

 ELIS PLZEŇ a. s.		Page 1 of 20
	Handbook to software FLOSET 2.0, FLOSET 2.1	

Handbook to software

FLOSET 2.0

FLOSET 2.1

The Floset 2.1 application is designed to run in operating systems Windows Vista, 7, 8 and 8.1 (32/64 bit versions). This version is functionally identical as Floset version 2.0. There is the "Floset 2.1" title in applications header which indicates version currently in use.

Floset – version "distributor" includes all modules.

Floset – version "customer" includes only module – Flowmeter Settings, module – Backup Settings and module – Flowmeter Diagnose.

Content

1. Handbook to software FLOSET 2.0	3
1.1. Help for application of FLOSET 2.0	3
1.1.1. <i>First start of the application</i>	3
1.1.2. <i>How to enter the serial number?</i>	3
1.1.3. <i>How to choose application language?</i>	4
1.1.4. <i>What is group and address?</i>	4
1.1.5. <i>How to connect flowmeter with computer?</i>	4
1.2. Help for application FLOSET 2.0 - module – Flowmeter Settings.....	5
1.2.1. <i>Main features of the module:</i>	5
1.2.2. <i>tab - Output settings</i>	5
1.2.3. <i>tab - Display settings</i>	6
1.2.4. <i>tab – Parameters</i>	6
1.3. Help for application FLOSET 2.0 - module – Flowmeter Calibration	7
1.3.1. <i>Main features of the module:</i>	7
1.3.2. <i>tab - Settings</i>	7
1.3.3. <i>tab – Calibration</i>	10
1.3.4. <i>tab – Calibration of electrical constants</i>	10
1.4. Help for application FLOSET 2.0 - module - Backup Settings	11
1.4.1. <i>Main features of the module:</i>	11
1.4.2. <i>List of all items which are saved</i>	12
1.4.3. <i>Loading saved settings to the flowmeter</i>	15
1.5. Help for application FLOSET 2.0 - module - Reset Counters	16
1.5.1. <i>Main features of the module:</i>	16
1.5.2. <i>Button Reset all counters!</i>	16
1.5.3. <i>Button Save current values to file</i>	16
1.6. Help for application FLOSET 2.0 - module – Flowmeter Diagnose	17
1.6.1. <i>Main features of the module:</i>	17
1.6.2. <i>Repeated Reading</i>	17
1.6.3. <i>Diagnostic test</i>	18

1. Handbook to software FLOSET 2.0

Software FLOSET 2.0 is intended for setting, calibration, storing of Configuration file, zero setting of measured values and diagnostic of flowmeter. You will receive your own serial number along with the software. You will see older modules FLOSET 1.0 in the software when communicating with older flowmeters FLONET.

Attention:

Unsuitable setting of parameters can influence the correct measurement of flow. If you aren't sure, please, make changes of parameters, when the handbook of software is right studied!!!

Recommendation:

We recommend reading the "Configuration file" from flowmeter before making of changes of set parameters and save it to your PC. These parameters you can already return to flowmeter. The name of "Configuration file" sets up from serial number and filename extension ".fln".

1.1. Help for application of FLOSET 2.0

System requirements:

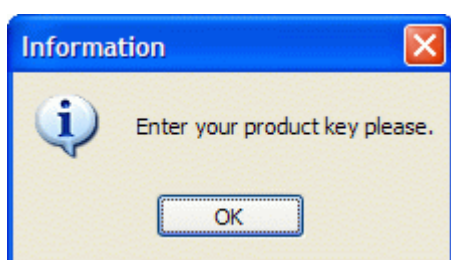
- computer IBM PC compatible (minimum PC486 133 MHz)
- serial USB or COM port
- operating system MS Windows 2000 or higher (32 bit only)
- connected flowmeter FLONET

Main features of the program:

- intended for starting additional installed modules with special functions
- initial connection with the flowmeter
- language selection for whole application

1.1.1. First start of the application

- Right after the start you are asked to enter the serial number, which you should received within the application you bought.
- You must enter the serial number with connected flowmeter!



1.1.2. How to enter the serial number?

- Connect flowmeter to the computer with the serial cable to free USB (COM) port.
- Connect the flowmeter to power supply.
- Start the application.



- Enter communication parameters. Serial port, group and address (COMn, 1 and 1).
- Press Connect.
- If the connection is successfully established, you can enter the serial number now.
- Press OK.



- If the serial number is accepted, you should see buttons with installed modules instead of serial number fields.

1.1.3. How to choose application language?

- Language button is active only when the communication with flowmeter is not established.
- After you press Language button, you should see a list of accessible language mutations.
- Choose your language and press OK.
- Application should immediately switch to the language you choose.

1.1.4. What is group and address?

- Group and address are numbers from 1 to 255 and say, which flowmeter will application communicate with, if there are more flowmeters connected to each other. Then every flowmeter in the net should have different combination of these numbers (for example: 1-1, 1-2, 1-3). Default setting from producer is value 1 for both group and address (if customer does not say other way).

1.1.5. How to connect flowmeter with computer?

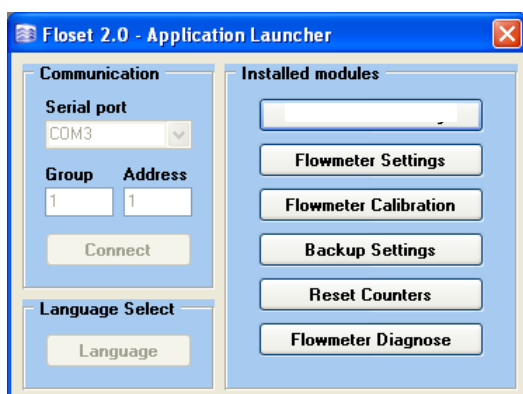
Old revision FN20XX

- You need only standard COM cable if the computer has integrated RS232 serial COM port.
- If the computer has only USB port, you must use any standard USB-COM converter which emulates COM port in operating system.

