

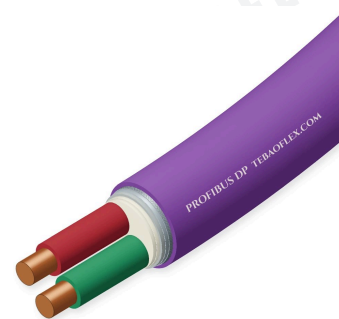


PROFIBUS DP / PA & Process Fieldbus cables

PROFIBUS DP

Cable

IEC 61158-2 / EN 50170 $150\ \Omega < 30\ \text{pF/m}$ $1 \times 2 \times 0.64\ \text{mm}$ FastConnect PROFIBUS DP fieldbus cable



IEC 61158-2 / EN 50170

 $150\ \Omega \pm 15\ \Omega < 30\ \text{pF/m}$

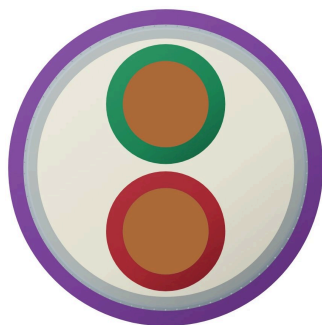
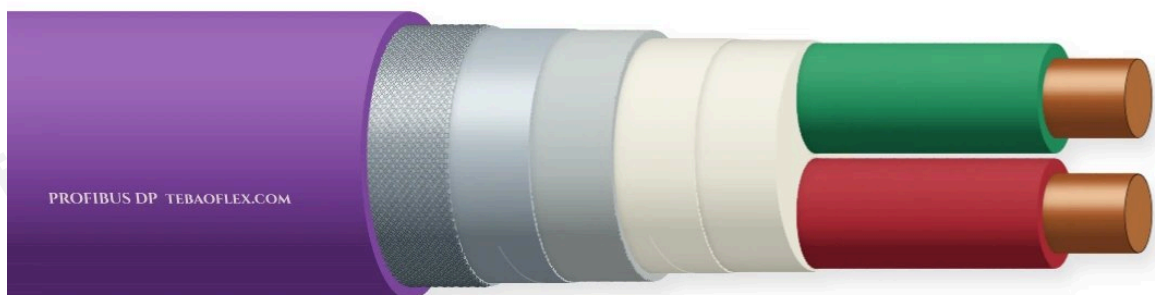
12 Mbps · 8.0 mm FastConnect

Application

PROFIBUS DP Cable is the IEC 61158-2 and EN 50170 Type A $150\ \Omega \pm 15\ \Omega$ RS-485 fieldbus cable (9.6 kbps to 12 Mbps), engineered with nitrogen-foamed O2YS polyethylene insulation ($< 30\ \text{pF/m}$ mutual capacitance), Red (Line B) and Green (Line A) cores

Typical uses: PLC & remote I/O factory backbones, Variable-frequency drive (VFD) networks, Water, wastewater & power plants, Machine tools & drag-chain gantries

Construction



Cross-section, not to scale

1	Copper conductor pair	IEC 61158-2 / EN 50170
2	Foamed-skin PE (O2YS) dielectric	EN 50170 Type A
3	FastConnect inner bedding	
4	Static screen (Al/PET)	IEC 61158-2
5	EMC tinned copper braid	IEC 61158-2
6	Outer sheath (8.0 mm OD)	

Technical data

Typical values

Characteristic impedance Z_0	150 $\Omega \pm 15 \Omega$ (3 to 20 MHz)
Max. DC loop resistance @ 20 °C	$\leq 110 \Omega/\text{km}$ (solid 0.64 mm) · $\leq 133 \Omega/\text{km}$
Velocity of propagation (VoP)	78–80 % (0.78–0.80 c)
Operating temp. (fixed / flex)	-40 °C to +80 °C fixed · -30 °C to +70 °C flex)
Outer diameter (FastConnect)	8.0 mm ± 0.4 mm
Oil & chemical resistance	EN 60811-404 · UL Oil Res I/II (PUR & ...)
Standards	IEC 61158-2 / EN 50170-2-2 PROFIBUS Type A

