

BLITZConnect

ZHI44 Series II Connector



ZH144 Series III

Introduction:

- ◆ Conforms to ZH144 III series standard
- ◆ High contact density layouts available
- ◆ Screw coupling, Shell size from 9 to 25
- ◆ RFI - EMI shielding and shell to shell continuity
- ◆ Accessories (protective caps, backshells, etc°)
- ◆ Hermetic versions
- ◆ High power up to 850A
- ◆ Optical layouts
- ◆ 230V layouts available



Features

● Mechanical

Shell: Aluminum, Stainless steel, Titanium alloy

Insulator: Thermoplastic

Grommet and interfacial seal: Silicone elastomer

Shell plating: Cadmium olive drab (W); Passivated (K); Nickel (F); Titanium alloy (TA)

Contacts: Copper alloy with gold plating (crimp, solder or PCB type)

Endurance: 500 mating cycles

Shock: 300 g, 3 ms

Sine Vibration: 60 g, 140 - 1000 Hz with T° cycling

Random Vibration: 1g²/ Hz, 100 - 1000 Hz at T° max. ; 5g²/ Hz, 100 - 1000 Hz at ambient T°

● Electrical

Operating Voltage & Test Voltage (Unmated Condition)

Service Rating	M	N	I	II
Sea Level	1300	1000	1800	2300
21000m	800	600	1000	1000

Rated Current

Contact Size	Contact Dia. (mm)	Contact resistance(mΩ)	Rated Current(A)
22D	Φ0.76	≤12	5
20#	Φ1.00	≤5	7.5
16#	Φ1.60	≤2.5	13
12#	Φ2.40	≤1.5	23
10#	Φ3.15	≤1.0	40

Insulation Resistance : ° 5000 MΩ (500VDC)
















































Crimp contact

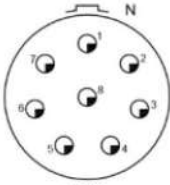
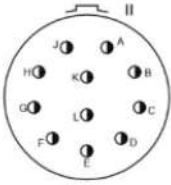
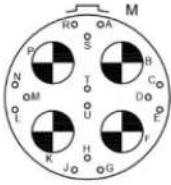
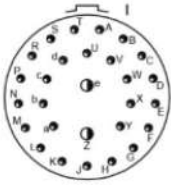
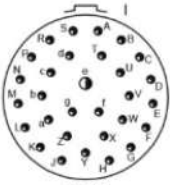
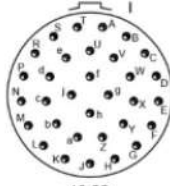
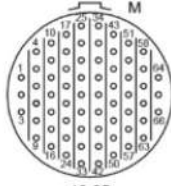
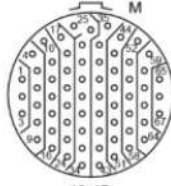
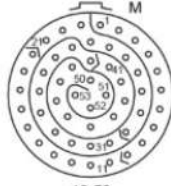
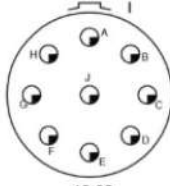
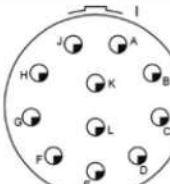
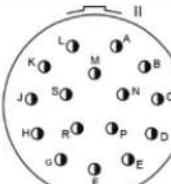
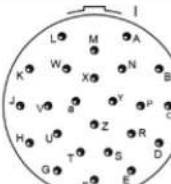
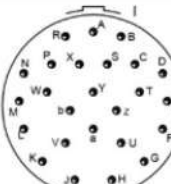
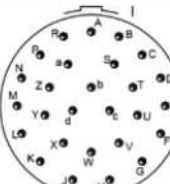
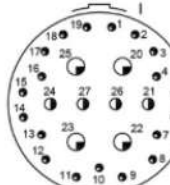
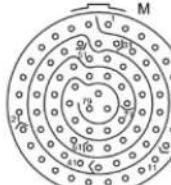
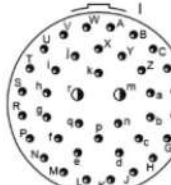
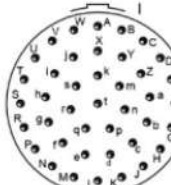
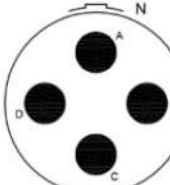
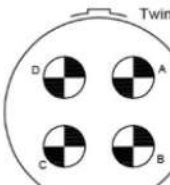
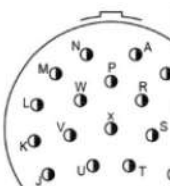
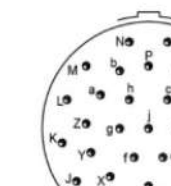
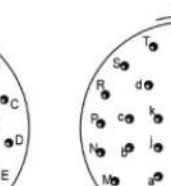
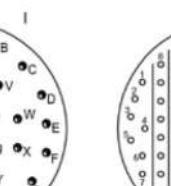
Contact size	Contact Dia(mm)	Color Band (male)	Color Band (female)	Inner Dia. (mm)	Outer Dia. (mm)	Wire Range (mm ²)	Wire Size (AWG)	Wire Dia. (mm)	Insertion/Extraction Tool	Crimp tool
22D	Φ0.76	Orange Blue Black	Orange Yellow Grey	0.85	1.20	0.08 0.125 0.2 0.3	28 26 24 22	0.76-1.37	M81969/ 14-01	YJQ-02
20#	Φ1.00	Orange Blue Orange	Orange Green Brown	1.17	1.78	0.2 0.3 0.5	24 22 20	1.02-2.11	M81969/ 14-10	YJQ-02 XCXY-01
16#	Φ1.60	Orange Blue Yellow	Orange Green Red	1.68	2.62	0.5 0.8 1.0 1.2	20 18 16	1.65-2.77	M81969/ 14-03	XCXY-01
12#	Φ2.40	Orange Blue Green	Orange Green Orange	2.49	3.84	2.0 3.0	14 12	2.46-3.61	M81969/ 14-04	XCXY-01
10#	Φ3.15	Green Red Grey	Green Orange Purple	3.40	4.65	4.8	10	3.42-4.12	M81969/ 14-05	XCXY-01 YTQ
8#	Φ3.60	—	—	4.55	6.4	8.37	8	6.4-6.9	M81969/ 14-12	YTQ

