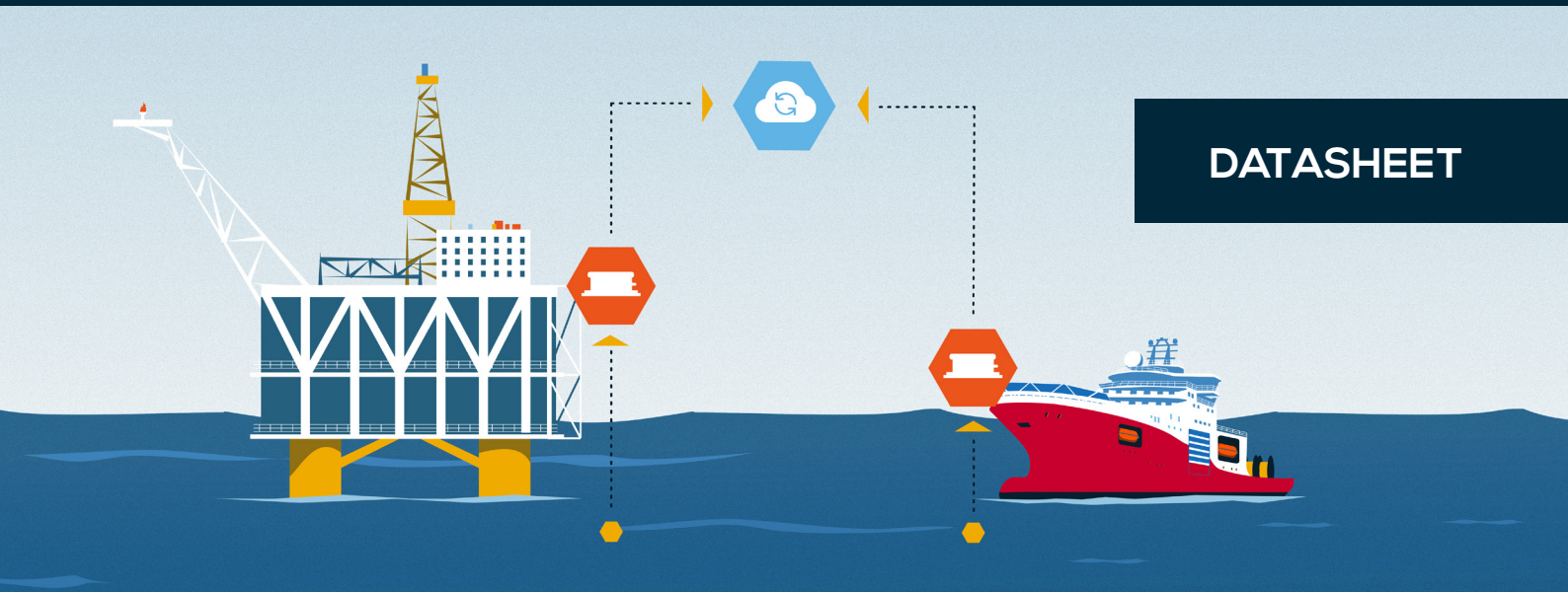


MIROS RANGEFINDER EX

THE ULTIMATE STAND-ALONE SENSOR

FOR AIR GAP, TIDE, WATER LEVEL, DRAUGHT

AND WAVE MEASUREMENTS



DATASHEET

The Miros RangeFinder ^{Ex} is a dry-mounted, radar-based sensor purpose-built to deliver accurate, real-time measurements of sea level, tide, non-directional wave parameters, and air gap measurements.

Offering market-leading, verified data accuracy, the real-time measurements can be accessed directly from the instrument via a web browser or integrated with 3rd party systems. Real-time and historical data can be accessed anywhere, anytime and on any device via the integrated Miros Cloud service, allowing for easy and secure collaboration between different stakeholders.

The RangeFinder has proven its ruggedness and reliability through decades of service in extreme weather conditions all over the world and can be delivered with motion compensation for use on vessels and with Atex IEC Ex certification (Ex db eb ib T6) for use in Zone 1.

