

PB 360

**Hirschmann® and Belden®  
Present Industrial Ethernet  
Connectivity Solutions**

All from One Source. Complete Ethernet Connectivity Solutions for Industrial and Mission-Critical Applications.



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Featured Brands



**Introduction**

Belden has assembled the industries most complete line of connectivity products for networking applications requiring connectivity between switches, routers, firewalls, and access points. Most importantly, the termination of Ethernet and Fiber cables within a control cabinet has become increasingly important in that control cabinets are becoming smaller and more complex. The management of Ethernet and Fiber connections have become an essential part of the overall planning and installation process.

People realize that their network equipment is vital to keeping their networks up and running. What most people may not realize is that approximately 70% of network downtime happens because of a failure at the physical layer. The physical layer primarily consists of media (copper and fiber) and connectors. By working with Belden, you can be assured of a complete end-to-end Ethernet solution from one source.

**End-to-End Ethernet Solution**

An end-to-end Ethernet solution consists of a complete array of managed and unmanaged Ethernet switches, routers, firewalls, and access points coupled with the industries most diversified line of industrial cordsets and

cable for both copper and fiber terminations. Finally, Belden and its Hirschmann brand have developed the industries first modular industrial patch panel designed to save time in the installation and streamlining the troubleshooting process.

**Advantages**

- Recognized and Proven Best in Class Quality and Technology
- One source for end to end industrial Ethernet solutions
- Broadest Hardened Ethernet Product Portfolio
- Knowledgeable Local & Global Support
- High flexibility for user configuration and future expansion
- Assured enterprise interoperability

## MIPP: A Versatile, Modular Patch Panel for Industrial Use



MIPP is a modular, flexible patch panel that combines both copper and fiber cabling in one innovative solution.

The MIPP is available as both single and double modules:

- Single Fiber Modules (up to 12 fiber connections)
  - 6 x SC duplex adapters
  - 6 x LC duplex adapters
  - 6 x ST duplex adapters
  - 6 x E-2000™ duplex adapters
- Single Copper Modules
  - 4 x RJ45 keystone shielded
  - 4 x RJ45 keystone unshielded
  - 4 x RJ45 coupler shielded
  - 4 x RJ45 coupler unshielded
- Double Fiber Modules (up to 24 fiber connections)
  - 12 x SC duplex adapters
  - 12 x LC duplex adapters
  - 12 x ST duplex adapters
  - 12 x E-2000™ duplex adapters







Thanks to their compact dimensions, up to 6 modules can be combined in any permutation – and when required, each module can be easily removed or replaced for maximum flexibility.

### The Advantages at a Glance

- Accommodating various media and connectors
- LC, SC fiber duplex adapters
- RJ45 copper keystone jacks (Shielded and Unshielded, Cat 5e, Cat 6, Cat 6A)

- RJ45 copper coupler (Shielded and Unshielded, Cat 6A)
- High port density for maximum use of available space
- Easy to use, allows space for handling cable and module is removable from unit to facilitate connection/splicing
- Splice tray and multiple fingers for easy fiber management
- Cable entry in two places (top or bottom) for ease of use and choice of placement in cabinet
- Three cable entries for single fiber module, for ring topology applications
- Double fiber module accommodates hybrid fiber cables, with single mode and multi mode fibers
- Resilient for protection against the harsher industrial environments
- Wide temperature range from -20°C to +70°C
- Available as part of a system with market leading Hirschmann™ switches and high performance Belden cabling for optimum reliability in Industrial Ethernet networks
- UL approval (UL 1863) pending

### Technical Information

Housing Type and Description						
Description	Modular Industrial Patch Panel, DIN Rail					
Number of Single Modules	1	2	3	4	5	6
						
Mechanical Construction						
Material Housing	Aluminium					
Dimensions (WxHxD)	42 x 138 x 122 mm	72 x 138 x 122 mm	102 x 138 x 122 mm	132 x 138 x 122 mm	162 x 138 x 122 mm	192 x 138 x 122 mm
Dimensions with Adapters and Gland, max. (HxD)	165 x 133 mm	165 x 133 mm	165 x 133 mm	165 x 133 mm	165 x 133 mm	165 x 133 mm
Mounting	DIN Rail					
Appr. Weight Housing	360 g	530 g	697 g	865 g	1034 g	1200 g
Dimension Wallmount Plate (WxH)	38 x 157 mm	68 x 157 mm	98 x 157 mm	128 x 157 mm	158 x 157 mm	188 x 157 mm
Appr. Weight Wallmount Plate	67 g	119 g	172 g	223 g	277 g	329 g



