SEACON®

UNDERWATER ELECTRICAL AND FIBER OPTIC CONNECTORS

FIELD INSTALLABLE

UNDERWATER ELECTRICAL DRY-MATE CONNECTORS

SECTION **DATASHEET**

FIELD INSTALLABLE

INTRODUCTION

In recent years the search for oil has required operations in progressively deeper waters by mobile offshore drilling units. Drilling at these depths places strong demands on equipment, particularly the cable and connectors that link subsea operations to the surface. SEA CON® addressed the equipment problem by developing an underwater connector system with high reliability, improved condition assessment capability and better maintainability. SEA CON®'s next-generation multiplex (MUX) cable termination system is the tangible result of the company's ability to apply real-world operator field experience to its product design and produce a step-change improvement in connector performance.

SEA CON®'s range of MUX systems consist of 1 Atmosphere and Positively Pressurized (RUFF-NEK) connector solutions as well as the new underwater cable termination system which consists of the Armor Termination Assembly (ATA), Breakaway unit and RUFF-NEK connector.

The RUFF-NEK connector is an electro/optical/mechanical termination that contains an integral system that does not rely on separate external compensator systems to apply a constant overpressure (internal pressure greater than external pressure) to the end of the cable and termination volume. The overpressure is maintained at up to 60 psi over ambient pressure and helps to prevent water intrusion into the termination chamber that could be caused by flooding of the conductor strands (in the event of cable jacket and conductor insulation breach) or by seal failure. In the cable termination system the ATA is affixed to a clevis mount (padeye) at a convenient location on the BOP (Blow Out Prevention) stack while the RUFF-NEK connector mates to either a transformer module, crossover or directly to the subsea electronics module (pod). The orientation aspect that can be a problem with a conventional connector is eliminated due to the breakaway unit that interfaces the ATA with the BOP, enabling a connection in 90-degree intervals.

There are many benefits to the cable termination system including a lighter, more manageable connector, separate armor termination function from electrical connector function and a controlled breakaway function.

Every static seal is redundant (e.g., dual versus single o-ring) for maximum reliability, and everywhere possible, the seals are testable to enable verification of seal integrity off the critical path. The RUFF-NEK connector provides visual verification of positive pressure over ambient. It also includes the ability to electrically check for fluid contamination without opening the connector.

AVAILABILITY

Connector materials include 316 Stainless Steel, 17-4PH Stainless Steel, Titanium, Neoprene, Nitrile (formerly known as Buna N) and Hypalon, however other materials are available for different environments. The materials used in the manufacture enable the connector to have a design life of 20 years.

The connectors can be rated up to 20,000 psi has many standard configurations (e.g., 6#10 electrical contacts and 8 fiber optic channels or 12#16 electrical channels) and is available with single or dual-pressure compensated chambers.

Due to the absence of a requirement for resins and molding, the connector has a fully field-installable capability. In the event of a complete failure or loss of compensation medium, secondary seals on the electrical contacts allow operation even with a flooded connector.

APPLICATIONS

SEA CON®'s Field Installable products are suitable for offshore harsh environment applications including drilling rigs and drilling vessels.

TESTING

The ability for the connector to operate in a flooded condition was proven in qualification. Testing included operational testing at pressure both with no compensating fluid and in a flooded condition.

The strength of the ATA was tested in a simulated operating environment. The test showed that the initial design could transmit in excess of 16,000 pounds and enabled an initial operating rating of 8,000 pounds, although different ratings are available on request.

Testing was also conducted to ensure that the cable separated from the connector without damage to the pod. The results showed that no damage occurred to interfacing components when the cable pulled out at approximately 700 pounds.

Pressure testing of the the RUFF-NEK connector was also conducted to a simulated operating environment of 7,500 psi, equivalent to 10,000 feet operating depth and also 8,400 psi, simulating 15,000 feet depth.

SPECIAL ASSEMBLIES

The ATA was designed to be an integral part of the MUX umbilical cable termination system shown in Figure 1. The Armor Termination Assembly is secured to the riser or control system framework using a Breakaway Unit that is designed to separate at a defined load. The smaller, more manageable RUFF-NEK is then routed and connected. In the case of accidental BOP droppage, the Breakaway Unit shears and the unarmored section of cable pulls out of the RUFF-NEK.

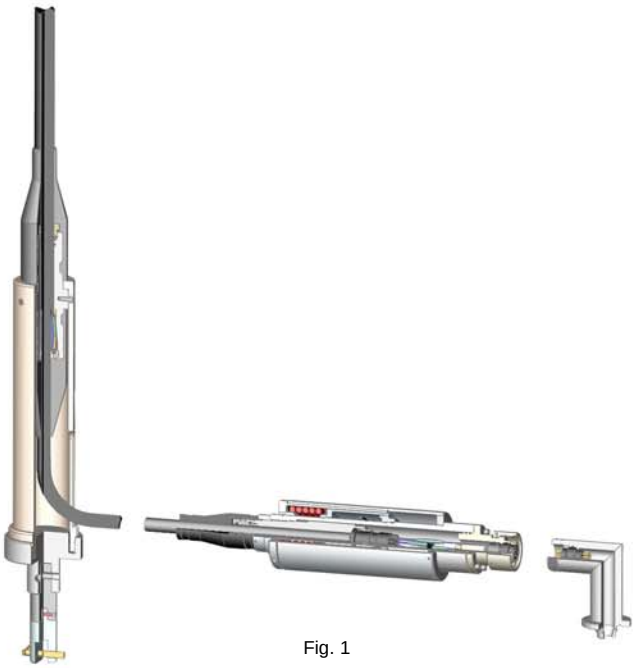


Fig. 1

For further information please contact SEA CON®.

