

SSCU

Ultrasonic energy meters



Flanged ultrasonic energy meters, intended for heating or cooling.

- ✓ Size DN25...DN100
- ✓ Nominal flow 3.5...60 m³/h
- ✓ For horizontal or vertical mounting
- ✓ No data loss when changing battery
- ✓ No moving parts enable flow measurement at low pressure drops
- ✓ Available with M-Bus, pulse output or M-Bus and 3 pulse inputs
- ✓ 24 V or 230 V power pack available as accessory
- ✓ Return flow or forward flow selectable on site

Function

The menu system, available in the display, makes it possible to read a large number of parameters, such as heat and cold consumption, total energy spent on heating and cooling, temperatures along with current energy consumption. Installation is normally in the return pipe, but can be selected during installation.

Connection

The energy meter comes equipped with two PT500 temperature sensors. The resistors for the sensors are composed of platinum and maintain a standard of DIN IEC 60751.

High reliability

The meter offers reliable and accurate performance over long periods of measurement. The calculator features a high accuracy of measurement, in addition to a long life and robust design. The calculator utilizes EEPROM memory, meaning loss of data does not occur if the battery is changed.

Flexible design

Due to the multiple combination options offered by its components, the meters can easily be adapted to suit a large number of individual requirements. Models with M-Bus, pulse output or M-Bus + pulse input are available.

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REGIN
THE CHALLENGER

Energy meters with M-Bus have a default address of “0”, which is not a valid primary communication address. This primary address can be changed by searching for secondary addresses (i.e. the ID number of the meter).

Installation

Both temperature sensors have a cable length of 3 m. Temperature sensor pockets can be found under the heading *Accessories*. The calculator can be wall mounted or DIN-rail mounted.

Installation is normally in the return pipe, but can be selected during installation.

