Conesys Europe
Hermetic Connectors
Table of Contents

Conesys Europe
Hermetic Connectors

Glass-to-Metal Sealing Glossary

Conesys hermetic connectors are based upon glass-to-metal sealing technology, which offers reliability at an attractive cost.

This technology provides a high degree of performance in harsh environments that would typically cause resilient connectors to fail (from corrosion, high temperature, high pressure, etc.).

Hermetic technology is a good solution to reduce connector dimensions to a minimum. There are no rear parts, making the connectors completely flat (PCB applications).

Air Leakage
Air leakage is the measure of gas ingress across a hermetic barrier. Total air leakage is the sum of the gas which passes through the seal itself, through permeable shell materials, or via cracks or gaps in the mounting area.

Hermeticity – Leak Rate
This terminology describes the most important characteristic of a hermetic connector. The *hermeticity* or "leak rate" of a hermetic connector is measured by the *helium leak test*. Since all materials are ultimately permeable to helium gas ingress at some point, hermeticity ratings are used to define acceptable performance levels as required by individual applications. The leak rate is measured in $atm.cm^3.s^{-1}$. The acceptable leak rate depends on application. A leak rate of 1.10^{-9} $atm.cm^3.s^{-1}$ is essentially zero. At this rate it would take more than 1500 years for a connector to leak a tank of 50 cm^3 of helium. And helium is the smallest element present on earth. So imagine for air, water, fluid . . .

Pressure Differential
Pressure differential is the difference in pressure between the inside and outside of a sealed connector, the compartments on either side of a wall or bulkhead, or the outside atmosphere and a sealed equipment housing. It is this pressure differential that leads to leakage across a sealed barrier and ultimately to contamination of sensitive electronic equipment.

Compression Seal
Compression seal (also called "mismatched" sealing) is the most effective glass-to-metal sealing technology. It is created by using metal shell and contact materials which expand at a greater rate than glass, during heating. During cooling, the metal materials contract back into the already solidifying glass to form a robust compression bond.

Coefficient of Expansion
A mathematically derived value describing the dimensional change of a material when subjected to a measured change in temperature. Factored into hermetic connector fabrication to insure the glass and metal materials return to a known state of compression after the heating and cooling process is completed.

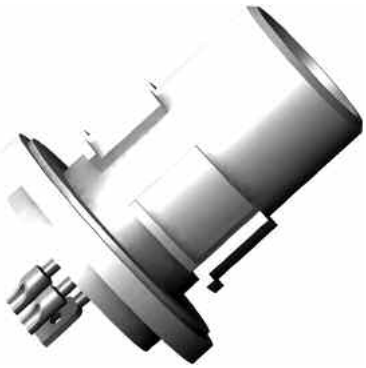
Weld Mount
One of the most common mounting configurations for hermetic connectors, especially for electronic equipment such as switches, sensors and transducers. Weld mount hermetic connectors are permanently attached to the pressurized bulkhead with laser, TIG or MIG welding technology. The alternative is solder mounting configuration.

Fields of Application

Military Applications
Conesys hermetic connectors meet design standards of MIL-DTL-38999, EN2997, MIL-C-26482, MIL-C-26500, MIL-C-5015, and MIL-C-24308.

Electronic Equipment
Hermetic connectors are designed with several configurations. Pin tail contact configuration is available for PCB soldering. Hermetic connectors can also be used for their very short dimensions.

Pressure
With an adapted design, hermetic connectors can withstand pressure up to 1500 bars. Main applications include pressure sensors and connectors for fuel tanks.



Vacuum
The glass to metal sealing technology provides a barrier fully adapted to vacuum applications.

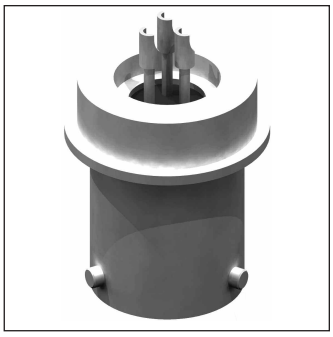
Fluid Hydraulics
Glass is an inert material, completely adapted to withstanding aggressive fluids like fuel, oil, skydrol, cooling fluid, and de-icing fluid. Conesys hermetic connectors are the obvious choice for engines and severe industrial environments.

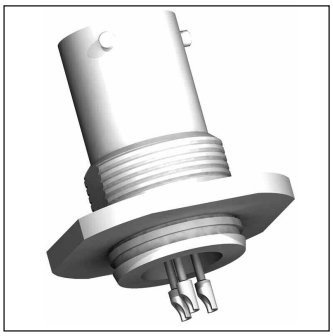
Corrosion
Our hermetic connectors can withstand the effect of salt corrosion through adapted materials and plating. Our connectors are therefore well adapted to marine environments.

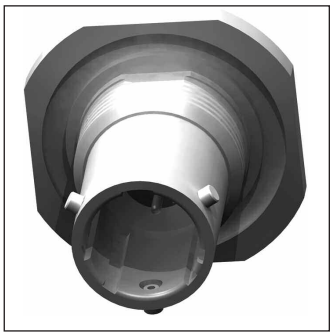
Custom solutions
Based on standard designs, our hermetic connectors can be designed for special and dedicated applications.

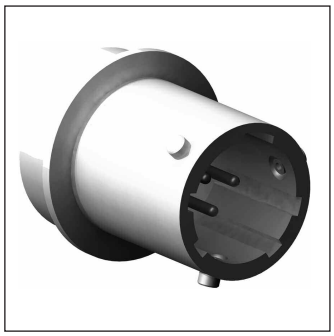
Conesys Europe
Hermetic Connectors

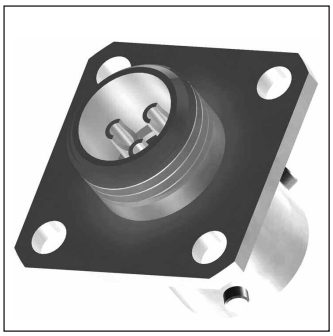
AE1 Series
per MIL-DTL-38999 Series I











Features and Application

AE1 Series hermetic connector receptacles are manufactured to Conesys Europe standards and meet all the requirements of MIL-DTL-38999 Series I.

AE1 is a bayonet coupling subminiature configuration with high contact density for harsh-environment applications. These environment-resisting connectors are 100% "scoop-proof." Pins are recessed in elongated shells to prevent the possibility of bending contacts when plugs are scooped into the mating receptacles.

This family of connectors is available in 3 receptacle mounting styles: square flange, jam nut, and solder mount. 9 shell sizes and insert arrangements utilizing sizes 22D, 20, 16, 12, and 8 contacts are available.

Customer-specific designs can be proposed for special applications – Consult factory for details.

These hermetic connectors are available in passivated stainless steel and mild steel material, tin or nickel plated. Other materials can be proposed for special applications – Please consult factory.

MIL-STD-1560 Insert Arrangement – AE1 Series hermetic connectors use standard insert arrangement.

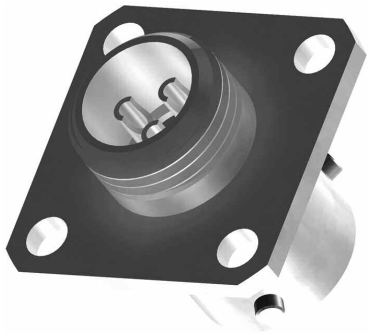
Customer-Specific Insert Arrangement – AE 1 Series hermetic connectors can be proposed with special insert arrangement – Please consult factory.

Scoop-Proof Design – Recessed pins in elongated shells minimize the possibility of contact damage. In a blind-mating application, mating shells cannot "scoop" the pins and cause a shorting or bending of contacts.

Interfacial Pin Insert Seal – Raised moisture barriers around each receptacle pin, which mate into lead-in chamfers of the plug hard face socket insert, provide individual contact sealing.

Glass Insulator – Our hermetic connectors are designed with sintered compression glass as an insulator.

Shell Polarization – Alternate key/keyway positions prevent cross mating of adjacent connectors having identical insert arrangement.



Performance Specifications

Operating Temperature Range
Classes E and N : -65°C to +200°C (-85°F to +392°F)
Class D : -65°C to +150°C (-85°F to +302°F)

Material and Finish Data (Class)
Class E:

RECEPTACLE	material:	stainless steel
	finish:	passivated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Class N:

RECEPTACLE	material:	stainless steel
	finish:	nickel plated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Class D:

RECEPTACLE	material:	mild steel
	finish:	tin plated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Corrosion Resistance
Class E: 500 hours
Classes D and N: 48 hours

Durability
Minimum of 500 mating cycles.

Leakage
$< 1.10^{-7}$ atm.cm^3.s^{-1}.

Shell-to-Shell Conductivity
Maximum potential drop shall not exceed:
Class N: 1 millivolt
Classes D and E: 50 millivolts

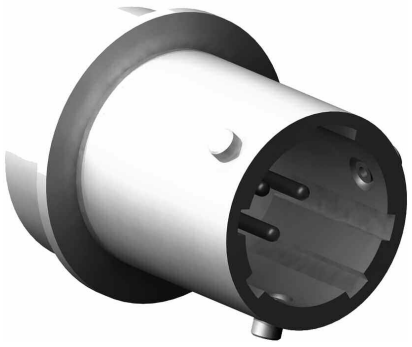
Insulation Resistance
>5000 M| under 500 Vdc
(25°C – 65% HR max.)

Withstanding Voltage
At sea level:
Service M: 1300 V RMS
Service I: 1800 V RMS
Service II: 2300 V RMS

At 21 000 m altitude:
Service M: 800 V RMS
Service I: 1000 V RMS
Service II: 1000 V RMS

Maximum Current Rating per Contact

Size 22D	3 Amp
Size 20	5 Amp
Size 16	10 Amp
Size 12	17 Amp
Size 8	40 Amp



AE1 Series
Hermetic Connectors
per MIL-DTL-38999 Series I

Military and Conesys Part Number Development

Mil. Prefix	**MS274**	**69Y**	**15**	**D**	**19**	**P**	**A**	
Conesys Prefix	**AE1**	**69Y**	**15**	**D**	**19**	**P**	**A**	**-XXX**

Shell Type (specification sheet number)

69Y = Wall mount receptacle

70Y = Jam nut receptacle

71Y = Solder mount receptacle

Shell Size

Y **9, 11, 13, 15, 17, 19, 21, 23,** and **25**

Material and Finish

D = Shell – mild steel, tin plated
= Terminals – ferrous alloy, gold plated

E = Shell – stainless steel, passivated
= Terminals – ferrous alloy, gold plated

N = Shell – stainless steel, nickel plated
= Terminals – ferrous alloy, gold plated

Insert Arrangement

See pages 47–50

Contact Style (pin only)

P = Pin with solder cup

X = Pin with eyelet

C = Pin tail (for PCB)

Polarization (keying)

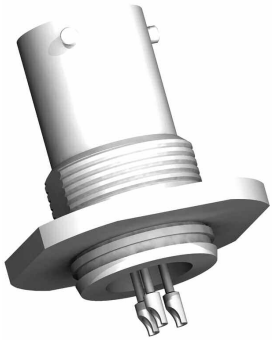
N = Normal (omitted in part number)

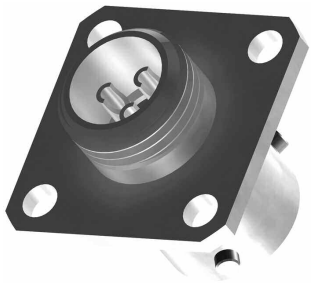
A, B, C, or **D** for alternatives (B and C keyways are not available in SS 9)

Modification or Particularities (applies to Conesys part numbers only)

XXX = Modification

Consult factory for details





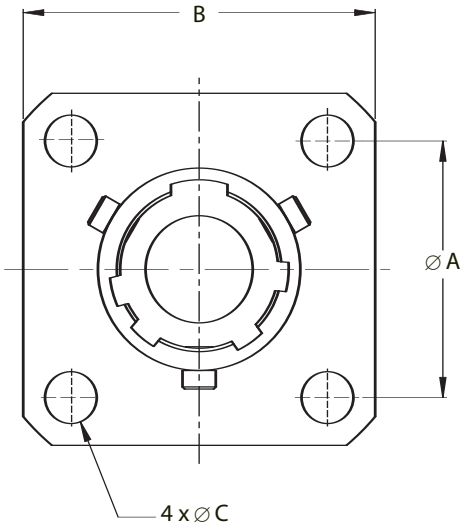
Terminal Configuration

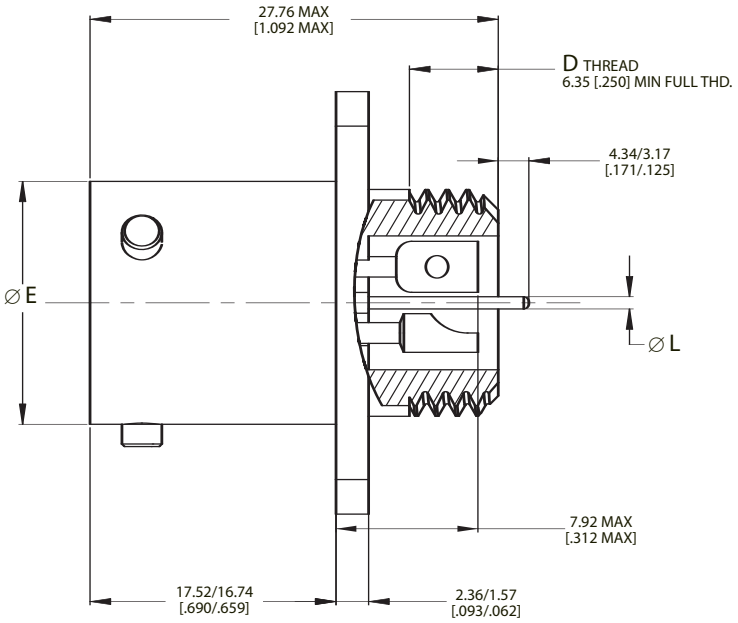
Terminal Style P
Solder cup
Available in sizes 22, 20, 16, 12, and 8
For other sizes, please consult factory.

Terminal Style X
Eyelet
Available in sizes 22, 20, and 16
For other sizes, please consult factory.

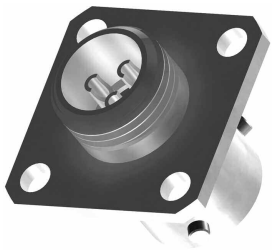
Terminal Style C
Pin tail for PCB
Available in sizes 22, 20, and 16
For other sizes or lengths, please consult factory.

AE169
Wall Mount Receptacle
MS27469

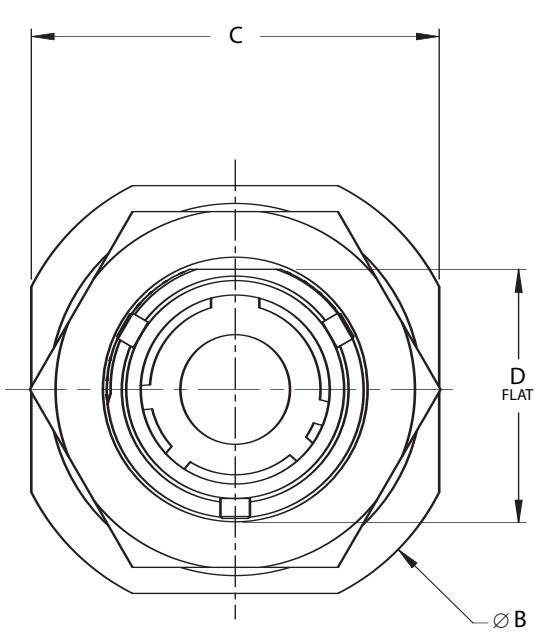


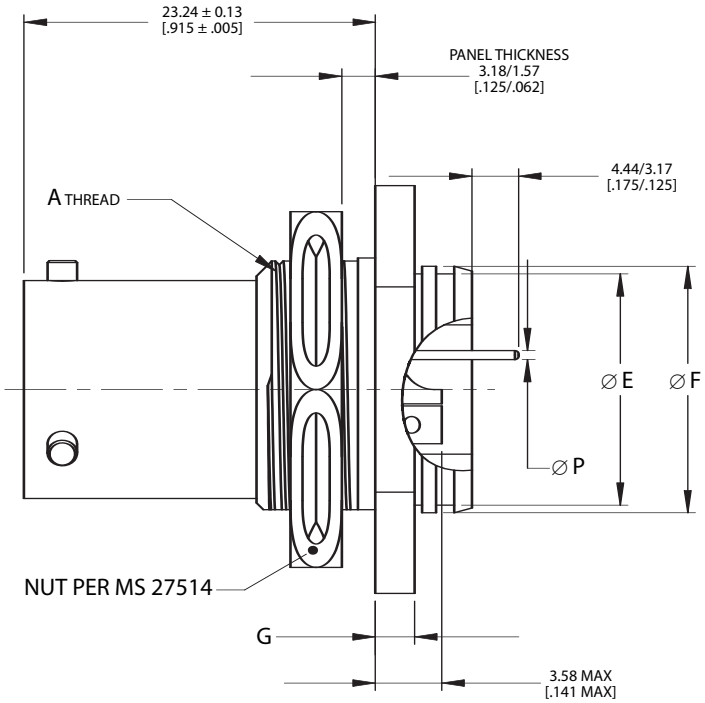


Contact Size	⌀L	
	mm	inch
22D	0.28 0.38	.011 .015
20	0.60 0.70	.024 .028
16	1.56 1.61	.061 .063
12	2.36 2.41	.093 .095

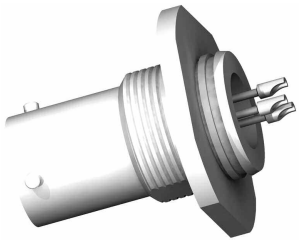


Shell Size	A (TP)		B ±0.41	B ±.016	C +0.25 -0.13	C +.010 -.005	D Thread Class 2A	⌀E +0.03 -0.13	⌀E +.001 -.005
	mm	inch	mm	inch	mm	inch		mm	inch
9	18.26	.719	23.83	.938	3.25	.128	.6875-24 UNEF	14.53	.572
11	20.62	.812	26.19	1.031	3.25	.128	.8125-20 UNEF	17.78	.700
13	23.01	.906	28.57	1.125	3.25	.128	.9375-20 UNEF	21.59	.850
15	24.61	.969	30.96	1.219	3.25	.128	1.0625-18 UNEF	24.76	.975
17	26.97	1.062	33.32	1.312	3.25	.128	1.1875-18 UNEF	27.94	1.100
19	29.36	1.156	36.53	1.438	3.25	.128	1.3125-18 UNEF	30.66	1.207
21	31.75	1.250	39.67	1.562	3.25	.128	1.4375-18 UNEF	33.83	1.332
23	34.93	1.375	42.88	1.688	3.73	.147	1.5625-18 UNEF	37.01	1.457
25	38.10	1.500	46.02	1.812	3.73	.147	1.6875-18 UNEF	40.18	1.582





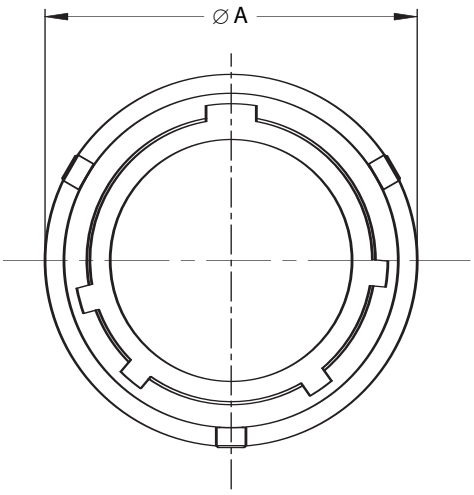
Contact Size	⌀P mm	⌀P inch
22D	0.28 0.38	.011 .015
20	0.60 0.70	.024 .028
16	1.56 1.61	.061 .063
12	2.36 2.41	.093 .095

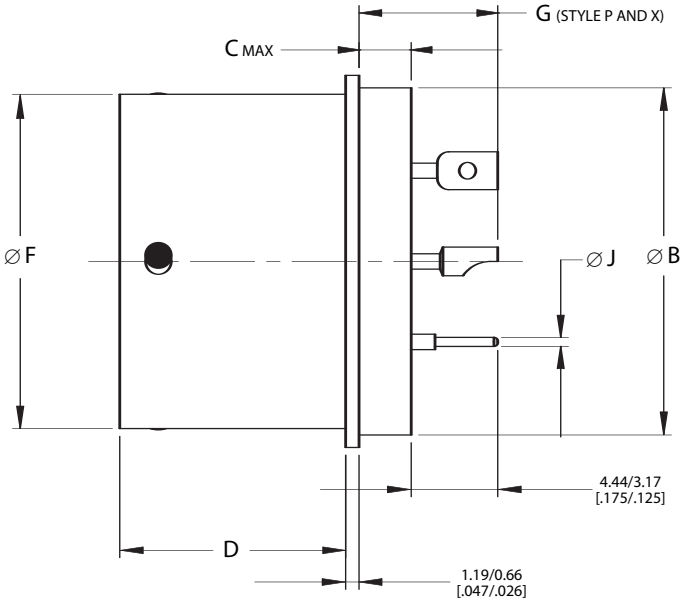


Note: Jam nut connectors are delivered with hex nut MS27514 and O-ring seal.

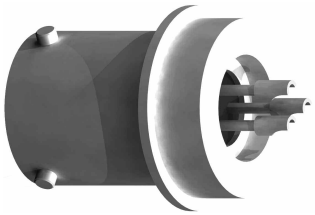
Shell Size	A Thread Class 2A	⌀B ±0.39 mm	⌀B ±.015 inch	C ±0.40 mm	C ±.016 inch	D Flat 0.00 -0.25 mm	D Flat .000 -.010 inch	⌀E ±0.27 mm	⌀E ±.011 inch	⌀F +0.27 0.00 mm	⌀F +.011 .000 inch	G ±0.40 mm	G ±.016 inch
9	.6875-24 UNEF	30.19	1.189	26.97	1.062	16.64	.655	15.29	.602	16.31	.642	2.77	.109
11	.8125-20 UNEF	34.93	1.375	31.75	1.250	19.18	.755	18.44	.726	19.46	.766	2.77	.109
13	1.000-20 UNEF	38.10	1.5	34.92	1.375	24.00	.945	21.64	.852	22.66	.892	2.77	.109
15	1.125-18 UNEF	41.28	1.625	38.10	1.500	27.08	1.066	24.84	.978	25.86	1.018	2.77	.109
17	1.250-18 UNEF	44.45	1.75	41.27	1.625	30.25	1.191	27.99	1.102	29.01	1.142	2.77	.109
19	1.375-18 UNEF	49.23	1.938	46.02	1.812	33.43	1.316	31.19	1.228	32.21	1.268	3.55	.140
21	1.500-18 UNEF	52.37	2.062	49.23	1.938	36.60	1.441	34.34	1.352	35.36	1.392	3.55	.140
23	1.625-18 UNEF	55.58	2.188	52.37	2.062	39.78	1.566	37.54	1.478	38.56	1.518	3.55	.140
25	1.750-18 UNS	58.72	2.312	55.58	2.188	42.95	1.691	40.69	1.602	41.71	1.642	3.55	.140

AE171
Solder Mount Receptacle
MS27471



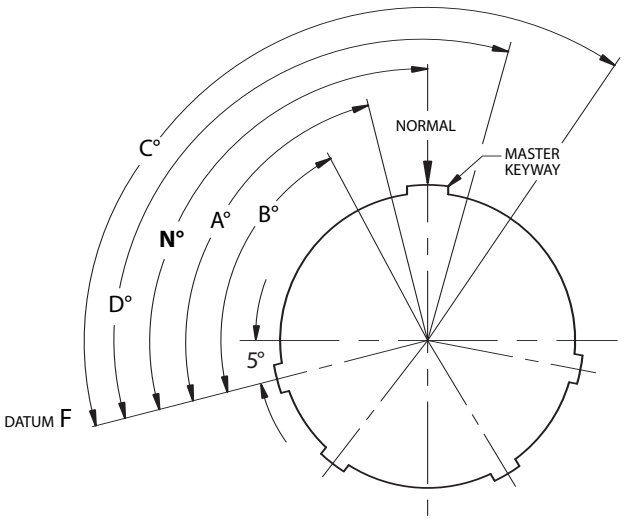


Contact Size	∅ J	
	mm	inch
22D	0.28 0.38	.011 .015
20	0.60 0.70	.024 .028
16	1.56 1.61	.061 .063
12	2.36 2.41	.093 .095



Shell Size	∅ A		∅ B		C		D		∅ F		G	
	±0.41	±.016	+0.03 -0.13	+.001 .005	Maximum		+0.79 0	+.031 .000	+0.03 -0.13	+.001 -.005	Maximum	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
9	19.05	.750	17.07	.672	4.75	.187	16.74	.659	14.53	.572	9.12	.359
11	21.44	.844	19.84	.781	4.75	.187	16.74	.659	17.78	.700	9.12	.359
13	24.61	.969	23.01	.906	4.75	.187	16.74	.659	21.59	.850	9.12	.359
15	27.79	1.094	26.19	1.031	4.75	.187	16.74	.659	24.76	.975	9.12	.359
17	30.94	1.218	29.36	1.156	4.75	.187	16.74	.659	27.94	1.100	9.12	.359
19	33.32	1.312	31.75	1.250	4.75	.187	16.74	.659	30.66	1.207	9.12	.359
21	36.53	1.438	34.92	1.375	4.75	.187	16.74	.659	33.83	1.332	9.12	.359
23	39.70	1.563	38.10	1.500	5.53	.218	16.74	.659	37.01	1.457	9.12	.359
25	42.88	1.688	41.27	1.625	5.53	.218	16.74	.659	40.18	1.582	9.12	.359

Keying Positions



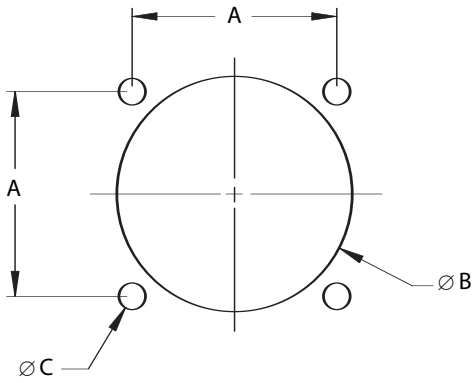
Notes:

1. Mating face of receptacle shown.
2. The master keyway (key) has various positions relative to DATUM **F**; the minor keyways (keys) remain fixed as shown. In the Normal position, the master keyway (key) is at 95° from DATUM **F**.
3. The insert arrangement does not rotate relative to master keyway (key).

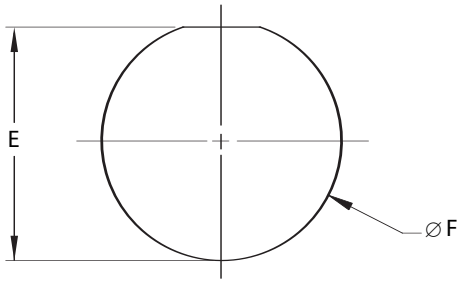
Shell Size	Keying Positions				
	BSC				
	N°	**A°**	**B°**	**C°**	**D°**
9	95	77	–	–	113
11	95	81	67	123	109
13	95	75	63	127	115
15	95	74	61	129	116
17	95	77	65	125	113
19	95	77	65	125	113
21	95	77	65	125	113
23	95	80	69	121	110
25	95	80	69	121	110

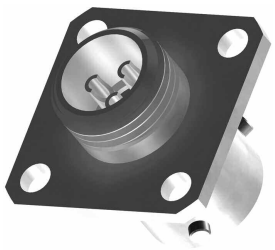
Panel Cutouts

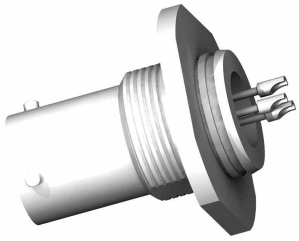
AE169
Wall Mount Receptacle



AE170
Jam Nut Receptacle



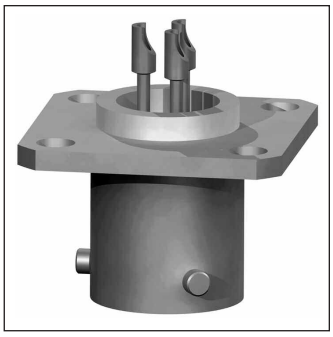


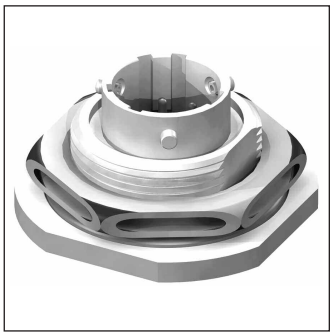


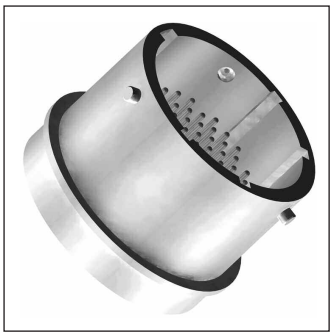
Shell Size	A (TP) mm	A (TP) inch	⌀B Minimum mm	⌀B Minimum inch	⌀C ±0.13 mm	⌀C ±.005 inch	E 0.00 -0.25 mm	E .000 -.010 inch	⌀F +0.25 0.00 mm	⌀F +.010 .000 inch
9	18.26	.719	16.66	.656	3.25	.128	17.02	.670	17.78	.700
11	20.62	.812	20.22	.796	3.25	.128	19.59	.771	20.96	.825
13	23.01	.906	23.42	.922	3.25	.128	24.26	.955	25.65	1.010
15	24.61	.969	26.59	1.047	3.25	.128	27.56	1.085	28.83	1.135
17	26.97	1.062	30.96	1.219	3.25	.128	30.73	1.210	32.01	1.260
19	29.36	1.156	32.94	1.297	3.25	.128	33.91	1.335	35.18	1.385
21	31.75	1.250	36.12	1.422	3.25	.128	37.08	1.460	38.35	1.510
23	34.93	1.375	39.29	1.547	3.91	.154	40.26	1.585	41.53	1.635
25	38.10	1.500	42.47	1.672	3.91	.154	43.43	1.710	44.70	1.760

Conesys Europe
Hermetic Connectors

AE2 Series
per MIL-DTL-38999 Series II







Features and Application

AE2 Series hermetic connector receptacles are manufactured to Conesys Europe standards and meet all the requirements of MIL-DTL-38999 Series II.

AE2 Series connectors feature a bayonet coupling mechanism with lower profile design.

These connectors were designed for military and commercial applications where the prime requirements are lower profile and lighter weight.

Reduction of both size and weight were achieved through the use of thinner shell walls and length restrictions. These design restrictions reduce the RFI attenuation characteristics and eliminate the "scoop" protection, while yielding an excellent general-purpose, lightweight connector. Compared with AE1 Series, AE2 Series connectors achieved up to 20% reduction in mated pair length, up to 39% reduction in outside diameter and up to 40% reduction in weight (128-pin mated pair).

This family of connectors is available in 4 receptacle mounting styles. Square flange, box mounting, jam nut, and solder mount.

9 shell sizes and insert arrangements utilizing sizes 22D, 20, 16 and 12 contacts are available.

Customer-specific design can be proposed for special applications – Consult factory for details.

These hermetic connectors are available in passivated stainless steel and mild steel material, tin or nickel plated. Other materials can be proposed for special applications – Please consult factory.

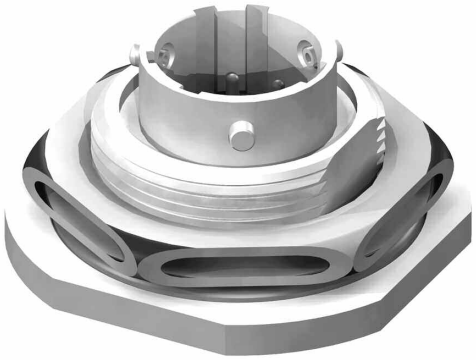
MIL-STD-1560 Insert Arrangement – AE2 Series hermetic connectors use standard insert arrangement.

Customer-Specific Insert Arrangement – AE2 Series hermetic connectors can be proposed with special insert arrangement – Please consult factory.

Interfacial Pin Insert Seal – Raised moisture barriers around each receptacle pin, which mate into lead-in chamfers of the plug hard face socket insert, provide individual contact sealing.

Glass insulator – These hermetic connectors are designed with sintered compression glass as an insulator.

Shell Polarization – Alternate key/keyway positions prevent cross mating of adjacent connectors having identical insert arrangement.



Performance Specifications

Operating Temperature Range
Classes E and N : -65°C to +200°C (-85°F to +392°F)
Class D : -65°C to +150°C (-85°F to +302°F)

Material and Finish Data (Class)
Class E:

RECEPTACLE	material:	stainless steel
	finish:	passivated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Class N:

RECEPTACLE	material:	stainless steel
	finish:	nickel plated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Class D:

RECEPTACLE	material:	mild steel
	finish:	tin plated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Corrosion Resistance
Class E: 500 hours
Classes D and N: 48 hours

Durability
Minimum of 500 mating cycles.

Leakage
$< 1.10^{-7}$ atm.cm^3.s^{-1}.

Shell-to-Shell Conductivity
Maximum potential drop shall not exceed:
Class N: 1 millivolt
Classes D and E: 50 millivolts

Insulation Resistance
>5000 M| under 500 Vdc
(25°C – 65% HR max.)

Withstanding Voltage
At sea level:
Service M: 1300 V RMS
Service I: 1800 V RMS
Service II: 2300 V RMS

At 21 000 m altitude:
Service M: 800 V RMS
Service I: 1000 V RMS
Service II: 1000 V RMS

Maximum Current Rating per Contact

Size 22D	3 Amp
Size 20	5 Amp
Size 16	10 Amp
Size 12	17 Amp
Size 8	40 Amp

Military and Conesys Part Number Development

Mil. Prefix	**MS274**	**76Y**	**14**	**D**	**18**	**P**	**A**	
Conesys Prefix	**AE2**	**76Y**	**14**	**D**	**18**	**P**	**A**	**-XXX**

Shell Type (specification sheet number)

76Y = Wall mount receptacle

77Y = Jam nut receptacle

78Y = Solder mount receptacle

Shell Size

Y **8, 10, 12, 14, 16, 18, 20, 22,** and **24**

Material and Finish

D = Shell – mild steel, tin plated
= Terminals – ferrous alloy, gold plated

E = Shell – stainless steel, passivated
= Terminals – ferrous alloy, gold plated

N = Shell – stainless steel, nickel plated
= Terminals – ferrous alloy, gold plated

Insert Arrangement

See pages 47–50

Contact Style (pin only)

P = Pin with solder cup

X = Pin with eyelet

C = Pin tail (for PCB)

Polarization (keying)

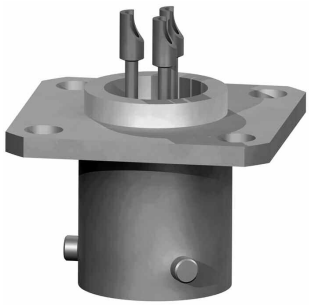
N = Normal (omitted in part number)

A, B, C, or **D** for alternatives (B and C keyways are not available in SS 8)

Modification or Particularities (applies to Conesys part numbers only)

XXX = Modification

Consult factory for details



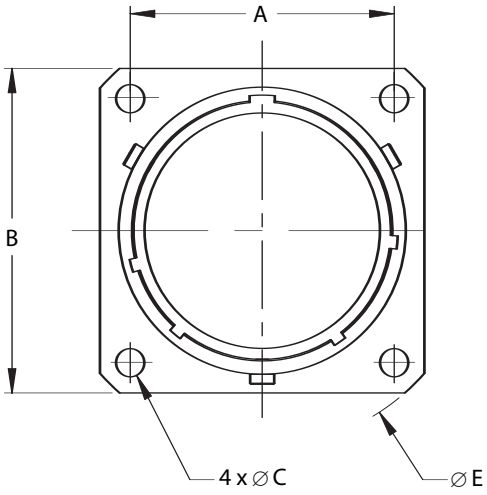
Terminal Configuration

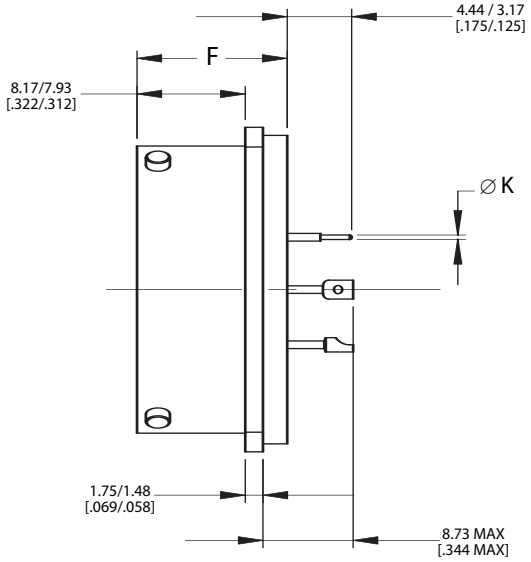
Terminal Style P
Solder cup
Available in size 22, 20, 16, 12, and 8
For other sizes, please consult factory.

Terminal Style X
Eyelet
Available in size 22, 20, and 16
For other sizes, please consult factory.

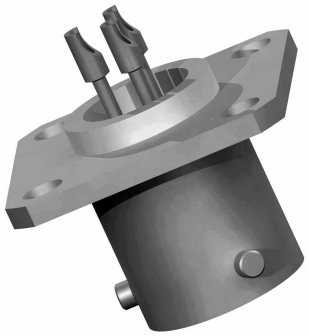
Terminal Style C
Pin tail for PCB
Available in size 22, 20, and 16
For other sizes or lengths, please consult factory.

