

HySense Q

Volume flow sensors

Output signal

The second digit of the model name indicates the output signal of the sensor:

0	digital
1	analog

Important tips for all volume flow sensors

- Each volume flow sensor is delivered with a calibration certificate. Please keep this safe.
- We recommend a re-calibration of the sensor every 1 or 2 years. Please use the Hydrotechnik calibration service. Please do not forget to send the calibration certificate with the sensor when ordering calibration services.
- Multiple calibrations for different viscosities are possible for all volume flow sensors!



HySense QG 100* / QG 110*



Gear volume flow sensor



Delivery with f/l-converter for output signal 4...20 mA***

The volume flow sensor QG 100 with frequency output signal allows detection of the medium flow direction and impulse duplication when used with Hydrotechnik measuring instruments. A possible application is the positioning during cylinder traverse paths.

Qualities	
Measuring principle	displacement
Viscosity range	10 ... 500 mm ² /s (cSt)
Medium temperature	-20 ... +120 °C
Environmental temperature	max. +80 °C
Storage temperature	-20 ... +85 °C
Output signal	frequency (rectangle) / 4 ... 20 mA
Supply voltage U _b	12 ... 24 VDC
Electrical measuring connector	5 pole device connector, M16 x 0.75
Protection type (EN 60529 / IEC 529)	IP 40
Tightening torque	< 0.5 Nm, thread pin (clamping piece) T 3362000
Calibration viscosity	30 mm ² /s (cSt)
Material casing cover	1.4305
Material middle / bottom part	0.7060
Material sealings	FKM
Material gear wheels	1.7131
Suitable measuring cable	MK 01

Pin assignment	QG 100 (frequency)	QG 110 (4 ... 20 mA)
	Pin 1 = signal +	Pin 1 = signal +
	Pin 2 = - U _b / signal - / GND	Pin 2 = signal - / GND
	Pin 3 = + U _b	Pin 3 = + U _b
	Pin 4 = free	Pin 4 = free
	Pin 5 = free	Pin 5 = free

Measuring range	Non-linearity	Geometric gear volume	Allowed working pressure		Impulses per liter	Hydraulic connector	Error limit*
			bar	MPa			
0.05 ... 5.0	± 0.5 %	~ 0.191	630	63	5,250	ISO 228-G¼	± 0.5 %
0.2 ... 30.0**		~ 0.609	160	16	1,640	ISO 228-G ³ / ₈	
0.2 ... 30.0			630	63			
0.7 ... 70.0	± 0.4 %	~ 2.222	420	42	450	ISO 228-G ³ / ₄	± 0.4 %
3 ... 300	± 0.5 %	~ 8.750			100	SAE-Flansch 1¼	± 0.5 %

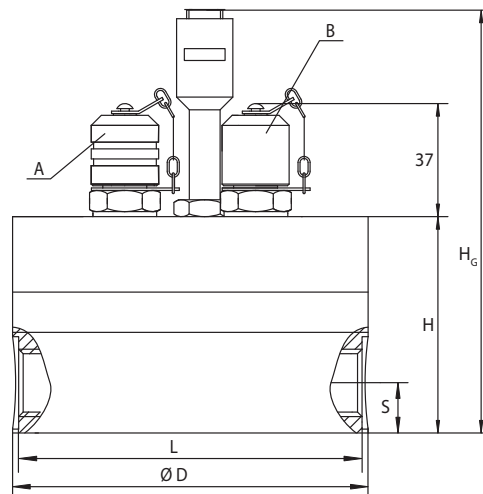
*: for QG 100 and factory calibrated viscosity
 **: casing material AlCuMgPb F37
 ***: for QG 110 additional ± 0.2 % of final value (error of f/l-converter)
 Factory standard calibration for mineral oil at 30 cSt.
 Other calibration viscosity optional.

