



## GWFcoder®

Key technology for the automated reading of water and gas meters

### Our strength: Your benefit

- Transfer of the effective meter reading:  
**No data loss and guaranteed security of the billing data**
- Batteryless register:  
**No service life restriction**
- No programming required when commissioning the meter in a readout system (Plug & Play):  
**Easy and fast on-site installation**

### Application

- Automated mobile or fixed network readout of relevant billing data of water and gas meters
- Wired or radio remote readout of hard to access metering installations, e.g.
  - Meter pits
  - Commercial and industrial metering
  - Reservoirs
  - Transfer or infeed points for water organisations

### Features

- Proven mechanical roller register with serial interface
- IEC interface according 62056-21 mode A or M-Bus interface according EN 13757-2/3
- Greater level of information and readout accuracy compared to meters with pulse output
- Guaranteed correlation between electronic readout and register reading
- Non-reactive readout of the data set via the GWF patented opto-electronic GWFcoder® technology
- Enables the retrofitting of wired or wireless automated reading without having to modify the water or gas meter – «Plug & Play»

### GWFcoder® -Data protocol IEC

|                         |                      |
|-------------------------|----------------------|
| Medium:                 | Water / gas          |
| Absolute meter reading: | 123654m <sup>3</sup> |
| Serial number:          | 43215678             |
| Meter production date:  | 29-12-06             |
| Meter size:             | DN 80 / G 4          |

### Options

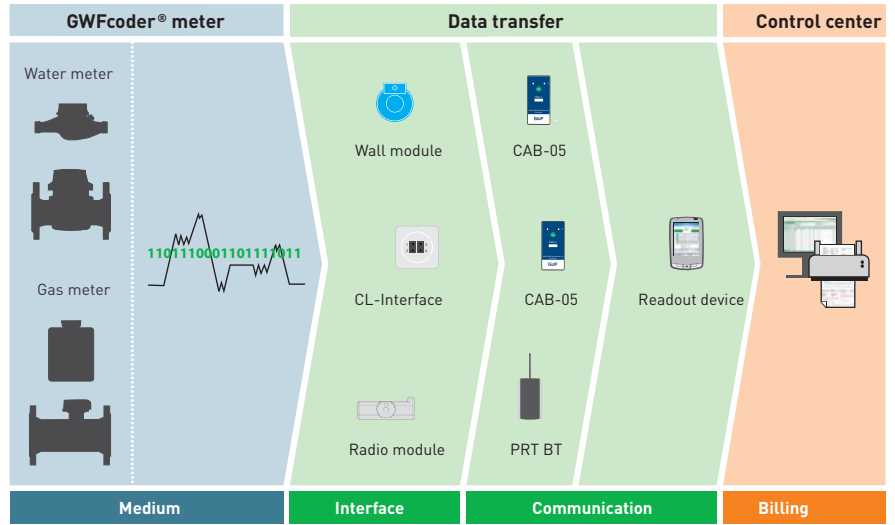
- Flood-proof execution (IP68) due to hermetically sealed roller register made of glass/cooper

# Reading technologies

Water and gas meters with GWFcoder® register are ideal for future upgrading to remote or direct readout technologies

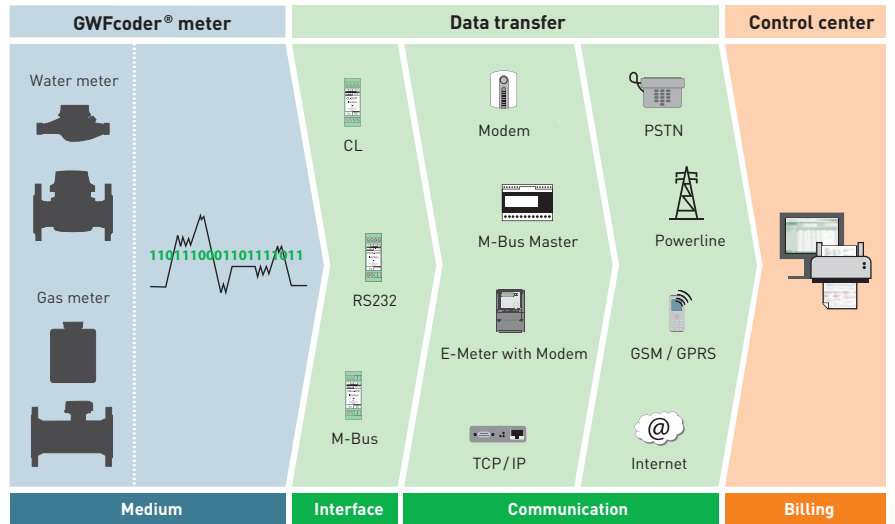
## Mobile on-site reading

- Direct or outside wall readout via the inductive interface; transmission distance of up to max. 150m
- Outside wall readout via the CL interface without access to the measuring point; transmission distance of up to max. 150m
- Mobile «walk-by» meter reading or «drive-by» meter reading from a moving vehicle without access to the property