Module Type and Description						
Type	Single Module	Single Module	Single Module	Single Module	Single Module	Single Module
Description	6 x SC Duplex	6 x LC Duplex	6 x ST Duplex	6 x E-2000™ Duplex	4 x RJ45 Keystone Jack, Unshielded	4 x RJ45 Coupler, Unshielded

Mechanical Construction						
Material	Aluminium					
Adapter/Keystone Types	<ul style="list-style-type: none"> <li>Blue SC adapter OS2 UPC zirconia ceramic</li> <li>Beige SC adapter OM1/OM2 PC phosphor bronze</li> <li>Aqua SC adapter OM3/OM4 PC zirconia ceramic</li> </ul>	<ul style="list-style-type: none"> <li>Blue LC adapter OS2 UPC zirconia ceramic</li> <li>Beige LC adapter OM1/OM2 PC phosphor bronze</li> <li>Aqua LC adapter OM3/OM4 PC zirconia ceramic</li> </ul>	<ul style="list-style-type: none"> <li>Blue ST adapter OS2 UPC zirconia ceramic</li> <li>Beige ST adapter OM1/OM2 PC phosphor bronze</li> <li>Aqua ST adapter OM3/OM4 PC zirconia ceramic</li> </ul>	<ul style="list-style-type: none"> <li>Blue E-2000™ adapter OS2 UPC zirconia ceramic</li> <li>Beige E-2000™ adapter OM1/OM2 PC zirconia ceramic</li> <li>Aqua E-2000™ adapter OM3/OM4 PC zirconia ceramic</li> </ul>	<ul style="list-style-type: none"> <li>Cat 5e Modular Jack, Keyconnect AX101310, black</li> <li>Cat 6+ Modular Jack, Keyconnect AX101321, black</li> <li>Cat 6A/10GX Modular Jack, Keyconnect AX102283, black</li> </ul>	<ul style="list-style-type: none"> <li>Cat 6A/10GX Modular Jack, Keyconnect Couple AX104024, black</li> </ul>
Appr. Weight Module	218 g	218 g	218 g	218 g	516 g	516 g
Protection Class	IP40	IP40	IP40	IP40	IP20	IP20
Cable Entry	3, M16 Gland	3, M16 Gland	3, M16 Gland	3, M16 Gland	–	–
Maximum Diameter Cable	10 mm	10 mm	10 mm	10 mm	4 x 7.5 mm	4 x 7.5 mm
Cable Types	Fiber cables up to 12 fi bers: loose tube, mini-breakout, breakout cables				Cat 5e unshielded, Cat 6 unshielded, Cat 6A unshielded	

Module Type and Description						
Type	Double Modules	Double Modules	Double Modules	Double Modules	Single Module	Single Module
Description	12 x SC Duplex	12 x LC Duplex	12 x ST Duplex	12 x E-2000™ Duplex	4 x RJ45 Keystone Jack, Shielded	4 x RJ45 Coupler, Shielded

