

## GJB599 I Series Float Mounting Electrical Connector for Cabinets (RFD Series)

### Description

- EMI shielding
- grounding shell before contacts are mated
- Low weight, volume saving
- 8 shell sizes from 11# to 25#
- Insert arrangement: same as GJB599 I series 11#~25# shell
- 100% scoop-proof to avoid bending pin during mating
- Number of contacts: from 1 to 128
- Contact size: 22D, 20#, 16#, 12#, 8#, 4#
- applicable rear accessory according to standard J1784

### Product features

The receptacles of the RFD series connectors are mounted in the fixed unit of equipment, and the plugs mounted in the free unit. The RFD series connectors have no locking and unlocking mechanisms. Locking and unlocking function must be supplied by the equipment itself.

Owing to the floating plugs of the RFD series, the matching tolerance between the free unit and the fixed unit could be adjusted, and the distortion or excursion caused by some factors such as a load, can be absorbed. The floating scope of a plug is showed as figure 1.

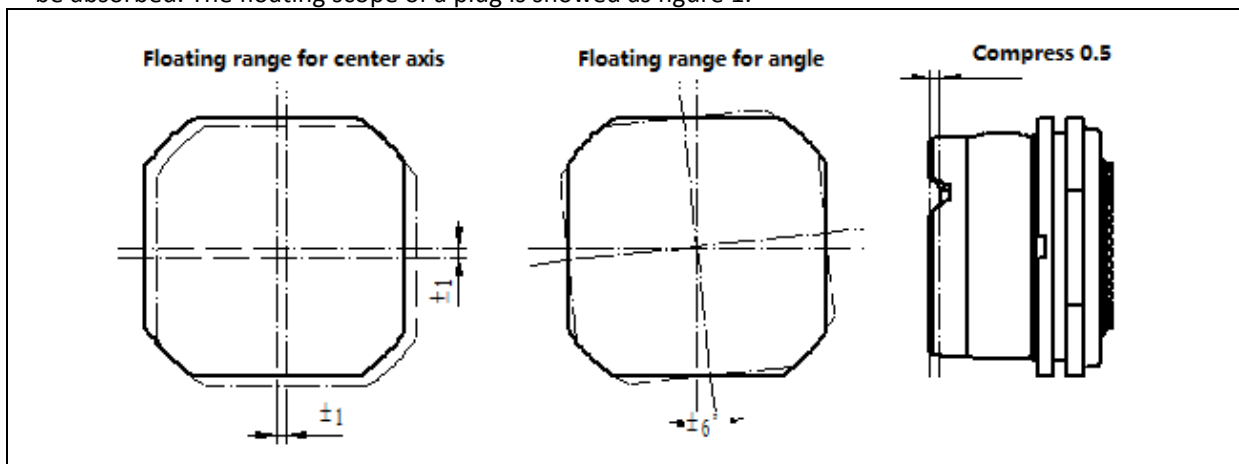


Fig 1 The Floating Range for Plug

### Order information

<b>Basic series</b>	RFD	27467	T	25	B	42	P	N
27467: jam nut plug								
27999: square flange plug								
27466: wall-mounting, square flange receptacle (front mounting,)								
27496: box square flange receptacle(front mounting,)								
27468: jam nut receptacle								
<b>Shell style</b>								
T: thread termination								
E: no thread termination								
<b>Shell size</b>								
11/13/15/17/19/21/23/25								
<b>Shell plating</b>								
B: olive-drab cadmium plating								
F: electroless nickel								
<b>Insert arrangement:</b> (the same as GJB599 I series)								
<b>Contact style</b>								
P: pin								
S: socket								
<b>Polarization</b>								
N: the common polarization only								

## Main technical characteristics

### [Environmental]

- Operation temperature:
  - Olive-green cadmium plating:  $-65^{\circ}\text{C} \sim +175^{\circ}\text{C}$
  - Electroless nickel plating:  $-65^{\circ}\text{C} \sim +200^{\circ}\text{C}$
- high temperature resistance: 1000 h
- Relative humidity: 98% at  $40^{\circ}\text{C}$
- Air leakage rate:  $\leq 16 \text{ cm}^3/\text{h}$  at a pressure differential of 2 atmospheres
- Salt spray
  - Olive-green cadmium plating: 500 h
  - Electroless nickel plating: 48 h
- Fluid immersion resistance: against various fuels, coolant, solvent

