



**ZENNER**

Produkt information

PDC-  
communication module

LoRaWAN™

Saarbrücken, September 2020

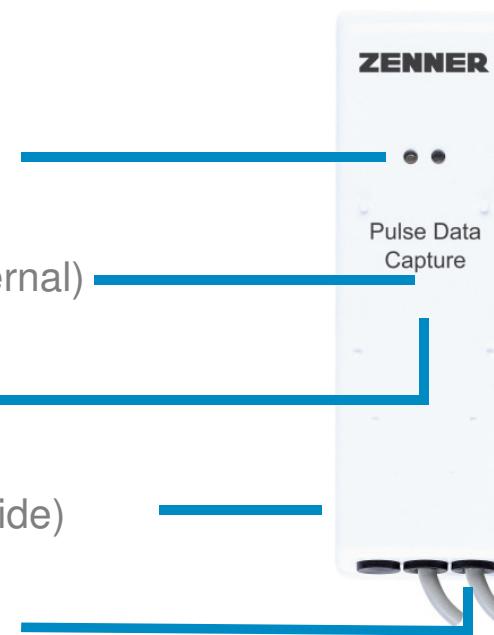


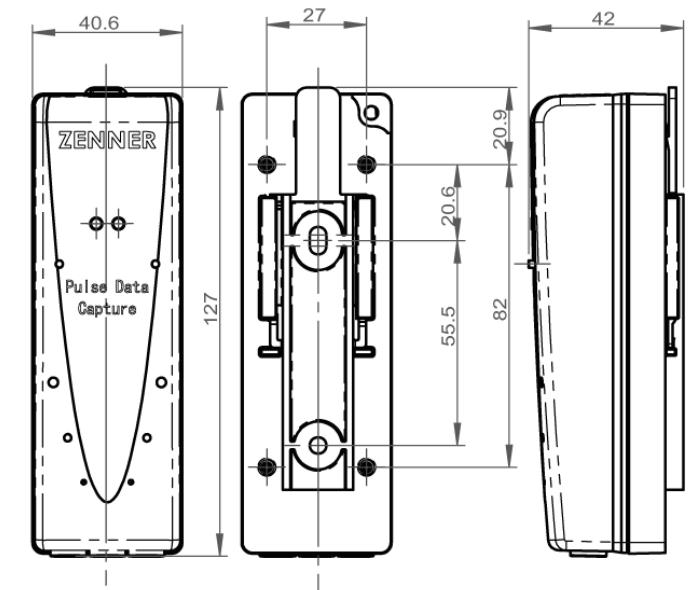
# AGENDA

- Components
- Hard Facts
- LoRaWAN™ Variant
- Technical data
- Content LoRaWAN™ radio telegram
- LoRaWAN™ PDC settings
- Commissioning
- SAP-Numbers & SAP-Shorttext explanation

# Components

## PDC

- Optical Interface
  - Battery & Antenna (internal)
  - LED (ret)
  - ID & Barcode (on the side)
  - 2 channels possible
- 

