



MID1-...M
Frequency output with fixed frequency
Status display via LED
(no adjustments possible)



EFFF-MID1 Frequency output (adjustable)
EFFS-MID1 Limit switch output (min/max)
EFFU-MID1 Analogue voltage output
EFFI-MID1 Analogue current output
all design types with LED status display,
adjustments via HONSBURG interface /
configurator respectively teachable)



Flex-MID1
Frequency output (adjustable) or
limit switch output (min/max)
and analogue output
(0...10 V or 4...20 mA)



omni-MID1
Analogue output (0...10 V or 4...20 mA)
and
2 limit switch outputs (min/max)

Adjustments via programming ring on the device
Status display via LCD and LED

- * For all conductive liquids
- * No moving parts inside the measuring tube
- * High overload protection
- * Low pressure loss
- * Compact design
- * Different nominal diameters

BENEFIT

The MID1 system consists of a number of sensors that measure the flow velocity of a liquid according to the principle of Faraday's law of induction. For this purpose, the liquid must have a minimum conductivity of 50 µS/cm. Dependent on the cross-section of the measuring tube, the velocity is converted into a flow volume.

Three different nominal diameters are available. The sensors may be supplied with distinct signal-evaluation electronics that differ in the type and number of outputs and in their ease of operation.

PROGRAMMING

Adjustment of all parameters can be done by a PC including a HONSBURG interface. In addition, "teaching" of individual parameters is possible for the EFF. and Flex series. In case of EFF. sensors, this is accomplished via one wire of the connection cable, in case of Flex devices with a magnet included in the delivery. For omni devices many parameters can be set by means of a detachable adjusting ring and the integrated LC display.

All sensors are delivered with pre-settings according to customers demand so that there is no need for reading voluminous manuals prior to commissioning into service.

To see more details about EFF., Flex and omni, please refer to the appropriate data sheets.

MOUNTING

The R threads fit into every G inch thread. For mounting it is recommended to cover the thread with 2 or 3 layers of sealant tape (eg. Teflon tape). The maximum tightening torques are:

- 1/4" : 3 ±0.5 Nm
- 1/2" : 5 ±0.5 Nm
- 1" : 12 ±1 Nm

To reach the accuracy indicated in the specifications in practice as well, an inflow and outflow section of 10 x D each should be observed.

Always install the flow meters upstream, not downstream a valve (on the pressure side). Good bleeding and an operation free of air bubbles must be provided.

Before connecting the power supply make sure that the voltage corresponds to the values indicated in the specifications.

All other information on the electronic modules can be found in the respective EFF., Flex.. or omni.. data sheet.

Adaptors as accessories on request:

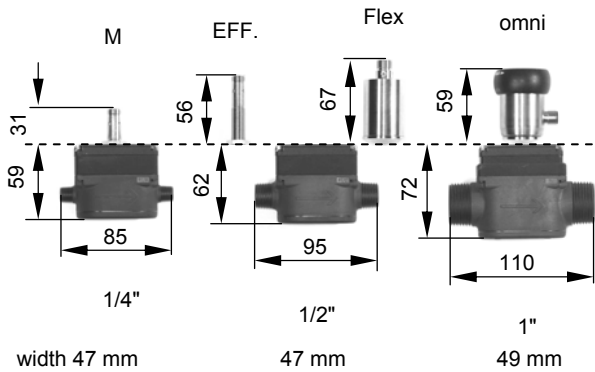
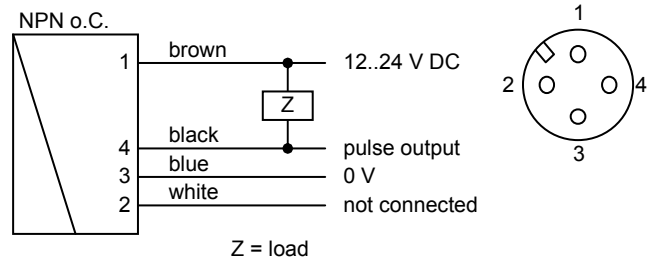
Female thread G, hose adaptors, Ermeto compression joint, customer-specific...



