cannon

Hermetic Connectors Catalog

Providing over 25 years of shipboard navigational guidance and safety without a single failure

ITT

Glass Sealed Hermetic Connectors

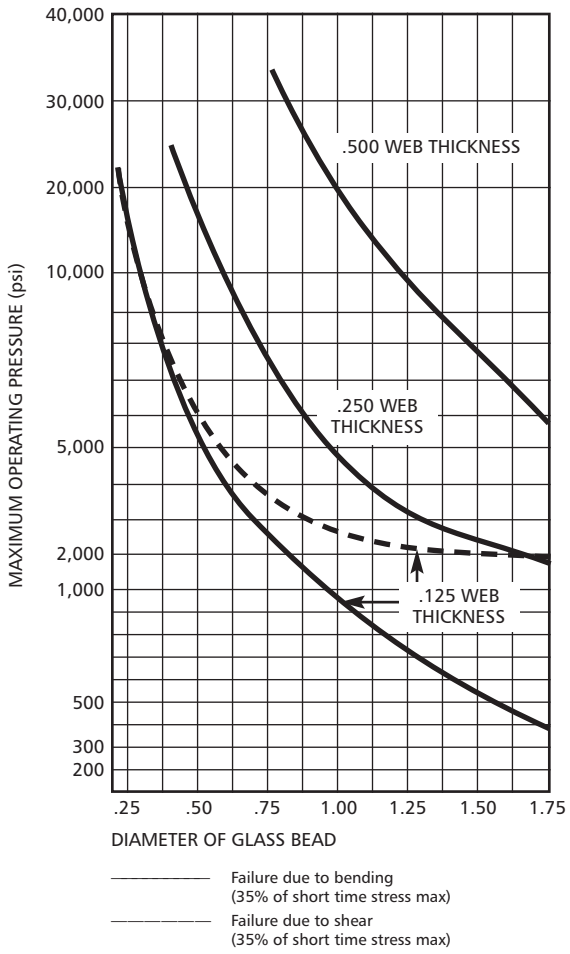
Users around the world have found that ITT Cannon hermetic connectors function reliably under extreme environmental conditions. Hermetic connectors are impervious to most liquids and gases, including acids, alkalis, oils, gasoline, jet fuel and hydraulic fluids. They can take shock loads as high as 100 g's with no loss in hermeticity, and can take extremes of both heat and cold with no loss of performance.

Manufacturing Expertise

Cannon compression glass seals are strong. A 50,000 psi compression stress generates a sealing force that can withstand up to 10,000 psi differential pressure (pressure varies with connector type). Since it is independent of adhesion, the seal has a temperature capability of -260° to +450° Fahrenheit. The seal has high radiation resistance and a leak rate of less than 10^{-8} cc per second.

All ITT Cannon hermetic connectors are 100% tested after fabrication. A stringent examination ensures that all military specifications are met. The product is tested for leak performance, dielectric withstanding voltage and insulation resistance.

PRESSURE CAPABILITIES OF SOLID OR INDIVIDUAL GLASS BEAD CONNECTORS



Compression Glass Seals

Glass is an ideal electrical insulating material for connectors. Its mechanical strength readily supports contacts. The compression seal is achieved by placing a glass preform within the surrounding metal shell, heating the glass and shell to the glass melting temperature, and then cooling the assembly. As the assembly cools, the glass becomes rigid and the metal shell begins to compress the glass. This compression provides a very high strength, high reliability hermetic seal.

Custom Design Capabilities

Custom hermetic connectors can be manufactured to meet special requirements. Hermetic connectors have been developed to withstand exposure to propellants, high pressure and high temperature conditions for missiles, "sub-safe" connectors for penetration feed-thru on ships and submarines, connectors for aircraft engines and many more.

This catalog provides a sample of the standard hermetic connectors available from Cannon. If you don't immediately find the connector that is right for your application, we encourage you to call an ITT Cannon technical sales representative in your area or complete and mail the business reply card at the back of this catalog.

Table of Contents

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Hermetic			
Series	**KPTH**	**PVH**	**KJLY**
Military Spec Market	MIL-DTL-26482-style Series I Industrial/Commerical	MIL-DTL-26482-style Series I VG95328 Industrial/Commerical	MIL-DTL-38999-style Series I Military/Aerospace
Coupling System	Bayonet	Bayonet	Bayonet
Maximum Temperature Range	125 deg C	125 deg C	200 deg C
Hardware	Stainless Steel/Steel	Stainless Steel/Steel	Stainless Steel/Steel
Finishes	Fused Tin/Nickle	Fused Tin/Nickle	Fused Tin/Nickel
Contact Termination	Solder	Solder	Solder/Crimp
PCB Termination	Available	Available	Available
Contact Type	Signal	Signal	Signal/Power
Contact Release	Captive	Captive	Captive/Rear Release
Contact Plating	Gold	Gold	Gold
Contact Sizes	Size 12-20	Size 16-20	Size 8-22
Wire Range AWG	Size 12-24	Size 16-24	Size 8-28
Test Current	3.0-23.0 Amps	3.0-13.0 Amps	1.5-23.0 Amps
Dielectric Withstanding Voltage Sea Level	1500-2300 VAC rms	1500-2300 VAC rms	1000-2300 VAC rms
Shell Sizes	8-24	10-24	9-25
Mating Cycles	500	500	500
RoHS Compliance	Available	Available	Available
Sea Spray Max	48 Hours	48 Hours	500 Hours
Grommet and Seals	Neoprene	Silicone	Silicone
Page No.	J-7	J-7	J-13

Hermetic			
Series	**KJY**	**KJAY**	**KJAYA**
Military Spec Market	MIL-DTL-38999-style Series II Military/Aerospace	MIL-DTL-38999-style Series III Military/Aerospace	MIL-DTL 38999-style Series III Military/Aerospace
Coupling System	Bayonet	Triple Start	Triple Start
Maximum Temperature Range	200 deg C	200 deg C	125 deg C
Hardware	Stainless Steel/Steel	Stainless Steel/Steel	Aluminum and Stainless Steel
Finishes	Cadmium/Nickel	Nickel	Cadmium/Nickel
Contact Termination	Solder/Crimp	Solder/Crimp	Solder/Crimp
PCB Termination	Available	Available	Available
Contact Type	Signal/Power	Signal/Power	Signal/Power
Contact Release	Captive/Rear Release available	Captive/Rear Release available	Captive/Rear Release
Contact Plating	Gold	Gold	Gold
Contact Sizes	Size 8-22	Size 8-22	Size 8-22
Wire Range AWG	Size 8-28	Size 8-28	Size 8-28
Test Current	1.5-23.0 Amps	1.5-23.0 Amps	1.5-23.0 Amps
Dielectric Withstanding Voltage Sea Level	1000-2300 VAC rms	1000-2300 VAC rms	1000-2300 VAC rms
Shell Sizes	8-24	9-25	9-25
Mating Cycles	250 with spring fingers	500	500
RoHS Compliance	Available	Available	Available
Sea Spray Max	500 Hours	500 Hours	500 Hours
Grommet and Seals	Silicone	Silicone	Silicone
Page No.	J-13	J-13	J-28

Hermetic			
Series	**GS / BFH / TBFH**	**MDMH**	**D*H**
Military Spec Market	MIL-L-5015-style Type Military / Aerospace	MIL-DTL-83513-style Type Military / Aerospace	MIL-DTL 24308-style Military/Aerospace
Coupling System	Threaded	Jack Screw	Jack Screw
Maximum Temperature Range	150 deg C	150 deg C	150 deg C
Hardware	Stainless Steel/Steel	Stainless Steel/Steel	Stainless Steel/Steel
Finishes	Fused Tin/Nickle	Fused Tin/Nickle	Fused Tin/Nickel
Contact Termination	Solder/Crimp	Solder	Solder
PCB Termination	Available	Available	Available
Contact Type	Signal/Power	Signal	Signal/Power
Contact Release	Captive/Rear Release	Captive	Captive
Contact Plating	Tin/Gold	Gold	Gold
Contact Sizes	Size 0-16	Size 24	Size 8-22
Wire Range AWG	Size 8-24	Size 26-30	Size 8-28
Test Current	10-100 Amps	3.0 Amps Max	1.5-23.0 Amps
Dielectric Withstanding Voltage Sea Level	1500-2300 VAC rms	150 VAC rms	300 VAC rms
Shell Sizes	8-40	9, 15, 21, 25, 31, 37, 51	A, E, B, C, D
Mating Cycles	250	250	250
RoHS Compliance	Available	Available	Available
Sea Spray Max	48 Hours	48 Hours	48 Hours
Grommet and Seals	Silicone	Silicone	Silicone
Page No.	J-30	J-43	J-45

- Pin contacts in a compression glass seal
- Solder pot or eyelet termination
- Leak rate not in excess of .01 micron cu. ft./hr.
- 100 psi differential causes no detectable leakage in excess of .01 micron cu. ft./hr.
- 100 g shock with no loss of hermeticity.
- Thermetic shock from -75°C to +200°C without affecting leakage rate.

ITT Cannon hermetically-sealed KPT and PVA (MIL-C-26842-style, Series I and II) connectors are designed for those applications and environments that require delicate mechanisms to be protected from variations in atmospheric pressure.

These miniature, circular connectors have broad-base commercial, military and industrial applications, ranging from general purpose to space and lunar environments.

The receptacles are available with pin contacts only and in three shell styles: box mounting KPT02H, solder mounting KPT01H, and jam nut KPT07H for Series I; box mounting PVA0, solder mounting PVA3, and jam nut PVA7 for Series II. Contact arrangements are tooled in a full leak-free compression glass web.

How To Order

KPTH - Series I

KPT	I	H	18	A	32	P	N
MS	3113	H	18	C	32	P	N

SERIES PREFIX
SHELL STYLE
CLASS
SHELL SIZE
MATERIAL AND CONTACT TERMINATION
CONTACT ARRANGEMENT
CONTACT TYPE
ALTERNATE INSERT POSITION
MODIFICATION CODE

SERIES PREFIX
KPT — ITT Cannon Prefix
MS — complies with the MIL standard "style" not necessary here
Series I with interfacial seal (when specified as shown).

SHELL STYLE
ITT Cannon designation
01 — Solder Mounting Receptacle
02 — Box Mounting Receptacle (not available in MS)
07 — Jam Nut Mounting Receptacle

MS designation
3113 — Solder Mounting Receptacle
3114 — Jam Nut Receptacle

CLASS
H — Hermetic

SHELL SIZE
8, 10, 12, 14, 16, 18, 20, 22, 24

MATERIAL AND CONTACT TERMINATION
C — Steel Shell and Solder Pot Contacts (MS specification)
Y — Steel Shell and Eyelet Contacts (MS specification)
A — Stainless Shell & Solder Pot Contacts (not MS approved)
B — Stainless Shell & Eyelet Contacts (not MS approved)
No designator — Connector *without* face seal and with solder pot contacts and steel shell (not MS approved).

CONTACT ARRANGEMENTS
See page J-8.

CONTACT TYPE
P — Pin
S — Socket (Consult factory)

ALTERNATE INSERT POLARIZATION
N (normal), W, X, Y, and Z (N designator not applicable to MS)

MODIFICATION CODE
Consult factory (not applicable to MS).

PVA - Series II

PVA	7	H	18	B	32	P	N
MS	3449	H	18	C	32	P	N

SERIES PREFIX
SHELL STYLE
CLASS
SHELL SIZE
MATERIAL AND CONTACT TERMINATION
CONTACT ARRANGEMENT
CONTACT TYPE
ALTERNATE INSERT POLARIZATION

SERIES PREFIX
PVA — ITT Cannon Equivalent MIL-C-26482-style (Series II)
PV — ITT Cannon Prefix, Stainless Steel Hardware
MS — Not currently available

SHELL STYLE
ITT Cannon Numbers:
0 — Box Mounting Receptacle
3 — Solder Mounting Receptacle
7 — Jam Nut Mounting

MS designation
3440 — PVA0H
3443 — PVA3H
3449 — PVA7H

CLASS
H — Hermetic

SHELL SIZE
8, 10, 12, 14, 16, 18, 20, 22, 24

MATERIAL AND CONTACT TERMINATION
B — PV only — Solder Pot Contacts
C — MS only — Solder Pot Contacts

CONTACT ARRANGEMENTS
See page J-8.

CONTACT TYPE
P — Pin
S — Socket (Consult factory)

ALTERNATE INSERT POLARIZATION
N (normal), W, X, Y, and Z

MODIFICATION CODE
Consult factory

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Standard Data

ELECTRICAL

Number of contacts: 2 thru 61

Wire Size, AWG: #16, #20

Contact Termination: Solder (PC Tails-Consult Factory)

Contact Rating

SIZE	RATED AMPS	TEST CURRENT	MV DROP
20	7.5	5.0	70
16	22.0	13.0	75

Service Rating

TEST VOLT	SERVICE	AC (rms)	DC
Sea	1	1500	2100
Level	2	2300	3200

MATERIALS AND FINISHES

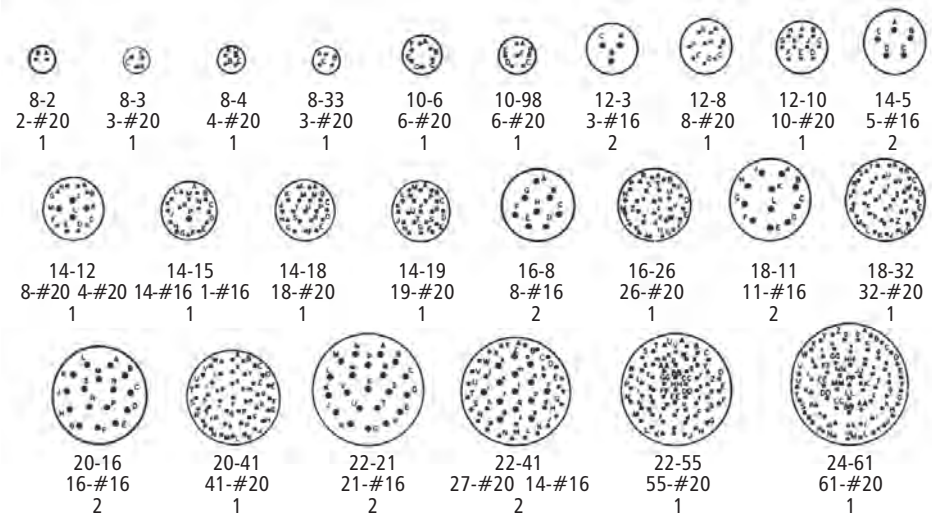
	KPT (Series I)	PVA (Series II)
Shell	Steel, electrodeposited tin over cadmium	Steel, .0001 min. tin over nickel
Insulator	Compression glass	Compression glass
Jam Nut	Steel	Steel, nickel plated
Bayonet Pins		Stainless steel
Seals	Silicone and polychloroprene	Static and interfacial-fluorosilicone/ silicone elastomer
O Ring (Flange)	Nitrile	Silicone elastomer
Contacts	Steel, electrodeposited tin over cadmium	Ferrous alloy, plated .00005 min. gold over nickel

MECHANICAL

	KPT (Series I)	PVA (Series II)
Shell Styles	1 — Solder mounting receptacle 2 — Box mounting receptacle 7 — Jam nut mounting receptacle	0 — Box mounting receptacle 3 — Solder mounting receptacle 7 — Jam nut receptacle
Shell Sizes	8 thru 24	8 thru 24
Polarization/Coupling	5 Keyway/3 point bayonet	5 Keyway/3 point bayonet
Service Class	H — Hermetic	H — Hermetic

Contact Arrangements

Drawing not to scale; face view of pin insert shown



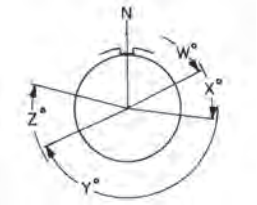
Shell Size	8-2	8-3	8-4	8-33	10-6	10-98	12-3	12-8	12-10	14-5
No. of Contacts	2-#20	3-#20	4-#20	3-#20	6-#20	6-#20	3-#16	8-#20	10-#20	5-#16
Service Rating	1	1	1	1	1	1	2	1	1	2

Shell Size	14-12	14-15	14-18	14-19	16-8	16-26	18-11	18-32
No. of Contacts	8-#20 4-#20	14-#16 1-#16	18-#20	19-#20	8-#16	26-#20	11-#16	32-#20
Service Rating	1	1	1	1	2	1	2	1

Shell Size	20-16	20-41	22-21	22-41	22-55	24-61
No. of Contacts	16-#16	41-#20	21-#16	27-#20 14-#16	55-#20	61-#20
Service Rating	2	1	2	2	1	1

Alternate Insert Positions

(Face view of pin insert)



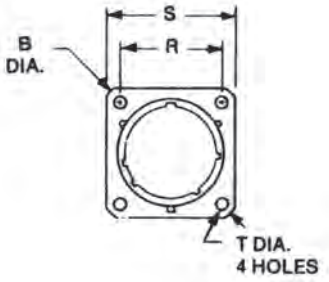
The diagram above indicates alternate insert positions. The five positions (W, X, Y, Z and Normal) differ in degree of rotation for various sizes and arrangements. For the exact degree of rotation, and for the list of contact arrangements and alternate positions available, refer to the tabulation at right.

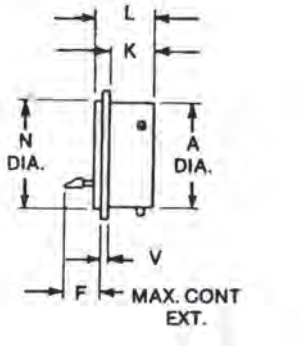
No. of Contacts	Shell Size	Arr. No.	Degrees of Rotation W	X	Y	Z
2	8	8-2	58	122	—	—
3	8	8-3	60	210	—	—
	8	8-33	90	—	—	—
4	8	8-4	45	—	—	—
6	10	10-6	90	—	—	—
	10	10-98	90	180	240	270
3	12	12-3	—	—	180	—
8	12	12-8	90	112	203	292
10	12	12-10	60	155	270	295
5	14	14-5	40	92	184	273
12	14	14-12	43	90	—	—
15	14	14-15	17	110	155	234

No. of Contacts	Shell Size	Arr. No.	Degrees of Rotation W	X	Y	Z
18	14	14-18	15	90	180	270
19	14	14-19	30	165	315	—
8	16	16-8	54	152	180	331
26	16	16-26	60	—	275	338
11	18	18-11	62	119	241	340
32	18	18-32	85	138	222	265
16	20	20-16	238	318	333	347
41	20	20-41	45	126	225	—
21	22	22-21	16	135	175	349
41	22	22-41	39	135	264	196
55	22	22-55	30	142	226	314
61	24	24-61	90	180	270	324

Box Mounting Receptacles

KPT02H

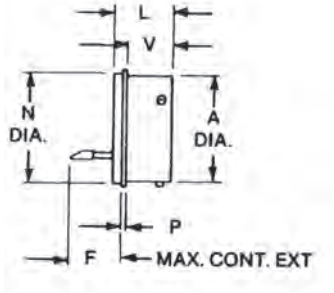




Shell Size	A +.001 (0.03) -.005 (0.13)	B ± .020 (0.51)	F	K ± .020 (0.51)	L ± .005 (0.13)	N +.001 (0.03) -.005 (0.13)	R ± .005 (0.13)	S ± .010 (0.25)	T ± .005 (0.13)	V ± .010 (0.25)
8	.473 (12.01)	1.062 (26.97)	.344 (8.74)	.438 (11.13)	.546 (13.87)	.562 (14.27)	.594 (15.09)	.812 (20.62)	.120 (3.05)	.062 (1.57)
10	.590 (14.99)	1.250 (31.57)	.344 (8.74)	.438 (11.13)	.546 (13.87)	.672 (17.07)	.719 (18.26)	.938 (23.83)	.120 (3.05)	.062 (1.57)
12	.750 (19.05)	1.375 (34.82)	.344 (8.74)	.438 (11.13)	.546 (13.87)	.781 (19.84)	.812 (20.62)	1.031 (26.19)	.120 (3.05)	062 (1.57)
14	.875 (22.22)	1.500 (38.10)	.344 (8.74)	.438 (11.13)	.546 (13.87)	.906 (23.01)	.906 (22.99)	1.125 (28.58)	.120 (3.05)	062 (1.57)
15	1.000 (25.40)	1.625 (41.28)	.344 (8.74)	.438 (11.13)	.546 (13.87)	1.031 (26.19)	.969 (24.62)	1.219 (30.96)	.120 (3.05)	062 (1.57)
18	1.125 (28.58)	1.750 (44.45)	.344 (8.74)	.438 (11.13)	.546 (13.87)	1.156 (29.36)	1.062 (26.97)	1.312 (33.32)	.120 (3.05)	062 (1.57)
20	1.250 (31.75)	1.875 (47.62)	.344 (8.74)	.468 (11.89)	.608 (15.44)	1.250 (31.75)	1.156 (29.36)	1.438 (36.53)	.120 (3.05)	.094 (2.39)
22	1.375 (34.92)	2.050 (52.07)	.344 (8.74)	.468 (11.89)	.640 (16.26)	1.375 (34.92)	1.250 (31.75)	1.562 (39.67)	.120 (3.05)	.094 (2.39)
24	1.500 (38.10)	2.250 (57.15)	.320 (8.13)	.500 (12.70)	.673 (17.09)	1.500 (38.10)	1.375 (34.92)	1.687 (42.85)	.147 (3.73)	.094 (2.39)

Solder Mounting Receptacles

MS 3113H **KPT01H**

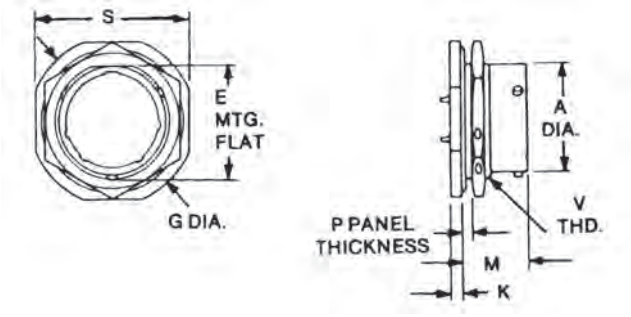


Shell Size	A +.001 (0.03) -.005 (0.13)	F	L ± .005 (0.13)	N +.001 (0.03) -.005 (0.13)	P ± .005 (0.13)	S +.010 (0.25) -.016 (0.41)	V ± .005 (0.13)
8	.473 (12.01)	.370 (9.40)	.546 (13.87)	.562 (14.27)	.031 (0.79)	.631 (16.03)	.421 (10.69)
10	.590 (14.99)	.370 (9.40)	.546 (13.87)	.672 (17.07)	.031 (0.79)	.756 (19.20)	.421 (10.69)
12	.750 (19.05)	.370 (9.40)	.546 (13.87)	.781 (19.84)	.031 (0.79)	.850 (21.59)	.421 (10.69)
14	.875 (22.22)	.370 (9.40)	.546 (13.87)	.906 (23.01)	.031 (0.79)	.975 (24.76)	.421 (10.69)
15	1.000 (25.40)	.370 (9.40)	.546 (13.87)	1.031 (26.19)	.031 (0.79)	1.100 (27.94)	.421 (10.69)
18	1.125 (28.58)	.370 (9.40)	.546 (13.87)	1.156 (29.36)	.031 (0.79)	1.224 (31.09)	.421 (10.69)
20	1.250 (31.75)	.370 (9.40)	.608 (15.44)	1.250 (31.75)	.031 (0.79)	1.318 (33.48)	.485 (12.32)
22	1.375 (34.92)	.370 (9.40)	.640 (16.26)	1.375 (34.92)	.031 (0.79)	1.444 (36.68)	.485 (12.32)
24	1.500 (38.10)	.340 (8.64)	.673 (17.09)	1.500 (38.10)	.031 (0.79)	1.569 (39.85)	.518 (13.16)

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Jam Nut Receptacle

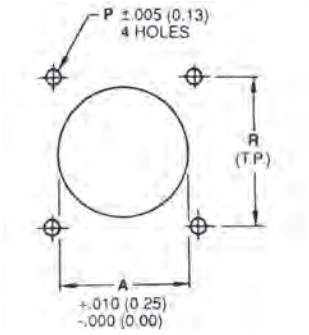
MS 3114H **KPT07H**



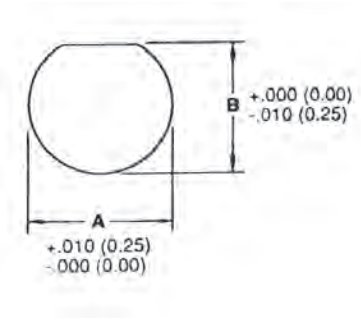
Shell Size	A - .003 (0.08)	E ± .005 (0.13)	G Max.	K + .001 (0.03) - .016 (0.41)	M ± .015 (0.38)	P Min.	P Max.	S Max.	V
8	.471 (11.96)	.525 (13.34)	1.078 (27.38)	.094 (2.39)	.707 (17.96)	.062 (1.57)	.125 (3.18)	.954 (24.23)	9/16-24UNEF-2A
10	.588 (14.94)	.650 (16.51)	1.203 (30.56)	.094 (2.39)	.707 (17.96)	.062 (1.57)	.125 (3.18)	1.078 (27.38)	11/16-24UNEF-2A
12	.748 (19.00)	.813 (20.65)	1.391 (35.33)	.094 (2.39)	.707 (17.96)	.062 (1.57)	.125 (3.18)	1.266 (32.16)	7/8-20UNEF-2A
14	.873 (22.17)	.937 (23.80)	1.516 (38.51)	.094 (2.39)	.707 (17.96)	.062 (1.57)	.125 (3.18)	1.391 (35.33)	1-20UNEF-2A
15	.998 (25.35)	1.061 (26.95)	1.641 (41.68)	.094 (2.39)	.707 (17.96)	.062 (1.57)	.125 (3.18)	1.516 (38.51)	1-1/8-18UNEF-2A
18	1.123 (28.52)	1.186 (30.12)	1.766 (44.86)	.094 (2.39)	.707 (17.96)	.062 (1.57)	.125 (3.18)	1.641 (41.68)	1-1/4-18UNEF-2A
20	1.248 (31.70)	1.311 (33.30)	1.954 (49.63)	.125 (3.18)	.895 (22.73)	.062 (1.57)	.250 (6.35)	1.828 (46.43)	1-3/8-18UNEF-2A
22	1.373 (34.87)	1.436 (36.47)	2.078 (52.78)	.125 (3.18)	.895 (22.73)	.062 (1.57)	.250 (6.35)	1.954 (49.63)	1-1/2-18UNEF-2A
24	1.498 (38.05)	1.561 (39.65)	2.203 (55.96)	.125 (3.18)	.895 (22.73)	.062 (1.57)	.250 (6.35)	2.078 (52.78)	1-5/8-18UNEF-2A

Panel Cutouts - KPTH

Flange Mounted Receptacle
(Front Mounting)



Jam Nut Receptacle



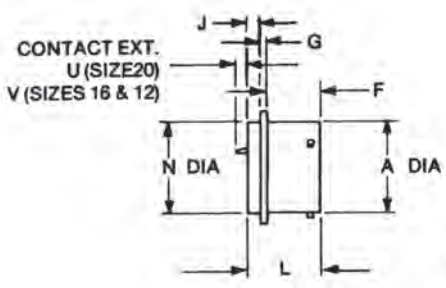
Shell Size	KPT02H / KPT01H A	KPT02H / KPT01H R*	KPT02H ± .005 (0.13)	KPT02H Screw
▲8	.565 (14.35)	.594 (15.09)	.125 (3.18)	#4
10	.675 (17.14)	.719 (18.26)	.125 (3.18)	#4
12	.784 (19.91)	.812 (20.62)	.125 (3.18)	#4
14	.909 (23.09)	.906 (23.01)	.125 (3.18)	#4
15	1.034 (26.26)	.969 (24.62)	.125 (3.18)	#4
18	1.159 (29.44)	1.062 (26.97)	.125 (3.18)	#4
20	1.253 (31.83)	1.156 (29.36)	.125 (3.18)	#4
22	1.378 (35.00)	1.250 (31.75)	.125 (3.18)	#4
24	1.503 (38.18)	1.375 (34.92)	.155 (3.94)	#6

Shell Size	KPT07H A	KPT07H B
8	.567 (14.35)	.531 (13.49)
10	.692 (17.14)	.656 (16.66)
12	.880 (19.91)	.819 (20.80)
14	1.005 (23.09)	.943 (23.95)
15	1.130 (26.26)	1.067 (27.10)
18	1.255 (29.44)	1.192 (30.28)
20	1.380 (31.83)	1.317 (33.45)
22	1.505 (35.00)	1.442 (36.63)
24	1.630 (38.18)	1.567 (39.80)

*Not used in KPT01H connectors.

