

CB/CA-Bayonet



CA-Bayonet is basically a MIL-C-5015 connector, but with an improved coupling system. CA-Bayonet replaces the threaded coupling used in MIL-C-5015 with a positive, quick mating 3-point reverse Bayonet lock. CA-Bayonet shares the same shell dimensions, contact layouts, contacts, and performance characteristics as the MIL-C-5015 threaded connectors; however the two series do not intermate. Over 180 contact layouts are available from 1 to 85 circuits and up to 245 Amps per contact. The standard MIL-C-5015 layouts allow the mixing of power and signal contacts, power only, or signal only. Contacts are available in solder, crimp, or PC termination covering wire gauges from size 26 to size 0 AWG. Thermocouple contacts (J, Y, K, T) are also available. These connectors are completely sealed to withstand moisture, condensation, vibration, and flash-over across a broad range of wire diameters. When the two connector halves are mated, the rear sealing grommet plus the dynamic interfacial seal at the front create an environmentally sealed assembly.

CT/Standard

MS Circular Connector to MIL-C-5015



ITT Cannon Threaded connectors are designed and manufactured to MIL-C-5015 to operate in extreme environmental conditions. They were originally designed for aircraft, but have since found their way into a wide variety of commercial and military applications. These popular connector styles are particularly well suited to commercial applications where a low cost, yet extremely rugged connector is required. Over 180 contact layouts are available from 1 to 65 positions and up to 150 Amps per contact. The standard MIL-C-5015 layouts allow the mixing of power and signal contacts, power only, or signal only. Contacts are available in solder, crimp, or PC termination covering wire gauges from size 20 to size 0 AWG. Thermocouple contacts (J, Y, K, T) are also available. These connectors are completely sealed to withstand moisture, condensation, vibration, and flash-over. When the two connector halves are mated, the rear sealing grommet plus the interfacial seal at the front create a completely sealed assembly.

Applications

Industrial environments requiring extreme environmental reliability and 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

Cannon



Features

CB/CT Common Features

Full Military Temperature Range

CB/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 20 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 24 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 over for many years and have proven their reliability in a wide range of combat and industrial applications. The primary applications are now in industry where these connectors have found broad application when reliability coupled with low cost is critical.

Environmental

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

CT Cannon Threaded/MS-E/F/R Connectors

Standard Shielding Interface

CT connectors meet and/or exceed the requirements for MIL-DTL-5015 E/F/R styles of connectors. The threaded coupling provides superior EMI/RFI shielding with out the need for special grounding spring components required for shielding bayonet style connectors. The threaded coupling nuts are used extensively in robotic applications where connector/cables rock continually. The standard CT coupling nuts holes for lock wires for 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 10⁻³ 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

Design original as 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 assemblies these in days to reduce the users total cost of ownership.

Agency Approvals

- MIL-C-5015
- VG 95 342

CB Cannon Reverse Bayonet CAB Connectors

Simple and Fast Mating and Un-mating

CB bayonet style connectors use a unique "reverse bayonet" coupling system for ease of use. This system allows mating and un-mating of the connector halves with a simple 120° rotation - without compromising shock, vibration, or moisture resistance. The coupling nut employs the exclusive Cannon "roller bolt" which is actually three small stainless steel wheels that roll down the mating ramps. The roller bolt lowers mating forces by half over competitive bayonet connectors while

providing the same level of shock, vibration, and moisture resistance. The large open ramps are easily cleaned of mud or other contaminants. The roller bolt and ramp coupling system eliminates the possibility of cross threading and thread damage possible with standard MIL-DTL-5015 threaded connectors. This quick mating design is easier to mate in cold weather, tight spaces, or on equipment which must be disassembled frequently.

Proven Reliability

CA-Bayonet has been used extensively in military vehicles such as the M1 Tank, the Hummer advanced locomotives, transit cars and auxiliary equipment.

Audible, Visual, & Tactile Confirmation of Mating

CB connectors, provide the user with 3 independent checks that the connector halves are mated. When the coupling nut is fully rotated, the three roller bolts snap into the end of the ramps with a loud "click" (audible confirmation). At that same moment, the user can actually feel the bolts click into the grooves (tactile confirmation). A red arrow on the receptacle, and a red dot on the coupling nut are aligned when the connector is properly mated (visual confirmation).

Environmental Sealing

The sealing of this connector is not compromised by any of the operating conditions defined in MIL-C-5015 or VG95 234. Mated connectors are completely watertight when tested to 1 bar (35 feet) per the requirements of the VG 95 234 specification. Unlike CT connectors the receptacle contacts are not bonded into the inserts unless requested by the end user.