TECHNICAL DATA

Measurement ranges	R1/4"	0.05 - 1 l/min
	R1/2"	0.5 - 10 l/min
	R1"	3 - 60 l/min
Accuracy	R1/4"	0.5 % FS at 0.05 .. 0.2 l/min 2.5 % MV at 0.2 .. 1 l/min
	R1/2"	0.5 % FS at 0.5 .. 2 l/min 2.5 % MV at 2 .. 10 l/min
	R1"	0.5 % FS at 3 .. 12 l/min 2.5 % MV at 12 .. 60 l/min
FS = Full scale MV = Measured value all data for 4 sec. filter time		
Minimum conductivity (medium)	50 µS/cm	
Operating pressure	max. 10 bar (safety factor 1,5)	
Pressure loss	max. 0.3 bar at maximum flow	
Operating temperature	0..60 °C (avoid frost and dew)	
Medium temperature	0..60 °C	
Storage temperature	-20..80 °C	

Supply voltage	12..24 VDC (omni/Flex: 18..24 VDC)
Signal output	400 Hz@F.S., NPN o.C. (others on request)
LED	yellow, signals: - supply voltage present - medium present - flow direction ok
Current consumption	appr. 100 mA (without add. electronics)
Electrical connection	for locking plug M12x1, 4pole
Protection	IP64
Materials (in contact with medium)	stainless steel 1.4404 PPS, FKM (Viton)
Materials (without medium contact)	brass plated, PA6.6, V2A
Certification	CE
Weight	MID1-008: appr. 200 g MID1-015: appr. 200 g MID1-025: appr. 300 g Flex additional: appr. 120 g omni additional: appr. 150 g

DIMENSIONS

TERMINAL ASSIGNMENT

TYPE NOMENCLATURE

MID1-	015	A	P	001	M	S	01	basic type specification
	008							● mechanical connection R1/4"
	015							● mechanical connection R1/2"
	025							● mechanical connection R1"
		A						● male thread
			P					● body material PPS
				001				● measurement range 0.05 - 1 l/min
				010				● measurement range 0.5 - 10 l/min
				060				● measurement range 3 - 60 l/min
					M			● frequency output NPN o.C.
					E			● output via local electronics (omni-MID1, Flex-MID1, EFF.-MID1)
						S		● for locking plug M12x1, 4pole
								<u>Dynamics-/Accuracy-Index</u>
								<u>filter time</u> <u>accuracy</u>
							01	○ 0.1 s ±4.2 % FS
							03	○ 0.3 s ±3.6 % FS
							06	○ 0.6 s ±3.1 % FS
							10	○ 1.0 s ±2.7 % FS
							20	● 2.0 s ±2.0 % FS
							40	○ 4.0 s ±0.5 % FS

All technical changes reserved

●BASIC Standard ○BASIC Programme option □VARIO Special option ⊕ PLUS Accessories ✗ not recommendable

GENERAL CHARACTERISTICS

Flowmeter operates according to variable area principle with a cylindrical float moving flow-dependently in a conical plastic tube.

- * comfortable scale reading with good resolution
- * extended scale length
- * actual flow rate indicator min/max