Measuring range	Order number / weight			
	QG 100 (frequency)	g	QG 110 (4 ... 20 mA)	g
0.05 ... 5.00	3143-02-35.030	3,000	3185-02-35.030	3,155
0.2 ... 30.0	3843-03-35.030**	1,481	3885-03-35.030**	1,641
0.2 ... 30.0	3143-03-35.030	4,074	3185-03-35.030	4,186
0.7 ... 70.0	3143-04-35.030	9,000	3185-04-35.030	9,100
3 ... 300	3143-05-35.030	32,330	3185-05-35.030	32,490

*: former product name GFM

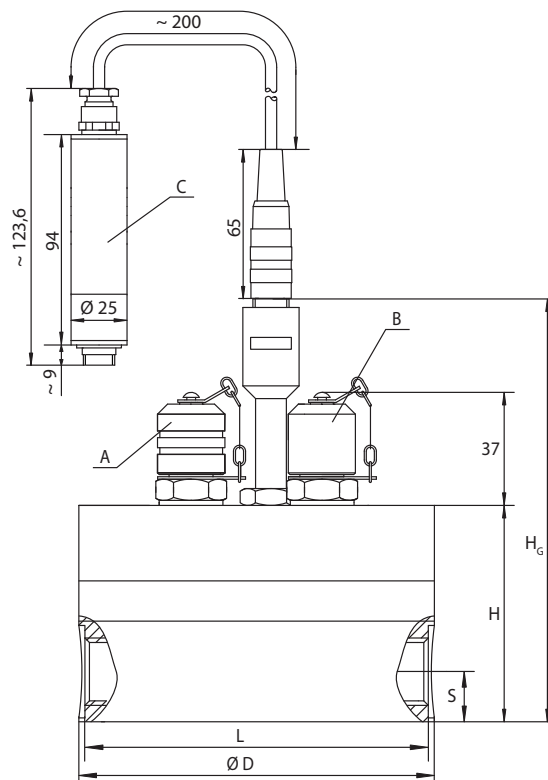
Dimensions

QG 100



- A MINIMESS® p/T test point, series 1620
- B MINIMESS® test point, series 1620

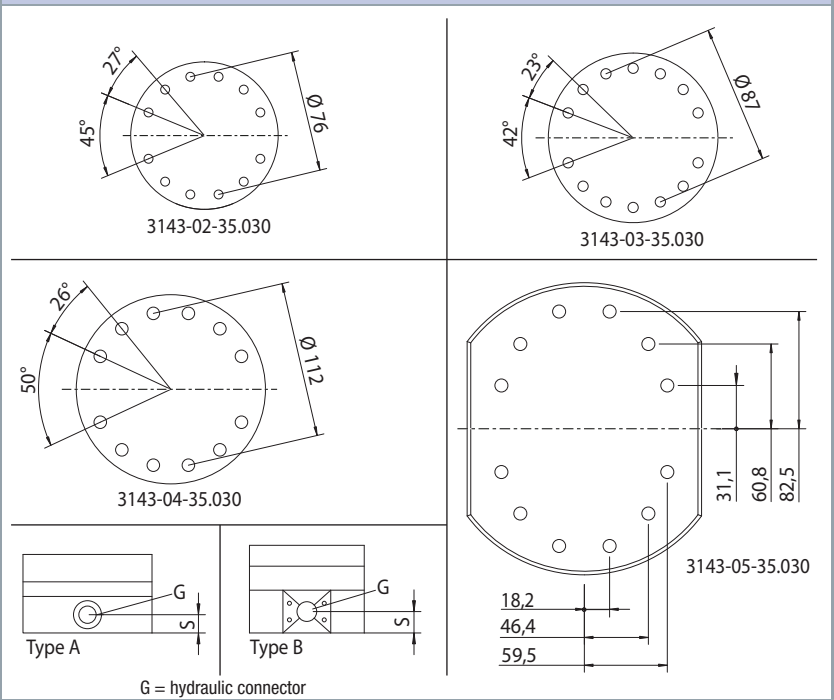
QG 110



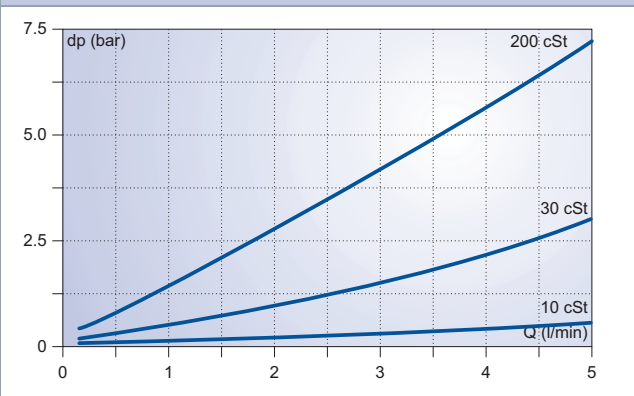
- A MINIMESS® p/T test point, series 1620
- B MINIMESS® test point, series 1620
- C f/l-converter

Measuring range	D	H	H _G	L	S	Type
l/min	mm					see below
0.05 ... 5.00	96	59	125	93	13	A
0.2 ... 30.0	106	67	133	102,5	15	A
0.7 ... 70.0	136	93	153	131	20	A
3 ... 300	210	145	190	210	42	B

