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Vaisala MARWIN® Sounding System MW32

Vaisala MARWIN® Sounding System designed for demanding mobile applications.

The Vaisala MARWIN® Sounding System MW32 complements the Vaisala offering of weather measurement systems. Vaisala is world's most trusted supplier of meteorological measurement solutions providing accurate, reliable and field-proven weather observation systems.

Features/Benefits

- Meteorological profile data for artillery ballistic preparation and numerical weather prediction models
- Rugged design to stand harsh environment and transport
- Straight-forward, menu-driven operation through integrated display and keyboard
- Extensive data quality assurance processes guarantee error free messages in relevant STANAG and WMO formats
- Over 30 calculated meteorological parameters available in tabular form

The Vaisala MARWIN® Sounding System MW32 provides an atmospheric profile of wind, pressure, temperature and humidity from the surface up to the altitudes to be used in the ballistic weather computation. In addition, the data can be used as input into numerical weather models to provide updated observation for more precise predictions. Further, the atmospheric profile is useful for e.g. for aviation, CBRN and naval applications.

Compact system design

The MW32 system consists of a receiver/processor and antennas to track the radiosonde attached to a free-flying balloon. The integrated display and keyboard unit supports menu driven operation. Side panel connectors enable rack mount installation. The display unit and connector panel have been designed using MIL-STD-1472F as a guideline.

The system can be operated, assembled and disassembled wearing gloves or arctic mittens.

Easy operation

The Vaisala MARWIN® Sounding System is straightforward to operate using the self-guiding menu. After powering-up, the radiosonde is connected to the system for setting-up using an umbilical cable. When done, the system indicates its readiness for launch.

Rugged design for tough military use

The Vaisala MARWIN® Sounding System has been designed from conception for demanding use in harsh environments, and rough transportation. A special feature is the conductive cooling. It complies with MIL-STD-810G for low and high temperature, temperature shock, sand and dust, wind driven rain, humidity, salt fog and altitude.

Resistance to shock and vibration

The Vaisala MARWIN® Sounding System complies with MIL-STD-810G specifications for vibration, functional shock and transit drop.

Versatile interfaces

The Vaisala MARWIN® Sounding System provides one integral LAN port, two USB ports and four serial ports. It also supports the PCSERV protocol of the Vaisala MARWIN® Sounding System MW12 legacy so the MW32 can replace the MW12.

Antennas

Several antenna options are available to meet different telemetry range needs. Vaisala offers a portable and fixed antenna set for telemetry and local GPS reception.

Technical data

Hardware and software

Processor type	COM Express PC, 1.5GHz
DRAM	SO-DIMM, 2 GB
Flash disk	8 GB
TFT LCD display	8.4", SVGA, transflective, daylight viewable
Integral console	5 hardkeys, 5 softkeys, alphanumeric keypad
Operating system	Windows Embedded XP®
I/O PORTS:	
Asynchronous serial	RS-232C, 4 lines
LAN connection	10/100 Mbps Ethernet, 1 line
USB	USB1.1 / USB2.0, 2 lines
OTHER	
Cooling system	Conductive cooling, no cooling fans
Case	Cast aluminium
Connector types	MIL-C-26482, MIL-C-38999, MIL-C-5015
Protection Class	IP65
Environmental tests	MIL-STD-810G, see separate list
Electromagnetic compliance	MIL-STD-461F, see separate list
Dimensions (WxDxH)	430 x 380 x 280 mm
Weight	22 kg

Power supply

Internal AC Power Unit	Input: 90-132 / 180-264 VAC autoranging, 47-63 Hz
Internal DC Power Unit	Input: 18-33 VDC, MIL-STD-1275B DC out for external device: 12 V / 0.5 A, 28 V / 1 A
Internal Battery	2 pcs, Ultralife UBI-2590 Li-Ion, Internal back-up power time: 240 minutes. Automatic switch-over from AC to external DC to internal battery

Radiosondes and windfinding options

Supports Vaisala RS92-SGP, RS92-AM* and RS92-D** radiosondes

Windfinding options:	C/A code GPS
	P(Y) codeless (MIL-GPS)*

**Radio-direction finding (with Vaisala Radiotheodolite RT20)

Antennas

CG31 Portable antenna (UHF and GPS)
CG32 Vehicle antenna (UHF and GPS)
RM32 and RM31N, Omnidirectional UHF antennas
GA31 and GA31N, GPS antennas
RB31 Directional UHF antenna for fixed installation
**Vaisala Radiotheodolite RT20

Telemetry

Frequency range	400.15 ... 406 MHz, EN 302 054 v1.1.1 **1668.4 … 1690 MHz EN 302 454 v1.1.1
Tuning step	10 kHz, user adjustable
Error detection and correction	Reed-Solomon
Telemetry range (400 MHz)	150 km with portable CG31 antenna and RS92-SGP radiosonde up to 350 km (with directional antenna and RS92-SGP radiosonde)

Meteorological messages (Military)

METCM, STANAG 4082 Standard Artillery Computer Meteorological Message
METB2/METB3, STANAG 4061 Standard Ballistic Meteorological Message
METFM, STANAG 2103 Standard Fallout Meteorological Message
METSR/METSRX, Sound Ranging Meteorological Message
METTA, STANAG 4140 Standard Target Acquisition Meteorological Message
METEO 11

Meteorological messages (WMO)

TEMP FM35-XI, TEMP SHIP FM36-XI, TEMP MOBIL FM38-XI
PILOT FM32-XI, PILOT SHIP FM33-XI, PILOT MOBIL FM34-XI
BUFR 3'09'052 (for TEMP data)
BUFR 3'09'050 and BUFR 3'09'051 (for PILOT data)

Environmental conditions

Operating temperature	-20 ... +50 °C
Operating humidity	0 ... 100 %RH
Storage temperature	-40 ... +71 °C
Storage humidity	5 ... 95 %RH
ANTENNAS	
Operating temperature	-40 ... +55° C
Operating humidity	0 ... 100 %
Operating wind speed	0 ... 65 m/s
Operating precipitation	Unlimited
Storage temperature	-50 ... +71 °C
Storage humidity	0 ... 100 %RH

* Rockwell-Collins DAGR, AN/PSN-13A GPS Unit required (DAGR hardware P/N 822-1873-002 (ver. 0010) with software P/N 984-3006-002).
** Required configuration if 1680 MHz band RS92-D is used

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For more information, visit www.vaisala.com or contact us at sales@vaisala.com

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