KEY FEATURES

- Atex IEC Ex certified
- High sampling rate and accuracy
- No parts submerged in water
- Low maintenance costs
- Not impacted by fog, rain or moisture
- Embedded data processing
- Browser-based user interface
- IoT-enabled for easy data access

ESSENTIAL FOR

- Accurate air gap, water level and draught measurements from both fixed or floating locations
- Real-time sea state monitoring, incident analysis and environmental specifications
- Long-term asset integrity assessments
- Accurate non-directional wave measurements calculated from both wave spectrum and timeseries
- Tide gauge according to WMO TD 1339



The triangular FMCW (Frequency Modulated Continuous Wave) microwave sensor accurately measures the distance to the water surface, with a sampling frequency up to 200Hz. Wave variables are calculated both from the wave point spectrum¹ and from time-series analysis.

The sensor is a self-contained, network connected device with an integrated web-based user interface.

The RangeFinder is an IoT-enabled device that can be easily and securely integrated both with local and remote systems. It can also be complimented with various value-adding cloud services from Miros, such as web displays, database integration, data processing and device management services.

SPECIFICATIONS

Data	Range	Resolution	Accuracy
Distance (Air Gap)	2 - 95 m	1 mm	< 5 mm
Wave Height	< 93 m	1 cm	< 1 cm
Wave Period	0.5 - 128 s	0.1 s	0.1 s
Internal Sampling Rate: 50 - 200Hz, depending on range			

Physical Interfaces

Standard Interface:	CAT5e or better
Serial Interface:	RS-232 (Standard) RS-422 (Optional)

Displays/GUI

Data, Status, Configuration	Web-based UI
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Integration Options

Local:	NMEA, proprietary formats
Remote:	JSON & CSV format from Miros Cloud

Data Output Rate (local):	Up to 50Hz via TCP/IP or serial
Data Output Rate Miros Cloud:	Up to 10 Hz for air gap

Input Interfaces

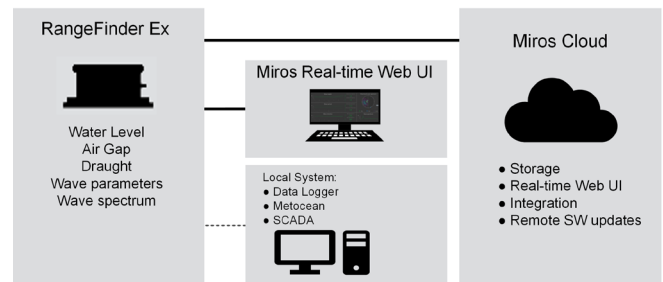
Date/Time:	NTP
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Electrical Data

Frequency of Operation:	9.4 - 9.8 GHz, Triangular FM
Transmitted Power:	2 dBm ± 3 dB (Nominal 1.6mW)
Beam Width:	5° (-3 dB one way)
Supply Voltage:	12 - 36 VDC (Nominal 24 VDC)
Power Consumption:	< 7 W
EMC:	2014/30/EU

Environmental Specifications

Temperature:	-20°C to +50°C
Humidity:	0 - 100 %RH
Ingress Protection:	IP 66
ATEX:	II 2(2)G, Ex db [ib Gb] IIB T6 Gb
IEC Ex:	Ex db [ib Gb] IIB T6 Gb



Physical Specifications

Dimensions (HxWxD):	210 x 500 x 440 [mm]
Weight:	15 kg
Material:	Al. EN AW 5052 / EN AW 6082
Finish/Colour:	Enameled / Grey RAL 7035 ExD Housing with Cast Aluminium Finish

Accessories & Options

MP-327	Mounting Bracket
101749	JB RangeFinder Ex w/ 24VDC power supply
101750	JB RangeFinder Ex w/o power supply
101726	RangeFinder Ex Motion (with integrated MRU)
Cloud Services	Contact Miros for details

Specifications are subject to change without prior notice.