INTEGRA METERING

AMTRON® S3U

Compact heat and cooling meter

The compact meter AMTRON® S3U is used for heat and cooling measurements in small units, such as flats, offices and in local and district heating systems. AMTRON® S3U can be supplied with pulse output, M-Bus Interface or Wireless M-Bus (radio) according to the non-proprietary OMS® standard.

Features

- Energy supply via 10-year battery + battery is exchangeable
- Return flow detection
- Flow and return adjustable in the field
- Installation in horizontal and vertical lines
- Metrological approval accord. to 2014/32/EU (MID) and PTB K 7.2

Customer benefits

- Easy installation
- Long product life – and option to expand after 10 years of use
- Radio according to the non-proprietary OMS® standard for trouble-free mobile or permanent reading
- Combined heat and cooling measurement
- Also usable in clearing transactions

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Scope of application

The product AMTRON® S3U is intended for use in units such as flats, offices and local as well as district heating systems and can be used as follows:

The heat and cooling meters AMTRON® S3U can be horizontally or vertically installed in the lines. No in- or outlet section is required. The meter head can be oriented to the top or to the side.

For set-off installation of the calculator a wall mount is also supplied.

Functional description

The compact meter consists of a flow transmitter, calculator and temperature sensor.

The flow transmitter works according to the highly precise ultrasonic measurement principle.

The temperature sensors are equipped with high-quality, long-time stable platinum resistances Pt1000 with fast response and pinpoint accuracy. The return flow sensor is integrated in the flow rate sensor. The flow sensor with 1.5m cable length and 5mm diameter features a screwing CEN M10x1 for directly immersing installation.

The calculator is rotatable and can also be separately mounted (AMTRON® S3U max. 85 cm).

The large and high-contrast display shows the measured energy in MWh with three decimal digits. With the operating key the three display loops of different data can be requested by briefly pressing the button. The display loops are separated for easy and quick operation in main loop, technical loop and statistical loop. The last 15 end-month and half-month values can also be read with this display or via radio. 24 end-month and half-month values can be read via M-Bus or optical interface.

Depending on the device version a potential-free pulse output, an M-Bus interface or Wireless M-Bus radio according to the non-proprietary OMS standard are available.

For the connection of a heat and cooling meter three pulse inputs are available depending on the device version.

For installation control and support of commissioning the calculator also offers a self-monitoring with detailed error messages.

Technical data

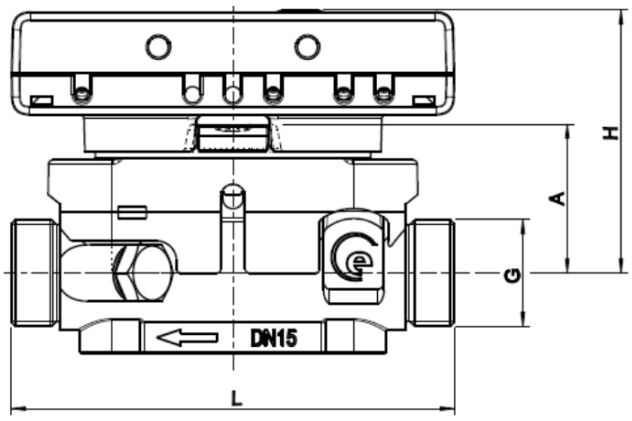
The table shows the technical data of available functions. Please refer to the price list for possible combinations.

