

ENERGY METERING

Accessories for heat pumps





Please read first

This operating manual provides important information on handling the unit. It is an integral part of the product and must be stored so that it is accessible in the immediate vicinity of the unit. It must remain available throughout the entire service life of the unit. It must be handed over to subsequent owners or users of the unit.

In addition to this operating manual, you must also have the operating manual for the heating and heat pump controller and the operating manual for your heat pump.

Read the operating manual before working on or operating the unit. Especially the chapter on safety. Follow all instructions in full and unreservedly.

This operating manual may contain descriptions, which seem incomprehensible or unclear. In the event of any questions or if any details are unclear, contact the factory customer service department or the manufacturer's local partner.

As this operating manual has been written for several unit models, always comply with the parameters for the respective model.

This operating manual is intended only for persons assigned to work on or with the unit. Treat all its constituent parts confidentially. They are protected by copyright. They may not be reproduced, transmitted, copied, stored in electronic systems or translated into another language, either wholly or in part, without the express written permission of the manufacturer.

Symbols

The following symbols are used in the operating manual. They have the following meaning:



Information for users.



Information or instructions for qualified personnel.



DANGER!

Indicates imminent danger, which results in severe injuries or death.



WARNING!

Indicates a potentially dangerous situation that could result in serious injuries or death.



CAUTION!

Indicates a potentially dangerous situation that could result in moderate or slight injuries.



ATTENTION.

Indicates a potentially dangerous situation, which could result in property damage.



NOTE.

Emphasized information.



Reference to other documents of the manufacturer.



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INFORMATION FOR USERS

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General

USE

BAFA (German Federal Agency for Economics and Export Control - Bundesamt für Wirtschaft und Ausfuhrkontrolle) - tested heat metering device for installation in the heating water circuit.



NOTE:

This energy metering device is not suitable as a heat meter for the purposes of billing heating costs.

INTENDED USE

The unit is only to be used for its intended purpose. This means:

- as an energy metering device in the heating water circuit

DISCLAIMER

The manufacturer is not liable for any damage or losses resulting from use of the unit which is not its intended use.

The manufacturer's liability also expires:

- if work is carried out on the unit and its components contrary to the instructions in this operating manual.
- if work is improperly carried out on the unit and its components.
- if work is carried out on the unit which is not described in this operating manual, and this work has not been explicitly approved by the manufacturer in writing.
- if the unit or components in the unit have been altered, modified or removed without the explicit written consent of the manufacturer.

SAFETY

The unit is safe to operate for its intended use. The construction and design of the unit conform to current state of the art standards, all relevant DIN/VDE regulations and all relevant safety regulations.

Every person who carries out work on the unit must have read and understood the operating manual before starting any work. This also applies if the respective person has already worked with such a unit or a similar unit or has been trained by the manufacturer.

CUSTOMER SERVICE

For technical information please contact a qualified technician or the manufacturer's local partner.



“Customer service” overview in the heat pump operating manual.

WARRANTY / GUARANTEE

For warranty and guarantee conditions, please refer to the purchase documents.



NOTE:

Please contact your dealer about all matters concerning warranties and guarantees.

DISPOSAL

When withdrawing the old unit from service, comply with the relevant local laws, guidelines, directives and standards concerning recovery, reuse, recycling and disposal.

SCOPE OF DELIVERY:

Energy metering device 1"

1 x Comfort circuit board Lux Com 2.0

1 x gauging section (VFS 5-100)

1 x sensor with cable 2.9m (VFS 5-100)

1 x circlip for sensor

2 x O-rings

2 x union nuts 1"

2 x threaded connector G1" - R3/4"

2 x reducing adapter Rp3/4" - R1"

Energy metering device 5/4"

1 x Comfort circuit board Lux Com 2.0

1 x gauging section (VFS 10-200)

1 x sensor with cable 2.9m (VFS 10-200)

1 x circlip for sensor

2 x O-rings

2 x union nuts 1 1/4"

2 x threaded connector G1" - R1 1/4"

2 x reducing adapter Rp 1" - R1 1/4"

Energy metering device 2"

1 x Comfort circuit board Lux Com 2.0

1 x gauging section (VFS 20-400)

1 x sensor with cable 2.9m (VFS 20-400)

1 x circlip for sensor

2 x O-rings

2 x union nuts 1 1/2"

2 x threaded connectors G1 1/2" - R1 1/4"

2 x reducing adapter Rp1 1/4" - R2"



Installation

! ATTENTION.
The device may only be installed in the heating water flow or return! It must not be installed further than 1.9m from the controller! It must be installed between the heat pump and the flow or return outlet branches to the heating and domestic hot water circuit!

