



G. GIOANOLA

METERING EFFICIENCY

KALOR 2 compact thermal energy meter for heating and cooling systems

MID approved to MI004 Directive 2014/32/UE

Accuracy class: EN1434 class 3

- **Protection Class IP65**
- **Mechanical Class M2 / Electromagnetic E1**
- **Temperature range 15°C ... 90°C**

- Compact energy meter suitable for direct metering of thermal energy in heating/cooling systems where water is used as heat carrier with a maximum temperature of 90 °C
- The meter consists of three main units: mechanical volume meter, electronic calculator and temperature sensors
- Bidirectional inductive scanning system measuring method, return flow sensor connection (standard version) in the housing, max. fluid temperature 90 °C
- Detachable calculator with 50 cm cable with LCD display with 8 digits and special characters, powered by replaceable 3 V lithium battery with 10 years service life, optical communication/configuration interface, key-operated query menu on 3 levels (main/technical/statistical), Selectable yearly reading date; 15 monthly and semimonthly values via display or wireless M-Bus; 24 monthly and semimonthly values via optical interface or M-Bus
- PT1000 Temperature sensors diam. 5 mm with 1,5 mt. cable lenght, 2-wire connection (1 sensor inserted in housing/1 sensor free)
- Configuration by software installation on flow circuit and use (not certified) of glycol by type and diluted percentage with energy value ≤ 10kWh

Options:

- Wired M-Bus communication interface protocol EN13757-2 EN13757-3 + 3 pulse inputs
- Wired M-Bus communication interface protocol EN13757-2 EN13757-3
- Two potential-free pulse outputs Class OA energy/volume or energy/energy pulse duration 125ms – Max. current 120mA- Contact resistance max.25 Ohm – (battery life 6 years + 1 version with pulse output)
- Dual registers heat/cooling metering
- Radio interface wireless M-Bus EN 13757-3,-4 Frequency 868 MHz – Selectable modes T1, S1 –3 pulse inputs to connect hot and cold sanitary water meters
- 230V or 24V mains power supply

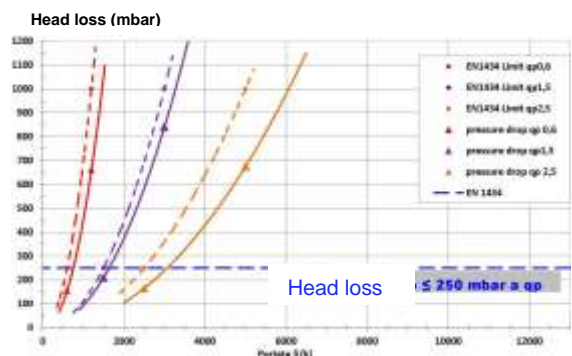
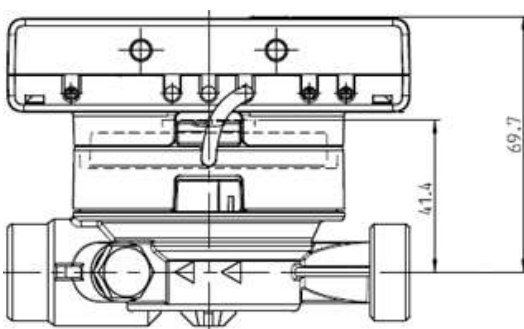
Accessories:

- TEE couplings 1/2" 3/4" wet mounting
- TEE couplings with ball valve 1/2" 3/4" wet mounting
- Kit of brass fittings (2 nuts/2 tailpieces/2 gaskets) 1/2" x 3/4" / 3/4" x 1"



