

# INDUSTRIAL MINI I/O CONNECTOR FIELD INSTALLABLE

EVERY CONNECTION COUNTS

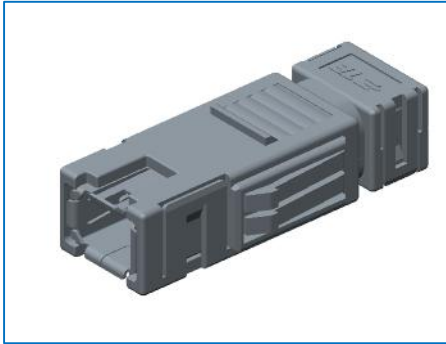


# Industrial Mini I/O – Field Installable

TE's Industrial Mini I/O connector provides innovative and time-saving wire-termination alongside serving as a space saving and reliable I/O solution for industrial environments.



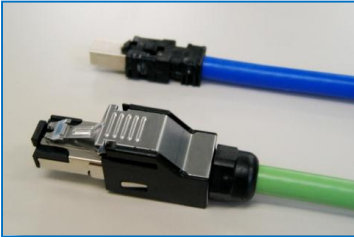
# Industrial Mini I/O – Field Installable



- Innovative and time-saving wire-termination
- Reliable connections in industrial and vibration-prone environments
- Space saving solution that allows for increased design flexibility
- Available in different versions for multiple applications
- Intermateable with receptacles in different configurations (TMT, SMT, right and straight angle)

# Industrial Mini I/O – Smaller than RJ45

## ❖ Size advantage



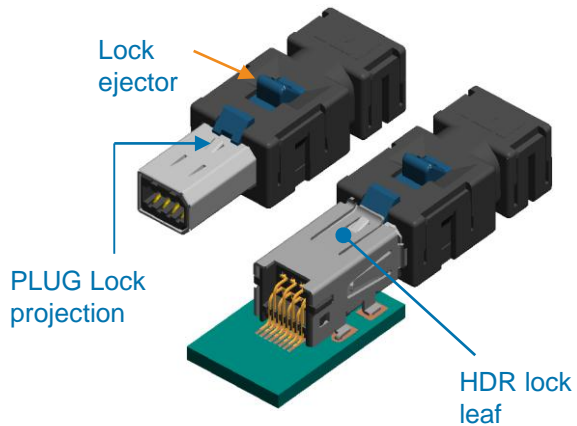
- With only **one quarter the size** of conventional RJ45 plugs, the Industrial Mini I/O connector provides critical space saving.
- The limited space on the PCB can be used more efficiently.
- The Field Installable Mini I/O version offers an innovative piercing termination that additionally decreases the time usually needed to terminate the wires through soldering and with an easy to use hand tool.
- Field Installation of the Industrial Mini I/O is now possible in virtually any environment.

Traditional RJ45 vs  
Industrial Mini I/O connector

- 75%space saving

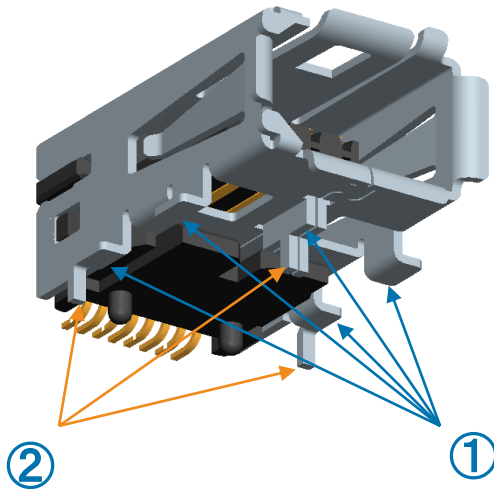


# Industrial Mini I/O – More reliable than RJ45



- Accidental unplugging of a network connection due to shock, vibration, pulling on cords, etc. causes expensive downtime in an industrial environment
- Industrial Mini I/O's unique locking system is specified to 100N of pull out force

# Industrial Mini I/O – More reliable than RJ45



- The second part to secure interface is proper board retention
- This header design has 2 features to enable required retention strength:
  - Solder pads at 5 points
  - 3 pegs with through hole anchor

① Solder pad at 5 points

② Peg has through whole anchor (3/5)

