BELDEN

SENDING ALL THE RIGHT SIGNALS

NP 262

Belden® Industrial Ethernet Connectivity

Belden DataTuff® IP67 and IP20 Cord Sets, IP67 Modular Jacks, Plug Kits, Surface Mount Boxes and Faceplates complement Belden's superior-performing Industrial Ethernet Unshielded and Shielded Twisted Pair Cables with Bonded-Pair Technology.

Belden Now Offers Industrial Ethernet Cabling End-to-End Solutions

Commercial Ethernet, which was developed well over 30 years ago, is today the most widely installed LAN standard since it is used in a majority of the world's LAN-connected PCs and workstations. And as the technology has evolved in terms of better overall performance and faster speeds, so has Ethernet's appropriateness for the industrial environment.

Industrial Ethernet provides a common physical media among the various process/manufacturing devices plus it seamlessly integrates the data flow between the front office and the plant floor.

And although Industrial Ethernet Cabling is based upon the same standards as commercial Ethernet technology (ANSI/TIA/EIA-568B), the two environments couldn't differ more. The office-type environment offers its cabling system a relative safe harbor, but the industrial world can present very harsh and hazardous environmental conditions, meaning there's a real risk in bringing commercial-type cabling and connectivity products into the industrial landscape.

There's a better way – with cabling system components designed specifically for the industrial environment: Belden DataTuff Industrial Ethernet Cabling and Connectivity Solutions.

Belden's DataTuff products are built for mission critical applications in harsh environments. Belden's sealed IP67-rated products are designed for use in factory and process areas in unprotected and outdoor environments. They are resistant to ingress of dust, moisture, water, oil and chemicals exposure.

Belden's non-sealed, IP20-rated cord sets are designed for use inside protected enclosures, control rooms, etc., but may be subjected to harsh conditions such as extreme temperatures, EMI/RFI and vibration. *(See IP Enclosure Ratings Table.)*

Belden DataTuff Connectivity Solutions

Belden now offers the following DataTuff connectivity products:

- Cord Sets (RJ45) Cat 5e UTP or FTP. Solid or Stranded 24 AWG conductors. Industrial Grade Sunlight/Oil Resistant jackets. Suitable for use in IP67 or IP20 installations.

- Modular Jack (RJ45). Cat 5e UTP or FTP. Suitable for use in IP67 installations.

- Plug Kits (RJ45). Cat 5e UTP or FTP. Suitable for use in IP67 installations.

Accessories include:

- 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. Stainless Steel Cover. Suitable for use in IP67 installations.

- Hand tool to crimp UTP and FTP RJ45 plugs. Cable Stripper. Punch-down connecting tool and tool pouch.

Belden DataTuff
Industrial Ethernet Cables

Belden also offers a full line of UTP and FTP DataTuff Cables that feature patented Bonded-Pair Technology. The Bonded-Pair technology affixes the conductor insulation of the cable pairs along their longitudinal axes to ensure that no performance-robbing gaps can develop between the conductor pairs. Since no gaps can occur, and the conductor-to-conductor spacing, or centricity, is always uniform, the cable offers excellent and consistently reliable electrical performance –

even after the cable has been subjected to the bending, pulling and twisting that is inherent in the installation process. Belden calls this unique after-installation performance capability Installable Performance.®

With Quality Built-in

Belden DataTuff cabling products are routinely manufactured to the industry's highest standards of quality, utilizing the most advanced equipment systems, controls and processes. In fact, Belden has long been a pioneer in production processes, such as statistical process control (SPC), that have become industry standards.

IP Enclosure Ratings

The IP Code defined in International Standard IEC 60529 classifies a component's level of protection against the intrusion of solid objects or dust, accidental contact, and water. The rating consists of the letters IP (sometimes interpreted as "ingress protect rating" or "international protection rating"), followed by two numbers and an optional letter. The numbers indicate conformity with the conditions summarized in the tables below. Where there is no protection rating with regard to one of the criteria, the number is replaced with the letter X.

