XCA Marine Bayonet Connectors with Hyperboloid Contacts

Bayonet · hyperboloid sockets · 1–62 contacts · 240 h acid salt spray





Coupling	Bayonet, keyed
Contacts	1 to 62 per connector
Current	5 / 10 / 20 / 40 A
Rated voltage	500 V (1500 V test)
Acid salt spray	240 h
Temperature	–55 to +150 °C

Key features

- Hyperboloid wire-spring sockets: low insertion force and low contact resistance
- Bayonet coupling with five key positions (N, W, X, Y, Z) to prevent mis-mating
- 32 standard layouts, shell sizes 14 to 39, with Ø1, Ø1.5, Ø2 and Ø3 mm contacts
- Potted through-bulkhead receptacles and glass-sealed receptacles for sealed enclosures
- Aluminum with olive-drab cadmium or stainless steel shells; gold-plated copper-alloy contacts
- Tested for acid atmosphere, 240 h acid salt spray and mold
- Straight and 90° cable-clamp or cable-tie backshells
- Contact counts, layouts and materials can be customized

Specifications

Electrical

Parameter	Value	Condition
Rated voltage / withstanding voltage	500 V / 1500 V	Normal atmosphere
Rated voltage / withstanding voltage, damp heat	500 V / 750 V (sealed), 500 V / 1125 V (standard)	
Rated voltage / withstanding voltage, 1 kPa	150 V / 300 V (sealed), 250 V / 300 V (standard)	
Insulation resistance	≥ 5000 MΩ / ≥ 100 MΩ	Normal atmosphere / damp heat

Mechanical

Parameter	Value	Condition
Coupling	Bayonet	
Durability	500 mating cycles	
Vibration	10–2000 Hz, 15 g	
Shock	50 g	
Acceleration	50 g	

Environmental		
Parameter	**Value**	**Condition**
Operating temperature	−55 to +150 °C	
Relative humidity	Up to 95 % at 40 °C	
Altitude	30,000 m	
Acid salt spray	240 h	35 ± 2 °C, 5 % NaCl, pH 3.5 ± 0.5; cycles of 24 h spray and 24 h drying
Acid atmosphere	3 cycles of 2 h spray + 22 h storage, then 4 cycles of 2 h spray + 7 days storage	35 ± 2 °C, 5 % NaCl, pH 3.5 ± 0.5
Mold	84 days, grade 1 or better	GJB 150A.10-2009
Leak rate, through-bulkhead receptacle	≤ 46 Pa·cm³/s	5.07 × 10⁴ Pa differential
Leak rate, glass-sealed receptacle	≤ 0.1 Pa·cm³/s	1.52 × 10⁵ Pa differential

Materials		
Parameter	**Value**	**Condition**
Shell	Aluminum alloy, olive-drab cadmium; or stainless steel, passivated	
Insulator	Thermoset plastic	
Grommet and seals	Rubber	
Contacts	Copper alloy, gold plated	

Versions

Series code	Version	Notes
XCA…T	Plug	
XCA…F	Square-flange receptacle	With or without rear thread
XCA…Y	Round-flange receptacle	Rear thread for backshells
XCA…S(1), S(2)	Potted through-bulkhead receptacle, square flange	S(1): sockets outside, pins inside; S(2): pins outside, sockets inside
XCA…S(3)	Potted through-bulkhead receptacle, jam nut, anti-rotation	Sockets outside, pins inside
XCA…F…M1…D40	Glass-sealed square-flange receptacle	Stainless steel
XC-FJDMP / XC-FJWMP	Straight / 90° cable-clamp backshell	
XC-FJKMP-02 / XC-FJGWMP	Straight / 90° cable-tie backshell	

Contact sizes and current ratings

Contact size	Engaging diameter	Contact resistance	Contact resistance (hermetic)	Current rating	Wire size
Ø1	1.0 mm	≤ 4.5 mΩ	≤ 9 mΩ (potted) / ≤ 13.5 mΩ (glass-sealed)	5 A	0.20–0.75 mm² (AWG 22–18)

Contact size	Engaging diameter	Contact resistance	Contact resistance (hermetic)	Current rating	Wire size
Ø1.5	1.5 mm	≤ 2.5 mΩ	≤ 5 mΩ / ≤ 7.5 mΩ	10 A	0.75–1.50 mm² (AWG 18–14)
Ø2	2.0 mm	≤ 1.25 mΩ	≤ 2.5 mΩ / ≤ 3.75 mΩ	20 A	2.00–3.00 mm² (AWG 14–12)
Ø3	3.0 mm	≤ 0.75 mΩ	≤ 1.5 mΩ / ≤ 2.25 mΩ	40 A	4.00–5.00 mm² (AWG 12–10)

