

# CAPTEURS ENREGISTREURS AUTONOMES CONNECTÉS

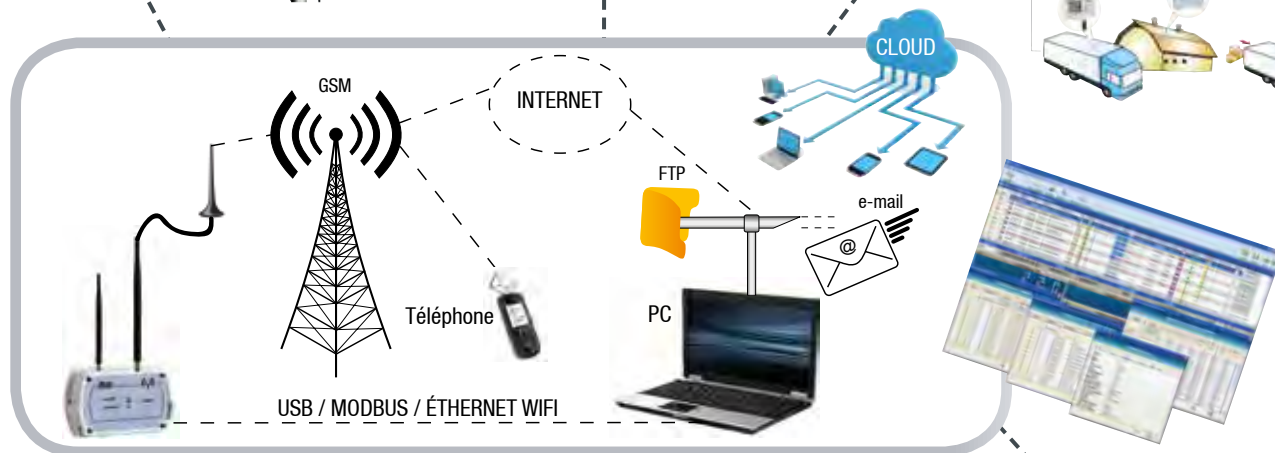
## AGRICULTURE



## INDUSTRIE MACHINES



## TRANSPORT MARCHANDISE



## SALLES BLANCHES



## SECTEUR ALIMENTAIRE

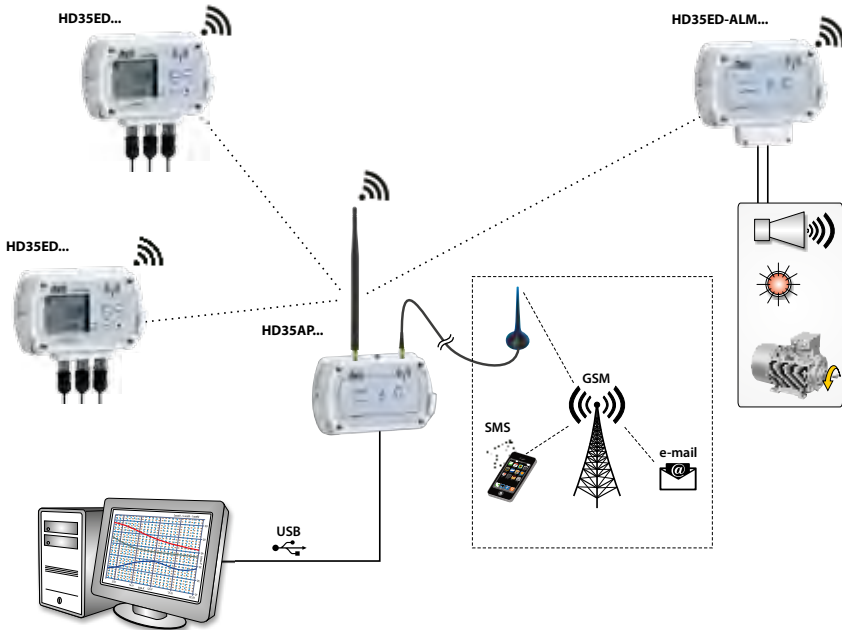


## LIEUX PUBLICS MUSÉES



# Signalling alarm system

- 2 alarm thresholds for each measured quantity
- acoustic signal emitted by the internal buzzer and alarm condition notified to access point
- alarm displayed on pc
- email sent by Access Point with cellular/Ethernet/Wi-Fi connectivity
- SMS sent by AP with cellular connectivity
- wireless remote alarm unit with 2 relay outputs for the activation of signaling devices (sirens, blinking lights)



