

Datasheet

Wideband BOP Subsea Electronics Module (SEM)



Description

The Subsea Electronics Module (SEM) provides the interface to the client Blow Out Prevention (BOP) system, driving up to 12 pilot valve solenoids to operate the BOP hydraulic functions, and reading back up to 12 pressure operated status switches and 4 analogue sensors which indicate the internal status of the BOP. The SEM can interface to BOPs from all the major manufacturers.

The dual redundant SEM can operate with up to four DARTs to provide multiple acoustic communication paths and ensure reliable communication even under the most demanding conditions.

System availability is ensured by a periodic 'heartbeat' signal sent automatically from the surface to the subsea system. Built-in test functions

test all pilot valve solenoids in the client's BOP. The acoustic signalling uses sophisticated modulation and optimal correlation receiver processing to provide a two way communication link that is highly robust and extremely resistant to noise, multi-path effect and interference from other acoustic sources.

Alternatively, if the client's hydraulic pod contains control electronics and electrical power, the SEM can be configured to interface via a serial communication link, rather than via individual solenoid drives.

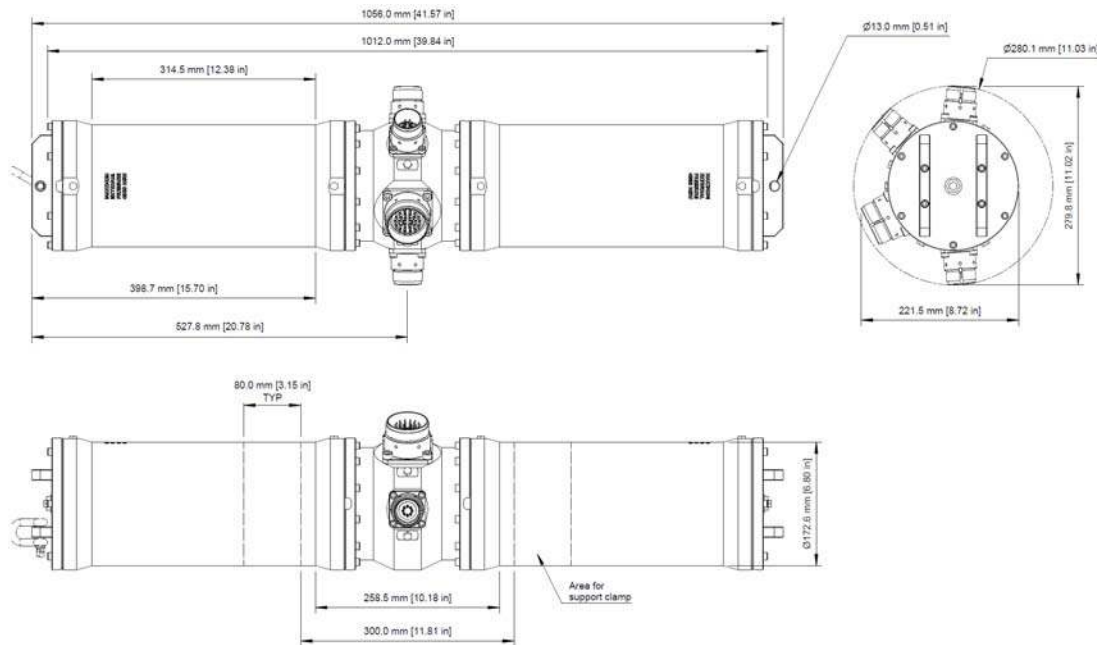
The SEM includes dual redundant Lithium battery packs sufficient for three year's normal operation, is rated to 4000m (12000ft) water depth and manufactured from Super Duplex Stainless steel.

Key Features

- Fully Dual Redundant isolated electronics chambers
- Capable of operating up to four DART transceivers
- Reliable multiple acoustic communication paths
- Capable of Driving up to 12 Pilot Valves
- Highly secure command structure
- With up to 12 pressure read backs
- Four 4-20mA sensors
- Compatible with all makes of BOP
- Wideband signal technology ensures reliable operation of near BOPs
- Depth rated to 4,000 Metres (over 12,000 feet)
- Super duplex stainless steel housing

Specifications

Wideband BOP Subsea Electronics Module (SEM)



| Feature | Type 8136-000-003 |
|----------------------------------|--|
| Power | Long Life Lithium Primary Cell Battery Pack (Non-rechargeable) |
| Battery Capacity per Sub-Section | 50 AHrs @ 14.5V |
| Battery Life | >3 Years (In Normal Operation) |
| Number of Solenoid Drives | 12 |
| Solenoid Drive Voltage | 24VDC @ 50W (Other options available) |
| Number of Read-backs | 12 |
| Read-back Type | Pressure Switch (volt-free contact) |
| Number of 4-20mA Sensors | 4 |
| Sensor Supply | 24VDC |

Mechanical Specification

| | |
|-----------------------|--|
| Housing Construction | Super Duplex Stainless Steel - UNS32550 |
| Dimensions Length | 1066 mm (L), 168mm (Clamp Diameter), 245mm (Min. Clearance Diameter) |
| Weight in Air / Water | 91kg / 62kg |
| External connectors | BOP (Client) 1 x SEACON SEAMATE SMM-30-FCR |
| | DART 2 x SEACON SEAMATE SMK-8-FCR |
| | Test 1 x SEACON SEAMATE SMK-6-FCR |

Environmental Specification

| | |
|---------------------------------|-----------------------------|
| Depth Rating | 4,000 Metres |
| Operating / Storage Temperature | -20 to +60°C / -25 to +70°C |
| Design Qualification | API-16D |