

4G Logger for weather station

HD33M-MB.4 - DATA LOGGER WITH 4G MODULE WITH RS485 MODBUS-RTU INPUT AND CONTACT INPUT FOR RAIN GAUGE

INTRODUCTION

The **HD33[L]M-MB.4** is a compact outdoor data logger for environmental monitoring, designed to acquire and store data from connected sensors and make them available remotely.

It integrates 4G communication for off-site access and supports RS485 MODBUS-RTU sensor networks, with alarm and reporting functions for unattended installations.

FEATURES

RS485 Modbus-RTU Master

Provides a master RS485 interface for connecting and managing a network of MODBUS-RTU slave sensors, enabling scalable field installations with multiple measurement points..

4G Remote Connectivity

Integrated 4G communication supports remote operation and supervision, reducing the need for onsite access while keeping the system connected in distributed deployments.

Data Transmission

Measurements can be delivered through multiple channels: e-mail, FTP and HTTP server upload, making integration with IT systems and cloud services straightforward.

Alarm Notification

For each quantity, alarms can be configured with high/low thresholds, hysteresis and delay; alarm events can be notified via e-mail and SMS.

Rugged & Flexible Installation

IP67 enclosure for outdoor use and 7...30 Vdc supply for versatile powering, suitable for both mains-based systems and solar installations.

CONFIGURATION & MEASUREMENT

Communication Settings

Transmission interval and destinations are user-selectable; communication functions can also be remotely managed via SMS commands.

Inputs/Outputs & Sensor Power Management

RS485 master port for MODBUS networks, a voltage-free contact input for rain gauges, and a switched power output to energize sensors only during measurement cycles.

PC Software & Database

The free of charge HD35AP-S PC software, allows data logger configuration, real-time measurement display (graphical and numerical), and data download. Transferred data are stored into a database for archiving and analysis.

Measurement & Calculations

Depending on connected sensors, the unit supports environmental quantities such as temperature, humidity, atmospheric pressure, solar radiation, wind speed and direction, rainfall quantity.

CFR21 Option

The HD35AP-CFR21 software option adds functions aligned to FDA 21 CFR part 11 recommendations, including activity traceability (audit trail) and controlled user access management.



SCALABLE MODBUS SENSOR NETWORKING

RS485 MODBUS-RTU Master to build expandable multi-sensor installations with multiple measurement points.



REMOTE ACCESS VIA INTEGRATED 4G

Built-in 4G connectivity for off-site supervision and operation, ideal for unattended deployments.



MULTI-CHANNEL DATA DELIVERY FOR EASY INTEGRATION

Automatic reporting via e-mail, FTP and HTTP/Cloud upload, simplifying IT/cloud integration.



ACTIONABLE ALARMS FOR UNATTENDED SITES

Per-channel alarm logic (high/low thresholds, hysteresis, delay) with e-mail/SMS notifications to trigger timely interventions.



OUTDOOR-READY, LOW-MAINTENANCE INSTALLATION

IP67 enclosure, 7...30 Vdc supply and compatibility with mains or solar power; includes switched sensor power to optimize field operation.

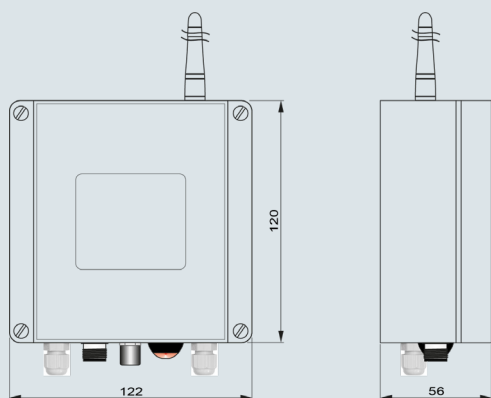
General specifications

Power supply	7...30 Vdc
Power consumption	< 1 A during 4G activity
Antenna	External
Measuring interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Internal memory	Circular management or stop logging if memory is full. Number of samples depending on the number of detected quantities (from 120.000 to 424.000)
Alarm	Acoustic through internal buzzer. Sending of alarm e-mail and SMS.
Display	Optional custom LCD
LED indicator	2-color LED: power on (blinks red), 4G activity (blinks green)
Connection to PC	USB port with mini-USB connector
Operating conditions	
version without LCD	-40...+70 °C / 0...100 %RH
version with LCD	-20...+70 °C / 0...100 %RH
Weight	1 kg approx. (including shield and fixing clamping)
Housing	
Dimensions	122 x 120 x 56 mm (excluding external antenna)
Material	Polycarbonate (PC)
Protection degree	IP 67 (with protective cap on the USB connector)
Installation	Wall mounted or fixed on a 40 mm diameter mast with the optional protection shield from solar radiations.

Measurement specifications

Measurement specifications only depends on the the sensors connected.

Dimensions



Ordering codes

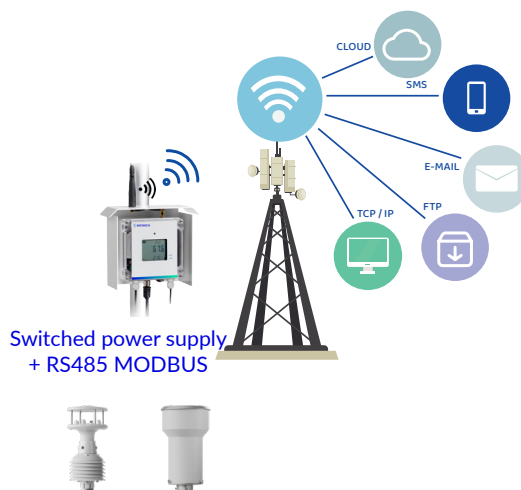
HD33 M-MB.4

LCD
Blank = without LCD
L = with custom LCD

The datalogger is supplied with the HD35AP-S software, which can be downloaded from the website. Probes, sensors, and USB cable CP23 must be ordered separately. SIM card not included.



Communication description



The diagram shows how the HD33LM-MB.4 collects data from field sensors: MODBUS-RTU devices are connected via the RS485 master interface, while a rain gauge is connected through a voltage-free contact input.

The logger can switch sensor power on only during measurement cycles and then transmit stored data remotely via the cellular network to Cloud/HTTP server, FTP, e-mail, or provide SMS notifications/commands, with an option for direct TCP/IP connection to a remote PC.

PC application software & Cloud

The HD35AP-S PC software allows you to configure the data logger, view real-time measurements, and download data at regular intervals or on demand. Data is stored in a remote database on the local network, accessible from any PC via the software. The data logger also automatically transmits data to an HTTP server at customizable intervals, so you can monitor it from anywhere using a smartphone, tablet, or laptop with an Internet connection. Stay connected and in control, anytime, anywhere!



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Senseca Italy Srl

Via G. Marconi, 5 - Selvazzano Dentro (PD) - Italy

www.environmental.senseca.com

sales.padua@senseca.com