

Datasheet (LOB-GW-DINRAIL-HYB-WMBUS)



Technical Characteristics

Type	LOB-GW-DINRAIL-HYB-WMBUS
Description	Wireless M-Bus Gateway (ext. Power)
Cellular NB-IoT / LTE Cat. M1 Modem	
LTE SiP	Nordic nRF9160
Antenna	External Antenna (SMA female) (2 dBi)
Supported LTE Band	• Standard: B8, B20, B3 (791 MHz - 969 MHz, 1710 MHz – 1785 MHz) • Other Bands on request
SIM card slot	4FF (Nano SIM)
Supported LTE modes	• Narrowband IoT (NB-IoT) • LTE Cat-M1 (on request)
Data Upload	Secure CoAP over DTLS (via Lobaro IoT Platform)
LoRaWAN Upload	
LoRaWAN Protocol Version	V1.0.2, EU-868
Activation method	Over-the-air activation (OTAA) Activation by personalization (ABP)
Typically RF range	2km
Ideal RF range	10km (free line of sight)
Wireless M-Bus communication	

Antenna	External Antenna (SMA female) (2 dBi)
Frequencies	868.3 MHz, 868.95 MHz
Supported wireless M-Bus modes	Unidirectional 868 MHz modes according to EN13757-4: • C1 / T1 (combined) • S1 Proprietary formats: • Xylem SensusRF (Bubble Up)
Telegram storage size	64 kByte storage • up to 500 telegrams (avg. size 100 Byte) • 218 telegrams à 255 Byte (max telegram size)
Maximum white list size	minimum 150 different meters (2 KByte config size)
White list filters	• Meter ID • Manufacturer code (M-Field) • Meter type (e.g. only water meters)
Supported meters per gateway	• Standard: 500 • More on request
Encryption	AES128 (Mode 5 + Mode 7)
RF reception range	• up to 100m under ideal conditions • Indoor 30m • One Gateway every 2nd or 3rd Floor
Firmware features	• Configurable wireless M-Bus collection intervals • Automated upload of all received telegrams
Additional I/O	
Local configuration port	PC based initial configuration via USB adapter
LED	RGB Led to signal different operating modes
Power Supply	
Supply Voltage Connection	Phoenix Terminal Block
Supply Voltage Range	12 - 24 Volt (DC)
Max. Power Consumption	2 W
Typical Power Consumption	1.5 W
Mechanical dimensions	
Size (Din-Rail Housing)	3 TE: 53mm (W) x 77mm (L) x 32mm (H)
Size Wall Mount Housing	130mm (W) x 130mm (L) x 75mm (H)
IP Rating	IP20 (indoor) IP54/IP66 (with RK 4/12-L housing)
Weight without antenna (Din-Rail Housing)	50 g
Environmental Requirements	
Operating Temperature	-20°C to +55 °C
Rel. Humidity	20 - 70 % fR, non-condensing

Max. Installation Height	2 m
Conformity	
	• EN 300 220-1 (RF) • EN 300 220-2 (RF) • EN 301 908-1 (RF) • EN 301 908-13 (RF) • EN 301 489-3 & EN 301 489-52 (EMC) • EN 62368-1 (Electrical Safety) • EN 62311:2008 (Electrical Safety) • IEC 63000:2018 (RoHS)

Radio frequencies

RX: receive mode , TX: transmit mode

Direction	Protocol	Frequency	Bandwidth	Modulation	Duty-Cycle	Transmit Power (EIRP)
RX + TX	LoRaWAN	868.1 MHz	+/- 0.0625 MHz	LoRa	1%	14 dBm
RX + TX	LoRaWAN	868.3 MHz	+/- 0.0625 MHz	LoRa	1%	14 dBm
RX + TX	LoRaWAN	868.3 MHz	+/- 0.0625 MHz	LoRa	1%	14 dBm
RX + TX	LoRaWAN	868.3 MHz	+/- 0.125 MHz	LoRa	1%	14 dBm
RX + TX	LoRaWAN	868.5 MHz	+/- 0.0625 MHz	LoRa	1%	14 dBm
RX + TX	LoRaWAN	867.1 MHz	+/- 0.0625 MHz	LoRa	1%	14 dBm
RX + TX	LoRaWAN	867.5 MHz	+/- 0.0625 MHz	LoRa	1%	14 dBm
RX + TX	LoRaWAN	867.7 MHz	+/- 0.0625 MHz	LoRa	1%	14 dBm
RX + TX	LoRaWAN	867.9 MHz	+/- 0.0625 MHz	LoRa	1%	14 dBm
RX + TX	Lobaro LoRa P2P	869.525 MHz	+/- 0.0625 MHz	LoRa	10%	14 dBm
RX	wMBUS C1/T1	868.95 MHz	+/- 0.050 MHz	FSK	-	-
RX	wMBUS S1	868.3 MHz	+/- 0.050 MHz	FSK	-	-
RX + TX	NB-IoT Band 8	880-915 MHz (up) 925-960 MHz (down)	25 MHz	NB-IoT	-	23 dBm
RX + TX	NB-IoT Band 20	832-862 MHz (up) 791-821 MHz (down)	30 MHz	NB-IoT	-	23 dBm
RX + TX	NB-IoT Band 3	1710-1785 MHz (up) 1805-1880MHz (down)	75 MHz	NB-IoT	-	23 dBm