Intermateable and Intermountable with all VG 95 234 Connectors

The standard MIL-C-5015 layouts and dimensions insure intermateability and intermountability with all connectors made in accordance with VG 95 234. When front mounted all CB connectors are intermountable with standard threaded MIL-C-5015 connectors, making it possible to upgrade without the need to change panel cutouts or clearances in most cases.

Agency Approvals

- Numerous European & International Rail Approvals (call for current listing)
- VG 95 234

Cannon



ITT Industries
Engineered for life

Technical Specifications

NEW!

Black Zinc Cobalt and Electroless Nickel Industrial Plating.

Call for more information.

MATERIALS & FINISHES

Shell	Aluminum Alloy. (Shells can be grounded).
Plating	Olive drab chromate coating over cadmium plating, black zinc cobalt, electroless nickel, bright nickel or green zinc
Contacts	Copper alloy
Platings	Hard Silver plating or Gold plating
Insulator*	Resilient polychloroprene (Neoprene)
Seals	Silicone or Neoprene

*Optional zero halogen and high temperature insulators are available. Call for information.

ELECTRICAL DATA

Operating Voltage/Test Voltage According to MIL-C-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. Call for details.

Current Rating at 68° F (+20°C)

CONTACT SIZE	(CB) MAX. CURRENT (AMPS)	CONTACT RESISTANCE MILLIHOHM MAX.	(CT) TEST CURRENT (AMPS**)	POTENTIAL DROP (MILLIVOLTS)
16/16S	22	16	13	49
12	41	3	23	42
8	74	1	46	26
4	135	0.5	80	23
0	245	0.2	150	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 call for info.

Wire Range Sizes	26 AWG to 0 AWG (See contact selection on pages CAB 18-21).		
Insulation Resistance	CB/CA:	>5000 Megohm (CB-Bayonet) >1000 Megohm (CA-Bayonet.) According to VG 95 319 Test 5.12 and VG 95 210 Part 32, Test condition B.	
	CT/CA/MS:	>5000 megohms at 77°F (25°C) per MIL-C-5015, 3.18	

Cannon




Technical Specifications

MECHANICAL

Operating Temperature	-55° to +125°C (-67° to +257°F) Neoprene		
Sealing	CB/CA:	Fully submersible to 1 bar (35 feet) when mated. Meets IP67, DIN 40 050, VG 95 234.	
	CT/CA/MS:	48 hours in 6 feet of water per MIL-C-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 according to MIL-W-5086 or within the listed ranges are used.		

CONTACT SIZE	WIRE SIZE (MIL-W-5086)	CB/CA-BAYONET INSULATION O.D. LIMIT (INCHES)				CT/CA/MS INSULATION O.D. LIMIT (INCHES)			
		MIN.	(mm)	MAX.	(mm)	MIN.	(mm)	MAX.	(mm)
16	16	.087	(2.2)	.110	(2.8)	.064	(1.63)	.130	(3.30)
12	12	.122	(3.1)	.138	(3.5)	.114	(2.90)	.17	(4.32)
8	8	.220	(5.6)	.256	(6.5)	.164	(4.17)	.255	(6.48)
4	4	.335	(8.5)	.370	(9.4)	.275	(6.98)	.370	(9.40)
0	0	.452	(11.5)	.512	(13.0)	.415	(10.54)	.550	(13.97)

Insulation Strip Lengths	(See Contact Selection Chart on  pages 102-103).	
Mating Life	CB/CA:	2,000 cycles minimum (commercial) 500 cycles minimum (to VG 95 234)
	CT/CA/MS:	100 cycles minimum. To MIL-C-5015, 3.16
Salt Spray	CB/CA:	Meets VG 95 234, Test 5.34
	CT/CA/MS:	MIL-STD-1344 Method 1001 Condition B. minimum. (Cad.)
Heat	CB/CA:	+125°C (+257°F) for 1000 hours
	CT/CA/MS:	+125°C (+257°F) for 60 hours, +85°C (+185°F) for 1000 hours per MIL-C-5015, 4.6.14, minimum.
Chemical Resistance	CB/CA:	Tested un-mated and mated according to VG 95 234 for hydraulic fluid, lubricating oil, fuels, humidity, water, salt water, solvents, and corrosion resistance.
	CT/CA/MS:	20 hour full immersion unmated in hydraulic fluid and lubricating oil per MIL-C-5015 minimum.
Vibration	CB/CA:	200 m/s ² at 10 to 2,000 Hz. To VG 95 234 Test 5.16.
	CT/CA/MS:	10 to 2,000Hz (15g's) 10 microseconds maximum discontinuity. To MIL-STD-1344 Method 2005 per MIL-C-5015.
Shock	CB/CA:	50g 11ms, three major axes. To VG 95 234 Test 5.17.
	CT/CA/MS:	50g 11ms duration, three major axes. 10 microseconds maximum discontinuity. To MIL-C-5015, 3.13.
Contact Type	Solder, crimp, PC, or thermocouple. Hard silver or gold plating.	