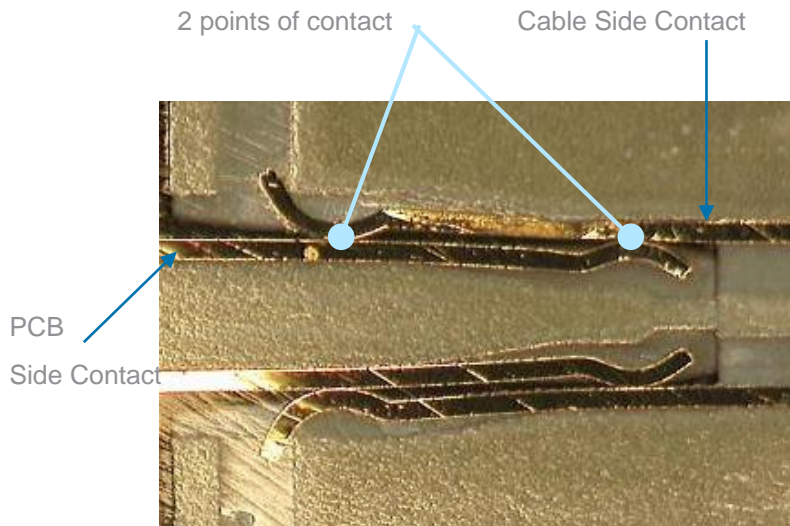
Solder pads are used to fix the SMT connector to a PCB.

Generally this is done at 2 points.

However, Industrial Mini I/O has 5 points which enhances the strength.

# Industrial Mini I/O – More reliable than RJ45

## Contact Cross Section



- **Contact System** known as the “Fighting Snake Principle”
- Multiple points of contact reduce contact failures
- Au plated products improve conductivity and contact lifespan
- Overall design = Improved Reliability for Customer Networks

# Industrial Mini I/O – Field Installable

## ❖ One trusted partner for your satisfaction

- One of the leading companies in connectivity, TE offers short lead times and dedicated service through a broad distribution network.
- With our global footprint and local sales teams in all regions, TE is able to offer the support you expect, making it easy to do business with us.
- Easy-to-use – and easy-to-choose: At TE, you will find what you are looking for; and if you have any questions, our Technical experts are there for you – 24 hours a day.
- As one of the most innovative companies in the world, TE provides industry-leading products and technologies that help you solve your problems – now and in the future.





# The Idea Behind It

## Feature of New development

- Field assembly at an in-house of customer's factory
- W-W, W-B are available
- Common shape for free hanging and panel mount for W-W with railed panel lock configuration

### Existing



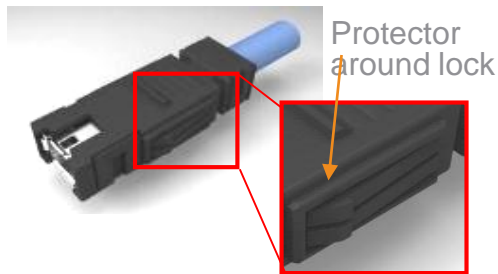
- Cable termination: Soldering, making field assembly difficult
- W-B type Only

