Sontex Thermal Energy Flow Metering

User guide

Software

Prog739-749

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06-03-14	06.03.14	RT	Add Chapter wM-Bus (OMS)
02-05-14	02.05.14	RT	Add annex ‘’Special liquids’’

User Agreement
for readout and parameterisation software "Prog739-749"

Please find enclosed the readout and parameterisation software "Prog739-749". This software enables to readout and to parameterise all the extended options of the compact heat meter Supercal 739 and Superstatic 749.

This version of the software is intended to be used by accredited laboratories for re-calibration or other authorized personnel only. This software allows accessing the metrological data of the heat meter by a specific tab in the software. The metrological data of the heat meter are protected by a calibration seal. Breaking the calibration seal is a violation and fraud by the corresponding national calibration law and can be prosecuted.
Calibration and warranty are immediately null and void by breaking the calibration seal.

The standard version of the readout and parameterisation software Prog739-749 for all other users is available for download from www.sontex.ch/downloads_e.html and allows parameterise all the extended options of the of the compact heat meter Supercal 739 and Superstatic 749 but without the possibility to access the metrological data.

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1. Introduction

The software **Prog739-749** contains different features helping to configure the installation parameters of the compact heat meter Supercal 739 and of the fluidic oscillation compact heat meter Superstatic 749.

This document informs about the installation and how to use the software Prog739-749.

2. Installation process

The software "Prog739-749" is available in the ‘’Download’’ section of the Sontex SA website and will also be sent by automated email.

Unzip the file in a folder on your computer (i.e, C:\Sontex\ Prog739\ Vx.xxx).
Make sure that all unzipped files in the folder are NOT ‘’read only’’. If some of the files are ‘’read only’’, change the properties of the files with Window Explorer.

In case of the installation of a new version of the software "Prog739-749", the new version can replace all files of the previous version.

3. Overview Prog739-749

The software ‘’Prog739-749’’ contains different features that allow the configuration of the heat meters.

4. System requirements

Necessary equipment to operate the software "Prog739-749":

- Operating system: XP, Win 7, Win 8
- 30 MB of free memory space on the hard drive
- 512MB RAM memory
- Internet Explorer V6.0 or higher installed on your PC

5. Getting started

Start the application with the file "**Prog739.exe**"

The main menu of the software "Prog739-749" allows configuring or to change the configuration of the communication parameters, the language, some options and give the access to preconfigured virtual devices to allow a training mode, to become familiar with the software.

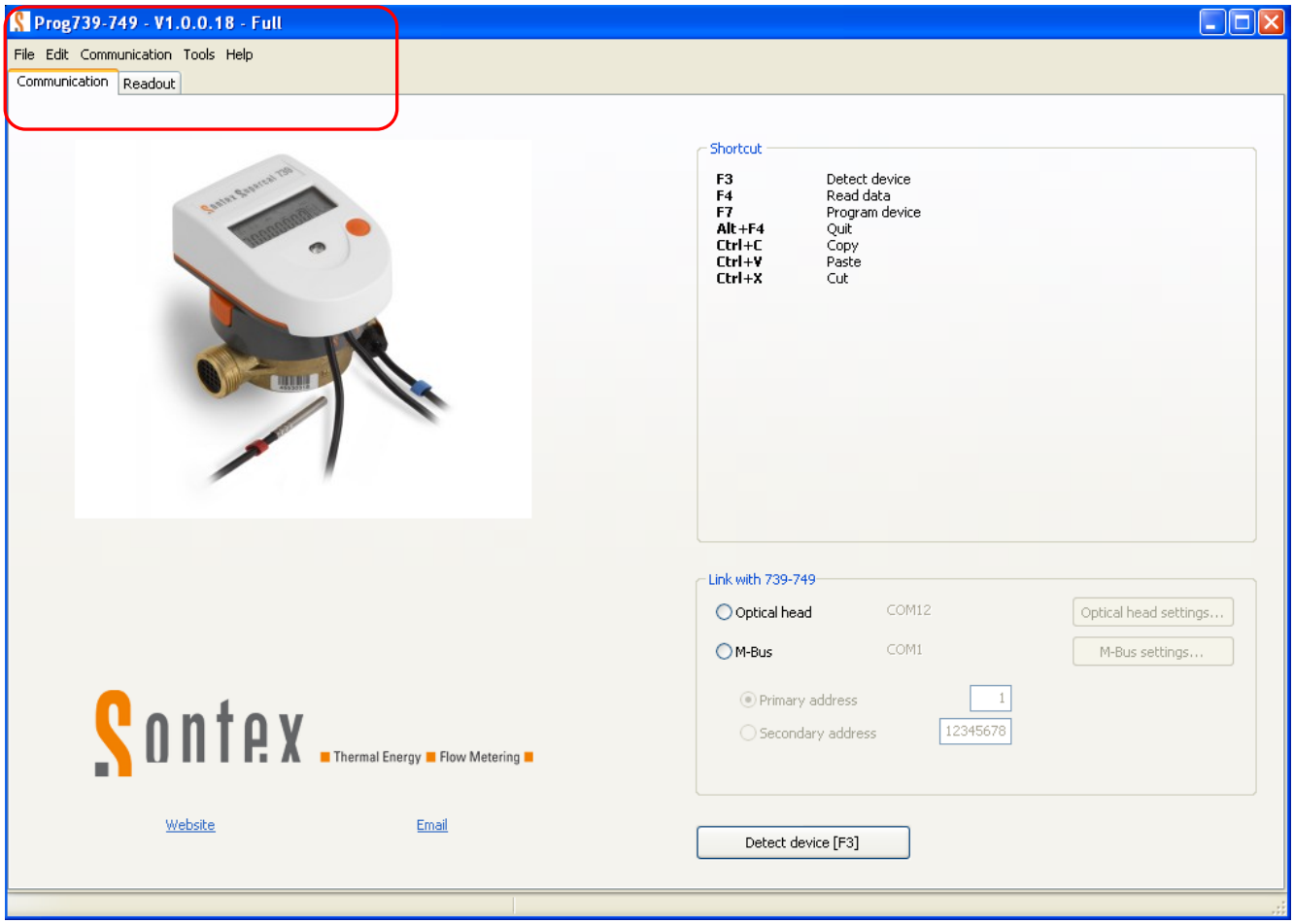


Figure 1 – Main menu

5.1 Language

The menu ‘’Tools –Language’’ gives the possibility to select a language between different languages (English, German…).

