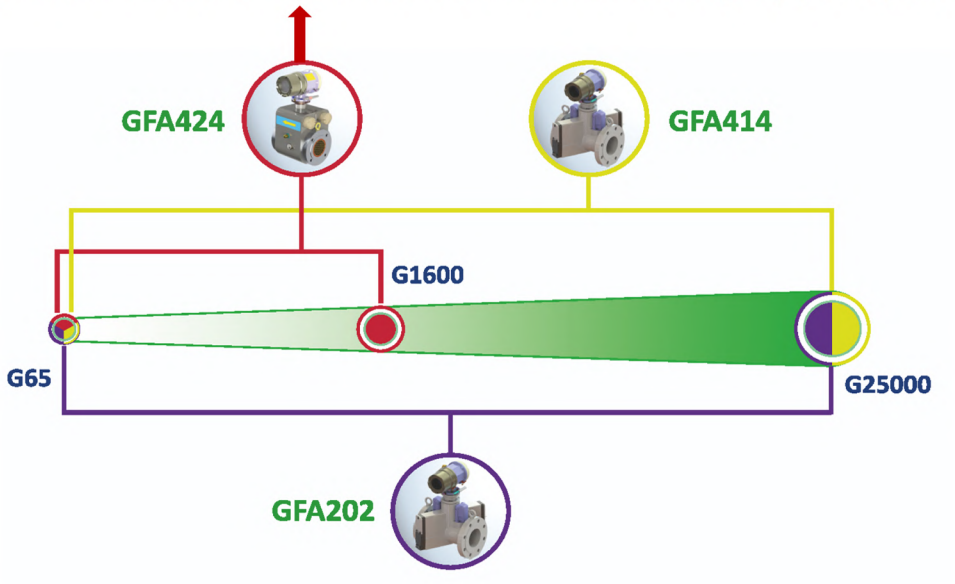
Next Generation Flow metering of Natural Gas
Ultrasonic gas flow meters of the GFA Series

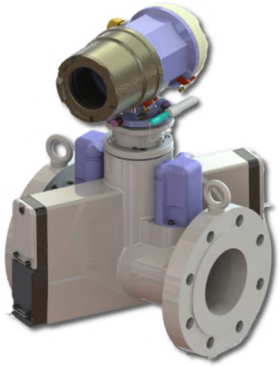
The GFA series of multichannel ultrasonic gas flow meters has a new addition !!!

Energoflow AG announces the launch of the world's first four channel ultrasonic gas flow meter which does not require any straight runs - neither before, nor after the meter

✦ ***GFA424: First ever 4 channel USM with Zero straight pipe requirement***



GFA 424



GFA 202 / GFA 414

The GFA Family at a Glance

Three models, one unified platform — each optimised for specific application requirements

Feature	GFA202	GFA414	GFA424
Ultrasonic Channels	2	4	4
Nominal Sizes (DN)	50 – 600	50 – 600	50 – 200
Flow Ratings (G)	G65 – G25000	G100 – G25000	G100 – G1600
Max Operating Pressure	25 MPa	25 MPa	2 MPa
Accuracy Class	1 (MID)	0.5 (OIML) / 1 (MID)	0.5 (OIML) / 1 (MID)
Straight Runs (upstream/downstream)	10D / 3D	10D / 3D	✦ NONE
Bidirectional Flow	✓ Yes	✓ Yes	— No
Integrated PTZ Corrector	Optional	Optional	Optional
Battery Life	> 5 years	> 5 years	> 5 years
Compliance with EU Directives	✓ ATEX / MID / PED/ EMC	✓ ATEX / MID / PED/ EMC	✓ ATEX / MID / PED/ EMC

GFA424 – The Latest Innovation: No Straight Runs needed

✦ **WORLD FIRST EVER: 4 channel USM requiring NO upstream or downstream straight pipes**