Crimp contacts and wire sizes

Contact	Crimp type	Color band	Crimp barrel ID (mm)	Wire (mm²)	AWG
Ø1	A	Red	1.0	0.20 / 0.35 / 0.50	22–20
Ø1	B	Blue	1.3	0.75	20–18
Ø1.5	A	Red	1.4	0.75 / 1.00	18
Ø1.5	B	Blue	1.8	1.20 / 1.50	16–14
Ø2	A	Red	2.1	2.00	14
Ø2	B	Blue	2.5	2.50 / 3.00	12
Ø3	A	Red	3.2	4.00	12
Ø3	B	Blue	3.4	5.00	10

Cable-clamp backshell sizes

Shell	Cable Ø (mm)	Length L (mm)
14	7–8	23.5
18	7–8	23.5
22	10–13	27
24	10–13	30
27	10–13	30
30	12–18	35.5
33	12–18	35.5
36	16–23	40.5
39	16–23	40.5

How to order

XCA [shell][type][contacts][contact type] M [finish][key]

Example: **XCA18T7Z1MP4(W)** — Plug, shell 18, 7 contacts, gold-plated pins, marine environment, rear thread for backshell, aluminum olive-drab cadmium, key W

Code segment	Options
Shell	**14–39** 14, 18, 22, 24, 27, 30, 33, 36, 39
Type	**T** Plug
Type	**F** Square-flange receptacle

Code segment	Options
Type	**Y** Round-flange receptacle
Contacts	**1–62** See insert arrangements
Contact type	**Z1** Pin, gold plated
Contact type	**K1** Socket, gold plated
Finish	**D4** No rear thread, olive-drab cadmium
Finish	**D40** No rear thread, stainless steel passivated
Finish	**P4** Rear thread for backshell, olive-drab cadmium
Finish	**P40** Rear thread for backshell, stainless steel passivated
Key	**(none)** N
Key	**(W) (X) (Y) (Z)** Alternate keys

Plugs are available with P4 or P40 only.

Add (B) for B-type crimp contacts for larger wire, for example XCA18T7Z1MP4(W)(B); without (B), A-type contacts are supplied.

Through-bulkhead receptacles: XCA[shell]S(1|2|3)[contacts]M1M[D4|D40][key]; glass-sealed receptacles: XCA[shell]F[contacts]M1MD40[key].

Cadmium finishes are not RoHS compliant and are supplied on request.

Insert arrangements

Arrangement	Contacts	Contact sizes
14-1	1	1 × Ø3
14-2	2	2 × Ø1.5
14-3	3	2 × Ø1, 1 × Ø1.5
14-4	4	4 × Ø1
18-4	4	2 × Ø1, 2 × Ø3
18-5	5	5 × Ø1.5
18-7	7	7 × Ø1
22-10	10	6 × Ø1, 4 × Ø1.5
22-14	14	14 × Ø1
24-5	5	5 × Ø3
24-12	12	12 × Ø1.5
24-19	19	19 × Ø1
27-12	12	4 × Ø1, 8 × Ø2
27-19	19	14 × Ø1, 5 × Ø1.5
27-24	24	24 × Ø1
30-15	15	13 × Ø1.5, 2 × Ø2
30-19	19	10 × Ø1, 4 × Ø1.5, 3 × Ø2, 2 × Ø3
30-22	22	10 × Ø1, 6 × Ø1.5, 6 × Ø2
30-30	30	30 × Ø1

Arrangement	Contacts	Contact sizes
33-22	22	18 × Ø1.5, 4 × Ø2
33-27	27	17 × Ø1, 4 × Ø1.5, 2 × Ø2, 4 × Ø3
33-41	41	41 × Ø1
36-40	40	34 × Ø1, 4 × Ø1.5, 2 × Ø2
36-41	41	31 × Ø1, 10 × Ø1.5
36-55	55	55 × Ø1
39-16	16	16 × Ø3
39-35	35	16 × Ø1, 13 × Ø1.5, 2 × Ø2, 4 × Ø3
39-36	36	18 × Ø1, 6 × Ø1.5, 12 × Ø2
39-46	46	30 × Ø1, 12 × Ø1.5, 4 × Ø2
39-47	47	39 × Ø1, 4 × Ø1.5, 2 × Ø2, 2 × Ø3
39-51	51	43 × Ø1, 8 × Ø1.5
39-62	62	62 × Ø1

Standards

- **GJB 2889** — Chinese specification to which the XCA series is built.

Request a quote or drawing: https://sinoxh.com/request-a-quote/?product=XCA