HIGH PRESSURE, HIGH TEMPERATURE (HPHT) DOWN-HOLE, DRY-MATE CONNECTOR SERIES

KEY FEATURES

- Over 70 units sold
- Optical, Electrical and Hybrid (electro/optical) versions available
- 2-channel optical only version
- 2-channel electrical only version
- 4-channel hybrid (2 optical, 2 electrical)
- Maximum operating pressure: 10,000psi
- Maximum operating temperature: +125°C
- Primary metal-to-metal sealing
- Inconel® 625 body material
- All less than 1" in diameter
- ¼" OD, 10,000psi WP 316LSS tube
- Field installable termination
- Linear splice box to facilitate field installation
- Maximum optical attenuation: 0.3dB
- Maximum optical back-reflection: -50dB
- Maximum voltage: 600 VAC
- Maximum current: 2.5 amps

DESIGN RATINGS

- Design life: 25 years
- Maximum operating pressure: 10,000 psi
- Maximum test pressure: 16,500 psi
- Minimum operating temperature: 0°C
- Maximum operating temperature: +125°C
- Minimum storage temperature: -40°C
- Maximum storage temperature: +85°C
- Maximum optical attenuation: 0.3dB
- Maximum back reflection: -50dB
- Maximum voltage: 600 VAC
- Maximum test voltage: 2,500 VDC
- Maximum current: 2.5 amps

QUALITY

Hybrid (2-optical, 2-electrical) female connector with linear splice box

1/4" OD 10,000psi tube

Electrical, 2-channel, female, connector

Electrical, 2-channel, male, connector

Optical, 2-channel, female, connector with linear splice box

Optical, 2-channel, male, connector mounted on host optical system

Optical, 2-channel, female, connector mounted on host optical system

Optical, 2-channel, male, connector

Short Jumper Assembly

Optical, 2-channel, female, connector with linear splice box

Short Jumper Assembly

Host electrical system

Optical, 2-channel, pressure cap

Hybrid (2-optical, 2-electrical) male, connector with split separate optical and electrical outlets

Optical, 2-channel, female, connector

Optical, 2-channel, male, connector mounted on host optical system

Optical, 2-channel, female, connector with linear splice box

Optical, 2-channel, male, connector mounted on host optical system

Optical, 2-channel, female, connector

Optical loop-back facility (not implemented yet)

Host optical system

Long Jumper Assembly
The list of connectors configurations are as follows:

**Hybrid - 2 Electrical and 2 Optical Channels**
- 7938-101 - HPHT, hybrid, 2E, 2F, down-hole, male connector with split separate optical and electrical outlets
- 7938-102 - HPHT, hybrid, 2E, 2F, down-hole female connectors with pressure barrier and linear splice box

**Optical Connectors - 2 channel**
- 7936-101 - HPHT, 2-channel, optical, bulkhead mounted, down-hole, male connector, with pressure barrier
- 7936-102 - HPHT, 2-channel, optical, bulkhead mounted, down-hole female connector with pressure barrier
- 7936-103 - HPHT, 2-channel, optical, down-hole, male in-line connector
- 7936-104 - HPHT, 2-channel, optical, down-hole female in-line connector with linear splice box
- 7936-105 - HPHT, 2-channel, optical, down-hole, male pressure cap (for female connector)
- 7936-106 - HPHT, 2-channel, optical, down-hole female in-line connectors with pressure barrier and linear splice box

**Hybrid - 2 Electrical and 2 Optical Channels**
- 7937-101 - HPHT, 2-channel, electrical, down-hole, female connector with glass-to-metal seal pressure barrier
- 7937-102 - HPHT, 2-channel, electrical, down-hole male connector with glass-to-metal seal pressure barrier

---

**FIELD MAINTENANCE**
- The HPHT Connectors are designed for field installation and maintenance
- The Linear Splice Box is a unique feature designed to facilitate the final optical fiber length adjustment required for field installation
- Connectors are design for rear-termination of fiber, wires and tube
- Primary seals are metal-to-metal that can be easily energized on site

---

**BENCH & PRODUCTION TESTING SUMMARY**
- Optical insertion loss
- Optical back-reflection
- Electrical insulation resistance
- Electrical continuity
- Shell continuity
- Proof voltage test, 2000 VDC for 5 minutes
- Production Hyperbaric 10,000 psi (as required)
QUALIFICATION TESTING SUMMARY

- Pressure Testing - 15,000 psi, 5-cycles and 1 hour hold, Optical and electrical performance monitored during test
- Optical insertion loss and back-reflection
- Electrical insulation resistance and contact resistance
- Proof voltage
- Shock (single axis)
  - 3 shocks in a horizontal direction
  - 3 shocks in a vertical direction
  - Shock profile is a half-sine period of 11ms at 30g.
- Vibration (3-axis) - Vibrate in x-axis, y-axis and z-axis, vibration profile:
  - A double sweep from 5 Hz to 150 Hz and back to 5 Hz
  - 5 Hz to 25 Hz: ± 2mm displacement
  - 25 Hz to 150 Hz: 5g acceleration
  - Sweep rate maximum 1 octave/minute
  - Optical and electrical performance monitoring during the vibration and verified after completion of the vibration
- High-temperature testing
  - 2 weeks at 125°C and then 5-cycles between ambient, monitoring optical and electrical performance
- Low-temperature testing
  - 20°C to ambient, verify functioning afterwards
- Outside 50-mate test, monitoring optical and electrical performance to monitor degradation

TRACK RECORD & RELIABILITY DATA

Connectors have been delivered to customers but the operational sample population is still too small to extrapolate any significant statistical data for reliability.

All reasonable efforts have been taken to ensure that the information contained herein is accurate at the date of publication, but no representation or warranty as to the accuracy or completeness of such information is intended or to be implied by its inclusion herein. Any and all representations and warranties pertaining to the information and products referred to herein shall be set forth in SEACON standard sales order form. In addition, SEACON reserves the right to make changes to the contents hereof without notice, therefore it is suggested that at the time of inquiry, the appropriate sales office or factory be contacted directly for verification of published specifications and products availability.

© 2014 SEACON Advanced Products, LLC.
ALL RIGHTS RESERVED