HD50… SERIES
WEB DATALOGGER

- Temperature, humidity, atmospheric pressure, CO_2 and illuminance data logging
- Models with inputs for standard Pt100, Pt1000, TC, potentiometric sensors and for current (0/4…20 mA) and voltage (f.s. 50 mV, 1 V, 10 V) transmitters are available
- Connection to local network via Wi-Fi (IEEE 802.11b/g/n) or ETHERNET
- Multi-client integrated web server for monitoring the measurements and setting the instrument, even from mobile devices (smartphones and tablets)
- Supplied with PC software, for configuration, monitor and data download in a database
- Sending of data via e-mail, FTP and to Delta OHM portal
- Software option available for compliance to **FDA 21 CFR part 11** recommendations
- Alarm notification via e-mail when configurable measurement thresholds are exceeded
- Custom or graphic LCD
- Internal clock regularly synchronized with a reference server

APPLICATIONS

- Monitoring of perishable goods: food, medicines, vaccines, plants and flowers in greenhouses
- Air quality in laboratories, offices, schools
- Industrial processes
- Museums and document archives

DESCRIPTION

The data loggers of the **HD50** series allow indoor monitoring of various physical quantities. The data loggers are available for the monitoring of:

- Temperature
- Humidity
- Atmospheric pressure
- Carbon dioxide (CO_2)
- Illuminance

The models that measure relative humidity and temperature calculate absolute humidity, Dew Point, wet bulb temperature, mixing ratio, partial vapour pressure.

Models with 4 input channels, with terminal header connections, are available for the connection of standard analog sensors:

- Transmitters with 0÷20 or 4÷20 mA current output and 0÷50 mV, 0÷1 V or 0÷10 V voltage output
- Pt100 / Pt1000 temperature sensors and K, J, T, N, E type thermocouples
- Sensors with potentiometric output

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This allows extending the monitoring capability to countless other quantities, in addition to those listed above.

All the models can be supplied with or without LCD. The versions with LCD can be equipped with a **custom LCD** (option **L**, a quantity is displayed in the main row and the temperature, if available, is displayed in the secondary row) or with a **graphic LCD** (option **G**, a quantity is displayed in the main row and three quantities are displayed in the secondary rows).

Three LEDs on the front panel indicate the status of power supply, LAN/WLAN local network connection and alarm.

Connectivity

The data loggers can be connected to a local network via the **Wi-Fi** or **Ethernet** interface (the two interfaces are mutually exclusive; they can not be used simultaneously). The data logger 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 an **HTTP server** (Cloud) and via **e-mail** (as attachments).

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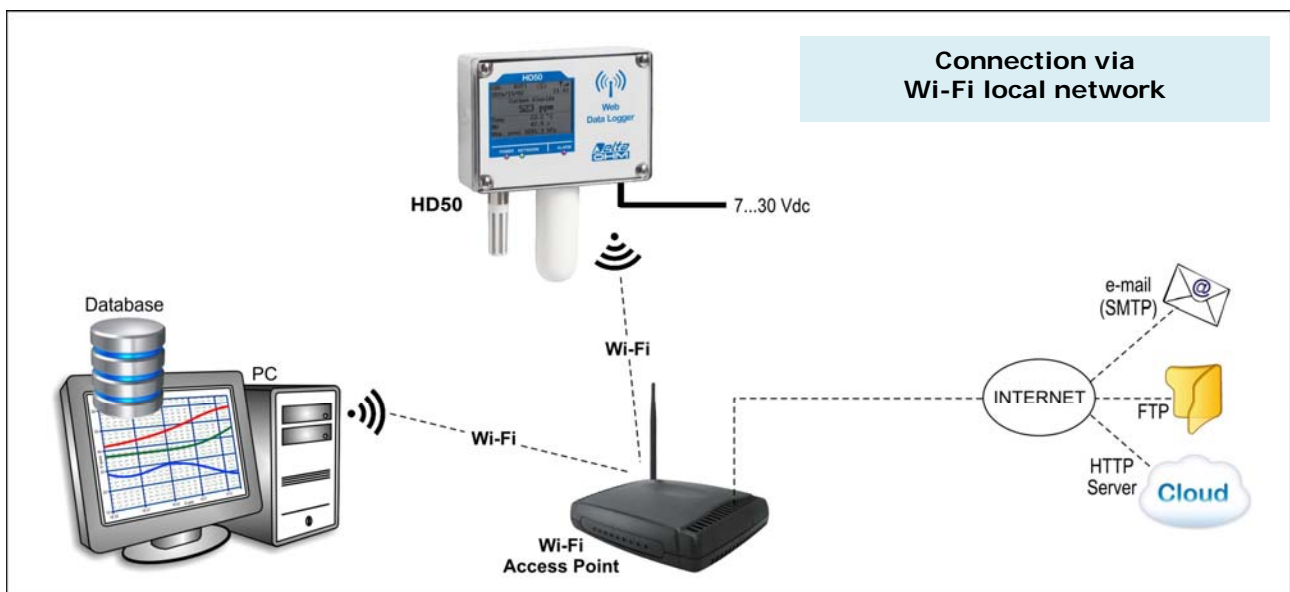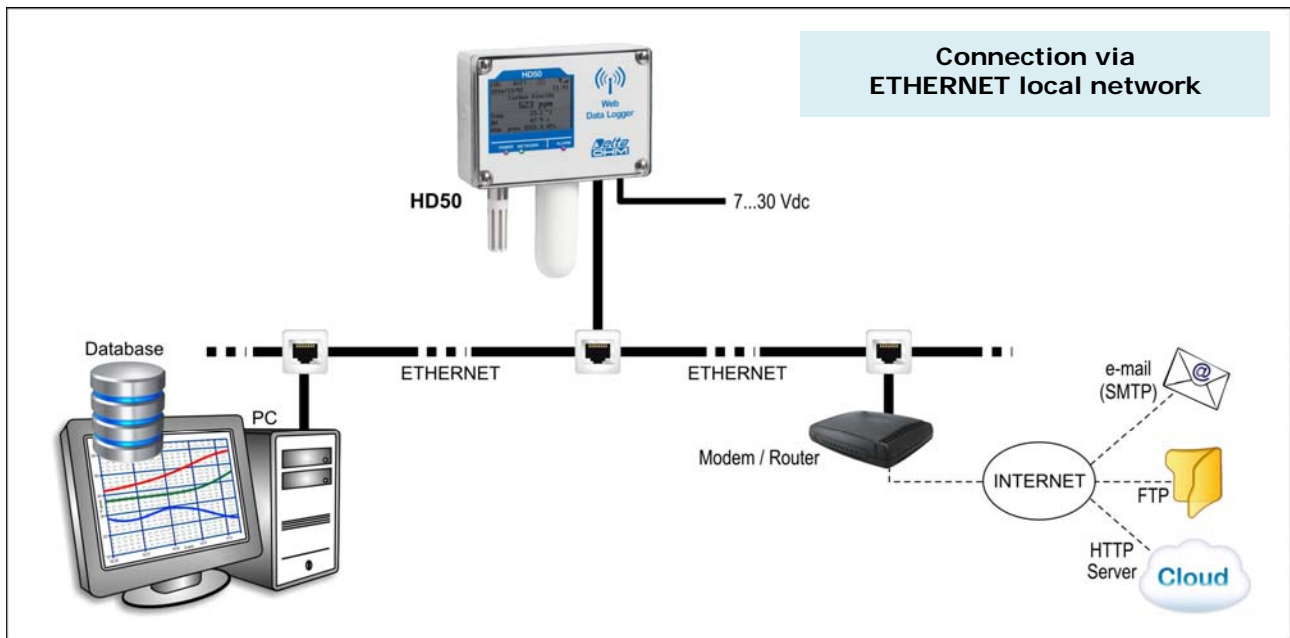
Multiple devices can be connected to the same local network, either via Wi-Fi (through a router or Wi-Fi access point) or via Ethernet. The data of all the devices connected to the network can be collected in the same database and can be viewed with a "Cloud" service, or can be downloaded via e-mail or FTP.

