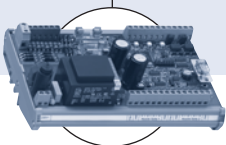


Gas monitoring system for filling stations



Type 8060 must be combined with



Type 1098

Gas controller

- Monitoring gas recovery at petrol stations acc. to 21.BImSchV.
- Volume flow measurement - independent of gas medium
- Vortex measuring principle with ultrasonic
- Compact design
- ATEX conformity

The system is suitable for monitoring the gas feedback equipment which is inserted into petrol pumps of filling stations.

It checks whether the quantity of the gas recovered during refuelling is equal to the delivered fuel volume.

The complete monitoring system consists of a controller Type 1098 and 1 or 2 gas sensors Type 8060.

The sensors are connected to the intrinsically safe circuit of the controller. Petrol pulses and the fill nozzle signal are connected to the further inputs.

The controller assesses the gas and the petrol volume, then it compares the difference between these two volumes and indicates the current status and, if the need arises, a malfunction of the gas recovery system via a Bus interface and digital outputs.

If needed the controller supplies also the signal to switch off the petrol pump in compliance with 21.BImSchV.

The Type 1094 hand-held terminal is necessary for use in maintaining the gas monitoring system.

Technical data

General data

Compatibility 8060 sensor only with 1098 gas monitoring controller

Materials

Sensor housing	Brass
Sensor measuring chamber	PVDF
Gasket	FKM
Controller	PCB for mounting on DIN rail to DIN50022

Electrical connections

Sensor	3-pin cable, 3 m (Attention! Must not be shortened)
Controller	Terminal strip

Environment

Ambient temperature -20 up to +60°C (Operation and storage)

Relative humidity ≤ 80%; non condensated

Standard and approvals

Protection class

Sensor	IP67
Controller	IP20

Standard

Sensor and controller	
General requirements	EN 50 014
Intrinsic safety	EN 50 020
EMC	EN 50081-1, EN 61000-6-2
Sensor	EN 50284
Gas pumps	prEN 13671-1
Safety instructions	EN 1127-1
ATEX	RL 94/9/EG "ATEX" directive

Sensor technical data	
Gas connection	G 3/8" internal thread
Measuring range	15 up to 45 litres/min
Measuring principle	Vortex ultrasonic
Fluid temperature	-20 up to 50°C
Fluid pressure	Vacuum or atmospheric pressure (0.1 - 1.2 bar abs.)
Pressure drop	10 mbar
Accuracy	≤ ±4% + 4% of F.S.* (with calibration)
Power supply	Through Bürkert type 1098 gas monitoring controller
Output	60 mA ±8 mA current modulation

Controller technical data	
Electrical connections	Terminal strip
Power supply	240 V AC
Current consumption with sensor	≤ 50 mA
Sensor connection	2 intrinsically safe circuit
Input	Current signal proportional to the flow (see that the connections are correct, because the device is not protected against polarity reversal)
Output	Power supply
Connections	
Inputs	
Petrol pulses	2 Inputs, 22 kΩ Pull-Up (internal)- accept open collector-, TTL- or 24V- signal,
Fill nozzle signal	2 x 4 Inputs, 22 kΩ Pull-Up (internal)- accept open collector-, TTL- or 24V- signal,
Outputs	
Error message	2 x 1 Opto-isolated output, up to 40 V DC, up to 100 mA
Warning message	2 x 1 Opto-isolated output, up to 40 V DC, up to 100 mA
Interfaces	RS485 for communication with cashier RS485 for service hand terminal

Sensor technical data -EEx	
⚠-Protection	
Sensor	II 1/2 G
Controller	II (1) G
⚠-Certification	
Sensor	EEx ia II B T3 (PTB 04 ATEX 2117)
Controller	[EEx ia] II B (PTB 05 ATEX 2008X)
Conformity specifications	
Operating voltage Ui	≤ 27.3 VDC
Short circuit rating Io	≤ 260 mA
Linear characteristic Po	≤ 1.6 W
Medium temperature	-20 up to +50°C
Ambient temperature	-20 up to +60°C
Storage temperature	-20 up to +60°C
Internal capacity Ci	-20 up to +60°C
Internal inductance Li	inefficient through clamp diode
Voltage requirement	negligible
Current requirement	approx. ± 12 V DC approx. 100 mA

* F.S. = Full scale (45 l/min)

Design and operating principle

The Vortex-Sensor Type 8060 is an electronic sensor designed to measure the volume of an explosive gas-air-mixture. The medium to be measured flows in a plastic measuring chamber in which an obstacle is placed so that the flow generates vortices. These vortices are picked up by an ultrasonic signal to produce the measuring signal. The electronic, which is powered over an intrinsically safe electrical circuit, analyses this measuring signal and provides a frequency signal proportional to the volume flow rate.