### Field assembly



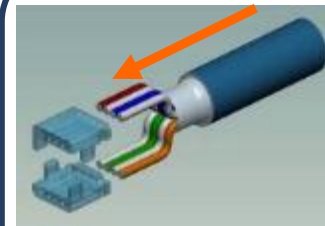
2 piercing point per 1 contact

### Free hanging and Panel mount for W-W

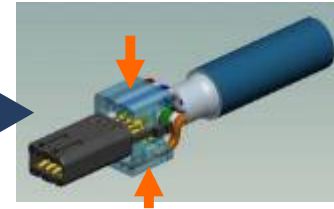


Railed panel lock configuration

## New Development



Cable location



Cable termination

-Cable termination: Piercing  
Making field assembly **easier**



Free hanging



Panel mount

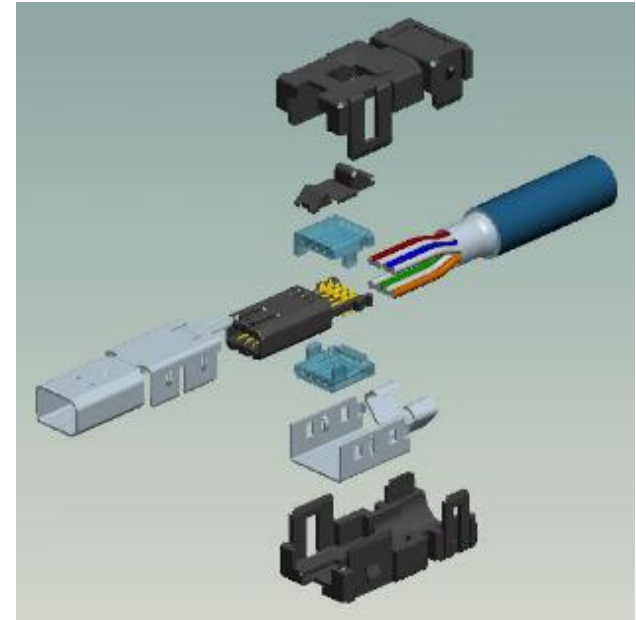
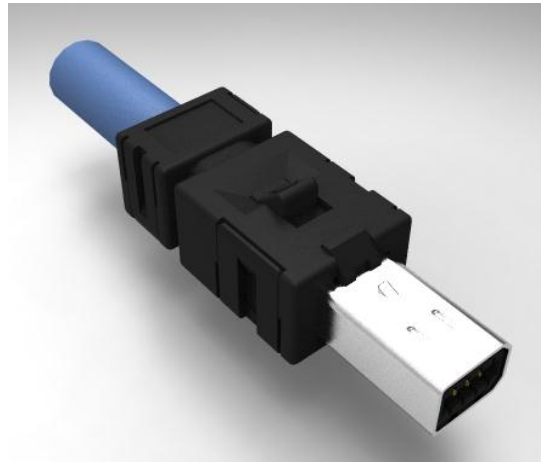
Common shape for Free hanging  
and Panel mount for W-W

# Product Specifications

- Product Specifications (Design Objectives)
  - Voltage Rating 30V
  - Current Rating 0.5A
  - Temperature Rating -40°C~70°C
  - Durability 750cycles
  - Meet transmission performance of Cat5e
  - Applicable Cable
    - AWG 24~26
    - (Insulation Outside Diameter: Dia. 0.93~1.05&1.05~1.15mm)
  - Outer Cable Diameter 7.1mm Max

