

Engelmann **Ultrasonic Thermal Energy Meter**

SensoStar U

Ultrasonic flow sensor for inline installation points



Most accurate measurement results in any installation position

Various installation options due to a large selection of installation lengths

Flexible communication based on modular system

Fast response due to dynamic temperature measurement cycle

Flow sensor

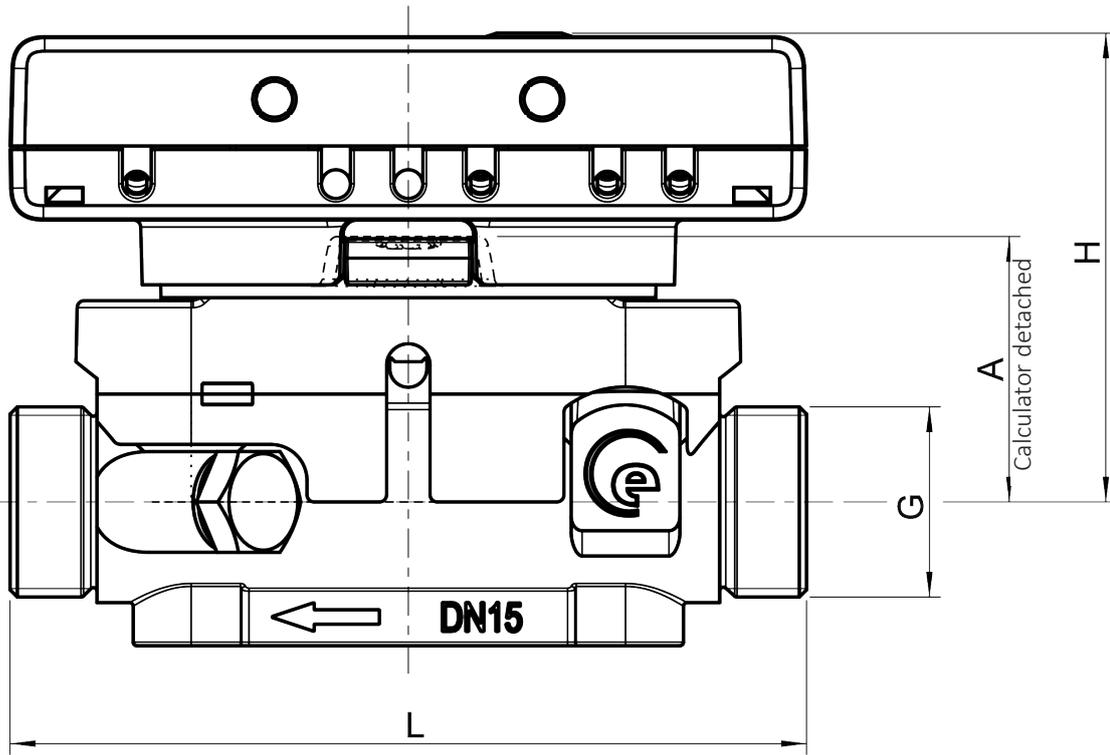
Sizes	Nominal flow rate Qp	m ³ /h	0.6	0.6	1.5	1.5	2.5	2.5	3.5	3.5	6	6	10
	Low flow threshold value	l/h	6	6	6	6	12	12	14	14	30	30	50
	Minimum flow Qi	l/h	12	12	12	12	25	25	28	28	60	60	100
	Maximum flow Qs	m ³ /h	1.2	1.2	3	3	5	5	7	7	12	12	20
Pressure drop Δp at Qp	bar	0.03	0.03	0.21	0.04	0.12	0.12	0.21	0.21	0.20	0.20	0.11	
Pressure drop Δp at Qs	bar	0.13	0.13	0.85	0.17	0.46	0.46	0.89	0.89	0.80	0.80	0.43	
Nominal diameter	mm	DN 15	DN 20	DN 15	DN 20	DN 20	DN 25	DN 20	DN 25	DN 25	DN 32	DN 40	
Dynamic range Qi/Qp	-	1:50	1:50	1:125	1:125	1:100	1:100	1:125	1:125	1:100	1:100	1:100	

Measuring method	ultrasound; Time-of-Flight		
Accuracy class (MID)	class 2		
Protection class	IP68		
Nominal pressure PN	bar	16	
Medium	water		
Mounting position	any position (horizontal, vertical, overhead)		
Point of installation	outlet flow and inlet flow; can be set when the amount of energy is still ≤ 10 kWh		
Temperature range medium heat	°C	15 – 90 15 – 130 high temperature (150; for max. 2000 h) (optional)	
Temperature range medium cooling (from Qp 1.5 to Qp 10)	°C	5 – 50	
Temperature range medium heat/cooling	°C	15 – 90 heat 15 – 120 high temperature (optional) 5 – 50 cooling	

Calculator

Temperature range medium	°C	0 – 150 heat / 0 – 50 cooling (from Qp 1.5 to Qp 10)
Ambient temperature in the field	°C	5 – 55 at 95 % relative humidity
Transport temperature	°C	-25 – 70 (for max. 168 h)
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 heat/cooling	K	> 0.5 / < -0.5
Resolution temperature	°C	0.01
Measuring cycle temperature; dynamic	s	2 / 60; by using external power supply: 2 s permanent
Measuring cycle flow	s	2
Calculator housing dimensions (H x W x D)	mm	75 x 110 x 34.5
Length of connecting cable calculator–flow sensor	m	0.85 (optional: 2.85)
Display	LCD – 8 digits + special characters	
Displayed thermal energy	up to 3 decimal places	

TECHNICAL DATA



PRESSURE DROP SENSOSTAR U