Box Mounting Receptacles

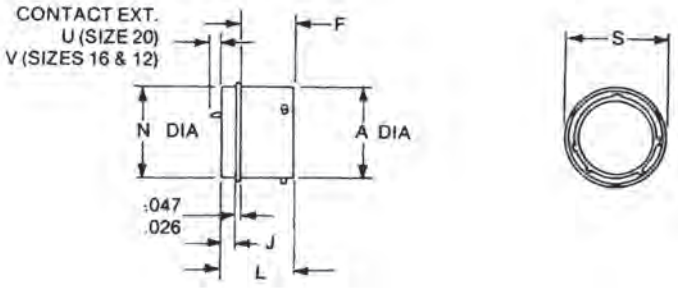
PV0H / PVA0H



Shell Size	A + .001 (0.03) - .005 (0.13)	B ± .020 (0.51)	F ± .010 (0.25)	J ± .010 (0.25)	G ± .016 (0.41)	L Max. Ref.	N + .001 (0.03) - .005 (0.13)	R ± .005 (0.13)	S ± .010 (0.25)	T ± .005 (0.13)	Contact Ext. U ± .030 (0.76)	Contact Ext. V ± .030 (0.76)
8	.473 (12.01)	1.062 (26.97)	.588 (14.94)	.115 (2.92)	.062 (1.57)	.801 (20.35)	.562 (14.27)	.594 (15.09)	.812 (20.62)	.120 (3.05)	.148 (3.76)	.218 (5.54)
10	.590 (14.99)	1.250 (31.57)	.588 (14.94)	.115 (2.92)	.062 (1.57)	.801 (20.35)	.672 (17.07)	.719 (18.26)	.938 (23.83)	.120 (3.05)	.148 (3.76)	.218 (5.54)
12	.750 (19.05)	1.375 (34.82)	.588 (14.94)	.115 (2.92)	.062 (1.57)	.801 (20.35)	.781 (19.84)	.812 (20.62)	1.031 (26.19)	.120 (3.05)	.148 (3.76)	.218 (5.54)
14	.875 (22.22)	1.500 (38.10)	.588 (14.94)	.115 (2.92)	.062 (1.57)	.801 (20.35)	.906 (23.01)	.906 (22.99)	1.125 (28.58)	.120 (3.05)	.148 (3.76)	.218 (5.54)
15	1.000 (25.40)	1.625 (41.28)	.588 (14.94)	.115 (2.92)	.062 (1.57)	.801 (20.35)	1.031 (26.19)	.969 (24.62)	1.219 (30.96)	.120 (3.05)	.148 (3.76)	.218 (5.54)
18	1.125 (28.58)	1.750 (44.45)	.588 (14.94)	.115 (2.92)	.062 (1.57)	.801 (20.35)	1.156 (29.36)	1.062 (26.97)	1.312 (33.32)	.120 (3.05)	.148 (3.76)	.218 (5.54)
20	1.250 (31.75)	1.875 (47.62)	.650 (16.51)	.083 (2.11)	.094 (2.39)	.863 (21.92)	1.250 (31.75)	1.156 (29.36)	1.438 (36.53)	.120 (3.05)	.148 (3.76)	.218 (5.54)
22	1.375 (34.92)	2.050 (52.07)	.650 (16.51)	.115 (2.92)	.094 (2.39)	.895 (22.73)	1.375 (34.92)	1.250 (31.75)	1.562 (39.67)	.120 (3.05)	.148 (3.76)	.186 (4.72)
24	1.500 (38.10)	2.250 (57.15)	.650 (16.51)	.115 (2.92)	.094 (2.39)	.895 (22.73)	1.500 (38.10)	1.375 (34.92)	1.687 (42.85)	.147 (3.73)	.148 (3.76)	.186 (4.72)

Solder Mounting Receptacle

PV3H / PVA3H

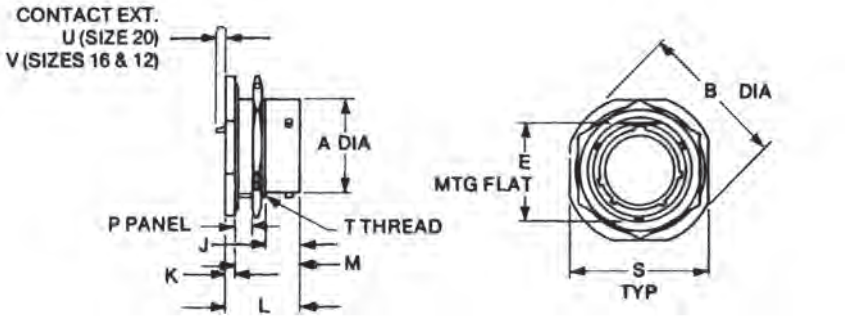


Shell Size	A + .001 (0.03) - .005 (0.13)	F	J ± .005 (0.13)	L - .005 (0.13)	N + .001 (0.03) - .005 (0.13)	S ± .010 (0.25)	U ± .005 (0.13)	V ± .005 (0.13)
8	.473 (12.01)	.588 (14.94)	.136 (3.45)	.801 (20.35)	.562 (14.27)	.625 (15.88)	.148 (3.76)	.218 (5.54)
10	.590 (14.99)	.588 (14.94)	.136 (3.45)	.801 (20.35)	.672 (17.07)	.750 (19.05)	.148 (3.76)	.218 (5.54)
12	.750 (19.05)	.588 (14.94)	.136 (3.45)	.801 (20.35)	.781 (19.84)	.844 (21.44)	.148 (3.76)	.218 (5.54)
14	.875 (22.22)	.588 (14.94)	.136 (3.45)	.801 (20.35)	.906 (23.01)	.969 (24.62)	.148 (3.76)	.218 (5.54)
15	1.000 (25.40)	.588 (14.94)	.136 (3.45)	.801 (20.35)	1.031 (26.19)	1.094 (27.79)	.148 (3.76)	.218 (5.54)
18	1.125 (28.58)	.588 (14.94)	.136 (3.45)	.801 (20.35)	1.156 (29.36)	1.218 (30.94)	.148 (3.76)	.218 (5.54)
20	1.250 (31.75)	.650 (16.51)	.136 (3.45)	.863 (21.92)	1.250 (31.75)	1.312 (33.32)	.148 (3.76)	.218 (5.54)
22	1.375 (34.92)	.650 (16.51)	.168 (4.27)	.895 (22.73)	1.375 (34.92)	1.438 (36.53)	.116 (2.95)	.186 (4.76)
24	1.500 (38.10)	.650 (16.51)	.168 (4.27)	.895 (22.73)	1.500 (38.10)	1.564 (39.73)	.116 (2.95)	.186 (4.76)

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Jam Nut Receptacle

PV7H / PVA7H



Shell Size	A +.001 (0.03) -.005 (0.13)	B +.016 (0.41) -.015 (0.38)	E ±.005 (0.13)	J ±.010 (0.25)	K ±.008 (0.20)	L Max. Ref.	M ±.008 (0.20)	P Min / Max	S +.016 (0.41) -.015 (0.38)	T UNEF-2A	Contact Ext. U ±.030 (0.76)	Contact Ext. V ±.030 (0.76)
8	.473 (12.01)	1.062 (26.97)	.525 (13.34)	.368 (9.35)	.105 (2.67)	.820 (20.83)	.699 (17.75)	.062/.187 (1.57/4.75)	.938 (23.83)	.5625-24	.104 (2.64)	.174 (4.42)
10	.590 (14.99)	1.187 (31.75)	.650 (16.51)	.368 (9.35)	.105 (2.67)	.820 (20.83)	.699 (17.75)	.062/.187 (1.57/4.75)	1.062 (14.99)	.6875-24	.104 (2.64)	.174 (4.42)
12	.750 (19.05)	1.375 (34.92)	.813 (20.65)	.368 (9.35)	.105 (2.67)	.820 (20.83)	.699 (17.75)	.062/.187 (1.57/4.75)	1.250 (19.05)	.875 -20	.104 (2.64)	.174 (4.42)
14	.875 (22.22)	1.500 (38.10)	.937 (23.80)	.368 (9.35)	.105 (2.67)	.820 (20.83)	.699 (17.75)	.062/.187 (1.57/4.75)	1.375 (34.92)	1.000 -20	.104 (2.64)	.174 (4.42)
15	1.000 (25.40)	1.625 (41.28)	1.061 (26.95)	.368 (9.35)	.105 (2.67)	.820 (20.83)	.699 (17.75)	.062/.187 (1.57/4.75)	1.500 (38.10)	1.125 -18	.104 (2.64)	.174 (4.42)
18	1.125 (28.58)	1.750 (44.45)	1.186 (30.12)	.368 (9.35)	.105 (2.67)	.820 (20.83)	.699 (17.75)	.062/.187 (1.57/4.75)	1.625 (41.28)	1.250 -18	.104 (2.64)	.174 (4.42)
20	1.250 (31.75)	1.938 (47.62)	1.311 (33.30)	.368 (9.35)	.138 (3.51)	.920 (23.37)	.763 (19.38)	.062/.187 (1.57/4.75)	1.812 (46.02)	1.375 -18	.069 (1.75)	.139 (3.53)
22	1.375 (34.92)	2.062 (52.07)	1.436 (36.47)	.368 (9.35)	.138 (3.51)	.920 (23.37)	.763 (19.38)	.062/.187 (1.57/4.75)	1.938 (49.23)	1.500 -18	.069 (1.75)	.139 (3.53)
24	1.500 (38.10)	2.187 (57.15)	1.561 (39.65)	.395 (10.03)	.138 (3.51)	.951 (24.16)	.793 (20.14)	.062/.187 (1.57/4.75)	2.062 (52.37)	1.625 -18	.039 (0.99)	.109 (2.77)

- High contact density
- 100% scoop proof – Series I and III
- Lightweight Low Profile – Series II
- Environment-resistant
- Operating temperature range from -85°F to +392°F (-65°C to +200°C)

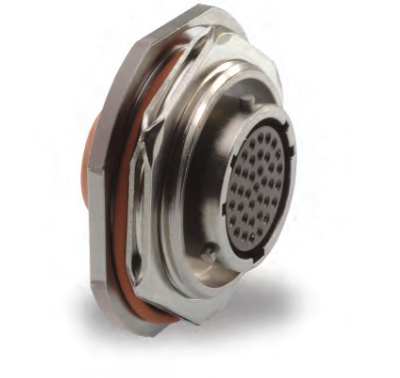
ITT Cannon's KJLY, KJY and KJAY connectors are hermetically sealed and designed to meet the critical performance and design requirements of MIL-C-38999. Engineered for high density circuitry capabilities, these connectors are designed to operate at temperatures ranging from -85°F to +392°F (-65°C to +200°C).

They are readily adaptable to both commercial and space age requirements where size, weight, scoop proof/low-profile design and high reliability are key factors.

The KJLY and KJAY are designed with a "scoop-proof" feature which provides a safety factor in blind mating applications. The shells also feature five keyway shell polarization to assure alignment during engagement. Complete environment sealing is accomplished with an interfacial seal, with individual raised tapered sealing barriers around each pin contact, a peripheral seal, and hermetic sealing.

ITT Cannon's MIL-C-38999-style KJLY, KJY and KJAY connector series offers these advanced features to meet the demands of present-day sophisticated engineering designs.

Standard Data



MATERIALS AND FINISHES

Shell	As noted in "How to Order" sections
Insulator	Compression Glass
Contacts	Nickel / Iron Alloy, Gold Plate
Seals	Silicone base elastomer
Jam Nut	As noted in "How to Order" sections

MATERIALS AND FINISHES

Contact Size 22D, 20, 16, and 12

Contact Rating and Wire Size Accommodation

Wire Size	Contact Size and Test amps 22D	*22M	*22	20	16	12
28	1.5	1.5	—	—	—	—
26	2.0	2.0	2.0	—	—	—
24	3.0	3.0	3.0	3.0	—	—
22	5.0	—	5.0	5.0	—	—
20	—	—	—	7.5	7.5	—
18	—	—	—	—	10.0	—
16	—	—	—	—	13.0	—
14	—	—	—	—	—	7.0
12	—	—	—	—	—	23.0

*Inactive for new design

Service Rating (unmated condition)

Test Voltages	Service Rating M	Service Rating I	Service Rating II
Sea Level	1300	1800	2300
110,000 ft.	200	200	200

MECHANICAL

	KJLY / KJAY	KJY
Shell Styles	2 – Box mounting receptacle 1 – Solder mount receptacle 7 – Jam nut receptacle	0 – Wall mounting receptacle 1 – Solder mount receptacle 7 – Jam nut receptacle
Shell Sizes	9, 11, 13, 15, 17, 19, 21, 23, 25	8, 10, 12, 14, 16, 18, 20, 22, 24
Coupling	3 point bayonet, quick release/triple start Acme	3 point bayonet, quick release
Shell polarization	5 keyways	5 keyways
Design	Scoop-proof	Low-profile

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Test Data

TEST DESCRIPTION	PARAGRAPH REFERENCE	REQUIREMENTS
Thermal Shock	4.7.3	Unmated receptacles shall be subjected to 10 cycles of thermal shock per Step 1 and Step 2 of MIL-C-38999.
Air Leakage	4.7.5	The connector shall be mounted in a suitable test apparatus. A pressure differential of 1 atmosphere shall be applied across the connector. A suitable means to determine the leakage through the connector of air or other pressurizing gas, containing not less than 10 percent helium by volume, shall be employed while the specified pressure is applied. There shall be no evidence of leakage in excess of 0.01 micron ft^3/h (x 10^{-7} cm^3/s).
Coupling Torque	4.7.6	For qualification testing, mating halves shall be coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling shall be measured and recorded. For quality conformance, suitable gages may be used instead of the appropriate counterparts. The coupling torque for mating and unmating of counterpart connectors shall meet the requirements of Table III, paragraph 4.7.6 MIL-C-38999.
Insulation Resistance	4.7.9.2	**Insulation Resistance at ambient temperature** — Unmated connectors shall be tested as specified in method 3003 of MIL-STD-1344. Connectors shall be mated when testing after altitude immersion and humidity. The insulation resistance between any pair of contacts and between any contact and the shell shall be greater than 5,000 megohms. Insulation resistance after altitude immersion shall be 10,000 megohms minimum. Insulation resistance after humidity shall be 100 megohms minimum.
	4.7.9.2	**Insulation Resistance at elevated temperature** — Unmated connectors shall be tested as specified in method 3003 of MIL-STD-1344. Applicable elevated temperature for 30 minutes: Finish D, 150° +5/ -0°C; E; 200° +5/ -0°C. Measurements shall be made while the connectors are still in the chamber at the specified temperature. The insulation resistance between any pair of contacts and between any contact and the shell shall be greater than 200 megohms.
Dielectric Withstanding voltage	4.7.6	**Dielectric withstanding voltage at sea level** — Wired, unmated connectors shall be tested in accordance with Method 3001 of MIL-STD-1344. Connectors shall be mated when testing after altitude immersion and humidity. The magnitude of the test voltage shall be as specified in Table XIV. The test voltage shall be maintained at the specified value for 2 seconds minimum.
	4.7.10.2	**Dielectric withstanding voltage at altitude** — Mated connectors and unmated connector halves with pin contacts shall be tested in accordance with method 3001 of MIL-STD-1344. The magnitude of the test voltage shall be as specified in Table XIV. The test voltage shall be maintained at the specified value for 2 seconds minimum. Only the engaging faces of hermetics shall be subject to the high altitude. The rear face shall be suitably protected. The chamber shall be evacuated to each of the specified altitude pressure equivalents listed below. Altitude — Equivalent Pressure 50,000 feet — 87.5 torr 70,000 feet — 35.5 torr 100,000 feet — 5.74 torr When tested as specified in 4.7.10.1 or 4.7.10.2 connectors shall show no evidence of flashover or breakdown.
Contact Resistance	4.7.13	Contacts of mated connectors shall be tested in accordance with method 3004 of MIL-STD-1344. Contacts in the mated condition shall meet the contact resistance requirements of Table IV, paragraph 4.7.13 MIL-C-38999. Lead resistance may be included in the measurement.
Vibration	4.7.22	For qualification only, wired and mated connectors shall be subjected to the applicable test(s) specified. Connectors shall be mounted on the vibration table by normal means. All contacts shall be wired in a series circuit with 100 milliamperes maximum current flow through the series circuit during vibration. Connectors shall be continuously monitored for all discontinuities. A detector capable of detecting any discontinuities in excess of 1 microsecond shall be used.
Shock	4.7.23	Wired and mated connectors shall be subjected to the applicable test specified. Connectors shall be mounted by normal means and held together by normal coupling means. All contacts shall be wired in a series circuit with 100 milliamperes maximum current flow through the series circuit during shock. Connectors shall be monitored for any discontinuities. A detector capable of detecting any discontinuities in excess of 1 microsecond shall be used.

TABLE XIV — TEST VOLTAGES, ac RMS, 60 Hz

Altitude	Service Rating M Mated	Service Rating M Unmated	Service Rating I Mated	Service Rating I Unmated	Service Rating II Mated	Service Rating II Unmated
Sea Level	1300	1300	1800	1800	2300	2300
50,000 feet	800	550	1000	600	1000	800
70,000 feet	800	350	1000	400	1000	500
100,000 feet	800	200	1000	200	1000	200

TABLE IV — CONTACT RESISTANCE

Class	Contact Size	Wire Size	Test Amperes	Millivolt drop maximum Initial	Millivolt drop maximum After corrosion or temp durability	Maximum Resistance in milliohms Initial	Maximum Resistance in milliohms After corrosion or temp durability
Y & N	12	12	17	85	100	5	6
	16	16	10	85	100	8	10
	20	20	5	60	75	12	15
	220	22	3	85	95	28	32

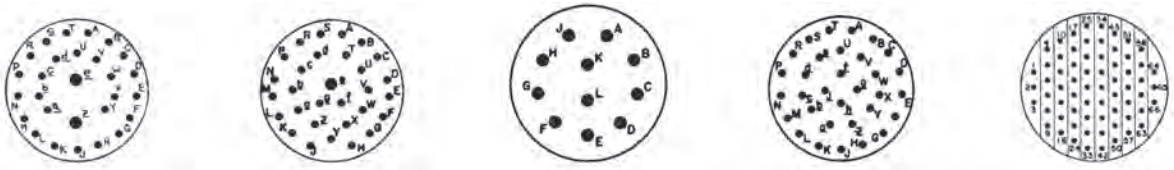
Contact Arrangements (Engaging View Pin Insert)

* Socket inset only
** Pin insert only (not available in socket insert Series I and III)
† Indicates layouts are available in all shell styles including MS27499, MS27508, KJ2E, and KJ5E.
• Consult factory for MS27505E / KJL5E insert availability.

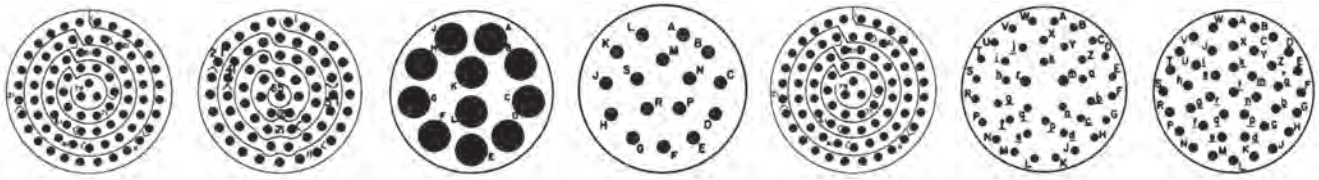
Series III	X	9-98	9-35	—	11-5	—	11-98	—	11-35	—	—	13-8
Series II	8-6†	9-98†	8-35†	—	10-5†	10-13†	10-98†	10-99†	10-35†	12-3	12-4†	12-8†
Series I	9-6**	9-98	9-35	11-4	11-5	11-13**	11-98	11-99**	11-35	—	13-4**	13-8
No. of Contacts	6 # 22M	3 # 20	6 # 22D	4 # 20	5 # 20	13 # 22M	6 # 20	7 # 20	13 # 22D	3 # 16	4 # 16	8 # 20
Service Ratings	M	I	M	I	I	M	I	I	M	II	I	I

Series III	13-98	13-35	15-5	15-15	15-18	15-19	15-35
Series II	12-98†	12-35†	14-5†	14-15†	14-18†	—	14-35†
Series I	13-98	13-35	15-5	15-15	15-18	15-19	15-35
No. of Contacts	10 # 20	22 # 22D	5 # 16	14 # 20, 1 # 16	18 # 20	19 # 20	37 # 22D
Service Ratings	I	M	II	I	I	I	M

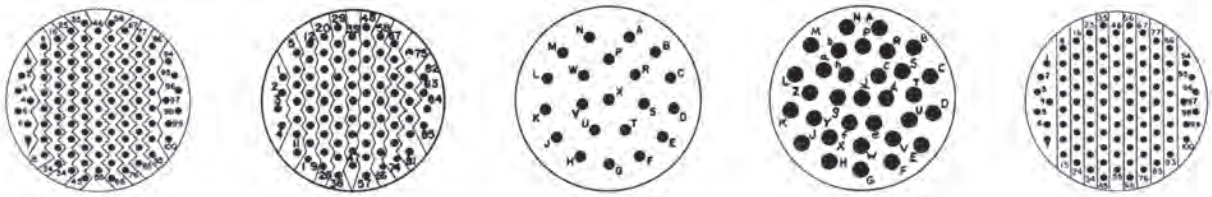
Series III	15-97	17-6	17-8	17-26	17-35	—	—
Series II	14-97†	16-6	16-8†	16-26†	16-35†	16-42†	16-99†
Series I	15-97	17-6	17-8	17-26	17-35	—	17-99**
No. of Contacts	8 # 20, 4 # 16	6 # 12	8 # 16	26 # 20	55 # 22D	42 # 22	21 # 20, 2 # 16
Service Ratings	I	I	II	I	M	M	I



Series III	—	—	19-11	19-32	19-35
Series II	18-28	18-30	18-11	18-32†	18-35†
Series I	19-28**	19-30**	19-11	19-32	19-35
No. of Contacts	26 # 20, 2 # 16	29 # 20, 1 # 16	11 # 16	32 # 20	66 # 22D
Service Ratings	I	I	II	I	M



Series III	—	—	21-11	21-16	21-35	21-39	21-41
Series II	20-1†	20-2†	—	20-16†	20-35†	20-39†	20-41†
Series I	21-1**	—	21-11	21-16	21-35	21-39	21-41
No. of Contacts	79 # 22M	65 # 22	11 # 12	16 # 16	79 # 22D	37 # 20, 2 # 16	41- # 20
Service Ratings	M	M	I	II	M	I	I



Series III	—	—	23-31	—	23-35
Series II	22-1†	22-2†	22-21	23-32	22-35†
Series I	23-1**	23-2**	23-21	23-32**	23-35
No. of Contacts	100 # 22M	85 # 22	21 # 16	32 # 20	100 # 22D
Service Ratings	M	M	II	I	M

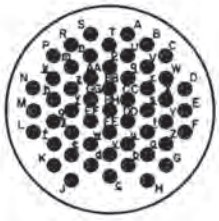
Please consult factory for availability of layouts not shown.

