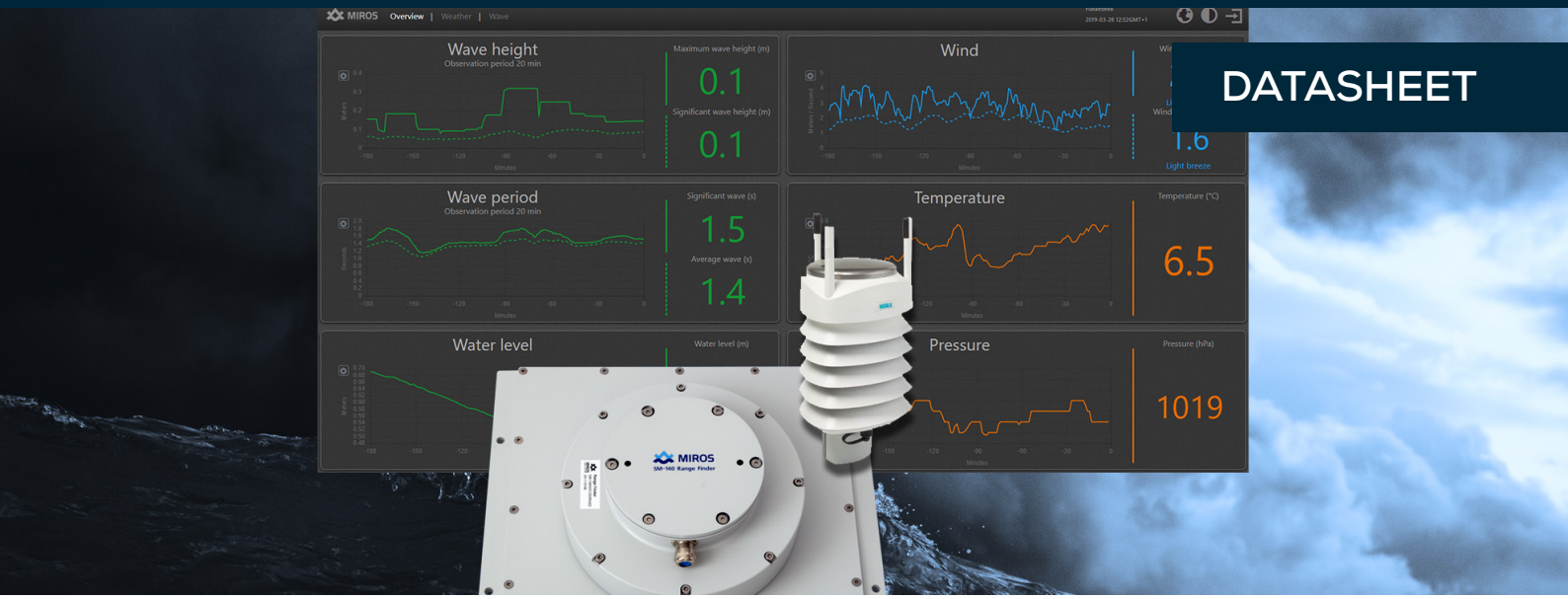
MIROS WAVEWEATHER

ACCURATE, REAL-TIME MEASUREMENTS OF LOCAL SEA STATE AND WEATHER CONDITIONS

DATASHEET



The compact and easy to install Miros WaveWeather is designed to deliver accurate real-time measurements of local sea state and weather conditions at offshore locations, inside ports, coastal areas or during vessel navigation to improve safety and efficiency for marine operations.

WaveWeather combines measurements from two different sensors, the Miros RangeFinder and Vaisala Weather Transmitter.

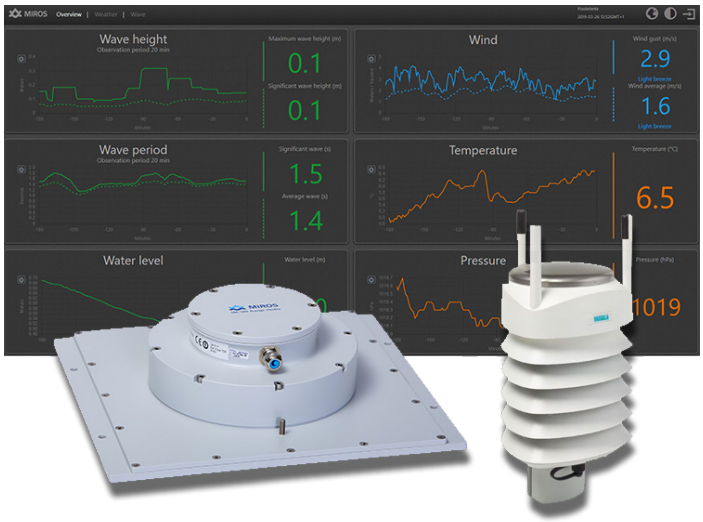
Real-time data is integrated into Miros Cloud making it immediately accessible anywhere and without the need of any external processing. Miros Cloud enables easy integration with tidal tables, weather forecasts and other data sources as well as enabling the access to data history enhancing the long-term asset integrity assessments with accurate and reliable data.