Cannon



ITT Industries
Engineered for life

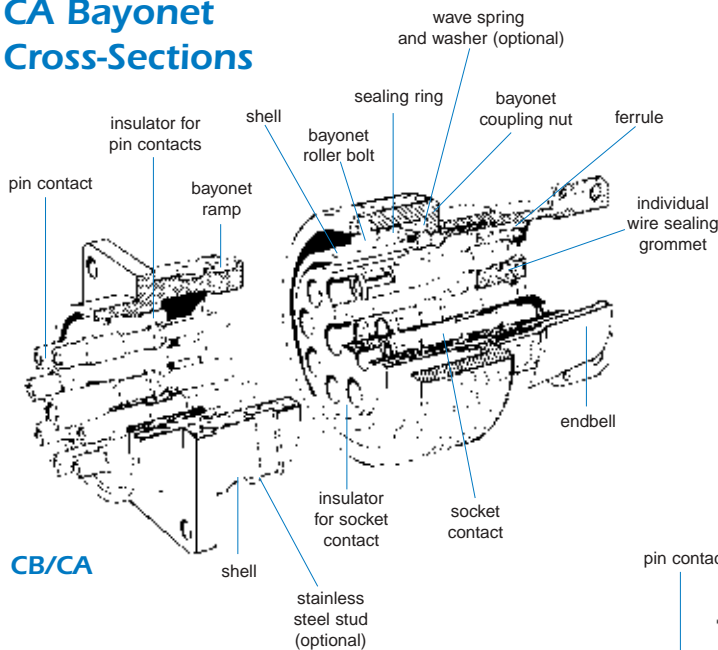
Number of Circuits	CB/CA: 1 to 65 CT/CA/MS: 1 to 56 (See pages 88-107).
Contact Insertion	CB/CA: From rear with simple hand tool Removable, 5 cycles minimum. CT/CA/MS: Solder contacts are bonded into insulator
Contact Retention	Pin and socket contacts are designed to resist severe vibration and repeated connection and disconnection. Contact retention and separation is tested according to VG 95 319 Part 2. (Contact retention to test 5.4 with test force in mating direction. Separation force test 5.7 using required test gauge.)

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)

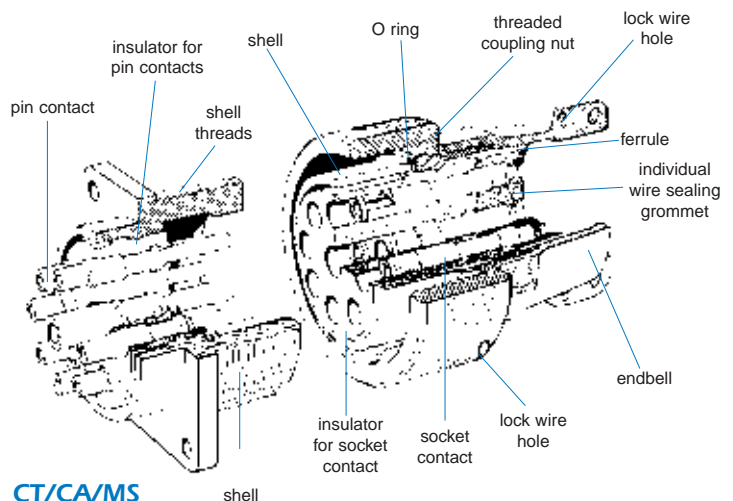
NOTE: CT/CA/MS receptacle contacts are bonded into the insulator.

Polarization	Key and keyway plus three point bayonet with optional rotational polarization. (See pages 93-101).
Approvals/Specifications	CB/CA: ■VG 95 234 ■ MIL-C-5015 CT/CA/MS: ■VG 95 342 ■ MIL-C-5015

CA Bayonet Cross-Sections



CB/CA



CT/CA/MS

Cannon