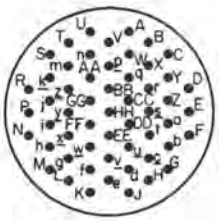
Dimensions shown in inches (mm)
Specifications and dimensions subject to change

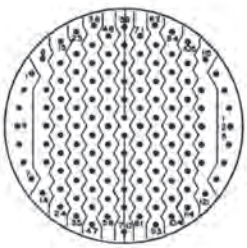
Contact Arrangements (Engaging View Pin Insert)

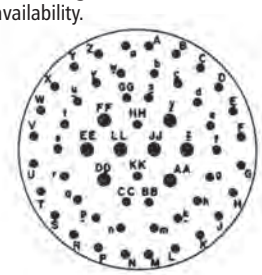
* Socket inset only
** Pin insert only (not available in socket insert Series I and III)

† Indicates layouts are available in all shell styles including MS27499, MS27508, KJ2E, and KJ5E.
• Consult factory for MS27505E / KJL5E insert availability.

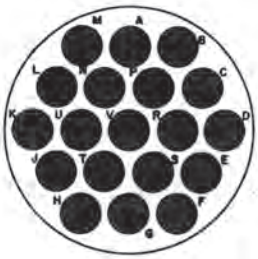


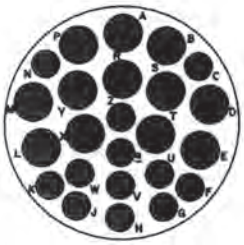


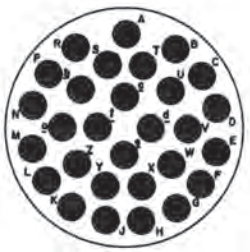




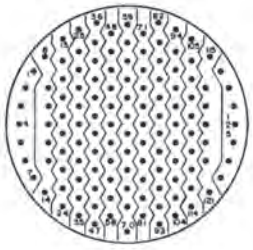
	—		—	—
Series III	25-53	23-55	—	25-4
Series II	22-53†	22-55	24-1†	24-4†
Series I	23-53	23-55	25-1**	25-4
No. of Contacts	53 # 20	55 # 20	128 # 22M	48 # 20, 8 # 16
Service Ratings	I	I	M	I

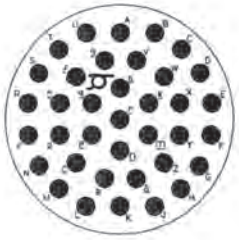


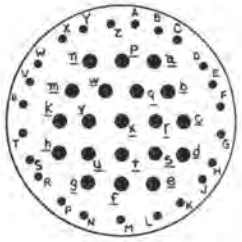




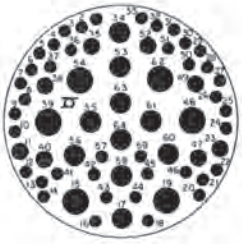
	—	—	—
Series III	25-19	25-24	25-29
Series II	—	24-24†	24-29†
Series I	25-19	25-24	25-29
No. of Contacts	19 # 12	12 # 16, 12 # 12	29 # 16
Service Ratings	I	I	I

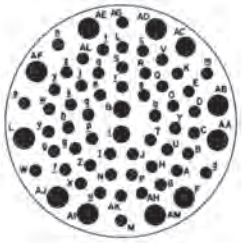






	—	—	—
Series III	25-35	25-37	25-43
Series II	24-35†	—	—
Series I	25-35	25-37*•	25-43
No. of Contacts	128 # 22D	37 # 16	23 # 20, 20 # 16
Service Ratings	M	I	I



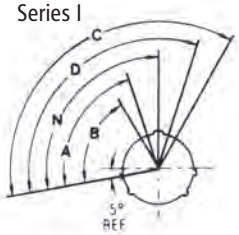


	—	—	—
Series III	25-61	25-64*	25-66*
Series II	24-61	—	—
Series I	25-61	25-64•	25-66•
No. of Contacts	61 # 20	40 # 22D, 8 # 20 10 # 16, 6 # 12	53 # 22D, 2 # 20, 11 # 16
Service Ratings	I	I	I

Please consult factory for availability of layouts not shown.

Polarizing Positions

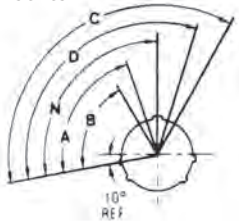
Series I



Front face of receptacle (plug opposite). Insert arrangement does not rotate with main key/keyway. The master key is rotated to provide shell polarization; the minor keys remain fixed.

Shell Size	Angle of Rotation (Degrees) Normal	A	B	D	D
9	95°	77°	—	—	113°
11	95°	81°	67°	123°	109°
13	95°	75°	63°	127°	115°
15	95°	74°	61°	129°	116°
17	95°	77°	65°	125°	113°
19	95°	77°	65°	125°	113°
21	95°	77°	65°	125°	113°
23	95°	80°	69°	121°	110°
25	95°	80°	69°	121°	110°

Series II

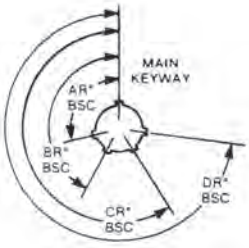


Front face of receptacle (plug opposite). Insert arrangement does not rotate with main key/keyway. The master key is rotated to provide shell polarization; the minor keys remain fixed.

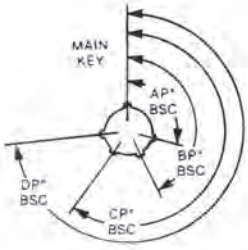
Shell Size	Angle of Rotation (Degrees) Normal	A	B	D	D
8	100°	82°	—	—	118°
10	100°	86°	72°	128°	114°
12	100°	80°	68°	132°	120°
14	100°	79°	66°	134°	121°
16	100°	82°	70°	130°	118°
18	100°	82°	70°	130°	118°
20	100°	82°	70°	130°	118°
22	100°	85°	74°	126°	115°
24	100°	85°	74°	126°	115°

Series III

RECEPTACLE
(front face shown)



PLUG
(front face shown)

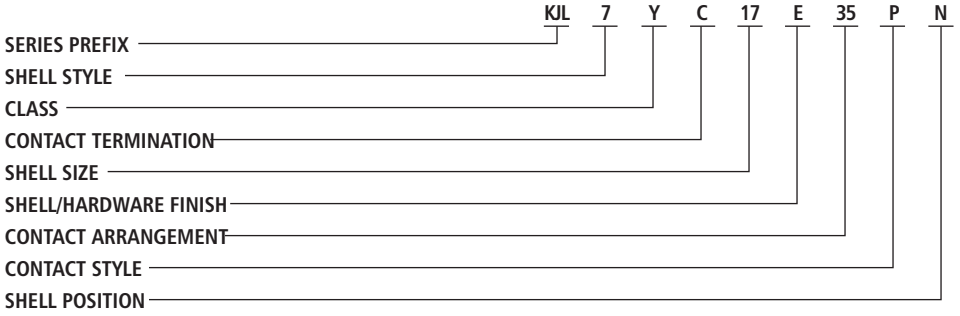


Shell Size	Key & Keyway Arrangement Identification Letter	Key Locations AR° or AP° BSC	BR° or BP° BSC	CR° or CP° BSC	DR° or DP° BSC
9	N	105	140	215	265
	A	102	132	248	320
	B	80	118	230	312
	C	35	140	205	275
	D	64	155	234	304
	E	91	131	197	240
11 13 and 15	N	95	141	208	236
	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
	D	119	146	176	298
	E	51	141	184	242
17 and 19	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272
21 23 and 25	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272

NOTES:
1. All angles are BSC
2. The insert arrangement does not rotate with main key/keyway
3. All minor keys are rotated to provide shell polarization, the master key remains fixed at twelve o'clock position
4. Polarization is different from Series I and II

How to Order

ITT Cannon Nomenclature



SERIES PREFIX
KJLY — Series I - Scoop proof

SHELL STYLE
0 — Wall Mounting Receptacle
1 — Solder mounting
7 — Jam nut mounting

CLASS
Y — Hermetic

CONTACT TERMINATION
C — Crimp Version; Series I only (see pages 10-11 for available arrangements)
No Designator — Standard connector with solder pot contacts

SHELL SIZE
9, 11, 13, 15, 17, 19, 21, 23 and 25

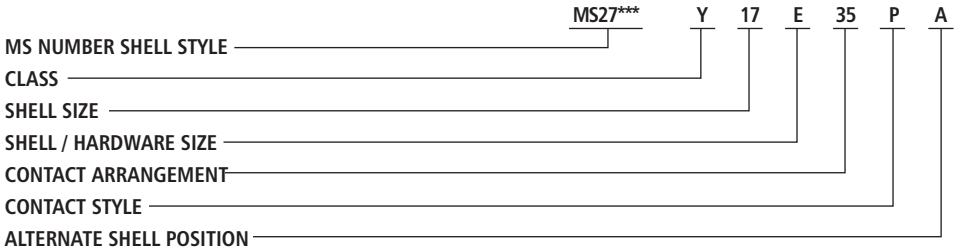
HARDWARE FINISH STANDARD
D — Fused tin -85°F to +302°F (-65°C to +150°C). Jam Nut finish is cadmium/nickel.
E — Stainless Steel -85°F to +392°F (-65°C to +200°C). Jam Nut finish is passivated.

CONTACT ARRANGEMENTS
See pages J-15 to J-16.

CONTACT TYPE
P — Pin; all contacts are gold plated.

ALTERNATE SHELL POSITION
A, B, C, and D (not required for normal). See page J-17.

Military Nomenclature



MS NUMBER SHELL STYLE
MS27469 – Wall Mount
MS27470 – Jam Nut Mount
MS27471 – Solder Mount

CLASS
Y — Hermetic

SHELL SIZE
9, 11, 13, 15, 17, 19, 21, 23 and 25

HARDWARE FINISH STANDARD
D — Fused tin -85°F to +302°F (-65°C to +150°C). Jam Nut finish is cadmium/nickel.
E — Stainless Steel -85°F to +392°F (-65°C to +200°C). Jam Nut finish is passivated.

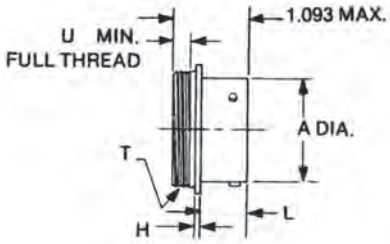
CONTACT ARRANGEMENTS
See pages J-15 to J-16.

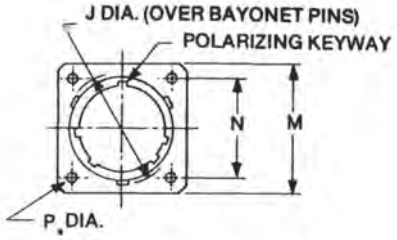
CONTACT STYLE
P — Pin; all contacts are gold plated.

ALTERNATE SHELL POSITION
A, B, C, and D (not required for normal). See page J-17.

Wall Mount

MS27469 **KJL0Y**

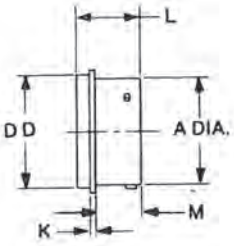


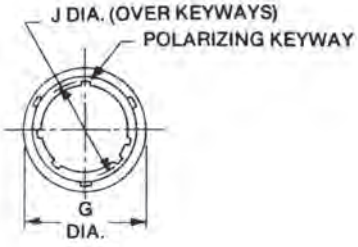


Shell Size	A Max.	H Max.	J Max.	L Max.	M ± 0.16	N ± .005	P Max.	T Thread	U
9	.573 (14.55)	.093 (2.36)	.662 (16.81)	.690 (17.53)	.938 (23.83)	.719 (18.26)	.138 (3.51)	.6875-24 UNEF-2A	.250 (6.35)
11	.701 (17.81)	.093 (2.36)	.810 (20.57)	.690 (17.53)	1.031 (26.19)	.812 (20.62)	.138 (3.51)	.8125-20 UNEF-2A	.250 (6.35)
13	.851 (21.62)	.093 (2.36)	.960 (24.38)	.690 (17.53)	1.125 (28.58)	.906 (23.01)	.138 (3.51)	.9375-20 UNEF-2A	.250 (6.35)
15	.976 (24.79)	.093 (2.36)	1.085 (27.56)	.690 (17.53)	1.219 (30.96)	.969 (24.62)	.138 (3.51)	1.0625-18 UNEF-2A	.250 (6.35)
17	1.101 (27.97)	.093 (2.36)	1.210 (30.73)	.690 (17.53)	1.312 (33.32)	1.062 (26.97)	.138 (3.51)	1.1875-18 UNEF-2A	.250 (6.35)
19	1.208 (30.68)	.093 (2.36)	1.317 (33.45)	.690 (17.53)	1.438 (36.53)	1.156 (29.36)	.138 (3.51)	1.3125-18 UNEF-2A	.250 (6.35)
21	1.333 (33.86)	.093 (2.36)	1.442 (36.63)	.690 (17.53)	1.562 (39.67)	1.250 (31.75)	.138 (3.51)	1.4375-18 UNEF-2A	.250 (6.35)
23	1.458 (37.03)	.093 (2.36)	1.567 (39.80)	.690 (17.53)	1.688 (42.88)	1.375 (34.92)	.157 (3.99)	1.5625-18 UNEF-2A	.250 (6.35)
25	1.583 (40.21)	.093 (2.36)	1.692 (42.98)	.690 (17.53)	1.812 (46.02)	1.500 (38.10)	.157 (3.99)	1.6875-18 UNEF-2A	.250 (6.35)

Solder Mount

MS27471 **KJL1Y**



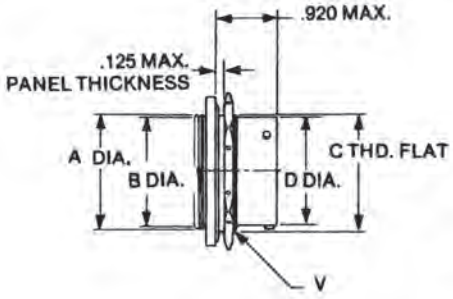


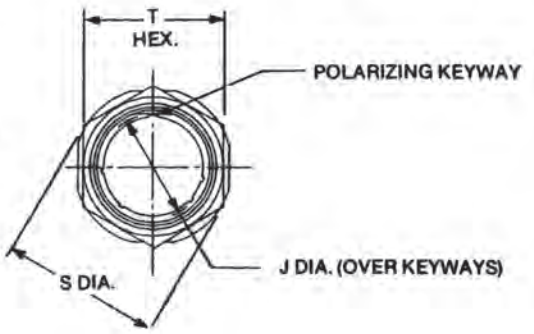
Shell Size	A Max.	D Max.	G Max.	J Max.	K ± 0.16	L ± .005	M Max.
9	.573 (14.55)	.673 (17.09)	.766 (19.46)	.497 (12.62)	.047 (1.19)	.924 (23.47)	.690 (17.53)
11	.701 (17.81)	.782 (19.86)	.860 (21.84)	.625 (15.88)	.047 (1.19)	.924 (23.47)	.690 (17.53)
13	.851 (21.62)	.907 (23.04)	.985 (25.02)	.774 (19.66)	.047 (1.19)	.924 (23.47)	.690 (17.53)
15	.976 (24.79)	1.032 (26.21)	1.111 (28.22)	.899 (28.83)	.047 (1.19)	.924 (23.47)	.690 (17.53)
17	1.101 (27.97)	1.157 (29.39)	1.234 (31.34)	1.024 (26.01)	.047 (1.19)	.924 (23.47)	.690 (17.53)
19	1.208 (30.68)	1.251 (31.78)	1.328 (33.73)	1.129 (26.68)	.047 (1.19)	.924 (23.47)	.690 (17.53)
21	1.333 (33.86)	1.376 (34.95)	1.454 (36.93)	1.254 (31.85)	.047 (1.19)	.924 (23.47)	.690 (17.53)
23	1.458 (37.03)	1.501 (38.13)	1.579 (40.11)	1.379 (35.03)	.047 (1.19)	.924 (23.47)	.690 (17.53)
25	1.583 (40.21)	1.626 (41.30)	1.704 (43.28)	1.504 (38.20)	.047 (1.19)	.924 (23.47)	.690 (17.53)

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Jam Nut Mount

MS27470 **KJL7Y**

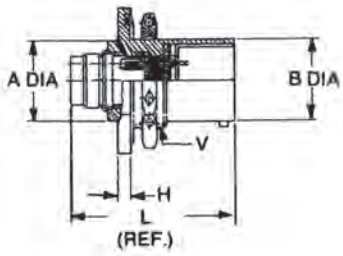


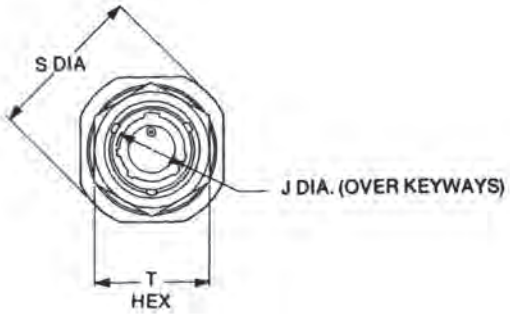


Shell Size	A Max.	B Max.	C Max.	D Max.	J Max.	S Max.	T Max.	T Thread
9	.653 (16.59)	.613 (15.59)	.655 (16.64)	.573 (14.55)	.497 (12.62)	1.204 (30.58)	.892 (22.66)	.6875-24 UNEF-2A
11	.777 (19.74)	.737 (18.72)	.755 (19.18)	.701 (17.81)	.625 (15.88)	1.391 (35.33)	1.017 (25.83)	.8125-20 UNEF-2A
13	.903 (22.94)	.863 (21.92)	.942 (23.93)	.851 (21.62)	.774 (19.66)	1.516 (38.51)	1.205 (30.61)	1.000-20 UNEF-2A
15	1.029 (26.14)	.989 (25.13)	1.066 (27.08)	.976 (24.79)	.899 (22.83)	1.641 (41.68)	1.329 (33.76)	1.125-18 UNEF-2A
17	1.153 (29.28)	1.113 (28.27)	1.191 (30.25)	1.101 (27.97)	1.024 (26.01)	1.766 (44.86)	1.455 (36.96)	1.250-18 UNEF-2A
19	1.279 (32.49)	1.239 (31.47)	1.316 (33.43)	1.208 (30.68)	1.129 (28.68)	1.954 (49.63)	1.579 (40.11)	1.375-18 UNEF-2A
21	1.403 (35.64)	1.363 (24.62)	1.441 (36.60)	1.333 (33.86)	1.254 (31.85)	2.078 (52.78)	1.705 (43.31)	1.500-18 UNEF-2A
23	1.529 (38.84)	1.489 (37.82)	1.566 (39.78)	1.458 (37.03)	1.379 (35.03)	2.204 (55.98)	1.829 (46.46)	1.625-18 UNEF-2A
25	1.653 (41.99)	1.613 (40.97)	1.691 (42.95)	1.583 (40.21)	1.504 (38.20)	2.328 (59.13)	2.017 (51.23)	1.750-18 UNS-2A

Solder Mount

Crimp Version (No MS designator) **KJL7YC**

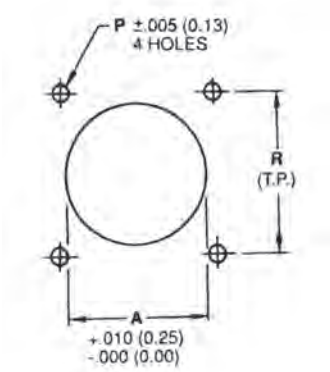




Shell Size	A Max.	B Max.	H Max.	J Max.	L Max.	S Max.	T	V Thread
9	.569 (14.45)	.573 (14.55)	.125 (3.18)	.497 (12.62)	1.98 (50.29)	1.204 (30.58)	.892 (22.66)	.6875-24 UNEF-2A
11	.696 (17.68)	.701 (17.81)	.125 (3.18)	.625 (15.88)	1.44 (36.58)	1.391 (35.33)	1.017 (25.83)	.8125-20 UNEF-2A
13	.810 (20.57)	.851 (21.62)	.125 (3.18)	.774 (19.66)	1.44 (36.58)	1.516 (38.51)	1.205 (30.61)	1.0000-20 UNEF-2A
15	.936 (23.77)	.976 (24.79)	.125 (3.18)	.899 (28.83)	1.44 (36.58)	1.641 (41.68)	1.329 (33.76)	1.1250-18 UNEF-2A
17	1.062 (26.97)	1.101 (27.97)	.125 (3.18)	1.024 (26.01)	1.44 (36.58)	1.766 (44.86)	1.455 (36.96)	1.2500-18 UNEF-2A
19	1.160 (29.46)	1.208 (30.68)	.156 (3.96)	1.129 (26.68)	1.44 (36.58)	1.954 (49.63)	1.579 (40.11)	1.3750-18 UNEF-2A
21	1.285 (32.64)	1.333 (33.86)	.156 (3.96)	1.254 (31.85)	1.44 (36.58)	2.078 (52.78)	1.705 (43.31)	1.5000-18 UNEF-2A
23	1.410 (35.81)	1.458 (37.03)	.156 (3.96)	1.379 (35.03)	1.44 (36.58)	2.204 (55.98)	1.829 (46.46)	1.6250-18 UNEF-2A
25	1.535 (38.99)	1.583 (40.21)	.156 (3.96)	1.504 (38.20)	1.44 (36.58)	2.328 (59.13)	2.017 (51.23)	1.7500-18 UNS-2A

Panel Cutouts

Wall Mount
(Rear Mounting)

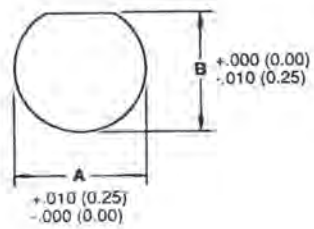


Shell Size	A	P	R
9	.665 (16.89)	.128 (3.25)	.719 (18.26)
11	.815 (20.70)	.128 (3.25)	.812 (20.62)
13	.965 (24.51)	.128 (3.25)	.906 (23.01)
15	1.090 (27.69)	.128 (3.25)	.969 (24.62)
17	1.215 (30.86)	.128 (3.25)	1.062 (26.97)
19	1.320 (33.53)	.128 (3.25)	1.156 (29.36)
21	1.445 (36.70)	.128 (3.25)	1.250 (31.75)
23	1.570 (39.88)	.147 (3.73)	1.375 (34.92)
25	1.695 (43.05)	.147 (3.73)	1.500 (38.10)

Solder Mount
(Front Mounting)

Shell Size	A
9	.678 (17.22)
11	.787 (19.99)
13	.912 (23.16)
15	1.037 (26.34)
17	1.162 (29.51)
19	1.256 (31.90)
21	1.381 (35.08)
23	1.506 (38.25)
25	1.631 (41.43)

Jam Nut Mount

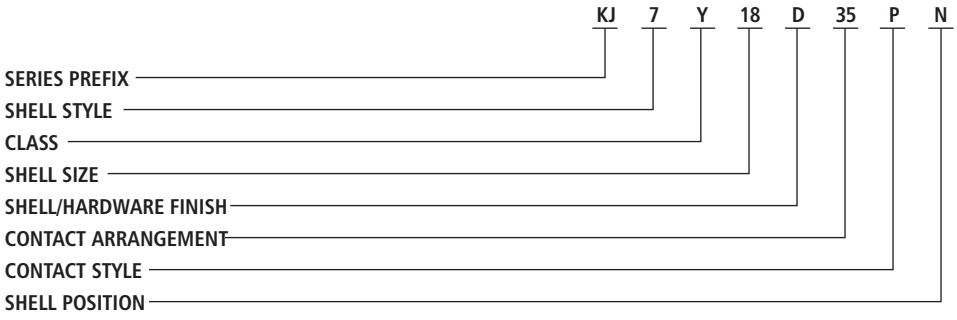


Shell Size	A	B
9	.697 (17.70)	.656 (16.66)
11	.822 (20.88)	.756 (19.20)
13	1.010 (25.65)	.943 (23.95)
15	1.135 (28.83)	1.067 (27.10)
17	1.260 (32.00)	1.192 (30.28)
19	1.385 (35.18)	1.317 (33.45)
21	1.510 (38.35)	1.442 (36.63)
23	1.635 (41.53)	1.567 (39.80)
25	1.760 (44.70)	1.692 (42.98)

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

How to Order

ITT Cannon Nomenclature



SERIES PREFIX
KJY — Series II - Low Profile

SHELL STYLE
1 — Solder mounting
2 — Box mounting receptacle
7 — Jam nut receptacle

CLASS
Y — Hermetic

SHELL SIZE
8, 10, 12, 14, 16, 18, 20, 22 and 24

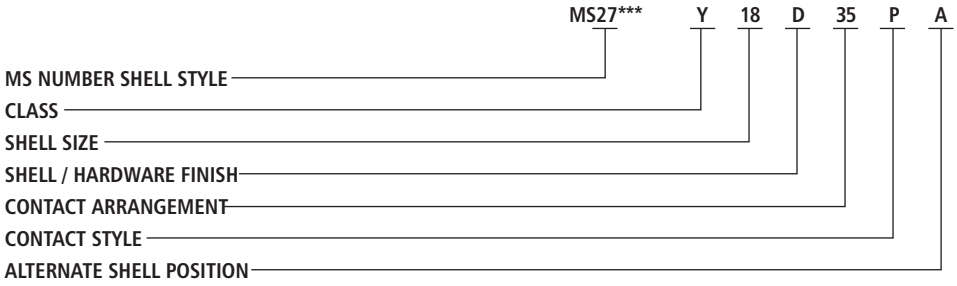
SHELL / HARDWARE FINISH STANDARD
D — Fused tin -85°F to +302°F (-65°C to +150°C). Jam Nut finish is cadmium/nickel.
E — Stainless Steel -85°F to +392°F (-65°C to +200°C). Jam Nut finish is passivated.