# Software compatibility

from Microsoft **Windows xp**  
to **Windows 10**

# Battery life

NON-rechargeable Li-SOCI2 battery for measuring and outdoor repeating devices:

- 2 years typical autonomy with 30 s logging interval (may change significantly with measuring interval and RF/log frequency)
- 1,5 years when pressure sensors are used
- 1,5 years with CO<sub>2</sub> sensors and 2 min logging interval
- 1 year for alarm modules



Rechargeable Li-ion battery for access points and indoor repeaters (usually powered by USB or external adapter/power supply):

- up to 3 days autonomy

# Logging

- different measuring & logging interval
- data stored in internal memory of the data logger with cyclic / not cyclic logging
- data saved on both (AP and EDs) to increase system reliability
- logged value as the average of measures observed in the logged interval

# Transmitting range

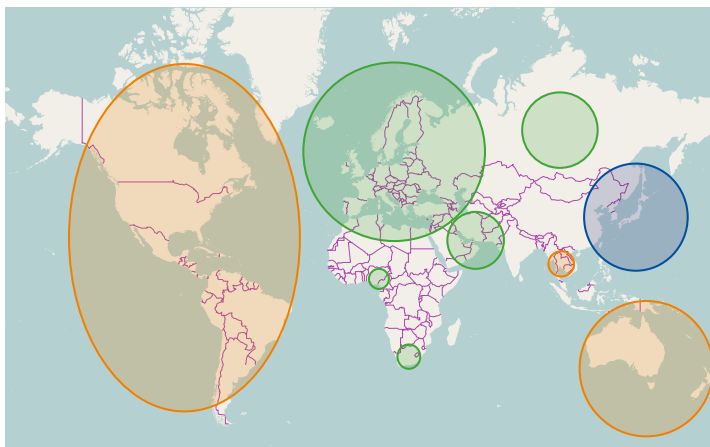
The transmission range in indoor applications depends on the walls thickness and material.

## Transmitting range (open field)

	HD35AP / HD35APS / HD35APR / HD35APW HD35AP3G / HD35RE... HD35AP3GMT	HD35APG / HD35APGMT	HD35APD
<b>868 MHz frequency band</b>			
HD35ED... with internal antenna	300 m	300 m	180 m
HD35ED... with external antenna / HD35RE...	>500 m	>500 m	180 m
<b>902-928 MHz frequency band</b>			
HD35ED... with internal antenna	180 m	180 m	180 m
HD35ED... with external antenna / HD35RE...	>500 m	>500 m	180 m
<b>915.9-929.7 MHz frequency band</b>			
HD35ED... with internal antenna	300 m	---	---
HD35ED... with external antenna / HD35RE...	>500 m	---	---

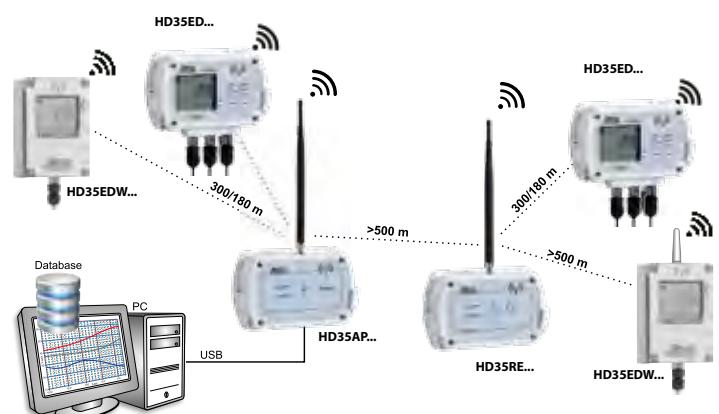
# RF frequencies

- 868 MHz (in compliance with the European normative ETSI EN 300 220)
- 902-928 MHz (in compliance with U.S. FCC part 15 section 247 and I.C. RSS-210 regulations)
- 915.9-929.7 MHz (in compliance with ARIB STD-T108 standard)