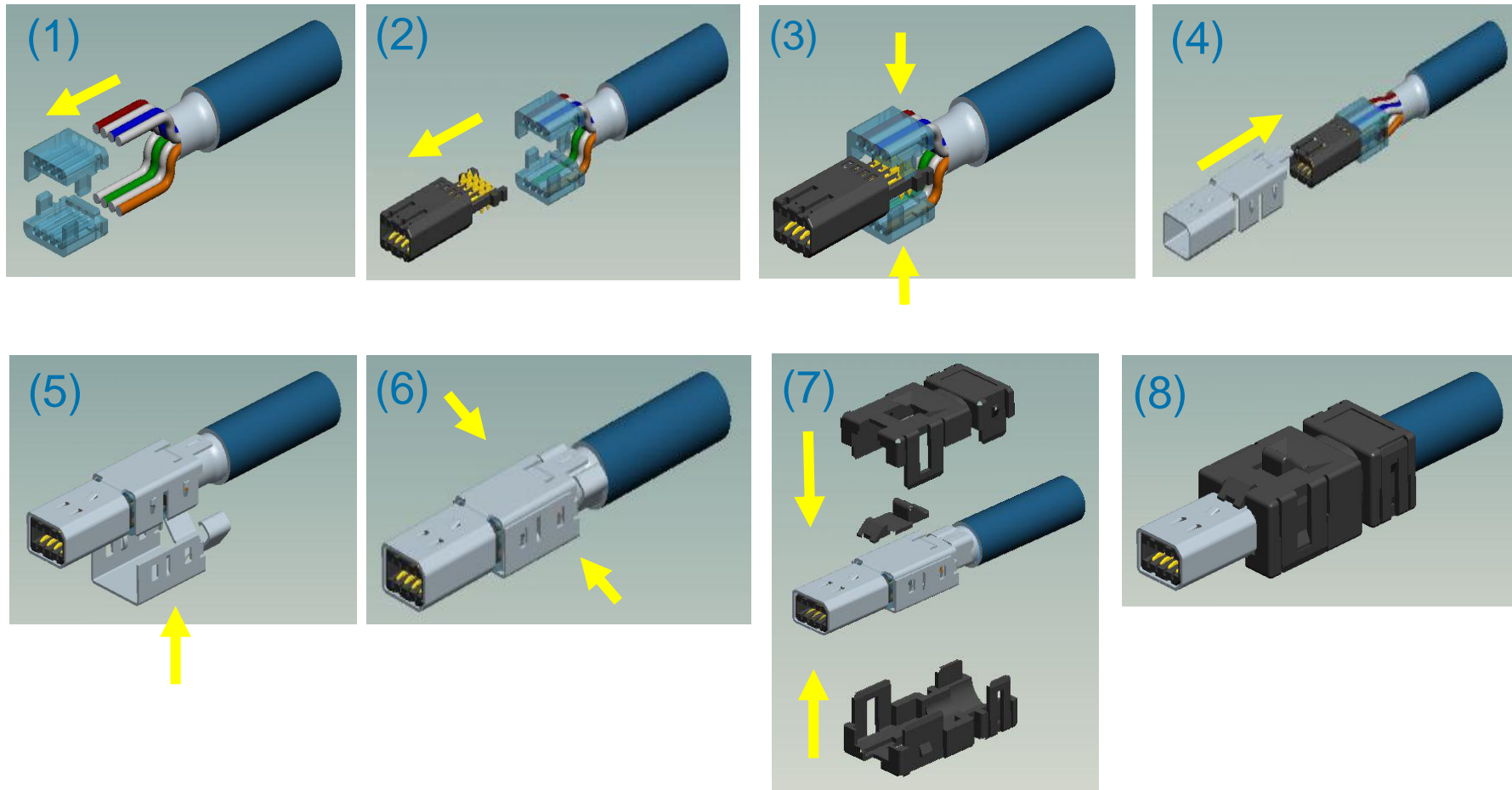
# Concept Plug Kit

## Plug Kit

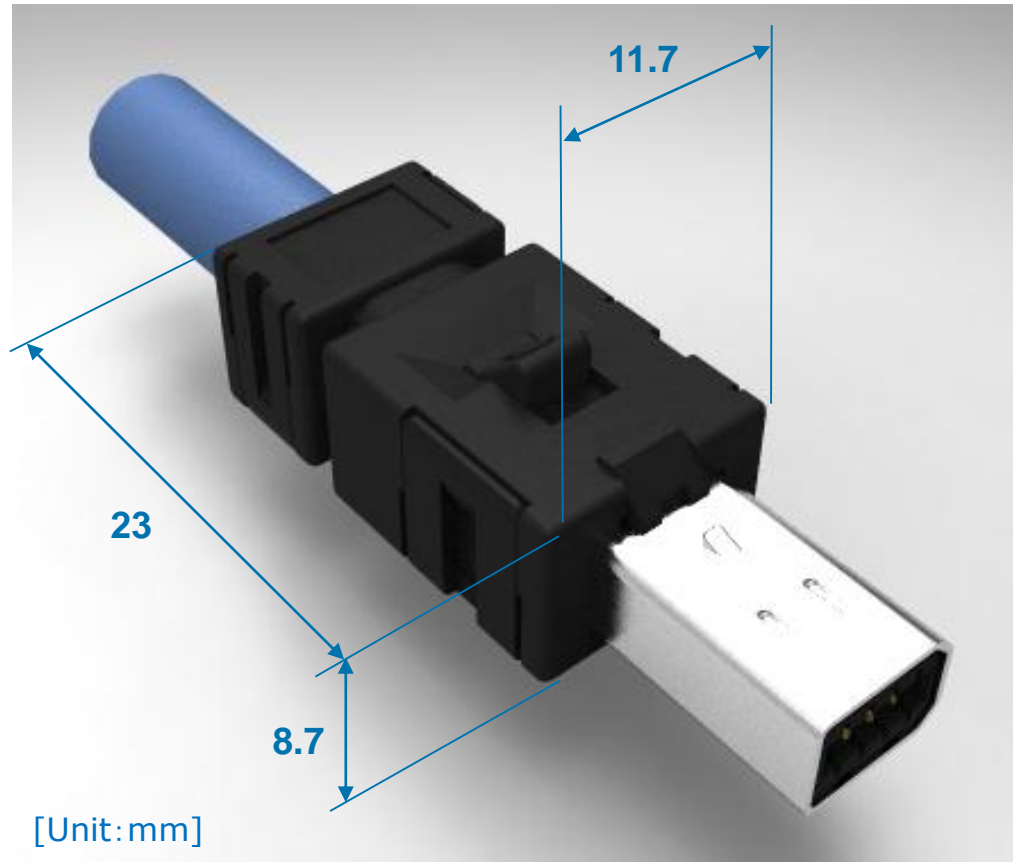


Part Number	Name	Applicable wire
2201855-1	Plug KIT Type I L size	AWG 24~26 Stranded Wire insulation OD: 1.05-1.15 Cable OD : 7.1Max
2201855-2	Plug KIT Type I M size	AWG 24~26 Stranded Wire Insulation OD: 0.93-1.05 Cable OD : 7.1Max

