Industrial Ethernet Media Cord Sets

Prior to the advent of Industrial Ethernet (standardized Ethernet communications via hardened networking infrastructure), office grade Ethernet cabling and connectors were the only available options. Unfortunately, these traditional media solutions proved unable to withstand the harsh environment of the factory floor or other industrial applications.

The Hirschmann product family of Industrial Ethernet Media Solutions eliminates these issues by combining standard RJ45 connection technology with the proven industrial Micro (M12) connection technology typically found in sensor/actuator machine applications - also available on all OCTOPUS, MICE, and MACH1000 Switches.

With the integration of Bonded-Pair technology by Belden, these industrial ethernet media cordsets have the highest level of signal quality making them one-of-a-kind..

TPE - Bonded-Pair, CAT 5e, 24 AWG Unshielded, 2- and 4-Pair

Part No.	Configuration	Description
J424TPESTJT...M	RJ45 to RJ45	Industrial Ethernet CAT 5E, TPE unshielded, 2- and 4-pair, 24 AWG cable, bonded-pairs, stranded (7x32) tinned copper conductors, polyolefin insulation, and industrial grade sunlight and oil-resistant, teal jacket.
M224TPESTJT...M	RJ45 to M12	
M224TPESTMT...M	M12 to M12	
J224TPESTPT...M	RJ45 to M12 (Panel Receptacle)	

Example of completed part number: **J424TPESTJT00.3M** is a 00.3 meter cable.

TPE High-Flex - Bonded-Pair, CAT 5e, 24 AWG Unshielded, 2- and 4-Pair

Part No.	Configuration	Description
J424THFSTJT...M	RJ45 to RJ45	Industrial Ethernet High-Flex CAT 5E, TPE High-Flex, unshielded, 2-and 4 pair, 24 AWG cable, stranded copper alloy conductors, polyolefin insulation, teal jacket. Warranted to 10 million flex cycles @ 20X OD and 1M flex cycles @ 10X OD.
M224THFSTJT...M	RJ45 to M12	
M224THFSTMT...M	M12 to M12	
J224THFSTPT...M	RJ45 to M12 (Panel Receptacle)	

Example of completed part number: **J424THFSTJT00.3M** is a 00.3 meter cable.

PVC - Bonded-Pair, CAT 5e, 24 AWG Unshielded, 2- and 4-Pair

Part No.	Configuration	Description
J424PVCSTJT...M	RJ45 to RJ45	Industrial Ethernet CAT 5E, PVC unshielded, 2- and 4-pair, 24 AWG cable, bonded-pairs, stranded (7x32) tinned copper conductors, polyolefin insulation, and industrial grade sunlight and oil-resistant, teal jacket.
M224PVCSTJT...M	RJ45 to M12	
M224PVCSTMT...M	M12 to M12	
J224PVCSTPT...M	RJ45 to M12 (Panel Receptacle)	

Example of completed part number: **J424PVCSTJT00.3M** is a 00.3 meter cable.

TPE - Bonded-Pair, CAT 5e, 24 AWG Shielded, 2-Pair

Part No.	Configuration	Description
J224TPETLJT...M	RJ45 to RJ45	Industrial Ethernet CAT 5E, TPE Shielded, 2-pair, 24 AWG cable, bonded-pairs, stranded (7x32) tinned copper conductors, polyolefin insulation, and industrial grade sunlight and oil-resistant, teal jacket.
M224TPETLJT...M	RJ45 to M12	
M224TPETLMT...M	M12 to M12	
J224TPETLPT...M	RJ45 to M12 (Panel Receptacle)	

Example of completed part number: **J224TPETLJT00.3M** is a 00.3 meter cable.

TPE High-Flex - Bonded-Pair, CAT 5e, 24 AWG Shielded, 2- and 4-Pair

Part No.	Configuration	Description
J424THFTLJT...M	RJ45 to RJ45	Industrial Ethernet CAT 5E, TPE, High-Flex shielded, 2- and 4-pair, 24 AWG cable, bonded-pairs, stranded (7x32) tinned copper conductors, polyolefin insulation, and industrial grade sunlight and oil-resistant, teal jacket.
M224THFTLJT...M	RJ45 to M12	
M224THFTLMT...M	M12 to M12	
J224THFTLPT...M	RJ45 to M12 (Panel Receptacle)	

Example of completed part number: **J424THFTLJT00.3M** is a 00.3 meter cable.

Industrial Ethernet Media Cord Set Configurator

Hirschmann by Belden

J	2	2 4	P V C	S T	J	T	0 0 . 3 M

Connector Type 1
J = RJ45
M = M12

Number of Conductors (Pairs)
2 = 2 pair
4 = 4 pair

Wire Gauge
24 = 24 AWG cable

Cable Type
PVC = PVC cable type - Bonded-Pair
TPE = TPE cable type - Bonded-Pair
THF = TPE High-Flex cable type - Bonded-Pair

Stranding/Shielding
ST = Stranded, Unshielded
TL = Stranded, Shielded

Connector Type 2
J = RJ45
M = M12
P = M12 Panel Mount Receptacle

Cable Jacket Color
T = Teal
B = Black*
G = Grey*
R = Red*
U = Blue*
N = Orange*

Cable Lengths

00.3M	=0.3 meters	10.0M	= 10 meters	60.0M	= 60 meters
00.5M	= 0.5 meters	12.0M	= 12 meters	65.0M	= 65 meters
01.0M	= 1 meter	15.0M	= 15 meters	70.0M	= 70 meters
02.0M	= 2 meters	20.0M	= 20 meters	75.0M	= 75 meters
03.0M	= 3 meters	25.0M	= 25 meters	80.0M	= 80 meters
04.0M	= 4 meters	30.0M	= 30 meters	90.0M	= 90 meters
05.0M	= 5 meters	40.0M	= 40 meters		
06.0M	= 6 meters	50.0M	= 50 meters		
07.0M	= 7 meters	55.0M	= 55 meters		

* Denotes special order. Minimum quantaties apply.