Example of a hybrid network (Wi-Fi + ETHERNET) with multiple data loggers
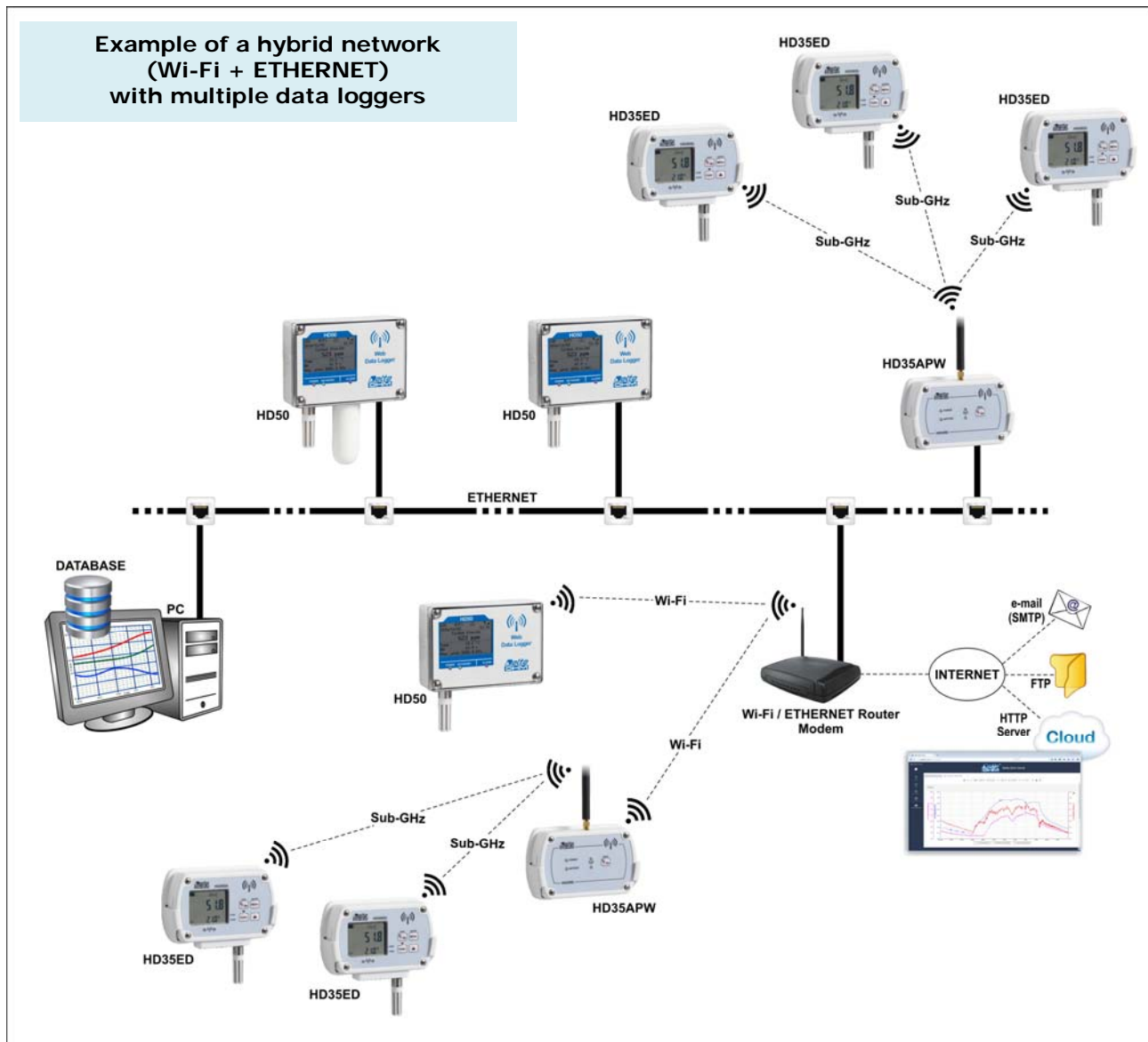
Logging

A measuring interval and a logging interval can be set in the data logger. The stored value is the average of the measures acquired in the logging interval. The acquired data are stored in the internal memory and sent via Internet (if the data logger is connected to a local network with Internet connection). When the data logger memory is full, it can be chosen to stop the logging or to continue overwriting the older data (cyclic logging). It is possible to log all the available quantities or, in order to increase the memory capacity, only the quantities of interest.

Alarms

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, visually, by lighting the alarm LED on the front panel, 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.
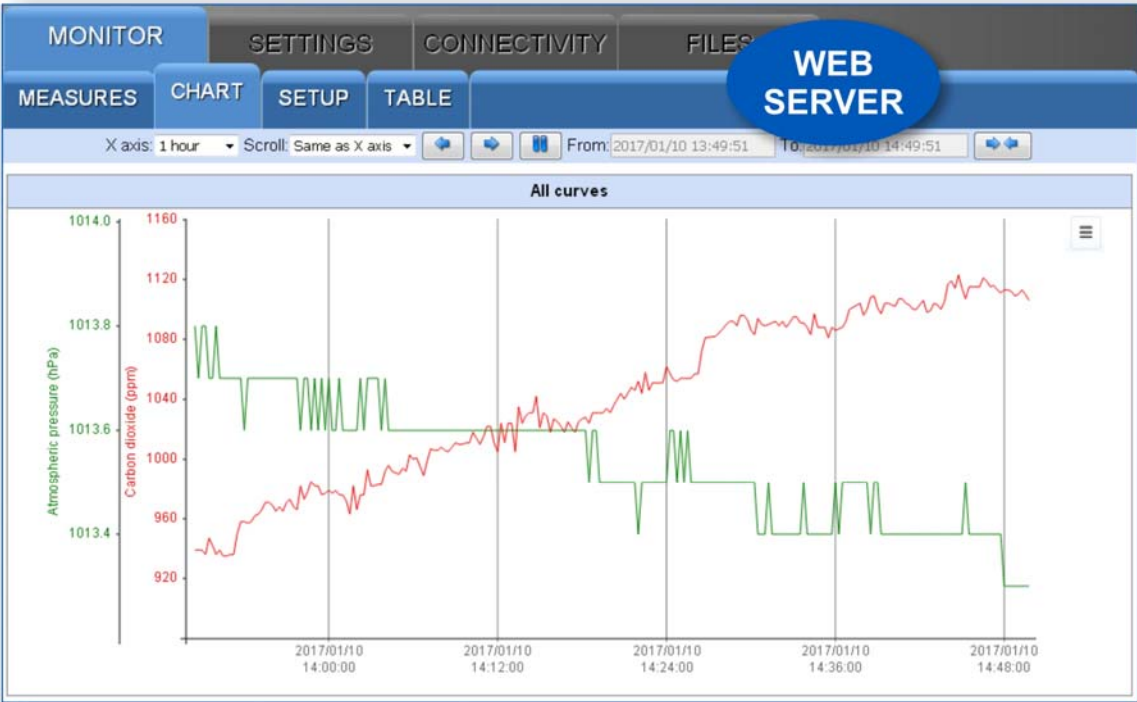
Integrated Web Server

Thanks to the integrated web server, you can configure the data logger and view the real time measurements from any PC, tablet or smartphone connected to the same local network of the data logger by simply using a web browser and typing the IP address of the data logger, without the need to install specific software.

The measurements in alarm appear on a red background that immediately highlights them. Measurements can be displayed graphically or in a table form. The data received with the MONITOR feature can be saved in a file (not in the database) and exported in CSV format.

The files with the data sent by the data logger via e-mail and/or FTP, or the data acquired in the past with the MONITOR feature of the web server and saved in the PC, tablet or smartphone can be imported and displayed.

Web server: monitor of measurements with CO_2 measurement in alarm

**Web server: graph of measurements**

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Cloud

The data logger can automatically send, at regular intervals, the data to an HTTP server.
This allows you to view the data from anywhere in the world, even by using mobile devices,
(tablet, smartphone, notebook), simply having an Internet connection and using a web browser.
The data sending interval is configurable.

