SHX16 Watertight 38999-Type Circular Connectors

38999 type · 0.5 MPa mated · 126 insert arrangements



Mated hydrostatic pressure	0.5 MPa
Insert arrangements	126
Contact sizes	22D to 10 (5–33 A)
Temperature	–40 to +120 °C
Salt spray	48–1000 h

Key features

- Withstands 0.5 MPa hydrostatic pressure when mated
- 38999-type insert arrangements, including coax, shielded and twinax contacts
- EMI/RFI shielding; removable crimp contacts (except hermetic receptacles); solder and PCB contacts available
- Five-key polarization with six key positions
- Hermetic SHX16/21 receptacle, axially sealed, leak rate ≤ 1 × 10^{-8} Pa·m^3/s
- Watertight mechanical and potted backshells and sealing caps
- Custom contact counts, cable lengths and materials on request.

Specifications

Electrical

Parameter	Value	Condition
Dielectric withstanding voltage, service rating I	1800 V / 1000 V / 1000 V	Sea level / 21,336 m / 30,480 m altitude, mated
Dielectric withstanding voltage, service rating II	2300 V / 1000 V / 1000 V	Sea level / 21,336 m / 30,480 m altitude, mated
Dielectric withstanding voltage, service rating M	1300 V / 800 V / 800 V	Sea level / 21,336 m / 30,480 m altitude, mated
Dielectric withstanding voltage, service rating N	1000 V / 600 V / 600 V	Sea level / 21,336 m / 30,480 m altitude, mated
Insulation resistance	≥ 5000 MΩ	Room temperature
Insulation resistance	≥ 1000 MΩ / ≥ 200 MΩ	High temperature, unsealed / hermetic
Insulation resistance	≥ 1000 MΩ	Low-pressure immersion
Insulation resistance	≥ 100 MΩ	Humidity

Mechanical and environmental

Parameter	Value	Condition
Hydrostatic pressure, mated	0.5 MPa	
Hermetic leak rate	≤ 1 × 10^{-8} Pa·m^3/s	SHX16/21 axially sealed receptacle, 0.1 MPa differential
Durability	500 mating cycles	

Mechanical and environmental		
Parameter	**Value**	**Condition**
Random vibration	50–2000 Hz, 1 g²/Hz (100–2000 Hz), 2 × 8 h	Ambient temperature
Shock	300 g, half-sine, 3 ms	
Operating temperature	–40 to +120 °C	
Mold resistance	Grade 2, 28 days	GJB 150A

Versions

Series code	Version	Notes
SHX16/26	Threaded plug	
SHX16/20	Square-flange receptacle	
SHX16/21	Hermetic square-flange receptacle	Axially watertight; stainless steel (K) only
SHX16QJ	Mechanical watertight backshell	Packing-gland clamp, 360° shielding; plugs only
SHX16QG	Potted backshell	
SHX16/20 or /26 …BHG	Sealing caps for receptacle or plug	

Shell materials and finishes

Code	Shell material	Finish	Shell conductivity	EMI shielding	Temperature	Salt spray
N	Aluminum alloy	Electroless nickel	—	—	–40 to +120 °C	48 h
K	Stainless steel	Passivated	—	—	–40 to +120 °C	500 h
C	Aluminum bronze	Nickel	—	—	–40 to +120 °C	1000 h

Contact sizes and current ratings

Contact size	Engaging diameter	Contact resistance	Contact resistance (hermetic)	Current rating
22D	0.76 mm	≤ 14.6 mΩ	≤ 28 mΩ	5 A
20	1.02 mm	≤ 7.3 mΩ	≤ 12.0 mΩ	7.5 A
16	1.58 mm	≤ 3.7 mΩ	≤ 8.5 mΩ	13 A
12	2.41 mm	≤ 1.83 mΩ	≤ 5 mΩ	23 A
10	3.20 mm	≤ 1 mΩ	—	33 A

How to order

SHX16/ [type] [finish] [shell] [arrangement] [contact] [key] [termination] [options]

Example: **SHX16/26K1735PN** — Threaded plug, stainless steel, shell 17, arrangement 17-35, pin contacts, key position N

