Industrial Ethernet Cables

SF/UTP Cat 5e – 2 Pair Cables

A range of shielded copper cables for use in industrial Ethernet networks, 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	Number of Pairs	Stationary Application	Flexible Application
PVC	Cat 5e	2 Pairs	72001E	72002E
Premium FRNC	Cat 5e	2 Pairs	72001NH	72002NH
PUR (Halogen Free)	Cat 5e	2 Pairs	72001PU	72002PU

Applications

- Industrial environments where IP67 may be required
- Transmission of data in industrial applications via the ethernet protocol
- Stationary applications, where there is no movement after installation
- Flexible applications, subject to occasional movement or vibration after installation

Features & Benefits

- Choice of PVC, Premium FRNC or PUR cable jacket for specific application requirements in the harsh industrial environment
- High shield coverage to maintain signal integrity in the industrial ‘noisy’ environment
- Oil resistant
- Chemical & solvent resistant
- Temperature resistant
- Abrasion resistant
- Excellent mechanical resistance
- Weld-splatter resistant PUR cable jacket available on request
- IP67 rated
- UV resistant
- Black cable jacket

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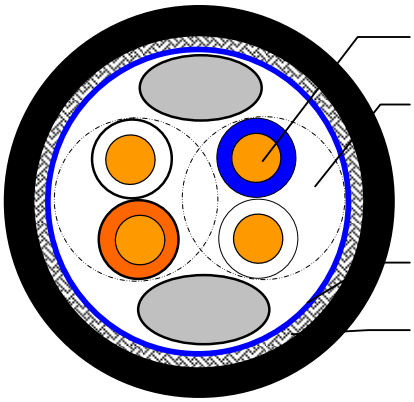
Construction & Dimensions

Mechanical Data – Stationary Application



Conductor (24AWG/1 – Solid Bare Copper)

2 Twisted, Polypropylene Insulated Conductors

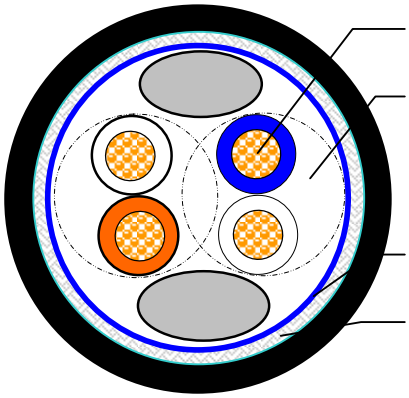
- Pair 1 = White / Blue
- Pair 2 = White / Orange

Foil Shield – Laminated Aluminium / Polyester

Braid Shield – Tinned Copper

Part Number	Conductor	Insulation (Nom. Dia.)	Braid Coverage	Sheath Material	Sheath (Nom. Dia.)	Sheath Colour
72001E	24AWG/1	1.10mm	>80%	PVC	6.00mm	Black
72001NH	24AWG/1	1.10mm	>80%	FRNC	6.00mm	Black
72001PU	24AWG/1	1.10mm	>80%	PUR	6.00mm	Black

Mechanical Data – Flexible Application



Conductor (26AWG/7 – 7x0.16mm Stranded Tinned Copper)

2 Twisted, Polypropylene Insulated Conductors

- Pair 1 = White / Blue
- Pair 2 = White / Orange

Foil Shield – Laminated Aluminium / Polyester

Braid Shield – Tinned Copper

Part Number	Conductor	Insulation (Nom. Dia.)	Braid Coverage	Sheath Material	Sheath (Nom. Dia.)	Sheath Colour
72002E	26AWG/7	0.98mm	>80%	PVC	6.00mm	Black
72002NH	26AWG/7	0.98mm	>80%	FRNC	6.00mm	Black
72002PU	26AWG/7	0.98mm	>80%	PUR	6.60mm	Black

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Standards

- ISO/IEC 11801 2nd Edition
- ISO/IEC 24702
- EN 50173-1
- TIA/EIA-568-B.2

Electrical Properties

Max Operating Voltage UL	450V A.C. / 300V D.C.
Velocity of Propagation @ 4 – 100 MHz	68%
Impedance @ 1 – 100 MHz	100 +/- 15 Ohm

72001E / 72001NH / 72001PU (AWG24)

Frequency (MHz)	Insertion Loss (Max) (dB/100m)	NEXT (dB)	ELFEXT (dB/100m)	RETURN LOSS (dB)
1	2.0	65.3	63.8	20.0
4	4.1	56.3	51.7	23.0
10	6.5	50.3	43.8	25.0
16	8.2	47.2	39.7	25.0
20	9.3	45.8	37.7	25.0
25	10.4	44.3	35.8	24.3
31.25	11.7	42.9	33.9	23.6
62.5	17.0	38.3	27.8	21.5
100	22.0	35.3	23.8	20.1

72001E / 72002NH / 72002PU (AWG26)

Frequency (MHz)	Insertion Loss (Max) (dB/100m)	NEXT (dB)	ELFEXT (dB/100m)	RETURN LOSS (dB)
1	3.2	65.3	63.8	20.0
4	6.0	56.3	51.7	23.0
10	9.5	50.3	43.8	25.0
16	12.1	47.2	39.7	25.0
20	13.6	45.8	37.7	25.0
25	15.3	44.3	35.8	24.3
31.25	17.1	42.9	33.9	23.6
62.5	24.8	38.3	27.8	21.5
100	32.0	35.3	23.8	20.1

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Mechanical, Physical and/or Environmental Characteristics

Flame Resistance	IEC 60332-1
Oil Resistance	IEC 60811-2-1
Bending Radius / Setting Radius	10 x Diameter / 5 x Diameter
Halogen Free	IEC 60754-1 / IEC 60754-2 (FRNC and PUR Cable)
Maximum Pulling Tension	40N
Temperature Range - Installation	-5 °C to +50 °C
Temperature Range - Operating	-40 °C to +80 °C

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