**Cloud: viewing measurements with a Web browser**

PC application software

The supplied PC basic software **HD35AP-S** allows configuring the data logger, viewing the real
time measurements both graphically and numerically, downloading the data in a database. The
data can be downloaded automatically, at regular intervals, or upon user request.
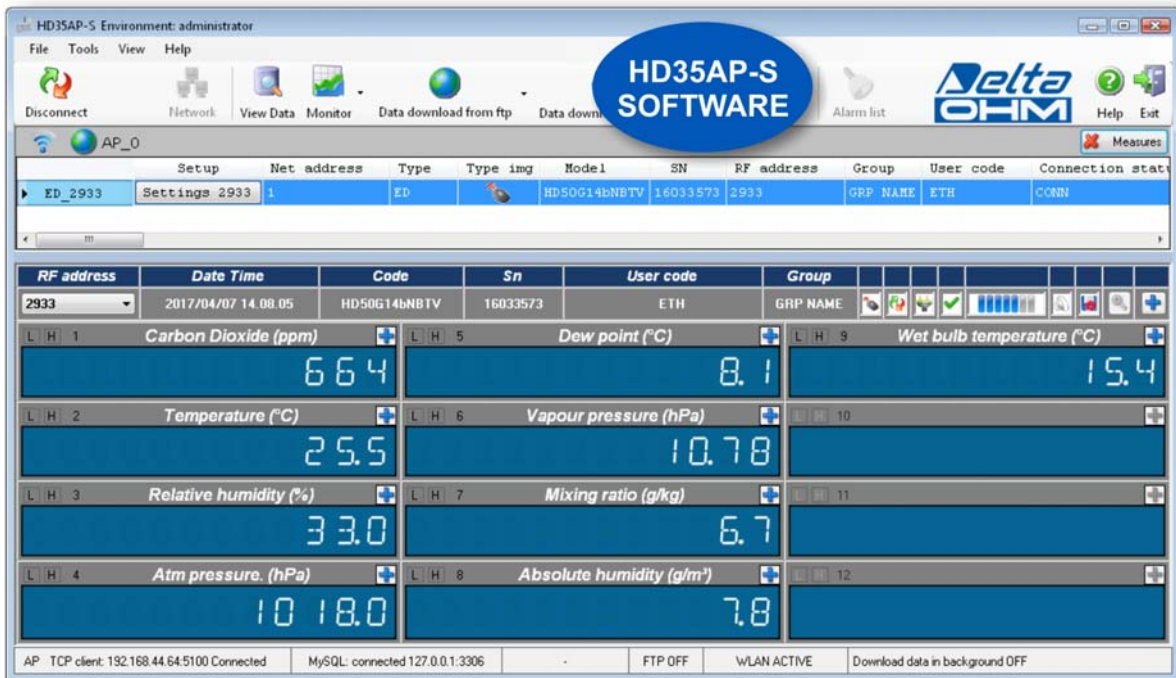
**HD35AP-S software: viewing the real time measurements**

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The database functions allow viewing the data coming from multiple data loggers simultaneously. The connection to the database is **multi-client**: it is possible to store the data in a remote database on the local network to which the PC is connected, and the data can be viewed from any PC on the network via the HD35AP-S software.
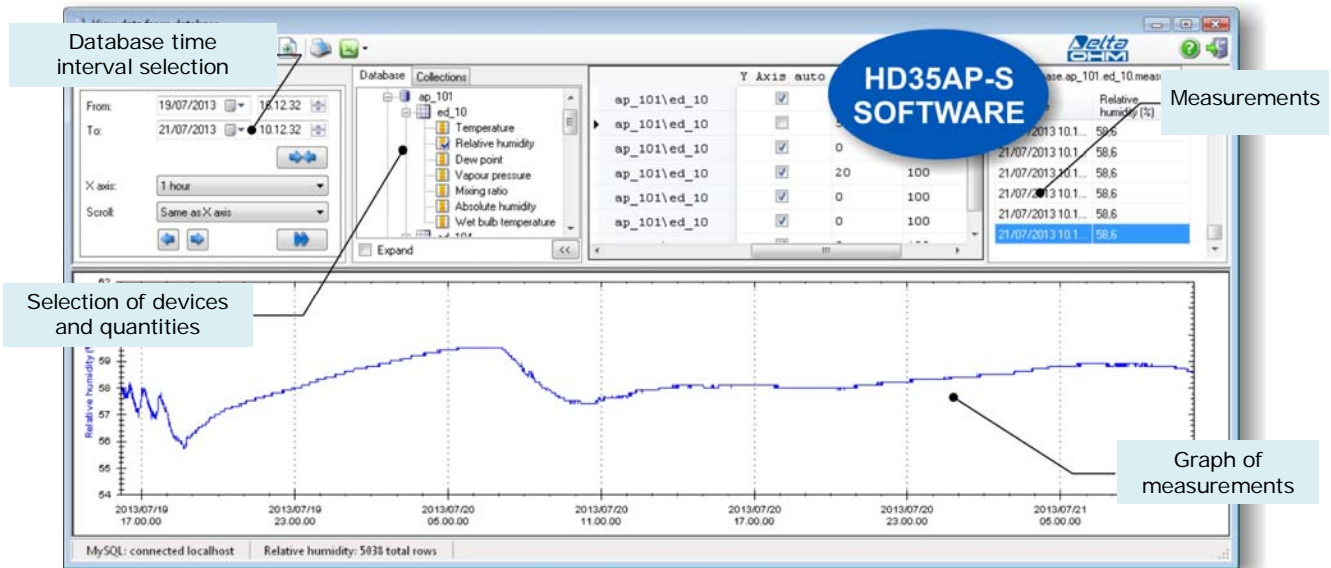
HD35AP-S software: database

The **HD35AP-CFR21** option allows, in addition to the features of the basic software, the protection of recorded data and 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 data logger.

- The management of users access for the data logger 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.
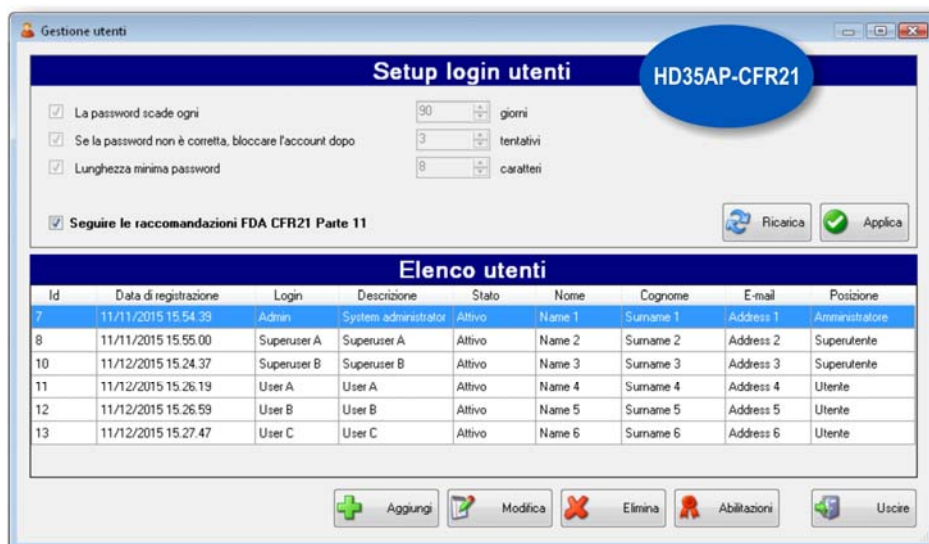
HD35AP-CFR21 option: users permissions