PRODUCT DATASHEET

BREAKAWAY UNIT

SHEAR-PIN BREAKAWAY POINT FOR ARMOR SECTION OF DEEPWATER MUX CABLES

Breakaway Unit mounted to lower end of Armor Termination Assembly (ATA)

DESCRIPTION

The **Breakaway Unit** provides a means of reducing the damage caused when extreme MUX cable tension breaks a termination. The unit is designed to anchor an **Armor Termination Unit** to a clevis mount at the Subsea end of a riser or control system framework. The breakaway concept is based on shear pin technology. Shear pin material with a low ultimate/yield strength ratio is used to increase accuracy of targeted breaking load.

KEY FEATURES

- Overall Length: 6.4"
- Overall Diameter: 1.6"
- Replaceable shear pin
- Non-destructive failure mode
- Depth Rating: Full Ocean Depth
- Field Installable (no compounds)
- 17-4 PH SST shear pin
- 1/2" clevis mount lower, 3/8" pin upper
- Interfaces with **SEA CON**® Armor Termination Assembly

DESIGN RATINGS & TESTING

- Laboratory tested breaking strength: 8,000 lb
- Design life: 20 years

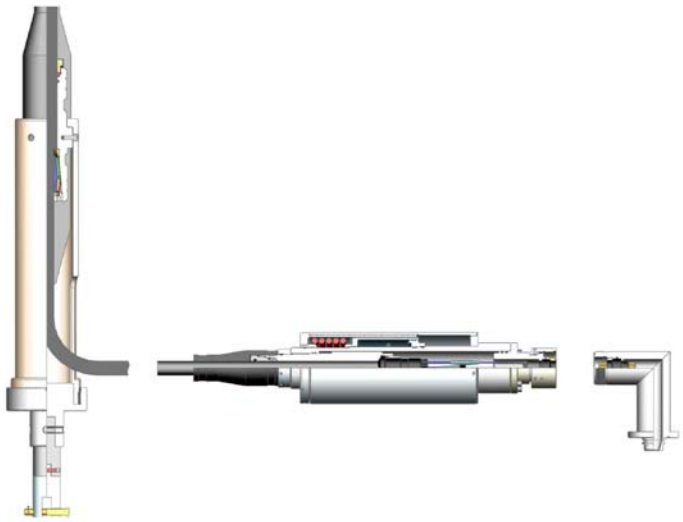
SEACON Advanced Products, LLC.
1321 Nelius Road, PO Box 767, Bellville, Texas 77418, USA
TEL: +1 (979) 865 8846 FAX: +1 (979) 865 8859
E-Mail: sales@seacon-ap.com Website: www.seacon-ap.com

MATERIALS

- Body: 316 SST
- Shear Pin: 17-4 PH SST

PRINCIPLE OF OPERATION

The **Breakaway Unit** was designed to be an integral part of the MUX umbilical cable termination system shown below. The **Armor Termination Assembly** is secured to the riser or control system framework using a **Breakaway Unit** that is designed to separate at a defined load. The smaller, more manageable **FITA** is then routed and connected. In the case of accidental BOP droppage, the **Breakaway Unit** shears and the unarmored section of cable pulls out of the **FITA**.



ATA FITA Termination System

QUALITY

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

WQS ISO 9001 REGISTERED UKAS MANAGEMENT SYSTEMS
Certificate No. 6936

SEACON Advanced Products, LLC.
1321 Nelius Road, PO Box 767, Bellville, Texas 77418, USA
TEL: +1 (979) 865 8846 FAX: +1 (979) 865 8859
E-Mail: sales@seacon-ap.com Website: www.seacon-ap.com

SEACON advanced PRODUCTS

SEACON®

SEACON advanced PRODUCTS

PRODUCT DATASHEET

ARMOR TERMINATION ASSEMBLY (ATA)

SEPARATED ARMOR TERMINATION POINT FOR CONTRA-HELICAL ARMOR-WOUND DEEPWATER MUX CABLES

ATA termination to electrical MUX cable

DESCRIPTION

The ATA allows contra-helical armor to be terminated a distance away from the end electrical connection of a MUX umbilical cable. This makes terminated cable handling much more manageable, and provides an emergency break-away point which preserves SEM integrity. The interior armor 'plug' is mechanical, no epoxy is used. The dual-cone technology assures holding strengths exceeding 75% of cable breaking strength.