### [Mechanical]

- Retention force of insert installed in the shell: 7 bars
- Retention force of contacts installed in the insulator:

Contact size	22D	20#	16#	12#	8#	4#
Max load(N)	45	67	110	150	150	150

- Mating and unmating force

Shell size	Max mating force(N)	Min unmating force(N)
11	20×10	12×10
13	30×10	13×10
15	35×10	15×10
17	50×10	16×10
19	55×10	18×10
21	65×10	22×10
23	80×10	27×10
25	102×10	34×10

- Durability: 500 cycles
- Random vibration: 10~2000Hz, peak value of acceleration 28g
- Sinusoid vibration: 10~2000Hz, peak value of acceleration 30g
- Shock: 3ms one thirds sinusoid, peak value of acceleration 150g

### [Electrical]

- Rated current of contact:

Contact size	22D	20#	16#	12#	8#	4#
Rated current(A)	5	7.5	13	23	60	100

- Contact resistance:

Contact size	22D	20#	16#	12#	8#	4#
Contact resistance(mΩ)	8	4.7	2	1.1	0.6	0.26

- Insulation resistance:

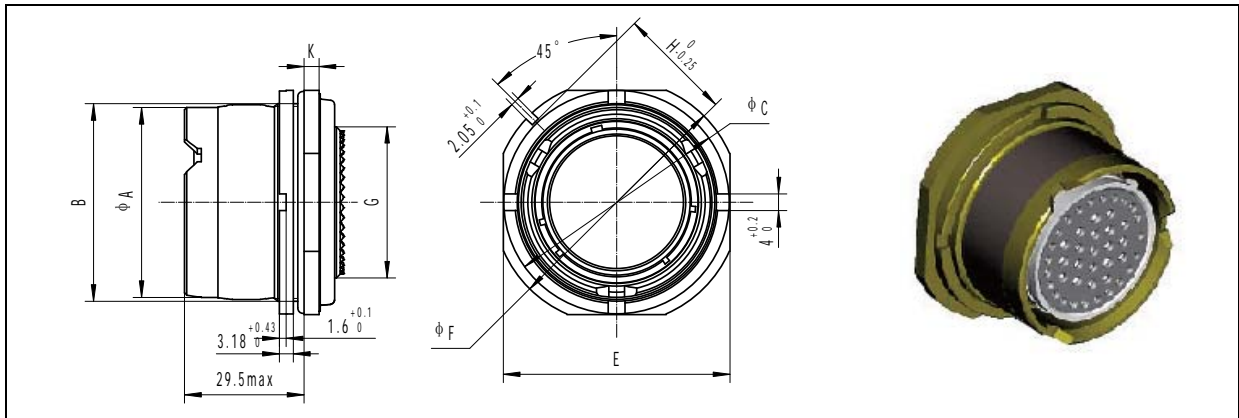
Normal  $\geq 5000\text{M}\Omega$ ; high temperature  $\geq 1000\text{M}\Omega$

- Service rating

Operation class	Withstanding voltage at sea level (Vrms)	Withstand voltage at 21000-meter altitude (Vrms)	Operating voltage	
			Vrms	Vdc
M	1300	800	400	550
N	1000	600	300	400
I	1800	1000	600	850
II	2300	1000	900	1250