Mechanical Construction						
Material	Steel					
Adapter/Keystone Types	<ul style="list-style-type: none"> <li>Blue SC adapter OS2 UPC zirconia ceramic</li> <li>Beige SC adapter OM1/OM2 PC phosphor bronze</li> <li>Aqua SC adapter OM3/OM4 PC zirconia ceramic</li> </ul>	<ul style="list-style-type: none"> <li>Blue LC adapter OS2 UPC zirconia ceramic</li> <li>Beige LC adapter OM1/OM2 PC phosphor bronze</li> <li>Aqua LC adapter OM3/OM4 PC zirconia ceramic</li> </ul>	<ul style="list-style-type: none"> <li>Blue ST adapter OS2 UPC zirconia ceramic</li> <li>Beige ST adapter OM1/OM2 PC phosphor bronze</li> <li>Aqua ST adapter OM3/OM4 PC zirconia ceramic</li> </ul>	<ul style="list-style-type: none"> <li>Blue E-2000™ adapter OS2 UPC zirconia ceramic</li> <li>Beige E-2000™ adapter OM1/OM2 PC zirconia ceramic</li> <li>Aqua E-2000™ adapter OM3/OM4 PC zirconia ceramic</li> </ul>	<ul style="list-style-type: none"> <li>Cat 5e Shielded Modular Jack, Keyconnect AX104595, metal body</li> <li>Cat 6+ Shielded Modular Jack, Keyconnect AX104596, metal body</li> <li>Cat 6A/10GX Shielded Modular Jack, Keyconnect AX104562, metal body</li> </ul>	<ul style="list-style-type: none"> <li>Cat 6A/10GX Shielded Modular Jack, Keyconnect Coupler AX104501, metal body</li> </ul>
Appr. Weight Module	450 g	450 g	450 g	450 g	636 g	636 g
Protection Class	IP40	IP40	IP40	IP40	IP20	IP20
Cable Entry	1, M20 Gland	1, M20 Gland	1, M20 Gland	1, M20 Gland	–	–
Maximum Diameter Cable	13 mm	13 mm	13 mm	13 mm	4 x 7.5 mm	4 x 7.5 mm
Maximum Diameter Cable	Fiber cables up to 24 fi bers: loose tube, mini-breakout Hybrid Fiber cable: 6 x SM + 6 x OM1, 6 x SM + 6 x OM2, 6 x SM + 6 x OM3, 6 x SM + 6 x OM4				Cat 5e shielded, Cat 6 shielded, Cat 6A shielded, Cat 7 shielded	

Accessories						
Pigtails (1 pack of 12 pigtails, 900 micron, 0.6 m in 12 different colors)	<ul style="list-style-type: none"> <li>SC/UPC SM 9/125, OS2</li> <li>SC/PC MM 62.5/125, OM1</li> <li>SC/PC MM 50/125, OM2</li> <li>SC/PC MM 50/125, OM3</li> <li>SC/PC MM 50/125, OM4</li> </ul>	<ul style="list-style-type: none"> <li>LC/UPC SM 9/125, OS2</li> <li>LC/PC MM 62.5/125, OM1</li> <li>LC/PC MM 50/125, OM2</li> <li>LC/PC MM 50/125, OM3</li> <li>LC/PC MM 50/125, OM4</li> </ul>	<ul style="list-style-type: none"> <li>ST/UPC SM 9/125, OS2</li> <li>ST/PC MM 62.5/125, OM1</li> <li>ST/PC MM 50/125, OM2</li> <li>ST/PC MM 50/125, OM3</li> <li>ST/PC MM 50/125, OM4</li> </ul>	<ul style="list-style-type: none"> <li>E-2000™/UPC SM 9/125, OS2</li> <li>E-2000™/PC MM 62.5/125, OM1</li> <li>E-2000™/PC MM 50/125, OM2</li> <li>E-2000™/PC MM 50/125, OM3</li> <li>E-2000™/PC MM 50/125, OM4</li> </ul>		
Brilliance Field Installable Connector (900 micron)	12 brilliance connectors SC: <ul style="list-style-type: none"> <li>SM 9/125, OS2, blue, AX104247</li> <li>MM 62.5/125, OM1, beige, AX104244</li> <li>MM 50/125, OM2, black, AX104245</li> <li>MM 50/125, OM3/OM4, aqua, AX104246</li> </ul>	12 brilliance connectors LC: <ul style="list-style-type: none"> <li>SM 9/125, OS2, blue, AX104243</li> <li>MM 62.5 micron, OM1, beige, AX104240</li> <li>MM 50 micron, OM2, black, AX104241</li> <li>MM 50 micron, OM3/OM4, aqua, AX104242</li> </ul>	24 brilliance connectors ST: <ul style="list-style-type: none"> <li>SM 9/125, OS2, blue, AX104251</li> <li>MM 62.5/125, OM1, beige, AX104248</li> <li>MM 50/125, OM2, black, AX104249</li> <li>MM 50/125, OM3 OM4, aqua, AX104250</li> </ul>			

