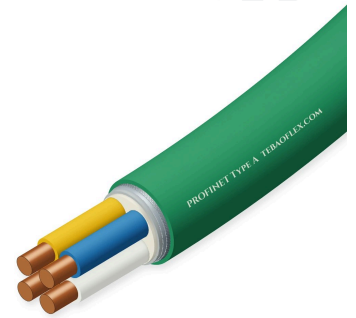




## PROFINET &amp; Industrial Ethernet cables

# PROFINET Type A Cable

IEC 61156-5 / PNO 2.142 100  $\Omega$  2×2×AWG22/1 solid-conductor Star-Quad  
PROFINET Type A cable



IEC 61156-5 / PNO 2.142

100  $\Omega$  · 2×2×AWG22/1 Solid

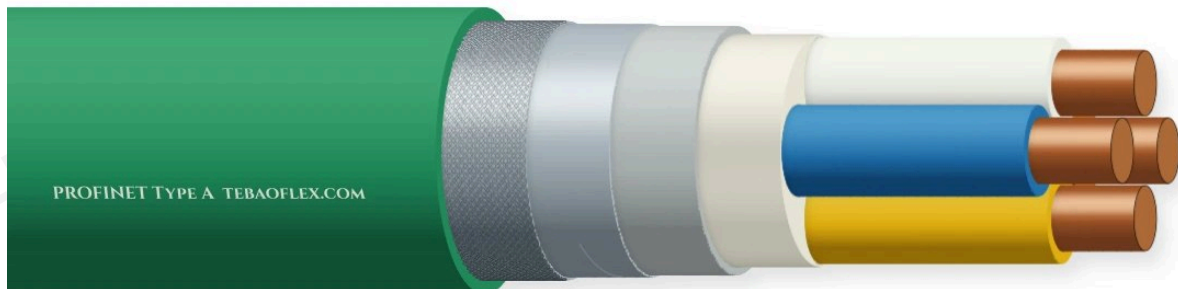
SF/UTP FastConnect 6.5 mm

## Application

PROFINET Type A is the standard PNO 2.142 and IEC 61156-5 Cat5e (100 MHz, 100BASE-TX) fixed-installation Industrial Ethernet cable featuring a 2×2×AWG22/1 ( $\varnothing$  0.64 mm solid bare copper) Star-Quad core, FastConnect (FC) inner bedding, SF/UTP overall

**Typical uses:** Factory & process automation, Automotive body-in-white plants, Switchgear & PLC cabinets, Intralogistics fixed backbones

## Construction



Cross-section, not to scale

|   |                               |                          |
|---|-------------------------------|--------------------------|
| 1 | Solid bare copper conductor   | IEC 61156-5 / PNO Type A |
| 2 | Core insulation (O2YS / 2YI1) | PNO 2.142                |
| 3 | Star-Quad core lay-up         | PNO 2.142 Star-Quad      |
| 4 | FastConnect inner bedding     |                          |
| 5 | Static screen (Al/PET)        | IEC 61156-5 SF/UTP       |
| 6 | EMC copper braid              | IEC 61156-5 SF/UTP       |
| 7 | Outer sheath (RAL 6018 green) | PNO 2.142                |

## Technical data

Typical values

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

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

Attenuation (1 / 10 / 100 MHz) 2.1 / 6.0 / 19.5 dB/100m

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

Min. bending radius (fixed / pull)  $4 \times D$  fixed ·  $8 \times D$  during pulling

Oil & coolant resistance EN 60811-404 (oil-resistant PVC & PUR)

Standards IEC 61156-5 / PNO Guideline 2.142 Type A

Max. DC loop resistance @ 20 °C  $\leq 115 \Omega/\text{km}$

Velocity of propagation (VoP)  $\approx 65 \%$  (0.65 c) · delay  $\leq 530$  ns/100m