# Plug cable connector assembly

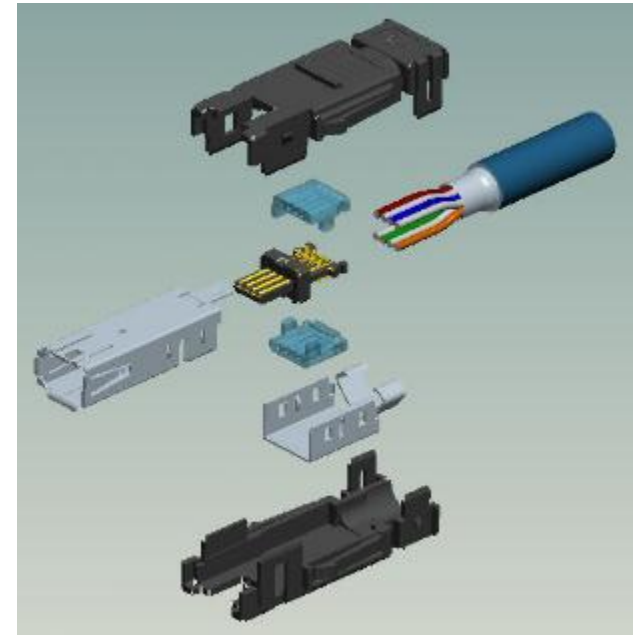
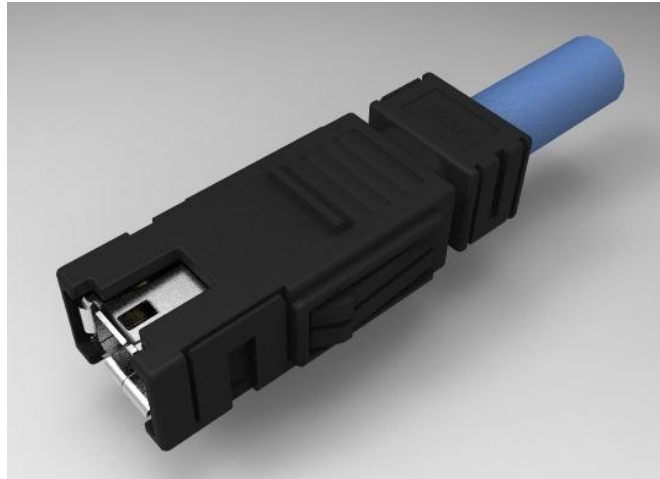


