

# HYDRASONIC F8

### Ultrasonic Heating/Cooling BTU Meter

## **Revolutionizing Flow**



The meter is designed for commercial metering of the heating and cooling energy when the heat transfer medium is water; it is used in the district cooling facilities in residential buildings, companies and institutions.

ADVANTAGES:

Heating and cooling energy is stored in separate registers.

Possibility to use rate tariffs.

Programmable dates for annual and monthly reports.

Registration of maximal monthly parameter value, etc.

Provided with remote data transfer modules with M-Bus, CL or wireless radio link interfaces.





GENERAL			
Application	-	Heating or bifunctional (heating /cooling)   Heat-transfer fluid: glycol-free water	
Approval	-	MID (DE-13-MI004-PTB008)	
Accuracy class	-	Class 2	
Ambient temperature	°C	+5 +55 (<35 has a positive effect on battery lifetime)	
Storage temperature	°C	+5 +55   max20 +60 (max. 4 weeks)	
Humidity	%	93 maximum	
Battery supply	-	3.6 VDC 2xAA-Cell	
Lithium content	g	2 x 0.7	
Temperature sensor type	-	Pt 500, 2-wires: Ø 5.2 mm	
Cable length of temperature sensor	m	1.45	
Test possibilities	-	via display	
Volume measuring cycle	S	2	
Temperature measuring cycle	S	16 (long radio telegram + Mbus) / 32 (short radio telegram)	
Power calculation cycle	S	2	

CALCULATOR			
Protection class	-	IP65	
Environmental class-mechanical	-	M1, M2	
Environmental class electromechanical	-	E1, E2	
Calculator	-	Removable, with 0.45m cable to flow sensor	
Absolute temperature range	°C	+1 +105 (+130 in option)	
Starting temperature difference $\Delta \Theta$	К	0.125	
Min. temperature difference ΔΘmin	к	3 (MID approved)	
Max. temperature difference (heating) $\Delta \Theta$ max	К	127 (MID approved)	
Extensive readable data memory	-	2 predefined history logs for 720 daily (Log-1) and 120 monthly (Log-2) values of volume and error hours; additionally event memory( error log)	



FLOW SENSORS			
Dynamic range (Qp/Qi)	-	1:100	
Mounting position flow sensor	-	Any position, calming section not necessary	
Temperature range (heating/ cooling)	°C	+5 +105*	
Temperature range (heating/ cooling)	°C	+5 +105	
Protection class	-	IP54 (heating) - IP68 (heating/cooling)	

\* +130°C in option

DISPLAY			
Display indication	LCD-8 digit		
Units	kWh - m³ - °C - m3/h*		
Total values	99,999.999		
Values displayed (main loop)	Energy - Volume - Flow - Power - Temperature - Differential temperature - Operating days - Error Status - Display test		

\*MWh-GJ optional

M-BUS			
M-Bus	Auto baud detect (300 and 2,400 bauds); galvanically insulated		
Data transmission	Data reading via 2 non-polarized wires (1.45 m)		
Battery life-time	Up-to 12 years*		

\*Under standard conditions of use and temperature

WIRELESS M-BUS (RADIO)			
Frequency/band	868 MHz		
Type of radio telegram	Open Metering Standard (OMS)		
Transmission data updating	Online - no time delay between value measurement and data transmission		
Data transmission	Unidirectional		
Battery lifetime	Up to 12 years*		
Sending interval options	Short telegram: 33 sec. for heating, 43 sec. for heating/cooling   Long telegram: 64 sec. for heating, 91 sec. for heating/cooling		

\*Under standard conditions of use and temperature



FLOW SENSOR TECHNICAL DATA					
Nominal Flow rate	qp	m³/h	1.5	2.5	
Nominal diameter	DN	mm	15	20	
Overall length	L	mm	110	130	
Starting flow rate		l/h	2.5	4	
Minimum flow rate	qi	l/h	15	25	
Maximum flow rate	qs	m³/h	3	5	
Overload flow rate		m³/h	4.6	6.7	
Operating pressure	PN	bar	16	16	
Kvs value (Δp=Q2/Kvs2)			4.33	7.91	
Pressure loss at qp	Δр	mbar	120	100	

#### DIMENSIONS

Nominal flow rate	qp	m³/ h	1.5	2.5
Nominal diameter	DN	mm	15	20
Overall length	L	mm	110	130
Overall length with coupling	L2	mm	190	230
Length of calculator	L1	mm	90	90
Height	Н	mm	14.5	18
Height	H1	mm	55	58
Height of calculator	H2	mm	27	27
Height of calculator	Н3	mm	40	40
Width of calculator	В	mm	135	135
Connection thread on meter		inch	G¾ B	G1B
Connection thread of coupling		inch	R½	R¾
Weight		kg	0.70	0.77







### **PRESSURE LOSS & TYPICAL ERROR GRAPH**





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