KEY FEATURES

- Overall Length: 27"
- Overall Diameter: 4.75" at Base
- Interfaces with SEA CON® Breakaway Unit
- Dual cone, mechanical armor plug
- Overall boot sealed
- Depth Rating: Full Ocean Depth
- Compatible with embedded and non-embedded MUX cables
- Field Installable (no compounds)

DESIGN RATINGS & TESTING

- Breaking Strength cable dependent
- Qualification tested breaking strength: 16,900 lb. with armor breakage failure mode
- Design life: 20 years
- Designed for easy adaptability to cable variations

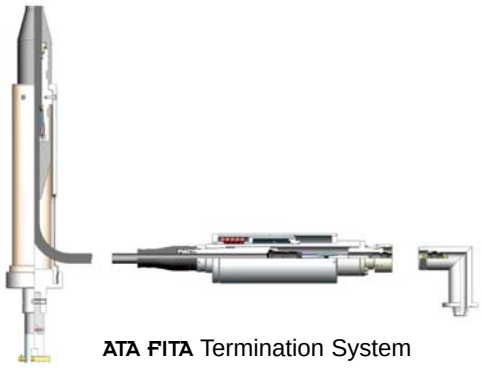
MATERIALS

- 15-7 SST, 316 SST, 17-4 PH SST, CA630
- Elastomer: Neoprene, Nitrile

SEACON Advanced Products, LLC.
1321 Nelius Road, PO Box 767, Bellville, Texas 77418, USA
TEL: +1 (979) 865 8846 FAX: +1 (979) 865 8859
E-Mail: sales@seacon-ap.com Website: www.seacon-ap.com

PRINCIPLE OF OPERATION

The **ATA** was designed to be an integral part of the MUX umbilical cable termination system shown below. The **Armor Termination Assembly** is secured to the riser or control system framework using a **Breakaway Unit** that is designed to separate at a defined load. The smaller, more manageable **FITA** is then routed and connected. In the case of accidental BOP droppage, the **Breakaway Unit** shears and the unarmored section of cable pulls out of the **FITA**.



ATA FITA Termination System

CABLE TYPES

- NSW 116351
- NSW 116372
- NSW 116373
- NSW 116375
- NSW 116380
- NSW 938600
- OYO GEOSPACE 472-00050-XX-YY
- Rochester A304485
- Rochester A304739
- Rochester A304862
- Rochester A305605
- Rochester A305614
- Rochester A306393
- Rochester A306660
- Rochester A307243
- Rochester A307472
- Rochester A307631
- Vector A71033
- Vector A72022
- Vector A72023

QUALITY

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

ISO 9001 REGISTERED
Certificate No. 6936

PRODUCT DATASHEET

FIELD INSTALLABLE & TESTABLE ASSEMBLY (FITA)

POSITIVELY COMPENSATED (60 PSI OVER AMBIENT), DEEPWATER MUX CABLE CONNECTOR

FITA terminated to electrical MUX cable

DESCRIPTION

The FITA connector is an electrical termination that maintains a constant positive pressure inside the oil-filled connector cavity. Positive pressure, maintained at 60 psi using a spring-loaded piston, deters water ingress from conductor interstices and other sources. Inside the connector, advanced conductor booting technology assures functionality even when the FITA is water-flooded. The FITA is field installable and testable. Dual barrier seals are used throughout the connector.

KEY FEATURES

- Overall Length: 21"
- Overall Diameter: 4.2"
- Pressure Compensated Chambers
- Megger Test Pin allows testing for water-flooding while mated
- Depth Rating: 10,000 ft.
- Voltage: 600 V / Current: 15 A
- 12#16 Electrical Contacts, new version to include fiber optic contacts
- Modular cable terminations and Field Installable (no compounds)

DESIGN RATINGS & TESTING

- Design life: 20 years
- Qualification tested to 7,500 psi. Design pressure: 20,000 psi.
- Secondary seals on electrical contacts allow for operation even water flooded
- Test ports for O-rings
- Connector Insulation Resistance: >100 Megohms @ 500 VDC
- Cable Pullout Load: 700 lbs.
- Qualification tested in ice bath, chamber water-filled, then oil-filled

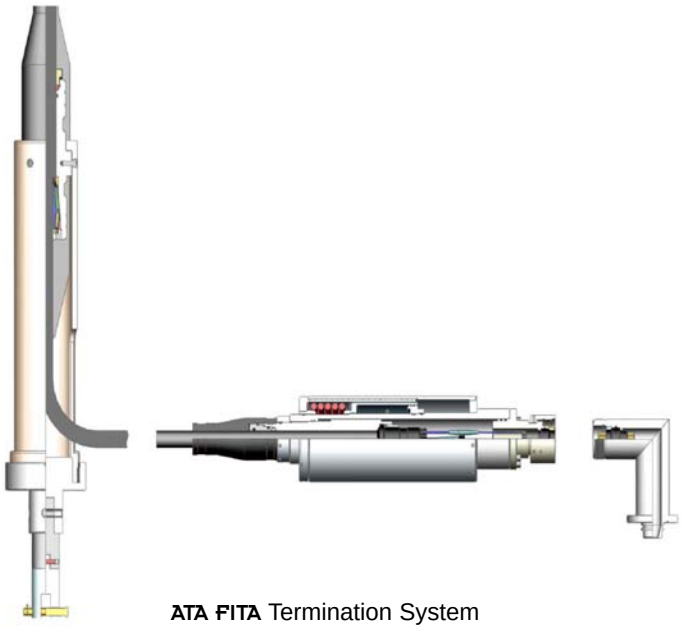
SEACON Advanced Products, LLC.
1321 Nelius Road, PO Box 767, Bellville, Texas 77418, USA
TEL: +1 (979) 865 8846 FAX: +1 (979) 865 8859
E-Mail: sales@seacon-ap.com Website: www.seacon-ap.com

