

SERIES 2 GAS-NET DEVICES

The good gets even better

Several thousand devices of the gas-net series have been built at Elster-Instromet Systems in Dortmund since 2001 and are in operation across the world. Now the established products have been made even more attractive by new software and hardware components. We are now in the process of switching over and producing Series 2 gas-net devices. The new components will offer further advantages which are presented and explained below with the example of the gas-net F1 flow computer.

Existing functions remain

Just to reassure you right from the start: all the functions of the previous gas-net products have been fully retained. The support provided by the components of the GAS-WORKS PC program system will also stay the same. In future, the same modules will support both gas-net series. The advantages of the Series 2 gas-net devices are thus additional. For the user, however, everything looks the same at first glance.

The all-rounder: ExMFE5

In Series 2 devices the previously known four-channel ExMFE4 input board will be replaced by the five-channel ExMFE5 board. This input board, tailored specially for flow computers, is a genuine all-rounder. All inputs will continue to have ATEX-approved, integrated explosion protection according to (EEx ib) IIC, which means that the signals of all intrinsically safe transmitters and sensors (gas meter, pressure and temperature) can be directly connected to the flow computer without additional isolating switching amplifiers. This saves money otherwise needed for additional hardware and wiring.

Here is a summary of the ExMFE5 inputs:

- Three pulse inputs for connecting low frequency or high frequency pulsers (LF up to 2 Hz; HF up to 5 kHz) with automatic transmitter signal level adaptation and additional open-circuit monitoring. Alternatively, it is also possible to connect an encoder totalizer to the first of these three inputs without changing the hardware. This encoder totalizer transfers the reading of the mechanical totalizer of the gas meter to the flow computer. Two HF transmitters can be connected



gas-net application in China

to the other two inputs in addition to the encoder totalizer. In this case, the flow computer will compare all three incoming volumes and thus facilitate optimum monitoring of the gas meter.

- One input for connecting the temperature sensor, type PT100 in 4-wire technique.
- One 4-20 mA current input for connecting a pressure transmitter. Alternatively, one or more transmitters transferring their measuring result via HART protocol to the flow computer can be connected to this input without changing the hardware. The HART protocol allows the reading to be transferred as a digital numerical value to the flow computer if suitable pressure transmitters and temperature sensors are used.

This ExMFE5 input board has been thus precisely designed for the connection of all sensors and transmitters of a single-stream volume correction. If two streams are to be corrected in one device, then (and only then) will the device be equipped with a second, identical input board for the second gas stream. In this way there are no superfluous inputs and costs can be saved.



Series 2 gas-net F1 with integrated network interface

Connecting gas meters digitally

With gas-net flow computers it has always been possible to connect Q.Sonic ultrasonic gas meters by using the MSER2 digital input board.

Series 2 gas-net F1 devices now also allow digital interfacing of SICK|MAIHAK's FLOWSIC600. The totalizer readings that are generated inside and are indicated by the meter serve as a basis for transferring and processing data. This is how diagnostic data such as the measuring quality of the ultrasonic paths is transferred to the flow computer as well.

More outputs with MFA8

In addition to the new input board, there is also a new standard for the output board: now MFA8 instead of MFA6. With four digital / pulse outputs and four 0-20mA current outputs, this board offers two more current outputs compared to the previous standard.

Additional monitoring with ExDE6

The list of input boards with integrated explosion protection to (EEx ib) IIC has been expanded with the ExDE6 input board. With six intrinsically safe signal / pulse inputs (channel 1 can also be used for an encoder totalizer), this board provides a reasonably priced possibility for collecting, monitoring and logging additional signals from the station (e.g. safety shut-off valve, differential pressure at the filter, LF contact of the gas meter, etc.) in the flow computer.

Universal digital interfacing with network, modem and MSER2

Digital interfaces and communication protocols of all kinds are becoming more and more important for the powerful measuring devices in the gas-net series. One significant innovation of Series 2 gas-

net devices is an integrated network interface by means of which gas-net devices can be directly connected as stations to TCP/IP-based networks. The following summary provides an overview of the digital interfacing possibilities with communication protocols:

Communication via DSfG:

- > Interface for connecting to the local DSfG bus (DSfG class A)
- > Interface for remote connection via the public switched telephone network or GSM wireless networks (DSfG class B)
- > Interface for remote connection via IP networks by using TCP as communication protocol (also DSfG class B)

Communication via other protocols:

- > Interfaces for serial communication protocols (Modbus ASCII, Modbus RTU, RK512, ...)
- > Interface for remote connection via IP networks and Modbus TCP
- > Interfaces for special proprietary protocols of measuring devices of different manufacturers

gas-net – more attractive than ever

Compared to all these novelties, it is hardly worth mentioning that Series 2 gas-net devices are equipped with a significantly higher data logging capacity, which allows deeper billing archives than before and is extremely useful when it comes to monitoring tasks. All these new features make the gas-net series with its modular hardware and software concept and its attractive cost-effectiveness an even more interesting alternative for measuring and monitoring tasks in large-scale gas measurement.

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