5.2 Communication by optical probe or M-Bus

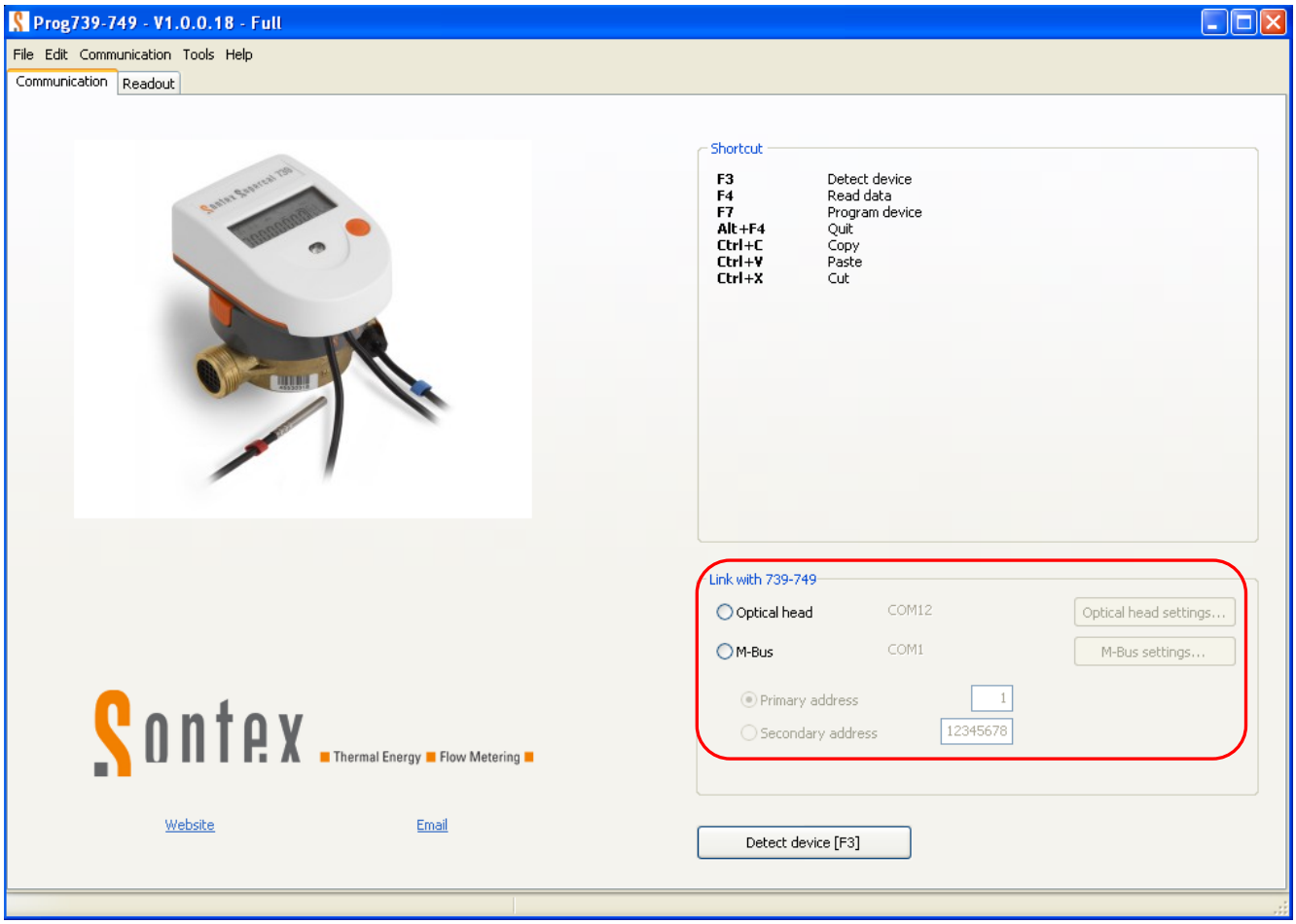


Figure 2 – Connection to the 739 - 749

In case of communication problems with the devices by optical probe or M-Bus, change the ''Filter settings'' as follows:

1. Preliminary check
   - Check the serial COM Port
   - Set the ''Filter settings (Optical or M-Bus)'' filter to "**Without filter**". Depending of the optical head construction the signal has to be filtered for a successful communication
   - Try a new detection

2. If detection failed
   - Set the reception filter: "**Echo**".
   - Try a new detection

3. If the detection failed
   - Set the reception filter: "**Noise**".
   - Try a new detection

4. Try with different hardware, other interface, optical interface, computer and start again.

5.2.1 Configuration of the options

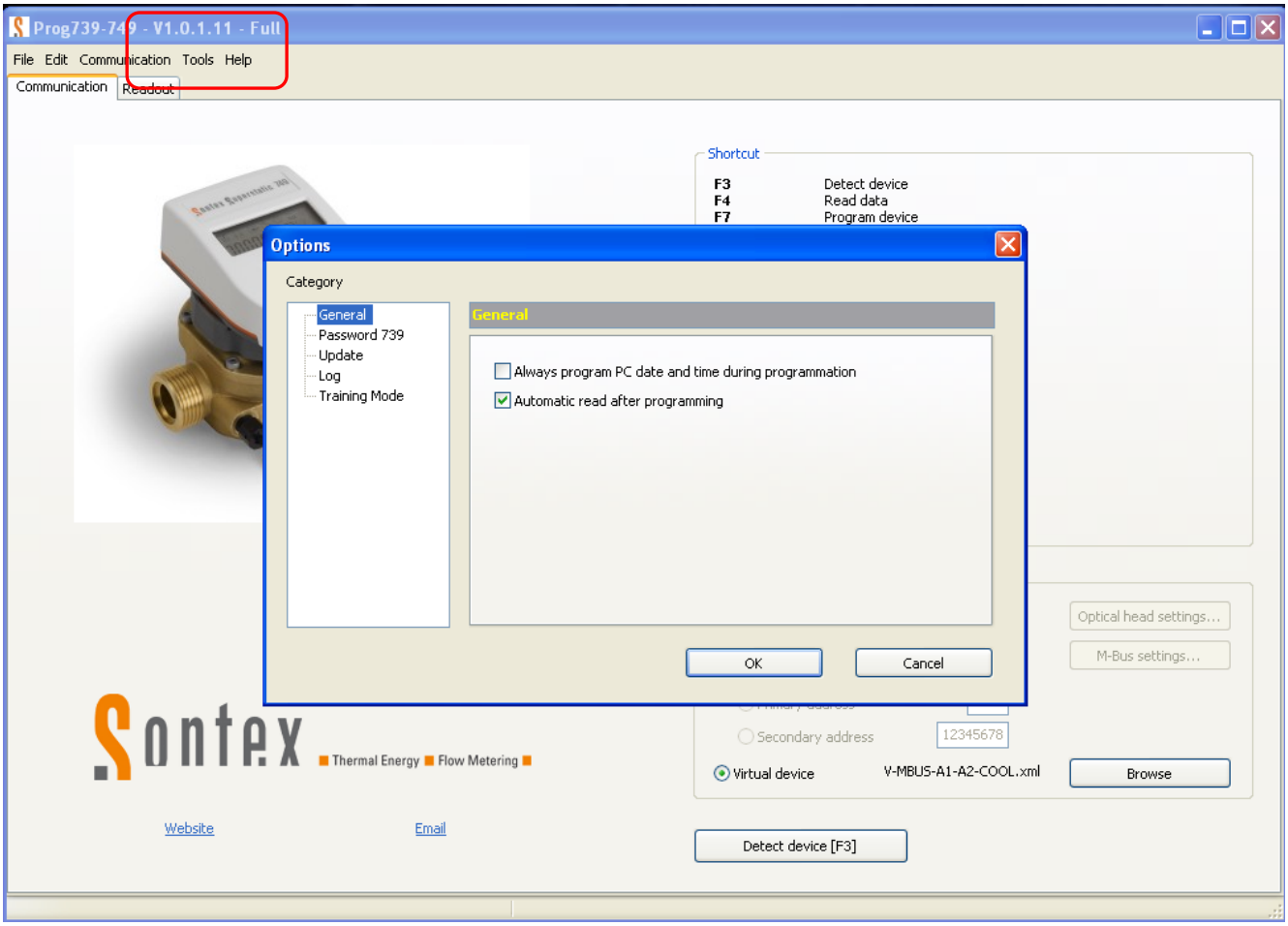


Figure 3 – Menu ‘’Options’’

In the menu **‘’Tools’’**-> **‘’Options’’** it’s possible to change some parameters in different categories.

1. General
   - By checking this box, your device will always be set to the time of your PC if programming.
   - By checking the box ‘’Automatic reading after programming’’, the software will automatically read the device after its programming and will display the read values. All the data from the device will be also updated in the installation protocol.

2. Password 739/749
   - To protect your device against fraud, a password has been integrated into the Supercal 739 and the Superstatic 749 products, therefore also in the software. By checking the box "Ask for the ‘’installer’’ password before reading’’, the password is required to read the device. The default ‘’installer’’ password ex-factory of the Supercal 739 and Superstatic 749 is " 00001234", and may be changed by the user (see chapter 6.2).

3. Update
   - This feature will search for updates if your computer is connected with the internet.

4. Log
   - This feature allows the creation of a log file, useful for troubleshooting in case of problems with the software / reading (To enable in case of problems).

5. Training mode
   - By checking this box, the access to a virtual device will be created to help familiarise with the software and to do trainings without having a device available. Preconfigured devices are available in a list with the software in the file '' Virtual devices''.

Choose to use a preconfigured virtual device by clicking the'' virtual device''. The box '' Browse'' gives access to a predefined selection.

1. Select the virtual device from the list, and click Open
2. Detect the device by selecting [F3]
3. The Prog739-749 now displays your preconfigured virtual device

Note: The virtual devices are available for the purpose of demonstration and cannot be programmed.

