



TacMet® Tactical Meteorological Observation System MAWS201M

Vaisala TacMet MAWS201M is a portable weather station that offers high performance in a compact package. MAWS201M is designed to be used in various environments and in any weather.



TacMet MAWS201M with optional communication devices and enhancements

Features

- Cost-effective, quickly deployable, and portable automatic weather station
- For defense operations that use small landing strips, drop zones, test ranges, UAV systems, and uncategorized airports
- The most compact lightweight system with full aviation support
- Reliability and precision gained through built-in diagnostics and high-quality sensor technology
- Robust design for harsh environments
- Enhanced freezing rain detection
- Accurate second wind measurement site to assist approach
- Preconfigured digital displays to distribute data to the command center

Compact and lightweight basic system

MAWS201M measures, processes, and reports data from wind speed and direction, air temperature, relative humidity (dew point), pressure, and precipitation. The system is powered either by AC (mains) power or by an integrated solar panel. Backup batteries are available, providing a minimum of 7 days of operation without recharging.

Full aviation support with enhanced systems

MAWS201M is easily enhanced with the needed support for aviation. An additional optical sensor set enhances the basic system with sensors for cloud height and coverage, visibility, and present weather. Furthermore, it is possible to add a remote wind site and digital displays to the system. A freezing rain sensor option is also available. MAWS201M includes a handheld display for setting station-specific parameters and for viewing measured and calculated parameters and system alarms.

Maximum portability and ease of use

Mechanical parts of the system are lightweight but robust, and all cables are fitted with quick-release color-coded connectors. The carrying cases are light, yet they provide excellent cushioning during transport.

Versatile reports automatically

Optionally, MAWS201M can be delivered with advanced AviMet® software that displays numerical and graphical data and codes automatically. It also issues automatic METAR and SPECI reports based on user-defined weather events. Remarks can easily be included with reports.

The software also does the archiving and transmitting for further processing.

Reliability and highest precision

MAWS201M processes statistical calculations, performs data quality control, and formats data for output. Built-in quality control software validates sensor data against user-set limits and step changes between successive measurements.

In case of unlikely malfunction, MAWS201M automatically detects failures, and the sensor can be replaced quickly on site.

Technical data

Operating environment

Operating environment	Outdoor use
Use in wet location	Yes
Operating temperature	-50 ... +60 °C (-58 ... +140 °F), cold start at -40 °C (-40 °F) ^{1) 2)}
Storage temperature	-50 ... +70 °C (-58 ... +158 °F)
Operating humidity	0 ... 100 %RH
Maximum operating wind speed	35 m/s (78 mph)
Pollution degree	2
Maximum operating altitude	3000 m (approx. 9800 ft)
IP rating	IP66 ³⁾

1) For further extended range, contact Vaisala.

2) For internal battery storage and operating temperature range, see manufacturer documentation.

3) The EUR plug of AC (mains) cable (ZZ45121-IP67) is IP44.

Setup time

Basic system	< 15 min
With optical sensors	30 min
With remote wind site	30 min ¹⁾

1) Total setup time depends on location and distance of additional wind sites and displays.

Inputs and outputs

AC (mains) power	100 ... 240 V AC, ±10 % 50 ... 60 Hz
Solar panel	13 W
Overvoltage category	II
Internal battery	
Basic system (approx. 7 days operation without AC power) ¹⁾	7 Ah / 12 V
With optical sensors (min. 24 h operation without AC power)	52 Ah / 12 V
With remote wind site (min. 24 h operation without AC power)	26 Ah / 12 V
Battery regulator for enhanced systems	Charge/Recharge control Temperature compensation Deep discharge protection Simultaneous inputs from solar and AC power allowed

1) With Handheld Terminal QMD102M disconnected, no radio modem.

Mechanical specifications

Tripod mast	Adjustable from 1.8 to 3.6 m (6 to 12 ft)
Optional telescopic mast	10 m (30 ft)
Weight	
Basic system	2 × carry case, 44 kg (97 lb)
Basic system and optical sensors (Enhancement 2)	4 × carry case, 115 kg (253.53 lb)
Basic system, optical sensors, and remote wind site (Enhancement 2 and Enhancement 1)	6 × carry case, 176 kg (388.01 lb)
Optional freezing rain sensor (Enhancement 3)	1 × carry case, 12 kg (26.46 lb)

Standard communication options

Wireless communication	UHF (403 ... 473 MHz) VHF (135 ... 174 MHz)
Landline communication	RS-232

For other communication options, please contact Vaisala.

Data validation, calculations, and reports

Data collection platform	Vaisala Data Logger QML201C
MTBF	> 12 500 h (MIL-HNDB217F)
Data quality control	Upper/Lower climatological limits Step change validation Sensor status indication
Statistical calculations	Averaging over user-configurable periods Minimum/Maximum values Standard deviation Cumulative values
Other calculations	Dew point QNH, QFE, QFF, PA, DA, pressure tendency, pressure trend Gust, peak, squall Modified discomfort index
Weather data reports	METAR, SPECI

Sensor options

Sensor	Basic	Enhancement
Wind speed and direction (WMS302M)	✓	-
Atmospheric pressure (BARO-1)	✓	-
Temperature and relative humidity (HMP155)	✓	-
Rain/Precipitation (QMR101M)	✓	-
Cloud height and coverage (CL31M)	-	✓
Visibility and present weather (PWD22M)	-	✓
Wind speed and direction (WMT700)	-	✓
Freezing rain (LID-330IP)	-	✓

Compliance

EU directives and regulations	Low Voltage Directive (2014/35/EU) EMC Directive (2014/30/EU) RoHS Directive (2011/65/EU) amended by 2015/863
Electrical safety	EN 60950 FCC part 15, class B ¹⁾
EMC compatibility	EN 61326-1, industrial environment
EMC emissions	CISPR 32 / EN 55032, Class B
Compliance marks	CE, FCC, ICES, RCM

1) Basic System and Enhancement 2 (Present Weather Sensors).

VAISALA

www.vaisala.com

Published by Vaisala | B210730EN-J © Vaisala 2022

All rights reserved. Any logos and/or product names are trademarks of Vaisala or its individual partners. Any reproduction, transfer, distribution or storage of information contained in this document is strictly prohibited. All specifications – technical included – are subject to change without notice.