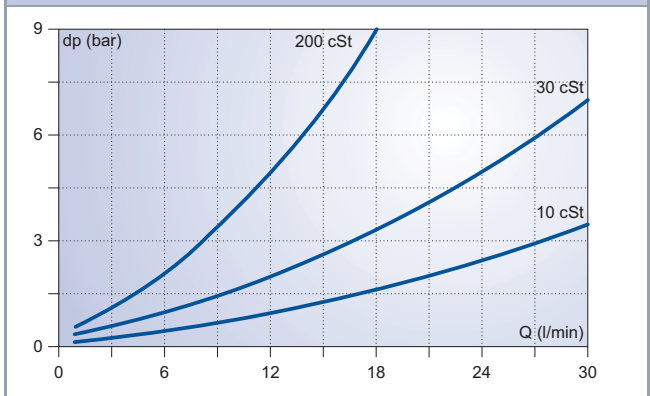
QG 100 / QG 110



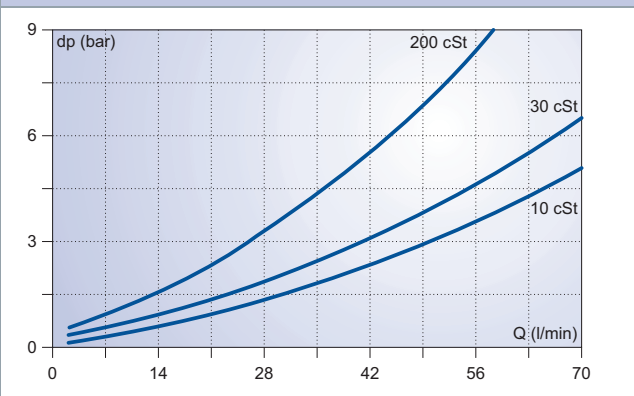
Q = 0.05 ... 5 l/min



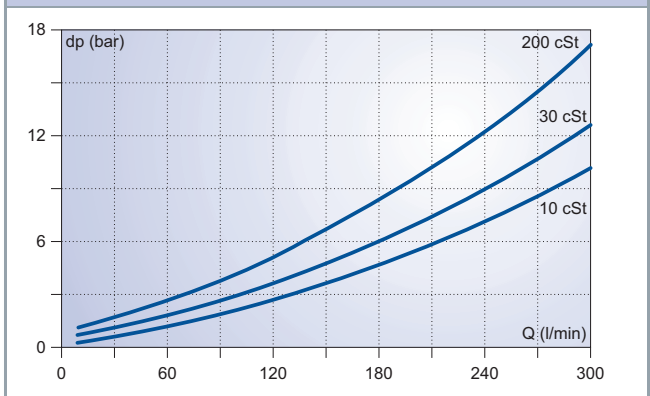
Q = 0.2 ... 30 l/min



Q = 0.7 ... 70 l/min



Q = 3 ... 300 l/min



HySense QG 107*

Gear volume flow sensor for high-temperature applications



Qualities	
Measuring principle	displacement
Viscosity range	10 ... 500 mm ² /s (cSt)
Medium temperature	-20 ... +160 °C
Environmental temperature	max. +50 °C (amplifier)
Storage temperature	-20 ... +85 °C
Output signal	frequency (rectangle)
Supply voltage U _b	10 ... 30 VDC
Electrical measuring connector	4 pole device connector, M12 x 1
Protection type (EN 60529 / IEC 529)	IP 64
Tightening torque	8 Nm (± 2 Nm)
Calibration viscosity	30 mm ² /s (cSt)
Material casing cover	1.4305
Material middle / bottom part	0.7060
Material sealings	FKM
Material gear wheels	1.7131
Suitable measuring cable	customer-specific

Pin assignment	Frequency
	Pin 1 = + U _b
	Pin 2 = signal
	Pin 3 = - U _b / GND
	Pin 4 = free

