

Interconnect Technologies & Solutions

For over 90 years, ITT has been developing innovative solutions for harsh environment applications. We have a proven track record of demonstrating our expertise and commitment to the industrial industry, offering the broadest portfolio of interconnect products.

Our interconnect range include sealed circulars, plastic and metal shell bayonet coupling circulars, miniature metal shell circulars, PC board header connectors and sensor and direct device connectors. ITT is also a systems supplier, providing value-added module and harness assemblies.

In addition to our CA Bayonet series, we also offer these connectivity solutions:

Environmentally Sealed

Harsh Environments



Cannon MIL-DTL-38999

High density contact arrangements, corrosion-resistant shells, rear release crimp snap-in contacts, operates under severe high temperature vibration testing.

Cannon KPT / KPSE

Environmentally sealed miniature circular connectors available in two versions: KPT (solder contact) and KPSE (high performance crimp contact). Intermateable and intermountable with all MIL-C-26482 connectors and is available with many materials, finishes and configurations.



Cannon Trident

Versatile range of electrical connectors based on a standard contact design. Options include; industrial grade, harsh environment and shielded circulars.

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Introduction

Cannon CA-Bayonet series was designed in accordance with the VG95234 specification. This versatile and highly reliable connector series is an improvement on the well established MIL-C-5015 series. CA-Bayonet has a proven bayonet coupling design that offers exceptional vibration protected sealing against fluids, and easy connection/disconnection.

Initially designed for aircraft and airborne applications, these rugged connectors are used in the electrical equipment of trucks, off-road vehicles, ships, earth-moving equipment, telecommunications and others.

Connectors in accordance with VG95234 are interchangeable with the corresponding MIL-C-5015 connectors. Both connector lines feature the same shell dimensions and contacts layouts. However, due to the different coupling systems (MIL-C-5015 threaded coupling, VG95234 bayonet coupling) they are not intermateable.

Advantages

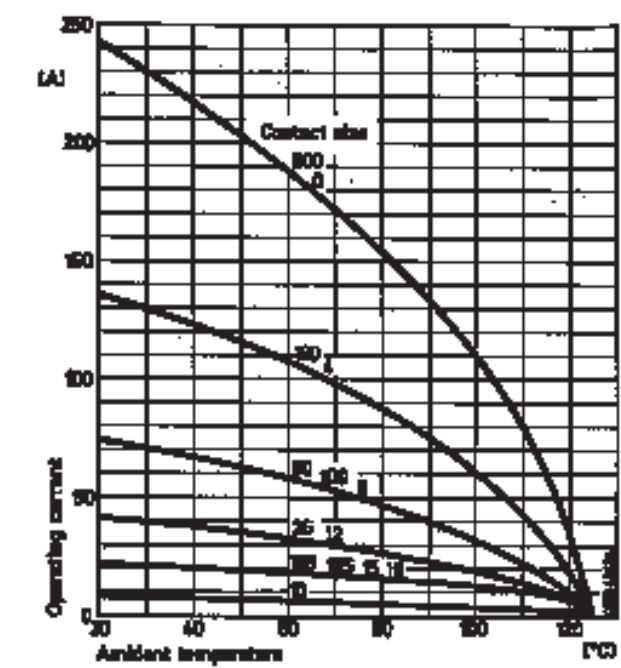
- rugged shell design
- environmental
- bayonet coupling for easy mating and unmating
- vibration proof
- waterproof up to 1 bar (35 feet of water)

Electrical Data

Contact rating at 68 °F (+20 °C)

Contact size	max. current A
10	8
16S/15S	22
16/15	22
12/25	41
8/60/100	74
4/160	135
0/500	245

Current rating
depending on ambient temperature



Operating voltage and connector usage

Connectors in equipments must not be separated or mated under load when used per specifications.

As according to specification the connectors are suitable for an operating voltage of 50 V (see Product Safety Information). However, this is only valid, when the connectors are freely accessible during operation and consequently might be touchable. When the connectors will be operated with line voltage, please contact ITT Customer Service.

Contact resistance
(Millivolt test)

The contact resistance has to be tested according to VG95234 part 2, test no. 5.10.1 and VG 95210, part 37. The measuring points are indicated in the illustration.



Contact size		Max. contact resistance mΩ
metric	AWG	
10	–	12
15S/15	16S/16	6
25	12	3
60/100	8	1
160	4	0,5
500	0	0,2

Insulation resistance
Acc. to VG95319, part 2, test no. 5.12 and VG95210, part 32, test condition B
Standard insulator material > 1000 MΩ
FKM insulator material (upon request) > 5000 MΩ

Test voltage
Acc. to VG95319, part 2, test no. 5.13 and VG 95210, part 31
Test voltage for service rating:

Service rating	Test voltage V _{rms}
Instruments	1050
A	1600
B	4000
D	2500
E	3000

Air and creepage paths (min.)

