

# Datasheet

## Sentry - Integrity Monitoring Sonar Head



### Description

The Integrity Monitoring Sonar Head (IMS) comprises a combined transmit and receive array, along with the required electronics to transfer data to the surface.

The Sonar Head has a wide bandwidth transmission capability, centred by default on 70kHz. 8 separate 45° transmit sectors are used, which are individually addressable, allowing any segment to be disabled to reduced nuisance acoustic returns.

The deep water service, compact transducer array has 128 separately wired elements, which are used to form 256 equally spaced, receive beams – each on a 1.4° horizontal beam pitch. Software further interpolates these beams to provide a highly accurate range and bearing estimation for the detected event.

The Sonar Head also contains the electronics to digitise, baseband, multiplex and transfer the signals received by the transducer, along with control and monitoring software that performs periodic built-in-testing

to verify the health of the transducer elements and front-end electronics.

Efficient electronics and transducer arrays result in a total peak power budget of less than 75W for the sonar.

An attitude and heading reference sensor compensates for orientation on deployment, allowing the sonar to be easily deployed by ROV.

The IMS Sonar Head is available in a Grade 5 Titanium housing, suitable for long term permanent installation. The pressure housing design follows API-16D design rules.

### Integration

The Sentry IMS Sonar Head can be configured to meet operational requirements and conform to existing subsea infrastructure. This flexibility is based on two Sonar Head types:

8265-000-01 – High bandwidth, raw sonar data is transferred to the surface via copper Ethernet or fibre-optic cabling. Sonar processing and alarm management are carried out live on the Sentry Command Workstation (CWS). The sonar

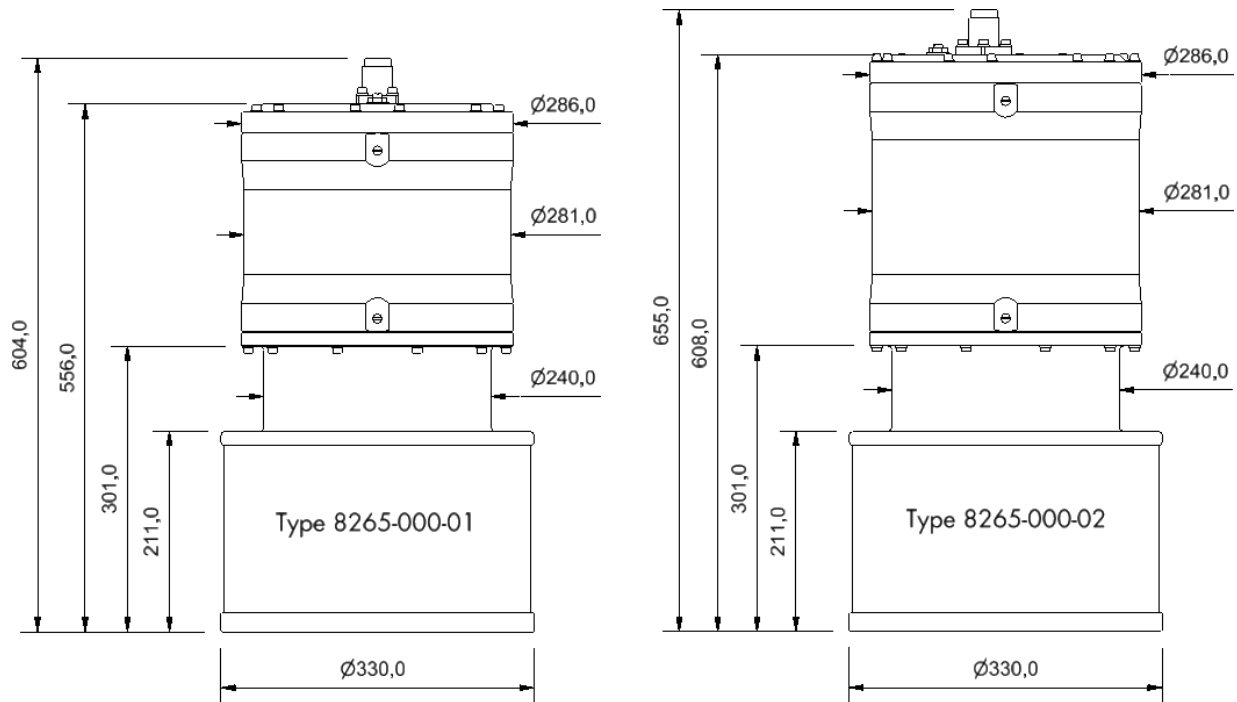
draws AC power via an umbilical from the Sentry Power Distribution Unit (PDU).8265-000-02 - Raw sonar data is processed subsea. Alarms are transferred back to the surface via a wired or acoustic link. DC power is provided locally via a subsea hook-up or battery pack.

### Key Features

- Environmentally friendly low 206dB re1µPa @ 1m Source Level
- Operating power of <105W
- Grade 5 Titanium Housing
- Separately addressable 45° transmit sectors
- Integrated altitude and heading reference sensor
- Sensitive to small leaks over a 360° azimuth at ranges in excess of 500m
- High bearing and range accuracy
- Configurable to enable integration with existing infrastructure
- Multiple sonar heads can be interfaced together to increase coverage

# Specifications

## Sentry - Integrity Monitoring Sonar Head



Feature	Type 8265-000-01	Type 8265-000-02
Operational Frequency	70kHz	70kHz
Bandwidth	20kHz	20kHz
Source Level	206dB re 1μPa @ 1m	206dB re 1μPa @ 1m
Pulse Length	40ms	40ms
3dB Vertical Beamwidth	11°	11°
3dB Azimuthal Beamwidth	3.5°	3.5°
Receive Beams	256	256
Detection Area	360° up to 1500m*	360° up to 1500m*
Detection Bearing Resolution	<0.14°	<0.14°
Detection Range Accuracy	<1m @ 150m range	<1m @ 150m range
Electrical	230V AC (±10%), Typical 85W	18 to 36V DC (±10%), Typical 105W
Communication	Ethernet	Ethernet / Acoustic
Operating Temperature	-10 to +40°C	-10 to +40°C
Storage Temperature	-10 to +55°C	-10 to +55°C
Mechanical Construction	Titanium Grade 5	Titanium Grade 5
Operational Depth Rating	4,000m	4,000m
Dimensions; Length x Diameter	556 mm x 330 mm dia.	608 mm x 330 mm dia.
Weight in Air (Water)**	86kg (48.5kg)	90kg (49.5kg)

\*360° detection, azimuth selectable in 8 x 45° transmit sectors. \*\*Estimated Weights.

Specifications subject to change without notice - 06/2021