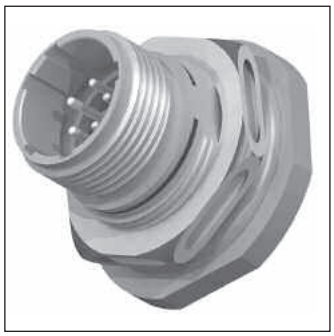
Conesys Europe
Hermetic Connectors

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

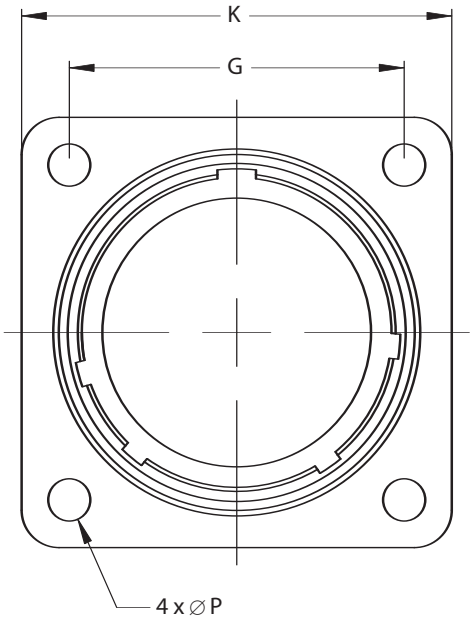
Terminal Configuration

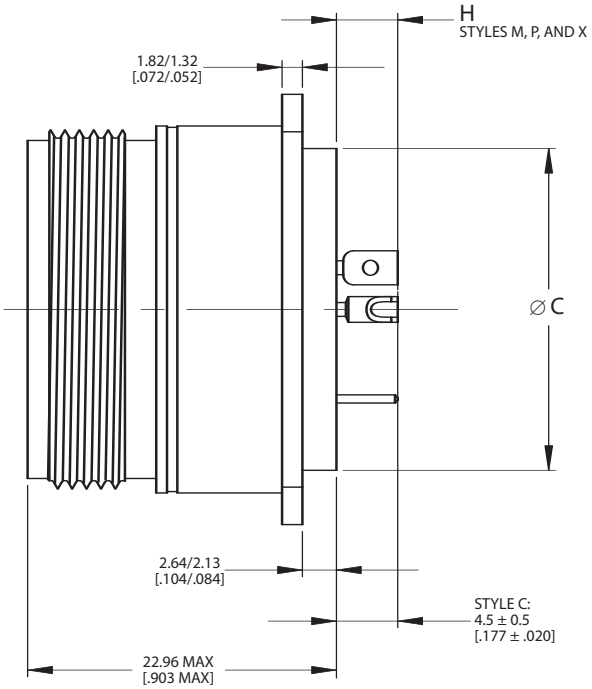
Terminal Styles M and P
Solder cup
Available in sizes 20, 16, and 12
For other sizes, please consult factory.

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

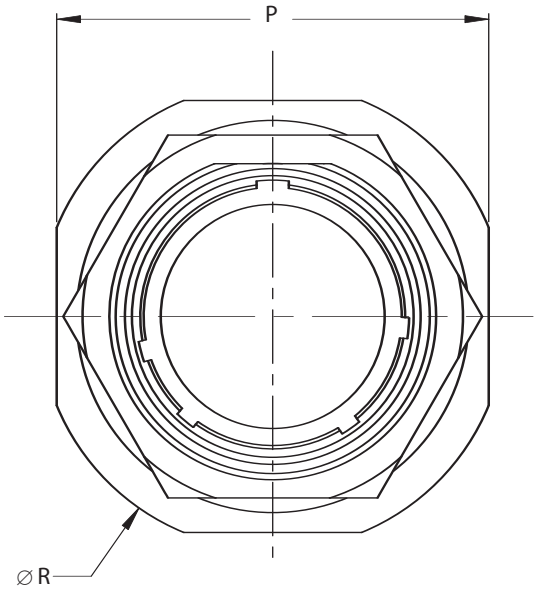
Terminal Style C
Pin tail for PCB
Available in sizes 22, 20, and 16
For other sizes or lengths, please consult factory.

