# VAISALA

# HydroMet™ Automatic Weather Station MAWS201

MAWS201 is a portable automatic weather station designed to be used in various environments and in any weather.

### Features

- Cost-effective, quickly deployable, and portable automatic weather station
- For a variety of applications: meteorological research, environmental impact studies, emergency response, waste management
- Compact, robust, and lightweight
- Low power consumption
- Field-proven reliability and accuracy
- Wide selection of sensors and options
- Extensive calculation and data logging capacity

## Easy to Set Up and Configure

MAWS201 is easy to set up. Every sensor is supplied with a cable and connectors for easy installation. All components fit together easily and no special tools are required.

Vaisala Lizard Setup Software simplifies the configuration of sensor measurements, calculations, data logging schedules, and data transmissions. There are templates to guide you through the initial setup, and a large number of further options if you want to customize the settings further.

## Accurate Sensors

The basic sensor suite measures wind speed and direction, atmospheric pressure, air temperature, relative humidity, and precipitation. Optional sensors can be added to measure, for example, soil/water temperature, global and net solar radiation, soil moisture, and water level. The performance of the sensors has been proven in the field in a wide range of environments.

## Reliable in All Weather

MAWS201 operates reliably in all weather: its corrosion-resistant, anodized aluminum construction is rugged and weatherproof. The cables are made of high-quality polyurethane with moulded, watertight connectors that fulfill the requirements of the IP68 standard. All the inputs are surge-protected.

The quality control software checks the sensor data against the user-set climatological limits, as well as the step changes between successive measurements. Each statistical calculation has its own, user-configurable validation routine.

## Statistical Calculations

The statistical calculations include minimum, maximum, average, standard deviation, and cumulative values. All are calculated over user-defined intervals. All extreme values can be timestamped.

In addition, a library of calculations is available. These include, for example, unit conversions, dew point, frost point, QNH, QFF, QFE, evapotranspiration, sunshine duration, forest fire index, wind chill, and heat stress.

## Versatile Data Outputs

The user can freely configure the data output formats. Several ready-made templates make configuration easy.

The alarm module notifies the user when a measured or calculated value exceeds the set threshold values. The alarm module can be configured, for example, to send an alarm message, to change timing intervals, to log data, and to set an excitation voltage for controlling an external device.

# Technical Data

## Operating Environment

| | |
|---|---|
| Operating temperature | −40 ... +60 °C (−40 ... +140 °F) |
| Storage temperature | −50 ... +70 °C (−58 ... +158 °C) |
| Operating humidity | 0 ... 100 %RH |

## Mechanical Specifications

**Weight Example**

| | |
|---|---|
| Portable system with 3 m (9 ft 10 in) tripod (pressure, temperature/humidity, and wind sensors) | 15 kg (33.07 lb) |

**Basic Enclosure**

| | |
|---|---|
| Dimensions (H × Ø) | 420 × 120 mm (16.54 × 4.72 in) |
| Weight | 3 kg (6.61 lb) |
| Materials | Anodized aluminum |
| IP rating | NEMA 4X, IP66 |

## Sensors

| | |
|---|---|
| Wind | QMW102/WMS302, WXT530 |
| Pressure | BARO-1QML |
| Air temperature, relative humidity | HMP155 |
| Solar radiation | QMS101/SP Lite2, QMS102/CMP3, QMN101/NR Lite2 |
| Precipitation | QMR101, QMR102 |
| Soil/Water temperature | QMT103, QMT107, QMT110 |
| Soil moisture | ML2x |

## Options and Accessories

| | |
|---|---|
| Communication modules | DSU232, DSI486 |
| Mains power supply | QMP213 |
| Solar/Mains power supply | QMP201C |
| Carrying cases for MAWS201 | QMM110, QMM120 |
| UHF radio modem set | SATEL3ASET-M2 |

## Compliance

| | |
|---|---|
| Emissions | CISPR 32 Class B (EN 55032) |
| ESD immunity | IEC 61326-1 (EN 61326-1) |
| RF field immunity | IEC 61000-4-3 |
| EFT immunity | IEC 61000-4-4 |
| Surge (lightning pulse) | IEC 61000-4-5 |
| Conducted RF immunity | IEC 61000-4-6 |

## QML201C Inputs and Outputs

| | |
|---|---|
| Processor | 33 MHz, 32-bit Motorola |
| A/D conversion | 24-bit |
| Memory | 4 MB RAM and 4 MB program |
| Data logging memory | 3.3 MB internal Flash memory |
| External memory card capacity | 2 GB on CompactFlash card |
| Sensor inputs | 10 analog inputs (20 single-ended inputs) 2 counter/frequency inputs Internal channel for pressure sensor BARO-1 |
| Voltage (external powering) | 8 ... 30 VDC |
| Power consumption | < 10 mA / 12 V (typically with basic 5 sensors) |

## QML201C Communication Specifications

**Serial**

| | |
|---|---|
| Standard | RS-232 and 2-wire RS-485; SDI-12 |
| Optional | 2 optional plug-in slots for communication modules to increase the number of the serial I/O channels up to 8 pcs Fast serial expansion bus for connecting digital I/O module, for example |
| Speed | 300 ... 38 400 bps |
| Configurable parameters | Speed, start bits, data bits, stop bits, parity, XON/XOFF, and checksum |

**Ethernet**

| | |
|---|---|
| Standard | IEE 802.3 2 plug-in slots for Ethernet modules DSE101 |

## QML201C Powering Specifications

| | |
|---|---|
| Mains power QMP213 | 85 ... 264 VAC |
| Mains power QMP201C [1] | 85 ... 264 VAC |

1) With 12 W solar panel and 7 Ah backup battery.

CE

**VAISALA**

www.vaisala.com