

A close-up photograph of industrial machinery. In the center, a vertical metal component is mounted on a base. To its right, a small grey rectangular box contains a red LED digital display showing the number '09.7'. The background is a blurred factory floor with other machinery and orange overhead cables.

# ENHANCE PRODUCTIVITY AND MAXIMIZE PERFORMANCE

## TE CONNECTIVITY'S PRODUCT SOLUTIONS FOR MACHINES

Machine manufacturers are integrating smarter, more connected components into their unique design specifications. With the opportunity to increase productivity, safety, and throughput, there is a need to implement autonomous machinery across many industries.

The need for safer, reliable, and more productive machinery is creating design challenges for engineers such as: the integration of data connectivity, miniaturized components, as well as extreme levels of product quality and reliability. TE Connectivity (TE) is here to address these challenges by providing design recommendations, as well as a fully integrated product portfolio. Our lines of connectors, terminals, relays, and tubing have proven reliability that meet the challenges engineers are facing when designing for smarter, more connected machinery.

# CONNECTORS



## Commercial MATE-N-LOK Connectors

WTW and WTB solution with a 5.08mm centerline, 1 thru 16 positions, up to 19A, 250V. Fully polarized nylon housings. Designed with a locking feature that will hold connector halves together under severe conditions of vibration and shock.



## Universal MATE-N-LOK Connectors

Contacts are on a 6.35mm centerline design with WTW, WTP and WTB options rated up to 19A, 600V. Offered in 1 thru 15 positions in WTW and 2 thru 15 positions in WTB. Housings feature positive polarization, positive locking, and rear cavity identification for easy, error resistant assembly.



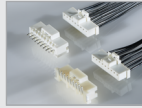
## Micro MATE-N-LOK Connectors

Low profile connectors that have a vertical height of less than 4.7mm. Rated up to 5A, 250V. Polarized housings prevent connector mis-mating, and positive latching feature prevents un-mating, 2-4 positions available.



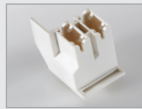
## Mini-Universal MATE-N-LOK Connectors

Fully polarized housing help to assure proper mating. Splash proof design option for applications that require sealing. Space-saving 4.14mm centerline rated up to 9.5A, 600V. Available in WTW and WTB options.



## GRACE INERTIA 2.5mm Connectors

Compact WTW and WTB connectors with a 2.5mm centerline to save space. The inertia locking mechanism helps prevent connectors from being disconnected during movement and prevents defective products caused by half mating. Up to 3A max, 50V. Optional Terminal Position Assurance (TPA) provides extra protection against contact back out.



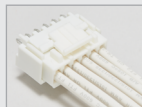
## Power Triple Lock Connectors

WTW solution with a 6.0mm centerline. Rated up to 20A, 600V. Designed for better power and signal applications. Locks in three ways and offers an optional TPA device that helps assure terminals are fully seated and remain that way. Three material options support standard 105°C, high temperature 150°C and glow wire applications.



## Signal Double Lock Connectors

Compact, 2.5mm centerline, signal circuit solution for use where space is at a premium. Rated up to 3A max. Designed for reliability with a double lock plate that helps to ensure correct loading and mating of contacts in the housing. IP67 rated water and dust proof sealing options available.



## Economy Power Connectors

Offers up to 11A, 600V for high power needs in a 3.96mm centerline. Provides reliability with a locking latch that prevents the plug housing and post header from vibrating apart. Optional Terminal Position Assurance (TPA) accessories.



## Power Key Connectors

WTB power circuit connector with a 5.0mm centerline. Built to optimize contact seating and proper mating to the PCB header. Designed to reduce bubbles created by PC board coating process. Rated up to 10A, 300V. With an audible click to help confirm contacts are inserted.



## Power Double Lock Connectors

WTW and WTB connectors available on a 3.96mm, 6.5mm, 7.92mm and 13.0mm centerline designed for use in power circuit applications. Offers secondary locking. Rated up to 14A, 300V. Available in 1-12 positions and UL recognized, CSA certified and VDE approved flame retardant.



## MTA Connectors

WTW and WTB connector systems that can reduce labor costs by utilizing insulation displacement contact (IDC) technology to simplify assembly processes. MTA 100 offers a 2.54mm centerline in 2-28 positions, rated up to 5A, 250V. MTA 156 offers a 3.96mm centerline in 2-24 positions. Rated up to 7A, 600V.



