

## PRODUCT DATASHEET

# S-SERIES S1

## MODULAR, WET-MATE, OPTICAL CONNECTOR



*S-Series, Single Way Plug and Receptacle (S-1)*

### DESCRIPTION

The S-1 connector is a small single channel underwater mateable, fiber optic connector. It utilizes the same modular contacts as the S-Series connector; refer to datasheet SAPL-DS-0007.

### 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 +30°C (23°F to +113°F)

### DESIGN RATINGS

- Average insertion loss better than 0.5dB (1.0dB max)
- Average back-reflection better than -40dB
- Lifecycle of up to 25 mate/de-mates
- Maintenance-free over design life (within number of mate/de-mate cycles)
- Depth Rating: 1,000m (3,200 feet)
- Operating Temperature: -5°C to +30°C (23°F to +113°F)
- Storage Temperature: -20°C to +60°C (-4°F to +140°F)

### QUALITY

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



Certificate No. 6936

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SAPL-DS-0002

S-1

Rev 1

Page 1 of 2

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### OPERATION

- Typical mate stroke length: 46mm (1.8")
- Maximum mate/de-mate speed: Unlimited
- Typical mate force: 6.8kg (15lb)
- Maximum rotational misalignment: 360°
- Maximum angular misalignment: + or -10°
- Maximum radial misalignment: 1.5mm (0.06"+/-)

### MATERIALS

- Seawater-wetted body parts: Beryllium Copper or other customer specific materials, 316 and CA630
- Pressure compensation fluid is high viscosity DC200
- Front seals and bladders: Natural rubber
- 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.

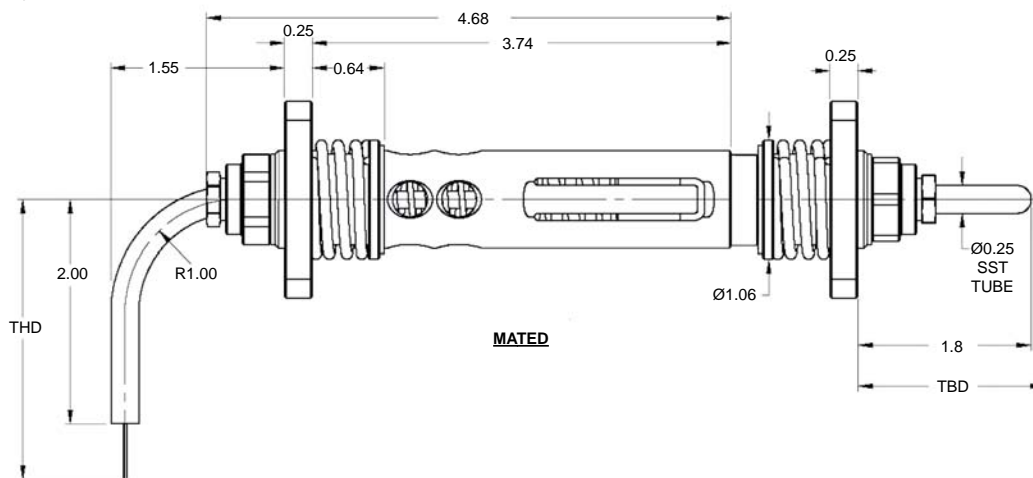
### QUALIFICATION

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.



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S-1

Rev 1

Page 2 of 2