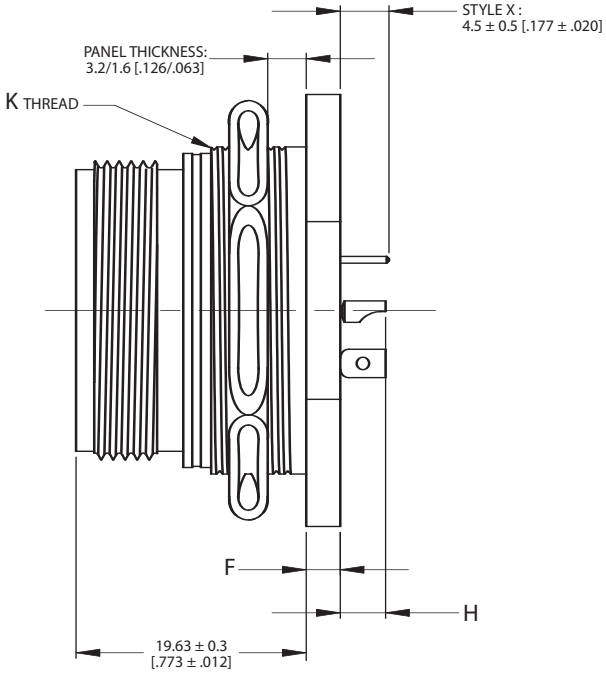
8000 Y0 and YE0
Wall Mount Receptacle
EN2997 Y0 and YE0





