



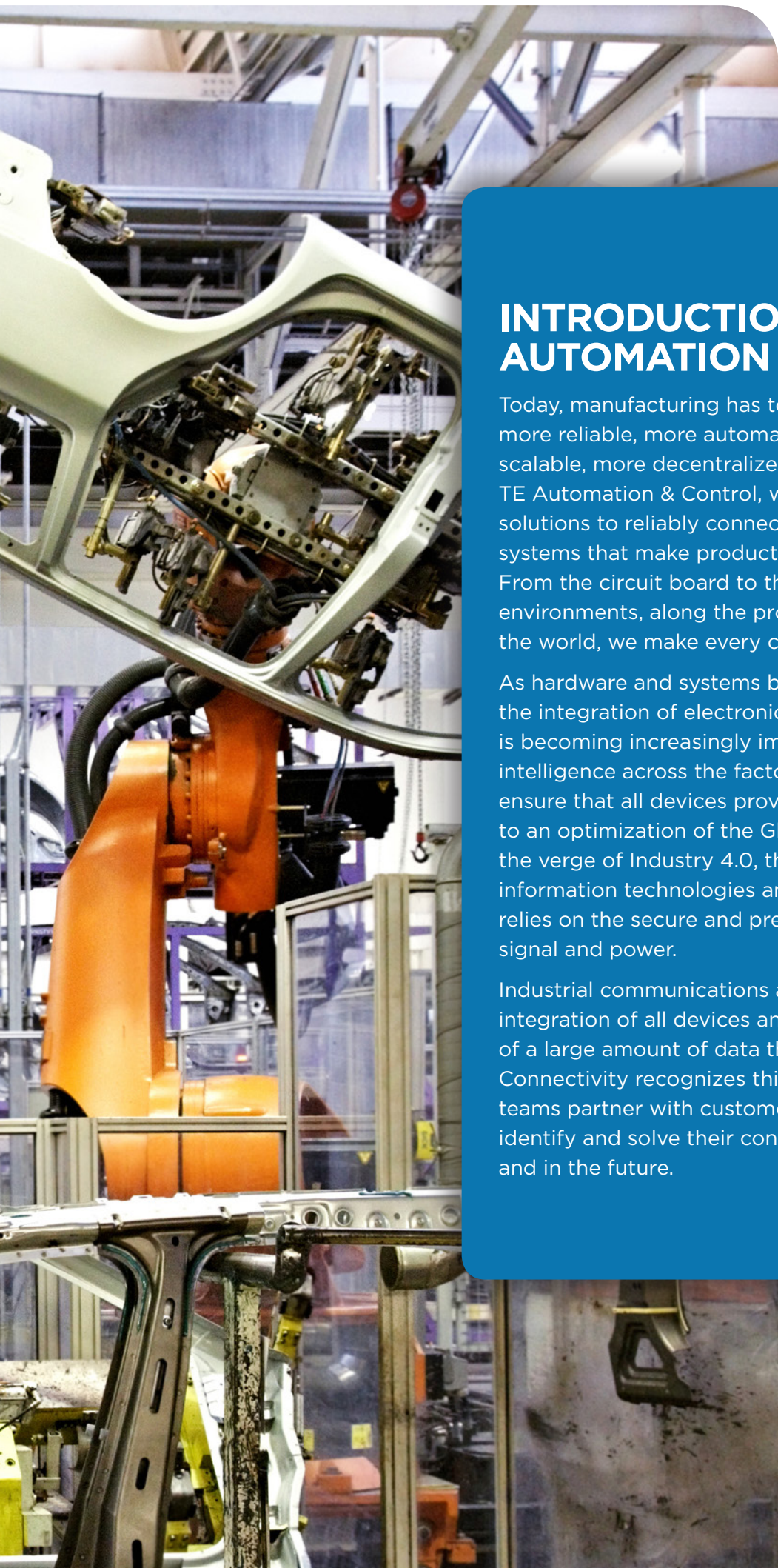
INDUSTRIAL COMMUNICATIONS

Networked manufacturing environments enable seamless communication, as well as greater speed and efficiency. In addition to data transfer among equipment on the factory floor, information must be shared throughout the entire production environment. Having access to real-time data regarding productivity and throughput empowers sound and immediate decision-making throughout your entire organization.

