User Guide

SonoMeter 30

Ultrasonic energy meter
for heating and cooling applications

User Guide

Contents

1. Safety information

Note: *Before beginning installation works you must read this document and follow the instructions.*
Caution: *If this equipment is used in a manner not specified by the manufacturer, the protection functions provided by the equipment may be impaired.*

- The meter is powered by a battery (3.6 V) or a mains supply 24 V AC/DC module. During meter installation and service risks exist, because the heat conveying fluid inside the flow sensor is under high pressure and temperature (up to 25 bar and 130° C).
- Only qualified technical personnel may install and maintain energy meters. Personnel must be familiar with appropriate technical documentation and general safety instructions. It is necessary to follow general safety requirements during installation and maintenance process.
- Device complies with safety class II. Protective grounding is not required, because housing is made from plastics, and conductive parts are not exposed to the surface.
- Safety guarantees at installation and service of meter is:
  - Reliable insulation of electrical circuits.
  - Hermetic fitting of primary flow and temperature sensors into the pipeline.
  - Reliable fastening of sub-assemblies of energy meter at installation
- Safety requirements for temperature sensors are provided in appropriate technical documentation.
- Operating conditions:
  - Ambient temperature: Calculator at +5 to +55° C; Flow sensor at -30 to +55° C
  - Relative humidity < 93 %

Warning: *Mounting of the sub-assemblies of energy meter is permissible only after ensuring of absence of heat conveying fluid in the pipeline.*

2. Application field

The ultrasonic energy meter SonoMeter 30 is designed for measuring heating and cooling energy and the recording of data in two separate registers.
It is intended for commercial accounting of energy consumption in objects of local or district heating systems: in dwelling houses, office buildings or energy plants.
The microprocessor compact heat and cooling energy meter can be mounted in both flow and return pipe. The meter is available with the inseparable pair of temperature sensors installed at factory or the user can apply pair of temperature sensors which corresponds to requirements of Directive 2004/22/EC of 31 March 2004 on measuring instruments and has the type examination certificate.
Heat meter corresponds to essential requirements of the Technical Regulation for Measuring Instruments, dated 30 March 2006 (transposing in the NB's country law Directive 2014/32/EU on measuring instruments):
- Annex I : Essential requirements.
- Annex VI, MI-004 : Heat meter.

SonoMeter 30 complies with the European standard EN 1434 "Heat meters"
SonoMeter 30 fulfils "C" class environment protection requirements according to EN1434-1:2007.
- Climatic ambient temperature range: from 5 to 55° C.
- Humidity: non-condensing.
- Location: closed
- Mechanical environment class: M1, Electromagnetic environment class: E2.

3. How to operate the heat meter

The meter operates independantly after being installed and started. It contains different interfaces to access or read out meter data as well as to re-programm different pre-set parameters.
The meter can be equipped with additional communication modules to generate a AMR (Automated Meter Reading) measuring device as well as with modules for external power supply.
The LCD Display shows measurement values, parameters, meter data and else and the different levels of information can be accessed by the button placed in the middle of the calculator.

3.1 General
Pulse inputs (additional)
The meter can be used as input platform for two additional metering devices, e.g. water meters. The pulse inputs have the following specifications:

Number of pulse inputs	2
Measurement unit	m^3
Pulse value	Programmable
Type of pulses	IB by LST EN1434-2
Maximum permissible frequency of input pulses	3 Hz
Maximum permissible voltage of input pulses	3.6 V
Condition of maintenance of high level	3.6 V via 3.3 MΩ resistor

3. How to operate the heat meter *(continuous)*

Display (LCD)
The device is equipped with 8-digits LCD (Liquid Crystal Display) with special symbols to display parameters, measurement units and operation modes.

Information:
- integral and instantaneous
- measured
- parameters
- archive data
- device configuration information

Energy units resolution:
- 00000001 kWh
- 00000.001 MWh (Gcal or GJ)

Flow volume resolution: 00000.001 m^3

Data registration and storage
Every hour, day and month values of the measured parameters are stored in memory of the meter. All data from archive can be read only by means of the remote reading (see 5.5).
In addition data logger records of monthly parameters can be seen on the display (see 5.3.1); factory set is display of the previous month only.
Following hourly, daily and monthly parameter values are recorded in energy meter memory:

1	Integrated heating energy
2	Integrated cooling energy
3	Integrated energy of tariff 1 *
4	Integrated energy of tariff 2 *
5	Integrated volume of liquid
6	Integrated pulse value in pulse input 1 *
7	Integrated pulse value in pulse input 2 *
8	Maximum thermal power value for heating and date
9	Maximum thermal power value for cooling and date
10	Maximum flow rate value and date
11	Maximum value of flow temperature of heat conveying liquid and date
12	Maximum value of return temperature of heat conveying liquid and date
13	Minimum value of flow temperature of heat conveying liquid and date
14	Minimum value of return temperature of heat conveying liquid and date
15	Minimum value of temperature difference and date
16	Average value of flow temperature of heat conveying liquid
17	Average value of return temperature of heat conveying liquid
18	Operating time without an error of thermal energy calculation
19	Total error code
20	Time when the flow rate exceeded $1,2q_s$
21	Time when the flow rate was less than q_i

If activated

Data logger capacity for all 21 parameters:
- hourly records up to 1480 h
- daily records up to 1130 days
- monthly records up to 36 last months

Storage time of measured integrated parameters even if device is disconnected from power supply:
- not less than 15 years

3.2 Onboard communication modules and interfaces
3.2.1 Optical interface

Integrated into the front panel of calculator. It is designed for data reading via M-bus protocol and parameterization of the meter.
The optical interface starts work (is activated) only **after pressing control button** and automatically **shuts down after 5 minutes**, after the last pressing any button or after completing data transmission via interface.

3. How to operate the heat meter *(continuous)*

Optional plug in communication modules:
- M-Bus module
- Radio module 868 MHz
- MODBUS RS485 module

It is designed for data reading via M-bus protocol and parameterization of the meter.
If meter is powered from internal battery - the total working time of serial communication interface is limited up to 200 minutes per month (for protection of the battery against premature discharge). Unused limit of communications are summarized. The interface is blocked after the expiration of a limit and only after change of the hour, the new time limit of communications will be given (for 16 seconds for each next hour).

