

► Brunata HGQ and HGS – static electronic energy meter

Approved for energy billing and prepared for remote reading

Characteristics

- Measuring range 1:1000, approved for 1:250
- High accuracy and operation reliability
- Easily read display with backlight ensuring easy reading
- Insensitive to impurities, overload not possible
- Flow sensor with low pressure drop, vertical as well as horizontal installation
- No requirements for straight pipe distance before and after flow sensor
- Monitoring and remote reading via databus or direct connection LON / Mbus / RS232
- Data backup in EEPROM
- Registration of energy supply and mean temperature
- Available as combined meter for heating and cooling
- Available as glycol meter
- Approved according to EN 1434, class 2, TS no. 27.01.090
- Environmental approval in accordance with best class, EN 1434 class C

Further information

The HGQ and HGS energy meter is approved for registration and billing of district heating and heat energy in other waterborne heating systems. It is also used for the metering of cooling energy and is available as combined meter for heating and cooling with two separate energy registers. The meter consists of a flow sensor, paired Pt 500 temperature sensors and an advanced microprocessor-based electronic unit for wall mounting.

The Brunata HG-meter is fully electronic and the measuring principle is based on Faraday's magnetic induction principle.

The meter has a straight passage and contains no moving parts that may be worn or choked up. The water passes through a well-defined lining of Polysulfone/Ultrason S. The water flow induces a voltage signal across the stainless, polished electrodes to the electronic unit. Overloading is not possible; the upper limit for maximum flow is only limited by the pump's capacity. The flow sensor can be mounted vertically as well as horizontally.

The meter has only one operating key, a logically structured menu and it is programmable with regards to sequence and placing. Version 184 registers maximum values for power, flow, Δt , supply and return temperatures with information about time and date every month. In addition to this, version 188 also has tariff registration according to different criteria, i.e. registration of supplied



energy. All versions allow for the logging of historic data in the programmable menu (24 accounting periods).

The HGQ and HGS meter has pulse output for energy and volume. Apart from the metering of energy it may also work as a pulse collector with display readings on consumption from other meters, i.e. water meters, electricity meters etc.

Ordering information

HGxx-Ry-zzz / ABCDEF

xx: Meter size:	Q1, Q3, S5, S9, S16	A: Power supply:	1: 230 VAC
y: Connection:	R0, R3, R4, R6		2: 24 VAC
zzz: Menu/display:	180: Special meter for flats	B: Backlight in display:	B: With/-: Without
	182: Standard meters	C: External meters:	0, 1 or 2
	184: Special meter with peak values	D: Communication module:	M-Bus / LonWorks / RS232
	185: Heat and cooling meter		/ - none
	188: Tariff meter	E: No. of accounting periods:	0 / 6 / 12 / 24
		F: Programmed for Glycol (% stated)	

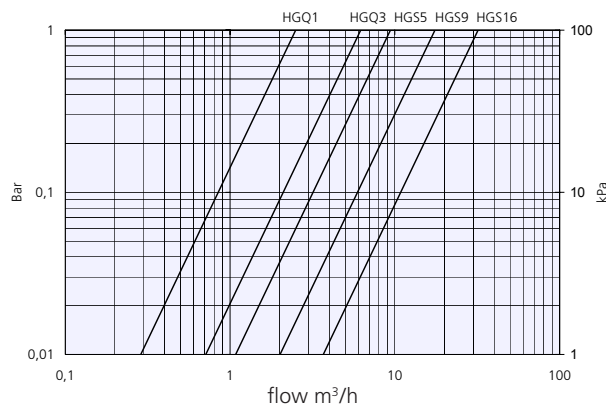
Options/ : Storage menu with 24 accounting periods
 accesories Pulse collector for other meters
 Communication module RS232, M-Bus, LON
 Analogue output (separate box) 4-20 mA
 Programmed for water with Glycol
 Handheld terminal for outdoor reading

Brunata is a 100 % Danish owned company. We have more than 85 years of experience within developing and producing heat cost allocators and heating accounts. Brunata has implemented a quality system in accordance with EN ISO 9001. Please contact us for further information on our products!

