ELECTREX
the energy saving technology

Engineered and manufactured in Italy
Made in Italy
Pensato, progettato e prodotto in Italia

LOW ENERGY CONSUMPTION

Environmental Sensors & Deca

Multifunction Sensors

In addition to the energy vectors the Electrex monitoring and control solutions may include also environmental parameters. One way to integrate these parameters is by adding to the same monitoring system one or more sensors from the one provided by Electrex (and listed in this datasheet). The sensors may be connected in an Rs485 network (Deca Sensor RS485 or RS485 Node Box SI with Sensor Bus); or via the wireless protocol E-Wi 2.4 Ghz (based on the IEEE802.15 .4 standard) or E-Wi at 868MHz; or connected to the Ethernet / Wi-Fi via Electrex devices with built-in SI module (Net series and Libra panel with built-in SI module). Depending on the type of connection / sensor used it is possible to measure one or more parameters such as: ambient temperature, temperature on contact (e.g. PV panels, in-out boiler's water temperature), relative humidity, luminosity, pressure, differential pressure as well as count the impulses from energy, gas, water, etc. meters. The variety of sensors allow to set up applications for indoor/outdoor environmental parameters monitoring in the residential, commercial and industrial sectors. While in Energy Automation applications the sensors can be used for remote controlling, alarm and notification management and building automation.

Built-in and external sensors

Some of the devices are equipped with built-in, one or more, sensors (**Deca Sensor RS485, Deca Sensor E-Wi 2.4 and Deca Sensor E-Wi 868**); while more frequently the sensors are external (**the Net series with built-in SI module**, the **RS485 Node 12Vdc SI** and the **Libra net** and **Lyra net SI panel**). There are also devices that have both built-in and external sensors (the **TE Bus** versions of the **Deca Sensor RS485 and Deca Sensor E-Wi 2.4**).

Indoor and outdoor models DECA SENSOR

The multifunction sensors **Deca Sensor E-Wi and RS485** are suitable for indoor and outdoor (if appropriately protected).

'4DI TE Bus' models

The **Deca Sensor RS485 4DI TE BUS** and **Deca Sensor E-Wi 2.4 4DI TE BUS** multifunctional sensors versions are equipped with:
- 4 Digital Inputs (4DI) suitable for counting impulses coming from electrical energy, gas and water meters / counters (see paragraph for RS485 version);
- 1 Input for an external temperature probe (TE) measuring for example the temperature on contact of a PV panel;
-1 I^2C BUS to connect multiple sensors with various combinations (eg up to 8 parameters between temperature and relative humidity or 1 for temperature, 1 for relative humidity, 1 for brightness and 1 for air pressure). Alternatively, only one sensor can be connected to the bus for the detection of carbon dioxide (CO2).

'2DI 2DO TE Bus' and '4DO TE Bus' versions

In addition to the versions with 4 digital input are available also versions with 2DI and 2DO or 4DO:
- 2 Digital Inputs (2DI) can be used for counting (see here below for RS485 versions), while the 2 (2DO) or the 4 (4DO) digital outputs can be used for alarm states rated at 27 Vdc 27 mA compliant with DIN 43864 (available also in the 7 Vdc 30 mA versions).

Example of sensors: Sensor Bus Black Box, Sensor Bus Plate T, Sensor Bus Black Box Connectors and Sensor Bus White Deca.

RS485 '2DI 2DO TE Bus' & '4DI TE Bus' versions

Only for in the RS485 versions with 2 (2DI) or 4 (4DI) digital inputs, the inputs, in addition to the counting task, can be configured (hardware modification) as state indicators (e.g. ON/OFF status of machines, switches, etc.).

