# ITT Cannon CT / MS3100 Series MIL-DTL-5015 Connectors



ITT Cannon CT series MIL-DTL-5015 connectors are manufactured to MIL-5015 for use in very harsh environments. ITT Cannon CT series heavy-duty connectors were originally designed as aerospace components and are popular, cost-effective, rugged commercial and military connectors. Hundreds of contact layouts are available, including common 2-pin connectors, 3-pin connectors, 4-pin connectors, 12-pin connectors and 16-pin connectors. The ITT Cannon CT series is a waterproof connector that is completely sealed to withstand condensation, vibration and flash-over. For full product details on the CT series, see the specifications below.

## APPLICATIONS

- Power generators
- Battery systems
- Engines
- Sensors
- Motion control
- Off-road vehicles

- Earth-moving equipment
- Ships

Industrial environments requiring extreme environmental reliability with ease of mating and unmating such as:

- Railroad equipment
- Any mobile equipment
- Industrial machinery
- Telecommunications

## FEATURES

#### FULL MILITARY TEMPERATURE RANGE

CT connectors will operate in temperatures from -55° to +125°C (-67° to +257°F) under the harshest possible conditions.

#### WIDE RANGE OF WIRE GAUGES AND CURRENT-CARRYING CAPABILITY

Up to 245 amps with wire gauges from size 26 up to size 0 AWG wire.

#### **RESILIENT INSULATOR & GROMMET**

A resilient polychloroprene insulator and rear-sealing grommet guarantees a liquid-tight assembly. Crimp contacts can be inserted and removed a minimum of five cycles for field service.

#### WIDE VARIETY OF CONTACTS

High-reliability screw machine contacts with silver or gold plating are available in sizes from 20 through 0 to accommodate wire gauges from 26 to 0 AWG. Solder, crimp, PC, and thermocouple contacts are available.

#### **RUGGED SHELL**

Aluminum alloy shell and hardware create a rugged connector with minimal weight. These connectors have been used extensively in the military for many years and have proven their reliability in a wide range of combat and industrial applications.

#### ENVIRONMENTAL

Vibration and water-proof. Will perform in the full range of MIL-DTL-5015 environments.

#### STANDARD SHIELDING INTERFACE

CT connectors meet requirements for MIL-DTL-5015 E/F/R styles of connectors. The threaded coupling provides superior EMI/RFI shielding without the need for special grounding spring components required for shielding bayonet style connectors. The threaded coupling nuts are used extensively in robotic applications where connectors and cables rock continually. The standard CT coupling nuts contain holes for lock wires used in high-vibration or security applications.

#### SEALED RECEPTACLES

All CT solder receptacles have inserts and contacts bonded in place in accordance to the MIL-DTL-5015 specifications. These receptacles are sealed and their air leakage rate is not greater than one atmospheric cubic inch per hour (4.55 x 10<sup>-3</sup> cubic centimeters per second) through the interface. Gaskets and seal screws are used to seal the panel and protect from leaks around the connectors.

#### **HIGH PERFORMANCE, LOW COST**

Originally designed to the first military specification – Tri-Service connector for the Army, Air Force and Navy – these connectors are now widely used in industrial applications. These threaded connectors are easy to specify, purchase and assemble, providing long service life for applications needing minimum maintenance. PEI-Genesis assembles these in days to reduce the user's total cost of ownership.

#### AGENCY APPROVALS

• MIL-DTL-5015

# TECH SPECS

#### MATERIALS & FINISHES

Shell	Aluminum alloy (shells can be grounded)
Shell Plating	Olive drab chromate coating over cadmium plating, black zinc cobalt, electroless nickel
Contacts	Copper alloy
Contact Platings	Hard silver plating or gold plating
Insulator*	Resilient polychloroprene (Neoprene)
Seals	Silicone or Neoprene

\*Optional zero halogen and high-temperature insulators are available. Contact us for information.

## **ELECTRICAL DATA**

Operating Voltage/Test Voltage According to MIL-DTL-5015

SERVICE RATING	OPERATIN	G VOLTAGE	TEST VOLTAGE	AIR SPACING NOM.	CREEPAGE DISTANCE NOM. (INCHES)	
	DC V	AC VRMS	AC VRMS	(INCHES)		
I	250	200	1,000	-	1/16	
А	700	500	2,000	1/16	1/8	
D	1,250	900	2,800	1/8	3/16	
E	1,750	1,250	3,500	3/16	1/4	
В	2,450	1,750	4,500	1/4	5/16	

The indicated values for the Operating Voltage are limits concerning the electrical function. In any case when the working voltage exceeds 50V, safety precautions must be in accordance with the following standards: VDE 0100, IEC 309-1 or applicable national standards.

