

CONFIGURATION MANUAL

EDC B.ONE COMMUNICATION MODULE



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EDC Version 1.2.11

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1 General information

Be sure to read the operating instructions for the EDC module and the B.One Device Manager app before you begin configuration. This will protect you and prevent damage to the device. Check the contents of the package for completeness before assembly. Assembly and commissioning must only be carried out by qualified personnel. Current applicable laws and regulations as well as the generally recognized rules of technology must be observed during assembly and installation..

1.1 Intended Use

The EDC (Electronic Data Capture) module is used to capture and transmit meter information from ZENNER water meters. It is designed for installation on compatible ZENNER water meters. The module is used in the water management and consumption monitoring sectors. Users are typically utility companies and service providers involved in billing, energy monitoring, etc. Retrofitting and commissioning of the modules should only be carried out by qualified personnel. Operational reliability is only guaranteed when used as intended by the manufacturer. No liability is assumed for damages resulting from other uses. Any modification is only permitted with the manufacturer's consent. Otherwise, the manufacturer's warranty becomes invalid.

1.2 Safety instructions

General information about the device:

- This device is intended for its designated use only. Caution! Improper use can damage the device. Opening the device can cause damage and potentially result in hand injuries. The device is factory sealed and not intended to be opened.
- Unauthorized work on the device may compromise its safety and functionality. Loss of functionality and personal injury can result from unauthorized work on the device. Please familiarize yourself with the necessary procedures beforehand.
- Ensure that the installation environment complies with the specified operating range. Adhere to the specified temperature and limit values at all times.
- To avoid damaging the device or impairing its functionality, refrain from using chemical cleaning agents. If cleaning is necessary, use a dry or slightly damp cloth.
- The device is equipped with a permanently installed lithium battery that must not be recharged. This type of battery is classified as hazardous material (hazard class 9). All applicable transport regulations must be observed! Data sheets, safety data sheets, and test reports for the batteries are available upon request. Please also note the **following general information on handling batteries** . The device contains a non-rechargeable lithium battery. Attempting to recharge it will damage the device and may result in personal injury.
- This device must not be disposed of with normal household waste under any circumstances. Please refer to the disposal instructions provided separately in these instructions.

General information on handling lithium batteries and devices containing lithium batteries

Attention! The following precautions must be observed when handling lithium batteries and devices containing lithium batteries.

- Store in a dry place.
- Do not heat or throw into fire to avoid explosions.
- Do not short-circuit
- Do not open or damage
- Do not charge
- Keep out of reach of children

2 Materials needed



- Software B.One Device Manager App (only for Android devices)
- MinoConnect Bluetooth Radio or K01-Blue 3000
- ZVEI - IrDA CombiHead for MinoConnect Android device (at least Android version 8)



Figure 1: 186432 MinoConnect Set BTLE Radio Opto ZR (left) and 181560 Optokopf K01-Blue 3000 (right)

3 EDC configuration options

To configure the EDC parameters, please proceed as follows:

- Open the B.One Device Manager app on your device.
- Check your connected devices by tapping the slide menu in the upper left corner and selecting "Pairing". Your connected device should be displayed here.
- Return to the main menu and select "CONFIGURATION"
- In the new menu, select "Default" as the device. Select "IR" to configure devices with the optical head.
- Make sure the MinoConnect is switched on.
- Place the optical head in the designated spot on the EDC and ensure it is positioned correctly.
- Press the "READ" button at the bottom of the configuration menu.
- After successful data retrieval, you can view and configure the various parameters of the EDC (see table below).
- Configurable parameters are marked by this symbol. 
- After tapping this symbol, please select the desired option from the drop-down menu and press "OK".
- In the configuration menu, press the "WRITE" button to execute the command.
- This symbol indicates that the command has been executed successfully. 

Please continue with this process until the EDC is fully configured to your requirements. An overview and explanation of the parameters displayed in the B.One Device Manager app can be found in the tables below. All configurable parameters are shown in bold and cursive.

