REV. 1.0
20/07/2018

HD50R-MB

Ethernet Data Logger

ENGLISH

The quality level of our instruments is the result of the constant development of the product. This may produce some differences between the information written in this manual and the instrument you have purchased. We cannot completely exclude the possibility of errors in the manual, for which we apologize.

The data, images and descriptions included in this manual cannot be legally asserted. We reserve the right to make changes and corrections with no prior notice.

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1 INTRODUCTION

The HD50R-MB data logger allows several physical quantities to be monitored in a large variety of application fields.

To the "Master" **RS485 MODBUS-RTU** input you can connect a network of sensors for measuring, for example, temperature, humidity, atmospheric pressure, solar radiation, wind speed and direction (e.g. an anemometer of the HD52.3D… series can be connected), etc.

As an alternative to the Modbus-RTU protocol, a proprietary protocol can be used to connect the HD2003 anemometer.

A voltage-free contact input allows connecting a rain gauge with contact output. Rain gauges with contact output either normally closed or normally open can be connected. A measurement compensation curve as a function of the rainfall rate can be configured. The data logger calculates the rainfall rate in mm/h (by referring the rainfall quantity in the last five minutes to an hourly value) and the rainfall quantity in the last day.

The data logger can be connected to an **Ethernet** local network and allows the simultaneous operation of two communication protocols: proprietary and **Modbus TCP/IP**. The data logger manages up to 10 "TCP/IP Client" simultaneously. If the local network is connected to Internet, the data can be regularly sent to an **FTP** address, to the **Cloud** and via **e-mail**.

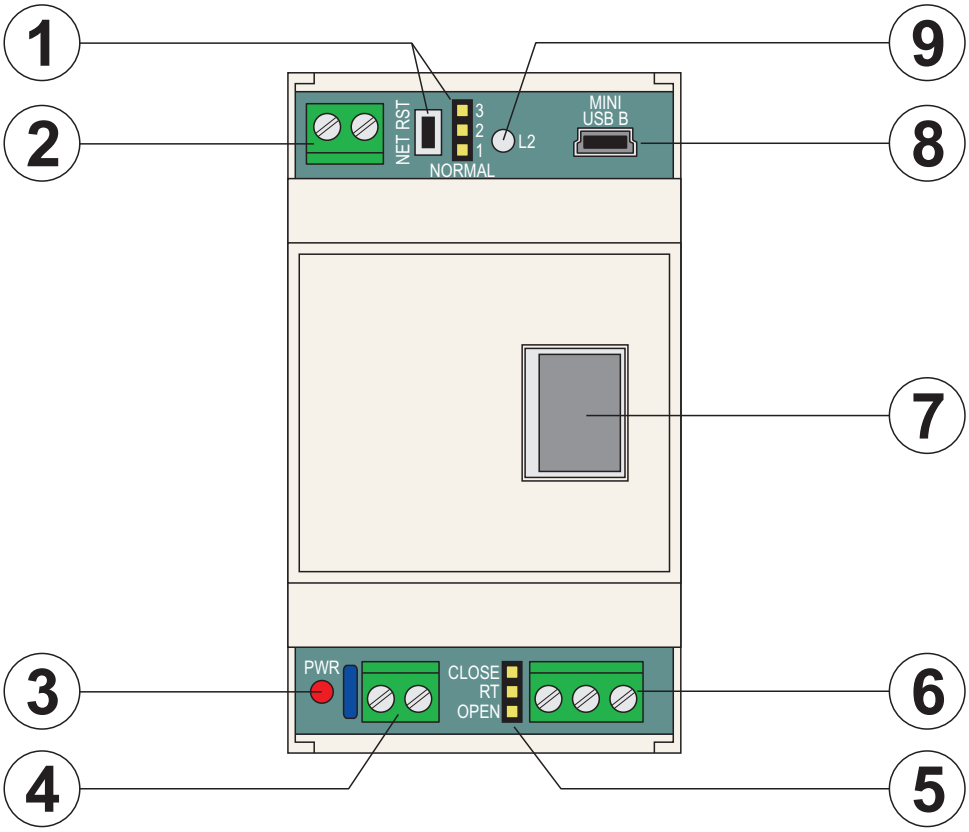
For each detected quantity, two alarm thresholds can be set by the user. Exceeding a threshold is signaled acoustically, by means of the internal buzzer, and remotely, by sending alarm **e-mails**. An alarm hysteresis and a delay in the generation of the alarm can be configured for each detected quantity.