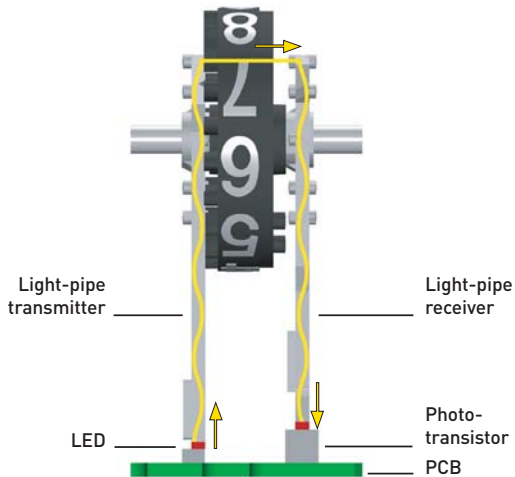
## Remote meter reading

- The GWFcoder® technology enables the combined remote reading of water, gas and electricity meters
- Depending on the interface at the communication unit (e.g. modem), various interfaces (interface converter) are available to integrate the GWFcoder® water and gas meters in the remote meter reading and to read out the meters with addresses according to IEC standards



# Encoder register variants





## GWFcoder®-Technology

In the GWFcoder® system, the individual rollers of the mechanical register are read out optoelectronically. The position of the various long asymmetrically arranged slits in the roller counters is scanned using 5 light barriers (light-pipe transmitter and receiver). The light barriers are implemented with phototransistors, LEDs, and light conductors, which are all consecutively scanned and evaluated. The precisely defined position of each individual roller counter is encoded as an absolute roller counter reading and read out as a part of the protocol via the GWFcoder® interface. This functioning principle is patented by GWF. The GWFcoder® interface, compared to a meter with a pulse output, has an incomparably higher level of information content and readout accuracy. A GWFcoder® register does not require a battery, which, in turn, does not compromise existing revision cycles. The readout device supplies the power for the readout.

## Standards and interface

GWFcoder® registers can be implemented with all common standardised or interface definitions. The GWFcoder® system currently supports the following interfaces:

### Interface

|          |  |
|----------|--|
| SCR/IEC: | IEC 62056-21 Mode A (IEC 1107)             |
| M-Bus:   | EN 13757-2/3                               |
| Namur:   | EN 60947-5-6 (large-scale gas measurement) |
| Sensu:   | UI-1203                                    |

## Comparison «absolute meter reading» - pulse

### GWFcoder® technology:

Transfers the effective meter reading. The read-out value in the billing system and the invoice are the same as the meter reading.

### Pulse transfer:

The potential sources of error for a reproduced meter reading with pulse transmission are:

- Bouncing
- Backflow water
- Temporary signal interruption
- Double pulses
- Incorrect pulse value

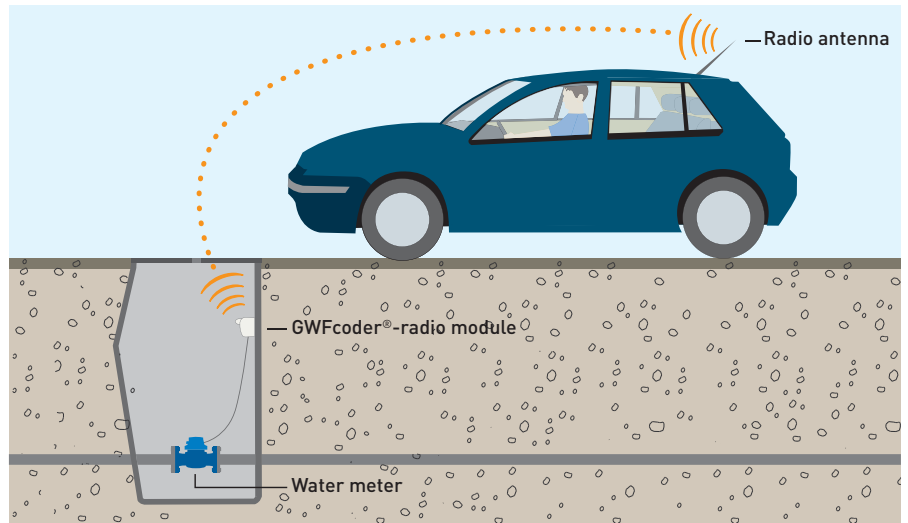
The readout value in the billing system and the invoice may differ from the meter reading.