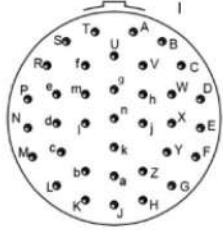
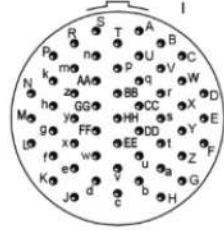
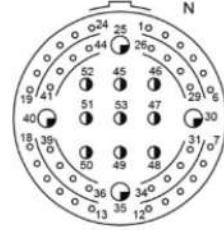
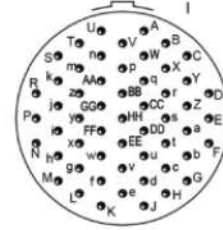
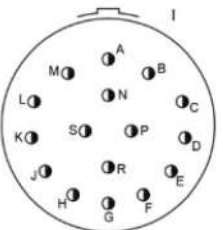
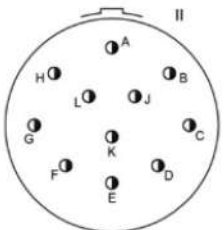
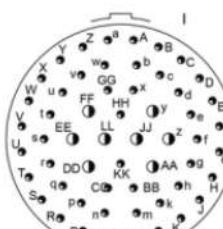
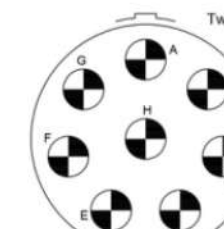
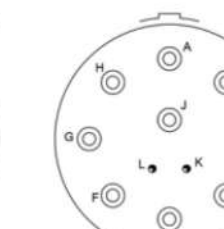
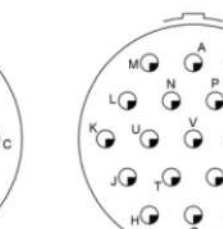
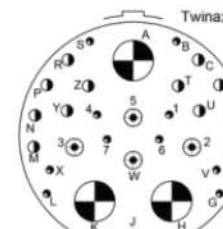
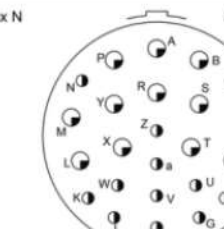
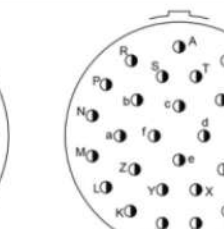
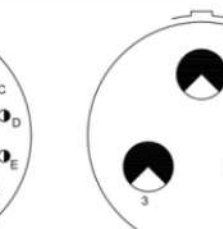
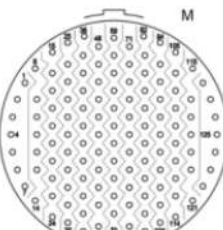
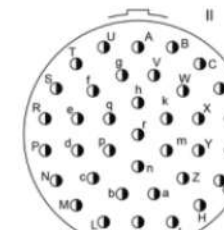
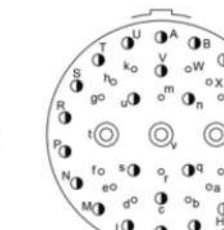
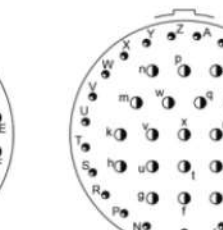
Solder contact