Energy meter	
Basic features	
Environment class	EN 1434 class C
Ambient temperature	5 – 55 °C at 95 % rH
Protection class	Flow sensor IP65
Installation position	Horizontal or vertical
Required in- and outlet sections	None
Accuracy class	AMTRON® S3U: EN 1434 class 2
Power supply	Lithium battery 10+1 years (changeable)
Display features	LCD, 8 digits + special characters
Units	MWh, kW, m³, m³/h (kWh, GJ, l, l/h, MW, MMBTU, Gcal)
Values total	99 999.999
Values display / reading	Energy, volume, flow, performance, temperatures, temperature difference, maximum values, freely adjustable annual set day; 15 month- and half-month values via display or radio; 24 month- or half-month values via optical interface or M-Bus
Temperature measurement	Heat: 15 ... 90 °C
Temperature difference range	Cold: 5 ... 50 °C
Resolution temperature measurement	typical ±0.01 K
Measurement cycle	dynamical 2 / 60 s
Interfaces	M-Bus protocol
Optical interface	
M-Bus (depending on the version)	M-Bus according to EN1434-3 / EN13757 (With frequent reading the battery life is influenced)
Wireless M-Bus Funk (depending on the version)	868 MHz, Open Metering Standard (OMS) for the modes S1/T1 and S2/T2 according to EN13757 short or long telegram for mobile walk-by or permanent AMR reading Sending interval 2 minutes up to 240 minutes Sending times freely adjustable Encryption AES 128 (Default: mode T1, long telegram with current energy and volume meter status and the last 15 end-month values for energy, sending interval 4 minutes on working days from 07:00 a.m. – 07:00 p.m., encrypted)

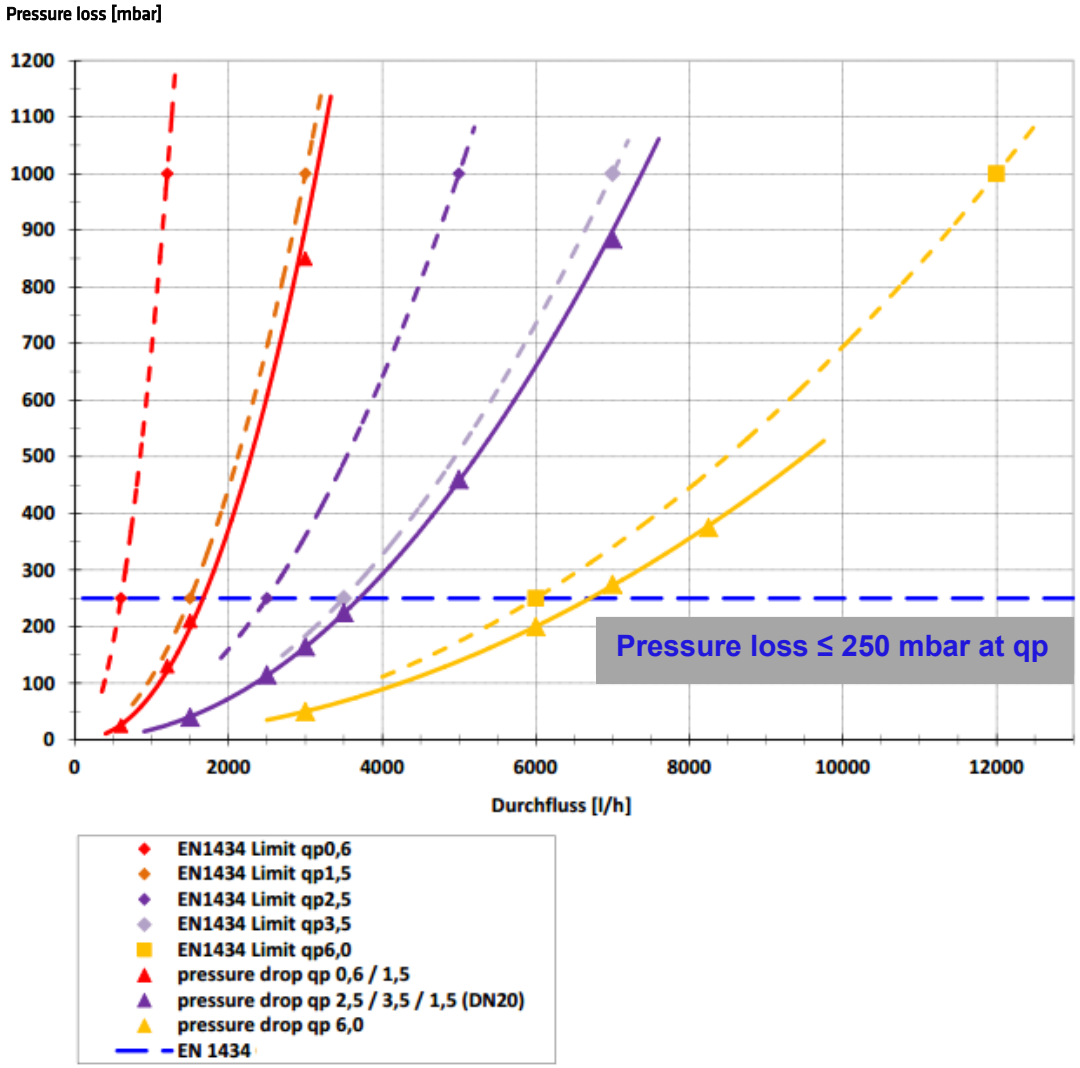
Flow measurement Nominal flow [m3/h]		**qp = 1.5**	**qp = 2.5**	**qp = 3.5**	**qp = 6**	**qp = 10**
Nominal diameter DN	[mm]	15	20	25	25	40
Thread connection	[inch]	G ¾	G1	G1 ¼	G1 ¼	G2B
Installation length	[mm]	110	130	150	150	200-300
Nominal pressure PN	[bar]	16	16	16	16	16