New revision FN20XX.1

- You need only standard USB2.0 with AB connectors (computer-periphery) if your computer has USB port integrated.

Both revisions can be also connected via RS485 interface if the flowmeter has one. But you will need converter which will translates RS485 to USB or RS232 COM in your computer.



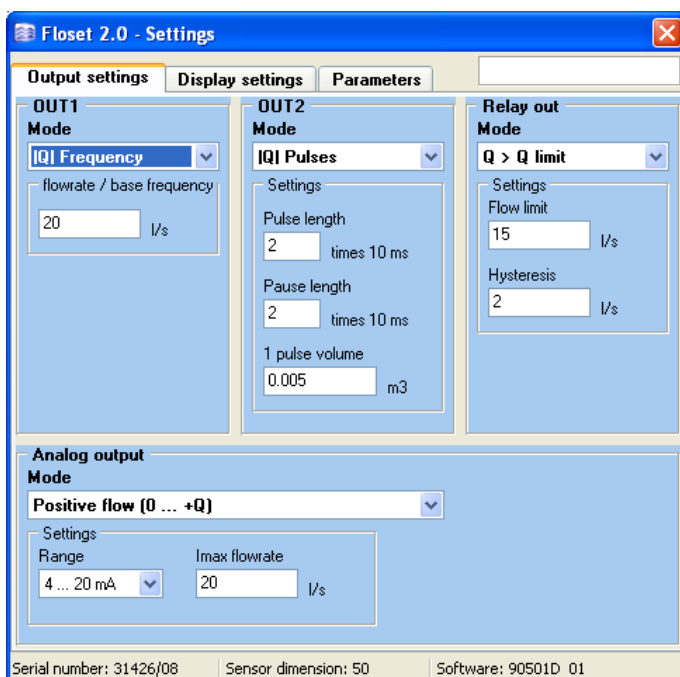
1.2. Help for application FLOSET 2.0 - module – Flowmeter Settings

1.2.1. Main features of the module:

- set all parameters of the flowmeter

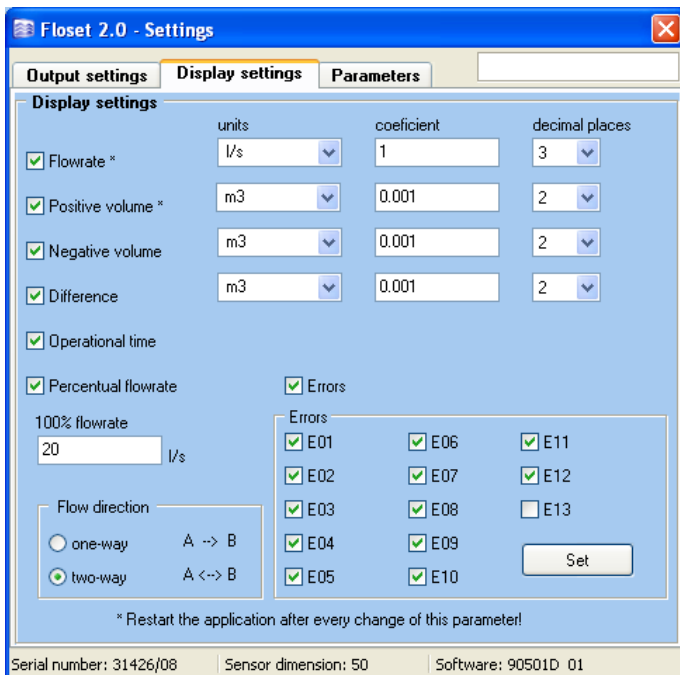
1.2.2. tab - Output settings

- Here you can in detail set every output of the flowmeter. It is OUT1, OUT2, Analog output and Relay out put



1.2.3. tab - Display settings

- You can choose what will be showed on display, in which units and how many decimal places.
- Flowmeter internally uses units l/s and other units are derived using coefficient. For example ml/s has coefficient 1000.
- If you would like to use other units then predefined, you have to rewrite the name of unit and enter your own coefficient.



The screenshot shows the 'Display settings' tab in the 'FLOSET 2.0 - Settings' window. It contains several sections for configuring display parameters:

- Display settings:** A table with columns for 'units', 'coefficient', and 'decimal places'.

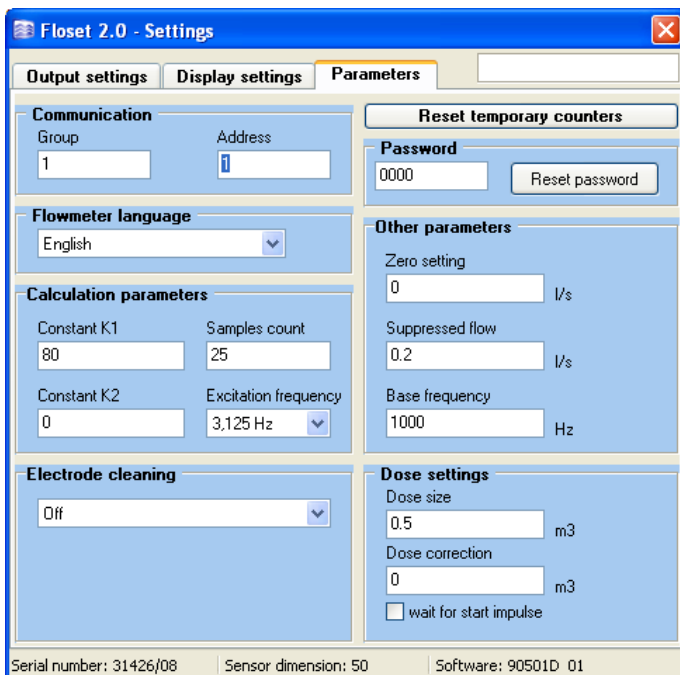
	units	coefficient	decimal places
☒ Flowrate *	l/s	1	3
☒ Positive volume *	m3	0.001	2
☒ Negative volume	m3	0.001	2
☒ Difference	m3	0.001	2
- ☒ Operational time
- ☒ Percentual flowrate: 100% flowrate is set to 20 l/s.
- ☒ Errors: A grid of checkboxes for errors E01 through E13. E01-E10 are checked, E11 and E12 are checked, and E13 is unchecked. A 'Set' button is present.
- Flow direction:** Radio buttons for 'one-way' (A → B) and 'two-way' (A ↔ B). 'two-way' is selected.