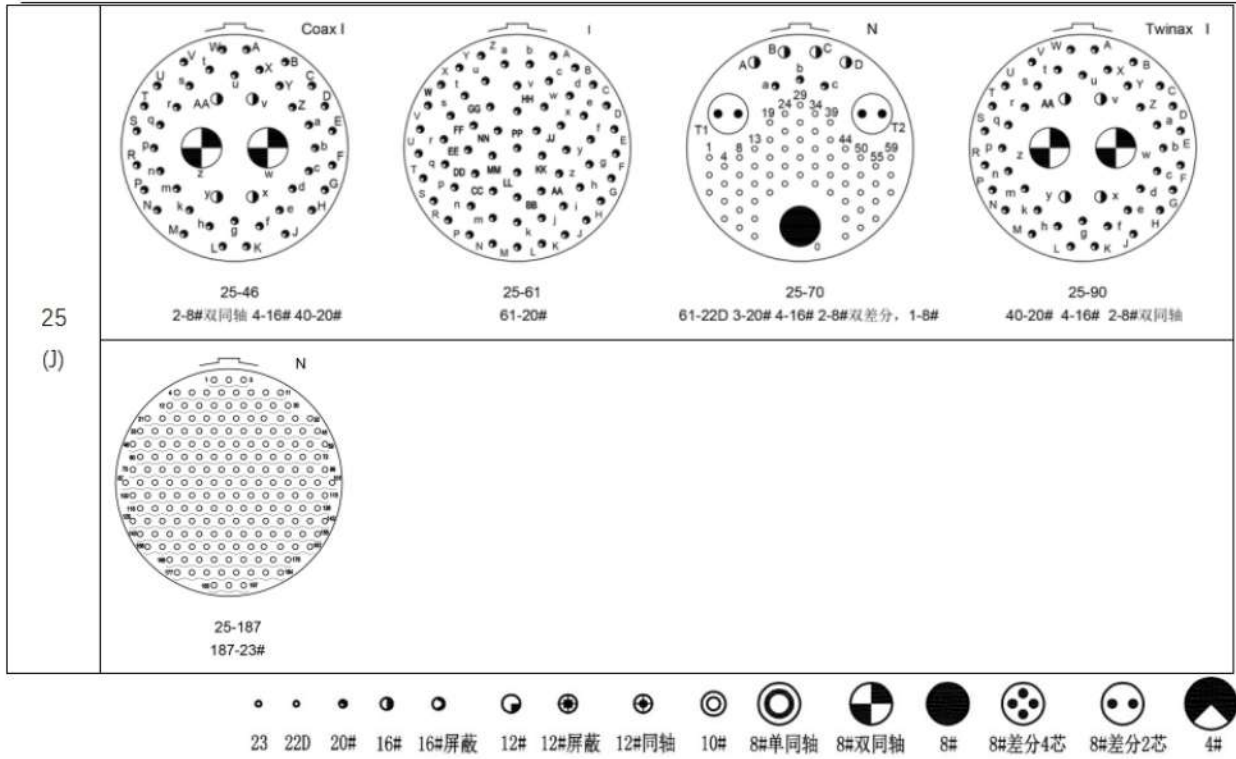
Contact size	Solder cup(mm)	Max. wire size (AWG)
22D	Φ0.9	22
20#	Φ1.1	20
16#	Φ1.9	16
12#	Φ2.9	12
10#	Φ3.6	10
8#	Φ4.8	8

Contact Layout (View of Mating-Face of Pin Insert)

09 (A)	 <p>09-03 3-20#</p>	 <p>09-02 2-20#</p>	 <p>09-07 7-22D</p>	 <p>09-09 9-23#/22D</p>	 <p>09-11 1-16#</p>	 <p>09-23 9-23#/22D</p>	 <p>09-35 6-22D</p>	 <p>09-44 4-22M</p>	 <p>09-98 3-20#</p>			
11 (B)	 <p>11-02 2-16#</p>	 <p>11-04 4-20#</p>	 <p>11-05 5-20#</p>	 <p>11-19 19-23#/22D</p>	 <p>11-23 19-23#/22D</p>	 <p>11-35 13-22D</p>	 <p>11-98 6-20#</p>	 <p>11-99 7-20#</p>				
13 (C)	 <p>13-02 2-12#</p>	 <p>13-03 3-16#</p>	 <p>13-04 4-16#</p>	 <p>13-05 2-16# 3-20#</p>	 <p>13-08 8-20#</p>	 <p>13-12 1-12#同轴 11-22D</p>	 <p>13-26 2-12# 6-22D</p>	 <p>13-35 22-22D</p>	 <p>13-98 10-20#</p>			
15 (D)	 <p>15-03 2-12# 1-16#</p>	 <p>15-05 5-16#</p>	 <p>15-15 1-16# 14-20#</p>	 <p>15-18 18-20#</p>	 <p>15-19 19-20#</p>	 <p>15-21 1-12#同轴 3-20# 17-22D</p>	 <p>15-31 30-22D 1-12#</p>	 <p>15-35 37-22D</p>	 <p>15-38 4-12#</p>	 <p>15-97 4-16# 8-20#</p>		
17 (E)	 <p>17-02 38-22D 1-8#</p>	 <p>17-06 6-12#</p>	 <p>17-08 8-16#</p>	 <p>17-11 8-20# 3-12#</p>	 <p>17-20a 2-8# 2-20# 16-22D</p>	 <p>17-26 26-20#</p>	 <p>17-30 3-10# 3-20#</p>	 <p>17-35 55-22D</p>	 <p>17-42 42-22D</p>	 <p>17-62 2-8#</p>	 <p>17-75 2-8#同轴</p>	<p>17-99 2-16# 21-20#</p>

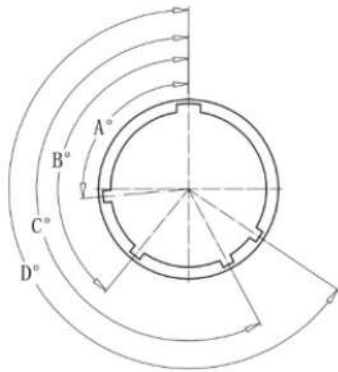
19 (F)	 <p>19-08 8-12#</p>	 <p>19-11 11-16#</p>	 <p>19-18 2-8# 双同轴 14-22D</p>	 <p>19-28 2-16# 26-20#</p>	 <p>19-30 1-16# 29-20#</p>
	 <p>19-32 32-20#</p>	 <p>19-35 66-22D</p>	 <p>19-45 67-22D</p>	 <p>19-53 53-22D</p>	 <p>19-96 9-12#</p>
21 (G)	 <p>21-11 11-12#</p>	 <p>21-16 16-16#</p>	 <p>21-24 24-20#</p>	 <p>21-25 25-20#</p>	 <p>21-27 27-20#</p>
	 <p>21-29 4-12# 4-16# 19-20#</p>	 <p>21-35 79-22D</p>	 <p>21-39 2-16# 37-20#</p>	 <p>21-41 41-20#</p>	 <p>21-48 4-8#</p>
	 <p>21-75 4-8# 双同轴</p>				
23 (H)	 <p>23-21 21-16#</p>	 <p>23-32 32-20#</p>	 <p>23-34 34-20#</p>	 <p>23-35 100-22D</p>	