TE's Industrial Communications solutions play a critical role in driving the efficiency of many manufacturing processes, safely and reliably.

EVERY CONNECTION COUNTS


TE
connectivity
INDUSTRIAL



INTRODUCTION OF AUTOMATION & CONTROL

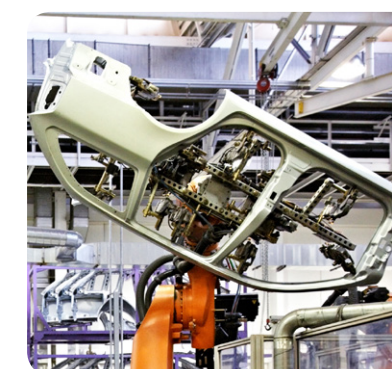
Today, manufacturing has to be more of everything: more reliable, more automated, more flexible, more scalable, more decentralized. More connected. At TE Automation & Control, we deliver the innovative solutions to reliably connect, power and control the systems that make production more productive. From the circuit board to the harshest working environments, along the production floor and across the world, we make every connection count.

As hardware and systems become more advanced, the integration of electronics in industrial automation is becoming increasingly important. Embedding intelligence across the factory floor, for example, will ensure that all devices provide realtime data leading to an optimization of the Global Supply Chain. On the verge of Industry 4.0, the migration of more information technologies and applications in the field relies on the secure and predictable transport of data, signal and power.

Industrial communications are key to a seamless integration of all devices and to the reliable transport of a large amount of data through the network. TE Connectivity recognizes this trend and our engaged teams partner with customers around the world to identify and solve their connectivity challenges—now and in the future.

TABLE OF CONTENT

TE'S INDUSTRIAL COMMUNICATIONS PRODUCTS	4~5
INDUSTRIAL MINI I/O CONNECTOR	6
INDUSTRIAL RJ45 CONNECTORS	7
INDUSTRIAL USB CONNECTORS	8
CABLE ASSEMBLIES	9
M8/M12 CONNECTOR	10



TE'S INDUSTRIAL COMMUNICATIONS PRODUCTS

TE Product Group		Connection Type		Environment		Housing Options						Application		Installation
		Wire-to-Board	Wire-to-Wire	IP20	IP 65/67	Metal	Plastic	Push/Pull	Latching	Screw	1/4 Turn	Data	Signal	Field Installable
	Industrial Mini I/O													
	Type I	●					●		●			●		●
	Type II	●					●		●			●		●
	Industrial RJ45													
	Industrial Ethernet	●		●			●					●		●
	ODVA (Variant 1)		●	●	●	●	●				●	●		●
	CPC Product Family	●	●		●	●	●				●	●		●
	Push/Pull (Variant 14)	●	●		●	●	●	●				●		●
	Screw Type (Variant 3)	●			●		●			●		●		●
	Industrial USB Series													
	USB Latching IP20	●		●		●	●		●			●		
	Circular		●		●	●	●				●	●		
	M8/M12													
	Panel Mount/Board Mount	●			●	●	●			●		●	●	
	Y-Adapters	●	●		●		●			●		●	●	
	Cable Assemblies	●	●		●		●			●		●	●	
	M8/M12 connector	●	●		●	●	●			●		●	●	●

INDUSTRIAL MINI I/O CONNECTOR

The Industrial Mini I/O connector system is a small, compact, latching, wire-to-board I/O interface that is now also available as a vertical version, enabling you to safely and reliably connect in all angles. TE's Industrial Mini I/O solution allows you to save up to 75 percent of space compared to conventional RJ45 plugs, giving you the flexibility to use your limited space on the PCB more efficiently.



