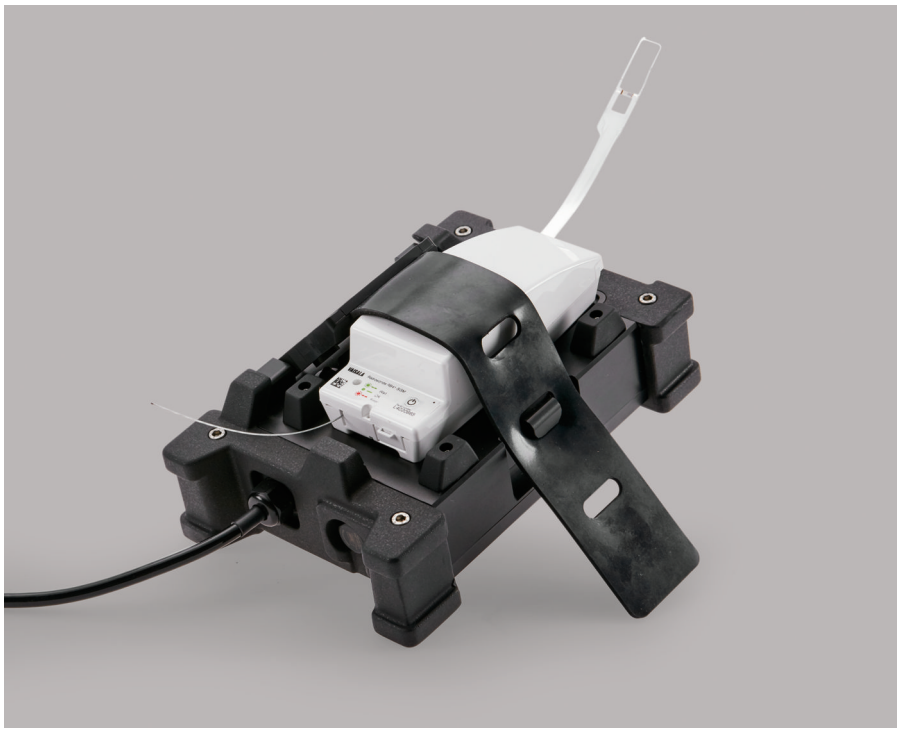
Ground Check Device MWH322



Features

- Rugged radiosonde interface for Vaisala Sounding Systems MW32 and MW41
- Utilizes wireless short range data link to communicate with Vaisala Radiosonde RS41
- Radiosonde can be prepared inside its protective cardboard package and with gloves or arctic mittens on
- Military grade switch activates the interface when radiosonde is placed onto MWH322 – no short range transmitter in radiosonde
- Detects automatically the RS41 radiosonde and powers it up
- Fully compliant with ETSI EN 302 291-1 and -2
- Equipped with precise barometer modules

Vaisala Radiosonde Ground Check Device MWH322 has been designed for the ground preparation of Vaisala Radiosonde RS41 in field conditions.

Versatile and Convenient

MWH322 can be conveniently operated with both Vaisala MARWIN® Sounding System MW32 and Vaisala DigiCORA® Sounding System MW41. MWH322 version for MW32 is equipped with a serial cable and it connects to MW32's serial radiosonde connector. The version for MW41 is equipped with a USB cable and it connects to a USB connector of the sounding PC.

MWH322 can be operated on a desk, or attached to MW32's handle. In case of a vehicle or shipboard installation, optional Vehicle Installation Kit can be used to mount it e.g. on a table or a wall.

The kit has been tested to meet Crash Hazard Shock specification according to MIL-STD 810G, and it also allows quick removal of MWH322 if needed.

As RS41 radiosonde is placed onto the MWH322 the sounding system MW32/MW41 detects the radiosonde and automatically powers it up. The radiosonde can be secured in place with a rubber strap.

The version with serial cable has been tested to fulfill all relevant environmental specifications according to MIL-STD 810G, and electromagnetic emission and immunity specifications according to MIL-STD 461F.

Ease of Use

Thanks to the wireless connection, the radiosonde can be prepared inside its cardboard package, which protects sensors until balloon launch site. MWH322 can easily be operated with gloves or arctic mittens on.

RS41 Ground Check at MWH322

The Vaisala Radiosonde RS41 temperature sensor is very stable utilizing linear resistive platinum technology. The humidity sensor integrates humidity and temperature sensing elements providing consistent results in all sounding conditions.

The Vaisala Radiosonde RS41 sensors are all calibrated against references that are traceable to international standards (SI units).

During the radiosonde preparation procedure several steps are carried out including functionality checks for sensors and setting the radiosonde frequency and the optional in-flight operational parameters, like radio silence (with Vaisala Radiosonde RS41-SGM), and timer for turning the radiosonde power off either after desired time or altitude.

For the ground check of the RS41 temperature sensor, several intelligent electrical checks and a comparison against the temperature element of the humidity sensor is conducted. For the RS41 temperature sensor only comparisons are made, thus no corrections to radiosonde measurement are applied.

Reliable Measurements

The unique sensor designs of Vaisala Radiosonde RS41 enable automatic reconditioning and physical zero humidity check of the humidity sensor during the ground preparations. Prior to flight, reconditioning effectively removes chemical contaminants that could affect humidity measurement. The physical zero humidity check is based on generating dry conditions by heating the humidity sensor. This enables long radiosonde storage time. This results in dry reference corrections that are more reliable than those made utilizing drying desiccants with limited drying capacity.

The pressure measured with the precise barometer modules inside MWH322 can be used as a surface pressure in MW32 and MW41 sounding systems.

The Short Range Communication Link of MWH322

MWH322 utilizes wireless short range data link to communicate with Vaisala Radiosonde RS41. The communication link is based on the RF technology having a range of 4 cm. During ground preparations only the MWH322 device is active, while there is no short range transmitter on the radiosonde.

The communication link is completely switched off when there is no radiosonde. A military grade switch activates the interface when radiosonde is placed onto MWH322.

The short range communication link of Vaisala Ground Check Device MWH322 operates at 13.56 MHz and is tested to be fully compliant with the standard ETSI EN 302 291-1 and -2.

Technical Data

Operating Environment

Operating temperature	-20 ... +50 °C
Storage temperature	-40 ... +71 °C
Operating humidity	0 ... 100 %RH
Storage humidity	5 ... +95 %RH

Inputs and Outputs

Input	From MW32 or PC
Voltage	9 VDC (MW32) or 5 VDC (USB)
Typical current	200 mA at 5 VDC, 150 mA at 9 VDC

Mechanical Specifications

Short range wireless communication	RF technique
Frequency (carrier)	13.56 MHz
Transmitting power	Max. 200 mW
Communication link range	0.04 m
Electrical interface	MW32 or USB 1.1/2.0
Cable with connector	MIL-C-26482 (MW32) or USB
Cable length	1 m (MW32) or 1.5 m (USB)
Weight	1.43 kg without locking mechanism 1.79 kg with locking mechanism
Dimensions (H × W × L)	72 × 150 × 223 mm without locking mechanism 72 × 220 × 223 mm with locking mechanism

Compliance

IP rating	IP65
Environmental tests	MIL-STD-810G, see separate list
Electromagnetic compliance	MIL-STD-461F, see separate list

Vaisala MARWIN Sounding System MW32 and Vaisala Ground Check Device MWH322 with Vaisala Radiosonde RS41-SGM in its cardboard package.

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Published by Vaisala | B211449EN-C © Vaisala 2017