RJ45 to RJ45

RJ45 to M12

M12 to M12

RJ45 to M12 (Panel Receptacle)

About Belden Bonded-Pair Cable

Cable Designed for Maximum Durability

The cable itself is also designed for maximum durability. We chose the finest technology on the market for our products – Bonded-Pairs from Belden. This patented technology absolutely ensures that Hirschmann media is the most rugged and dependable product available. A wide variety of cable and jacket construction is also available, including:

- Copper 2- and 4-pair, 24 AWG Bonded-Pairs
- Stranded construction
- Polyolefin insulation
- PVC or ultra-rugged TPE jackets

Non-Bonded-Pair versus Bonded-Pair Cable for Mission Critical Industrial Ethernet Applications

What is Bonded-Pair Technology?

Bonded-Pair technology was developed to ensure superior electrical performance in twisted pair Ethernet cable installations. This design physically bonds the individual insulated conductors together along their longitudinal axes which assure uniform conductor–to–conductor spacing and electrical integrity.

How Does Bonded-Pair Cable Help You?

1) Bonded-Pairs are less susceptible to noise. Cables with nonbonded-pairs tend to separate due to movement during installation, flexing or handling. Each pair can be pictured as an antenna that can receive or transmit signals.

Variations in non-bonded conductor-to-conductor spacing are cumulative and result in susceptibility to EMI and RFI that degrades signal transmission and network performance.

In addition, the cable will emit more noise that can adversely affect surrounding instrumentation. Bonded-Pairs lock conductor-to-conductor spacing in place. "Physicals Equals Electricals" is a statement that describes why Bonded-Pairs are critical.

2) Bonded-Pairs improve impedance and return loss performance. Impedance irregularities, due to non-bonded-pair separation, cause signal reflections (return loss). Any impedance variation is cumulative along the length of the cable. Bonded-Pairs maintain conductor-to-conductor spacing, thus improving impedance stability and return loss performance.

3) Minimizes pair-to-pair crosstalk. All twisted pair Ethernet cables have crosstalk or pair-to-pair coupling. Each pair has different twists/inch (lay length) to minimize crosstalk. Lay length variation can increase the crosstalk that is cumulative down the length of the cable. Bonded-Pairs reduce crosstalk by minimizing lay length variation.

4) Improved termination quality. Bonded-Pairs maintain the electrical characteristics all the way into the connector. Bonded-Pairs increase installation consistency and signal integrity while reducing maintenance calls.

5) Superior mechanical robustness. Bonded-Pairs improve the pulling strength of a cable by up to 60% over non-bonded designs by equalizing the tension on each conductor. This is especially critical during the installation process, flexing or handling where the conductors may be severed due to the pulling forces.

TPE - High Flex (THF) Applications

Hirschmann by Belden is the first to offer High Flex Industrial Ethernet Cordsets with bonded pairs.

We warrantee these products (THF) to no less than 10 million flex cycles @ 20X OD and 1M flex cycles @ 10X OD.

Illustration 1: Example of Non-Bonded Pair. As cable is stretched and pulled, pairs begin to separate, causing a degradation in signal quality.

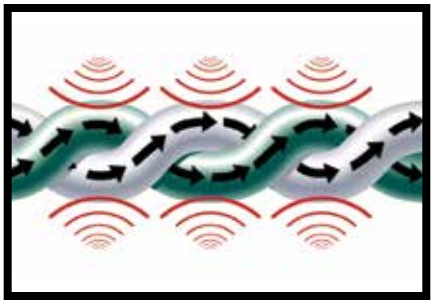

Illustration 2: Example of Bonded Pair. As cable is stretched and pulled, pairs stay intact.

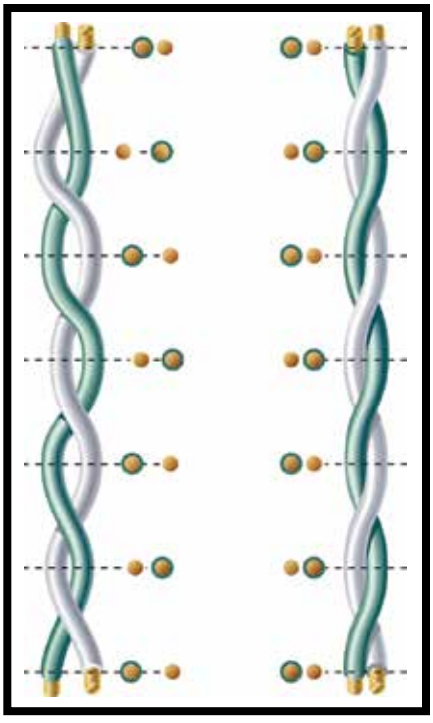

Illustration 3: Side-by-side comparison. Non-Bonded Pair versus Bonded-Pair cable.