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Pulse Input S0 to NB-IoT

The converter is designed for efficient readings of meters with pulse outputs. It enables integration of existing meters into the NB-IoT wireless network. The device is synchronised with the network time and reads precisely at hourly intervals with a detection of a minimum and maximum flow rates.

Pulse Input S0 to NB-IoT

- The device originally developed for a gas industry and in collaboration with gas companies, allows retrofitting of any 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 a remote configuration over the network, it significantly reduces the total cost of ownership (TCO) in projects requiring frequent remote readings of gas meters.
- Wide compatibility with meters featuring S0 pulse or Wiegand output. Ideal for industrial Smart Metering.
- 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

Originally for the gas industry, we have developed a product with a display, NB-IoT configuration with a lifespan of over 10 years, 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 utility providers aimed at optimizing the distribution systems and readings in compliance with the EED and the ESG regulations.

\\ Technical Specifications

General Specification

Dimension	145 x 65 x 40 mm
Weight	235g with battery
IP rating	IP65, 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

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

Regulations and Certifications

Standard	CE, RoHS

Device Configuration

Local device configuration	IEC 62056-21 via optical head (password protected) 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

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
Supported NB-IoT features	PSM, eDRX
Maximum payload length	512 B uplink, 1024B downlink*

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

S0 Interface

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
Functionality	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
Private APN requirement	The device must be operated with private APN to ensure secure (walled garden) communication

*The device is designed for dry contacts and accepts external voltage up to 24 V.

Battery Specifications

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

Packaging

1x Pulse Input S0 to NB-IoT converter	1x installation manual 1x Battery

Ordering Codes

ACR-EX-200NILCD-I1-C	S0 input to NB-IoT battery powered

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