Wireless M-Bus 433MHz (wM-Bus) to **NB-IoT**

The Wireless M-Bus (wM-Bus) on NB-IoT converter is mainly used by utility companies or waterworks that need to connect their existing meters to comply with the European EED directive without the need to replace the meters themselves.

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- We subtract the widest range of meters from the currently available solutions on the market—wM-Bus, wM-Bus OMS, Apator Metra, Radian protocol (Sontex, Itron), Sensus BUP and others on request.
- The large battery is intended for the operation for more than 10 years with a daily readings from Monday to Friday.
- The antenna connector is designed for a minimal loss and ensures a maximum reception sensitivity. This allows us to cover up to six floors depending on the type of building.
- The units can be delivered in a pre-configured state for your specific project, including your SIM card.
- IP67 waterproof enclosure for the outdoor installations—for example, even on street lights in the middle of a residential area.

Installation, Operation and Lifespan without any Concerns

The Wireless M-Bus (wM-Bus) to the NB-IoT converter allows for an easy installation, hassle-free operation and a long, concern-free lifespan. This device offers a high sensitivity and coverage of up to six floors, supports the largest number of protocols on the market and is powered by batteries with a lifespan of over 10 years with daily readings as well.

The converter can be easily integrated into superior systems and supports a maintenance via firmware updates over the air and remote configuration options. With a broad compatibility and minimal maintenance requirements, it provides a reliable solution for all of the metering needs.

Technical Specifications

General Specification

Dimension	145 x 90 x 55 mm
Weight	475 g with battery
IP rating	IP67
Mounting	6 fixation points for mounting to the wall, tube or collar
Mounting holes	4x M4 pan screw and 2x oval hole for zip-tie fixation
HS code	85269200

Operating Conditions

Operational temperature	-30 to +60 °C
Humidity	0 to 85% RH (non-condensing)

Regulations and Certifications

Standard	CE, RoHS

Device Configuration

Local device configuration	Over the cable via ACR-CONFIG and the configuration app
Remote device configuration	Downlink via network or ACRIOS backend
FUOTA support	Yes, over the NB-IoT network
Configuration options	Configuration via Lua scripting interface
Can be supplied pre-configured	Yes

NB-IoT

Bands	B1/B2/B3/B4/B5/B8/B12/B13/B14/B17/ B20/B26/B28
NB module	SIM7022
Supported protocols	UDP
Antenna	Internal
TX Power	23 dBm
SIM form factor	3FF, chip SIM on demand
Supported NB-IoT features	PSM, eDRX
Maximum payload length	512 B uplink, 1024B downlink*

* might be dependent on the network. Tested with Vodafone network

wM-Bus Interface

Communication protocol	M-Bus EN 13757-4, M-Bus EN 13757-3
Device type	Master
Supported modes	T1 mode / 433 MHz, Sensus BUP, Sontex Radian
Maximum connected devices	800 unique ids in send-once mode
Compatibility	Sensus BUP, Sontex Radian (Supercom)
Typical range	4 to 5 floors (40 meters)
Peak antenna gain	~1.4 dBi
VSWR	~1.8:1
Configuration options	Collection duration in each mode, inter-frame timeout, collecting intervals
Functionality	Device type filtering, ID filtering, transparent wM-Bus bridge, discovery scan, active error reporting, NB-IoT network failure recovery mechanisms, scheduled reading

Battery Specifications

Battery size	D-Cell
Capacity	38 000 mAh
Self-discharge	<1%
Rechargable	No
Replacable by the customer	Yes
Battery connector	JST-XH 2pin

Battery Life-time

5 hour reading, 1x a week	12 years

Packaging

1x wM-Bus to NB-IoT converter	1x installation manual
1x Battery	1x 433MHz antenna 2JW0315W-433-C675W

Optional Accessories

ACR-CONFIG	Configuration cable

Ordering Codes

ACR-CV-101NI-W433-D2	wM-Bus 433MHz to NB-IoT with double battery cell, internal NB-IoT antenna and external wM-Bus antenna

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