

Datasheet

BOP Deep Acoustic Remote Transceiver (DART)



Description

Deep-rated Acoustic Remote Transceivers (DARTs) are part of the Blow Out Prevention (BOP) control subsea system. Housings are constructed from super duplex stainless steel and depth rated to 4000 metres (12000 ft).

DARTs are usually installed on arms, typically 8-10 feet long, that swing out from the opposite sides of the BOP stack, when the vessel is lowered. This ensures they have an unobstructed 'line-of-sight' path to the surface for reliable acoustic communications.

Up to four DARTs can be used to provide multiple acoustic communication paths and ensure reliable communication even under demanding conditions. This level of acoustic and functional redundancy,

combined with the inherent robustness of the Wideband signals achieves an acoustic link with reliability that is comparable to that of a cabled link and may be considered as a direct alternative to an umbilical cable.

System availability is ensured by a periodic 'heartbeat' signal sent automatically from the surface to the subsea system. The reply indicates the health of the system. There are also built-in test functions to test all pilot valve solenoids in the client's BOP. All operations and communications are logged.

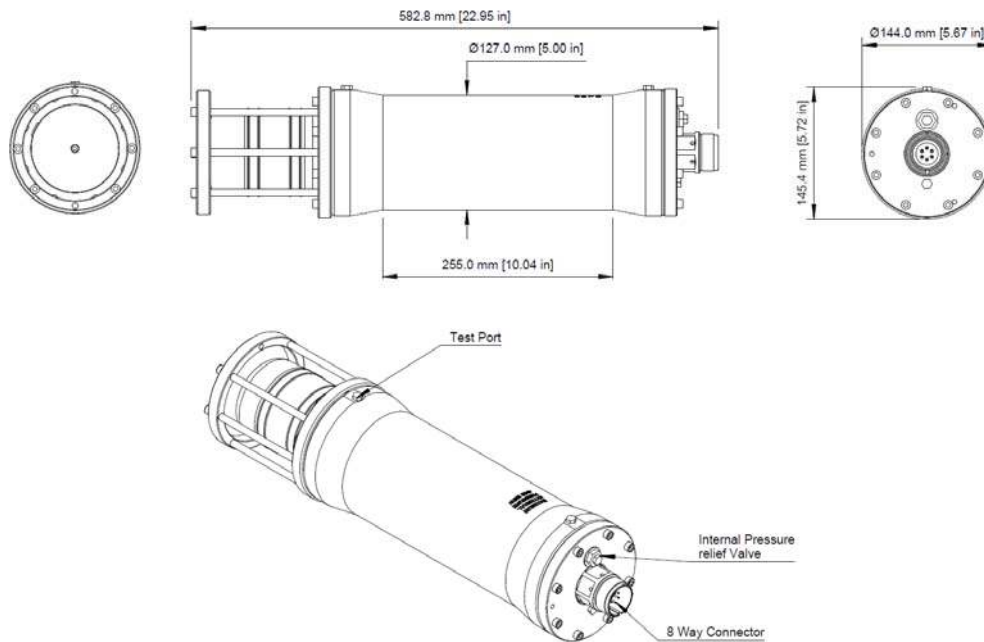
Each installation has a unique address and will only respond to commands which include its address. This allows several systems to operate within acoustic range of one another without any mutual interference.

Key Features

- Fully redundant subsea electronics
- Subsea units depth rated to 4000 metres (12000 feet)
- Dual acoustic transceivers mounted on BOP ensure reliable communications with the surface
- Compatible with all makes of BOP
- Wideband signal technology ensures reliable operation in near BOP's
- Reliable multiple acoustic communication paths
- Long life lithium battery pack
- Super Duplex stainless steel construction

Specifications

BOP Deep Acoustic Remote Transceiver (DART)



Acoustic Communication Specification	Type 8137-000-07
Operating Frequency	Sonardyne MF (19–36kHz)
Optimal Cone of Operation	±45°
Transmit Source Level (dB re 1µPa @ 1m)	>190dB
Receiver Threshold(dB re 1µPa)	<100dB
Acoustic Communication Link	Robust Spread Spectrum

System Specification

Power	Long Life Lithium Primary Cell Battery Pack (Non-rechargeable)
Battery Capacity per Sub-Section	30 AHrs @ 14.5V
Battery Life	>18 Months (In Normal Operation)
Serial Communication	2 x RS485 (Single pair to each SEM Sub-section)

Mechanical Specification

Housing Construction	Super Duplex Stainless Steel - UNS32550
Dimensions	583 mm (L) x 144mm (Max. Dia.
Weight in Air / Water	22kg / 16kg
External connector	1 x SEACON SEAMATE SMK-8-FCR

Environmental Specification

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