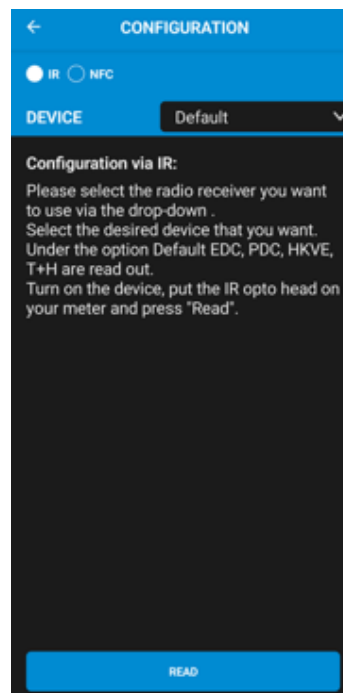


Figure 2: Configuration screen of the B.One Device Manager app

3.1 Description of the configuration parameters

parameter	Description
Readout Time	Time of meter reading
Serial number module	Printed serial number on the meter housing
Medium module	Medium of the communication module
Generation module	The module's generation number
Serial number	The 14-digit alphanumeric serial number of the counter
Medium meterr	Medium of the meter device connected to the communication module
Version	The firmware version of the connected device
Device time	The system time of the device
Set device time	Takes the current time from the system and writes it to the measuring device.
Key date	Date on which the cumulative consumption is stored in the device. This date value is often used to generate the consumption bill. ZENNER factory setting 01.01.
Device mode	DeliveryMode = Device is not activated, OperationMode = Device is activated
Battery end date	Date until which the battery will last even under heavy use. The device usually lasts longer.
Nominal flow	Selection of the continuous flow rate in m ³ / h for automatic setting of the default values of the smart meter functions (differential values)
Pulse value	Unit and scalar encoded as VIF
Mechanical register	Upper part of the water meter, which records water consumption.
Register Digits	Number of water meter register cogs (mechanical digits). For apartment and house water meters with a D-register: 5 digits and 3 decimal places = 8 For large water meters: 6 digits and 3 pointers = 9
Pulse multiplier	The pulse multiplier of the measuring device. Select the correct value by checking either the markings on the measuring device or the information in the EDC manual.
Scenario LoRa	Configuration number of the radio operation. Determines which data is sent and at what intervals.
Scenario wMBus	Configuration number of the radio operation. Determines which data is sent and at what intervals.
Activation mode	OTAA (Over-the-air activation): The device initiates a join process with the network, which assigns a dynamic DevAddr and negotiates security keys with the device. Once activated, the device switches to ABP (Activation by personalization).
Net ID	A 24-bit value used to identify LoRaWAN networks. This network-specific address is used so that uplink frames sent by this device can be forwarded to your home network.
DevEUI	A unique 64-bit identifier assigned by the manufacturer or owner of the terminal device.


parameter	Description
JoinEUI	Global application ID that uniquely identifies the manufacturer of the end device.
DevAddr	Logical address used to identify objects on the network.
ADR	Adaptive data rate. This is an optimization mechanism for transmission power, data rate, and transmission time on the network.
Send Join Request	Allows an already activated device to reconnect. The activation mode must first be set to OTAA.
Frequence	Radio frequency of the device
Burst	This event indicates that the measuring device has detected a pipe rupture. A "pipe burst" is detected when the flow rate exceeds a certain value (>30% of Q3) for a period of 30 minutes. This is averaged over a period of 15 minutes. The event log stores the date and time of the event.
Oversized	This event indicates that the meter is oversized. The meter is considered oversized if the flow rate never exceeds $0.1 \cdot Q3$ (10% of Q3). This is averaged over a 15-minute period. The number of times the flow rate falls below 10% of Q3 is counted. If the flow rate is not reached after 30 days, the meter is flagged as "oversized". If a flow rate of > 10% of Q3 is reached on average within a quarter of an hour, detection is permanently deactivated and the status is cleared. The event log stores the date and time of the event.
Backflow	This event is triggered when reverse water flow is detected.
Blockage	This event indicates that the meter has detected a blockage. If no meter reading progress is detected by the EDC module over a period of four weeks, a meter stop (blockage) is reported. The blockage is considered lifted when a meter reading difference of more than 10 liters occurs within a quarter of an hour.
Leakage	This event indicates that the counter has detected a leak. If the flow rate is never zero over a 24-hour period (96 quarter-hour values), this indicates a leak. The EDC module sets the corresponding bits. If the flow rate remains zero for a quarter of an hour (before reaching 96 quarter-hours without flow), the algorithm restarts. Once 96 quarter-hours of flow have elapsed, the leakage indication remains until the flow rate remains zero for eight consecutive quarter-hours. The event memory stores the date and time of the event.
Reset Backflow	Timeframe for clearing the "backflow" event
Reset Leakage	Timeframe for clearing the "leakage" event
Undersized	This event indicates that the meter is undersized. If the flow rate is continuously higher than Q3 (continuous flow) over a 6-hour period, this indicates an undersized meter, and the message "Meter undersized" will be displayed. The average is calculated over a 15-minute period. The event log stores the date and time of the event.
Smart function	Enables/Disables the smart functions
Meter Value	Meter value of the connected device
Return volume	The return volume of the meter
Hardware status	Hardware status of the counter
Warnings	List of all warnings
Reset warnings	Function to delete all warnings from device memory