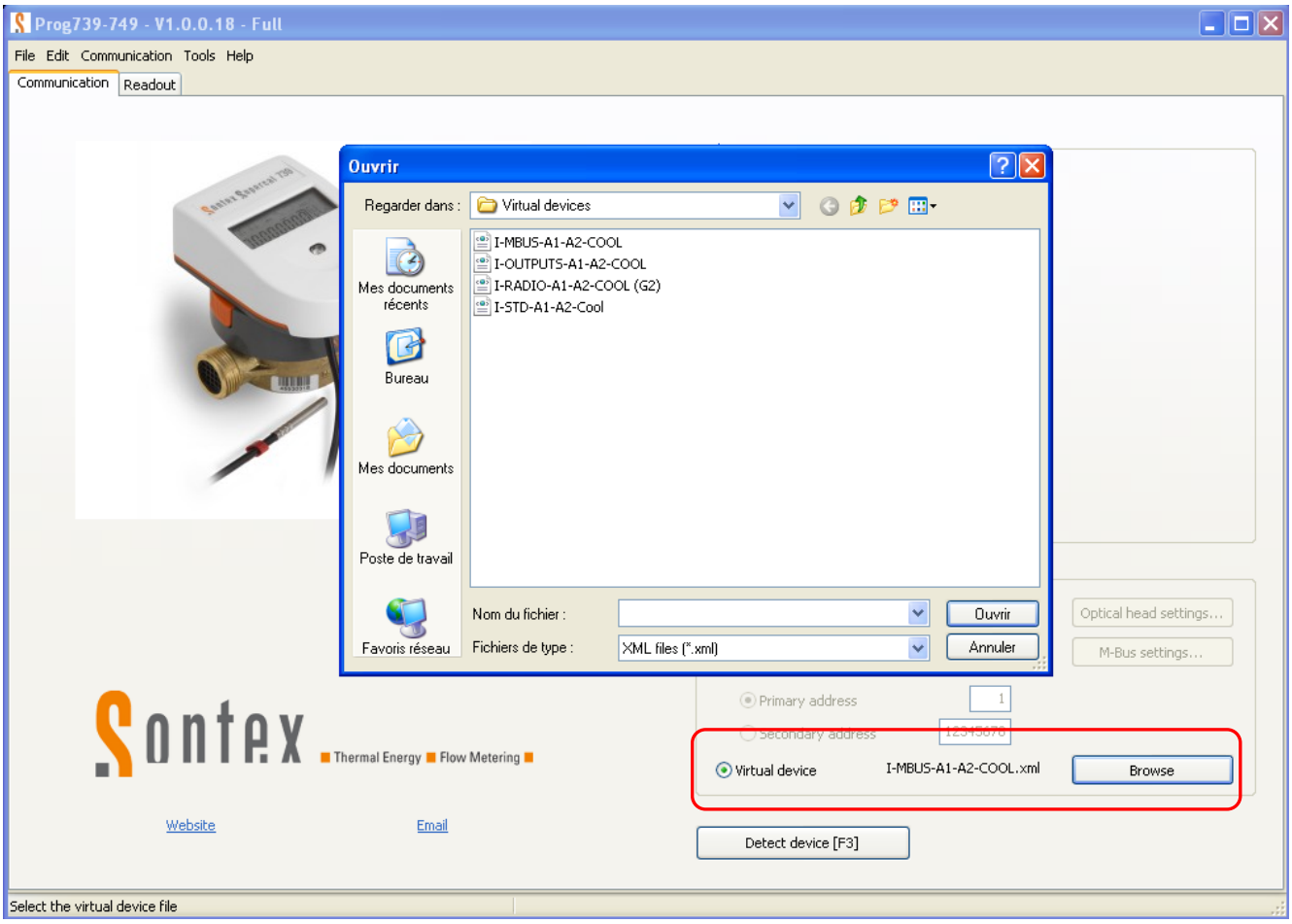


Figure 4 – Use of virtual devices

6. General Settings

After the detection of the device [F3], the ''General settings'' tab appears. Depending on the configuration, an additional menu will be added to allow visualization and parameterisation of selected options (see below in figure 5, a standard device without options and in Figure 6, one with 2 complementary inputs and Heating/Cooling options).
All information found in the white fields can be changed.

