

**Operating instructions
Communications module
ACM M-BUS WIRE,
ACM SCR+ WIRE for gas meters
with Absolute ENCODER AE2 with
and without smart valve**



Translation from the German
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Absolute ENCODER AE2 with and without
smart valve** 1

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Safety

Please read and keep in a safe place



Please read through these instructions carefully before installing or operating. Following the installation, pass the instructions on to the operator. This unit must be installed and commissioned in accordance with the regulations and standards in force. These instructions can also be found at www.docuthek.com.

Explanation of symbols

■, 1, 2, 3... = Action
> = Instruction

Liability

We will not be held liable for damage resulting from non-observance of the instructions and non-compliant use.

Safety instructions

Information that is relevant for safety is indicated in the instructions as follows:

⚠ DANGER

Indicates potentially fatal situations.

⚠ WARNING

Indicates possible danger to life and limb.

! CAUTION

Indicates possible material damage.

All interventions may only be carried out by qualified gas technicians. Electrical interventions may only be carried out by qualified electricians.

Conversion, spare parts

All technical changes are prohibited. Only use OEM spare parts.

Transport

On receipt of the product, check that the delivery is complete (see Part designations). Report any transport damage immediately.

Storage

Store the product in a dry place. Ambient temperature: see Technical data.

Disposal

Components are to be disposed of separately. On request, old units may be returned carriage paid to Elster GmbH in accordance with the relevant waste legislation requirements (for Germany: KrW-/AbfG [Act for Promoting Closed Substance Cycle Waste Management and Ensuring Environmentally Compatible Waste Disposal]).

Checking the usage

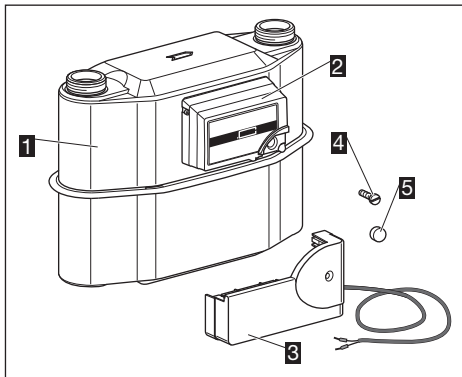
Communications module ACM..WIRE for gas meters with Absolute ENCODER AE2

Communications module ACM..WIRE for recording and forwarding absolute meter readings. ACM M-BUS WIRE additionally offers the "V-Drive" option. This means that activation and status messaging of the valve incorporated in the gas meter can be carried out. The valve is designed for the remote connection and disconnection of the gas supply. This function is only guaranteed when used within the specified limits – see page 4 (Technical data). Any other use is considered as non-compliant.

Type code

Code	Description
ACM	Absolute ENCODER communications module
M-BUS	M-BUS bus system
SCR+	SCR+ interface
WIRE	Cable-based version
V-Drive	Smart valve control (M-BUS)

Part designations



- 1 Gas meter
- 2 Absolute ENCODER AE2
- 3 ACM M-BUS WIRE/ACM SCR+ WIRE
- 4 Retaining screw (at the rear of the ACM..WIRE)
- 5 Calibration seal (at the rear of the ACM..WIRE)

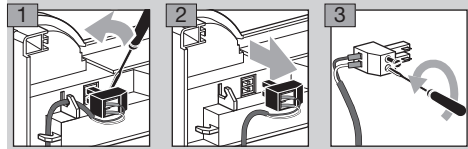
Wiring

⚠ WARNING

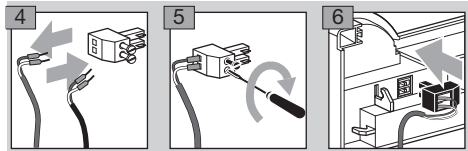
Electric shocks can be fatal! Before working on possible live components ensure the unit is disconnected from the power supply.

- ▷ For the electrical connection between the ACM..WIRE and the receiving unit, polarity is inconsequential.
- 1 Wire the ACM..WIRE to the receiving unit.
- ▷ If a connection cable is already routed to the receiving unit at the installation location, the prefabricated connection cable on the ACM..WIRE may be removed, as described below.

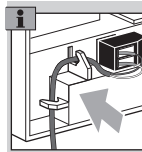
Removing the prefabricated connection cable



- ▷ Use the connection plug from the ACM..WIRE for further wiring with the already routed connection cable.



- 7 Feed the new connection cable into the strain relief facility.