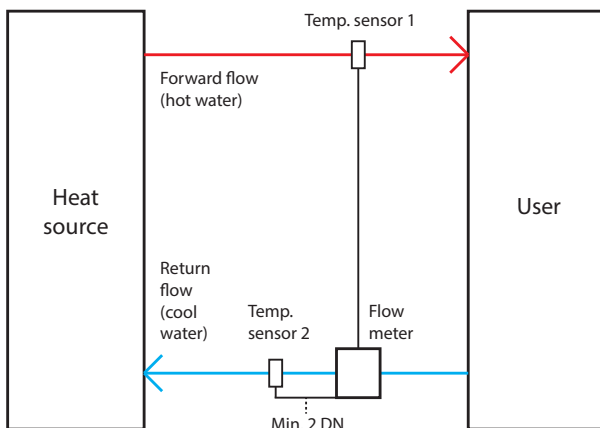


Fig. 1 Installation example heating

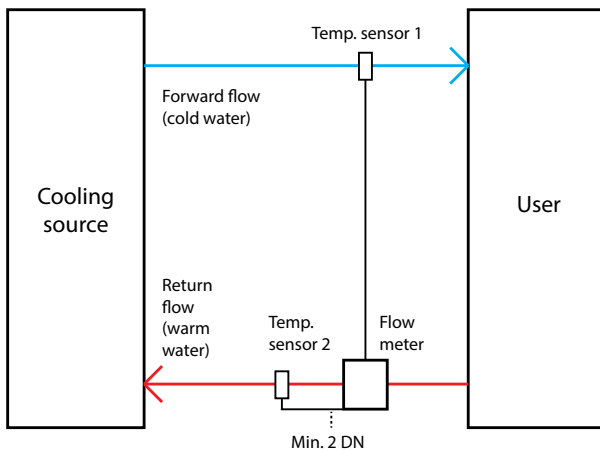


Fig. 2 Installation example cooling

Technical data, calculator

Power supply	3 V lithium battery, min. 10 years
Temperature range	0...150 °C Heating, 0...50 °C Cooling
Temperature difference limits	3...100 K (heating), -3...-50 K (cooling)
Temperature resolution	0.01 °C
Ambient temperature	5...55 °C
Storage temperature	-25...-55 °C
Ambient humidity	< 95 % RH
Protection class	IP54
Calculation of heat from K	$\Delta\theta > 0.05$ K
Calculation of cooling from K	$\Delta\theta < -0.05$ K
Dual purpose heat/cooling meter	$\Delta\theta_{HC} < -0.5$ K
Measurement frequency at q_p	Cycle 30 s
Data storage	EEPROM, daily storage of values
Interfaces	M-Bus, pulse output or M-Bus with 3 pulse inputs
Reading dates	Annual billing date selectable, 24 monthly values
Display	LCD, 8 digits + additional symbols
Display units	MWh, kWh, GJ, m ³ , m ³ /h, l/h, kW, MW, °C
Mechanical class	Class M2 (MID: 31.03.2004 annex I)
EMC	Class E2 (MID: 31.03.2004 annex I)
Environmental class	C (EN 1434)

Technical data, temperature sensor

Cable length	3 m
Sensor element	PT500; separately approved type as per EN60751, unshielded
Diameter, sensor	6 mm
Installation	Direct or indirect in a temperature sensor pocket per EN1434
Temperature sensor requirements, heat meter	EU (MID) identification on the temperature sensors
Temperature sensor requirements, cooling meter	National German approval as a temperature sensor for cooling meters. Requirements in other countries may be different.

Technical data, flow meter

Connection	Flanged according to EN 1092-3
Pressure rating	PN25
Media	Water
Mounting position	Horizontal or vertical
Mounting position, cooling	Transducers (black housing) to the side of or under the measuring tube
Point of installation	Return flow (optional forward flow if the calculator is set up for this)
Temperature range	5...130 °C (National approvals may differ)
Temperature range, heating	10...130 °C
Temperature range, cooling	5...50 °C

Accuracy according to MID	Class 2
Recommended minimum system pressure	1 bar (to avoid cavitation problems)



This product carries the CE-mark. More information is available at www.regincontrols.com.

Models

Article	Nominal diameter	Nominal flow, Q_p	Maximum flow, q_s	Minimum flow, q_l	Flow at 0.1 bar pressure drop	Low flow threshold	Pressure drop at q_p
SSCU25-3.5...	DN25	3.5 m ³ /h	7 m ³ /h	35 l/h	4.4 m ³ /h	14 l/h	60 mbar
SSCU25-6.0...	DN25	6 m ³ /h	12 m ³ /h	60 l/h	4.4 m ³ /h	24 l/h	180 mbar
SSCU40-10...	DN40	10 m ³ /h	20 m ³ /h	100 l/h	8.9 m ³ /h	40 l/h	130 mbar
SSCU50-15...	DN50	15 m ³ /h	30 m ³ /h	150 l/h	13.3 m ³ /h	60 l/h	110 mbar
SSCU65-25...	DN65	25 m ³ /h	50 m ³ /h	250 l/h	30 m ³ /h	100 l/h	105 mbar
SSCU80-40...	DN80	40 m ³ /h	80 m ³ /h	400 l/h	36 m ³ /h	160 l/h	160 mbar
SSCU100-60...	DN100	60 m ³ /h	120 m ³ /h	600 l/h	50.6 m ³ /h	240 l/h	115 mbar

Options	SSCU...	-...	-...
Flow (DN) (length) (flange)			
3.5 m ³ /h (DN25) (260 mm) (PN25 flange with 4 bolt holes)	SSCU25-3.5...		
6 m ³ /h (DN25) (260 mm) (PN25 flange with 4 bolt holes)	SSCU25-6.0...		
10 m ³ /h (DN40) (300 mm) (PN25 flange with 4 bolt holes)	SSCU40-10...		
15 m ³ /h (DN50) (270 mm) (PN25 flange with 4 bolt holes)	SSCU50-15...		
25 m ³ /h (DN65) (300 mm) (PN25 flange with 8 bolt holes)	SSCU65-25...		
40 m ³ /h (DN80) (300 mm) (PN25 flange with 8 bolt holes)	SSCU80-40...		
60 m ³ /h (DN100) (360 mm) (PN25 flange with 8 bolt holes)	SSCU100-60...		
Type of measurement and installation point			
Heating, installation of flow meter in return pipe (MID approval)		-HR	
Cooling, installation of flow meter in return pipe ¹		-CR	
Communication interface			
M-Bus			-M
M-Bus with 3 pulse inputs ²			-MPI
Pulse output for energy			-PO

1. National German approval

2. The standard setting for the pulse counters is 1 l/pulse. Other values (10 l/pulse or 100 l/pulse) are available upon request.

