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.

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 - 1 m	0.1 m	±0.2 m
	1 - 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.

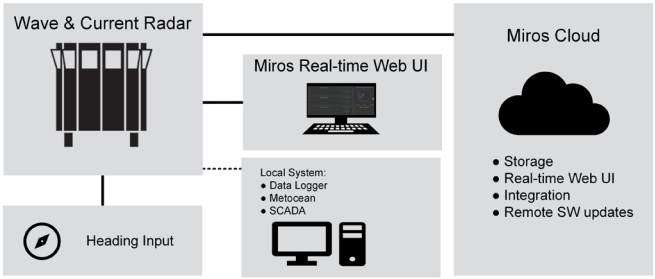
Physical interface
Standard interface: CAT5e STP

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-050/05/SF: 85 W
SM-050/05/TM: 365 W
EMC: 2014/30/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: 53,2 kg (standard version)
74,6 (tropical version)
Material: Al. EN AW 5052-H32
Finish/Colour: Enameled / Grey RAL 7035

Versions
SM-050/05/S S = Standard temperature range
SM-050/05/T T = Tropical temperature range [2]
Both versions can be equipped
with the motion reference unit (MRU) for floating installations [3]

Accessories
MP-309/03: Pedestal
MP-294/03: Shock absorober

Options
Cloud services: Contact Miros for details
SM-050/05/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, but reasonable measurements may be obtained during transit at speeds of up to 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.