

Pulse Input S0 to the NB-IoT with ATEX

Our converter with the optional ATEX certification is designed for the efficient readings of gas meters with the pulse outputs. It enables the integration of gas meters—typically for the medium consumption—into the NB-IoT wireless network. The device is synchronized with the network time and reads precisely at hourly intervals with the detection of a minimum and maximum flow rates.

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- The device is specially developed for the gas industry and in collaboration with gas companies. It allows the retrofitting of any gas meter on the market with a pulse or Wiegand output.
- Thanks to the possibility of a local configuration via an optical head through the IEC 62056-21 protocol or the remote configuration over the network, it significantly reduces the total cost of ownership (TCO) in projects requiring frequent remote readings of the gas meters.
- ATEX certification allows the connection of the gas meters even in EX zone 2. A necessity for the gas industry.
- We prioritize TCO—from using a coulomb counter to obtain an accurate battery life to the pre-configured units delivery tailored to your setup.

Installation, Operation and longevity without Worries

For the gas industry, we have developed a product with the ATEX certification, NB-IoT configuration with a lifespan of over 10 years, support for the LWM2M protocol and integration of the IEC configuration protocol. For all the NB-IoT devices, we can perform firmware updates remotely via the NB-IoT network, so customers do

not need to make any changes to the installation. We have experience with projects for small businesses and large heating plants aimed at optimizing the distribution systems and readings in compliance with the EED and the ESG regulations.

Technical specifications

General specification

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|----------------|--|
| Dimension | 145 x 65 x 40 mm |
| Weight | 235g 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 |
| LCD display | Yes. 7 segments with decimal point, 8 digits |
| HS code | 85269200 |

Operating conditions

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

Regulations and certifications

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| Standard | CE, RoHS, ATEX zone 2 pending under different ordering code |
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Device configuration

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| Local device configuration | IEC 62056-21 via optical head and configuration SW tool |
| Remote device configuration | Downlink via network |
| FUOTA support | Yes, over the NB-IoT network |
| Configuration options | Assign unique device ID, archive readout, counter setup, network parameters, pulse ratio |

NB-IoT

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|---------------------------|---|
| Bands | B1/B2/B3/B4/B5/B8/B12/B13/B14/B17/B20/B26/B28 |
| NB module | SIM7022 |
| Supported protocols | UDP, LWM2M |
| Antenna | Internal |
| TX Power | 23 dBm |
| SIM form factor | 3FF |
| Supported NB-IoT features | PSM, eDRX |
| Maximum payload length | 512 B uplink, 1024B downlink* |

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

S0 interface

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|-------------------------------|---|
| A number of inputs | 1 |
| Impulse counter | 32 bits = 4 294 967 295 pulses |
| Minimum pulse duration (ms) | 50 |
| Maximum input voltage (V) | 24 |
| Maximum pulse frequency (Hz) | 20 |
| Logical 1 range (V) | More than 2 (up to 24) |
| Logical 0 range (V) | Less than 1 |
| Closed mechanical contact | Resistance < 100kΩ |
| Open mechanical contact | Resistance > 200MΩ |
| Polarity inversion protection | Electronic and mechanical |
| Connector | WAGO |
| Reading period | 24x / day with a sending period 1x / day S0 readings on LCD display, network time synchronization, pulse counter setting, historic values, detection of min and max flow, hourly values for past 40 days, network failure recovery mechanism |
| Functionality | |

Battery specifications

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|-------------------|--|
| Battery size | C-Cell |
| Capacity | 8 500 mAh |
| Self-discharge | <1% |
| Rechargeable | No |
| Replacable | Yes |
| Battery connector | JST-XH 2pin |
| Battery life-time | 10 years with reading 1x/hour with a sending period 1x/day |

Packaging

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|-------------------------------|--------------------------------------|
| 1x wM-Bus to NB-IoT converter | 1x installation manual 1x Battery |
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Ordering codes

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| ACR-EX-100NILCD-II-C | S0 input to NB-IoT battery powered |
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