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 HD35AP-S software is installed.
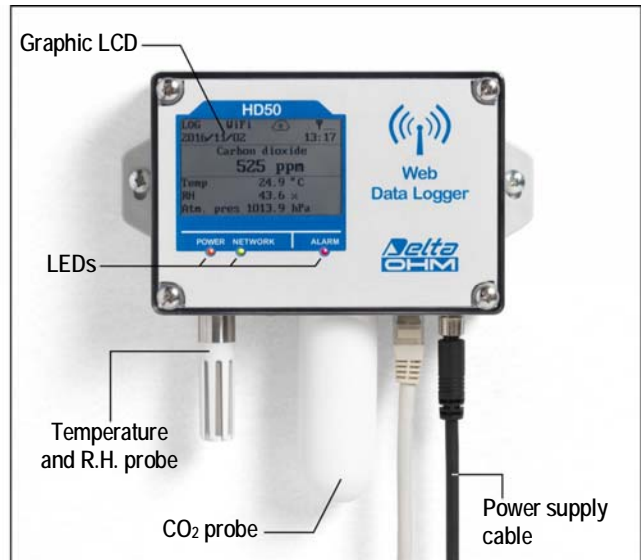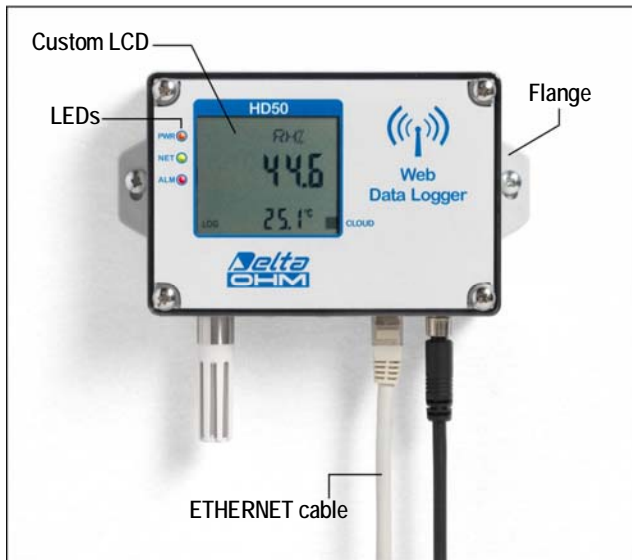
Note: if the HD35AP-CFR21 option is used, the data logger integrated web server allows only viewing the measurements, but not the data logger configuration, because the settings changed via web server can not be traced.

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Internal clock

The internal clock can be regularly **synchronized** with a NIST reference server (if the data logger is connected to the local network via Wi-Fi or Ethernet and the Internet connection is available), thereby eliminating any problems due to the clock drift. The feature is particularly useful if you want to compare the measures acquired by various detecting systems at the same time.

Installation

Wall mount installation by using the appropriate **optional** flanges to be fixed on the back of the housing.

Custom LCD / LEDs / Flange / Web Data Logger / ETHERNET cable

Graphic LCD / LEDs / Temperature and R.H. probe / CO_2 probe / Power supply cable / Web Data Logger

Dimensions in mm

Available models

In order to highlight the physical quantities measured by the data loggers, the ordering codes include some identification characters for the various quantities, according to the following convention:

1 = Humidity

4b = Atmospheric pressure (barometer)

N = Temperature with NTC10K sensor (**N/1** = 1 channel, **N/2** = 2 channels, **N/3** = 3 channels)

7P = Temperature with Pt100/Pt1000 sensor

B = Carbon dioxide (CO_2)

I = Illuminance low range (0...20,000 lux)
I2 = Illuminance high range (0...200,000 lux)

To indicate the fixed probe or the probe with cable, the following indications are used:

TC = Probe with cable (M12 connector)
TV = Fixed vertical probe without cable
TCV = Fixed sensors + photometric probe with cable

The data loggers are also available with **custom** (option **L**, except for the model HD50H) or **graphic** (option **G**) **LCD**.

Available HD50... series models (other models can be supplied upon request for quantities):

Model	MEASURES						INPUTS		OPTIONAL LCD	
							Number of M12 connectors	Built-in sensors	L	G
	NTC10K	Pt100	RH	Patm	CO2	Lux			Custom	Graphic
HD50 N/1 TC	●						1		●	●
HD50 N/2 TC	●						2		●	●
HD50 N/3 TC	●						3		●	●
HD50 N TV	●							●	●	●
HD50 1N TC	●		●				1		●	●
HD50 17P TC		●	● (*)				1		●	●
HD50 1N TV	●		●					●	●	●
HD50 14bN TC	●		●	●			1	Patm	●	●
HD50 14b7P TC		●	● (*)	●			1	Patm	●	●
HD50 1NB TV	●		●		●			●	●	●
HD50 14bNB TV	●		●	●	●			●	●	●
HD501NITCV	●		●			●	1	T/RH	●	●
HD5014bNITCV	●		●	●		●	1	T/RH/Patm	●	●
HD501NIBTCV	●		●		●	●	1	T/RH/CO2	●	●
HD5014bNIBTCV	●		●	●	●	●	1	T/RH/CO2 Patm	●	●
HD50 H	Transmitters with 0÷20 mA, 4÷20 mA, 0÷50 mV, 0÷1 V or 0÷10 V output Pt100 / Pt1000 sensors, thermocouples K, J, T, N, E Sensors with potentiometric output						4 terminal header inputs			●

(*) RH sensor extended operating temperature range (-40...+150 °C).

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Analog inputs (HD50...H)

In the HD50...H models, each of the 4 analog inputs can be configured as Pt100/Pt1000, thermo-couple, 0/4...20 mA (the shunt resistance is internal), 0...50 mV, 0...1 V, 0...10 V or potentiometric input.
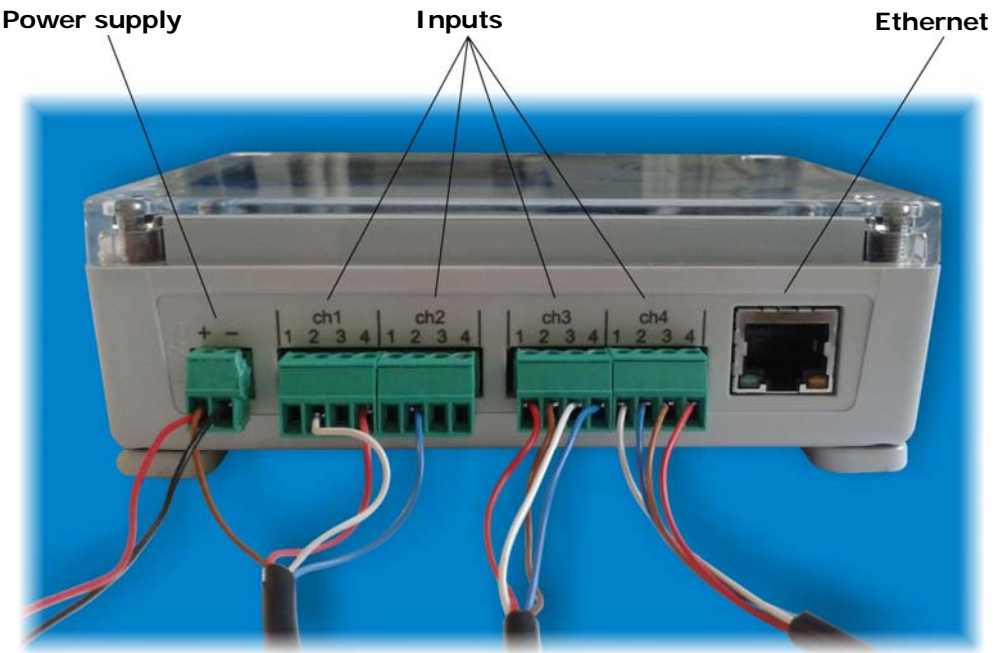
1 2 3 4 ch1/ch2/ch3/ch4 — GND (analog ground), IN-, IN+, Excitation voltage	**1 2 3 4** Pt100 / Pt1000 2 wires	**1 2 3 4** Pt100 / Pt1000 3 wires	**1 2 3 4** Pt100 / Pt1000 4 wires
1 2 3 4 Potentiometer	**1 2 3 4** 0...50 mV	**1 2 3 4** 0...1 V 0...10 V	**1 2 3 4** 0...20 mA 4...20 mA	**1 2 3 4** Thermocouple K,J,T,N,E

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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 full. The number of samples that can be stored depends on the number of quantities selected for logging (see the next table).
Interfaces	Wi-Fi (IEEE 802.11b/g/n) and ETHERNET (RJ45 connector)
Protocols	Proprietary and Modbus TCP/IP
Wi-Fi security settings	WEP64, WEP128, WAP, WAP2
Alarm	Acoustic by means of the internal buzzer, LED on the front panel, sending of e-mails.
Power supply	External 7...30 Vdc (no internal battery)
Display	Optional custom or graphic LCD
LED indicators	Power supply, Network connection (LAN/WLAN) and Alarm
Operating temperature and humidity	-20...+70 °C / 0...100 %RH
Housing	Material: Polycarbonate Dimensions: 130 x 90 x 40 mm (156 x 90 x 44 mm with flanges) Protection degree: IP 54 (with protective cap on RJ45 connector)
Weight	300 g approx.
Installation	Wall mount, indoor