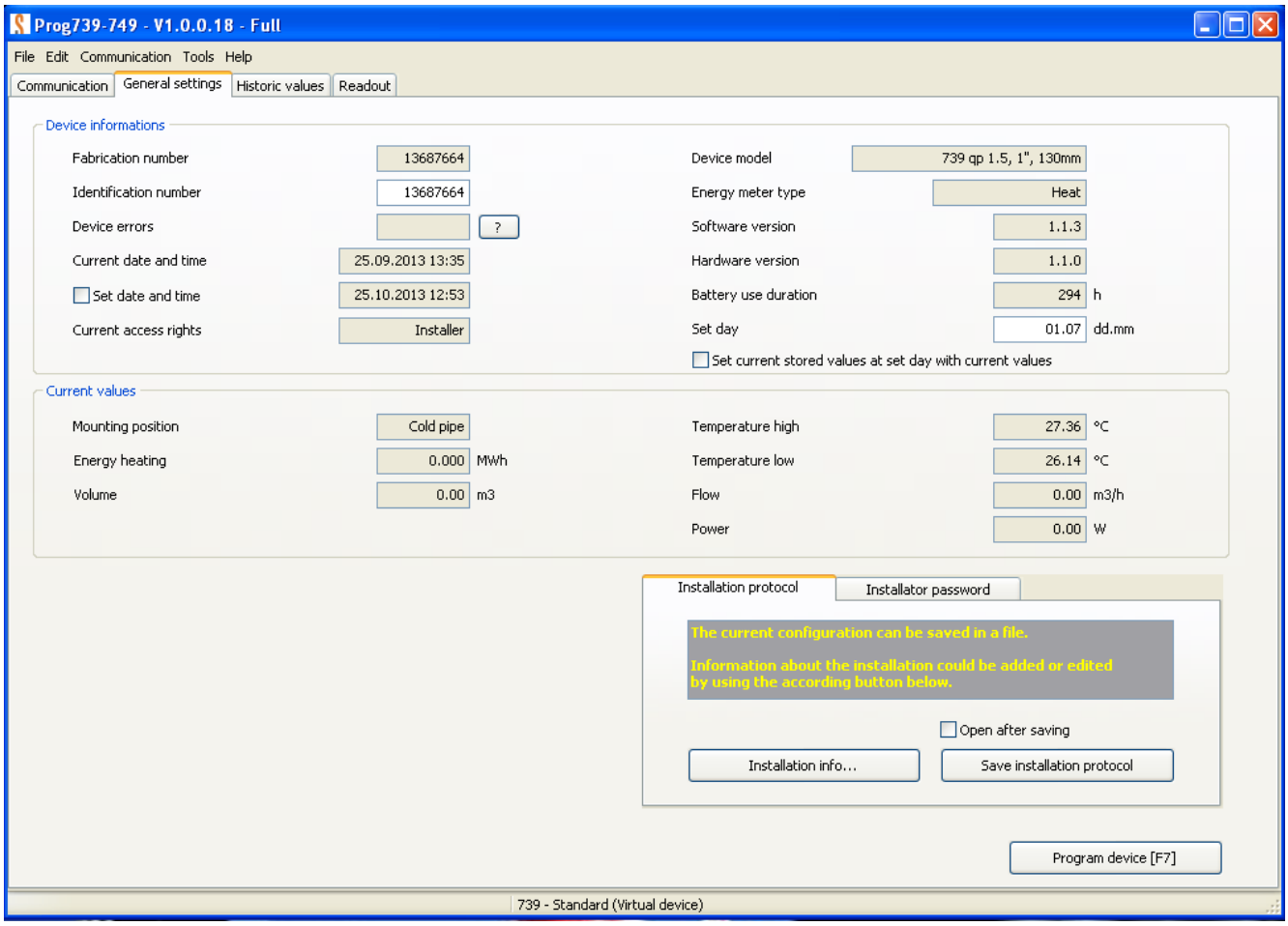


Figure 5 – Standard device without options

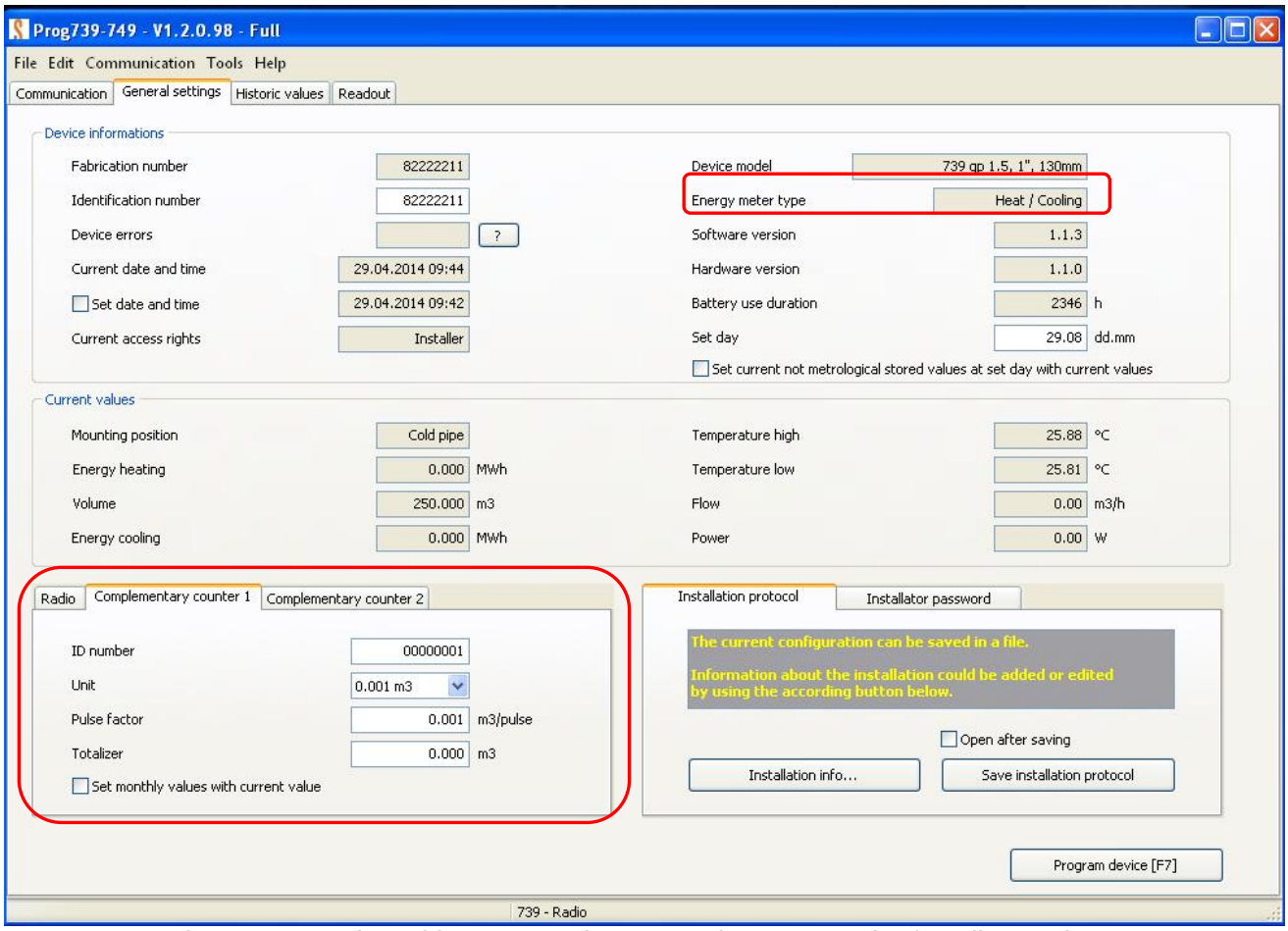


Figure 6 – Device with two complementary inputs, Heating/Cooling options

6.1 Option radio wM-Bus (OMS)

If the device is ordered with the option radio wM-Bus a new sub-tab appears in the 'General settings'' tab of the Prog739-749. The transmission protocols can be selected here as well as the enabling / disabling of the encryption. A key can be generated with the random key generator. Also an own key can be used. It must always be 16 characters long.

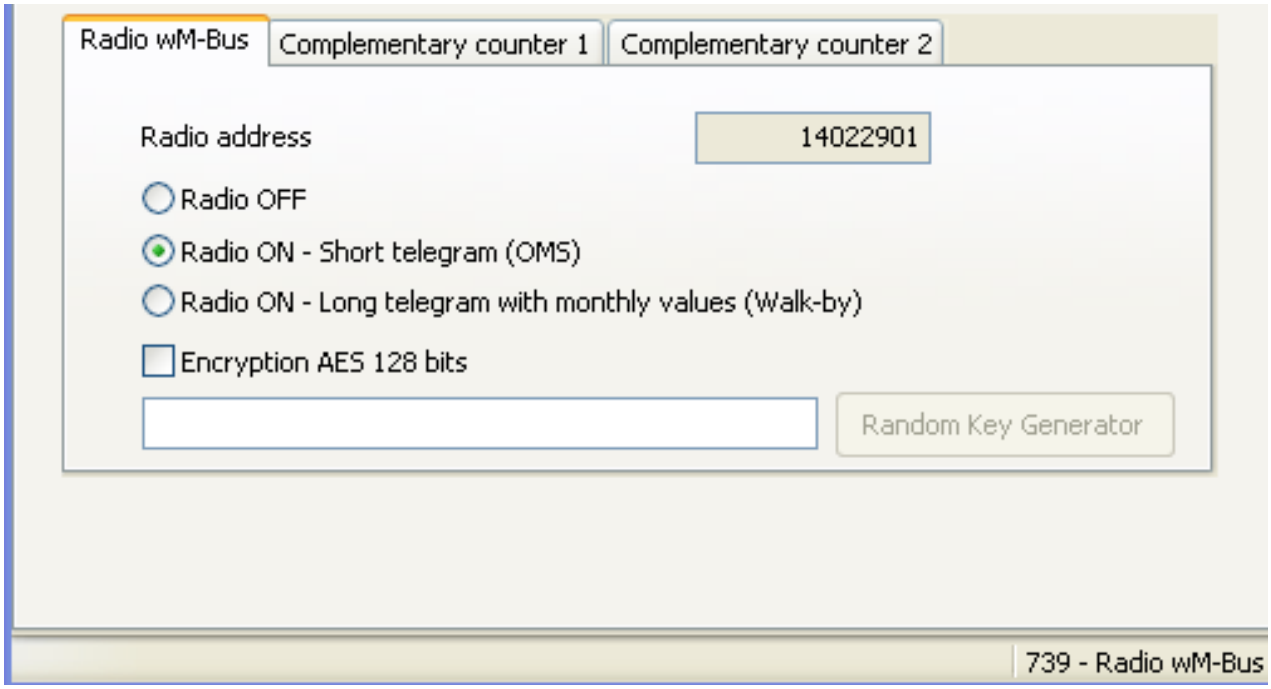


Figure 7 – Parameterization tab for the wM-Bus radio option

By checking the box '' Encryption AES 128-bit '' the following options are available:

1) Keep the area free and the encryption key will be the factory preset key (The factory set key is written on a sticker of the instruction leaflet delivered with the product. The factory set key can't be with the optical head).
2) Write a key yourself: Exactly 16 characters (16 bytes), 0-9, A-F, with or without spaces, the programme will correct any errors).
3) Generate a random key.

If points 2) or 3) are selected, you can record / save your encryption key in a file. For this go to the Menu ''Tools -> Options -> wM-Bus''