The PC software **HD35AP-S** allows configuring the data logger, viewing the real time measurements, downloading and viewing the data into a database. The HD35AP-S software allows connecting one data logger at a time. If there are several data loggers in the local network, the PC software **HDServer1** allows detecting automatically all the data loggers connected to the network and connecting simultaneously to all the data loggers; it also allows entering the data received by the data loggers into a database, viewing the data in the database and configuring the main measurement parameters of the devices (alarms, logging interval, …). The **HD35AP-CFR21** software option (available with both HD35AP-S and HDServer1) allows the protection of recorded data and configuration in response to **FDA 21 CFR part 11** recommendations.

35 mm DIN rail installation.

7…30 Vdc external power supply.

2 DESCRIPTION



1. Push-button and short-jumper for restoring the factory LAN configuration.

2. Input for contact rain gauge.

3. Red POWER LED: indicates the presence of the external power supply.

4. Power supply input.

5. RS485 line termination.

6. Input for RS485 Modbus-RTU sensors.

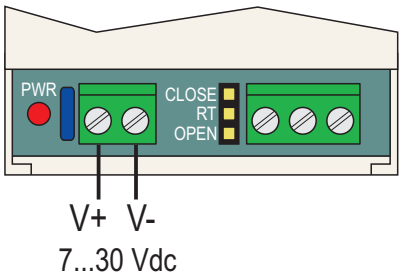
7. RJ45 connector for Ethernet connection.

8. Mini-USB connector.

9. Bicolor NETWORK LED: indicates the status of the connection to the LAN (blinks green when the unit is in normal operation mode; blinks red to signal problems in LAN connection).

3 CONNECTIONS

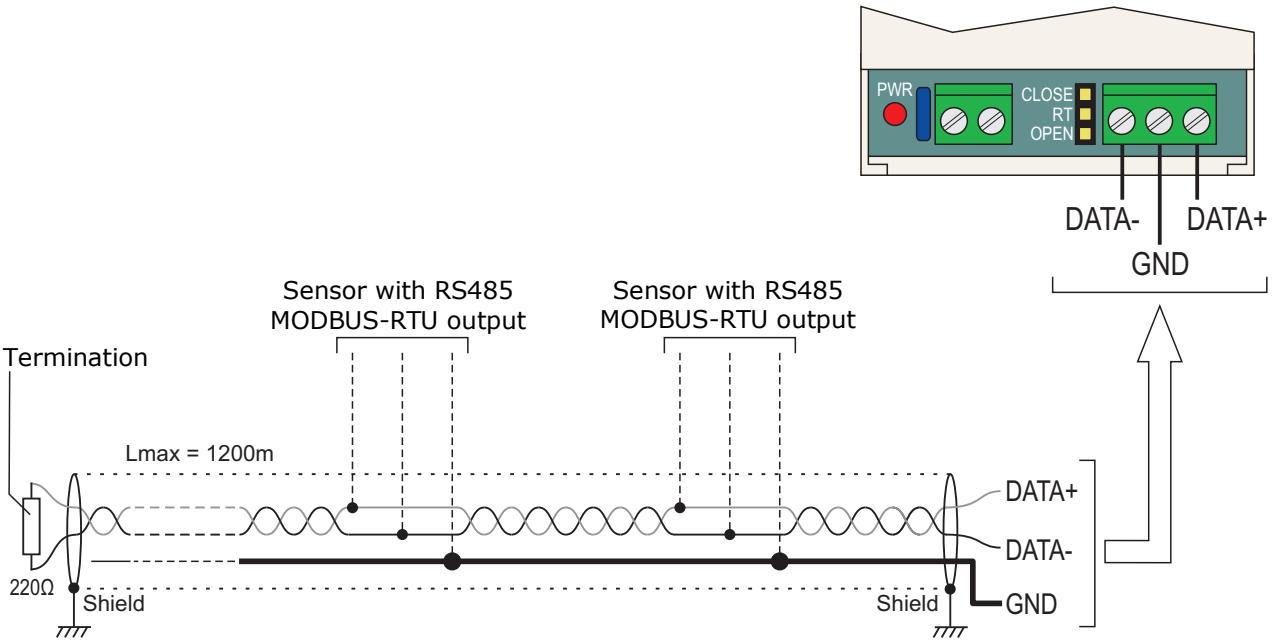
POWER SUPPLY



RS485 MODBUS-RTU CONNECTION

Thanks to RS485 connection, several sensors can be connected in a multi-point network. The instruments are connected in sequence by means of a shielded cable with twisted pair wires for signals and a third wire for the ground.

The RS485 ground is isolated from the power supply.



