Sensing the environment

MeteoSense 4.0 main unit

MN-0129-LL / MN-0130-LL / MN-0131-LL

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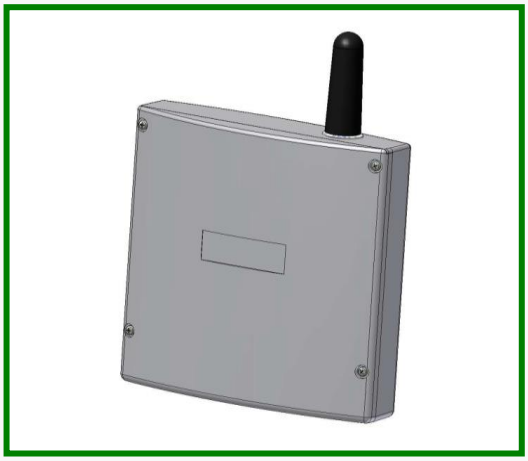
Reliable data acquisition unit and datalogger.
Data transmission:
- GPRS/LTE CAT M-1 e NB-IoT with custom TCP/IP protocol and FTP
- LAN Ethernet with custom TCP/IP protocol
- MODBUS RTU over RS485

Alphanumeric display for data visualization, connection and diagnostics.
Additional storage on MicroSD Card.
USB configuration interface.
Integrated charger for solar panel power supply (up to 60 W), or mains with optional back-up battery.
Acquisition of meteorological and agronomic sensors.
Outdoor case in UV resistant ABS plastic.
Optional IoT wireless units expansion.

APPLICATIONS:
Professional Meteorology
Agro-meteorology
Airfields / Heliports
Real-time environmental monitoring



Description

The MeteoSense 4.0 main unit represents the evolution of the best-selling MeteoSense 2.0 station, and offers a number of advanced features.
The unit is able to interface different types of sensors, both analog and digital output, and transfer data to a remote server via LTE connectivity in CAT M-1 and NarrowBand IoT modes (where present) and in "fallback" mode on the traditional 2G (GPRS) network (MN-0129-LL). Ethernet LAN connectivity is always available with RJ45 connector (MN-0130-LL) or via ModBus interface on RS485 (MN-0131-LL); it is designed for solar or mains power supply (in this case an optional back-up battery can be provided).
The unit provides also for internal diagnostic data, and complete remote management to minimize interventions in the field.

All sensor connections are made via an easy terminal block, which eliminates the need for cable glands, and makes installation operations much easier and faster.
The unit is designed to withstand the elements over time, and the ABS case guarantees reliability over time.

The alphanumeric LCD display, together with the rotary encoder, allows to display unit status (connection parameters, sensor measurements, etc.) in any condition and the setting of the basic parameters, thus facilitating installation and maintenance.

The unit also has a MicroSD card slot, for permanent storage of all data regardless of their transmission, and a USB port for configuration in the field.

Electrical specification:

Power supply: 12 Vdc, embedded electronic charger for solar panel operation. Optional external adapter for fixed power supply.
Reverse polarity protection.
Remote monitoring of battery voltage, charge status, panel voltage.
Average power consumption: <1W

Mechanical specification:

Operating temperature: -30 °C +70°C
Environmental protection: IP 56
Housing: ABS, UV resistant for outdoor operation
Size: 240x240x80 mm

Supported sensors:

THSense: air temperature/humidity sensor with solar shield;
E-Leaf: Two channel-output leaf wetness sensor;
TerraSense: soil moisture and temperature sensor (up to 3 unit on each station);
EC Sense: soil conductivity sensor**;**
Rain collector, tipping bucket;
Wind speed and direction sensor;
Visible and UV solar radiation sensors;
Barometer and internal case temperature.
PT1000 temperature sensor.
Up to 4 contact-closure inputs
Up to 12 analog input channels
2xRS485 interfaces

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Additional features:

Mounting accessories included.
Real-time data transmission.
40 days of continuous operation with battery, even without solar panel charging **.
USB port for configuration and data downloading.
SD card slot.
16x2 LCD Display Alphanumeric Characters.
Rotary encoder for LCD screen selection.
2x Optional Logic Inputs (NPN Logic).
2x Optional configurable outputs (NO / NC dry contacts).
MicroSIM card available on request.

Installation:

MeteoSense 4.0 is very easy to be installed, since the equipment is supplied from Netsens already configured, with a "turnkey" approach, including all mounting accessories.
If solar panel power supply option is required, please check that the panel is oriented toward South (in Northern Hemisphere) and free from surrounding obstacles.

Figure 1 –MeteoSense 4.0 station (example of configuration)

Figure 2 – Data interface

Traceability, packaging and shipping:

Each MeteoSense 2.0 unit is individually tested and a unique identifying serial number is assigned, which allows tracking over time; this code can be printed on the shipping carton, on the unit itself or alternatively on the appropriate section of the user manual. Please keep this code carefully, to be communicated to the technician in case of failure or replacement.
Units are sold individually equipped with its own package, which will protect the sensor during transport.
If the box is open or visibly damaged, don't accept delivery by courier. Do not open the box with knives, cutter blades, which could damage the sensor or its cable.

Ordering Codes:

MN-0129-LL	MeteoSense 4.0 2G/LTE main unit
MN-0130-LL	MeteoSense 4.0 LAN main unit
MN-0131-LL	MeteoSense 4.0 ModBus version

MeteoSense 4.0 main unit

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Warranty:

Netsens s.r.l. warrants that the above described components will be free from defects in material and workmanship for the following time period from the purchasing:

- Two years for items purchased by final users for non professional use;
- One year for items purchased by companies and organizations for professional use.

This warranty is valid only if all the components are used accordingly to the Manufacturer's indication and to the recommendations included in this User Manual.
This warranty does not cover: batteries, fuses, lights and any other consumable equipment. Also this warranty does not apply for damages due to neglect, misuse, contamination, alteration, accident or abnormal conditions of operation or handling, including failures caused by use outside Manufacturer specifications.
This warranty covers the original purchaser and it is not transferable.
If one or more components are supposed to be defective, contact Netsens s.r.l. or your local reseller in order to obtain a valid return authorization.
Netsens s.r.l. shall not be liable for any special, indirect, incidental or consequential damages or losses, arising from any cause.
Please contact Netsens s.r.l. for any additional information concerning warranty.

Disposal of Waste Electrical & Electronic Equipment:

Disposal of Waste Electrical & Electronic Equipment:
The symbol (crossed out wheeled-bin) on your product indicates that the product shall not be mixed or disposed with your household waste at their end of use.
The product shall be handed over to your local community waste collection point for recycling of the product.
For more information, please contact your Government Waste Disposal department in your country.
Inappropriate waste handling could possibly have a negative effect on the environment and human health due to potential hazardous substances.
With your cooperation in the correct disposal of this product, you contribute to reuse, recycle and recover the product and our environment will be protected.

Revisions:

Date	Version	Page(s)	Revisions
10-12-2019	1.0	1-4	First release

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