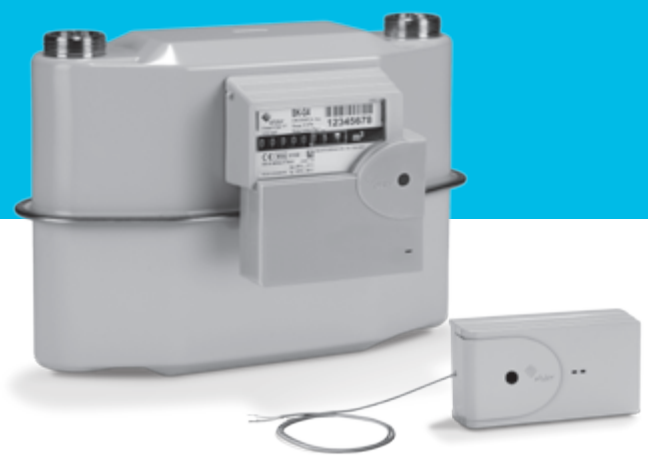
ACM WAVE SYSTEM RF

Absolute ENCODER communication module ACM WAVE SYSTEM RF for smart metering



Applications

Media: natural gas, propane and butane*
Industries: gas industry
Tasks: remote data readout

Brief information

If the distance between a cable-based M-BUS master and the gas meter is too big or if another construction interrupts the connection, the wireless ACM WAVE SYSTEM RF with its communication modules which are matched in pairs can be used:
The absolute meter reading is provided by the Absolute ENCODER AE2 index. The communication modules in the ACM WAVE SYSTEM RF then forward the data. Data is transferred over a wireless link on the basis of a secured point-to-point connection to a downstream receiving unit that functions as M-BUS master, e.g. electricity meter, data concentrator or multi-utility controller MUC.
In addition to data transmission, the ACM WAVE SYSTEM RF V-Drive offers the optional function of remote switching of a valve integrated in the diaphragm gas meter (see Smart valve data sheet).

Main features

- Forwarding absolute meter readings
- No battery in the index. Power supply via communication module TRANSMITTER RF.
- The wireless link can optionally be expanded using up to three REPEATER RF.
- Simple plug-in installation of the communication module TRANSMITTER RF with immediate availability
- Encrypted data transmission possible

Options

- Communication modules for Absolute ENCODER AE2 can be retrofitted in the field.
- Remotely switchable valve in gas meter (see Smart valve data sheet)

elster
Instromet

* Gases in acc. with EN 437

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System description

ACM WAVE SYSTEM RF/
ACM WAVE SYSTEM RF V-DRIVE

The communication module TRANSMITTER RF is designed as a plug & play solution and is simply plugged into and sealed to the ENCODER index. The connected receiving unit is synchronized automatically. All the ACM WAVE SYSTEM RF units are delivered fully programmed.

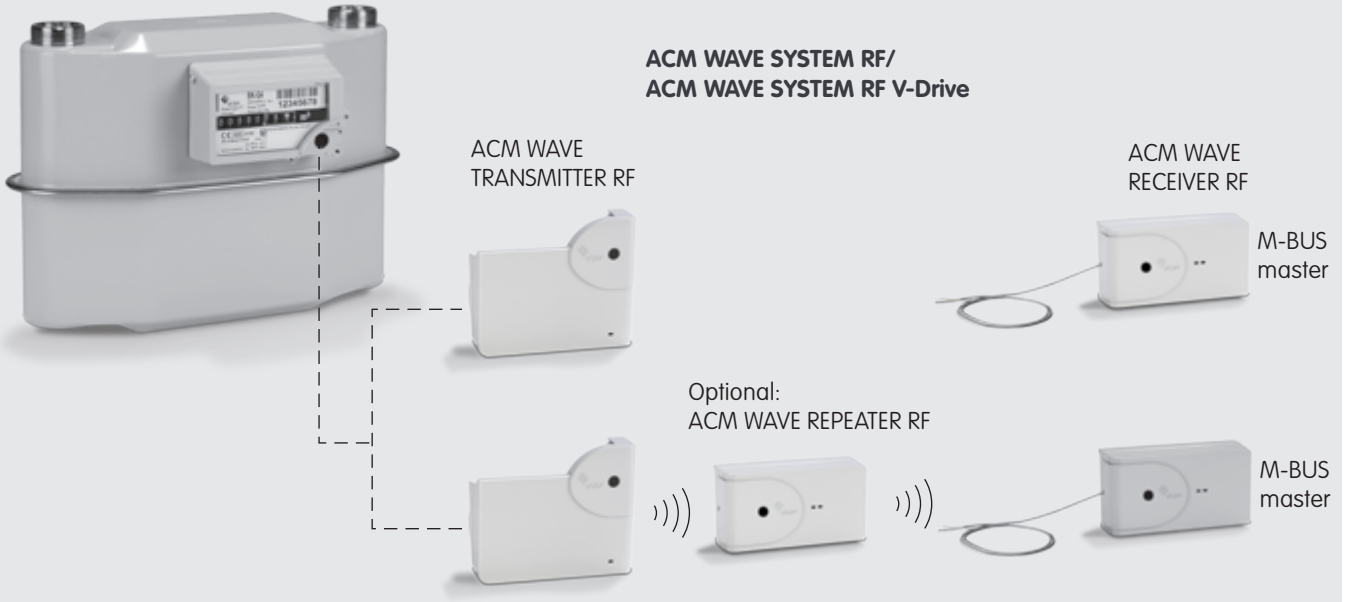
The absolute meter reading is provided by the Absolute ENCODER AE2 index. The data is transferred from the TRANSMITTER RF to the RECEIVER RF over a wireless link. The RECEIVER RF is connected to the receiving unit by a cable.