## VAL-U-LOK Connectors

2- 24 position discrete wire interconnect system. Rated up to 13A, 600V in a 4.2mm centerline. Available in WTW or WTB options.



## Circular Plastic Connectors

TE's Circular Plastic connectors offer a wide array of product solutions to exceed application and output requirements while meeting needs for miniaturization and cost savings.



## Heavy Duty Connectors

Heavy Duty connectors offer quality and sustainability in an easy-to-install, economically-friendly and ruggedized connection.



## Intercontec Connectors

Whether you need to connect power, signal or data - or all combined - TE's INTERCONTEC connector solutions provide a custom solution for your application.



## Industrial RJ45 Connectors

Industrial RJ45 connectors provide flexible solutions for most customer connection requirements with its common core design which is part of IP20 and can also be used in IP65/67 variants. The common core design is part of the IP20 and can also be used in IP65/67 variants.



## Mini I/O Connectors

Industrial Mini I/O connector system is a compact, wire-to-wire and wire-to-board solution for reliably serial, bus and Ethernet connections in industrial applications.



## M8/M12 Connectors

With a versatile portfolio and many customer-specific configurations, the M8/M12 Panel product range gives design flexibility for board connectivity, chassis mount connectivity and cable assemblies with hybrid and space-saving solutions.

## TERMINALS AND SPLICES



### FASTON Terminals

Designed for speed and reliability. Receptacles available insulated and uninsulated, in straight and flag configurations. Options for low insertion force and high temperature requirements available.



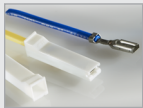
### Ultra-Fast Terminals

Fully insulated FASTON receptacles offer a completely protected terminal and a closed barrel wire crimp. Terminates 26-10 AWG solid, fused and stranded wire. Each assembly's translucent nylon housing is color-coded to identify wire size.



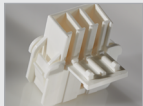
### Rings and Spades

Providing versatile mating options that support solid or stranded wire connections and offered in a range of sizes, materials, configurations and plating to meet specific requirements.



### Positive Lock Receptacles

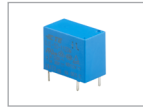
Designed to provide ease of assembly and secure retention to mating tabs. Receptacles lock onto mating tabs and are removable only by deflecting an integral lever lock. High temperature options rated up to 250°C.



### FASTIN-FASTON Terminals

Receptacles and tabs available for single and multiple connections. Locking lances help to ensure firm retention of contacts in the housing. Glow Wire approved housings available.

## PCB RELAYS



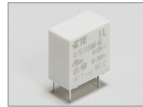
### OJ / OJE Miniature PCB Relays

Miniature size in a 1 Form A (NO) contact arrangement. Various models support a range of loads with contact ratings from 3 to 10A. Both sensitive (200mW) and standard (450mW) coil options accommodate various drive circuits.



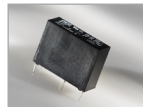
### PCH Relays

Compact size in a 1 Form A (NO) and 1 Form C (CO) contact arrangement with ratings from 3 to 10A. Sensitive coil available for 1 Form A-type.



### T77 Miniature PCB Relays

Compact size, 3-10A rating, Creepage spacing of 6.5mm between coil and contacts, UL class F approved insulation system.



### PCJ Relays

1 pole 3A/5A, 1 form A (NO) contact arrangement. Sensitive coil 200mW and approved for use in ambient temperature up to 105°C.

## PANEL SOLUTIONS



### ENTRELEC Terminal Blocks

Through a comprehensive product offering and a global support network, ENTRELEC terminal blocks offer a strong track record of high quality, reliability, ease of use, and connection technologies to help meet your design needs.



### Identification & Labeling - Panel Labels

A cost effective, commercially attractive replacement for engraved labels using a high performance, thermal transfer label with a foam backed adhesive. Suitable for on-demand printing, and ideal for use with high definition graphics and barcodes in indoor and outdoor use. The foam back adhesive allows for the label to be adhered to curved surfaces as well as textured surfaces.



### Panel Plug-in Relays - P&B and Schrack

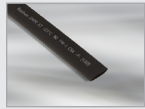
Potter & Brumfield and Schrack Panel Plug-in Relays offer multiple mounting and termination options through a wide range of styles, housings, current ratings, and more to help fit your application needs.