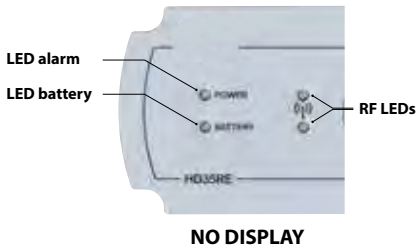


# RF signal repeater

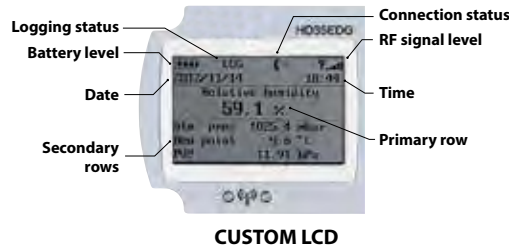
Single repeaters (or more repeaters in multi-hop network) are used to increase the distance between the access point and the end devices.



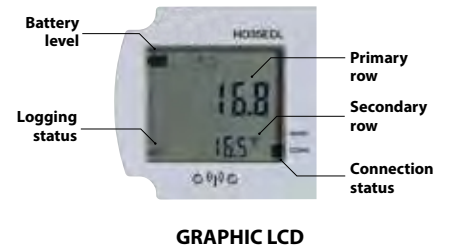
# Different display possibilities



NO DISPLAY



CUSTOM LCD



GRAPHIC LCD

## CFR21

The **HD35AP-CFR21** option allows the protection of recorded data and configuration of the instrument in response to **FDA 21 CFR part 11** recommendations. In particular, the following functionalities become available:

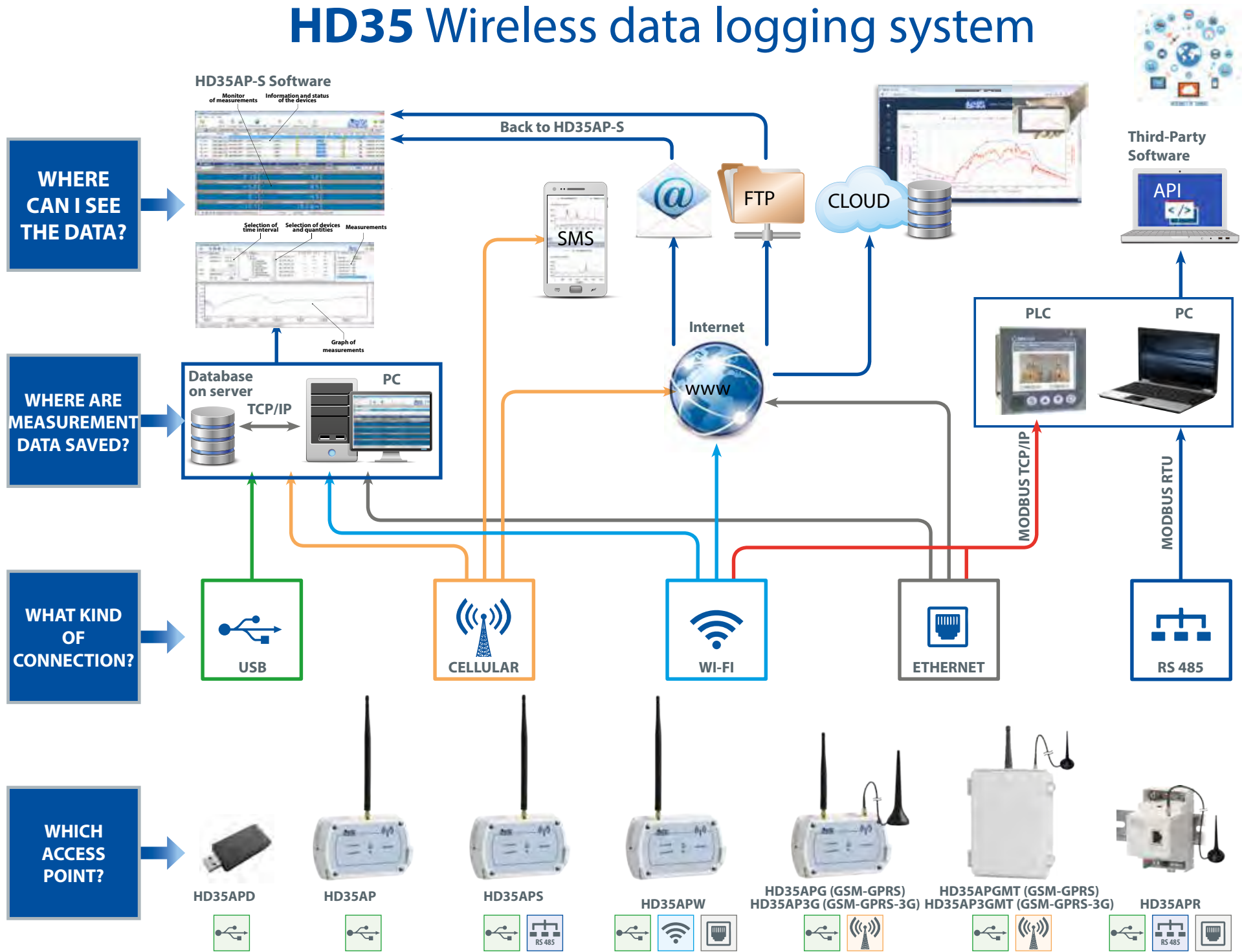
- the **traceability of activities** (audit trail) performed with the software; for example, which users connected and what changes were made to the instrument configuration.
- the **management of users' access** for the instrument configuration and viewing of data in the database. Each user can be assigned 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.