Deca Sensor RS485 and Deca Sensor E-Wi 2.4 *

Parameters	*Type*	*Range*
Temperature (T)	**T inst**	**-20 … +80°C (wider ranger on request)**
	T average	
	T min	
	T max	
Relative Humidity (H)	**RH inst**	**0 … 100%**
	RH average	
	RH min	
	RH max	
Luminosity (L) (programmable for internal or external use)	**Lx inst**	**Indoor: 0 … 4.000 lux Outdoor: 0 … 65.000 lux**
	Lx media	
	Lx min	
	Lx max	
External TE Temperature	**T inst**	**-40 … +80°C**
	T average	
	T min	
	T max	
	Or Analog Input	**0 … 5Vcc**
Atmospheric pressure (B)	**B inst**	**800 … 1.100 mbar**
	B average	
	B min	
	B max	
Counters (for 2 or 4 Digital Inputs) (RS485 version, with suitable hardware conf., also status indicator)	**C**	**100 Hz**
Alarm outputs (for 2 or 4 digital outputs)	**Status ON-OFF**	**27Vdc – 27mA** (DIN 43864) Available also in 7Vdc - 30mA version

* depending on the version.

Sensor Bus measures *

Parameters	Type	Range
Temperature (T)	T inst T average T min T max	-20 … +80°C (wider ranger on request)
Relative Humidity (H)	RH inst RH average RH min RH max	0 … 100%
Luminosity (L) (programmable for internal or external use)	Lx inst Lx media Lx min Lx max	Indoor: 0 … 4.000 lux Outdoor: 0 … 65.000 lux
Atmospheric pressure (B)	B inst B average B min B max	800 … 1.100 mbar
CO2 air concentration	CO_2 ist CO_2 average CO_2 min CO_2 max	0 … 2.000 ppm
Node Box CO2 air concentration	CO_2 inst CO_2 average CO_2 min CO_2 max	400 … 2.000 ppm
Particulate material [PM1.0, PM2.5, PM4, PM10]	PM ist PM media PM min Pm max	0 … 1.000 µg/m3
Volatile Organic Compounds [VOC]	PM ist PM average PM min Pm max	0 … 1.000 ppm
Differential Pressure (DP) Temperature (T)	DP & T ist DP, T avg DP & T min DP & T max	-500 Pa … +500 Pa -20 … +80°C

* depending on the version.

Deca Sensor Alarms

The **Deca Sensor E-Wi 2.4 and RS485** include a Modbus register regarding the state of the 4 programmable alarms. Each alarm is independent and bindable to one of the available parameters (e.g. instantaneous or average temp., instantaneous or average relative humidity, luminosity, external optional temp., counting digital input, etc. for a total of 4+4 logic combinations). The alarms can refer to the same parameter in order to have more thresholds. Each alarm can be set on the max or min value. It is also possible to set the hysteresis (in % on the threshold) and the delay of activation on each alarm (from 1 sec. to 8 hours). If there are 2 or 4 digital outputs, these are combined with the relative logic outputs of the alarms.
The battery alarm (only for version E-Wi battery powered) instead is automatic and it is activated when the remaining power is less than 30%.

Deca Sensor E-Wi 2.4 and RS485 calibration

In the **Deca Sensor E-Wi 2.4 and RS485**, it is also possible to define the offset, that is a value which can be added or subtracted from the measurement made, and the gain, that is a multiplicative constant. This will permit to apply compensations in order to, for example, correct the positioning of the sensor if installed in a different position from the original one.

Measurement setup

For each sensor it is possible to define if the measure should be disabled, if it should be instantaneous, an average or the median.

Deca Sensor E-Wi 2.4 advanced settings

The **Deca Sensor E-Wi Battery**, in order to make the battery last longer, uses a communication method which alternates periods of "sleep" and periods of "wake up" lasting the needed time to make the measures and transmit the data. The time between the two "wake up" periods is called '*rendez-vous*' interval.

The 'rendez-vous' interval can be set between 30 seconds and 24 hours, e.g. 15 minutes and it is also possible to configure the samples number (how many times the Deca Sensor should wake up and measure without transmitting, between two rendez-vous). It is also possible to choose the communication channel among 16 available channels.

In E-Wi version, with external power supply, it is possible to choose between the "low power" mode and the "always ON" mode.