CONTACT ARRANGEMENT
See pages J-15 to J-16.

CONTACT TYPE
P — Pin; all contacts are gold plated.

ALTERNATE SHELL POSITION
N (normal), A, B, C, D. See page J-17.

ITT Cannon Nomenclature



MS NUMBER SHELL STYLE
MS27477 – Jam Nut Receptacle
MS27476 – Box Mounting Receptacle
MS27478 – Solder Mounting

CLASS
Y — Hermetic

SHELL SIZE
8, 10, 12, 14, 16, 18, 20, 22 and 24

HARDWARE FINISH STANDARD
D — Fused tin -85°F to +302°F (-65°C to +150°C). Jam Nut finish is cadmium/nickel.
E — Stainless Steel -85°F to +392°F (-65°C to +200°C). Jam Nut finish is passivated.

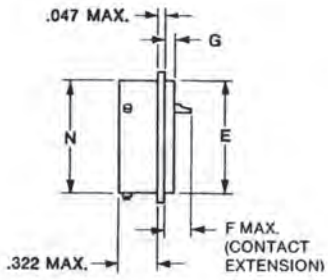
CONTACT ARRANGEMENT
See pages J-15 to J-16.

CONTACT TYPE
P — Pin; all contacts are gold plated.

ALTERNATE SHELL POSITION
A, B, C and D (not required for normal). See page J-17.

Solder Mounting Receptacle

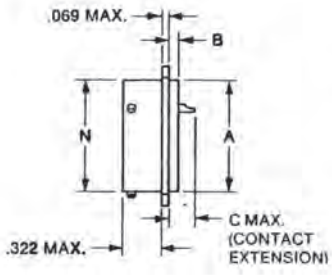
MS27478 **KJ1Y**



Shell Size	D Dia. Max.	E Dia. Max.	F — Contact Extension #16	#20	#22D	#22M	G Max.	N Dia. Max.
8	.698 (17.73)	.563 (14.30)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.089 (2.26)	.474 (12.04)
10	.808 (20.52)	.673 (17.09)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.089 (2.26)	.591 (15.01)
12	.917 (23.29)	.782 (19.86)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.089 (2.26)	.751 (19.08)
14	1.042 (26.47)	.907 (23.04)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.089 (2.26)	.876 (22.25)
16	1.167 (29.64)	1.032 (26.21)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.089 (2.26)	1.001 (25.43)
18	1.292 (32.82)	1.157 (29.39)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.089 (2.26)	1.126 (28.60)
20	1.386 (35.20)	1.251 (31.78)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.089 (2.26)	1.251 (31.78)
22	1.511 (38.38)	1.376 (34.95)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.118 (3.00)	1.376 (34.95)
24	1.636 (41.55)	1.501 (38.13)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.375 (9.52)	.118 (3.00)	1.501 (38.13)

Box Mounting Receptacle

MS27476 **KJ2Y**

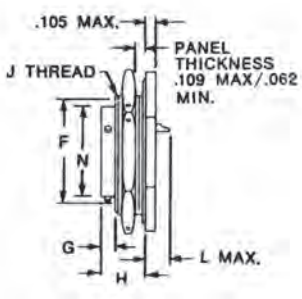


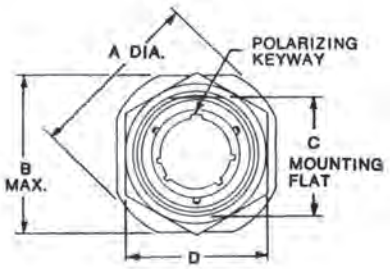
Shell Size	A Dia. Max.	B Max.	C — Contact Extension #16	#16	#16	#16	N Dia. Max.	V +.005 +.010	X Max.	X Max.
8	.563 (14.30)	.057 (1.45)	.344 (8.74)	.344 (8.74)	.344 (8.74)	.344 (8.74)	.474 (12.04)	.125 (3.18)	.828 (21.03)	.594 (15.09)
10	.673 (17.09)	.057 (1.45)	.344 (8.74)	.344 (8.74)	.344 (8.74)	.344 (8.74)	.591 (15.01)	.125 (3.18)	.954 (24.23)	.719 (18.26)
12	.782 (19.86)	.057 (1.45)	.344 (8.74)	.344 (8.74)	.344 (8.74)	.344 (8.74)	.751 (19.08)	.125 (3.18)	1.047 (26.59)	.812 (20.62)
14	.907 (23.04)	.057 (1.45)	.344 (8.74)	.344 (8.74)	.344 (8.74)	.344 (8.74)	.876 (22.25)	.125 (3.18)	1.141 (28.98)	.906 (23.01)
16	1.032 (26.21)	.057 (1.45)	.344 (8.74)	.344 (8.74)	.344 (8.74)	.344 (8.74)	1.001 (25.43)	.125 (3.18)	1.234 (31.24)	.969 (24.61)
18	1.157 (29.39)	.057 (1.45)	.344 (8.74)	.344 (8.74)	.344 (8.74)	.344 (8.74)	1.126 (28.60)	.125 (3.18)	1.328 (33.73)	1.062 (26.97)
20	1.251 (31.78)	.057 (1.45)	.344 (8.74)	.344 (8.74)	.344 (8.74)	.344 (8.74)	1.251 (31.78)	.125 (3.18)	1.453 (36.91)	1.156 (29.36)
22	1.376 (34.95)	.086 (2.18)	.344 (8.74)	.344 (8.74)	.344 (8.74)	.344 (8.74)	1.376 (34.95)	.125 (3.18)	1.578 (40.08)	1.250 (31.75)
24	1.501 (38.13)	.086 (2.18)	.344 (8.74)	.344 (8.74)	.344 (8.74)	.344 (8.74)	1.501 (38.13)	.152 (3.86)	1.703 (43.66)	1.375 (34.92)

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Jam Nut Receptacle

MS27477 **KJ7Y**

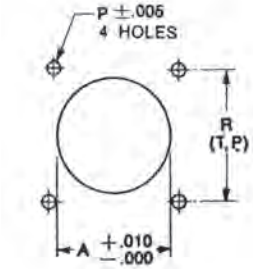




Shell Size	A Dia. Max.	B Max.	C Max.	D Max. Hex.	F Dia. Min.	G Max.	H Max.	J Thread	L — Contact Extension #16 Max.	#20 Max.	#22D Max.	#22M Max.	N Dia. Max.
8	1.390 (35.31)	1.266 (32.16)	.818 (20.78)	1.079 (27.41)	.678 (17.22)	.145 (3.68)	.443 (11.25)	.875-20 UNEF-2A	.280 (7.11)	.280 (7.11)	.280 (7.11)	.280 (7.11)	.474 (12.04)
10	1.515 (38.48)	1.391 (35.33)	.942 (23.93)	1.205 (30.61)	.780 (19.81)	.145 (3.68)	.443 (11.25)	1.000-20 UNEF-2A	.280 (7.11)	.280 (7.11)	.280 (7.11)	.280 (7.11)	.591 (15.01)
12	1.640 (41.66)	1.516 (38.51)	1.066 (27.08)	1.329 (33.76)	.963 (24.46)	.145 (3.68)	.443 (11.25)	1.125-18 UNEF-2A	.280 (7.11)	.280 (7.11)	.280 (7.11)	.280 (7.11)	.751 (19.08)
14	1.765 (44.83)	1.641 (41.68)	1.191 (30.25)	1.455 (36.96)	1.088 (27.64)	.145 (3.68)	.443 (11.25)	1.250-18 UNEF-2A	.280 (7.11)	.280 (7.11)	.280 (7.11)	.280 (7.11)	.876 (22.25)
16	1.953 (49.61)	1.797 (45.64)	1.321 (33.55)	1.579 (40.11)	1.222 (31.04)	.145 (3.68)	.443 (11.25)	1.375-18 UNEF-2A	.280 (7.11)	.280 (7.11)	.280 (7.11)	.280 (7.11)	1.001 (25.43)
18	2.031 (51.59)	1.906 (48.41)	1.441 (36.60)	1.705 (43.31)	1.333 (33.86)	.145 (3.68)	.443 (11.25)	1.500-18 UNEF-2A	.280 (7.11)	.280 (7.11)	.280 (7.11)	.280 (7.11)	1.126 (28.60)
20	2.156 (54.76)	2.032 (51.61)	1.566 (39.78)	1.829 (46.46)	1.458 (37.03)	.171 (4.34)	.469 (11.91)	1.625-18 UNEF-2A	.250 (6.35)	.250 (6.35)	.250 (6.35)	.250 (6.35)	1.251 (31.78)
22	2.280 (57.91)	2.157 (54.79)	1.691 (42.95)	2.017 (51.23)	1.583 (40.21)	.171 (4.34)	.469 (11.91)	1.750-18 UNS -2A	.250 (6.35)	.250 (6.35)	.250 (6.35)	.250 (6.35)	1.376 (34.95)
24	2.405 (61.09)	2.281 (57.84)	1.816 (46.13)	2.142 (54.41)	1.708 (43.38)	.171 (4.34)	.469 (11.91)	1.875-18 UN -2A	.250 (6.35)	.250 (6.35)	.250 (6.35)	.250 (6.35)	1.501 (38.13)

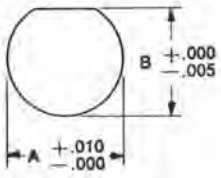
Panel Cutouts

Flange Mounted Receptacle (Front Mounted)



Shell Size	A Dia.	P Dia.	R Dia.	Mtg. Screw
8	.565 (14.35)	.125 (3.18)	.594 (15.09)	#4
10	.675 (17.14)	.125 (3.18)	.719 (18.26)	#4
12	.789 (20.04)	.125 (3.18)	.812 (20.62)	#4
14	.909 (23.09)	.125 (3.18)	.906 (23.01)	#4
16	1.034 (26.26)	.125 (3.18)	.969 (24.61)	#4
18	1.159 (29.44)	.125 (3.18)	1.062 (26.97)	#4
20	1.253 (31.83)	.125 (3.18)	1.156 (29.36)	#4
22	1.378 (35.00)	.125 (3.18)	1.250 (31.75)	#4
24	1.503 (36.68)	.152 (3.86)	1.375 (34.93)	#6

Jam Nut Receptacles



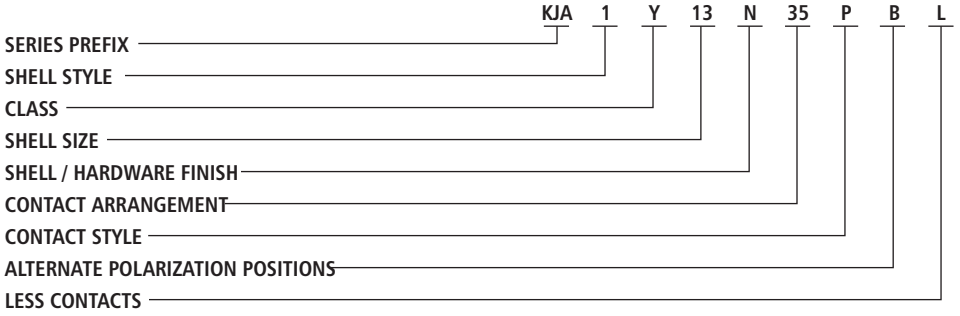
Shell Size	A Dia.	B
8	.885 (17.70)	.828 (21.03)
10	1.010 (25.65)	.952 (24.18)
12	1.135 (28.83)	1.076 (27.33)
14	1.260 (32.00)	1.201 (30.51)
16	1.385 (35.18)	1.331 (33.81)
18	1.510 (38.35)	1.451 (36.86)
20	1.635 (41.53)	1.576 (40.03)
22	1.760 (44.70)	1.701 (43.21)
24	1.885 (47.88)	1.826 (46.38)

Solder Mount Receptacles (Front Mounted)

Shell Size	A Dia.
8	.568 (14.43)
10	.678 (17.22)
12	.787 (19.99)
14	.912 (23.16)
16	1.037 (26.34)
18	1.162 (29.51)
20	1.256 (31.90)
22	1.381 (35.08)
24	1.506 (38.25)

How to Order

ITT Cannon Nomenclature



SERIES PREFIX
KJAY — Series III - Scoop proof, threaded coupling

SHELL STYLE
1 — Solder mount Receptacle
2 — Box mount receptacle
5 — Thru-bulkhead
7 — Jam nut receptacle

CLASS
Y — Hermetic

SHELL SIZE

9	11	13	15	17	19	21	23	25
A	B	C	D	E	F	G	H	J

Cannon Designation
Military Designation

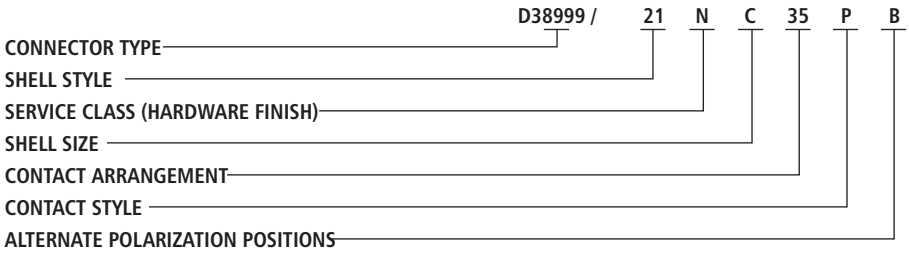
SHELL / HARDWARE FINISH STANDARD
D — Corrosion resistant steel passivated, -85°F to +392°F (-65°C to +200°C).
E — Corrosion resistant steel with electro-deposited nickel plate, -85°F to +392°F (-65°C to +200°C).

CONTACT ARRANGEMENTS
See pages J-15 to J-16.

CONTACT TYPE
P — Pin contacts
P/P — Pin / Pin (Shell Style 5 only)

ALTERNATE POLARIZATION POSITION
N (normal), A, B, C, D, E, S. See page J-17.

Military Nomenclature



CONNECTOR TYPE
D38999 / – MIL-C-38999 Series III

SHELL STYLE
D38999 / 21 – Box mount receptacle
D38999 / 23 – Jam nut receptacle
D38999 / 25 – Solder mount receptacle
D38999 / 27 – Thru-bulkhead

SERVICE CLASS
(Hardware Finish)
N — Corrosion resistant steel, electro-deposited nickel, -85°F to +392°F (-65°C to +200°C).
Y — Corrosion resistant steel with electro-deposited nickel plate, -85°F to +392°F (-65°C to +200°C).

SHELL SIZE

A	B	C	D	E	F	G	H	J
9	11	13	15	17	18	20	22	24

Military Designation
Cannon Designation

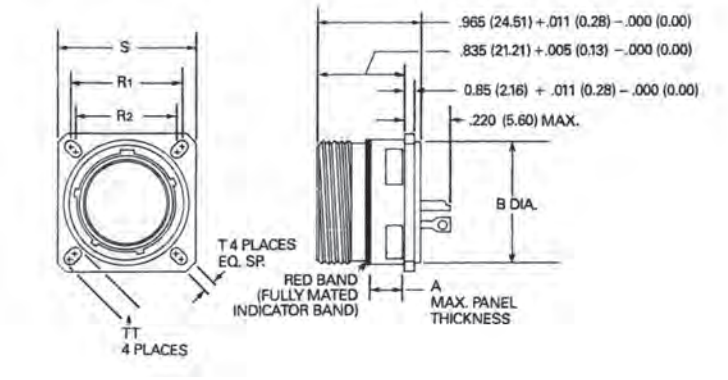
CONTACT ARRANGEMENTS
See pages J-15 to J-16.

CONTACT TYPE
P — Pin contacts

ALTERNATE POSITIONS
N (normal), A, B, C, D, E, S. See page J-17.

Box Mount Receptacle

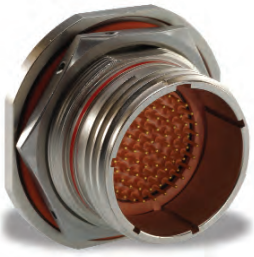
D38999/ **KJA2Y****

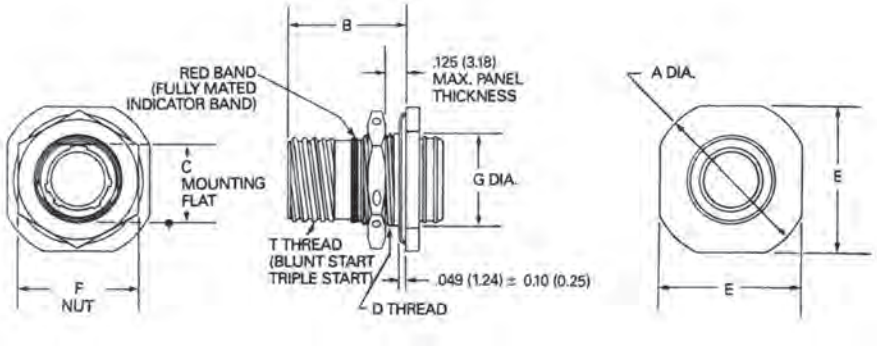


Shell Size	A Max.	B Dia. Max.	R_1	R_2	S ± 0.16	T + .005 –.000 (+.010 –.005)	TT + .004 –.002 (+.10 –.05)
9	.234 (5.94)	.542 (13.77)	.719 (18.26)	.594 (15.09)	.935 (23.75)	.126 (3.25)	.216 (5.49)
11	.234 (5.94)	.669 (16.99)	.812 (20.62)	.719 (18.26)	1.030 (26.16)	.126 (3.25)	.194 (4.93)
13	.234 (5.94)	.800 (20.32)	.906 (23.01)	.812 (20.62)	1.124 (28.55)	.126 (3.25)	.194 (4.93)
15	.234 (5.94)	.915 (23.24)	.969 (24.61)	.906 (23.01)	1.219 (30.96)	.126 (3.25)	.173 (4.39)
17	.234 (5.94)	1.035 (26.29)	1.062 (26.97)	.969 (24.61)	1.309 (33.25)	.126 (3.25)	.194 (4.93)
19	.234 (5.94)	1.113 (28.27)	1.156 (29.36)	1.062 (26.97)	1.435 (36.45)	.126 (3.25)	.194 (4.93)
21	.204 (5.18)	1.230 (31.24)	1.250 (31.75)	1.156 (29.36)	1.561 (39.65)	.126 (3.25)	.194 (4.93)
23	.204 (5.18)	1.376 (34.95)	1.375 (34.92)	1.250 (31.75)	1.687 (42.85)	.152 (3.91)	.242 (6.15)
25	.204 (5.18)	1.487 (37.77)	1.500 (38.10)	1.375 (34.92)	1.809 (45.95)	.152 (3.91)	.242 (6.15)

Box Mount Receptacle

D38999/ **KJA7Y****



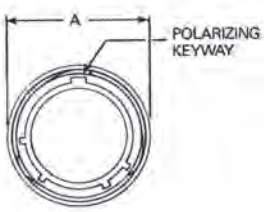


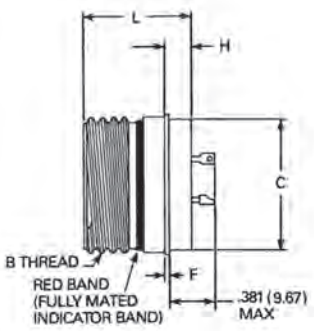
Shell Size	A Dia. Max.	B Max.	C Flat Max.	D Metric Thread	E Dim. Max.	F Max.	G Dia. Max.	F Max.
9	1.200 (30.48)	.875 (22.22)	.654 (16.61)	M17x1-6g0.100	1.078 (27.38)	.878 (22.30)	.688 (17.48)	.6250-0 1P-0.3L-TS
11	1.385 (35.18)	.875 (22.22)	.754 (19.51)	M20x1-6g0.100	1.267 (32.18)	1.003 (25.48)	.814 (20.68)	.7500-0 1P-0.3L-TS
13	1.511 (38.38)	.883 (22.43)	.941 (23.90)	M25x1-6g0.100	1.389 (35.28)	1.191 (30.25)	1.003 (25.48)	.8750-0 1P-0.3L-TS
15	1.637 (41.58)	.883 (22.43)	1.065 (27.05)	M28x1-6g0.100	1.515 (38.48)	1.315 (33.40)	1.125 (28.58)	1.0000-0 1P-0.3L-TS
17	1.763 (44.78)	.883 (22.43)	1.190 (30.23)	M32x1-6g0.100*	1.641 (41.68)	1.441 (36.60)	** **	1.1875-0 1P-0.3L-TS
19	1.948 (49.48)	.883 (22.43)	1.315 (33.40)	M35x1-6g0.100	1.826 (46.38)	1.565 (39.75)	** **	1.2500-0 1P-0.3L-TS
21	2.074 (52.68)	.883 (22.43)	1.440 (36.58)	M38x1-6g0.100	1.952 (49.58)	1.691 (42.95)	** **	1.3750-0 1P-0.3L-TS
23	2.200 (55.88)	.883 (22.43)	1.565 (39.75)	M41x1-6g0.100	2.078 (52.78)	1.815 (46.10)	1.625 (41.28)	1.5000-0 1P-0.3L-TS
25	2.322 (58.98)	.883 (22.43)	1.690 (42.93)	M44x1-6g0.100	2.204 (55.98)	2.003 (50.87)	1.751 (44.48)	1.6250-0 1P-0.3L-TS

*Modified Major Diameter (31.95—31.80)
**"G" diameter and "D" Thread Major Diameter are common surfaces on shell sizes 17, 19 and 21, and there will be no step.

Solder Mount Receptacle

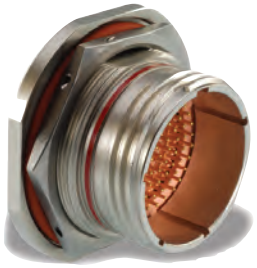
D38999 / 25 **KJA1Y****





Shell Size	A Dia. Max.	Metric B Thread Class 2A (Plated)	C Dia. Max.	F ± .010 (0.30)	H Max.	L Max.
9	.763 (19.40)	.6250-0 1P-0.3L-TS	.673 (17.10)	.035 (0.90)	.247 (6.27)	.937 (23.80)
11	.858 (21.80)	.7500-0 1P-0.3L-TS	.783 (19.90)	.035 (0.90)	.247 (6.27)	.937 (23.80)
13	.980 (24.90)	.8750-0 1P-0.3L-TS	.909 (23.10)	.035 (0.90)	.247 (6.27)	.937 (23.80)
15	1.106 (28.10)	1.0000-0 1P-0.3L-TS	1.031 (26.20)	.035 (0.90)	.247 (6.27)	.937 (23.80)
17	1.232 (31.30)	1.1875-0 1P-0.3L-TS	1.157 (29.40)	.035 (0.90)	.247 (6.27)	.937 (23.80)
19	1.322 (33.60)	1.2500-0 1P-0.3L-TS	1.251 (31.80)	.035 (0.90)	.247 (6.27)	.937 (23.80)
21	1.448 (36.80)	1.3750-0 1P-0.3L-TS	1.377 (35.00)	.035 (0.90)	.247 (6.27)	.937 (23.80)
23	1.574 (40.00)	1.5000-0 1P-0.3L-TS	1.503 (28.20)	.035 (0.90)	.279 (7.08)	.968 (24.60)
25	1.700 (43.20)	1.6250-0 1P-0.3L-TS	1.625 (41.30)	.035 (0.90)	.279 (7.08)	.968 (24.60)

Dimensions shown in inches (mm)
Specifications and dimensions subject to change



ITT Cannon's new KJAYA is a lightweight aluminum shell connector that provides low pressure sealing of 0.01 micron cubic feet per hour for a pressure differential of 15 PSI.

The KJAYA hermetic utilizes a special sealing materials and the connector is designed to meet the water immersion requirements at a depth of 1 meter. It is a low cost aluminum based connector that also provides a reduction in weight.

The KJAYA utilizes copper based contacts with a reduction in resistance when compared to steel based contacts. The KJAYA is available in crimp poke home and printed circuit contacts.