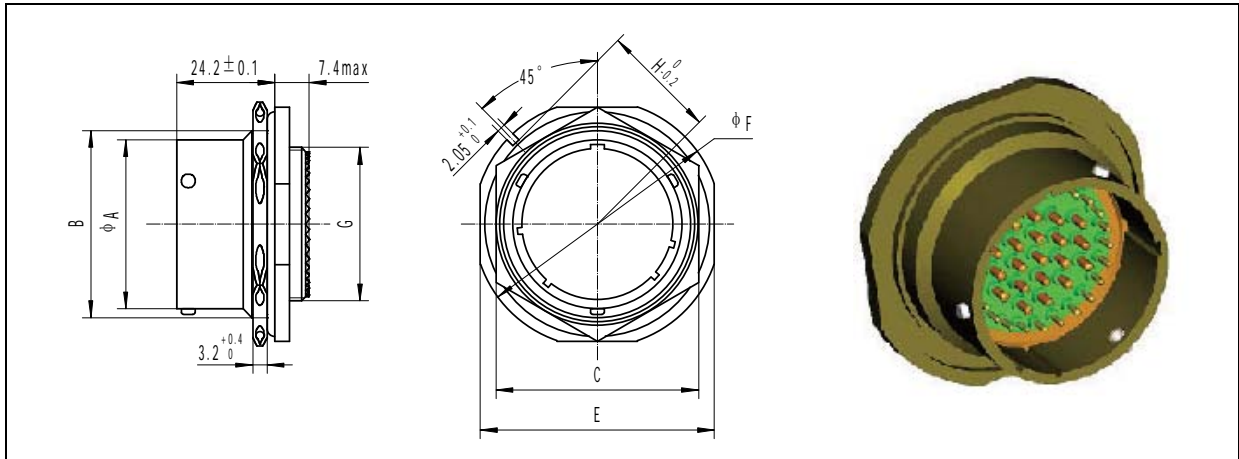
### Outline dimension

[Jam nut plug RFD27467]



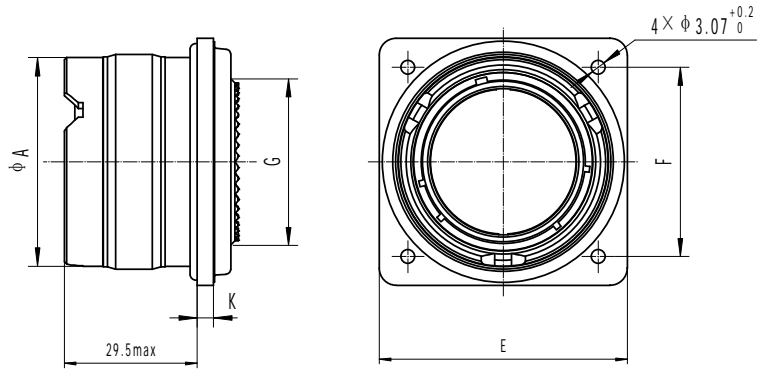
Shell size	A	Thread B UNEF-2A	C	E	F	Thread G UNEF-2A	H	K
11	23.00	1.0000-20	32.23	32.16	38.10	0.5625-24	16.92	2.77
13	26.80	1.1250-18	35.25	36.34	41.28	0.6875-24	18.51	2.77
15	30.00	1.2500-18	38.40	38.51	44.45	0.8125-20	20.10	2.77
17	33.22	1.3750-18	41.60	41.69	49.23	0.9375-20	22.67	2.77
19	36.20	1.5000-18	46.30	46.43	52.37	1.0625-18	24.26	3.56
21	39.40	1.6250-18	49.60	49.64	55.58	1.1875-18	25.84	3.56
23	42.60	1.7500-18	52.70	52.78	58.72	1.3125-18	27.43	3.56
25	45.68	1.8750-16	53.93	54.03	59.10	1.4375-18	27.58	3.56

[Jam nut receptacle RFD27468]



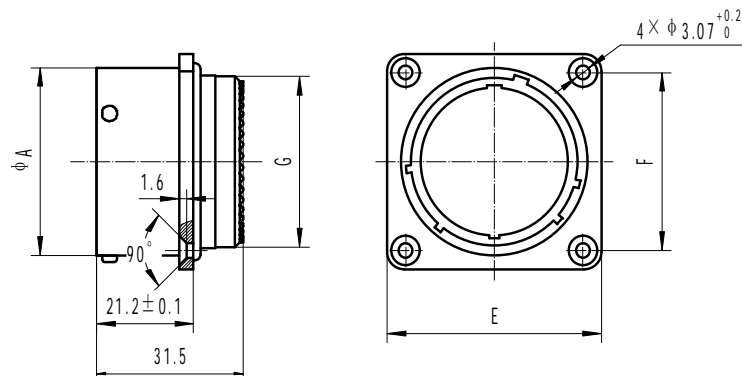
Shell size	A	Thread B UNEF-2A	C	E	F	Thread G UNEF-2A	H
11	17.81	0.8125-20	25.80	31.49	35.20	0.5625-24	15.33
13	21.62	1.0000-20	30.00	34.69	38.38	0.6875-24	16.92
15	24.80	1.1250-18	33.00	37.79	41.55	0.8125-20	18.51
17	27.97	1.2500-18	37.00	40.99	44.73	0.9375-20	20.10
19	30.69	1.3750-18	40.00	45.79	49.51	1.0625-18	22.67
21	33.86	1.5000-18	43.00	48.99	52.65	1.1875-18	24.26
23	37.04	1.6250-18	46.00	52.09	55.86	1.3125-18	25.84
25	40.22	1.7500-18	51.20	55.29	59.00	1.4375-18	27.43