Measuring range	Geometric gear volume	Allowed working pressure		Impulses per liter	Hydraulic connector	Error limit*
		bar	MPa			
l/min	cm ³					of current value
0.2 ... 30.0	~ 0.609	630	63	1,640	ISO 228-G ³ /8	± 0.5 %
0.7 ... 70.0	~ 2.222	420	42	450	ISO 228-G ³ /4	± 0.4 %

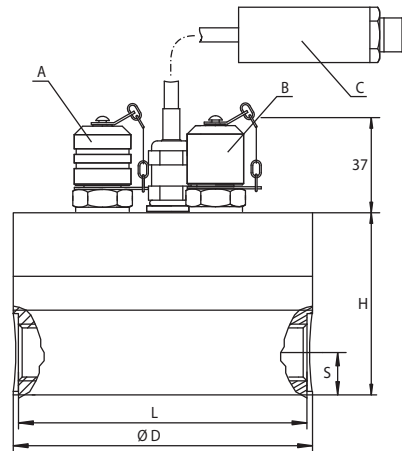
Measuring range	Weight	Order number
l/min	g	
0.2 ... 30.0	3,700	3189-03-35.030
0.7 ... 70.0	8,600	3189-04-35.030

*: former product name GFM

*: for factory calibrated viscosity
Factory standard calibration for mineral oil at 30 cSt. Other calibration viscosities optional.

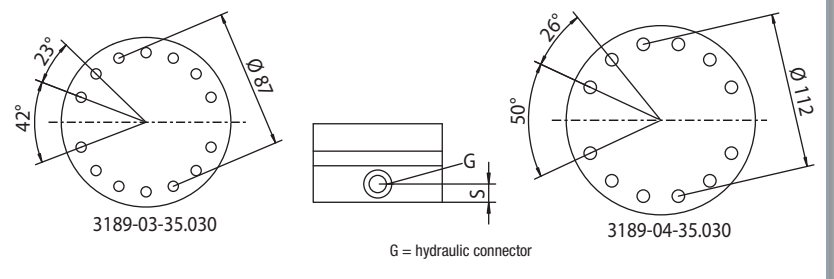
- A MINIMESS® p/T test point, series 1620
- B MINIMESS® test point, series 1620
- C Frequency sensor, high-temperature version

QG 107



Measuring range	D	H	H _G	L	S	Weight	Type
l/min	mm					g	
0.2 ... 30.0	106	67	133	102.5	15	4,074	A
0.7 ... 70.0	136	93	153	131	20	9,000	A

Mounting options



On page 27 you can find the delta-P curves for the volume flow sensors QG 100 / QG 110. These are valid for the sensors QG 107, too.