

ITT Cannon Trident Connectors: Trident Ringlock, Trident Neptune & TNM



INTERMATEABLE WITH SOURIAU CONNECTORS

ITT Cannon Trident connectors are a family of cost-effective, reliable circular connectors that include the Trident Ringlock, Trident Neptune and TNM series. All three series of ITT Cannon Trident connectors are fully-sealed to IP67. The Trident Ringlock and Trident Neptune series are UL94-V0 circular plastic connectors with a metal coupling nut and bayonet retention mechanisms, providing the cost and weight benefits of a plastic connector with the durability of a metal connector. Trident Ringlock connectors are intermateable with SOURIAU/Burndy Trim-Trio (UTG). Trident Neptune uses the same contacts as Ringlock, but is a unique product perfect as a transportation connector or in harsh environments where full-sealing and a mix of power and signal contacts are required. ITT Cannon's TNM series is an all-metal version similar to MIL-DTL-26482, but lower cost and not intermateable. For full details on the ITT Cannon Trident connector family, see the product specifications below.

APPLICATIONS

Industrial and vehicular connections to and from electronic cabinets and boxes. Any power and signal application requiring total moisture sealing.

- Trucks & buses
- Off-road vehicles
- Rail and mass transit
- Marine
- Process control
- Industrial machinery
- Control cables
- Probes
- Hand controllers
- Remote sensors
- Inter-system connections

FEATURES

STRONG, LIGHT-WEIGHT & LOW-COST

Superior to plastic circular connectors and less costly than metal connectors, Trident's metal bayonet coupling nut and locking mechanism provide strength and life comparable to an all-metal connector. Bodies are composed of durable UL94V0 thermoplastic with high-strength nickel-plated metal coupling nuts and bayonet ring. Molded rubber and silicone seals guarantee water-tightness.

ATTRACTIVE APPEARANCE

Trident connectors are aesthetically-pleasing, making them perfect for front panel mounting.

SUBMERSIBLE OR WATERJET-PROOF VERSIONS

Neptune uses a rear individual wire sealing grommet and is fully submersible to IP67. Ringlock is protected against submersion to IP67 using gland seal cable clamp.

WIDE TEMPERATURE RANGE

Trident will operate in temperatures from -55°C to +120°C (-67° to +248°F) under conditions of high humidity, severe vibration, ice and mud.

WIDE RANGE OF WIRE GAUGES AND CURRENT CARRYING CAPABILITY

Up to 30 amps per contact with wire sizes from 28 AWG up to 12 AWG wire. TNM 700-volt handles up to 40 amp power for up to 8 AWG wire.

STANDARD AND REVERSE CONNECTOR HOUSINGS

In the STANDARD configuration, the receptacles use socket contacts and the plugs use pin contacts. A REVERSED version is also available for safety and/or polarization. Standard and reversed connectors will not intermate. 'Keying Pins' are also available to polarize connectors with the same orientation and layout used on the same panel to prevent mis-mating.

WIDE RANGE OF CONTACT STYLES

Contacts are available in crimp, PC, coax, wire wrap or first mate/last break for ground connections.

FIELD SERVICEABLE

The use of removable crimp contacts allows connections to be changed or modified in the field if necessary. Contacts are copper alloy with a range of gold or tin platings.

AGENCY APPROVALS

- UL and CSA (Trident Ringlock)
- IP67 Submersible

MATERIALS & FINISHES

Shell	UL94V0 thermoplastic with nickel-plated copper alloy coupling nut and bayonet lock ring
Contacts	High-reliability copper alloy available in two versions: stamped and formed or machined
Plating	Tin, gold flash, gold (1 micron), heavy gold (4 microns)
Seals	Rubber, silicone

ELECTRICAL DATA

Operating Voltage	Up to 250 Vac rms degree of pollution permitting per IEC664 (TNM 700-volt power version)
Test Voltage	2000 Vac rms test potential
Current rating	30 Amps (Neptune Power contacts), 13 Amps (Signal contacts). 16 Amp contacts available. TNM 40 amp power.
Wire Range Sizes	28 - 14 AWG (stamped contacts), 28 - 16 AWG (machined), 18 - 12 AWG (Power Neptune) 16 - 8 AWG (Power TNM)
Contact Resistance	5 Milliohms Initial
Insulation Resistance	5000 Megaohms at 500Vdc
Crimp Contacts	Semi-automatic, hand-crimpable or fully-automatic
Wire Size	20 - 16 AWG
Wire Insulation Sealing Range	1.98 mm (.078 in) to 3.30 mm (.130 in) diameter
Contact Insertion	No tool required. Suitable for automation.
Contact Extraction	Rear removable
Contact Retention	20 lbs. minimum per contact
Wire Strip Length	5.59 mm (.220 in) to 5.33 mm (.210 in)