KEY FEATURES

- Real-time monitoring of wave height, periods, water level and weather data.
- Easy data access
- Secure data transmission
- Not impacted by rain, fog, or moisture
- Easy access to historical data
- Remote diagnostics, configuration, and software upgrades
- No parts submerged in water
- Low maintenance cost

ESSENTIAL FOR

- Increased productivity in weather-critical operations
- Improved safety and efficiency of offshore operations
- Incident analysis and environment specifications
- Port navigation
- Enhancing long-term asset integrity assessments
- Offshore wind turbine installation and overhaul
- Planning and operation support
- Tide gauge according to WMO TD 1339



The WaveWeather system consists of IoT-enabled devices, a Miros RangeFinder and a Vaisala WTX 536 Weather Transmitter, both securely connected to the Miros Cloud.

The Vaisala transmitter provides weather data while RangeFinder provides the non-directional wave measurements in all weather conditions, undisturbed by fog, rain, or moisture.

Together with Miros Cloud the system is complemented with various value adding services, such as data storage and download, data applications, device management and integration with weather- and tidal -forecast services.

SPECIFICATIONS

Data	Range	Resolution	Accuracy
Distance	3 - 95 m[1]	1 mm	< 5 mm[2]
Wave height	< 92 m	1 cm	< 1 cm[2]
Wave period	0.5 - 128 s	0.1 s	0.1 s
Wind speed	0 - 60 m/s	0.1 m/s	±3 % at 10 m/s[3]
Wind direction	1 - 360°	1°	±3° at 10 m/s[3]
Air temperature	-52 - +60°C	0.1°C	±3°C
Air humidity	0 - 90% RH	0.1% RH	±3 % RH
	90 - 100% RH		±5 % RH
Air pressure	600 - 1100 hPa	0.1 hPa	±5° hPa[4]
Rainfall intensity	0 - 200 mm/h	0.1 mm/h	
Rainfall		1 mm	

Physical Interfaces

Standard Interface:	CAT5e or better

Displays/UI

Data, Status, Configuration	Web-based UI

Intergration Options

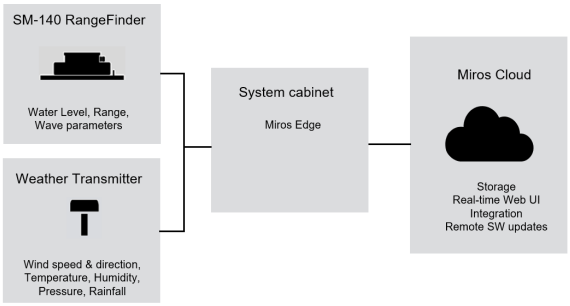
Sensor data and status:	JSON & CSV format from Miros Cloud
Data Output Rate Miros Cloud:	Up to 10 Hz for air gap

Electrical Data

RangeFinder:	
Frequency of Operation:	9.4 - 9.8 GHz, Triangular FM
Transmitted Power:	2 dBm ± 3 dB (Nominal 1,6mW)
Power consumption:	< 7 W
EMC:	2014/30/EU
Weather Transm., EMC	IEC 60945 & 613226-1
Vaisala Weather Transmitter	
Supply Voltage:	6 - 24 VDC
Power Consumtion:	Nom. 15W, Max. 17W
With optional heater:	Nom. 25W, Max. 35W

Environmental Specifications

Sensors:	
Temperature:	-30°C to +50°C
Humidity:	0 – 100 %RH
Ingress Protection:	
RangeFinder:	IP 67
Weather Transmitter:	IP 66[5]
Central equipment:	Indoor and outdoor versions available



Accessories & Options

SM-140/N/03:	Range 3-95 m
SM-140/W/03:	Range 1-23 m
SM-140/x/03/M:	Floating installations
MP-327:	RangeFinder mounting bracket
WXT 536:	Bird Spike
WXT 536:	Vaisala Mounting Kit
Cloud Services:	Contact Miros for details

Physical Specifications

Weight:	SM-140/N:	11,8 kg
	SM-140/W:	10 kg
	WTX 536:	0,7 kg

Notes

1. Depending on the sensor elevation above sea level and selected sensor range.
2. The accuracy (standard deviation) of water level and wave variables is mainly determined by the sea surface statistics, site specific properties, sensor mounting height and data integration time. Typical accuracy for averaged measurement is ± 5mm. For measurements to a fixed target in a controlled environment, the accuracy is ± 1mm.
3. Wind: at 10 m/s wind speed; Temperature: for sensor element at 20°C
4. For T_{amb} 0 - 30°C. For T_{amb} -52 to +60: +/-10 hPa
5. With the optional WXT mounting kit

Please refer to the SM-140 RangeFinder and Vaisala WTX 536 datasheets for additional information.

Specifications are subject to change without prior notice.