Performance and Material Specifications

MATERIALS AND FINISHES

Shell	Aluminum alloy*
Insulator	High grade plastic/epoxy
Contacts	Copper alloy, gold plate
Grommet and Seal	Silicone base elastomer
Jam Nut	Aluminum alloy*

*Finish as noted in How to Order section.

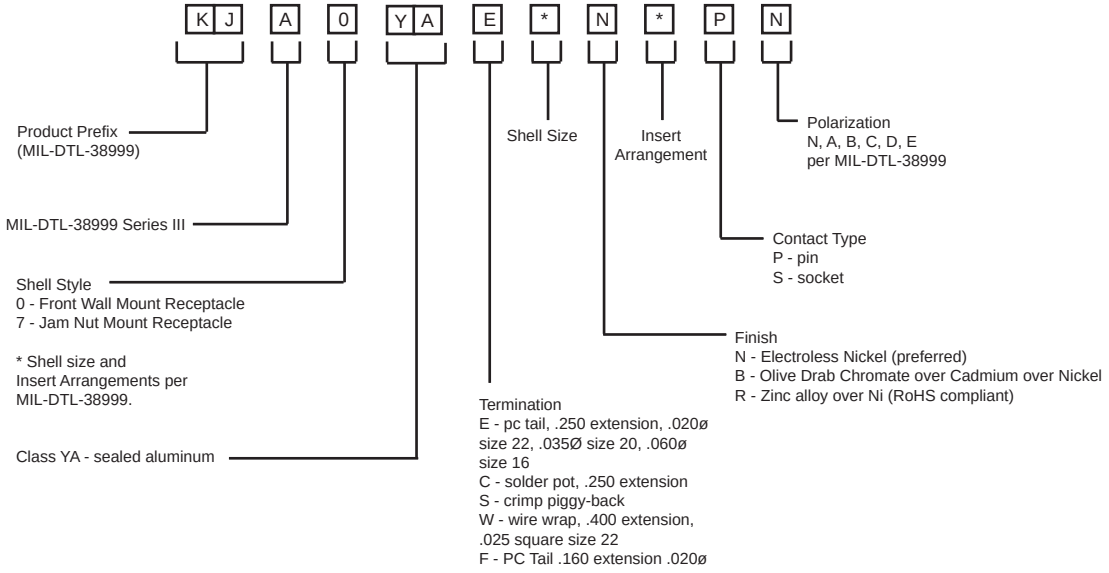
PERFORMANCE

Temperature	-55°C to +125°C
Sealing	1 x 10^{-7} cm^3 1 sec
Water Immersion	Per Mil-Std-810 and IP67

Piggy Back Crimp Contacts

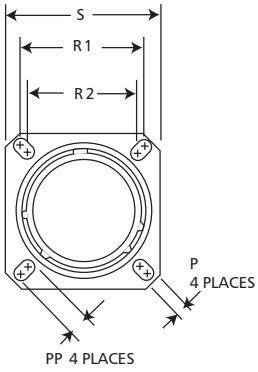
Contact Size	Part Number
22D	M39029/57-354
20	M39029/57-357
16	M39029/57- 358
12	M39029/57- 359

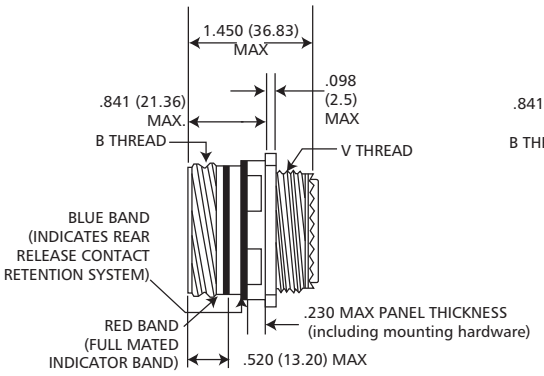
How to Order - KJA*Y*

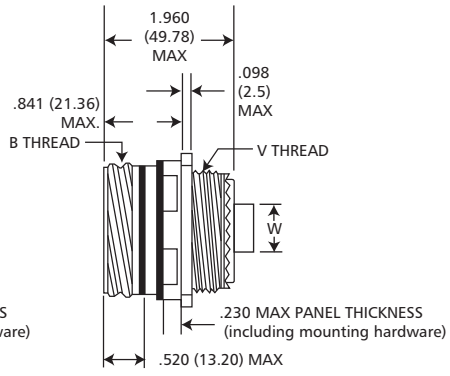


Wall Mounting Receptacle

KJA0YA





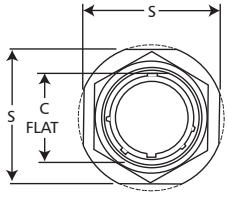


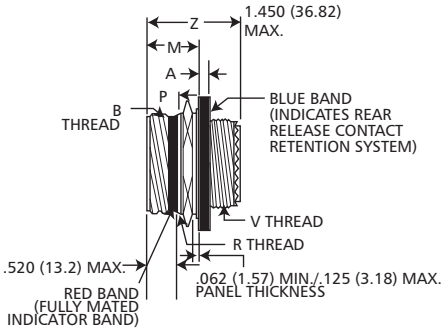
Crimp Piggyback

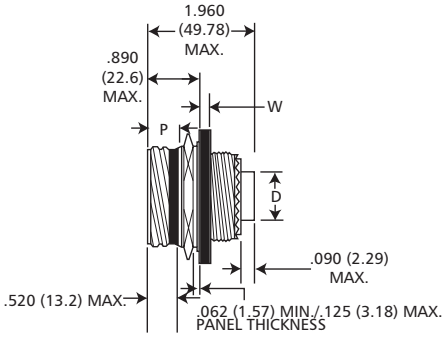
Shell Size	Shell size Code	P Dia. Max.	PP Max.	R_1	R_2	S Max.	W Max.	BB Thread .01P-.03L-TS-2A
9	A	.132 (3.25)	.220 (5.59)	.719 (18.26)	.594 (15.09)	.949 (24.1)	.098 (2.50)	.6250 (15.88)
11	B	.132 (3.25)	.198 (5.03)	.812 (20.62)	.719 (18.26)	1.043 (26.5)	.098 (2.50)	.7500 (19.05)
13	C	.132 (3.25)	.198 (5.03)	.906 (23.01)	.812 (20.62)	1.138 (28.9)	.098 (2.50)	.8750 (22.23)
15	D	.132 (3.25)	.198 (5.03)	.969 (24.61)	.906 (23.01)	1.232 (31.3)	.098 (2.50)	1.000 (25.46)
17	E	.132 (3.25)	.198 (5.03)	1.062 (26.97)	.969 (24.61)	1.323 (33.6)	.098 (2.50)	1.1875 (30.16)
19	F	.132 (3.25)	.198 (5.03)	1.156 (29.36)	1.062 (26.97)	1.449 (36.8)	.098 (2.50)	1.2500 (31.75)
21	G	.132 (3.25)	.198 (5.03)	1.250 (31.75)	1.156 (29.36)	1.575 (40.0)	.126 (3.20)	1.375 (34.93)
23	H	.158 (4.01)	.246 (6.25)	1.375 (34.92)	1.250 (31.75)	1.701 (43.2)	.126 (3.20)	1.5000 (38.10)
25	J	.158 (4.01)	.246 (6.25)	1.500 (38.10)	1.375 (34.92)	1.823 (46.3)	.126 (3.20)	1.6250 (41.28)

Jam Nut Receptacle

KJA7YA







Crimp Piggyback

Shell Size	Shell size Code	A Dia. Max.	B Flat Max.	C Max.	D Dia. Max.	G Thread 1.0-6g 0.100 R	P Max.	S Max.	W Max.	BB Thread .01P-.03L-TS-2A
9	A	1.201 (30.5)	.655 (16.63)	.880 (22.31)	.299 (7.59)	M17	.571 (14.5)	1.079 (27.4)	.114 (2.9)	.6250 (15.88)
11	B	1.386 (35.2)	.755 (19.17)	.880 (22.31)	.427 (10.85)	M20	.571 (14.5)	1.268 (32.2)	.114 (2.9)	.7500 (19.05)
13	C	1.512 (38.4)	.942 (23.92)	.890 (22.6)	.541 (13.74)	M25	.579 (14.7)	1.390 (35.3)	.114 (2.9)	.8750 (22.23)
15	D	1.638 (41.6)	1.066 (27.07)	.890 (22.6)	.666 (16.92)	M28	.579 (14.7)	1.516 (38.5)	.114 (2.9)	1.000 (25.46)
17	E	1.764 (44.8)	1.191 (30.25)	.890 (22.6)	.791 (20.09)	M32	.579 (14.7)	1.642 (41.7)	.114 (2.9)	1.1875 (30.16)
19	F	1.949 (49.5)	1.316 (33.42)	.890 (22.6)	.880 (22.35)	M35	.579 (14.7)	1.827 (46.4)	.146 (3.7)	1.2500 (31.75)
21	G	2.075 (52.7)	1.441 (36.60)	.890 (22.6)	1.005 (25.52)	M38	.579 (14.7)	1.953 (49.6)	.146 (3.7)	1.375 (34.93)
23	H	2.201 (55.9)	1.566 (39.77)	.890 (22.6)	1.130 (28.70)	M41	.579 (14.7)	2.079 (52.8)	.146 (3.7)	1.5000 (38.10)
25	J	2.323 (59.0)	1.691 (42.95)	.890 (22.6)	1.255 (31.88)	M44	.579 (14.7)	2.205 (56.0)	.146 (3.7)	1.6250 (41.28)

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

MIL-C-5015-style Standard Circular
GS

ITT Cannon hermetically sealed GS connectors a re designed for applications where a vacuum, inert gas, or a constant or controlled pressure is re-quired to eliminate adverse effects created by at-mospheric changes.

These connectors have broad-base commercial, military and industrial applications where extreme operating conditions require a hermetically sealed container. Developed for use in relays, position indicators, tachometers, direction finders and air-craft instruments, GS connectors have been used heavily in commercial and private aircraft, and on spacecraft fuel tanks and sensors. Other applica-tions include air conditioning, home refrigeration units, nuclear instrumentation, and control rod cables in power plant test chambers.

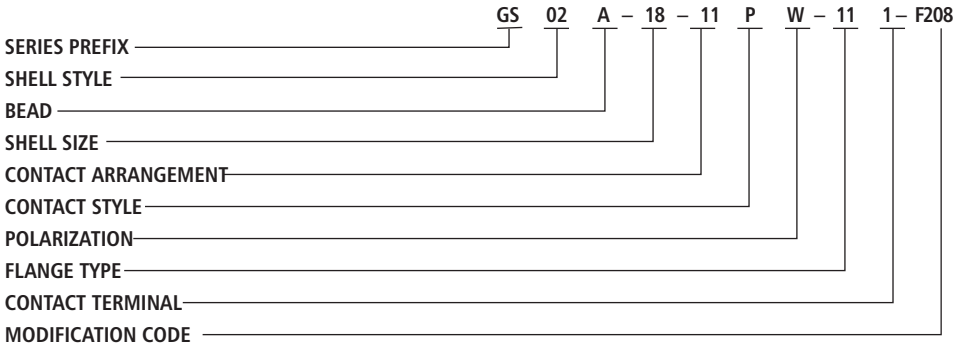
GS connectors are hermetically sealed with com-pression glass to prevent air leakage in excess of 1 x 10^{-6} standard cubic centimeters per second at 1 atmosphere. Standard hermetic receptacles are available with either solder pot or eyelet contacts. Thermocouple contacts are also available in some configurations (see page 3).

The standard materials for shells and contacts is steel with tin over cadmium finish on GS02 / GS06 connectors and clear chromate coating over cadmium (A105) on BFH / TBFH connectors. Other materials and finishes can be supplied to meet specific applications.

GS connectors are manufactured to ITT Cannon specifications and meet the instrument Service Voltage Rating of MIL-C-5015-style. Asterisked contact arrangements (solid glass web design) shown on page 26 meet MS specified voltage ratings. Connectors with higher voltage ratings are also available upon request. Salt spray, shock and vibration requirements, and mating dimensions all approximate the requirements of MIL-C-5015 and can be contractually approved for military ap-plications.

How to Order

ITT Cannon Nomenclature



PREFIX
GS — Glass sealed

SHELL STYLE
02 — Receptacle (with male threads)
06 — Receptacle (with coupling nut)

BEAD
Layouts marked with (*) on pages 24-25 are tooled with a solid bead. Add designa-tor "A" to order individual bead.

SHELL SIZE
Coupling thread diameter figured in sixteenths of an inch.

CONTACT ARRANGEMENT
See pages J-31 to J-32.

CONTACT TYPE
P for Pin; S for Socket

ALTERNATE INSERT POSITION
See page J-34.

FLANGE TYPE
00 — Flangeless (standard flange for BFH)
11 — Square flange
25 — Circular flange
30 — Hex flange, with hex lockout

CONTACT TERMINAL
1 — Eyelet
2 — Solder pot
3 — Short solder pot

MODIFICATION CODE
F208 – Stainless steel (304L type) hardware; contacts .00005 min. gold over nickel
Consult factory for other modification codes.

Standard Data

ELECTRICAL SERVICE DATA
Maximum current ratings of contacts and maxi-mum allowable voltage drop under test condi-tions when assembled as in service are shown below. Maximum total current to be carried per connector is the same as that allowable in wire bundles as specified in MIL-W-5088.

Contact Size	Test Current (amps)	Potential Drop (millivolts)
16	10	125
12	17	125
8	33	125
4	60	125
0	100	125

Per para. 3.6.6 of MIL-C-5015 (Reference)

HIGH POTENTIAL TEST VOLTAGE
MS connectors show no evidence of breakdown when the test voltage given below is applied be-tween the two closest contacts and between the shell and the contacts closest to the shell for a period of one minute.

MS Service Rating	Test Voltage (RMS) 60 cps	Suggested* Operating Voltages DC	AC (rms)	Air Spacing nom. inches	Creepage Distance nom. inches
Inst.	1000	250	200		1/16
A	2000	700	500	1/16	1/8
D	2800	1250	900	1/8	3/16
	1300	450	325		
	1500	530	375		

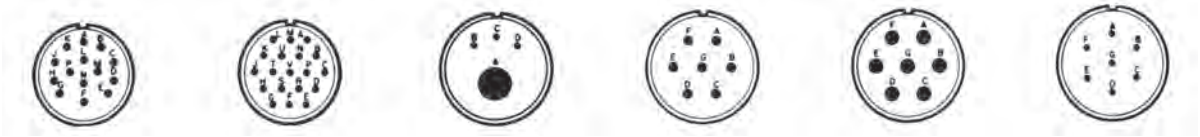
*As indicated in previous MS Specification and to be used by the designer only as a guide.

Contact Arrangements

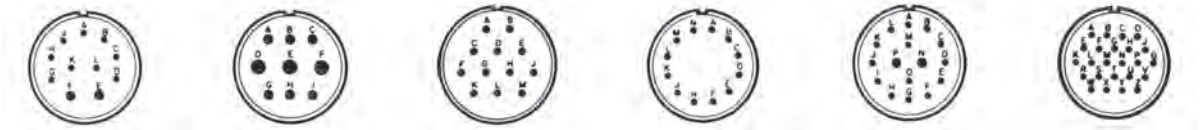
									
Shell Size	8S-1	10S2	*10SL-4	*10SL-3	10SLA-4	12S-4	*12S-3†	12S-10	14S-9
No. of Contacts	1- #16	1- #16	2- #16	3- #16	5- #20	1- #16	2- #16	4- #16	2- #16
Service Rating	A	A	1300	1300	1300	D	1500	Inst.	1500
								
Shell Size	14S-1	14S-7†	*14S-2†	14S-5†	14S-6	16S-4†	16-11†	16-10†
No. of Contacts	3-#16	3-#16	4-#16	5-#16	6-#16	2-#16	2-#12	3-#12
Service Rating	1500	1500	Inst.	Inst.	Inst.	1500	1500	1500
								
Shell Size	16-9†	16S-8†	16S-1†	18-4†	18-10†	18-11†	18-12†
No. of Contacts	2-#16 (B, D) 2-#12 (A, C)	5-#16	7-#16	4-#16	4-#12	5-#12	6-#16
Service Rating	1500	1500	1300	2300	1500	1500	1500
						
Shell Size	18-9†	18-8†	18-1†	20-19†	20-24†	20-4†
No. of Contacts	5-#16 (B, C, E-G) 2-#12 (A, D)	7-#16 (A, G) 1-#12 (H)	10-#16	3-#8	2-#16 (A, C)	4-#12
Service Rating	Inst.	1500	1300 (B, C, F, G) Inst. (all others)	A	1500	2300
						
Shell Size	20-14†	20-8†	20-17†	20-22†	20-15†	20-7†
No. of Contacts	3-#12 (C, D, E) 2-#12 (A, D)	4-#16 (B, C, E, F) 1-#12 (H)	1-#16 (F)	3-#16 (B, D, F)	7-#12	8-#16
Service Rating	A	Inst.	A	1500	1500	1500 C, D, E, F
						
Shell Size	20-16†	20-18†	20-27†	20-29†	20-33†	22-2†
No. of Contacts	7-#16 (A, G) 2-#12 (H, I)	6-#16 (A, C-E, G, H) 3-#12 (B, F, I)	14-#16	17-#16	11-#16	3-#8
Service Rating	A	1300	1500	1300	1500	2300
						
Shell Size	22-9†	22-22†	22-5†	22-18†	22-23†	22-20†
No. of Contacts	3-#12	4-#8	4-#16 (A, C, D, F) 2-#12 (B, E)	8-#16	8-#12	9-#16
Service Rating	E	2000	1500	1500	1500	1500

† MS polarization
†† ITT Cannon polarization
* Tooled with solid bead

Dimensions shown in inches (mm)
Specifications and dimensions subject to change



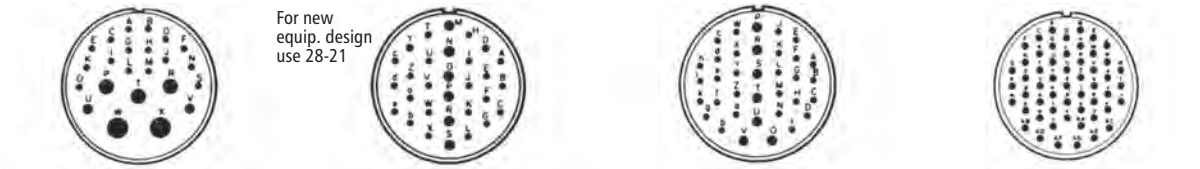
Shell Size	22-19†	22-14†	24-4†	24-2†	24-10†	24-27†
No. of Contacts	14-#16	19-#16	3-#16 (B, C, D) 1-#0 (A)	7-#12	7-#8	7-#16
Service Rating	1500	1500		1500	A	3000



Shell Size	24-20†	24-11†		24A-24†	24-19†	24-7†	24-28†
No. of Contacts	9-#16 (A-D, G-L) 2-#, 12 (E, F)	6-#12 (A-C, G-I)	3-#8 (D, F)	12-#12 2-#12 (P, N)	12-#16	14-#16 (A-M, O)	24-#16
Service Rating	1500	1500	A	1500	1500	1500	Inst.

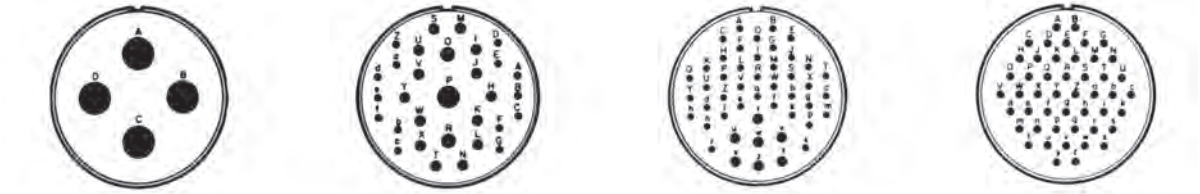
Shell Size	28A-16	28-9† 28-20† 28-17†		28-11†		18-#16 (A-I, N-X)
No. of Contacts	5-#16 (A, D-F, J) 4-#4 (B, C, G, H)	6-#12 (A, D, H-M)	6-#12 (B-G)	4-#16 (K-N) 10-#12 (A-J, P)	15-#16	4-#12 (A-M)
Service Rating		D	A	1500	1300 (A-L), D (R), A (M-P)	1500

Shell Size	28-12†	28-15†	28-21†	32-15†	32-17†
No. of Contacts	26-#16	35-#15	37-#16	6-#12 (B-F, H) 2-#0 (A, G)	4-#4
Service Rating	1500	1300	1300	A	D



For new equip. design use 28-21

Shell Size	32-6†		32-8†	32-7†	32A-10†
No. of Contacts	16-#16 (A-O, S) 2-#12 (U, V) 3-#8 (P-T) 2-#4 (W, X)		24-#16 (A-L, T-Z, A-e) 6-#12 (M-S)	28-#16 (A-N, W-Z, A-k) 7-#12 (O-V)	54-#16
Service Rating	D	1500	1500	1300 1500	1300



Shell Size	36-5†	36-9†		36-7†	36-10†
No. of Contacts	4-#0	14-#16 (A-G, Z-f) 14-#12 (H-N, S-Y)	2-#8 (O, R) 1-#4 (P)	40-#16 (A-Z, A-s) 7-#12 (t-z)	48-#16
Service Rating	A	1500	D	1500	1300

† MS polarization
†† ITT Cannon polarization

Shell Sizes and Contact Arrangements

Shell sizes are based on the diameter of the coupling threads in sixteenths of an inch; for example, size 22 shell has a coupling thread diameter of 22/16 inch, which equals 1-3/8. In the contact arrangement section, pages 24-25 the shell size and contact arrangement number are shown in combination, e.g., 8S-1, 22-2 or 24-7. The digits (8S, 22 and 24) preceding the dash refer to the shell size. The digits (-1, -2 and -7) following the dash are the contact arrangement numbers.

GS02 CONTACT ARRANGEMENTS - SOCKETS

12S-3S	18-8S	22-5S	28-17S
14S-1S	18-9S	22-9S	28-20S
14S-2S	18-10S	22-14S	28-21S
14S-5S	18-12S	22-19S	32-7S
14S-6S	20-4S	22-22S	32-8S
14S-7S	20-7S	24-2S	32-15S
14S-9S	20-8S	24-7S	32-17S
16S-1S	20-15S	24-10S	36-5S
16S-4S	20-16S	24-20S	36-7S
16S-8S	20-17S	24-28S	36-10S
16-9S	20-18S	28-9S	40A-27S
16-10S	20-24S	28-11S	
16-11S	20-27S	28-12S	
18-1S	20-29S	28-15S	
18-4S	20-33S		

GS02 CONTACT ARRANGEMENTS - PINS

8S-1P	*18-1P	*22-2P	*28-11P
10S-2P	18-4P	22-5P	28-12P
*10SL-3P	18-8P	22-9P	28-15P
*10SL-4P	18-9P	22-14P	28-17P
*10SLA4	18-10P	22-18P	28-20P
*12S-3P	18-11P	22-19P	*28-21P
12S-4P	18-12P	22-20P	*28-A16
*12SA10	20-4P	22-22P	*32-6P
14S-1P	20-7P	22-23P	*32-7P
*14S-2P	20-14P	24-2P	32-8P
*14S-5P	20-15P	24-7P	*32-9
*14S-6P	20-16P	*24-10P	32-17P
*14S-7P	20-17P	24-11P	32-A10
14S-9P	20-18P	24-19P	36-5P
*16S-1P	20-19P	24-20P	36-7P
*16S-4P	20-22P	24-22P	36-9P
*16S-8p	20-24P	24-27P	36-10P
16-9P	*20-27P	*24-28P	
16-10P	*20-29P	24A24	
16-11P	20-33P	28-9P	

*Tooled with solid bead.

GS06 CONTACT ARRANGEMENTS - PINS

14S-2P	20-20P
16S-1P	20-33P
18-1P	22-19P
18-11P	24-28P
20-7P	28-21P
20-15P	32-7P

Contact Arrangement	No. of Contacts	Wire Size
SHELL SIZE 8S		
8S-1	1	#16
SHELL SIZE 10S/10SL		
10S-2	1	#16
10SL-2	3	#16
10SL-4	2	#16
10SLA4	5	#20
SHELL SIZE 12/12S		
12S-3	2	#16
12S-4	1	#16
Δ 12SA10	4	#16
SHELL SIZE 14/14S		
14S-1	3	#16
14S-2	4	#16
14S-5	5	#16
14S-6	6	#16
14S-7	3	#16
14S-9	2	#16
SHELL SIZE 16/16S		
16S-1	7	#16
16S-4	2	#16
16S-8	5	#16
16-9	2	#12
	2	#16
16S-10	3	#12
16S-11	2	#12
SHELL SIZE 18		
18-1	10	#16
18-4	4	#16
18-8	1	#12
	7	#16
18-9	2	#12
	5	#16
18-10	4	#12
18-11	5	#12
18-12	6	#16
SHELL SIZE 20		
20-4	4	#12
20-7	8	#16
20-8	2	#8
	4	#16
20-14	2	#8
	3	#12
20-15	7	#12
20-16	2	#12
	7	#16
20-17	5	#12
	1	#16
20-18	3	#12
	6	#16
20-19	3	#8
20-22	3	#8
	3	#16
20-24	2	#8
	2	#16
20-27	14	#16
20-29	17	#16
20-33	11	#16
SHELL SIZE 22		
22-2	3	#8
22-5	2	#12
	4	#16
22-9	3	#12
22-14	19	#16
22-18	8	#16
22-19	14	#16
22-20	9	#16
22-22	4	#8
22-23	8	#12
SHELL SIZE 24		
24-2	7	#12
24-4	1	#0
	3	#16
24-7	2	#12
	14	#16
24-10	7	#8
24-11	3	#8
	6	#12
24-19	12	#16
24-20	2	#12
	9	#16
24-27	7	#16
24-28	24	#16
Δ 24A-24	12	#12
SHELL SIZE 28		
28-9	6	#12
	6	#16
28-11	4	#12
	18	#16
SHELL SIZE 8S		
28-12	26	#16
28-15	35	#16
28-17	15	#16
28-20	10	#12
	4	#16
28-21	37	#16
Δ 28A-16	4	#4
	5	#16
SHELL SIZE 32		
32-6	2	#4
	3	#8
	2	#12
	16	#16
32-7	7	#12
	28	#16
32-8	6	#12
	24	#16
32-15	2	#0
	6	#12
32-17	4	#4
Δ 32A-10	54	#16
SHELL SIZE 36		
36-5	4	#0
36-7	7	#12
	40	#16
36-9	1	#4
	2	#8
	14	#12
	14	#16
36-10	48	#16

Δ Cannon proprietary arrangements

Alternate Insert Positions

Each insert arrangement is shown in its normal position in the shell.