## HD35AP... base unit (access point) models and features of HD35AP-S basic software and HD35AP-CFR21 advanced software

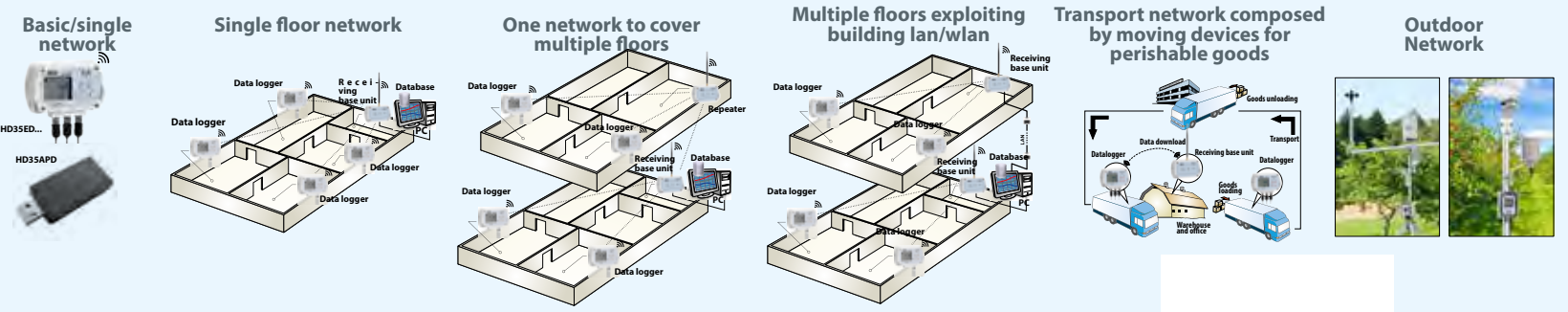
Available features:	HD35AP HD35APD HD35APS		HD35APG HD35AP3G HD35APGMT HD35AP3GMT		HD35APR		HD35APW	
	Basic	CFR21	Basic	CFR21	Basic	CFR21	Basic	CFR21
<b>Peripherals</b>								
USB connection	✓	✓	✓	✓	✓	✓	✓	✓
RS485 connection	Only HD35APS				✓	✓		
Wi-Fi connection							✓	✓
Ethernet connection					✓	✓	✓	✓
GSM/GPRS connection								
3G connection			Only HD35AP3G...					
<b>Supported protocols</b>								
USB proprietary	✓	✓	✓	✓	✓	✓	✓	✓
TCP/IP proprietary			✓	✓	✓	✓	✓	✓
Modbus RTU	Only HD35APS				✓	✓	✓	✓
Modbus TCP/IP					✓	✓	✓	✓
<b>Data download and viewing</b>								
Automatical data download in background	✓	✓	✓	✓	✓	✓	✓	✓
Reading and writing of data in the local Database	✓	✓	✓	✓	✓	✓	✓	✓
Personalized graphical viewing of the data	✓	✓	✓	✓	✓	✓	✓	✓
Viewing of the data in table format	✓	✓	✓	✓	✓	✓	✓	✓
Exporting of the data in text format	✓	✓	✓	✓	✓	✓	✓	✓
Printing of the report	✓	✓	✓	✓	✓	✓	✓	✓
Monitoring via software	✓	✓	✓	✓	✓	✓	✓	✓
Utility for the Database backup	✓	✓	✓	✓	✓	✓	✓	✓
Sending of data via e-mail			✓	✓	✓	✓	✓	✓
Sending of data to an FTP address and data download from FTP into the Database			✓	✓	✓	✓	✓	✓
Multi-client connection to the Database	✓	✓	✓	✓	✓	✓	✓	✓
Communication with Delta OHM Cloud			✓	✓	✓	✓	✓	✓
<b>Alarms</b>								
Alarm thresholds	✓	✓	✓	✓	✓	✓	✓	✓
Alarm SMSes			✓	✓				
Alarm e-mails			✓	✓		✓	✓	✓
<b>Configuration</b>								
Devices configuration	✓	✓	✓	✓	✓	✓	✓	✓
Change of configuration through password	✓	✓	✓	✓	✓	✓	✓	✓
Calibration of sensors (RH, CO, CO <sub>2</sub> , ΔP)	✓	✓	✓	✓	✓	✓	✓	✓
Password protection of calibration	✓	✓	✓	✓	✓	✓	✓	✓
Subdivision of data loggers into groups	✓	✓	✓	✓	✓	✓	✓	✓
Management compliant to FDA 21 CFR part 11				✓		✓		✓
Users management				✓		✓		✓
List of software activities				✓		✓		✓