3.2.2 Pulse outputs

Pulse outputs: 2 (OB-normal mode, OD-test mode)
Type: open collector, permissible current up to 20 mA, voltage up to 50 V
Pulse duration: 100 ms – in the normal operating mode, 1.6 ms – in the test mode

Energy pulse output values:

Energy units	kWh, MWh	GJ	Gcal
Pulse value of thermal energy	1 kWh/pulse	0.005 GJ/pulse	0.001 Gcal/pulse

Flow (volume) pulse output values:

Permanent flow rate, $[q_p, m^3/h]$	0.6 ... 6	10; 15
Pulse value [l, pulse]	1	10

For switching pulse outputs into pulse inputs two jumpers have to be set in the following positions and meter has to be reconfigured by Userconfiguration SW (see chapter 6).
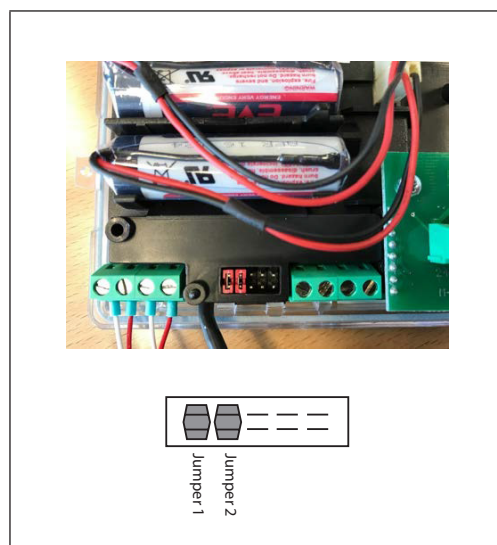
Fig. 3.1 Jumper position for activation of pulse inputs
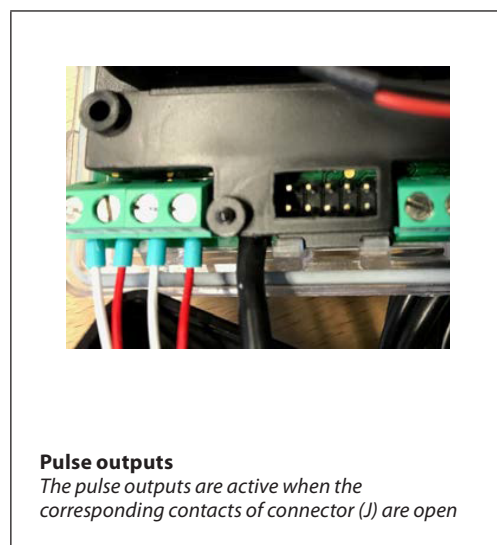
Pulse outputs
The pulse outputs are active when the corresponding contacts of connector (J) are open

Fig. 3.2 Pulse destinations of contacts of connector J

3.3 Supply voltage

Internal battery:
- Size AA, 3.6 V, 2.4 Ah, lithium battery (Li-SOCl$_2$)
- Service life not less than 11 years

Mains power supply:
- 12 V…42 V DC or 12 V…36 V AC, 50/60 Hz, 10 mA max + internal backup
- Battery: size AA, 3.6 V, 2.4 Ah, lithium battery (Li-SOCl$_2$) service life not less than 11 years (without data reading via a digital interface) – for powering of the meter, when the external power supply is turned off
- Mains supply 24V AC/DC module is mounted inside in the meter

4. Operation of calculator

4.1　Control button

The information can be displayed using control button ⊗ which is on the top of the calculator.

Meter parameters can not be re-programmed with the control button.

4.2　Display function

The calculator of energy meter is equipped with 8-digits LCD (Liquid Crystal Display) with special symbols to display parameters, measurement units and operation modes.

Destination of the special symbols:
➡ : The flow is flowing forward (right direction)
⬅ : The flow is flowing backwards
No arrow: No flow

The following information can be displayed:
- integral and instantaneous measured parameters;
- archive data and set day data;
- device configuration information.

The display is always on and constantly shows the total thermal energy.

4.3　Menu structure
4.3.1　Viewing the readings in normal mode (Users menu)

Use the control button (short and long press) to navigate through the display loops.
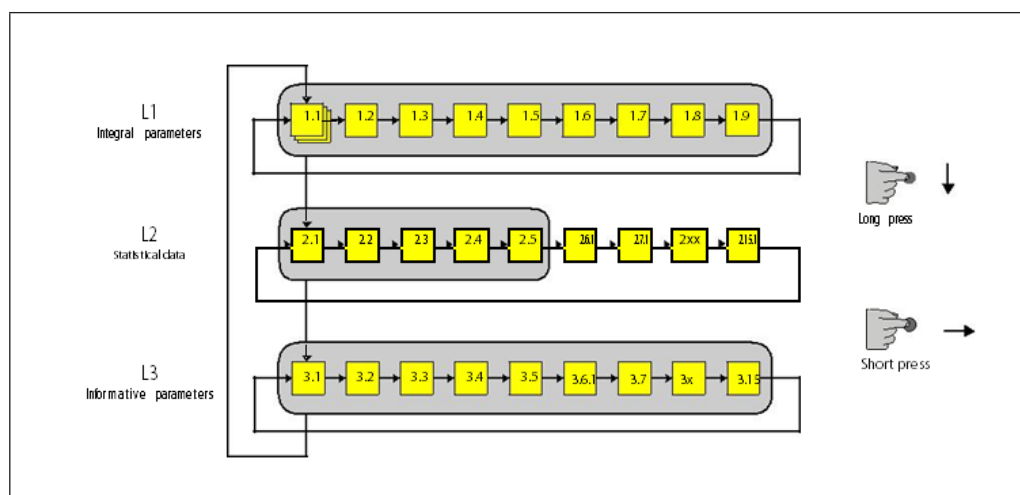
L1 - integral parameters, L2 – statistical data, L3- informative parameters

Integral parameters values (loop 1, ID1.2 and following) or – if at least one error has been detected – error code (loop 1, ID1.1) are displayed if the button has not been pressed for more than 60 seconds.