Deca Sensor with the RS485 port and the switching power supply 230Vac – 5Vdc

Deca Sensor features

- E-Wi or RS485 versions. All the Deca Sensor E-Wi can be equipped with an RS485 port adding the Deca Sensor Option Module RS485 5V Cod. PFATV01-00, the power supply 5Vdc Cod. PFTP000-R2 and updating the firmware.
- 2 or 4DI (2 or 4 digital inputs): for pulse counting (or detection of ON – OFF status if version RS485).
- 2 or 4DO (2 or 4 digital outputs): for ON – OFF alarms. Rated at 27 Vdc 27 mA compliant with DIN 43864 (available also versions rated at 7 Vdc 30 mA).
- External TE for external sensors. Max. length of the cable: 5 mt.
- Bus for up to 4 sensors among: up to 4 x temperature, 1 x humidity, 1 x luminosity, 1 x atmospheric pressure. Different sensor combinations on request (e.g. 4 temperature sensors). Can be wired as in-out mode (as the one used for the RS485) or in a radial mode. Max. length for the Bus is 20 mt.
- E-Wi protocol based on the standard IEEE 802.15.4. Speed 250kbps and frequency 2.4GHz.
- Transceiver 'HI' transmitting up to 13,7dBm (further, up to 20 dBm only where permitted) [-102dBm in reception]. Range: Up to 800m in an open space.
- Auto-reset in case of temporary barrier that will prevent the communication.
- Alarms on 4 parameters and automatic alarm when battery is below 30%.
- Configuration and data retrieve through Energy Brain software. Needs an Modbus RS485 address.

- High accuracy and stability over time
- Accuracy: ±0,5 °C between +10 …+50°C
  ±1,5 °C on extremes
  ±2% relative humidity
  ± 0,1 lux
- Power supply: 5Vdc
  battery 3,6V *(for E-Wi Battery)*
- Terminals: Spring clamp max. 1,5 mm^2
- Easy to install
- Wall mounting
- Black or White polycarbonate external case
- Size (l x w x h): 80 x 80 x 25 mm

RS485 Node 12Vdc SI features

Integrates the SI module with the RS485 interface. Equipped with an RJ45 female port for connection of various sensors via UTP cable. For e.g., up to 8 parameters if connected 1 x Sensor Bus Box TH, 2 x Sensor Bus Box TH 0,2 and 2 x Sensor Bus Box T. For a total of 5 temperature and 3 relative humidity variables.

RS485 Node 12Vdc SIO features

Integrate the SIO module (Sensors input and Inputs / Outputs) with RS485 interface. RJ45 female port for connection with UTP cable of different sensors. Besides those of the SI model can be connected also the RJ Box Buses in the various versions of inputs and outputs and air quality sensors. Dimensions: 38 x 73 x 20mm including fixing slots.

Other Sensors

- Temperature sensors (T) with a typical accuracy of ±0,5°C and various ext. cases. Addressable from 1 to 4. For the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI.

- Temperature sensors (T) with a typical accuracy of ±0,2°C and various ext. cases. Addressable from 1 to 4. For the Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI.

- Temperature and Relative Humidity sensors (TH) with a typical accuracy of ±0,2°C and ±1,8% and various ext. cases. Non addressable. For the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI.

- Temperature and Relative Humidity sensors (TH) with a typical accuracy of ±0,2°C and ±1,5% and various ext. cases. Addressable from 1 to 2. For the Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI.

- Luminosity sensors (L), for indoor (0-4.000Lux) or outdoor (0-65.000Lux) use. Non addressable. For the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI.

- Pressure sensors (B) from 800 to 1.100 mbar. Non addressable. For the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI.

- Differential pressure sensors (DP) from -500Pa to +500Pa and Temperature from -20°C to +80°C; typical accuracy of ±1°C. Non addressable. For the Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI.

- Ambiental CO_2 sensors from 0 to 2.000 ppm. Accuracy: ±50ppm. Non addressable. Requires a +5Vdc power supply. For the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI. Must be the only sensor connected (no other sensors the host device).

- Ambiental CO2 air and luminosity sensor. Measuring range: 0..40.000 ppm and for luminosity 0 - 4.000 lux or 0 - 65.000 lux. Not addressable. + 3.3Vdc power supply from the SIO bus. Can be used with SIO Deca Sensors, with RS485 SIO Nodes and Lyra HVAC.

