

# DATASHEET ULTRAHEAT® T330 | ULTRACOLD® T330

STATIC ULTRASONIC HEAT / COLDMETER



## Application

The T330 is a compact and robust ultrasonic heat- and cold meter, which is universal for all requirements in building technologies and was especially developed for these applications.

## Key Facts

- Ultrasonic measurement - precise, durable
- Compact, removable electronic unit
- Large, easy readable display
- 24 monthly values including mid-month values
- Intelligent, adaptive measuring cycle
- Any installation possible without any restrictions
- Full metal measuring tube
- DuraSurface™ Technology
- 11 years lifetime, also with walk-by radio

## Technical Data

General	
Measuring accuracy	Class 2 or 3 (EN 1434)
Environment class	A (EN 1434) for indoor installation
Mechanical class	M1 / M2 *)
Electromechanical class	E1 *)
Ambient humidity	< 93 % rel. F. at 25 °C, without condensation
Max. height	2000 m above sea level
Storage temperature	-20 ... 60 °C

\*) acc. to 2004/22/EC Measuring Instruments Directive (MID)

Electronic unit	
Ambient temperature	5 ... 55 °C
Housing protection class	IP 54 acc. to EN 60529
Power supply	Battery for 6 or 11 years
Operation threshold for $\Delta T$	0.2 K
Temperature difference $\Delta T$	3 K ... 80 K
Temperature measurement range	0 ... 180 °C
LCD	7 digit
Optical interface	Standard, EN 62056-21
Communication	Optional
Separability	Always, cable length 1.5 m

Temperature sensors	
Type	Pt 500 acc. to EN 60751, not detachable
Connection type	Pt 500, 2-wire technology
Cable length	1.5 m (optional 5 m)
Construction type	Bulb sensor $\varnothing$ 5.2 x 45 mm, DS direct short, M10 x 27.5 mm
Temperature range	0 ... 105 °C

Volume measuring tube	
Protection class	IP 54 acc. to EN 60529, optional IP 65
Mounting place	Warm side / cold side
Installation position	Any
Flow straightening	None
Measuring range	1:100
Temperature range	5 ... 105 °C
Maximum overload	$q_s = 2 \times q_p$ , permanent
Nominal pressure	PN16 (1.6 MPa; PS16) PN25 (2.5 MPa; PS25)

$q_p$ m <sup>3</sup> /h	Overall length and connection		
0.6	110 mm (3/4")	—	190 mm (1")
1.5	110 mm (3/4")	130 mm (1")	190 mm (1")
2.5	—	130 mm (1")	190 mm (1")

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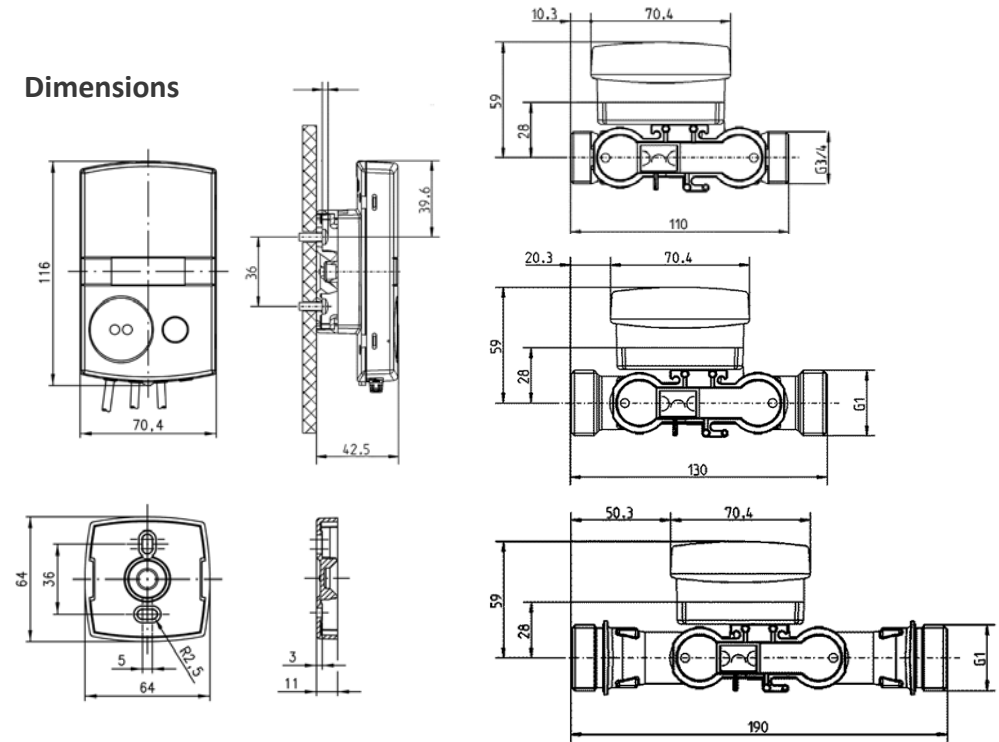
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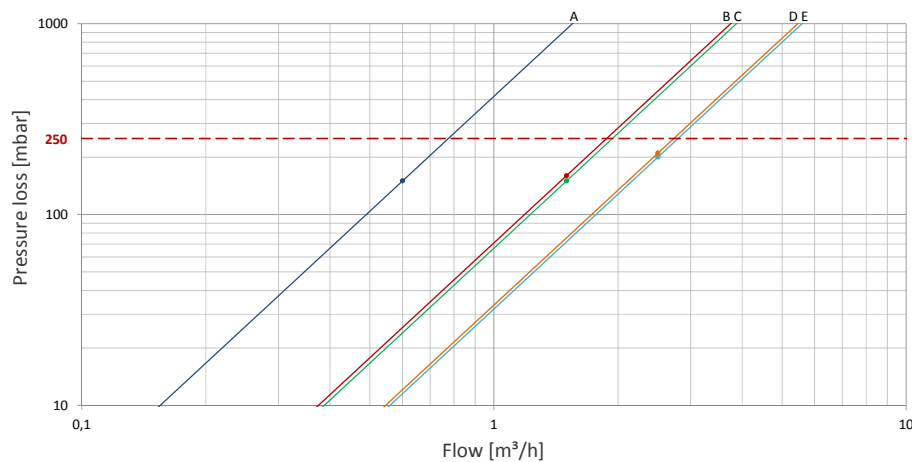
## Technical Data

