Profinet Compliant Cables

The Belden range of Profinet compliant cables is designed to withstand the entire spectrum of environmental and mechanical hazards, from temperature extremes and sunlight, to solvents, oils, chemicals and moisture.

Ordering Information

Belden European Item Numbers

Jacket Material	Performance	Type A (Stationary)	Type B (Flexible)	Type C (Trailing)
PVC	Cat 5e	70006E	70007E	N/A
Premium FRNC	Cat 5e	70006NH	70007NH	N/A
PUR (Halogen Free)	Cat 5e	70006PU	70007PU	70008PU

Applications

- Industrial environments where IP67 may be required
- Transmission of data in industrial applications via the Profinet ethernet protocol
- Type A (stationary) applications, where there is no movement after installation
- Type B (flexible) applications, subject to occasional movement or vibration after installation
- Type C (trailing) applications, for instance ‘C Track’

Features & Benefits

- Profinet compliant (Type A, B or C) cables with a star quad construction
- High shield coverage to maintain signal integrity in the industrial ‘noisy’ environment
- Choice of PVC, Premium FRNC or PUR cable jacket for specific application requirements in the harsh industrial environment
- Oil resistant
- Chemical & solvent resistant
- Temperature resistant
- Abrasion resistant
- Excellent mechanical resistance (especially Type C)
- Weld-splatter resistant PUR cable jacket available on request
- IP67 rated
- Green RAL 6018 cable jacket

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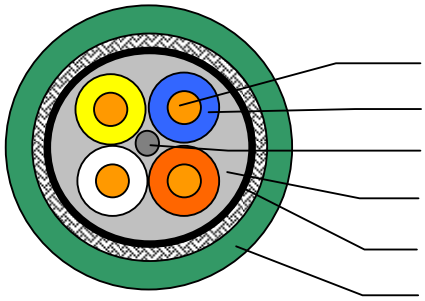
Construction & Dimensions

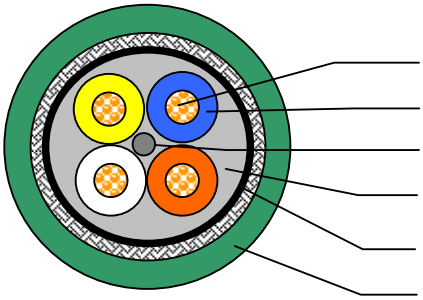
Mechanical Data Profinet Type A



Conductor (22AWG/1 solid bare copper wire)
Insulation
Filler
Bedding
Foil & Braid
Sheath (Green RAL 6018)

Part Number	Conductor	PE Insulation (Nom. Dia.)	Bedding Material (Nom. Dia.)	Braid Coverage	Sheath Material	Sheath (Nom. Dia.)
70006E	22AWG/1	1.50mm	PVC 3.90mm	>85%	PVC	6.50mm
70006NH	22AWG/1	1.50mm	PVC 3.90mm	>85%	FRNC	6.50mm
70006PU	22AWG/1	1.50mm	PVC 3.90mm	>85%	PUR	6.50mm

Mechanical Data Profinet Type B



Conductor (22AWG/7 7x0.25mm stranded tinned copper)
Insulation
Filler
Bedding
Foil & Braid
Sheath (Green RAL 6018)

Part Number	Conductor	Polyolefin Insulation (Nom. Dia.)	Bedding Material (Nom. Dia.)	Braid Coverage	Sheath Material	Sheath (Nom. Dia.)
70007E	22AWG/7	1.55mm	PVC 4.00mm	>85%	PVC	6.50mm
70007NH	22AWG/7	1.55mm	PVC 4.00mm	>85%	FRNC	6.50mm
70007PU	22AWG/7	1.55mm	PVC 4.00mm	>85%	PUR	6.50mm

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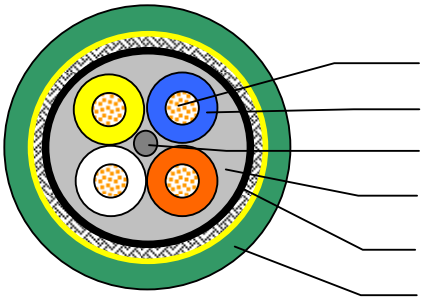
Mechanical Data – Profinet Type C



Conductor (22AWG/19 19x0.15mm stranded tinned copper)

Insulation

Filler

Bedding

Foil + Braid

Sheath (Green RAL 6018)

Part Number	Conductor	Polyolefin Insulation (Nom. Dia.)	Bedding Material (Nom. Dia.)	Braid Coverage	Sheath Material	Sheath (Nom. Dia.)
70008PU	22AWG/19	1.63mm	PVC 4.30mm	>85%	PUR	6.50mm

Electrical Properties

ISO/IEC 11801 ed. 2.0, Cat5e	
Max Operating Voltage	300V RMS
Test Voltage	2.5kV DC
Max Conductor Resistance @ 20°C	57.1 Ohm / km
Transfer Impedance @ 10 MHz	< 40 mOhm / m
Nominal Velocity of Propagation	68%
Delay	< 5.3 ns / m
Impedance @ 1 – 100 MHz	100 +/- 15 Ohm

Frequency (MHz)	Insertion Loss (dB/100m)	NEXT (dB)	ELFEXT (dB/100m)	RETURN LOSS (dB)
1	2.1	65	64	-
4	4	56	52	23
10	6.3	50	44	25
16	8	47	40	25
31.25	11.4	43	34	23.6
62.5	16.5	38	28	21.5
100	21.3	35	24	20.1

Mechanical, Physical and/or Environmental Characteristics

Flame Resistance	IEC60332-1
Oil Resistance	IEC 60811-2-1
Halogen Free	IEC 60754-1 / IEC 60754-2 (FRNC and PUR Cable Jacket)
Bending Radius / Setting Radius	10 x Diameter / 5 x Diameter
Temperature Range - Installation	- 5 °C to +50 °C
Temperature Range - Operating	-40 °C to +80 °C

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