## MIPP Product Configurator

Use the configured product code to order

**M I P P / J D / 1 L 1 P / 2 T 9 N / X X X X / X X X X / X X X X / X X X X / X X**

### Design/Model

**MIPP** = Modular Industrial Patch Panel

### Housing Type (Note: A double module requires two places)

X = No Housing	H = 2 x Double module fiber
A = 1 x Single module	I = 3 x Double module fiber
B = 2 x Single module	J = 1 x SM + 1 x DM fiber
C = 3 x Single module	K = 1 x SM + 2 x DM fiber
D = 4 x Single module	L = 2 x SM + 1 x DM fiber
E = 5 x Single module	M = 2 x SM + 2 x DM fiber
F = 6 x Single module	N = 3 x SM + 1 x DM fiber
G = 1 x Double module fiber	O = 4 x SM + 1 x DM fiber

Note: SM = Single module and DM = Double module

### Mounting Type

X = No Housing
W = Wall Mount Plate included
D = Standard DIN Rail

### Module Type

1 = Single module (fiber or blind)
2 = Double module (fiber or blind)
C = Single copper module

### Adapter and Keystone Type

T = ST/ST Duplex adapters	d = Shielded couplers
L = LC/LC Duplex adapters	u = Unshielded keystones
S = SC/SC Duplex adapters	s = Shielded keystones
E = E-2000™/E-2000™ Duplex adapters	N = Blind module
c = Unshielded couplers	

### Fiber Type / Category Type for Copper

1 = MM/OM1	8 = 6 x SM/OS2, 6 x OM4
2 = MM/OM2	9 = SM/OS2
3 = MM/OM3	e = Cat 5e
4 = MM/OM4	d = Cat 6
5 = 6 x SM/OS2, 6 x OM1	a = Cat 6A
6 = 6 x SM/OS2, 6 x OM2	N = Blind module
7 = 6 x SM/OS2, 6 x OM3	

### Accessories and Number of Keystones

P = Pigtails
B = Brilliance Field Installable Connectors
2 = 2 keystones/couplers
4 = 4 keystones/couplers
N = No accessories

### Description of Parts Configured:

Panel with one single module and one double module fiber:

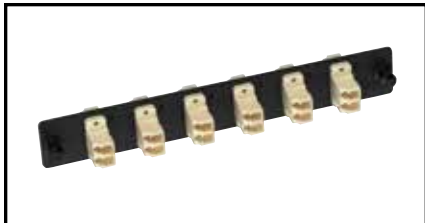
- OM1 single fiber module (three input version with 6 LC duplex adapters including pack of 12 pigtails)
- SM/OS2 double fiber module with 12 ST duplex adapters



## 19" Rackmount Patch Panels from Belden



AX100116, FiberExpress 48/96 Port (4U) Rack-mount Patch Panel



AX101729, Adapters loaded with 6 LC Duplex

### FiberExpress Patch Panels

**Features and Benefits:** Rugged and compact solution for field termination and fusion splices, all front access.

Description	Part No.
Rack Mount, 1U (capacity 2 adapter strips)	AX100041
Rack Mount, 4U (capacity: 8 adapter strips)	AX100116
Wall Mount, Small (capacity: 2 adapter strips)	AX100495
Wall Mount, Medium (capacity: 4 adapter strips)	AX100540

### Adapter Strips for FiberExpress Patch Panels

Description	Multimode	Singlemode
LC Duplex, 12 fibers	AX101729	AX101731
LC Duplex, 24 fibers	AX101741	AX100538
SC Simplex, 6 fibers	AX100092	AX100538
SC Duplex, 6 fibers	AX100094	AX101407
SC Simplex, 12 fibers	AX100084	AX100532
SC Duplex, 12 fibers	AX100098	AX101409

### KeyConnect™ Coupler Patch Panel CAT 6+ (Preloaded)

Description	Part No.
24-port, 1U, Black	AX104227
48-port, 2U, Black	AX104228

### KeyConnect™ Patch Panel CAT 6+ (Preloaded)

Description	Part No.
24 port, 1U	AX103253
48 port, 2U	AX103255

### Modular Connector Termination Tool

Description	Part No.
GIGAFLEX CONNECTION TOOL &110	AX100749

## Fiber Connectivity Solutions



Belden offers a variety of Fiber Connectivity Solutions to insure the right connection is made between Ethernet switches and other end devices. These solutions include field-installable connectors and installation kits, patch panels and adapter strips, field breakout kits and, fiber pigtailed and patchcords..