NOTE: High Voltage Cartridge Contacts are available. These cartridges are used in either size 8 or 4 contact cavities using 20 AWG contact rated 7.5 amps max and working voltages up to 5000 Vdc - 3500 Vac. Contact us for details.

CONTACT SIZE	(CT) TEST CURRENT (AMPS)	CONTACT RESISTANCE MILLIOHM MAX.	POTENTIAL DROP (MILLIVOLTS)
16/16S	13	16	49
12	23	3	42
8	46	1	26
4	80	0.5	23
0	150	0.2	21

\*\*Maximum total current to be carried per connector in wire bundles as specified in MIL-W-5088. Contact resistance, when tested to MIL-C-39029, will not exceed voltage drops listed in above table.

NOTE: CB & CT current rating are tested differently. Please contact us for more information.

Wire Range Sizes	26 AWG to 0 AWG (⇔ See contact selection pg 130)				
Insulation Resistance	CT/CA/MS:	>5000 megaohms at 77°F (25°C) per MIL-DTL-5015, 3.18			

## TECH SPECS

# MECHANICAL

Operating Temperature		ire -55° to	-55° to +125°C (-67° to +257°F) Neoprene						
Sealing		48 hou	48 hours in 6 feet of water per MIL-DTL-5015, 4.6.19. Meets 20-day						
, , , , , , , , , , , , , , , , , , ,		extrem	extreme humidity testing per						
Wire Sealin	g Range	The co	The connector is designed for individual wire sealing. Sealing of an outer cable						
	0 0	jacket (	iacket on multiconductor cables must be accomplished with an appropriate endbell.						
		Sealing	is only qua	aranteed if v	vires compl	v to MIL-W	/-5086 or	within	
		the liste	ed ranges a	ire used.		5			
00117107	0.75	WIRE SIZE	RE SIZE INSULATION O.D. LIMIT						
CONTACT	SIZE	(MIL-W-5086)	MIN. (	INCHES)	MIN. (M	M) M	AX. (INCHE	ES) M/	AX. (MM)
16		16		064	1.63		.130		3.30
12		12		114	2.90		.170		4.32
8		8		164	4.17		.255		6.48
4		4		275	6.98		.370		9.40
0		0		415	10.54		.550		13.97
Mating Life	Mating Life 100 cycles minimum. To MIL-DTL-5015, 3.16								
Salt Spray		CAD OI	CAD OD : MIL-STD-1344 Method 1001 Condition B. minimum.						
1 5		A206 : •	A206 : 48 hours						
Heat		+125°C	+125°C (+257°F) for 60 hours, +85°C (+185°F) for 1000 hours per MII -DTL -5015						
		4.6.14.	4.6.14. minimum.						
Chemical B	esistance	20-bou	20-bour full immersion unmated in hydraulic fluid and lubricating oil per						
Chemical Resistance		MIL-DT	MIL-DTL-5015 minimum.						
Vibration		10 to 2.	10 to 2,000Hz (15g's) 10 microseconds maximum discontinuity. To MII -STD-1344						
Vibration		Method	Method 2005 per MIL-DTL-5015.						
Shock 50g 11ms duration three major axes 10			microseco	nds maxir	num discor	itinuity			
Choon		To MIL -	To MIL-DTL-5015_3.13						
Contact Tur	20	Soldor	rimp PC	or thormoor	ouplo Hard	silvor or a	old plating		
Number of	Circuite	1 to 55	chinp, roo		Jupie. Haiu	Silver of go	Ju platilig	•	
Contact Ins		Solder	contacts an	e honded ir	nto insulator				<u> </u>
Contact Re		Pin and		tacts are d		raciet cava	ro vibratio	n and renea	ited
Contact He	connection and disconnection.								
CONTACT   RETENTION FORCE   SEPARAT			SEPARATIO	ARATION FORCE AXIAL LOAD SEPARATION FORCE					
SIZE NEWTONS (		ONS (LBS.)	MIN. NEWTONS (LBS.) GAUGE NEWTONS (LBS.) MIN. NEWTO			ONS (LBS.)			
16	35	(7.9)	1	(.22)	G 1.56	44	(10)	1	(0.25)
12	55	(12.4)	1.5	(.34)	G 2.36	67	(15)	2	(0.5)
8	80	(18.0)	3	(.67)	G 3.58	89	(20)	3	(0.75)
4 0	90	(20.2)	85	(1.90)	G 9 04	09 111	(20)	4 Q	(2)

NOTE: CT/CA/MS receptacle contacts are bonded into the insulator.

Polarization Key and keyway with optional rotational polarization

Approvals/Specifications MIL-DTL-5015

# CROSS SECTION insulator Orn



# **Mouser Electronics**

Authorized Distributor

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ITT Cannon: CT6-16-11PS