# HD35 Wireless data logging system





# WHICH NETWORK TOPOLOGY?



# THE RIGHT END DEVICE FOR ANY ENVIROMENT/ APPLICATION ?

**Possible probes**

- M12 connector
- Screw terminal header
- Built-in sensors
- Multiple
- Universal input

**Indoor**

**Waterproof devices for indoor and outdoor**

**Metereological devices**

**Industrial devices**

# WHICH PARAMETERS CAN I MEASURE ?

**Temperature**  
○ NTC 10K  
○ PT100  
○ PT1000  
○ TC  
○ Solar panel temp.

**Relative humidity**

**UVA UVB UVC**

**Leaf Wetness**

**CO**

**PAR**

**Wind speed**

**Wind direction**

**Atmospheric pressure**  
○ Barometer

**Illuminance**

**Solar radiation**

**CO<sub>2</sub>**

**Differential pressure**

**Rain**

**Soil Moisture**

**Industrial signals**

- voltage 0...50mV; 0...1V; 0...10V
- current 0/4...20mA
- voltage free contact / counter input
- RS485
- MODBUS

# UNLIMITED APPLICATIONS!

**Agriculture & Greenhouses**

**Pharma - Medical - Laboratories - Storage**

**Museums - Buildings - Hall - Public Places - Institutions**

**Food - Warehouses**

**Renewables**

**Meteo - Hydro**

**General industry**

# HD35ED... data loggers in indoor-use housing

MODEL	MEASUREMENTS										OPTIONAL LCD		INPUTS	
	NTC 10K	Pt100 Pt1000	RH	Patm	ΔP	Lux	UV	CO	CO <sub>2</sub>	L Custom	G Graphic	Conn. M12	Built-in sensors	
HD35ED 7P/1 TC		•										•	1	
HD35ED 7P/2 TC		•										•	2	
HD35ED 7P/3 TC		•										•	3	
HD35ED N/1 TC	•										•		1	
HD35ED N/2 TC	•										•		2	
HD35ED N/3 TC	•										•		3	
HD35ED N TV	•											•		
HD35ED 1 TV			•								•			
HD35ED 1 TVI			•								•			
HD35ED 1N TC	•		•										1	
HD35ED 17P TC		•	•										1	
HD35ED 1N TV	•		•									•		
HD35ED 1N TVI		Sensor integrated in RH module	•								•			
HD35ED 1N/2 TC	•		•										2	
HD35ED 1N/2 TCV	•		•										1 T / RH	
HD35ED 14bN TC	•		•	•									1 Patm	
HD35ED 14bN TV	•		•	•										
HD35ED 14bN TVI		Sensor integrated in RH module	•	•							•			
HD35ED 1N4r...TV	•		•											
HD35ED 4r...			•											