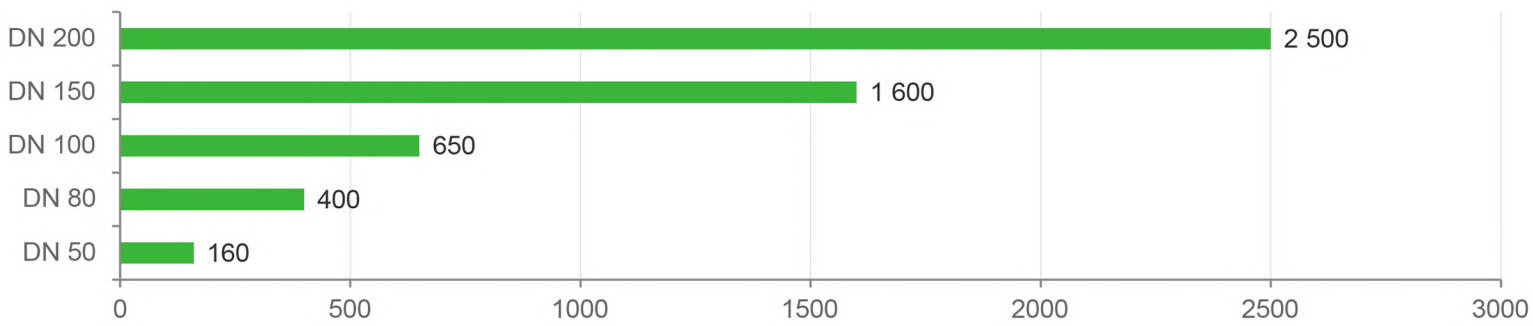
Perturbances in flow do not affect the measurement

Measurement Channels	4 (unidirectional)
Line Sizes	DN 50 to DN 200
Flow Ranges	1–160 m³/h (DN50) to 16–2,500 m³/h (DN200)
Accuracy Class	MID Class 1 / OIML Class 0.5
ATEX marking	II 2(1)G Ex db ib [ia Ga] IIC T4 Gb
Straight Pipes Required	✦ **NONE – 0D inlet / 0D outlet**
Max Operating Pressure	PN16 (16 bar) / ANSI #150 (20 bar)
Volume Correction	Optional integral EVC
Installation	Horizontal or vertical · Retrofit-ready
Ingress protection	IP67
Power	Battery >5 yr or 9–15 VDC external

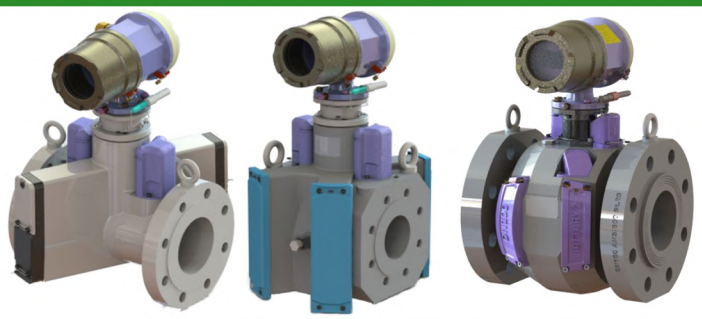
GFA424 – Flow Measurement Ranges

GFA424 covers DN 50 to DN 200, offering flow ranges suitable for distribution, commercial and industrial metering stations:

Nominal Size	Min Flow Qmin (m³/h)	Max Flow Qmax (m³/h)	Rangeability	Typical Applications
DN 50	1	160	1:160	Small commercial / industrial connections
DN 80	2.5	400	1:160	Medium commercial / gas distribution branches
DN 100	4	650	1:160	Industrial facilities / metering stations
DN 150	10	1,600	1:160	Large industrial / gas distribution stations
DN 200	16	2,500	1:156	High-capacity distribution / measuring stations



GFA414 GAS METER



Features

- power supply from the built-in battery or from an external source
- graphic local display
- 4 ultrasonic measurement channels
- storage of readings and parameters in non-volatile memory
- data transmission with external modem
- communication with external devices RS-485 digital interface (Modbus RTU protocol)

Specification

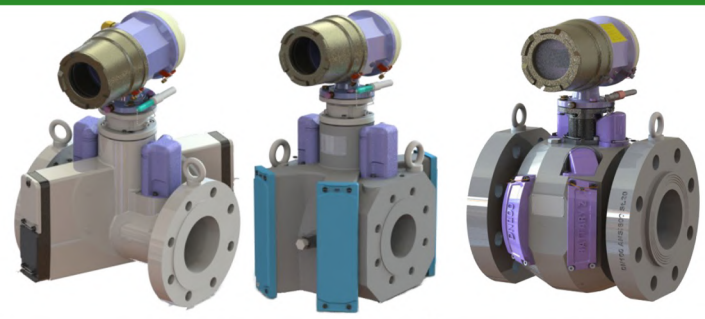
Item	Value	
The permissible limits of relative error in gas measurement under operating conditions are as follows: from Qt (inclusive) to Qmax (inclusive) from Qmin (inclusive) to Qt	Class 0,5* ± 0,5% ± 1%	Class 1 ± 1% ± 2%
Max operating pressure, MPa	1,6; 2,5; 4,0; 6,3; 10; 16; 25	
Minimum gauge pressure in the pipeline, MPa	0	
Basic absolute accuracy of the temperature measurement channel, °C, not more than	± 0,2	
Overall accuracy of the pressure measurement channel, %, not more than	± 0,1	
Output signal:	frequency-pulse type "dry contact"	
Meter size	DN 80 and above	