PRODUCT OVERVIEW

- Small, compact size
- Vertical Mini IO,
- Latching feature to meet high vibration environment
- SMT and Through Hole available,
- Two unique interfaces to prevent improper connection
- Cat 5E/Gigabit Ethernet support

PRODUCT FEATURES

- Mechanical**
- Operating Temperature: -40 °C ~ +85 °C
 - Durability: 1500 Cycles
 - Cable retention force: 98 N
- Electrical**
- 30 V rated
 - Current rating: 0.5 A
- Materials**
- Shell: Copper alloy
 - Contact: Copper alloy
 - Housing: Thermoplastic

- Product Dimensions**
- SMT Type (mm): 15.85 x 7.4 x 11.41
 - Through Hole Type (mm): 19 x 7.4 x 12.35

BENEFITS

- Less downtime and reliable connections due to vibration resistance
- Space saving of up to 75% and increased design flexibility
- Polarized with two options to prevent mis-mating

PART NUMBERS

Part Number	Description
1981080-1	INDUSTRIAL MINI I/O HDR ASSY, Right Angle, SMT, Type I
1981386-1	INDUSTRIAL MINI I/O HDR ASSY, Right Angle, SMT, Type II
2013595-1	Plug Kit Mini I/O Plug Kit Type I, Black Latch
2040008-1	Plug Kit Mini I/O Plug Kit Type II, Black Latch
1971885-1	INDUSTRIAL MINI I/O HDR ASSY, Vertical, SMT, Type I
1971885-2	INDUSTRIAL MINI I/O HDR ASSY, Vertical, SMT, Type II
1971886-1	INDUSTRIAL MINI I/O HDR ASSY, Vertical, THR, Type I
1971886-2	INDUSTRIAL MINI I/O HDR ASSY, Vertical, THR, Type II
2040537-1	INDUSTRIAL MINI I/O H-HDR ASSY, Right angle, THR, Type I
1-2040537-1	INDUSTRIAL MINI I/O H-HDR ASSY, Right angle, THR, Type II
1971153-1	INDUSTRIAL MINI I/O BYPASS CONN TYPE I

APPLICATIONS

- Industrial Communications
- Motion & Drives
- PLC's
- Robotics

More information at:
www.te.com/products/mini-io

INDUSTRIAL RJ45 CONNECTORS

The Industrial Ethernet RJ45 connectors from TE Connectivity offer a ruggedized design for use in Industrial Ethernet applications and are equipped with a robust termination technology. With the field installation RJ45 Modular Plug Series, this solution is capable of a data transmission rate of 100 Mbit/s (4 pos.) up to 1000 Mbit/s (8 pos.). Designed for use in Industrial environments, the connector features rugged locks with the jack, while an optional supporting frame allows a secondary locking, resulting in a secure interconnection.



Equipped with a fast termination technology, utilizing the company's "common core" design in the RJ45 Modular Plug Series, this solution can be applied in the field without the need for any tools, significantly reducing installation time and costs. This fast termination technology is used in all of TE's field installable connector series, including IP20, ODVA and push-pull connectors.

PRODUCT OVERVIEW

- Field-installable modular plugs
- Installation without tools
- Common core insert
- Ruggedized design for use in Industrial Ethernet applications

PRODUCT FEATURES

- Mechanical**
- Metallic locking tab for locking
 - Polarized for proper mating
 - Operating Temperature: -40°C to +70°C
- Electrical**
- Rated voltage : 24V DC
 - Rated current : 500mA per pin

- Materials**
- Housing : UL approved
 - Pass through modular jack : UL approved
 - UV resistant housing material

BENEFITS

- IDC version helps to reduce complexity of installation process
- IP67 version helps protect the equipment from water and dust
- Bulkhead receptacle mounts to either inside or outside of the panel cutout

PART NUMBERS

Part Number	Description
Ind. RJ45 (IP20)	
1903526-1	IE RJ45 CONNECTOR IP20 4POS 180DEG
1903527-1	IE RJ45 CONNECTOR, IP20, 8POS, 180DEG
Ind. RJ45 (Variant 14)	
1987004-1	RJ45 PLUG, PUSH-PULL, ASSY, CAT5, SHIELDED, 4POS
1987004-2	RJ45 PLUG, PUSH-PULL, ASSY, CAT5, SHIELDED, 8POS
Ind. RJ45 (Variant 1)	
1738607-4	KIT, PLUG, STRANDED WIRE, Shielded
1954656-2	KIT, PLUG, Common Core, 8POS
1811689-1	KIT, Receptacle, 8 POS Shielded

APPLICATIONS

- Industrial Communications
- Motion & Drives
- PLC's
- Robotics
- Process automation
- Machinery
- Diagnostic equipment