23 (H)	 <p>23-36 36-20#</p>	 <p>23-53 53-20#</p>	 <p>23-54 4-12# 9-16# 40-22D</p>	 <p>23-55 55-20#</p>
	 <p>23-97 16-16#</p>	 <p>23-99 11-16#</p>		
25 (J)	 <p>25-04 8-16# 48-20#</p>	 <p>25-08 / 25-10 8-8# 双同轴</p>	 <p>25-11 9-10# 2-20#</p>	 <p>25-19 19-12#</p>
	 <p>25-20 3-8# 双同轴 4-12# 同轴 13-16# 10-20#</p>	 <p>25-24 12-12# 12-16#</p>	 <p>25-29 29-16#</p>	 <p>25-33 3-4#</p>
	 <p>25-35 128-22D</p>	 <p>25-37 37-16#</p>	 <p>25-41 14-22D 24-16# 3-10#</p>	 <p>25-43 20-16# 23-20#</p>

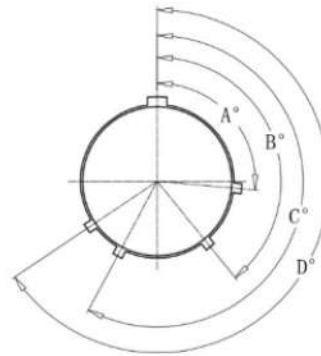


Orientation

Receptacle front view



Plug front view

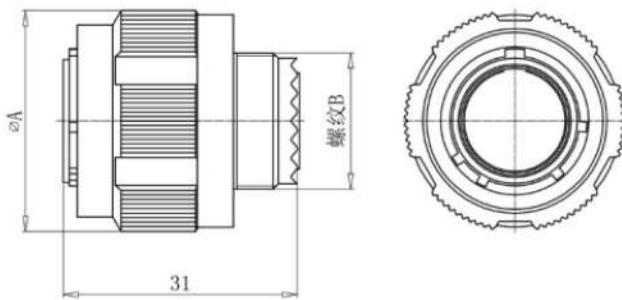


Shell size	MS shell size	Orientation	N	A	B	C	D	E
9	A	A°	105	102	80	35	64	91
		B°	140	132	118	140	155	131
		C°	215	248	230	205	234	197
		D°	265	320	312	275	304	240
11	B	A°	95	113	90	53	119	51
13	C	B°	141	156	145	156	146	141
15	D	C°	208	182	195	220	176	184
		D°	236	292	252	255	298	242
17	E	A°	80	135	49	66	62	79
19	F	B°	142	170	169	140	145	153
21	G	C°	196	200	200	200	180	197
23	H	D°	293	310	244	257	280	272
25	J							

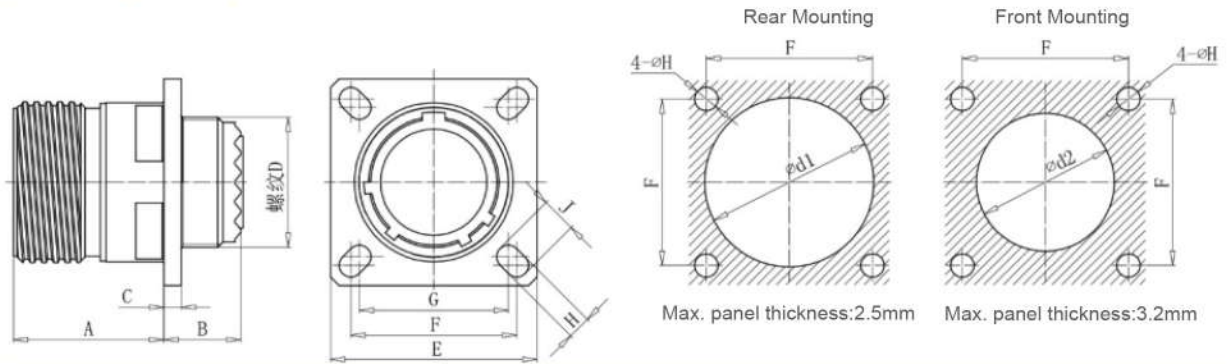
Dimensions

EMI Shielding Plug (D38999/26)

Shell size	MS Shell size	Dimensions	
		A	Thread B
09	A	21.5	M12×1.0-6g
11	B	25.0	M15×1.0-6g
13	C	29.2	M18×1.0-6g
15	D	32.4	M22×1.0-6g
17	E	35.6	M25×1.0-6g
19	F	38.5	M28×1.0-6g
21	G	41.7	M31×1.0-6g
23	H	44.9	M34×1.0-6g
25	J	48.0	M37×1.0-6g

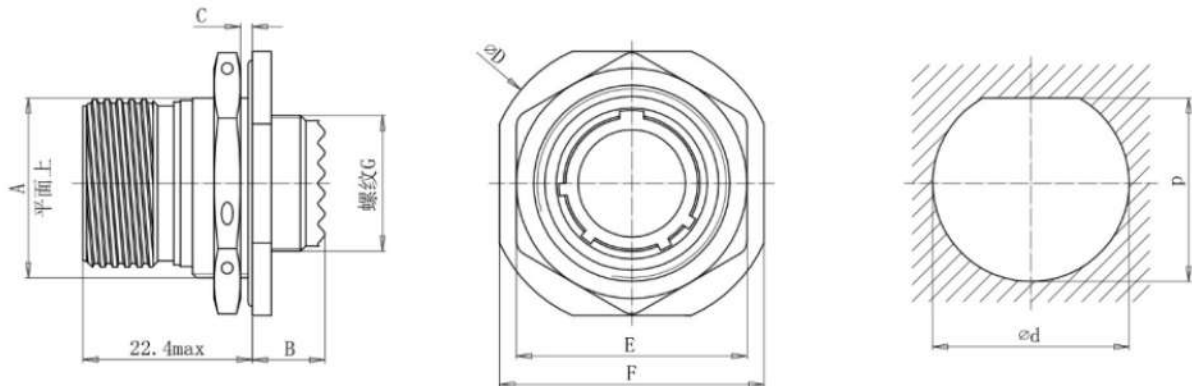


Square Flange Receptacle (D38999/20)