Capacity of the internal memory

Model	Number of samples that can be stored [**]	Stored quantities [*]
HD50 N/1 TC	906,750	T
HD50 N/2 TC	Min=744,830, Max=906,750	T (2 channels)
HD50 N/3 TC	Min=615,290, Max=906,750	T (3 channels)
HD50 N TV	906,750	T
HD50 1N TC	Min=388,600, Max=906,750	T, RH, T_D, T_W, AH, MR, PVP
HD50 17P TC	Min=388,600, Max=906,750	T, RH, T_D, T_W, AH, MR, PVP
HD50 1N TV	Min=388,600, Max=906,750	T, RH, T_D, T_W, AH, MR, PVP
HD50 14bN TC	Min=356,220, Max=906,750	T, RH, T_D, T_W, AH, MR, PVP, P_{ATM}
HD50 14b7P TC	Min=356,220, Max=906,750	T, RH, T_D, T_W, AH, MR, PVP, P_{ATM}
HD50 1NB TV	Min=356,220, Max=906,750	T, RH, T_D, T_W, AH, MR, PVP, CO_2
HD50 14bNB TV	Min=323,840, Max=906,750	T, RH, T_D, T_W, AH, MR, PVP, P_{ATM}, CO_2
HD501NITCV	Min=356,220, Max=906,750	T, RH, T_D, T_W, AH, MR, PVP, I
HD5014bNITCV	Min=323,840, Max=906,750	T, RH, T_D, T_W, AH, MR, PVP, P_{ATM}, I
HD501NIBTCV	Min=323,840, Max=906,750	T, RH, T_D, T_W, AH, MR, PVP, CO_2, I
HD5014bNIBTCV	Min=**XXX**,840, Max=906,750	T, RH, T_D, T_W, AH, MR, PVP, P_{ATM}, CO_2, I
HD50 H	Min=615,290, Max=1,165,820	depends on the connected sensors

[*] **List of the quantities:**

|	
T: temperature	**AH**: absolute humidity
RH: relative humidity	**MR**: mixing ratio
T_D: dew point	**PVP**: partial vapour pressure
T_W: wet bulb temperature	**P_{ATM}**: atmospheric pressure
CO_2: carbon dioxide	**I**: illuminance

[**] A sample consists of multiple values: a value for each quantity (measured or calculated) selected for logging. You get the maximum number of samples that can be stored when only one quantity is selected; you get the minimum number of samples that can be stored when all the quantities available in the data logger are selected.

Measurement characteristics (instrument in line with the sensor) for all data loggers except the versions with terminal header inputs:

Temperature - NTC10K sensor (HD50...N...TC, HD50...TV)	
Sensor	NTC 10 kΩ @ 25 °C
Measuring range	-40...+105 °C
Resolution (of the instrument)	0.1 °C
Accuracy	± 0.3 °C in the range 0...+70 °C / ± 0.4 °C outside
Stability	0.1 °C/year

Temperature - Pt100 sensor (HD50...7P...TC)	
Sensor	Pt100 1/3 DIN thin film
Measuring range	-100...+350 °C max. for probes measuring only temperature (the measuring range can be limited by the operating temperature of the probe used) -40...+150 °C for T/RH combined probes HD3517ETC...
Resolution (of the instrument)	0.1 °C
Accuracy	1/3 DIN
Stability	0.1 °C/year

Relative humidity	
Sensor	Capacitive
Measuring range	0...100 %RH
Resolution (of the instrument)	0.1 %
Accuracy	± 1.5 %RH (0..85 %RH) / ± 2.5 %RH (85..100 %RH) @ T=15...35 °C ± (2 + 1.5% of the measure)% @ T=remaining range
Sensor operating temperature	-20...+80 °C (standard) -40...+150 °C (with probe HP3517**E**...)
Response time	T_{90} < 20 s (air speed = 2 m/s, without filter)
Temperature drift	±2% in all the operating temperature range
Stability	1%/year

Atmospheric pressure	
Sensor	Piezoresistive
Measuring range	300...1100 hPa
Resolution (of the instrument)	0.1 hPa
Accuracy	± 0.5 hPa (800...1100 hPa) @ T=25°C ± 1 hPa (300...1100 hPa) @ T=0...50°C
Stability	1 hPa/year
Temperature drift	±3 hPa between -20...+60 °C
Available units of measurement	hPa (= mbar), mmHg, inchHg, mmH_2O, $inchH_2O$, atm

Carbon dioxide (CO_2)	
Sensor	Non-Dispersive Infrared (NDIR)
Measuring range	0...5000 ppm
Resolution (of the instrument)	1 ppm
Accuracy	± (50 ppm + 3% della misura) @ 20 °C and 1013 hPa
Operating temperature	-20...+60 °C
Response time	T_{90} < 120 s (air speed = 2 m/s)
Stability	5% of the measure/5 years
Temperature drift	0.1% f.s. / °C

Illuminance	
Sensor	Photodiode
Measuring range	I: 0…20,000 lux $I2$: 0…200,000 lux
Resolution (of the instrument)	I: 1 lux (0…2,000 lux), 10 lux (>2,000 lux) $I2$: 10 lux (0…20,000 lux), 100 lux (>20,000 lux)
Spectral range	According to photopic curve $V(\lambda)$
α (temperature coefficient) $f_6(T)$	<0.05% K
Calibration uncertainty	<4%
f'_1 (according to photopic curve $V(\lambda)$)	<6%
f_2 (response according to cosine law)	<3%
f_3 (linearity)	<1%
f_4 (instrument reading error)	<0.5%
f_5 (fatigue)	<0.5%
Class	B
Drift after 1 year	<1%
Operating temperature	0…50 °C
Reference Standard	CIE n°69 – UNI 11142

Relative spectral response of the illuminance sensor:

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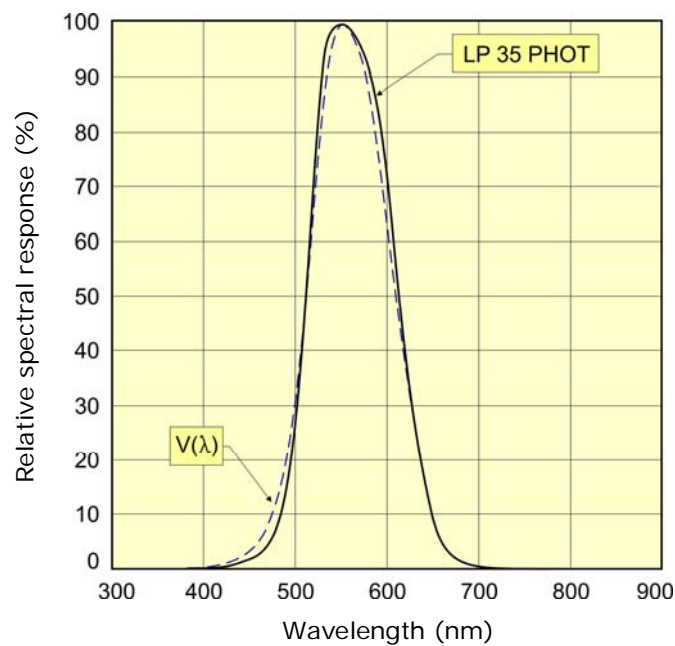
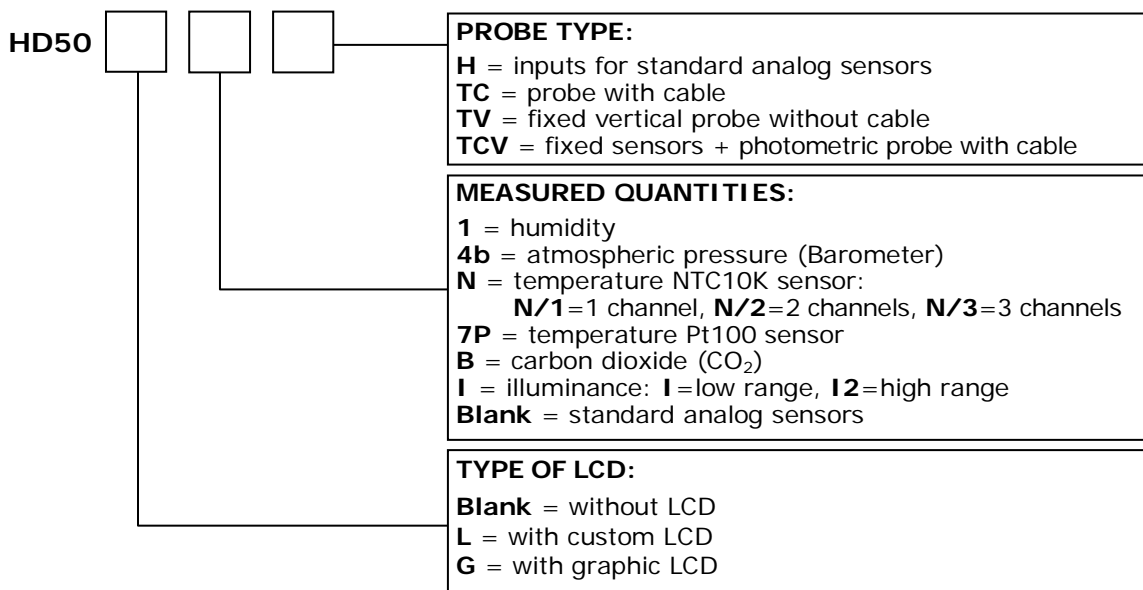**Characteristics of the terminal header inputs (only HD50...H):**