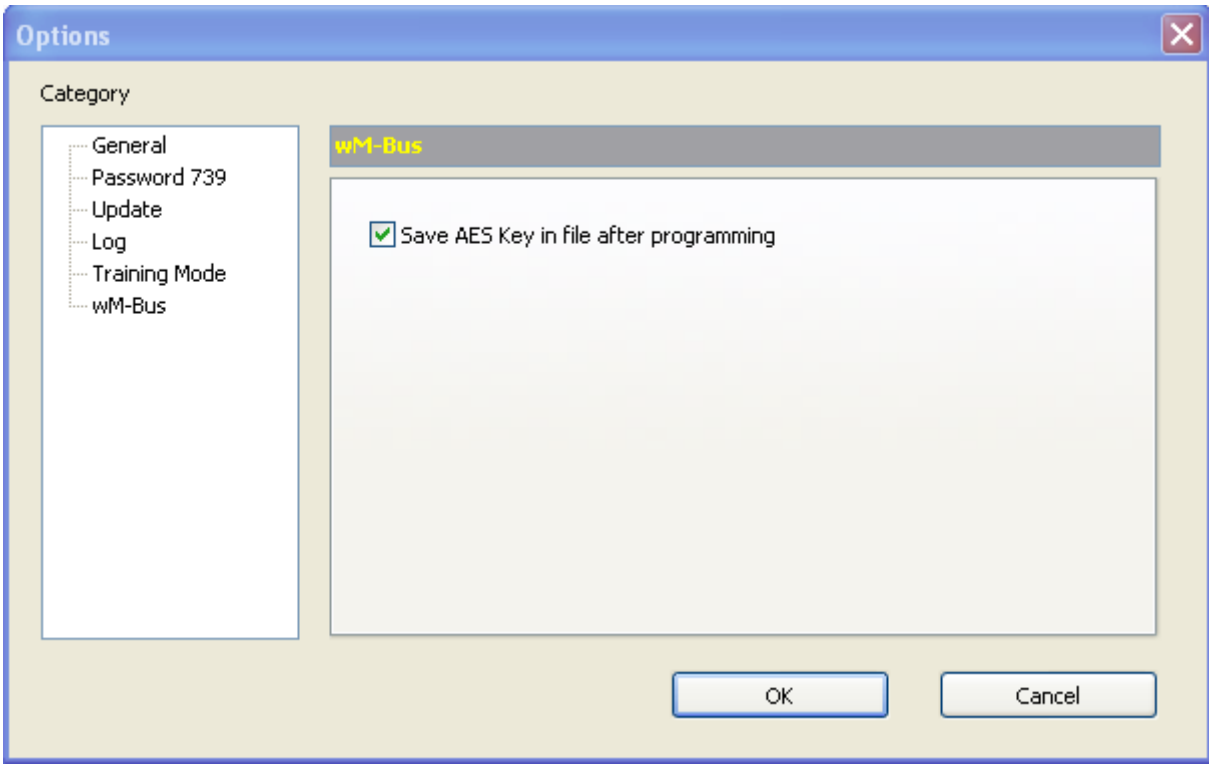


Figure 8 – Menu Options, select to save the encryption key

6.2 Menu installation protocol

This window provides the ability to record the general plant data and the values stored in the device or configured during the installation.
Sontex recommends saving the installation protocol in order to recover device data in case of problems or doubts. The data will be saved in a .xml file on your PC and can be printed as needed.

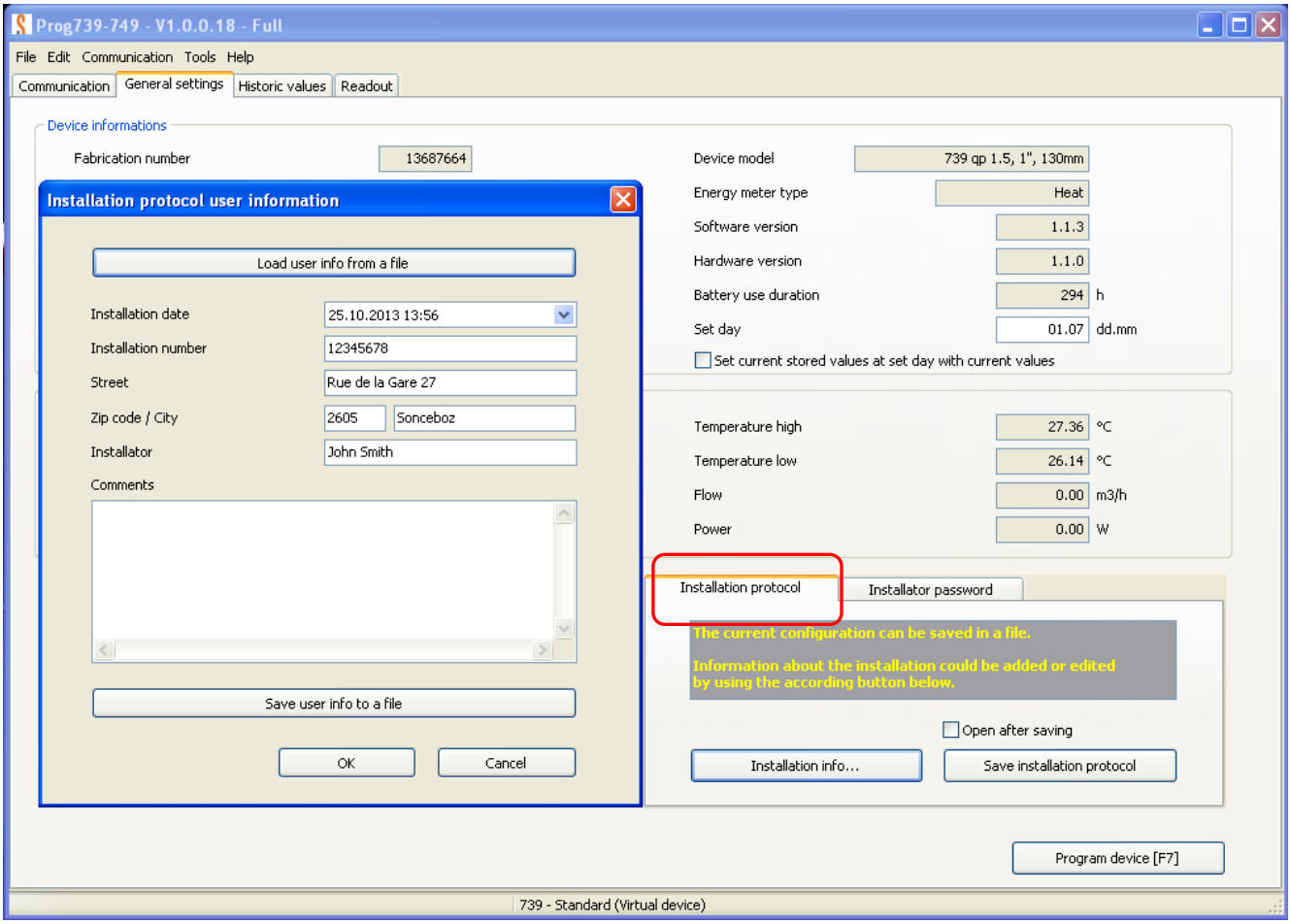
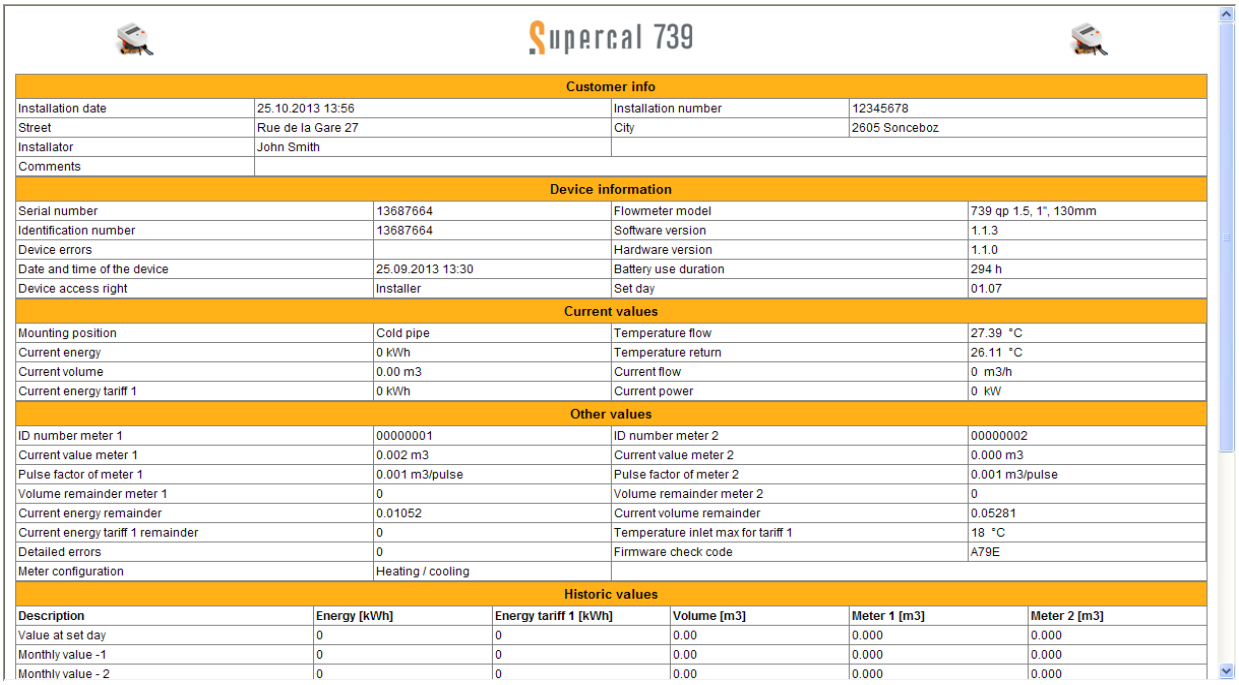


Figure 9 – Installation protocol



Supercal 739

Customer info			
Installation date	25.10.2013 13:56	Installation number	12345678
Street	Rue de la Gare 27	City	2605 Sonceboz
Installator	John Smith		
Comments			

Device information			
Serial number	13687664	Flowmeter model	739 qp 1.5, 1", 130mm
Identification number	13687664	Software version	1.1.3
Device errors		Hardware version	1.1.0
Date and time of the device	25.09.2013 13:30	Battery use duration	294 h
Device access right	Installer	Set day	01.07

