Sounding System MW41

Features

- Consistent, high-quality data
- Easy integration to existing soundings network
- Increased flexibility through advanced networking options
- Easy and simple operation
- Quick configuration and modification of station parameters, also remotely

Vaisala Sounding System MW41 supports the world-class performance of Vaisala RS41 radiosonde family. This makes MW41 an excellent choice for both synoptical and research applications.

Vaisala Sounding System MW41 processes, analyses, archives, and relays sounding data. The system consists of a computer that runs MW41 sounding software and is connected to a sounding processing subsystem through a network adapter. MW41 sounding software includes the sounding processing software running as services on a computer and an optional remote client for remote access.

Easy to integrate

Upgrading to MW41 from earlier Vaisala sounding systems is smooth and cost-effective. The software is compatible with commonly used Windows operating systems and hardware, making it easy to integrate to most IT bases and helping to minimize maintenance costs. Connectivity with Vaisala Automatic Weather Stations allows using highly accurate surface weather information as reference, which makes operation simpler and less sensitive to human error.

Flexible to use

As MW41 user interface is separated from other software functions, you can operate it from anywhere within your network. This allows, for example, managing sounding operations remotely, away from the sounding station. Additionally, all network users can access sounding data remotely.

The standard MW41 software package includes all features needed to perform synoptic soundings. For more advanced sounding needs, like ozone sounding capability or extended graphics, optional modules are available. You can tailor the system for specific needs of a sounding station.

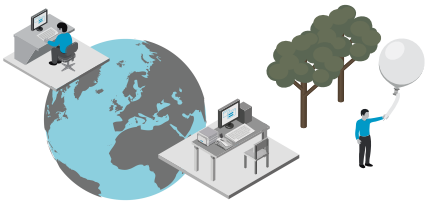
Intuitive to operate

MW41 follows the radiosonde preparation process, minimizing the need for user input and interaction. When the user needs to act, using the system is made easier with clear status indicators and animations, and a software help is available for additional assistance. As operating the system is highly intuitive, training users is faster. You can define access to specific functions by using user groups and their related privileges.

Quick to configure

Configuring MW41 for operation is easy. The user interface supports quick configuration of station parameters, message creation, and parameter sending. You can also configure the system remotely.

MW41 validates sounding data to make sure it is of high quality. The system can create WMO messages and special text reports using the validated data, and the data is also available in XML format.



Technical data

Compatibility

Radiosonde	• RS41-SG, RS41-SGE • RS41-SGP, RS41-SGPE • RS41-SGM • RS41-D
Special sensor	Ozone sensors: • ECC-6A ECC • Z ECC

System requirements for sounding workstation

Computer	Computer delivered by Vaisala includes: • Pre-installed MW41 sounding software • System recovery tools, including USB drive with recovery image • Optional Edgeport serial extension Optionally, you can use any computer that fulfills the requirements below.
Operating system	Windows® 11 Pro Windows 10 Pro (64-bit) With AUTOSONDE AS41 or AS15, these operating systems are also compatible: • Windows 10 IoT Enterprise 2016 or later (64-bit) • Windows Server 2016 • Windows Server 2012 R2
Web browser	• Microsoft Edge® latest version • Mozilla Firefox® latest version • Google Chrome™ latest version
Processor	2-core CPU (minimum) 4-core CPU (recommended)
Memory	8 GB RAM (minimum)
Hard disk space	160 GB
Display resolution	1366 × 768 (minimum)
DVD-ROM drive	For the installation media
Optional serial ports	Either integrated serial port or using USB/RS-232 converter. 1 for possible Vaisala Automatic Weather Station (AWS)
USB port	For connecting the ground check device
Ethernet adapter	For isolating the sounding system from the internal network
Speakers	Integrated either into computer or display
Remote client computer	Using devices that fulfill the same requirements as for sounding workstations is recommended.[1)]

1) It is likely that devices with lower hardware specifications, other operating systems, or other browsers can be used.

Vaisala Sounding Processing Subsystem

Software-defined radio technology
Code-correlating GPS

Operating environment

Indoor equipment	
Operating temperature	+10 … +40 °C (+50 … +104 °F) +10 … +45 °C (+50 … +113 °F) with rugged laptop
Storage temperature	−40 … +65 °C (−40 … +149 °F)
Operating humidity	10–90 %RH
Storage humidity	5–95 %RH
Outdoor equipment	
Operating temperature	−40 … +55 °C (−40 … +131 °F)
Storage temperature	−50 … +71 °C (−58 … +160 °F)
Operating humidity	0–100 %RH
Storage humidity	0–100 %RH
Operating wind speed	0–65 m/s (0–145 mph)
Operating precipitation	Unlimited

Telemetry

Frequency band	400.15–406 MHz
Tuning step (user-adjustable)	10 kHz
Error detection and correction	Reed-Solomon
Telemetry range (using directional antenna)	Up to 350 km (217.5 mi)

Meteorological messages

TEMP messages	TEMP FM35-XI, TEMP SHIP FM36-XI, TEMP MOBIL FM38-XI
PILOT messages	PILOT FM32-XI, PILOT SHIP FM33-XI, PILOT MOBIL FM34-XI
BUFR messages	3 09 050 and 3 09 051 (for PILOT and High resolution data) 3 09 052 and 3 09 057 (for TEMP and High resolution data) 3 09 056 (for descending sounding after balloon burst)
Advanced option	CLIMAT TEMP FM 75-X 3 09 053 (DROP BUFR)
Special sensor option	NILU, WOUDC
Defense messages option	METCM STANAG 4082, METB2/METB3 STANAG 4061, METFM STANAG 2103, METSR/METSRX, METTA STANAG 4140, METEO 11

Antennas

Telemetry Antenna RB31
Telemetry Antennas RM32 and RM31N
GPS Antennas GA31 and GA31N
Portable Antenna Set CG31

Ground check set

For details, see RI41 datasheet.

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