Voltage class	Instr.	A	D	E
Air and creepage paths mm	0,7	1,1	2,8	4,8

Mechanical Features

Ambient temperature

Standard insulator material
–55°/125°C (– 67/257°F)

FKM insulator material*
–30°/200°C (– 22/392°F)

Safety provisions**

IP 67 acc. to DIN 40 050
(1 bar pressure after 12 hrs.)

Vibration test

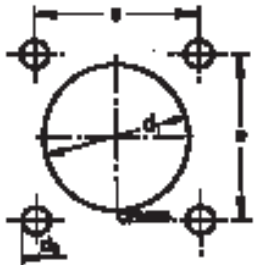
200 m/s² at 10 to 2000 Hz

Mating cycles

500 min.

Mounting Holes

Mounting holes for wall mounting receptacles style A, B1, B2, C1, C2, J1, J2, N1 and N2 acc. to VG95234, or CA 3100E/F/R-B and CA 3102 E-B.

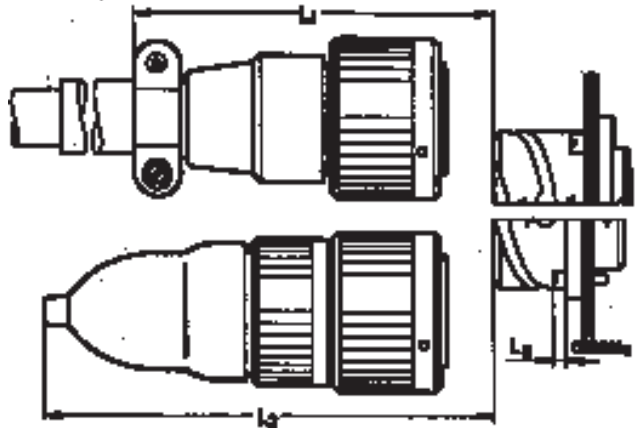


Shell size	ø d1H12 Style A CA 3102E-B	Style B1, B2 C1, C2, J1, J2 N1, N2 CA 3100E, F, R-B TBF-B/-05	ø d2H13 Style A, B2, C2, J2, N2 CA-B Mod-05	Style B1, C1, J1, N1 CA 3100E, F, R-B	e
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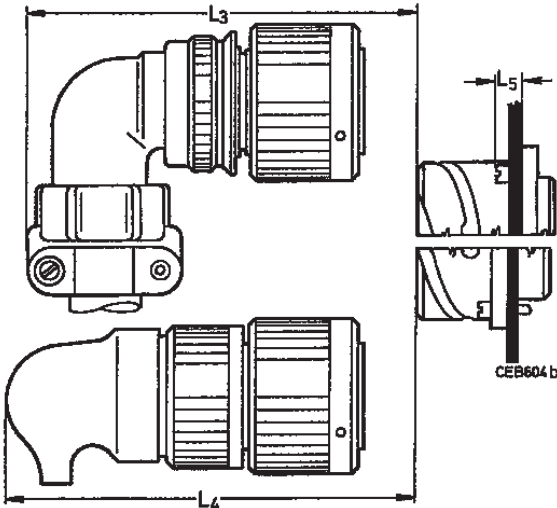
Separating and Mounting Dimensions

When using connectors according to VG 95234 the below mentioned installation dimensions have to be met.

Connector style D
or
CA3106E-B and
CA3106F-B
CA3106F-B-13/-14/-15



Connector style G, M, R1
or
CA3106E-B-02/-03/-06
CA3106E-B-13/-14/-15 and
CA3106E-B-32
with shrink boot, straight,
acc. VG95343



How to order

VG Order reference



Explanation

Series	VG 95234
Shell style	J1, J2, N1, N2, S1, U1

Modification (only for CA.....-B)	01	– metric crimp contacts
	02	– adapter for heat shrink boots AWG crimp contacts
	03	– adapter for heat shrink boots, metric contacts
	04	– rear mount, thread in flange, metric crimp contacts
	05	– trear mount, through holes in flange, (CA3100, CA 3102, CA 20, TBF)
	06	– shrink boot adapter, thread holes in flange, solder pot contacts
	08	– angular endbell, through holes in flange (for CA3100 only)
	09	– angular endbell, through holes in flange (for CA3100 only)
	13	– shielded version, solder contacts
	14	– shielded version, metric crimp con- tacts
	15	– shielded version, AWG crimp contacts

