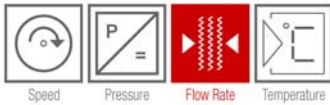


GAS FLOWMETER GD 300

for measuring of all technical and medical gases DN25 - DN400



- Oscillating measuring principle, without moving parts
- Resistent to dirt, e.g. oil, rust, sulphur
- Best results measuring wet biogas with a specially developed biogas-sensor
- Short response time $T_{90} \leq 100$ ms
- High accuracy ($\pm 1,5\%$ of true value)
- High reproducibility (0,1% of true value)
- Low loss of pressure
- Maximum operating pressure 63 bar, temperature 120°C
- Each flowmeter with calibration report
- ATEX-certification pending



Principle of measurement

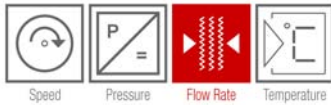
The gas flow meter GD 300 is a fluidistor oscillator. Its oscillating frequency is directly proportional to the speed of the gas passing through the meter. The ratio of frequency and the flow rate is constant in a wide range.

The gas passes through a tube with an orifice. Inside the tube there are channels with a connection to the measuring labyrinth (stainless steel 1.4571), the fluidistor oscillator. There the platinum sensor is located. A part of the gas flow is directed through the channels by the resulting dynamic pressure at the orifice plate. In the labyrinth the gas column oscillates. The oscillation frequency is proportional to the flow velocity and thus to the total flow rate. This oscillation frequency, which corresponds to the exchange rate, is measured by the platinum hot wire sensor.

The sensor can be replaced without removing the meter. A change of sensor has no influence on the calibration of the gas flow meter.

Technical data

METER SIZE	DN 25 to DN 400
PRESSURE-CLASSIFICATION	Flange acc. to EN-1092-2 bolt circle diameter: PN 16 up to DN 150 PN 16 or PN 10 from DN 200 to DN 400 Flange acc. to ASME B 16,5
PRESSURE RANGE	0,5 bar, 6 bar, 10 bar, 16 bar, 40 bar, 63 bar
TEMPERATURE	-30 to +120°C; gas as well as environment Max. 60°C for the Ex version
MATERIAL	Meter housing: stainless steel 1.4571 Metering orifice: stainless steel 1.4571 Metering labyrinth: stainless steel 1.4571 Sensor: platinum Sealing: silicone Protection class: IP65

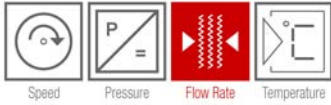


Flow range

DN (mm)	m ³ /h					
	orifice 13		orifice 15		orifice 17	
	Q _{min}	Q _{max}	Q _{min}	Q _{max}	Q _{min}	Q _{max}
25	0,20	20	0,35	35	0,70	70
32	0,20	20	0,60	60	1,00	100
40	0,20	20	0,90	90	2,00	200
50	0,20	20	1,10	110	2,50	250
65	0,90	90	1,70	170	4,50	450
80	1,40	140	4,50	450	8,00	800
100	2,70	270	6,50	650	10,00	1000
125	4,00	400	8,00	800	15,00	1500

DN (mm)	m ³ /h					
	orifice 25		orifice 27		orifice 30	
	Q _{min}	Q _{max}	Q _{min}	Q _{max}	Q _{min}	Q _{max}
150	6,00	600	12,00	1200	30,00	3000
200	12,00	1200	25,00	2500	60,00	6000
250	20,00	2000	40,00	4000	75,00	7500
300	30,00	3000	50,00	5000	113,00	13000
350	40,00	4000	70,00	7000	140,00	14000
400	50,00	5000	100,00	10000	160,00	16000

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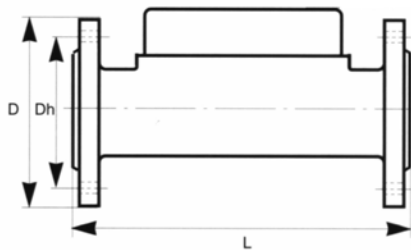