AE276
Box Mount Receptacle
MS27476

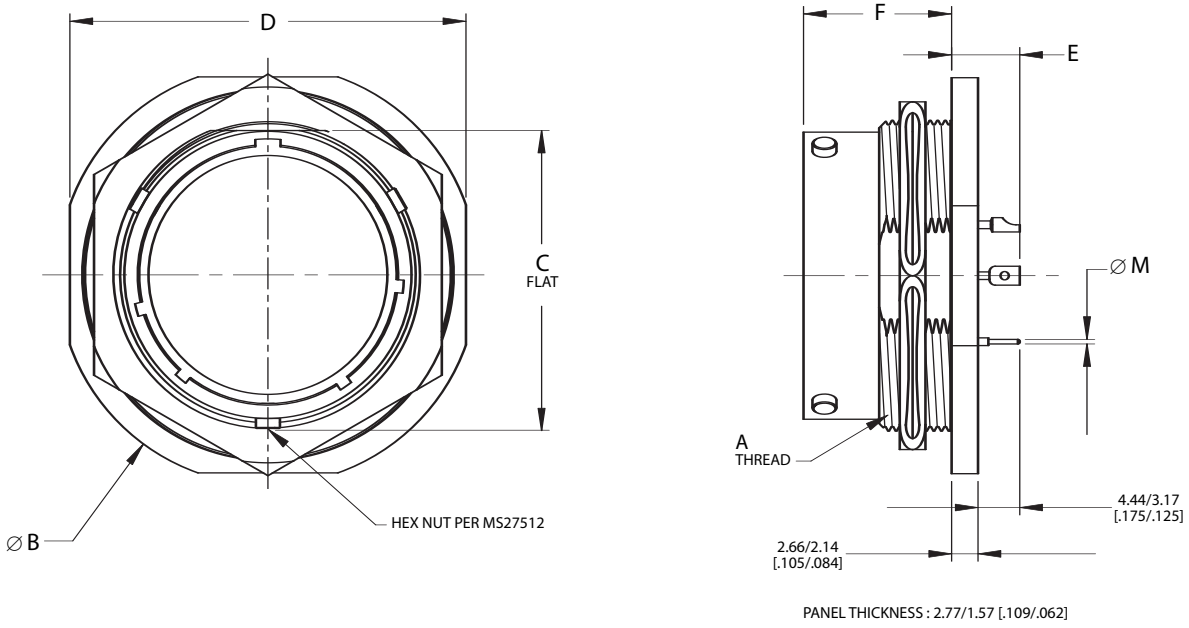




Contact Size	∅K	
	mm	inch
22D	0.28 0.38	.011 .015
20	0.60 0.70	.024 .028
16	1.56 1.61	.061 .063
12	2.36 2.41	.093 .095



Shell Size	A		B		∅C		∅E		F	
			Maximum		+0.25 -0.13	+.010 -.005	Maximum		Maximum	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
8	15.09	.594	21.03	.828	3.05	.120	27.38	1.078	11.51	.453
10	18.26	.719	24.23	.954	3.05	.120	32.16	1.266	11.51	.453
12	20.62	.812	26.59	1.047	3.05	.120	35.33	1.391	11.51	.453
14	23.01	.906	28.98	1.141	3.05	.120	38.51	1.516	11.51	.453
16	24.61	.969	31.34	1.234	3.05	.120	41.68	1.641	11.51	.453
18	26.97	1.062	33.73	1.328	3.05	.120	44.86	1.766	11.51	.453
20	29.36	1.156	36.91	1.453	3.05	.120	48.03	1.891	11.51	.453
22	31.75	1.250	40.08	1.578	3.05	.120	51.21	2.016	11.51	.453
24	34.93	1.375	43.26	1.703	3.73	.147	55.98	2.204	12.29	.484

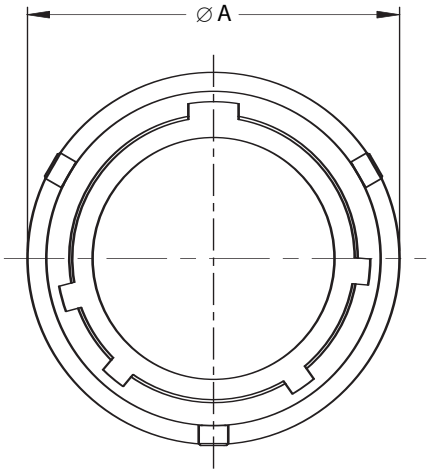


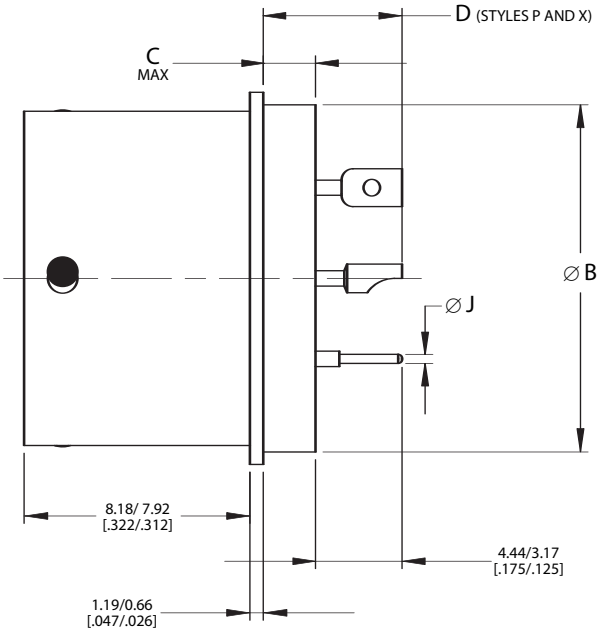
Contact Size	∅ M	
	mm	inch
22D	0.28 0.38	.011 .015
20	0.60 0.70	.024 .028
16	1.56 1.61	.061 .063
12	2.36 2.41	.093 .095

Note: Jam nut connectors are delivered with hex nut MS27512 and O-ring seal.

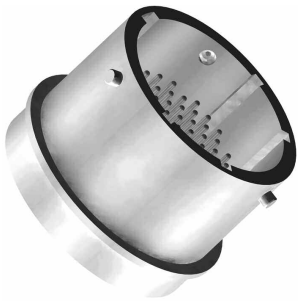
Shell Size	A	∅ B		C		D		E		F	
	Thread Class 2A	±0.41	±.015	Flat +0.03 -0.15	+.001 -.006	±0.41	±.015	Maximum		±0.13	±.005
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
8	.8750-20 UNEF	34.92	1.375	20.75	.817	31.75	1.250	7.14	.281	11.13	.438
10	1.000-20 UNEF	38.10	1.500	23.90	.941	34.93	1.375	7.14	.281	11.13	.438
12	1.125-18 UNEF	41.27	1.625	27.05	1.065	38.10	1.500	7.14	.281	11.13	.438
14	1.250-18 UNEF	44.45	1.750	30.23	1.190	41.28	1.625	7.14	.281	11.13	.438
16	1.375-18 UNEF	49.23	1.938	33.53	1.320	45.24	1.781	7.14	.281	11.13	.438
18	1.500-18 UNEF	51.21	2.016	36.58	1.440	48.01	1.890	7.14	.281	11.13	.438
20	1.625-18 UNEF	54.38	2.141	39.75	1.565	51.21	2.016	6.35	.250	11.79	.441
22	1.750-18 UNS	57.53	2.265	42.93	1.690	54.36	2.140	6.35	.250	11.79	.441
24	1.8750-16 UN	60.71	2.390	46.10	1.815	57.53	2.265	6.35	.250	11.79	.441

AE278
Solder Mount Receptacle
MS27478



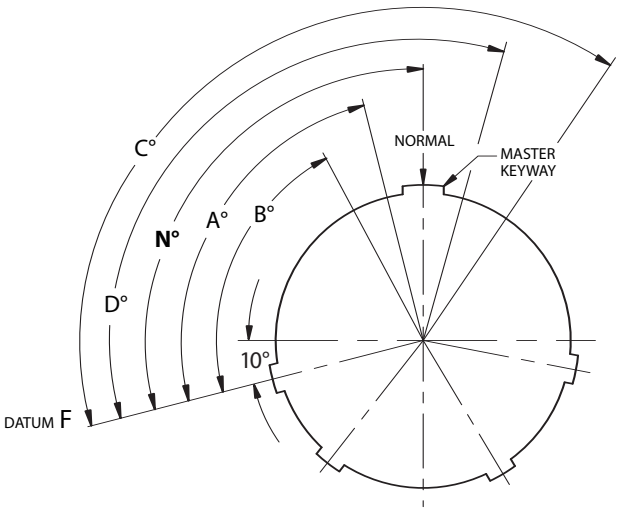


Contact Size	∅ J	
	mm	inch
22D	0.28 0.38	.011 .015
20	0.60 0.70	.024 .028
16	1.56 1.61	.061 .063
12	2.36 2.41	.093 .095



Shell Size	∅ A		∅ B		C		D	
	+0.28 -0.25	+.011 -.010	+0.03 -0.13	+.001 -.005	Maximum		Maximum	
	mm	inch	mm	inch	mm	inch	mm	inch
8	17.45	.687	14.27	.562	3.17	.125	9.52	.375
10	20.24	.797	17.07	.672	3.17	.125	9.52	.375
12	23.01	.906	19.84	.781	3.17	.125	9.52	.375
14	26.19	1.031	23.01	.906	3.17	.125	9.52	.375
16	29.36	1.156	26.19	1.031	3.17	.125	9.52	.375
18	32.54	1.281	29.36	1.156	3.17	.125	9.52	.375
20	34.92	1.375	31.75	1.250	3.17	.125	9.52	.375
22	38.10	1.500	34.92	1.375	3.96	.156	9.52	.375
24	41.27	1.625	38.10	1.500	3.96	.156	9.52	.375

Keying Positions



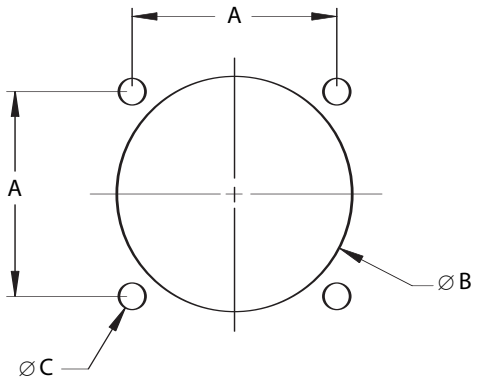
Notes:

1. Mating face of receptacle shown.
2. The master keyway (key) has various positions relative to DATUM **F**; the minor keyways (keys) remain fixed as shown. In the Normal position, the master keyway (key) is at 100° from DATUM **F**.
3. The insert arrangement does not rotate relative to master keyway (key).

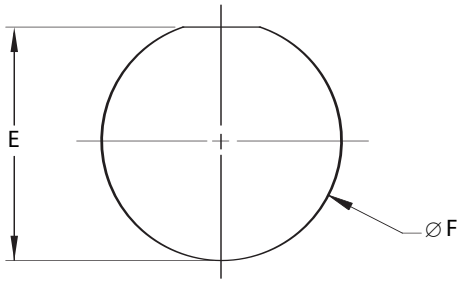
	Keying Positions				
	BSC				
ShellSize	N°	A°	B°	C°	D°
8	100	82	–	–	118
10	100	86	72	128	114
12	100	80	68	132	120
14	100	79	66	134	121
16	100	82	70	130	118
18	100	82	70	130	118
20	100	82	70	130	118
22	100	85	74	126	115
24	100	85	74	126	115

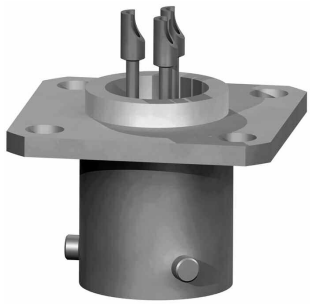
Panel Cutouts

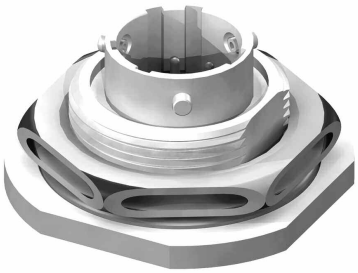
AE276
Wall Mount Receptacle



AE277
Jam Nut Receptacle







Shell Size	A (TP) mm	A (TP) inch	⌀B Minimum mm	⌀B Minimum inch	⌀C ±0.13 mm	⌀C ±.005 inch	E 0.00 -0.25 mm	E .000 -.010 inch	⌀F +0.25 0.00 mm	⌀F +.010 .000 inch
8	15.09	.594	14.15	.557	3.25	.128	21.08	.830	22.48	.885
10	18.26	.719	17.32	.682	3.25	.128	24.26	.955	25.65	1.010
12	20.62	.812	21.69	.854	3.25	.128	27.56	1.085	28.83	1.135
14	23.01	.906	24.87	.979	3.25	.128	30.73	1.210	32.01	1.260
16	24.61	.969	28.04	1.104	3.25	.128	33.91	1.335	35.18	1.385
18	26.97	1.062	31.22	1.229	3.25	.128	37.08	1.460	38.35	1.510
20	29.36	1.156	34.39	1.354	3.25	.128	40.26	1.585	41.53	1.635
22	31.75	1.250	37.57	1.479	3.25	.128	43.42	1.709	44.70	1.760
24	34.93	1.375	40.74	1.604	3.91	.154	46.61	1.835	47.88	1.885

Conesys Europe
Hermetic Connectors

AE3 Series
per MIL-DTL-38999 Series III
and EN3645

Features and Application

AE3 Series hermetic connector receptacles are manufactured to Conesys Europe standards and meet all the requirements of MIL-DTL-38999 Series III and EN3645.

AE3 Series are cylindrical connectors, designed for highest performance capabilities, and used in both general purpose and severe environment applications.

These connectors feature a one-turn coupling system, utilizing self-locking triple start ACME thread. ACME threads provide coupling durability, while thicker wall sections and greater coupling surface area improve strength, shock resistance and EMI shielding. Blunting of the threads on both receptacle and plug coupling nut eliminates cross threading.

Square flange, jam nut, solder, and welding receptacles are available in 9 shell sizes and insert arrangements utilizing sizes 22D, 20, 16, 12 and 8 contacts.

Customer-specific design can be proposed for special applications – Consult factory for details.

These hermetic connectors are available in stainless steel material, passivated or nickel plated. Other materials can be proposed for special applications – Please consult factory.

MIL-STD-1560 Insert Arrangement – AE3 Series hermetic connectors use standard insert arrangement.

EN3645 and Specific Insert Arrangement – AE3 Series hermetic connectors can be proposed with EN3645 or special insert arrangement – Please consult factory.

Scoop-Proof Design – Recessed pins in elongated shells minimize the possibility of contact damage. In a blind mating application, mating shells cannot "scoop" the pins and cause a shorting or bending of contacts.

Interfacial Pin Insert Seal – Raised moisture barriers around each receptacle pin, which mate into lead-in chamfers of the plug hard face socket insert, provide individual contact sealing.

Glass insulator – These hermetic connectors are designed with sintered compression glass as an insulator.

Performance Specifications

Operating Temperature Range
Classes Y and N : -65°C to +200°C (-85°F to +392°F)

Material and Finish Data (Class)
Class Y:

RECEPTACLE	material:	stainless steel
	finish:	passivated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Class N:

RECEPTACLE	material:	stainless steel
	finish:	nickel plated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Corrosion Resistance
Class Y: 500 hours as per MIL-DTL-38999
Class N: 48 hours as per MIL-DTL-38999

Durability
Minimum of 500 mating cycles.

Leakage
$< 1.10^{-7}$ atm.cm^3.s^{-1}.

Shock and Vibration
Shock: Pulse of approximate half sine wave of 300 g ± 15% magnitude with duration of 3 ±1 milliseconds applied in three axes. Vibration: as per MIL-DTL-38999.

Shell-to-Shell Conductivity
Maximum potential drop shall not exceed:
Class N: 1 millivolt
Classes Y: 50 millivolts

Insulation Resistance
>5000 M| under 500 Vdc
(25°C – 65% HR max.)

Withstanding Voltage
At sea level:
Service M: 1300 V RMS
Service I: 1800 V RMS
Service II: 2300 V RMS

At 21 000 m altitude:
Service M: 800 V RMS
Service I: 1000 V RMS
Service II: 1000 V RMS

Maximum Current Rating per Contact

Size 22D	3 Amp
Size 20	5 Amp
Size 16	10 Amp
Size 12	17 Amp
Size 8	40 Amp

Military and Conesys Part Number Development

Mil. Prefix	**D38999/**	**21**	**Y**	**D**	**19**	**P**	**N**	
Conesys Prefix	**AE3**	**21**	**Y**	**D**	**19**	**P**	**N**	**-XXX**

Shell Type (specification sheet number)

21 = Wall mount receptacle

23 = Jam nut receptacle

25 = Solder mount receptacle

27 = Weld mount receptacle

Class (Material and Finish)

Y = Shell – stainless steel, passivated
= Terminals – ferrous alloy, gold plated

N = Shell – stainless steel, nickel plated
= Terminals – ferrous alloy, gold plated

Shell Size

A, B, C, D, E, F, G, H, or **J**

Insert Arrangement

See pages 47–50

Contact Style (pin only)

P = Pin with solder cup

X = Pin with eyelet

C = Pin tail (for PCB)

Polarization (keying)

N = Normal

A, B, C, D, or **E** for alternatives

Modification or Particularities (applies to Conesys part numbers only)

XXX = Modification

Consult factory for details

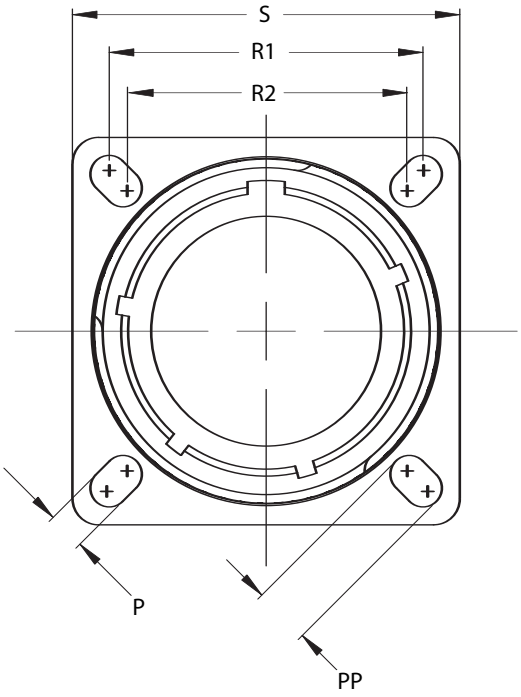
Terminal Configuration

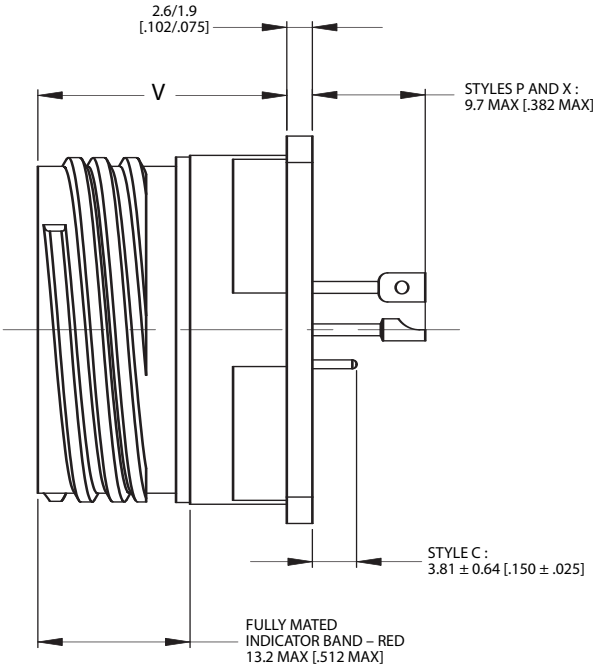
Terminal Style P
Solder cup
Available in size 22, 20, 16, 12, and 8
For other sizes, please consult factory.

Terminal Style X
Eyelet
Available in size 22, 20, and 16
For other sizes, please consult factory.

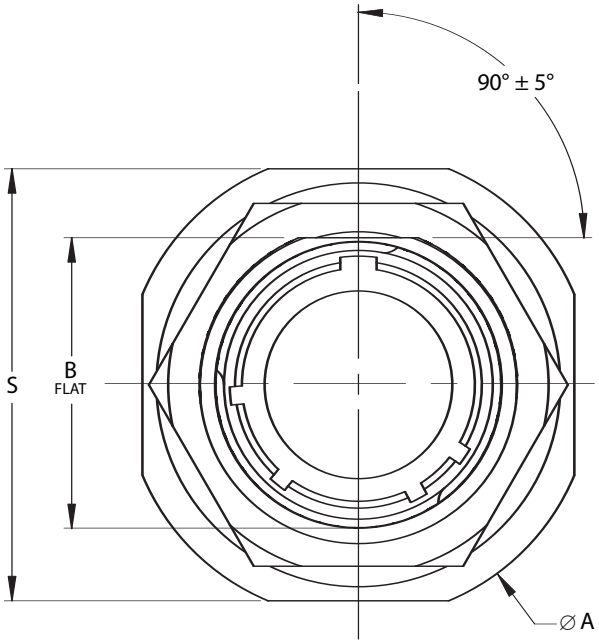
Terminal Style C
Pin tail for PCB
Available in size 22, 20, and 16
For other sizes or lengths, please consult factory.

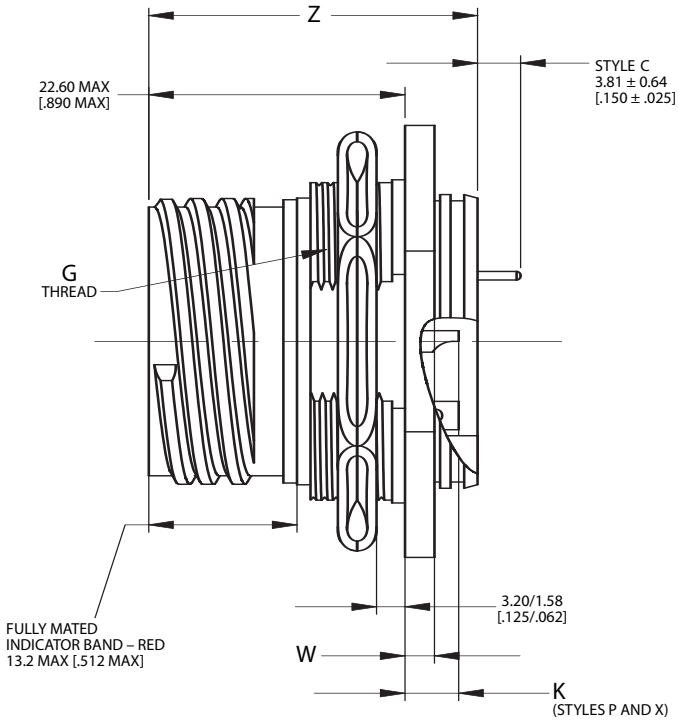
AE321
Wall Mount Receptacle
D38999/21 – EN3645Y0





Shell Size	Shell Size Code	P		PP		R1		R2		S		V	
		±0.20	±.008	±0.20	±.008	(TP)		(TP)		±0.30	±.012	Maximum	
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
9	A	3.25	.128	5.49	.216	18.26	.719	15.09	.594	23.8	.937	21.40	.843
11	B	3.25	.128	4.93	.194	20.62	.812	18.26	.719	26.20	1.031	21.40	.843
13	C	3.25	.128	4.93	.194	23.01	.906	20.62	.812	28.60	1.126	21.40	.843
15	D	3.25	.128	4.93	.194	24.61	.969	23.01	.906	31.00	1.220	21.40	.843
17	E	3.25	.128	4.93	.194	26.97	1.062	24.61	.969	33.30	1.311	21.40	.843
19	F	3.25	.128	4.93	.194	29.36	1.156	26.97	1.062	36.50	1.437	21.40	.843
21	G	3.25	.128	4.93	.194	31.75	1.250	29.36	1.156	39.70	1.563	21.40	.843
23	H	3.91	.154	6.15	.242	34.93	1.375	31.75	1.250	42.90	1.689	21.40	.843
25	J	3.91	.154	6.15	.242	38.10	1.500	34.93	1.375	46.00	1.811	21.40	.843

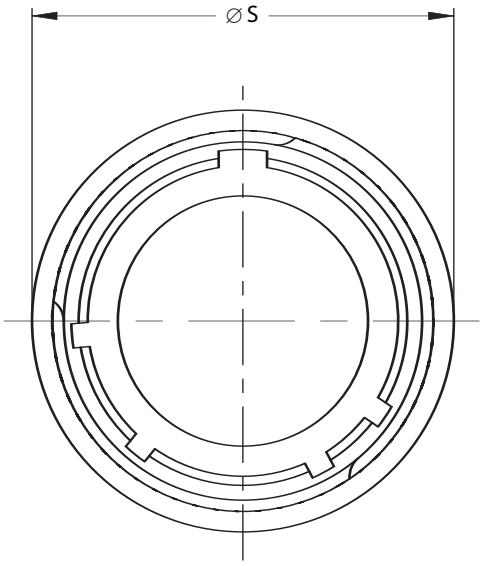


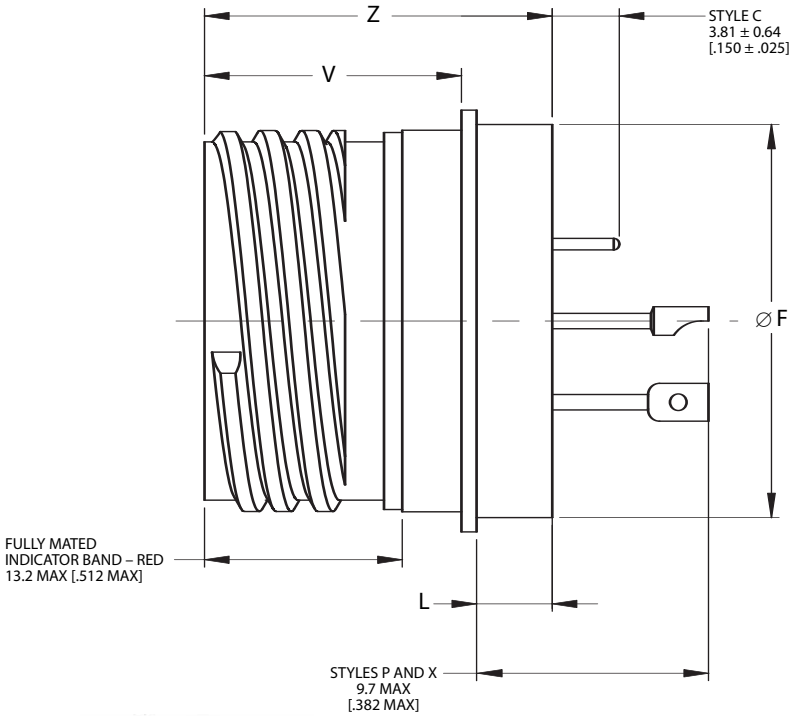


Note: Jam nut connectors are delivered with hex nut D38999/28 and O-ring seal.

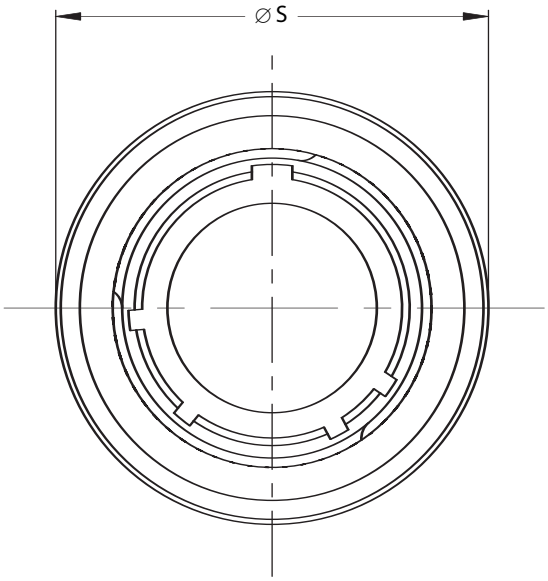
Shell Size	Shell Size Code	∅ A		B		G	K		S		W		Z	
		±0.30	±.012	Flat +0.10 -0.15	+.004 -.006	Thread	Maximum		±0.40	±.016	+0.30 -0.10	+.012 -.004	Maximum	
		mm	inch	mm	inch		mm	inch	mm	inch	mm	inch	mm	inch
9	A	30.20	1.189	16.53	.651	M17x1-6g 0.100R	5.30	.209	27.00	1.063	2.60	.102	29.20	1.150
11	B	34.90	1.374	19.07	.751	M20x1-6g 0.100R	5.30	.209	31.80	1.252	2.60	.102	29.20	1.150
13	C	38.10	1.500	23.82	.938	M25x1-6g 0.100R	5.10	.201	34.90	1.374	2.60	.102	29.20	1.150
15	D	41.30	1.626	26.97	1.062	M28x1-6g 0.100R	5.10	.201	38.10	1.500	2.60	.102	29.20	1.150
17	E	44.50	1.752	30.15	1.187	M32x1-6g 0.100R	5.10	.201	41.30	1.626	2.60	.102	29.20	1.150
19	F	49.20	1.937	33.32	1.312	M35x1-6g 0.100R	5.10	.201	46.00	1.811	3.40	.134	30.10	1.185
21	G	52.40	2.063	36.5	1.437	M38x1-6g 0.100R	5.10	.201	49.20	1.937	3.40	.134	30.10	1.185
23	H	55.60	2.189	39.67	1.562	M41x1-6g 0.100R	5.10	.201	52.40	2.063	3.40	.134	30.10	1.185
25	J	58.70	2.311	42.85	1.687	M44x1-6g 0.100R	5.10	.201	55.60	2.189	3.40	.134	30.10	1.185

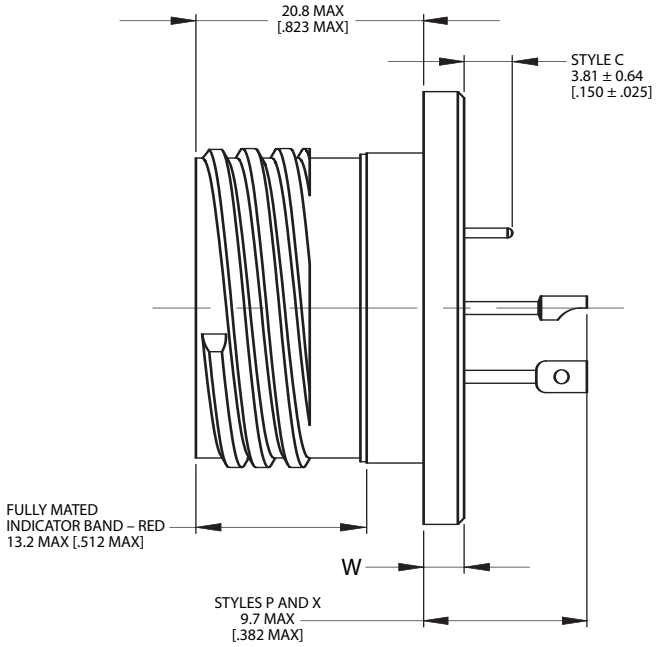
AE325
Solder Mount Receptacle
D38999/25 – EN3645Y1





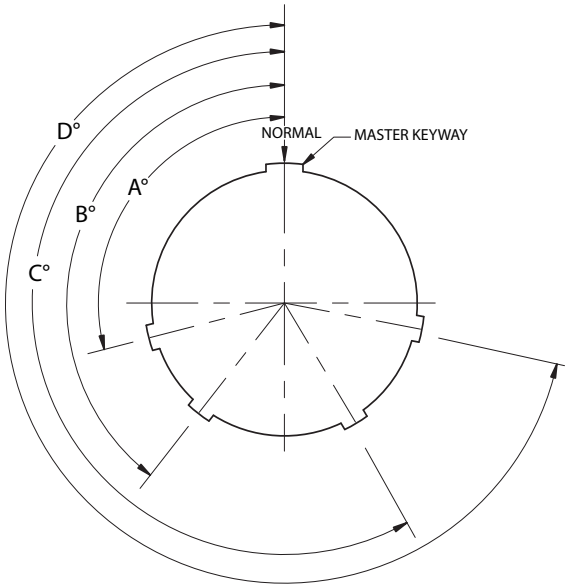
Shell Size	Shell Size Code	⌀F Maximum		L Maximum		⌀S Maximum		V Maximum		Z Maximum	
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
9	A	17.10	.673	5.10	.201	19.40	.764	17.20	.677	23.80	.937
11	B	19.90	.783	5.10	.201	21.80	.858	17.20	.677	23.80	.937
13	C	23.10	.909	5.10	.201	24.90	.980	17.20	.677	23.80	.937
15	D	26.30	1.035	5.10	.201	28.10	1.106	17.20	.677	23.80	.937
17	E	29.40	1.157	5.10	.201	31.80	1.252	17.20	.677	23.80	.937
19	F	31.80	1.252	5.10	.201	33.60	1.323	17.20	.677	23.80	.937
21	G	35.00	1.378	5.10	.201	36.80	1.449	17.20	.677	23.80	.937
23	H	38.20	1.504	5.90	.232	40.00	1.575	17.20	.677	24.60	.969
25	J	41.40	1.630	5.90	.232	43.20	1.701	17.20	.677	24.60	.969





Shell Size	Shell Size Code	⌀S		W	
		+0.30 0.00	+.012 .000	±0.15	±.006
		mm	inch	mm	inch
9	A	24.70	.972	3.20	.126
11	B	27.80	1.094	3.20	.126
13	C	31.00	1.220	3.20	.126
15	D	34.20	1.346	3.20	.126
17	E	36.40	1.433	3.20	.126
19	F	40.10	1.579	3.20	.126
21	G	43.70	1.720	3.20	.126
23	H	47.90	1.886	4.00	.157
25	J	50.10	1.972	4.00	.157

Keying Positions

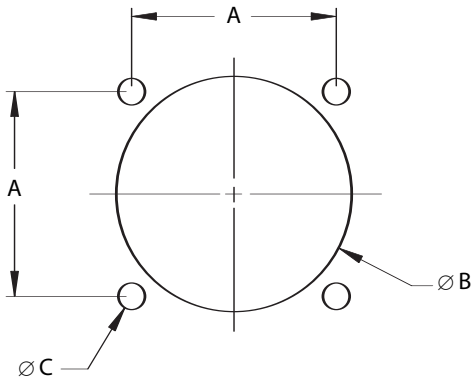


1. Mating face of receptacle shown.
2. All minor keyways (keys) are rotated to provide shell polarization while master keyway (key) remains fixed as shown.
3. Insert arrangement does not rotate relative to the master keyway (key).

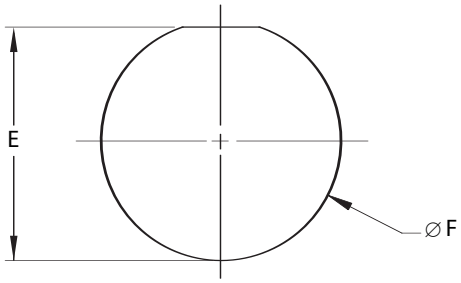
Shell Size	Key/Keyway	Key/Keyway Positions			
		BSC			
	Identification Letter	A°	B°	C°	D°
A (9)	N	105	140	215	265
	A	102	132	248	320
	B	80	118	230	312
	C	35	140	205	275
	D	64	155	234	304
	E	91	131	197	240
B (11) C (13) D (15)	N	95	141	208	236
	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
	D	119	146	176	298
	E	51	141	184	242
E (17) F (19) G (21) H (23) J (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

Panel Cutouts

AE321
Wall Mount Receptacle



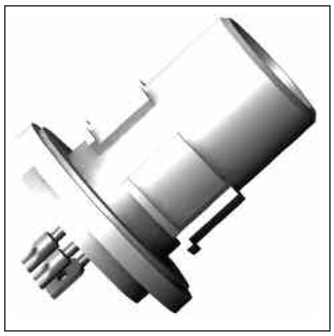
AE323
Jam Nut Receptacle

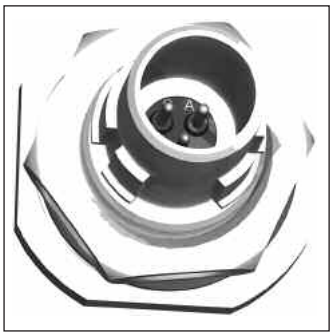


Shell Size	Shell Size Code	A (TP) mm	A (TP) inch	⌀B Minimum Back Mounting mm	⌀B Minimum Back Mounting inch	⌀B Minimum Front Mounting mm	⌀B Minimum Front Mounting inch	⌀C ±0.13 mm	⌀C ±.005 inch	E 0.00 -0.25 mm	E .000 -.010 inch	⌀F +0.25 0.00 mm	⌀F +.010 .000 inch
9	A	18.26	.719	16.66	.656	13.11	.516	3.25	.128	17.02	.670	17.78	.700
11	B	20.62	.812	20.22	.796	15.88	.625	3.25	.128	19.59	.771	20.96	.825
13	C	23.01	.906	23.42	.922	19.05	.750	3.25	.128	24.26	.955	25.65	1.010
15	D	24.61	.969	26.59	1.047	23.01	.906	3.25	.128	27.56	1.085	28.83	1.135
17	E	26.97	1.062	30.96	1.219	25.81	1.016	3.25	.128	30.73	1.210	32.01	1.260
19	F	29.36	1.156	32.94	1.297	28.98	1.141	3.25	.128	33.91	1.335	35.18	1.385
21	G	31.75	1.250	36.12	1.422	32.16	1.266	3.25	.128	37.08	1.460	38.35	1.510
23	H	34.93	1.375	39.29	1.547	34.93	1.375	3.91	.154	40.26	1.585	41.53	1.635
25	J	38.10	1.500	42.47	1.672	37.69	1.484	3.91	.154	43.43	1.710	44.70	1.760

Conesys Europe
Hermetic Connectors

AE4 Series
per MIL-DTL-38999 Series IV





Features and Application

AE4 Series hermetic connector receptacles are manufactured to Conesys Europe standards and meet all the requirements of MIL-DTL-38999 Series IV.

AE4 Series connectors are scoop-proof with breech coupling, designed to give a quick disconnect coupling mechanism to an already rugged connector.

AE4 Series hermetic receptacle connectors are intermateable and interchangeable with all other qualified MIL-C-38999 Series IV connectors.

Square flange, jam nut, solder mount and weld mount receptacles are available in 8 shell sizes and insert arrangements utilizing sizes 22D, 20, 16, 12, and 8 contacts.

Customer specific design can be proposed for special applications – Consult factory for details.

These hermetic connectors are available in stainless steel material both passivated and nickel plated. Other materials can be proposed for special applications – Please consult factory.

MIL-STD-1560 Insert Arrangement – AE4 Series hermetic connectors use standard insert arrangement.

Customer Specific Insert Arrangement – AE4 Series hermetic connectors can be proposed with special insert arrangement – Please consult factory.

Interfacial Pin Insert Seal – Raised moisture barriers around each receptacle pin, which mate into lead-in chamfers of the plug hard face socket insert, provide individual contact sealing.

Glass Insulator – These hermetic connectors are designed with sintered compression glass as an insulator.

Performance Specifications

Operating Temperature Range
Classes Y and N : -65°C to +200°C (-85°F to +392°F)

Material and Finish Data (Class)
Class Y:

RECEPTACLE	material:	stainless steel
	finish:	passivated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Class N:

RECEPTACLE	material:	stainless steel
	finish:	nickel plated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Corrosion Resistance
Class Y: 500 hours as per MIL-DTL-38999
Class N: 48 hours as per MIL-DTL-38999

Durability
Minimum of 500 mating cycles.

Leakage
$< 1.10^{-7}$ atm.cm^3.s^{-1}.