Available as:

- IP20 (regular and with 45 degree angle)
- IP 65/67 Push Pull
- IP 65/67 ODVA compliant (plastic and metal shell version)

INDUSTRIAL USB CONNECTORS

The industrial USB connectors from TE Connectivity are ideal for all industrial USB applications where a high locking force or a sealed design for the use in industrial applications is required. With the introduction of a new IP20 series of industrial USB connectors that feature an integrated locking mechanism with audible and tactile feedback, TE offers an excellent interconnect solution for internal USB cable routing. The newly designed locking feature helps prevent accidental pull out of the plug, which enables customers to secure a cable internally without having to worry about the plug coming loose during transit and use.

A sealed and highly reliable version (IP65/IP67) of the industrial circular USB connectors is also available. This rugged USB connector is designed for use in harsh environments and features a quick-connect bayonet coupling mechanism.



PRODUCT OVERVIEW

- USB 2.0 standard, USB type A & B connection system
- Rugged IP20 and Sealed IP 67 solution
- Integrated locking mechanism provides excellent strong lock strength
- Protective cover available for the receptacles
- Plastic and metal housing

PRODUCT FEATURES

- Mechanical**
- Operating Temp. -55 °C to +85 °C
- Electrical**
- Voltage Rating — 30VAC (rms)
 - Data Rate – 480Mbits/s
- MATERIALS**
- Housing – High temperature thermoplastic, UL94V-O, black
 - Contact – Brass, gold plated on contact area, nickel underplated
 - Shield – Steel, nickel plated, copper underplated

BENEFITS

- Locking feature provides reliable and safe connections in all conditions for less downtime

PART NUMBERS

Latching USB connector:

Part Number	Description
2013798-1	Industrial USB Plug Conn Kit
1903814-1	Industrial USB Rec Assy R/A 1Row
1903815-1	Industrial USB Rec Assy R/A 2Row
2083112-2	Cable Assy Ind. USB Type A (1m)
2083112-3	Cable Assy Ind. USB Type A (2m)
2083112-4	Cable Assy Ind. USB Type A (3m)
2083112-5	Cable Assy Ind. USB Type A (5m)

Circular USB connector:

Part Number	Description
1954637-1	Plug Kit, USB Series A
1954640-1	Plug Kit, USB Series B
1954643-1	Recpt Kit, Series A to Series A
1903815-1	Industrial USB Rec Assy R/A 2Row
2058362-1	Plug Kit, USB Series A, Metal Shell
2058363-1	Plug Kit, USB Series B, Metal Shell
2058364-1	Recpt. Kit, Series A to A
2058365-1	Recpt Kit, Series B to A

APPLICATIONS

- Human Machine Interface (HMI) – Panels
- Barcode Readers
- Machine Vision
- Mass Storage
- Printers

More information at:
www.te.com/products/industrial-USB-connectors

CABLE ASSEMBLIES

TE’s Industrial Communications solution includes standard length Industrial Ethernet cable assemblies. The PVC jacketed cable assemblies are available in 3 through 20 meter lengths. Options are available for IP20, field installable and IP67 versions.



PRODUCT OVERVIEW

- PVC jacketed cable
- Rated to 250 V
- Shielded and non-shielded options
- Category 5e
- IP20 and IP67 options
- Standard lengths of 3, 5, 7,10,15 and 20 meters

PRODUCT FEATURES

- Mechanical**
- Operating Temp. -55 °C to +85 °C
- Electrical**
- Voltage Rating — 30VAC (rms)
 - Data Rate – 480Mbits/s
- MATERIALS**
- Housing – High temperature thermoplastic, UL94V-O, black
 - Contact – Brass, gold plated on contact area, nickel underplated
 - Shield – Steel, nickel plated, copper underplated

BENEFITS

- Complete Industrial Communications portfolio with standard length Industrial Ethernet cable assemblies from 3 through 20 meters
- Reliable connections with field installable IP20 and IP67 versions