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

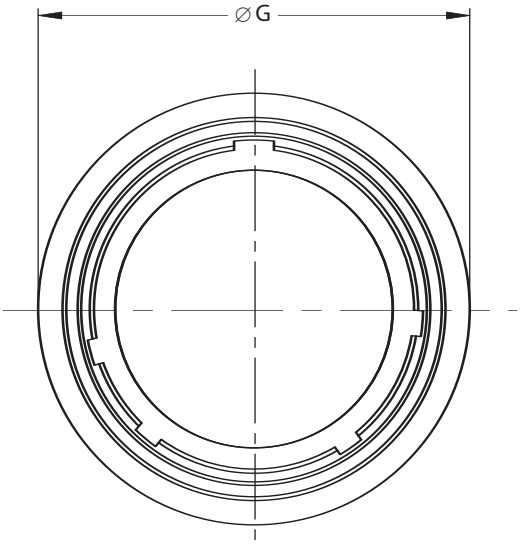


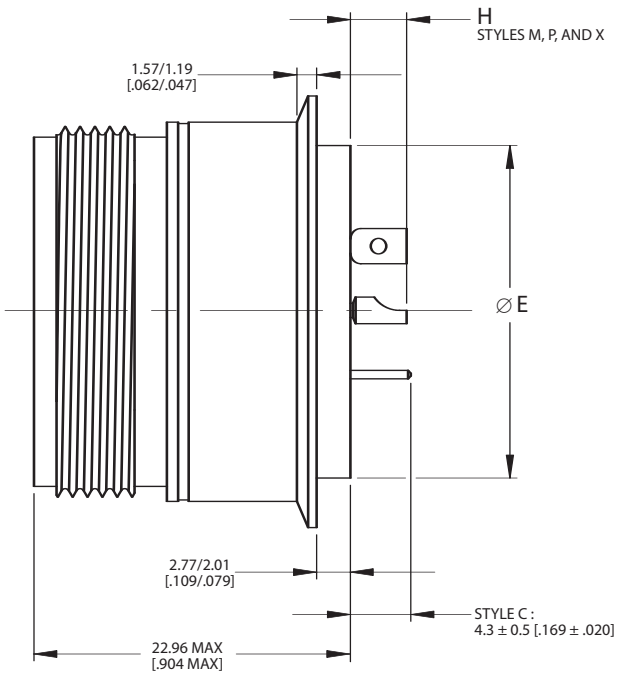


Shell Size	∅R ±0.4 mm	∅R ±.016 inch	H #20 ±0.7 mm	H #20 ±.028 inch	H #16 and #12 ±0.7 mm	H #16 and #12 ±.028 inch	K Thread Class 2A	F ±0.51 mm	F ±.020 inch	P ±0.4 mm	P ±.016 inch
8	26.99	1.063	3.80	.150	4.60	.181	0.6250-20 UN	2.97	.117	24.50	.965
10	29.89	1.177	3.80	.150	4.60	.181	0.7500-20 UNEF	2.97	.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





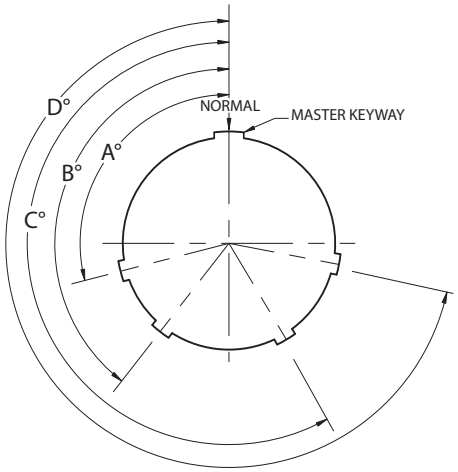
Shell Size	∅E		G		H			
					#20		#16 & #12	
	±0.07	±.002	Maximum		±0.7	±.028	±0.7	±.028
	mm	inch	mm	inch	mm	inch	mm	inch
8	12.63	.497	18.36	.723	4.20	.165	4.93	.194
10	14.20	.559	21.59	.850	4.20	.165	4.93	.194
12	18.98	.747	26.8	1.055	4.20	.165	4.93	.194
14	20.55	.809	27.94	1.100	4.20	.165	4.93	.194
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



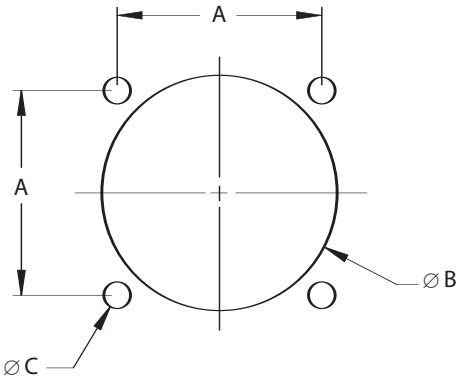
Notes:

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).

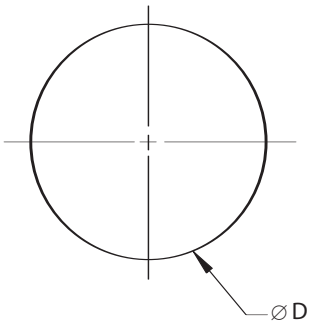
Position	Shell Size											
	08				10				12 to 24			
	A	B	C	D	A	B	C	D	A	B	C	D
N	105	140	215	265	105	140	215	265	105	140	215	265
6	102	132	248	320	102	132	248	320	18	149	192	259
7	80	118	230	312	80	118	230	312	92	152	222	342
8	35	140	205	275	35	140	205	275	84	152	204	334
9	64	155	234	304	64	155	234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

Panel Cutouts

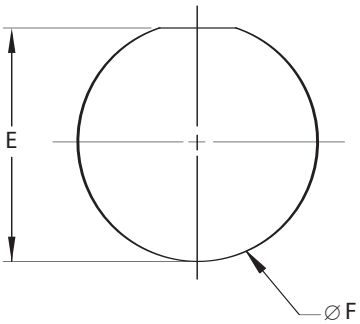
TYPE 0
Square Flange Receptacle



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

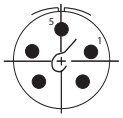
Insert Arrangement	Total No. of Contacts	Quantity of Contacts By size 20	16	12
08-03	3	3		
08-98	3	3		
10-05	5	5		
10-06	6	6		
10-20*	2		2	
12-03	3		3	
12-12	12	12		
14-04	4			4
14-07	7		7	
14-12	12	9	3	
14-15	15	15		
16-10	10		10	
16-24	24	24		
18-08	8			8
18-14	14		14	
18-31	31	31		
20-16	16	16		
20-25	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.