|                  |  |  |  |  |
|------------------|--|--|--|--|
| Encoder register |  |  |  |  |
| Reed contact     |  |  |  |  |

# Applications

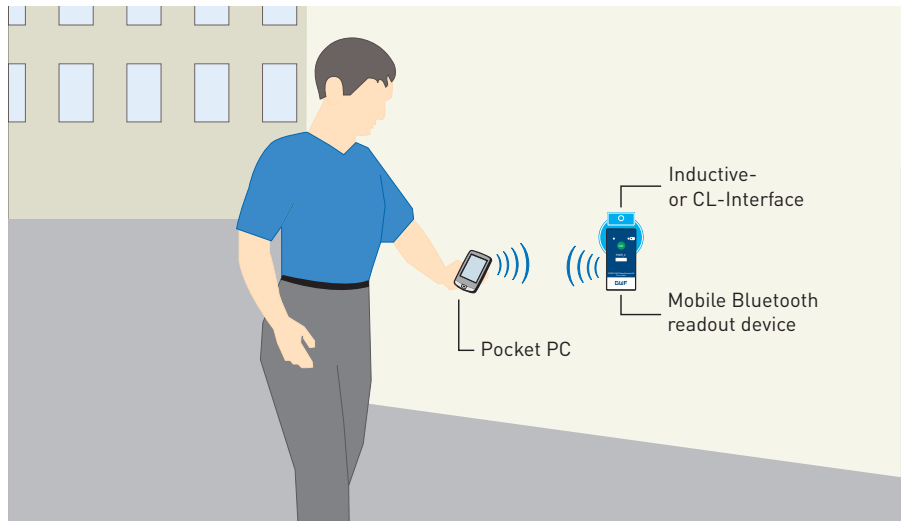
## Wireless pit readout

Meter with GWFcoder® register, IEC interface and GWF radio module (type RCM-PI) is read out by radio using a mobile infrastructure.



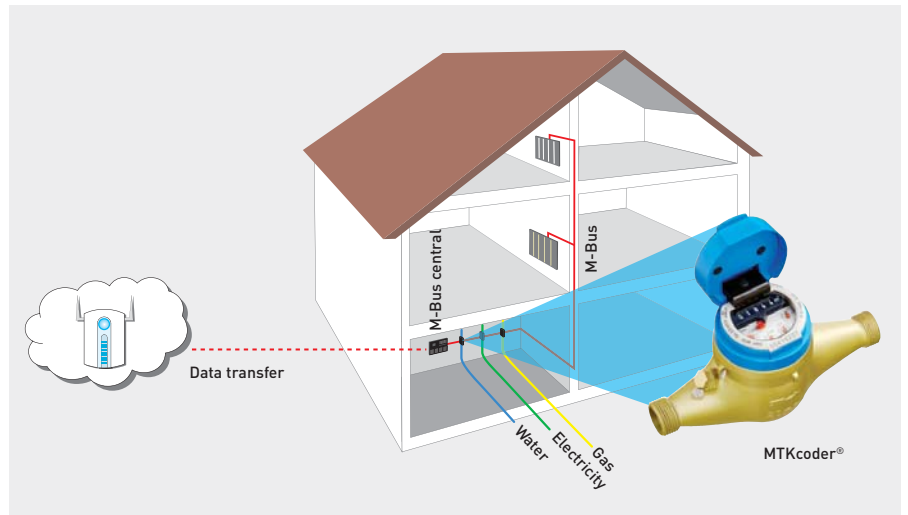
## GWRead Mobile - Wall pad reading

Encoder meters with a wall pad can be read without entering the property by means of an inductive wall pad. The meter data is then automatically assigned to the customer. The meter readout device then transmits this data wireless via Bluetooth to the Mobile readout device.



## M-Bus remote reading

The meters with GWFcoder® registers and M-Bus interfaces are connected to an M-Bus remote reading system. This ensures that the meter data is transferred directly via an M-Bus data centre or level converter to a PC where the data is further processed.



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