A note at the bottom states: '* Restart the application after every change of this parameter!'

At the bottom of the window, status information is displayed: Serial number: 31426/08, Sensor dimension: 50, Software: 90501D 01.

1.2.4. tab – Parameters

- Here you can change other parameters of the flowmeter including possibility to reset the password for entrance to service menu and reset the temporary counters.

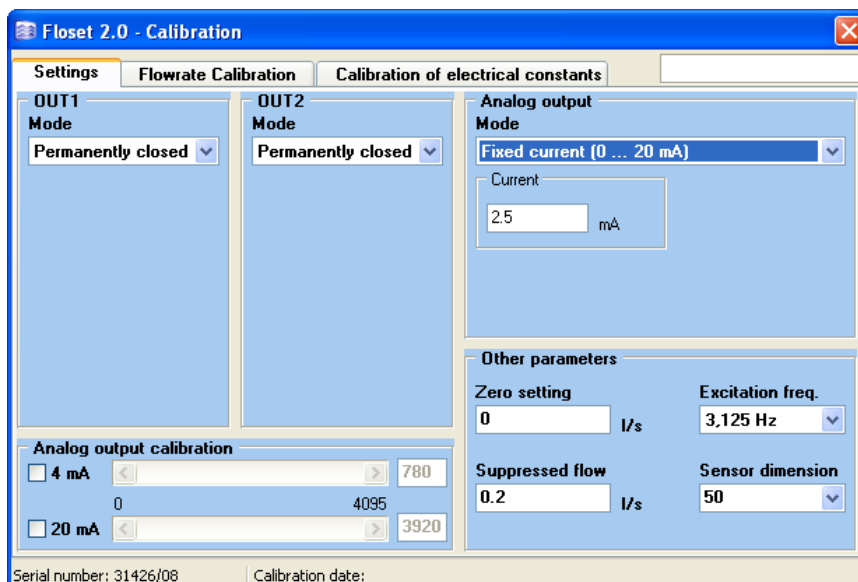


The screenshot shows the 'Parameters' tab in the 'FLOSET 2.0 - Settings' window. It contains several sections for configuring flowmeter parameters:

- Communication:** Fields for 'Group' (set to 1) and 'Address' (set to 1).
- Flowmeter language:** A dropdown menu set to 'English'.
- Calculation parameters:** Fields for 'Constant K1' (80), 'Samples count' (25), 'Constant K2' (0), and 'Excitation frequency' (3.125 Hz).
- Electrode cleaning:** A dropdown menu set to 'Off'.
- Reset temporary counters:** A button to reset temporary counters.
- Password:** A field showing '0000' and a 'Reset password' button.
- Other parameters:** Fields for 'Zero setting' (0 l/s), 'Suppressed flow' (0.2 l/s), and 'Base frequency' (1000 Hz).
- Dose settings:** Fields for 'Dose size' (0.5 m3) and 'Dose correction' (0 m3), with a checkbox for 'wait for start impulse' which is unchecked.

At the bottom of the window, status information is displayed: Serial number: 31426/08, Sensor dimension: 50, Software: 90501D 01.

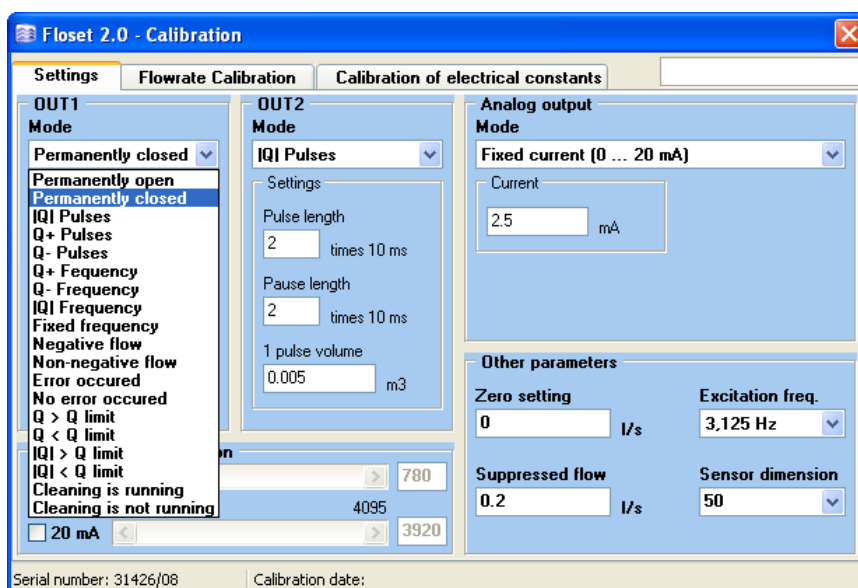
1.3. Help for application FLOSET 2.0 - module – Flowmeter Calibration