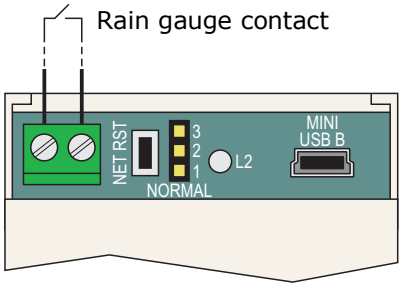
Line terminations must be placed at the ends of the network. If the instrument is at one end of the line, insert the termination placing the short jumper next to the RS485 connector between the "RT" and "CLOSE" indications. Otherwise, remove the termination placing the short jumper between the "RT" and "OPEN" indications.

The cable shield must be connected to both ends of the line.

The cable maximum length depends on the transmission speed and on the cable characteristics. Typically, the maximum length is 1200 m. The data line must be kept separated from any power lines to avoid interferences to the transmitted signal.

Each sensor in the RS485 network is univocally identified by an address ranging within 1 and 247. **No more than one sensor with the same address can be present in the network**.

RAIN GAUGE CONNECTION



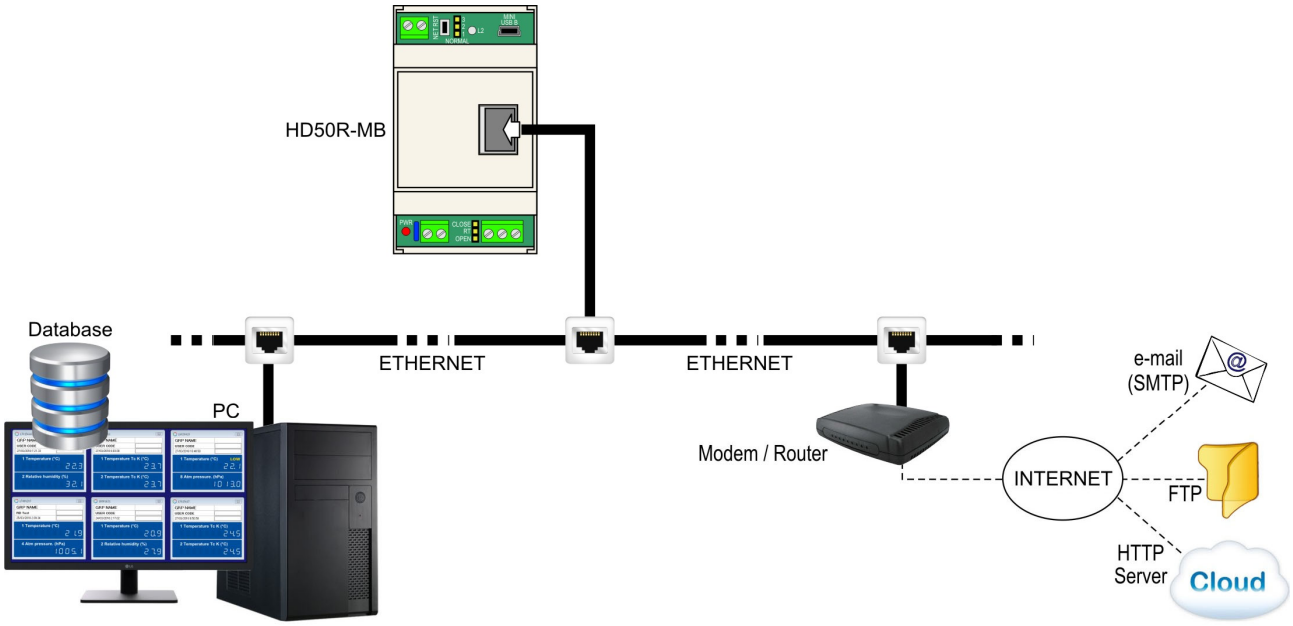
USB CONNECTION

The data logger can be connected to a PC via the mini-USB connector and the **CP23** cable.

USB connection doesn't require the installation of drivers: when the data logger is connected to a PC, Windows® operating system automatically recognizes the instrument as an HID device (Human Interface Device) and uses the drivers already included in the operating system.

ETHERNET CONNECTION

Connect the RJ45 connector of the data logger to a socket of the local network via a standard Ethernet cable.



The data logger is preset to get a dynamic IP address from the network DHCP server. The IP address can be displayed and changed by connecting the data logger to a PC via USB and using the HD35AP-S application software. A static IP address can also be set. The IP address can also be displayed by connecting the data logger to a PC via Ethernet and using the **HDServer1** software, which can automatically detect the data loggers connected to the network.