MECHANICAL DATA

Sealing	Up to IP67
Wire Sealing Range	See column 9 on contact chart, ⇨ page 49 .
Insulation Strip Lengths	See column 8 on contact chart, ⇨ page 49 .
Mating Life	500 cycles (machined contacts); 200 cycles (stamped)
Salt Spray	To MIL-STD-1344 Method 1001 (48 hrs. no corrosion)
Heat	Damp Heat to BS 2011 Pt2 Ca, 21 days exposure +105°C to -50°C (5 cycles) remains within specifications
Chemical Resistance	Connectors show no damage when exposed to fluids used in industrial/vehicle applications.
Vibration	5 to 55 Hz (1 minute) No discontinuities longer than 1-microsecond
Shock	50g 11ms MIL-STD-202 Method 213 condition A
Contact Type	Crimp, PC, first mate/last break, co-ax, wire wrap
Number of Circuits	4 to 48
Contact Insertion	From rear. No insertion tool needed. Removable with proper extraction tool (front release).

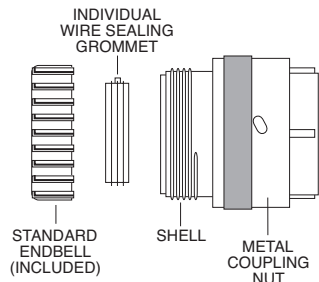
CONTACT	FORCE (MIN)	
	LBS.	NEWTONS
Machined	25	110
Stamped	15	65

Polarization	Standard or reversed sex shells and/or keying pins
Agency Listing	UL (E102053), CSA (LR68300), TNM: UL, C-UL, E151413
Color	Silver (TNM) or Black with silver coupling nut and ring (Ringlock and Neptune)

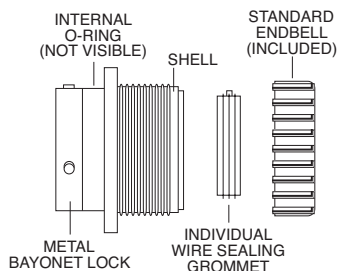
EXPLODED VIEW

NEPTUNE

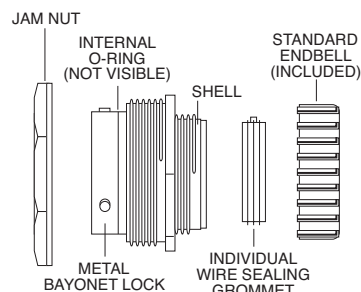
PLUG



FLANGED RECEPTACLE

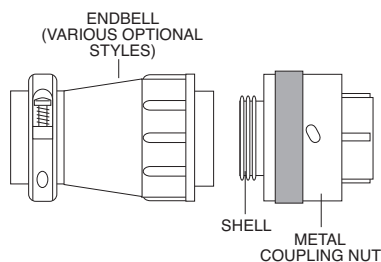


JAM NUT RECEPTACLE

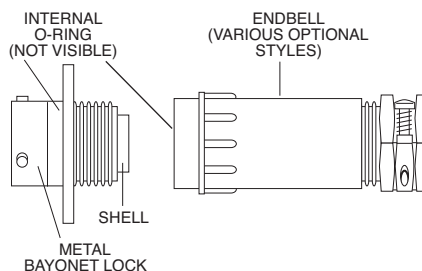


RINGLOCK

PLUG

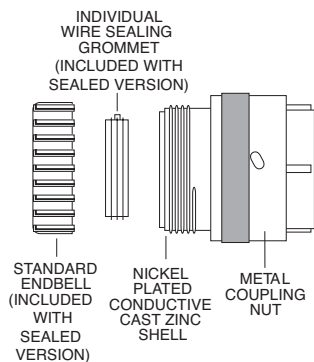


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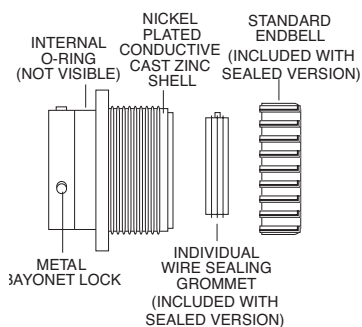


TNM

PLUG



FLANGED RECEPTACLE



LIGHT ROPE



HIGH POWER



700 VOLT HIGH POWER