

EDC B.One-communication module

for connection to ZENNER water meters with modulator disc

with LoRaWAN® or wireless M-Bus radio interface

The EDC B.One-communication module (Electronic data capture module) with LoRaWAN® or wireless M-Bus interface is a clip-on module for secure remote reading to integrate water meters into LoRaWAN® or wireless M-Bus readout systems.

The EDC B.One-communication module (Electronic Data Capture module) is designed for non reactive, electronic pulse detection of all the ZENNER water meters with modulator disc.



B.
One

Performance characteristics in overview

- Configurable radio technology (wM-Bus or LoRaWAN®)
- Battery powered
- Tampering detection
- Protection class IP68
- Retrofittable without destroying seals
- Flow direction recognition
- Secure data collection without the use of reed switches
- Optical interface for configuration purposes

The EDC B.One-module was developed for

- Single-jet dry dial meters ETKD/ETWD
- Multi-jet dry dial meters MTKD/MTWD
- Positive displacement meters RTKD
- Bulk meters WPD / WPHD / WSD / WPV

Smart Metering functions

- Self monitoring
- Tampering detection
- Dismounting detection of the module
- Reverse water flow detection
- Leakage detection
- Meter stop detection
- Meter oversized detection
- Meter undersized respectively pipe burst detection

EDC B.One-communication module with LoRaWAN® or wireless M-Bus interface

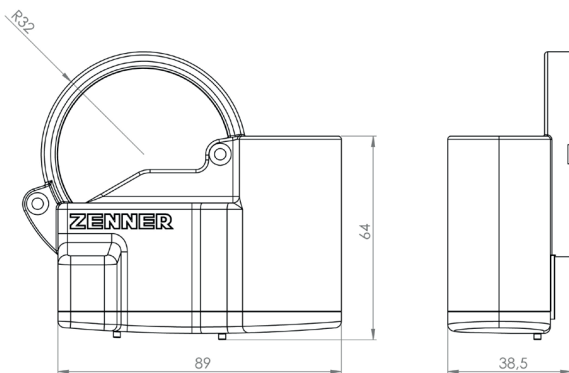
Technical data	General
Operating frequency	868 MHz
Transmission power	max. 25 mW
Error detection	CRC
Protection class radio module	IP68
Optical interface	yes
Display	no
Energy supply	Lithium battery (C-Cell)
Ambient conditions	>0 °C to +55 °C
CE conformity	according to directive 2014/53/EU (RED)
Reverse water flow detection	yes
Battery status monitoring	yes

Technical data	LoRaWAN®	wM-Bus
Calculated battery life	EDC B.One-retrofitable modules: up to 10 years + storage reserve (for scenarios 201 and 202) and up to 7 years + storage reserve (for scenarios 203 and 204); depending on the local ambient conditions! Compact device with ex works fitted EDC can achieve up to 15 years + storage reserve in scenarios 201 and 202.	EDC B.One-retrofitable modules: up to 11 years + storage reserve (depending on the selected transmission scenario and local ambient conditions!) Compact device with ex works fitted EDC: up to 15 years + storage reserve (details are given in the device user guide)
Data transmission procedure	LoRaWAN® class A (bi-directional communication)	wireless M-Bus (standard: C1 mode) from firmware 1.78: C1 or T1 depending on scenario
Telegram content	Telegram content depends on the communication scenario. Content can be, for example: Daily, monthly, half-monthly, key date value, date, time, status information (alarms), firmware version, identification number	Telegram content depends on the communication scenario. Content can be, for example: Serial number, date, meter reading, mid-month value, previous month (max. 15), status information
Duration of transmission telegrams	up to 1.5 s (depending on spreading factor)	approx. 10-15 ms
Sending interval	Default: daily (monthly, hourly or 8 telegrams per day, each with the last 3 hourly values: on request)	Standard: 20 seconds, others on request
Encryption of radio protocols	yes	yes (Standard: Encryption Mode 5; Encryption Mode 7 on request)
Radio activation* in case of retrofitting	- by means of illuminating the infrared interface > 8 seconds (illuminant should not be an LED); - by means of the ZENNER infrared optical head IrCombiHead, the universal interface MinoConnect (USB or Bluetooth) and the MSS configuration software or the B.One Device Manager App.	- by means of illuminating the infrared interface > 8 seconds (illuminant should not be an LED) with EDC B.One V2** / EDC B.One V3***; - by means of the ZENNER infrared optical head IrCombiHead, the universal interface MinoConnect (USB or Bluetooth) and the MSS configuration software or the B.One Device Manager App.
Radio activation* (compact device with radio module ex works)	- by means of illuminating the infrared interface > 8 seconds (illuminant should not be an LED); - by means of the ZENNER infrared optical head IrCombiHead, the universal interface MinoConnect (USB or Bluetooth) and the MSS configuration software or the B.One Device Manager App; - Autostart after flow rate of 30 litres for multi-jet meters with 1 litre/pulse, 300 litres for bulk water meters with 10 litres/pulse and 3000 litres for bulk water meters with 100 litres/pulse	- by means of illuminating the infrared interface > 8 seconds (illuminant should not be an LED) with EDC B.One V2** / EDC B.One V3***; - by means of the ZENNER infrared optical head IrCombiHead, the universal interface MinoConnect (USB or Bluetooth) and the MSS configuration software or the B.One Device Manager App; - Autostart after flow rate of 30 litres for multi-jet meters with 1 litre/pulse, 300 litres for bulk water meters with 10 litres/pulse and 3000 litres for bulk water meters with 100 litres/pulse