Pt100 / Pt1000	
Measuring range	-200...+650 °C
Resolution	0.1 °C
Accuracy	± 0.1 °C (excluding probe error)
Sensor coefficient	α=0.00385 °C^{-1}
Connection	2, 3 or 4 wires

Thermocouple	
Thermocouple type	K, J, T, N, E. The inputs are not isolated, **use thermocouples with isolated hot junction**.
Measuring range	type K: -200...+1370 °C type J: -100...+750 °C type T: -200...+400 °C type N: -200...+1300 °C type E: -200...+750 °C
Resolution	0.1 °C

Accuracy
(excluding probe error)
	type K: ± 0.1 °C (< 600 °C) type J: ± 0.1 °C
	        ± 0.2 °C (> 600 °C) type T: ± 0.1 °C
	type N: ± 0.1 °C (< 600 °C)
	        ± 0.2 °C (> 600 °C)
	type E: ± 0.1 °C (< 300 °C)
	        ± 0.2 °C (> 300 °C)

0/4...20 mA input	
Shunt resistance	Internal (50 Ω)
Resolution	16 bits
Accuracy	± 2 µA

0...50 mV, 0...1 V and 0...10 V inputs	
Input resistance	100 MΩ
Resolution	16 bits
Accuracy	± 0.01% f.s.

Potentiometric input	
Potentiometer	Tipically 10 kΩ.
Resolution	16 bits
Accuracy	± 0.01% f.s.

HD50... Data logger with integrated **Web Server**. Depending on the model, it measures temperature, humidity, atmospheric pressure, carbon dioxide and illuminance. A model for the acquisition of standard analog sensors is available. **Wi-Fi** and **Ethernet** connection. It stores the measures in the internal memory and transmits the acquired data to an **FTP** address, to an **HTTP server** (Cloud) and via **e-mail**. **Optional LCD display**. Acoustic alarm with internal buzzer. External 7...30 Vdc power supply. Supplied with: **basic HD35AP-S** software, pair of flanges for wall mounting, adapter from M8 connector to screw terminals for connecting the power supply, operating manual.

The external probes, the SWD10 power supply and the CPM8... power supply cable have to be ordered separately. The Ethernet cable is not included.
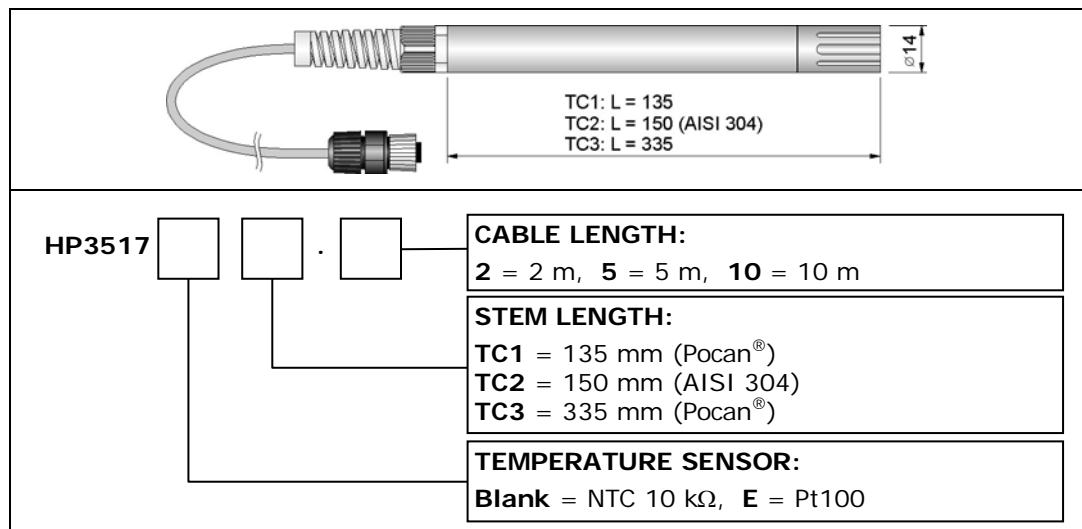
HD50 ☐ ☐ ☐

PROBE TYPE:

H = inputs for standard analog sensors
TC = probe with cable
TV = fixed vertical probe without cable
TCV = fixed sensors + photometric probe with cable

MEASURED QUANTITIES:

1 = humidity
4b = atmospheric pressure (Barometer)
N = temperature NTC10K sensor:
      N/1=1 channel, **N/2**=2 channels, **N/3**=3 channels
7P = temperature Pt100 sensor
B = carbon dioxide (CO_2)
I = illuminance: **I**=low range, **I2**=high range
Blank = standard analog sensors

TYPE OF LCD:

Blank = without LCD
L = with custom LCD
G = with graphic LCD

Note: please see the table of available models.

### Temperature and relative humidity combined probes

HP3517... Temperature and relative humidity combined probe. R.H. sensor measuring range: 0...100%. Temperature sensor: NTC10kΩ @ 25 °C (HP3517TC...) or Pt100 (HP3517**E**TC...). NTC10KΩ sensor measuring range: -40...+105 °C. Pt100 sensor measuring range: -40...+150 °C. R.H. sensor operating temperature: -40...+80 °C (HD3517TC...) or -40...+150 °C (HP3517**E**TC...). M12 4-pole (HD3517TC...) or 8-pole (HP3517**E**TC...) female connector.

TC1: L = 135
TC2: L = 150 (AISI 304)
TC3: L = 335
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HP3517 ☐ ☐ . ☐

CABLE LENGTH:

2 = 2 m, **5** = 5 m, **10** = 10 m

STEM LENGTH:

TC1 = 135 mm (Pocan®)
TC2 = 150 mm (AISI 304)
TC3 = 335 mm (Pocan®)

TEMPERATURE SENSOR:
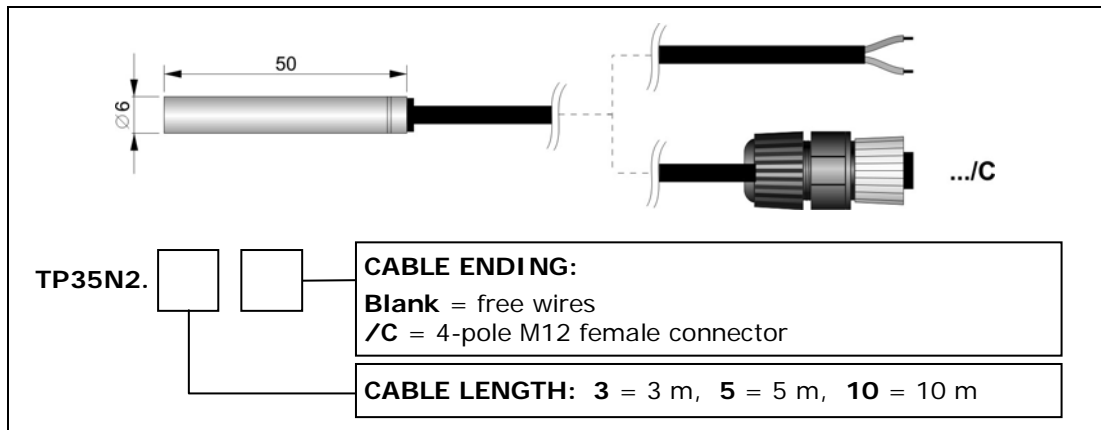
Blank = NTC 10 kΩ, **E** = Pt100

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HD9007A-1   12-ring protection from solar radiations. Supplied with mounting bracket.