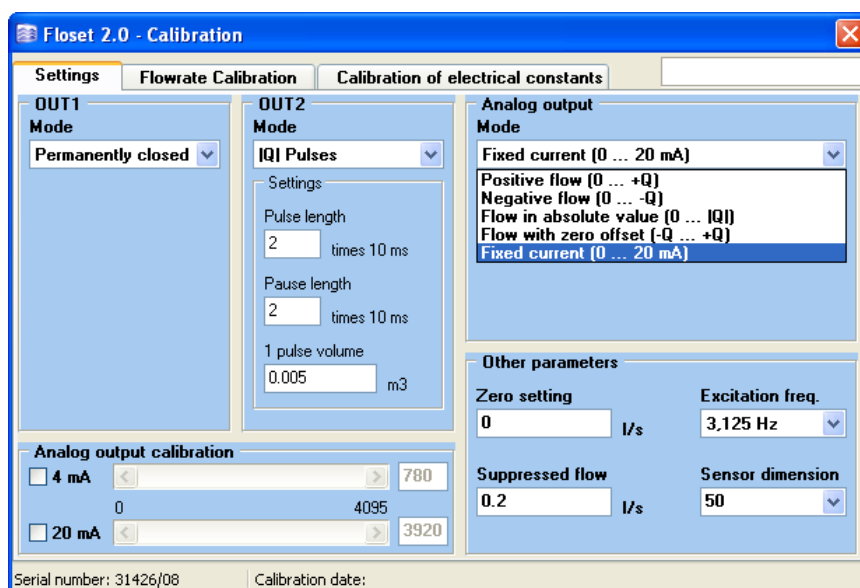
1.3.1. Main features of the module:

- setting of all outputs needed for calibration
- calibration of analog out put
- up to 10 points calibration
- possibility of show average flow rate during calibration

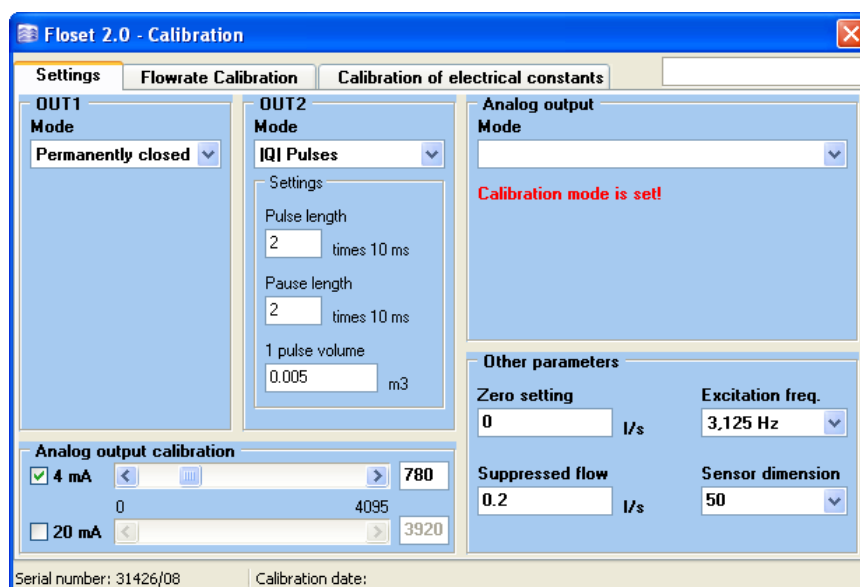
1.3.2. tab - Settings



- Set modes of OUT1, OUT2 and analog outputs.



- If you calibrate analog output, the previous setting of the output will be lost.



- Set other needed parameters. After you choose Sensor dimension, constants K1 and K2 will be automatically overwritten by default values for this dimension.

Floset 2.0 - Calibration

Settings | **Flowrate Calibration** | Calibration of electrical constants

OUT1
Mode
Permanently closed

OUT2
Mode
IQI Pulses

Settings

Pulse length
2 times 10 ms

Pause length
2 times 10 ms

1 pulse volume
0.005 m3

Analog output
Mode
Flow in absolute value (0 ... IQI)

Settings

Range
4 ... 20 mA

I_{max} flowrate
20 l/s

Analog output calibration

☐ 4 mA 0 4095 780

☐ 20 mA 0 3920

Other parameters

Zero setting
0 l/s

Excitation freq.
3,125 Hz
6,250 Hz
3,125 Hz
1,000 Hz
0,500 Hz

Suppressed flow
0.2 l/s

Serial number: 31426/08 Calibration date:

Floset 2.0 - Calibration

Settings | **Flowrate Calibration** | Calibration of electrical constants

OUT1
Mode
Permanently closed

OUT2
Mode
IQI Pulses

Settings

Pulse length
2 times 10 ms

Pause length
2 times 10 ms

1 pulse volume
0.005 m3

Analog output
Mode
Flow in absolute value (0 ... IQI)

