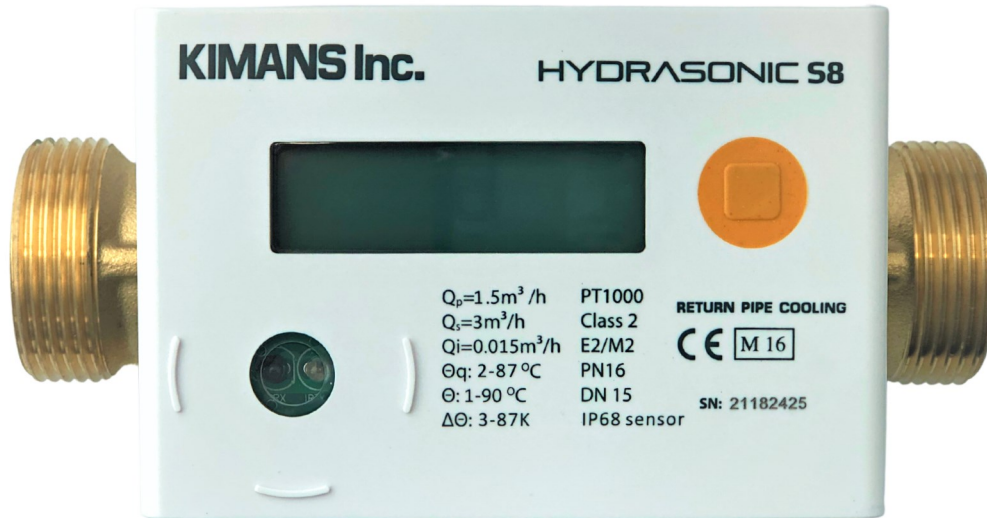


# HYDRASONIC S8

**KIMANS Inc.**

## ULTRASONIC HEATING/COOLING BTU METER



## APPLICATION

Hydrasonic S8 ultrasonic BTU meter is designed for measuring the energy consumption in heating/cooling application for billing purpose.

Its static ultrasonic technology is based on the measurement of the transit time. It offers benefits like easy battery & temperature sensor replacement, IP68 protection, no straight run requirements, M-Bus and Wireless M-Bus communication options.

## FEATURES

- Easy battery replacement
- Easy temperature sensor replacement
- Heat-transfer fluid: water
- Constant high measuring rates of the temperatures and volume with up to 12 years battery life-time
- M-Bus or Wireless M-Bus communication options
- 8-digit LCD
- Removable calculator (1.5 m coaxial cable) ensuring comfortable reading

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## ULTRASONIC HEATING/COOLING BTU METER

### GENERAL

HYDRASONIC S8		
Application	-	Heating or bi-functional (heating/cooling)   Heat-transfer fluid: glycol-free water
Approval	-	In compliance with MID-EN1434
Accuracy class	-	Class 2
Ambient temperature	°C	+5 ... +55
Storage temperature	°C	+5 ... +55   max. -20...+60 (max. 4 weeks)
Humidity	%	95 maximum
Battery supply	-	3.6 VDC
Temperature sensor type	-	PT1000 , 2-wires: Ø 5.2 mm
Cable length of temperature sensor	m	1.4
Test possibilities	-	via display
Volume measuring cycle	s	2
Temperature measuring cycle	s	30
Power calculation cycle	s	2

### FLOW SENSORS-BASIC FEATURES

HYDRASONIC S8		
Dynamic range ( $Q_p/Q_i$ )	-	1:100
Mounting position flow sensor		Any position, no straight run requirements
Temperature range (heating/cooling)	°C	2-87*
Protection class	-	IP68 (heating/cooling)

\*150 °C optional

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### CALCULATOR-BASIC FEATURES

HYDRASONIC S8		
Protection class	-	IP66 (Optional IP67)
Environmental class-mechanical	-	M1, M2
Environmental class-electromechanical	-	E1, E2
Calculator	-	Removable, with 1.5m cable to flow sensor
Absolute temperature range	°C	+1...+90 (+150 optional)
Starting temperature difference $\Delta\theta$	K	0.125
Min. temperature difference $\Delta\theta_{min}$	K	In compliance with MID
Max. temperature difference (heating) $\Delta\theta_{max}$	K	147 (In compliance with MID)
Extensive readable data memory	-	Monthly for 18 months (hourly, daily, yearly optional) values of energy, volume and error hours; additionally event memory (error log)
Interchangeable components	-	Battery (Standard) ; Temperature sensors (Optional)

### INTERFACES

HYDRASONIC S8	
Optical	ZVEI interface, for communication and testing. M-Bus protocol
Display	LCD-8 digit
M-Bus	According to EN13757-3: 2013
Wireless M-Bus	According to EN13757-4; 2013