Shock and Vibration
Shock: Pulse of approximate half sine wave of 300 g ± 15% magnitude with duration of 3 ±1 milliseconds applied in three axes. Vibration: as per MIL-DTL-38999.

Shell-to-Shell Conductivity
Maximum potential drop shall not exceed:
Class N: 1 millivolt
Classes Y: 50 millivolts

Insulation Resistance
>5000 M| under 500 Vdc
(25°C – 65% HR max.)

Withstanding Voltage
At sea level:
Service M: 1300 V RMS
Service I: 1800 V RMS
Service II: 2300 V RMS

At 21 000 m altitude:
Service M: 800 V RMS
Service I: 1000 V RMS
Service II: 1000 V RMS

Maximum Current Rating per Contact

Size 22D	3 Amp
Size 20	5 Amp
Size 16	10 Amp
Size 12	17 Amp
Size 8	40 Amp

Military and Conesys Part Number Development

Mil. Prefix	D38999/	41	Y	D	19	P	N	
Conesys Prefix	AE4	41	Y	D	19	P	N	-XXX

Shell Type (specification sheet number)

- **41** = Wall mount receptacle
- **43** = Jam nut receptacle
- **45** = Solder mount receptacle
- **47** = Weld mount receptacle

Class (Material and Finish)

- **Y** = Shell – stainless steel, passivated
  = Terminals – ferrous alloy, gold plated
- **N** = Shell – stainless steel, nickel plated
  = Terminals – ferrous alloy, gold plated

Shell Size

B, C, D, E, F, G, H, or **J**

Insert Arrangement

See pages 47–50

Contact Style (pin only)

- **P** = Pin with solder cup
- **X** = Pin with eyelet
- **C** = Pin tail (for PCB)

Polarization (keying)

- **N** = Normal

A, B, C, D, or **E** for alternatives

Modification or Particularities (applies to Conesys part numbers only)

XXX = Modification

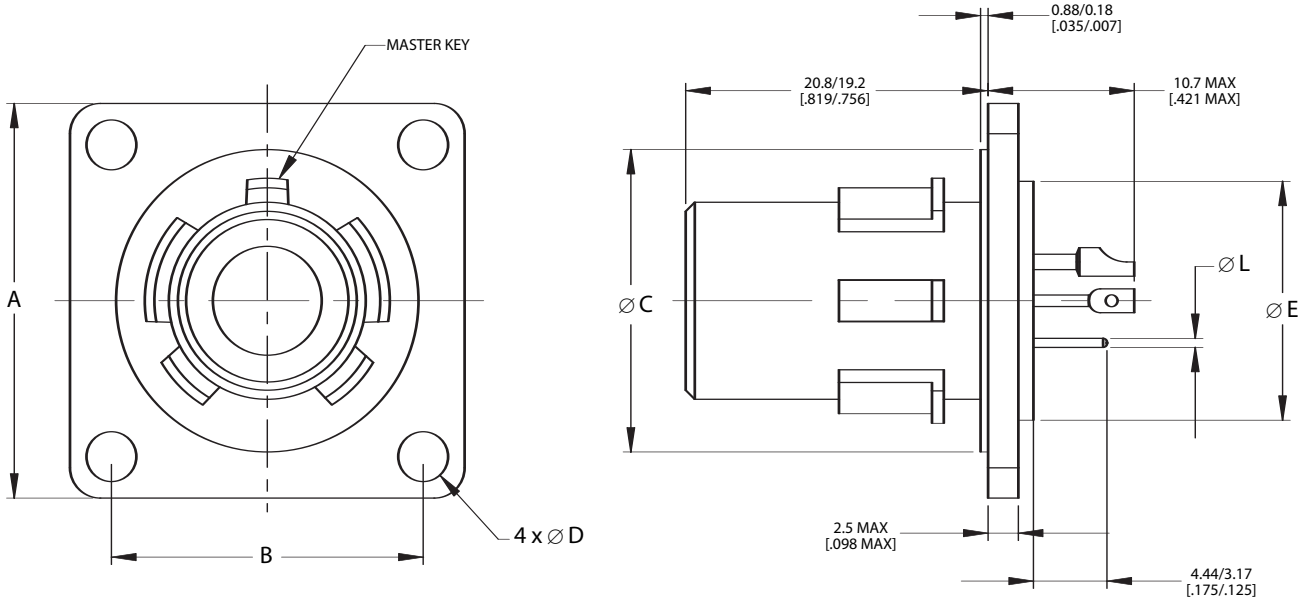
Consult factory for details

Terminal Configuration

Terminal Style P
Solder cup
Available in size 22, 20, 16, 12, and 8
For other sizes, please consult factory.

Terminal Style X
Eyelet
Available in size 22, 20, and 16
For other sizes, please consult factory.

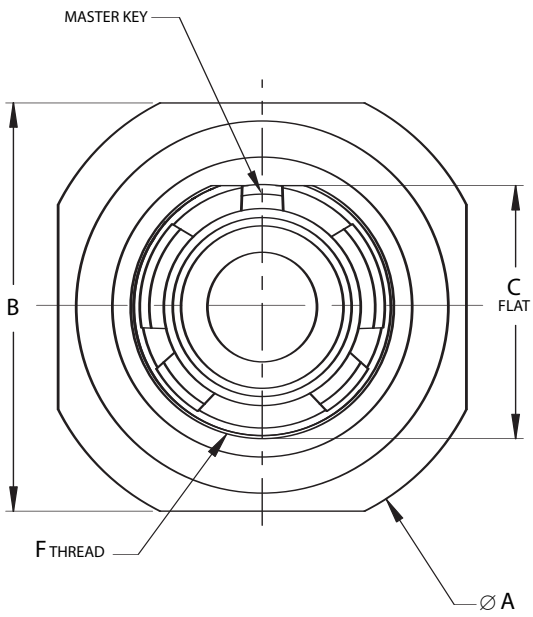
Terminal Style C
Pin tail for PCB
Available in size 22, 20, and 16
For other sizes or lengths, please consult factory.

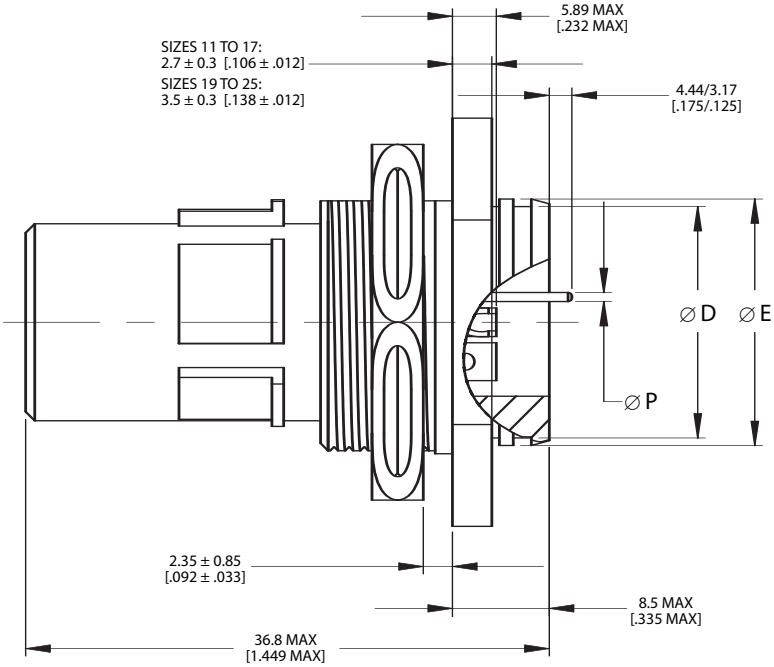


Contact Size	∅ L	
	mm	inch
22D	0.28 0.38	.011 .015
20	0.60 0.70	.024 .028
16	1.56 1.61	.061 .063
12	2.36 2.41	.093 .095

Shell Size	Shell Size Code	A		B		∅ C		∅ D		∅ E	
		±0.55	±.022	(TP)		±0.19	±.007	±0.20	±.008	Maximum	
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
11	B	26.15	1.030	20.62	.812	19.96	.786	3.30	.130	15.88	.625
13	C	28.55	1.124	23.01	.906	23.16	.912	3.30	.130	19.05	.750
15	D	30.95	1.219	24.61	.969	26.33	1.037	3.30	.130	23.01	.906
17	E	33.35	1.313	26.97	1.062	29.53	1.163	3.30	.130	25.81	1.016
19	F	36.55	1.439	29.36	1.156	32.68	1.287	3.30	.130	28.98	1.141
21	G	39.65	1.561	31.75	1.250	35.86	1.412	3.30	.130	32.16	1.266
23	H	42.85	1.687	34.92	1.375	39.03	1.536	3.80	.150	34.93	1.375
25	J	46.05	1.813	38.10	1.500	42.21	1.662	3.80	.150	37.69	1.484

AE443
Jam Nut Receptacle
D38999/43

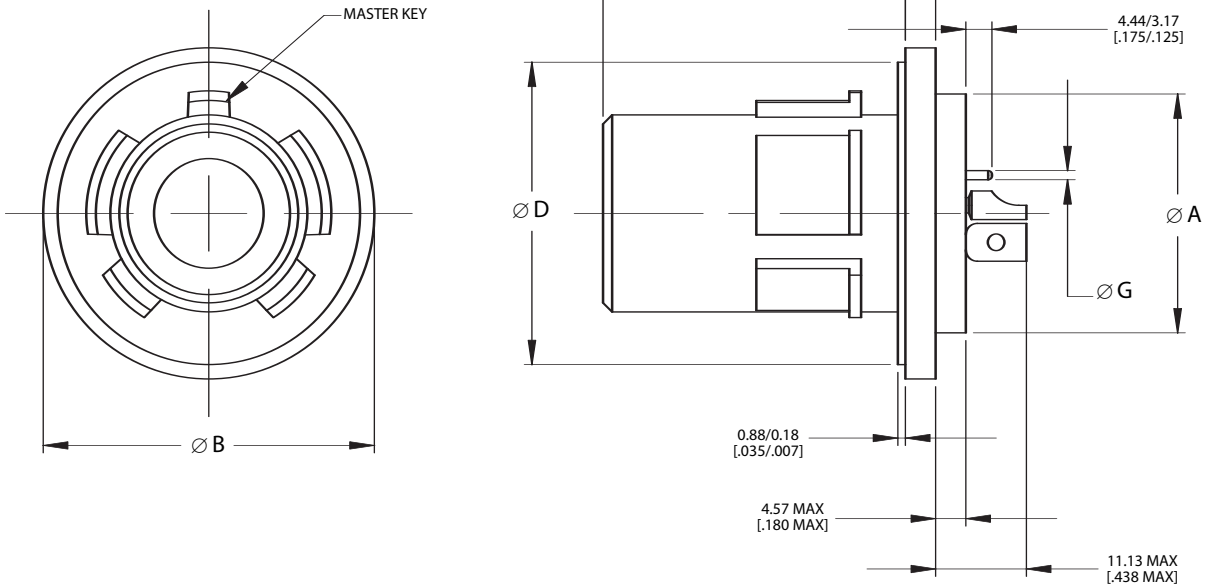




Contact Size	∅P	
	mm	inch
22D	0.28 0.38	.011 .015
20	0.60 0.70	.024 .028
16	1.56 1.61	.061 .063
12	2.36 2.41	.093 .095

Note: Jam nut connectors are delivered with hex nut D38999/28 and O-ring seal.

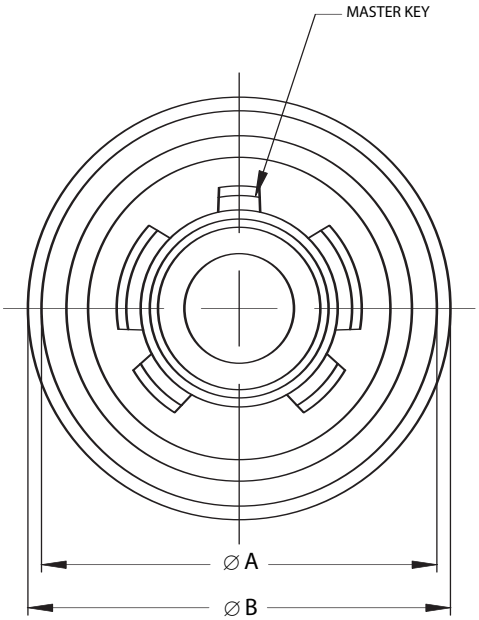
Shell Size	Shell Size Code	∅A		B		C		∅D		∅E		F
		±0.30	±.012	±0.45	±.018	Flat ±0.13	±.005	±0.20	±.008	±0.25	±.010	Thread
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
11	B	34.90	1.374	31.75	1.250	19.05	.750	18.40	.724	19.55	.770	M20x1-6g 0.100R
13	C	38.10	1.500	34.95	1.376	23.80	.937	21.55	.848	22.85	.900	M25x1-6g 0.100R
15	D	41.30	1.626	38.15	1.502	26.95	1.061	24.80	.976	26.05	1.026	M28x1-6g 0.100R
17	E	44.50	1.752	41.25	1.624	30.13	1.186	27.95	1.100	29.15	1.148	M32x1-6g 0.100R
19	F	49.20	1.937	46.05	1.813	33.31	1.311	31.20	1.228	32.35	1.274	M35x1-6g 0.100R
21	G	52.40	2.063	49.25	1.939	36.49	1.437	34.30	1.350	35.55	1.400	M38x1-6g 0.100R
23	H	55.60	2.189	52.35	2.061	39.64	1.561	37.50	1.476	38.75	1.526	M41x1-6g 0.100R
25	J	58.70	2.311	55.55	2.187	42.85	1.687	40.70	1.602	41.85	1.648	M44x1-6g 0.100R

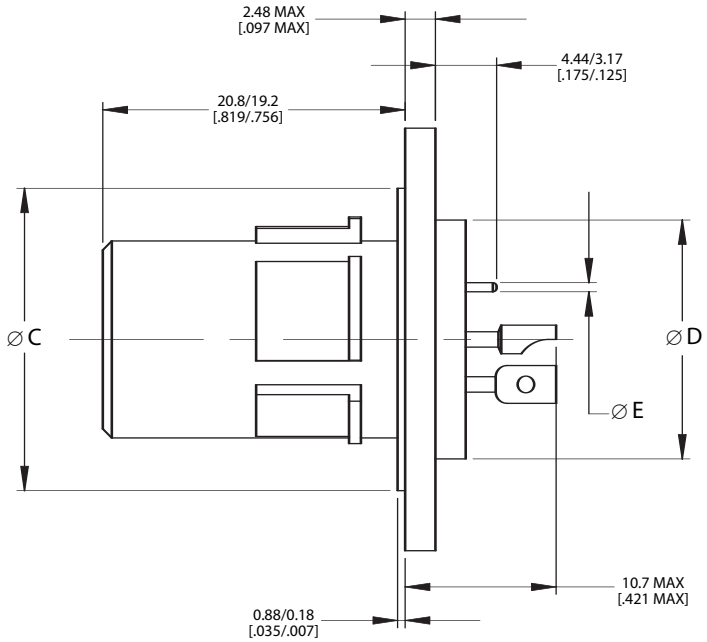


Contact Size	∅ G	
	mm	inch
22D	0.28 0.38	.011 .015
20	0.60 0.70	.024 .028
16	1.56 1.61	.061 .063
12	2.36 2.41	.093 .095

Shell Size	Shell Size Code	∅ A		∅ B		∅ D	
		Maximum		Maximum		±0.19	±.007
		mm	inch	mm	inch	mm	inch
11	B	19.90	.783	21.90	.862	19.96	.786
13	C	23.10	.909	25.10	.988	23.16	.912
15	D	26.30	1.035	28.20	1.110	26.33	1.037
17	E	29.40	1.157	31.40	1.236	29.53	1.163
19	F	31.80	1.252	33.80	1.331	32.68	1.287
21	G	35.00	1.378	37.00	1.457	35.86	1.412
23	H	38.20	1.504	40.20	1.583	39.03	1.537
25	J	41.40	1.630	43.30	1.705	42.21	1.662

AE448
Weld Mount Receptacle
D38999/48

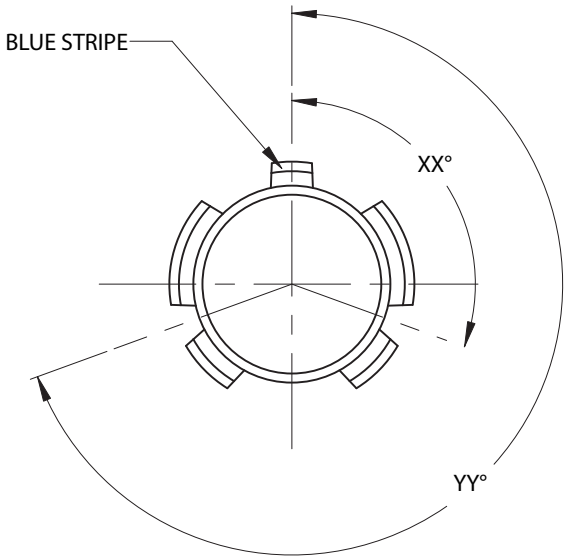




Contact Size	∅ E	
	mm	inch
22D	0.28 0.38	.011 .015
20	0.60 0.70	.024 .028
16	1.56 1.61	.061 .063
12	2.36 2.41	.093 .095

Shell Size	Shell Size Code	∅ A		∅ B		∅ C		∅ D	
		±0.15	±.006	±0.15	±.006	±0.19	±.007	Maximum	
		mm	inch	mm	inch	mm	inch	mm	inch
11	B	26.15	1.030	27.95	1.100	19.96	.786	15.88	.625
13	C	29.35	1.156	31.15	1.226	23.16	.912	19.05	.750
15	D	32.55	1.281	34.35	1.352	26.33	1.037	23.01	.906
17	E	34.75	1.368	36.55	1.439	29.53	1.163	25.81	1.016
19	F	38.45	1.514	40.25	1.585	32.68	1.287	28.98	1.141
21	G	42.05	1.656	43.85	1.726	35.86	1.412	32.16	1.266
23	H	46.25	1.821	48.05	1.892	39.03	1.537	34.93	1.375
25	J	48.45	1.907	50.25	1.978	42.21	1.662	37.69	1.484

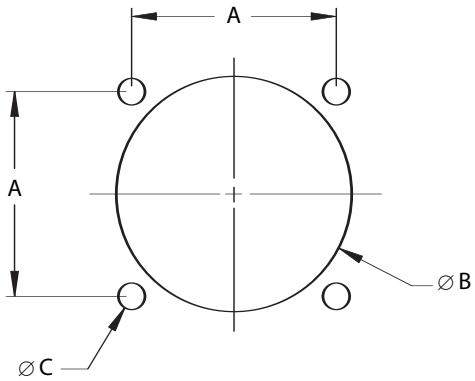
Keying Positions



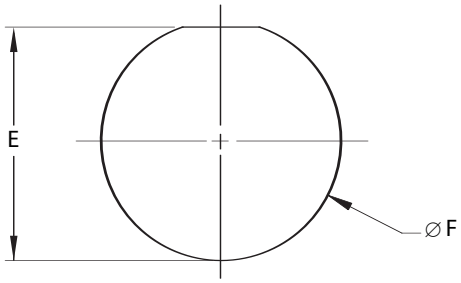
Key/Keyway	XX°	YY°
N	110	250
A	100	260
B	90	270
C	80	280
D	70	290
K	120	255

Panel Cutouts

AE441
Wall Mount Receptacle



AE443
Jam Nut Receptacle



Shell Size	Shell Size Code	A (TP) mm	A (TP) inch	⌀B Minimum Back Mounting mm	⌀B Minimum Back Mounting inch	⌀B Minimum Front Mounting mm	⌀B Minimum Front Mounting inch	⌀C ±0.13 mm	⌀C ±.005 inch	E 0.00 -0.25 mm	E .000 -.010 inch	⌀F +0.25 0.00 mm	⌀F +.010 .000 inch
11	B	20.62	.812	20.22	.796	15.88	.625	3.25	.128	19.59	.771	20.96	.825
13	C	23.01	.906	23.42	.922	19.05	.750	3.25	.128	24.26	.955	25.65	1.010
15	D	24.61	.969	26.59	1.047	23.01	.906	3.25	.128	27.56	1.085	28.83	1.135
17	E	26.97	1.062	30.96	1.219	25.81	1.016	3.25	.128	30.73	1.210	32.01	1.260
19	F	29.36	1.156	32.94	1.297	28.98	1.141	3.25	.128	33.91	1.335	35.18	1.385
21	G	31.75	1.250	36.12	1.422	32.16	1.266	3.25	.128	37.08	1.460	38.35	1.510
23	H	34.93	1.375	39.29	1.547	34.93	1.375	3.91	.154	40.26	1.585	41.53	1.635
25	J	38.10	1.500	42.47	1.672	37.69	1.484	3.91	.154	43.43	1.710	44.70	1.760

Insert Arrangement and Contact Information

Insert Arrangement				Service	Total	Quantity of Contacts				
					No. of	by Size				
Series I	Series II	Series III	Series IV	Rating	Contacts	22D	20	16	12	8
9-35	8-35	A-35	—	M	6	6				
9-98	8-98	A-98	—	I	3		3			
11-2	—	B-2	B-2	I	2			2		
11-4	—	B-4	B-4	I	4		4			
11-5	10-5	B-5	B-5	I	5		5			
11-35	10-35	B-35	B-35	M	13	13				
11-98	10-98	B-98	B-98	I	6		6			
11-99	10-99	B-99	B-99	I	7		7			
13-4	12-4	C-4	C-4	I	4			4		
13-8	12-8	C-8	C-8	I	8		8			
13-35	12-35	C-35	C-35	M	22	22				
13-98	12-98	C-98	C-98	I	10		10			
15-5	14-5	D-5	D-5	II	5			5		
15-15	14-15	D-15	D-15	I	15		14	1		
15-18	14-18	D-18	D-18	I	18		18			
15-19	—	D-19	D-19	I	19		19			
15-35	14-35	D-35	D-35	M	37	37				
15-97	14-97	D-97	D-97	I	12		8	4		
17-6	16-6	E-6	E-6	I	6				6	
17-8	16-8	E-8	E-8	II	8			8		
17-26	16-26	E-26	E-26	I	26		26			
17-35	16-35	E-35	E-35	M	55	55				
17-99	16-99	E-99	E-99	I	23		21	2		

Insert Arrangement and Contact Information

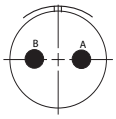
Insert Arrangement				Service	Total	Quantity of Contacts				
					No. of	by Size				
Series I	Series II	Series III	Series IV	Rating	Contacts	22D	20	16	12	8
19-11	18-11	F-11	F-11	II	11			11		
19-28	18-28	F-28	F-28	I	28		26	2		
19-30	18-30	F-30	F-30	I	30		29	1		
19-32	18-32	F-32	F-32	I	32		32			
19-35	18-35	F-35	F-35	M	66	66				
21-11	—	G-11	G-11	I	11				11	
21-16	20-16	G-16	G-16	II	16			16		
21-35	20-35	G-35	G-35	M	79	79				
21-39	20-39	G-39	G-39	I	39		37	2		
21-41	20-41	G-41	G-41	I	41		41			
21-48 *	—	G-48 *	G-48 *	I	4					4
23-21	22-21	H-21	H-21	II	21			21		
23-32	22-32	H-32	H-32	I	32		32			
23-35	22-35	H-35	H-35	M	100	100				
23-53	22-53	H-53	H-53	I	53		53			
23-55	22-55	H-55	H-55	I	55		55			
25-4	24-4	J-4	J-4	I	56		48	8		
25-19	24-19	J-19	J-19	I	19				19	
25-24	24-24	J-24	J-24	I	24			12	12	
25-29	24-29	J-29	J-29	I	29			29		
25-35	24-35	J-35	J-35	M	128	128				
25-43	—	J-43	J-43	I	43		23	20		
25-61	24-61	J-61	J-61	I	61		61			

* Not MIL-STD-1560 layout

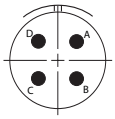
Insert Arrangement Views

9-35/8-35
A35,
6 # 22D, M

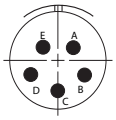
9-98/8-98
A98,
3 # 20, I



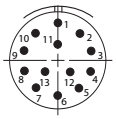
11-2
B2,
2 # 16, I



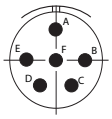
11-4
B4,
4 # 20, I



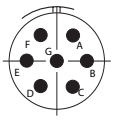
11-5/10-5
B5,
5 # 20, I



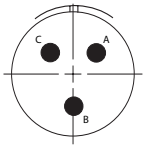
11-35/10-35
B35,
13 # 22D, M



11-98/10-98
B98,
6 # 20, I

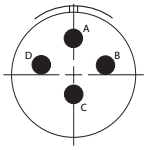


11-99/10-99
B99,
7 # 20, I

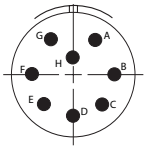


12-3

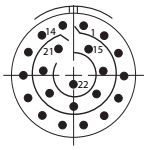
3 # 16, II



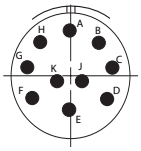
13-4/12-4
C4,
4 # 16, I



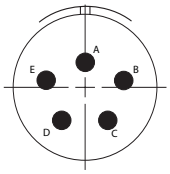
13-8/12-8
C8,
8 # 20, I



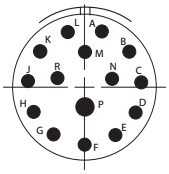
13-35/12-35
C35,
22 # 22D, M



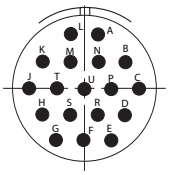
13-98/12-98
C98,
10 # 20, I



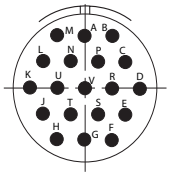
15-5/14-5
D5,
5 # 16, II



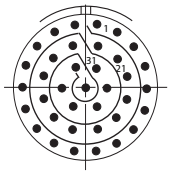
15-15/14-15
D15,
1 # 16, 14 # 20, I



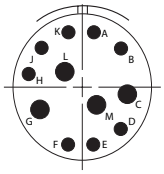
15-18/14-18
D18,
18 # 20, I



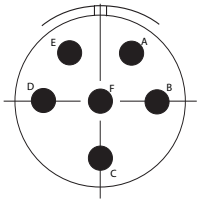
15-19
D19,
19 # 20, I



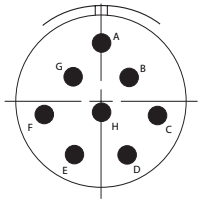
15-35/14-35
D35,
37 # 22D, M



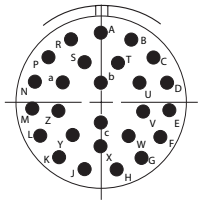
15-97/14-97
D97,
4 # 16, 8 # 20, I



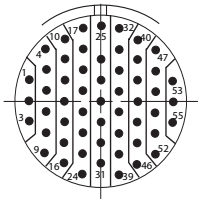
17-6/16-6
E6,
6 # 12, I



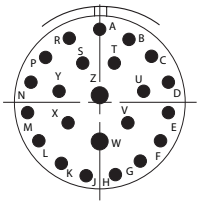
17-8/16-8
E8,
8 # 16, II



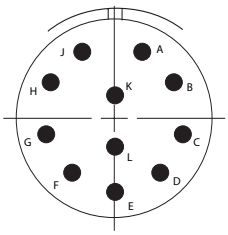
17-26/16-26
E26,
26 # 20, I



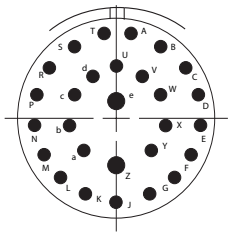
17-35/16-35
E35,
55 # 22D, M



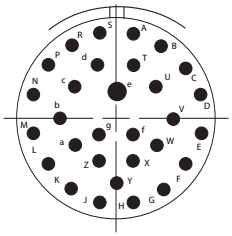
17-99/16-99
E99,
2 # 16, 21 # 20, I



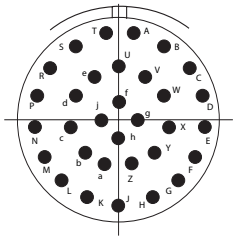
19-11/18-11
F11,
11 # 16, II



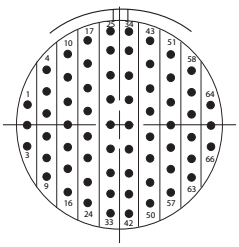
19-28/18-28
F28,
2 # 16, 26 # 20, I



19-30/18-30
F30,
1 # 16, 29 # 20, I



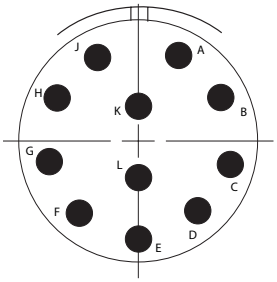
19-32/18-32
F32,
32 # 20, I



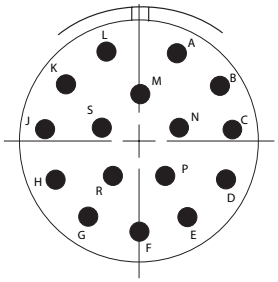
19-35/18-35
F35,
66 #22D, M

AE1, AE2, AE3, and AE4 Series
Insert Arrangement (Pin Front View)
per MIL-STD-1560

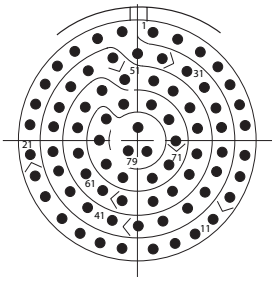
Insert Arrangement Views



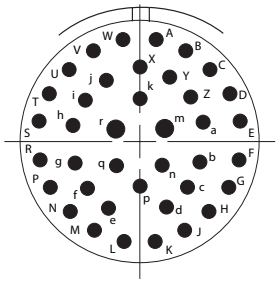
21-11
G11,
11 # 12, I



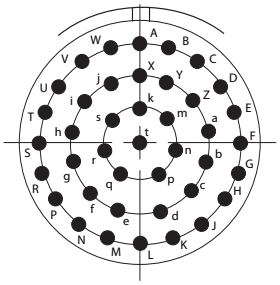
21-16/20-16
G16,
16 # 16, II



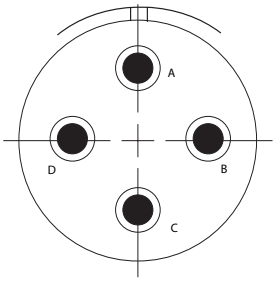
21-35/20-35
G35,
79 # 22D, M



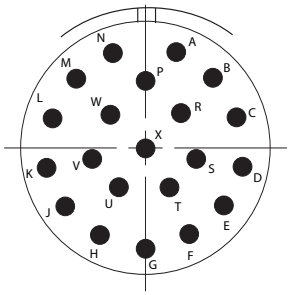
21-39/20-39
G39,
2 # 16, 37 # 20, I



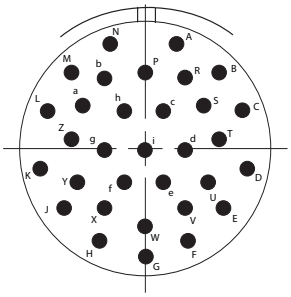
21-41/20-41
G41,
41 # 20, I



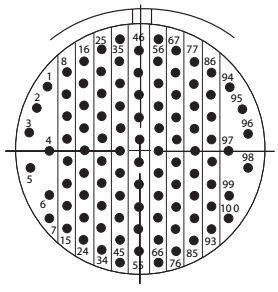
21-48*
G48*,
4 # 8 Power, I



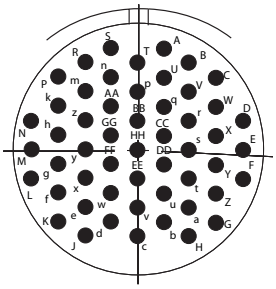
23-21/22-21
H21,
21 # 16, II



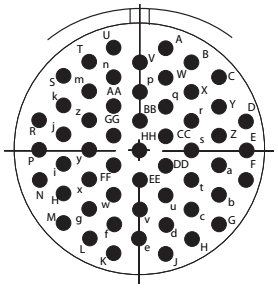
23-32/22-32
H32,
32 # 20, I



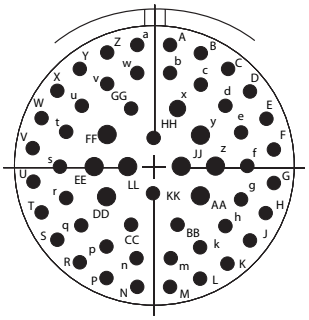
23-35/22-35
H35,
100 # 22D, M



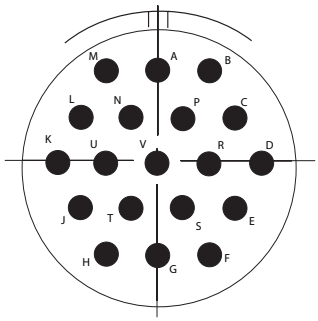
23-53/22-53
H53,
53 # 20, I



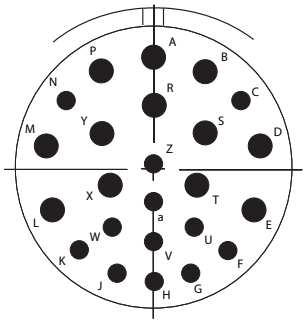
23-55/22-55
H55,
55 # 20, I



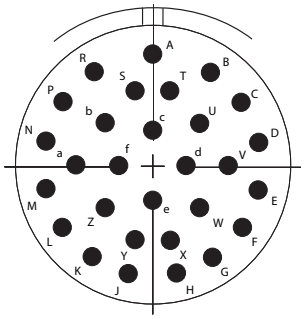
25-4/24-4
J4,
8 # 16, 48 # 20, I



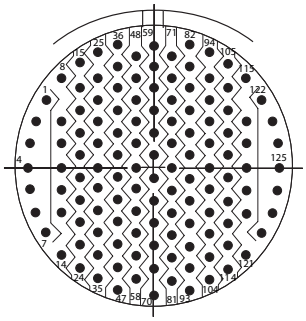
25-19/24-19
J19,
19 # 12, I



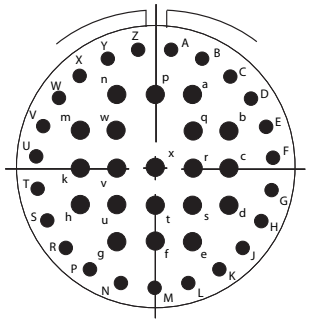
25-24/24-24
J24,
12 # 12, 12 # 16, I



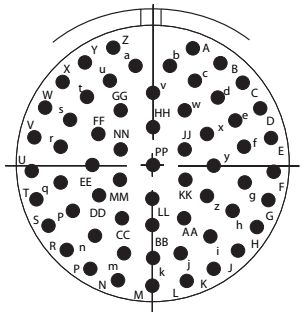
25-29/24-29
J29,
29# 16, I



25-35/24-35
J35,
128 # 22D, M



25-43
J43,
20 # 16, 23 # 20, I



25-61/24-61
J61,
61 # 20, I

* Not MIL-STD-1560 layout

Conesys Europe
Hermetic Connectors

8000 Series
per EN2997

Features and Application

8000 Series hermetic connector receptacles are manufactured to Conesys Europe standards and meet all the requirements of EN2997.

8000 Series is a threaded cylindrical connector designed for highest performance capabilities, used in severe-environment applications, i.e., aircraft engines.

These connectors are fully interchangeable and intermateable with MIL-C-83723 Series III Threaded and Rolls-Royce ESC10 connectors.

Square flange, jam nut, and solder mount receptacles are available in 10 shell sizes and insert arrangements utilizing sizes 20, 16, and 12 contacts.

Customer specific design can be proposed for special applications – Consult factory for details.

These 8000 Series hermetic connectors are available in passivated stainless steel material. Other materials can be proposed for special applications with commercial P/N – Please consult factory.

Insert Arrangement – 8000 Series hermetic connectors use EN2997 insert arrangements.

Customer Specific Insert Arrangement – 8000 Series hermetic connectors can be proposed with special insert arrangement issued from MIL-STD-1554 (insert arrangements for MIL-C-83723 series III connectors) – Please consult factory.

Shell polarization – Alternate key/keyway positions prevent cross mating of adjacent connectors having same insert arrangement.

Interfacial Pin Insert Seal – Raised moisture barriers around each receptacle pin, which mate into lead-in chamfers of the plug hard face socket insert, provide individual contact sealing.

Glass Insulator – These hermetic connectors are designed with sintered compression glass as insulator.

Special Contacts – These hermetic connectors are available with special contact, i.e., thermo couple (chromel, alumel, etc.). Commercial P/N only.

Performance Specifications

Operating Temperature Range
Class Y: -65°C to +200°C (-85°F to +392°F)
Class YE: -65°C to +260°C (-85°F to +500°F)

Material and Finish Data (Class)
Class Y:

RECEPTACLE	material:	stainless steel
	finish:	passivated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Class YE:

RECEPTACLE	material:	stainless steel
	finish:	passivated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Corrosion Resistance
Class Y: 48 hours as per EN2997
Class YE: 48 hours as per EN2997

Durability
Minimum of 500 mating cycles.

Leakage
$< 1.10^{-7}$ atm.cm^3.s^{-1}.

Shock and Vibration
Shock: Pulse of approximate half sine wave of 300 g ± 15% magnitude with duration of 3 ±1 milliseconds applied in three axes. Vibration: as per EN2997.

Shell-to-Shell Conductivity
Maximum potential drop shall not exceed:
Class Y: 10 millivolts
Class YE: 10 millivolts

Insulation Resistance
>5000 M| under 500 Vdc
(25°C – 65% HR max.)

