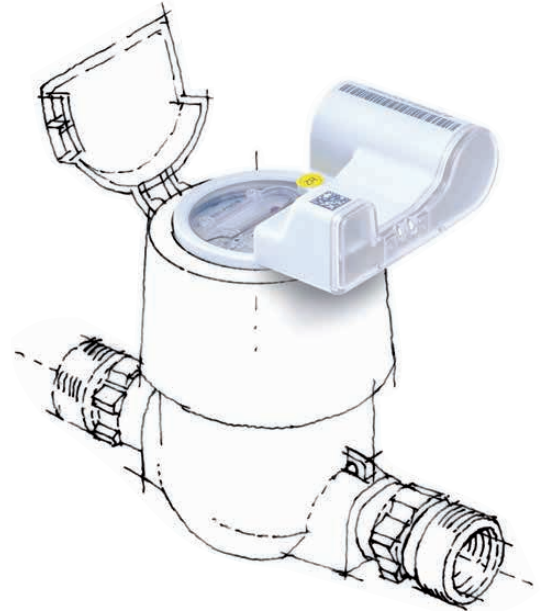# MÄTARKONTROLL

EDC communication module

Water meter clip-on module
for secure remote reading
for integration of water meters in
Smart Metering AMR/AMI Systems

ZENNER
All that counts.

MÄTARKONTROLL

EDC communication module

AMR/AMI communication module

for water meters

Typical applications:

- Wireless remote readout of water meters with walk-by or drive-by system
- Remote reading of the meters via M-Bus Systems
- Remote reading via GSM module
- Accurate metering of fluids in the industrial and commercial segment
- Information of the flow volume and consumption by the means of transducer

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The Electronic Data Capture (EDC) module for non reactive, electronic pulse detection of all the ZENNER water meters whose registers are equipped with modulator disc enables a secure remote reading and the integration of water meters in Smart-Metering measurement systems.

The EDC module was developped for:
- Single-jet dry dial meters ETKD/ETWD
- Multi-jet dry dial meters MTKD/MTWD
- Positive displacement meters RTKD-S
- Bulk meters WPD / WSD

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The EDC module is available in four different versions

1. wireless M-Bus radio module according to OMS-Standard (868 MHz), EN 13757-4
2. wired M-Bus-module, EN 13757-3
3. Pulse module with forward and reverse detection
4. combined M-Bus and pulse module

The water meter can be equipped with the required EDC module during manufacturing or afterwards, receiving a retrofit module.

⊙ **Performance Characteristics:**

■ Battery powered with a lifetime up to 15 years
■ Tampering detection
■ Protection class IP68
■ Retrofittable without destroying seals
■ Detection of water flow direction
■ Secure data collection without the use of reed switches
■ Optical interface for configuration purposes
■ Suitable for ZENNER single-jet, multi-jet, piston type and Woltman water meters with modulator disc

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The EDC module provides all the important functions for smart metering

Smart Metering Functions:

- Self-monitoring
- Tampering detection
- Dismounting of module and meter detection
- Reverse water flow detection
- Leakage detection
- Meter Stop detection
- Meter oversized detection
- Meter undersized respectively pipe burst detection

Configuration:

The configuration of the EDC module in case of retrofitting for example is made via the optical interface by using the ZENNER MinoConnect with ZENNER IrCombiHead and the configuration software GMM. Alternative software solutions on request.

Technical data

General specifications:

Power supply	Long life battery: up to 15 years (depending on the version)
Battery status monitoring	yes
Operating temperature	-15 ... +55 °C
Protection class:	IP 68

Data logger:

Annual due date values	16
Monthly values	18, plus 18 Semi-monthly values
Daily values	96
Quarter hour values	96

General specifications EDC pulse module**

The EDC module as pulse module can be delivered in three different versions

Data set type	Mode U:	Mode B1:	Mode B2:
Output 1:	Balanced pulses	Forward pulses	Forward and reverse pulses
Output 2:	Dismounting module resp. cable break detection (normal state = closed)	Reverse pulses	Flow direction (open=forw.)

* Reverse pulses are offset by reduction of the corresponding number of forward pulses.

Number of conductors	3
Cable length	1,5 m
Output type	N-channel open-drain (equivalent to open-collector)
Max. output voltage	24 VDC
Max. output current	50 mA
Pulse length	10 ms - 100 ms (configurable, firmware parameter)
On output resistance	110 Ω
Off output capacitance	1 nF
Electromagn. Compatibility	Fulfils the European Directive 89/336/EWG
Standard Pulse value	DN 15 - 40 1 L/Imp.
	DN 50 - 125 10 L/Imp
	DN 150-300 100 L/Imp
	> DN 300 1000 L/Imp

** Function of the pulse module outputs according to ISO 22158
Other versions on request.

General specifications EDC-Radio:

Transmission mode	Wireless M-Bus unidirectional, T1 (Standard), optionally S1, C1
Encoding mode	AES-128 according to OMS (device specific), optionally customer-specific
Contents of the Package	Current value, due date, current monthly value, history of the monthly values, status information
Transmission interval	typical 20 sec., other configuration possible
Transmitting power	25 mW

General specifications EDC M-Bus:

Number of required conductors	2
Cable length	1,5 m
Electromagn. Compatibility	conform to the European Directive 89/336/EWG

General specifications EDC M-Bus and pulse:

Number of conductors	5
Cable length	1,5 m
Electromagn. Compatibility	Fulfills the European Directive 89/336/EWG
Pulse output function	Mode U, balanced pulses

Other versions on request.

Data contents (radio, M-Bus)

The EDC module can be delivered with various data telegrams.

Data protocols	Type A*	Type B*	Type C**
Current value	x	x	x
Current date	x	x	
Due date	x	x	x
Monthly value, previous month	x	x	x
Further 11 monthly values	x		
Status information 1	x	x	x
Status information 2	x	x	x

* Data telegram according OMS Spec., Transmission interval 20 sec.
** wM-Bus, manufacturer specific data telegram, Transmission interval 15 sec.

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Remote readout with the EDC modul

D-register with modulator disc

EDC
pulse module

EDC
M-Bus module

EDC radio
module

Pulse counter
IZM multipulse

M-Bus converter

MinoConnectRadio

Smartphone with
readout software

PC with readout software