Dimensions and weight

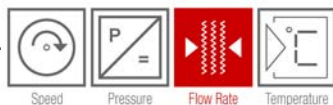
mm	DN (NOMINAL WIDTH)	L (S/L)	D	D _H	WEIGHT(KG) APPROX.	
					REDUCED FLANGE	FULLSIZE FLANGE
25	300	115	85	4	5	
32	300	140	100	5	6	
40	300	150	110	6	7	
50	300	165	125	8	9	
65	300	185	145	11	12	
80	300	200	160	12	14	
100	300/360	220	180	14	18	
125	300	250	210	16	20	
150	350/500	285	240	18	22	
200	350	340	295	20	23	
250	450	405	355	26	30	
300	500	460	410	31	36	
350	500	520	470	37	42	
400	500	580	525	44	48	

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Flanges according to EN-1092-2



similar image



Order information

The following information is needed for an order:

A)	Minimum flow rate (m ³ /h)
B)	Maximum flow rate (m ³ /h)
C)	Medium, e.g. wet biogas
D)	Nominal width DN (e.g. DN50)
E)	Operating pressure (bar)
F)	Operating temperature (°C)
G)	Maximum pressure loss (mbar)

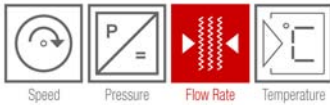
The ordering code of the gas flow meter consists of the device type GD 300 and a 13 digit code.

GD 300 - Nominal width Orifice Tube length Flange type Flange size Bolt circle diameter Pressure range Option

GD 300-NOMINAL WIDTH	ORIFICE	TUBE LENGTH	FLANGE TYPE	FLANGE SIZE	BOLT CIRCLE DIAMETER	PRESSURE RANGE	OPTIONS
025 = DN 025	DN 025-DN 125	S = short (standard)	I = ISO	R = Reduced size	10 = PN10	00 = 0,5 bar	0 = Standard
...	13, 15, 17	L = long	A = ASME	F = Full size	16 = PN16	06 = 6 bar	1 = free of oil
080 = DN 080					40 = PN40	10 = 10 bar	fan grease
...					63 = PN63	16 = 16 bar	
150 = DN 150	DN 150-DN 400					40 = 40 bar	
...	25, 27, 30					63 = 63 bar	

Example: GD 300-08017SIR16000

080	= Nominal width DN80	R	= Reduced size
17	= Orifice 17	16	= Bolt circle diameter PN16
S	= Tube length S	00	= Pressure range 0,5 bar
I	= ISO flange	0	= Standard



Technical details/ Installation information

During project planning it has to be considered that the nominal width of the pipe must not be increased by the gas flow meter in order to avoid distortion of the measurand. It is important that the defined measurement range of each nominal width must not be exceeded.

Measurand below the limit value Q_{\min} (flow range) can not be displayed.

The meter can be installed in horizontal as well as vertical (dry gas) pipes. Wet gas requires a horizontal mounting or must be installed in falling direction. In case of potential risk of condensate or liquid in the gas, the GD 300 has to be installed horizontally with the meterhead upwards in order to ensure the drainage of the condensate. Up-stream the meter requires a straight pipe length of $10 \times DN$ (D =pipe diameter), downstream $5 \times DN$.

The gas velocity of an upstream flow may not exceed supersonic speeds anywhere. Thus supercritical pressure drops must be avoided.

To install the sensor cable, the cover of the GD 300 has to be lifted, therefore the device has to be installed at a minimum distance of 10 cm to the ceiling.

EVALUATION ELECTRONICS

Flow Rate Correction Calculator GDR 1403 for all technical and medical gases

The Flow Rate Correction Calculator detects the impulse signals of up to two fluidistor gas flow meters GD 300 using 1 or 2 channels. According to the assignment it converts the impulse signals into m^3/h , Nm^3/h , l/h or NI/h . The actual flow rate is displayed in m^3/h (l/h) resp. Nm^3/h (NI/h) or the quantity in m^3 (l) resp. Nm^3 (NI) on the LCD-display.