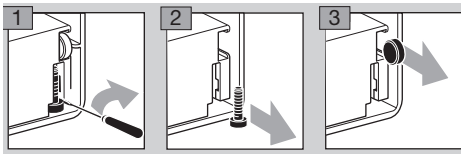
Installation

Installing the gas meter

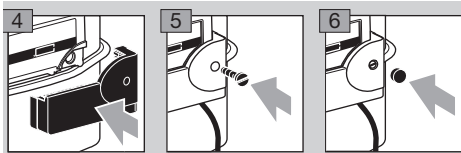
- ▷ For installing the gas meter in the pipework, refer to the operating instructions for diaphragm meters BK-G1.6 to BK-G25T, see www.docuthek.com → Elster-Instromet → Products → Gas measuring devices → Diaphragm meters → Diaphragm meters BK-G1.6 to BK-G25T operating instructions.

Attaching the ACM..WIRE

- ▷ The ACM..WIRE is connected to the Absolute ENCODER AE2 index after the gas meter has been installed in the pipework.
- ▷ The retaining screw and a calibration seal are found at the rear of the ACM housing.



- ▷ When connecting the ACM..WIRE to the index, avoid bending the contacts.



Commissioning

Synchronization

- ▷ The ACM..WIRE communications module is delivered fully programmed.
- ▷ Once the ACM..WIRE has been connected to the index and wired to the receiving unit, the units are synchronized automatically.

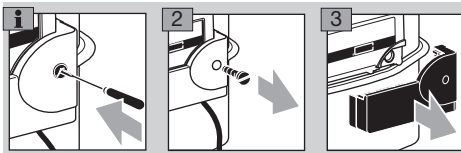
Charging time

- ▷ The cable-based ACM..WIRE operates without a battery. The internal energy accumulator ensures a minimum charging time of < 1 minute between each valve operation. Only the first charging process causes a start-up time of max. **20 minutes**. Communication with the index is possible during this time. Valve operation is possible on completion of the charging process.

Replacement

- ▷ The units can be replaced without further programming effort.
- ▷ The relevant calibrated part of the meter remains unaffected.

- 1 For removing the ACM..WIRE, the seal must be pierced and broken with a screwdriver.



- 4 Install the new ACM..WIRE according to the enclosed operating instructions.

Maintenance

The communications module ACM..WIRE for gas meters with Absolute ENCODER AE2 requires little servicing.

Assistance in the event of malfunction

⚠ WARNING

Electric shocks can be fatal! Before working on possible live components ensure the unit is disconnected from the power supply.

- ? **Fault**
- ! **Cause**
- ● **Remedy**

Possible faults and suggested solutions

- ? **Communication with the index is disturbed.**
- ! The contacts on the index are bent.
- ● Remove the ACM..WIRE from the index and straighten the contacts. Reconnect the ACM..WIRE.
- ! The ACM..WIRE has been incorrectly fitted.
- ● Fit the ACM..WIRE according to the enclosed operating instructions.
- ! The connection plug is not plugged in.
- ● Check the connection plug and plug in.
- ! The connection cable is incorrectly connected.
- ● Check the connection cable, see page 2 (Wiring).

ACM M-BUS WIRE V-Drive

- ? **Valve does not switch.**
- ! Energy accumulator charging time insufficient.
- ● Wait until the charging time of max. **20 min.** has elapsed.

Technical data

Enclosure: IP 54.

Ambient temperature: -25 to +55°C.

M-BUS transfer of status and error messages in accordance with EN 13757.

Connection cable design: 2 m (other dimensions on request), flexible, two-core cable LiYY, fireproof pursuant to IEC 60332-1, $\varnothing = 0.25 \text{ mm}^2$.

The free cable end has 2 wire end ferrules.

Energy supply:

via M-BUS: 6 mA (4 M-Bus loads),
via SCR+: 3 mA.

ACM M-BUS WIRE V-Drive:

Waiting time between each valve movement: < 1 min.

Energy accumulator charging time: < 20 min.

Smart valve for M-BUS

Ambient temperature: -10 to +40°C.

Opening time from closed to open/released state:

$\leq 4 \text{ s}$,

closing time: $\leq 0.5 \text{ s}$.

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.

Declaration of conformity

We, the manufacturer, hereby declare that the accordingly labelled products Absolute ENCODER AE2 with communications module ACM M-BUS WIRE, ACM M-BUS WIRE V-Drive and ACM SCR+ WIRE for gas meters BK-G comply with the requirements of the listed Directives and Standards:

Directives:

– 2004/108/EC.

Standards:

– EN 55022, EN 61000-4-5, EN 61000-4-6,
EN 61000-6-2.

The production is subject to the stated Quality System pursuant to DIN EN ISO 9001, TÜV NORD CERT. Elster GmbH

Scan of the Declaration of conformity (D, GB) – see www.docuthek.com

Contact

elster

Elster GmbH

Postfach 129, D-55248 Mainz-Kastel

Steinern Straße 19-21, D-55252 Mainz-Kastel

T +49 6134 605-0

F +49 6134 605-390

www.elster-instromet.com

Elster Metering Ltd.

Tollgate Business Park

Beaconside

Stafford, Staffordshire ST16 3HS

T +44 1785 275200

F +44 1785 275305

jeavons.info@gb.elster.com