### DISPLAY

HYDRASONIC S8	
Display indication	LCD-8 digit + special characters
Units	kWh - m <sup>3</sup> - °C - m <sup>3</sup> /h*
Total values	99,999.999
Values displayed (main loop)	Energy - Volume - Flow - Power - Temperature - Differential temperature - Operating hours - Meter SN-Meter size-Meter time-Error Status - Display test

\*MWh-GJ optional

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## ULTRASONIC HEATING/COOLING BTU METER

### M-BUS

HYDRASONIC S8	
M-Bus	Auto baud detect (300 and 2,400 bauds); galvanically insulated
M-Bus cable	24 AWG , 2 Core
Data transmission	Data reading via 2 non-polarized wire (1.5m)
Battery life-time	Up-to 12 years*

\*Under standard conditions of use and temperature

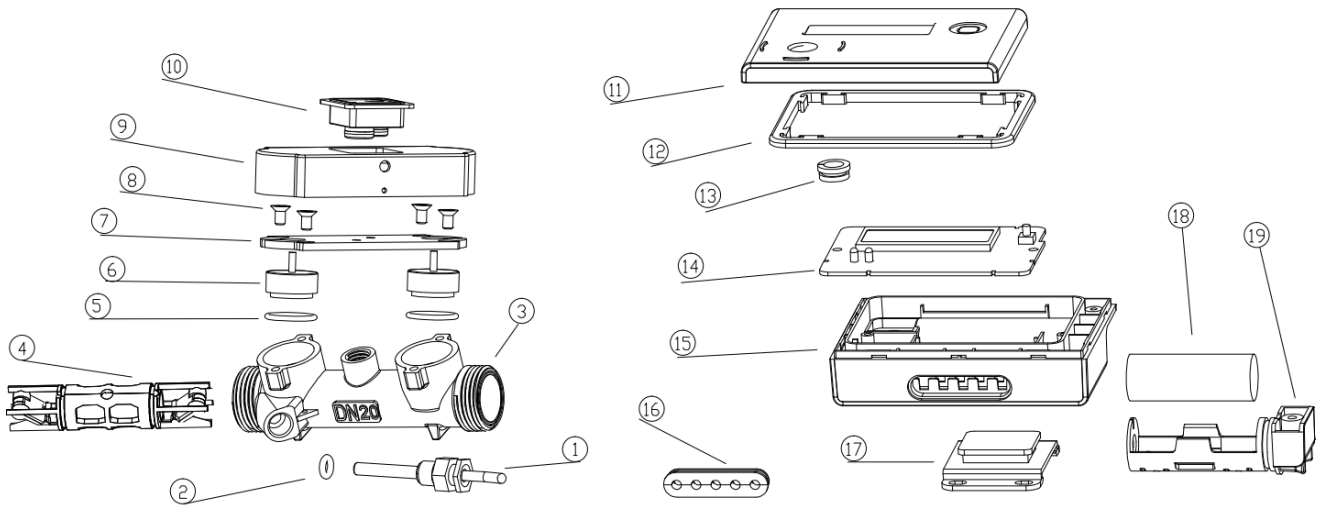
### TECHNICAL DATA FOR FLOW SENSOR

HYDRASONIC S8						
Measuring Method	Ultrasonic; Time of Flight					
Nominal Diameter	mm	DN15	DN20	DN25	DN32	DN40
Nominal flow $q_p$	m <sup>3</sup> /h	1,5	2,5	3,5	6,0	10,0
Low flow threshold	m <sup>3</sup> /h	0.006	0.012	0.014	0.03	0.05
Minimum flow $q_i$	m <sup>3</sup> /h	0.015	0.025	0.035	0.06	0.1
Maximum flow $q_s$	m <sup>3</sup> /h	3,0	5,0	7,0	12,0	20
Pressure drop $\Delta p$ at $q_p$	bar	0,21	0,12	0,21	0,20	0,11
Pressure drop $\Delta p$ at $q_s$	bar	0,85	0,46	0,89	0,80	0,43
Thread	inch	G3/4B	G1B	G1 1/4B	G1 1/2B	G2B
Length	mm	110	130	160	180	200
Dynamic range $Q_p/Q_i$	-	1:100	1:100	1:100	1:100	1:100
Accuracy class (MID)	-	Class 2				
Nominal pressure PN	bar	16 / 20 (Optional)				