Settings

Range
4 ... 20 mA

I_{max} flowrate
20 l/s

Analog output calibration

☐ 4 mA 0 4095 780

☐ 20 mA 0 3920

Other parameters

Zero setting
0 l/s

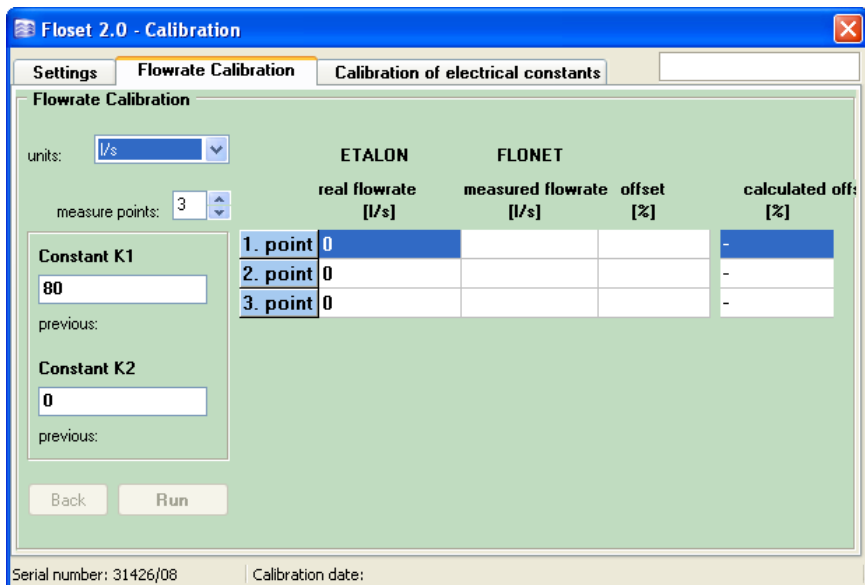
Excitation freq.
3,125 Hz

Suppressed flow
0.2 l/s

Sensor dimension
10
15
20
25
50

Serial number: 31426/08 Calibration date:

1.3.3. tab – Calibration

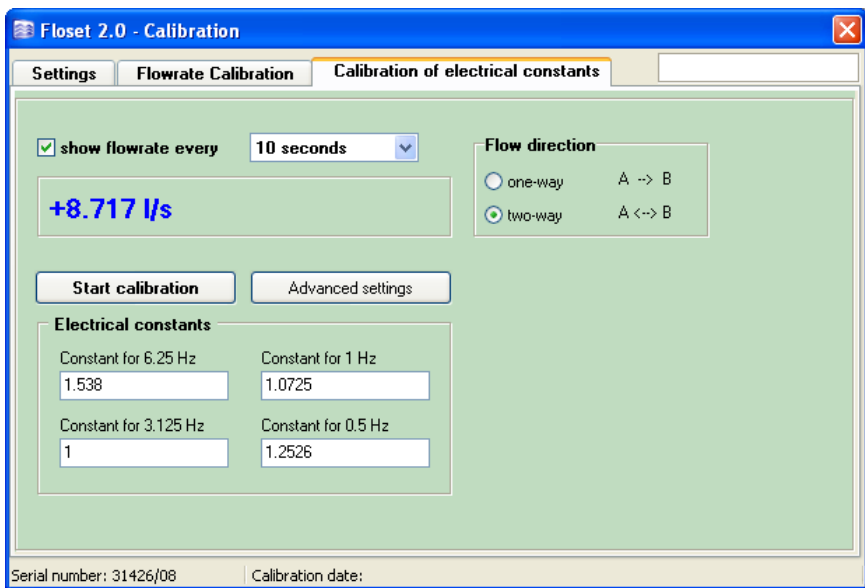


The screenshot shows the 'Flowrate Calibration' tab in the 'Floset 2.0 - Calibration' window. The 'units' dropdown is set to 'l/s' and 'measure points' is set to 3. On the left, 'Constant K1' is 80 and 'Constant K2' is 0. The main table has columns: 'real flowrate [l/s]', 'measured flowrate [l/s]', 'offset [%]', and 'calculated off: [%]'. It contains three rows for '1. point', '2. point', and '3. point', all with a value of 0 in the 'real flowrate' column. The 'offset' and 'calculated off' columns are empty. At the bottom, there are 'Back' and 'Run' buttons. The status bar shows 'Serial number: 31426/08' and 'Calibration date:'.

- Choose units which will be used during calibration.
- Choose measure points from 3 to 10.
- Fill in table of flow rates after you finish measuring. You can fill either offset or measured flow rate. The second item will always be automatically calculated.
- Press Run.
- Column Calculated offset shows new theoretical offsets from real flow rates.
- If the calibration was not successful you can press Back, write the previous constants to the flowmeter and repeat measuring.

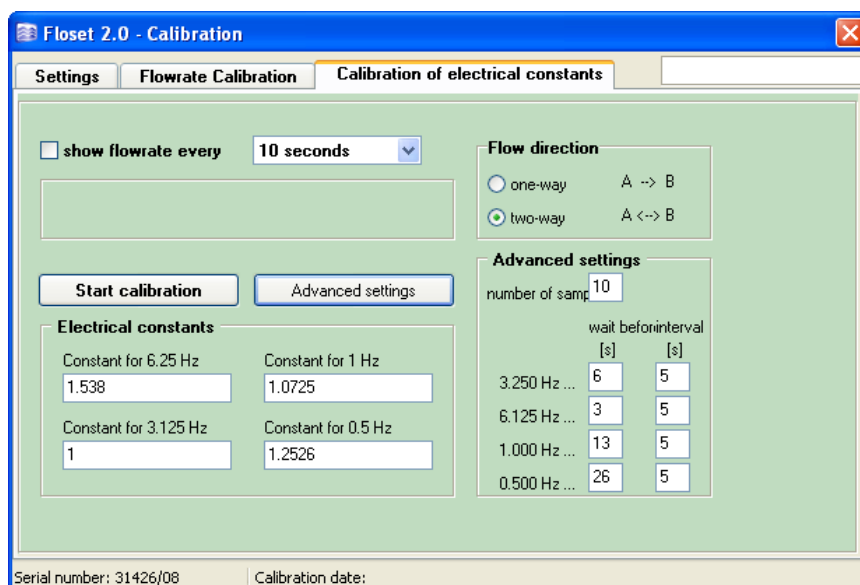
1.3.4. tab – Calibration of electrical constants

- If the flowmeter has no display installed it may be useful to watch average flow rate during calibration process.