3.2 Example: Changing the communication scenario

This chapter demonstrates the parameter configuration process using the example of changing the communication scenario. While the configuration options differ, the process remains the same for all parameters.



Figure 3: Example configuration process

- Follow the steps at the beginning of Chapter 3 to set up your MinoConnect and read your device.
- To change the communication scenario, please tap the icon to the left of the parameter name.
- In the pop-up window that appears, deactivate the active scenario. Switching between scenarios is only possible if the other scenario is deactivated!
- Now select the desired scenario and confirm your selection with "OK".
- Back in the device overview, you will see a preview of the changes you have entered.
- If the changes you made are correct, tap the "WRITE" button at the bottom of the screen. Make sure the optical head is still in the correct position on the device.
- This symbol indicates successful configuration of the parameter. 

4 Configuration of the EDC B.One module

This chapter explains the entire configuration process using the specific example of a ZENNER bulk water meter WPD DN 150 in combination with the EDC B.One module.

4.1 Before configuration

- Before installing the EDC module, please check your specific meter reading.
- In the case shown in Figure 4, the index is close to 3×10^3 but the number “3” is not fully reached. The first counter (labeled “X1”) has almost reached “9”. The second counter (labeled “X0.1”) has already counted more than “9”. The third counter (labeled “X0.01”) lies between “3” and “4”.



Figure 4: Interpretation of the meter reading

- The result is a meter reading of 28935 (equivalent to 28.935 m^3 or 28,935 liters). This value should be rounded, in this case to 28,900 liters. Note the meter reading, as it will be needed later in the configuration process.
- Please place the EDC module on the water meter as shown in Figure 5 and mount it as described in the EDC manual.



Figure 5: EDC mounting position

4.2 Configuration process

- Please follow the steps described at the beginning of Chapter 3 to start the configuration process. The correct positioning of the optical head is shown in Figure 6.



Figure 6: Position of the optical head

- Enter the **serial number of the meter** 22002355 (see Figure 5).
- Mechanical counter:
Select the appropriate mechanical counter from the images in the dropdown menu. The parameters "Register Digits" and "Pulse multiplier" are set automatically. In our case, "WPHD DN 150-300, WSD DN 150-200".

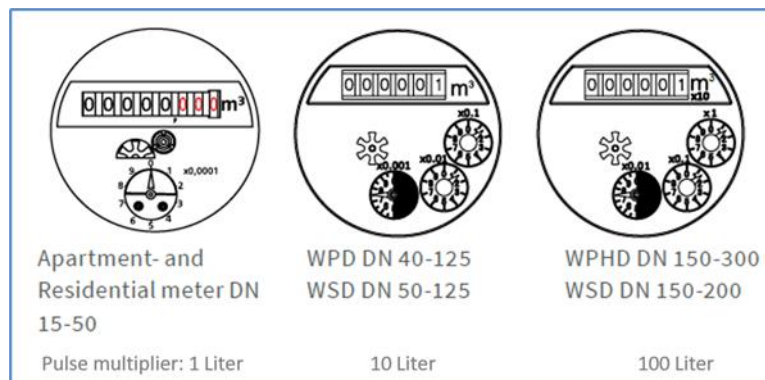


Figure 7: Categorization of the momentum multiplier

- Set the **nominal flow rate** according to the marking on the meter register. In this case, the nominal flow rate is $250 \text{ m}^3 / \text{h}$.
- Enter the **meter reading in liters** (see section 4.1). Due to the pulse value of 100 liters, it is sufficient to consider the meter reading only up to the hundreds place. Round up or down accordingly.
- Choose and configure your desired **smart functions** .
- Press "Write" to apply the configuration. A message will appear if the application is successful.



5 Contact

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