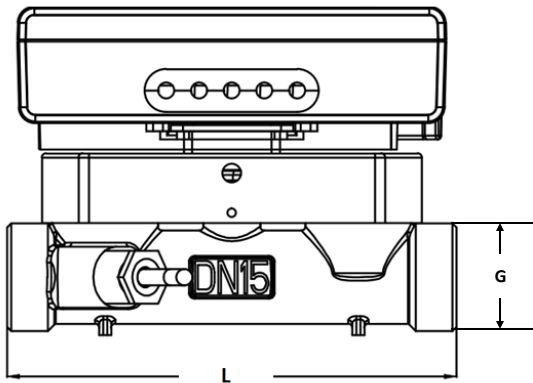
# HYDRASONIC S8

## ULTRASONIC HEATING/COOLING BTU METER

### DIMENSIONS



Item No:	Description	Item No:	Description
1	Temperature sensor	11	Calculator face cover
2	Gasket for temperature sensor	12	Gasket for calculator
3	Brass body	13	Menu button
4	Reflector tube	14	Printed Circuit Board & Display
5	Gasket for flow sensor	15	Calculator body
6	Ultrasonic flow sensor	16	Cable gland tray
7	SS Sensor support	17	Wall mounting bracket
8	SS Screws	18	Battery
9	Flow sensor cover	19	Battery sleeve
10	Mounting bracket		

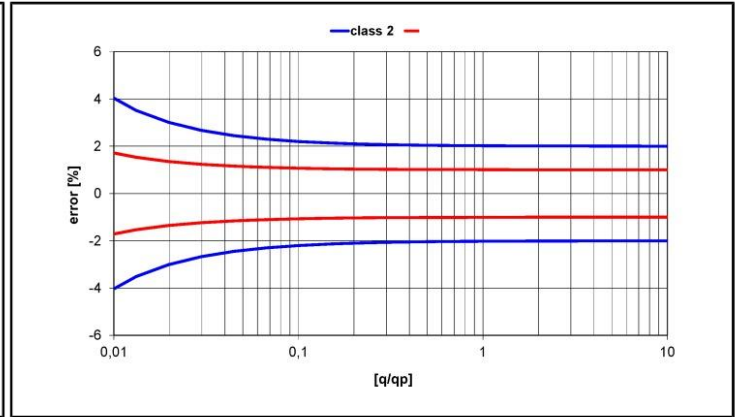
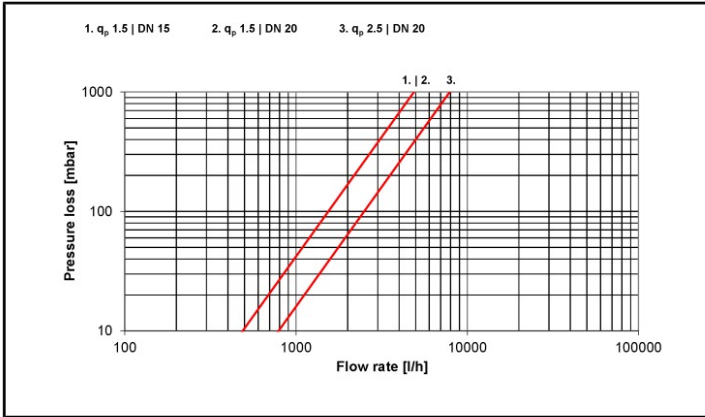


Nominal flowrate $Q_p$ (m <sup>3</sup> /h) min	Maximum flowrate $Q_{max}$	Nominal diameter (DN)	Thread G (in)	Length L (mm)	Approx. weight (kg)
1,5	3,0	DN 15	G3/4B	110	0,720
2,5	5,0	DN 20	G1B	130	0,770
3,5	7,0	DN 25	G1 1/4B	160	0,930
6,0	12,0	DN 32	G1 1/2B	180	1,255
10,0	20,0	DN 40	G2B	200	1,580

# HYDRASONIC S8

## ULTRASONIC HEATING/COOLING BTU METER

### PRESSURE LOSS GRAPH/TYPICAL ERROR GRAPH



### ORDERING CODE

**S8** - **XX** - **XX** - **XX** - **XX** - **XX**

#### CONNECTION SIZE

G3/4	3/4
G1	1
G1 1/4	1 1/4
G1 1/2	1 1/2
G2	2

#### FLOW SENSOR CABLE LENGTH

1.5 m (Standard)	1.5
3 m (Optional)	3

#### TEMPERATURE SENSOR CABLE LENGTH

1.5 m (Standard)	1.5
3 m (Optional)	3

#### INTERCHANGEABLE COMPONENTS

Battery (Standard)	B
Battery & Temperature Sensors	BT

#### TEMPERATURE RANGE

1-90 °C	TS
1-150 °C	TO