HD9007A-2   16-ring protection from solar radiations. Supplied with mounting bracket.

HD9007T26.2 Fitting for Ø 14 mm probes for the protections from solar radiations HD9007A-1 and HD9007A-2.

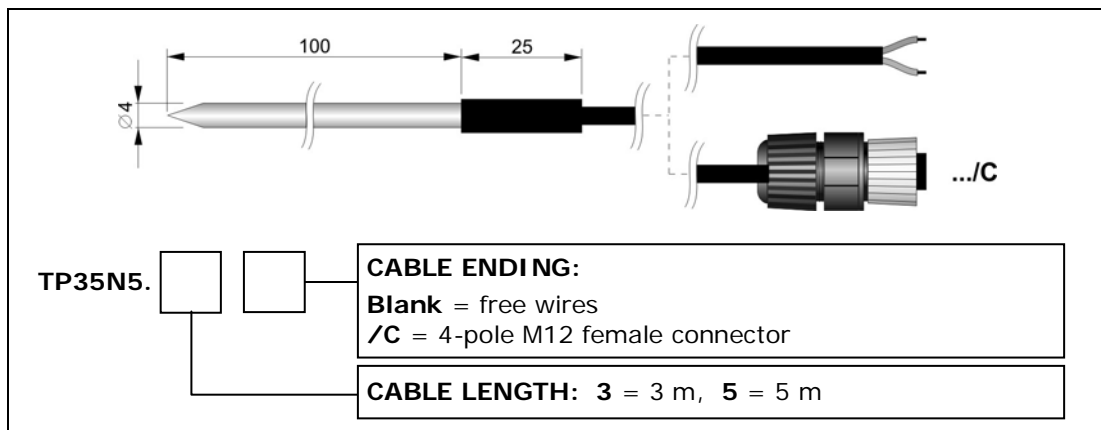### Temperature probes with NTC10kΩ @ 25 °C sensor

TP35N1...   Temperature probe with **NTC10KΩ** sensor. Operating temperature: -20...+75 °C. Accuracy: ± 0.3 °C in the range 0...+70 °C / ± 0.4 °C outside. Dimensions: Ø 5 x 40 mm. AISI 316 stainless steel tube.
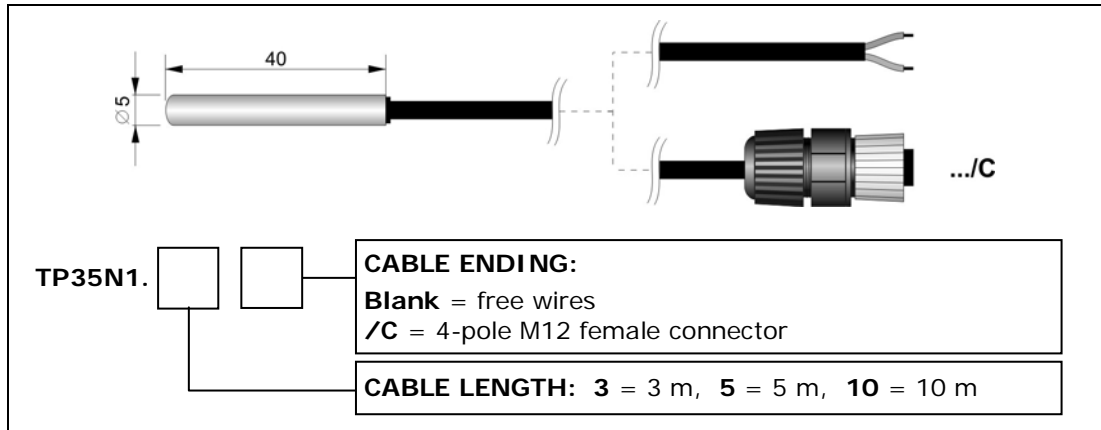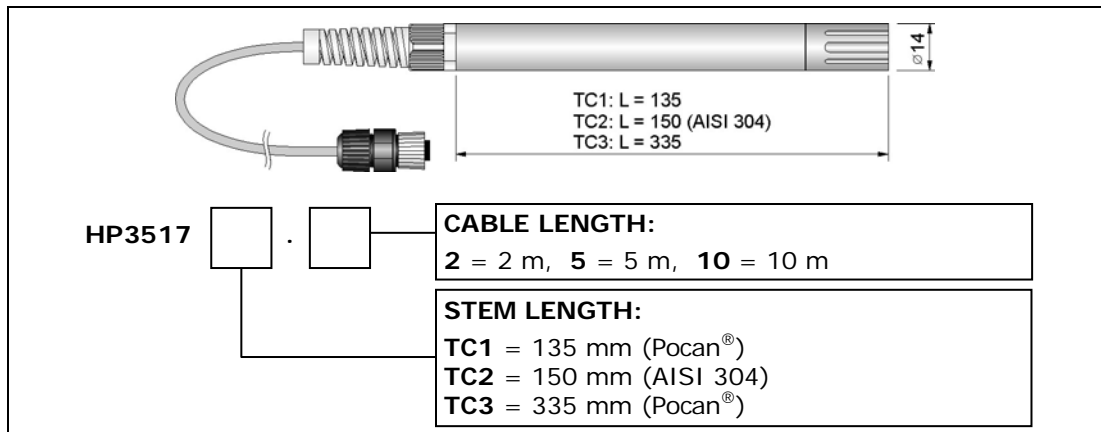

TP35N2...   Temperature probe with **NTC10KΩ** sensor. Operating temperature: 0...+75 °C. Accuracy: ± 0.3 °C in the range 0...+70 °C / ± 0.4 °C outside. Dimensions: Ø 6 x 50 mm. AISI 316 stainless steel tube.

TP35N5...   Penetration temperature probe with **NTC10KΩ** sensor. Operating temperature: -20...+105 °C. Accuracy: ± 0.3 °C in the range 0...+70 °C / ± 0.4 °C outside. Dimensions: Ø 4 x 100 mm. AISI 316 stainless steel tube.

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HP3507... Environmental temperature probe with **NTC10KΩ** sensor. Operating temperature: -40...+105 °C. Accuracy: ± 0.3 °C in the range 0...+70 °C / ± 0.4 °C outside. Diameter 14 mm. 4-pole M12 female connector.


| HP3517 ☐ . ☐ | **CABLE LENGTH:** **2** = 2 m, **5** = 5 m, **10** = 10 m |
| | **STEM LENGTH:** **TC1** = 135 mm (Pocan®) **TC2** = 150 mm (AISI 304) **TC3** = 335 mm (Pocan®) |

HD9007A-1 12-ring protection from solar radiations. Supplied with mounting bracket.