Current values			
Mounting position	Cold pipe	Temperature flow	27.39 °C
Current energy	0 kWh	Temperature return	26.11 °C
Current volume	0.00 m3	Current flow	0 m3/h
Current energy tariff 1	0 kWh	Current power	0 kW

Other values			
ID number meter 1	00000001	ID number meter 2	00000002
Current value meter 1	0.002 m3	Current value meter 2	0.000 m3
Pulse factor of meter 1	0.001 m3/pulse	Pulse factor of meter 2	0.001 m3/pulse
Volume remainder meter 1	0	Volume remainder meter 2	0
Current energy remainder	0.01052	Current volume remainder	0.05281
Current energy tariff 1 remainder	0	Temperature inlet max for tariff 1	18 °C
Detailed errors	0	Firmware check code	A79E
Meter configuration	Heating / cooling		

Historic values

Description	Energy [kWh]	Energy tariff 1 [kWh]	Volume [m3]	Meter 1 [m3]	Meter 2 [m3]
Value at set day	0	0	0.00	0.000	0.000
Monthly value -1	0	0	0.00	0.000	0.000
Monthly value - 2	0	0	0.00	0.000	0.000

Figure 10 – Example of an installation protocol in .XML file

6.3 Menu ‘’Installer password’’

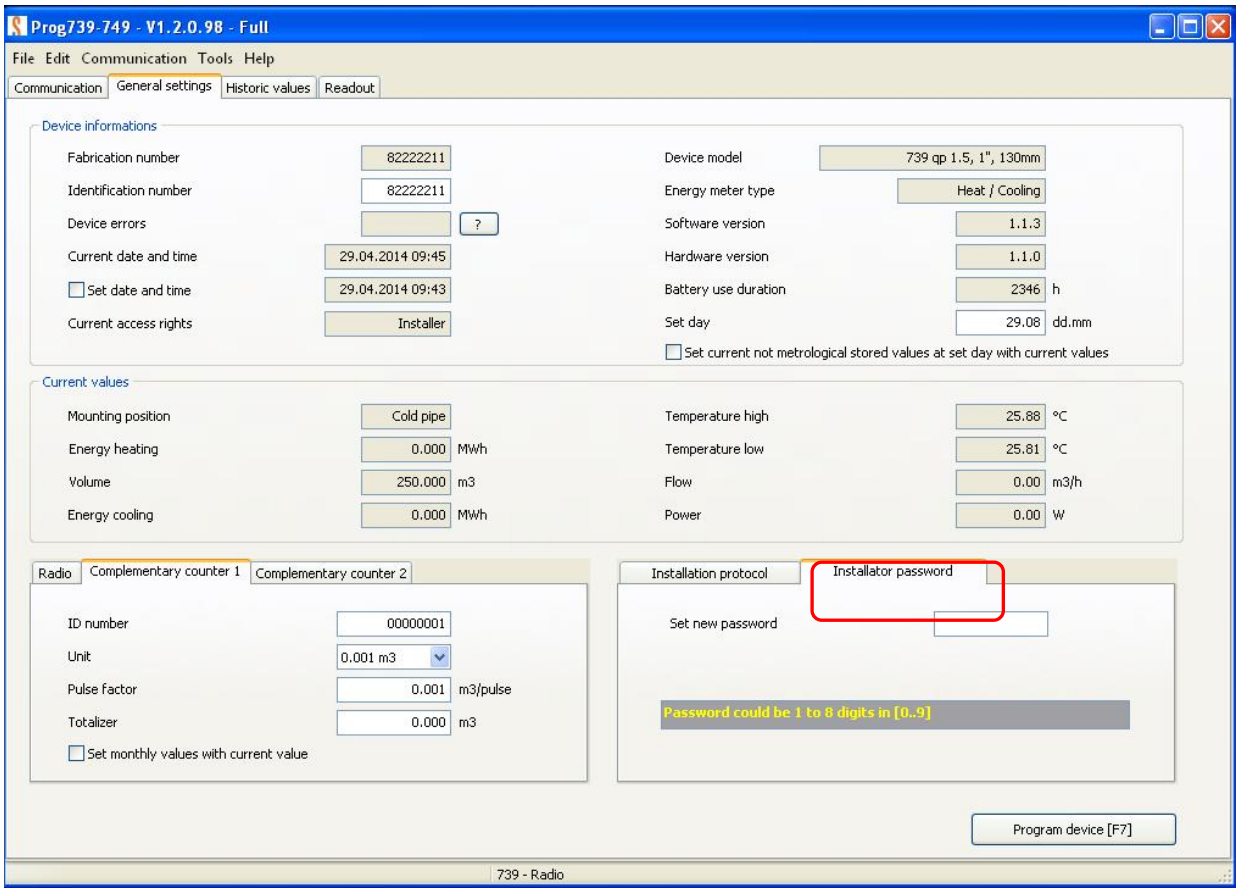


Figure 11 – ‘’Installer’’ password for 739 – 749 devices

This menu allows changing the password "Installer". After changing the password, the device must be programmed [F7].

Select the category Password 739 in the menu **‘’Tools - Options"**.

1. If the ''Ask for the installer password before reading'' button is activated, the software will ask for the password before each device detection.

2. If the "Use this password" button is activated, you will first have to enter your new password in the field provided, confirm it, and then the software will automatically use the stored password. The default password is " 00001234".

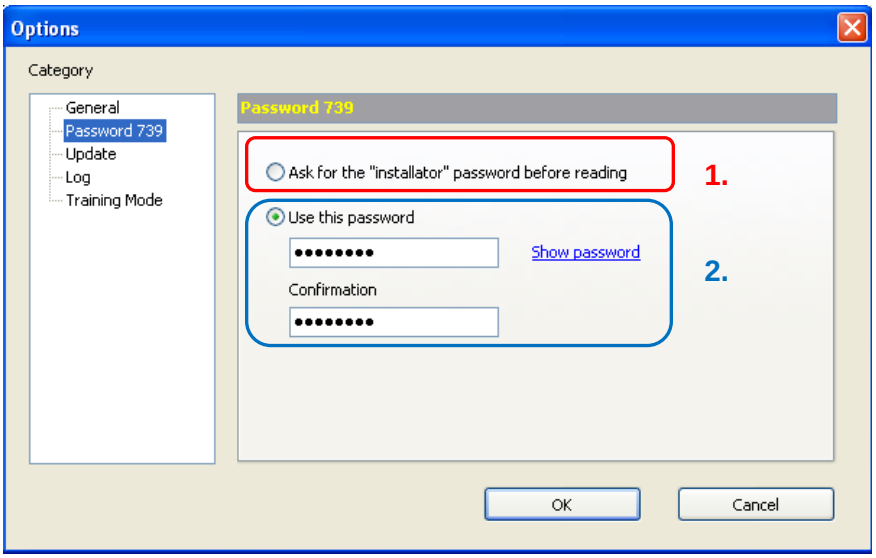
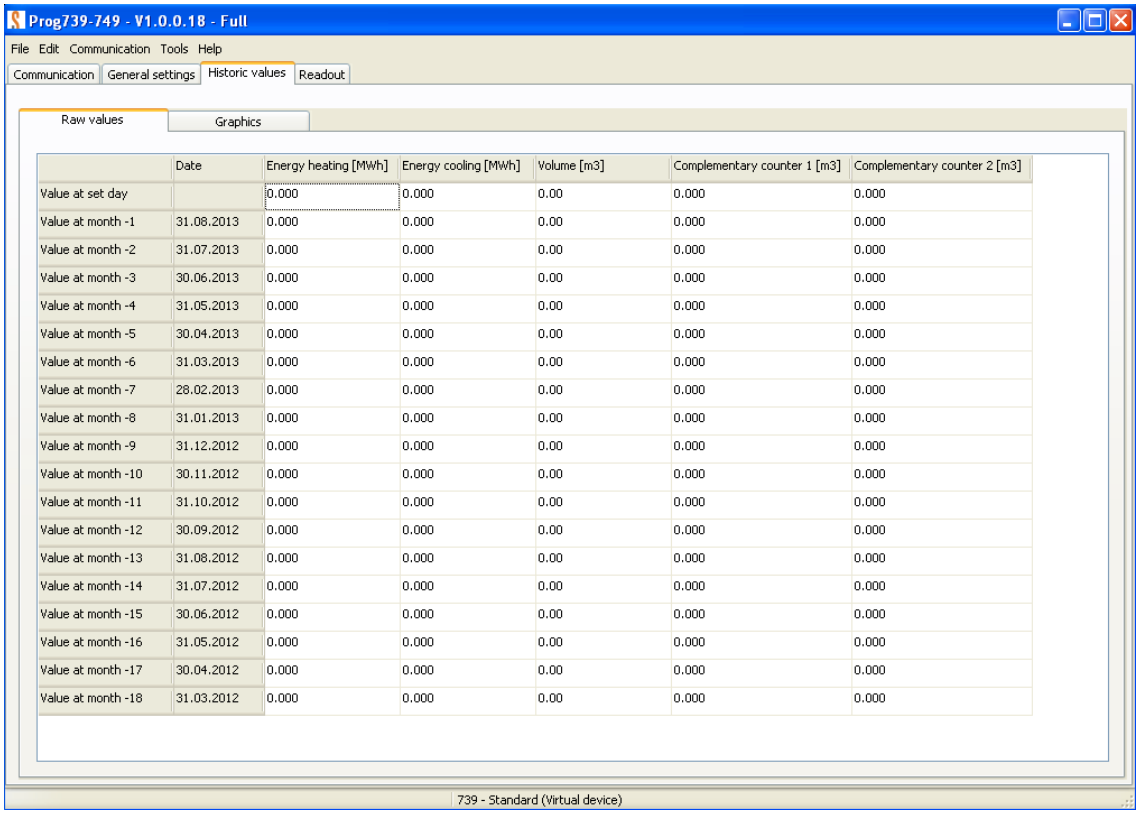


