



## ModBus/LoRaWAN® Bridge



The **ModBus/LoRaWAN® Bridge** collects data from any ModBus RTU existing equipment and connects these devices to a public or private LoRaWAN® network. The Bridge has the capability to change the behaviour of the ModBus device by writing into its registers.

### APPLICATIONS

- Monitoring and control of ModBus slave equipment from a remote server via a public or private LoRaWAN® network: inputs, outputs, electrical machines, measuring equipment...

### BENEFITS & KEY FEATURES

- LoRaWAN®, Class A
- Easy to use and deploy
- Management of all the variables (read and write) of a ModBus (or JBus) RTU slave equipment from a remote server via a LoRaWAN® network
- Battery life up to 10 years
- IP55

### QUALITY & RELIABILITY

- RED, RoHS



The **ModBus/LoRaWAN® Bridge** acts as a ModBus master. It manages a set of ModBus slaves connected on a wired bus (RTU mode). It communicates with a remote server via a public or private LoRaWAN® network.

The sensor supports up to 10 different configuration profiles. Each profile can be configured remotely (periodicity of data collection, equipment address, ModBus function code).

Once the configuration is completed, data collection starts automatically and periodically.

At every wake-up, the bridge transmits the ModBus commands to the ModBus connected devices. The response of the ModBus connected devices is transmitted to the remote server. The remote server can achieve a write request into the bits or registers of a ModBus equipment.

The bridge does not interpret the ModBus (or JBus) commands: the list of functions to be executed and the addresses of the devices are set by the remote server.

The LoRaWAN® ModBus RS485 Bridge is easy to use, deploy and maintain:

- NFC tag for identification (product code, serial number and batch number)
- Magnetic switch to activate/deactivate the sensor
- LEDs for activation, deactivation and network pairing




When powered through a 3.6V/3,6Ah lithium battery, the autonomy of the bridge is more than 10 years when transmitting 4 registers every 1 hour in SF12. It can also be powered from an external 9-24V / 300mW power supply.

## THE LARGEST IOT PRODUCTS RANGE FOR YOUR PROJECT

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

WATTECO is a LoRa Alliance® member.

## TECHNICAL DATA

RADIOFREQUENCY	Frequency (MHz)	Transmit Power (dBm)	Receiver Sensitivity (dBm)	
	EU: 863-870	+14	-140	
FIRMWARE				
Protocol	LoRaWAN®, Class A			
Application layer	ZCL (ZigBee Cluster Library) – to be interpreted by the remote server			
Transmission cycles	Configurable from 10 minutes to 24 hours			
Activation method	Activation by Personalization (ABP) or Over-The-Air Activation (OTAA)			
Data encryption	AES128			
MODBUS INTERFACE CHARACTERISTICS				
Physical link	RS485 – 2 line– protection against overvoltage Termination resistor can be activated at set-up			
Serial link	UART – Half Duplex			
Data rate (kbit/s)	1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2			
Mode	RTU			
Configurable parameters from the LoRaWAN® remote server	<ul style="list-style-type: none"> <li>- Data rate, parity, number of data bits, number of stop bits</li> <li>- Wake-up periodicity to read/write ModBus</li> <li>- Transmit measurement periodicity</li> </ul>			
POWER SUPPLY				
Voltage	3.6V / 3600mAh – Lithium battery or 9V-24V 300mW – External power supply <u>Nota:</u> the bridge does not supply power to the equipment connected			
Autonomy in a range of +10°C to +25°C	>10 years when transmitting 4 registers every 1 hour in SF12			
INTERFACE				
NFC Tag	Product code, serial number, batch number			
LEDs	Configuration, Network pairing / unpairing			
Magnetic switch	Reset, ON/OFF			
ENCLOSURE	Size (mm)	Fastenings	IP rating	Fire resistance
	92 x 92 x 56	Supplied screws and anchors	IP55	UL94-V0HB
ENVIRONMENT	Operating temperature (°C)		Storage temperature (°C)	
	-10 / +50		-10 / +50	
DIRECTIVES & STANDARD				
Radio Equipment Directive 2014/53/EU, RoHS			  	

## PRODUCT NUMBER

REFERENCE	DESCRIPTION
50-70-080	MODBUS/LoRaWAN® BRIDGE CLASS A
50-70-109	MODBUS/LoRaWAN® BRIDGE CLASS C