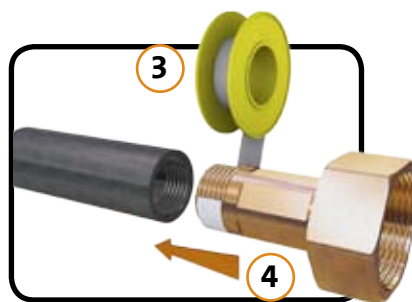
i NOTE.
Note the flow direction (see arrow on the gauging section)! An approach section of at least 10 cm must be ensured on the heating water inlet side in the gauging section.

i NOTE.
If the circulation pump is installed upstream of the gauging section, a distance of 0.5m must be maintained!



! ATTENTION
The sensor head may only be installed as shown in the figure!
Ensure correct fit of the O-rings!

Insert the sensor with cable (1) in the gauging section (2) and use circlip to fasten in position



Seal threaded connector (4), insert the O-ring in the threaded connector and connect with the heating pipe (3)



Connect the energy metering device (5) with the pipe via the threaded connector

! ATTENTION
Use low tightening torque (max. 50 Nm) on plastic gauge pipe, to avoid damage to the thread and the gauge pipe. Tightening with larger torques, as with flat seals, is not necessary due to the O-ring technology!

! ATTENTION
Do not push any objects into the hole of the sensor (for example, a needle or similar object), as this can irreparably damage the sensor.





Electrical connection work

The following applies to all work to be done:



DANGER!

Risk of fatal electric shock!

All electrical connection work must be carried out by qualified electricians only.

Before opening the unit, safely disconnect the system from the power supply and prevent it from being switched back on!



DANGER!

During installation and while carrying out electrical work, comply with the relevant EN-, VDE and/or local safety regulations.

- ① Connect the sensor to the Comfort printed board 2.0 as shown in the terminal diagram.
- ② Cut off the sensor connector no more than 1 cm behind the connector and connect the cable to the Comfort printed board 2.0.



Terminal diagram

- ③ The Comfort printed board (included in the scope of delivery) must be mounted on the control board of the heat pump.



Heat pump operating manual, "Electrical Connection Work" section.



ATTENTION

Do not shorten or lengthen the cable from the volume flow sensor! Exception: to remove the connector, to do this, cut off max. 1 cm behind the connector.

Heat pump controller

MAKE THE MEASURING EQUIPMENT SETTING

Information on use of the heat pump controller:

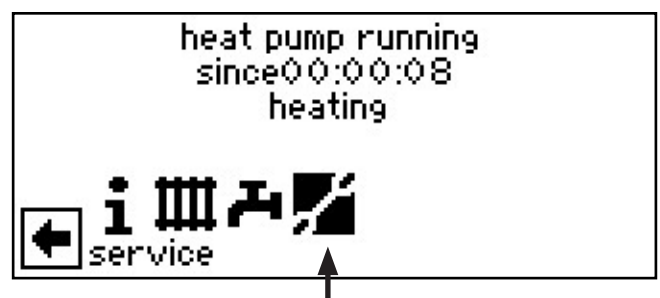


Heat pump controller operating manual

SELECT PROGRAM AREA

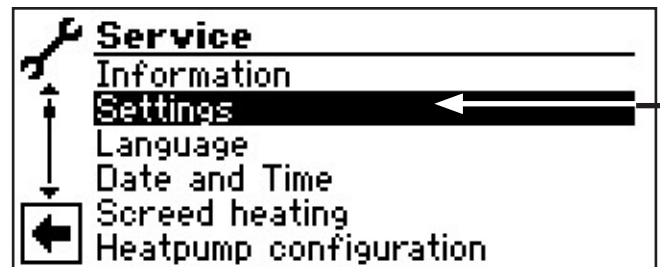
Proceed as follows:

- ① In the navigation screen, select the symbol...

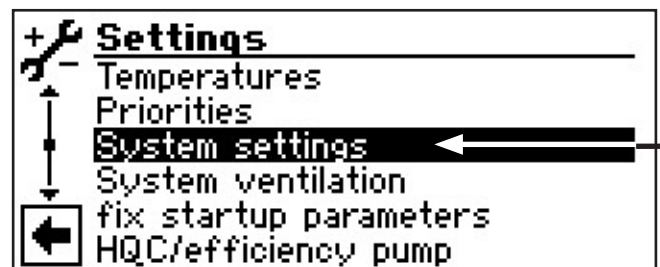


- ② The screen switches to the "Service" menu...

- ③ In the "Service" menu select the menu field "Settings".



- ④ In the "Service Settings" menu, go to and select the "System Setting" menu field...



- ⑤ The screen switches to the "System Setting" menu...

- ⑥ Go to and select the "Energy" parameter. The background of the respective input field turns dark...



+ System settings		
↕	pump optim. Time	180 min
↕	efficiency pump	No
↕	heat quantity	V 10-200
↕	Solar control	temp. Diff.
↕	active cooling	No
←	time pump flow	1 min

Setting values:

Factory setting = No

1" =V 5-100

5/4" =V 10-200

2" =V 20-400

The respective necessary setting is given on the sensor head.

⑦ Confirm setting.

⑧ Exit the menu



NOTE.