Figure 12 - Option ‘’Installer’’ password

7. Historic values

The history of the last 18 monthly values and of the set day values is stored in the non-volatile memory of the device and can be accessed at any time through the optical interface.
The software allows viewing these as a tabular form (Figure 13) or as a graph (Figure 14).



	Date	Energy heating [MWh]	Energy cooling [MWh]	Volume [m3]	Complementary counter 1 [m3]	Complementary counter 2 [m3]
Value at set day		0.000	0.000	0.00	0.000	0.000
Value at month -1	31.08.2013	0.000	0.000	0.00	0.000	0.000
Value at month -2	31.07.2013	0.000	0.000	0.00	0.000	0.000
Value at month -3	30.06.2013	0.000	0.000	0.00	0.000	0.000
Value at month -4	31.05.2013	0.000	0.000	0.00	0.000	0.000
Value at month -5	30.04.2013	0.000	0.000	0.00	0.000	0.000
Value at month -6	31.03.2013	0.000	0.000	0.00	0.000	0.000
Value at month -7	28.02.2013	0.000	0.000	0.00	0.000	0.000
Value at month -8	31.01.2013	0.000	0.000	0.00	0.000	0.000
Value at month -9	31.12.2012	0.000	0.000	0.00	0.000	0.000
Value at month -10	30.11.2012	0.000	0.000	0.00	0.000	0.000
Value at month -11	31.10.2012	0.000	0.000	0.00	0.000	0.000
Value at month -12	30.09.2012	0.000	0.000	0.00	0.000	0.000
Value at month -13	31.08.2012	0.000	0.000	0.00	0.000	0.000
Value at month -14	31.07.2012	0.000	0.000	0.00	0.000	0.000
Value at month -15	30.06.2012	0.000	0.000	0.00	0.000	0.000
Value at month -16	31.05.2012	0.000	0.000	0.00	0.000	0.000
Value at month -17	30.04.2012	0.000	0.000	0.00	0.000	0.000
Value at month -18	31.03.2012	0.000	0.000	0.00	0.000	0.000

Figure 13 – Historic value tab

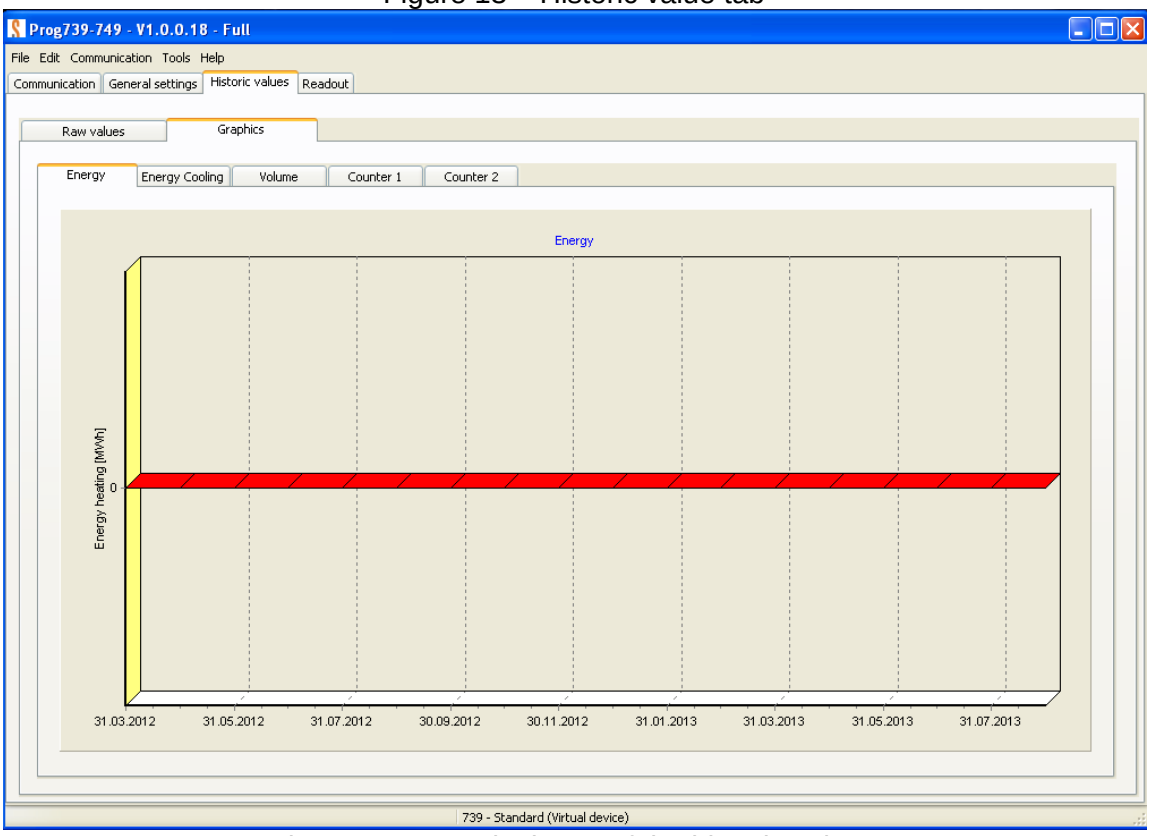


Figure 14 – Graph viewer of the historic values

8. Readout

The " Readout" tab allows the automatic or manual reading of different devices through the optical interface and viewing in tabular or graphical form. The saving of the readout data can be performed from this tab.