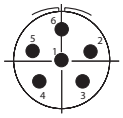
Insert Arrangement Views

803
3 # 20

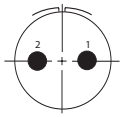
898
3 # 20



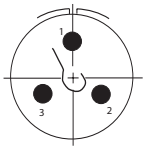
1005
5 # 20



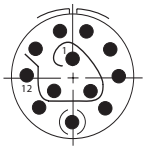
1006
6 # 20



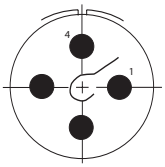
1020*
2 # 16



1203
3 # 16



1212
12 # 20



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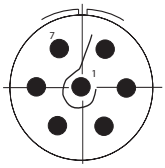
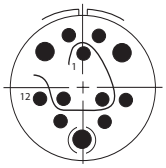
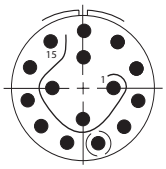
4 # 12



1407
7 # 16



1412
9 # 20, 3 # 16



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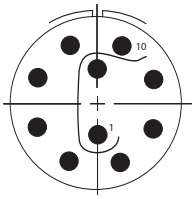
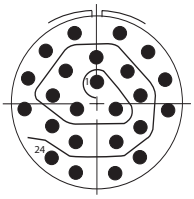
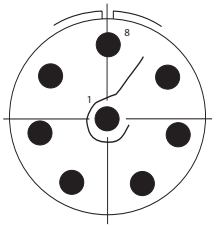
15 # 20



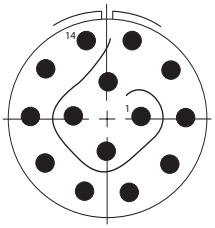
1610
10 # 16



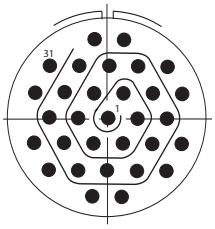
1624
24 # 20



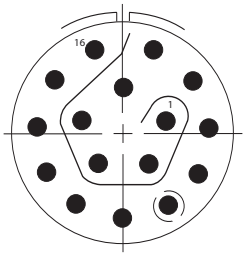
1808
8 # 12



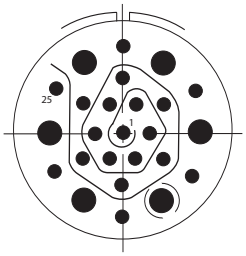
1814
14 # 16



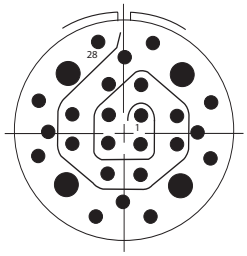
1831
31 # 20



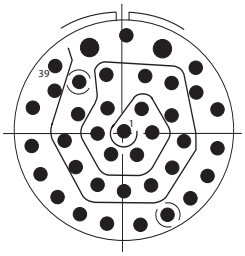
2016
16 # 16



2025
19 # 20, 6 # 12



2028
24 # 20, 4 # 12



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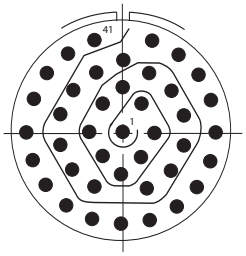
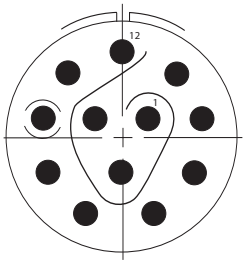
37 # 20, 2 # 16



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