

PRODUCT DATASHEET

S-SERIES S-4 MODULAR, WET-MATE, OPTICAL CONNECTOR



S-Series, 4-channel plug and receptacle (S-4)

DESCRIPTION

The **S-Series** is a small modular underwater mateable, fiber optic connector. The configuration is a 4 channel device that facilitates underwater connection of optical fibers. It utilizes modular optical contacts in such a way that the standard **CM2000** electrical contacts may be incorporated and as such is a high quality hybrid. The **S-Series** connector is ideally suited where subsea fiber optic connectors are required in less aggressive clear water environments.

KEY FEATURES

- Small size, simple & robust with few moving parts
- Modular optical contact design
- All sealing mechanisms and optical coupling based on field proven technology
- Optical coupling within oil-filled bladders
- Average insertion loss better than 0.5dB (1.0 dB max)
- Average back reflection better than -40dB (-35 dB min)
- Lifecycle of up to 25 mate/de-mates without refurbishment
- Tested to 1,000m (3,200 feet)
- Operating temperature range: -5°C to +45°C (23°F to +113°F)

CONFIGURATIONS

- Modular optical contacts
- Suitable for any type of optical fiber
- Optical coupling within oil-filled bladders
- Oil-filled hose, molded or customer specific terminations
- Mounting configurations can be easily configured to suit customer requirements

DESIGN RATINGS

- Average insertion loss better than 0.5dB (1.0 dB max)
- Average back-reflection better than -40dB (-35 dB min)
- Lifecycle of up to 25 mate/de-mates
- Depth Rating: 1,000m (3,200 feet)
- Operating Temperature: -5°C to +45°C (23°F to +113°F)
- Storage Temperature: -20°C to +60°C (-4°F to +140°F)

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OPERATION

- Typical mate stroke length: 46 mm (1.8")
- Maximum mate/de-mate speed: Unlimited
- Typical mate force: 6.8kg (15 lb)
- Maximum rotational misalignment: 2°
- Maximum angular misalignment: 1°
- Maximum radial misalignment: 3.2 mm (0.125")

MATERIALS

- Seawater-wetted body parts: 316 Stainless Steel and Beryllium Copper or other customer specific materials
- Front seals and bladders: Natural rubber
- Pressure compensation fluid is high viscosity DC200
- O-rings: Nitrile

PRINCIPLE OF OPERATION

The critical fiber-to-fiber joint is made without exposure to the external contamination of a harsh subsea environment. This is achieved during the optical coupling process where the optical ferrules are wiped as they enter pressure compensated bladders before aligning and coupling with their respective mating half.

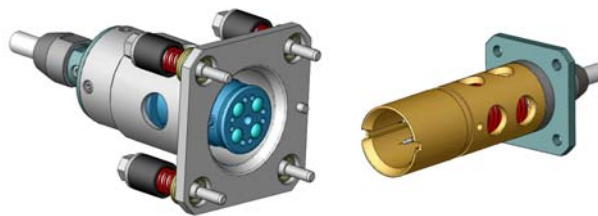
QUALIFICATION

The key connector qualification tests are:

- Optical Tests - Optical Attenuation & Back-Reflection
- Mechanical Tests - Mating Force, Misalignment
- Hyperbaric Tests - Pressure, Sand/Silt, Wet-Mating

TRACK RECORD & RELIABILITY DATA

The **S-Series** optical wet-mate connectors have been qualified to the tests listed above. Connectors have been delivered to customers but the operational sample population is still too small to extrapolate any significant statistical data for reliability.



QUALITY

- **SEACON** Advanced Products, LLC operate a Quality Management System certified to ISO 9001:2008.



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