Thanks to the availability of two TCP/IP ports, each of which can operate with proprietary (for the connection with HD35AP-S software) or **MODBUS TCP/IP** protocol, and ten sockets (in total, to be divided between the two ports), the data logger allows the

simultaneous operation of two communication protocols (proprietary and Modbus TCP/IP) and manages up to **10 "TCP/IP Client"** simultaneously. The default setting of the ports is the following:

- Port number = 5100 for proprietary protocol (8 sockets)
- Port number = 502 for Modbus TCP/IP protocol (2 sockets)

The Ethernet settings can be changed with the HD35AP-S software. It is possible to restore the factory parameters by placing the short jumper next to the NET RST push-button between the "2" and "3" indications and then pressing the NET RST push-button. After the reset, replace the short jumper between the "2" and "1 (NORMAL)" indications.

If the local network is connected to Internet, the data can be regularly sent to an **FTP** address, to the **Cloud** and via **e-mail** (as attachments).

Note: if the communication with the Cloud is used, the maximum number of "clients" with proprietary or **MODBUS TCP/IP** protocol is nine.

4 SOFTWARE

The parameters of the instrument (logging parameters, alarm thresholds, quantities to be acquired, network settings, etc.) can be configured by connecting the instrument to the PC via USB or Ethernet local network and using the **HD35AP-S** application software (see the instructions of the software).

Some basic parameters (alarms, logging interval, user code, …) can also be set with the **HDServer1** application software.

To download the data in a database, the **HD35AP-S** (it allows connecting one data logger at a time) or **HDServer1** (it allows connecting several data loggers simultaneously) application software and the **MySQL** database management system (included in the application softwares packages) must be installed.

HD35AP-CFR21 SOFTWARE OPTION

The **HD35AP-CFR21** option allows, in addition to the features of the basic software (both HD35AP-S and HDServer1), the protection of recorded data and instrument configuration in response to **FDA 21 CFR part 11** recommendations. In particular become available:

- The traceability of activities (Audit Trail) performed with the software; for example, which users connected and what changes were possibly made to the configuration of the instrument.
- The management of users access for the instrument configuration and viewing of data in the database. Each user can be assigned a different password for using the software. There are also three levels of access (Administrator, Super-user and standard User); for each level, the allowed operations can be defined.

The HD35AP-CFR21 option works with USB hardware key to be connected to any PC connected to the same local network of the PC in which the basic software is installed.

5 MODBUS

The device general information can be read through the function code **0x2B/0x0E**:

- Manufacturer (Delta OHM)
- Model
- Firmware version

The list of MODBUS registers is shown below. Depending on the connected sensors, some of the registers could not be significant for the system.

The following conventions have been used in the tables:

- Type: **b** = bit, **B** = 8 bits (Byte), **W** = 16 bits without sign (Word), **SW** = 16 bits with sign
- **(x10)** = decimal value expressed as an integer (e.g., if the content of the register is 184, the value is to be intended as 18,4).
- **(x100)** = centesimal value expressed as an integer (e.g., if the content of the register is 500, the value is to be intended as 5,00).

The commands for requesting units of measurement return an index according to the correspondence indicated in the table below:

Indexes of the units of measurement

Index	Unit of meas.	Index	Unit of meas.	Index	Unit of meas.	Index	Unit of meas.	Index	Unit of meas.
0	°C	13	inchHg	26	J/m^2	39	inch	52	l/min
1	°F	14	$inchH_2O$	27	$\mu J/cm^2$	40	counts	53	gallon/min
2	%UR	15	kgf/cm^2	28	V	41	mm/h	54	m^3/min
3	g/m^3	16	PSI	29	mV	42	inch/h	55	m^3/h
4	g/kg	17	m/s	30	mA	43	counts/h	56	$\mu mol/(m^2s)$
5	mbar	18	km/h	31	ppm	44	mW/m^2	57	mm/day
6	bar	19	ft/s	32	Hz	45	m	58	kV
7	Pa	20	mph	33	%	46	s	59	A
8	hPa	21	knot	34	degrees	47	µW/lumen	60	kA
9	kPa	22	W/m^2	35	lux	48	dB		
10	atm	23	$\mu W/cm^2$	36	m^2/s	49	dBA		
11	mmHg	24	Wh/m^2	37	g (*)	50	kWh		
12	mmH_2O	25	kWh/m^2	38	mm	51	l/s	255	Not defined

(*) Gravity acceleration

Discrete Inputs - Read-only parameters

Address	Type	Discrete Input description
7	b	If 1, at least a quantity is in alarm.