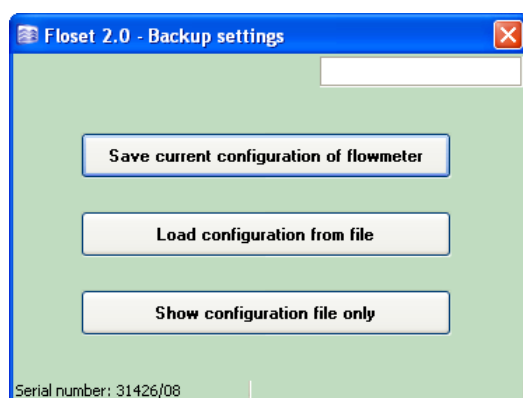


The screenshot shows the 'Calibration of electrical constants' tab in the 'Floset 2.0 - Calibration' window. The 'show flowrate every' checkbox is checked, set to '10 seconds', and the current flow rate is displayed as '+8.717 l/s'. The 'Flow direction' section has 'one-way' selected (A → B). Below are 'Start calibration' and 'Advanced settings' buttons. The 'Electrical constants' section contains four input fields: 'Constant for 6.25 Hz' (1.538), 'Constant for 1 Hz' (1.0725), 'Constant for 3.125 Hz' (1), and 'Constant for 0.5 Hz' (1.2526). The status bar shows 'Serial number: 31426/08' and 'Calibration date:'.

- Calibration of electrical constant is important for measuring the same flow rate at different excitation frequencies.



1.4. Help for application FLOSET 2.0 - module - Backup Settings

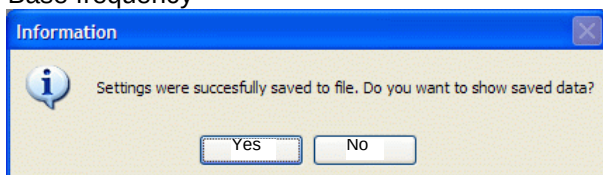


1.4.1. Main features of the module:

- save current state of all settings and counters of the flowmeter to single file
- load saved state back to the flowmeter
- show all items which are saved/loaded

1.4.2. List of all items which are saved

- Identification
- Serial number
- Software
- Production date
- Calibration date
- Sensor number
- Sensor dimension
- Address
- Group
- Language
- Password
- Constant K1
- Constant K2
- Samples count
- Excitation frequency
- Constant 4mA
- Constant 20mA
- Error - visible
- Operational time - value, visible
- Temporary time - value, visible
- Percentual flow rate - visible, 100% flow rate
- Flow rate - visible, coefficient, unit, decimal places
- Total positive volume - value, visible, coefficient, unit, decimal places
- Total negative volume - value, visible, coefficient, unit, decimal places
- Total difference - value, visible, coefficient, unit, decimal places
- Temporary positive volume - value, visible, coefficient, unit, decimal places
- Temporary negative volume - value, visible, coefficient, unit, decimal places
- Temporary difference - value, visible, coefficient, unit, decimal places
- Analog output - type, mode, I_{max} flow rate, fixed current
- OUT1 - mode, 1kHz flow rate, fixed frequency, flow limit, pulse length, pause length, 1 pulse volume, hysteresis
- OUT2 - mode, 1kHz flow rate, fixed frequency, flow limit, pulse length, pause length, 1 pulse volume, hysteresis
- Relay - mode, flow limit, 1 pulse volume, hysteresis
- Electrode cleaning - mode, time
- Zero setting
- Suppressed flow
- Dose - dose size, dose correction, dosing mode switch on
- Flow direction
- Activation / Deactivation of errors E1 - E13
- Electrical constants for 0.5 Hz, 1 Hz, 3.125 Hz, 6.25 Hz
- Base frequency



- These items are saved in file in special format *.fln and are readable only in this application.



C:\Documents and Settings\weinfurt\Dokumenty\31426-08.fln

Identification	Elis 3
Production date	1. 4.2009
Serial number	31426/08
Software	90501D 01
Sensor number	31427/08
Sensor dimension	50
Password	0000
Calibration date	
Address	1
Group	1
Constant K1	80
Constant K2	0
Samples count	25
Excitation frequency	3.125 Hz
Constant 4mA	780
Constant 20mA	3920
Language	English
Operational time	22h 33m 8s
Operational time - visible	yes
Temporary time	22h 38m 2s
Temporary time - visible	yes
Error - visible	yes
Percentual flowrate - visible	yes
Percentual flowrate - 100% [l/s]	20

C:\Documents and Settings\weinfurt\Dokumenty\31426-08.fln

Percentual flowrate - 100% [l/s]	20
Flowrate - visible	yes
Flowrate - coefficient	1
Flowrate - unit	l/s
Flowrate - decimal places	3
Total positive volume [litre]	103489.658903
Total positive volume - visible	yes
Total positive volume - coefficient	0.00100000004749745
Total positive volume - unit	m3
Total positive volume - decimal places	2
Total negative volume [litre]	-3431.442786
Total negative volume - visible	yes
Total negative volume - coefficient	0.00100000004749745
Total negative volume - unit	m3
Total negative volume - decimal places	2
Total difference [litre]	106921.101689
Total difference - visible	yes
Total difference - coefficient	0.00100000004749745
Total difference - unit	m3
Total difference - decimal places	2
Temp. positive volume [litre]	103489.658903
Temp. positive volume - visible	yes
Temp. positive volume - coefficient	0.00100000004749745
Temp. positive volume - unit	m3