MATERIALS

- 15-5 PH SST, 316 SST, 17-4 PH SST, CA360
- Electrical Insert: Glass Re-enforced Epoxy
- Elastomer: Neoprene, Nitrile

PRINCIPLE OF OPERATION

The **FITA** was designed to be an integral part of the MUX umbilical cable termination system shown below. The **Armor Termination Assembly** is secured to the riser or control system framework using a **Breakaway Unit** that is designed to separate at a defined load. The smaller, more manageable **FITA** is then routed and connected. In the case of accidental BOP droppage, the **Breakaway Unit** shears and the unarmored section of cable pulls out of the **FITA**.



ATA FITA Termination System

QUALITY

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

ISO 9001 REGISTERED
Certificate No. 6936

PRODUCT DATASHEET

RIGHT ANGLE FLANGED CONNECTOR RECEPTACLE

SEM-MOUNTED ELECTRICAL BULKHEAD CONNECTION FOR DEEPWATER MUX CABLE CONNECTOR

Right Angle FCR mated to FITA

DESCRIPTION

The Right Angle FCR gives the flexibility to route a MUX connector / cable in a more manageable fashion. The receptacle mounts to existing hole penetrations on subsea modules. The connection side of the receptacle interfaces with SEA CON®'s standard MSS Cable Connector Plug line. Standard body material is passivated 316 SST although other materials are available upon request.

KEY FEATURES

- Dimensions (MSSL): 5.8" x 4.5" x 2.0"
- 3.0" 6-Bolt Flange
- Maximum Voltage: 600 VDC
- Currently available with 12#16 AWG contacts. Fiber Optic development underway
- Depth Rating: 20,000 psi mated, 5,000 psi open-face
- Mounts in standard MSS cavity
- Resistant to back-pressure

DESIGN RATINGS & TESTING

- Design Pressure: 7,500 psi
- Design life: 20 years
- Elbow weld on each unit dye penetrant tested and seal tested

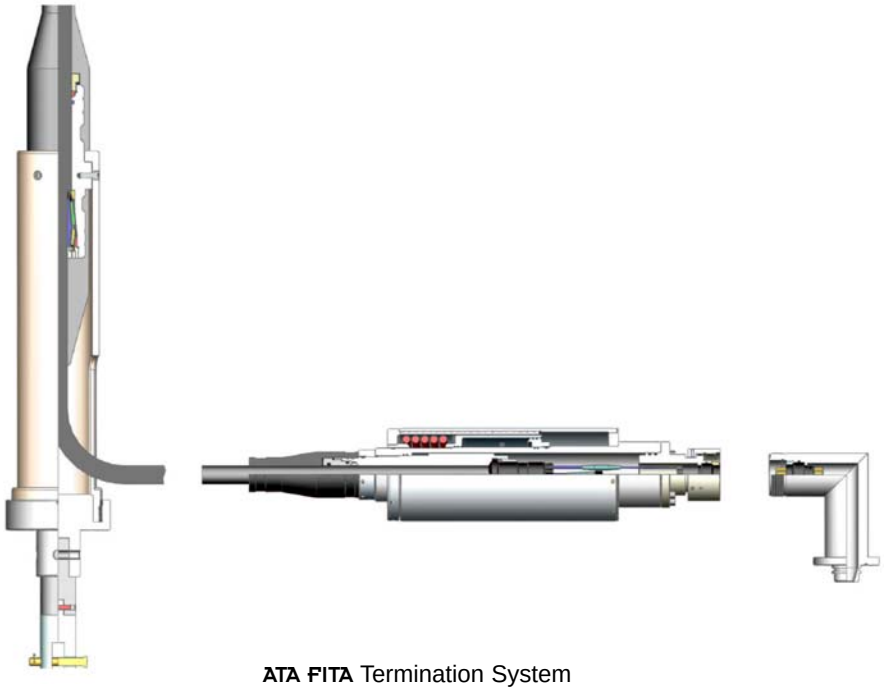
MATERIALS

- Shell: 316 SST
- Insert: Glass Re-enforced Epoxy

SEACON Advanced Products, LLC.
1321 Nelius Road, PO Box 767, Bellville, Texas 77418, USA
TEL: +1 (979) 865 8846 FAX: +1 (979) 865 8859
E-Mail: sales@seacon-ap.com Website: www.seacon-ap.com

DESIGN RATINGS

The Right Angle FCR was designed to be an integral part of the MUX umbilical cable termination system shown below. The **Armor Termination Assembly** is secured to the riser or control system framework using a **Breakaway Unit** that is designed to separate at a defined load. The smaller, more manageable **FITA** is then routed and connected. In the case of accidental BOP droppage, the **Breakaway Unit** shears and the unarmored section of cable pulls out of the **FITA**.