### Brilliance® Field-Installable Connectors and Installation Kits

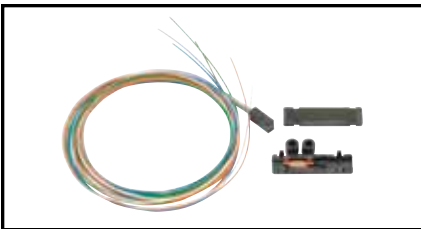
#### Features and Benefits:

Fast and Easy to install, no epoxy, no polishing, re-usable, complete installation kit with instruction video.

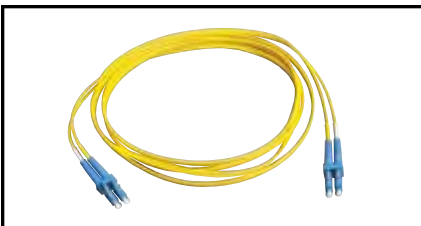
Description	Multimode OM1, 62.5µm		Multimode OM2, 50 µm		Singlemode, OS2	
	1 per package	25 per package	1 per package	25 per package	1 per package	25 per package
LC 900 µm Tight Buffer	AX104240-S1	AX104240-B25	AX104241-S1	AX104241-B25	AX104243-S1	AX104243-B25
SC 900 µm Tight Buffer	AX104244-S1	AX104244-B25	AX104245-S1	AX104245-B25	AX104247-S1	AX104247-B25



AX104271, Precision Installation Kit



AX101100, Field Breakout Kit, 6 fibers, 1 pack



AX200507, FiberExpress Duplex Patch Cord, LC Duplex - LC Duplex, Single-mode, UPC

### Installation Kits

Description	Part No.
Basic Installation Kit (Pouch, Support Handle, Installation Guide, Video)	AX104268
Field Installation Kit (Basic Kit, Fiber Preparation Tools, Field Cleaver and Visual Fault Locator)	AX104270
Precision Installation Kit (Basic Kit, Fiber Preparation Tools, Precision Cleaver and Visual Fault Locator)	AX104271

### Field Breakout Kits

For field termination of loose tube fiber cable.

Description	Part No.
6 fibers, 1/pack	AX101100
12 fibers, 1/pack	AX101101

### Fiber Pigtailed

8 in. trays are for FX Rack Mount 1U and small Wall Mount only

Description	Multimode 62.5 µm OM1	Multimode 50 µm OM2	Singlemode OS2-UPC
LC- OPEN, 2 m (6 ft), Simplex 900 µm Tight buffer	AX200657	AX200658	AX200659
SC- OPEN, 2 m (6 ft), Simplex 900 µm Tight buffer	70101714	AX200192	AX200147

### Fiber Patch Cords

Description	Multimode 62.5 µm OM1	Multimode 50 µm OM2	Singlemode OS2-UPC
LC Duplex - LC Duplex, 2 m (6 ft), Duplex Zip Cord 2.0 mm	AX200517	AX200527	AX200507
LC Duplex - LC Duplex, 3 m (10 ft), Duplex Zip Cord 2.0 mm	AX200518	AX200528	AX200508
SC Duplex - SC Duplex, 2 m (6 ft), Duplex Zip Cord 3.0 mm	AX200056	AX200084	AX203908
SC Duplex - SC Duplex, 3 m (10 ft), Duplex Zip Cord 3.0 mm	AX200057	AX200082	AX202523
ST - ST 2 m (6 ft), Duplex Zip Cord 3.0 mm	70102419	AX200341	AX200200
ST - ST 3 m (10 ft), Duplex Zip Cord 3.0 mm	70102420	AX200459	AX202089





## Industrial Ethernet Media Cord Sets, Cat5e - Bonded Pair



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 cord sets 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
<b>J424TPESTJT...M</b>	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
<b>J424THFSTJT...M</b>	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
<b>J424PVCSTJT...M</b>	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
<b>J224TPETLJT...M</b>	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
<b>J424THFTLJT...M</b>	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 24 PVC ST J T 00.3M**

**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** \_\_\_\_\_

<b>00.3M</b> = 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 quantities apply.