Nominal flow $q_p$	0.6	0.6	1.5	1.5	1.5	2.5	2.5	[m <sup>3</sup> /h]	
Overall length	110	190	110	130	190	130	190	[mm]	
Connection	G $\frac{3}{4}$	G1	G $\frac{3}{4}$	G1	G1	G1	G1		
Maximum flow rate $q_s$	1.2	1.2	3	3	3	5	5	[m <sup>3</sup> /h]	
Minimum flow rate $q_i$	6	6	15	15	15	25	25	[l/h]	
Response threshold (variable)	1.2	1.2	3	3	3	5	5	[l/h]	
Pressure loss at $q_p$	150	150	150	160	160	200	210	[mbar]	
Kv-Factor at $\Delta p$ 1bar	1.5	1.5	3.9	3.8	3.8	5.6	5.3	[m <sup>3</sup> /h]	
Graph in diagram	A	A	C	B	B	E	D		
Weight	0.8	1.1	0.8	0.8	1.1	0.8	1.1	[kg]	
Packing Dimensions	Length	15.5	22.5	15.5	15.5	22.5	15.5	22.5	[mm]
	Width	13.5	18.5	13.5	13.5	18.5	13.5	18.5	[mm]
	Height	12.0	11.3	12.0	12.0	11.3	12.0	11.3	[mm]

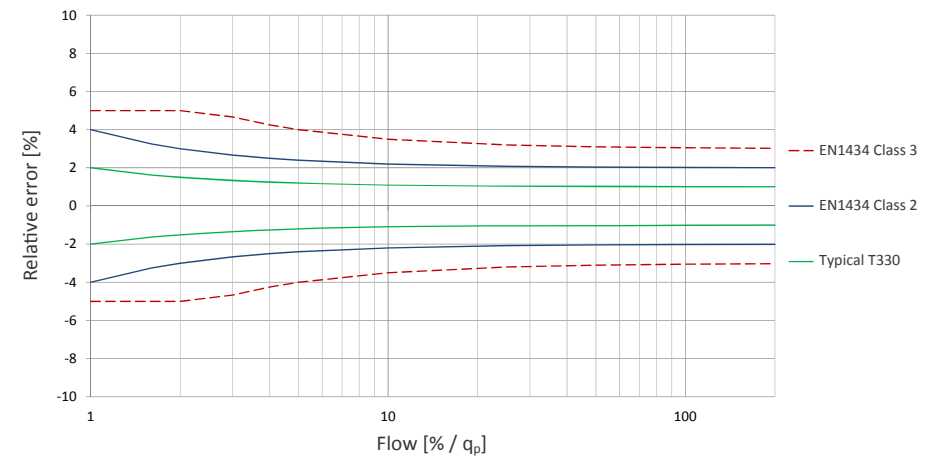
## Dimensions



## Pressure loss diagram



## Typical error acc. to EN1434



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## Communication (optional)

M-Bus	
Standard	EN13757-2 / EN13757-3
Address	Primary- or secondary address
Transmission rate	Autobaud: 300 / 2400 Baud
Connection	1.5 m cable, 2-wired, fixed
Reading interval	> 1 min @ 2400 baud
Data telegram	1 predefined data telegram; User defined data telegram with service software UltraAssist
Previous month values	24 prev. month telegram via roll frame function available; 24 prev. monthly values available in user defined telegram

wM-Bus	
Standard	Open Metering System Specification OMS (Issue 3.0.1) EN 13757-4; Modus T1
Frequency	868.95 MHz (min. 868.90 MHz - max. 869.00 MHz)
Transmission power	min. 3.16 mW (5 dBm) to max. 25 mW (13.9 dB)
Range	
- Free field <sup>*)</sup>	Up to 400 m
Battery lifetime	6 a (mobile) / 11 a (mobile - short telegram / stationary)
Sending interval	
- Mobile data reading	Acc. to configuration 20 - 34 seconds
- Stationary data reading	15 minutes
- User defined data reading	Acc. to telegram length 20 - 900 seconds
Data telegram	3 predefined data telegrams (mobile 6/11 a /stationary 11 a) User defined data telegram with service software UltraAssist

<sup>\*)</sup> depending on topology or building structure the range can deviate significantly

Pulse output	
Output type	open drain
Classification	OB/OC (acc. to EN1434-2)
Cable	1.5 m; 4-wired, LL84201 4xAWG28 / 0.2 mm <sup>2</sup>
Cable diameter	4 mm
Cable labelling	passive pulse output
Voltage	max. 30 V
Current	max. 30 mA
Dielectric strength	500 V <sub>eff</sub> against ground
ON/OFF resistance	<74 Ω / 6 MΩ

