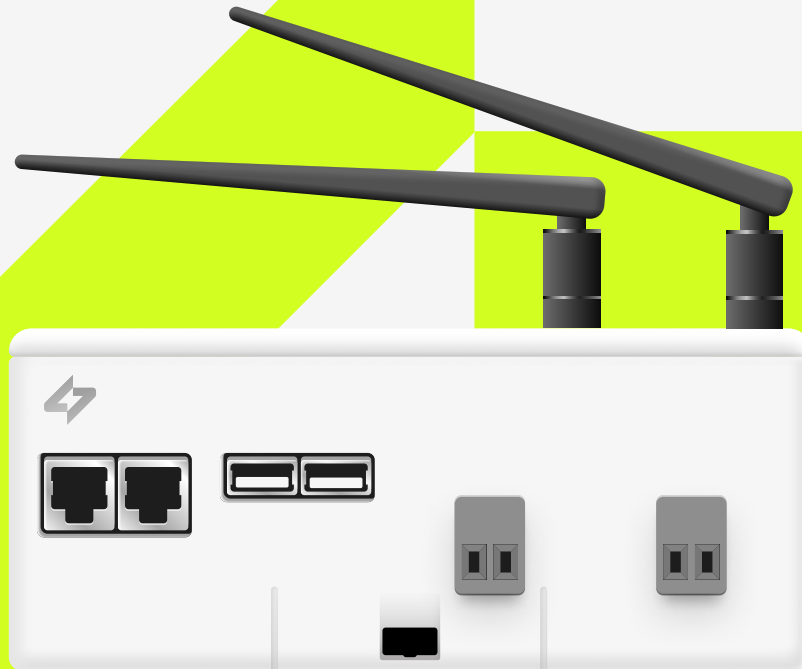● Simplify BMS

Installation Guide

Box

Wattsense®

Part 2 - Technical Datasheet

The Tower and the Bridge rely on the exact same electronic device:

- Created to connect all equipment from all buildings: IoT sensors, meters, heating, air conditioning, air handling systems, building management systems (BMS)
- Easy and quick to install: accessible for all. If the building already has a BMS, the box connects to the main bus as the third party. If there's no BMS, a BMS network is directly created by the box.
- Telemetry and controls: collects data and controls equipment.
- Smart Converter: unifies the field communication protocols.
- Web-Connected: automatically connects to the cloud via 3G/4G or ethernet cable.
- Powerful IoT device: combines the functionality of a gateway, a PLC, a modem, and an edge device.

Power supply

- Stabilized power supply input: 85-264 V AC output: DC 24 V +/-10% / 2 A
- The cable between the power supply and the device: 2 wires (red, black), 22 AWG, minimum section: 0.35 mm².
- Protection against overvoltage, undervoltage, and overcurrent from the power supply with indication by LED: green LED when the power supply is compatible, red LED if it is not suitable.

Hardware

CPU:	528MHz ARM Cortex A7
Memory:	512MB RAM
Storage:	4GB Flash
Consumption:	5W
Dimension:	160 × 110 × 55 mm (without antennas) 160 × 110 × 95 mm (with antennas)
Weight:	350g - 385g with antenna
Operating temperature:	From 0°C to +45°C
Humidity:	5% to 95% humidity - No condensation
IP Code	IP2X
Mounting:	-DIN rail Omega profile (TN35) DIN 1015 / 1070 / 3070- Wall mounted (2 screws)

⬤ Interfaces

Type of interface	Quantity	Operating LEDS	
Cellular modem	1	Yes	● Not connected ☀ every 1.2s Connected ☀ every 0.4s Communicating
LoRaWAN module from 863MHz to 928MHz	1	No	
Ethernet RJ45	2	Yes	● Communicating ● Not communicating
RS485	2	Yes	● Communicating ● Not communicating
USB	2	No	
USB Micro	1	No	
KNX	1	Yes	● Communicating ● Not communicating
M-Bus	1	Yes	● Communicating ● Not communicating
LPB/BSB (X-Bus)	1	Yes	● Communicating ● Not communicating

Protection of communication bus against ESD, short circuit, overconsumption.

Other LEDs

Power Supply	1	Yes	● Power supply OK ● Power supply NOK
Heartbeat	1	Yes	☀ Box working ● Box not working

⬤ Drivers

- BACnet IP
- BACnet IP Server
- Diematic
- KNX S et LTE
- LON IP-852
- LPB

- LoRaWAN 1.0 Local private - Frequency plans supported: WSG-EU-SC-00-14 : EU863-870, IN865-867 WSG-NA-SC-00-14 :US902-928, AS923-925, AU915-928
- M-Bus (3UL Max.)
- Modbus RTU
- Modbus TCP/IP
- Modbus TCP/IP Server
- MQTT Client

Software

- Secured Linux Yocto distribution.
- Built-in drivers for all buses, protocols, and building equipment.
- Automatic discovery of equipment on BACnet.
- Remote and automated configuration.
- Secure server communication via MQTT.
- Automatic and secure software updates.

Security

Enterprise-grade security based on SSL/TLS with the following properties:

- Two-way authentication between box and server with x509 certificates.
- End-to-end encryption.
- Message integrity checks.

Data frequency

Data is read by default at a 10-minute interval, excluding IoT sensors that have their own frequencies to minimize battery consumption. Commands (downlink) are sent instantly.

USB Micro

55 mm

M-Bus
Interface

LPB / BSB
Interface

RS485
Interfaces 1 and 2

SMA female connector for GSM antenna

SMA female connector for LoRaWAN antenna

Power supply
Connection DC
24 V +/-10% / 2 A

Wattsense

55 mm

110 mm

160 mm

Interface
KNX

Interfaces
USB 2.0, 1 and 2

Interfaces
Ethernet 1 and 2