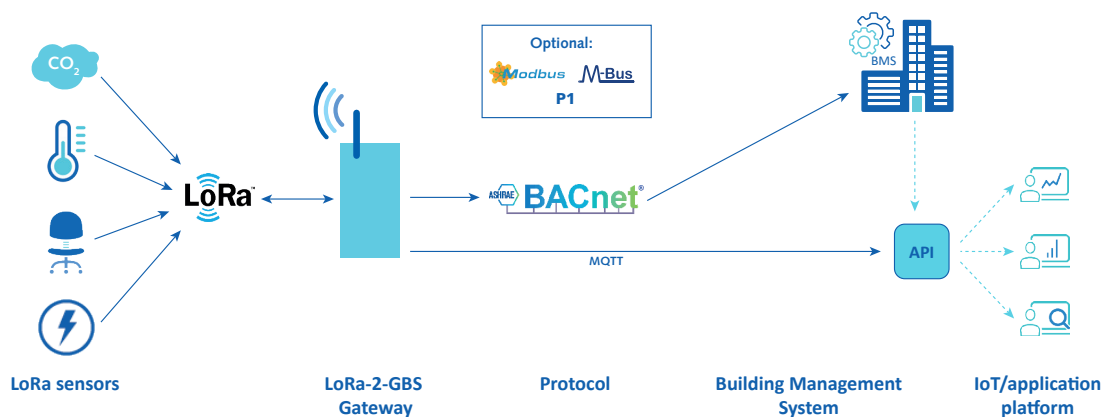# LoRa-2-BMS Gateway

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Enrich your building management system with wireless LoRa sensors for an integrated Smart Building solution

Customers would like to know more and more about the condition of a building. This is leading to a higher demand for data. Examples are air quality information (CO_2), energy management or workplace occupancy. Many buildings have a Building Management System (BMS) or wish to purchase one. However, it is often too expensive or not possible to wire everything through sensors (e.g. in monumental buildings).

With the MCS LoRa-2-BMS solution, you have the advantages of your building management system AND the advantages of battery powered wireless LoRa sensors. The solution looks like this:

| LoRa sensors | LoRa-2-GBS Gateway | Protocol | Building Management System | IoT/application platform |

5 technologies in 1 Gateway

With the MCS LoRa-2-BMS Gateway, you have an all-in-one Gateway to connect your BMS with wireless LoRa sensors via BACnet IP. The LoRa-2-BMS Gateway is in fact a combination of 5 different technologies in 1 Gateway.

LoRa Base station
The Gateway acts as a LoRa Base station with internal LoRaWAN server. This allows you to set up a Private LoRa network. You do not need a public LoRa or external LoRaWAN server. Therefore, you have no monthly recurring costs for this.

Payload converter
Payload converter of the LoRa sensors is also done by the Gateway. Therefore, you do not need an external payload conversion server. This also avoids monthly costs.

BACnet IP protocol
BACnet IP protocol and other protocols (such as Modbus, mBus, P1) are integrated into the Gateway. These are used to communicate with your BMS.

MQTT
MQTT or other protocols communicate with your (IoT) application server.

Secure VPN
Optionally, we can offer a Secure VPN with it. This gives you secure remote access to the Gateway and/or the underlying building management system.

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Important characteristics

Cost saving

You benefit from enormous cost savings because this Gateway actually combines 5 technologies. In addition, with this Gateway you make your BMS suitable for wireless sensors. It therefore requires less cabling.

Easy configuration

The Gateway is conveniently configurable via the intuitive wizzard.

Linking i/o's

Wireless LoRa sensors can be connected to send data and/or control i/o's. Note: the latter is only possible with LoRa Class C sensors.

Easily expandable

The solution is flexibly expandable with multiple hardware and software features. For example with protocols in: Modbus, mBus, P1, GPIO and protocols out: BACnet, MQTT, Azure IoT Hub, Amazon AWS-MQTT and Opinum.

CONFIGURATION WIZZARD

The intuitive configuration wizzard makes installing the Gateway easy thanks to, e.g.:

- Predefined LoRa sensors;
- Decoding of the different parameters of the payload of the sensors;
- Making the information in the payload appear as BACnet objects on the OUT side;
- Connection via, for example, MQTT to your own application platform.

Gateway functions with all MCS LoRa sensors

The LoRa-2-BMS Gateway functions with all LoRa sensors supplied by MCS. These sensors are automatically 'provisioned' with the configuration wizard. You don't have to do any difficult payload decoding; we have already done this for you.

The sensors listed below can be ordered at MCS and are guaranteed to work optimally. Do you have a LoRaWAN sensor that is not on this list? Our engineers will gladly support you to make them compatible with the LoRa-2-BMS Gateway.

MANUFACTURER	SERIES	APPLICATION
Elsys	ERS	Air quality (CO_2, temperature, VOC, humidity) and light
	EMS	Workplace occupancy (heat, light)
Bosch	Parking Lot sensor	Parking occupancy
Adeunis	All LoRa sensors	Energy measurements (Modbus, analog, digital, pulse) and controls
MCS	ITalks 1608 (V2)	Multi-purpose
Enginko	All LoRa sensors	Energy management and air quality (CO2, VOC, particulate matter)
Advantech	WISE-2410 LoRa	Industrial vibration and temperature

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Generic hardware specifications

Power input	9-30VDC, connector microfit
Metal housing dimensions	115 x 106 x 45 mm
Mounting possibilities	Bulkhead, 6xM4 holes, DINrail (optional)
System status	LEDs
Operating temperature	-30°C to +70°C
CPU	ARM926EJ-S @ 450 MHz

	LORA-2-BMS GATEWAY ETHERNET	LORA-2-BMS GATEWAY 4G
Product number	P109176	P109175
HARDWARE INTERFACES		
Ethernet	✔	✔
4G (Cat3)	✘	✔ (fallback 3G & 2G)
Private LoRaWan 868Mhz	✔	✔
RS232/485	Optional	Optional
P1	Optional	Optional
GPIOs in	Optional	Optional
SOFTWARE INTERFACES		
BACnet IP out	✔	✔
BACnet IP in	Optional	Optional
Modbus IP in/out	Optional	Optional
mBus in	Optional	Optional
MQTT	✔	✔
REMOTE MANAGEMENT & PROVISIONING PLATFORM		
Universe	✔	✔
IOT PLATFORMS		
Azure IoT Hub	Optional	Optional
Amazon AWS	Optional	Optional
APPLICATION		
(Extended) Secure VPN	✔	✔
Luvid-Red (Node-Red)	✔	✔
SOFTWARE ASSURANCE		
Updates output	✔	✔
Updates input	✔	✔