Shell size	MS Shell size	A max	B max	C max	D Thread	E	F	G	H	J	d1 min	d2 min
9	A	20.9	10.8	2.5	M12×1.0-6g	23.8	18.26	15.09	3.25	5.49	16.66	13.11
11	B	20.9	10.8	2.5	M15×1.0-6g	26.2	20.62	18.26	3.25	4.93	20.22	15.88
13	C	20.9	10.8	2.5	M18×1.0-6g	28.6	23.01	20.62	3.25	4.93	23.42	19.05
15	D	20.9	10.8	2.5	M22×1.0-6g	31.0	24.61	23.01	3.25	4.39	26.59	23.01
17	E	20.9	10.8	2.5	M25×1.0-6g	33.3	26.97	24.61	3.25	4.93	30.96	25.81
19	F	20.9	10.8	2.5	M28×1.0-6g	36.5	29.36	26.97	3.25	4.93	32.94	28.98
21	G	20.1	11.5	3.2	M31×1.0-6g	39.7	31.75	29.36	3.25	4.93	36.12	32.16
23	H	20.1	11.5	3.2	M34×1.0-6g	42.9	34.93	31.75	3.91	6.15	39.29	34.93
25	J	20.1	11.5	3.2	M37×1.0-6g	46.0	38.10	34.93	3.91	6.15	42.47	37.69

Jam Nut Receptacle (D38999/24)

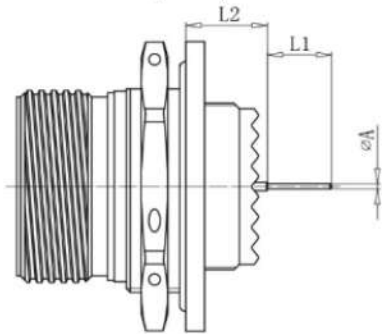


Shell size	MS Shell size	A	B max	C max	D max	E	F	G Thread	d	P
9	A	16.5	9.9	3.2	30.5	22.5	27.1	M12×1.0-6g	17.70	17.00
11	B	19.2	9.9	3.2	35.2	25.7	32.1	M15×1.0-6g	20.88	19.53
13	C	23.8	9.9	3.2	38.4	30.5	35.0	M18×1.0-6g	25.58	24.26
15	D	26.9	9.9	3.2	41.6	33.6	38.3	M22×1.0-6g	28.80	27.53
17	E	30.3	9.9	3.2	44.8	36.8	41.8	M25×1.0-6g	32.01	30.73
19	F	33.4	9.9	3.2	49.3	40.0	46.4	M28×1.0-6g	35.15	33.86
21	G	36.5	9.9	3.2	52.7	43.2	49.6	M31×1.0-6g	38.28	37.06
23	H	39.7	9.9	3.2	55.9	46.3	52.8	M34×1.0-6g	41.53	40.26

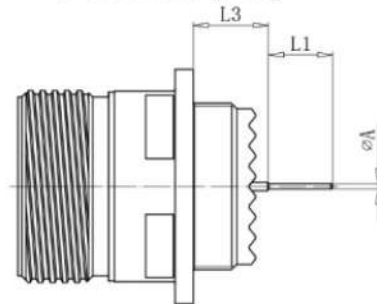
25	J	42.8	9.9	3.2	59.0	51.0	55.8	M37×1.0-6g	44.68	43.41
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PC Tail Contacts Receptacle

D38999/24 (PCB)



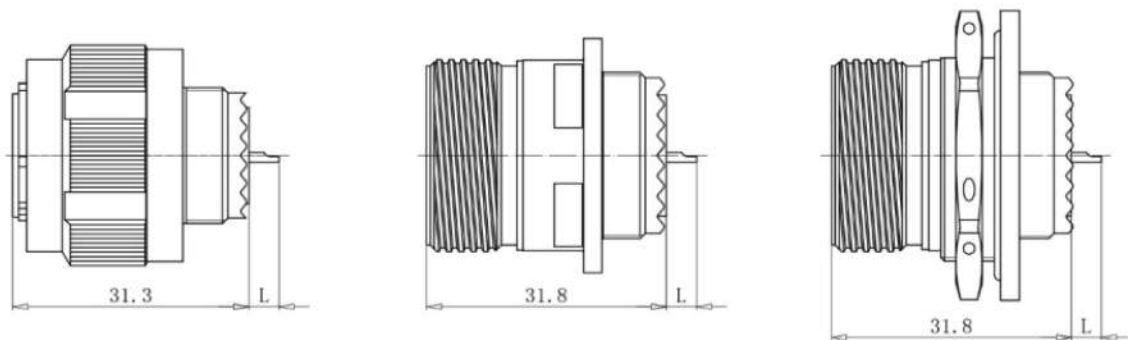
D38999/20 (PCB)



Contact Size (PC tail)		L1	A
22D	Long PCB	8.5	0.7
	Short PCB	4.0	
20#	Long PCB	8.5	0.7
	Short PCB	5.1	
16#	Long PCB	8.5	1.15
	Short PCB	5.1	