[Square flange plug RFD27999]



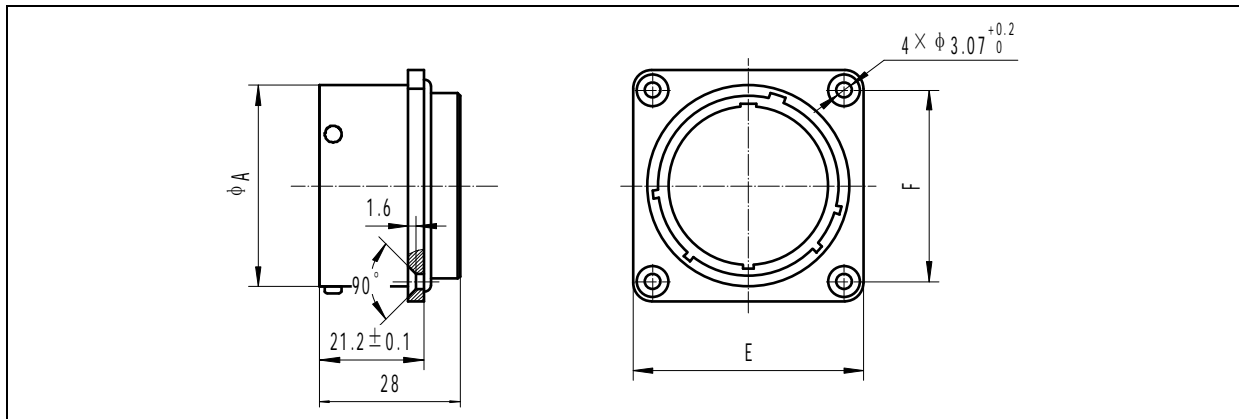
Shell size	A	E	F	Thread G UNEF-2A	K
11	23.00	33.60	25.50	0.5625-24	2.77
13	26.80	36.30	28.00	0.6875-24	2.77
15	30.00	39.50	30.00	0.8125-20	2.77
17	33.22	41.69	32.00	0.9375-20	2.77
19	36.20	46.43	35.00	1.0625-18	3.56
21	39.40	49.64	37.00	1.1875-18	3.56
23	42.60	53.00	39.50	1.3125-18	3.56
25	45.68	54.50	41.50	1.4375-18	3.56

[Wall-mounting square flange receptacle ( front mounting) RFD27466]



Shell size	A	E	F	Thread G UNEF-2A
11	17.81	28.30	20.62	0.5625-24
13	21.62	30.70	23.01	0.6875-24
15	24.80	32.30	24.61	0.8125-20
17	27.97	34.70	26.97	0.9375-20
19	30.69	37.10	29.36	1.0625-18
21	33.86	39.70	31.75	1.1875-18
23	37.04	42.90	34.93	1.3125-18
25	40.22	46.00	38.10	1.4375-18

[Box square flange receptacle (front mounting) RFD27496]



