

FLOW Measurement for Tanker Vehicles



for Propane & Butane

FLOWCOM 2000

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Since 1981 Flow Instruments has been successfully designing and manufacturing flow meter systems for cryogenic liquids as well as carbondioxide, nitrousoxide and LNG. In 2001 Flow introduced its first flow meter for propane-butane and obtained approval from PTB. The latest addition to the flowcom product line, the Flowcom 2000, was made possible due to up-to-date microprocessor technology and know-how, gained over 20 years of experience in this field. The main feature of the Flowcom 2000 is its user-friendly and intuitive operation. For instance, it is possible to configure the flow processor without

any ancillary equipment such as a laptop or handheld computer. While the flow processor is being configured, help information as well as minimum and maximum values are displayed for each parameter individually. The four push buttons of the flow meter are labeled on the display above and clearly indicate their current function depending on the context. The user is guided through the menus which allows the meter to be operated and configured even without a manual. This minimizes user errors by offering clear instructions.

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Features

- Four binary outputs with built in short circuit protection and over-temperature protection
- Available for products such as LIN, LOX, LAR, CO₂, N₂O, LNG, C₂H₄, C₃H₈, C₄H₁₀
- Temperature compensation
- Intuitive operation
- Large, back lit graphic LCD (240x64pixels)
- Rugged aluminium housing IP65
- Serial service interface (RS232) via MIL-connector
- Software download capability (via RS232)
- Serial printer port (RS232)
- Wide power supply range from 9 VDC up to 36 VDC

Options

- Ticket printer
- Data transfer to remote computer such as a handheld or vehicle board computer

Technical Data

- Dimensions, HxWxD: 200 x 230 x 175 mm
- Power supply: 9 ... 36 VDC
- Power consumption (w/o options): max. 30 VA
- Operating temperature range: -20 ... 55°C
- Storage temperature range: -30 ... 65°C

Approvals

- CE-labeled and designed according to OIML recommendations
- Type approvals available for Germany, Poland and Austria. Contact our Customer Service Department for type approvals in other countries.
- Approvals for Denmark and Switzerland in preparation.



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Components

Currently there are more than 2000 Flowcom systems in use world wide. They have been proven to be very reliable and can be economically upgraded as needed.

The illustration shows the Example of installed Flow Metering System for Propane/Butane with differential pressure transmitter, temperature probe (PT100), gas bubble sensor and metering section.

The ticket printer prints 42 characters per line on paper formats varying from 80x80 mm up to 182x257 mm. The TM-295 produces duplicates along with the original and its graphics capability is unmatched in this class. The printer can work with various fonts in 3 sizes.



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Components

Gasbubble sensor

The Flowcom 2000 metering system comes with a gas bubble sensor which replaces the traditionally used large and heavy phase separator and thus simplifies the pipework substantially. This sensor is used to determine the percentage amount of gas bubbles in the liquid in order to terminate the delivery if a certain threshold is exceeded which normally occurs when the vehicle tank runs out of liquid.

Metering Section

The metering section is the nucleus of the system. It operates on the basis of effective pressure measurement. The quantity of media flowing is calculated from the pressure drop across an orifice restrictor in

the line. The metering section features no moving parts, and thus is totally maintenance-free.

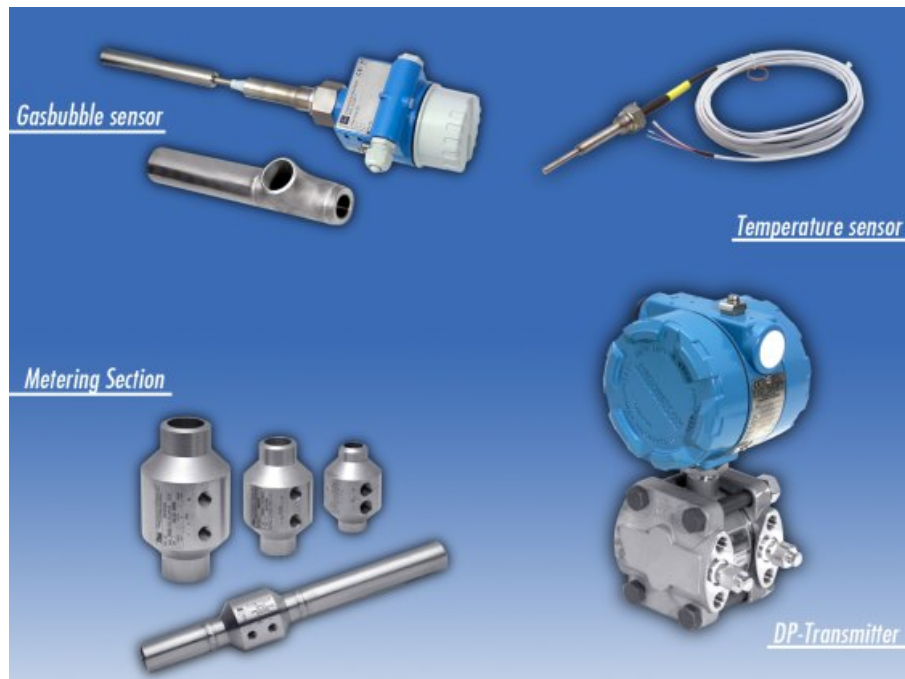
Temperature Sensor

The used temperature sensor, type PT100, is a resistance platinum sensor which operates on the basis of the 4-conductor principle.

DP-Transmitter

In order to measure the differential pressure the reliable ROSEMOUNT 1151, is installed to the metering section.

The transmitter provides a 4 ... 20 mA output signal, from which the electronic processor calculates the flow rate.



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Alternative Flow Processors

The *FLOWCOM S8*, approved in numerous countries around the world, is installed on more than one thousand road tankers. It features temperature compensation and optional vapor return compensation for applications with dual hose delivery of carbon dioxide and nitrous oxide. It comes with eight binary inputs and outputs which allow the flow processor to control valves and pump.

The *FLOWCOM LC* aims at applications where system cost is a critical factor. It is the most basic member of the Flowcom product line and works without temperature compensation. Thus, it is ideal for metering of products which have a fairly

constant temperature such as cryogenic liquids stored in low pressure tanks. The *Flowcom LC* is intended to be used in applications where specific approvals are not required. An optional ticket printer can be connected.

The *FILLCOM 250* system was especially designed for stationary applications like loading stations for road- and railroad tanker vehicles. The LC-Display allows for easy operation because menus and messages can be displayed in different languages. Its expandable input and output ports make it an ideal choice for many applications.



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