If the settings are wrong, the flow is not recorded correctly and the results of the energy metering are therefore unusable.



NOTE.

The values are only saved by the controller every 2 hours, so that each time the controller is restarted a difference can occur between the energy actually generated and the displayed energy.

READING OUT HEAT QUANTITIES AND VOLUME FLOWS

Proceed as follows:

① In the "Service" menu, select the "Information" menu field...

+ Service	
←	Information
↕	Settings
↕	Language
↕	Date and Time
↕	Screened heating
←	Heatpump configuration

② The screen switches to the "Information" menu...

i Information	
↕	Operating hours
↕	Error memory
↕	Outages
↕	Facility status
←	heat quantity
←	BACnet

③ The screen changes to the "Energy" menu...

i heat quantity		
	Heating	4.7 KWh
	DHW	0.0 KWh
	total	4.7 KWh
	flow rate	18319 L/h
←	since :24.7.2013	0.6 KWh

Energy

The energy recorded for *heating, hot water* (possibly swimming pool) in kWh, the sum of all, and the *flow in l/h* are displayed.

The last line "since: ..." simultaneously functions as the RESET. If it is clicked, the meter resets itself to zero in this line - allowing the energy to be recorded for an individually-defined span of time (beginning on the displayed date).

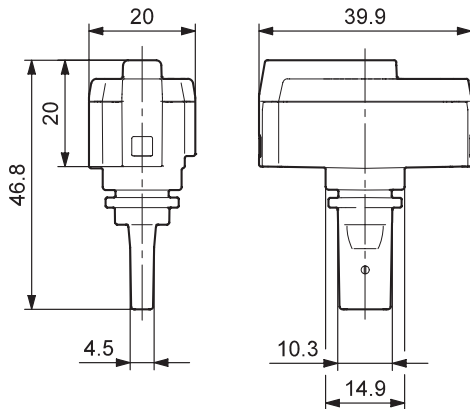


Technical Data

	1"	5/4"	2"
Flow			
Range	5 to 100 l/min	10 to 200 l/min	20 to 400 l/min
Temperature			
Range	0 to 100°C	0 to 100°C	0 to 100°C
Media (fluids) and basic conditions			
Type of medium (fluid)	Liquids. The sensor is compatible with aggressive substances.	Liquids. The sensor is compatible with aggressive substances.	Liquids. The sensor is compatible with aggressive substances.
Medium temperature (in operation)	0 to 100°C	0 to 100°C	0 to 100°C
Maximum medium temperature	-25 to 120°C	-25 to 120°C	-25 to 120°C
Ambient temperature (in operation)	-25 to 60°C	-25 to 60°C	-25 to 60°C
(Relative) humidity	0-95% , non-condensing	0-95% , non-condensing	0-95% , non-condensing
Max. operating pressure	6 bar	6 bar	6 bar
Electrics			
Power consumption	< 50 mW	< 50 mW	< 50 mW
Standards			
Protection class	IP 44 (not installed IP20)	IP 44 (not installed IP20)	IP 44 (not installed IP20)

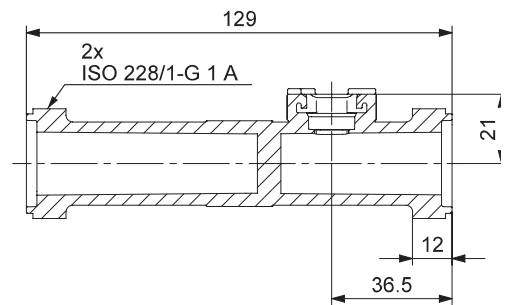


Dimensioned drawings

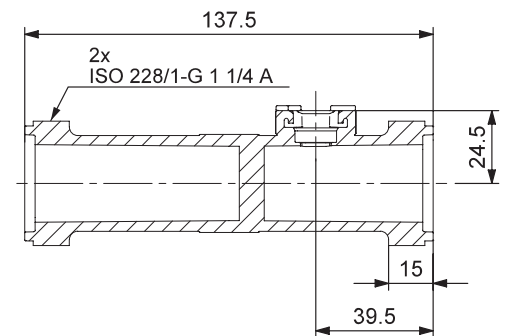


GAUGING SECTION WITHOUT THREADED CONNECTORS:

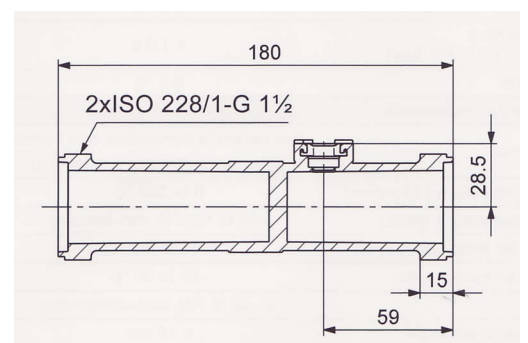
1"



5/4"



2"





Terminal diagram