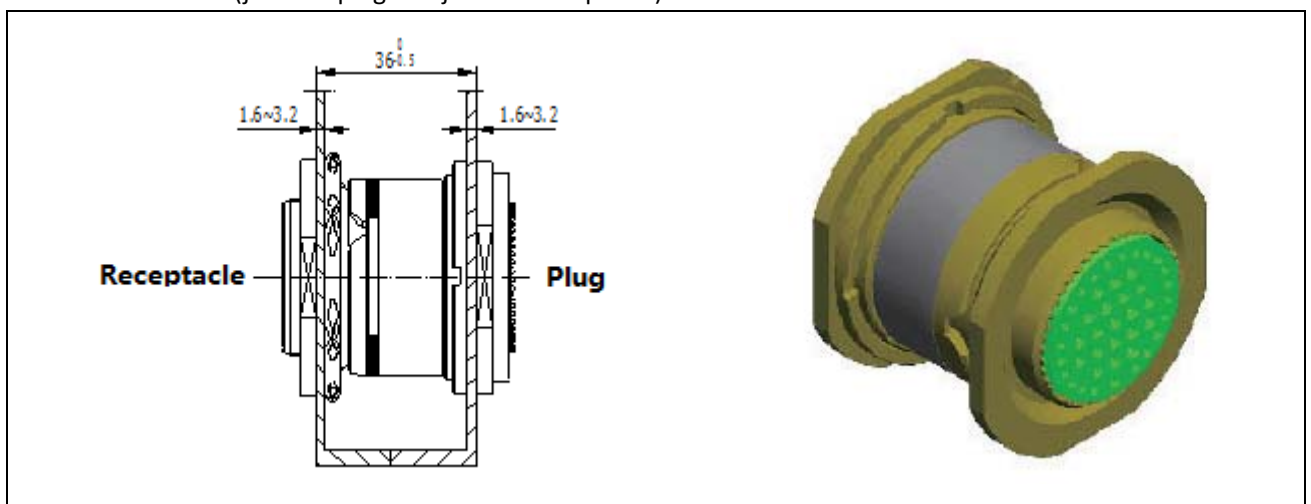
Shell size	A	E	F
11	17.81	28.30	20.62
13	21.62	30.70	23.01
15	24.80	32.30	24.61
17	27.97	34.70	26.97
19	30.69	37.10	29.36
21	33.86	39.70	31.75
23	37.04	42.90	34.93
25	40.22	46.00	38.10

**Installation**

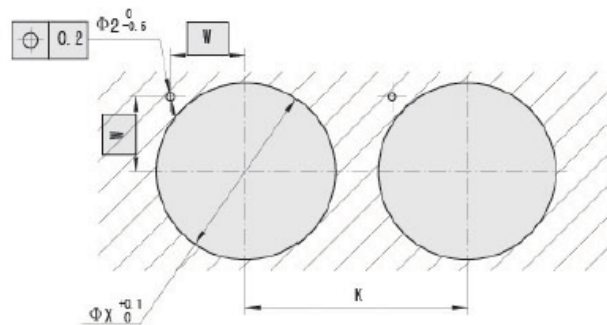
Notes:—The dimension between the two flanges is critical for it assures the technical characteristics after mating.

- The guide system independent of the connector makes the float unit in place
- no mechanical pressure should be put on the rear of plug by cables.

Mated connectors (jam nut plug and jam nut receptacle)



Panel cutout dimensions and recommended nut coupling torque (applicable to jam nut plug and receptacle)

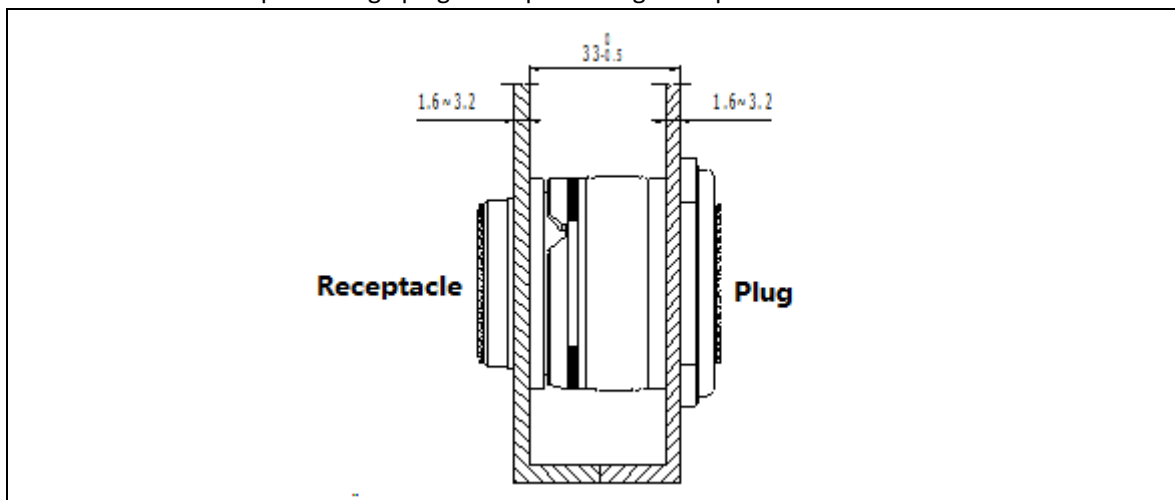


Note: The smallest hole is for interference assembly of stainless steel dowel.