Full list of shown parameters is represented. For the specific meter it can be reduced via Software SonoMeter30UserConfig (see next chapter).

4. Operation of calculator
(continuous)

LOOP 1 – integral parameters

ID	Parameter	Value	Description
1.1	Error code with data stamp of starting of error Are shown only at an error in meter work	*Error* / *Er 0011* / *20070913*	All three displays, will be displayed in turns in one second interval Calculator errors / Temperature 2 errors / Temperature 1 errors / Flow errors *Er 0011* Description of Error codes is presented in p. 5.3.2
1.2	Energy for heating	*00078813* M Wh	
1.3	Energy for cooling	*00018813* M Wh	Are shows only in the heating and cooling energy meters
1.4*	Integrated energy of tariff 1 Is shown only if tariff function is active	*00749078* M Wh	"Snowflake" indicates that the tariff is linked to the meter of cooling energy
1.5*	Integrated energy of tariff 2 Is shown only if tariff function is active	*00998038* M Wh	"Snowflake" indicates that the tariff is linked to the meter of cooling energy
1.6	Integrated quantity of heatconveying liquid	*00149718* m³	
1.7	Integrated reading of pulse input 1 Is shown only if pulse input is active	*00499318* m³	The additional flow sensor can be connected to a pulse input 1
1.8	Integrated reading of pulse input 2 Is shown only if pulse input is active	*00988898* m³	The additional flow sensor can be connected to a pulse input 2
1.9	Segment test	*88888888*	Changes each 1 second
1.10	Working hours without an energy calculation error	*00070347* h	
1.11	Customer number	*C0135410*	Corresponds to a wire transmission via M-Bus protocol
1.12	Control number	*5998*	

* values of the parameters can be modified by installing a meter with configuration software SonoMeter30 UserConfig.
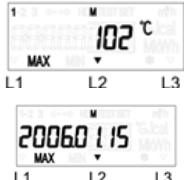*In the same way it is possible to switch off indication of irrelevant parameters.*

4. Operation of calculator
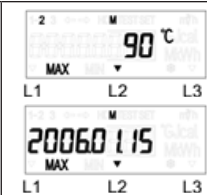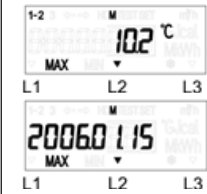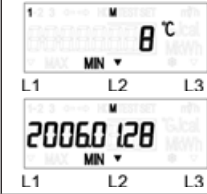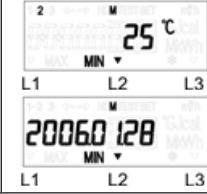*(continuous)*

LOOP 2 – statistical data
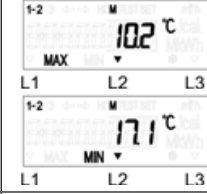
ID	Parameter	Value	Description
2.1	Quantity of thermal energy on set day with date stamp	00078813 MWh L1 L2 L3 2006.01.01 L1 L2 L3	Changing with date stamp every 1 second
2.2	Quantity of thermal energy for cooling on set day with date stamp	00090483 MWh L1 L2 L3 2006.01.01 L1 L2 L3	When meter is intended for heating and cooling, the two separate displays are shown. Changing with date stamp every 1 second
2.3	Tariff register 1 on set day with date stamp *Is shown only if tariff function is active*	00000483 MWh L1 L2 L3 2006.01.01 L1 L2 L3	Changing with date stamp every 1 second
2.4	Tariff register 2 on set day with date stamp *Is shown only if tariff function is active*	00000483 MWh L1 L2 L3 2006.01.01 L1 L2 L3	Changing with date stamp every 1 second
2.5	Volume of liquid on set day with date stamp	00088893 L1 L2 L3 2006.01.01 L1 L2 L3	Changing with date stamp every 1 second
2.6	1st pulse input pulse value on set day with date stamp *Is shown only if pulse input is active*	00088893 L1 L2 L3 2006.01.01 L1 L2 L3	Changing with date stamp every 1 second
2.7	2nd pulse input pulse value on set day with date stamp *Is shown only if pulse input is active*	00088893 L1 L2 L3 2006.01.01 L1 L2 L3	Changing with date stamp every 1 second
2.8	Quantity of thermal energy on set day of previous month with date stamp	2006.01.01 L1 L2 L3 2006.131 L1 L2 L3	The user chooses set day in the month according to needs. (If it is set up 31, the data will be recorded in the last day of the month) Registration Time: 23:59:59
2.9	Quantity of thermal energy for cooling on set day of previous month with date stamp	00078813 MWh L1 L2 L3 2006.131 L1 L2 L3	Changing with date stamp every 1 second
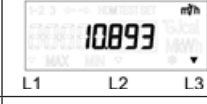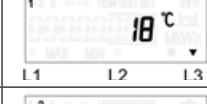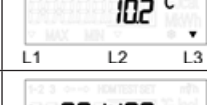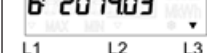
4. Operation of calculator
(continuous)

2.10	Tariff register 1 on set day of previous month with date stamp *Is shown only if tariff function is active*	00078813 M Wh 20060131	Changing with date stamp every 1 second
2.11	Tariff register 2 on set day of previous month with date stamp *Is shown only if tariff function is active*	00078813 M Wh 20060131	Changing with date stamp every 1 second
2.12	Volume of liquid on set day of previous month with date stamp	00088893 m³ 20060131	Changing with date stamp every 1 second
2.13	1st pulse input pulse value on set day of previous month with date stamp *Is shown only if pulse input is active*	00088893 m³ 20060131	Changing with date stamp every 1 second
2.14	2nd pulse input pulse value on set day of previous month with date stamp *Is shown only if pulse input is active*	00088893 m³ 20060131	Changing with date stamp every 1 second
2.15	Maximum Power of previous month with date stamp	8893 kW 20060115	Changing with date stamp every 1 second
2.16	Minimum Power (or maximum Power for cooling) of previous month with date stamp	0000 kW 20060128	Changing with date stamp every 1 second
2.17	Maximum flow rate of previous month with date stamp	10893 m³/h 20060115	Changing with date stamp every 1 second
2.18	Maximum temperature in flow pipe of previous month with date stamp	102 °C 20060115	Changing with date stamp every 1 second
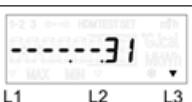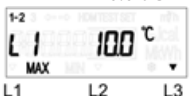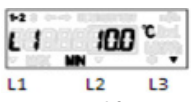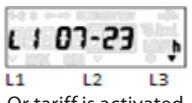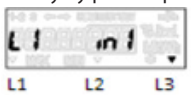
4. Operation of calculator
(continuous)