Dimensions with different contact size		Shell size 09-11	Shell size 13 15 17 19 21 23 25
L2	with 22D male	10.52~11.46	10.34~11.28
	with 22D female	10.19~11.46	10.01~11.28
	with 20# or 16# male / female	10.69~11.63	10.51~11.45
L3	with 22D male	9.48~10.58	9.48~10.58
	with 22D female	9.15~10.58	9.15~10.58
	with 20# or 16# male / female	9.65~10.75	9.65~10.75

Solder Type



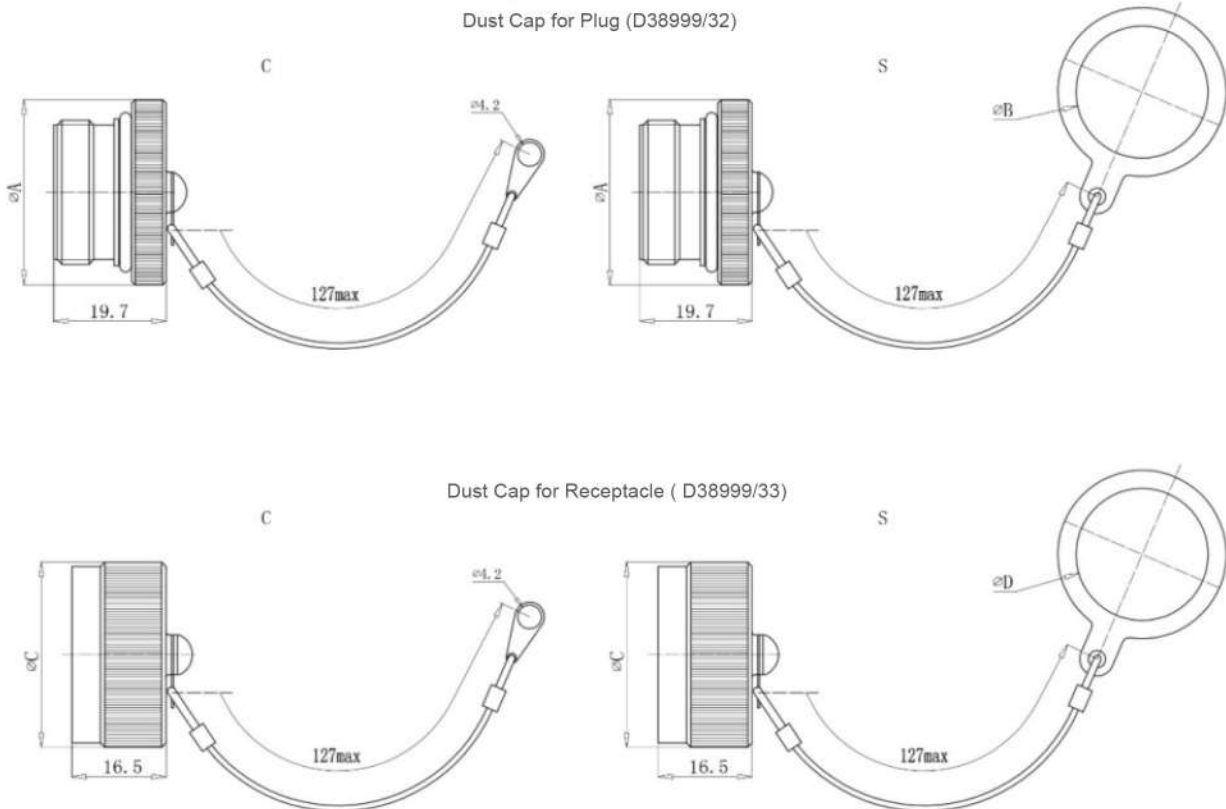
Contact size (solder)	22D	20#	16#	12#	10#	8#
L	4	4	4	4	6	6

Protective caps

Part Number:

Basic series	D38999 / 32	F	15	N
Shell style: 32 = Plug Dust Cap 33 = Receptacle Dust Cap				
Shell plating: Cadmium olive drab (W); Passivated (K); Nickel (F)				
Shell size: 09-11-13-15-17-19-21-23-25				
Type of Chain: R - Stainless steel rope with clevis (for D38999/20) C- Silk rope with clevis (for D38999/20) N - Stainless steel rope with ring (for D38999/24) S- Silk rope with ring (for D38999/24)				

Dimensions:



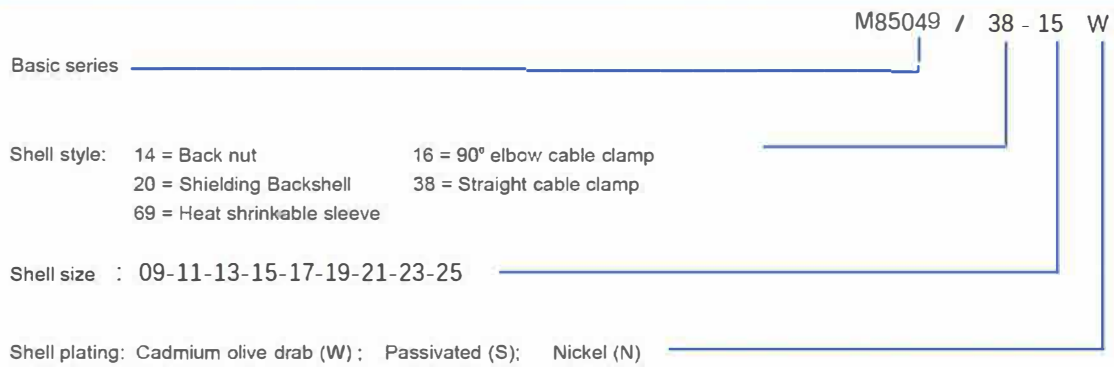
Shell size	09	11	13	15	17	19	21	23	25
A	22.5	26.5	29.5	32.5	36	38.4	41.7	44.4	48.3
B min	12.92	17.78	19.27	22.6	25.62	28.95	31.97	34.03	38.32
C	22.5	26.5	29.5	32.5	36	38.4	41.7	44.4	48.3