# Plug dimensions



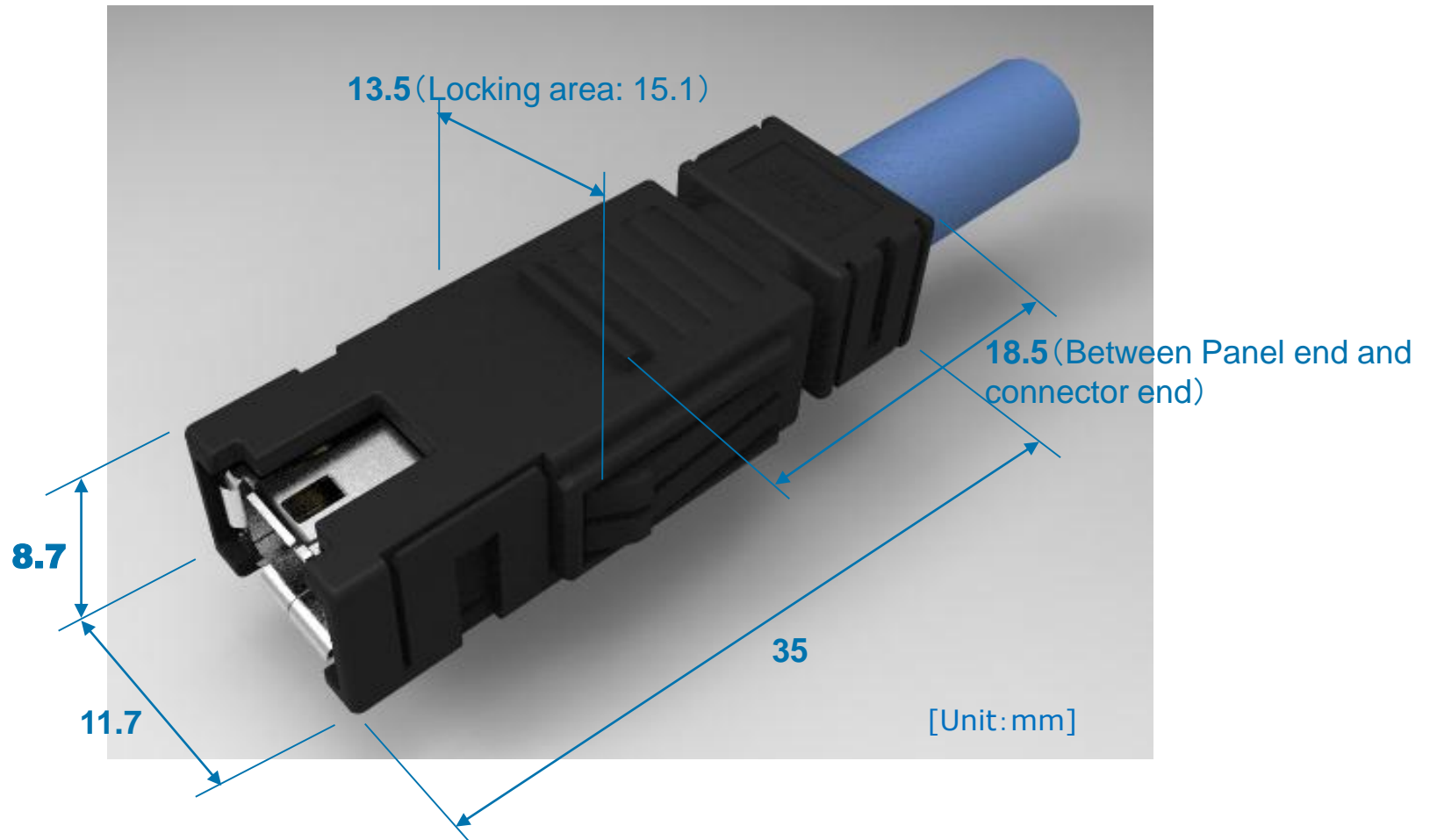
# Concept Receptacle Kit

## Receptacle Kit

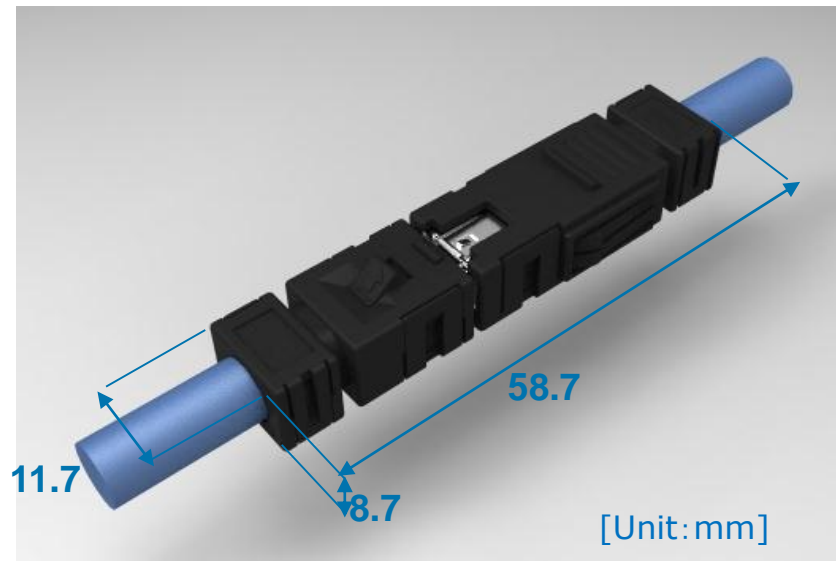


Part Number	Name	Applicable wire
2201864-1	REC KIT Type I L size	AWG 24~26 Stranded Wire insulation OD: 1.05-1.15 Cable OD : 7.1Max
2201864-2	REC KIT Type I M size	AWG 24~26 Stranded Wire Insulation OD: 0.93-1.05 Cable OD : 7.1Max