2.19	Maximum temperature in return pipe of previous month with date stamp	**90** ℃ / **2006.0115**	Changing with date stamp every 1 second
2.20	Maximum temperature difference of previous month with date stamp	**102** ℃ / **2006.0115**	Changing with date stamp every 1 second
2.21	Minimum temperature in flow pipe of previous month with date stamp	**8** ℃ / **2006.0128**	Changing with date stamp every 1 second
2.22	Minimum temperature in return pipe of previous month with date stamp	**25** ℃ / **2006.0128**	Changing with date stamp every 1 second
2.23	Minimum temperature difference of previous month with date stamp	**102** ℃ / **171** ℃	Changing with date stamp every 1 second
2.24 ... 2.590	The data of previous months with date stamp (up to 36 previous months)	Analogy ID 2.8 ... 2.23	During installation of the meter, it is possible to choose: to display the data of the previous month only, to display the data of the last two months or to display the data of all 36 previous months *

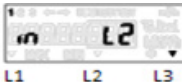### LOOP 3 – informative parameters
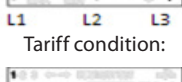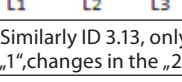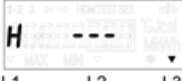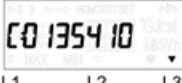
3.1	Thermal power	**8893** kW	
3.2	Flow rate	**10893** m³/h	
3.3	Temperature in flow pipe	**18** ℃	
3.4	Temperature in return pipe	**25** ℃	
3.5	Temperature difference	**102** ℃	
3.6	Next replacement date of the battery	**b 201403**	

4. Operation of calculator
(continuous)

ID	Parameter	Display	Description
3.7	Real time calendar	2007.01.01	
3.8	Real time clock	21-45-59	
3.9*	Yearly set day	----.01.01	
3.10*	Monthly set day	------.31	
3.11*	Tariff 1 If tariff function is not active display shows: "L I OFF"	Tariff 1, when T1-T2 < 10.0 oC L1 100.0 ℃ Or >10.0 oC L1 100.0 ℃ Or in interval from 10.0 to 40.0oC (changes each 1 s.) L1 100.0 ℃ L1 400.0 ℃ Or there is the time interval in hours (00-24h.) L1 07-23 h Or tariff is activated directly by pulse input: L1 in 1	Display shows the chosen triggers and thresholds. It is possible to choose: One of the measured parameters, 1st or 2nd pulse input (if it is configured as an input), one of the temperatures or the temperature difference. Examples on the left show temperature difference as trigger.
3.12*	Tariff 2 If tariff function is not active display shows: "L 2 OFF"	Similarly ID 3.11, only „L1",changes in the „L2"	See 3.11

* values of the parameters can be modified by installing a meter with configuration software SonoMeter30 UserConfig.
In the same way it is possible to switch off indication of irrelevant parameters.

4. Operation of calculator
(continuous)

3.13*	1st pulse input/output configuration	Input: Input (tariff activation): Outputs: energy, quantity of liquid Tariff * Tariff condition:	Inputs: Can be configured only for a quantity of water. Maximum pulse resolution is displayed 0.00001 m3. Outputs: Can be configured for a quantity of water (m3), for heating (In a shown case) / cooling(additional snowflake is displayed) energy or to one of tariffs.
3.14*	2nd pulse input/output configuration	Similarly ID 3.13, only „1",changes in the „2"	See 3.13
3.15	Type of heat-conveying liquid	H ---	Type of heat-conveying liquid: "---" (crosses) - water
3.16	Pressure value for energy calculations	160E4 PA	"160E4"-corresponds to the pressure 1.6 MPa
3.17*	Customer number	CO135410	Are transferred on telegram M-bus
3.18	Software version number	SoFt 007	
3.19	Serial number	01475310	
3.20*	M-Bus address	buSA 140	
3.21	Working hours without a power calculation error	00070347 h	
3.22	Battery operation time	b0070347 h	

* values of the parameters can be modified by installing a meter with configuration software SonoMeter30 UserConfig.
In the same way it is possible to switch off indication of irrelevant parameters.
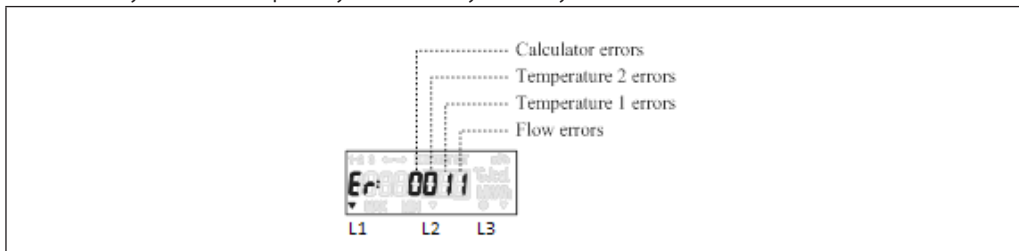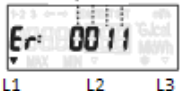
4. Operation of calculator
(continuous)

4.3.2. Error codes

Error code may consist from up to 4 symbols. Each symbol may have values 0…8

Code	Description
Status of calculator	0 - no error, normal operation 1 - warning – ending battery life 2- temperature difference is greater than the permitted limits 4- temperature difference is less than the permitted limits 8- electronics failure
Status of temperature sensor 2 (return pipe)	0- no error, normal operation 4- short circuit 8- sensor failure (open circuit or short circuit)
Status of temperature sensor 1 (flow pipe)	0- no error, normal operation 4- short circuit 8- sensor failure (open circuit or short circuit)
Status of flow sensor	0- no error, normal operation 1- no signal, flow sensor is empty 2- flow flows in an reverse direction 4- flow rate greater than 1.2·qs (are displayed q=1,2qs) 8- electronics failure

Active error codes are added and simultaneously displayed, if it is detected more than one error:
3 - corresponds errors 2 + 1
5 - corresponds errors 4 + 1
7 - corresponds errors 4 + 2 + 1
9 - corresponds errors 8 + 1
A - corresponds errors 8 + 2
B - corresponds errors 8 + 2 + 1
D - corresponds errors 8 + 4 + 1
E - corresponds errors 8 + 4 + 2
F - corresponds errors 8 + 4 + 2 +1

In a case when value at least one digit of error code is ≥ 8 : calculation of thermal energy and summation of volume of water and operation time without errors are stopping.

