


**Product:** [9844LW](#) 



Life Cycle Status: Capability

RS485, 4 Pr #24 Str TC, PE Ins, OS+TC Brd, LSZH Jkt, Cca

## Product Description

4-Pair, 24 AWG stranded (7x32) TC conductors, polyethylene insulation, twisted pairs, overall Beldfoil® (100% coverage) + TC braid shield (90% coverage), 24 AWG stranded TC drain wire, LSZH jacket, Flame resistance IEC 60332-1-2, CPR Cca

## Technical Specifications

### Product Overview

Suitable Applications:	RS-485, POS; Computer communications; Low Voltage Analog Signals (4-20ma, 0-10v, ...); Low Voltage Digital Control (24v, ...); Line Level Audio; Panel Wiring; serial communication (RS-485 standard) comprising of PLCs, VFDs, HMIs, motors, RTU, SCADA, etc. within noisy environments over long distance, etc.
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### Physical Characteristics (Overall)

#### Conductor

AWG	Stranding	Material	No. of Pairs
24	7x32	TC - Tinned Copper	4

Conductor Count:	8
Total Number of Pairs:	4

#### Insulation

Material	Nominal Diameter	Diameter +/- Tolerance
PE - Polyethylene	1.73 mm	0.05 mm

#### Color Chart

Number	Color
Pair 1	White/Blue & Blue/White
Pair 2	White/Orange & Orange/White
Pair 3	White/Green & Green/White
Pair 4	White/Brown & Brown/White

#### Outer Shield

Type	Material	Material Trade Name	Coverage [%]	Thickness of Foil	Drainwire Material	Drainwire AWG
Tape	Bi-Laminate (Alum+Poly)	Beldfoil® (Z-Fold®)	90%	9 / 23 µm	TC - Tinned Copper	AWG24/7
Braid	Tinned Copper (TC)		90%			

#### Outer Jacket

Material	Nominal Diameter	Nominal Wall Thickness
LSZH - Low Smoke Zero Halogen (Flame Retardant)	9.9 mm	0.9 mm

## Construction and Dimensions

#### Cabling

Description
4 pairs twisted to cable core

## Electrical Characteristics

#### Conductor DCR

Nominal Conductor DCR	Nominal Outer Shield DCR
78.7 Ohm/km	6.9 Ohm/km

#### Capacitance

Nom. Capacitance Conductor to Conductor	Nom. Capacitance Conductor to Other Conductor to Shield
42 pF/m	75.5 pF/m

#### Impedance

Frequency [MHz]	Nominal Characteristic Impedance
1 MHz	120 Ohm

#### High Frequency (Nominal/Typical)

Frequency [MHz]	Nom. Insertion Loss
1 MHz	1.97 dB/100m

#### Delay

Nominal Delay	Nominal Velocity of Propagation (VP) [%]
520 ns/ft	66%

#### Current

Element	Max. Recommended Current [A]
Conductor(s)	2.1 Amps per Conductor

#### Voltage

Voltage Rating [V]
300 V

### Temperature Range

Installation Temperature Range:	-15°C To +80°C
Storage Temperature Range:	-45°C To +80°C
Operating Temp Range (Flexible Install):	-15°C To +80°C
Operating Temp Range (Fixed Install):	-45°C To +80°C

### Mechanical Characteristics

Oil Resistance:	IEC 60811-404
Max. Pull Tension:	500 N
Min. Bend Radius During Installation:	99 mm

### Standards

CENELEC Compliance:	EN 50290-2-20
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### Applicable Environmental and Other Programs

Environmental Space:	Indoor - Euroclass Cca
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### Suitability

Suitability - Indoor:	Yes
Suitability - Non-Halogenated:	Yes
Suitability - Oil Resistance:	Yes
Suitability - Sunlight Resistance:	Yes

### Flammability, LSOH, Toxicity Testing

IEC Flammability:	IEC 60332-1-2
IEC 60754-1 - Halogen Amount:	Zero
IEC 60754-2 - Halogen Acid Gas Amount - Max. Conductivity:	2.5 µS/mm
IEC 60754-2 - Halogen Acid Gas Amount - Min. pH:	4.3

IEC 61034-2 - Smoke Density Min. Transmittance:	60%
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## Product Notes

Notes:	This is a preliminary Technical Design Specification (TDS) which is subject to modification throughout the prototyping phase. The minimum business quantity to offer is 3km for the first order. This product will have Chrome as standard color and 305mt or 500mt as standard put-ups. Additional options for colors and put-ups are available on special request. The estimated production lead time for the first order will be similar to the production lead time of 9844NH plus extra 6-7 weeks. Please liaise with your Belden representative for confirmation.
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## History

Update and Revision:	Revision Number: 0.9 Revision Date: 11-13-2024
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