MIROS WAVE & CURRENT RADAR

ACCURATE MEASUREMENTS OF DIRECTIONAL WAVE SPECTRA & SURFACE CURRENTS

DATASHEET

The Miros Wave & Current Radar is a unique high-performance remote sensor for the measurement of directional wave spectra and surface currents. It is the only sensor which utilises the dual-footprint pulse Doppler method for wave measurements, and the microwave dual frequency method for measuring surface currents.

The sensor enables data to be easily and securely accessed both locally and remotely using modern IoT technologies. The sensor provides excellent quality wave spectrum and wave parameter data. The accuracy been verified in a number of independent comparisons, contact Miros for more details.

The Miros Wave & Current Radar has proven its ruggedness and reliability through many years of service in extreme weather conditions, including heavy precipitation, all over the world.

KEY FEATURES

- Easy data access, locally and remotely
- No parts submerged in water
- Low maintenance costs
- For fixed or floating installations
- Not impacted by fog, rain or mist
- Web-based user interface
- Embedded data processing and web server

ESSENTIAL FOR

- Real-time sea state and surface current monitoring
- Weather-critical maritime operations
- Structural integrity verification
- Collection of in-situ data, on- or offshore
- Improvement of forecasts

The Miros Wave & Current Radar observes the ocean surface in a semi-circle at a distance of 180 - 450 m depending on the installation height, typically 18 - 80 m.

The radar frequency gives a strong echo from capillary waves which are normally present at wind speeds > 2 m/s.

Water particle velocity is measured by use of the Pulse-Doppler technique and provides accurate measurements even in the harshest weather conditions.

The Miros Wave & Current Radar is a modern IoT-enabled device that can easily and securely integrate with both local and remote systems.

The device can also be complemented with various value adding Cloud services from Miros, such as web displays, database integration, data processing and device management services.

Cloud integration enables all relevant stakeholders to securely access critical data simultaneously, allowing for a shared situational awareness, supporting decision-making in real time as conditions develop.

SPECIFICATIONS

Directional Spectra	Bins	Range	Resolution
Directions:	36	1 - 360°	10°
Frequencies:	37	0.03 - 0.3 Hz	0.0078 Hz

Waves	Range	Resolution	Accuracy
Height:	0 - 4 m	0.1 m	±0.2 m
	4 - 30 m	0.1 m	±5 %
Period:	3 - 30 s	0.1 s	±5 %
Direction:	1 - 360°	1°	±7°

Update Interval 128 s. Default averaging time approx. 40 min.

Surface Currents [4]

	Range	Resolution	Accuracy
Speed:	0 - 2.5 m/s	0.01 m/s	±0.05 m/s
Direction:	1 - 360°	1°	±7°

Update Interval 128 s. Default averaging time approx. 40 min.

Physical interface

Standard interface:	CAT5e STP

Displays/GUI

Data, Status, Configuration:	Web GUI

Integration options

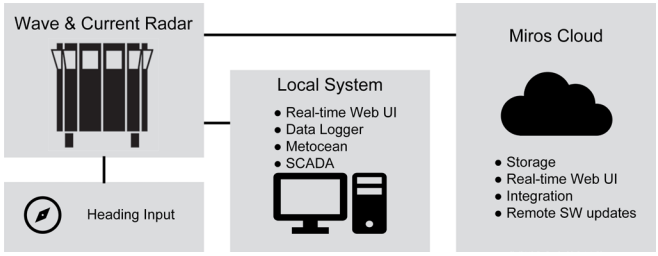
Local:	NMEA (proprietary formats)
Remote:	CSV and JSON formats from Miros Cloud

Input Interfaces

Heading:	NMEA - HDT
Date/Time:	NTP

Electrical Data

Frequency of Operation:	5.8 GHz pulse
Bandwidth:	20 MHz
Transmitted Power:	275 mW average (10 W peak)
Supply Voltage:	110 VAC or 230 VAC ±10 %
Power Consumption:	SM-050/04/SF: 85 W
	SM-050/04/TM: 365 W
RED:	2014/53/EU



Environmental Specifications

Temperature:	-15°C (-25°C) [1] to +40°C (+50°C) [2]
Humidity:	0 – 100 %RH
Ingress Protection:	IP 66

Physical Specifications

Dimensions (HxWxD):	860 x 897 x 696 [mm]
	870 x 1100 x 980 [mm] [2]
Weight:	47 kg (69 kg) [2]
Material:	Al. EN AW 5052-H32
Finish/Colour:	Enameled / Grey RAL 7035

Versions

SM-050/04/SF:	S = Standard temp. range
SM-050/04/SM:	F = Fixed installation [3]
SM-050/04/TF:	M = Floating installation
SM-050/04/TM:	T = Tropical temp. range [2]

Accessories & Options

Cloud services:	Contact Miros for details
MP-309/03:	Pedestal
MP-294/03:	Shock absorober
SM-050/04/xxA:	Alternative frequency [1]

Built-in Ethernet SHDSL Extender, for extended cable distance to several km.

Notes

1. On request. Contact Miros for details.
2. Tropical version with sun shield and cooling door (versions SM-050/04/Tx) required when temperature exceeds 40°C.
3. The radar is designed for stationary use. Reasonable measurements may be obtained during transit at speeds of 6-8 knots.
4. Surface current measurements are only available in certain sea states. Contact Miros for more details.

Specifications are subject to change without prior notice.