In the case of the flow sensor error "4" : duration of time of error condition (when the flow rate "q> 1.2 · qs") is registered additionally.

4.4 Remote data reading

For data transmission from meter it can be used optical interface. The optical head is placed on the calculator and is connected to reading device. In addition for remote reading of data can be used two pulse outputs, or one of the following communication modules:
- M-Bus module
- RF module 868 MHz
- MODBUS RS485 module
- BACnet RS485

All communication interfaces do not affect the measured parameters and their calculation, and therefore can be replaced by another type without removing of verification seal.

5. Meter access and configuration

Note: *This is for advanced users only.*

The software "SonoMeter30UserConfig" is used to read and configure SonoMeter 30 device via OG-1-USB optical reader (dongle).
Meter configuration can be done also via M-Bus interface module then converter COM/M-Bus (MB-1) can be used.

Installation and using SonoMeter30UserConfg is described in chapter 5.2 .

5.1   Jumper placement and optical head

Some parameters can be changed only in **test** mode.

Fig. 5.1 *Jumper setting for test mode*

Fig. 5.2 *OG-1-USB optical head*

Optical interface is integrated into the front panel of calculator. It is designed for data reading via M-bus protocol and parameterization of the meter using OG-1-USB optical head. Or any other standard according EN1434.

The optical interface is activated by pressing control button and automatically shuts off after 5 minutes, after the last pressing button or after completing data transmission via interface.

5.2   Pre-settings (delivery from factory)

M-Bus address	Last two digits of serial number
Pulse interfaces:	Pulse outputs
Pulse output 1:	Energy [1 kWh/pulse]
Pulse output 2:	Volume [1 L/pulse]
Yearly due date:	31.12.
Monthly due date	31. (if set up is 31, the data will be recorded on the last day of the month)
History logs in display (monthly):	Off (except previous month)
History logs in memory (monthly):	Off (except previous month)
History logs in memory (daily, hourly):	Off (except previous month)
Tariff functionality	Not activated
MBus communication	Limited to 90 sec sending interval

5.3   Software "SonoMeter30UserConfig"
5.3.1   Program installation

Program **SonoMeter 30 UserConfig** is used to read data from SonoMeter 30 device and to configure meter by editing its parameters.
Microsoft Windows must have Microsoft NET FrameWork v3 installed. You can install **SonoMeter 30 User - Config** from SonoMeter 30 UserConfig.exe file. You will be asked to enter user name and your organization.

5. Meter access and configuration
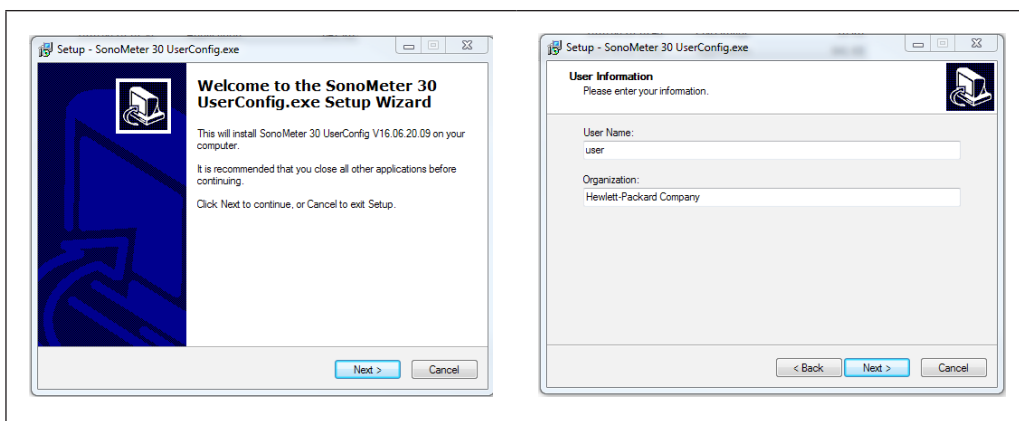*(continuous)*

Fig. 5.3 *User information*
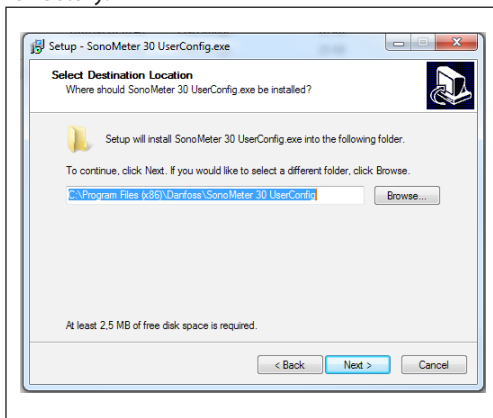
Press ***Next*** to see/change the installation directory.

Press ***Next*** to see an installation summary.

Fig. 5.4 *Installation directory*
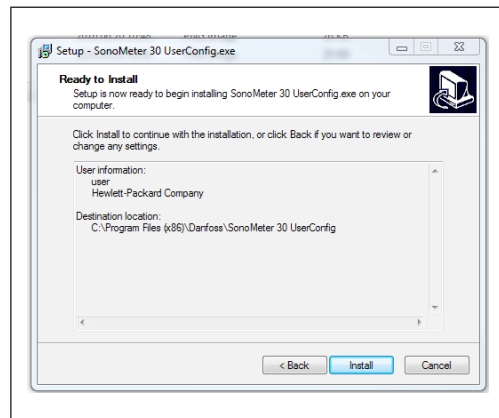
Fig. 5.5 *Setup summary*

Press ***Install*** and then ***Finish*** to complete the installation.