- Particle dust sensor or PM Particulate Matter. Particulate size: PM1.0, PM2.5, PM4, PM10. Measuring range 0… 1,000 microg / m3. Not addressable. + 3.3Vdc power supply from the SIO bus. Can be used with SIO Deca Sensors, with RS485 SIO Nodes and Lyra HVAC.

- Sensor of volatile organic compounds (VOC). Measuring range: 0 ... 60000 ppb. Not addressable. + 3.3Vdc power supply from the SIO bus. Can be used with SIO Deca Sensors, with RS485 SIO Nodes and Lyra HVAC.

- Temperature and Luminosity sensors (TL). Non addressable. For the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI.

- Temperature and Luminosity sensors (TL). Non addressable. For the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI.

- Temperature, Relative Humidity and Luminosity sensors (THL). Non addressable. For the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI.

- Sensor External TE temperature sensors (T) in various ext. cases. Only for Deca Sensor TE Bus, Libra and Net series with built-in 4NTC module.

How to order

Type	Code
Temperature sensors (for the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI):	
SENSOR BUS BLACK BOX T	PFATBTQ-00B
SENSOR BUS WHITE BOX T	PFATBTQ-00W
SENSOR BUS BLACK DECA T	PFATDTQ-00B
SENSOR BUS WHITE DECA T	PFATDTQ-00W
SENSOR BUS CYLINDER T	PFAT1TQ-00
SENSOR BUS PLATE T	PFAT2TQ-00
Temperature sensors ± 0,2°C (Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI):	
SENSOR BUS BLACK BOX T 0,2	PFATBAQ-00B
SENSOR BUS WHITE BOX T 0,2	PFATBAQ-00W
SENSOR BUS RJ BLACK BOX T 0,2	PFATRAQ-00B
SENSOR BUS RJ WHITE BOX T 0,2	PFATRAQ-00W
SENSOR BUS BLACK DECA T 0,2	PFATDAQ-00B
SENSOR BUS WHITE DECA T 0,2	PFATDAQ-00W
Temperature ± 0,2°C and Rel. Humidity ± 1,8% sensors (for the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI):	
SENSOR BUS BLACK BOX TH	PFATBHQ-00B
SENSOR BUS WHITE BOX TH	PFATBHQ-00W
SENSOR BUS BLACK DECA TH	PFATDHQ-00B
SENSOR BUS WHITE DECA TH	PFATDHQ-00W
Temperature ± 0,2°C and Rel. Humidity ± 1,5% (for the Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI):	
SENSOR BUS RJ BLACK BOX TH 0,2	PFATREQ-00B
SENSOR BUS RJ WHITE BOX TH 0,2	PFATREQ-00W
SENSOR BUS BLACK DECA TH 0,2	PFATDEQ-00B
SENSOR BUS WHITE DECA TH 0,2	PFATDEQ-00W
Luminosity sensors (for the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI):	
SENSOR BUS BLACK BOX L	PFATBMQ-00B
SENSOR BUS WHITE BOX L	PFATBMQ-00W
SENSOR BUS CYLINDER L	PFAT1MQ-00
Pressure sensors (for the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI):	
SENSOR BUS BLACK BOX B	PFATBNQ-00B
SENSOR BUS WHITE BOX B	PFATBNQ-00W
SENSOR BUS RJ BLACK BOX B	PFATRNQ-00B
SENSOR BUS RJ WHITE BOX B	PFATRNQ-00W
Differential Pressure sensors (for the Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI):	
SENSOR BUS RJ BLACK BOX DP	PFATRDQ-00B
SENSOR BUS RJ WHITE BOX DP	PFATRDQ-00W
CO_2 sensors (for the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI):	
SENSOR BUS BLACK BOX CO2	PFATBCQ-00B
NOTE: the Sensor CO2 must be powered with a 5Vdc power supply.	
Temperature and Luminosity sensors (for Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI):	
SENSOR BUS BLACK BOX T L	PFATBFQ-00B
Temperature, Relative Humidity and Luminosity sensors (for the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI):	
SENSOR BUS BLACK BOX T H L	PFATBLQ-00B
Temperature, Relative Humidity, Luminosity and Pressure sensors (for the Deca Sensor TE Bus, Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI):	
SENSOR BUS BLACK BOX T H L B	PFATBRQ-00B

