

Your Global Automation Partner

**TURCK**

# A-Size (7/8") Power Cordsets, Receptacles

Manual

Turck Inc. sells its products through Authorized Distributors. These distributors provide our customers with technical support, service and local stock. Turck distributors are located nationwide – including all major metropolitan marketing areas.

For Application Assistance or for the location of your nearest Turck distributor, call:  
1-800-544-7769

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Literature and Media questions or concerns?  
Contact Marketing Turck USA – [media@turck.com](mailto:media@turck.com)

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# 1 Technical Specification and Certification

## Conforms with:

UL 2237 Outline of Investigation for Multi-Point Interconnection Power Cable Assemblies For Industrial Machinery, Edition 4, April 20, 2015

Following the provisions of Directive (if applicable):

RoHS Directive 2011/65/EU July 21, 2011

Low Voltage Directive 2014/35/EC February 26, 2014

## 2 Introduction

This User Manual contains safety and installation practices for cable assemblies and panel mount receptacles intended for use in power distribution for industrial machinery

## 3 Operating Instructions

- These operating instructions contain important information.
- Read the instructions carefully and follow the safety instructions.

### 3.1 Symbols

#### Warning of injuries:



## 4 Intended Use

### Incorrect use of these products can be dangerous to people and equipment.

Use in accordance to product specifications, operating instructions, local electrical code, and proper operating conditions.

## 5 General Safety Guidelines

These safety guidelines do not account for any contingencies or events which may arise during installation, operation and maintenance.

- Adhere to the manufacturers recommended current, voltage and temperature ratings. Exceeding these specifications may result in the damage of product or equipment.
- Adhere to and install in accordance to local electrical code.

### Risk of electrical shock:



- These devices are not intended to be connected or disconnected while under load. Electrical arcing or other failure resulting in loss or injury may occur. Disconnect all power and shut down system(s) before disconnecting or connecting.
- Cable assemblies and receptacles with exposed live end wires shall be installed with protection against the exposure to incidental contact. Failure to do so could result in electrical shock.
- Do not provide power from male pins, power should only be supplied from connectors with female contacts. Failure to do so could result in electrical shock.

**General use:**

- Proper overcurrent protection/fusing shall be used. Refer to local electrical code for protection requirements. Failure to follow proper overcurrent protection requirements could result in product damage which could lead to personal loss or injury.
- Cables are to be installed and protected in accordance to local electrical code.
- Evaluate extreme environmental chemicals, liquids, gases and contaminants prior to installation to ensure product suitability. Failure to do so may result in a chemical breakdown or corrosion of the product.
- Evaluate extreme shock and vibration requirements to ensure that product is suitable and will not become disconnected or damaged while in service.
- Should the connector face, housing, cable or wires become damaged or frayed remove from operation immediately and replace.

**Maintenance:**

- Products should not need maintenance under normal operation within product specifications.
- If equipment maintenance or product change out is necessary it is required to do so only in the de-energized state.
- Unintentional activation or uncontrolled restart could cause loss or injury.
- Secure the system from unintentional activation per local electrical code requirements.
- Following equipment maintenance or product change out, ensure a controlled restart.

6 General Information

**6.1 Product Description**

The A-Size (7/8”) Power cordsets and receptacles design follows the ANSI B93.55M-1981 Hydraulic fluid power- Solenoid piloted industrial valves – Interface dimensions for electrical connectors and the SAE H1738-2 Specification for Mini, Micro and Nano Plugs and Receptacles. The environmental seal for mated connectors is formed by a cork and bottle design of the pin and socket plastic carriers in which each connection chamber is individually sealed. This provides a high level of ingress protection resulting in superior electrical performance.