D min	17.78	21.33	25.62	28.95	31.97	35.3	38.32	41.65	44.45
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Backshell of Zh44 Series III



Part Number

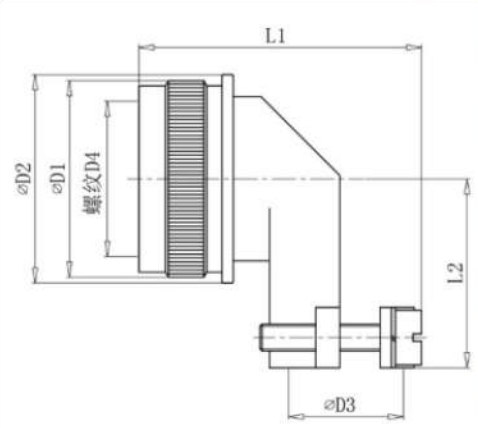


Dimensions

M85049/14 Back Nut

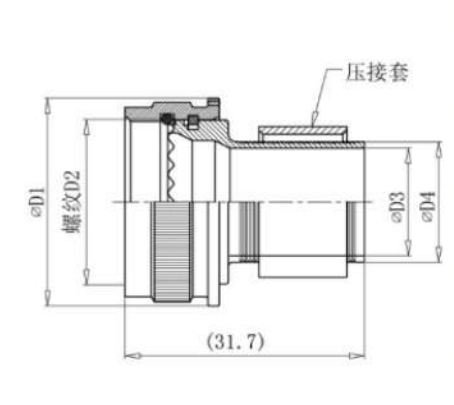
	Shell size	D1	D2	D3	Thread D4
		09	16.5	17.6	7.9
	11	19.5	20.6	10.8	M15×1.0
	13	22.5	23.6	13.6	M18×1.0
	15	26.5	27.6	16.9	M22×1.0
	17	29.5	30.3	20.1	M25×1.0
	19	32.5	33.3	22.1	M28×1.0
	21	36.0	36.8	25.2	M31×1.0
	23	38.5	39.3	28.3	M34×1.0
	25	41.7	42.3	31.6	M37×1.0

M85049/16 90° Elbow Cable Clamp



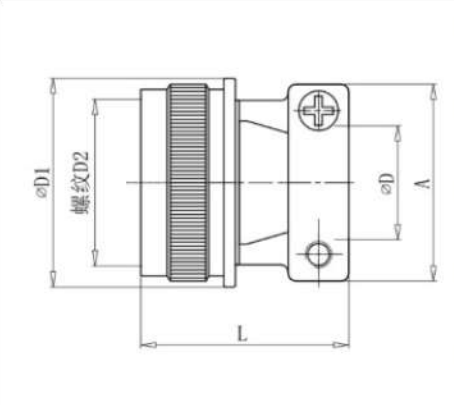
Shell size	D1	D2	D3	Thread D4	L1 max	L2 max
09	16.5	17.6	3.2~6.4	M12×1.0	29.0	25.0
11	19.5	20.6	4.0~9.5	M15×1.0	32.0	26.0
13	22.5	23.6	4.8~11.1	M18×1.0	33.5	27.5
15	26.5	27.6	5.5~14.3	M22×1.0	36.5	31.0
17	29.5	30.3	6.4~15.9	M25×1.0	38.5	32.5
19	32.5	33.3	7.9~19.1	M28×1.0	41.5	34.0
21	36.0	36.8	9.5~22.2	M31×1.0	44.5	34.5
23	38.5	39.3	10.3~23.8	M34×1.0	46.0	36.5
25	41.7	42.3	14.3~25.4	M37×1.0	48.0	43.5

M85049/20 Shielding Backshell



Shell size	D1	Thread D2	D3	D4
09	17.6	M12×1.0	6.55	8.81
11	20.6	M15×1.0	8.63	12.65
13	23.6	M18×1.0	10.90	12.95
15	27.6	M22×1.0	14.10	16.00
17	30.3	M25×1.0	17.25	19.30
19	33.3	M28×1.0	20.40	22.61
21	36.8	M31×1.0	23.60	25.65
23	39.3	M34×1.0	26.40	28.70
25	42.3	M37×1.0	28.40	30.53

M85049/38 Straight Cable Clamp



Shell size	D1	Thread D2	D	A	L
09	17.6	M12×1.0	2.49~5.94	20	23.6
11	20.6	M15×1.0	3.87~5.94	22	24.6
13	23.6	M18×1.0	4.83~8.33	24.5	26.7
15	27.6	M22×1.0	6.60~11.61	26	27.7
17	30.3	M25×1.0	7.19~15.60	30.5	27.7
19	33.3	M28×1.0	8.26~16.10	35	29
21	36.8	M31×1.0	8.71~17.73	38	30.4
23	39.3	M34×1.0	9.68~20.90	41	32.4
25	42.3	M37×1.0	10.62~21.66	44	34.4