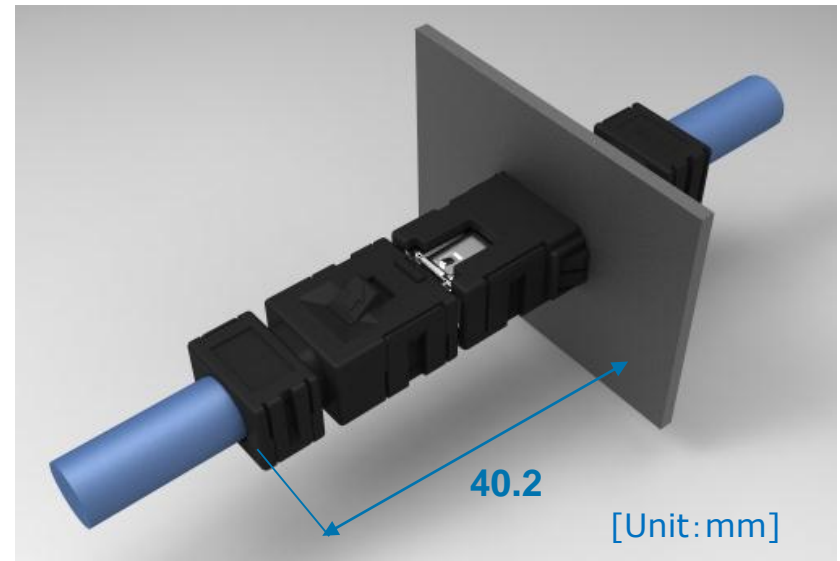
# Receptacle dimensions



# Mating overview

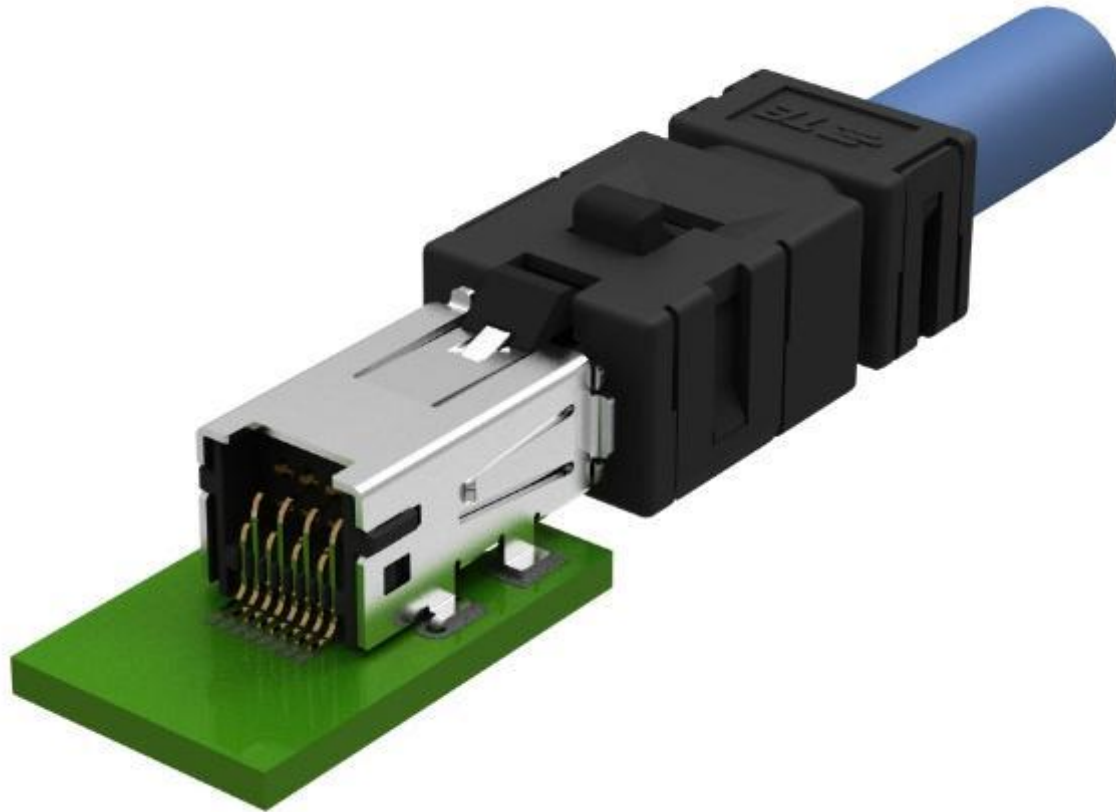


With Panel



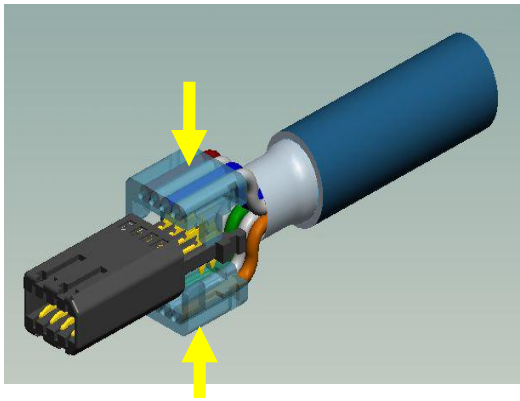


# Compatible with other Mini I/O headers

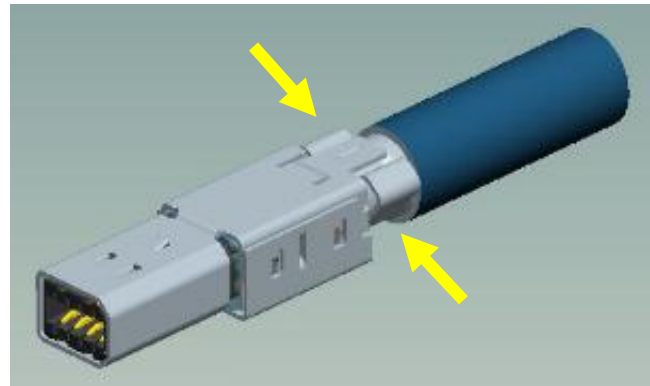


# Hand Tool for Field Installation

Wire termination and cable crimp is available with one hand tool



Wire termination



Cable crimp

# Find more at...

## Mini I/O homepage

[te.com/products/mini-io](http://te.com/products/mini-io)

- Product information
- Further documents
- Order samples

## Mini I/O flyer

- Complete overview of product portfolio
- Part numbers and drawings

**Introducing Industrial Mini I/O connector, Field Installable version**

TE's Industrial Mini I/O Field Installable connector provides innovative and time saving wire-termination alongside serving as a space saving and reliable I/O solution for industrial environments. TE's Industrial Mini I/O connector is only one quarter the size of the conventional RJ45 plug and as a result, provides space saving and the flexibility to use limited space on the PCB more effectively. Designed with two points of contact, this connector is built for the stringent demands of an industrial and high vibration environment, enabling increased productivity through a reliable connection. With its innovative patching termination, the Mini I/O Field Installable version decreases the time usually needed to terminate the wires through soldering and with an easy to use hand tool, the field assembly in virtually any environment is now possible.

**BENEFITS**

- Innovative and time-saving wire-termination
- Reliable connections in industrial and vibration prone environments
- Space saving solution that allows for increased design flexibility