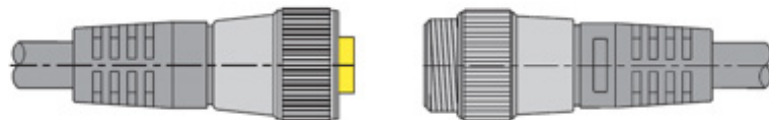
**6.2 Technical Data**

Number of poles	3-pole, 4-pole
Conductor size range	14 AWG
Rated current	Up to 15 A
Rated voltage	Up to 600 VAC
Protection class	Up to NEMA 1,3,4,6P and IEC IP67
Ambient Temperature	From -40°C to +90°C

**6.3 Installation**

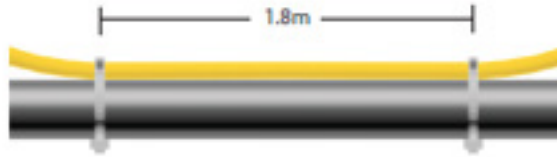
**Connector Installation:**

Connectors are designed with keyways that ensure the connectors are assembled in the proper orientation. With power disconnected, the connector keyway should be aligned with the keyway on the mating connector. The connector should then be pushed into the mating connector and the coupling nut turned until hand tight. The connector should then be pushed firmly a second time and the coupling nut hand tightened again. This generally allows an additional 1/8-1/4 turn and ensures that a tight, weatherproof connection is made. Connectors are designed to be able to be connected by hand and meet the rated ingress protection for the product. We do not recommend the use of a wrench or other tools with the products for tightening unless it is a torque wrench with the proper torque setting. Recommended torque for tightening connectors is 2.0 Nm.



## Cable Support:

Cables should be supported to prevent movement on the equipment. Ideally the cable should be supported in a distance not to exceed 1.8m (6ft) without continuous support (refer to local electrical code for specific requirements). The cable should also be supported at any connection points or terminations so that tension is not transmitted to joints or terminals



## Proper Bend Radius:

Providing sufficient bend radius will allow the cable to absorb the energy of bending over a greater portion of its length, increasing its effective working life. Small increases in the radius of the bend can produce substantial increases in cable life.

### Minimum bend radius for Fixed Applications:

Standard cable - 5x cable diameter

### Minimum bend radius for Moving Applications:

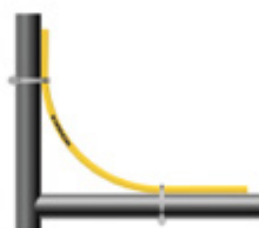
Standard cable - 10x cable diameter



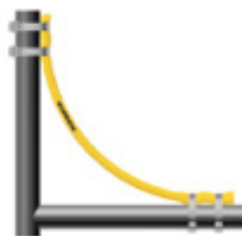
## Tying Cables with Cable Ties:

When tying cable with self locking cable ties, always leave the ties loose enough for the cables to slide freely under the tie. Over tightening will create stress concentrations that can cause the conductors to fail prematurely. Never tighten the tie to the point where the cable jacket becomes deformed or pinched.

Correct

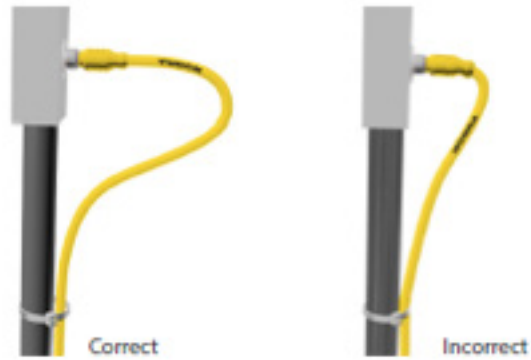


Incorrect

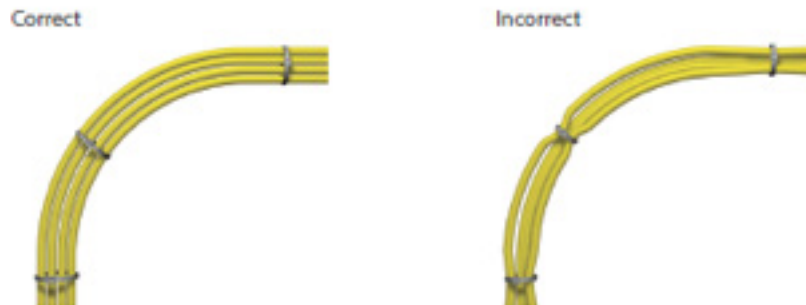


**Eliminating Stress Points in Cable Dress:**

Installing cables to allow for adequate stress loops and freedom of motion increase the life of the cables. TURCK cordsets incorporate molded strain reliefs that will assist in preventing stress.