Female thread Rp1 to Rp2 cast iron



GKL-050GTW0064PO

TECHNICAL DATA

	Rp	Type	metering range - float			L mm	L1 mm	L2 mm	G	SW mm	X mm	weight kg	
			polypropylene without magnet	polypropylene with magnet	stainless steel without/with magnet								
H ₂ O	Rp 1	GKL-025GTW1000	100 - 1000	100 - 1000	100 - 1000	l/h	402	369	350	1 1/2	55	17	0.75
	Rp 1 1/4	GKL-032GTW1000	100 - 1000	100 - 1000	-	l/h	410	370	350	2	66	19	1.25
		GKL-032GTW1600	150 - 1600	150 - 1600	150 - 1600	l/h							
	Rp 1 1/2	GKL-040GTW1600	200 - 1600	200 - 1600	-	l/h	414	372	350	2 1/4	74	20	1.75
		GKL-040GTW2500	300 - 2500	300 - 2500	200 - 2500	l/h							
		GKL-040GTW3300	300 - 3300	300 - 3300	-	l/h							
Rp 2	GKL-050GTW0025	0.2 - 2.5	0.2 - 2.5	-	m ³ /h	420	374	350	2 3/4	90	24	2.40	
	GKL-050GTW0040	0.4 - 4	0.4 - 4	0.4 - 4	m ³ /h								
	GKL-050GTW0064	0.6 - 6.4	0.6 - 6.4	0.6 - 6.4	m ³ /h								
air	Rp 1	GKL-025GTL0100	1 - 10	1.25 - 10	-	Nm ³ /h	402	369	350	1 1/2	55	17	0.75
		GKL-025GTL0160	1.5 - 16	1.5 - 16	-	Nm ³ /h							
		GKL-025GTL0250	-	3 - 25	-	Nm ³ /h							
	Rp 1 1/4	GKL-032GTL0160	1.5 - 16	-	-	Nm ³ /h	410	370	350	2	66	19	1.25
		GKL-032GTL0250	2 - 25	-	-	Nm ³ /h							
		GKL-032GTL0400	4 - 40	4 - 40	-	Nm ³ /h							
		GKL-032GTL0640	-	6 - 64	-	Nm ³ /h							
	Rp 1 1/2	GKL-040GTL0250	2 - 25	-	-	Nm ³ /h	414	372	350	2 1/4	74	20	1.75
		GKL-040GTL0400	4 - 40	-	-	Nm ³ /h							
		GKL-040GTL0500	5 - 50	-	-	Nm ³ /h							
		GKL-040GTL0600	-	5 - 60	-	Nm ³ /h							
	Rp 2	GKL-050GTL0400	4 - 40	-	-	Nm ³ /h	420	374	350	2 3/4	90	24	2.4
GKL-050GTL0640		6 - 64	-	-	Nm ³ /h								
GKL-050GTL1000		10 - 100	-	-	Nm ³ /h								
GKL-050GTL1500		-	15 - 160	-	Nm ³ /h								
GKL-050GTL2500		-	20 - 250	-	Nm ³ /h								

GKL-...G

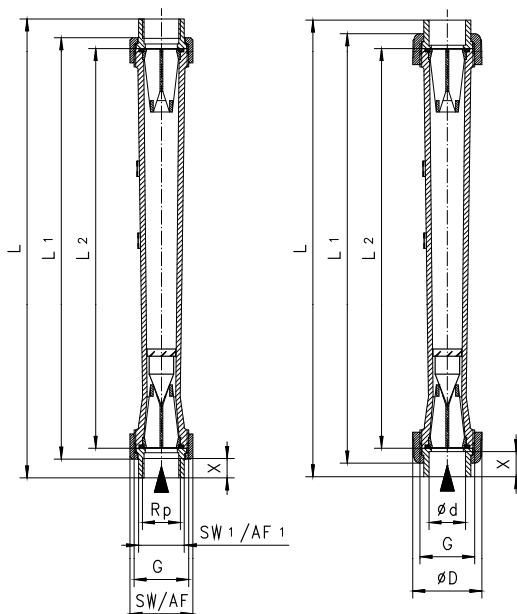
GKL-...M

pressure PN15
 tolerance ±1% of full scale
 and ±3% of measured value
 media temperature max. 60°C
 pressure loss max. 20mbar

Measurements on request

tube	temperature °C										
	-20	0	20	30	40	50	60	70	80	90	100
trogamid	15	15	15	13,5	12	10,7	9,5	-	-	-	-
polysulfon	15	15	15	14	13	12	11	9,7	8,5	7,7	6,0

bar



MATERIALS

tube trogamid
 float polypropylene
 connector cast iron

variable area

ELECTRICAL DATA

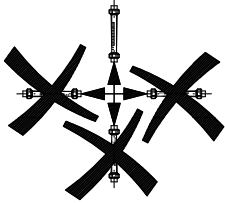
● **BASIC Standard**

No electrical components.

⊕ **PLUS accessories**

Switch units or continuous signal converters
see description next page

MOUNTING POSITION



METERING SUBSTANCES



water



gas/air

NOMENCLATURE

For combinations see table "technical data".