Continues - ->

How to order

Type	Code
SENSOR BUS WHITE BOX T H L B	PFATBRQ-00W
SENSOR BUS RJ BLACK BOX T H L B	PFATRRQ-00B
SENSOR BUS RJ WHITE BOX T H L B	PFATRRQ-00W
Temperature sensors (for the Deca Sensor TE Bus and Net series with built-in 4NTC module):	
SENSOR EXTERNAL PLATE TE	PFAT2TS-00
SENSOR EXTERNAL EYELET TE	PFAT3TS-00
SENSOR EXTERNAL NAKED TE	PFAT4TS-00
NOTE: to each Deca Sensor 4DI TE BUS can be connected a single Sensor External TE while for the Net series with built-in 4NTC module can be connected up to 4 Sensor External TE.	
Temperature sensors (for the Net series with built-in 4NTC module):	
SENSOR EXTERNAL PLATE TE CUSTOM 01	PFAT2TC-00
NOTE: other customized versions of Sensor External on request.	
Input and/or output Box (for the Net series with built-in SI module, Libra and RS485 Node Box 12Vdc SI):	
BUS RJ BOX 12VDC 4DI	PFATR0Q-N4
RS485 Node versions:	
RS485 NODE 12VDC SI	PFATR01-T4
Deca Sensor RS485 and wireless E-Wi versions:	
DECA SENSOR RS485 T 5V	PFATUT1-0C
DECA SENSOR RS485 T H 5V	PFATUH1-0C
DECA SENSOR RS485 T H L 5V	PFATUL1-0C
DECA SENSOR RS485 T 4DI TE BUS 5V..	PFATUT1-NC
DECA SENSOR RS485 T H 4DI TE BUS 5V..	PFATUH1-NC
DECA SENSOR RS485 T H L 4DI TE BUS 5V..	PFATUL1-NC
DECA SENSOR RS485 T H L 2DI 2DO TE BUS 5V..	PFATUL1-QC
DECA SENSOR RS485 T H L 4DO TE BUS 5V..	PFATUL1-PC
DECA SENSOR E-Wi HI T BATTERY	PFATUTH-0B
DECA SENSOR E-Wi HI T H BATTERY	PFATUHH-0B
DECA SENSOR E-Wi HI T H L BATTERY	PFATULH-0B
DECA SENSOR E-Wi HI T 4DI TE BUS BATTERY 5V..	PFATUTH-NB
DECA SENS. E-Wi HI T H 4DI TE BUS BATTERY 5V...	PFATUHH-NB
DECA SENS. E-Wi HI T H L 4DI TE BUS BATTERY 5V.	PFATULH-NB
DECA SENS. E-Wi HI T H L 2DI 2DO TE BUS BAT.5V.	PFATULH-QB
DECA SENS. E-Wi HI T H L 4DO TE BUS BAT.5V.	PFATULH-PB
NOTE: other customized versions on request.	
All the Deca Sensor E-Wi may be equipped with an RS485 port adding the option Cod. PFATV01-00 Deca Sensor Option Module RS485 5V.	
Deca Sensor RS485 and wireless E-Wi accessories:	
DECA SENSOR LED PULSE COUNTER	PFAT0IS-01
SENSOR LED PULSE C. MOUNTING BRACKET	PFAT000-01
DECA SENSOR OPTION MODULE RS485 5V	PFATV01-00
DECA SENSOR LITHIUM BATTERY	PFAT000-0B
SWITCHING POWER SUPPLY 5VDC 600mA	PFTP000-R2
DECA SENSOR EXTERNAL ENCLOSURE	PFAT0T0-01