PART NUMBERS

Part Number	Description
Ind. Ethernet	
X-960927-X	4 pos. Ethernet cable assembly IP20, solid
X-960928-X	4 pos. Ethernet cable assembly, IP20, stranded
X-960929-X	8 pos. Ethernet cable assembly, IP20, stranded
X-960930-X	8 pos. AWG26 Ethernet cable assembly Mod Plug
X-960931-X	4 pos. push pull Ethernet cable assembly stranded
X-960932-X	8 pos. push pull Ethernet cable assembly stranded
Ind. Mini I/O Typ I	
2083108-X	Mini IO Type I, double ended
2083109-X	Mini IO Type I, single ended
Ind. Mini I/O Typ II	
2083110-X	Mini IO Type II, double ended
2083111-X	Mini IO Type II, double ended
Ind. USB	
2083112-X	Industrial USB double ended
2083113-X	Industrial USB single ended
RJ45 to MINI IO Type I	
1986524-X	RJ45 to MINI IO Type I
RJ45 to MINI IO Type II	
1986530-X	RJ45 to MINI IO Type II

APPLICATIONS

- Industrial Communications

M8/M12 CONNECTOR

TE Connectivity's M8/M12 Connector System for machine industrial automation and control applications provides a solution that safely and reliably ensures the communication in industrial environments. This connector system also finds applications outside of its traditional industries where a compact reliable connection system with environmental protection is required. TE's solution includes an extensive connector range of PCB headers, cable assemblies and IO boxes, and provides users with an interface that supports higher bandwidth needs - meeting the requirements of up to 10 Gb/s.



TE's broad product portfolio provides customers with shielded and unshielded cable assembly options in both Cat5e and Cat6A cable types. For rewiring on site a range of field serviceable connectors are provided, while the T and Y adaptors facilitate simple splitting of control signals, allowing versatile systems to be quickly and easily established. Additional styles are available on request including alternative mounting arrangements for panel mount connectors and double ended cable assemblies.

PRODUCT OVERVIEW

- Easily installable connector system including connectors, I/O modules and Cable assemblies
- Alternative mount arrangements for solder cup or PCB
- Panel Mount and distribution version available
- Shield reliable

PRODUCT FEATURES

Mechanical

- IP 67 protection level
- Operating temperature: -25°C to +85°C
- Retention force: 4 to 5 ways max.15N
8 ways: max.30N

Electrical

- Rated voltage:
4-pins: 250V, 5-pins: 60V, 8-pins: 30V
- Current-carrying capacity

A-coding	4 to 5 ways	=4A
	8 ways	=2A
B-coding	5 ways	=4A
D-coding	4 ways	=4A

Materials

- Brass substrate
- Alternative gold or silver finish

Standards/Specifications

- 108-104160

BENEFITS

- M8/M12 Connector System provides full solution including quick turn, prototype cable assemblies

PART NUMBERS

Part Number	Description
3-2271110-1	M12 A Code, Straight, 4P, Male
4-2271110-1	M12 A Code, Straight, 5P, Male
5-2271110-2	M12 A Code, Straight, 8P, Male
3-2271116-1	M12 A Code, Straight, 4P, Female
4-2271116-1	M12 A Code, Straight, 5P, Female
5-2271116-2	M12 A Code, Straight, 8P, Female
3-2271114-1	M12 D Code, Straight, 4P, Male
3-2271120-1	M12 D Code, Straight, 4P, Female
3-2271134-1	M12 A Code, Rear Mount, 4P, Male
4-2271134-1	M12 A Code, Rear Mount, 5P, Male
5-2271134-1	M12 A Code, Rear Mount, 8P, Male
3-2271137-1	M12 A Code, Rear Mount, 4P, Female
4-2271137-1	M12 A Code, Rear Mount, 5P, Female
5-2271137-1	M12 A Code, Rear Mount, 8P, Female
3-2271136-1	M12 D Code, Rear Mount, 4P, Male
3-2271139-1	M12 D Code, Rear Mount, 4P, Female

APPLICATIONS

- Industrial Communications
- Sensor
- Machine tools
- Process automation

More information at:

More information at:
www.te.com/products/m8-m12

NOTES



LET'S CONNECT

We make it easy to connect with our experts and are ready to provide all the support you need.

Just call your local support number or visit www.te.com/industrial to chat with a Product Information Specialist.

Technical Support
te.com/support-center

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