ATA FITA Termination System

QUALITY

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

ISO 9001 REGISTERED
Certificate No. 6936

SEACON Advanced Products, LLC.
1321 Nelius Road, PO Box 767, Bellville, Texas 77418, USA
TEL: +1 (979) 865 8846 FAX: +1 (979) 865 8859
E-Mail: sales@seacon-ap.com Website: www.seacon-ap.com

PRODUCT DATASHEET

MSSQ FLANGED CONNECTOR RECEPTACLE

SEM-MOUNTED ELECTRICAL BULKHEAD CONNECTION FOR DEEPWATER MUX CABLE CONNECTOR

MSSQ-FCR

DESCRIPTION

The **MSSQ-FCR** has been part of **SEA CON**®'s standard product line for over 30 years and has been used for connection to MUX cable connectors in the drilling industry for more than 10 years. The receptacle mounts to existing hole penetrations on many subsea modules. The connection side of the receptacle interfaces with **SEA CON**®'s standard **MSSQ** Cable Connector Plug line. Typical connection is to a **MSSQ-RUFF-NEK**, positive pressure compensated MUX cable connector. The **MSSQ** series of MUX terminations is available with electrical contacts only and electrical-fiber optic hybrids. Standard body material is passivated 316 SST although other materials are available upon request.

KEY FEATURES

- Mates to **MSSQ-RUFF-NEK** MUX cable connector
- Mounting o-ring test port
- Dual o-ring seals throughout
- Depth Rating: 20,000 psi mated, 5,000 psi open-face
- Mounts in standard **MSSQ** cavity, and others - see *AVAILABLE CONFIGURATIONS*

DESIGN RATINGS & TESTING

- Design pressure varies depending on application. 5000 psi standard
- Design life: 20 years
- Conductor Insulation Resistance: >1,000 Mohms @ 500 VDC

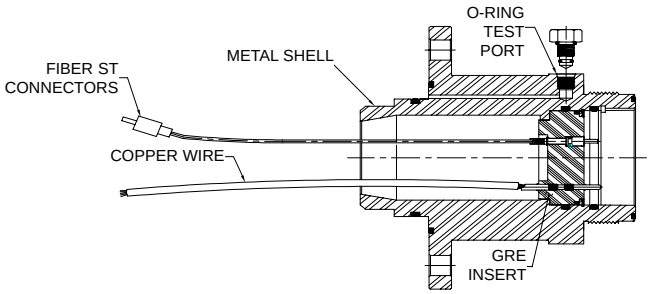
MATERIALS

- Shell: Standard 316 SST, custom materials available
- Internal stainless steel parts: 302, 304, 316, 15-7 PH
- Insert: Glass Reinforced Epoxy
- Electrical contacts: Gold-plated copper
- O-Rings: Nitrile (formerly known as Buna N)
- Optical Contacts: Zirconia ceramic

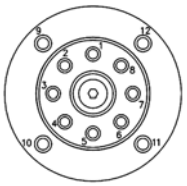
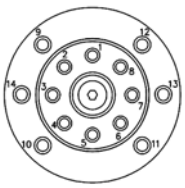
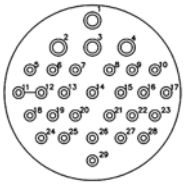
SEACON Advanced Products, LLC.
1321 Nelius Road, PO Box 767, Bellville, Texas 77418, USA
TEL: +1 (979) 865 8846 FAX: +1 (979) 865 8859
E-Mail: sales@seacon-ap.com Website: www.seacon-ap.com

PRINCIPLE OF OPERATION

The MSSQ-FCR uses flange-mounting to secure it to a bulkhead or vessel. Flange diameter varies depending on the application. Dual o-rings; one radial and one facial, provide sealing of the base. These o-rings are testable via the test port seen in Figure 2. A glass reinforced epoxy (GRE) 'insert' provides electrical isolation. The mating side of the receptacle, shown on the right, also uses radial and facial o-rings for sealing to the cable connector plug (CCP).



Electro-Optical MSSQ-FCR

BOP Control System	Varco	Varco ABB/Vetco Cameron	Hydril
Voltage Rating	1,000 VAC	1,000 VAC	1000 VAC - Power Contacts 600VDC - Signal Contacts
Current Rating	42 A	42 A	42A - Power Contacts 18A - Signal Contacts
Optical Loss	≤ 1.0 dB	≤ 1.0 dB	NA
Contact Configuration	 8FO/4#10 AWG	 8FO/6#10 AWG	 25#16/4#10 AWG

*See SEA CON® catalog for other standard MSSQ configurations.

QUALITY

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

ISO 9001 REGISTERED
Certificate No. 6936

SEACON Advanced Products, LLC.
1321 Nelius Road, PO Box 767, Bellville, Texas 77418, USA
TEL: +1 (979) 865 8846 FAX: +1 (979) 865 8859
E-Mail: sales@seacon-ap.com Website: www.seacon-ap.com

PRODUCT DATASHEET

MSSQ RUFF-NEK

POSITIVELY COMPENSATED (60 PSI OVER AMBIENT), DEEPWATER MUX CABLE CONNECTOR

MSSQ RUFF-NEK terminated to electro-optical MUX cable

DESCRIPTION

The MSSQ RUFF-NEK connector is a MUX cable termination that maintains a constant positive pressure inside its oil-filled connector cavity. Positive pressure, maintained at 60 psi using a spring-loaded piston, deters water ingress from conductor interstices and other sources. Inside the connector, advanced conductor booting technology assures functionality even when the MSSQ RUFF-NEK is water-flooded. The MSSQ RUFF-NEK is field installable and testable. Dual static barrier seals are used throughout the connector. It is currently available in both all electric and electro optic hybrid configurations.