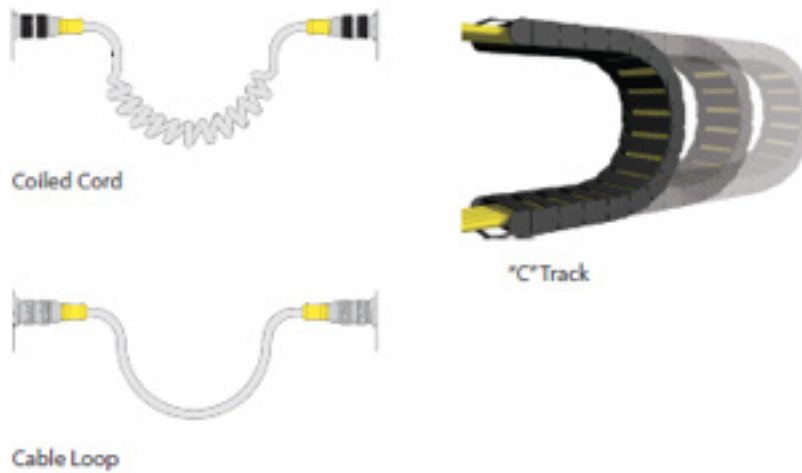
**Cable Bundling:**

When bundling several cables together, always keep the bundle loose enough to move within itself. Tightly tied bundles create both compression and tension stresses when the bundle is moved.



## Cabling for Motion Applications:

Where cabling is subjected to linear, angular or rotational motion between two points, always allow adequate cable length to absorb the energy imparted by the motion. Use of coiled cords, mechanical support mechanisms, or large, well supported cable loops will maximize cable life.



## Disassembly:

Connectors should only be disassembled in the de-energized state.

In the event that a connector will be unmated and exposed it is best practice to use a closure cap to seal off the exposed contacts from the surrounding environment. This is especially relevant where foreign material has the potential to come into contact with the unprotected connector. TURCK offers closure caps in a variety of materials and configurations to complement each connector type. Ensuring proper protection of the electrical contacts extends both product life and long term operating reliability.





## 6.4 Description of Possible Applications

- Power for motors, lights, heaters, and other electrical devices
- Conveying
- Machine builders
- Food and beverage
- Automation system designers and integrators
- Sorting machines
- Packaging and palletizing
- Automotive
- Solar
- For delivering single phase or three phase power
- Applications for TC-ER or dual rated TC-ER/STOOW cable requirements
- Process Automation
  - o FM – Adheres to the National Electrical Code (NEC), ANSI/NFPA 70 requirements for Class 1, Division 2

## 7 Additional Information

### 7.1 Contact Address

#### USA:

TURCK  
3000 Campus Drive  
Minneapolis, MN 55441  
Phone: (763) 553-7300  
Fax: (763) 553-0708  
Application Support: 1-800-544-7769  
Email: [turckusa@turck.com](mailto:turckusa@turck.com)  
[www.turck.com](http://www.turck.com)

#### International:

Additional contact addresses can be found on our website at: [www.turck.com](http://www.turck.com)

### 7.2 Additional product information

Additional product information can be found on our website at: [www.turck.com](http://www.turck.com)

## 8 Transport, Storage, Disposal

### Transport:

Product should be adequately protected during transport to protect from inadvertent damage. Failure to follow guidelines could result in product damage.

- Transport temperatures should not exceed or go below the product specified ambient temperature rating.
- Protect against excessive shock to product during transport.

### Storage:

Improper storage may cause damage to the product.

- Storage temperature should not exceed the product specified ambient temperature rating.
- Store connectors in a dry and dust free location if possible.
- If connectors are exposed to the elements in an unmated state it is best practice to use a closure cap to protect the connector from foreign material.

### Disposal:

Disposal and recycling of used product should abide by local environmental regulations and guidelines.