RJ45 to RJ45



RJ45 to M12



M12 to M12



RJ45 to M12 (Panel Receptacle)





**DataTuff® Industrial Ethernet Cord Sets (RJ45). Cat 6 4-Pair, 23 AWG – Heavy Duty Oil- & Sunlight-Resistant Black Jackets**

IP67 interface complies with the **Ethernet/IP** specification (IEC 61076-3-106 Variant 1)

**Unshielded with Solid Conductors** (ref: Belden Bonded-Pair Cable 7940A)

Cabling Rating NEC: CMR, CMX-Outdoor CEC: CMR FT4.

Belden Part No.	IP Rating	Length meters (Ft.)	Tethered Cap	Package Quantity
E600001 010S1	IP67	1 m (3.3 ft.)	Yes	1
E600002 010S1	IP67	2 m (6.6 ft.)	Yes	1
E600003 010S1	IP67	3 m (9.8 ft.)	Yes	1
E600005 010S1	IP67	5 m (16.4 ft.)	Yes	1
E600025 010S1	IP67	25 m (82 ft.)	Yes	1
E601001 010S1	IP20	1 m (3.3 ft.)	–	1
E601002 010S1	IP20	2 m (6.6 ft.)	–	1
E601003 010S1	IP20	3 m (9.8 ft.)	–	1
E601005 010S1	IP20	5 m (16.4 ft.)	–	1

**Shielded with Solid Conductors** (ref: Belden Bonded-Pair Cable 7953A)

Cabling Rating NEC: CMR, CMX-Outdoor CEC: CMR FT4.

Belden Part No.	IP Rating	Length meters (Ft.)	Tethered Cap	Package Quantity
E604001 010S1	IP67	1 m (3.3 ft.)	Yes	1
E604002 010S1	IP67	2 m (6.6 ft.)	Yes	1
E604003 010S1	IP67	3 m (9.8 ft.)	Yes	1
E604005 010S1	IP67	5 m (16.4 ft.)	Yes	1
E604025 010S1	IP67	25 m (82 ft.)	Yes	1
E605001 010S1	IP20	1 m (3.3 ft.)	–	1
E605002 010S1	IP20	2 m (6.6 ft.)	–	1
E605003 010S1	IP20	3 m (9.8 ft.)	–	1
E605005 010S1	IP20	5 m (16.4 ft.)	–	1

**DataTuff Industrial Ethernet Ruggedized Cord Sets with Metal Body (RJ45). Cat6 4-Pair, 23 AWG – Heavy Duty Oil- & Sunlight-Resistant, Black Jackets**

**Unshielded with Solid Conductors** (ref: Belden Bonded-Pair Cable 7940A)

Cable Rating NEC: CMR, CMX-Outdoor CEC: CMR FT4.

Belden Part No.	IP Rating	Length meters (Ft.)	Tethered Cap	Package Quantity
R601001 010S1	IP20	1 m (3.3 ft.)	–	1
R601002 010S1	IP20	2 m (6.6 ft.)	–	1
R601003 010S1	IP20	3 m (9.8 ft.)	–	1
R601005 010S1	IP20	5 m (16.4 ft.)	–	1

**Shielded with Solid Conductors** (ref: Belden Bonded-Pair Cable 7953A)

Cable Rating NEC: CMR, CMX-Outdoor CEC: CMR FT4.

