



SERIES 70 10K PSI / 700 BAR / 7000 M

# SeaKing™ High-Pressure Subsea Connectors, Cables, and PBOF Assemblies



## Qualification test plan - selected data

### 2 APPLICABLE DOCUMENTS

#### 2.1 Government Documents.

The following government documents form a part of this specification to the extent specified herein. Unless otherwise indicated in the listing the issue in effect on the day release of this specification shall apply.

MIL-DTL-38999	Connectors Electrical, Circular, Miniature, High Density, Quick Disconnect Bayonet, Threaded and Breech Coupling, Environment Resistant, Removable Crimp and Hermetic Solder Contacts, General Specification for
MIL-DTL-38999/23	Connectors, Electrical, Circular, Threaded, Receptacle, Jam-Nut Mounting, Hermetic, Solder Contacts, Series III, Metric
MIL-DTL-38999/28	Connectors, Electrical, Circular Nut, Hexagon, Connector Mounting Series III and IV Metric
MIL-STD-202	Test Method Standard Electronic and Electrical Component Parts
MIL-STD-810	Environmental Engineering Considerations and Laboratory Tests

#### 2.2 Non-Government Documents

- ISO-13628-6 Hydrostatic Pressure Test Procedure for Electrical Connector
- EIA-364 Electrical Connectors and Sockets Test Procedures Including Environmental Classification
- EIA-364-20 Withstanding Voltage Test Procedure for Electrical Connectors, Sockets Coaxial Contacts
- EIA-364-21 Insulation Resistance Test Procedure for Electrical Connectors Sockets and Coaxial Contacts
- EIA-364-26 Salt Spray Test Procedure for Electrical Connectors and Sockets
- EIA-364-32 Thermal Shock (Temperature Cycling) Test Procedure for Electrical Connectors and Sockets

### 7 VERIFICATION

- 7.6 Dielectric Withstanding Voltage. (All Parts) **PASSED**  
Connectors shall be tested in accordance with test procedure EIA-364-20 Method C and Condition I, at 1200 VAC ± 10% 60 second and there shall be no evidence of electric breakdown or flashover.
- 7.7 Insulation Resistance. (All Parts) **PASSED**  
Connectors shall be tested in accordance with test procedure EIA-364-21  
Connector contacts shall be tested 5 GΩ at 500 VDC ±10% voltage source at room temperature
- 7.8 Durability. **PASSED**  
Connectors shall be tested in accordance with EIA-364-9, IEC-60512-5 Test 9a.  
The wired, assembled plugs and receptacles shall be mated and unmated 300 cycles.  
The mating and unmating shall be accomplished so that the plug and receptacle are completely separated during each cycle. After the durability test is completed a pass 5 GΩ at 500 VDC insulation resistance test from each contact to every other contact and the shell.

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### 7.9 Thermal Shock. (All Parts)

**PASSED**

Test in accordance with test procedure EIA-364-32 Method A

Unmated connectors shall be subjected to 5 cycles at temperature of -20°C to 105°C ± 5°C

There shall be no evidence of cracking, breaking or loosening.

After the thermal shock test is completed a pass 5 GΩ at 500 VDC insulation resistance test from each contact to every other contact and the shell.

### 7.10 Salt Spray. (Group 2 only)

**PASSED**

Connectors shall be tested in accordance with test procedure EIA-364-26 Condition C

The connectors shall be fully populated and immersion time 500 hours.

At the end of the immersion duration while still immersed, insulation resistance 5 GΩ at 500 VDC test shall be completed from each contact to every other contact and the shell.

### 7.11 Hydrostatic Pressure.

**PASSED**

Connectors shall be test in accordance with procedure per ISO-13628-6 except the minimum

Period of measurement shall be three minutes. Replace Interface O-rings before pressure testing

- Hydrostatic Pressure Testing – Open Face – BCR Individual
- Hydrostatic Pressure Testing – Mated Condition – Mated Pair
- Hydrostatic Pressure Testing – Glass sealed Inserts

8 cycles – 3X 5min-dwell @ 11,000 + 4X 5min-dwell @ 15,000 + 1 X 1hr-dwell @ 15,000psi

Ramp 3,000psi/min – Reference

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