## 9 Warranty Terms And Conditions

### RISK OF LOSS

Delivery of the equipment to a common carrier shall constitute delivery to the Purchaser and the risk of loss shall transfer at that time to Purchaser. Should delivery be delayed due to an act or omission on the part of the Purchaser, risk of loss shall transfer to the Purchaser upon notification by TURCK Inc. that the order is complete and ready for shipment.

### WARRANTIES

TURCK INC. (hereinafter "TURCK") offers five (5) WARRANTIES to cover all products sold. They are as follows:

- 1) The 12-MONTH WARRANTY is available for the products listed - generally those not covered by LIFETIME, 5-YEAR, 24-MONTH or 18-MONTH warranty. No registration required.
- 2) The 18-MONTH WARRANTY is available for the products listed - generally those not covered by LIFETIME or 5-YEAR WARRANTY. No registration is required.
- 3) The 24-MONTH WARRANTY is available for the products listed - generally those not covered by LIFETIME, 5-YEAR or 18-MONTH. No registration is required.
- 4) The 5-YEAR WARRANTY is available generally for the products listed. No registration is required.
- 5) A LIFETIME WARRANTY is available for the products listed. It becomes effective when the accompanying TURCK LIFETIME WARRANTY REGISTRATION is completed and returned to TURCK

### GENERAL TERMS AND CONDITIONS FOR ALL WARRANTIES

- 12-MONTH STANDARD WARRANTY
- 18-MONTH STANDARD WARRANTY
- 24-MONTH STANDARD WARRANTY
- 5-YEAR WARRANTY
- LIFETIME WARRANTY

TURCK warrants the Products covered by the respective WARRANTY AGREEMENTS to be free from defects in material and workmanship under normal and proper usage for the respective time periods listed above from the date of shipment from TURCK. In addition, certain specific terms apply to the various WARRANTIES.

THESE EXPRESS WARRANTIES ARE IN LIEU OF AND EXCLUDE ALL OTHER REPRESENTATIONS MADE- BOTH EXPRESSED AND IMPLIED. THERE ARE NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE FOR PRODUCTS COVERED BY THESE TERMS AND CONDITIONS.

TURCK warrants that the goods sold are as described, but no promise, description, affirmation of fact, sample model or representation, oral or written shall be part of an order, unless set forth in these terms and conditions, or are in writing and signed by an authorized representative of TURCK. These WARRANTIES do not apply to any Product which has been subject to misuse, negligence, or accident - or to any Product which has been modified or repaired, improperly installed, altered, or disassembled - except according to TURCK's written instructions.

These WARRANTIES are subject to the following conditions:

- 1) These WARRANTIES are limited to the electronic and mechanical performance only, as expressly detailed in the Product specifications and NOT to cosmetic performance.
- 2) These WARRANTIES shall not apply to any cables attached to, or integrated with the Product. However, the 18-MONTH WARRANTY shall apply to cables sold separately by TURCK
- 3) These WARRANTIES shall not apply to any Products which are stored, or utilized, in harsh environmental or electrical conditions outside TURCK's written specifications.
- 4) The WARRANTIES are applicable only to Products shipped from TURCK subsequent to January 1, 1988.


### ADDITIONAL SPECIFIC TERMS FOR -

(12-MONTH STANDARD WARRANTY) for Linear Displacement Transducers (EZ-Track) and RFID products, Draw Wire Assemblies/ Slip Rings.

(18-MONTH STANDARD WARRANTY) FOR Q-TRACK INDUCTIVE SENSORS, ULTRASONIC SENSORS, FLOW SENSORS, PRESSURE

SENSORS, TEMPERATURE SENSORS, CABLES AND ALL NON-SENSING PRODUCTS SOLD BY TURCK INC. INCLUDING MULTI-SAFE, MUL TI-MO DUL, MUL TI-CART AND RELATED AMPLIFIER PRODUCTS, RELAYS AND TIMERS. (24-MONTH STANDARD WARRANTY) FOR ENCODERS.  
5-YEAR WARRANTY FOR INDUCTIVE AND CAPACITIVE PROXIMITY SENSORS: The periods covered for the above WARRANTIES and Products shall be 12 MONTHS, 18-MONTHS, 24-MONTHS and 5-YEARS, respectively, from the date of shipment from TURCK.

# TURCK



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