Coils - Read/Write parameters

Address	Type	Coil description
1	b	Logging status: 0=active, 1=inactive
2	b	Logging mode: 0=non cyclic, 1=cyclic
3	b	Set 1 to delete the device logging memory. Bit zeroing is automatic.
4	b	Buzzer activation in case of measurement alarm: 0=no, 1=yes

Address	Type	Coil description
9	b	Protection of configuration with password: 0=no, 1=yes Changing the parameter requires the Administrator password (see Holding Register 10036).

Input Registers - Read-only parameters

Address	Type	Input Register description
Measured values and status of measurement alarms		
0	SW	**TEMPERATURE** in the set measurement unit (x10).
1	B	Alarm for temperature: 0=OFF, 1= lower threshold alarm, 2= higher threshold alarm
2	SW	**RELATIVE HUMIDITY** in % (x10).
3	B	Relative humidity alarm: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
4	SW	**DEW POINT** in the set measurement unit (x10).
5	B	Dew Point alarm: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
6	SW	**PARTIAL VAPOR PRESSURE** in hPa (x100).
7	B	Partial vapor pressure alarm: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
8	SW	**MIXING RATIO** in g/Kg (x10).
9	B	Mixing ratio alarm: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
10	SW	**ABSOLUTE HUMIDITY** in g/m^3 (x10).
11	B	Absolute humidity alarm: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
12	SW	**WET BULB TEMPERATURE** in the set measurement unit (x10).
13	B	Wet bulb temperature alarm: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
18	SW	**SOLAR RADIATION** in W/m^2.
19	B	Alarm for solar radiation: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
20	SW	**ILLUMINANCE** in lux.
21	B	Illuminance alarm: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
24	SW	**ATMOSPHERIC PRESSURE** in the set measurement unit (the multiplier depends on the set unit).
25	B	Atmospheric pressure alarm: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
30	SW	**DAILY SOLAR RADIATION** in Wh/m^2.
31	B	Alarm for daily solar radiation: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
32	SW	**CO_2** in ppm.
33	B	CO_2 alarm: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
86	SW	**RAIN RATE** in counts/h.
87	B	Rain rate alarm: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
88	SW	**DAILY RAIN** in counts.
89	B	Daily rain alarm: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.

Address	Type	Input Register description
92	SW	**WIND SPEED** (HD52.3D anemometer) in m/s (x100).
93	B	Wind speed (HD52.3D anemometer) alarm: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
94	SW	**WIND DIRECTION** (HD52.3D anemometer) in degrees (x10).
95	B	Wind direction (HD52.3D anemometer) alarm: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
118	SW	**AIR SPEED** (HD404…SR transmitter) in m/s (x100).
119	B	Air speed (HD404…SR transmitter) alarm: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
122	SW	**RAINFALL QUANTITY IN THE LAST HOUR** in counts.
123	B	Alarm for rainfall quantity in the last hour: 0=OFF, 1=lower threshold alarm, 2=higher threshold alarm.
Measurement units and resolution		
5000	W	**TEMPERATURE** unit of measurement: 0=°C, 1=°F.
5004	W	**DEW POINT** unit of measurement: 0=°C, 1=°F.
5012	W	**WET BULB TEMPERATURE** unit of measurement: 0=°C, 1=°F.
5021	SW	**ILLUMINANCE** resolution: -2=100, -1=10, 0=1
5024	W	**ATMOSPHERIC PRESSURE** unit of measurement: see the table of indexes
5025	SW	**ATMOSPHERIC PRESSURE** resolution: …, -2=100, -1=10, 0=1, 1=0.1, 2=0.01, …
5052	W	**WIND SPEED** measurement unit: see TAB 12.1
5053	SW	**WIND SPEED** resolution: …, -2=100, -1=10, 0=1, 1=0.1, 2=0.01, …
General information		
10000	W	Year of last measurement.
10001	W	Month of last measurement.
10002	W	Day of last measurement.
10003	W	Hour of last measurement.
10004	W	Minutes of last measurement.
10005	W	Seconds of last measurement.
10013	W	Password level for the current connection: 0=no password, 1=user level, 2= administrator level

Holding Registers - Read/Write parameters

Address	Type	Holding Register description
Measurement alarm thresholds		
0	SW	**TEMPERATURE** lower alarm threshold in the set measurement unit (x10).
1	SW	Temperature higher alarm threshold in the set measurement unit (x10).
2	SW	**RH** lower alarm threshold in % (x10).
3	SW	RH higher alarm threshold in % (x10).
4	SW	**DEW POINT** lower alarm threshold in the set measurement unit (x10).
5	SW	Dew point higher alarm threshold in the set measurement unit (x10).
6	SW	**PARTIAL VAPOR PRESSURE** lower alarm threshold in hPa (x100).
7	SW	Partial vapor pressure higher alarm threshold in hPa (x100).
8	SW	**MIXING RATIO** lower alarm threshold in g/Kg (x10).
9	SW	Mixing ratio higher alarm threshold in g/Kg (x10).
10	SW	**ABSOLUTE HUMIDITY** lower alarm threshold in g/m^3 (x10).
11	SW	Absolute humidity higher alarm threshold in g/m^3 (x10).