Operating / test voltage 300 V (UL) · 2.0 kV DC / 1.5 kV AC test

Installation temperature -20 °C to +60 °C

Max. pulling tension  $\leq 100$  N

Flame retardancy IEC 60332-1-2 / UL 1685 CMG/PLTC

## Sizes

5 standard constructions

Tick the sizes you need and send this page to [info@tebaoflex.com](mailto: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 A configurations 5 sizes                     |                            |                    |                                |              |                        |                      |
| <input type="checkbox"/> PROFINET Type A FC PVC 2×2×AWG22/1         | 2×2×AWG22/1 (PVC FC)       | AWG 22/1 (0.64 mm) | 6.5                            | 32           | 61                     | 26                   |
| <input type="checkbox"/> PROFINET Type A FC PUR 2×2×AWG22/1         | 2×2×AWG22/1 (PUR FC)       | AWG 22/1 (0.64 mm) | 6.5                            | 32           | 60                     | 26                   |
| <input type="checkbox"/> PROFINET Type A FC FRNC/LSZH 2×2×AWG22/1   | 2×2×AWG22/1 (LSZH FC)      | AWG 22/1 (0.64 mm) | 6.5                            | 32           | 63                     | 26                   |
| <input type="checkbox"/> PROFINET Type A Underground PE 2×2×AWG22/1 | 2×2×AWG22/1 (PE Burial)    | AWG 22/1 (0.64 mm) | 6.5                            | 32           | 54                     | 26                   |
| <input type="checkbox"/> PROFINET Type A SWA Armoured 2×2×AWG22/1   | 2×2×AWG22/1 (SWA Armoured) | AWG 22/1 (0.64 mm) | 10.8                           | 32           | 195                    | 43                   |

– Outer diameters and weights are nominal factory values subject to  $\pm 5 \%$  manufacturing tolerance per IEC 61156-5 / PNO Guideline 2.142 (Type A).

## Impedance, capacitance & attenuation

5 sizes

| Configuration              | Impedance $Z_0$ | Max. DC R @ 20 °C $\Omega/\text{km}$ | Mutual C pF/m $\approx$ | VoP % | Attenuation @ 20 °C dB/100m         | Dielectric test V |
|----------------------------|-----------------|--------------------------------------|-------------------------|-------|-------------------------------------|-------------------|
| 2×2×AWG22/1 (PVC FC)       | 100 $\Omega$    | 115.0                                | 48.0                    | 65    | 2.1 @ 1 · 6.0 @ 10 · 19.5 @ 100 MHz | 2,000             |
| 2×2×AWG22/1 (PUR FC)       | 100 $\Omega$    | 115.0                                | 48.0                    | 65    | 2.1 @ 1 · 6.0 @ 10 · 19.5 @ 100 MHz | 2,000             |
| 2×2×AWG22/1 (LSZH FC)      | 100 $\Omega$    | 115.0                                | 48.0                    | 65    | 2.1 @ 1 · 6.0 @ 10 · 19.5 @ 100 MHz | 2,000             |
| 2×2×AWG22/1 (PE Burial)    | 100 $\Omega$    | 115.0                                | 48.0                    | 65    | 2.1 @ 1 · 6.0 @ 10 · 19.5 @ 100 MHz | 2,000             |
| 2×2×AWG22/1 (SWA Armoured) | 100 $\Omega$    | 115.0                                | 48.0                    | 65    | 2.1 @ 1 · 6.0 @ 10 · 19.5 @ 100 MHz | 2,000             |

– Transmission values (characteristic impedance  $Z_0$ , mutual capacitance, VoP, and attenuation) are measured at +20 °C per IEC 61156-5 / PNO Guideline 2.142 (Type A).

## Standards and approvals

- ✓ IEC 61156-5
- ✓ PNO Guideline 2.142
- ✓ UL / CSA CMG PLTC

## 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

+86 185 9591 3361

Email

info@tebaoflex.com

Web

tebaoflex.com/cables/profinet-type-a-cable



Typical values for this cable type, based on IEC 61156-5 / PNO Guideline 2.142 (Type A). Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.