

Valve Ve

Disconnection of the gas supply in diaphragm gas meters

Applications

Media: natural gas, propane and butane

Industries: gas industry

Tasks: remote gas supply connection/disconnection in diaphragm gas meters

Brief information

The implementation of smart metering offers customers and utility companies many new possibilities. One of these is the remote reading of data.

By replacing conventional diaphragm gas meters, smart meters with additional functionality can be used, e.g. remote connection and disconnection of the gas supply internally within the meter itself. This significantly reduces the costs and labour caused by consumers in default of payment.

An important safety criterion when using remotely switchable diaphragm gas meters is the reconnection of gas supply.

First, the end customer acknowledges that his installation is in due condition thus allowing the valve to be opened. Then the gas meter checks whether the customer's installation is in due condition, i.e. that its appliances are closed.



Remote shut-down

The integrated valve is open on delivery as standard.

In the event of remote disconnection, the smart gas meter receives a command to close from the data management software. This signal is forwarded to the gear motor of the integrated valve. The valve is closed and thus the gas supply is shut off.



Main features

- Enables remote disconnection of the gas supply
- Safe re-establishment of the gas supply
- Protected against unintentional opening of the valve
- Gas enable only once all of the customer's gas appliances are closed
- No energy consumed when valve is open or closed
- Low energy consumption during activation
- Detection of open and closed positions

Re-establishment of the gas supply

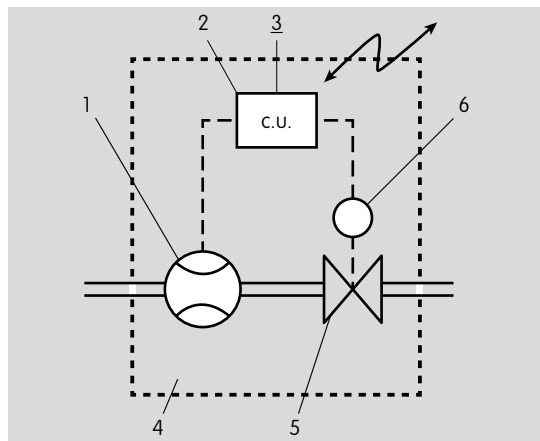
Before the gas supply is re-established, the valve is armed ready for opening by the data management software. The end user then confirms that all their gas appliances are off by pressing the release button and the valve opens.

The gas meter carries out an automatic flow rate measurement to check whether the customer's gas appliances are closed.

If the flow rate or the volume measured during the testing time is lower than the defined value, the appliances are regarded as being closed. The valve remains open and the gas supply which had been disconnected is re-established.

If the customer's gas appliances are open, however, and the test registers a flow rate or volume which is above the defined value, the valve is closed immediately. This test can be repeated several times on the gas meter.

If it is not possible to re-establish the gas supply due to increased leakage rates, the data management software must release the valve for opening again.



1. Flow meter
2. Electronic control unit
3. Customer release button
4. Gas meter housing
5. Integrated valve
6. Valve actuator

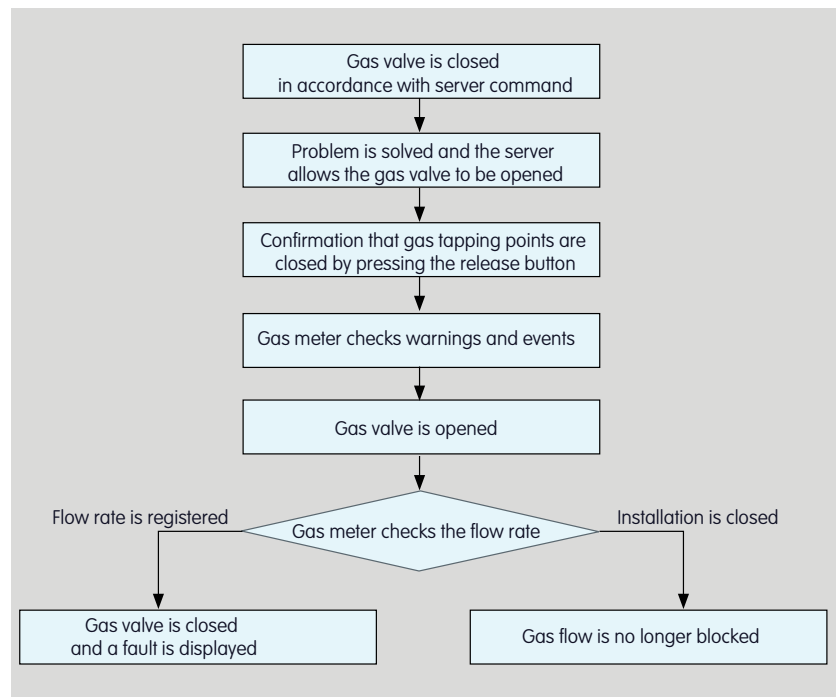
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Safe opening of the valve thanks to flow detection



Technical data

Ambient temperature	-25 °C to +55 °C
Opening time incl. flow rate measurement	< 2 min.
Opening and closing times of the valve	approx. 5 s (max. 15 s)
Max. operating pressure for valve operation	100 mbar
Max. operating pressure of the gas meter	500 mbar
pressure absorption BK-G4 to EN1359	< 2 mbar
Leakage rate when closed	max. 1 l/h up to 100 mbar