- Available in different versions for multiple applications
- Interchangeable with receptacles in different configurations (THT, SMT, right and straight angle)

**KEY FEATURES**

- Small, Compact Size (space savings)
- Time saving wire-termination
- Enables wire-to-wire connections
- Interchangeable with receptacles of various configurations (SMT, Right Angle, Straight, THT)
- Helping minimize to prevent mis-mating

**APPLICATIONS**

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

**MECHANICAL**

- Operating temperature: -40 °C to +85 °C
- Cable diameter: 7/32 in. Max
- Wire size: 24 AWG Max
- Latch retention force: 98N (22lbf)

**ELECTRICAL**

- 8 position
- 30 V rated
- Wire-to-board
- Current rating: 0.5 AMPs
- 0.625 mm pitch

**MATERIALS**

- Shell: Copper alloy
- Contact: Copper alloy
- Housing: Thermoplastic

**STANDARDS AND SPECIFICATIONS**

- Meets CECC requirements when used in an Ethernet application product specification: 10s 78955
- Application specification: I4-5006

**PRODUCT OFFERING**

Part Number	Description
200984-1	MINI I/O PLUG KIT TYP. 12L
200985-1	MINI I/O PLUG KIT TYP. 18L
200986-2	MINI I/O PLUG KIT TYP. 18R
200989-1	MINI I/O PLUG KIT TYP. 12R
200990-1	MINI I/O REC KIT TYP. 12L
200991-2	MINI I/O REC KIT TYP. 18L
200992-2	MINI I/O REC KIT TYP. 18R
200993-1	MINI I/O REC KIT TYP. 12R
200994-1	MINI I/O REC KIT TYP. 12L
200995-1	MINI I/O REC KIT TYP. 18L
200996-1	MINI I/O REC KIT TYP. 18R
200997-1	HAND TOOL
200998-1	CABLE FITTING

**PRODUCT DIMENSIONS**

- Plug kit: 11.62 x 3.4 x 8.7 mm
- Receptacle kit: 11.7 x 3.5 x 13.5 mm

**te.com/products/mini-io**

**TE connectivity**

[te.com/products/mini-io](http://te.com/products/mini-io)



**Making Every  
Connection Count.  
Especially The One We  
Make With You.**