KEY FEATURES

- Overall Length: 24.2"
- Overall Diameter: 4.75"
- Megger Test Pin allows testing for water-flooding while mated
- Test port for mating o-rings
- Depth Rating: 15,000 ft.
- Modular cable terminations and Field Installable (no compounds)
- Pressure Compensated Chamber

OPERATION

- Design life: 20 years
- Qualification tested to 8,400 psi. Design pressure: 20,000 psi
- Secondary seals on contacts allow for operation even water flooded
- Conductor Insulation Resistance: >500 Megohms @ 500 VDC
- Cable Pullout Load: 700 lbs, <1.0 dB attenuation
- Qualification tested in ice bath, chamber water-filled, then oil-filled

MATERIALS

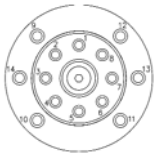
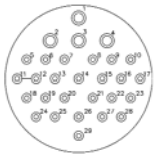
- 15-5 PH SST, 316 SST, 17-4 PH SST, CA630, Titanium Grade 5
- Electrical and elctro-optical inserts: Glass Reinforced Epoxy
- Elastomer: Neoprene, Nitrile
- Compensation Fluid: DC200 or DC710 non conductive silicone oil

SEACON Advanced Products, LLC.
1321 Nelius Road, PO Box 767, Bellville, Texas 77418, USA
TEL: +1 (979) 865 8846 FAX: +1 (979) 865 8859
E-Mail: sales@seacon-ap.com Website: www.seacon-ap.com

PRINCIPLE OF OPERATION

The **RUFF-NEK** was designed to be an integral part of the MUX umbilical cable termination system shown below. The **Armor Termination Assembly** is secured to the riser or control system framework using a **Breakaway Unit** that is designed to separate at a defined load. The smaller, more manageable **RUFF-NEK** is then routed and connected. In the case of accidental BOP droppage, the **Breakaway Unit** shears, and the unarmored section of cable pulls out of the **RUFF-NEK**.

ATA FITA Termination System

MUX Cable	Rochester A304862 Rochester 05605 Vector A71033** NSW 938600** NSW 116373**	Vector A72022 Vector A72023
Voltage Rating	1000 VAC	1000 VAC - Power Contacts 600VDC - Signal Contacts
Current Rating	42 A	42A - Power Contacts 18A - Signal Contacts
Optical Loss	≤ 1.0 dB	NA
Contact Configuration	 8FO/6#10 AWG	 25#16/4#10 AWG

*See **SEA CON**® catalog for other standard **MSSQ** configurations that can be easily adapted to the **MSSQ RUFF-NEK**.

QUALITY

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

ISO 9001 REGISTERED — UKAS MANAGEMENT SYSTEMS
Certificate No. 6936

SEACON advanced PRODUCTS

SEACON®

SEACON advanced PRODUCTS

PRODUCT DATASHEET

SBP SERIES FITA

POSITIVELY COMPENSATED (UP TO 60 PSI OVER AMBIENT), DEEPWATER MUX CABLE CONNECTOR WITH INTEGRAL ARMOR TERMINATION ASSEMBLY

DESCRIPTION

The **SBP Series** connector is a MUX cable termination that maintains a constant positive pressure inside its oil-filled cavity. Positive pressure maintained up to 60 psi using a spring loaded piston, deters water ingress from conductor interstices and other sources. Inside the connector advanced conductor booting technology assures functionality even when the **SBP Series** connector is water-flooded. The **SBP Series** connector is field installable and testable. Dual barrier seals are used throughout the connector. It is currently available in an electro-optical hybrid configuration.

KEY FEATURES

- Overall length: 28.2"
- Overall Diameter: 8"
- Megger Test Pin allows testing for water flooding while mated
- Test port for mating o-rings
- Depth Rating: 10,000ft
- Modular cable terminations and Field Installable (no compounds)
- Pressure Compensated Chamber
- Integral Cable Armor Termination

DESIGN RATINGS

- Design Life: 20 years
- Qualification tested to 5,300 psi
- Design pressure: 8,000 psi
- Secondary seals on contacts allow for operation even water flooded
- Conductor Insulation Resistance: >1Gohm @ 1000 VDC
- Cable Working Load: 6,000lb
- Qualification tested in ice bath, chamber water-filled, then oil-filled

SEACON Advanced Products, LLC.
1321 Nelius Road, PO Box 767, Bellville, Texas 77418, USA
TEL: +1 (979) 865 8846 FAX: +1 (979) 865 8859
E-Mail: sales@seacon-ap.com Website: www.seacon-ap.com

MATERIALS

- 15-5 PH SST, 316 SST, 17-4 PH SST, CA360, Titanium Grade 5
- Electrical and electro-optical inserts: Glass Reinforced Epoxy
- Elastomer: Neoprene, Nitrile
- Compensation Fluid: DC710 non conductive silicone oil

PRINCIPLE OF OPERATION

The SBP Series Connector was designed to be an integral part of the MUX umbilical cable termination system. The 6,000lb Armor Termination is integral to the connector body allowing the tensioned cable loads to be carried through the connection interface. The SBP connector is a flange mounted configuration allowing for good load transfer using 16, ½-20 x 1 -1/4 LG HEX SCT Cap Screws.