If the quality of the wireless link is not adequate, up to three REPEATER RF can be connected into the link. The data is transferred from the REPEATER RF to the RECEIVER RF over a wireless link.

Only prefabricated module pairs can communicate with each other. This secured point-to-point connection ensures that radio signals cannot be affected by any other appliances in the household.

The modular connection between the TRANSMITTER RF and ENCODER index enables the ACM WAVE SYSTEM RF to be replaced at any time without further programming effort. The metrology-relevant part of the gas meter thus remains unaffected.

Diaphragm gas meter with Absolute ENCODER AE2



Energy supply

ACM TRANSMITTER RF

The wireless TRANSMITTER RF is battery powered. The battery supplies the index with power during the reading process. The ENCODER index is opto-electronically scanned, with this being the only time there is any requirement for power. This minimizes energy consumption.

If no data is transferred or the valve is not activated, the Absolute ENCODER AE2 can be disconnected from the electrical power supply.

ACM REPEATER RF

The optional REPEATER RF is also battery powered.

ACM RECEIVER RF

However, the cable-based RECEIVER RF is supplied with energy via the M-BUS.

An internal energy accumulator in the RECEIVER RF causes a start-up time of < 5 minutes due to its charging process following commissioning or after a power shut-down. During this time period, transfer of the meter reading is still possible.

In the case of an integrated valve in the gas meter in conjunction with the ACM WAVE SYSTEM RF V-Drive, the valve status "Open/Released" and "Closed" can be called up at any time from the customer's data management software.

Installation

ACM TRANSMITTER RF
The plug-in TRANSMITTER RF is plugged into the Absolute ENCODER AE2 index via a 4-pin plug. The plug connector automatically produces synchronization.
A screw to secure the connection and a seal are included in the delivery. This separate seal does not affect the metrology-relevant part of the gas meter. The TRANSMITTER RF can be simply replaced at any time by another communication module.

ACM REPEATER RF
Synchronization and availability for data exchange are activated via an internal reed contact. This is triggered by a specific permanent magnet.

ACM RECEIVER RF
The RECEIVER RF is delivered with a prefabricated connection cable for the receiving unit.
Synchronization and availability for data exchange are produced automatically.

The RECEIVER RF and the optional REPEATER RF are supplied with a base plate. With the wide variety of mounting options provided by the base plate, the units can be mounted on either the wall, a pipe or a DIN rail.

Base plate

Technical data

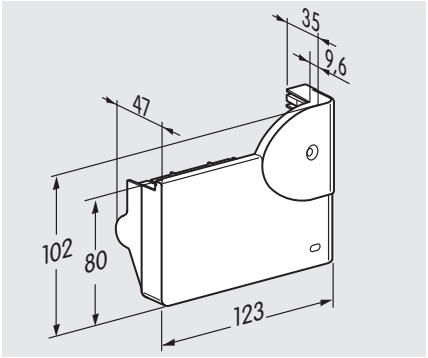
ACM WAVE SYSTEM RF
Enclosure: IP 54.
Ambient temperature: -25 to +55°C.
Transfer of status and error messages.
The ACM WAVE SYSTEM RF supports M-Bus data transmission protocols to DSMR (Dutch Smart Meter Requirements) and OMS (Open Metering System).

ACM WAVE SYSTEM RF V-Drive (Smart Valve)
Ambient temperature: -10 to +40°C.
Opening time from closed to open/released state: ≤ 4 s,
closing time: ≤ 0.5 s.
Data transmission is carried out hourly.
Min. inlet pressure: 17.5 mbar.
Allowed leakage flow in the customers' piping:
valve released:
max. 13 l/h at 35 mbar Δp,
valve closed: 5 l/h.

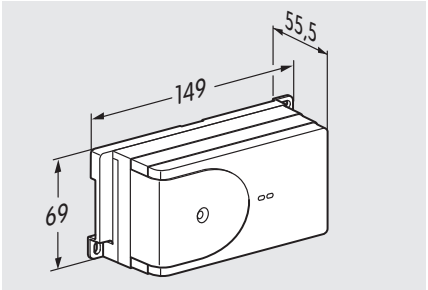
ACM TRANSMITTER RF/ ACM REPEATER RF
Battery power supply.
Battery service life: 15 years.
TRANSMITTER RF and REPEATER RF are designed for max. 4 control commands per hour.

ACM RECEIVER RF
Power supply via M-BUS: 6 mA (4 M-Bus loads).
Waiting time between each valve operation: < 1 minute.
Energy accumulator charging time: < 5 minutes.
Service life: 30 years.
Connection cable design:
length: 2 m (other dimensions on request),
type: flexible, two-core cable LiYY, fireproof pursuant to IEC 60332-1,
cross-section: 0.25 mm^2.
The free cable end has 2 wire end ferrules.

TRANSMITTER RF dimensions:



RECEIVER RF/REPEATER RF dimensions:



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