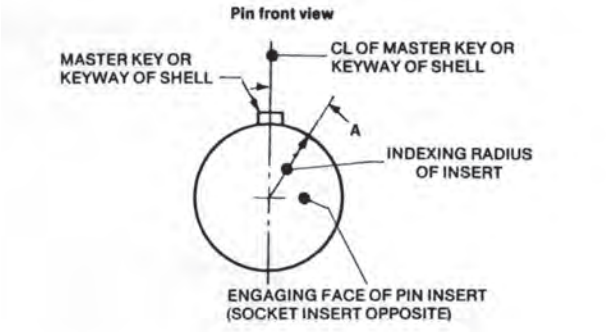
In normal position, the indexing radius coincides with CL of the master key or keyway of shell.

In alternate positions the pin insert is rotated clockwise so that angle "A" between the indexing radius and the CL of the master key or keyway of shell is as required.

In alternate positions the socket insert is rotated counter-clockwise so that angle "A" between the indexing radius and the CL of the master key or keyway of shell is as required.

MS Alternate Positions

No. of Contacts	Contact Arrangement	Degrees W	X	Y	Z
2	12S-3	70	145	215	290
	14S-9	70	145	215	290
	16S-4	35	110	250	325
	16-11	35	110	250	325
3	14S-7	90	180	270	—
	16-10	90	180	270	—
	20-19	90	180	270	—
	22-2	70	145	215	290
	22-9	70	145	215	290
4	14S-2	—	120	240	—
	16-9	35	110	250	325
	18-4	35	110	250	325
	18-10	—	120	240	—
	20-4	45	110	250	—
	20-24	35	110	250	325
	22-22	—	110	250	—
	24-4	80	110	250	280
	32-17	45	110	250	—
	36-5	—	120	240	—
5	14S-5	—	110	—	—
	16S-8	—	170	265	—
	18-11	—	170	265	—
	20-14	80	110	250	280
6	18-12	80	—	—	280
	20-8	80	110	250	280
	20-17	90	180	270	—
	20-22	80	110	250	280
	22-5	35	110	250	325
7	16S-1	80	—	—	280
	18-9	80	110	250	280
	20-15	80	—	—	280
	24-2	80	—	—	280
	24-10	80	—	—	280
	24-27	80	—	—	280



No. of Contacts	Contact Arrangement	Degrees W	X	Y	Z
8	18-8	70	—	—	290
	20-7	80	110	250	280
	22-18	80	110	250	280
	22-23	35	—	250	—
	32-15	35	110	250	280
9	20-16	80	110	250	280
	20-18	35	110	250	325
	22-20	35	110	250	325
	24-11	35	110	250	325
10	18-1	70	145	215	290
11	24-20	80	110	250	280
12	28-9	80	110	250	280
14	20-27	35	110	250	325
	22-19	80	110	250	280
	28-20	80	110	250	280
15	28-17	80	110	250	280

No. of Contacts	Contact Arrangement	Degrees W	X	Y	Z
16	24-7	80	110	250	280
17	20-29	80	—	—	280
19	22-14	80	—	—	280
22	28-11	80	110	250	280
23	32-6	80	110	250	280
24	24-28	80	110	250	280
26	28-12	90	180	270	—
30	32-8	80	125	325	280
31	36-9	80	125	325	280
35	28-15	80	110	250	280
	32-7	80	125	325	280
37	28-21	80	110	250	280
47	36-7	80	110	250	280
48	36-10	80	125	235	280

ITT Cannon Alternate Positions (Not MS approved)

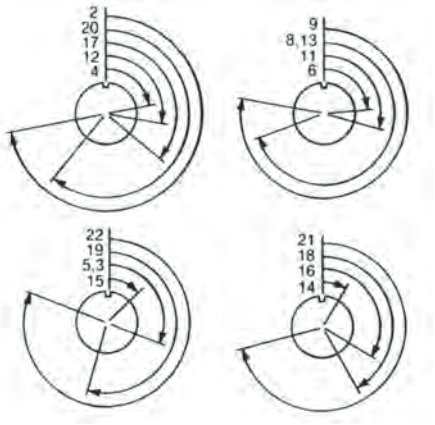
Shell Size	Contact Arrangement	Available Position							
10SL		2	3	5	8	12	13		
12S		3	5	8	13				
24	A24	2	4	9	12				
28	A16	2	3	5	8	9	13		
32	A10	2	3	4	5	8	9	12	13
40	A27	4	14	17	20	22			

Note: Front view of pin insulator rotated as shown.

Position	Angle (deg.)
Normal	0
2	260
3	110
4	80
5	use pos. 3
6	85
8	250
9	280

Position	Angle (deg.)
11	105
12	100
13	use pos. 8
14	30
15	45
16	120
17	130
18	150

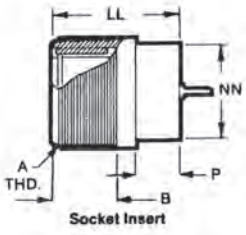
Position	Angle (deg.)
19	195
20	220
21	255
22	290
23	165
24	330
25	235
26	125



Dimensions shown in inches (mm)
Specifications and dimensions subject to change

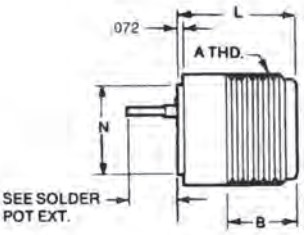
Flangeless Receptacle

GS02-00



Socket Insert

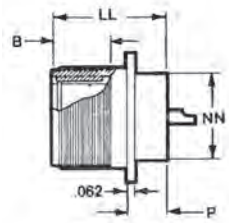
Flangeless Type 00



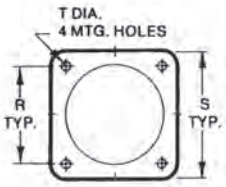
Pin Insert

Square Flange Receptacle

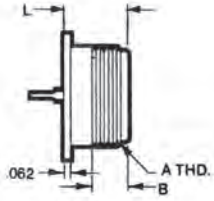
GS02-11



Socket Insert



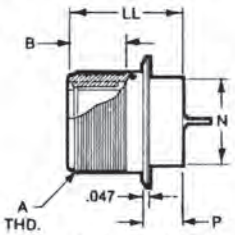
Flange Type 11



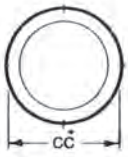
Pin Insert

Circular Flange Receptacle

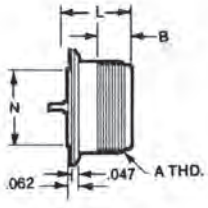
GS02-25



Socket Insert



Flange Type 25



Pin Insert

Part Number by Shell Size Pin Insert*	A Thread	B Min.	C ± .010 (0.25)	CC ± .010 (0.38)	L ± .015 (0.38)	LL ± .010 (0.25)	N + .000 (0.00) - .020 (0.51)	NN + .000 (0.00) - .020 (0.51)	P ± .015 (0.38)	P ± .015 (0.38)	S Max.	T ± .005 (0.13)
•GS02-8S-**P-Δ	1/2-28UNEF-2A	.438 (11.13)	.500 (12.70)	.750 (19.05)	.715 (18.16)	—	.438 (11.13)	—	—	.594 (15.09)	.908 (23.06)	.120 (3.05)
•GS02-10S-**P-Δ	5/8-24UNEF-2A	.438 (11.13)	.625 (15.88)	.875 (22.22)	.715 (18.16)	—	.500 (12.70)	—	—	.718 (18.24)	1.032 (26.21)	.120 (3.05)
•GS02-10SL-**P-Δ	5/8-24UNEF-2A	.438 (11.13)	.625 (15.88)	.875 (22.22)	.715 (18.16)	—	.500 (12.70)	—	—	.718 (18.24)	1.032 (26.21)	.120 (3.05)
GS02-12S-**P-Δ	3/4-20UNEF-2A	.438 (11.13)	.750 (19.05)	1.000 (25.40)	.715 (18.16)	1.094 (27.79)	.656 (16.66)	.656 (16.66)	.438 (11.13)	.812 (20.62)	1.126 (28.60)	.120 (3.05)
GS02-14S-**P-Δ	7/8-20UNEF-2A	.438 (11.13)	.875 (22.22)	1.125 (28.25)	.715 (18.16)	1.094 (27.79)	.719 (18.26)	.719 (18.26)	.438 (11.13)	.906 (23.01)	1.220 (30.99)	.120 (3.05)
GS02-16S-**P-Δ	1 -20UNEF-2A	.438 (11.13)	1.000 (25.40)	1.250 (31.75)	.715 (18.16)	1.094 (27.79)	.844 (21.44)	.844 (21.44)	.438 (11.13)	.968 (24.59)	1.313 (33.35)	.120 (3.05)
GS02-12-**P-Δ	3/4-20UNEF-2A	.625 (15.88)	.750 (19.05)	1.000 (25.40)	.900 (22.86)	1.281 (32.54)	.656 (16.66)	.656 (16.66)	.438 (11.13)	.812 (20.62)	1.126 (28.60)	.120 (3.05)
GS02-14-**P-Δ	7/8-20UNEF-2A	.625 (15.88)	.875 (22.22)	1.125 (28.25)	.900 (22.86)	1.282 (32.54)	.719 (18.26)	.719 (18.26)	.438 (11.13)	.906 (23.01)	1.220 (30.99)	.120 (3.05)
GS02-16-**P-Δ	1 -20UNEF-2A	.625 (15.88)	1.000 (25.40)	1.250 (31.75)	.900 (22.86)	1.282 (32.54)	.844 (21.44)	.844 (21.44)	.438 (11.13)	.968 (24.59)	1.313 (33.35)	.120 (3.05)
GS02-18-**P-Δ	1-1/8-18UNEF-2A	.625 (15.88)	1.125 (28.25)	1.375 (34.92)	.900 (22.86)	1.282 (32.54)	.969 (24.62)	.969 (24.62)	.438 (11.13)	1.062 (26.87)	1.407 (35.74)	.120 (3.05)
GS02-20-**P-Δ	1-1/4-18UNEF-2A	.625 (15.88)	1.250 (31.75)	1.500 (38.10)	.900 (22.86)	1.282 (32.54)	1.156 (29.36)	1.156 (29.36)	.438 (11.13)	1.156 (29.36)	1.532 (38.91)	.120 (3.05)
GS02-22-**P-Δ	1-3/8-18UNEF-2A	.625 (15.88)	1.375 (34.92)	1.625 (41.28)	.900 (22.86)	1.282 (32.54)	1.250 (31.75)	1.250 (31.75)	.438 (11.13)	1.250 (31.75)	1.657 (42.09)	.120 (3.05)
GS02-24-**P-Δ	1-1/2-18UNEF-2A	.625 (15.88)	1.500 (38.10)	1.750 (44.45)	.900 (22.86)	1.406 (35.71)	1.375 (34.92)	1.375 (34.92)	.563 (14.30)	1.375 (34.92)	1.782 (45.26)	.147 (3.73)
GS02-28-**P-Δ	1-3/4-18UNS-2A	.625 (15.88)	1.750 (44.45)	2.000 (50.80)	.900 (22.86)	1.406 (35.71)	1.625 (41.28)	1.625 (41.28)	.563 (14.30)	1.562 (39.67)	2.032 (51.61)	.147 (3.73)
GS02-32-**P-Δ	2 -18UNS-2A	.625 (15.88)	2.000 (50.80)	2.250 (57.15)	.900 (22.86)	1.406 (35.71)	1.875 (47.62)	1.875 (47.62)	.563 (14.30)	1.750 (44.45)	2.282 (57.96)	.173 (4.39)
GS02-36-**P-Δ	2-1/4-18UNS-2A	.625 (15.88)	2.250 (57.15)	2.500 (63.50)	.900 (22.86)	1.406 (35.71)	2.125 (53.98)	2.125 (53.98)	.563 (14.30)	1.937 (49.20)	2.531 (64.29)	.173 (4.39)

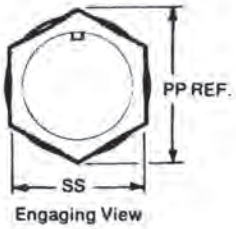
*For socket inserts, substitute S for P following the contact arrangement numbers.
**Add contact arrangement number. See pages J-31 to J-32 for contact arrangements.

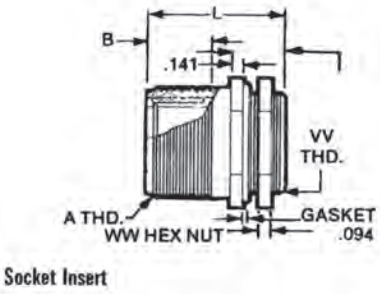
• Available with pin inserts only.
Δ Add flange and contact terminal type. See page J-38.

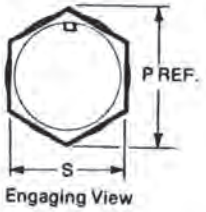
Dimensions shown in inches (mm)
Specifications and dimensions subject to change

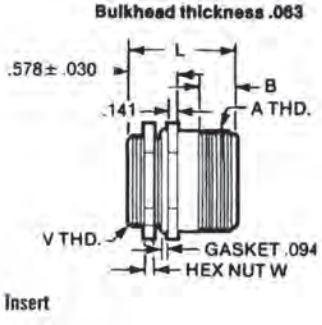
Hex Flange Receptacle

Hex Lockout **GS02-30**









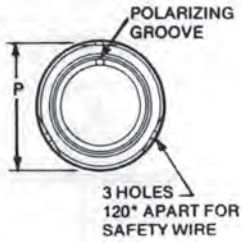
Part Number by Shell Size Pin Insert*	A Thread	B Min.	L ± .010	P	PP	S ± .015 (0.38)	SS ± .010 (0.25)	V	VV	W ±.010 (0.25)	WW ±.010 (0.25)
•GS02-8S-**P-30Δ	1/2-28UNEF-2A	.450 (11.43)	1.219 (30.96)	.594 (15.09)	—	.500 (12.70)	—	3/8-32UNEF-2A	—	.125 (3.18)	—
•GS02-10S-**P-30Δ	5/8-24UNEF-2A	.450 (11.43)	1.219 (30.96)	.719 (18.26)	—	.625 (15.88)	—	1/2-28UNEF-2A	—	.125 (3.18)	—
•GS02-10SL-**P-30Δ	5/8-24UNEF-2A	.450 (11.43)	1.219 (30.96)	.719 (18.26)	—	.625 (15.88)	—	1/2-28UNEF-2A	—	.125 (3.18)	—
GS02-12S-**P-30Δ	3/4-20UNEF-2A	.450 (11.43)	1.219 (30.96)	.875 (22.22)	1.000 (25.40)	.750 (19.05)	.875 (22.22)	5/8-24UNEF-2A	3/4-20UNEF-2A	.125 (3.18)	.125 (3.18)
GS02-14S-**P-30Δ	7/8-20UNEF-2A	.450 (11.43)	1.219 (30.96)	1.000 (25.40)	1.156 (29.36)	.875 (22.22)	1.000 (25.40)	3/4-20UNEF-2A	7/8-20UNEF-2A	.125 (3.18)	.125 (3.18)
GS02-16S-**P-30Δ	1 -20UNEF-2A	.450 (11.43)	1.219 (30.96)	1.156 (29.36)	1.313 (33.35)	1.000 (25.40)	1.125 (28.25)	7/8-20UNEF-2A	1 -20UNEF-2A	.141 (3.58)	.141 (3.58)
GS02-12-**P-30Δ	3/4-20UNEF-2A	.625 (15.88)	1.406 (35.71)	.875 (22.22)	1.000 (25.40)	.750 (19.05)	.875 (22.22)	5/8-24UNEF-2A	3/4-20UNEF-2A	.125 (3.18)	.125 (3.18)
GS02-14-**P-30Δ	7/8-20UNEF-2A	.625 (15.88)	1.406 (35.71)	1.000 (25.40)	1.156 (29.36)	.875 (22.22)	1.000 (25.40)	3/4-20UNEF-2A	7/8-20UNEF-2A	.125 (3.18)	.125 (3.18)
GS02-16-**P-30Δ	1 -20UNEF-2A	.625 (15.88)	1.406 (35.71)	1.156 (29.36)	1.313 (33.35)	1.000 (25.40)	1.125 (28.25)	7/8-20UNEF-2A	1 -20UNEF-2A	.141 (3.58)	.141 (3.58)
GS02-18-**P-30Δ	1-1/8-18UNEF-2A	.625 (15.88)	1.406 (35.71)	1.313 (33.35)	1.438 (36.53)	1.125 (28.25)	1.250 (31.75)	1 -20UNEF-2A	1-1/8-18UNEF-2A	.141 (3.58)	.141 (3.58)
GS02-20-**P-30Δ	1-1/4-18UNEF-2A	.625 (15.88)	1.406 (35.71)	1.438 (36.53)	1.594 (40.49)	1.250 (31.75)	1.375 (34.92)	1-1/8-18UNEF-2A	1-1/4-18UNEF-2A	.141 (3.58)	.141 (3.58)
GS02-22-**P-30Δ	1-3/8-18UNEF-2A	.625 (15.88)	1.406 (35.71)	1.594 (40.49)	1.750 (44.45)	1.375 (34.92)	1.500 (38.10)	1-1/4-18UNEF-2A	1-3/8-18UNEF-2A	.141 (3.58)	.141 (3.58)
GS02-24-**P-30Δ	1-1/2-18UNEF-2A	.625 (15.88)	1.406 (35.71)	1.750 (44.45)	1.875 (47.62)	1.500 (38.10)	1.625 (41.28)	1-3/8-18UNEF-2A	1-1/2-18UNEF-2A	.141 (3.58)	.141 (3.58)
GS02-28-**P-30Δ	1-3/4-18UNS-2A	.625 (15.88)	1.406 (35.71)	2.031 (51.59)	2.188 (55.58)	1.750 (44.45)	1.875 (47.62)	1-5/8-18UNEF-2A	1-3/4-18UNS -2A	.141 (3.58)	.141 (3.58)
GS02-32-**P-30Δ	2 -18UNS-2A	.625 (15.88)	1.406 (35.71)	2.313 (58.75)	2.469 (62.71)	2.125 (53.98)	2.250 (57.15)	1-7/8-16UN-2A	2 -18UNS -2A	.141 (3.58)	.141 (3.58)
GS02-36-**P-30Δ	2-1/4-18UN-2A	.625 (15.88)	1.406 (35.71)	2.738 (69.55)	2.862 (72.69)	2.500 (63.50)	2.500 (63.50)	2-1/8-16UN-2A	2-1/4-16UN-2A	.156 (3.96)	.141 (3.58)
GS02-40-**P-30Δ	2-1/2-18UN-2A	.625 (15.88)	1.406 (35.71)	3.026 (78.86)	3.172 (80.57)	2.625 (66.68)	2.750 (69.85)	2-3/8-16UN-2A	2-1/2-16UN-2A	.156 (3.96)	.156 (3.96)
GS02-44-**P-30Δ	2-3/4-18UN-2A	.625 (15.88)	1.406 (35.71)	3.316 (84.23)	3.460 (89.88)	2.875 (73.02)	3.000 (76.20)	2-5/8-16UN-2A	2-3/4-16UN-2A	.156 (3.96)	.156 (3.96)
GS02-48-**P-30Δ	3 -18UN-2A	.625 (15.88)	1.406 (35.71)	3.604 (91.54)	4.038 (102.57)	3.125 (79.38)	3.500 (88.90)	2-7/8-16UN-2A	3 -16UN-2A	.156 (3.96)	.156 (3.96)

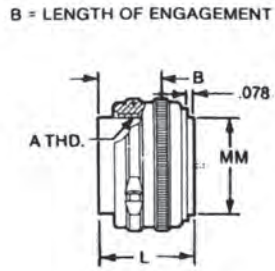
*For socket inserts, substitute S for P following the contact arrangement numbers.
**Add contact arrangement number. See pages J-31 to J-32 for contact arrangements.

• Available with pin inserts only.
Δ Add flange and contact terminal type. See page J-38.

Flangeless Receptacle

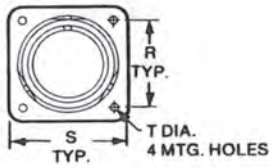
GS06-00

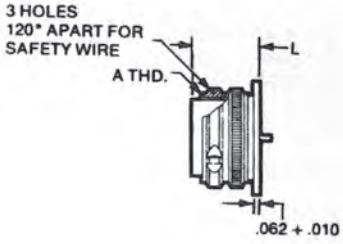




Square Flange Receptacle

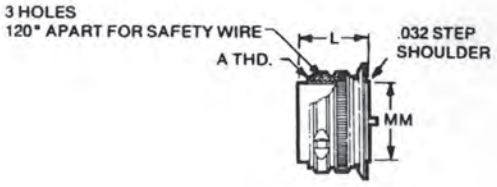
GS06-11





Circular Flange Receptacle

GS06-25



GS06 glass sealed receptacles are supplied with pin contact arrangements; however, some socket assemblies are available upon request. Tabulation dimensions are for pins only.

Part Number by Shell Size Pin Inserts*	A Thread	B	L ± .010 (0.25)	MM + .000 (0.00) - .020 (0.51)	P Max.	PP + .000 (0.00) - .020 (0.51)	R ± .005 (0.13)	S Max.	T ± .005 (0.13)
GS06-8S-**P-Δ	1/2-28UNEF-2B	.531 (13.49)	.875 (22.22)	.375 (9.52)	.761 (19.33)	.760 (19.30)	.594 (15.09)	.906 (23.01)	.120 (3.05)
GS06-12S-**P-Δ	3/4-20UNEF-2B	.531 (13.49)	.875 (22.22)	.578 (14.68)	1.011 (25.68)	1.010 (25.65)	.812 (20.62)	1.125 (28.58)	.120 (3.05)
GS06-14S-**P-Δ	7/8-20UNEF-2B	.531 (13.49)	.875 (22.22)	.672 (17.07)	1.156 (29.36)	1.135 (28.83)	.906 (23.01)	1.219 (30.96)	.120 (3.05)
GS06-16S-**P-Δ	1 -20UNEF-2B	.531 (13.49)	.875 (22.22)	.844 (21.44)	1.247 (31.67)	1.260 (32.00)	.969 (24.62)	1.312 (33.32)	.120 (3.05)
GS06-16-**P-Δ	1 -20UNEF-2B	.719 (18.26)	1.062 (26.97)	.844 (21.44)	1.247 (31.67)	1.260 (32.00)	.969 (24.62)	1.312 (33.32)	.120 (3.05)
GS06-18-**P-Δ	1-1/8-18UNEF-2B	.719 (18.26)	1.062 (26.97)	.906 (23.01)	1.344 (34.14)	1.385 (35.18)	1.062 (26.97)	1.406 (35.71)	.120 (3.05)
GS06-20-**P-Δ	1-1/4-18UNEF-2B	.719 (18.26)	1.062 (26.97)	1.062 (26.97)	1.469 (37.31)	1.510 (38.35)	1.156 (29.36)	1.531 (38.89)	.120 (3.05)
GS06-22-**P-Δ	1-3/8-18UNEF-2B	.719 (18.26)	1.062 (26.97)	1.156 (29.36)	1.594 (40.49)	1.635 (41.53)	1.250 (31.75)	1.656 (42.06)	.120 (3.05)
GS06-24-**P-Δ	1-1/2-18UNEF-2B	.719 (18.26)	1.062 (26.97)	1.375 (34.92)	1.719 (43.66)	1.760 (44.70)	1.375 (34.92)	1.781 (45.24)	.147 (3.73)
GS06-28-**P-Δ	1-3/4-18UNS -2B	.719 (18.26)	1.062 (26.97)	1.578 (40.08)	1.969 (50.01)	2.010 (51.05)	1.562 (39.67)	2.031 (51.59)	.147 (3.73)

*For socket inserts, substitute S for P following the contact arrangement number.
**Add contact arrangement number. See pages J-31 to J-32 for contact arrangements.
Δ Add flange and contact terminal type. See Ordering Data, page J-38.
NOTE: Available only with individual beads (steel web construction). Table is for pins only.

Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Thermocouple Contacts

Size 12 and 16 contacts, machined from matching thermocouple lead wire alloys, can be supplied in ITT Cannon connectors. These thermocouple contacts maintain continuity from thermal-sensor leads thru a bulkhead or other closures in temperature measuring applications.

These contacts for matching lead wires are detailed by the standards of the Instrument Society of America (I.S.A.):

I.S.A Standards	Material
J and Y	Iron and constantan
K	Chromel and alumel

Since the thermocouple connector application determines the soldering methods and materials to be used, thermocouple contacts, identified by permanent markings, are normally supplied with untinned solder pots.

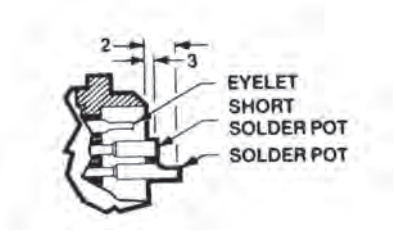
Maximum Contact Termination Extensions

GS02 FLANGE TYPES 00, 11 and 25
(pin and socket)

GS02 FLANGE TYPE 30
(socket only) sizes 24 thru 48

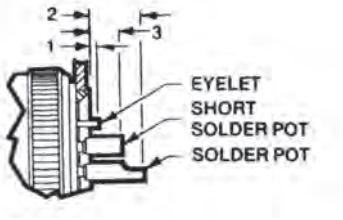
BFH
(socket only)

Contact Size	Contact Terminal No. 1	2	3
16	7/32	3/8	1/4
12	9/32	33/64	21/64
8	15/32	32/32	15/32
4	††	63/64	††
0	††	63/64	††



GS02 FLANGE TYPE 30
(socket only) sizes 12s thru 22

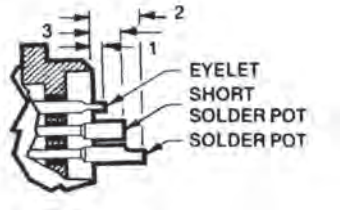
Contact Size	Contact Terminal No. 1	2	3
16	3/32	1/4	1/8
12	5/32	25/64	13/64
8	††	19/32	11/32
4	††	††	††
0	††	††	††



GS02 FLANGE TYPE 30
(pin only)

BFH
(pin only)

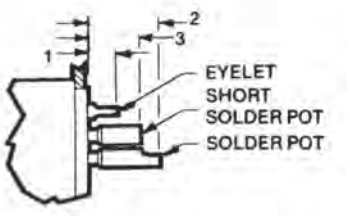
Contact Size	Contact Terminal No. 1	2	3
16	3/32	1/4	1/8
12	5/32	25/64	13/64
8	††	19/32	11/32
4	††	††	††
0	††	††	††



GS06 FLANGE TYPES 00, 11 and 25
(pin only)

Contact Size	Contact Terminal No. 1	2	3
16	1/16	7/32	3/32
12	1/8	3/8	11/64
8	††	9/16	5/16
4	††	61/64	††
0	††	††	††

†† Not manufactured, contact factory for special requirements.



The BFH is a hermetically sealed version of the BFR bulkhead fitting.

The TBFH-100 is a jam nut-mounted, thru-bulkhead receptacle for panel thicknesses of .187 (4.75) thru .312 (7.92). Sealing against the bulkhead is accomplished by an O ring seal.

The TBFH-200 is similar to the TBFH-100 with a longer overall length for panel thicknesses of .375 (9.52) thru .750 (19.05).

The TBFH-110 is the hermetically sealed version of the TBF thru-bulkhead receptacle. It is flange mounted and mates with 3106, 3107 and 3108 plugs. Contacts are sealed to achieve hermeticity preventing air leakage in excess of one micron cubit foot per hour at a pressure differential of one atmosphere. Receptacles with leak rate of .001 micron cubic foot per hour, and lower, are also available.

Materials and Finishes

Contact and shells are steel. Standard finish is clear chromate over cadmium. Other finishes are available for high temperature and special applications.

Materials and Finishes

SERIES PREFIX
TBFH – Thru-bulkhead fitting, Hermetic
BFH – Bulkhead fitting, Hermetic

SHELL SIZE
Coupling thread diameter figured in sixteenths of an inch.

CONTACT ARRANGEMENT
See Pages J-31

CONTACT TYPE
P — Pin (BFH)
S — Socket (BFH)
PS — Pin-Socket (sockets are on jam nut side) (TBFH)
PP — Pin-Pin (TBFH)
SP — Socket-Pin (pins on jam nut side) (TBFH)

POLARIZATION
See page J-34, for Alternate Insert Positions

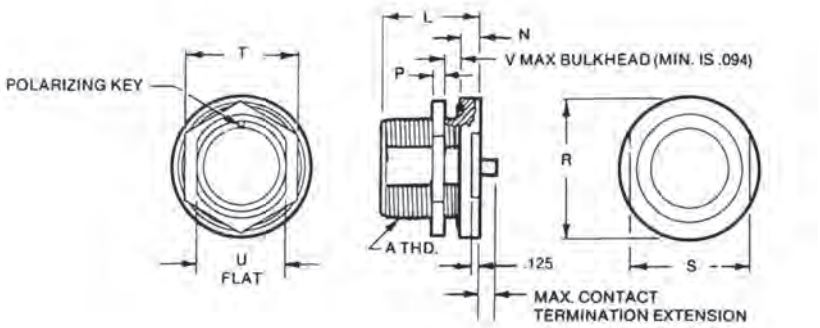
SHELL SIZE
00 – BFH (Thr'd digit contact termination)
100 – TBFH (For up to 5/16 panel thickness)
110 – Square flange
200 – TBFH (For up to 3/4 panel thickness)

CONTACT TERMINAL (BFH only)
1 – Eyelet
2 – Solder pot
3 – Short solder pot
B11 – Weldable

MODIFICATION CODE
F208 – Stainless steel (304L type) hardware; contacts .00005 min. gold over nickel
Consult factory for other modification codes.

Bulkhead Receptacle

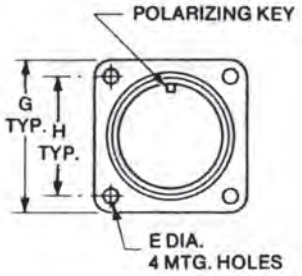
BFH

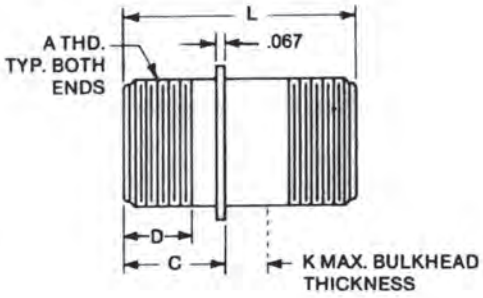


Part Number by Shell Size Pin Insert*	O Ring Part Number	A Thread	L Pin	L Socket	N	P	R	S	T Max.	U Max.	V Max.
•BFH8S-**P-00Δ	MS28775-114	1/2-28UNEF-2A	1.062 (26.97)	—	.250 (6.35)	.125 (3.18)	1.062 (26.79)	.813 (20.65)	.635 (16.13)	.457 (11.61)	.277 (7.04)
•BFH10S-**P-00Δ	MS28775-116	5/8-24NEF-2A	1.062 (26.97)	—	.250 (6.35)	.125 (3.18)	1.188 (30.18)	.938 (28.83)	.760 (19.30)	.575 (14.60)	.277 (7.04)
•BFH10SL-**P-00Δ	MS28775-116	5/8-24NEF-2A	1.062 (26.97)	—	.250 (6.35)	.125 (3.18)	1.188 (30.18)	.938 (28.83)	.760 (19.30)	.575 (14.60)	.277 (7.04)
BFH12S-**P-00Δ	MS28775-212	3/4-20UNEF-2A	1.062 (26.97)	1.094 (27.79)	.281 (7.14)	.125 (3.18)	1.313 (33.35)	1.062 (26.79)	.885 (22.48)	.689 (17.50)	.246 (6.25)
BFH14S-**P-00Δ	MS28775-214	7/8-20UNEF-2A	1.062 (26.97)	1.094 (27.79)	.281 (7.14)	.125 (3.18)	1.438 (36.53)	1.188 (30.18)	1.010 (25.65)	.814 (20.68)	.246 (6.25)
BFH16S-**P-00Δ	MS28775-216	1 -20UNEF-2A	1.062 (26.97)	1.094 (27.79)	.281 (7.14)	.141 (3.58)	1.563 (39.70)	1.313 (33.35)	1.135 (29.83)	.939 (23.95)	.230 (5.84)
BFH12-**P-00Δ	MS28775-212	3/4-20UNEF-2A	1.500 (38.10)	1.500 (38.10)	.281 (7.14)	.125 (3.18)	1.313 (33.35)	1.062 (26.79)	.885 (22.48)	.689 (17.50)	.422 (10.72)
BFH14-**P-00Δ	MS28775-214	7/8-20UNEF-2A	1.500 (38.10)	1.500 (38.10)	.281 (7.14)	.125 (3.18)	1.438 (36.53)	1.188 (30.18)	1.010 (25.65)	.814 (20.68)	.422 (10.72)
BFH16-**P-00Δ	MS28775-216	1 -20UNEF-2A	1.500 (38.10)	1.500 (38.10)	.281 (7.14)	.141 (3.58)	1.563 (39.70)	1.313 (33.35)	1.135 (29.83)	.939 (23.85)	.422 (10.72)
BFH18-**P-00Δ	MS28775-218	1-1/8-18UNEF-2A	1.500 (38.10)	1.500 (38.10)	.281 (7.14)	.141 (3.58)	1.688 (42.88)	1.438 (36.53)	1.260 (32.00)	1.057 (26.85)	.422 (10.72)
BFH20-**P-00Δ	MS28775-220	1-1/4-18UNEF-2A	1.500 (38.10)	1.500 (38.10)	.281 (7.14)	.141 (3.58)	1.813 (46.05)	1.563 (39.70)	1.385 (35.18)	1.182 (30.02)	.422 (10.72)
BFH22-**P-00Δ	MS28775-222	1-3/8-18UNEF-2A	1.500 (38.10)	1.500 (38.10)	.281 (7.14)	.141 (3.58)	1.938 (49.23)	1.688 (42.88)	1.510 (38.35)	1.307 (33.20)	.422 (10.72)
BFH24-**P-00Δ	MS28775-223	1-1/2-18UNEF-2A	1.500 (38.10)	1.500 (38.10)	.281 (7.14)	.141 (3.58)	2.062 (52.37)	1.875 (47.62)	1.635 (41.53)	1.432 (36.37)	.422 (10.72)
BFH28-**P-00Δ	MS28775-225	1-3/4-18UNS-2A	1.500 (38.10)	1.500 (38.10)	.281 (7.14)	.141 (3.58)	2.313 (58.75)	2.062 (52.37)	1.885 (47.88)	1.682 (42.72)	.422 (10.72)
BFH32-**P-00Δ	MS28775-227	2 -18UNS-2A	1.500 (38.10)	1.500 (38.10)	.281 (7.14)	.141 (3.58)	2.563 (65.10)	2.313 (58.75)	2.260 (57.40)	1.932 (49.07)	.422 (10.72)
BFH36-**P-00Δ	MS28775-229	2-1/4-16UN-2A	1.500 (38.10)	1.500 (38.10)	.281 (7.14)	.151 (3.84)	2.813 (71.45)	2.563 (65.10)	2.510 (63.75)	2.174 (55.22)	.422 (10.72)

*For socket inserts, substitute S for P following the contact arrangement numbers.
**Add contact arrangement number. See pages J-31 to J-32 for contact arrangements.
• Available with pin inserts only.
Δ Add contact terminal type. See Ordering Data, page J-38.

TBFH-110



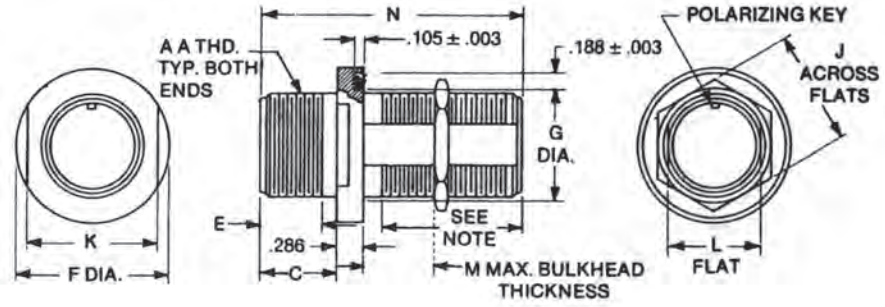


Part Number by Shell Size Pin Insert*	A Thread	C Max.	D Min.	E ± .005 (0.13)	G Max.	H ± .005 (0.13)	K Max.	L Max.
TBFH12S-**PS-110	3/4-20UNEF-2A	.729 (18.52)	.450 (11.43)	.120 (3.05)	1.125 (28.58)	.812 (20.62)	.281 (7.14)	1.697 (43.10)
TBFH14S-**PS-110	7/8-20UNEF-2A	.729 (18.52)	.450 (11.43)	.120 (3.05)	1.219 (30.96)	.906 (23.01)	.281 (7.14)	1.697 (43.10)
TBFH16S-**PS-110	1 -20UNEF-2A	.729 (18.52)	.450 (11.43)	.120 (3.05)	1.312 (33.32)	.968 (24.59)	.281 (7.14)	1.697 (43.10)
TBFH12S-**PS-110	3/4-20UNEF-2A	.916 (23.27)	.625 (15.88)	.120 (3.05)	1.125 (28.58)	.812 (20.62)	.281 (7.14)	2.072 (52.63)
TBFH14S-**PS-110	7/8-20UNEF-2A	.916 (23.27)	.625 (15.88)	.120 (3.05)	1.219 (30.96)	.906 (23.01)	.281 (7.14)	2.072 (52.63)
TBFH16S-**PS-110	1 -20UNEF-2A	.916 (23.27)	.625 (15.88)	.120 (3.05)	1.406 (35.71)	1.062 (26.97)	.281 (7.14)	2.072 (52.63)
TBFH18-**PS-110	1-1/8-18UNEF-2A	.916 (23.27)	.625 (15.88)	.120 (3.05)	1.406 (35.71)	1.062 (26.97)	.281 (7.14)	2.072 (52.63)
TBFH20-**PS-110	1-1/4-18UNEF-2A	.916 (23.27)	.625 (15.88)	.120 (3.05)	1.531 (38.89)	1.156 (29.36)	.281 (7.14)	2.072 (52.63)
TBFH22-**PS-110	1-3/8-18UNEF-2A	.916 (23.27)	.625 (15.88)	.120 (3.05)	1.656 (42.06)	1.250 (31.75)	.281 (7.14)	2.197 (55.80)
TBFH24-**PS-110	1-1/2-18UNEF-2A	.916 (23.27)	.625 (15.88)	.147 (3.73)	1.781 (45.24)	1.375 (34.92)	.281 (7.14)	2.197 (55.80)
TBFH28-**PS-110	1-3/4-18UNEF-2A	.916 (23.27)	.625 (15.88)	.147 (3.73)	2.031 (51.59)	1.562 (39.67)	.281 (7.14)	2.197 (55.80)
TBFH32-**PS-110	1 -18UNEF-2A	.916 (23.27)	.625 (15.88)	.173 (4.39)	2.281 (57.94)	1.750 (44.45)	.406 (10.31)	2.197 (55.80)
TBFH36-**PS-110	2-1/4-16UN-2A	.916 (23.27)	.625 (15.88)	.173 (4.39)	2.531 (64.29)	1.937 (49.20)	.406 (10.31)	2.197 (55.80)
TBFH40-**PS-110	2-1/2-16UN-2A	.916 (23.27)	.625 (15.88)	.173 (4.39)	2.781 (70.64)	2.187 (55.55)	.406 (10.31)	2.197 (55.80)
TBFH44-**PS-110	2-3/4-16UN-2A	.916 (23.27)	.625 (15.88)	.173 (4.39)	3.031 (76.99)	2.375 (60.32)	.406 (10.31)	2.197 (55.80)

**Add contact arrangement number. See pages J-31 to J-32 for contact arrangements.
NOTE: Available only with individual beads (steel web construction).

Thru-Bulkhead Receptacle

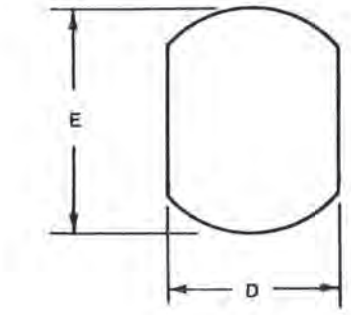
Jam Nut Mounted **TBFH-100 / -200**



Part Number by Shell Size	O Ring Part Number	A Thread	C Max.	E Min.	F Max.	G Max.	J Max.	K Max.	L Max.	TBFH-100 M Max.	TBFH-100 N Max.	TBFH-200 M Max.	TBFH-200 N Max.
TBFH12S-**PS-†	MS28775-114	3/4-20UNEF-2A	.635 (16.13)	.450 (11.43)	1.322 (33.58)	.844 (21.44)	.855 (21.72)	1.072 (27.23)	.689 (17.50)	.250 (6.35)	1.825 (46.36)	.375 (9.52)	2.015 (51.18)
TBFH14S-**PS-†	MS28775-116	7/8-20UNEF-2A	.635 (16.13)	.450 (11.43)	1.447 (36.75)	.969 (21.62)	1.010 (25.63)	1.197 (30.40)	.814 (20.68)	.250 (6.35)	1.825 (46.36)	.375 (9.52)	2.015 (51.18)
TBFH16S-**PS-†	MS28775-116	1 -20UNEF-2A	.635 (16.13)	.450 (11.43)	1.572 (39.93)	1.094 (27.79)	1.135 (28.83)	1.322 (33.58)	.939 (23.85)	.250 (6.35)	1.825 (46.36)	.375 (9.52)	2.015 (51.18)
TBFH12-**PS-†	MS28775-212	3/4-20UNEF-2A	.849 (21.56)	.625 (15.88)	1.322 (33.58)	.844 (21.44)	.885 (22.48)	1.072 (27.23)	.689 (17.50)	.187 (4.75)	2.200 (55.88)	.750 (19.05)	2.859 (72.62)
TBFH14-**PS-†	MS28775-214	7/8-20UNEF-2A	.849 (21.56)	.625 (15.88)	1.447 (36.75)	.969 (21.62)	1.010 (25.65)	1.197 (30.40)	.814 (23.85)	.187 (4.75)	2.200 (55.88)	.750 (19.05)	2.859 (72.62)
TBFH16-**PS-†	MS28775-216	1 -20UNEF-2A	.849 (21.56)	.625 (15.88)	1.572 (39.93)	1.094 (27.79)	1.135 (28.83)	1.322 (33.58)	.939 (23.85)	.187 (4.75)	2.200 (55.88)	.750 (19.05)	2.859 (72.62)
TBFH18-**PS-†	MS28775-212	1-1/8-18UNEF-2A	.849 (21.56)	.625 (15.88)	1.697 (43.10)	1.219 (30.96)	1.260 (32.00)	1.447 (36.75)	1.057 (26.85)	.187 (4.75)	2.200 (55.88)	.750 (19.05)	2.859 (72.62)
TBFH20-**PS-†	MS28775-214	1-1/4-18UNEF-2A	.849 (21.56)	.625 (15.88)	1.822 (46.28)	1.344 (34.14)	1.385 (35.18)	1.572 (39.93)	1.182 (36.75)	.187 (4.75)	2.200 (55.88)	.750 (19.05)	2.859 (72.62)
TBFH22-**PS-†	MS28775-216	1-3/8-18UNEF-2A	.849 (21.56)	.625 (15.88)	1.947 (49.45)	1.469 (37.31)	1.510 (38.35)	1.697 (43.10)	1.307 (33.20)	.187 (4.75)	2.200 (55.88)	.750 (19.05)	2.859 (72.62)
TBFH24-**PS-†	MS28775-218	1-1/2-18UNEF-2A	.849 (21.56)	.625 (15.88)	2.072 (52.63)	1.594 (40.49)	1.635 (41.53)	1.885 (47.88)	1.432 (36.37)	.312 (7.92)	2.325 (59.06)	.750 (19.05)	2.859 (72.62)
TBFH28-**PS-†	MS28775-220	1-3/4-18UNS-2A	.849 (21.56)	.625 (15.88)	2.322 (58.98)	1.840 (46.74)	1.885 (47.88)	2.072 (52.63)	1.682 (42.72)	.312 (7.92)	2.325 (59.06)	.750 (19.05)	2.859 (72.62)
TBFH32-**PS-†	MS28775-222	2 -18UNS-2A	.849 (21.56)	.625 (15.88)	2.572 (65.33)	2.090 (53.09)	2.260 (57.40)	2.322 (58.98)	1.932 (49.07)	.312 (7.92)	2.325 (59.06)	.750 (19.05)	2.859 (72.62)
TBFH36-**PS-†	MS28775-223	2-1/4-16UN-2A	.849 (21.56)	.625 (15.88)	2.822 (71.68)	2.340 (59.44)	2.510 (63.75)	2.572 (65.33)	2.174 (55.22)	.312 (7.92)	2.325 (59.06)	.750 (19.05)	2.859 (72.62)
TBFH40-**PS-†	MS28775-225	2-1/2-16UN-2A	.849 (21.56)	.625 (15.88)	3.227 (81.97)	2.685 (68.20)	2.760 (70.10)	2.885 (73.28)	2.423 (61.54)	.312 (7.92)	2.325 (59.06)	.750 (19.05)	2.859 (72.62)
TBFH44-**PS-†	MS28775-227	2-3/4-16UN-2A	.849 (21.56)	.625 (15.88)	3.460 (97.88)	2.842 (72.19)	3.010 (76.45)	3.085 (78.36)	2.673 (67.89)	.312 (7.92)	2.325 (59.06)	.750 (19.05)	2.859 (72.62)
TBFH48-**PS-†	MS28775-229	3 -16UN-2A	.849 (21.56)	.625 (15.88)	3.760 (95.50)	3.188 (80.98)	3.510 (89.15)	3.385 (85.98)	2.923 (74.24)	.312 (7.92)	2.325 (59.06)	.750 (19.05)	2.859 (72.62)

**Add contact arrangement number. See pages J-31 to J-32 for contact arrangements.
†Add panel accommodation number; 100 or 200.
NOTE: Available only with individual beads (steel web construction). Same mounting hole dimensions as BFH.

Mounting Dimensions — BFH and TBFH-100/-200

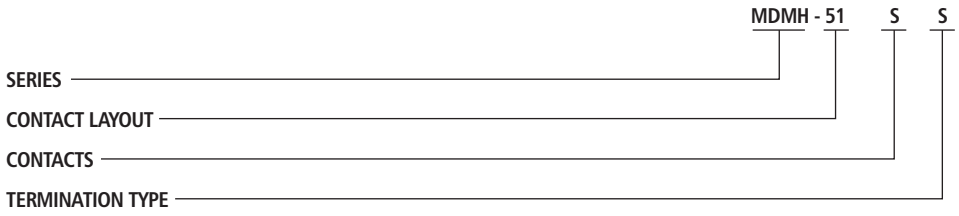


For Shell Sizes	D + .015 (0.38) - .000 (0.00)	E + .015 (0.38) - .000 (0.00)
8S	.460 (11.68)	.500 (12.70)
10S, 10SL	.578 (14.68)	.625 (15.88)
12S, 12	.692 (17.58)	.750 (19.05)
14S, 14	.817 (20.75)	.875 (22.22)
16S, 16	.942 (23.93)	1.000 (25.40)
18	1.060 (26.92)	1.125 (28.58)
20	1.185 (30.10)	1.250 (31.75)
22	1.310 (33.27)	1.375 (34.92)
24	1.435 (36.45)	1.500 (38.10)
28	1.687 (42.85)	1.750 (44.45)
32	1.937 (49.20)	2.000 (50.80)
36	2.177 (55.30)	2.250 (57.15)
40	2.426 (61.62)	2.500 (63.50)
44	2.676 (67.97)	2.750 (69.85)
48	2.926 (74.32)	3.000 (76.20)

- Lightweight, rugged microminiature connectors
- Contacts on .050 (1.27) centers, providing significant space and weight savings.
- Field proven, reliable twist pin contacts offer high mechanical and electrical integrity over hundreds of mating and unmating cycles.

MDMH microminiature hermetic connectors are compression glass sealed through a steel shell and into a diallyl phthalate "front end" insulator. An interfacial seal provides environmental protection when mated. MDMH receptacles are soldered to a chassis or container providing a completely leak-proof unit.