Fig. 5.6 *Completing the setup*

5.3.2   Software interface

SonoMeter 30 UserConfig has four user interface windows for different purposes:
- **Actual:** the actual data window;
- **LCD Menu:** LCD configuration window.
- **Configuration:** Configuration window for pulse channels, archive date and tariffs;
- **Archive:** Window for information from device archive;

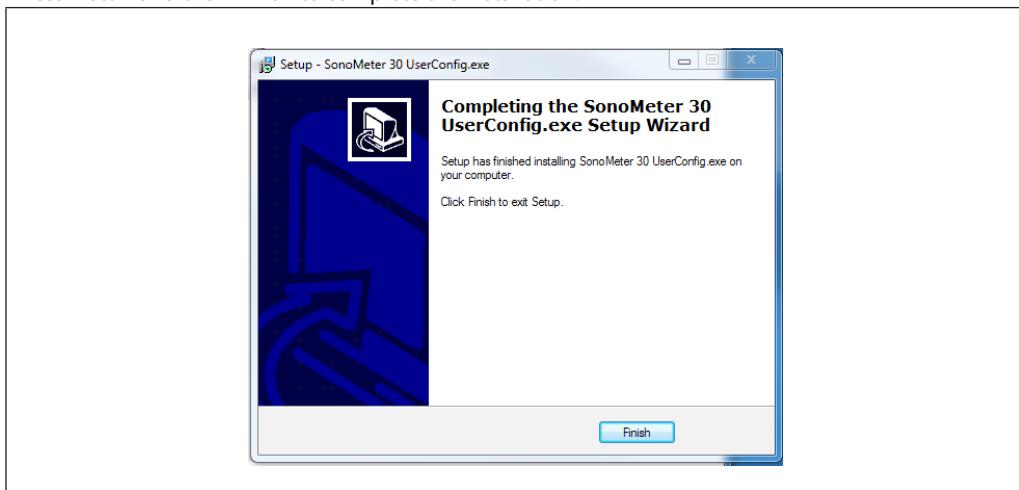## 5. Meter access and configuration
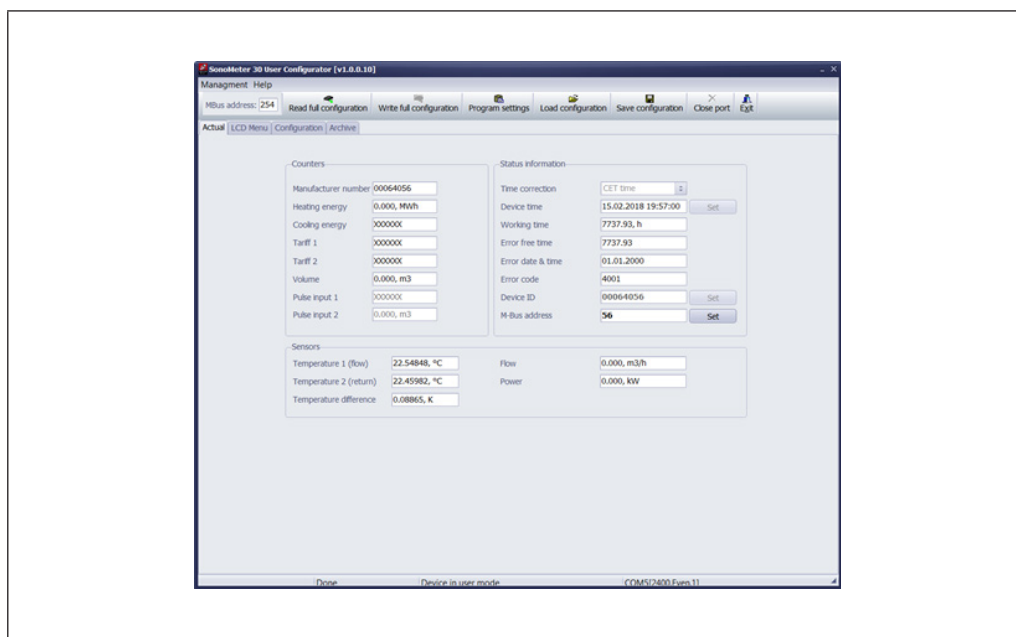*(continuous)*

5.3.2.1   Actual window

Fig. 5.7 *Actual window*

Actual parameters

No.	Name	Note
1	**Counters**	**Data from counters**
2	"Manufacturer number"	Serial number of device
3	Heating energy	Heating energy in MWh
4	Cooling energy	Cooling energy in MWh
5	Tariff 1	Tariff 1 in MWh (if configured)
6	Tariff 2	Tariff 2 in MWh (if configured)
7	Volume	Volume in m³
8	Pulse input 1	Pulse input 1 volume in m³ (if configured)
9	Pulse input 2	Pulse input 2 volume in m³ (if configured)
10	**Sensors**	**Data from sensors**
11	Temperature 1 (flow)	Temperature 1 (forward flow) in ˚C
12	Temperature 2 (return)	Temperature 2 (return flow) in ˚C
13	Temp. difference	Temperature difference, K
14	Flow	Flow rate in m³/h
15	Power	Power in kW
16	**Status information**	**Device status information**
17	Device time	dd.mm.yyyy hh:mm:ss
18	Working time	Total meter working time in hours
19	Error free time	Error free time in hours
20	Error date and time	Error date and time (dd.mm.yyyy)
21	Error code	Last error code
22	Device ID	ID number (8 digits decimal number)
23	M-Bus address	M-Bus address (decimal number)
24	set	Press the button to write time parameter to SonoMeter 30 device
25	set	Press the button to write new SonoMeter 30 device ID number
26	set	Press the button to write new SonoMeter 30 device M-Bus address