Max. flow qs	[m3/h]	3	5	7	12	20
Min. flow qi	[l/h]	S3U: 12	S3U: 25	S3U: 35	S3U: 60	S3U: 100
Starting value	[l/h]	S3U: 6	S3U:12	S3U: 14	S3U: 30	S3U: 50
Flow at Δp = 100mbar	[m3/h]	S3U: 1.13	S3U: 2.30	S3U: 2.30	S3U: 4.25	S3U: 8,10
Variants heating, installation in cold side (return flow) (h)						
Water temperature	[°C]	15 ... 90	15 ... 90	15 ... 90	15 ... 90	15 ... 90
Approval		MID 2014/32/EU	MID 2014/32/EU	MID 2014/32/ EU	MID 2014/32/ EU	MID 2014/32/ EU
Variants heating and cooling, installation in return flow (hc)						
Water temperature	[°C]	5 ... 90	5 ... 90	5 ... 90	5 ... 90	5 ... 90
Approval		MID 2014/32/EU	MID 2014/32/EU	MID 2014/32/ EU	MID 2014/32/ EU	MID 2014/32/ EU
Variants cooling, installation in return flow (c)						
Water temperature	[°C]	5 ... 50	5 ... 50	5 ... 50	5 ... 50	5 ... 50
Approval		PTB K 7.2	PTB K 7.2	PTB K 7.2	PTB K 7.2	PTB K 7.2

Dimensional drawings

AMTRON® S3U



Qp (m^3/h)	Nominal diameter	G (‘’)	L (mm)	H (mm)	A (mm)
1,5	DN15	G ¾ B	110	65	37
2,5	DN20	G 1 B	130	65	37
3,5	DN25	G 1 ¼ B	150	65	37
6	DN25	G 1 ¼ B	150	67.5	39.5
10	DN40	G 2 B	200/300	73	45


Pressure loss [mbar]
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
0
2000
4000
6000
8000
10000
12000
Durchfluss [l/h]
Pressure loss ≤ 250 mbar at qp
EN1434 Limit qp0,6
EN1434 Limit qp1,5
EN1434 Limit qp2,5
EN1434 Limit qp3,5
EN1434 Limit qp6,0
pressure drop qp 0,6 / 1,5
pressure drop qp 2,5 / 3,5 / 1,5 (DN20)
pressure drop qp 6,0
EN 1434

Approval

The device is according to the European Directive 2014/32/EU (MID Directive) and PTB K 7.2 (cooling) approved for the use in commercial practice. In most countries energy meters for commercial purposes are subject to obligatory calibration and need to be recalibrated after the calibration period expired. The operator is solely responsible for compliance with the calibration-relevant regulations.

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