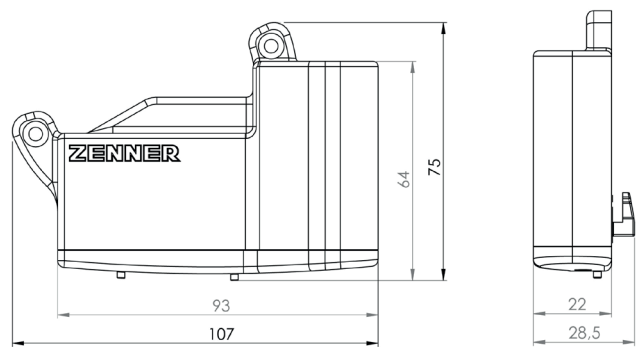
* After activation, the red LED flashes on EDC modules beginning with firmware 1.78 for a duration of one minute

** EDC V2 can be recognised by the serial number starting with "EZRI0A..."; with EDC V3 can be recognised by the identification "EZRI0B..."

*** EDC B.One V3 can only be configured with the B.One Device Manager App



Dimensions EDC B.One-C



Dimensions EDC B.One-S

EDC B.One-communication module with LoRaWAN® radio interface

Datalogger (readable via optical IrDA interface)

Annual key date values	max. 2
Monthly values	18 plus 18 half-monthly values
Daily values	32

LoRaWAN® radio telegram

Protocol content	Interval
Identification number EDC module	once when logging into the LoRaWAN®- network
Device-specific information (firmware version, LoRaWAN® version, device type)	six-monthly
Due date value and date [01.01.]	annually on the key date
Changes of status (manipulation, battery warning, ...)	event-driven

Scenario 201 (monthly)

Protocol content	Interval
Monthly value (previous month) [liter], status information, actual date and time	monthly (beginning)
Monthly value (previous month) [liter], mid-month value [liter], actual date and time	monthly (middle)

Scenario 202 (daily)

Protocol content	Interval
Daily values (previous day) [liter]	daily
Status information, actual date and time	monthly

Scenario 203 (8 telegrams per day)

Protocol content	Interval
each packet contains the last 3 hourly values [liter]	3 hours

Scenario 204 (hourly)

Protocol content	Interval
each packet contains the last 3 hourly values [liter]	hourly

EDC B.One-communication module with wireless M-Bus radio interface

Datalogger (readable via optical IrDA interface)	Firmware > 1.78	Firmware < 1.78
Annual key date values	max. 2	max. 16
Monthly values	18 plus 18 half-monthly values	18 plus 18 half-monthly values
Daily values	32	96
Quarter-hour values	0	96

Possible sending scenarios and related telegram content (Selection)

Scenario No.:	320	321	322*	323	324***	329***	338***
Frequency (MHz)	868	868	868	868	868	868	868
Sending interval	20 s	20 s	16 s	20 s	20 s	20 s	16 s
Radio pause	no	no	no	no	no	no	**
Telegram content:							
Current value	✓	✓	✓	✓	✓	✓	✓
Current date	✓	✓		✓	✓	✓	✓
Due date values		✓	✓		✓	✓	
Monthly value of the previous month	✓	✓	✓	✓	✓	✓	✓
Another 11 previous month's value	✓			✓		✓	✓
Status information	✓	✓	✓	✓	✓	✓	✓
wM-Bus mode	C1	C1	C1	T1	T1	C1	C1
Encryption mode	5	5	5	7	7	5	5

* Manufacturer specific telegram

** wM-Bus radio pause: Mondays to Fridays 7:00 pm-6:00 am, Saturdays and Sundays 12:00 am-12:00 am

*** OMS-certified scenarios

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