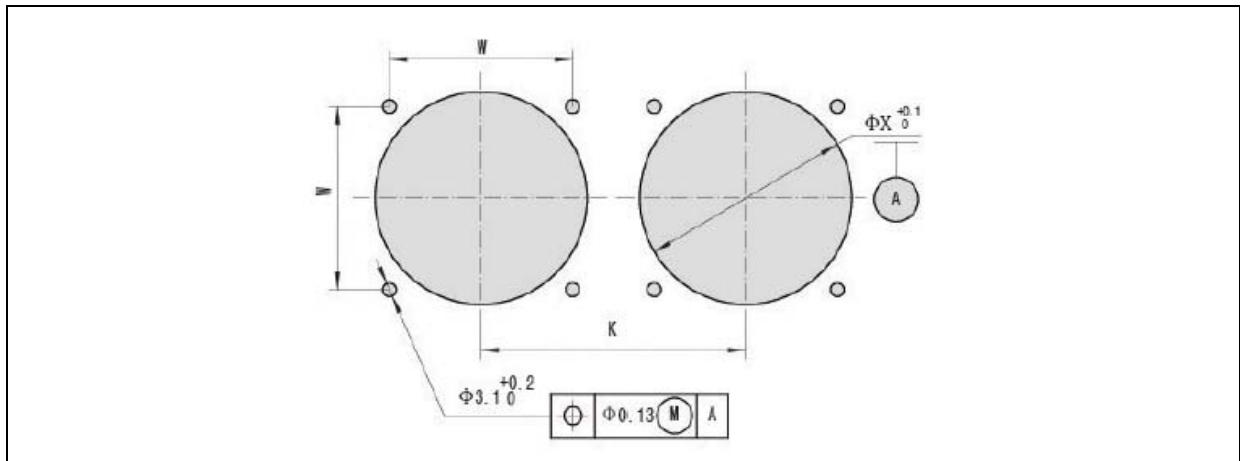
Shell size of plug	K (min)	W	X	Nut coupling torque	
				min	max
11	32.60	12.81	25.58	6.2	6.8
13	36.00	13.94	28.80	7.9	8.5
15	39.60	15.06	31.98	9.0	9.6
17	43.30	16.88	35.15	10.2	10.7
19	47.00	18.00	38.28	11.3	12.4
21	50.60	19.12	41.50	12.4	13.6
23	54.20	20.24	44.68	13.6	14.7
25	59.70	20.30	48.08	15.8	16.9

Shell size of receptacle	K (min)	W	X	Nut coupling torque	
				min	max
11	32.60	11.69	20.88	4.5	5.7
13	36.00	12.81	25.58	6.2	6.8
15	39.60	13.94	28.80	7.9	8.5
17	43.30	15.06	31.98	9.0	9.6
19	47.00	16.88	35.15	10.2	10.7
21	50.60	18.00	38.28	11.3	12.4
23	54.20	19.12	41.50	12.4	13.6
25	59.70	20.24	44.68	13.6	14.7

Mated connectors (square flange plug and square flange receptacle)



[Panel cutout dimensions for square flange plug]



Shell size	Mounting Dimension for Plug		
	$\Phi X \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	W	K, Min.
11	25.58	25.5	36
13	28.80	28	39.6
15	31.98	30	43.3
17	35.15	32	47
19	38.28	35	50.6
21	41.50	37	54.2
23	44.68	39.5	59.7
25	48.08	41.5	59.7

Shell size	Mounting Dimension for Receptacle		
	$\Phi X \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	W	K, Min.
11	16.78	20.62	36
13	19.98	23.01	39.6
15	22.88	24.61	43.3
17	25.88	26.97	47
19	29.08	29.36	50.6
21	32.28	31.75	54.2
23	34.08	34.93	59.7
25	37.28	38.1	59.7