

## Vaisala HydroMet™ System MAWS301

### Variety of applications

MAWS301 is a compact, robust and easy-to-use system which provides quality controlled data in applications including climatology, synoptical observation, meteorology, hydrology and aviation weather – even concurrently. MAWS301 is an optimal choice for National Meteorological Institutes in the modernization of their measurement networks, hydrological institutes, nuclear power plants, wind energy farms, and TV stations to support their mission-critical needs. MAWS301 is especially designed for unmanned operations at remote sites requiring high reliability and low power consumption with ultimate expandability.

### Enhanced precision with ease of use

MAWS301 uses a field-proven and high accuracy data logger with advanced software to support a broad range of analog and serial sensors. Sensor measurements, statistical calculations, data logging on a compact flash card and versatile data transmissions are performed according to a user-configured setup made with user-friendly Vaisala Setup Software Lizard.

### Power supply options

MAWS301 has low power consumption. The 11 Watt solar panel is enough for powering a basic MAWS301 system. A 33 Watt or even 65 Watt solar panel as well as a mains (AC) power supply are optional to power extended systems with telemetry devices. Available backup batteries range up to 52 Ah.

### Advanced telemetry

The system provides interfaces with almost any type of telemetry, terminal, displays as well as smart sensors. With optional plug-in modules the number of serial ports can be enhanced from 2 up to 8 ports, enabling multiple RS-232, RS-485 and SDI-12 connections. MAWS301 can be connected directly to a LAN network using Ethernet Communication Module DSE101 offering a 10/100Base-T Ethernet. Other options for telemetry include various wireless, landline, and satellite devices.

### Expandability

MAWS301 is expandable with, e.g., the Vaisala Sensor Multiplexer QMU101 offering additional 10 differential analog channels. The Vaisala Digital I/O Unit QMI118 adds



8 digital outputs and 8 digital inputs for sensors, power optimizing and unmanned control functions based on user-defined requirements.

### Innovative in installation and maintenance

Field-proven reliability of MAWS301 enclosures feature IP66 (NEMA4X) protection. In MAWS301 all sensors and telemetry devices are connected to the system using high quality polyurethane cables with IP68 connectors allowing quick and trouble-free installation. All the inputs have transient protection and all mains power and RF inputs are surge protected. A single maintenance person can easily and safely tilt the Vaisala Tilttable Masts.

#### Features

- Compact, robust and easy-to-use automatic weather station
- Easy and economical to install, maintain and upgrade
- Field-proven reliability and accuracy in harsh environments
- Low power consumption for extended remote operations
- Wide selection of sensors and telemetry options including built-in TCP/IP connectivity
- Extensive calculation and data logging capacity
- Open and modular design allowing high level of customization
- Low Total-Life-Cycle Cost

# Technical data

## General

Data Collection Platform	Vaisala Data Logger QML201
with Vaisala Setup Software Lizard	
Temperature	
Operating *)	-50 ... +60 °C (-58 ... 140 °F)
Storage	-50...+70 °C (-58 ... 158 °F)
Humidity	0 ... 100 % RH
EMC	In compliance with EN 61326-1 (2001-12)
Electrical equipment for measurement, control and laboratory use - EMC requirements - for use in industrial locations	
IP rating	NEMA-4X / IP-66
Materials	Stainless steel Painted aluminium Plastic
Mast**)	Tilttable 2/3/4/6/10 m (6/9/12/24/30 ft) pole mast
Enclosure	600(H) x 400 (W) x 200 (D) mm
Weight	Enclosure approx 20 kg Mast with sensors approx 150...200 kg
Maximum wind speed	With one set of guy wires 50 m/s (90 kt) With two sets of guy wires 75 m/s (130 kt)
Powering **)	90 ... 264 VAC, 45 ... 65 Hz 8 ... 14 VDC recommended (30 VDC max.)
Solar panel	11/ 33 W
Internal battery	up to 52 Ah/12V
Battery regulator	Charge/recharge control Temperature compensation Deep discharge protection
	Simultaneous inputs from solar and AC power allowed

## Data validation, calculations and reports

Data quality control	Upper / lower climatological limits Step change validation Sensor status indication
Statistical calculations	Averaging over user set periods Minimum / maximum values Standard deviation Cumulative values
Other calculations	Dew point Frost point QNH, QFE, QFF Gust, Squall, wind chill Evapotranspiration Sunshine duration

## Standard sensor options \*\*)

Weather transmitter	WXT520
Wind speed & direction	WM30, WA15, WA25, WINDSONIC, WMT52, WS425
Atmospheric pressure	PMT16A PTB330 with modifications
Air temperature, relative humidity & dew point	QMH102
Rain / precipitation	QMR102, RG13, RG360, VRG101
Global solar radiation	QMS101, SK01-D2, SK08, CMP3, CMP6 CMP11, CMP21, EQ08, EQ08-S
Net solar radiation	QMN101
Albedometers	QMS101(x2), CMP3(x2), CMA6, CMA11, EQ16
UV radiation / PAR	CUV4, UVR1-A, UVR1-B, PAR Lite
Sun duration	CSD3, SD4
Ground / water temperature	QMT103, QMT110
Soil / fuel moisture	EHC20, ML2X, QFM101
Evaporation	255 Series
Leaf wetness	QLW102
Cloud height & sky condition	CL31
Visibility & present weather	PWD10/20/12/22, FD12, FD12P, FS11
Snow depth	IRU-9429S
Water level	PR-36XW/H, PAA-36XW/H, IRU-9429S, QHR102, QSE104, 436BD

## Standard communication options \*\*)

Satellite communication	GOES, METEOSAT, Inmarsat-C Argos/SCD, Iridium, Autotrac
Wireless communication	GSM, GPRS, CDMA, UHF VHF ISM
Landline communication	RS232, RS485 bus, Fixed line, PSTN, LAN, MODBUS

## Data display options \*\*)

Data displays	DD50, WD30(TU), WD50, Pocket / Laptop / Tabletop PC
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\*) for further extended range, please contact Vaisala  
 \*\*) for other data validation, calculation, report, mast, solar powering, sensor and communication options, please contact Vaisala



For more information, visit [www.vaisala.com](http://www.vaisala.com) or contact us at [sales@vaisala.com](mailto:sales@vaisala.com)

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