### Terminals & Splices

Terminals and Splices product portfolio uses decades of solutions experience and engineering expertise to provide solderless connectivity solutions with UL, CSA, and Mil-Spec certification that meet the termination needs of its customers. With the many customization options available, TE offers the broadest range of insulated and uninsulated terminals and splices on the market, building design flexibility into every application.

## SINGLE WALL HEAT SHRINK TUBING



### SWFR Heat Shrink Tubing

Low shrink temperature for fast installation. Environmentally friendly tubing with no added halogens emits minimal amounts of toxic or acid gasses during combustion. 600V rating. UL 224/CSA VW-1 flame rating.



### CGPE-105 Heat Shrink Tubing

2:1 shrink ratio. Bright, shiny appearance; UV resistance; clear offers exceptional clarity. Easily hot stamped. Non-flame retardant polyolefin tubing



### RNF-100 and RNF-3000 Heat Shrink Tubing

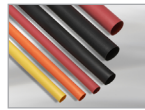
Excellent physical, chemical and electrical properties. Abrasion and solvent resistance superior to that of many polyolefin tubings. Wide range of sizes and colors.



### VERSAFIT Heat Shrink Tubing

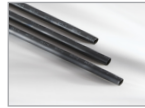
Meets AS23053/5, Cl. 3 as well as UL 224 and CSA C22.2 No. 198.1 standards. UL 224/CSA VW-1 flame rating. Low shrink temperature for fast installation.

## DUAL WALL HEAT SHRINK TUBING



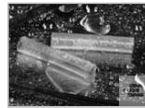
### BATTU Heat Shrink Tubing

2:1 shrink ratio semi-rigid, flame retardant, dual wall heat shrink tubing optimized for power cable to terminal applications in harsh environments of industrial and commercial vehicles and equipment.



### SCT Heat Shrink Tubing

4:1 shrink ratio allows a few sizes to cover a wide range of splice and component diameters. Flame retardant and mechanically tough. Adhesive wall forms a barrier against fluids and moisture at an extended temperature range.



### ES1000 and ES2000 Heat Shrink Tubing

4:1 shrink ratio allows a few sizes to cover a wide range of splice and component diameters. Flame retardant and mechanically tough providing strain relief.



### DWFR Heat Shrink Tubing

UL 224 VW-1 flame rating. 3:1 and 4:1 shrink ratios allow for connector-to-cable sealing. Medium wall provides increased mechanical protection. DWFR adhesive bonds to a wide variety of materials.



### AP-2000 Heat Shrink Tubing

Sized for use on specific standard sizes of metal pipe. Provides environmental and mechanical protection for automotive brake and fuel lines. Flexibility allows pipes to be bent after tubing has been installed.



### RBK Heat Shrink Tubing

4:1 shrink ratio allows a few sizes to cover a wide range of splice and component diameters. Mechanically tough providing strain relief and abrasion protection. Flame retardant.



### ATUM Heat Shrink Tubing

3:1 and 4:1 shrink ratios allow for connector-to-cable sealing. Medium wall provides increased mechanical protection. ATUM adhesive bonds to a wide variety of materials.



### QSZH Heat Shrink Tubing

4:1 shrink ratio allows a few sizes to cover a wide range of splice and component diameters. Mechanically tough providing strain relief and abrasion protection. Seals quick for efficient installation. No added halogens. Flame retardant.

## SPECIALTY HEAT SHRINK TUBING



### RayBlock Heat Shrink Tubing

Environmentally seals and provides strain relief to wire bundles of up to 20 wires. Withstands excursions to 120°C [248°F].



### HFT5000 Heat Shrink Tubing

Highly flexible for easy installation on a variety of substrates. Outstanding abrasion resistance over a wide temperature range. Heat-shrinkable to grip tightly. Resistant to harsh environments. Halogen-free.



### ES Caps

4:1 shrink ratio allows a few sizes to cover a wide range of splice diameters. Mechanically tough jacket provides strain relief and abrasion protection. Flame retardant jacket (black only).



### Versaflex Heat Shrink Tubing

Suitable for mechanical protection of wire harnesses where exceptional flexibility combined with superior abrasion and cut-through resistance is required. Will not trap heat or moisture. Expands easily over irregular shapes. Available in non-flame-retardant or flame-retardant versions.

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