First Number

The first number indicates the level of protection that the enclosure provides against access to hazardous parts (i.e., electrical conductors, moving parts) and the ingress of solid foreign objects.

Second Number

Protection of the equipment inside the enclosure against harmful ingress of water.

Level	Object Size Protected Against	Details
0	—	No protection against contact and ingress of objects.
1	>50 mm	Any large surface of the body, such as the back of a hand, but no protection against deliberate contact with a body part.
2	>12.5 mm	Fingers or similar objects.
3	>2.5 mm	Tools, thick wires, etc.
4	>1 mm	Most wires, screws, etc.
5	Dust protected	Ingress of dust is not entirely prevented, but it must not enter in sufficient quantity to interfere with the satisfactory operation of the equipment; complete protection against contact.
6	Dust tight	No ingress of dust; complete protection against contact.

Level	Protected Against	Details
0	Not protected	—
1	Dripping water	Dripping water (vertically falling drops) shall have no harmful effect.
2	Dripping water when tilted up to 15°	Vertically dripping water shall have no harmful effect when the enclosure is tilted at an angle up to 15° from its normal position.
3	Spraying water	Water falling as a spray at any angle up to 60° from the vertical shall have no harmful effect.
4	Splashing water	Water splashing against the enclosure from any direction shall have no harmful effect.
5	Water jets	Water projected by a nozzle against enclosure from any direction shall have no harmful effects.
6	Powerful water jets	Water projected in powerful jets against the enclosure from any direction shall have no harmful effects.
7	Immersion up to 1m	Ingress of water in harmful quantity shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time (up to 1m of submersion).
8	Immersion beyond 1m	The equipment is suitable for continuous immersion in water under conditions which shall be specified by the manufacturer. *Note: Normally, this will mean that the equipment is hermetically sealed. However, with certain types of equipment, it can mean that water can enter but only in such a manner that produces no harmful effects.*

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

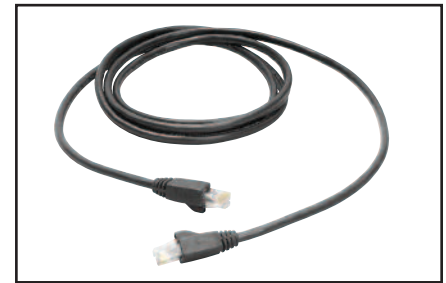| Belden Part No.	IP Rating	Length meters (Ft.)	Tethered Cap	Standard Package Quantity (Pieces)
E500001 010B50	IP67	1 m (3.3 ft.)	Yes	50
E500002 010B40	IP67	2 m (6.6 ft.)	Yes	40
E500003 010B32	IP67	3 m (9.8 ft.)	Yes	32
E500005 010B24	IP67	5 m (16.4 ft.)	Yes	24
E500025 010B6	IP67	25 m (82 ft.)	Yes	6
E501001 010B70	IP20	1 m (3.3 ft.)	–	70
E501002 010B50	IP20	2 m (6.6 ft.)	–	50
E501003 010B36	IP20	3 m (9.8 ft.)	–	36
E501005 010B30	IP20	5 m (16.4 ft.)	–	30

IP67 Cord Set

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	Standard Package Quantity (Pieces)
E502001 010B50	IP67	1 m (3.3 ft.)	Yes	50
E502002 010B40	IP67	2 m (6.6 ft.)	Yes	40
E502003 010B32	IP67	3 m (9.8 ft.)	Yes	32
E502005 010B24	IP67	5 m (16.4 ft.)	Yes	24
E502025 010B6	IP67	25 m (82 ft.)	Yes	6
E503001 010B70	IP20	1 m (3.3 ft.)	–	70
E503002 010B50	IP20	2 m (6.6 ft.)	–	50
E503003 010B36	IP20	3 m (9.8 ft.)	–	36
E503005 010B30	IP20	5 m (16.4 ft.)	–	30