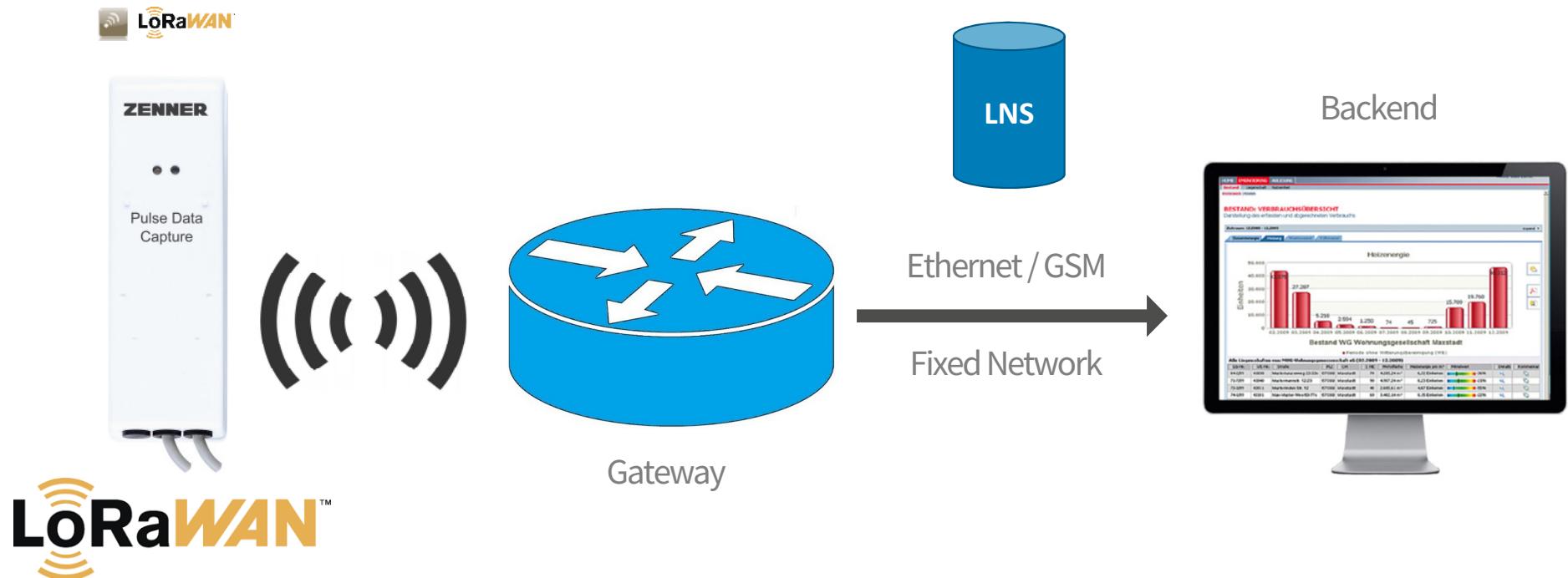


## HARD FACTS

- **PDC**-Communication module (**Pulse Data Capture** module)
- Modul for connection to measuring devices with pulse output
- Secure remote reading via LoRaWAN
- Integration of water-, heat-, gas- or electricity meters in Smart readout systems
- Suitable for ZENNER series ETKD-N/ETWD-N, MNK-N, MTKD-N/MTWD-N, RTKD-N sowie WS- und WP -N
- Retrofitting possible without breaking seals
- Variant with 2 channels available
- IP 68 protection class (important for meters in pits)



## From wM-Bus to LoRaWAN™



## TECHNICAL DATA

Frequency	868 MHz
Duration of telegrams	ca. 1s (depends on spreading factor)
Frequency of sending	Standard: daily, optional: monthly; (SZ 3 not implemented)
Data transmission	LoRaWAN™ Class A (bidirectional Communication)
Encryption of the telegrams	yes
Batterie capacity	Lithiumbattery: 10 Years + Reserve
Transmission power	25 mW
Protection class	IP 68
Operating temperature	10°C bis 40°C; -15°C bis +60°C (short-term)
CE-Conformity	Acc. To directive 2014/53/EU (RED)

# LoRaWAN™ radio telegram

Protocol content	Interval	Package			
Static device information: Serial no (DevEUI), manufacturer, Generation, OBIS code, ...	Once at join and every 6 months	SP 9.3			
Device specific information (Firmware version, LoRaWAN-Version, devicetype, (minol-meterID))	Directly after join and every 6 monaths	SP 9.2			
Due date value and date [01.01.] – Channel A and B	Yearly on due date	SP 8 two channels			
<b>Scenario 1 (monthly)</b> – Battery: 10 years + reserve	<b>Scenario 2 (daily)</b> – Battery: 10 years + reserve				
Protocol content	Interval	Package	Protocol content	Interval	Package
monthly value - Channel A and B, current date and time	monthly (start of month)	SP 6 two channels	Daily value - Channel A and B Status information	daily	SP 5 two channels
Monthly value, half monthly value - Channel A und B	monthly (Mid of month)	SP 7 two channels	Status information, current date and time	monthly	SP 9.1

SP=synchronous paktes=regelmäßig | AP=asynchronous paktes=unregelmäßig

# LoRaWAN™ PDC Settings

	<b>Retrofitt modules</b>
<b>Delivery mode</b>	Mode 1 Pulse recognition on
<b>Activation</b>	Via light or via ZENNER-Optical head via IrDA-interface using MSS Software
<b>Datenlogger</b> (readable via IrDA-interface)	Yearly due date values : 2 Monthly values: 18 plus 18 Half monthly values Daily values: 32

## COMISSIONING (same as EDC and micro modules)

- Remove protective film at IR interface and activate EDC module with light source (> 8s)
  - default: daily transmission interval
- Device sends a join request to the LNS and waits for join accept
- If no join response is received by the device, an additional request will be sent every minute (max. 5 requests)
- Control light LED (red) indicates the status of the connection process –  
fast flashing: no join accept received / slow flashing: successful connection
- In the case of unsuccessful joining, the device will send a random join request every other day until a successful connection has been made (LED does not indicate later join attempts)

## SAP-Numbers & SAP Short text

- 156871 : PDC LORA DV 1K OFF.KABELENDE IP68
  - DV = daily value
  - 1K = 1 Channel
- 156872 : PDC LORA DV 2K OFF.KABELENDE IP68
  - 2K = 2 Channels
  - OFF.KABELENDE = open cable end

## Further developments

- Certification for african market
- LoRa certification
- Implementation of smart functions (no project yet)
- Implementation of Scenario 3 (no project yet)
- Adaption to use the module in the German gas meter smart metering system
- Changing the housing for the gas meter market

Questions?



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Thanks a lot  
for your attention!