AVAILABLE CONFIGURATION

- BOP Control System - NOV / Shaffer
- Voltage Rating - 1,400 VAC
- Current Rating - 42 A
- Optical Loss ≤ 1.0dB
- MUX Cable - Rochester A304862, A305605, A307243 and A307472
- Contact Configuration - 8FO/4#10 AWG

QUALITY

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

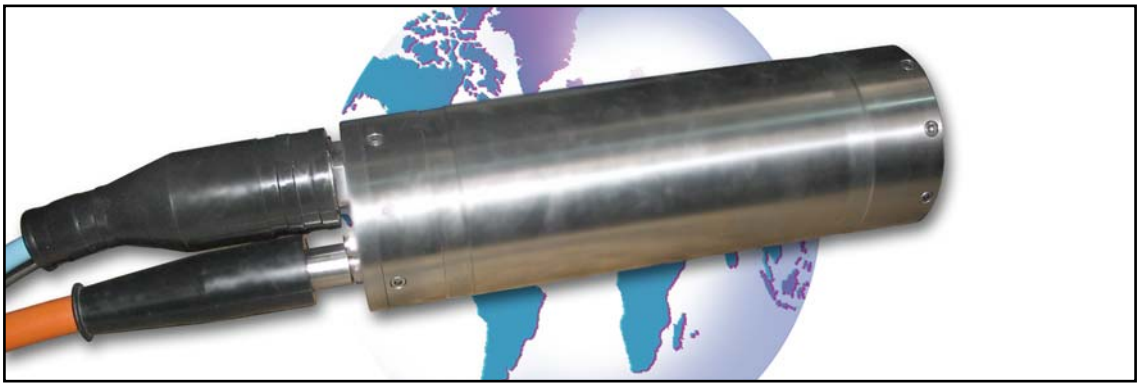
ISO 9001 REGISTERED
Certificate No. 6936

SEACON Advanced Products, LLC.
1321 Nelius Road, PO Box 767, Bellville, Texas 77418, USA
TEL: +1 (979) 865 8846 FAX: +1 (979) 865 8859
E-Mail: sales@seacon-ap.com Website: www.seacon-ap.com

PRODUCT DATASHEET

SUTA

SUBSEA UMBILICAL TERMINATION ASSEMBLY



DESCRIPTION

The Optical Subsea Umbilical Termination Assembly or SUTA is a termination and distribution unit for optical cables. It contains an integral pressure balanced compensation system, fiber management system, mechanical armor termination and fiber k-tube feed-through penetrations.

KEY FEATURES

- Integral fiber management system
- High pressure fiber optic feed-through penetrations
- Boot seals
- Depth Rating: Full ocean depth
- Field installable (no compounds)
- Oil filled and pressure compensated
- Dual o-ring seals
- Slide over cover for easy access and assembly
- Secure splice tray for maximum fiber stability
- Small - 5" (127mm) Diameter 15" (381mm) Length
- Modular cable termination design to facilitate different cables
- Options for multiple cable entry
- Options for multiple connections

QUALITY

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

ISO 9001 REGISTERED
Certificate No. 6936

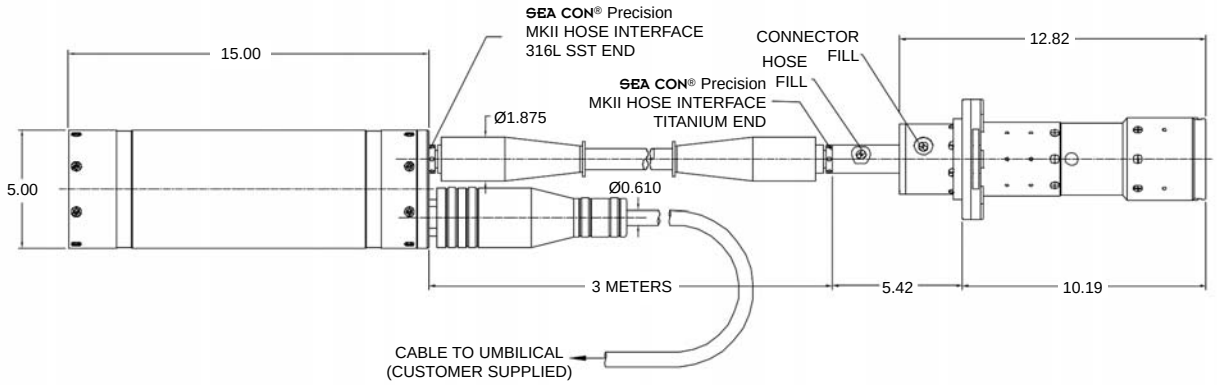
SEACON Advanced Products, LLC.
1321 Nelius Road, PO Box 767, Bellville, Texas 77418, USA
TEL: +1 (979) 865 8846 FAX: +1 (979) 865 8859
E-Mail: sales@seacon-ap.com Website: www.seacon-ap.com