How to Order



SERIES: Hermetic Micro D Receptacle

CONTACT LAYOUT:
9, 15, 21, 25, 31, 37, 51, 100

CONTACTS:
Socket (only)

TERMINATION TYPE:
Solder pot to accept #26 AWG max. harness wire

Note: Mating Micro D Plugs are the MDM Series.
To order call:
ITT Cannon
Santa Ana, California
714-557-4700

Standard Data

MATERIALS AND FINISHES	
Shell	Mild steel, fused tin
Insulator	Glass-filled diallyl phthalate per MIL-M-14. Type SDGF
Contacts	Copper Alloy, gold plated sockets on mild steel gold/nickel plated pins
Contact Termination	Solder pots
Hermetic Seal	Compression glass
Leak Rate	1 micron cubic ft./hr. max (1.04×10^{-5} cc/sec at 1 ATM pressure differential)

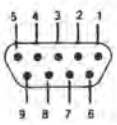
ELECTRICAL	
No. of Contacts	9 thru 100
Dielectric Withstanding Voltage	150 VAC
Insulation Resistance	5,000 Meg. Ohms Min.
Wire Size	#26 thru #30 AWG
Contact Termination	Solder pot

ELECTRICAL	
Size or Length	8 sizes
Service Class	Hermetically sealed
Coupling	Friction/jacks
Polarization	Keystone-shaped shells
Contact Spacing	.050 (1.27) centers
Shell Style	Receptacle, solder mounted

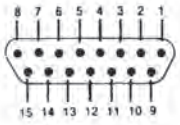
Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Contact Arrangements

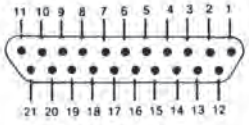
Face view of socket insert — use reverse order for wiring side.



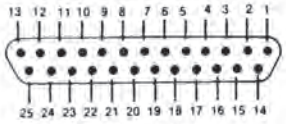
9 Contacts



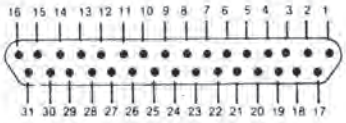
15 Contacts



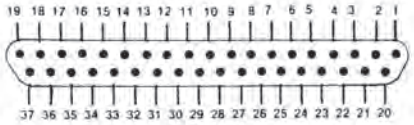
21 Contacts



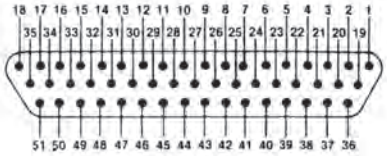
25 Contacts



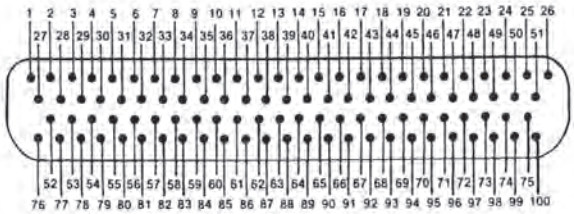
31 Contacts



37 Contacts



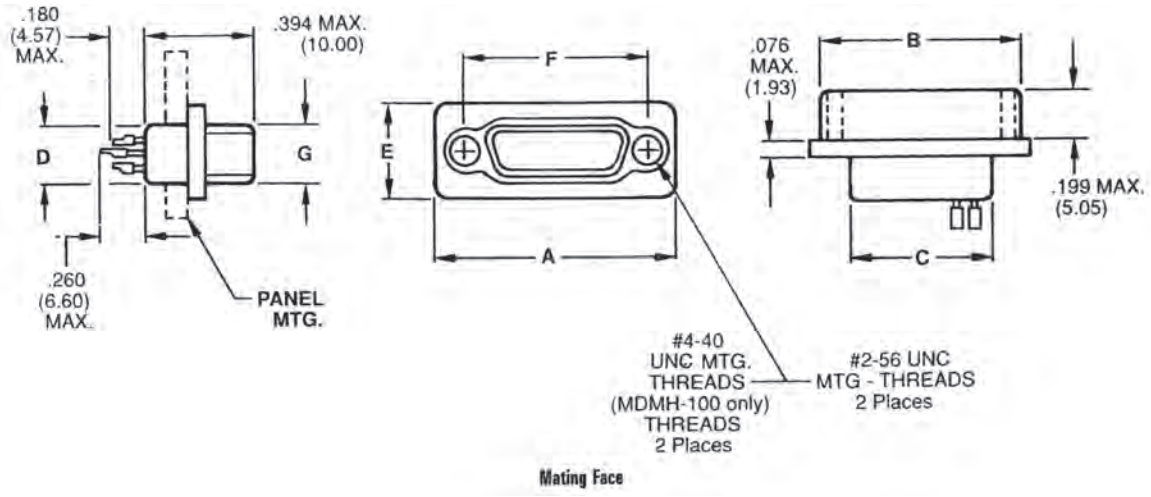
51 Contacts



100 Contacts

Contact indentification numbers are for reference only and do not appear on insulator or connector body.

Shell Dimensions



Part Number by Shell Size	A Max.	B Min.	C Max.	D Max.	E Max.	F ± .005 (0.13)	G Max.
MDMH-9S	.885 (22.48)	.738 (18.74)	.400 (10.16)	.270 (6.86)	.430 (10.92)	.565 (14.35)	.261 (6.63)
MDMH-15S	1.035 (26.29)	.888 (22.55)	.550 (13.97)	.270 (6.86)	.430 (10.92)	.715 (18.16)	.261 (6.63)
MDMH-21S	1.185 (30.10)	1.038 (26.36)	.770 (17.78)	.270 (6.86)	.430 (10.92)	.865 (21.97)	.261 (6.63)
MDMH-25S	1.285 (32.64)	1.137 (28.87)	.800 (20.32)	.270 (6.86)	.430 (10.92)	.965 (24.51)	.261 (6.63)
MDMH-31S	1.435 (36.45)	1.288 (32.72)	.950 (24.13)	.270 (6.86)	.430 (10.92)	1.115 (28.32)	.261 (6.63)
MDMH-37S	1.585 (40.26)	1.438 (36.53)	1.100 (27.94)	.270 (6.86)	.430 (10.92)	1.265 (32.13)	.261 (6.63)
MDMH-51S	1.535 (38.99)	1.388 (35.26)	1.050 (26.67)	.315 (8.00)	.473 (12.01)	1.215 (30.86)	.315 (8.00)
MDMH-100S	2.275 (57.78)	2.078 (52.78)	1.455 (36.97)	.365 (9.27)	.522 (13.26)	1.800 (45.72)	.410 (10.41)

D*H hermetically sealed connectors are designed to meet environmental conditions of extreme pressure differential. These connectors are part of the ITT Cannon D Subminiature series (refer to page 41 for cross reference information). The hermetic seal prevents leakage and subsequent accumulation of corrosive moisture behind the connector. There are five basic shell sizes in both standard and thru-bulkhead designs which can accommo-date from nine to 50 contacts. Polarization is achieved by the keystone shape of the shell, a feature of all connectors within the D Subminiature series.

How to Order

D*H

D E H 9 P 0 0 1

SERIES PREFIX
SHELL SIZE
CLASS
CONTACT ARRANGEMENT
CONTACT TYPE
FLANGE TYPE
MOUNTING
CONTACT TERMINATION

SERIES PREFIX
ITT Cannon prefix

SHELL SIZE
E, A, B, C, D

CLASS
H — Hermetic

CONTACT ARRANGEMENT
See page 41.

CONTACT TYPE
P — Pin only

FLANGE TYPE
0 — Solid flange, no mounting or locking facilities
1 — Two .120 dia. mounting holes
2 — Two jackposts accepting No. 4-40 screws

MOUNTING
0 — Standard
4 — Shell brazed to plate; can be front or rear panel mounted

CONTACT TERMINATION
1 — Eyelet
2 — Solder pot
Printed circuit contacts — Consult factory

D*TBH

D E TB H 9 P 0

SERIES PREFIX
SHELL SIZE
SHELL STYLE
CLASS
CONTACT ARRANGEMENT
CONTACT TYPE
FLANGE TYPE

SERIES PREFIX
ITT Cannon prefix

SHELL SIZE
E, A, B, C, D

SHELL STYLE
TB – Thru-bulkhead

CLASS
H — Hermetic

CONTACT ARRANGEMENT
See page J-48.

CONTACT TYPE
P — Pin only

FLANGE TYPE
00 — Solid flange, no mounting or locking facilities
10 — Two .120 (3.05) dia. mounting holes
20 — Two jackposts accepting #4-40 screws on layout identification side
30 — Two jackposts on both sides (D*TBH only)

Materials and Finishes

Shell —	In accordance with ASTM 620, 619, 568 —	Low carbon steel, plated with electro-deposited tin over cadmium over copper flash
Insulator —	Compression glass	
Contacts —	In accordance with ASTM A108 —	Steel, plated with gold over nickel

Military vs. ITT Cannon Current Ratings

The ITT Cannon rating for #20 contacts is 5 amps, which means 5 amps for all contacts simultaneously. MIL-W-5088 rates #20 contacts at 7.5 amps maximum. The explanation is as follows:

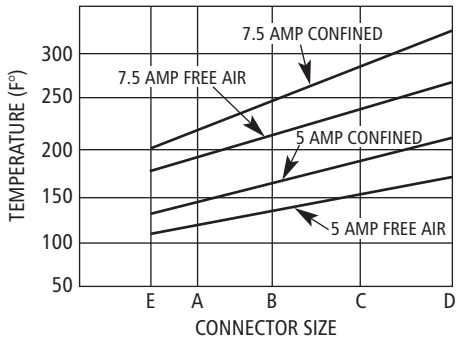
MIL-W-5088B, Paragraph 3.9.2.1.2 specifies:
"Table 1 current ratings for cables in bundles are based upon 15 or more cables carrying no more than 20% of the total carrying capacity of the bundle."

Table 1 specifies a current rating of 7.5 amps maximum for single wires in bundles of 15 or more wires. NOTE: Wires and contacts are both considered to be in the category of conductors.

Explanation
If 15 wires (normally rated at 7.5 amps per wire maximum, or at least a total bundle current of 112.5 amps) are not to carry more than 20% of the total 112.5 amps, the average current rating per wire is 20% of 112.5 amps (total bundle capacity) divided by 15 (number of wires).

Conclusion
The Military rating of #20 contacts or wires is 1.5 amps average (based on 15 wires per bundle or 15 contacts per plug) vs an ITT Cannon rating of 5 amps.

Average Maximum Temperature vs Connector Size for various current ratings of mated pairs of D Subminiature connectors



Notes:
1. Free air condition. Connectors not shielded from ambient condition in any manner.
2. Confined condition. Connectors placed in insulated box (1 x 2 x 3.5) during test, with no moving air.
3. Average maximum temperature stabilization: 1 hour or less in all cases.
4. All contacts in each mated pair tested were wired in series with specified current flowing.
5. Ambient conditions 77°F, 50% rh.

Test Data

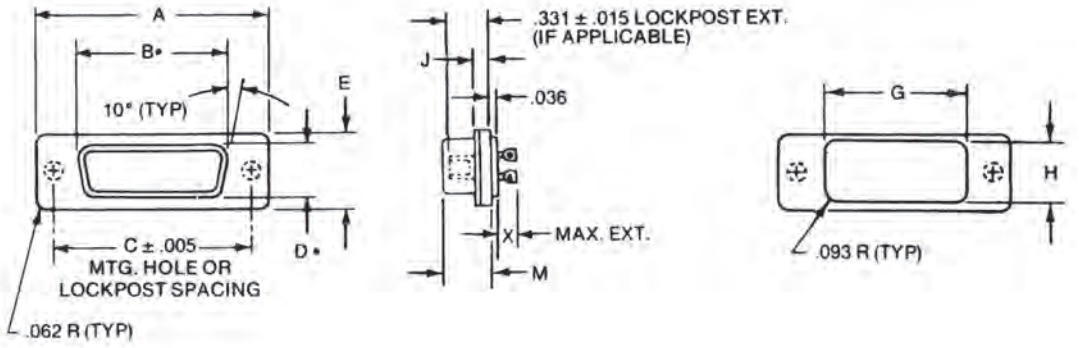
All voltages are measured from contact to shell, in unmated condition.

Voltage Rating (ac)	Altitude (feet)			
	Sea Level	20,000	50,000	70,000
Test (Max.)	750	625	225	175

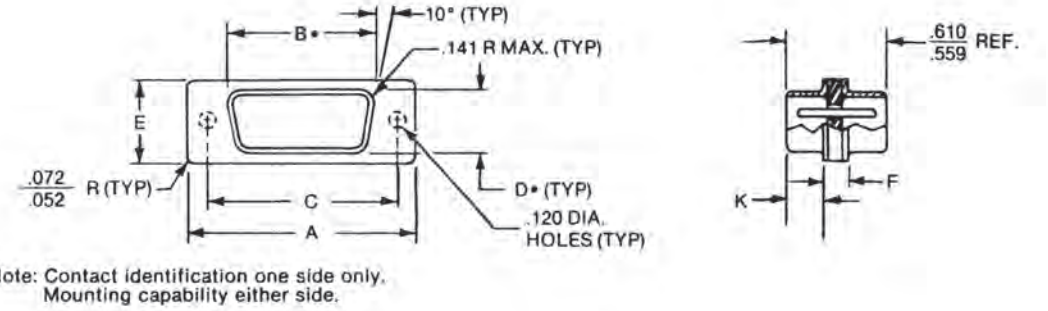
Insulation Resistance .....5,000 megohms min. when tested per MIL-STD-202A, Method 302
Contact Voltage Drop ....6.67 millivolts per amp max. when mated with any Original D or GOLDEN-D connector receptacle
Air Leakage Rate .....1 micron cubic ft/hour max. (1.04 x 10^{-5} cc/sec.) at 1 atm pressure differential
Vibration Resistance .....Exceeds test requirements of MIL-Ref. MIL-C-24308 STD-202, Method 204, Condition B
Corrosion Resistance .....Exceeds requirements of 48 hour Ref. MIL-C-24308 salt spray exposure, tested in accordance with MIL-STD-202, Method 101
Shock .....Exceeds tests for MIL-STD-202 Ref. MIL-C-24308 Method 213
DWV.....750 VAC rms

Standard

D*H



D*TBH



Note: Contact identification one side only.
Mounting capability either side.

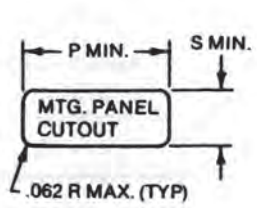
Part Number by Shell Size	A ± .010 (0.25)	B• ± .010 (0.25)	C ± .005 (0.13)	D• ± .010 (0.25)	E ± .010 (0.25)	F ± .014 (0.36) - .005 (0.13)	G ± .010 (0.25)	H ± .010 (0.25)	J ± .010 (0.25)	K ± .008 (0.20)	M ± .015 (0.38)	X Solder	X Eyelet
DEH9P-*	1.208 (30.68)	.703 (17.86)	.984 (24.99)	.366 (9.30)	.498 (12.65)	—	.725 (18.42)	.369 (9.37)	.904 (2.39)	—	.334 (8.48)	.238 (6.05)	.161 (4.09)
DETBH9P-*	1.208 (30.68)	.703 (17.86)	.984 (24.99)	.366 (9.30)	.498 (12.65)	.112 (2.84)	—	—	—	.236 (5.99)	—	—	—
DAH15P-*	1.545 (39.24)	1.029 (26.14)	1.312 (33.32)	.366 (9.30)	.498 (12.65)	—	.932 (23.67)	.369 (9.37)	.904 (2.39)	—	.334 (8.48)	.238 (6.05)	.161 (4.09)
DATBH15P-*	1.545 (39.24)	1.029 (26.14)	1.312 (33.32)	.366 (9.30)	.498 (12.65)	.112 (2.84)	—	—	—	.236 (5.99)	—	—	—
DBH25P-*	2.093 (53.16)	1.589 (40.36)	1.852 (47.04)	.384 (9.75)	.498 (12.65)	—	1.479 (35.57)	.369 (9.37)	.103 (2.62)	—	.334 (8.48)	.238 (6.05)	.161 (4.09)
DBTBH25P-*	2.093 (53.16)	1.589 (40.36)	1.852 (47.04)	.384 (9.75)	.498 (12.65)	.128 (3.25)	—	—	—	.226 (5.74)	—	—	—
DCH37P-*	2.733 (69.42)	2.237 (56.82)	2.500 (63.50)	.384 (9.75)	.498 (12.65)	—	2.125 (53.98)	.369 (9.37)	.103 (2.62)	—	.334 (8.48)	.238 (6.05)	.161 (4.09)
DCTBH37P-*	2.733 (69.42)	2.237 (56.82)	2.500 (63.50)	.384 (9.75)	.498 (12.65)	.128 (3.25)	—	—	—	.226 (5.74)	—	—	—
DDH50P-*	2.640 (67.06)	2.133 (54.18)	2.406 (61.11)	.490 (12.45)	.610 (15.49)	—	2.000 (50.80)	.500 (12.70)	.103 (2.62)	—	.334 (8.48)	.238 (6.05)	.161 (4.09)
DDTBH50P-*	2.640 (67.06)	2.133 (54.18)	2.406 (61.11)	.490 (12.45)	.610 (15.49)	.128 (3.25)	—	—	—	.226 (5.74)	—	—	—

*Add contact termination mounting, and flange type; see part number explanation.
•Dimensions B and D are measured as outside dimensions from the start of the radius corner.

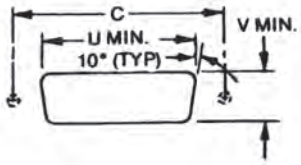
Mounting Dimensions

Hermetic sealing is effective only when connectors are front panel mounted, except for brazed assemblies in which both shells are brazed to the plate. Brazed assemblies may be u
front or rear panel mounting, and e
tor is subject to leak test. Consul
other rear mounting applications.

D*H



D*TBH



Part Number by Shell Size	C ± .005 (0.13)	P	S	U Min.	V Min.	Approx. Weight
DEH9P-*	.984 (24.99)	.735 (18.67)	.379 (9.63)	.794 (20.17)	.457 (11.61)	9g
DETBH9P-*	.984 (24.99)	—	—	.794 (20.17)	.457 (11.61)	
DAH15P-*	1.312 (33.32)	.942 (23.93)	.379 (9.63)	1.120 (28.45)	.457 (11.61)	
DATBH15P-*	1.312 (33.32)	—	—	1.120 (28.45)	.457 (11.61)	
DBH25P-*	1.852 (47.04)	1.489 (37.82)	.379 (9.63)	1.682 (42.72)	.477 (12.12)	
DBTBH25P-*	1.852 (47.04)	—	—	1.682 (42.72)	.477 (12.12)	
DCH37P-*	2.500 (63.50)	2.135 (54.23)	.379 (9.63)	2.330 (59.18)	.477 (12.12)	23g
DCTBH37P-*	2.500 (63.50)	—	—	2.330 (59.18)	.477 (12.12)	
DDH50P-*	2.406 (61.11)	2.010 (51.05)	.510 (12.95)	2.226 (56.54)	.583 (14.81)	25g
DDTBH50P-*	2.406 (61.11)	—	—	2.226 (56.54)	.583 (14.81)	

Cross Reference Chart

Military Part No.	ITT Cannon Part No.
M24308/9-1	DEH9P002
M24308/9-2	DAH15P002
M24308/9-3	DBH25P002
M24308/9-4	DCH37P002
M24308/9-5	DDH509002
M24308/9-6	DEH9P001
M24308/9-7	DAH15P001

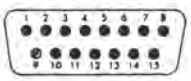
Military Part No.	ITT Cannon Part No.
M24308/9-8	DBH25P001
M24308/9-9	DCH37P001
M24308/9-10	DDH50P001
M24308/9-11	DEH9P202
M24308/9-12	DAH15P202
M24308/9-13	DBH25P202
M24308/9-14	DCH37P202

Military Part No.	ITT Cannon Part No.
M24308/9-15	DDH50P202
M24308/9-16	DEH9P201
M24308/9-17	DAH15P201
M24308/9-18	DBH25P201
M24308/9-19	DCH37P201
M24308/9-20	DDH50P201

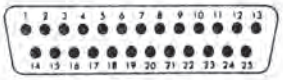
Contact Arrangements

Face View
Pin Insert

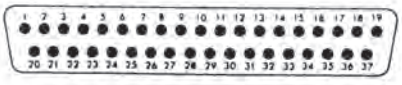
Shell Size	E
No. of Contacts	9
Contact Size	#20



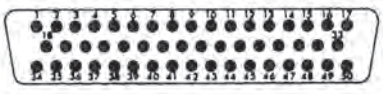
Shell Size	A
No. of Contacts	15
Contact Size	#20



Shell Size	B
No. of Contacts	25
Contact Size	#25



Shell Size	C
No. of Contacts	37
Contact Size	#20



Shell Size	D
No. of Contacts	50
Contact Size	#20

When off-the-shelf won't do…
… turn to ITT for custom-engineered interconnect solutions

Unmatched design, development, experience - for nearly 90 years

Whether it's land, sea, air, or space – ITT experience and innovation helps provide customers with high-performance, high-reliability, high-quality interconnect solutions. Specializing in harsh environment and mission-critical applications, ITT custom products are specified on major Aerospace and Hydrospace programs including:

- Patriot missile
- Tomahawk missile
- Trident missile
- Trident submarine
- Sidewinder missile
- Harpoon missile
- CVN-78 aircraft carrier
- Mark 48 torpedo
- Vertical Launch System
- Delta Rocket systems
- Titan Launch Vehicle
- Apache Helicopter
- International Space Station
- Space Shuttle

Aerospace

ITT is the worldwide leader in the development of special separation connector systems required by today's high performance missile and rocket vehicles:

- Custom umbilical interconnect systems and cabling for system launch applications
- Special connectors for rocket interstage separation
- Lanyard and ring lock connectors for pylon and weapons stores jettison
- Spring loaded connectors where blind mating is required
- Connectors designed to couple and uncouple in a Zero-G space environment.

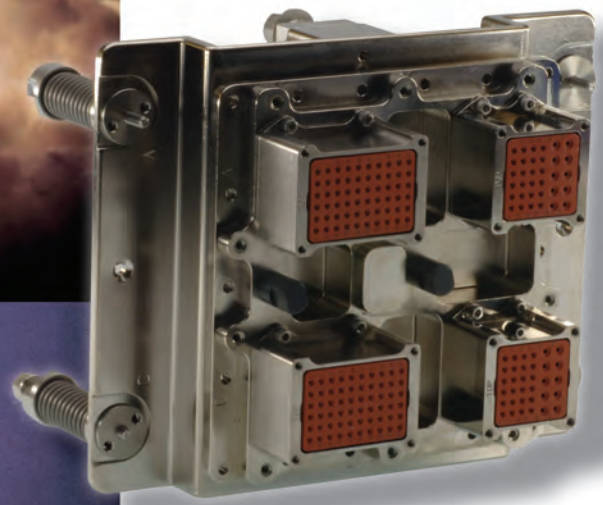
Hydrospace

For more than 40 years, ITT has been designing special bulkhead connector headers and interconnect systems for harsh undersea applications including:

- High pressure hull and missile tube penetrators
- Wet mateable connectors and custom headers for submarine sonar arrays
- Umbilical cable assemblies for torpedo tube-launched missiles systems
- Custom interface connectors for ship launch applications

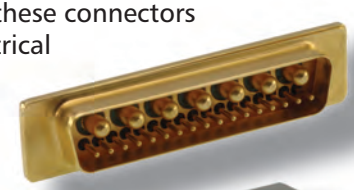
Your Space and Special interconnect needs are covered

When a mil-spec product just won't do, count on ITT to develop the right special-purpose connector or cable harness for your military or commercial, aerospace, and hydrospace applications. From special-release connectors found in missile and launch vehicles to special high-pressure bulkhead connectors found in submarine- and ship-based systems, ITT will meet your special connector needs. From blind mating applications to special coupling requirements, our custom designs are backed by our comprehensive capability to test and certify to DOD and customer specifications.



Special release connectors

The supplier of choice for major launch vehicles and weapons systems programs, ITT's family of special release connectors feature special umbilical and lanyard release functions that automatically disconnect at the time of system launch. Ideal for interstage separation, weapons store, and pylon applications, these connectors can incorporate both pneumatic and electrical lines in the same assembly.



Special bulkhead and hull penetrating connectors

ITT's wide range of special ship and SUB-SAFE bulkhead connectors provide the critical electrical interface required to penetrate and carry signals through the hull or bulkhead of military ships or submarine vehicles. Our header assemblies utilize compression glass sealing to stainless steel shells. This innovative assembly provides a very strong and highly reliable hermetic seal that will operate at extreme temperatures and pressures up to 20,000 P.S.I.

Custom connectors and cable assemblies. Customized service.

ITT continues to be the first choice for the design and development of unique and customer specific applications. Our representatives will work with your engineering team to develop a set of solutions that meet your performance, schedule, and cost requirements. With rapid prototype service from our comprehensive model shop, and DVT qualification testing from our complete in house PEL (Product Evaluation Lab), ITT will deliver your custom solution on time from concept to production.

RoHS COMPLIANT PART NUMBERS

RoHS and DFARS Compliant

ITT remains committed to supporting our customers with full compliance to the DFARS directives relating to specialty metals. Further, ITT continues to develop RoHS compliant products that are lead-free. As appropriate, we will continue to offer leaded product for those applications requiring it. For more information on ITT's RoHS initiative, visit www.ittcannon.com/RoHS.

ITT

Connect with your ITT Cannon representative today or visit us at www.ittcannon.com

COVER PHOTO: Courtesy of DOD

Connect with the experts

ITT's Cannon brand is a world leader in the design and manufacture of highly engineered connector solutions for multiple end markets.

Why ITT

ITT is a focused multi-industrial company that designs and manufactures highly engineered critical components and customized technology solutions. ITT's Cannon brand is a leading global manufacturer of connector products serving international customers in aerospace, defense, medical, industrial and transportation end markets. ITT's Connector business, which also includes the Veam and BIW Connector Systems brand, manufactures and supplies a variety of connectors and interconnects that make it possible to transfer data, signal and power in an increasingly connected world.

Connect with your ITT Cannon representative today or visit us at www.ittcannon.com

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