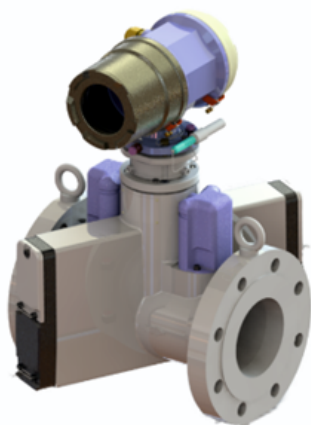


Energoflow AG : GFA Product Line

Ultrasonic gas meters GFA are the next generation ultrasonic gas flow meters designed to measure the flow rate and volume of natural gas with high accuracy and repeatability. The meters have an optional integrated Volume Corrector with pressure and temperature sensors for effective and reliable custody transfer measurements.

The meters comply with the requirements of OIML R137:2012 (w/amend.2014), EN 12405-1:2021, EN12405-2:2012 and the EU directives MID, ATEX, EMC and PED. Meters are also certified for custody transfer applications (MID / OIML).



GFA 202 and GFA 414 require straight runs - 10 DN before the meter and 3 DN after the meter.



GFA 424 model * will be unaffected by any perturbances in the flow and can be used without any upstream or downstream straight runs.

The GFA meters can be powered by an external 12 VDC source or from in-board battery for autonomous operation. The battery life is more than 5 years.

The meters have the following outputs:

1 x LF pulse, 1 x LF/HF pulse (user configurable);
1 x RS485 (MODBUS RTU); 1 x RS485 (MODBUS RTU) or 4...20 mA analog output (additional), 2 x NO discrete outputs (optional).

Technical Specifications	GFA 202	GFA 414	GFA 424*
Number of measurement channels (sensor pairs)	2	4	4
Flow measurement	Transit time method, Unidirectional / Bidirectional		Transit time method, Unidirectional
Measured flow velocity range, m/s	0.1 ... 40		0.1 ... 25
Maximum pressure drop across the flow meter, Pa	200		1800
Medium/Ambient temperature range, deg C	-40 to +70		
Accuracy Class	MID class 1	OIML class 0.5; MID class 1	OIML class 0.5; MID class 1
Qt ... Qmax, maximum permissible error, %	1	0.5 or 1 (as certified)	0.5 or 1 (as certified)
Qmin ... Qt, maximum permissible error, %	2	1 or 2 (as certified)	1 or 2 (as certified)
PTZ Volume correction method	NX19mod / GERG-91 mod/ SGERG		
Pressure measurement accuracy for PTZ correction, maximum permissible error, %	0.25		
Temperature measurement accuracy for PTZ correction, deg C	0.3		
Ex-marking	II 2 (1) G Ex db ib [ia Ga] IIC T4 Gb		
Ingress protection degree (as per IEC 60529)	IP 67		
Power supply	12 VDC external / Integral battery (battery life > 5 yrs.)		
Standard Line sizes, DN, mm**	50...600	50...600	50....200
Standard Flow ratings (G ratings)**	G 65 G25000	G 160 G25000	G100 G1600
Avialable Pressure ratings, MPa	1.6; 2.5; 4.0; 6.3; 10.0; 16.0; 25.0		1.6; 2.5; 4.0; 6.3; 10.0
Inline flow section material	Aluminium / Carbon Steel / Stainless Steel		
Integrally mounted Electronics unit	With Graphic LCD, body material Aluminum		
Requirement of straight runs for custody transfer applications, before the meter / after the meter, DN	10 / 3		Not required

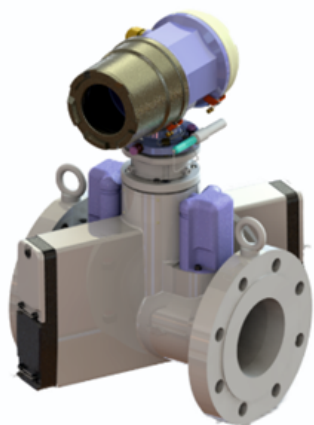
* - Under certification

** - Larger sizes available under order

Energoflow AG : GFA 产品系列

GFA 系列超声波气体流量计是新一代超声波气体流量计，专为高精度与高重复性地测量天然气流量和体积而设计。该系列流量计可选配集成的体积修正仪，内置压力与温度传感器，用于高效可靠的计量交接应用。

这些流量计符合 OIML R137:2012 (含 2014 修正案)、EN 12405-1:2021、EN 12405-2:2012 以及欧盟 MID、ATEX、EMC 与 PED 指令的要求。该系列产品也专为计量交接 (MID / OIML) 应用而设计。



GFA 202 和 GFA 414 型流量计

所需直管段长度：表前 10 倍公称直径 (10 DN)，表后 3 倍公称直径 (3 DN)。



GFA 424 型号 *

不受流场扰动影响，可在无任何前置或后置直管段的情况下安装使用。

GFA 系列流量计可通过外部 12V 直流电源供电，也可使用内置电池实现自主运行，电池寿命超过 5 年。流量计具备以下输出接口：

- 1 个低频脉冲输出，1 个低频/高频脉冲输出 (用户可配置)；
- 1 个 RS485 接口 (MODBUS RTU 协议)；
- 1 个 RS485 接口 (MODBUS RTU 协议) 或 4...20 mA 模拟输出 (附加功能)；
- 2 个常开型开关量输出 (可选项)。

技术参数	GFA 202	GFA 414	GFA 424*
测量通道数量 (传感器对数)	2	4	4
流量测量	时差法，单向 / 双向		时差法，单向测量
可测流速范围，米/秒 (m/s)	0.1 ... 40		0.1 ... 25
流量计最大压损，帕 (Pa)	200		1800
介质/环境温度范围，摄氏度 (°C)	-40 to +70		
准确度等级	MID class 1	OIML class 0.5; MID class 1	OIML class 0.5; MID class 1
Qt 至 Qmax 段，准确度 (不低于) %	1	0.5 or 1 (经认证)	0.5 or 1 (经认证)
Qmin 至 Qt 段，准确度 (不低于) %	2	1 or 2 (经认证)	1 or 2 (经认证)
PTZ 体积修正方法	NX19mod / GERG-91 mod/ SGERG		
用于 PTZ 修正的压力测量精度，不低于 %	0.25		
用于 PTZ 修正的温度测量精度，摄氏度 (°C)	0.3		
防爆标志	II 2 (1) G Ex db ib [ia Ga] IIC T4 Gb		
防护等级 (符合 IEC 60529)	IP 67		
电源供电方式	12V 直流外部电源 / 内置电池 (电池寿命超过 5 年)		
标准公称直径 (DN)，毫米 (mm) **	50...600	50...600	50...200
标准流量等级 (G 等级) **	G 65 G25000	G 160 G25000	G100 G1600
可选压力等级，兆帕 (MPa)	1.6; 2.5; 4.0; 6.3; 10.0; 16.0; 25.0		
直通流量段材质	铝 / 碳钢 / 不锈钢		
集成安装电子单元	配图形液晶显示屏，壳体材质为铝		
用于计量交接应用所需直管段长度，表前 / 表后，DN	10 / 3		无需

*—认证中

**—可根据订单提供更大口径规格