Belden Part No.	IP Rating	Length meters (Ft.)	Tethered Cap	Package Quantity
R605001 010S1	IP20	1 m (3.3 ft.)	–	1
R605002 010S1	IP20	2 m (6.6 ft.)	–	1
R605003 010S1	IP20	3 m (9.8 ft.)	–	1
R605005 010S1	IP20	5 m (16.4 ft.)	–	1

**DataTuff Industrial Ethernet Cord Sets (RJ45). Cat 5e 4-Pair,  
24 AWG – Heavy Duty Oil- & Sunlight-Resistant Black Jackets**

IP67 interface complies with the **Ethernet/IP** specification (IEC 61076-3-106 Variant 1)

**Unshielded with Solid Conductors** (ref: Belden Bonded-Pair Cable 7923A)

Cable Rating NEC: CMR, CMX-Outdoor CEC: CMR FT4. MSHA

Belden Part No.	IP Rating	Length meters (Ft.)	Tethered Cap	Package Quantity
E500001 010S1	IP67	1 m (3.3 ft.)	Yes	1
E500002 010S1	IP67	2 m (6.6 ft.)	Yes	1
E500003 010S1	IP67	3 m (9.8 ft.)	Yes	1
E500005 010S1	IP67	5 m (16.4 ft.)	Yes	1
E500025 010S1	IP67	25 m (82 ft.)	Yes	1
E501001 010S1	IP20	1 m (3.3 ft.)	–	1
E501002 010S1	IP20	2 m (6.6 ft.)	–	1
E501003 010S1	IP20	3 m (9.8 ft.)	–	1
E501005 010S1	IP20	5 m (16.4 ft.)	–	1

**Unshielded with Stranded Conductors** (ref: Belden Bonded-Pair Cable 7924A)

Cable Rating NEC: CMR, CMX-Outdoor CEC: CMR FT4

Belden Part No.	IP Rating	Length meters (Ft.)	Tethered Cap	Package Quantity
E502001 010S1	IP67	1 m (3.3 ft.)	Yes	1
E502002 010S1	IP67	2 m (6.6 ft.)	Yes	1
E502003 010S1	IP67	3 m (9.8 ft.)	Yes	1
E502005 010S1	IP67	5 m (16.4 ft.)	Yes	1
E502025 010S1	IP67	25 m (82 ft.)	Yes	1
E503001 010S1	IP20	1 m (3.3 ft.)	–	1
E503002 010S1	IP20	2 m (6.6 ft.)	–	1
E503003 010S1	IP20	3 m (9.8 ft.)	–	1
E503005 010S1	IP20	5 m (16.4 ft.)	–	1

**Shielded with Solid Conductors** (ref: Belden Bonded-Pair Cable 7953A)

Cable Rating NEC: CMR, CMX-Outdoor CEC: CMR FT4.

Belden Part No.	IP Rating	Length meters (Ft.)	Tethered Cap	Package Quantity
E506001 010S1	IP67	1 m (3.3 ft.)	Yes	1
E506002 010S1	IP67	2 m (6.6 ft.)	Yes	1
E506003 010S1	IP67	3 m (9.8 ft.)	Yes	1
E506005 010S1	IP67	5 m (16.4 ft.)	Yes	1
E506025 010S1	IP67	25 m (82 ft.)	Yes	1
E507001 010S1	IP20	1 m (3.3 ft.)	–	1
E507002 010S1	IP20	2 m (6.6 ft.)	–	1
E507003 010S1	IP20	3 m (9.8 ft.)	–	1
E507005 010S1	IP20	5 m (16.4 ft.)	–	1



## Modular Jacks (RJ45). Cat 6. IP67

IP67 interface complies with the **Ethernet/IP** specification (IEC 61076-3-106 Variant 1)

Belden Part No.	Description	Tethered Cap	Package Quantity
E100601 010S1	UTP, Black	Yes	1
E100602 010S1	FTP, Black	Yes	1

## Field-Installable Metal Body Ruggedized Plug (RJ45). Cat 6. IP20

Belden Part No.	Description	Package Quantity
R301601 000S1	UTP/STP, T568A Plug	1
R301602 000S1	UTP/STP, T568B Plug	1

## Modular Jacks (RJ45). Cat 5e. IP67

IP67 interface complies with the **Ethernet/IP** specification (IEC 61076-3-106 Variant 1)

Belden Part No.	Description	Tethered Cap	Package Quantity
E100501 010S1	UTP, Black	Yes	1
E100502 010S1	FTP, Black	Yes	1