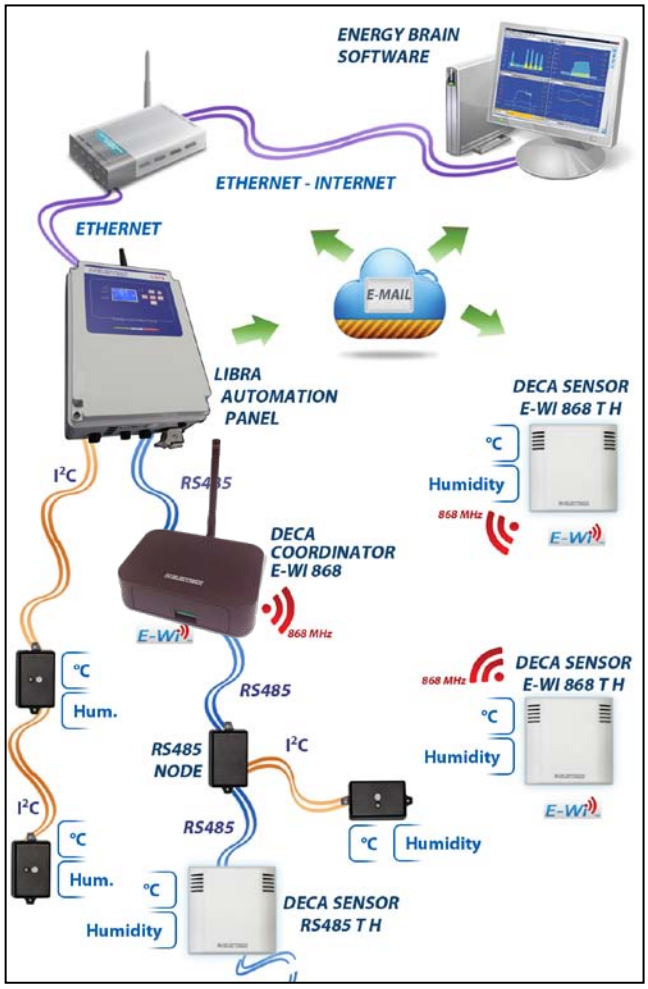
Deca Coordinator RS485 E-Wi 868
Deca Sensor E-Wi 868 T H
Deca Coordinator RS485 WM-Bus 868

The **Deca Coordinator RS485 E-Wi 868 12Vdc** is a device that can be connected in RS485 subnet to a Gateway datalogger of the Net families (Libra net, Kilo net, Exa net, Femto ECT net, Lyra net, etc.).

It is the coordinator of the wireless network on the frequency of 868MHz (Wireless) managing 'end devices' such as the multifunction sensors **Deca Sensor E-Wi 868 TH**, which transmit the measurements of temperature and relative humidity via radio at 868MHz using the **E - Wi** protocol.

The Deca Sensor E-Wi 868, in their elegant and functional enclosure, are the ideal solution for environmental and process measurement & monitoring applications in indoors and outdoors in the residential, commercial and industrial sectors. They can be used in an Electrex energy monitoring network, and in combination with Electrex devices of the Net series, in several other Energy Automation applications, including: remote control, alarm management and building automation.

Example of an E-Wi 868 monitoring network



In the network example the Deca Coordinator E-Wi 868 is connected in RS485 subnet to a Libra net and communicates via radio at 868 MHz with the various Deca Sensor E-Wi 868 TH which measure the temperature and relative humidity. In the RS485 network there are also other sensors that measure temperature and relative humidity in different areas.

Structure of the E-Wi 868 network

In 868MHz E-Wi wireless networks, each device is identified by a unique address. Up to 12 E-Wi 868 Coordinators can be connected to each network and up to 32 Deca Sensor E-Wi 868 devices can be associated to each Coordinator up to a maximum of 255 E-Wi 868 devices.

The E-Wi final devices are of the RFD type:

- RFD (reduced functionality device) is a device that is dormant most of the time and only occasionally wakes up to exchange information with the Coordinator with which it is associated (rendezvous event), called main device.

The E-Wi 868 network

For the E-Wi 868 wireless network to be established, the Coordinator must be turned on. At this point, each time a new wireless device is turned on, it will send the main device a request for association.

A device that requires to be part of the network is only accepted if the signal strength level at which it connects to the main device is higher than 7%. In the event that, during operation, the signal level is at zero for three consecutive messages, the device will be disconnected from the network.

Deca Sensor E-Wi 868 T H for indoor and outdoor applications

The Deca Sensor E-Wi 868 T H multifunctional sensors have been designed to be used both indoors and outdoors (as long as they are properly protected).