5. Meter access and configuration
(continuous)

5.3.2.2   LCD Menu window

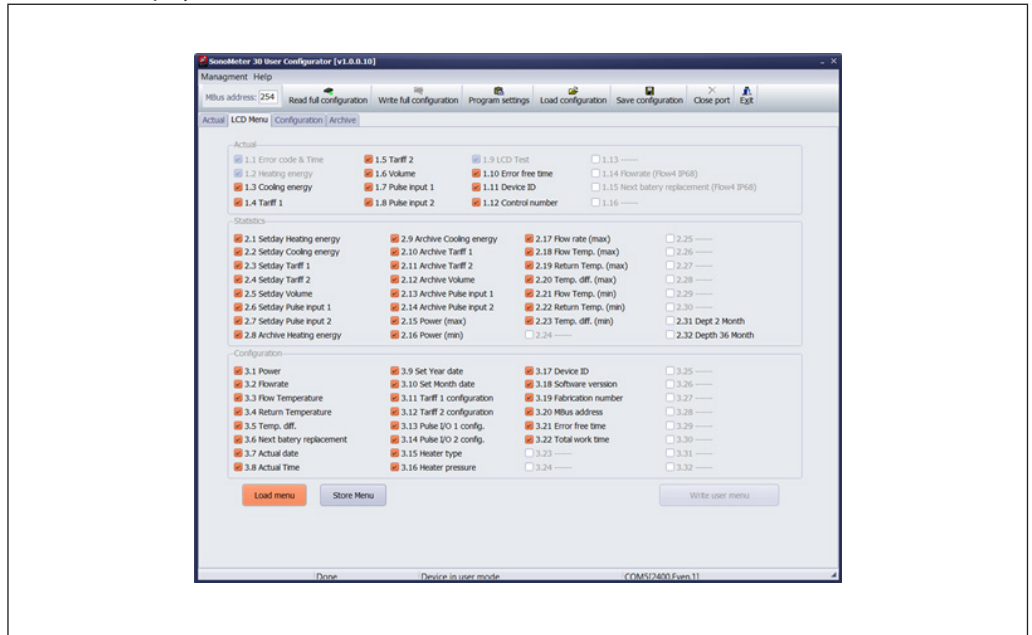LCD configuration can be done in LCD Menu window. Selected parameters will be displayed in the device LCD display.

Fig. 5.8 *LCD Menu*

Press **Read,** then select parameters and press **Write.**
If device LCD is successfully configured the message Device Ready will pop up.
LCD parameters can be changed only in **test** mode.
LCD configuration can be saved in the text file. Press **Save display configuration** to save LCD configuration into file, or press **Load display configuration** to get LCD configuration from file.

5.3.2.3   Configuration window

Device pulse channels, archive time values and tariffs are configured in the window **Configuration.**
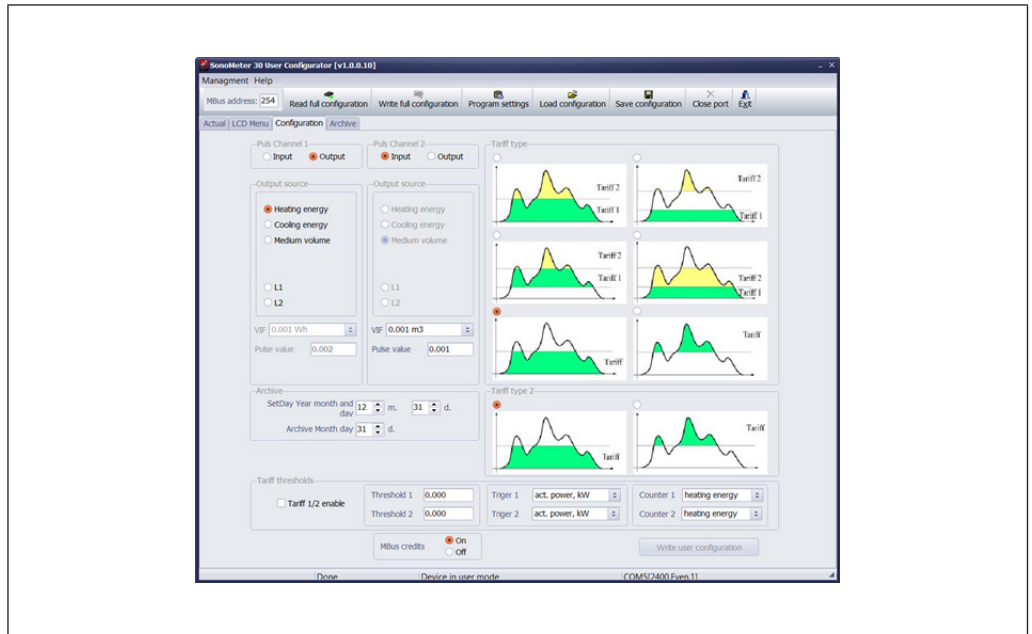TEST mode needed.

Fig. 5.9 *Configuration window*

5. Meter access and configuration
(continuous)

Input-output channels, set archive date and tariffs configuration
Pulse channel is configured by tagging:
- type (input or output);
- source (heating or cooling);
- energy;
- medium volume;
- external signal (L1, L2).