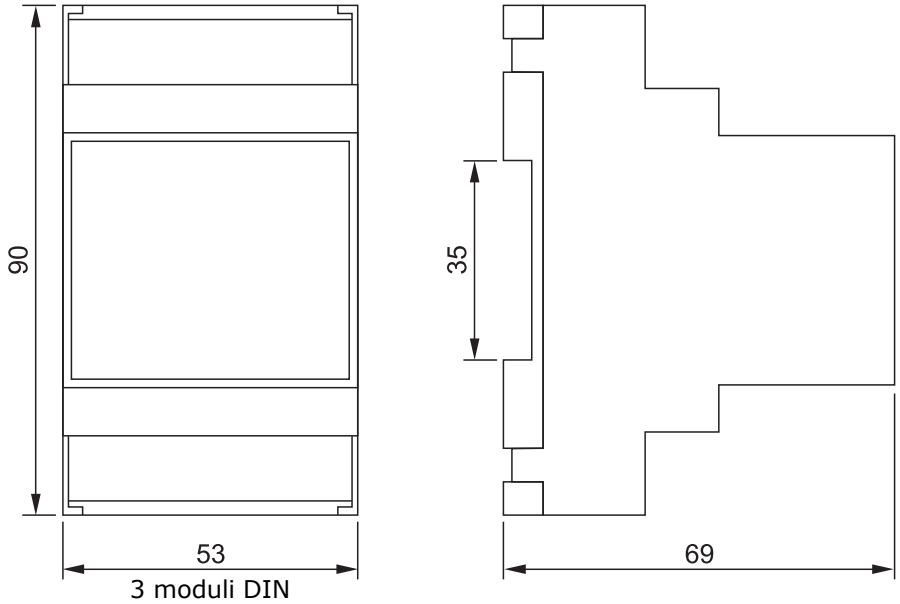
Address	Type	Holding Register description
12	SW	**WET BULB TEMPERATURE** lower alarm threshold in the set measurement unit (x10).
13	SW	Wet bulb temperature higher alarm threshold in the set measurement unit (x10).
18	SW	Lower alarm threshold for **SOLAR RADIATION** in W/m^2.
19	SW	Higher alarm threshold for solar radiation in W/m^2.
20	SW	**ILLUMINANCE** lower alarm threshold in lux.
21	SW	Illuminance higher alarm threshold in lux
24	SW	**ATMOSPHERIC PRESSURE** lower alarm threshold in the set measurement unit (the multiplier depends on the set unit).
25	SW	Atmospheric pressure higher alarm threshold in the set measurement unit (the multiplier depends on the set unit).
30	SW	Lower alarm threshold for **DAILY SOLAR RADIATION** in Wh/m^2.
31	SW	Higher alarm threshold for daily solar radiation in Wh/m^2.
32	SW	**CO_2** lower alarm threshold in ppm.
33	SW	CO_2 higher alarm threshold in ppm.
86	SW	**RAIN RATE** lower alarm threshold in counts/h.
87	SW	Rain rate higher alarm threshold in counts/h.
88	SW	**DAILY RAIN** lower alarm threshold in counts.
89	SW	Daily rain higher alarm threshold in counts.
92	SW	**WIND SPEED** (ultrasonic anemometer) lower alarm threshold in m/s (x100).
93	SW	Wind speed (ultrasonic anemometer) higher alarm threshold in m/s (x100).
94	SW	**WIND DIRECTION** (ultrasonic anemometer) lower alarm threshold in degrees (x10).
95	SW	Wind direction (ultrasonic anemometer) higher alarm threshold in degrees (x10).
118	SW	**AIR SPEED** (HD404…SR transmitter) lower alarm threshold in m/s (x100).
119	SW	Air speed (HD404…SR transmitter) higher alarm threshold in m/s (x100).
122	SW	Lower alarm threshold for **RAINFALL QUANTITY IN THE LAST HOUR** in counts.
123	SW	Higher alarm threshold for rainfall quantity in the last hour in counts.
General information		
da 10000 a 10019	B	User code with ASCII codification. Acceptable values are in the set {32,…,126}.
10020	W	Current year
10021	W	Current month
10022	W	Current day
10023	W	Current hour
10024	W	Current minute
10025	W	Current second
10026	W	Measurement interval: 0=1s, 1=2s, 2=5s, 3=10s, 4=15s, 5=30s, 6=1min, 7=2min, 8=5min, 9=10min, 10=15min, 11=30min, 12=1h
10027	W	Logging interval: 0=1s, 1=2s, 2=5s, 3=10s, 4=15s, 5=30s, 6=1min, 7=2min, 8=5min, 9=10min, 10=15min, 11=30min, 12=1h
10036	W	Password to be supplied to enable configuration change commands. The reading provides the fixed value 32768.
da 10037 a 10046	B	Device group with ASCII codification. Acceptable values are in the set {32,…,126}.