Cannon VG/CA-Bayonet

View on Mating face of Pin Insulator	No. of Contacts	Contact arrangement		Service rating	Insulator position						Position	Special polarization	Insulator weight (g) including contacts	
		Contact size VG	CA		N	V	W	X	Y	Z			pin	socket
	3	10SL-3 15S	10SL-3 16S	– A	0	–								

Cannon VG/CA-Bayonet

View on Mating face of Pin Insulator	No. of Contacts	Contact arrangement		Service rating	Insulator position						Position	Special polarization	Insulator weight (g) including contacts	
		Contact size VG	CA		N	V	W	X	Y	Z			pin	socket
	3 2 1	16-7 15 100	16-7 16 8	A	0	–								

Cannon VG/CA-Bayonet

View on Mating face of Pin Insulator	No. of Contacts	Contact arrangement		Service rating	Insulator position						Position	Special polarization	Insulator weight (g) including contacts	
		Contact size VG	CA		N	V	W	X	Y	Z			pin	socket
	6	–	18-12 16	A	0	–	80	–	–	280				

Cannon VG/CA-Bayonet

View on Mating face of Pin Insulator	No. of Contacts	Contact arrangement		Service rating	Insulator position						Position	Special polarization	Insulator weight (g) including contacts	
		Contact size VG	CA		N	V	W	X	Y	Z			pin	socket
	5	—	20-14	A	0	—	80	110	2					

Cannon VG/CA-Bayonet

View on Mating face of Pin Insulator	No. of Contacts	Contact arrangement		Service rating	Insulator position						Position	Special polarization	Insulator weight (g) including contacts	
		Contact size VG	CA		N	V	W	X	Y	Z			pin	socket
	11	–	20-33											

Cannon VG/CA-Bayonet

View on Mating face of Pin Insulator	No. of Contacts	Contact arrangement		Service rating	Insulator position						Position	Special polarization	Insulator weight (g) including contacts pin socket	
		Contact size VG	CA		N	V	W	X	Y	Z				
	4	– –	22-10 <											

Cannon VG/CA-Bayonet

View on Mating face of Pin Insulator	No. of Contacts	Contact arrangement		Service rating	Insulator position						Position	Special polarization	Insulator weight (g) including contacts	
		Contact size VG	CA		N	V	W	X	Y	Z			pin	socket
	7	–	22-28 12	A	–	–								

Cannon VG/CA-Bayonet

View on Mating face of Pin Insulator	No. of Contacts	Contact arrangement		Service rating	Insulator position						Position	Special polarization	Insulator weight (g) including contacts	
		Contact size VG	CA		N	V	W	X	Y	Z			pin	socket
	5 2 3													

Cannon VG/CA-Bayonet

View on Mating face of Pin Insulator	No. of Contacts	Contact arrangement		Service rating	Insulator position						Position	Special polarization	Insulator weight (g) including contacts	
		Contact size VG	CA		N	V	W	X	Y	Z			pin	socket
	12 6 6	–	28-9 16 12											

Cannon VG/CA-Bayonet

View on Mating face of Pin Insulator	No. of Contacts	Contact arrangement		Service rating	Insulator position						Position	Special polarization	Insulator weight (g) including contacts	
		Contact size VG	CA		N	V	W	X	Y	Z			pin	socket
	37	28-21 1												

Cannon VG/CA-Bayonet

View on Mating face of Pin Insulator	No. of Contacts	Contact arrangement		Service rating	Insulator position						Position	Special polarization	Insulator weight (g) including contacts	
		Contact size VG	CA		N	V	W	X	Y	Z			pin	contacts socket
	23	32-6 160/4 60/8												

Cannon VG/CA-Bayonet

View on Mating face of Pin Insulator	No. of Contacts	Contact arrangement		Service rating	Insulator position						Position	Special polarization	Insulator weight (g) including contacts	
		Contact size VG	CA		N	V	W	X	Y	Z			pin	socket
	54	–												

Cannon VG/CA-Bayonet

View on Mating face of Pin Insulator	No. of Contacts	Contact arrangement		Service rating	Insulator position						Position	Special polarization	Insulator weight (g) including contacts	
		Contact size VG	CA		N	V	W	X	Y	Z			pin	socket
	47 7 40	–	36-7 12 16	A	–									

Cannon VG/CA-Bayonet

View on Mating face of Pin Insulator	No. of Contacts	Contact arrangement		Service rating	Insulator position						Position	Special polarization	Insulator weight (g) including contacts	
		Contact size VG	CA		N	V	W	X	Y	Z			pin	socket
	52	–	<											

Alternate Insert Positions

Indicates location of centerline of key or keyway of shells in fixed normal position. Insert is rotated as shown by arrow and letters.

Connectors according to VG95234 are generally available with insert positions X and Y only.