DESIGN RATINGS & TESTING

- Design Life: 25 Years
- Adaptability to design for easy cable variations
- Lightweight - approximately 10lbs (4.5kg) in air
- Umbilical termination fiber splice, <0.10 dB per slice
- HYDRALIGHT wet-mate fiber optic connector, <0.50 dB per channel
- Operating Depth: 4500m
- Storage Temperature: -20°C to +60°C (-4°F to +140°F)
- Operational Temperature: -5ºC to +45ºC
- Pressure Compensation Fluid: Silicone Oil
- 24 hour Helium Leak Test
- Pressure Test 345 bar (5,000 psi), ambient temperature, 1 week soak
- Pressure Test 690 Bar (10,000 psi), ambient temperature, multiple cycling
- Hose assembly axial pull test

MATERIALS

- 316L SST, Titanium
- Elastomer: Nitrile



HANDLING PROCEDURES AND SPECIAL CAPABILITIES

SEACON ADVANCED PRODUCTS, LLC
1321 Nelius Road, P.O. Box 767,
Bellville, Texas 77418, USA.
TEL: +1 (979) 865-8846
FAX: +1 (979) 865-8859
E-Mail: sales@seacon-ap.com
Website: www.seacon-ap.com

SEACON BRAZIL
Rua Conde de Bonfim 120 sala 212,
Tijuca, Rio de Janeiro,
Brazil, CEP: 20520-053.
TEL #1: +55 (21) 3592-0920
TEL #2: +55 (21) 3594-0920
CELL: +55 (21) 8849-3336
E-Mail: renata@seacon-ap.com
Website: www.seaconworldwide.com

SEACON (europe) LTD
Seacon House, Hewett Road,
Gapton Hall Industrial Estate,
Great Yarmouth, Norfolk, NR31 0RB, UK.
TEL: +44 (0) 1493-652733
FAX: +44 (0) 1493-652840
E-Mail: sales@seaconeurope.com
Website: www.seaconeurope.com

SEA CON®
1700 Gillespie Way,
El Cajon, California 92020, USA.
TEL: +1 (619) 562-7071
FAX: +1 (619) 562-9706
E-Mail: seacon@seaconworldwide.com
Website: www.seaconworldwide.com

SEA CON US GULF AREA SALES OFFICE
14511 Old Katy Road, Suite 300,
Houston, Texas 77079, USA.
TEL: +1 (281) 599-3509
FAX: +1 (281) 599-3517
E-Mail: gulfcoastsales@seaconworldwide.com
Website: www.seaconworldwide.com

SEA CON US EAST COAST SALES OFFICE
50 Airport Road,
Westerly, RI 02891, USA.
TEL: +1 (401) 348-0155
FAX: +1 (401) 348-0227
E-Mail: eastcoastsales@seaconworldwide.com
Website: www.seaconworldwide.com

SEA CON FLORIDA SALES OFFICE
Building B, Suite 22,
3959 South Nova Road,
Port Orange, Florida 32127, USA.
TEL: +1 (281) 802-5504
E-Mail: steven.thumbeck@seacon-ap.com
Website: www.seaconworldwide.com

SEA CON GLOBAL PRODUCTION
Callejon Terrazos #8, Local 2-C,
Las Brisas 1ra. Seccion,
Tijuana, B.C., Mexico C.P. 22610.
TEL: +52 (664) 626-2726
FAX: +52 (664) 686-8922
E-Mail: sales@seaconglobal.com
Website: www.seaconglobal.com
Dial from U.S.A. TEL: +1 (619) 308-7901
TOLL FREE: (888) 562-7072
FAX: +1 (619) 308-7900

SEACON PHOENIX, LLC
15 Gray Lane, Suite 108,
Hopkinton Industrial Park,
Ashaway, RI 02804, USA.
TEL: +1 (401) 637-4952
FAX: +1 (401) 637-4953
E-Mail: sales@seaconphoenixllc.com
Website: www.seaconphoenixllc.com

Even though these procedures appear simple, only qualified technicians should perform the installation and maintenance.

INSTALLATION PROCEDURES

Torque values referenced assume installation into dry metal threads. Bulkhead connector receptacle (BCR) o-ring should be lubricated with an appropriate silicone grease before installing. This lubricant should be applied to form an adequate film. Excessive lubrication is detrimental to the operation of the connector. Care must be taken to ensure no grease or dirt is present on the face of the fiber optic contact. Cleaning of the contact is recommended using only suitable products. CCP o-ring should be greased as above with the same care being taken.

CARE AND MAINTENANCE

Once mated the connector requires no maintenance. When stored all fiber contacts should be protected with suitable dust caps.

CABLE AND CONTINUITY PRESERVATION

Avoid sharp bends in cables. Cables subjected to vibration and exposed to seawater drag should be adequately clamped to prevent fatigue and possible failure.

SPECIAL ASSEMBLIES

SEACON Advanced Products, LLC. maintains all facilities necessary to furnish complete underwater and environmental electrical connector/cable systems, including Research and Development, Engineering, Manufacturing, Quality Control and Pressure Testing. As well as supplying our standard 'off-the-shelf' items, we have the capability to design and manufacture SPECIAL CUSTOMIZED CONNECTORS AND CABLE ASSEMBLIES to suit your individual needs.

SEACON®