Withstanding Voltage

At sea level:	1500 V rms
At 15 000 m altitude:	600 V rms
At 21 000 m altitude:	400 V rms
At 33 000 m altitude:	200 V rms

Maximum Current Rating per Contact

Size 20	5 Amp
Size 16	10 Amp
Size 12	17 Amp

EN and Conesys Part Number Development

EN Prefix	**EN2997**	**Y**	**0**	**10**	**06**	**M**	**N**	
Conesys Prefix	**8000**	**Y**	**0**	**10**	**06**	**P**	**N**	**-XXX**

Class (Material and Finish)

Y = Shell – stainless steel, passivated (200 C°)
= Terminals – ferrous alloy, gold plated

YE = Shell – stainless steel, passivated (260 C°)
= Terminals – ferrous alloy, gold plated

Shell Type (specification sheet number)

0 = Square flange receptacle

7 = Jam nut receptacle

1 = Solder mount receptacle

Shell Size

8 thru 24 (Size 28 – Consult factory)

Insert Arrangement

See pages 62–64

Contact Style (pin only)

M = Pin with solder cup – EN P/N only

P = Pin with solder cup – Conesys P/N only

X = Pin with eyelet – Conesys P/N only

C = Pin tail (for PCB) – Conesys P/N only

Polarization (keying)

N = Normal

6, 7, 8, 9, or **Y** (Alternate keyed positions; Y is not available in SS 8)

Modification or Particularities (applies to Conesys part numbers only)

XXX = Modification

Consult factory for details

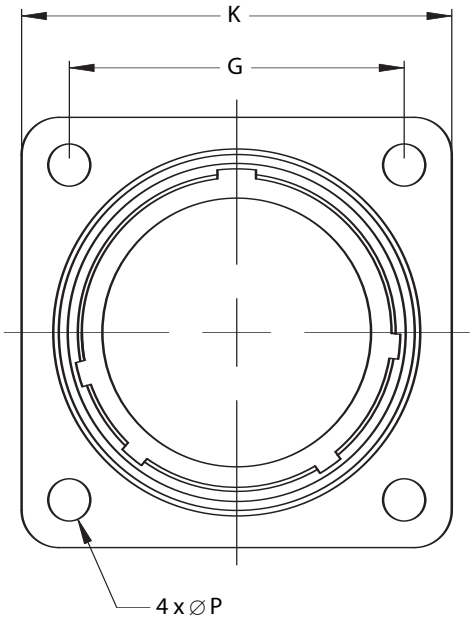
Terminal Configuration

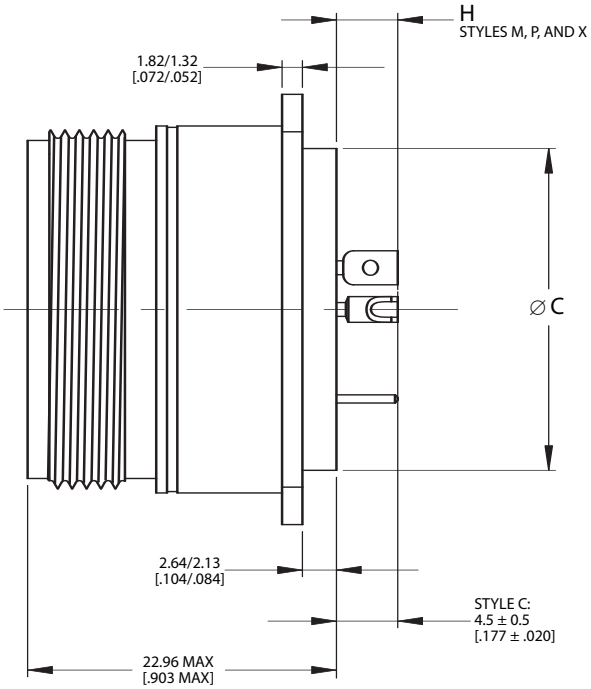
Terminal Styles M and P
Solder cup
Available in sizes 20, 16, and 12
For other sizes, please consult factory.

Terminal Style X
Eyelet
Available in sizes 20 and 16
For other sizes, please consult factory.

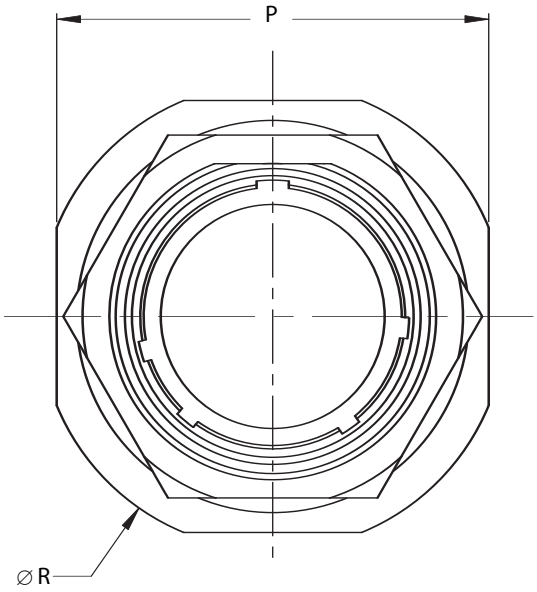
Terminal Style C
Pin tail for PCB
Available in sizes 22, 20, and 16
For other sizes or lengths, please consult factory.

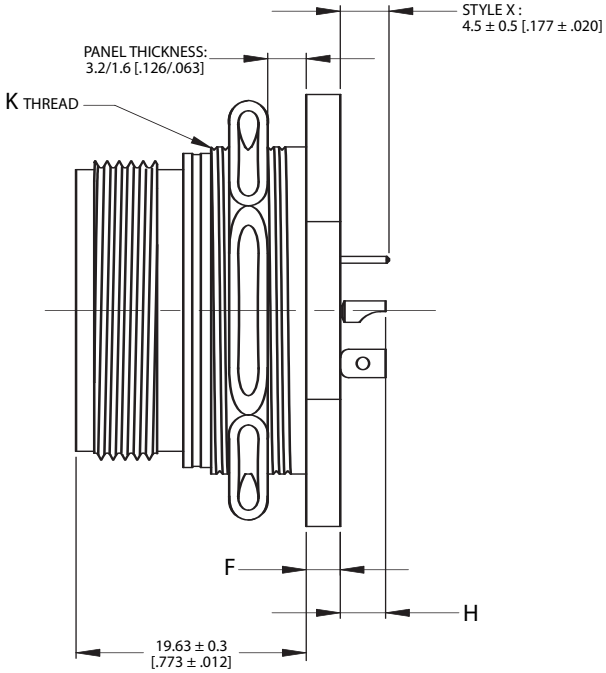
8000 Y0 and YE0
Wall Mount Receptacle
EN2997 Y0 and YE0





Shell Size	⌀C		H				K		G		⌀P	
			#20		#16 and #12							
	±0.07	±.002	±0.7	±.028	±0.7	±.028	Maximum		Maximum		±0.1	±.004
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
8	12.63	.497	4.20	.165	4.93	.194	20.75	.817	15.09	.594	3.20	.126
10	14.20	.559	4.20	.165	4.93	.194	23.93	.942	18.26	.719	3.20	.126
12	18.98	.747	4.20	.165	4.93	.194	26.32	1.036	20.62	.812	3.20	.126
14	20.55	.809	4.20	.165	4.93	.194	28.71	1.130	23.01	.906	3.20	.126
16	23.73	.934	4.20	.165	4.93	.194	31.88	1.255	24.61	.969	3.20	.126
18	26.90	1.059	4.20	.165	4.93	.194	34.24	1.348	26.97	1.062	3.20	.126
20	30.08	1.184	4.20	.165	4.93	.194	36.63	1.442	29.36	1.156	3.20	.126
22	33.25	1.309	4.20	.165	4.93	.194	39.80	1.567	31.75	1.250	3.80	.126
24	36.43	1.434	4.20	.165	4.93	.194	43.39	1.708	34.92	1.375	3.80	.126

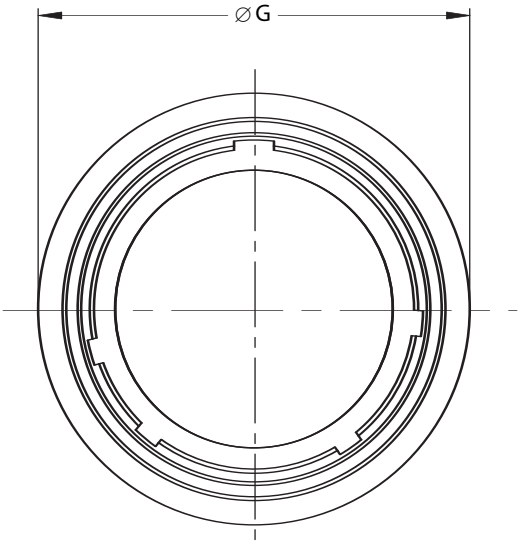


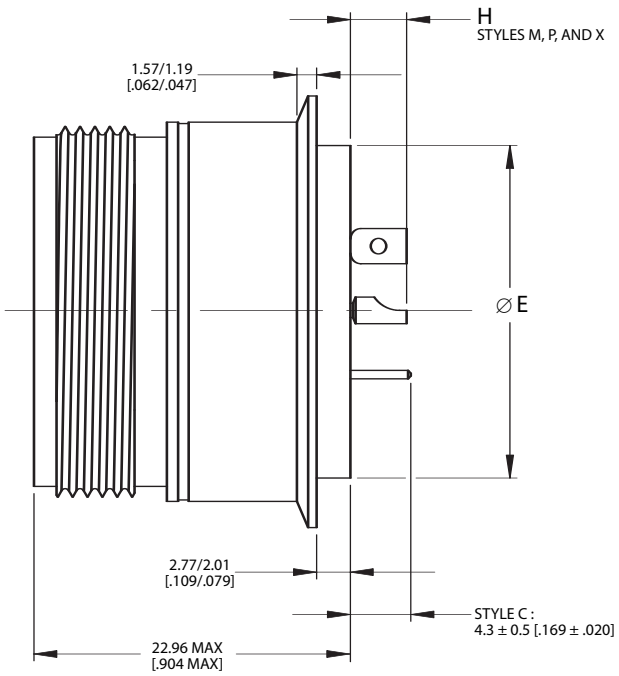


Shell Size	∅ R		H				K	F		P	
			#20		#16 and #12						
	±0.4	±.016	±0.7	±.028	±0.7	±.028	Thread	±0.51	±.020	±0.4	±.016
	mm	inch	mm	inch	mm	inch	Class 2A	mm	inch	mm	inch
8	26.99	1.063	3.80	.150	4.60	.181	0.6250-20 UN	2.97	.117	24.50	.965
10	29.89	1.177	3.80	.150	4.60	.181	0.7500-20 UNEF	2.97	.117	27.65	1.089
12	34.66	1.365	3.80	.150	4.60	.181	0.9380-20 UNEF	2.97	.117	32.40	1.276
14	38.12	1.501	3.80	.150	4.60	.181	1.000-20 UNEF	2.97	.117	34.94	1.376
16	41.29	1.626	3.80	.150	4.60	.181	1.1250-18 UNEF	2.97	.117	38.12	1.501
18	44.47	1.751	3.80	.150	4.60	.181	1.2500-18 UNEF	2.97	.117	41.29	1.626
20	49.24	1.939	3.80	.150	4.60	.181	1.3750-18 UNEF	2.97	.117	44.47	1.751
22	52.39	2.063	3.80	.150	4.60	.181	1.5000-18 UNEF	3.51*	.138*	49.24	1.939
24	55.04	2.167	3.50	.138	4.30	.169	1.6250-18 UNEF	3.51*	.138*	52.42	2.064

* ± 0.26 * ± .010

8000 Y1 and YE1
Solder Mount Receptacle
EN2997 Y1 and YE1





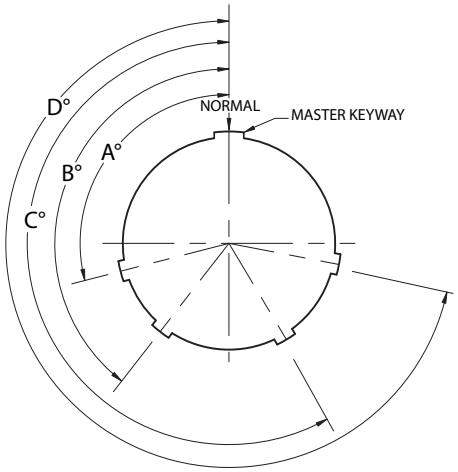
Shell Size	∅E		G		H			
					#20		#16 & #12	
	±0.07	±.002	Maximum		±0.7	±.028	±0.7	±.028
	mm	inch	mm	inch	mm	inch	mm	inch
8	12.63	.497	18.36	.723	4.20	.165	4.93	.194
10	14.20	.559	21.59	.850	4.20	.165	4.93	.194
12	18.98	.747	26.8	1.055	4.20	.165	4.93	.194
14	20.55	.809	27.94	1.100	4.20	.165	4.93	.194
16	23.73	.934	30.99	1.220	4.20	.165	4.93	.194
18	26.90	1.059	34.39	1.354	4.20	.165	4.93	.194
20	30.08	1.184	37.34	1.470	4.20	.165	4.93	.194
22	33.25	1.309	40.64	1.600	4.20	.165	4.93	.194
24	36.43	1.434	43.68	1.720	4.20	.165	4.93	.194

Tightening Torque of Jam Nut

Note: For recommended service use, torque settings to be in accordance with the table below.

Shell Size	Torque	
	±10%	±.10%
	N.m	in.lbs
8	7	62
10	10	89
12	12	106
14	15	133
16	18	160
18	22	195
20	25	222
22	27	239
24	29	257

Keying Positions



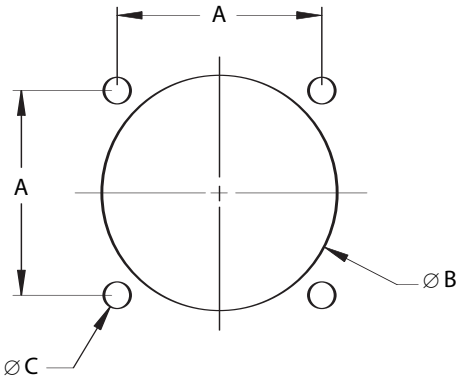
Notes:

1. Mating face of receptacle shown.
2. All minor keyways (keys) are rotated to provide shell polarization while master keyway (key) remains fixed as shown.
3. Insert arrangement does not rotate relative to the master keyway (key).

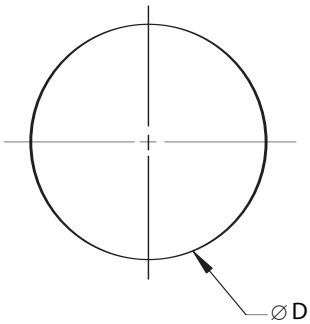
Position	Shell Size											
	08				10				12 to 24			
	A	B	C	D	A	B	C	D	A	B	C	D
N	105	140	215	265	105	140	215	265	105	140	215	265
6	102	132	248	320	102	132	248	320	18	149	192	259
7	80	118	230	312	80	118	230	312	92	152	222	342
8	35	140	205	275	35	140	205	275	84	152	204	334
9	64	155	234	304	64	155	234	304	24	135	199	240
Y	—	—	—	—	25	115	220	270	98	152	268	338

Panel Cutouts

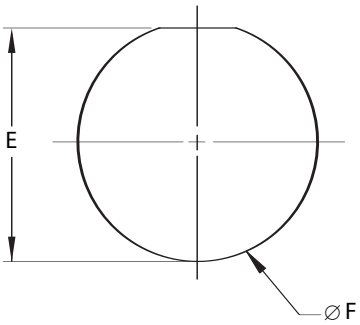
TYPE 0
Square Flange Receptacle



TYPE 1
Solder Mount Receptacle



TYPE 7
Jam Nut Receptacle



Shell Size	A (TP) mm	A (TP) inch	B Minimum mm	B Minimum inch	⌀C ±0.1 mm	⌀C ±.004 inch	E ±0.13 mm	E ±.005 inch	⌀F Minimum mm	⌀F Minimum inch	⌀D Minimum mm	⌀D Minimum inch
8	15.09	.594	15.80	.622	3.20	.126	15.37	.605	16.13	.635	12.96	.510
10	18.26	.719	18.70	.736	3.20	.126	18.54	.730	19.30	.760	14.53	.572
12	20.62	.812	23.40	.921	3.20	.126	23.29	.917	24.05	.947	19.30	.760
14	23.01	.906	24.90	.980	3.20	.126	24.89	.980	25.65	1.010	20.88	.822
16	24.61	.969	28.30	1.114	3.20	.126	28.07	1.105	28.83	1.135	24.05	.947
18	26.97	1.062	31.10	1.224	3.20	.126	31.12	1.225	32.00	1.260	27.23	1.072
20	29.36	1.156	34.50	1.358	3.20	.126	34.29	1.350	35.18	1.385	30.40	1.197
22	31.75	1.250	37.50	1.476	3.20	.126	37.46	1.475	38.35	1.510	33.58	1.322
24	34.92	1.375	40.60	1.598	3.80	.150	40.64	1.600	41.53	1.635	36.75	1.447

Insert Arrangement and Contact Information

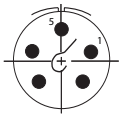
Insert Arrangement	Total No. of Contacts	Quantity of Contacts By size 20	16	12
08-03	3	3		
08-98	3	3		
10-05	5	5		
10-06	6	6		
10-20*	2		2	
12-03	3		3	
12-12	12	12		
14-04	4			4
14-07	7		7	
14-12	12	9	3	
14-15	15	15		
16-10	10		10	
16-24	24	24		
18-08	8			8
18-14	14		14	
18-31	31	31		
20-16	16	16		
20-25	25	19		6
20-28	28	24		4
20-39	39	37	2	
20-41	41	41		
22-12	12			12
22-19	19		19	
22-32	32	26		6
22-39	39	27	12	
22-55	55	55		
24-30	30		30	
24-43	43	23	20	
24-57	57	55		2
24-61	61	61		

* This layout is not to EN2997, and has to be ordered with Conesys P/N only.
Please consult factory for hermetic insert arrangement availability.

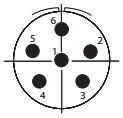
Insert Arrangement Views

803
3 # 20

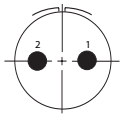
898
3 # 20



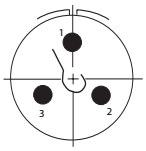
1005
5 # 20



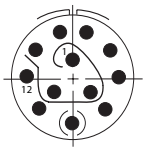
1006
6 # 20



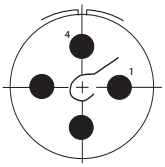
1020*
2 # 16



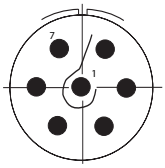
1203
3 # 16



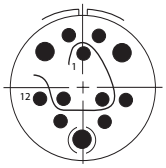
1212
12 # 20



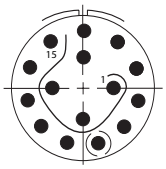
1404
4 # 12



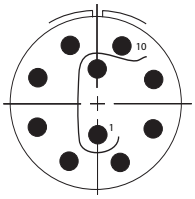
1407
7 # 16



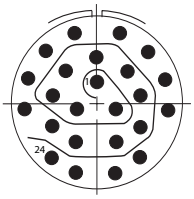
1412
9 # 20, 3 # 16



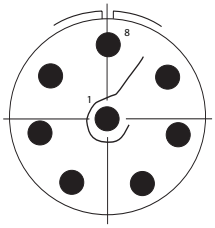
1415
15 # 20



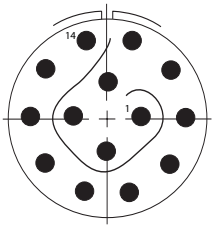
1610
10 # 16



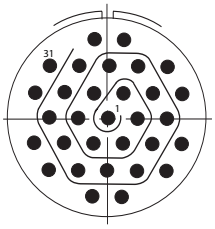
1624
24 # 20



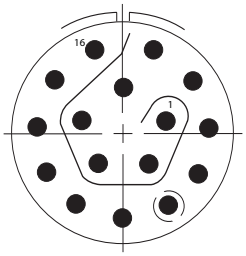
1808
8 # 12



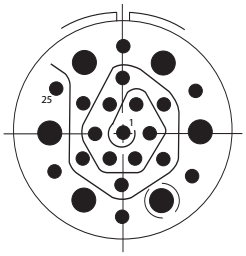
1814
14 # 16



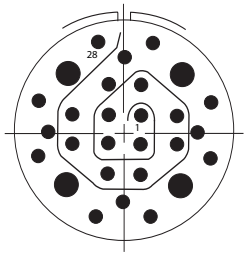
1831
31 # 20



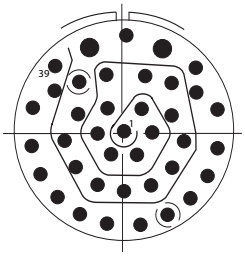
2016
16 # 16



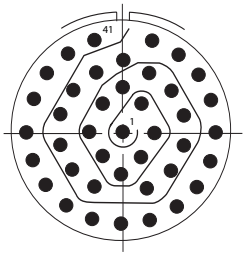
2025
19 # 20, 6 # 12



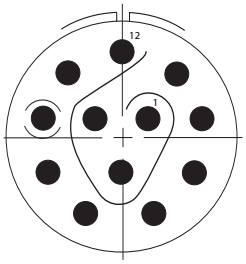
2028
24 # 20, 4 # 12



2039
37 # 20, 2 # 16



2041
41 # 20

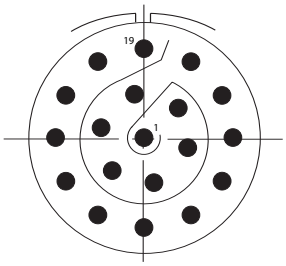


2212
12 # 12

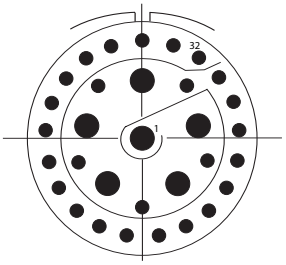
* This layout is not to EN2997, and has to be ordered with Conesys P/N only.
Please consult factory for hermetic insert arrangement availability.

EN 2997

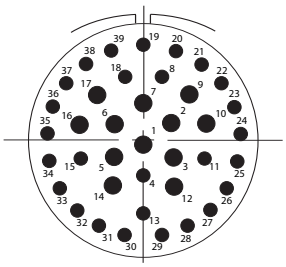
Insert Arrangement Views



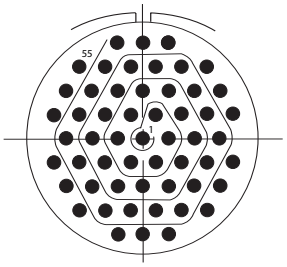
2219
19 # 16



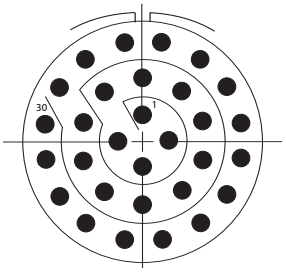
2232
26 # 20, 6 # 12



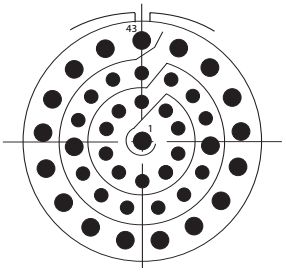
2239
27 # 20, 12 # 16



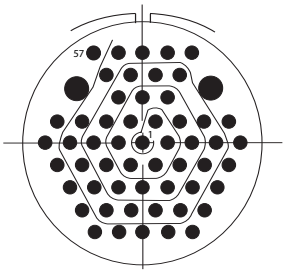
2255
55 # 20



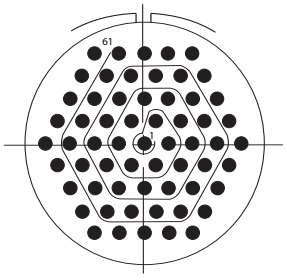
2430
30 # 16



2443
23 # 20, 20 # 16



2457
55 # 20, 2 # 12

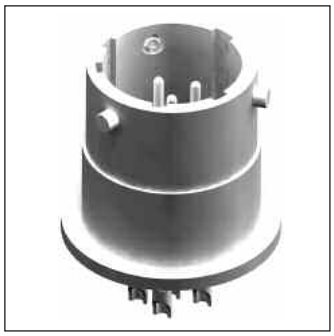


2461
61 # 20

EN 2997

Conesys Europe
Hermetic Connectors

AE833 Series
per MIL-DTL-83723 Series III



Features and Application

AE833 Series hermetic connector receptacles are manufactured to Conesys Europe standards and meet all the requirements of MIL-DTL-83723 Series III. These connectors combine the best features of MIL-DTL-26500 and NAS1599 miniature connector specifications and are available with bayonet and threaded coupling.

Box mounting, jam nut and solder mount receptacles are available in 9 shell sizes and insert arrangements utilizing sizes 20, 16, and 12 contacts for both bayonet and threaded coupling.

Customer specific design can be proposed for special applications – Consult factory for details.

AE833 Series hermetic connectors are available in passivated stainless steel, and tin-plated mild steel. Other materials can be proposed for special applications with commercial P/N – Please consult factory.

Insert Arrangement – AE833 Series hermetic connectors are designed with MIL-DTL-1554 insert arrangements. Other insert arrangements can be proposed with commercial P/N – Please consult factory.

Shell Polarization – Alternate key/keyway positions prevent cross mating of adjacent connectors having same insert arrangement.

Interfacial Pin Insert Seal – Raised moisture barriers around each receptacle pin, which mate into lead-in chamfers of the plug hard face socket insert, provide individual contact sealing.

Glass Insulator – These hermetic connectors are designed with sintered compression glass as an insulator.

Special Contacts – AE833 Series hermetic connectors are available with special contact, i.e., thermo couple (chromel, alumel, etc.). Commercial P/N Only.

Performance Specifications

Operating Temperature Range
Class Y: -65°C to +200°C (-85°F to +392°F)
Class H: -65°C to +150°C (-85°F to +302°F)

Material and Finish Data (Class)
Class Y:

RECEPTACLE	material:	stainless steel
	finish:	passivated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Class H:

RECEPTACLE	material:	mild steel
	finish:	tin plated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Corrosion Resistance
Class Y: 48 hours
Class H: 48 hours

Durability
Minimum of 500 mating cycles.

Leakage
$< 1.10^{-7}$ atm.cm^3.s^{-1}.

Shock and Vibration
Shock and vibration are in accordance with MIL-DTL-83723 specification.

Insulation Resistance
>5000 M| under 500 Vdc
(25°C – 65% HR max.)

Withstanding Voltage

At sea level:	1500 V rms
At 15 000 m altitude:	500 V rms
At 21 000 m altitude:	375 V rms
At 33 000 m altitude:	200 V rms

Maximum Current Rating per Contact

Size 20	5 Amp
Size 16	10 Amp
Size 12	17 Amp

Military and Conesys Part Number Development

Mil. Prefix	**M83723/**	**79**	**Y**	**10**	**06**	**N**	
Conesys Prefix	**AE833**	**79**	**Y**	**10**	**06**	**N**	**-XXX**

Shell Type and Contact Style

79 = Box mount receptacle with solder terminals
80 = Solder mount receptacle with solder terminals
81 = Jam nut receptacle with solder terminals
93 = Solder mount receptacle with pin tail for PCB
94 = Jam nut receptacle with pin tail for PCB

Class (Material and Finish)

Y = Shell – stainless steel, passivated (200°C)
= Terminals – gold plated
H = Shell – mild steel, tin plated (150°C)
= Terminals – gold plated

Shell Size

8 thru 24

Insert Arrangement

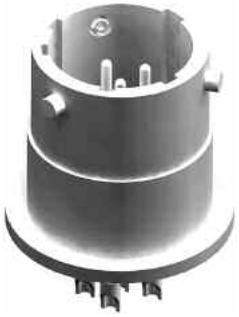
See pages 82–84

Polarization (keying)

N = Normal
6, 7, 8, 9, or **Y** (Alternate keyed positions; Y is not available in SS 8)

Modification (applies to Conesys part numbers only)

XXX = Modification (Available with Conesys P/N only – Please consult factory)



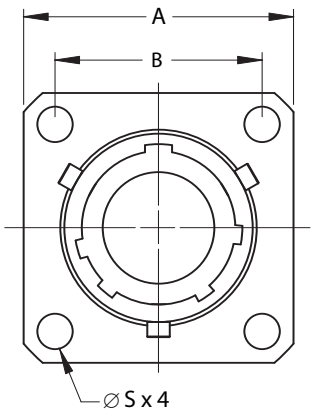
Terminal Configuration

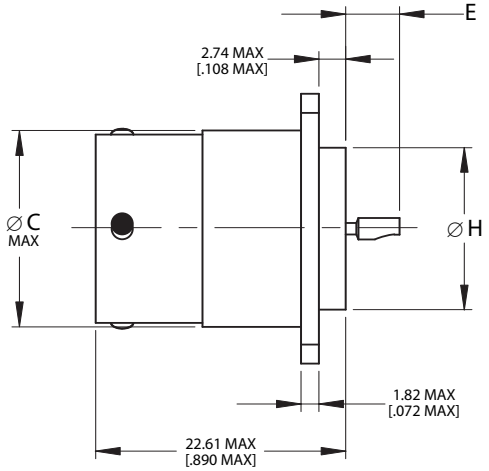
Terminal Style P
Solder cup
Available in sizes 20, 16, and 12
For other sizes, please consult factory.

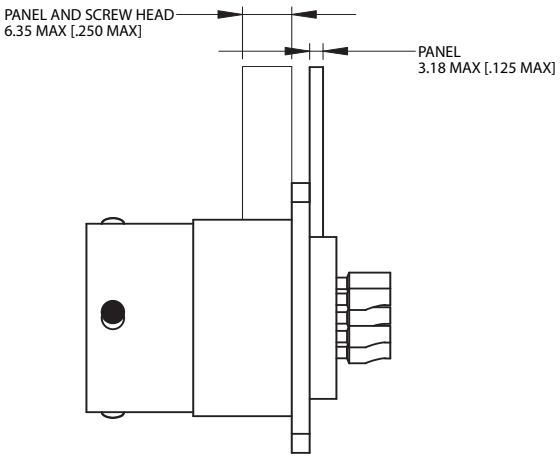
Terminal Style X
Eyelet – Available with Conesys P/N only
Available in sizes 20 and 16
For other sizes, please consult factory.

Terminal Style C
Pin tail for PCB
Available in sizes 22, 20, and 16
For other sizes or lengths, please consult factory.

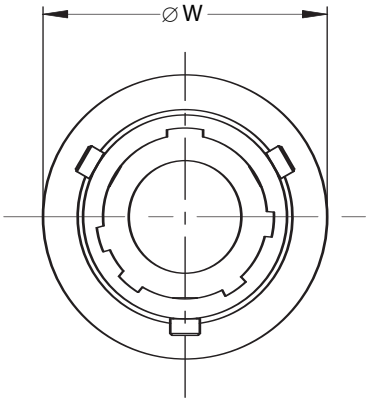
AE83379
Box Mount Receptacle with Solder Terminals
83723/79

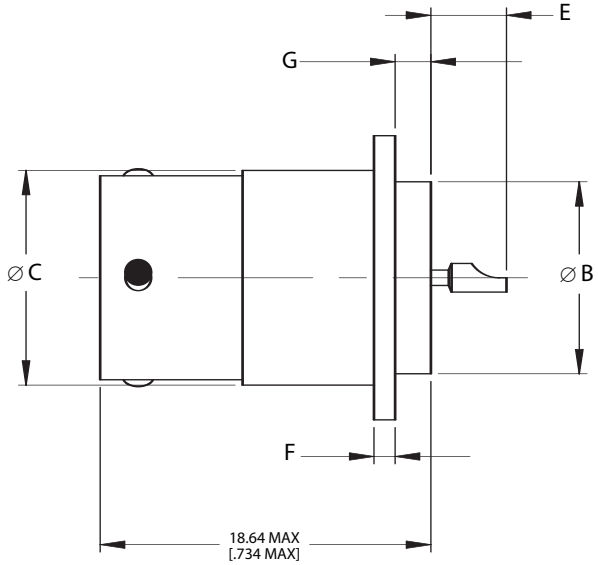






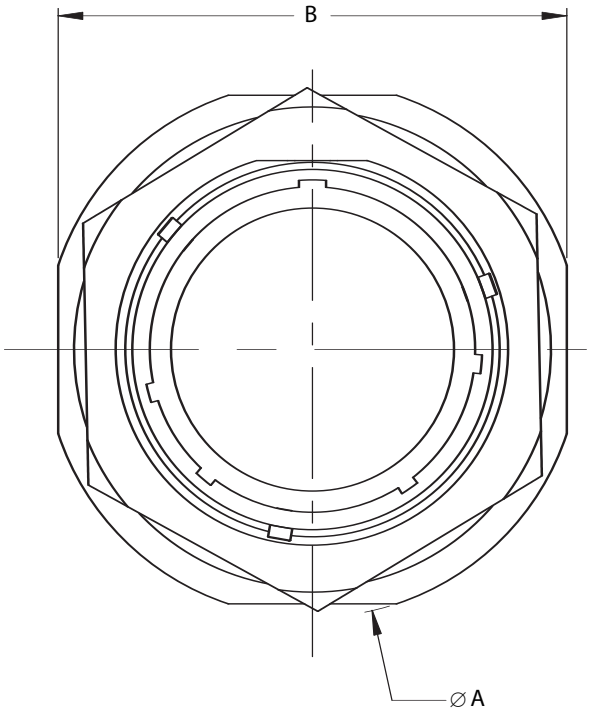
Shell Size	A Maximum mm	A Maximum inch	B (TP) mm	B (TP) inch	ψC Maximum mm	ψC Maximum inch	E #20 Maximum mm	E #20 Maximum inch	E #16 and #12 Maximum mm	E #16 and #12 Maximum inch	∅ H Maximum mm	∅ H Maximum inch	∅ S ±0.13 mm	∅ S ±.005 inch
8	20.75	.817	15.09	.594	14.25	.561	5.08	.200	6.86	.270	12.70	.500	3.05	.120
10	23.93	.942	18.26	.719	17.68	.696	5.08	.200	6.86	.270	14.27	.562	3.05	.120
12	26.32	1.036	20.62	.812	22.23	.875	5.08	.200	6.86	.270	19.05	.750	3.05	.120
14	28.71	1.130	23.01	.906	23.75	.935	5.08	.200	6.86	.270	20.62	.812	3.05	.120
16	31.88	1.255	24.61	.969	26.97	1.062	5.08	.200	6.86	.270	23.80	.937	3.05	.120
18	34.24	1.348	26.97	1.062	30.15	1.187	5.08	.200	6.86	.270	26.97	1.062	3.05	.120
20	36.63	1.442	29.36	1.156	33.32	1.312	5.08	.200	6.86	.270	30.15	1.187	3.05	.120
22	39.80	1.567	31.75	1.250	36.50	1.437	5.08	.200	6.86	.270	33.32	1.312	3.05	.120
24	43.39	1.708	34.92	1.375	39.67	1.562	5.08	.200	6.86	.270	36.50	1.437	3.78	.149

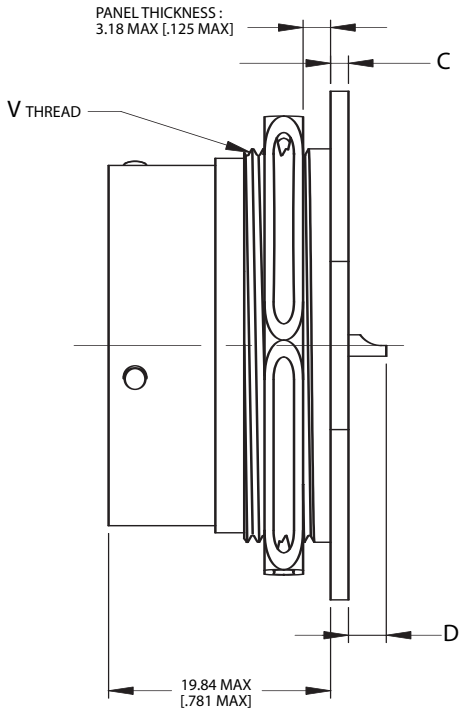




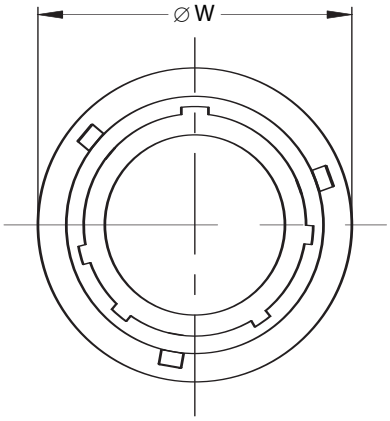
Shell Size	⌀B Maximum mm	⌀B Maximum inch	⌀C Maximum mm	⌀C Maximum inch	F ±0.17 mm	F ±.007 inch	G ±0.38 mm	G ±.015 inch	E #20 Maximum mm	E #20 Maximum inch	E #16 & #12 Maximum mm	E #16 & #12 Maximum inch	⌀W ±0.50 mm	⌀W ±.020 inch
8	12.70	.500	14.25	.561	1.40	.055	2.36	.093	5.17	.204	6.95	.274	18.80	.740
10	14.27	.562	17.68	.696	1.40	.055	2.36	.093	5.17	.204	6.95	.274	21.34	.840
12	19.05	.750	22.23	.875	1.40	.055	2.36	.093	5.17	.204	6.95	.274	26.54	1.045
14	20.62	.812	23.75	.935	1.40	.055	2.36	.093	5.17	.204	6.95	.274	27.69	1.090
16	23.80	.937	26.97	1.062	1.40	.055	2.36	.093	5.17	.204	6.95	.274	30.73	1.210
18	26.97	1.062	30.15	1.187	1.40	.055	2.36	.093	5.17	.204	6.95	.274	34.04	1.340
20	30.15	1.187	33.32	1.312	1.40	.055	2.36	.093	5.17	.204	6.95	.274	36.32	1.430
22	33.32	1.312	36.50	1.437	1.40	.055	2.36	.093	5.17	.204	6.95	.274	40.39	1.590
24	36.50	1.437	39.67	1.562	1.40	.055	2.36	.093	5.17	.204	6.95	.274	43.43	1.710

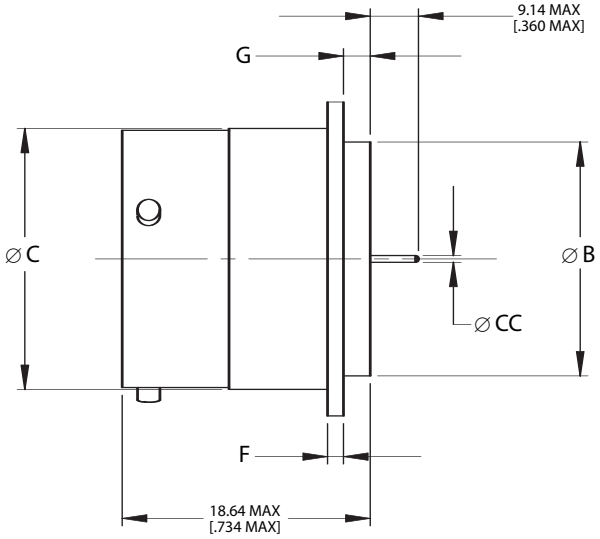
AE83381
Jam Nut Receptacle with Solder Terminals
83723/81