IP20 Cord Set

Shielded with Solid Conductors (ref: Belden Bonded-Pair Cable 7929A)
Cable Rating NEC: CMR, CMX-Outdoor CEC: CMR FT4. MSHA

Belden Part No.	IP Rating	Length meters (Ft.)	Tethered Cap	Standard Package Quantity (Pieces)
E504001 010B50	IP67	1 m (3.3 ft.)	Yes	50
E504002 010B40	IP67	2 m (6.6 ft.)	Yes	40
E504003 010B32	IP67	3 m (9.8 ft.)	Yes	32
E504005 010B24	IP67	5 m (16.4 ft.)	Yes	24
E504025 010B6	IP67	25 m (82 ft.)	Yes	6
E505001 010B70	IP20	1 m (3.3 ft.)	–	70
E505002 010B50	IP20	2 m (6.6 ft.)	–	50
E505003 010B36	IP20	3 m (9.8 ft.)	–	36
E505005 010B30	IP20	5 m (16.4 ft.)	–	30

Shielded with Stranded Conductors (ref: Belden Bonded-Pair Cable 7939A)
Cable Rating NEC: CMR, CMX-Outdoor CEC: CMR FT4

Belden Part No.	IP Rating	Length meters (Ft.)	Tethered Cap	Standard Package Quantity (Pieces)
E506001 010B50	IP67	1 m (3.3 ft.)	Yes	50
E506002 010B40	IP67	2 m (6.6 ft.)	Yes	40
E506003 010B32	IP67	3 m (9.8 ft.)	Yes	32
E506005 010B24	IP67	5 m (16.4 ft.	Yes	24
E506025 010B6	IP67	25 m (82 ft.)	Yes	6
E507001 010B70	IP20	1 m (3.3 ft.)	–	70
E507002 010B50	IP20	2 m (6.6 ft.	–	50
E507003 010B36	IP20	3 m (9.8 ft.)	–	36
E507005 010B30	IP20	5 m (16.4 ft.)	–	30

IP67 Modular Jack

IP67 Plug Kit

IP67 Stainless Steel Faceplates

IP67 Surface Mount Box

Crimp tool

Stripping tool
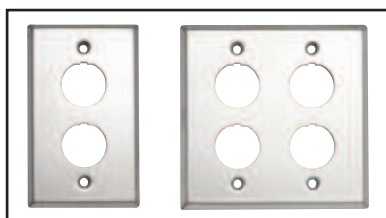

Punch-down Connecting Tool

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	Carton Quantity
E100501 010B25	UTP, Black	Yes	25
E100502 010B25	FTP, Black	Yes	25

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	Standard Package Quantity
E300501 010B25	UTP, Black	Yes	25
E300502 010B25	FTP, Black	Yes	25

Stainless Steel Faceplates. IP67

Belden Part No.	Description	Standard Package Quantity
E200001 000B25	Single gang, 1-port	25
E200002 000B25	Single gang, 2-port	25
E200004 000B25	Double gang, 4-port	25

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	Standard Package Quantity
E200101 009B8	1-port, White/Stainless Steel Cover	8
E200102 009B8	2-port, White/Stainless Steel Cover	8
E200103 009B8	3-port, White/Stainless Steel Cover	8
E200104 009B8	4-port, White/Stainless Steel Cover	8

Tools

Belden Part No.	Description	Standard Package Quantity
E400001 005S1	Hand tool to crimp unshielded (UTP) and shielded (FTP) RJ45 plugs, Black with Green handle	1
E400003 008S1	Cable stripper, Gray	1
AX100749	Punch-down connecting tool	1
C0054642	Punch-down connecting tool pouch	1

FTP = Foil Shielded Twisted Pairs • UTP = Unshielded Twisted Pairs

Belden also offers a complete line of commercial Copper and Fiber cabling and connectivity solutions.

Complete information for the entire Belden DataTuff Industrial Ethernet line is available at www.belden.com