Code segment	Options
Type	**20** Square-flange receptacle

Code segment	Options
Type	**21** Hermetic square-flange receptacle (K only)
Type	**26** Plug
Finish	**N** Aluminum alloy, electroless nickel
Finish	**K** Stainless steel, passivated
Finish	**C** Aluminum bronze, nickel
Shell	**09 – 25** 9, 11, 13, 15, 17, 19, 21, 23, 25
Arrangement	**e.g. 35** See the insert arrangement table below
Contact	**P / S** Pin / socket
Contact	**PL / SL** PCB pin / PCB socket
Key	**N** Normal key position
Key	**A B C D E** Alternate key positions
Termination	**(none)** Crimp
Termination	**H** Solder
Options	**F** Oil-resistant (fluorosilicone seals)

Insert arrangements

Arrangement	Contacts	Contact sizes	Service rating
9-03	3	3 × size 20	I
9-35	6	6 × size 22D	M
9-44	4	4 × size 22	M
9-98	3	3 × size 20	I
11-02	2	2 × size 16	I
11-04	4	4 × size 20	I
11-05	5	5 × size 20	I
11-08a	8	4 × size 20, 4 × size 22D	M
11-35	13	13 × size 22D	M
11-98	6	6 × size 20	I
11-99	7	7 × size 20	I
13-03	3	3 × size 16	II
13-04	4	4 × size 16	I
13-06	6	2 × size 12, 4 × size 20	M
13-06A	6	2 × size 16, 4 × size 20	M
13-08	8	8 × size 20	I
13-08A	8	4 × size 16, 4 × size 20	M
13-12	12	1 × size 12 coax, 11 × size 22D	M
13-12A	12	12 × size 20	N
13-16	16	3 × size 16, 13 × size 22D	N

Arrangement	Contacts	Contact sizes	Service rating
13-35	22	22 × size 22D	M
13-98	10	10 × size 20	I
15-03	3	2 × size 12, 1 × size 16	I
15-04A	4	4 × size 12	M
15-04B	4	4 × size 12 coax	N
15-05	5	5 × size 16	II
15-06A	6	6 × size 16	M
15-13	13	4 × size 16, 2 × size 20, 7 × size 22D	M
15-14	14	6 × size 16, 8 × size 22D	N
15-15	15	1 × size 16, 14 × size 20	I
15-18	18	18 × size 20	I
15-19	19	19 × size 20	I
15-23	23	3 × size 16, 2 × size 20, 18 × size 22D	M
15-32	32	9 × size 20, 23 × size 22D	M
15-35	37	37 × size 22D	M
15-97	12	4 × size 16, 8 × size 20	I
17-02	39	1 × size 8 twinax, 38 × size 22D	M
17-06	6	6 × size 12	I
17-06C	6	4 × size 12, 2 × size 22	I
17-08	8	8 × size 16	II
17-14	14	2 × size 12, 4 × size 16, 8 × size 20	M
17-15	15	5 × size 12 coax, 10 × size 22D	M
17-19	19	4 × size 16, 11 × size 20, 4 × size 22D	M
17-26	26	26 × size 20	I
17-28A	28	3 × size 12, 25 × size 22D	M
17-30	6	3 × size 10, 3 × size 20	N
17-35	55	55 × size 22D	M
17-42	42	42 × size 22	M
17-75	2	2 × size 8 twinax	N
17-99	23	2 × size 16, 21 × size 20	I
19-06A	6	3 × size 12 coax, 3 × size 16	N
19-11	11	11 × size 16	II
19-13	13	8 × size 12, 5 × size 20	I
19-17	17	2 × size 12, 15 × size 20	M
19-18	18	4 × size 8 twinax, 14 × size 22D	M
19-18A	18	4 × size 12 coax, 14 × size 22D	M
19-20	20	8 × size 16, 4 × size 20, 8 × size 22D	M