Address	Type	Holding Register description
da 20000 a 20011	B	User code with ASCII codification of measurement #1.
da 20012 a 20023	B	User code with ASCII codification of measurement #2.
da 20024 a 20035	B	User code with ASCII codification of measurement #3.
da 20036 a 20047	B	User code with ASCII codification of measurement #4.
da 20048 a 20059	B	User code with ASCII codification of measurement #5.
da 20060 a 20071	B	User code with ASCII codification of measurement #6.
da 20072 a 20083	B	User code with ASCII codification of measurement #7.
da 20084 a 20095	B	User code with ASCII codification of measurement #8.
da 20096 a 20107	B	User code with ASCII codification of measurement #9.
da 20108 a 20119	B	User code with ASCII codification of measurement #10.
da 20120 a 20131	B	User code with ASCII codification of measurement #11.
da 20132 a 20143	B	User code with ASCII codification of measurement #12.

6 TECHNICAL CHARACTERISTICS

Measuring interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min *(Note: the minimum interval may be greater than 1 s if the instrument acquires several sensors)*
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min *(Note: the minimum interval may be greater than 1 s if the instrument acquires several sensors)*
Internal memory	Circular management or stop logging if memory is full. Number of storable samples from 259,000 a 890,500 depending on the number of acquired quantities.
Interfaces	ETHERNET (RJ45 connector) with proprietary TCP/IP or Modbus TCP/IP protocol USB (mini-USB connector) Master RS485 Modbus-RTU (for acquiring the sensors)
Alarm	Acoustic by means of the internal buzzer and sending of e-mails
Power supply	External 7…30 Vdc
Consumption	40 mA @ 24 Vdc
LED indicators	Power supply and LAN connection
Operating temperature/ humidity	-10…+60 °C / 0…85 %RH non-condensing
Housing	Plastic material
Weight	200 g approx.
Installation	35 mm DIN rail

Dimensions (mm)



The measurement characteristics depend on the sensors connected.

7 INSTRUMENT STORAGE

Conditions for storage of the instrument:

- Temperature: -20...+70 °C.
- Humidity: below 90 %RH no condensation.
- When storing, avoid places where:
    - humidity is high;
    - instrument is exposed to direct solar radiation;
    - instrument is exposed to high temperature source;
    - there are strong vibrations;
    - there is vapor, salt and/or corrosive gas.

8 SAFETY INSTRUCTIONS

General safety instructions

The instrument has been manufactured and tested in compliance with the safety standard EN61010-1:2010 "Safety requirements for electrical equipment for measurement, control and laboratory use" and left the factory in a safe and secure technical condition.

The proper operation and the operational safety of the instrument can be ensured only if all the regular security measures are observed as well as the specific measures described in this operating manual.

The proper operation and the operational safety of the instrument can be ensured only under the climatic conditions specified in this manual.

Do not use the instrument in places where there are:

- Rapid ambient temperature variations that may cause condensation.
- Corrosive or flammable gases.
- Direct vibrations, shocks to the instrument.
- High-intensity electromagnetic fields, static electricity.

If the instrument is moved from a cold environment to a hot one or vice versa, the formation of condensation might cause problems to its operation. In this case you need to wait for the instrument temperature to reach ambient temperature before operation.

User obligations

The user of the instrument must make sure that the following regulations and directives related to the handling of hazardous materials are fulfilled:

- European directives on safety and health at work.
- National regulations on safety and health at work.
- Accident prevention regulations.