If any further requirements or options are needed, please contact Regin.

Example 1:

Desired application: Meter with 10 m³/h. Heating, installation in return pipe. M-Bus.

Resulting item ordering number: SSCU40-10-HR-M

Example 2:

Desired application: Meter with 60 m³/h. Cooling, horizontal installation in return pipe. M-Bus + pulse input.

Resulting item ordering number: SSCU100-60-CR-MPI

Accessories

Temperature sensor pocket for installation of universal temperature sensor with 6 mm sheath diameter

Article	Connection A	Compatible with	Installation length
TH-85-1/2	G½	q _p 3.5...10 m³h	85 mm
TH-120-1/2	G½	q _p 15...100 m³h	120 mm

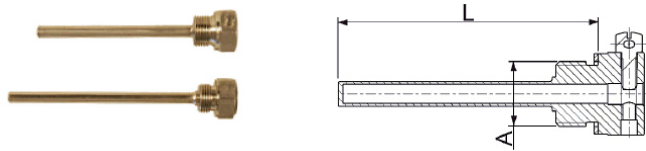


Fig. 3 TH

Optical interface and read-out software

Article	Description
OPTO-CABLE-USB	Optocoupler with USB interface
OPTO-TOOL	Software device monitor



Fig. 4 OPTO-CABLE-USB

24 V and 230 V power pack

Article	Description
POWERPACK-EM	230 V power pack
POWERPACK-EM-24	24 V AC power pack