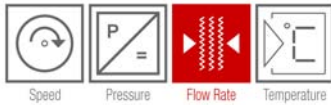
For further information see datasheet DS 303 E.

CHP Gas Monitor GDR 1404 for the sector biogas

In addition to the calculation of flow the GDR 1404 offers the following functions:

- Calculation of efficiency (ETA)
- Calculation of feeding loss (EVU)
- Integration of various gas analysis devices

For further information see datasheet DS 307 E.



Thermal Capacity Calculator GDR 1408 for the sector biogas

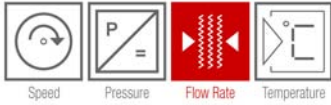
In addition to the calculation of flow the GDR 1408 offers the following functions:

- Continuous determination of thermal capacity (input) from the gas quantity (measurement of gas flow) and gas quality (gas analysis)
- Display of the current heat value in kJ/Nm^3 , display of the current thermal input in MW/h , determination of the gas composition (CH_4 , H_2S , CO_2 , O_2). The GDR 1408 calculates the primary energy of the gas medium.

For further information see datasheet DS 311 E.

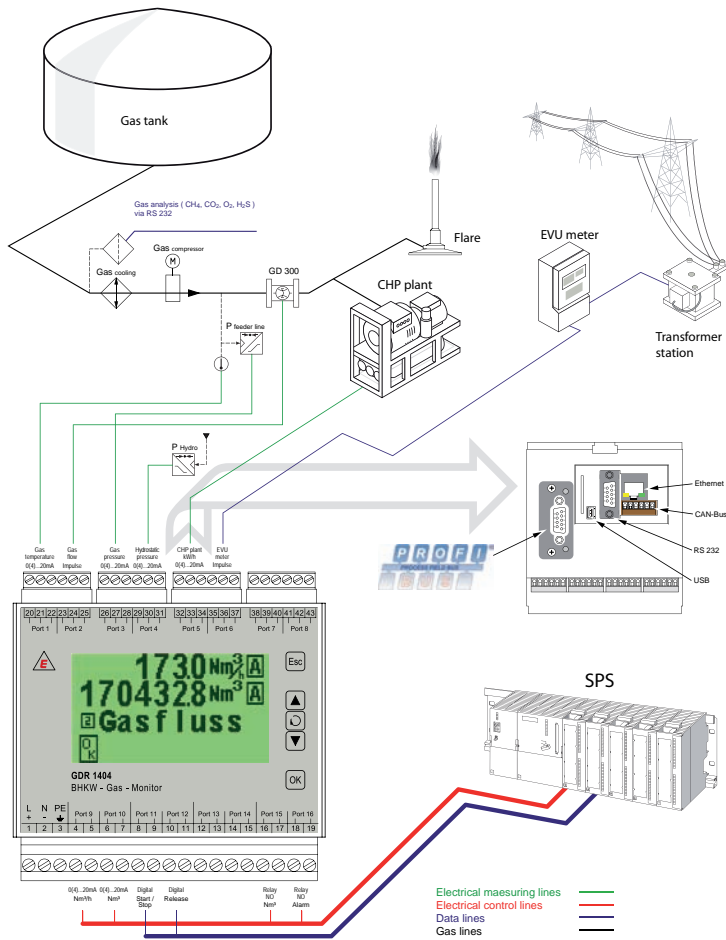
The devices share the following options:

- Integrated recorder to log measured values in the ring buffer (2 GB) for fast identification of faults during operation
- Saving logged data in an external SQL-database using the Energy Management and Configuration Software E3DM
- Visualisation of data in time series using the Energy Management and Configuration Software E3DM
- Integration into IT-networks via Ethernet TCP/IP
- Data transfer via PROFIBUS-DP, Modbus-RTU, Modbus-TCP, Ethernet/IP



Application example

CHP Gas Monitor GDR 1404 with gas engine



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