* for DN 80 mm at least

Item	Value
Power supply: - autonomous - external	lithium batteries 14 Ah 7.2V service life - up to up to 5 years** DC power supply 12 V
Parameters of the data exchange interface with external equipment: - exchange protocol	ModBus RTU
- exchange rate, bits/s	1200;2400;4800; 9600;19200; 38400; 57600; 115200
- communication line length, m, not more than	for RS-485 – up to 120
Enclosure protection class according to IEC 60529	IP67
Explosion protection level (ATEX) :	II 2(1)G Ex db ib [ia Ga] IIC T4 Gb

**without using a modem

GFA202 GAS METER



Features

- power supply from the built-in battery or from an external source
- graphic local display
- saving readings and parameters in non-volatile memory
- data transfer to an automated data acquisition system via external modem
- communication with external devices via RS-485 digital interface (Modbus RTU protocol)

Specification

Item	Value	
The permissible limits of relative error in gas measurement under operating conditions are as follows: from Qt (inclusive) to Qmax (inclusive) from Qmin (inclusive) to Qt	 ± 1% ± 2%	
Max operating pressure, MPa	1,6; 2,5; 4,0; 6,3; 10; 16; 25	
Minimum gauge pressure in the pipeline, MPa	0	
Basic absolute accuracy of the temperature measurement channel, °C, not more than	± 0,2	
Overall accuracy of the pressure measurement channel, %, not more than	± 0,1	
Output signal:	frequency-pulse type "dry contact"	
Wireless communication	External Nb-IoT or GSM/GPRS	

Item	Value
Power supply: - autonomous - external	lithium batteries 14 Ah 7.2V service life - up to up to 5 years* DC power supply 12 V
Parameters of the data exchange interface with external equipment: - exchange protocol	ModBus RTU
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*without using a modem

Core Advantages – Shared Across the GFA Family

No Moving Parts

Maintenance-free operation.
No mechanical wear or fatigue.

5-Year Battery Life

Autonomous lithium battery
14 Ah / 7.2V — no external power needed.

Dual RS-485 + 4–20mA

Two Modbus RTU ports; optional analog output.

Integrated PTZ Corrector

Optional P, T & Z correction built in.
NX-19 mod / GERG-91 / SGERG88.

IP67 + ATEX Compliance

Ex II 2(1)G Ex db ib [ia Ga] IIC T4 Gb.
Suitable for hazardous areas and for various media like NG, Biogas, H2+NG mixtures etc.

Comprehensive Logging

Hourly, daily & periodic archives.
Event & metrology logs.

MID / OIML Compliance

EU directive 2014/32/EU.
OIML R137-1&2:2012 · EN 12405.

Flexible Power

Battery or 9–15 VDC external.
Compatible with solar supply.

GFA414/202 GAS METER
Volumetric flow measurement ranges

DN	Meter standard size	Volumetric flow rate, m3/h				Rangeability
		thresh. Qthr	minimal Qmin	transit. Qt	maximal Qmax	
50	G65	0.5	1.0	12.5	100	1:100
	G100				160	1:160
	G160				250	1:250
80	G160	1.25	2.5	32.5	250	1:100
	G250				400	1:160
	G400				650	1:250
100	G250	2.0	4.0	50.0	400	1:100
	G400				650	1:160
	G650				1000	1:250
150	G400	4.0	10.0	125.0	650	1:65
	G650				1000	1:100
	G1000				1600	1:160
	G1600				2500	1:250
200	G650	5.0	16.0	200.0	1000	1:65
	G1000				1600	1:100
	G1600				2500	1:160
	G2500				4000	1:250
250	G1000	6.25	25.0	325.0	1600	1:65
	G1600				2500	1:100
	G2500				4000	1:160
	G4000				6500	1:250

DN	Meter standard size	Volumetric flow rate, m3/h				Rangeability
		thresh. Qthr	minimal Qmin	transit. Qt	maximal Qmax	
300	G1600	10.0	40.0	500.0	2500	1:65
	G2500				4000	1:100
	G4000				6500	1:160
	G6500				10000	1:250
400	G2500	16.0	64.0	800.0	4000	1:65
	G4000				6500	1:100
	G6500				10000	1:160
	G10000				16000	1:250
500	G4000	25.0	100.0	1250.0	6500	1:65
	G6500				10000	1:100
	G10000				16000	1:160
	G16000				25000	1:250
600	G6500	40.0	160.0	2000.0	10000	1:65
	G10000				16000	1:100
	G16000				25000	1:160
	G25000				40000	1:250