Fig. 5 POWERPACK-EM

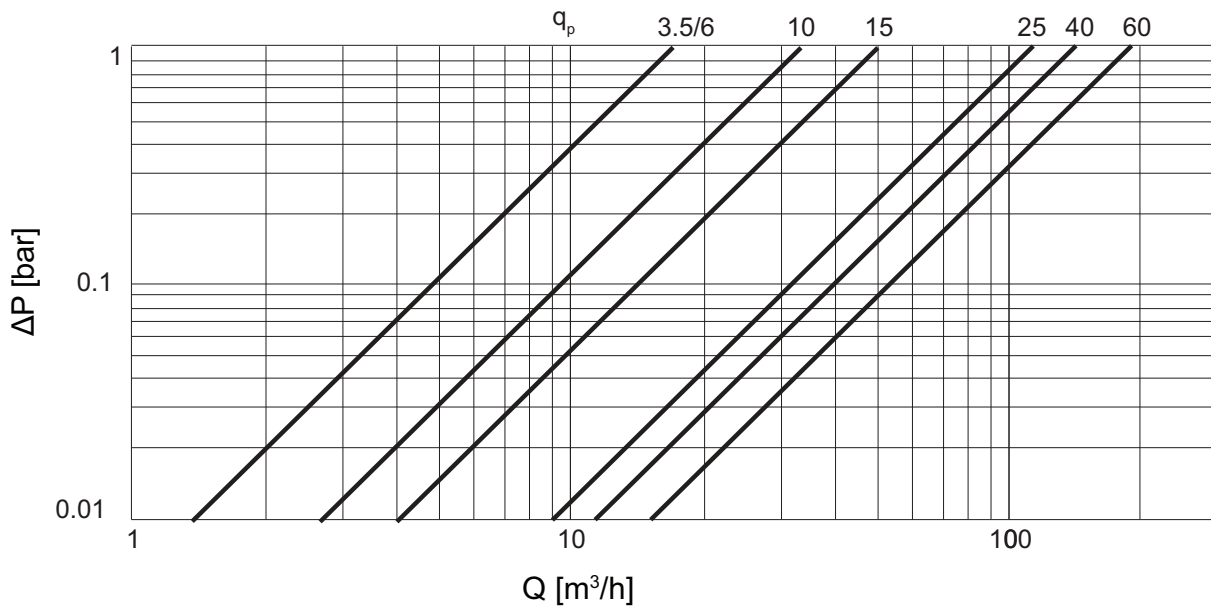
Spare parts

Article	Description
BATTERY-EM	Battery



Fig. 6 BATTERY-EM

Pressure drop curves



ΔP = Pressure drop
 Q = Flow

Dimensions

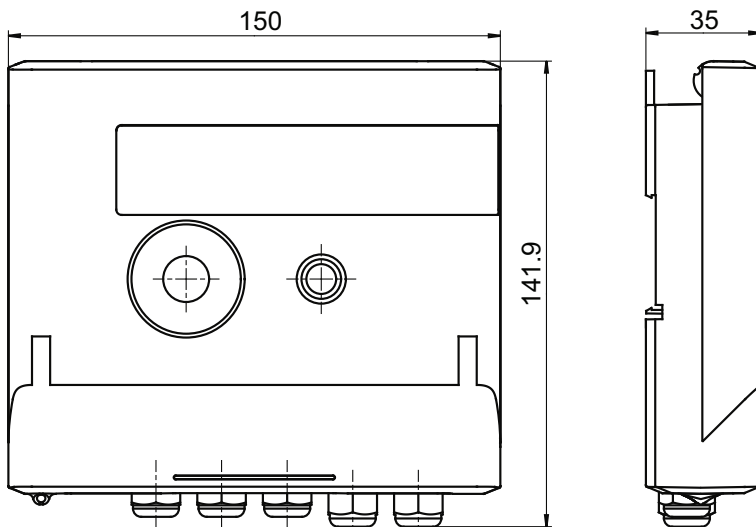


Fig. 7 Calculator

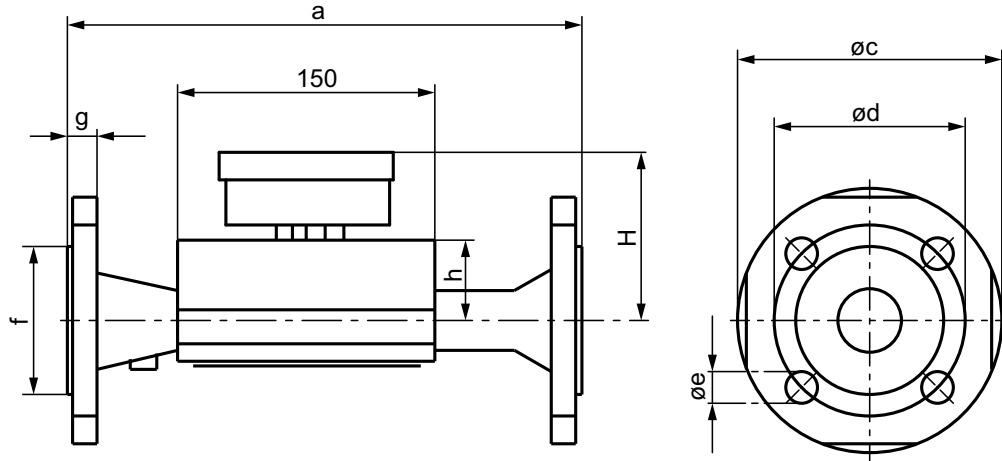


Fig. 8 Flow meter

Qp (m ³ /h)	PN bar	DN	a	øc	ød	øe	No. of holes	f	g	h
3.5	25	25	260	115	85	14	4	68	18	96
6.0	25	25	260	115	85	14	4	68	18	96
10	25	40	300	150	110	18	4	88	18	93
15	25	50	270	165	125	18	4	102	20	91
25	25	65	300	185	145	18	8	122	22	97
40	25	80	300	200	160	18	8	138	24	101
60	25	100	360	235	190	22	8	158	24	113

[mm], unless otherwise specified

Documentation

All documentation can be downloaded from www.regincontrols.com.