Shell Size	∅ A Maximum mm	∅ A Maximum inch	B ±0.13 mm	B ±.005 inch	C ±0.5 mm	C ±.020 inch	D #20 Maximum mm	D #20 Maximum inch	D #16 & #12 Maximum mm	D #16 & #12 Maximum inch	V Thread Class 2A
8	27.13	1.068	24.87	.979	2.97	.117	1.40	.055	3.17	.125	5/8-20 UN
10	30.28	1.192	28.04	1.104	2.97	.117	1.40	.055	3.17	.125	3/4-20 UNEF
12	35.05	1.380	32.79	1.291	2.97	.117	1.40	.055	3.17	.125	15/16-20 UNEF
14	38.23	1.505	35.33	1.391	2.97	.117	1.40	.055	3.17	.125	1-20 UNEF
16	41.40	1.630	38.51	1.516	2.97	.117	1.40	.055	3.17	.125	1-1/8-20 UN
18	44.83	1.765	41.68	1.641	2.97	.117	1.40	.055	3.17	.125	1-1/4 UN
20	47.24	1.860	44.86	1?766	2.97	.117	1.40	.055	3.17	.125	1-3/8-18 UNEF
22	52.53	2.068	49.63	1.954	3.76	.148	0.61	.024	2.38	.094	1-1/2-20 UN
24	54.86	2.160	52.81	2.079	3.76	.148	0.61	.024	2.38	.094	1-5/8-18 UNEF

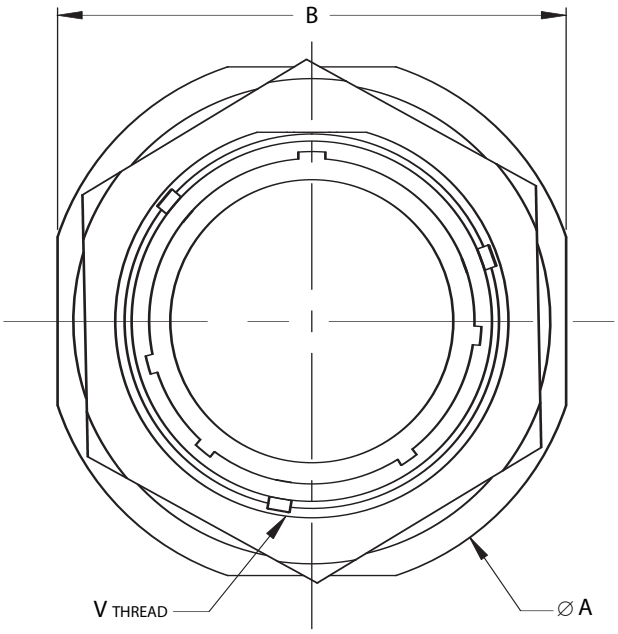


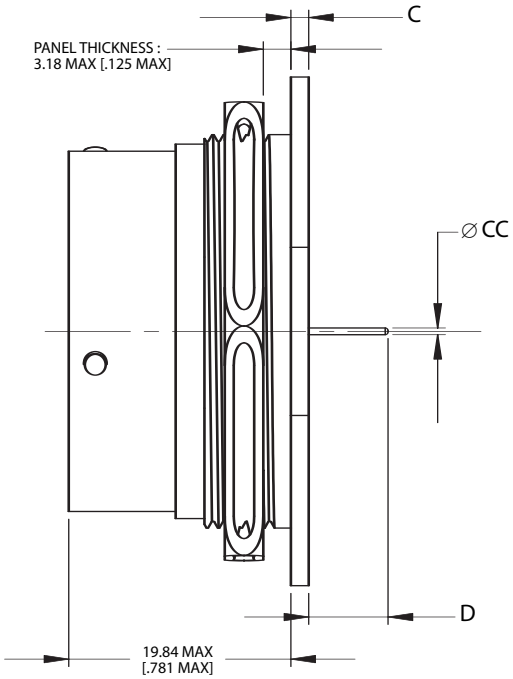


Contact Size	⌀CC ±0.05 mm	⌀CC ±.002 inch
20	1.02	.040
16	1.57	.062
12	2.38	.094

Shell Size	⌀B Maximum mm	⌀B Maximum inch	⌀C Maximum mm	⌀C Maximum inch	F ±0.17 mm	F ±.007 inch	G ±0.38 mm	G ±.015 inch	⌀W ±0.50 mm	⌀W ±.020 inch
8	12.70	.500	14.25	.561	1.40	.055	2.36	.093	18.80	.740
10	14.27	.562	17.68	.696	1.40	.055	2.36	.093	21.34	.840
12	19.05	.750	22.23	.875	1.40	.055	2.36	.093	26.54	1.045
14	20.62	.812	23.75	.935	1.40	.055	2.36	.093	27.69	1.090
16	23.80	.937	26.97	1.062	1.40	.055	2.36	.093	30.73	1.210
18	26.97	1.062	30.15	1.187	1.40	.055	2.36	.093	34.04	1.340
20	30.15	1.187	33.32	1.312	1.40	.055	2.36	.093	36.32	1.430
22	33.32	1.312	36.50	1.437	1.40	.055	2.36	.093	40.39	1.590
24	36.50	1.437	39.67	1.562	1.40	.055	2.36	.093	43.43	1.710

AE83394
Jam Nut Receptacle with Pin Tail for PCB
per MIL-DTL-83723 Series III





Contact Size	∅ CC	
	±0.05	±.002
	mm	inch
20	0.84	.033
16	Consult factory	
12	Consult factory	

Shell Size	∅ A		B		C		D		V
	Maximum		±0.13	±.005	±0.5	±.020	Maximum		Thread
	mm	inch	mm	inch	mm	inch	mm	inch	Class 2A
8	27.13	1.068	24.87	.979	2.97	.117	4.64	.183	5/8-20 UN
10	30.28	1.192	28.04	1.104	2.97	.117	4.64	.183	3/4-20 UNEF
12	35.05	1.380	32.79	1.291	2.97	.117	4.64	.183	15/16-20 UNEF
14	38.23	1.505	35.33	1.391	2.97	.117	4.64	.183	1-20 UNEF
16	41.40	1.630	38.51	1.516	2.97	.117	4.64	.183	1-1/8-20 UN
18	44.83	1.765	41.68	1.641	2.97	.117	4.64	.183	1-1/4 UN
20	47.24	1.860	44.86	1?766	2.97	.117	4.64	.183	1-3/8-18 UNEF
22	52.53	2.068	49.63	1.954	3.76	.148	3.85	.152	1-1/2-20 UN
24	54.86	2.160	52.81	2.079	3.76	.148	3.85	.152	1-5/8-18 UNEF

Military and Conesys Part Number Development

Mil. Prefix	**M83723/**	**88**	**Y**	**10**	**06**	**N**	
Conesys Prefix	**AE833**	**88**	**Y**	**10**	**06**	**N**	**-XXX**

Shell Type and Contact Style

88 = Box mount receptacle with solder terminals

89 = Jam nut receptacle with solder terminals

90 = Solder mount receptacle with solder terminals

Class (Material and Finish)

Y = Shell – stainless steel, passivated (200°C)
= Terminals – gold plated

H = Shell – mild steel, tin plated (150°C)
= Terminals – gold plated

Shell Size

8 thru 24

Insert Arrangement

See pages 82–84

Polarization (keying)

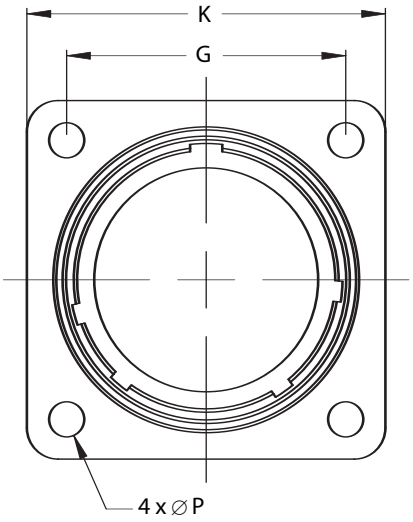
N = Normal

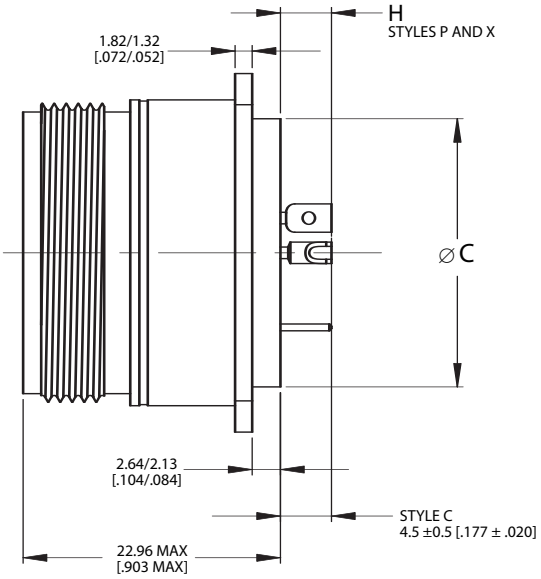
6, 7, 8, 9, or **Y** (Alternative keyed positions; Y is not available in SS 8)

Modification (applies to Conesys part numbers only)

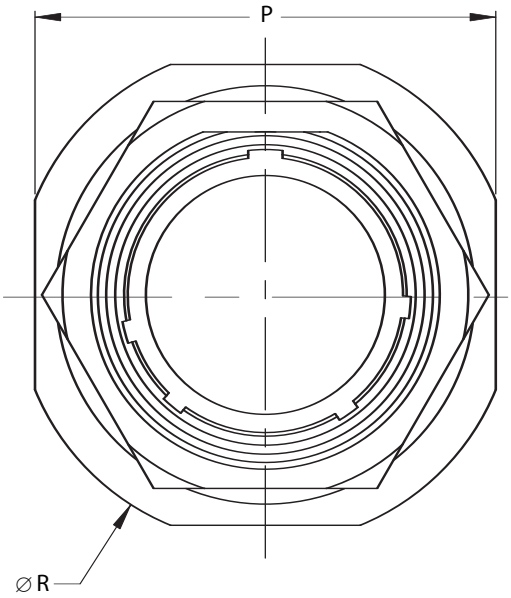
XXX = Modification (Available with Conesys P/N only – Please consult factory)

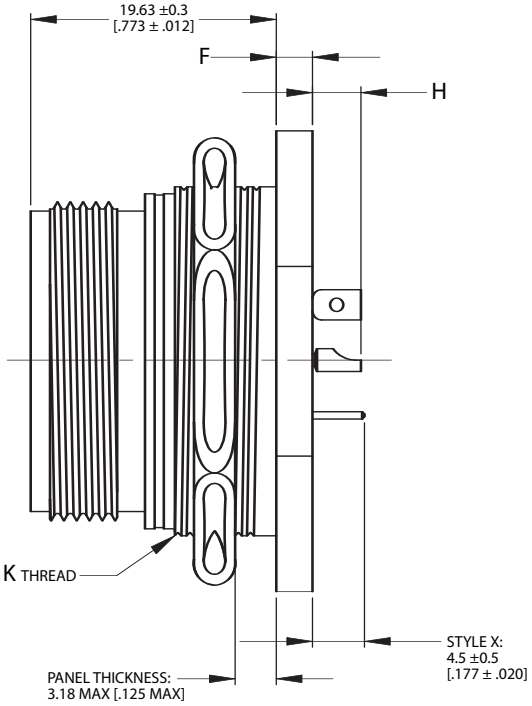
AE83388
Box Mount Receptacle
83723/88





Shell Size	∅C Maximum mm	∅C Maximum inch	H #20 Maximum mm	H #20 Maximum inch	H #16 & #12 Maximum mm	H #16 & #12 Maximum inch	K Maximum mm	K Maximum inch	G (TP) mm	G (TP) inch	∅P ±0.13 mm	∅P ±.005 inch
8	12.70	.500	4.93	.194	5.69	.224	20.75	.817	15.09	.594	3.05	.120
10	14.27	.562	4.93	.194	5.69	.224	23.93	.942	18.26	.719	3.05	.120
12	19.05	.750	4.93	.194	5.69	.224	26.32	1.036	20.62	.812	3.05	.120
14	20.62	.812	4.93	.194	5.69	.224	28.71	1.130	23.01	.906	3.05	.120
16	23.80	.937	4.93	.194	5.69	.224	31.88	1.255	24.61	.969	3.05	.120
18	26.97	1.062	4.93	.194	5.69	.224	34.24	1.348	26.97	1.062	3.05	.120
20	30.15	1.187	4.93	.194	5.69	.224	36.63	1.442	29.36	1.156	3.05	.120
22	33.32	1.312	4.93	.194	5.69	.224	39.80	1.567	31.75	1.250	3.05	.120
24	36.50	1.437	4.93	.194	5.69	.224	43.39	1.708	34.92	1.375	3.78	.149

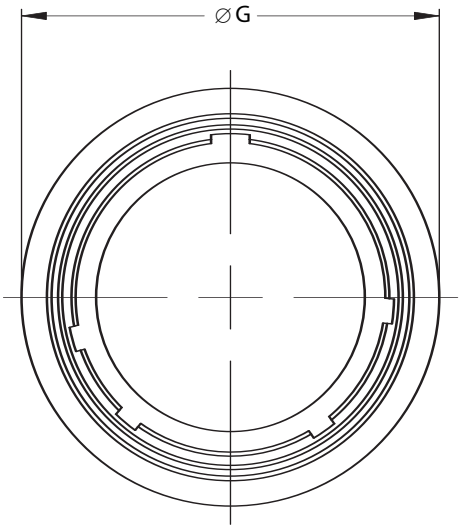


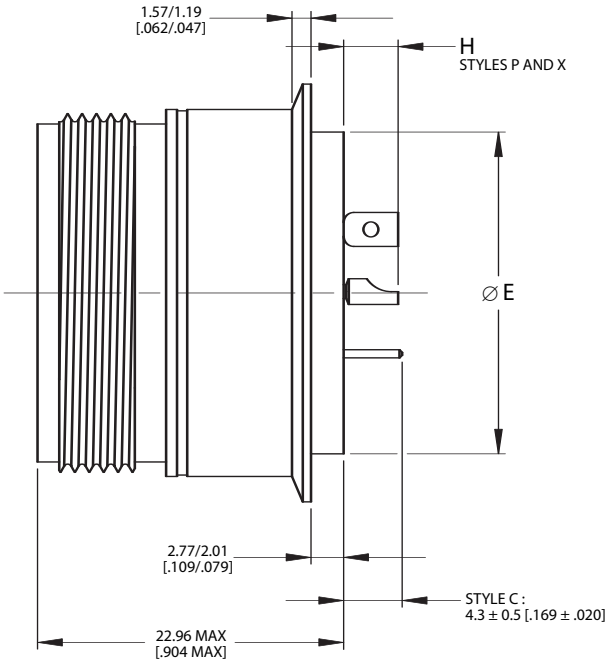


Shell Size	F		H				K	P		∅R	
	±0.51	±.020	#20 Maximum		#16 & #12 Maximum		Thread	±0.39	±.015	±0.39	±.015
	mm	inch	mm	inch	mm	inch	Class 2A	mm	inch	mm	inch
8	2.97	.117	4.57	.180	5.33	.210	5/8-20 UN	24.50	.965	26.99	1.063
10	2.97	.117	4.57	.180	5.33	.210	3/4-20 UNEF	27.65	1.089	29.89	1.177
12	2.97	.117	4.57	.180	5.33	.210	15/16-20 UNEF	32.40	1.276	34.66	1.365
14	2.97	.117	4.57	.180	5.33	.210	1-20 UNEF	34.94	1.376	38.12	1.501
16	2.97	.117	4.57	.180	5.33	.210	1-1/8-20 UN	38.12	1.501	41.29	1.626
18	2.97	.117	4.57	.180	5.33	.210	1-1/4 UN	41.29	1.626	44.47	1.751
20	2.97	.117	4.57	.180	5.33	.210	1-3/8-18 UNEF	44.47	1.751	49.24	1.939
22	3,51 *	.138 *	4.57	.180	5.33	.210	1-1/2-20 UN	49.24	1.939	52.39	2.063
24	3,51 *	.138 *	4.57	.180	5.33	.210	1-5/8-18 UNEF	52.42	2.064	55.04	2.167

* ±0.26 * ±.010

AE83390
Solder Mount Receptacle
83723/90





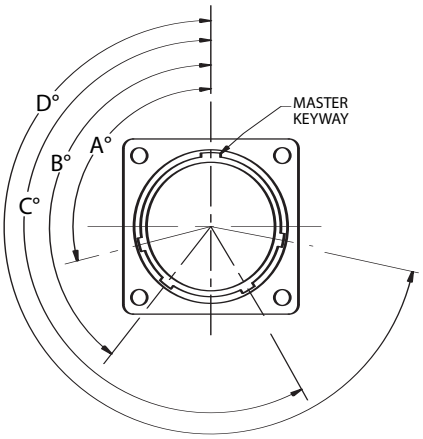
Shell Size	∅E Maximum mm	∅E Maximum inch	∅G ± 0.25 mm	∅G ±.010 inch	H #20 ± 0.76 mm	H #20 ±.030 inch	H #16 and #12 ± 0.76 mm	H #16 and #12 ±.030 inch
8	12.70	.500	18.11	.713	4.17	.164	4.93	.194
10	14.27	.562	21.34	.840	4.17	.164	4.93	.194
12	19.05	.750	26.55	1.045	4.17	.164	4.93	.194
14	20.62	.812	27.69	1.090	4.17	.164	4.93	.194
16	23.80	.937	30.74	1.210	4.17	.164	4.93	.194
18	26.97	1.062	34.09	1.342	4.17	.164	4.93	.194
20	30.15	1.187	37.09	1.460	4.17	.164	4.93	.194
22	33.32	1.312	40.39	1.590	4.17	.164	4.93	.194
24	36.50	1.437	43.43	1.710	4.17	.164	4.93	.194

Tightening Torque of Jam Nut

Note: For recommended service use, torque settings to be in accordance with the table below.

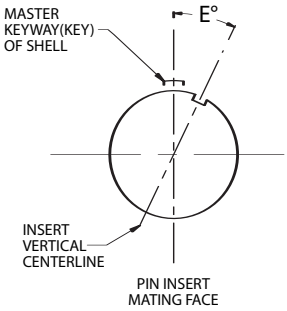
Shell Size	Torque	
	±10%	±.10%
	N.m	in.lbs
8	7	62
10	10	89
12	12	106
14	15	133
16	18	160
18	22	195
20	25	222
22	27	239
24	29	257

Shell Keying



ENGAGING FACE VIEW FOR
RECEPTACLE SHELL KEYWAYS

Insert Clocking



Notes:

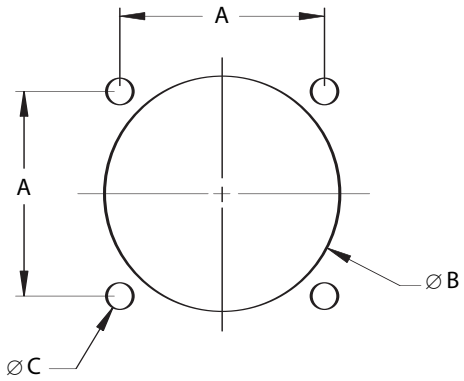
1. In the normal position (N), the insert centerline coincides with the centerline of the master keyway (key) of the shell. E = 0°.
2. In the alternate keying positions (6, 7, 8, 9 and Y), the minor keyways (keys) are positioned with reference to master keyway (key) as indicated in the keying position table below.

Shell Size	Position	Key/Keyway Positions				Insert position
		A	B	C	D	E
8*, 10	N	105	140	215	265	0
	6	102	132	248	320	0
	7	80	118	230	312	0
	8	35	140	205	275	0
	9	64	155	234	304	0
10 only	Y	25	115	220	270	0
12 thru 24	N	105	140	215	265	0
	6	18	149	192	259	0
	7	92	152	222	342	0
	8	84	152	204	334	0
	9	24	135	199	240	0
	Y	98	152	268	338	0

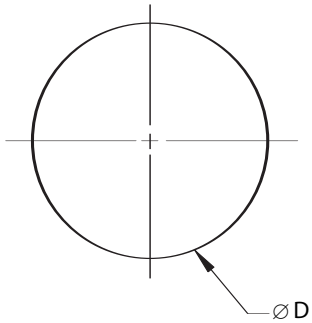
* Per MIL-STD-1554; keyed position Y is not available in shell size 8.

Panel Cutouts

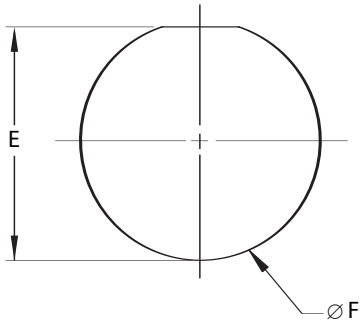
AE83379 / AE83388
Box Mount Receptacle



AE83380 / AE83393 / AE83390
Solder Mount Receptacle



AE83381 / AE83394 / AE83389
Jam Nut Receptacle



Shell Size	A (TP) mm	A (TP) inch	⌀B Back Mounting Minimum mm	⌀B Back Mounting Minimum inch	⌀B Front Mounting Minimum mm	⌀B Front Mounting Minimum inch	⌀C 0.00 -0.23 mm	⌀C .000 -.009 inch	⌀D ±0.13 mm	⌀D ±.005 inch	E ±0.13 mm	E ±.005 inch	⌀F ±0.13 mm	⌀F ±.005 inch
8	15.09	.594	15.75	.620	12.95	.510	3.18	.125	12.96	.510	15.37	.605	16.13	.635
10	18.26	.719	19.00	.750	16.13	.635	3.18	.125	14.53	.572	18.54	.730	19.30	.760
12	20.62	.812	23.32	.918	19.30	.760	3.18	.125	19.30	.760	23.29	.917	24.05	.947
14	23.01	.906	25.10	.988	22.48	.885	3.18	.125	20.88	.822	24.89	.980	25.65	1.010
16	24.61	.969	28.30	1.114	25.65	1.010	3.18	.125	24.05	.947	28.07	1.105	28.83	1.135
18	26.97	1.062	30.99	1.220	27.23	1.072	3.18	.125	27.23	1.072	31.12	1.225	32.00	1.260
20	29.36	1.156	34.19	1.346	30.40	1.197	3.18	.125	30.40	1.197	34.29	1.350	35.18	1.385
22	31.75	1.250	37.34	1.470	33.58	1.322	3.18	.125	33.58	1.322	37.46	1.475	38.35	1.510
24	34.92	1.375	40.54	1.596	36.63	1.442	3.91	.154	36.75	1.447	40.64	1.600	41.53	1.635

Insert Arrangement and Contact Information

Insert Arrangement	Service Rating	Total No. of Contacts	Quantity of Contacts By size 20	16	12
8-2	I	2	2		
8-3	I	3	3		
8-98	I	3	3		
10-2	I	2	2		
10-5	I	5	5		
10-6	I	6	6		
10-20	I	2		2	
12-3	I	3		3	
12-12	I	12	12		
14-4	I	4			4
14-7	I	7		7	
14-12	I	12	9	3	
14-15	I	15	15		
16-10	I	10		10	
16-24	I	24	24		
18-8	I	8			8
18-14	I	14		14	
18-31	I	31	31		
20-16	I	16	16		
20-25	I	25	19		6
20-28	I	28	24		4
20-39	I	39	37	2	
20-41	I	41	41		
22-12	I	12			12
22-19	I	19		19	
22-32	I	32	26		6
22-39	I	39	27	12	
22-55	I	55	55		
24-30*	I	30		30	
24-43	I	43	23	20	
24-57	I	57	55		2
24-61	I	61	61		

* Non MIL-STD-1554 layout

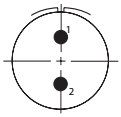
Please consult factory for insert arrangement availability.

Insert Arrangement Views

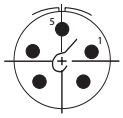
802
2 # 20

803
3 # 20

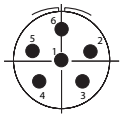
898
3 # 20



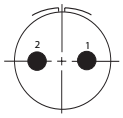
1002
2 # 20



1005
5 # 20



1006
6 # 20



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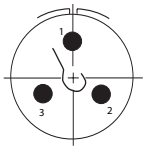
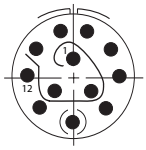
2 # 16



1203
3 # 16



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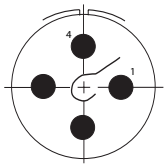
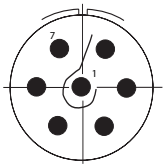
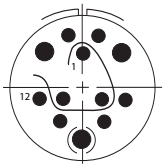
12 # 20



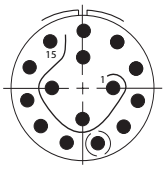
1404
4 # 12



1407
7 # 16



1412
9 # 20, 3 # 16



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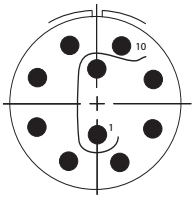
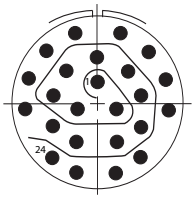
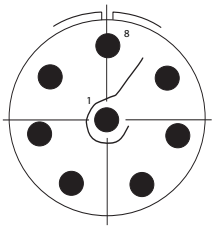


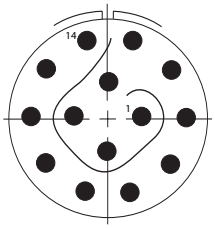
1610
10 # 16



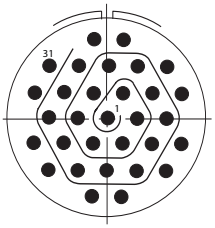
1624
24 # 20



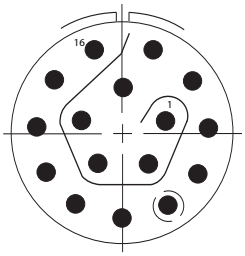
1808
8 # 12



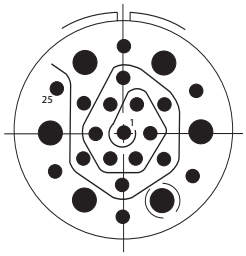
1814
14 # 16



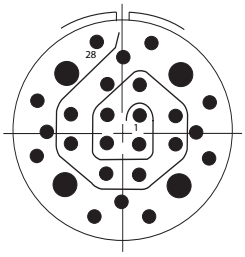
1831
31 # 20



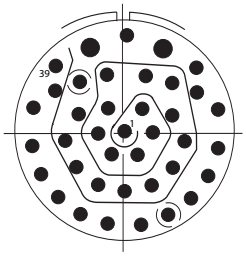
2016
16 # 16



2025
19 # 20, 6 # 12



2028
24 # 20, 4 # 12



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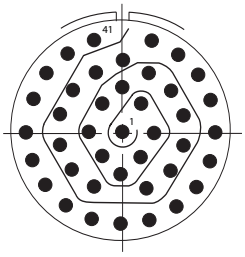
37 # 20, 2 # 16



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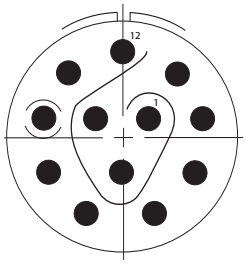
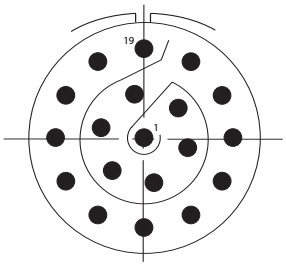
41 # 20



2212
12 # 12

Insert Arrangement Views



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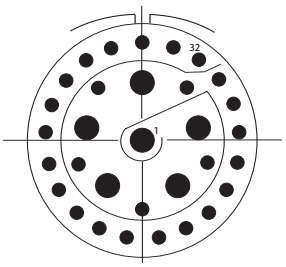
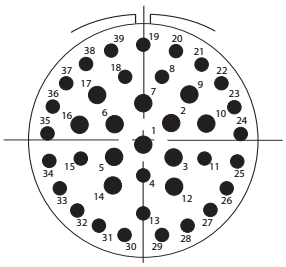
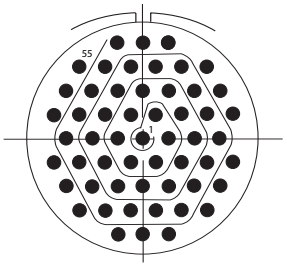


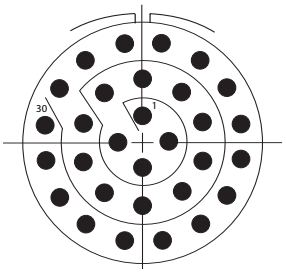
2232
26 # 20, 6 # 12



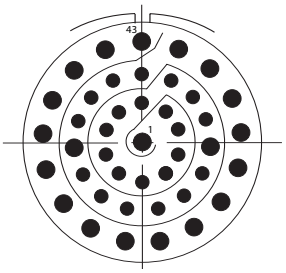
2239
27 # 20, 12 # 16



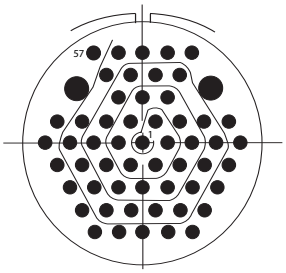
2255
55 # 20



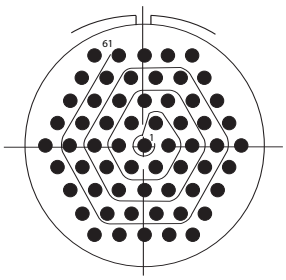
2430*
30 # 16



2443
23 # 20, 20 # 16



2457
55 # 20, 2 # 12



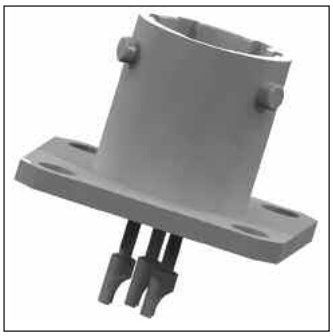
2461
61 # 20

* Non MIL-STD-1554 layout
Please consult factory for insert arrangement availability.

Conesys Europe
Hermetic Connectors

AE7 Series
per MIL-DTL-26482 Series 2

AE77 Series
per EN3646, HE302, and NAS1599



Features and Application

AE7 Series and AE77 Series hermetic connector receptacles are manufactured to Conesys Europe standards. AE7 Series meets all the requirements of MIL-DTL-26482. AE77 Series hermetic connectors are based on HE302, EN3646, and NAS1599 specification. They are fully intermateable with AE7 series connectors.

AE7 and AE77 Series connectors are widely used on commercial, military and aerospace systems requiring general purpose, miniature cylindrical bayonet coupling connectors.

This family of hermetic connectors is available in 5 receptacle styles. They include:
- narrow flange, wall mounting
- narrow short flange, wall mounting
- wide flange, wall mounting
- jam nut mounting
- solder mounting

These hermetic connectors are available in passivated stainless steel material and tin or nickel plated mild steel. Other materials can be proposed for special applications – Please consult factory.

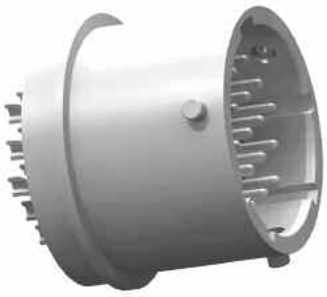
Insert Arrangement – AE7 and AE77 Series hermetic connectors use MIL-STD 1669 and EN3646 insert arrangements. Contacts are available in size 20, 16, and 12.

Insert Polarization – Alternate insert clocking positions prevent cross mating of adjacent connectors having the same insert arrangement.

Interfacial Pin Insert Seal – Raised moisture barriers around each receptacle pin, which mate into lead-in chamfers of the plug hard face socket insert, provide individual contact sealing.

Glass Insulator – These hermetic connectors are designed with sintered compression glass as an insulator.

Special Contacts – These hermetic connectors are available with special contact, i.e., thermo couple (chromel, alumel, etc.). Commercial P/N only.



Performance Specifications

Operating Temperature Range
AE7 Series: -55°C to +200°C (-67°F to +392°F)
AE77 Series:
Class H: -55°C to +200°C (-67°F to +392°F)
Class Y: -55°C to +200°C (-67°F to +392°F)

Material and Finish Data (Class)
Class H:

RECEPTACLE	material:	mild steel
	finish:	nickel plated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Class Y:

RECEPTACLE	material:	stainless steel
	finish:	passivated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Corrosion Resistance
In accordance with MIL-STD-1344 Method 1001 per MIL DTL 26482 (for standard plating).

Durability
Minimum of 500 mating cycles.

Leakage
$< 1.10^{-7}$ atm.cm^3.s^{-1}.

Shock and Vibration
In accordance with MIL-STD-202, Method 204, Condition B.

Insulation Resistance
>5000 M| under 500 Vdc
(25°C – 65% HR max.)

Withstanding Voltage
Service Rating I:

At sea level:	1500 V rms
At 15 000 m altitude:	600 V rms
At 21 000 m altitude:	400 V rms
At 33 000 m altitude:	200 V rms

Service Rating II:

At sea level:	2300 V rms
At 15 000 m altitude:	750 V rms
At 21 000 m altitude:	500 V rms
At 33 000 m altitude:	200 V rms

Maximum Current Rating per Contact

Size 20	5 Amp
Size 16	10 Amp
Size 12	17 Amp

Military and Conesys Part Number Development

Mil. Prefix	MS34	40	H	10	B	06	P	W	
Conesys Prefix	AE7	40	H	10	B	06	P	W	-XXX

Shell Type (specification sheet number)
- **40** = Wall mount receptacle – narrow
- **43** = Solder mount receptacle
- **49** = Jam nut receptacle

Class (Material and Finish)
- **H** = Hermetic – see contact style

Shell Size
- **8 thru 24**

Contact Style (pin only)
- **A** = Pin with solder cup, gold plated
  = Shell – stainless steel, passivated
- **B** = Pin with eyelet, gold plated
  = Shell – stainless steel, passivated
- **C** = Pin with solder cup, tin plated
  = Shell – mild steel, tin plated
- **Y** = Pin with eyelet, tin plated
  = Shell – mild steel, tin plated

Insert Arrangement
- See pages 100–102

Contact Style (pin only)

Polarization (keying)
- **N** = Normal (omitted in part number)
- **W, X, Y,** or **Z** Alternate insert polarizations (see pages 100–101 for position availability)

Modification or Particularities (applies to Conesys part numbers only)
- **XXX** = Modification
- Consult factory for details

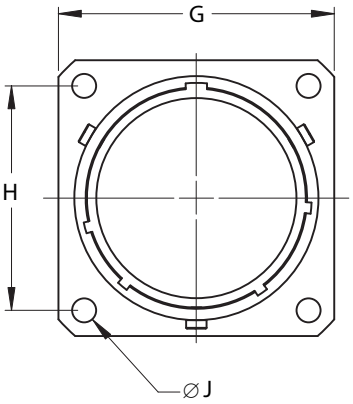
Terminal Configuration

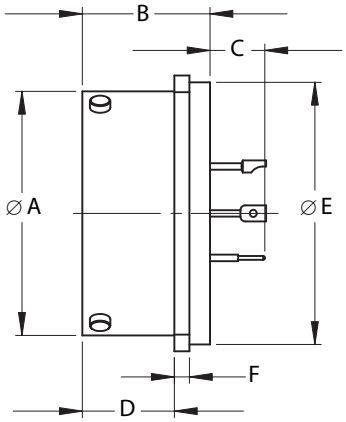
Terminal Styles A and C
Solder cup
Available in sizes 20, 16, and 12
For other sizes, please consult factory.

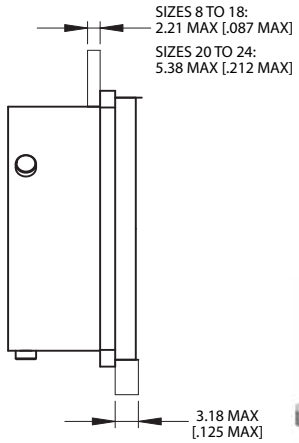
Terminal Styles B and Y
Eyelet
Available in sizes 20 and 16
For other sizes, please consult factory.

Pin tail for PCB
Available in sizes 22, 20, and 16
P/N with modification code only; please consult factory.