Arrangement	Contacts	Contact sizes	Service rating
19-22	22	7 × size 12, 15 × size 22D	M
19-28	28	2 × size 16, 26 × size 20	I
19-30	30	1 × size 16, 29 × size 20	I
19-32	32	32 × size 20	I
19-35	66	66 × size 22D	M
19-45	67	67 × size 22D	M
19-53	53	53 × size 22	M
19-82	8	8 × size 12 coax	I
19-96	9	9 × size 12	I
21-10A	10	10 × size 12 coax	II
21-11	11	11 × size 12	I
21-13	13	2 × size 10, 7 × size 12, 4 × size 20	M
21-16	16	16 × size 16	II
21-24	24	24 × size 20	I
21-25	25	25 × size 20	I
21-27	27	27 × size 20	I
21-28	28	3 × size 10, 25 × size 22D	I
21-35	79	79 × size 22D	M
21-35A	68	2 × size 12 coax, 66 × size 22D	M
21-39	39	2 × size 16, 37 × size 20	I
21-39A	39	2 × size 8 twinax, 4 × size 16, 33 × size 22D	M
21-41	41	41 × size 20	I
21-61	61	6 × size 16, 55 × size 22D	M
21-75	4	4 × size 8 twinax	N
21-75A	4	4 × size 12	I
23-02	85	85 × size 22	M
23-06H	6	6 × size 10	II
23-14	14	14 × size 12	I
23-21	21	21 × size 16	II
23-26	26	8 × size 12, 18 × size 20	M
23-32	32	32 × size 20	I
23-34	34	34 × size 20	I
23-34A	34	4 × size 12, 16 × size 16, 14 × size 22D	M
23-35	100	100 × size 22D	M
23-36	36	36 × size 20	I
23-44a	44	2 × size 10, 4 × size 12, 38 × size 22D	M
23-53	53	53 × size 20	I

Arrangement	Contacts	Contact sizes	Service rating
23-55	55	55 × size 20	I
23-70	70	10 × size 20, 60 × size 22D	M
23-72	72	2 × size 8 twinax, 70 × size 22D	M
23-86	86	16 × size 20, 70 × size 22D	M
23-97	16	16 × size 16	I
23-99	11	11 × size 16	II
25-02	100	100 × size 22	M
25-04	56	8 × size 16, 48 × size 20	I
25-07	99	2 × size 8 twinax, 97 × size 22D	M
25-08	8	8 × size 8 twinax	N
25-10	10	6 × size 10, 4 × size 12	N
25-11	11	9 × size 10, 2 × size 20	N
25-19	19	19 × size 12	I
25-20	30	3 × size 8 twinax, 1 × size 12 coax, 3 × size 12 shielded, 13 × size 16, 10 × size 20	N
25-24	24	12 × size 12, 12 × size 16	I
25-29	29	29 × size 16	I
25-31	31	2 × size 8 twinax, 5 × size 10, 12 × size 16, 12 × size 20	M
25-32	32	6 × size 10, 10 × size 16, 16 × size 20	M
25-35	128	128 × size 22D	M
25-35A	35	11 × size 12 coax, 24 × size 20	M
25-36	36	2 × size 8 twinax, 4 × size 10, 8 × size 16, 22 × size 20	N
25-39	39	2 × size 12, 17 × size 16, 20 × size 20	M
25-43	43	20 × size 16, 23 × size 20	I
25-45	45	8 × size 12, 37 × size 20	M
25-46	46	2 × size 8 twinax, 4 × size 16, 40 × size 20	I
25-61	61	61 × size 20	I
25-64a	64	8 × size 16, 40 × size 20, 16 × size 22D	M
25-69	69	10 × size 16, 15 × size 20, 44 × size 22D	M
25-92	92	4 × size 20, 88 × size 22D	M
25-93	118	8 × size 16, 110 × size 22D	M
25-94	94	4 × size 12 coax, 8 × size 16, 82 × size 22D	M
25-118G	118	8 × size 16, 110 × size 22D	N

Standards

- **GJB 599B** — Chinese specification for 38999-type circular connectors (counterpart of MIL-DTL-38999); SHX16 follows its requirements and adds watertight sealing.

Request a quote or drawing: https://sinoxh.com/request-a-quote/?product=SHX16