Low-frequency impedance (31.25–39 kHz)	185 $\Omega \pm 18.5 \Omega$
Mutual capacitance @ 1 kHz	$\approx 28.5 \text{ pF/m}$ (standard limit $< 30 \text{ pF/m}$)
Attenuation (0.2 / 4 / 16 MHz)	0.25 / 2.2 / 4.2 dB/100m (solid Type A)
Operating / test voltage	250 V (300 V UL CMG) · 1.5 kV AC / 3.6 kV
Min. bending radius (fixed / chain)	7.5 × D (60 mm) fixed · 10 × D (80 mm)
Flame & halogen-free	IEC 60332-1-2 · UL CMG/PLTC · FRNC IEC 60754

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 $\varnothing \approx$ mm	Copper kg/km	Weight $\approx$ kg/km	Min. bend R fixed mm
Standard PROFIBUS DP configurations 6 sizes						
☐ PROFIBUS DP FC Standard PVC 1×2×0.64	1×2×0.64 mm (Fixed PVC Violet)	0.64 mm (AWG 22/1)	8.0	26	66	64
☐ PROFIBUS DP FC FRNC/LSZH 1×2×0.64	1×2×0.64 mm (Fixed LSZH Violet)	0.64 mm (AWG 22/1)	8.0	26	68	64
☐ PROFIBUS DP FC Ex-i Blue 1×2×0.64	1×2×0.64 mm (Ex-i Blue PVC)	0.64 mm (AWG 22/1)	8.0	26	66	64
☐ PROFIBUS DP Underground PE 2Y2Y 1×2×0.64	1×2×0.64 mm (Burial Black PE)	0.64 mm (AWG 22/1)	8.0	26	58	64
☐ PROFIBUS DP FC Flex 1×2×0.78 (7-wire)	1×2×0.78 mm (7-wire Flex PUR)	0.34 mm ² (AWG 22/7)	8.0	28	64	64
☐ PROFIBUS DP Drag-Chain Trailing PUR 1×2×0.78 (19-wire)	1×2×0.78 mm (19-wire Chain PUR)	0.36 mm ² (AWG 22/19)	8.0	28	63	64

– Outer diameters and weights are nominal factory values subject to ± 5 % manufacturing tolerance per IEC 61158-2 / EN 50170 (PROFIBUS DP Type A).

Impedance, capacitance & attenuation

6 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
1×2×0.64 mm (Fixed PVC Violet)	150 Ω	110.0	28.5	79	0.25 @ 0.2 · 2.2 @ 4 · 4.2 @ 16 MHz	1,500
1×2×0.64 mm (Fixed LSZH Violet)	150 Ω	110.0	28.5	79	0.25 @ 0.2 · 2.2 @ 4 · 4.2 @ 16 MHz	1,500
1×2×0.64 mm (Ex-i Blue PVC)	150 Ω	110.0	28.5	79	0.25 @ 0.2 · 2.2 @ 4 · 4.2 @ 16 MHz	1,500
1×2×0.64 mm (Burial Black PE)	150 Ω	110.0	28.5	79	0.25 @ 0.2 · 2.2 @ 4 · 4.2 @ 16 MHz	1,500
1×2×0.78 mm (7-wire Flex PUR)	150 Ω	133.0	28.5	78	0.30 @ 0.2 · 2.5 @ 4 · 4.9 @ 16 MHz	1,500
1×2×0.78 mm (19-wire Chain PUR)	150 Ω	133.0	28.5	78	0.30 @ 0.2 · 2.5 @ 4 · 4.9 @ 16 MHz	1,500

– Transmission values (characteristic impedance Z_0 , mutual capacitance, VoP, and attenuation) are measured at +20 °C per IEC 61158-2 / EN 50170 (PROFIBUS DP Type A).

Standards and approvals

- ✓ IEC 61158-2 / EN 50170
- ✓ PNO FastConnect Spec
- ✓ UL CMG / PLTC / AWM

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/profibus-dp-cable



Typical values for this cable type, based on IEC 61158-2 / EN 50170 (PROFIBUS DP 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.