AE740
Wall Mount Receptacle – Narrow
MS3440

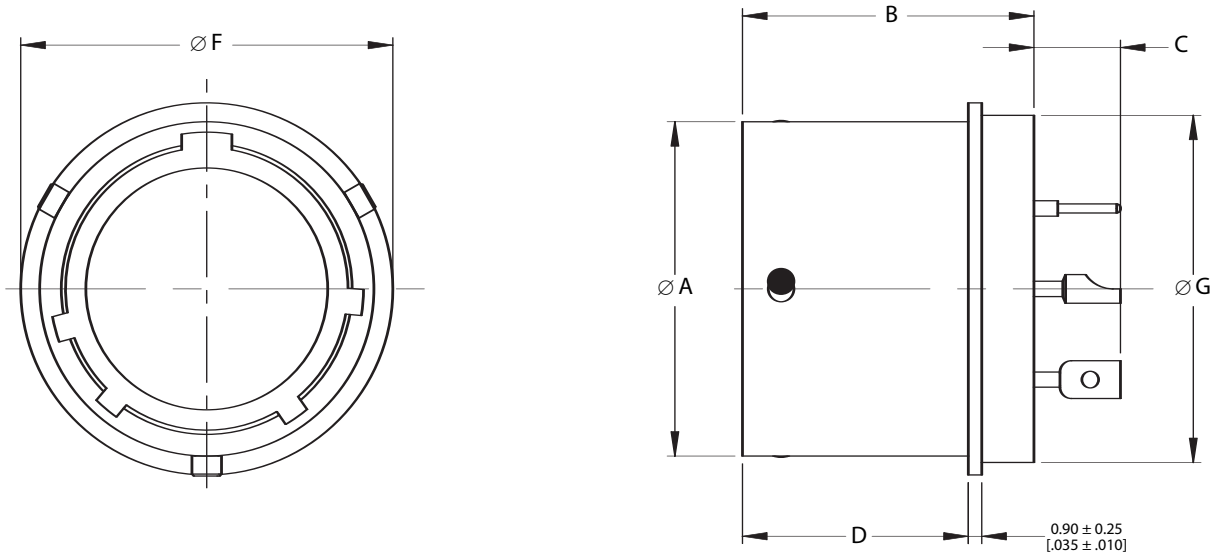


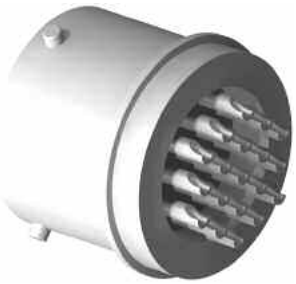




Shell Size	C #20		C #16 and #12	
	±0.76	±.030	±0.76	±.030
	mm	inch	mm	inch
8 to 20	3.76	.148	5.54	.218
22 and 24	2.95	.116	4.72	.186

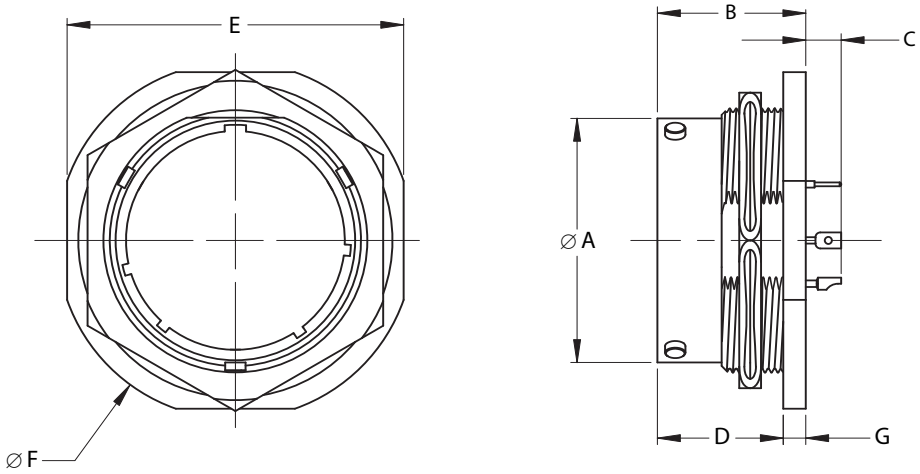
Shell Size	∅A		B		D		∅E		F		G		H		∅J		L	
	Maximum		Maximum		±0.25	±.010	±0.08	±.003	±0.41	±.016	Maximum		(TP)		±0.13	±.005	Maximum	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
8	12.04	.474	20.35	.801	14.94	.588	14.22	.560	1.57	.062	21.03	.828	15.09	.594	3.05	.120	2.21	.087
10	15.02	.591	20.35	.801	14.94	.588	17.02	.670	1.57	.062	24.23	.954	18.26	.719	3.05	.120	2.21	.087
12	19.08	.751	20.35	.801	14.94	.588	19.79	.779	1.57	.062	26.59	1.047	20.62	.812	3.05	.120	2.21	.087
14	22.25	.876	20.35	.801	14.94	.588	22.96	.904	1.57	.062	28.98	1.141	23.01	.906	3.05	.120	2.21	.087
16	25.33	.997	20.35	.801	14.94	.588	26.14	1.029	1.57	.062	31.34	1.234	24.61	.969	3.05	.120	2.21	.087
18	28.60	1.126	20.35	.801	14.94	.588	29.31	1.154	1.57	.062	33.73	1.328	26.97	1.062	3.05	.120	2.21	.087
20	31.78	1.251	21.92	.863	16.51	.650	31.70	1.248	2.39	.094	36.91	1.453	29.36	1.156	3.05	.120	5.38	.212
22	34.95	1.376	22.73	.895	16.51	.650	34.87	1.373	2.39	.094	40.08	1.578	31.75	1.250	3.05	.120	5.38	.212
24	38.13	1.501	22.73	.895	16.51	.650	38.05	1.498	2.39	.094	43.26	1.703	34.92	1.375	3.73	.147	5.38	.212

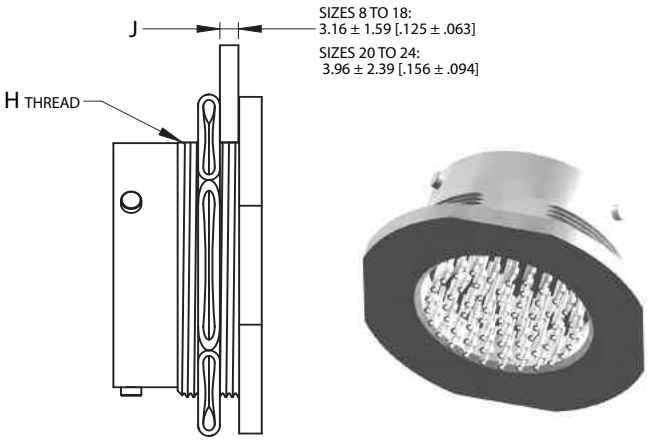




Shell Size	∅A Maximum mm	∅A Maximum inch	∅B Maximum mm	∅B Maximum inch	C #20 ±0.76 mm	C #20 ±.030 inch	C #16 and #12 ±0.76 mm	C #16 and #12 ±.030 inch	D ±0.25 mm	D ±.010 inch	∅F ±0.25 mm	∅F ±.010 inch	∅G ±0.08 mm	∅G ±.003 inch
8	12.04	.474	20.35	.801	3.76	.148	5.54	.218	14.94	.588	15.87	.625	14.22	.560
10	15.02	.591	20.35	.801	3.76	.148	5.54	.218	14.94	.588	19.05	.750	17.02	.670
12	19.08	.751	20.35	.801	3.76	.148	5.54	.218	14.94	.588	21.44	.844	19.79	.779
14	22.25	.876	20.35	.801	3.76	.148	5.54	.218	14.94	.588	24.61	.969	22.96	.904
16	25.33	.997	20.35	.801	3.76	.148	5.54	.218	14.94	.588	27.79	1.094	26.14	1.029
18	28.60	1.126	20.35	.801	3.76	.148	5.54	.218	14.94	.588	30.94	1.218	29.31	1.154
20	31.78	1.251	21.92	.863	3.76	.148	5.54	.218	16.51	.650	33.32	1.312	31.70	1.248
22	34.95	1.376	22.73	.895	2.95	.116	4.72	.186	16.51	.650	36.53	1.438	34.87	1.373
24	38.13	1.501	22.73	.895	2.95	.116	4.72	.186	16.51	.650	39.73	1.564	38.05	1.498

MS3449
Jam Nut Receptacle
AE749





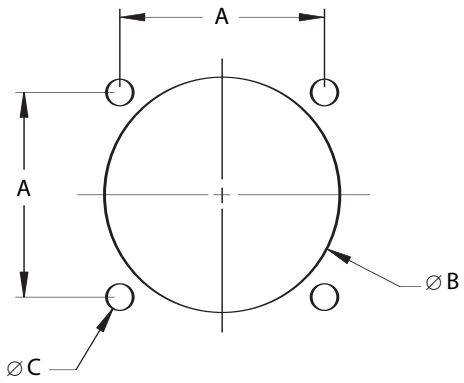
Shell Size	C #20 ±0.76 mm	C #20 ±.030 inch	C #16 and #12 ±0.76 mm	C #16 and #12 ±.030 inch
8 to 18	2.64*	.104*	4.42*	.174*
20 and 22	1.75*	.069*	3.53*	.139*
24	0.95*	.038*	2.77*	.109*

* Not Applicable for pin tail – Please consult factory

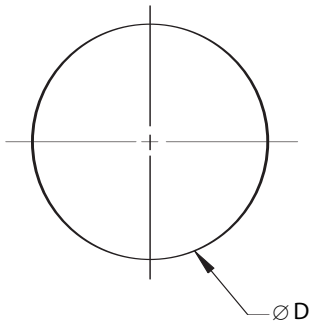
Shell Size	⌀A Maximum mm	⌀A Maximum inch	B Maximum mm	B Maximum inch	D ±0.20 mm	D ±.008 inch	E ±0.39 mm	E ±.016 inch	⌀F ±0.39 mm	⌀F ±.016 inch	G ±0.20 mm	G ±.008 inch	H Thread Class 2A	J ±1.59 mm	J ±.063 inch
8	12.04	.474	20.83	.820	17.75	.699	23.84	.939	26.99	1.063	2.67	.105	.5625-24 UNEF	3.16	.125
10	15.02	.591	20.83	.820	17.75	.699	26.99	1.063	30.16	1.188	2.67	.105	.6875-24 UNEF	3.16	.125
12	19.08	.751	20.83	.820	17.75	.699	31.76	1.251	34.94	1.376	2.67	.105	.8750-20 UNEF	3.16	.125
14	22.25	.876	20.83	.820	17.75	.699	34.94	1.376	38.11	1.501	2.67	.105	1.000-20 UNEF	3.16	.125
16	25.33	.997	20.83	.820	17.75	.699	38.11	1.501	41.29	1.626	2.67	.105	1.125-18 UNEF	3.16	.125
18	28.60	1.126	20.83	.820	17.75	.699	41.29	1.626	44.46	1.751	2.67	.105	1.250-18 UNEF	3.16	.125
20	31.78	1.251	23.37	.920	19.38	.763	46.04	1.813	49.24	1.939	3.51	.138	1.375-18 UNEF	3.96 ≠	.156 ≠
22	34.95	1.376	23.37	.920	19.38	.763	49.24	1.939	52.39	2.063	3.51	.138	1.500-18 UNEF	3.96 ≠	.156 ≠
24	38.13	1.501	24.16	.951	19.15	.754	52.39	2.063	55.56	2.188	3.51	.138	1.625-18 UNEF	3.96 ≠	.156 ≠

Panel Cutouts

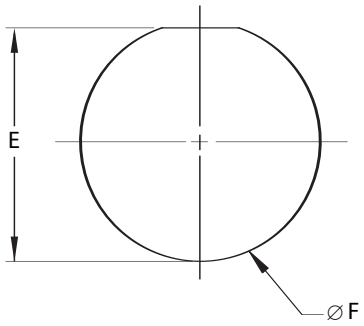
AE740
Wall Mount Receptacle



AE743
Solder Mount Receptacle



AE749
Jam Nut Receptacle



Shell Size	A (TP) mm	A (TP) inch	⌀B Minimum mm	⌀B Minimum inch	⌀C ±0.25 mm	⌀C ±.010 inch	⌀D ±0.13 mm	⌀D ±.005 inch	E ±0.13 mm	E ±.005 inch	⌀F ±0.13 mm	⌀F ±.005 inch
8	15.09	.594	14.43	.568	3.05	.120	14.48	.570	13.61	.536	14.53	.572
10	18.26	.719	17.40	.685	3.05	.120	17.27	.680	16.79	.661	17.70	.697
12	20.62	.812	21.95	.864	3.05	.120	20.04	.789	20.93	.824	22.73	.895
14	23.01	.906	25.12	.989	3.05	.120	23.22	.914	24.08	.948	25.65	1.010
16	24.61	.969	28.27	1.113	3.05	.120	26.39	1.039	27.23	1.072	28.83	1.135
18	26.97	1.062	31.45	1.238	3.05	.120	29.57	1.164	30.40	1.197	32.00	1.260
20	29.36	1.156	34.62	1.363	3.05	.120	31.95	1.258	33.58	1.322	35.18	1.385
22	31.75	1.250	37.80	1.488	3.05	.120	35.13	1.383	36.75	1.447	38.35	1.510
24	34.92	1.375	41.02	1.615	3.73	.147	38.30	1.508	39.93	1.572	41.53	1.635

Conesys Part Number Development

Conesys Prefix	AE77	02	H	10	06	P	W	-XXX

Shell Type (specification sheet number)

- **01** = Solder mount receptacle
- **02** = Square flange receptacle – narrow
- **02L** = Square flange receptacle – wide
- **02S** = Square flange receptacle – short length
- **07** = Jam nut receptacle

Class (Material and Finish)

- **H** = Shell – steel, nickel plated (200°C)
  = Terminals – ferrous alloy, gold plated
- **Y** = Shell – stainless steel, passivated (200°C)
  = Terminals – ferrous alloy, gold plated

Shell Size

- **8 thru 24**

Insert Arrangement

See pages 100–102

Contact Style (pin only)

- **P** = Pin with solder cup
- **X** = Pin with eyelet
- **C** = Pin tail (for PCB)

Polarization (keying)

- **N** = Normal (omitted in part number)
- **W, X, Y,** or **Z** Alternate insert polarizations (see pages 100–101 for position availability)

Modification or Particularities (applies to Conesys part numbers only)

- **XXX** = Modification

Consult factory for details

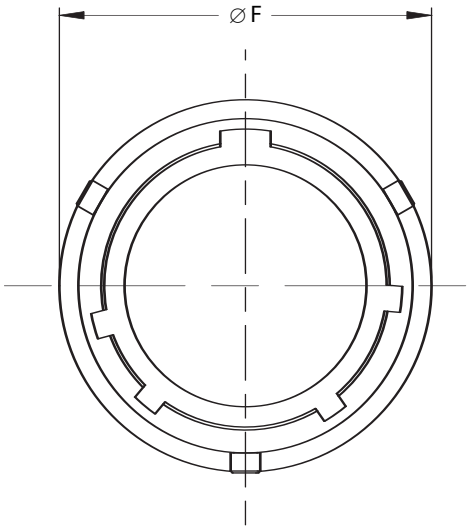
Terminal Configuration

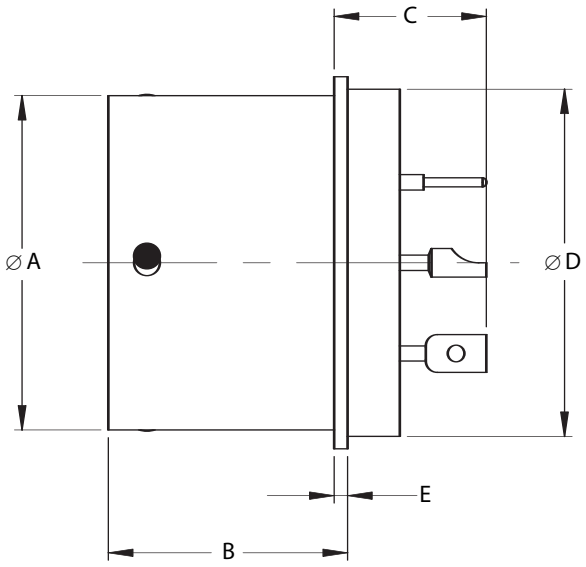
Terminal Style P
Solder cup
Available in sizes 20, 16, and 12
For other sizes, please consult factory.

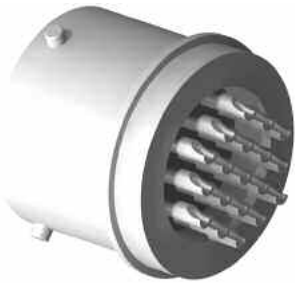
Terminal Style X
Eyelet
Available in sizes 20 and 16
For other sizes, please consult factory.

Terminal Style C
Pin tail for PCB
Available in sizes 22, 20, and 16
For other sizes or lengths, please consult factory.

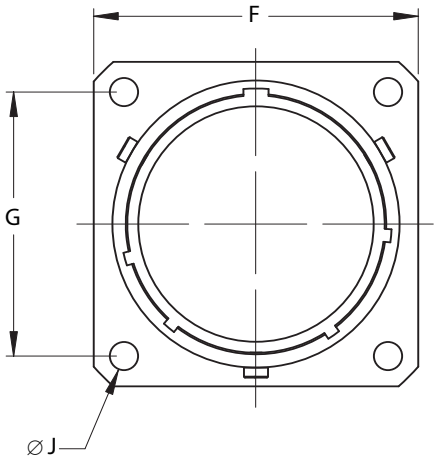
AE7701
Solder Mount Receptacle
per HE302, EN3646, and NAS1599

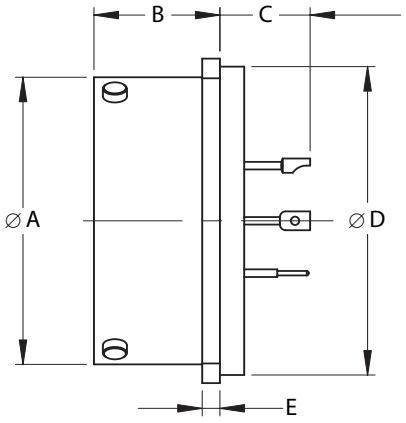


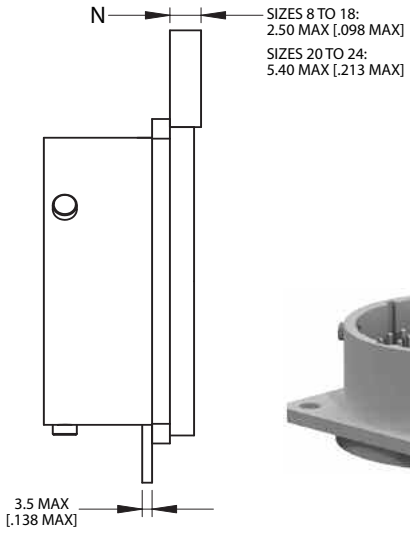




Shell Size	∅A Maximum		∅B Maximum		C #20 Maximum		C #16 and #12 Maximum		∅D Maximum		E Maximum		∅F Maximum	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
8	12.04	.474	11.75	.463	7.80	.307	10.00	.394	14.30	.563	0.90	.035	16.12	.635
10	15.02	.591	11.75	.463	7.80	.307	10.00	.394	17.10	.673	0.90	.035	19.30	.760
12	19.08	.751	11.75	.463	7.80	.307	10.00	.394	19.85	.781	0.90	.035	21.68	.854
14	22.25	.876	11.75	.463	7.80	.307	10.00	.394	23.05	.907	0.90	.035	24.86	.979
16	25.33	.997	11.75	.463	7.80	.307	10.00	.394	26.20	1.031	0.90	.035	28.03	1.104
18	28.60	1.126	11.75	.463	7.80	.307	10.00	.394	29.40	1.157	0.90	.035	31.18	1.228
20	31.78	1.251	13.40	.528	8.20	.323	10.30	.406	31.80	1.252	0.90	.035	33.57	1.322
22	34.95	1.376	13.40	.528	8.20	.323	10.30	.406	34.95	1.376	0.90	.035	36.77	1.448
24	38.13	1.501	13.40	.528	7.50	.295	9.50	.374	38.10	1.500	0.90	.035	39.94	1.572



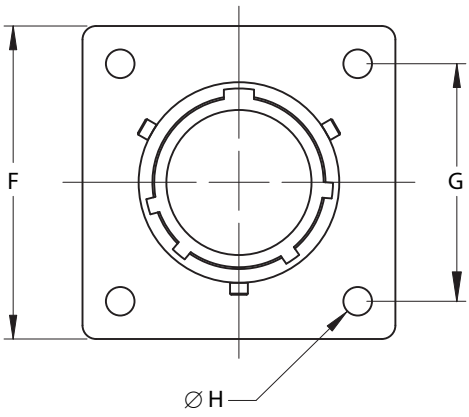


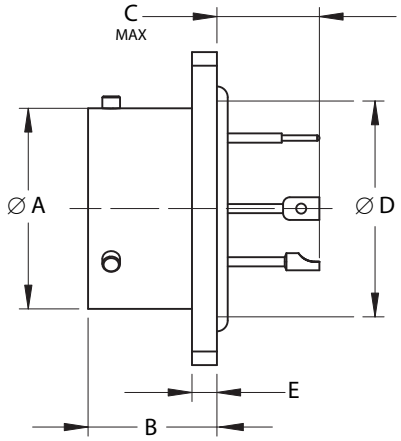


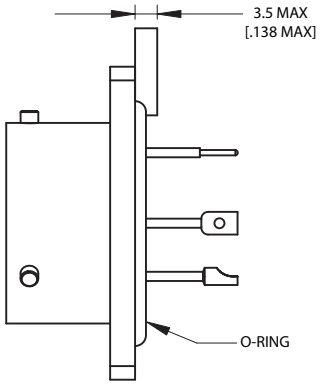
Shell Size	C #20 ±0.76 mm	C #20 ±.030 inch	C #16 and #12 ±0.76 mm	C #16 and #12 ±.030 inch
8 to 18	6.80	.268	8.90	.350
20 and 22	7.10	.280	9.20	.362
24	6.20	.244	8.30	.327

Shell Size	∅ A Maximum mm	∅ A Maximum inch	B Maximum mm	B Maximum inch	∅ D ±0.25 mm	∅ D ±.010 inch	E ±0.41 mm	E ±.016 inch	F Maximum mm	F Maximum inch	G (TP) mm	G (TP) inch	∅ J ±0.15 mm	∅ J ±.006 inch	N Maximum mm	N Maximum inch
8	12.04	.474	12.80	.504	14.40	.567	1.80	.071	21.03	.828	15.09	.594	3.15	.124	2.50	.098
10	15.02	.591	12.80	.504	17.20	.677	1.80	.071	24.23	.954	18.26	.719	3.15	.124	2.50	.098
12	19.08	.751	12.80	.504	19.95	.785	1.80	.071	26.59	1.047	20.62	.812	3.15	.124	2.50	.098
14	22.25	.876	12.80	.504	23.15	.911	1.80	.071	28.98	1.141	23.01	.906	3.15	.124	2.50	.098
16	25.33	.997	12.80	.504	26.35	1.037	1.80	.071	31.34	1.234	24.61	.969	3.15	.124	2.50	.098
18	28.60	1.126	12.80	.504	29.55	1.163	1.80	.071	33.73	1.328	26.97	1.062	3.15	.124	2.50	.098
20	31.78	1.251	14.25	.561	31.95	1.258	1.80	.071	36.91	1.453	29.36	1.156	3.15	.124	5.40	.213
22	34.95	1.376	14.25	.561	35.05	1.380	1.80	.071	40.08	1.578	31.75	1.250	3.15	.124	5.40	.213
24	38.13	1.501	15.10	.594	38.15	1.502	1.80	.071	43.26	1.703	34.92	1.375	3.70	.146	5.40	.213

AE7702L
Square Flange Receptacle – Wide
per HE302, EN3646, and NAS1599

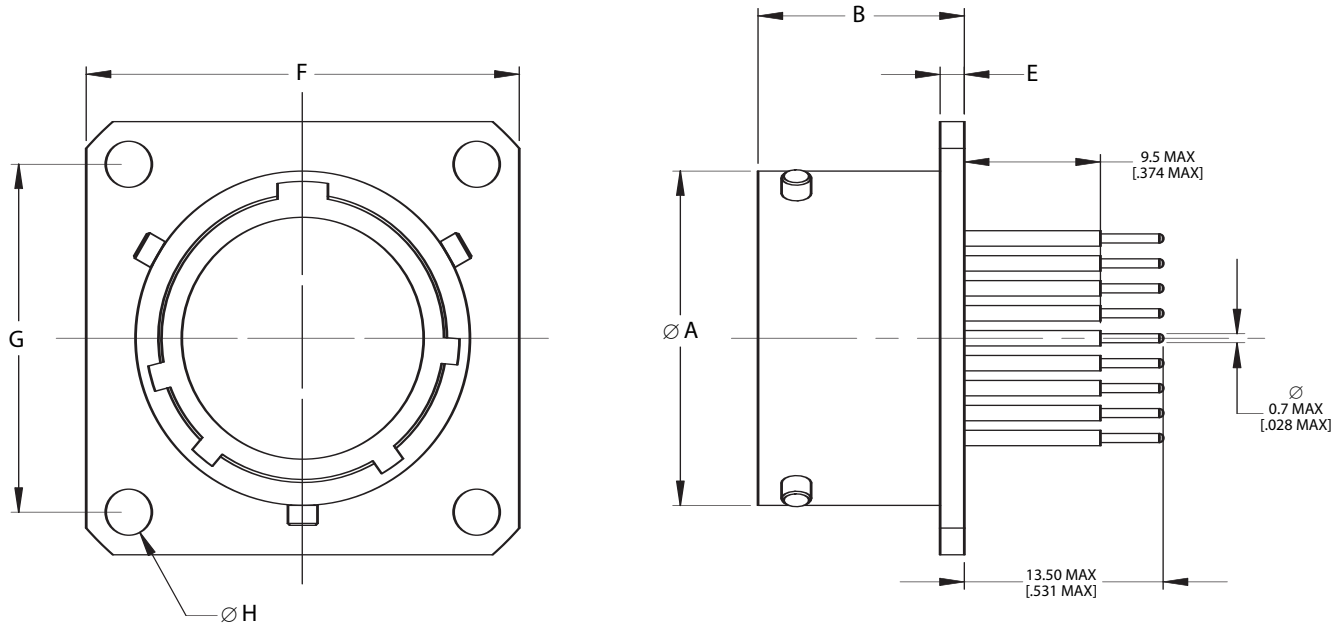






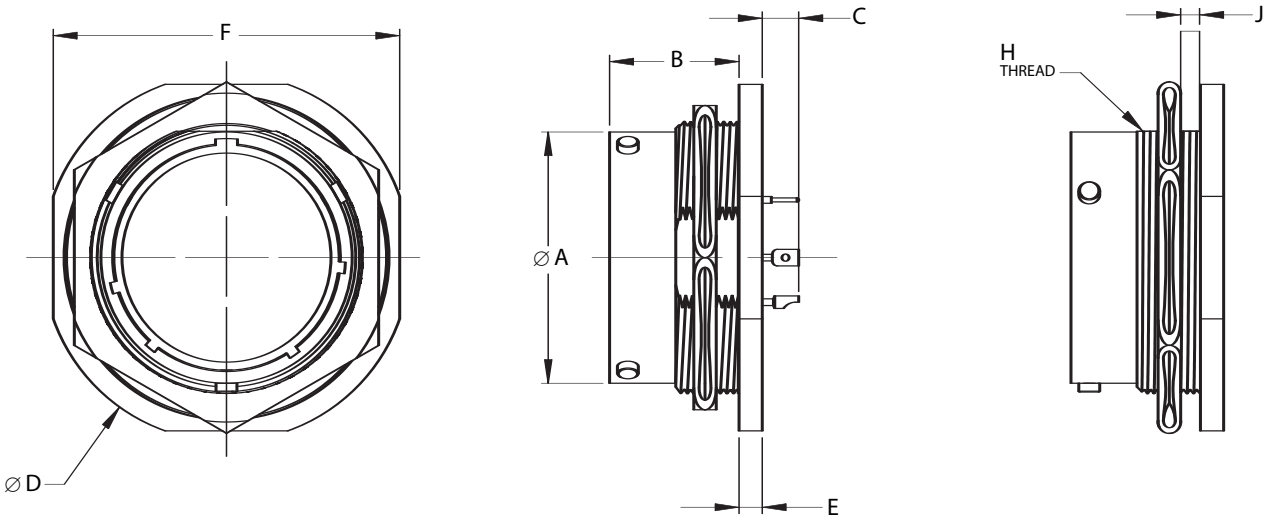
Shell Size	C #20		C #16 and #12	
	±0.76	±.030	±0.76	±.030
	mm	inch	mm	inch
8 thru 18	6.80	.268	8.90	.350
20 and 22	7.10	.280	9.20	.362
24	6.20	.244	8.30	.327

Shell Size	∅A		B		∅D		E		F		G		∅H	
	Maximum		Maximum		±0.25	±.010	Maximum		Maximum		(TP)		±0.15	±.006
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
8	12.04	.474	13.55	.533	14.40	.567	2.75	.108	26.40	1.039	18.10	.713	3.15	.124
10	15.02	.591	13.55	.533	17.20	.677	2.75	.108	28.90	1.138	20.62	.812	3.15	.124
12	19.08	.751	13.55	.533	19.95	.785	2.75	.108	32.10	1.264	23.82	.938	3.15	.124
14	22.25	.876	13.55	.533	23.15	.911	2.75	.108	34.50	1.358	26.18	1.031	3.15	.124
16	25.33	.997	13.55	.533	26.35	1.037	2.75	.108	36.80	1.449	28.57	1.125	3.15	.124
18	28.60	1.126	13.55	.533	29.55	1.163	2.75	.108	38.80	1.528	30.55	1.203	3.15	.124
20	31.78	1.251	16.00	.630	31.95	1.258	3.55	.140	42.80	1.685	32.94	1.297	3.15	.124
22	34.95	1.376	16.00	.630	35.05	1.380	3.55	.140	44.80	1.764	34.92	1.375	3.15	.124
24	38.13	1.501	16.85	.663	38.15	1.502	3.55	.140	47.90	1.886	38.10	1.500	3.70	.146



Shell Size	∅A		B		E		F		G		∅H	
	Maximum		Maximum		±0.41	±.016	Maximum		(TP)		±0.15	±.006
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
8	12.04	.474	12.80	.504	1.80	.071	21.03	.828	15.09	.594	3.15	.124
10	15.02	.591	12.80	.504	1.80	.071	24.23	.954	18.26	.719	3.15	.124
12	19.08	.751	12.80	.504	1.80	.071	26.59	1.047	20.62	.812	3.15	.124
14	22.25	.876	12.80	.504	1.80	.071	28.98	1.141	23.01	.906	3.15	.124
16	25.33	.997	12.80	.504	1.80	.071	31.34	1.234	24.61	.969	3.15	.124
18	28.60	1.126	12.80	.504	1.80	.071	33.73	1.328	26.97	1.062	3.15	.124
20	31.78	1.251	14.25	.561	1.80	.071	36.91	1.453	29.36	1.156	3.15	.124
22	34.95	1.376	14.25	.561	1.80	.071	40.08	1.578	31.75	1.250	3.15	.124
24	38.13	1.501	15.10	.594	1.80	.071	43.26	1.703	34.92	1.375	3.70	.146

AE7707
Jam Nut Receptacle
per HE302, EN3646, and NAS1599



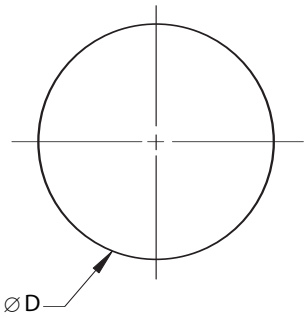
All Sizes	C #20		C #16 and #12	
	±0.76	±.030	±0.76	±.030
	mm	inch	mm	inch
Solder Cup	*	*	1.50	.059
Eyelet	*	*	1.50	.059
Pin Tail	5.00	.197	5.00	.197

*Contacts sunken into shell.

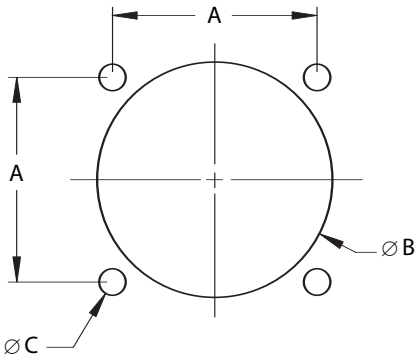
Shell Size	⌀A		B		⌀D		E		F		J	
	Maximum		Maximum		Maximum		Maximum		Maximum		Maximum	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
8	12.04	.474	17.80	.701	27.37	1.078	2.60	.102	24.10	.949	4.70	.185
10	15.02	.591	17.80	.701	30.57	1.204	2.60	.102	27.20	1.071	4.70	.185
12	19.08	.751	17.80	.701	35.32	1.391	2.60	.102	32.10	1.264	4.70	.185
14	22.25	.876	17.80	.701	38.50	1.516	2.60	.102	35.10	1.382	4.70	.185
16	25.33	.997	17.80	.701	41.67	1.641	2.60	.102	38.30	1.508	4.70	.185
18	28.60	1.126	17.80	.701	44.85	1.766	2.60	.102	41.50	1.634	4.70	.185
20	31.78	1.251	22.60	.890	49.62	1.954	3.40	.134	46.30	1.823	6.35	.250
22	34.95	1.376	22.60	.890	52.77	2.078	3.40	.134	49.50	1.949	6.35	.250
24	38.13	1.501	23.70	.933	55.97	2.204	3.40	.134	52.60	2.071	5.55	.219

Panel Cutouts

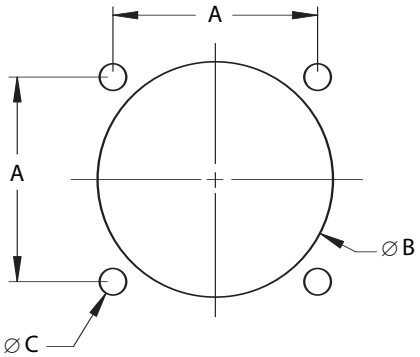
AE7701
Solder Mount Receptacle



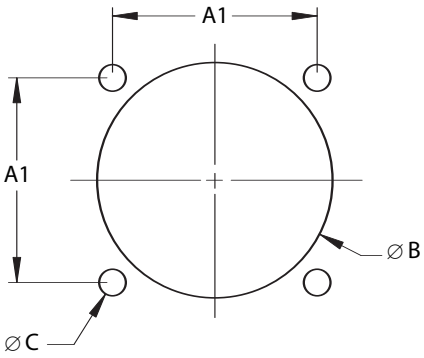
AE7702
Wall Mount Receptacle – Narrow



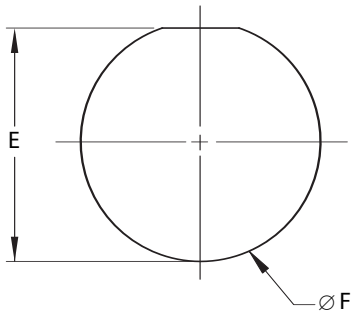
AE7702S
Wall Mount Receptacle – Short



AE7702L
Wall Mount Receptacle – Wide



AE7707
Jam Nut Receptacle

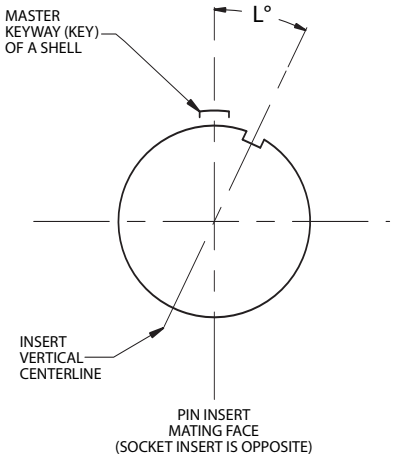


Shell Size	A (TP) mm	A (TP) inch	A1 (TP) mm	A1 (TP) inch	⌀B Maximum mm	⌀B Maximum inch	⌀C ±0.15 mm	⌀C ±.006 inch	⌀D Maximum mm	⌀D Maximum inch	E Maximum mm	E Maximum inch	⌀F Maximum mm	⌀F Maximum inch
8	15.09	.594	18.10	.713	16.05	.632	3.15	.124	14.70	.579	13.85	.545	14.70	.579
10	18.26	.719	20.62	.812	19.00	.748	3.15	.124	17.50	.689	17.05	.671	17.85	.703
12	20.62	.812	23.82	.938	22.25	.876	3.15	.124	20.20	.795	21.15	.833	22.60	.890
14	23.01	.906	26.18	1.031	25.40	1.000	3.15	.124	23.40	.921	24.30	.957	25.75	1.014
16	24.61	.969	28.57	1.125	28.60	1.126	3.15	.124	26.60	1.047	27.45	1.081	28.95	1.140
18	26.97	1.062	30.55	1.203	31.75	1.250	3.15	.124	29.80	1.173	30.65	1.207	32.10	1.264
20	29.36	1.156	32.94	1.297	34.90	1.374	3.15	.124	32.10	1.264	33.80	1.331	35.30	1.390
22	31.75	1.250	34.92	1.375	38.10	1.500	3.15	.124	35.30	1.390	37.00	1.457	38.45	1.514
24	34.92	1.375	38.10	1.500	41.30	1.626	3.70	.146	38.40	1.512	40.15	1.581	41.65	1.640

Insert Arrangement/Positions

Notes:

- In the normal insert clocking position (position N), the insert centerline coincides with the centerline of the master keyway (key) of the shell: L = 0°.
- In the alternate clocking positions (W, X, Y and Z), the pin insert (viewing from mating side) is rotated clockwise relative to the centerline of the master keyway (key) of the shell.
- Be careful with alternate positions. See table below for position availability on layouts of interest.