- Tolerances:
- # 10SL-20: ± 2°
 - # 22-36: ± 1,5°
 - # 32A69: ± 1°



Special Insert Alternations

Special insert alternations are marked by positions. The position number indicates the turning of the contact insert in the direction of the polarizing key in view of the mating or termination side of the socket insulator.

Contact arrangement	Position of	Contact arrangement	Polarization
12SA10	3	12SA10	110°
	8	12SA10	250°
18-17	12	18-9	100°
24A24	2	24A24	260°
	4	24A24	80°
	9	24A24	280°
	12	24A24	100°
32-16	12	32-6	100°

Contact Arrangements

Contact arrangement	No. of contacts	Contact size					
		0 500	4 160	8 100 60	12 25	16 15	20 10
12S4	1					1	
14S4	1					1	
16-12	1		1				
18-6	1		1				
18-7	1			1			

Contact Arrangements

Contact arrangement	No. of contacts	Contact size					
		0 500	4 160	8 100 60	12 25	16 15	20 10
24-19	12					12	
24A24	12				12		
28-9	12				6	6	
28-51	12				12		
20-11	13					13	
20-27							

Box Mounting Receptacle

VG 95234 – Style A
CA 3102E-B and Modifications, see page 9

Receptacle for front panel mounting with square flange.
Threaded holes in flange not possible.



VG95234 Part no.	Cannon Part no.	d ₁ max.	d ₂ H13	d ₃ -0,15	l ₁ ±0,3	l ₂ +0,4	l ₃ ±0,2	l
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Box Mounting Receptacle

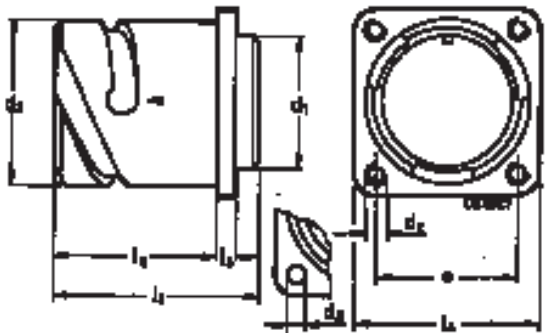
VG95234 Style B1 (with threaded holes in flange)

CA3102-B and Modifications, e g **-04**, **-109** or **-111**

CA3102-B designates a receptacle with square flange for rear panel mounting.

VG95234 Style B2 (with through holes in flange)

CA3102E-B and Modifications, see page 9



Thru-Bulkhead Receptacle

VG 95234 Style C1 resp. TBF-B (with threaded holes)
VG 95234 Style C2 resp TBF-B-05 (with flange through holes)

TBF-B designates a bulkhead receptacle with mounting flange.

Modifications see page 9



VG95234 Part no.	Cannon Part no.	d ₂ C1	C2 H13	d ₂
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Wall Mounting Receptacle

CA3100F-B designates a wall mounting receptacle with straight endbell and protective hose.

CA3100F-B and Modifications, see page 9



Straight Plug

CA3101R-B designates a cable connection plug with short endbell, without cable clamp

CA3101R-B and Modification, see page 9



Cannon Part no.	d ₁ -0,15	d ₂ min.	d ₃ max.	d ₄ max.	l ₁ max.	l ₂ +0,4	l ₃ ±0,2	l ₅ ±0,2	Weight ^{1)</}
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Sealing Rings

for use on the barrel of the plug

Size	Part no.	d ₉
10SL	980-8550-000	9,0
12S	980-8551-000	11,5
14S	980-8552-000	14,0
16/16S	980-8553-000	17,0
18	980-8554-000	19,5
20	980-8555-000	22,5
22	980-8556-000	25,4
24	980-8557-000	28,5
28		

Termination Tools

for pin contacts according VG95234 and for Cannon contacts with reduced termination size.

Contact size	Wire size		Hand crimp tool Type	Crimp die for M22520-1-01	Pneumatic crimp tool ¹⁾		Universal-type	Turret for Universal type
	mm ²	AWG			Standard type	Turret for Standard type		
10/20	0,2 – 1,0	20 – 24	M22520-1-01 Hand crimp tool (eight indent crimp)	600 325 600 325				

Termination Tools

for pin contacts according VG95234 and Cannon
contacts with reduced termination diameter.

Contact size	Wire size		Hand crimp tool Type	Crimp die for M22520-1-01	Pneumatic crimp tool ¹⁾		Universal type	Turret for Universal type
	mm ²	AWG			Standard type	Turret for Standard type		
10/20	0,2-1,0	18 – 24	M22520-1-01 Eight indent tool (eight indent Crimp)	600 325 				