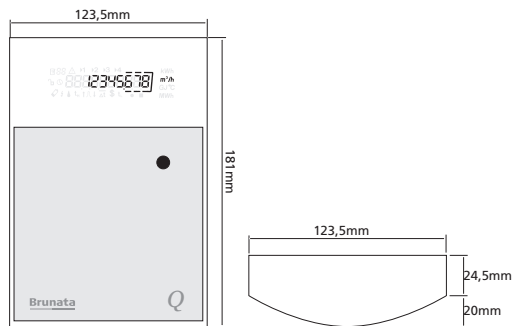
Technical data

		HGQ1	HGQ3	HGS5	HGS9	HGS16
Upper flow limit	m ³ /h	1.8	4.5	7.5	13.5	24
Max. flow (q _v)	m ³ /h	1.5	3.6	6	10.8	19.2
Permanent flow (q _p)	m ³ /h	1.2	3	5	9	16
Flow at Δp=10kPa	m ³ /h	0.9	2	3	5.5	10
Minimum flow (q _{min})	l/h	4.8	12	20	36	64
Lower flow limit	l/h	1.2	3	5	9	16

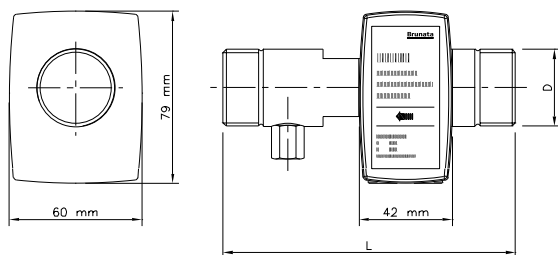
Pressure loss curve



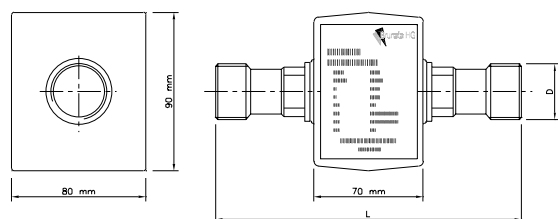
Dimensional outlines



Electronics HGQ and HGS



Flow sensor HGQ1 and 3



Flow sensor HGS5, 9 and 16

Meter types and dimensions

Dimension and overall length			Code for flow sensor dimensions				
D [mm]	Thread [inches]	Overall length L [mm]	HGQ1	HGQ3	HGS5	HGS9	HGS16
20	G $\frac{3}{4}$ B	110	-R0-	-R0-			
25	G1B	105	-R2-	-R2-			
25	G1B	130	-R3-	-R3-			
25	G1B	190	-R4-	-R4-	-R4-	-R4-	-R4-
32	G1 $\frac{1}{4}$ B	260			-R6-	-R6-	-R6-

Alternative connecting dimensions

Dimension wanted	Thread/Flange	Meter type	Connection	Connecting dimensions per meter
G $\frac{3}{4}$ B x 130	Thread	-R0-	Adapter	1
G $\frac{3}{4}$ B x 165	Thread	-R0-	Adapter	1
G1B x 220	Thread	-R4-	Adapter	1
G1 $\frac{1}{4}$ B x 260	Thread	-R4-	Adapter	2
G2B x 300	Thread	-R6-	Adapter	2
DN25 x 260	Flange	-R4-	Loose flange	2
DN32 x 260	Flange	-R4-	Loose flange	2
DN40 x 300	Flange	-R4-	Loose flange	2
DN50 x 270	Flange	-R4-	Loose flange	2

Technical data

Supply / Consumption	230 or 24 Volts AC/3 Watts
Dynamic measuring range	1:1000, approved to 1:250
Display value	999'999'999
No. of decimals	Max. 3
Temperature difference	1-110 K
Temperature digit	0.01 °C
Temperature sensors	Pt100 or Pt500
Accuracy	EN1434, class 2
Information and error registration	Present error and date/time as well as previous error with error type and date. Duration in hours with erroneous function is recorded (hour counter).
Protection class	Electronics: IP44, flow sensor: IP54
Surrounding temperature	5 – 55 °C
Data communication	MBus protocol
Pulse output	Potential free, open collector, max 20 mA, 28 V
Other output	5 V DC, HF signal for test equipment
Pulse input	External pulse meters (2 units), active or passive pulse signal course, 48 V max.
Display functions	See separate data sheet
Pressure class	PN16
Liquid temperature	T _{max} = 120 °C
Installation requirements	None
Conductivity requirements	> 2 mS/m [20 μS/cm]
Cable length	Standard 1.5 meter, 3, 5 and 8 mtr. optional

Temperature sensors

Direct sensors (standard for HGQ)	Type DS, paired Pt500, diameter 3.3 with bushing for flow sensor and 1 R $\frac{1}{2}$ " bushing for the other sensor
Sensors for pockets (standard for HGS)	Type E, paired Pt 500, diameter 6 in sensor pocket R $\frac{1}{2}$ " x 85 mm
Alternative pocket lengths	60, 120 and 210 mm
Temperature range	0-150 °C
Cable length	Standard 1.5, 3, 5 and 8 mtr. optional