Insert Arrangement	Total No. of Contacts	Quantity of Contacts			Alternate Positions				
		By Size			Insert Rotation in Degrees				
		20	16	12	N	W	X	Y	Z
8-2	2	2			0	58	122	—	—
8-3	3	3			0	60	210	—	—
8-4	4	4			0	45	—	—	—
8-33	3	3			0	90	—	—	—
8-3A / 8-98	3	3			0	—	—	—	—
10-6	6	6			0	90	—	—	—
10-7*	7	7			0	90	—	—	—
10-98	6	6			0	—	—	—	—
12-3	3		3		0	—	—	180	—
12-8	8	8			0	90	112	203	273
12-10	10	10			0	60	155	270	295
14-2*	2			2	0	—	—	—	—
14-4	4			4	0	45	—	—	—
14-5	5		5		0	40	92	184	273
14-9	9	5		4	0	15	90	180	240
14-12	12	8	4		0	43	90	—	—
14-15	15	14	1		0	17	110	155	234
14-18	18	18			0	15	90	180	270
14-19	19	19			0	30	165	315	—
16-8	8		8		0	54	152	180	331
16-14	11	5		6	0	25	78	180	240
16-21	21	16	5		0	—	—	—	—
16-23	23	22	1		0	158	270	—	—
16-26	26	26			0	60	—	275	338

* Non MIL-STD-1669 layout

Insert Arrangement/Positions

Insert Arrangement	Total No. of Contacts	Quantity of Contacts			Alternate Positions				
		By Size			Insert Rotation in Degrees				
		20	16	12	N	W	X	Y	Z
18-8	8			8	0	180	—	—	—
18-11	11		11		0	62	119	241	340
18-30	30	29	1		0	180	193	285	350
18-32	20	20			0	85	138	222	265
20-16	16		16		0	238	318	333	347
20-24	24	24			0	70	145	215	290
20-39	39	37	2		0	63	144	252	333
20-41	41	41			0	45	126	225	—
22-12	12			12	0	—	—	—	—
22-21	21		21		0	16	135	175	349
22-41	41	27	14		0	39	135	264	—
22-55	55	55			0	30	142	226	314
22-95	32	26		6	0	26	180	266	—
24-19	19			19	0	30	165	315	—
24-31	31		31		0	90	225	255	—
24-61	61	61			0	90	180	270	324

Insert Arrangement (Pin Front View)

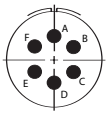

8-2
2 # 20, I

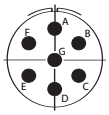

8-3
3 # 20, I

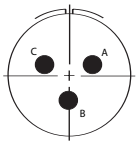

8-4
4 # 20, I

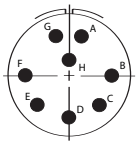

8-33
3 # 20, I

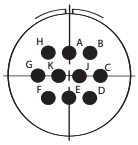

8-98
3 # 20, I

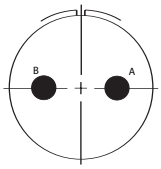

10-6
6 # 20, I

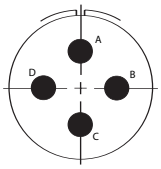

10-7*
7 # 20, I

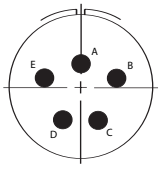

12-3
3 # 16, II

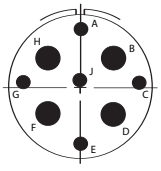

12-8
8 # 20, I

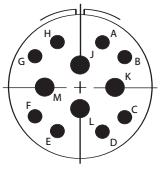

12-10
10 # 20, I

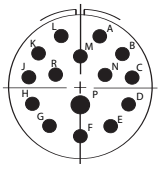

14-2*
2 # 12, I

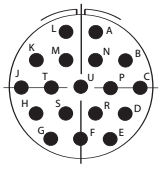

14-4
4 # 12, I

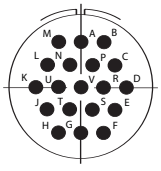

14-5
5 # 16, II


14-9
5 # 20, 4 # 12, I


14-12
4 # 16, 8 # 20, I

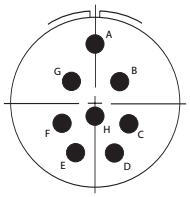

14-15
1 # 16, 14 # 20, I


14-18
18 # 20, I

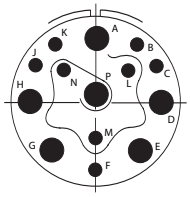

14-19
19 # 20, I

* Non MIL-STD-1669 layout

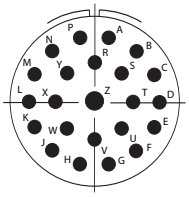
Insert Arrangement (Pin Front View)



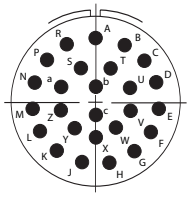
16-8
8 # 16, II



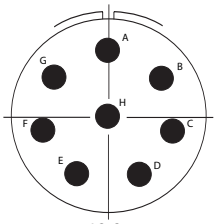
16-14
8 # 20, 6 # 12, I



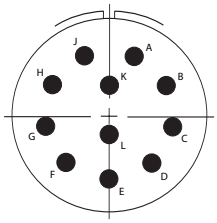
16-23
1 # 16, 22 # 20, I



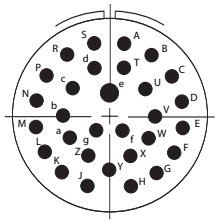
16-26
26 # 20, I



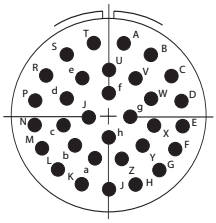
18-8
8 # 12, I



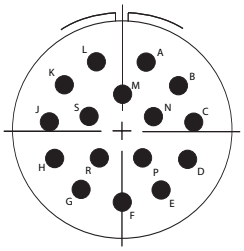
18-11
11 # 16, II



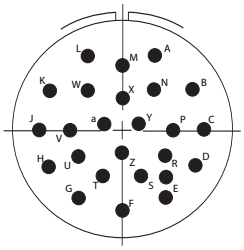
18-30
1 # 16, 29 # 20, I



18-32
32 # 20, I



20-16
16 # 16, II



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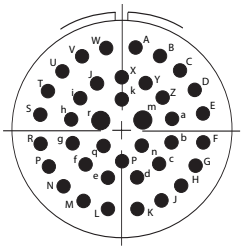
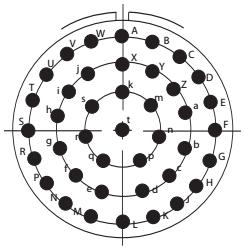
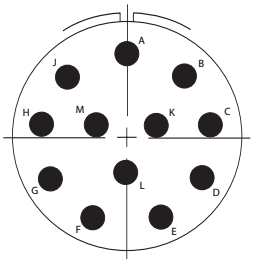
24 # 20, I



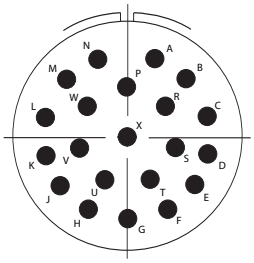
20-39
2 # 16, 37 # 20, I



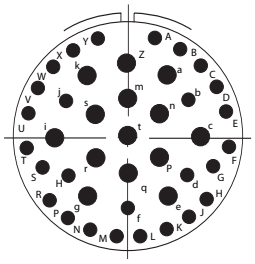
20-41
41 # 20, I



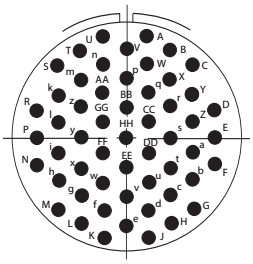
22-12
12 # 12, I



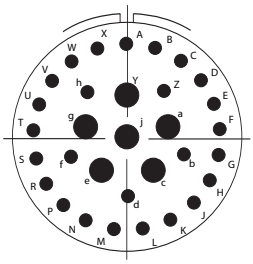
22-21
21 # 16, II



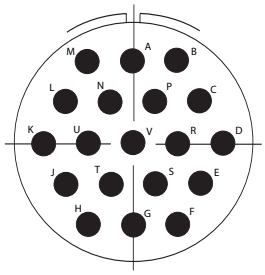
22-41
14 # 16, 27 # 20, I



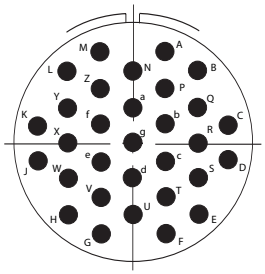
22-55
55 # 20, I



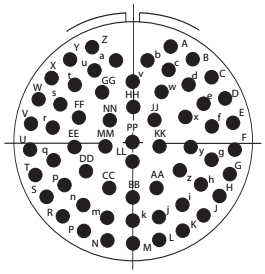
22-95
6 # 12, 26 # 20, I



24-19
19 # 12, II



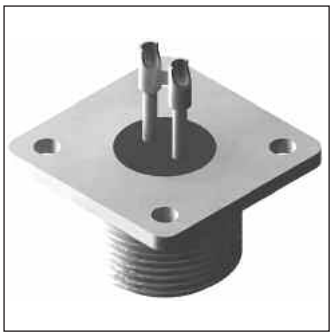
24-31
31 # 16, I



24-61
61 # 20, I

Conesys Europe
Hermetic Connectors

AE5 Series
per MIL-DTL-5015



Features and Application

AE5 Series hermetic connector receptacles are manufactured to Conesys Europe standards and meet all the requirements of MIL-DTL-5015.

AE5 Series hermetic connectors are intermountable and intermateable with MIL-DTL-5015 Series I solder plug, Series II front release plug, MIL-DTL-5015 Series III plug and also MIL-DTL-83723 Series II crimp-type plug connectors.

AE5 Series hermetic connectors are recommended for a wide range of applications, from commercial/industrial and mass-transportation systems to the most stringent high-reliability defense and aerospace requirements.

This family of hermetic connectors is available in three receptacle styles: square-flange wall mounting, and two solder mounting receptacles.

These hermetic connectors are available in passivated stainless steel material, and tin- or nickel-plated mild steel. Other materials can be proposed for special applications – Please consult factory.

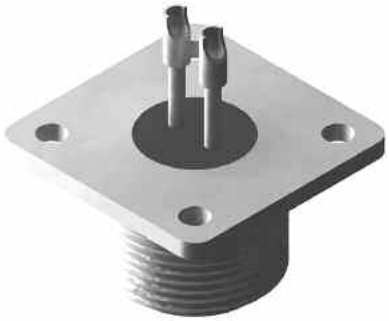
Insert Arrangement – AE5 Series hermetic connectors use MIL-STD 1651 insert arrangements. Contacts are available in sizes 16, 12, 8, 4, and 0.

Insert Polarization – Alternate insert clocking positions prevent cross mating of adjacent connectors having the same insert arrangement.

Interfacial Pin Insert Seal – Raised moisture barriers around each receptacle pin, which mate into lead-in chamfers of the plug hard face socket insert, provide individual contact sealing.

Glass Insulator – These hermetic connectors are designed with sintered compression glass as an insulator.

Special Contacts – AE5 Series hermetic connectors are available with special contact, i.e., thermo couple (chromel, alumel, etc.). Commercial P/N only.



Performance Specifications

Operating Temperature Range
Class HY: -55°C to +200°C (-67°F to +392°F)
Class HT: -55°C to +175°C (-67°F to +347°F)
Class H: -55°C to +125°C (-67°F to +257°F)

Material and Finish Data (Class)
Class H:

RECEPTACLE	material:	ferrous alloy
	finish:	nickel plated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Class HT:

RECEPTACLE	material:	ferrous alloy
	finish:	tin plated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Class HY (Conesys P/N only):

RECEPTACLE	material:	stainless steel
	finish:	passivated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Corrosion Resistance
Class H and HT: In accordance with MIL-DTL-5015.
Class HY: 1000 hour salt spray.

Durability
Minimum of 100 mating cycles.

Leakage
$< 1.10^{-7}$ atm.cm^3.s^{-1}.

Shock and Vibration
In accordance with MIL-DTL-5015 specification.

Insulation Resistance
>5000 M| under 500 Vdc
(25°C – 65% HR max.)

Maximum Current Rating per Contact
Size 16 10 Amp
Size 12 17 Amp
Size 8 40 Amp
Size 4 80 Amp
Size 0 150 Amp

Voltage Rating

	Inst.	A	D	E	B	C
Altitude	V RMS	V RMS	V RMS	V RMS	V RMS	V RMS
Sea Level	1000	2000	2800	3500	4500	7000
15 000 m	400	600	675	750	825	975
21 000 m	260	360	400	440	480	560
33 000 m	200	200	200	200	200	200

Military and Conesys Part Number Development

Mil. Prefix	**MS31**	**42**	**HT**	**14S**	**C**	**5**	**P**	**X**	
Conesys Prefix	**AE7**	**42**	**HT**	**14S**	**C**	**5**	**P**	**X**	**-XXX**

Shell Type (specification sheet number)

41 = Solder mount receptacle – less flange (not QPL)

42 = Wall mount receptacle

43 = Solder mount receptacle

Class (Material and Finish)

HT = Shell – ferrous alloy, tin plated
= Terminals – ferrous alloy, gold plated

H = Shell – ferrous alloy, nickel plated
= Terminals – ferrous alloy, gold plated

HY = Shell – stainless steel, passivated
= Terminals – ferrous alloy, gold plated

Shell Size

10SL to 24 (Consult factory for other sizes)

Contact Style (pin only)

C = Pin with solder cup

Y = Pin with eyelet

S = Pin tail for PCB (Conesys P/N only)

Insert Arrangement

See pages 112–116

Contact Style (pin only)

Polarization (keying)

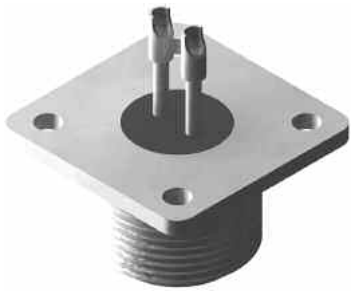
N = Normal (omitted in part number)

W, X, Y, or **Z** Alternate insert polarizations (see pages 112–113 for position availability)

Modification or Particularities (applies to Conesys part numbers only)

XXX = Modification

Consult factory for details



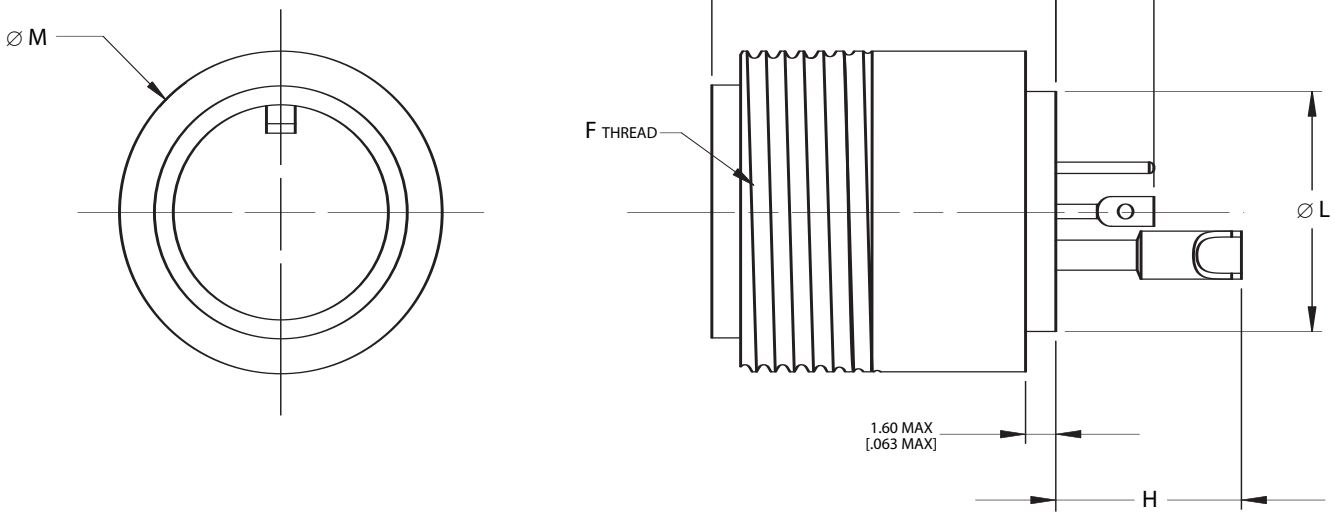
Terminal Configuration

Terminal Style C
Solder cup
Available in sizes 16, 12, 8, 4, and 0
For other sizes, please consult factory.

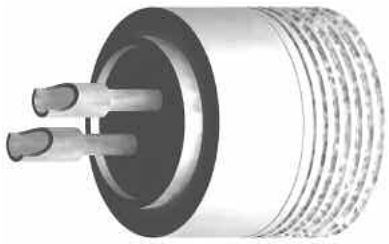
Terminal Style Y
Eyelet
Available in size 16
For other sizes, please consult factory.

Terminal Style S
Pin tail for PCB
Available in sizes 22, 20, and 16
For other sizes or lengths, please consult factory.

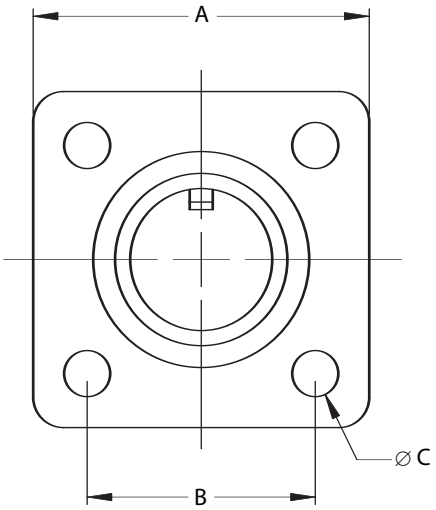
AE541
Solder Mount Receptacle – Less Flange

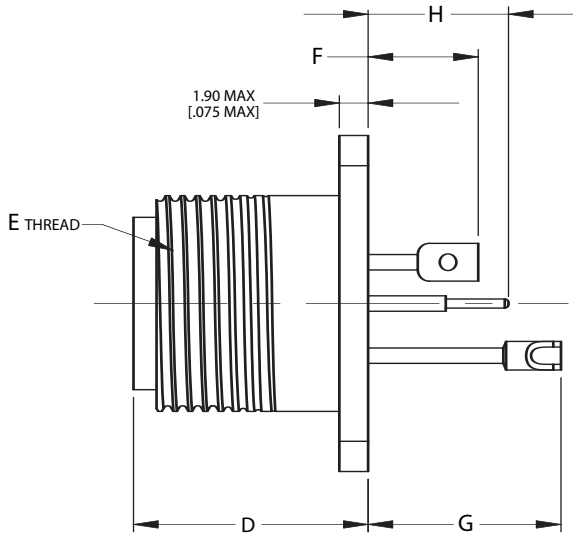


Contact Size	G		H	
	Maximum		Maximum	
	mm	inch	mm	inch
16	5.56	.219	9.50	.374
12	7.10	.280	13.10	.516
8	/	/	18.25	.719
4	/	/	24.90	.980
0	/	/	24.90	.980



Shell Size	E				⌀ L		F	⌀ M	
	#16, #12, and #8 Maximum		#4 and #0 Maximum		Maximum		Thread	Maximum	
	mm	inch	mm	inch	mm	inch	Class 2A	mm	inch
10 SL	18.54	.730	/	/	12.70	.500	.625-24 UNEF	15.90	.626
12 S	18.54	.730	/	/	16.70	.657	.750-20 UNEF	19.10	.752
14 S	18.54	.730	/	/	18.30	.720	.875-20 UNEF	22.20	.874
16 S	18.54	.730	26.41	1.040	21.50	.846	1.000-20 UNEF	25.40	1.000
12	23.24	.915	/	/	16.70	.657	.750-20 UNEF	19.10	.752
14	23.24	.915	/	/	18.30	.720	.875-20 UNEF	22.20	.874
16	23.24	.915	26.41	1.040	21.50	.846	1.000-20 UNEF	25.40	1.000
18	23.24	.915	26.41	1.040	24.60	.969	1.125-18 UNEF	28.60	1.126
20	23.24	.915	26.41	1.040	29.40	1.157	1.250-18 UNEF	31.80	1.252
22	23.24	.915	26.41	1.040	31.90	1.256	1.375-18 UNEF	35.00	1.378
24	23.24	.915	26.41	1.040	34.90	1.374	1.500-18 UNEF	38.10	1.500

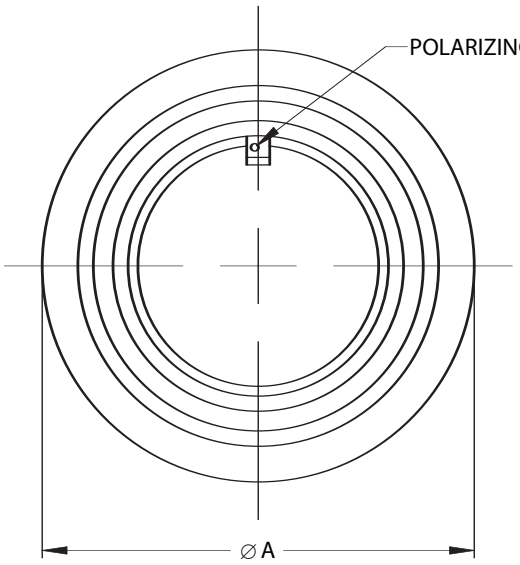


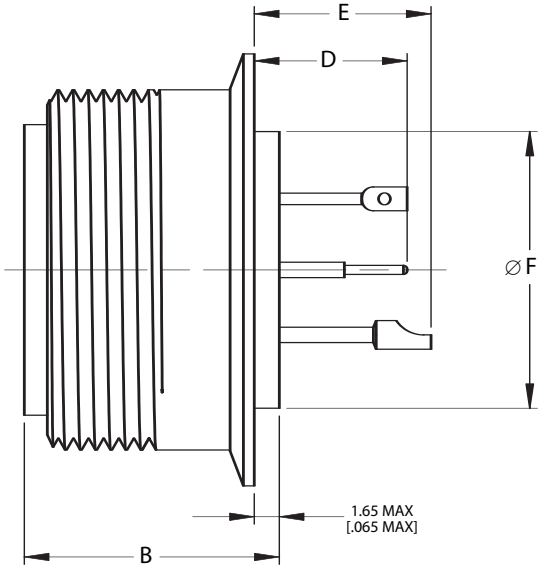


Contact Size	F		G		H	
	Maximum		Maximum		Maximum	
	mm	inch	mm	inch	mm	inch
16	5.56	.219	9.50	.374	5.56	.219
12	7.10	.280	13.10	.516	7.10	.280
8	/	/	18.25	.719	/	/
4	/	/	24.90	.980	/	/
0	/	/	24.90	.980	/	/

Shell Size	A		B		∅ C		D				E
	± 0.79	±.031	(TP)		± 0.40	±.016	#16, #12, and #8 Maximum		#4 and #0 Maximum		Thread
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	Class 2A
10 SL	25.40	1.000	18.26	.719	3.05	.120	18.54	.730	/	/	.625-24 UNEF
12 S	27.79	1.094	20.62	.812	3.05	.120	18.54	.730	/	/	.750-20 UNEF
14 S	30.18	1.188	23.01	.906	3.05	.120	18.54	.730	/	/	.875-20 UNEF
16 S	32.54	1.281	24.61	.969	3.05	.120	18.54	.730	26.41	1.040	1.000-20 UNEF
12	27.79	1.094	20.62	.812	3.05	.120	23.24	.915	/	/	.750-20 UNEF
14	30.18	1.188	23.01	.906	3.05	.120	23.24	.915	/	/	.875-20 UNEF
16	32.54	1.281	24.61	.969	3.05	.120	23.24	.915	26.41	1.040	1.000-20 UNEF
18	34.93	1.375	26.97	1.062	3.05	.120	23.24	.915	26.41	1.040	1.125-18 UNEF
20	38.10	1.500	29.36	1.152	3.05	.120	23.24	.915	26.41	1.040	1.250-18 UNEF
22	41.28	1.625	31.75	1.250	3.05	.120	23.24	.915	26.41	1.040	1.375-18 UNEF
24	44.45	1.750	34.93	1.375	3.73	.147	23.24	.915	26.41	1.040	1.500-18 UNEF

AE543
Solder Mount Receptacle
MS3143



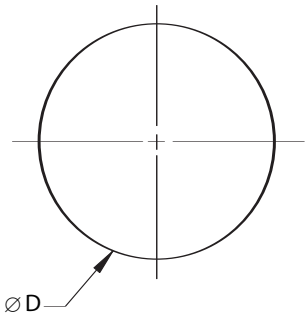


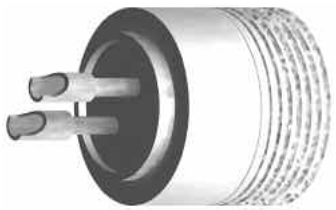
Contact Size	D Maximum mm	D Maximum inch	E Maximum mm	E Maximum inch
16	5.56	.219	9.50	.374
12	7.10	.280	13.10	.516
8	/	/	18.25	.719
4	/	/	24.90	.980
0	/	/	24.90	.980

Shell Size	B #16, #12, and #8 Maximum mm	B #16, #12, and #8 Maximum inch	B #4 and #0 Maximum mm	B #4 and #0 Maximum inch	∅F Maximum mm	∅F Maximum inch	∅A ± 0.25 mm	∅A ±.010 inch
10 SL	18.54	.730	/	/	12.70	.500	22.23	.875
12 S	18.54	.730	/	/	16.70	.657	25.40	1.000
14 S	18.54	.730	/	/	18.30	.720	28.58	1.125
16 S	18.54	.730	26.41	1.040	21.50	.846	31.75	1.250
12	23.24	.915	/	/	16.70	.657	25.40	1.000
14	23.24	.915	/	/	18.30	.720	28.58	1.125
16	23.24	.915	26.41	1.040	21.50	.846	31.75	1.250
18	23.24	.915	26.41	1.040	24.60	.969	34.93	1.375
20	23.24	.915	26.41	1.040	29.40	1.157	38.10	1.500
22	23.24	.915	26.41	1.040	31.90	1.256	41.28	1.625
24	23.24	.915	26.41	1.040	34.90	1.374	44.45	1.750

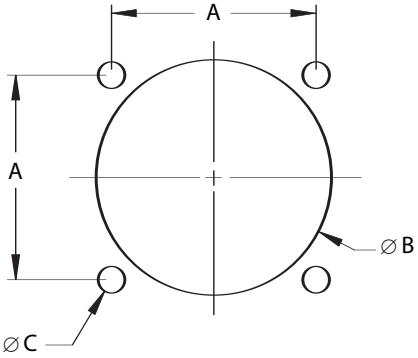
Panel Cutouts

AE541
Solder Mount Receptacle

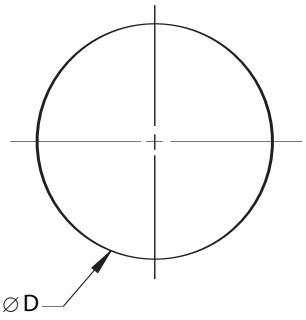




AE542
Wall Mount Receptacle



AE543
Solder Mount Receptacle

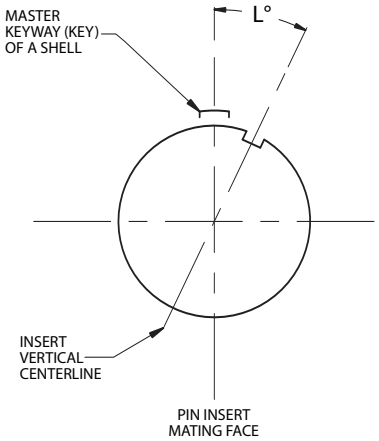


Shell Size	A (TP) mm	A (TP) inch	∅B ± 0.40 mm	∅B ±.016 inch	∅C +0.25 -0.13 mm	∅C +.010 -.005 inch	∅D ± 0.05 mm	∅D ±.002 inch
10 SL	18.26	.719	15.90	.626	3.05	.120	12.80	.504
12 S	20.62	.812	19.10	.752	3.05	.120	16.80	.661
14 S	23.01	.906	22.20	.874	3.05	.120	18.40	.724
16 S	24.61	.969	25.40	1.000	3.05	.120	21.60	.850
12	20.62	.812	19.10	.752	3.05	.120	16.80	.661
14	23.01	.906	22.20	.874	3.05	.120	18.40	.724
16	24.61	.969	25.40	1.000	3.05	.120	21.60	.850
18	26.97	1.062	28.60	1.126	3.05	.120	24.70	.972
20	29.36	1.152	31.80	1.252	3.05	.120	29.50	1.161
22	31.75	1.250	35.00	1.378	3.05	.120	32.00	1.260
24	34.93	1.375	38.10	1.500	3.73	.147	35.00	1.378

Polarization (Insert Clocking)

Notes:

- In the normal insert clocking position (position N), the insert centerline coincides with the centerline of the master keyway (key) of the shell: L = 0°.
- In the alternate clocking positions (W, X, Y and Z), the pin insert (viewing from mating side) is rotated clockwise relative to the centerline of the master keyway (key) of the shell.
- Be careful with alternate positions. See table below for position availability on layouts of interest.



Insert Arrangement	Total No. of Contacts	Service Rating	Quantity of Contacts by Size			Alternate Positions ** Insert Rotation in Degrees				
			16	12	8	N	W	X	Y	Z
10S-2	1	A	1			0	—	—	—	—
10SL-3	3	A	3			0	—	—	—	—
10SL-4	2	A	2			0	—	—	—	—
12S-3	2	A	2			0	70	145	215	290
12S-4	1	D	1			0	—	—	—	—
14S-1*	3	A	3			0	—	—	—	—
14S-2	4	Inst.	4			0	—	120	240	—
14S-5	5	Inst.	5			0	—	110	—	—
14S-6	6	Inst.	6			0	—	—	—	—
14S-7	3	A	3			0	90	180	270	—
14S-9*	2	A	2			0	70	145	215	290
16S-1	7	A	7			0	80	—	—	—
16S-4	2	D	2			0	35	110	250	325
16S-5*	3	A	3			0	70	145	215	290
16S-6*	3	A	3			0	90	180	270	—
16S-8	5	A	5			0	—	170	265	—
16-9	4	A	2	2		0	35	110	250	325
16-10	3	A		3		0	90	180	270	—
16-11	2	A		2		0	35	110	250	325
18-1	10	A/Inst.	10			0	70	145	215	290
18-4	4	D		4		0	35	110	250	325
18-8	8	A	7	1		0	70	—	—	290
18-9	7	Inst.	5	2		0	80	110	250	280
18-10*	4	A		4		0	—	120	240	—
18-11	5	A		5		0	—	170	265	—
18-12	6	A	6			0	80	—	—	280

* Inactive for new design

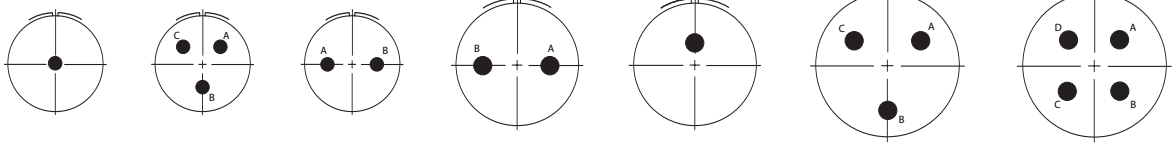
Polarization (Insert Clocking)

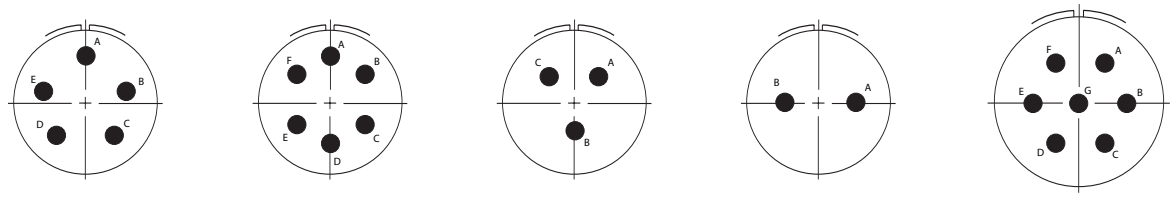
Insert Arrangement	Total No. of Contacts	Service Rating	Quantity of Contacts by Size			Alternate Positions ** Insert Rotation in Degrees				
			16	12	8	N	W	X	Y	Z
20-4	4	D		4		0	45	110	250	—
20-7	8	A / D	8			0	80	110	250	280
20-8	4	Inst.	4			0	80	110	250	280
20-14	3	A		3		0	80	110	250	280
20-15	7	A		7		0	80	—	—	280
20-16	9	A	7	2		0	80	110	250	280
20-17	6	A	1	5		0	90	180	270	—
20-18	9	A	6	3		0	35	110	250	325
20-22	6	A	3		3	0	80	110	250	280
20-24*	4	A	2		2	0	35	110	250	325
20-27	14	A	14			0	35	110	250	325
20-29	17	A	17			0	80	—	—	280
20-33	11	A	11			0	—	—	—	—
22-2	3	D			3	0	70	145	215	290
22-9	3	E		3		0	70	145	215	290
22-14**	19	A	19			0	80	110	250	280
22-18	8	A / D	8			0	80	110	250	280
22-19	14	A	14			0	80	110	250	280
22-20*	9	A	9			0	35	110	250	325
22-22	4	A			4	0	—	110	250	—
22-23	8	A / D		8		0	35	—	250	—
24-2	7	D		7		0	80	—	—	280
24-7	16	A	14	2		0	80	110	250	280
24-10	7	A			7	0	80	—	—	280
24-11	9	A		6	3	0	35	110	250	325
24-20	11	D	9	2		0	80	110	250	280
24-27	7	E	7			0	80	—	—	280
24-28	24	Inst.	24			0	80	110	250	280

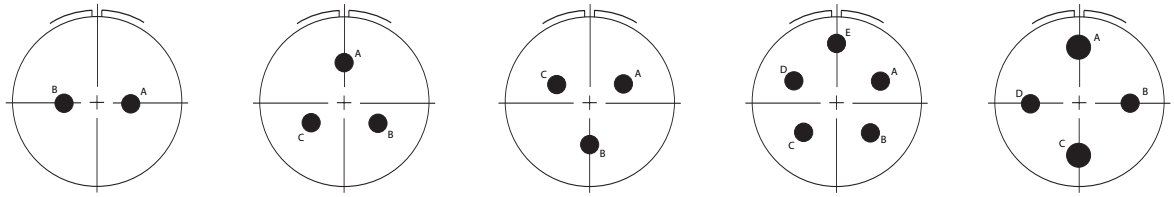
* Inactive for new design

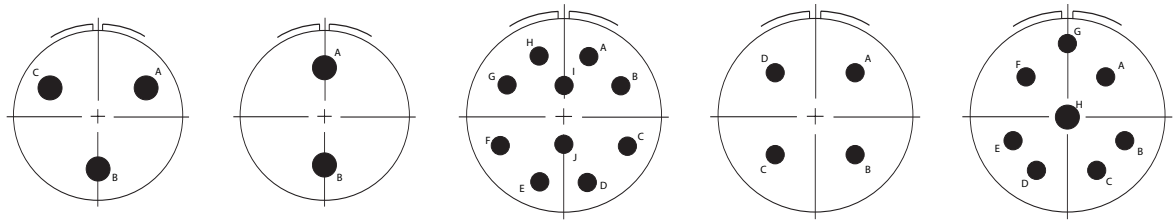
** Alternate positions X, Y are cancelled after June 26, 1968.

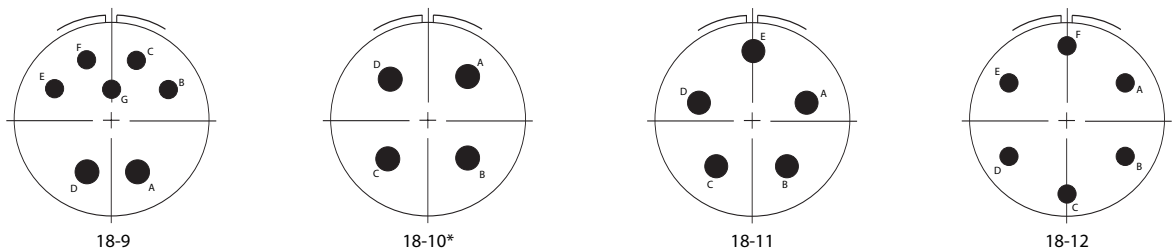
Insert Arrangement Views





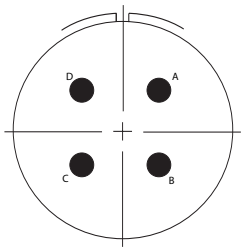




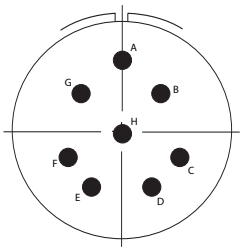


*Inactive for new design.

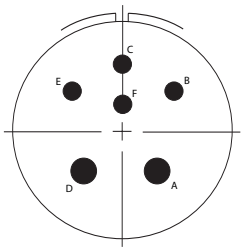
Insert Arrangement Views



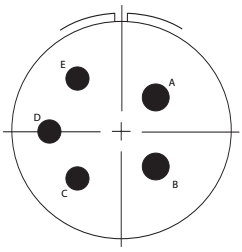
20-4
4 # 12



20-7
8 # 16



20-8
4 # 16, 2 # 8



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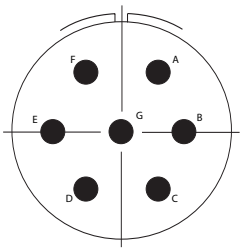
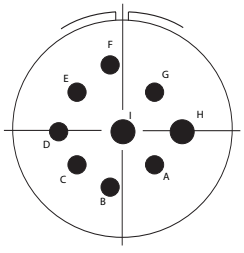
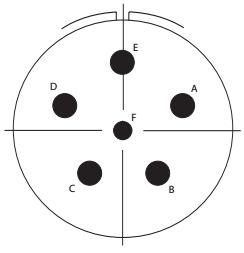
3 # 12, 2 # 8



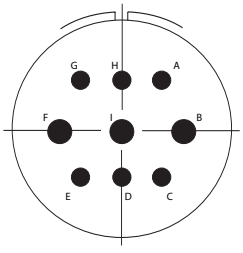
20-15
7 # 12



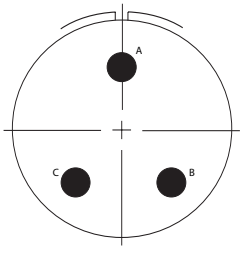
20-16
7 # 16, 2 # 12



20-17
1 # 16, 5 # 12



20-18
6 # 16, 3 # 12



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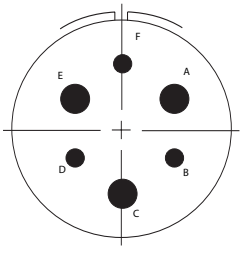
3 # 8



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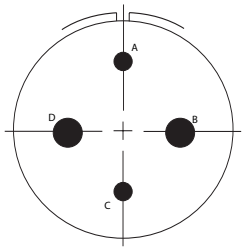
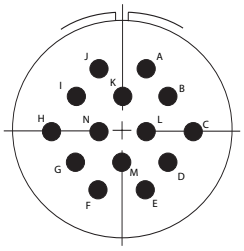
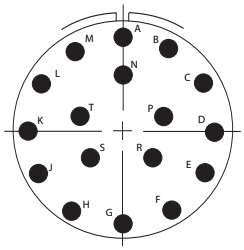
3 # 16, 3 # 8



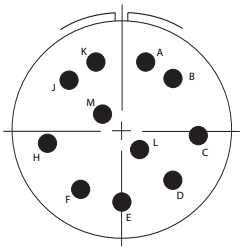
20-24*
2 # 16, 2 # 8



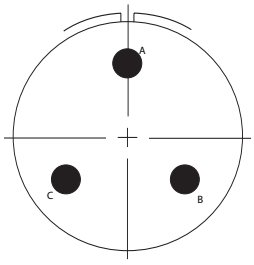
20-27
14 # 16



20-29
17 # 16



20-33
11 # 16



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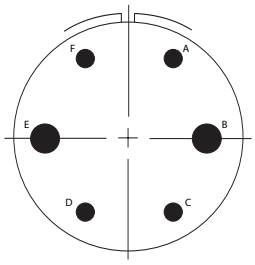
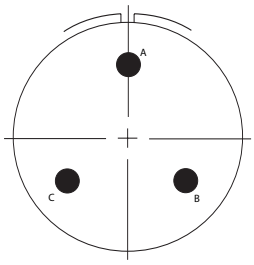
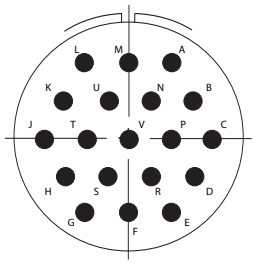
3 # 8



22-5
4 # 16, 2 # 12



22-9
3 # 12

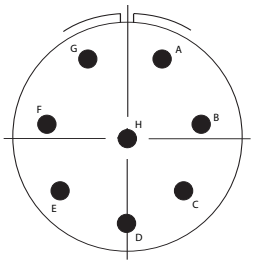


22-14**
19 # 16

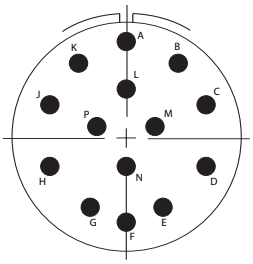
*Inactive for new design.