The measuring chamber and the electronic are both embedded in resin within a brass housing. Inside the metal housing the zone is 0; outside the zone is 1. The metallic housing enables zone 0 to be separated from zone 1.

The gas monitoring controller Type 1098 consists of a printed circuit board including a safety barrier for powering the sensor, a transformer and some electronic assemblies. The printed circuit board is integrated into a DIN rail housing. This controller accepts the sensor frequency signal, processes it and passes it on to the controller/computer. It is installed outside the Ex- area and is powered from the network.

Installation

For proper assembly of the Bürkert gas monitoring system, the following installation conditions must be fulfilled (see fig.)

- The unit must be fitted from top to bottom with the inlet section at the top. The direction of flow is marked on the housing.

The arrow indicating the direction of flow must point downwards from the top to the bottom.

- The connection to the outlet section of the measuring value sensor can be made in any form desired. The installation of a threaded 90° degree elbow joint is also permissible.

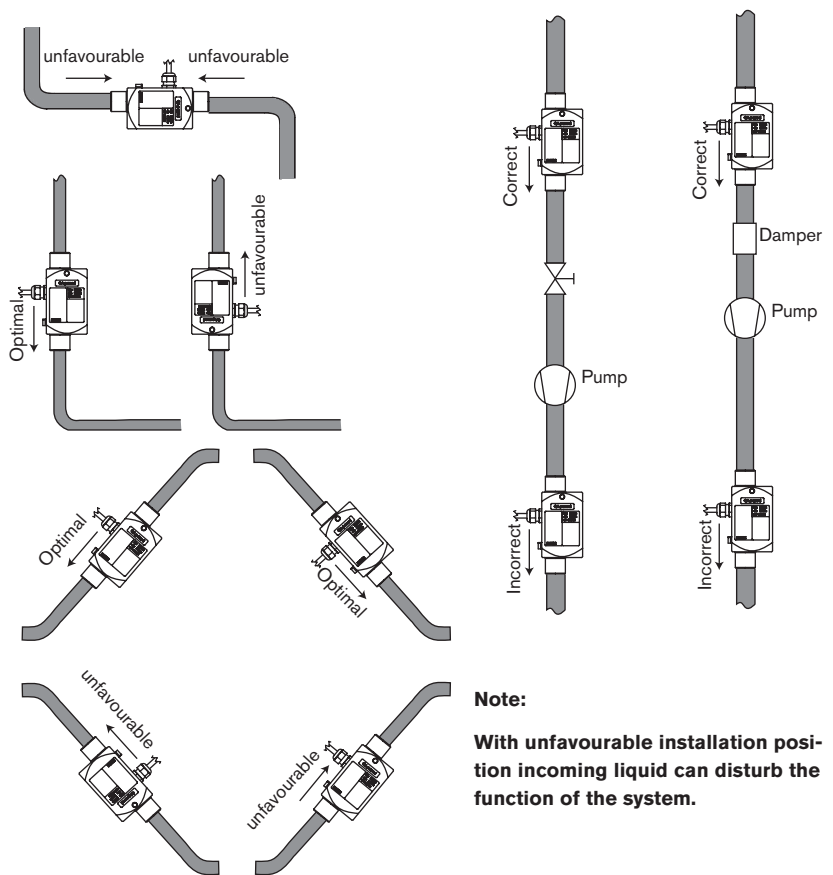
- Standard pipe connection for gas can be used.

- The 8060 is fitted in the gas recovery pipe before the pump and before the control valve, if one has been fitted.