MODEL	MEASUREMENTS										OPTIONAL LCD		INPUTS	
	NTC 10K	Pt100 Pt1000	RH	Patm	ΔP	Lux	UV	CO	CO <sub>2</sub>	L Custom	G Graphic	Conn. M12	Built-in sensors	
HD35ED 1NI... TCV	•		•				•					•	1 T / RH	
HD35ED 1NI TV	•		•				•					•		
HD35ED 14bNI...TCV	•		•	•			•					•	1 T / RH Patm	
HD35ED 14bNI TV	•		•	•			•					•		
HD35ED 1NIU TCV	•		•				•	UVA				•	1 T / RH	
HD35ED 1NIU TV	•		•				•	UVA				•		
HD35ED1NUBTCV	•		•				•	UVB				•	1 T / RH	
HD35ED1NUCTCV	•		•				•	UVC				•	1 T / RH	
HD35ED 14bNIU TCV	•		•	•			•	UVA				•	1 T / RH Patm	
HD35ED 14bNIU TV	•		•	•			•	UVA				•		
HD35ED 1NB			•									•		
HD35ED 1NAB		Sensor integrated in RH module	•									•		
HD35ED 14bNAB			•	•								•		
HD35ED H	Transmitters with 0/20 mA, 4/20 mA, 0/50 mV or 0/1 V output Pt100 / Pt1000 Sensors, K, J, T, N, E thermocouples Sensors with voltagefree contact or potentiometric output												•	3 terminal inputs

## Versions for weather stations:

MODEL	MEASUREMENTS							INPUTS	
	NTC 10K	RH	Patm	PYRA	Rain	Air speed	Air direction	Number of M12 connectors	Built-in sensors
HD35EDMTC	•	•	•	•	•	•	•	5	Patm



## HD35ED... data loggers in waterproof housing

MODEL	MEASUREMENTS											INPUTS	
	NTC 10K	Pt100 Pt1000	TC	Solar panel	RH	Patm	PYRA / Lux	Rain	Leaf	CO <sub>2</sub>	WBGT	Number of M12 connectors	Built-in sensors
HD35EDW 7P/1 TC		•										1	
HD35EDW 7P/2 TC		•										2	
HD35EDW 7P/3 TC		•										3	
HD35EDW N/1 TC	•											1	
HD35EDW N/2 TC	•											2	
HD35EDW N/3 TC	•											3	
HD35EDW NTV	•												•
HD35EDW K/4 TC			•									4 standard TC conn.	
HD35EDW 1 TV					•								•
HD35EDW 1 TVI					•								•
HD35EDW 1N TC	•				•							1	
HD35EDW 17P TC		•			•							1	
HD35EDW 1N TV	•				•								•
HD35EDW 1N TVI		Sensor integrated in RH module			•								•
HD35EDW 1N/2 TC	•				•							2	
HD35EDW 14bN TC	•				•	•						1	Patm
HD35EDW 14b7P TC		•			•	•						1	Patm
HD35EDW RTC							PYRA					1	
HD35EDW 1NR TC	•				•		PYRA					2	
HD35EDW 7PR TC				•			PYRA					2	
HD35EDW 1N7PRTC	•			•	•		PYRA					3	
HD35EDW RP TC							PYRA	•				2	