Decimal place in the display and pulse value must be configured too (only for inputs). Press **Read** and then **Write** to enable write configuration to device.
Archive writing time can be configured by writing **SetDay time and date** and **Archive month day**.
Tariff thresholds can be configured by writing **Threshold** value and by selecting **Trigger** and **Counter** options. Tag **Tariff ½ enable** to enable Tariffs. Thresholds levels are shown in pictures as lines. Different types of thresholds can be selected in **Tariff type** sections.
Also tariff type can be time interval. Counter will work in time interval from trigger 2 to trigger 1, or from trigger 1 to trigger 2, or counter 1 and counter 2 can work sequentially.
Press **Write** to load configuration into device. If device is successfully configured the message **Device Ready** will pop up.
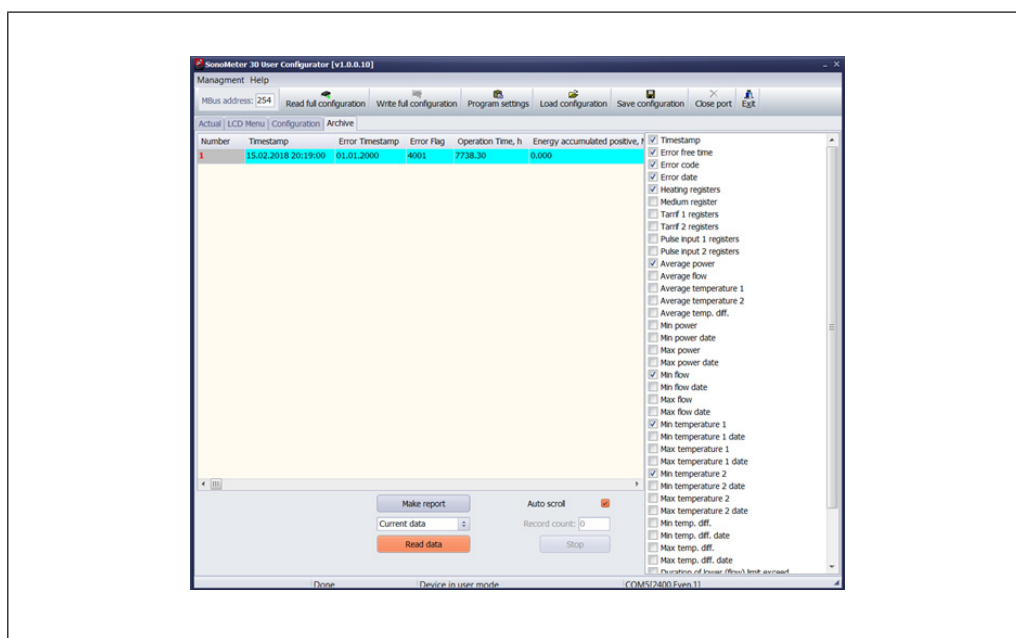These parameters can be changed only in **test** mode.


Fig. 5.10 Configuration window, Time Trigger

Configuration window parameters

No.	Name	Note
1	**Pulse channel 1 / Pulse channel 2**	Field for channel 1 and channel 2 configuration
2	Input / Output	Purpose of pulse channel
3	**Input/output source**	
4	Heating energy	Only available for output channel
5	Cooling energy	Only available for output channel
6	Medium volume	
7	L1 / L2	Pulse signal source for tariff 1 (L1), tariff 2 (L2)
8	VIF	Decimal place in the display
9	Pulse value	m^3/impulse
10	**Archive**	
11	Setday Year month and day	Device will archive information of 1 year duration measurements
12	Archive month day	Device will archive information of 1 month duration measurements
13	**Tariff thresholds**	
14	Tariff ½ enable	Tag to allow tariffs
15	Threshold 1 / Threshold 2	Levels of selected trigger.

5. Meter access and configuration
(continuous)

16	Trigger 1 / Trigger 2	Trigger is parameter for tariff energy counting: - Act. Power: kW - Act. Flow: m³/h - flow temp.: ˚C - return temp.:˚C - temp. diff.: K - time interval - pulse 1 - pulse 2
17	Counter 1 / Counter 2	Counter for heating or cooling energy counting
18	**Tariff 1 type**	
19	Above left	Tariff 1 valid up to threshold 1 Tariff 2 valid from threshold 1
20	Above right	Tariff 1 valid up to threshold1 Tariff 2 valid from threshold 2
21	Middle left	Tariff 1 valid from threshold 1 to threshold 2 Tariff 2 valid from threshold 2
22	Middle right	Tariff 1 valid up to threshold1 Tariff 2 valid from threshold 1 to threshold 2
23	Below left	Tariff 1 valid up to threshold1
24	Below right	Tariff 1 valid from threshold 1
25	**Tariff 2 type**	
26	Type 5	Tariff 2 valid up to threshold 2
27	Type 6	Tariff 2 valid from threshold 2
28	MBus credits	Battery powered meter: on, mains powered meter: off

5.3.2.4   Archive window
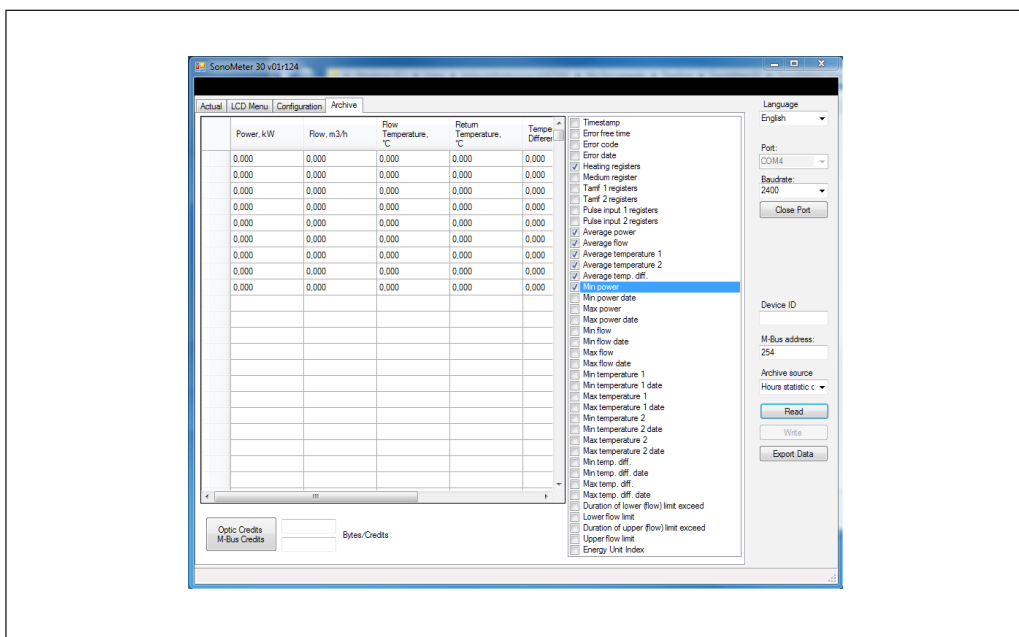
Fig. 5.11 *Archive window*

Reading archive data
Press **Read data** to read tagged parameters and see device archives in the **Archive** window. Press **Make report** to save archive data to CSV or XML file.
Parameter **Timestamp** is date and time of archive record.

Archive window fields

No.	Name	Note
1	Archive	Field for archive data from device
2	Make report	Press the button to save data to xml or csv file