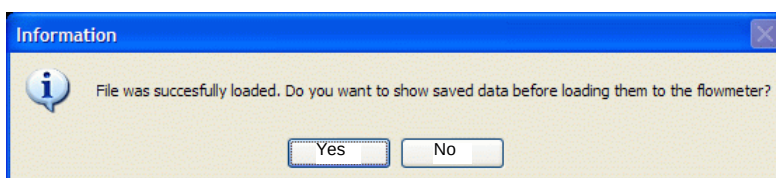
C:\Documents and Settings\weinfurt\Dokumenty\31426-08.fln	
Temp. positive volume - unit	m3
Temp. positive volume - decimal places	2
Temp. negative volume [litre]	-3431.442786
Temp. negative volume - visible	yes
Temp. negative volume - coefficient	0.00100000004749745
Temp. negative volume - unit	m3
Temp. negative volume - decimal places	2
Temp. difference [litre]	106921.101689
Temp. difference - visible	yes
Temp. difference - coefficient	0.00100000004749745
Temp. difference - unit	m3
Temp. difference - decimal places	2
Analog output - type	4..20 mA
Analog output - mode	for positive and negative flow in absolute
Analog output - lmax flowrate [l/s]	20
Analog output - fixed current [mA]	2.5
OUT1 - mode	permanently close
OUT1 - flowrate [l/s] / base frequency	20
OUT1 - fixed frequency [Hz]	10
OUT1 - flow limit [l/s]	250
OUT1 - pulse length [times 10ms]	2
OUT1 - pause length [times 10ms]	2
OUT1 - 1 pulse volume [litre]	100
OUT1 - hysteresis [l/s]	10

C:\Documents and Settings\weinfurt\Dokumenty\31426-08.fln	
OUT1 - hysteresis [l/s]	10
OUT2 - mode	Q Pulses
OUT2 - flowrate [l/s] / base frequency	500
OUT2 - fixed frequency [Hz]	10
OUT2 - flow limit [l/s]	250
OUT2 - pulse length [times 10ms]	2
OUT2 - pause length [times 10ms]	2
OUT2 - 1 pulse volume [litre]	5
OUT2 - hysteresis [l/s]	10
Relay - mode	Q > Q limit
Relay - flow limit [l/s]	15
Relay - 1 pulse volume [litre]	100
Relay - hysteresis [l/s]	2
Electrode cleaning - mode	off
Electrode cleaning - time [days]	255
Zero setting [l/s]	0
Suppressed flow [l/s]	0.200000002980232
Dose size [litre]	500
Dosing mode switch on	no
Dose correction [litre]	0
Flow direction	A <-> B
constant for 6.250 Hz	1.53799998760223
constant for 3.125 Hz	1
constant for 1.000 Hz	1.07249999046326

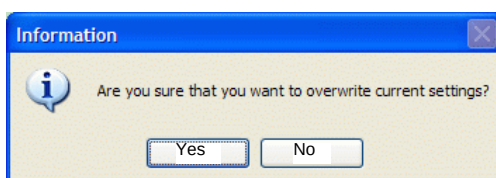
C:\Documents and Settings\weinfurt\Dokumenty\31426-08.fln

Suppressed flow [l/s]	0.200000002980232
Dose size [litre]	500
Dosing mode switch on	no
Dose correction [litre]	0
Flow direction	A <-> B
constant for 6.250 Hz	1.53799998760223
constant for 3.125 Hz	1
constant for 1.000 Hz	1.07249999046326
constant for 0.500 Hz	1.2525999546051
Error E-01	active
Error E-02	active
Error E-03	active
Error E-04	active
Error E-05	active
Error E-06	active
Error E-07	active
Error E-08	active
Error E-09	active
Error E-10	active
Error E-11	active
Error E-12	active
Error E-14	not active
Base frequency [Hz]	1000

1.4.3. Loading saved settings to the flowmeter



- **CAUTION!!!** Loading the saved state will overwrite all counters including total volumes and operational time!



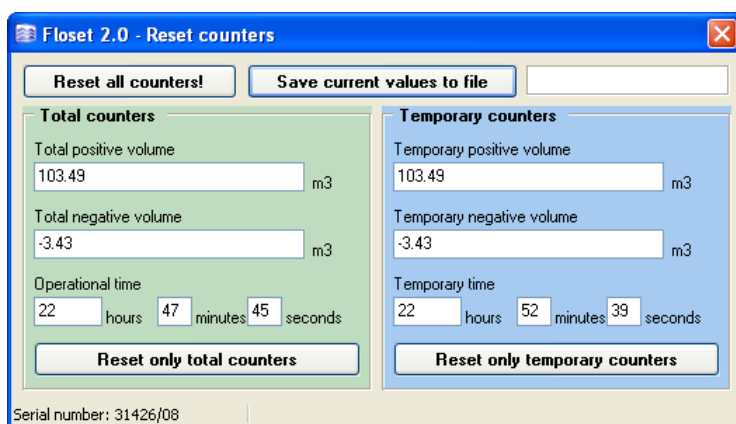
1.5. Help for application FLOSET 2.0 - module - Reset Counters