Deca Sensor E-Wi 868 T H measures

Parameter	*Type*	*Range*
Temperature	**T ist**	**- 10 … + 60°C**
Relative humidity	**RH ist**	**0 … 100%**
Battery Level*		**0 … 100%**

* A battery alarm can be generated via the Net type devices.

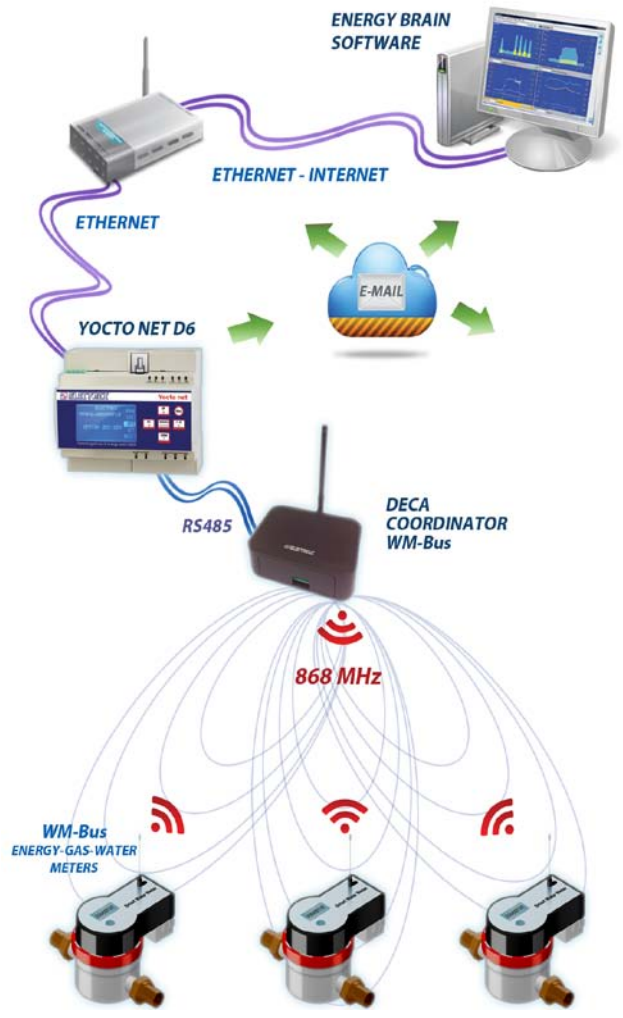
Advanced Deca Sensor E-Wi 868 configurations

To make the battery last longer in the Deca Sensor E-Wi 868 TH, the "low energy" mode is used, which is a communication technique that alternates periods in which the Deca Sensor “falls asleep” to consume less, then it “wakes up” for the period necessary to measure and transmit the measure and then goes back “to sleep”. The period between an awakening and the next one is called in the technical term "*rendez vous*" interval. It is possible to select the *rende zvous* interval between 1 minute and 24 hours, for example 15 minutes.

Deca Coordinator RS485 WM-Bus 868 12Vdc

The **Deca Coordinator RS485 WM-Bus 868 12Vdc** is a device that can be connected in an RS485 subnet to a Gateway datalogger of the Net families (Libra net, Kilo net, Exa net, Femto ECT net, Lyra net, etc.).

It performs the role of coordinator of the radio network, star type, on the frequency of 868MHz (Wireless) managing WM-Bus (Wireless Meter-Bus) 'end devices' such as flow meters (water, gas, etc.) that transmit in WM-Bus.



Other types of Deca Coordinator 868 or 169

It is possible to evaluate, on request, the development of a Deca Coordinator with radio transmission at frequencies of 868MHz or 169MHz with different protocols, for example LORA.
The Deca Coordinator can also be included in a different enclosure such as that of the Deca Sensor [(l x w x h): 80 x 80 x 25 mm.