Wireless M-Bus EN 13757	
4 Selectable modes	S1/T1*: unidirectional S2/T2: bidirectional
Compliance to OMS standard	short telegram in conformity to AMR (OMS-Spec_Vol2_Primary_v301 and v402)
Transmission power	-5 dBm, 0 dBm, +9 dBm
AES-128-Encryption	AES: Advanced Encryption Standard Key length: 128 bit (set and configured for each instrument)*
Type of telegram (to be chosen from)	Short telegram* Energy (heat/cooling, pulse input 1, pulse input 2), total volume, flow, power, hint flag, return flow temperature, temperature difference* Long telegram Energy (heat/cooling, pulse input 1, pulse input 2), hint flag, 15 monthly values
Transmission interval (configurable)	10 seconds - 240 minutes
Transmission period (configurable)	00:00 - 24:00 / 7:00 - 19:00*
Weekdays (configurable)	Monday – Sunday / Monday - Friday*
Weeks in a month	1 – 4*
Months	1 – 12*
Activation of the radio interface	The radio interface leaves the factory deactivated* (it can be activated by pressing the push-button key or by configuration optical kit)
Minimum battery lifetime	7 years (+3 in relation to radio data transmission interval)

* factory settings



KALOR 2

Technical data				
Water meter				
Nominal flow rate qp	m³/h	0,6	1,5	2,5
Horizontal starting flow rate	l/h	3,5	7,0	10,0
Vertical starting flow rate	l/h	4,0	7,0	10,0
Minimum flow rate qi	l/h	24	60	100
Maximum flow rate qs	m³/h	1,2	3,0	5,0
Pressure drop Δp at qp	bar	0,155	0,210	0,165
Pressure drop Δp at qs	bar	0,660	0,840	0,675
Nominal diameter	mm	DN 15	DN 15	DN 20
Thread	inch	G3/4B	G3/4B	G1B
Length	mm	110	110	130
Dynamic range qi/qp		1:25		
Accuracy class (MID)		3		
Nominal pressure PN	bar	16		
Temperature range of liquid – heat	°C	15-90		
Temperature range of liquid – cooling (qp 1.5 and qp 2.5)	°C	5-50		
Mounting position		Cooling energy meters: any position Heat meters: horizontal/vertical		
Calculator				
Temperature range of liquid – heat	°C	0-150		
Temperature range of liquid – cooling (qp 1.5 and qp 2.5)	°C	0-50		
Operating ambient temperature	°C	5-55 with 95% relative humidity		
Transport temperature	°C	-25-70 (max. 168 hours)		
Storage temperature	°C	-25-55		
Temperature difference range ΔΘ heat	K	3-100		
Temperature difference range ΔΘ cooling	K	-3- -50		
Minimum temperature difference ΔΘ heat	K	> 0,05		
Minimum temperature difference ΔΘ cooling	K	< -0,05		
Minimum temperature difference ΔΘ HC heat/cooling	K	> 0,5/< -0,5		
Temperature resolution	°C	0,01		
Dynamic temperature measuring cycle	s	2/60; with power pack: 2 s permanently		
Power supply		Replaceable 3 V lithium battery; all models are prepared for a 3 V power pack (input voltage 230 V/24 V)		
Data storage		Non-volatile memory		
Reading dates		Selectable yearly reading date; 15 monthly and semimonthly values via display or wireless M-Bus; 24 monthly and semimonthly values via optical interface or M-Bus		
2 tariff registers		Can be set individually; energy or time can be added		
Storage of maximum values		Flow rate and power		
Protection class		IP65		
Electromagnetic interference		EN 1434		
Temperature sensors (2-wire technique)				
Platinum precision resistor		Pt 1000		
Diameter	mm	5; 5.2; 6; AGFW 27.5; 38; needle sensor 3.5 x 75		
Cable length	m	1,5; 3; 6		
Installation point		Asymmetrical, symmetrical		
Weight				
Calculator not detachable	kg	0,755	0,755	0,795
Detachable calculator	kg	0,840	0,840	0,880
Dimensions				
Pulse cable length (only separable version)	m	0,50		
Calculator housing (h x w x d)	mm	75 X 110 X 34,5		
Thread		G3/4" DN15	G3/4" DN15	G1" DN20

The company's policy is one of continuous product improvement and the right is reserved to modify the specifications contained herein without notice. Illustrations are not binding. 02-25