

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

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

- Power generators
- Battery systems
- Engines
- Sensors
- Motion control
- Off-road vehicles
- Earth-moving equipment
- Ships
- 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.

FEATURES (CONT.)

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 (4.55×10^{-3} 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	OPERATING VOLTAGE		TEST VOLTAGE AC VRMS	AIR SPACING NOM. (INCHES)	CREEPAGE DISTANCE NOM. (INCHES)
	DC V	AC VRMS			
I	250	200	1,000	-	1/16
A	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
B	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	-55° to +125°C (-67° to +257°F) Neoprene
Sealing	48 hours in 6 feet of water per MIL-DTL-5015, 4.6.19. Meets 20-day extreme humidity testing per
Wire Sealing Range	The connector is designed for individual wire sealing. Sealing of an outer cable jacket on multiconductor cables must be accomplished with an appropriate endbell. Sealing is only guaranteed if wires comply to MIL-W-5086 or within the listed ranges are used.

CONTACT SIZE	WIRE SIZE (MIL-W-5086)	INSULATION O.D. LIMIT			
		MIN. (INCHES)	MIN. (MM)	MAX. (INCHES)	MAX. (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

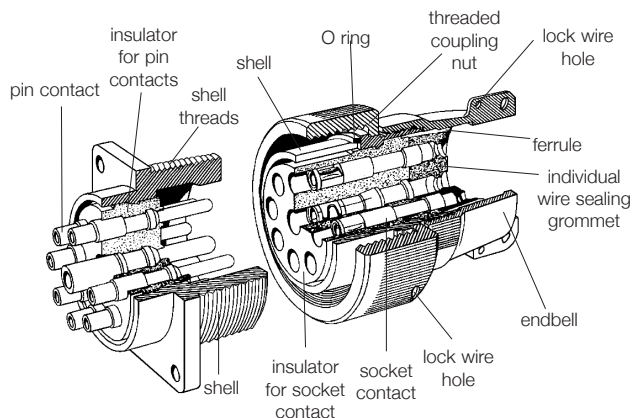
Mating Life	100 cycles minimum. To MIL-DTL-5015, 3.16
Salt Spray	CAD OD : MIL-STD-1344 Method 1001 Condition B. minimum. A206 : 48 hours
Heat	+125°C (+257°F) for 60 hours, +85°C (+185°F) for 1000 hours per MIL-DTL-5015, 4.6.14, minimum.
Chemical Resistance	20-hour full immersion unmated in hydraulic fluid and lubricating oil per MIL-DTL-5015 minimum.
Vibration	10 to 2,000Hz (15g's) 10 microseconds maximum discontinuity. To MIL-STD-1344 Method 2005 per MIL-DTL-5015.
Shock	50g 11ms duration, three major axes. 10 microseconds maximum discontinuity. To MIL-DTL-5015, 3.13.
Contact Type	Solder, crimp, PC or thermocouple. Hard silver or gold plating.
Number of Circuits	1 to 55
Contact Insertion	Solder contacts are bonded into insulator
Contact Retention	Pin and socket contacts are designed to resist severe vibration and repeated connection and disconnection.

CONTACT SIZE	RETENTION FORCE NEWTONS (LBS.)		SEPARATION FORCE MIN. NEWTONS (LBS.)		GAUGE	AXIAL LOAD NEWTONS (LBS.)		SEPARATION FORCE MIN. NEWTONS (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	90	(20.2)	4	(.90)	G 5.69	89	(20)	4	(1)
0	95	(21.4)	8.5	(1.9)	G 9.04	111	(25)	9	(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



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