Deca Coordinator E-Wi 868 T H features

Transceiving via 868MHz with E-Wi protocol:
speed: ..... 19.200 bps
transmission..... up to 14dBm
reception ..... -109dBm
External antenna

Terminal board with 5 screw terminals, three of which are galvanically insulated for the RS485 port and two for the 12Vdc power supply (can be supplied from the Libra net)
Terminals .....screw terminal (for power supply and RS485)
Maximum cable section..... 1 mm²
Self consumption..... ≤ 1VA
Working temperature.....-10/+60 °C
Relative Humidity .....95% non-condensing
Protection degree..... IP40 Front panel, IP20 Terminals side
Mounting ..... Wall mounting or resting on a horizontal plane
Enclosure ..... black in self-extinguishing ABS UL 94 V0
Dimensions (LxWxH):..... 125 x 40 x 85 mm

Deca Sensor E-Wi 868 T H features

High precision and high stability over time
Accuracy .....typical accuracy ±0,2 °C
.....typical accuracy ±1,8% umidità relativa
Battery powered (not included) ..... type AA Lithium-Thionylchlorid, voltage: 3,6 Volt, capacity: 2,4 / 2,6 Ah
*Battery life ..... up to 7 years**
Protection degree..... IP30
Led ..... red LED for signaling device ON and transmission
Mounting ..... Wall mounting
Enclosure ..... white in self-extinguishing ABS UL 94 V0
Dimensions (LxWxH):.....80 x 80 x 25 mm

** Battery life may vary due to its technical characteristics and the conditions of use of the Deca Sensor E-Wi 868 T H; The typical situation is related to measurements every 15 minutes and at least sufficient radio signal.*

Standards

Safety..... IEC EN 61010-1
E.M.C. .....EN 301489-1 and -3
RF spectrum efficiency..... EN 300 220-2 v.2.3.1

How to order

Type	Code
E-Wi 868MHz:	
Deca Coordinator RS485 E-Wi 868 12Vdc.....	*PFATM0IK04B*
Deca Coordinator RS485 E-Wi 868 12Vdc SI	*PFATM0IKT4B*
Deca Sensor E-Wi 868 T H Battery	*PFATDHI-0BW*
WM-Bus 868MHz:	
Deca Coordinator RS485 WM-Bus 868 12Vdc	*PFATM0UK04B*
Deca Coordinator RS485 WM-Bus 868 12Vdc SI	*PFATM0UKT4B*

NOTES

Building code table for Sensor Bus and Deca

CODE P F A T _ _ _ - _ _ _

Type		*Code*
BUILDING CODE		***PFAT B T Q - 0 0 B***
Sensor Bus, TE & Deca Sensor		
Case / Type	Box with wire = **B**	
	Deca case = **D**	
	Box with 2 x RJ45 ports = **R**	
	Cylinder terminal = **1**	
	Terminal with rectangular section = **2**	
	Eylet terminal = **3**	
	Terminal without container = **4**	
	Deca Sensor RS485 2,4 GHz = **U**	
	Container size 125 x 40 x 85 = **M**	
Measured variable	none = **0**	
	Temperature ±05°C = **T**	
	Temperature ±02°C = **A**	
	Temp. ±02°C & Rel. Humidity ±1,8% = **H**	
	Temp. ±02°C & Rel. Humidity ±1,5% = **E**	
	Luminosity = **M**	
	Pressure = **N**	
	Differential Pressure = **D**	
	CO_2 = **C**	
	Ambient CO_2 and Luminosity = **K**	
	Particulate matter - PM = **P**	
	Volatile Organic Compounds - VOC = **K**	
	Temperature & Luminosity = **F**	
	Temp. , Rel. Humidity & Luminosity = **L**	
	Temp. , Rel. Humid., Lumin. & Press. = **R**	
Communication	RS485 = **1**	
	E-Wi 2.4GHz = **H**	
	E-Wi 868MHz = **I**	
	Sensor Bus (I^2C) = **Q**	
	Sensor on analog input = **S**	
	Wireless M-Bus 868MHz = **U**	
	Custom Sensor 1 on analog input = **C**	
Special features	Coordinator = **K**	
Input / Output	none = **0**	
	2 Digital Inputs & 2 Digital Outputs = **Q**	
	4 Digital Inputs = **N**	
	4 Digital Outputs = **P**	
	Sensor Input = **T**	
Power Supply	none = **0**	
	Battery = **B**; 5Vdc = **C**; 12Vdc = **4**	
Color	Black = **B**; White = **W**	

ELECTREX the energy saving technology

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