M85049/69 Heat Shrinkable Sleeve

Shell size	D1	D2	D3	Thread D4
09	16.5	6.9	11.0	M12×1.0
11	19.5	9.8	14.0	M15×1.0
13	22.5	12.8	17.6	M18×1.0
15	26.5	16.3	20.5	M22×1.0
17	29.5	19.4	24.0	M25×1.0
19	32.5	21.6	26.4	M28×1.0
21	36.0	25.0	30.0	M31×1.0
23	38.5	27.7	33.2	M34×1.0
25	41.7	20.3	36.2	M37×1.0

M85049/18 Part Number

M85049 / 18 - 17 N 04 A

Basic Series _____

Shell style: M85049/18 = Straight Cable clamp with shielding _____

Shell size : 09-11-13-15-17-19-21-23-25 _____

Plating: Cadmium olive drab (W) Passivated (S)
 Nickel (N) Titanium (TA)

Cable Exit Diameter Code: _____
 see table 1 and 2

Length Code: see table 3 _____

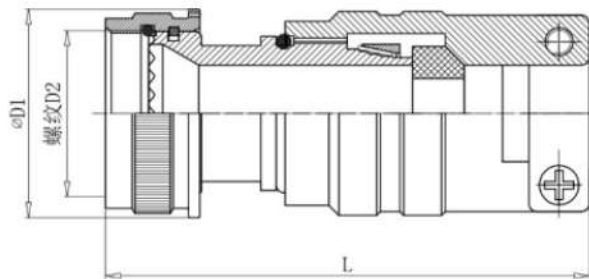
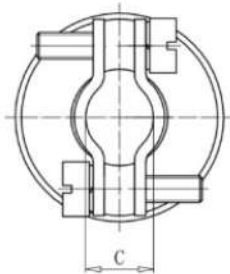


Table 1

Shell size	Cable Exit Diameter Code	D1	Thread D2
09	01~02	16.5	M12×1.0
11	01~03	19.5	M15×1.0
13	02~04	22.5	M18×1.0
15	02~05	26.5	M22×1.0
17	02~06	29.5	M25×1.0
19	03~07	32.5	M28×1.0

21	03-08	36.0	M31×1.0
23	03-09	38.5	M34×1.0
25	04-10	41.7	M37×1.0

Table 2

Cable Exit Diameter Code	Suitable cable dia. (mm)
01	1.57~3.18
02	3.18~6.35
03	6.35~9.53
04	9.53~12.7
05	12.7~15.88
06	15.88~19.05
07	19.05~22.23
08	22.23~25.4
09	25.4~28.58
10	28.58~31.75

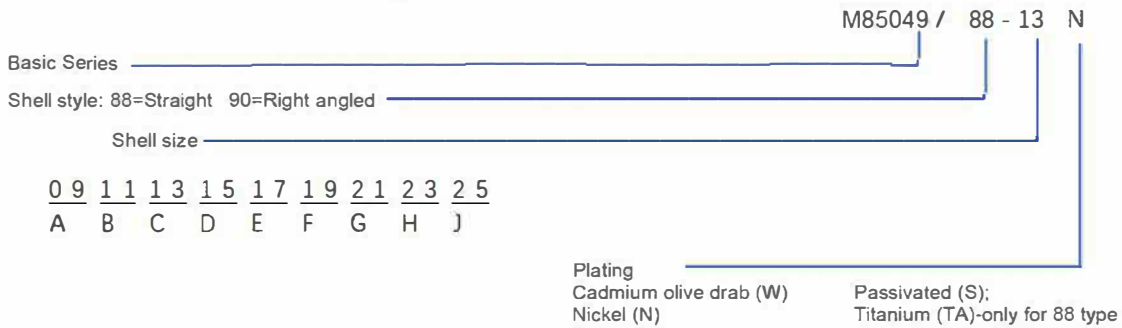
Table 3

Shell size	Length Code	L
09~25	Non-marked (standard)	64.1
09~25	A	88.1
15~25	B	113.5
21~25	C	138.9

The M85049/88 and M85049/90 type banding backshell offers a quick and easy way to terminate EMI shielding to a mil-spec connector. A simple band crimped to the rear of the backshell holds shielding firmly in place. Use an additional shrink boot for environmental protection. Compatible with MIL-DTL-38999 Series III and IV.

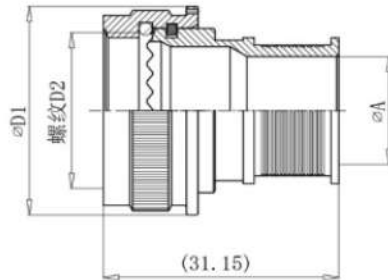
Part Number

M85049/88 M85049/90 Banding Backshell



Dimensions

M85049/88 Straight Banding Backshell



Shell Size	D1	Thread D2	A (02 Cable Exit Code)	A (03 Cable Exit Code)
09	17.6	M12×1.0	N/A	6.4
11	20.6	M15×1.0	N/A	7.9
13	23.6	M18×1.0	7.9	11.1
15	27.6	M22×1.0	11.1	14.3
17	30.3	M25×1.0	12.7	15.9
19	33.3	M28×1.0	15.9	19.1
21	36.8	M31×1.0	15.9	20.6
23	39.3	M34×1.0	17.5	23.8
25	42.3	M37×1.0	19.1	25.4

MIL-DTL-38999 Series III gasket

Shell Size	A	B	C	G	D
09	23.9	16.1	18.26	15.09	3.3
11	26.3	19.2	20.62	18.26	3.3
13	28.7	22.4	23.01	20.62	3.3
15	31.1	25.6	24.61	23.01	3.3
17	33.4	30.4	26.97	24.61	3.3
19	36.6	32.0	29.36	26.97	3.3
21	39.8	34.9	31.75	29.36	3.3
23	43.0	38.3	34.93	31.75	4.0
25	46.1	41.4	38.10	34.93	4.0