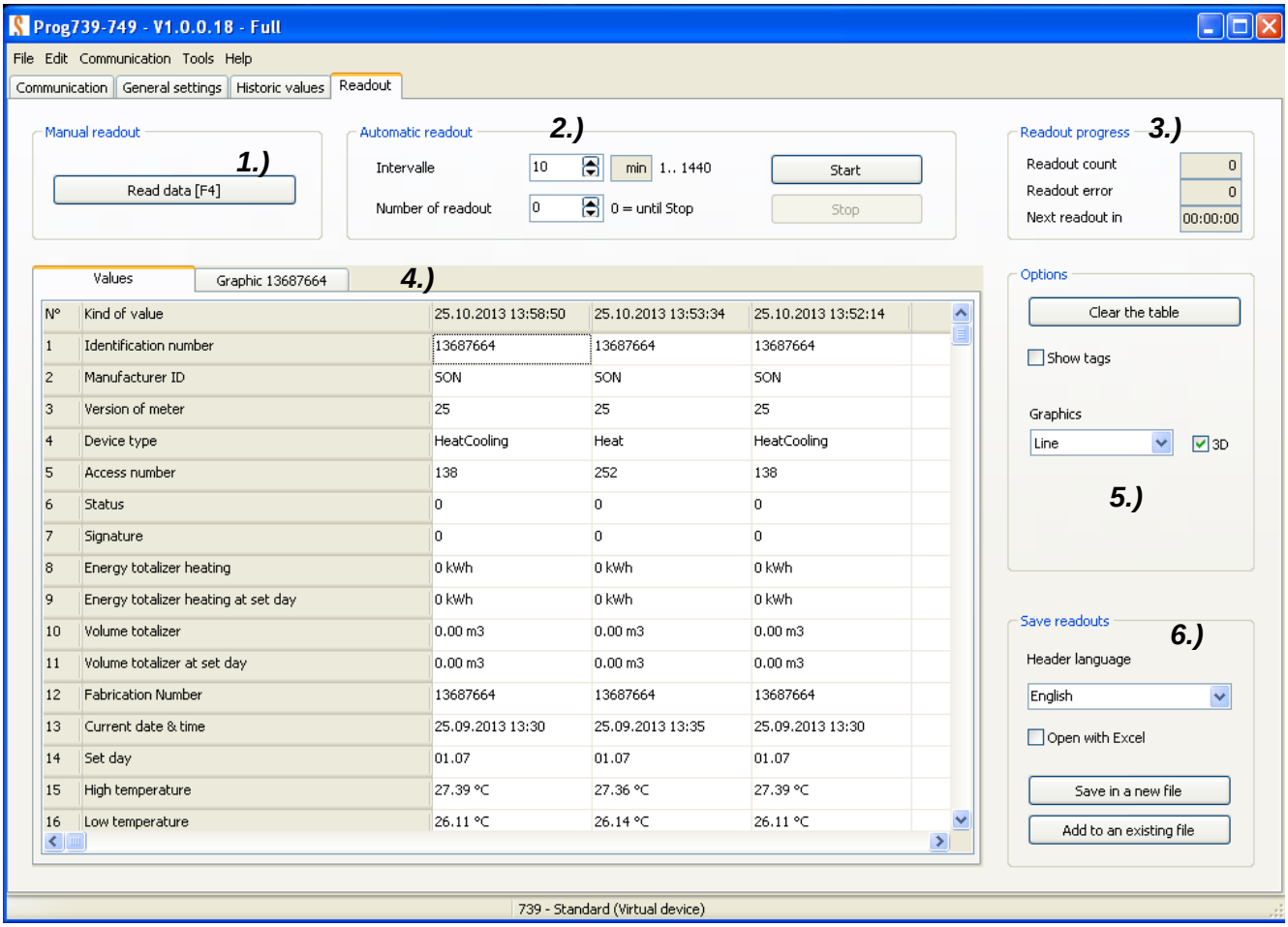


Figure 15 – Readout tab

1.) Manual readout : read the device by clicking on the button or select [F4]
2.) Automatic readout: it is possible to make repeated readings of the same device by selecting either the interval or the number of reading, for example during commissioning or control.
3.) Viewing of the readouts progress during the automatic readout.
4.) Display of all values recorded by the device (s) in a tabular or in a graphic form (only from the second reading)
5.) Graphics options
6.) Save readouts and choice of the language in which the headers appear in the readouts table in format.xml or. rlv.

9. Annexe

9.1 Special liquids

This tab and the programming of special liquids (glycols) is reserved to the Superstatic 749 and the installer license of the SW Prog739-749.
Sontex SA doesn't support the use of special liquids (glycols) other than water with mechanical flow sensors.

If the Prog739-749 detects a Superstatic 749 device (Firmware version ≥ 1.3.0) an additional tab "Special liquids" appears.

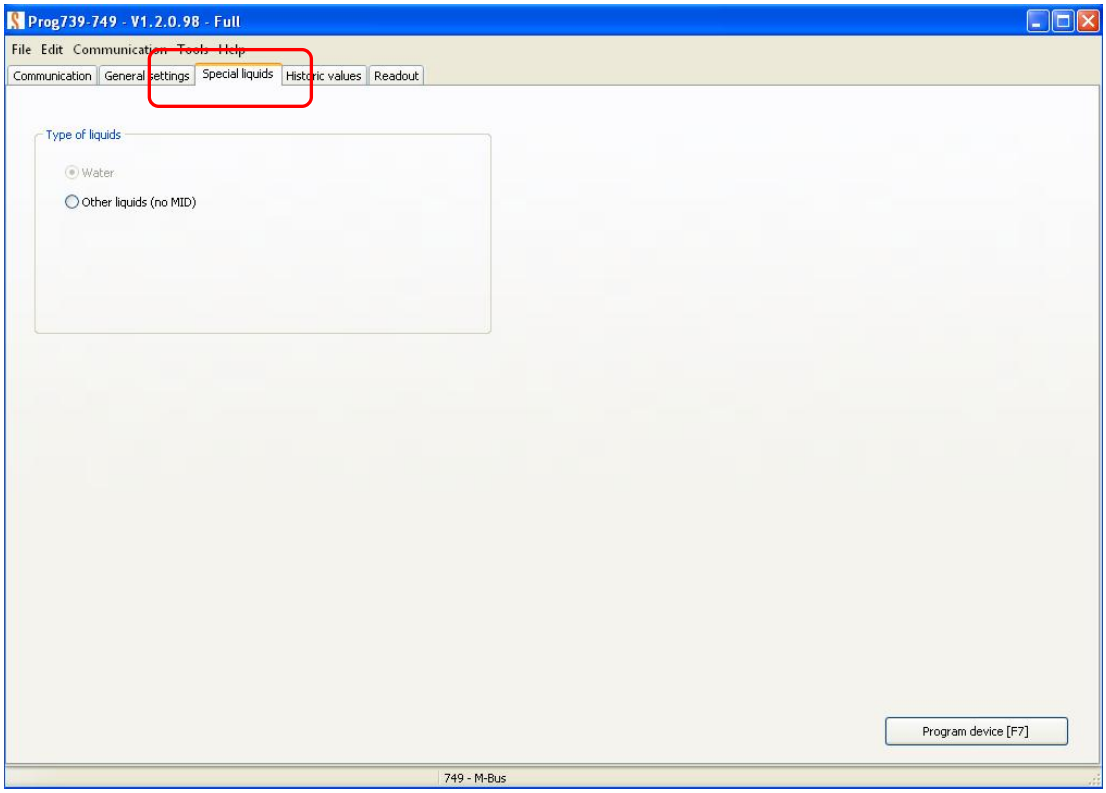


Figure 16 – ''Special liquids'' tab

These liquids are listed in the file ''Prog739.stx'' and are integral part of the software and is supported from version 1.2.1.x. This file is can also be downloaded from our download centre at [http ://www.sontex.ch/downloads_e.html](http://www.sontex.ch/downloads_e.html)

By default the Superstatic 749 is configured for the use with water as the main fluid (Figure 17). By selecting the button "Other liquids" (Figure 18) a choice of cooling liquids is shown. Choose from the list the desired liquid and concentration.



Figure 17 – by default

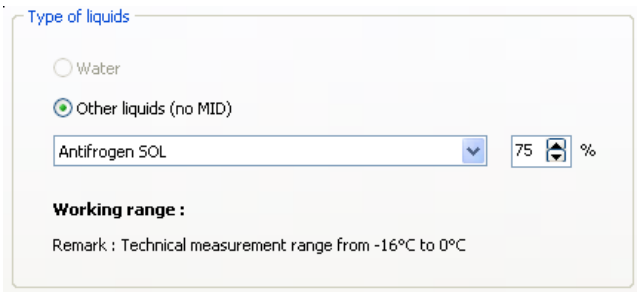


Figure 18 – special liquid choice

Program the device with [F7].

Please note that the programming with another liquid than water is irreversible, it means it's not possible anymore to program the device for the use with water without breaking the calibration seal.

If the device is programmed with a special liquid it can be double checked in the service menu of the LCD. There's a reference in the service menu on the first position: „SP_ FLUI d".
The selected liquid and the concentration are also listed in the installation protocol.

Other values			
ID number meter 1	00000001	ID number meter 2	00000002
Current value meter 1	2300.000 m3	Current value meter 2	4334.000 m3
Pulse factor of meter 1	0.001 m3/pulse	Pulse factor of meter 2	0.001 m3/pulse
Volume remainder meter 1	0	Volume remainder meter 2	0
Current energy remainder	0	Current volume remainder	0
Current energy tariff 1 remainder	0	Temperature inlet max for tariff 1	18 °C
M-Bus primary address	69	M-Bus baudrate	2400 bit/s
Detailed errors	0	Firmware check code	F7D3
Meter configuration	Heating	Communication module type	M-Bus
Used liquid	Antifrogen SOL	Percentage of liquid	75 %

Historic values					
Description	**Energy [kWh]**	**Energy tariff 1 [kWh]**	**Volume [m3]**	**Meter 1 [m3]**	**Meter 2 [m3]**
Value at set day	4325.0	2.4	432.000	2300.000	4334.000

Figure 19 –installation protocol

We explicitly point out that the programming of a Superstatic 749 with special liquid is not part of the homologation of the heat meter.

Technical support:
For technical support please contact your local Sontex representation or Sontex SA directly.

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