HydroMet™ Automatic Weather Station MAWS201

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

**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.

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**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
Technical Data

Operating Environment

Operating temperature
-40 °C to +60 °C (−40 °F to +140 °F)

Storage temperature
-50 °C to +70 °C (−58 °F to +158 °F)

Operating humidity
0 %RH to 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
IEEE 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.

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