## HD35ED... data loggers in waterproof housing

MODEL	MEASUREMENTS											INPUTS	
	NTC 10K	Pt100 Pt1000	TC	Solar panel	RH	Patm	PYRA / Lux	Rain	Leaf	CO <sub>2</sub>	WBGT	Number of M12 connectors	Built-in sensors
HD35EDW P TC								•				1	
HD35EDW P TC-ALM								•				1	
HD35EDW NP TC	•							•				2	
HD35EDW 1NP TC	•				•			•				2	
HD35EDW 1NL TC	•				•				•			2	
HD35EDW STC												1	
HD35EDW S/2 TC		Soil temperature and volumetric water content										2	
HD35EDW S/3 TC												3	
HD35EDW DP TC						Level (*)		•				1 +cable gland	
<b>HD35EDW 1NI2 TCV</b>	•				•		Lux					1	T / RH
<b>HD35EDW 1NB... TV</b>	•				•					•			•
<b>HD35EDW 1NB... TCV</b>	•				•		Lux			•		1	T/RH/ CO <sub>2</sub>
<b>HD35EDW1NB... FTCV</b>	•				•		PAR			•		1	T/RH/ CO <sub>2</sub>
<b>HD35EDW WBGT</b>											•	3	
<b>HD35EDW H</b>	Transmitters with 0÷20 mA, 4÷20 mA, 0÷50 mV, 0÷1 V or 0÷10 V output Pt100 / Pt1000 Sensors, K, J, T, N, E thermocouples Sensors with voltagefree contact or potentiometric output											4 terminal inputs	
<b>HD35EDW-MB</b>	Sensors with RS485 Modbus-RTU output One sensor with voltagefree contact output (tipping bucket rain gauge)											terminal inputs	



## HD35

Wireless data logging system







**CONSTRUCTEUR** WWW.C2AI.COM *Depuis 1990*  
INSTRUMENTATION ET RÉGULATION DES FLUIDES

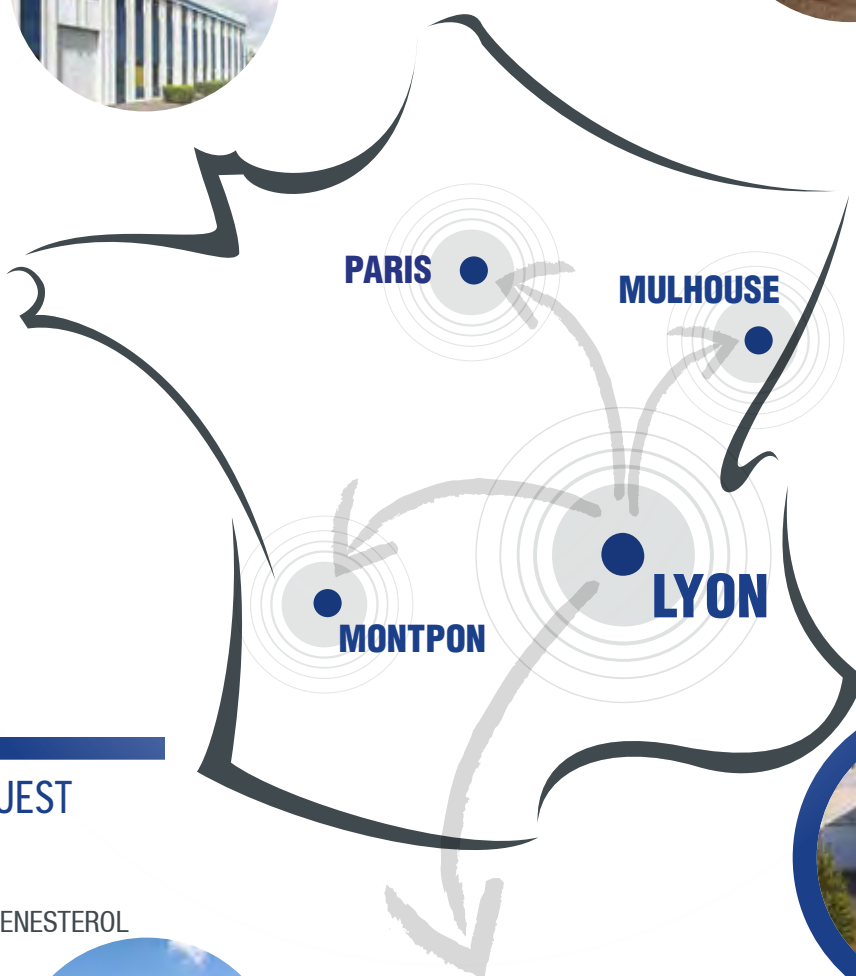
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