GKL-	025	G	T	W1000	PO	basic type specification															
	025					●	nominal diameter DN 25 - Rp1														
	032					●	nominal diameter DN 32 - Rp1 1/4														
	040					●	nominal diameter DN 40 - Rp1 1/2														
	050					●	nominal diameter DN 50 - Rp2														
		G				●	female thread Rp cast iron, PN15														
		M				○	threaded connector with glue fittings PVC, PN10														
			T			●	measuring tube trogamid														
			P			○	measuring tube polysulfon (max. temperature 100°C)														
				W1000		●	100 - 1000 l/h	●	○	○	○										●
				W1600		●	150 - 1600 l/h	●	○	○	○										●
				W2500		○	200 - 1600 l/h	●	○	○	○										●
				W2500		●	200 - 2500 l/h	●	○	○	○										○
				W3300		●	300 - 2500 l/h	●	○	○	○										●
				W0025		●	300 - 3300 l/h	●	○	○	○										●
				W0040		●	0,2 - 2,5 m³/h	●	○	○	○										●
				W0064		●	0,4 - 4 m³/h	●	○	○	○										●
				L0100		●	0,6 - 6,4 m³/h	●	○	○	○										●
				L0100		○	1 - 10 Nm³/h	●	○	○	○										○
				L0160		●	1,25- 10 Nm³/h	●	○	○	○										●
				L0250		●	1,5 - 16 Nm³/h	●	○	○	○										●
				L0250		●	2 - 25 Nm³/h	●	○	○	○										●
				L0400		●	3 - 25 Nm³/h	●	○	○	○										○
				L0400		●	4 - 40 Nm³/h	●	○	○	○										●
				L0500		●	5 - 50 Nm³/h	●	○	○	○										●
				L0600		○	5 - 60 Nm³/h	●	○	○	○										○
				L0640		●	6 - 64 Nm³/h	●	○	○	○										●
				L0640		○	10 - 100 Nm³/h	●	○	○	○										○
				L1000		●	15 - 150 Nm³/h	●	○	○	○										●
				L1500		●	20 - 250 Nm³/h	●	○	○	○										●
				L2500		●		●	○	○	○										●
					PO	●	float polypropylene without magnet														
					PM	○	float polypropylene with magnet														
					KO	○	float stainless steel without magnet														
					KM	○	float stainless steel with magnet														
						○	scale in %														
						□	actual metering ranges referring to pressure and temperature special scales														
						⊕	switch unit														Only for float with magnet.
							contin.signal convert.														Description see next page.

IMPORTANT FOR YOUR ORDER

- With gaseous media indicate pressure (relative or absolute), temperature and metering substance, e.g. air (metering range on request)

All technical changes reserved

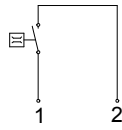
●BASIC Standard ○BASIC Programme option □VARIO Special option ⊕ PLUS Accessories ✗not recommendable

variable area

ACCESSORIES

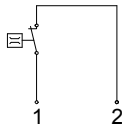
⊕ GKEH-1251

maximum switch unit plastic
bistable reed switch
wiring diagram 0.212 n.o.
250 V AC 0.2 A 10 VA
plug DIN 43650-B
protection class IP 65
additional weight 0.075 kg



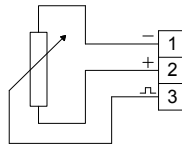
⊕ GKEL-1252

minimal switch unit plastic
bistable reed switch
wiring diagram 0.214 n.c.
250 V AC 0.2 A 10 VA
plug DIN 43650-B
protection class IP 65
additional weight 0.075 kg



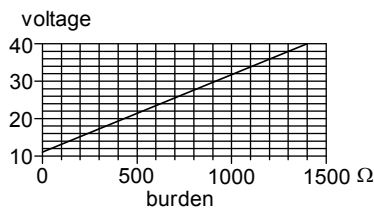
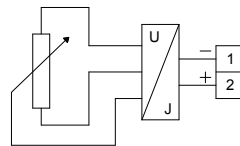
⊕ GKK-1270

continuous signal converter plastic
reed switch chain
24 V DC
exit signal: 0 - 10 k-Ohm
plug DIN 43650-B
protection class IP 65
additional weight 0.07 kg



⊕ GKI-1272

continuous signal converter plastic
reed switch chain with integrated signal converter
supply 11-40 V DC depending on ohmic resistance
ohmic resistance max. 1500 Ω
exit signal: 4 - 20 mA
plug DIN 43650-B
protection class IP 65
additional weight 0.08 kg



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●BASIC Standard ○BASIC Programme option □VARIO Special option ⊕ PLUS Accessories

✗ not recommendable