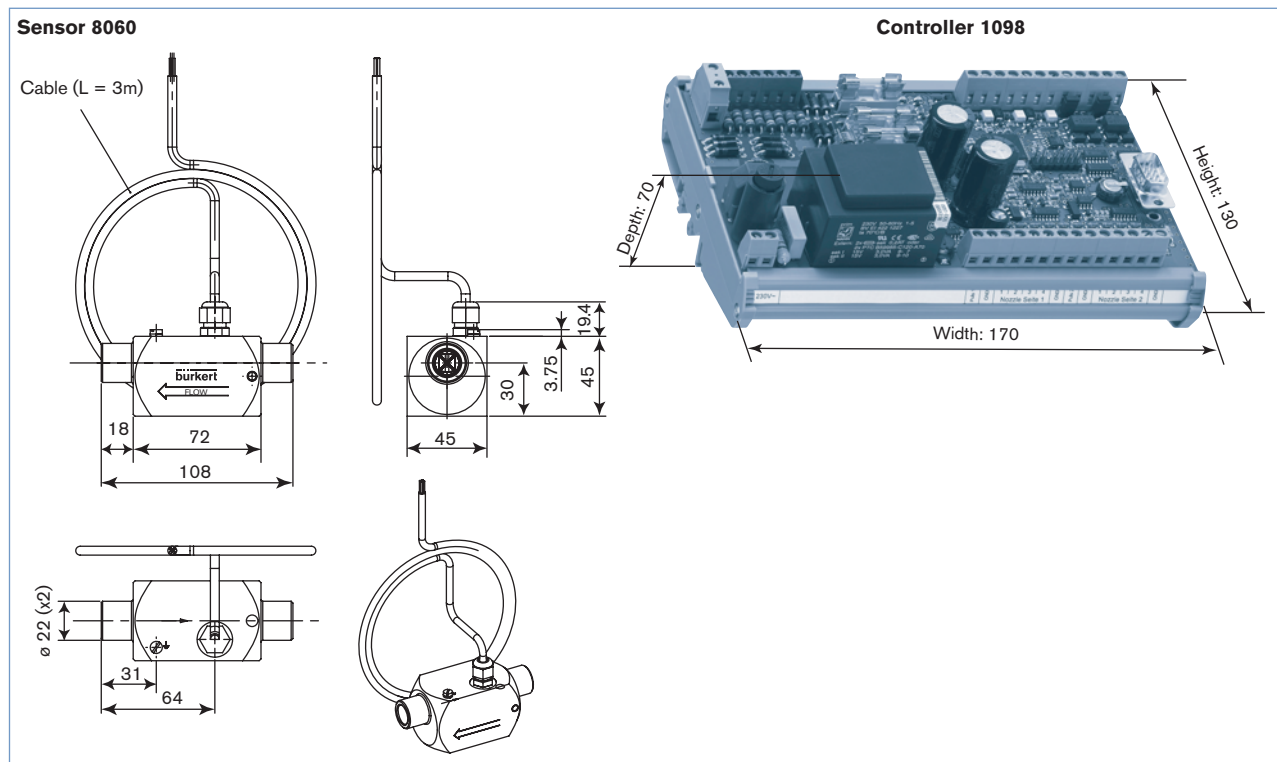
- The housing of the 8060 sensor is to be fixed vertically in the petrol dispenser using fixing brackets.

- In an installation with two sensors, the housings should not touch each other directly and if possible they should have a distance apart of 5 cm.

Deviating installation conditions are only permissible following prior verification and written approval from Bürkert.



Dimensions [mm]



Ordering chart - Complete gas monitoring system Type 8060/1098

Description	Voltage supply	Input/ Output	Electrical connection	Item no.
2 Sensors Type 8060 -EEx ia II B T3 (PTB 04 ATEX 2117) + 1 gas monitoring controller - [EEx ia] II B (PTB 05 ATEX 2008X)	240 V AC	Inputs: Petrol pulses Outputs: fill nozzle signal Error message Warning message	Terminals, 3 m cable	558 755
1 Sensor Type 8060 -EEx ia II B T3 (PTB 04 ATEX 2117) + 1 gas monitoring controller -[EEx ia] II B (PTB 05 ATEX 2008X)	240 V AC	Inputs: Petrol pulses Outputs: fill nozzle signal Error message Warning message	Terminals, 3 m cable	559 209

Ordering chart for spare parts Type 8060/1098

Description	Item no.
Vortex gas monitoring sensor 8060	558 999
Vortex gas monitoring controller 1098	559 000

Ordering chart for additional functions Type 8060/1098

Description	Item no.
Interface RS 485 - USB	554 388
Hand-held terminal Type 1094 including gas monitoring function	559 747

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In case of special application conditions, please consult for advice.

We reserve the right to make technical changes without notice.

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