9 ORDERING CODES

HD50R_MB Data logger with **Master** RS485 Modbus-RTU interface for acquiring sensors with RS485 Modbus-RTU output. A proprietary protocol is also available for connecting anemometers of the HD2003 series. A voltage-free contact input allows connecting a tipping bucket rain gauge. **USB** and **Ethernet** (proprietary TCP/IP or Modbus TCP/IP protocol) connection. Measurements are transmitted to an **FTP** address, to the **Cloud** and via **e-mail**. Acoustic alarm with internal buzzer and sending of **alarm e-mails**. External power supply 7…30 Vdc. 35 mm DIN rail installation. **HD35AP-S** and **HDServer1** softwares downloadable from Delta OHM web site are included.

The probes and the CP23 USB cable have to be ordered separately. The Ethernet cable is not included.

Accessories

HD35AP-CFR21 Software option that adds to the features of the basic software (both HD35AP-S and HDServer1), the management of the data logging system in accordance with the **FDA 21 CFR part 11 recommendations**. For Windows® operating systems.

CP23 Direct USB connection cable with mini-USB connector on the instrument side and A type USB connector on the PC side. Cable length 1.5 m.

DELTA OHM metrology laboratories LAT N° 124 are ISO/IEC 17025 accredited by ACCREDIA for Temperature, Humidity, Pressure, Photometry / Radiometry, Acoustics and Air Velocity. They can supply calibration certificates for the accredited quantities.

NOTES

NOTES

Member of GHM GROUP

DICHIARAZIONE DI CONFORMITÀ UE
EU DECLARATION OF CONFORMITY

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Documento Nr. / Mese.Anno:
Document-No. / Month.Year : **5117 / 07.2018**

Si dichiara con la presente, in qualità di produttore e sotto la propria responsabilità esclusiva, che i seguenti prodotti sono conformi ai requisiti definiti nelle direttive del Consiglio Europeo:
We declare as manufacturer herewith under our sole responsibility that the following products are in compliance with the requirements defined in the European Council directives:

Codice prodotto:
Product identifier : **HD50R-MB**

Descrizione prodotto:
Product description : **Data logger con connettività Ethernet**
Data logger with Ethernet connectivity

I prodotti sono conformi alle seguenti Direttive Europee:
The products conform to following European Directives:

Direttive / *Directives*	
2014/53/EU	Direttiva apparecchiature radio / *Radio Equipments Directive (RED)*
2011/65/EU	RoHS / *RoHS*

Norme armonizzate applicate o riferimento a specifiche tecniche:
Applied harmonized standards or mentioned technical specifications:

Norme armonizzate / *Harmonized standards*	
EN 61010-1:2010	Requisiti di sicurezza elettrica / *Electrical safety requirements*
EN 61326-1:2013	Requisiti EMC / *EMC requirements*
EN 50581:2012	RoHS / *RoHS*

Il produttore è responsabile per la dichiarazione rilasciata da:
The manufacturer is responsible for the declaration released by:

Johannes Overhues

Amministratore delegato
Chief Executive Officer

Caselle di Selvazzano, 18/07/2018

Questa dichiarazione certifica l'accordo con la legislazione armonizzata menzionata, non costituisce tuttavia garanzia delle caratteristiche.
This declaration certifies the agreement with the harmonization legislation mentioned, contained however no warranty of characteristics.

GUARANTEE

Member of GHM GROUP

TERMS OF GUARANTEE

All DELTA OHM instruments are subject to accurate testing, and are guaranteed for 24 months from the date of purchase. DELTA OHM will repair or replace free of charge the parts that, within the warranty period, shall be deemed non efficient according to its own judgement. Complete replacement is excluded and no damage claims are accepted. The DELTA OHM guarantee only covers instrument repair. The guarantee is void in case of incidental breakage during transport, negligence, misuse, connection to a different voltage than that required for the appliance by the operator. Finally, a product repaired or tampered by unauthorized third parties is excluded from the guarantee. The instrument shall be returned FREE OF SHIPMENT CHARGES to your dealer. The jurisdiction of Padua applies in any dispute.

The electrical and electronic equipment marked with this symbol cannot be disposed of in public landfills. According to the Directive 2011/65/EU, the european users of electrical and electronic equipment can return it to the dealer or manufacturer upon purchase of a new one. The illegal disposal of electrical and electronic equipment is punished with an administrative fine.

This guarantee must be sent together with the instrument to our service centre.
IMPORTANT: Guarantee is valid only if coupon has been correctly filled in all details.

Instrument Code: **HD50R-MB**

Serial Number _____

RENEWALS

Date _____	Date _____
Inspector _____	Inspector _____
Date _____	Date _____
Inspector _____	Inspector _____
Date _____	Date _____
Inspector _____	Inspector _____

CE

RoHS 2011/65/EU