** Alternate positions X, Y are cancelled after June 26, 1968.

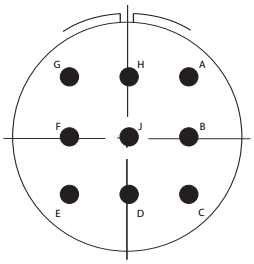
Insert Arrangement Views



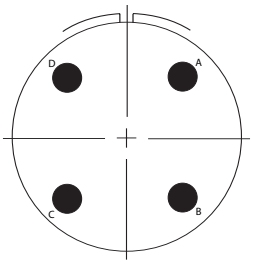
22-18
8 # 16



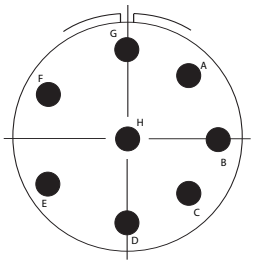
22-19
14 # 16



22-20*
9 # 16



22-22
4 # 8



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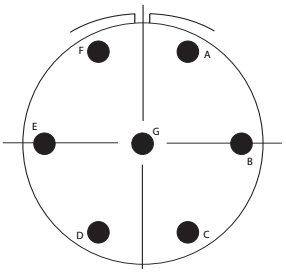
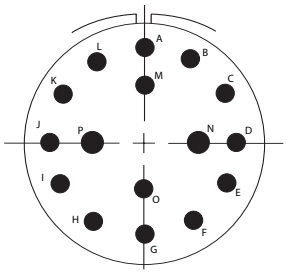
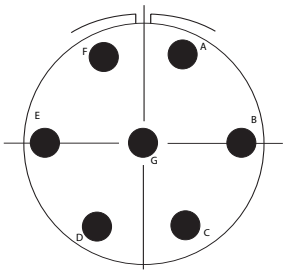
8 # 12



24-2
7 # 12



24-7
14 # 16, 2 # 12



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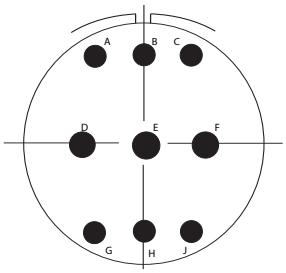
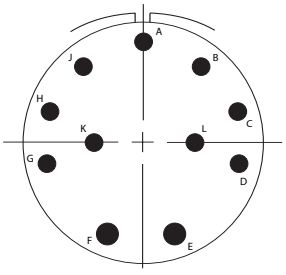
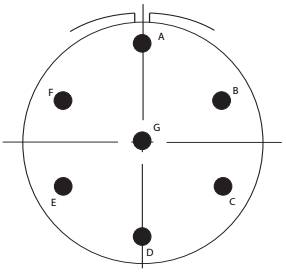
7 # 8



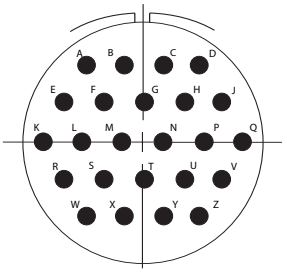
24-11
6 # 12, 3 # 8



24-20
9 # 16, 2 # 12



24-27
7 # 16



24-28
24 # 16

*Inactive for new design.

Conesys Europe
Hermetic Connectors

AE6 Series
per MIL-DTL-26500

Features and Application

AE6 Series Hermetic connector receptacles are manufactured to Conesys Europe standards and meet all the requirements of MIL-DTL-26500. AE6 Series offers hermetic connectors with bayonet and threaded coupling. These connectors are intermateable with MIL-DTL-83723 Series III connectors (except shell size 8, threaded coupling only).

AE6 series connectors are widely used on commercial, military, and aerospace systems requiring general purpose, miniature cylindrical bayonet or threaded coupling connectors.

This family of threaded and bayonet connector receptacles is available in jam-nut mounted, which incorporate O-ring seals, designed for rear panel "D" hole mounting; solder mounted, and box mounted with a Conesys P/N only.

These hermetic connectors are available in passivated stainless steel material and tin-plated mild steel.
Other materials and finish can be proposed for special applications – Please consult factory.

AE6 family connectors are available with standard solder cup and eyelet terminals and also with pin tail terminals. Contacts are tin- or gold-plated. Alternative finishes are available on request.

Insert Arrangement – Insert arrangements per MIL-STD-1554, utilizing contacts size 20, 16, and 12 are available.

Shell Polarization – Alternate key/keyway positions prevent cross mating of adjacent connectors having the same insert arrangement.

Insert Polarization – Alternate insert clocking positions prevent cross mating of adjacent connectors having the same insert arrangement.

Interfacial Pin Insert Seal – Raised moisture barriers around each receptacle pin, which mate into lead-in chamfers of the plug hard face socket insert, provide individual contact sealing.

Glass Insulator – These hermetic connectors are designed with sintered compression glass as an insulator.

Special Contacts – AE6 Series hermetic connectors are available with special contact, i.e., thermo couple (chromel, alumel, etc.). Commercial P/N only.

Performance Specifications

Operating Temperature Range
Class H: -55°C to +200°C (-67°F to +392°F)
Class Y: -55°C to +200°C (-67°F to +392°F)

Material and Finish Data (Class) – AE77 Series
Class H:

RECEPTACLE	material:	mild steel
	finish:	tin plated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Class Y (Conesys P/N only):

RECEPTACLE	material:	stainless steel
	finish:	passivated
CONTACTS	material:	ferrous alloy
	finish:	gold plated

Durability
Threaded Coupling Connectors:
Minimum of 200 mating cycles

Bayonet Coupling Connectors:
Minimum of 500 mating cycles

Leakage
$< 1.10^{-7}$ atm.cm^3.s^{-1}.

Insulation Resistance
>5000 M| under 500 Vdc
(25°C – 65% HR max.)

Withstanding Voltage

At sea level:	1500 V rms
At 15 000 m altitude:	500 V rms
At 21 000 m altitude:	375 V rms
At 33 000 m altitude:	200 V rms

Maximum Current Rating per Contact

Size 20	5 Amp
Size 16	10 Amp
Size 12	17 Amp

Military and Conesys Part Number Development

Mil. Prefix	MS	24265	H	22	B	55	C	N	
Conesys Prefix	AE	665	H	22	B	55	C	N	-XXX

Shell Type (specification sheet number)

N/A = Wall mount receptacle
= **664** (Conesys)
24265 = Jam nut receptacle
= **665** (Conesys)
27034 = Solder mount receptacle
= **634** (Conesys)

Class (Material and Finish)

H = Shell – mild steel, tin plated
= Terminals – ferrous alloy, gold plated
Y = Shell – stainless steel, passivated (Conesys P/N only)
= Terminals – ferrous alloy, gold plated

Shell Size

8 to 24

Coupling Type

B = Bayonet
T = Threaded

Insert Arrangement

See pages 129–130

Contact Style (pin only)

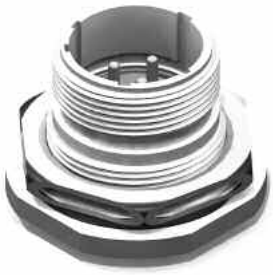
C = Solder cup
E = Eyelet
X = Pin tail for PCB (Conesys P/N only)

Polarization (keying)

N = Normal
6, 7, 8, 9, or **Y** (Alternate keyed positions; Y is not available in SS 8)

Modification or Particularities (applies to Conesys part numbers only)

XXX = Modification
Consult factory for details



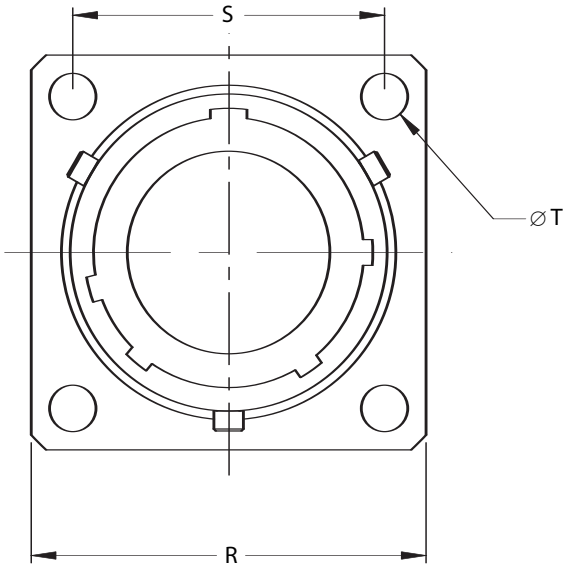
Terminal Configuration

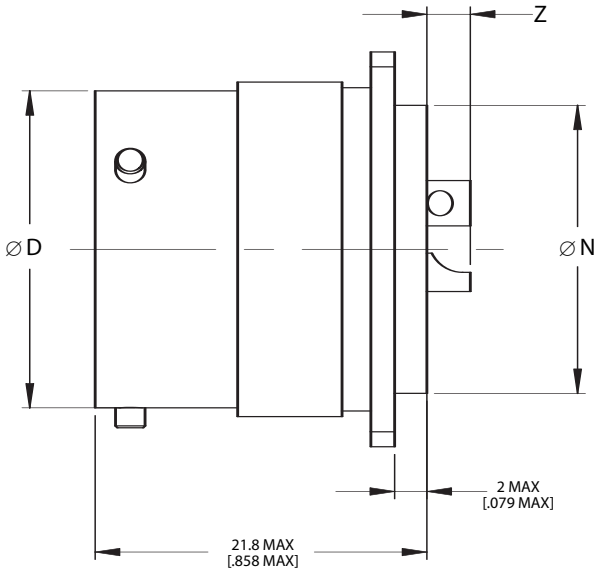
Terminal Style C
Solder cup
Available in sizes 20, 16, 12, and 8
For other sizes, please consult factory.

Terminal Style E
Eyelet
Available in sizes 20 and 16
For other sizes, please consult factory.

Terminal Style X
Pin tail for PCB
Available in sizes 22, 20, and 16
For other sizes or lengths, please consult factory.

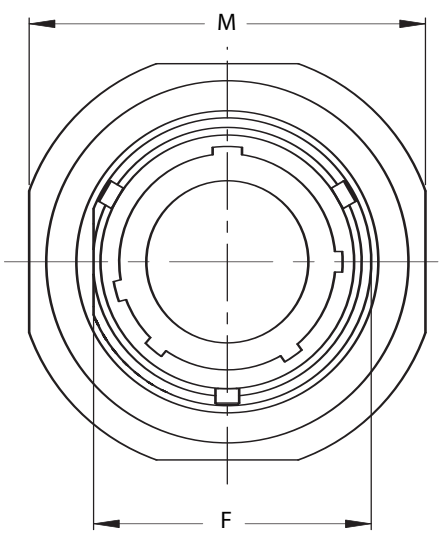
AE664***B
Wall Mount Receptacle – Bayonet Coupling

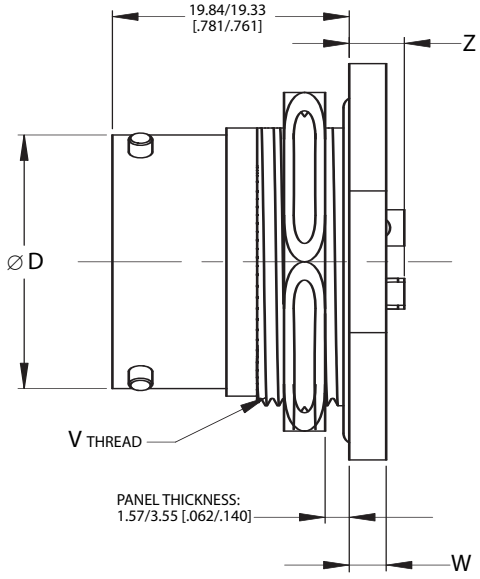




Contact Size	Z					
	Solder Cup (Style C) Maximum		**Eyelet (Style E)** Maximum		**Pin Tail (Style X)** Maximum	
	mm	inch	**mm**	inch	**mm**	inch
20	**3.81**	.150	**2.76**	.109	Consult factory	
16	**5.33**	.510	**4.34**	.171	Consult factory	
12	**5.58**	.220	**5.58**	.220	Consult factory	

Shell Size	⌀D		⌀N		R		S		⌀T	
	+0.00 -0.12	+.000 -0.005	Maximum		Maximum		(TP)		+0.00 -0.22	+.000 -0.009
	mm	inch	**mm**	inch	**mm**	inch	**mm**	inch	**mm**	inch
8	**13.61**	.536	**11.09**	.437	**20.75**	.817	**15.09**	.594	**3.18**	.125
10	**16.74**	.659	**14.27**	.562	**23.93**	.942	**18.26**	.719	**3.18**	.125
12	**21.06**	.829	**19.05**	.750	**26.32**	1.036	**20.62**	.812	**3.18**	.125
14	**22.81**	.898	**20.62**	.812	**28.71**	1.130	**23.01**	.906	**3.18**	.125
16	**26.04**	1.025	**23.79**	.937	**31.88**	1.255	**24.61**	.969	**3.18**	.125
18	**28.73**	1.131	**26.97**	1.062	**34.24**	1.348	**26.97**	1.062	**3.18**	.125
20	**31.90**	1.256	**30.02**	1.182	**36.63**	1.442	**29.36**	1.156	**3.18**	.125
22	**35.08**	1.381	**33.32**	1.312	**39.80**	1.567	**31.75**	1.250	**3.18**	.125
24	**38.25**	1.506	**36.37**	1.432	**43.39**	1.708	**34.92**	1.375	**3.91**	.154

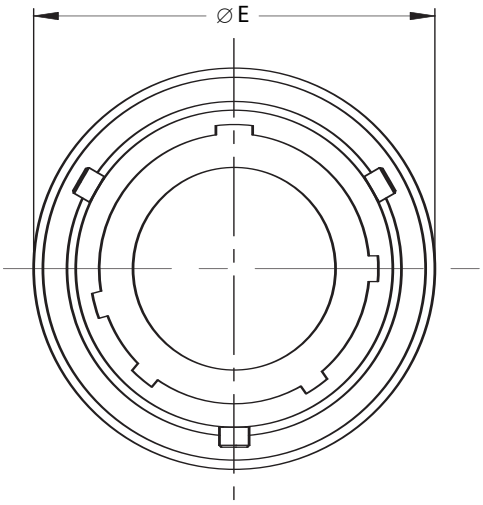


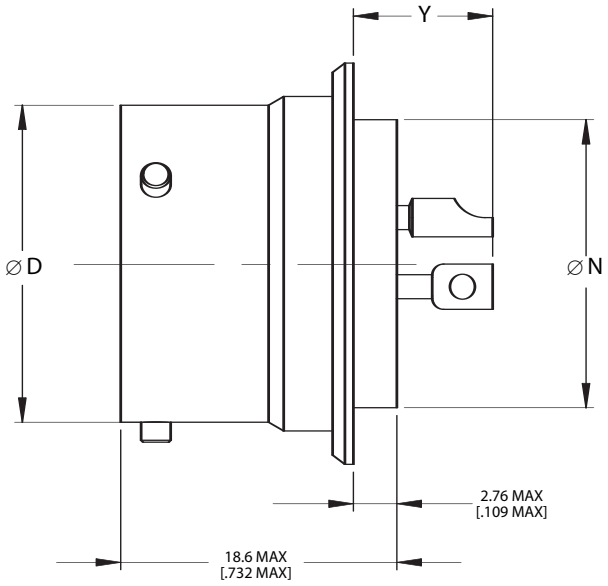


Contact Size	Z					
	Solder Cup (Style C) Maximum		Eyelet (Style E) Maximum		Pin Tail (Style X) Maximum	
	mm	inch	mm	inch	mm	inch
20	4.20	.165	4.20	.165	Consult factory	
16	5.95	.234	5.95	.234	Consult factory	
12	5.95	.234	5.95	.234	Consult factory	

Shell Size	⌀D		F		M		V	W	
	+0.00 -0.12	+.000 -0.005	Flat ±0.07	±.003	±0.12	±.005	Thread	±0.5	±.020
	mm	inch	mm	inch	mm	inch	Class 2A	mm	inch
8	13.61	.536	15.06	0.593	24.87	0.979	5/8-20 UN	2.97	.117
10	16.74	.659	18.24	0.718	28.04	1.104	3/4-20 UNEF	2.97	.117
12	21.06	.829	22.99	0.905	32.79	1.291	15/16-20 UNEF	2.97	.117
14	22.81	.898	24.59	0.968	35.33	1.391	1-20 UNEF	2.97	.117
16	26.04	1.025	27.76	1.093	38.51	1.516	1-1/8-20 UN	2.97	.117
18	28.73	1.131	30.91	1.217	41.68	1.641	1-1/4 UN	2.97	.117
20	31.90	1.256	34.09	1.342	44.86	1.766	1-3/8-18 UNEF	2.97	.117
22	35.08	1.381	37.26	1.467	49.63	1.954	1-1/2-20 UN	3.75	.148
24	38.25	1.506	40.44	1.592	52.81	2.079	1-5/8-18 UNEF	3.75	.148

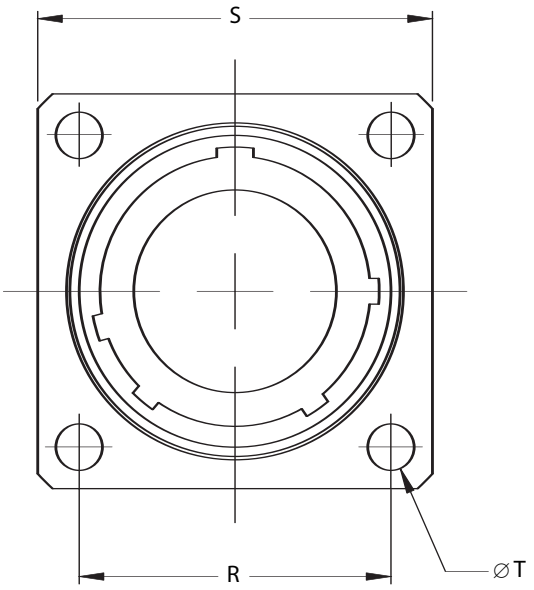
AE634***B
Solder Mount Receptacle – Bayonet Coupling
MS27034

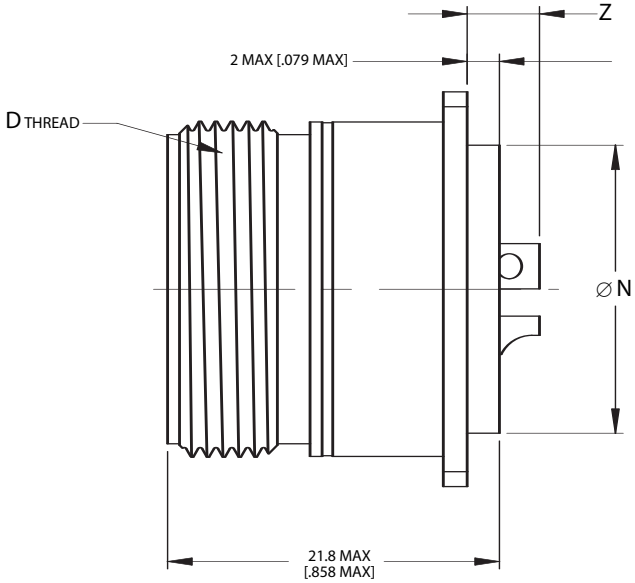




Contact Size	Y					
	Solder Cup (Style C) Maximum		Eyelet (Style E) Maximum		Pin Tail (Style X) Maximum	
	mm	inch	mm	inch	mm	inch
20	8.38	.330	8.38	.330	Consult factory	
16	10.16	.400	10.16	.400	Consult factory	
12	10.16	.400	10.16	.400	Consult factory	

Shell Size	∅D		∅N		∅E	
	+0.00 -0.12	+.000 -0.005	Maximum		±0.20	±.008
	mm	inch	mm	inch	mm	inch
8	13.61	.536	11.09	.437	17.90	.705
10	16.74	.659	14.27	.562	21.33	.840
12	21.06	.829	19.05	.750	26.54	1.045
14	22.81	.898	20.62	.812	27.68	1.090
16	26.04	1.025	23.79	.937	30.73	1.210
18	28.73	1.131	26.97	1.062	34.00	1.339
20	31.90	1.256	30.02	1.182	37.46	1.475
22	35.08	1.381	33.32	1.312	40.38	1.590
24	38.25	1.506	36.37	1.432	43.81	1.725

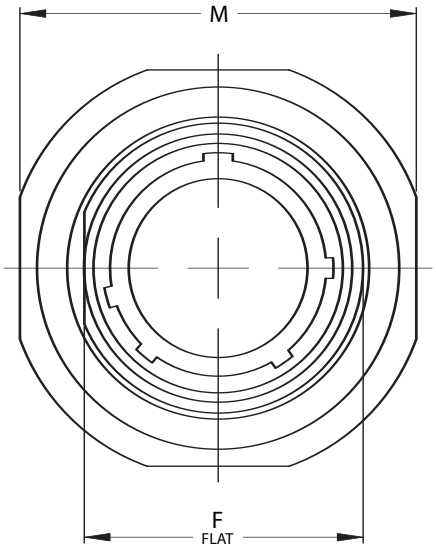


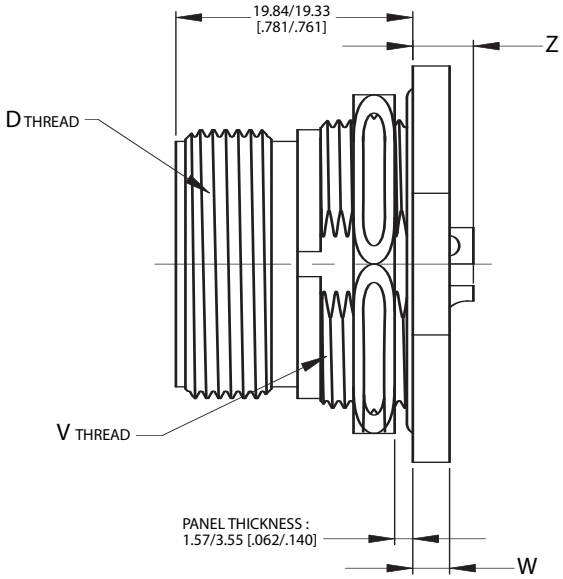


Contact Size	Z					
	Solder Cup (Style C) Maximum		**Eyelet (Style E)** Maximum		**Pin Tail (Style X)** Maximum	
	mm	inch	**mm**	inch	**mm**	inch
20	**3.81**	.150	**2.76**	.109	Consult factory	
16	**5.33**	.510	**4.34**	.171	Consult factory	
12	**5.58**	.220	**5.58**	.220	Consult factory	

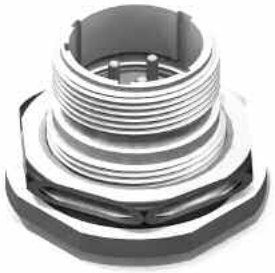
Shell Size	D	∅N		R		S		∅T	
	Thread	Maximum		Maximum		(TP)		**+0.00 -0.22**	+.000 -0.009
	Class 2A	**mm**	inch	**mm**	inch	**mm**	inch	**mm**	inch
8	9/16-24 UNEF	**11.09**	.437	**20.75**	.817	**15.09**	.594	**3.18**	.125
10	11/16-24 UNEF	**14.27**	.562	**23.93**	.942	**18.26**	.719	**3.18**	.125
12	7/8-20 UNEF	**19.05**	.750	**26.32**	1.036	**20.62**	.812	**3.18**	.125
14	15/16-20 UNEF	**20.62**	.812	**28.71**	1.130	**23.01**	.906	**3.18**	.125
16	1-1/16-18 UNEF	**23.79**	.937	**31.88**	1.255	**24.61**	.969	**3.18**	.125
18	1-3/16-18 UNEF	**26.97**	1.062	**34.24**	1.348	**26.97**	1.062	**3.18**	.125
20	1-5/16-18 UNEF	**30.02**	1.182	**36.63**	1.442	**29.36**	1.156	**3.18**	.125
22	1-7/16-18 UNEF	**33.32**	1.312	**39.80**	1.567	**31.75**	1.250	**3.18**	.125
24	1-9/16-18 UNEF	**36.37**	1.432	**43.39**	1.708	**34.92**	1.375	**3.91**	.154

AE665***T
Jam Nut Receptacle – Threaded Coupling
MS24265***T

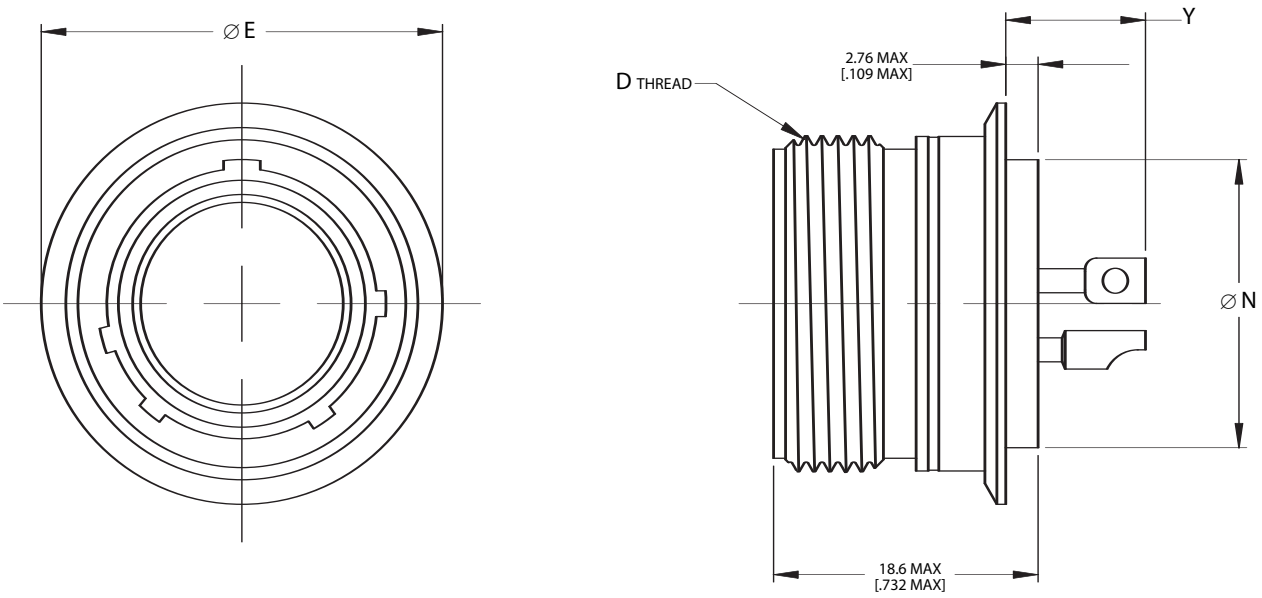




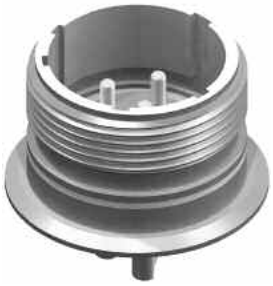
Contact Size	Z					
	Solder Cup (Style C) Maximum		Eyelet (Style E) Maximum		Pin Tail (Style X) Maximum	
	mm	inch	mm	inch	mm	inch
20	4.20	.165	4.20	.165	Consult factory	
16	5.95	.234	5.95	.234	Consult factory	
12	5.95	.234	5.95	.234	Consult factory	



Shell Size	D	F		M		V	W	
	Thread	Flat ±0.07	±.003	±0.12	±.005	Thread	±0.5	±.020
	Class 2A	mm	inch	mm	inch	Class 2A	mm	inch
8	9/16-24 UNEF	15.06	0.593	24.87	0.979	5/8-20 UN	2.97	.117
10	11/16-24 UNEF	18.24	0.718	28.04	1.104	3/4-20 UNEF	2.97	.117
12	7/8-20 UNEF	22.99	0.905	32.79	1.291	15/16-20 UNEF	2.97	.117
14	15/16-20 UNEF	24.59	0.968	35.33	1.391	1-20 UNEF	2.97	.117
16	1-1/16-18 UNEF	27.76	1.093	38.51	1.516	1-1/8-20 UN	2.97	.117
18	1-3/16-18 UNEF	30.91	1.217	41.68	1.641	1-1/4 UN	2.97	.117
20	1-5/16-18 UNEF	34.09	1.342	44.86	1.766	1-3/8-18 UNEF	2.97	.117
22	1-7/16-18 UNEF	37.26	1.467	49.63	1.954	1-1/2-20 UN	3.75	.148
24	1-9/16-18 UNEF	40.44	1.592	52.81	2.079	1-5/8-18 UNEF	3.75	.148



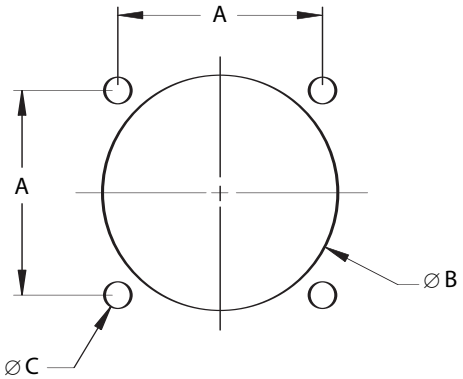
Contact Size	Y					
	Solder Cup (Style C) Maximum		Eyelet (Style E) Maximum		Pin Tail (Style X) Maximum	
	mm	inch	mm	inch	mm	inch
20	8.38	.330	8.38	.330	Consult factory	
16	10.16	.400	10.16	.400	Consult factory	
12	10.16	.400	10.16	.400	Consult factory	



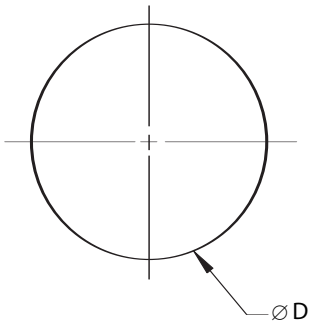
Shell Size	D	∅N		∅E	
	Thread	Maximum		±0.20	±.008
	Class 2A	mm	inch	mm	inch
8	9/16-24 UNEF	11.09	.437	17.90	.705
10	11/16-24 UNEF	14.27	.562	21.33	.840
12	7/8-20 UNEF	19.05	.750	26.54	1.045
14	15/16-20 UNEF	20.62	.812	27.68	1.090
16	1-1/16-18 UNEF	23.79	.937	30.73	1.210
18	1-3/16-18 UNEF	26.97	1.062	34.00	1.339
20	1-5/16-18 UNEF	30.02	1.182	37.46	1.475
22	1-7/16-18 UNEF	33.32	1.312	40.38	1.590
24	1-9/16-18 UNEF	36.37	1.432	43.81	1.725

Panel Cutouts

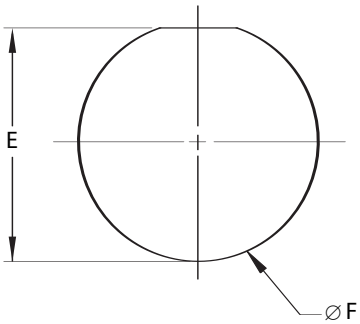
AE664**B / AE664**T
Wall Mount Receptacle



AE634**B / AE634**T
Solder Mount Receptacle

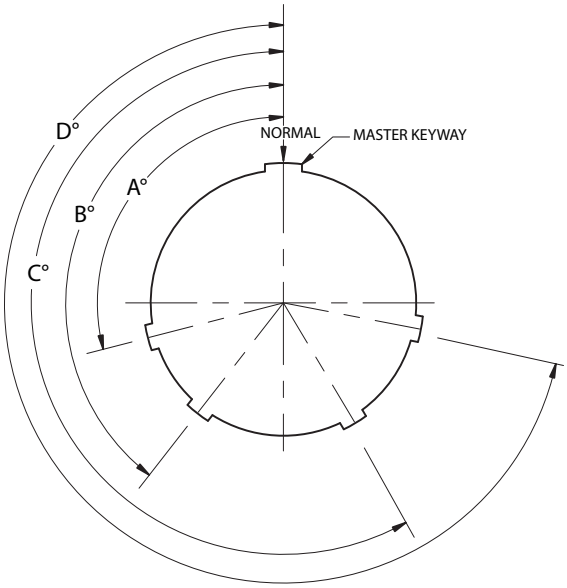


AE665**B / AE665**T
Jam Nut Receptacle



Shell Size	A (TP) mm	A (TP) inch	⌀B Back Mounting Minimum mm	⌀B Back Mounting Minimum inch	⌀B Front Mounting Minimum mm	⌀B Front Mounting Minimum inch	⌀C 0.00 -0.23 mm	⌀C .000 -.009 inch	⌀D +0.25 0.00 mm	⌀D +.010 .000 inch	E ±0.13 mm	E ±.005 inch	⌀F ±0.13 mm	⌀F ±.005 inch
8	15.09	.594	15.75	.620	11.35	.447	3.18	.125	11.23	.442	15.37	.605	16.13	.635
10	18.26	.719	19.00	.750	14.53	.572	3.18	.125	14.40	.567	18.64	.730	19.30	.760
12	20.62	.812	23.32	.918	19.30	.760	3.18	.125	19.18	.755	23.29	.917	24.05	.947
14	23.01	.906	25.10	.988	20.88	.822	3.18	.125	20.75	.817	24.89	.980	25.65	1.010
16	24.61	.969	28.30	1.114	24.08	.948	3.18	.125	23.93	.942	28.07	1.105	28.83	1.135
18	26.97	1.062	30.99	1.220	27.23	1.072	3.18	.125	27.10	1.067	31.12	1.225	32.00	1.260
20	29.36	1.156	34.19	1.346	30.28	1.192	3.18	.125	30.15	1.187	34.29	1.350	35.18	1.385
22	31.75	1.250	37.34	1.470	33.58	1.322	3.18	.125	33.45	1.317	37.46	1.475	38.35	1.510
24	34.92	1.375	40.54	1.596	36.63	1.442	3.91	.154	36.50	1.437	40.64	1.600	41.53	1.635

Keying Positions



Notes:

1. In the normal position (N), the insert centerline coincides with the centerline of the master keyway (key) of the shell.
2. In the alternate keying positions (6, 7, 8, 9 and Y), the minor keyways (keys) are positioned with reference to master keyway (key) as indicated in the keying position table below.

Shell Size	Polarizing Position	Key/Keyway Positions			
		A°	B°	C°	D°
8*, 10	N	105	140	215	265
	6	102	132	248	320
	7	80	118	230	312
	8	35	140	205	275
	9	64	155	234	304
10 only	Y	25	115	220	270
12 thru 24	N	105	140	215	265
	6	18	149	192	259
	7	92	152	222	342
	8	84	152	204	334
	9	24	135	189	240
	Y	98	152	268	338

* Y position is not available for shell size 8.

Insert Arrangement and Contact Information

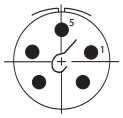
Shell Size	Insert Arrangement	Quantity of Contacts by Size			
		Total	20	16	12
8	08-03	3	3		
10	10-05	5	5		
12	12-03	3		3	
12	12-12	12	12		
14	14-07	7		7	
14	14-12	12	9	3	
14	14-15	15	15		
16	16-10	10		10	
16	16-24	24	24		
18	18-08	8			8
18	18-14	14		14	
18	18-31	31	31		
20	20-16	16	16		
20	20-25	25	19		6
20	20-39	39	37	2	
20	20-41	41	41		
22	22-19	19		19	
22	22-55	55	55		
24	24-30 **	30		30	
24	24-43	43	23	20	
24	24-57	57	55		2

** Non MIL-STD-1554 layout, available to Conesys P/N only.

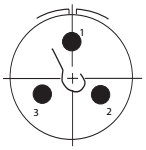
AE6 Series
Insert Arrangement (Pin Front View)
per MIL-DTL-1554

Insert Arrangement Views

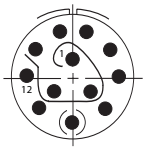
8-3
3 # 20



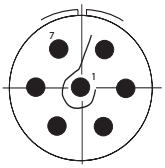
10-5
5 # 20



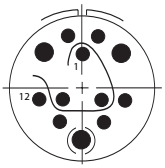
12-3
3 # 16



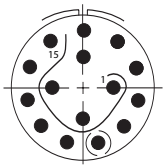
12-12
12 # 20



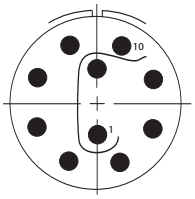
14-7
7 # 16



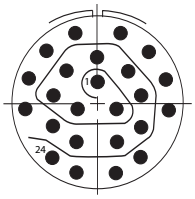
14-12
9 # 20, 3 # 16



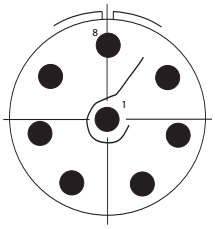
14-15
15 # 20



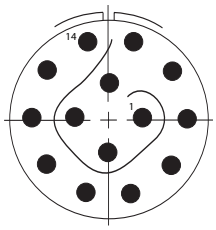
16-10
10 # 16



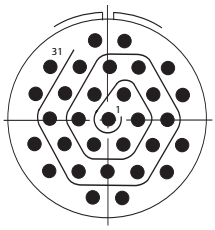
16-24
24 # 20



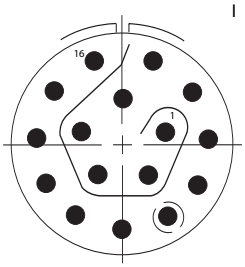
18-8
8 # 12



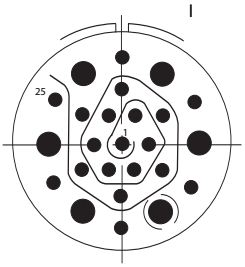
18-14
14 # 16



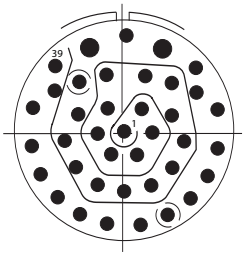
18-31
31 # 20



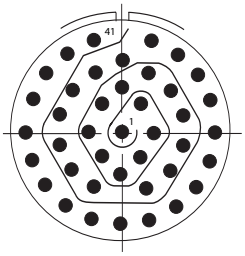
20-16
16 # 16



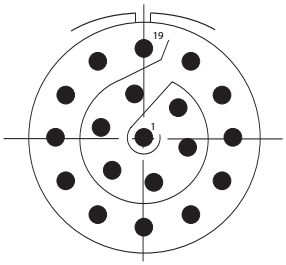
20-25
19 # 20, 6 # 12



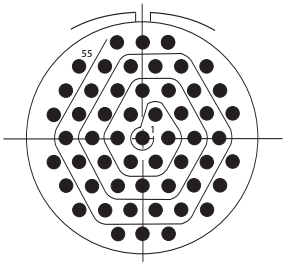
20-39
37 # 20, 2 # 16



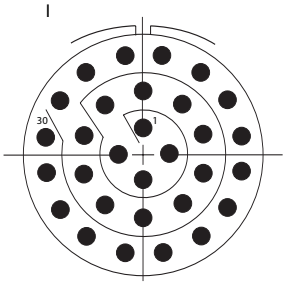
20-41
41 # 20



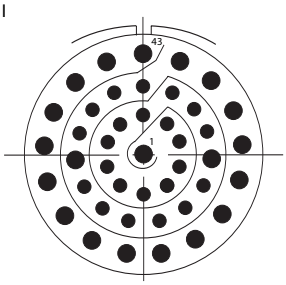
22-19
19 # 16



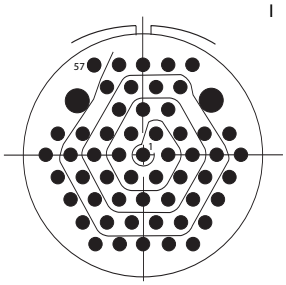
22-55
55 # 20



24-30**
30 # 16



24-43
23 # 20, 20 # 16



24-57
55 # 20, 2 # 12

** Non MIL-STD-1554 layout, available to Conesys P/N only.