**HD9007A-2** 16-ring protection from solar radiations. Supplied with mounting bracket.

HD9007T26.2 Fitting for Ø 14 mm probes for the protections from solar radiations HD9007A-1 and HD9007A-2.
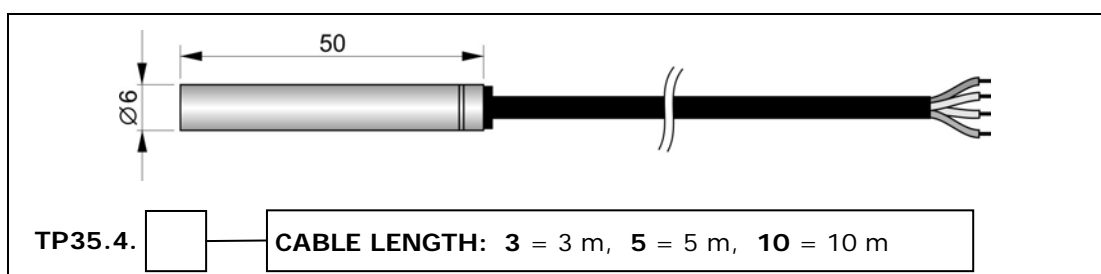
Temperature probes with Pt100 and Pt1000 sensor

TP35.1... Temperature probe with **Pt1000** 1/3 DIN 4-wire sensor. Operating temperature: -50...+105 °C. Dimensions: Ø 5 x 40 mm. AISI 316 stainless steel tube.

| TP35.1. ☐ | **CABLE LENGTH:** **3** = 3 m, **5** = 5 m, **10** = 10 m |
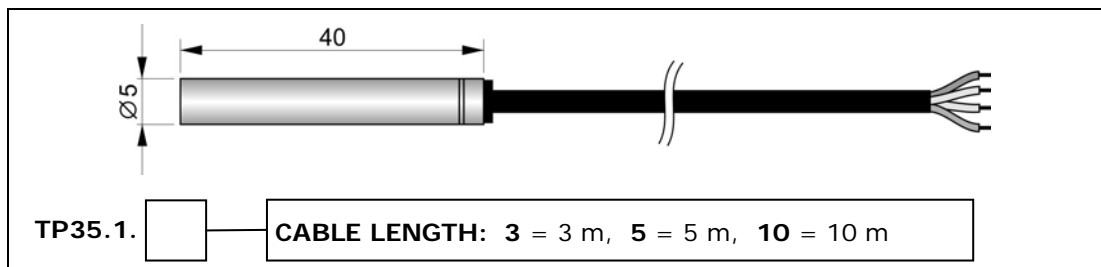
**TP35.2...** Temperature probe with **Pt1000** 1/3 DIN 3-wire sensor. Operating temperature: 0...+70 °C. Dimensions: Ø 5 x 20 mm. Thermoplastic rubber tube.

| TP35.2. ☐ | **CABLE LENGTH:** **3** = 3 m, **5** = 5 m |
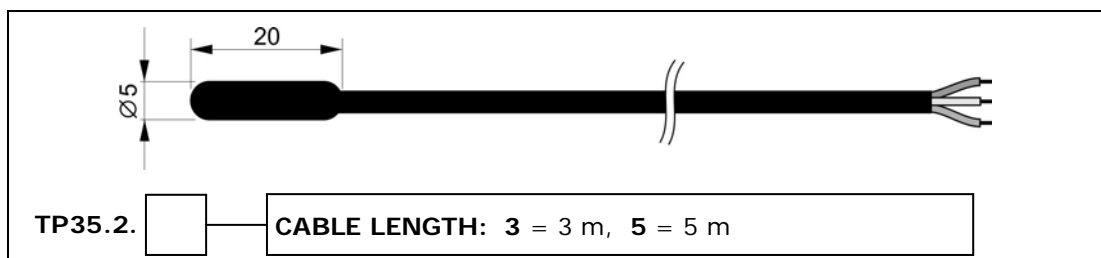
TP35.4... Temperature probe with **Pt100** 1/3 DIN 4-wire sensor. Operating temperature: -50...+105 °C. Dimensions: Ø 6 x 50 mm. AISI 316 stainless steel tube.

| TP35.4. ☐ | **CABLE LENGTH:** **3** = 3 m, **5** = 5 m, **10** = 10 m |

TP35.5... Temperature probe with **Pt1000** 1/3 DIN 3-wire sensor. Operating temperature: -40...+300 °C. Dimensions: Ø 4 x 100 mm. AISI 316 stainless steel tube.

TP35.5.		CABLE LENGTH: **3** = 3 m, **5** = 5 m
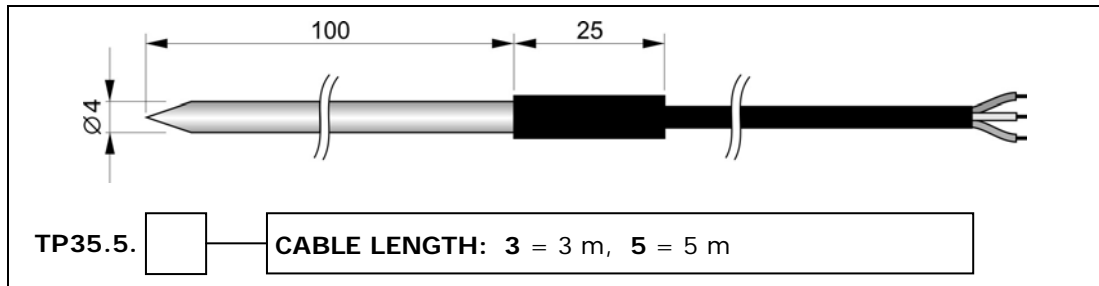
Thermocouple temperature probe

TP35K6.5 **K-type thermocouple** temperature probe with isolated hot junction. Operating temperature: -50...+750 °C. Accuracy: class 1 according to IEC 60584-2. Dimensions: Ø 3 x 150 mm. AISI 316 stainless steel tube. Cable length 5 m standard. Cable ending with free wires.
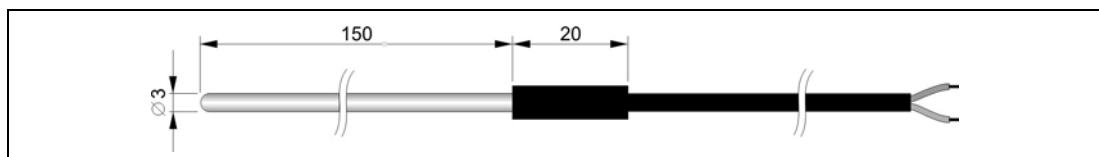
Illuminance probe

LP 35 PHOT Photometric probe for measuring illuminance, CIE photopic filter, spectral response according to the standard photopic curve, diffuser for cosine correction. Measuring range: 0.1...200,000 lux. Cable length 5 m.

LP BL Base with level. On request, to be assembled to the LP PHOT 35 probe upon ordering.

LP BL3 Adjustable wall support for LP PHOT 35 probe.

Accessories

HD35AP-S Additional copy of HD35AP-S basic software CD-ROM for system configuration, real-time measurement display and data download in the database. For Windows® operating systems.

HD35AP-CFR21 Advanced version of the HD35AP-S software including, in addition to the features of the basic software, the management of the data logging system in accordance with the **FDA 21 CFR part 11 recommendations**. For Windows® operating systems.

CPM8.2 Power supply cable. Length 2 m. M8 connector on one side, free wires on the other.

CPM8.5 Power supply cable. Length 5 m. M8 connector on one side, free wires on the other.

CPM8.10 Power supply cable. Length 10 m. M8 connector on one side, free wires on the other.

CPM8.SWD Adapting cable for connecting the SWD10 power supply. M8 connector on one side, jack female connector on the other.

SWD10 Stabilized mains power supply 100-240 Vac / 12 Vdc-1A.

HD75 Saturated solution to check Relative Humidity probes at 75% RH, includes ring adapter for 14 mm diameter probes, thread M12×1.

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HD33   Saturated solution to check Relative Humidity probes at 33% RH, includes ring adapter for 14 mm diameter probes, thread M12×1.

HD11   Saturated solution to check Relative Humidity probes at 11% RH, includes ring adapter for 14 mm diameter probes, thread M12×1.

MINICAN.12A Nitrogen cylinder for CO_2 calibration at 0 ppm. Volume 20 liters. **With adjustment valve**.

MINICAN.12A1 Nitrogen cylinder for CO_2 calibration at 0 ppm. Volume 20 liters. **Without adjustment valve**.

HD31.B3A   Adapter for the calibration of the CO_2 sensor with the nitrogen cylinder. Supplied with tube for connecting instrument and cylinder.

10/04/2017

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