## Plug Kits (RJ45). Cat 5e. IP67

IP67 interface complies with the **Ethernet/IP** specification (IEC 61076-3-106 Variant 1)

Belden Part No.	Description	Tethered Cap	Package Quantity
E300501 010S1	UTP, Black	Yes	1
E300502 010S1	FTP, Black	Yes	1

## Stainless Steel Faceplates. IP67

Belden Part No.	Description	Package Quantity
E200001 000S1	Single gang, 1-port	1
E200002 000S1	Single gang, 2-port	1
E200004 000S1	Double gang, 4-port	1

## Surface Mount Boxes. IP67

Surface Mount Box Dimensions: 12.8 x 12.8 x 6.7 cm deep (5.05" x 5.05" x 2.625" deep)

Belden Part No.	Description	Package Quantity
E200101 009S1	1-port, White/Stainless Steel Cover	1
E200102 009S1	2-port, White/Stainless Steel Cover	1
E200103 009S1	3-port, White/Stainless Steel Cover	1
E200104 009S1	4-port, White/Stainless Steel Cover	1

## Tools

Belden Part No.	Description	Package Quantity
E400001 006S1	Hand tool to crimp unshielded (UTP) and shielded (FTP) RJ45 plugs. Black with Blue handle	1
E400003 008S1	Cable stripper, Gray	1
AX100749	Punch-down connecting tool	1
C0054642	Punch-down connecting tool pouch	1

## Belden DataTuff Connectivity Solutions

Belden DataTuff Connectivity products are built specifically for use in mission-critical and harsh environments. They include:

- **Cord Sets (RJ45)**  
Cat 6 or Cat 5e UTP or FTP with solid 24 AWG conductors and industrial-grade sunlight/oil resistant jackets. Suitable for use in IP67 or IP20 installations.
- **Modular Jacks (RJ45)**  
Cat 6 or Cat 5e for UTP or FTP. Suitable for use in IP67 installations.
- **Plug Kits (RJ45)**  
Cat 5e UTP or FTP. Suitable for use in IP67 installations.
- **Metal Body Field-Installable Plug**  
Cat6 UTP or FTP.



IP67 Cord Set



IP20 Cord Set



IP67 Modular Jack



IP67 Plug Kit



Metal Body Field-Installable Plug

## Belden DataTuff Cabling Accessories

Belden offers industrial-grade faceplates and surface mount boxes:

- **Stainless Steel Faceplates**  
1- or 2-Port single-gang or 4-Port double-gang. Suitable for use in IP67 installations.
- **Surface Mount Boxes**  
1-, 2-, 3-, or 4-Port with Stainless Steel Covers. Suitable for use in IP67 installations.



IP67 Stainless Steel Faceplates



IP67 Surface Mount Box

## Belden DataTuff Tools

Belden provides the following easy-to-use, highly durable tools:

- **Crimping Hand Tool**  
1- or 2-Port single-gang or 4-Port double-gang. Suitable for use in IP67 installations.
- **Cable Strippers (Blue)**  
(Black with Blue handle) that crimps either UTP or FTP RJ45 plugs.
- **Punch Down Connecting Tool and Punch**



Crimping Tool



Stripping Tool



Punch-down Connecting Tool

## Hirschmann Standard D-coded M12 Connectors

Field attachable Industrial ETHERNET M12 connector "D"-coded according IEC 61076-2-101.

Type	Order no.	Contacts
EM12S OCTOPUS	934 445-001	4



Industrial ETHERNET M12 socket, "D"-coded according IEC 61076-2-101 mounting thread with connection leads.

Type	Order no.	Contacts
EF12M OCTOPUS	934 450-021	4



Bulkhead M12 connector "D"-coded according IEC 61076-2-101 Amendment 1 to RJ45.

Type	Order no.	Contacts
EF12RJ45 OCTOPUS	934 498-001	4



Industrial ETHERNET M12 socket, "D"-coded according IEC 61076-2-101 for combined front panels and circuit board installation

Type	Order no.	Contacts
EF12LW OCTOPUS	934 451-521	4
EF12L OCTOPUS	934 451-021	4

