



SMART
METERING



SMART
BUILDING



SMART
INDUSTRY

Hub'O M2M Multiprocoles Gateway



HUB'O is a multi-protocol M2M communication gateway that concentrates dozens of LoRaWAN® sensors on a single point, in order to communicate remotely with a server or locally with a supervision, a ModBus PLC.

APPLICATIONS

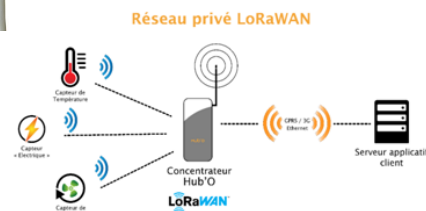
- Remote supervision and control of a set of sensors in buildings and industrial installations
 - alarms (Failure, unusual stop, measurement exceeding a threshold...)
 - states (equipment operation, position, control feedback...)
 - measurements (temperature, operating time, remote reading of water/gas/electricity/energy meters, number of breakdowns, etc.)
 - actions (start/stop machines, dynamic load control, ...)

BENEFITS & FEATURES

- Management of several dozen sensors
- LAN connection: LoRaWAN®, ModBus
- WAN connection: 3G/Ethernet
- Easy to install
- Deportable antenna
- IP65 enclosure: wall or clip mounting on DIN rail

CERTIFICATION

- CE, RoHS



The M2M LoRaWAN® HUB'O gateway is capable of:

- downloading configurations to the LoRaWAN® sensors on site
- time-shifting sensor data feedback
- lowering controls to LoRaWAN® sensors
- transferring alarms to the remote server almost immediately

HUB'O is a multi-protocol M2M gateway with LAN (LoRaWAN®, ModBus) and WAN (2G/3G, Ethernet) access points.

HUB'O cooperates with the nke Watteco LoRaWAN® sensor range. On the basis of interoperability tests, LoRaWAN® sensors from other brands may be added to the environment.

Installation and commissioning is fast, simple and requires no special qualifications. The gateway integrates:

- a DHCP server
- an NFC identification tag (product number, serial number, production batch)
- a push button to activate and deactivate the gateway

The commissioning of a sensor through the HUB'O gateway is "Plug and Play".

- From a portable terminal (tablet, smartphone) and an application developed by the end user, the installer reads the QRcode (or nfc tag) and transmits the keys and identifiers of the sensor to the remote server.
- The installer asks the sensor to pair with the server.
- The HUB'O gateway transmits the pairing request and the key and identifier of the expected sensor.
- The remote server accepts the procedure if it recognizes the sensor.
- Locally, the installer is warned on the sensor (buzzer or indicator light depending on the type of sensor) and on the gateway (buzzer and display of the identifier of the sensor that has just been paired). As soon as the sensor is paired, it can be reconfigured from a file transmitted by the Server through the HUB'O gateway.
- The sensor is functional: it performs the measurements and transmits the data to the gateway, which stores them temporarily (except for alarms). The data are uploaded in a file at the set polling frequency.

THE LARGEST IOT PRODUCTS RANGE FOR YOUR PROJECT

nke WATTECO is a European leader in the design and manufacture of intelligent IoT devices to fit to all remote reading and data collection solutions.

nke WATTECO is a LoRa Alliance®.

TECHNICAL SPECIFICATIONS

LoRaWAN	
Protocol	LoRaWAN®, Class C - Embedded Server
Simultaneous reception	on 3 frequencies: 868.1MHz, 868.3MHz, 868.5MHz
Radio service rate / number of sensors supported	service rate > 95% based on 25 sensors with an index reading every 30 minutes
Method of activation	Activation by Personalization (ABP) Over-The-Air Activation (OTAA)
Modulation	On fixed SF12 to ensure maximum range
Data Encryption	AES128
Frequency of transmission and reception	Defined in the configuration file

REMOTE SERVER COMMUNICATION	
Protocols	RF: LoRaWAN®, 2G/3G, Wired: Ethernet, optional ModBus485 ModBus TCP
Client-server protocol	HTTPS with configurable polling frequency: <ul style="list-style-type: none"> - configuration file of the gateway and of each sensor: identifier and usage. An ETag mechanism optimizes the number of downloads by limiting only to the files modified by the remote server - data files from the sensors - alarms exceeding sensor threshold. (note: the alarm is immediately raised as soon as it appears)
Internet Protocol	IPv4 (can be upgraded to IPv6)
Embedded file update	Via FTPS protocol
IP Addressing	DNS and DHCP Service Management
Clock synchronization	SNTP client launched at each connection to the remote server
Fire screen	Boarded.

EQUIPMENT CONFIGURATION	
Processor	ARM 9 supporting a LINUX BSP 3.18 distribution
Flash memory / RAM	256 MB / 128 MB
Clock - Calendar	PSTN component: keeps the clock and allows time stamping of messages in case of network failure.

POWER SUPPLY	
Voltage	Main: 230VAC, 50Hz, class II insulation Secondary: 7-18VDC
Stack	9 Volts Alkaline to transmit a mains failure alarm

INTERFACE	
LoRa / 2G / 3G antennas	Integrated antennas Optional ability to offset the antenna to improve RF coverage
Ethernet	TCP/IP network connection
USB	Local update of embedded software
LCD screen	Remote server communication, sensor recording/pairing, alarms
Push Button + Buzzer	Peering - de-peering on the public or private network LoRaWAN®
NFC Tag	Product number, serial number, batch number
Optional Inputs/Outputs	1 on/off input - 1 ICT input -1 analog input - 1 static output

CASE	
Dimensions	180 x 80 x 60 mm thick; off antenna
IP Class	IP55 - wall or clip mounting on DIN rail

ENVIRONMENT	
Operating temperature (°C)	0 / +50
Storage: Temperature (°C)	-10 / +70

STANDARDS & REGULATIONS	
EN, 61000-4-2 EN 300-220-1 V2-4-1, EN 301 489 V1-6-1	



PRODUCT REFERENCES

REFERENCE	DESCRIPTION
50-70-075	LoRaWAN® HUB'O - LoRaWAN® ETHERNET + 3G/4G GATEWAY