1.5.1. Main features of the module:

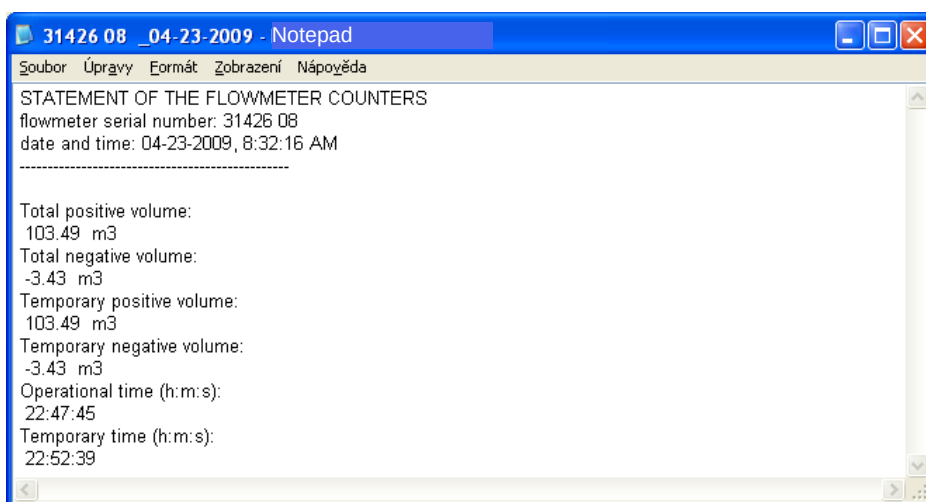
- reset all volumes and times
- save current state of counters to the file

1.5.2. Button Reset all counters!

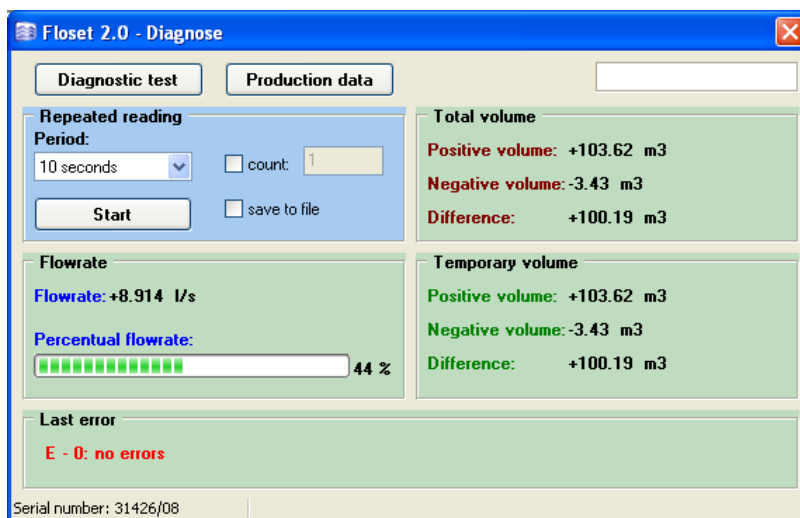
- This button resets all currently displayed values.



1.5.3. Button Save current values to file



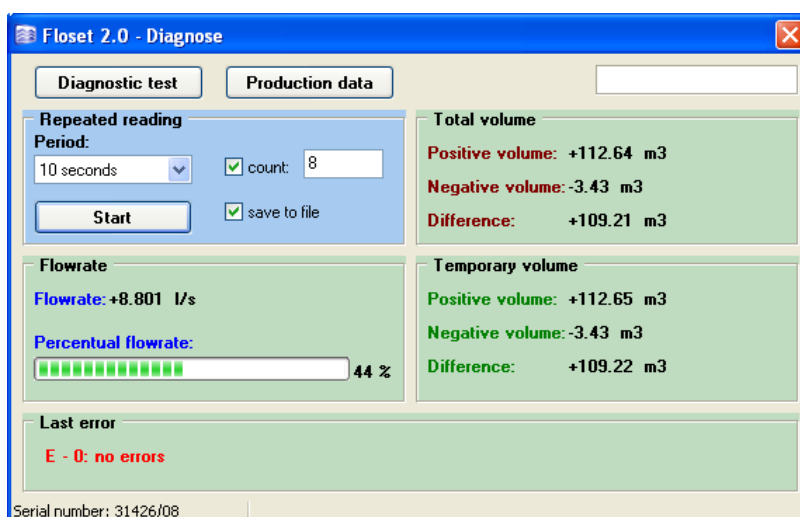
1.6. Help for application FLOSET 2.0 - module – Flowmeter Diagnose



1.6.1. Main features of the module:

- readings of all flow rates, volumes and errors
- possibility of log repeated readings to file
- show production data of the flowmeter
- diagnostic test and printing the diagnostic protocol

1.6.2. Repeated Reading



- Choose the period of time.
- You can select how many readings you want. Otherwise readings will be infinite.
- You can log readings to the file. Then check the appropriate checkbox and choose the file.

readings_31426-08 - Notepad

Soubor Úpravy Formát Zobrazení Nápověda

Reading starts at: 04-23-2009, 8:50:51 AM

time	flowrate [l/s]	total pozitive volume [m3]	total negative volume [m3]	temporary pozitive volume [m3]	temporary negative volume [m3]
8:50:53 AM	8.7936	112.0298	-3.4314	112.0298	-3.4314
8:51:02 AM	8.8958	112.1097	-3.4314	112.1087	-3.4314
8:51:13 AM	8.8101	112.2071	-3.4314	112.2071	-3.4314
8:51:22 AM	8.7383	112.2867	-3.4314	112.2867	-3.4314
8:51:32 AM	8.8714	112.3746	-3.4314	112.3746	-3.4314
8:51:43 AM	8.9278	112.4731	-3.4314	112.4731	-3.4314
8:51:52 AM	8.8562	112.5527	-3.4314	112.5527	-3.4314

Reading ends at: 04-23-2009, 8:52:02 AM

1.6.3. Diagnostic test

Diagnostic test

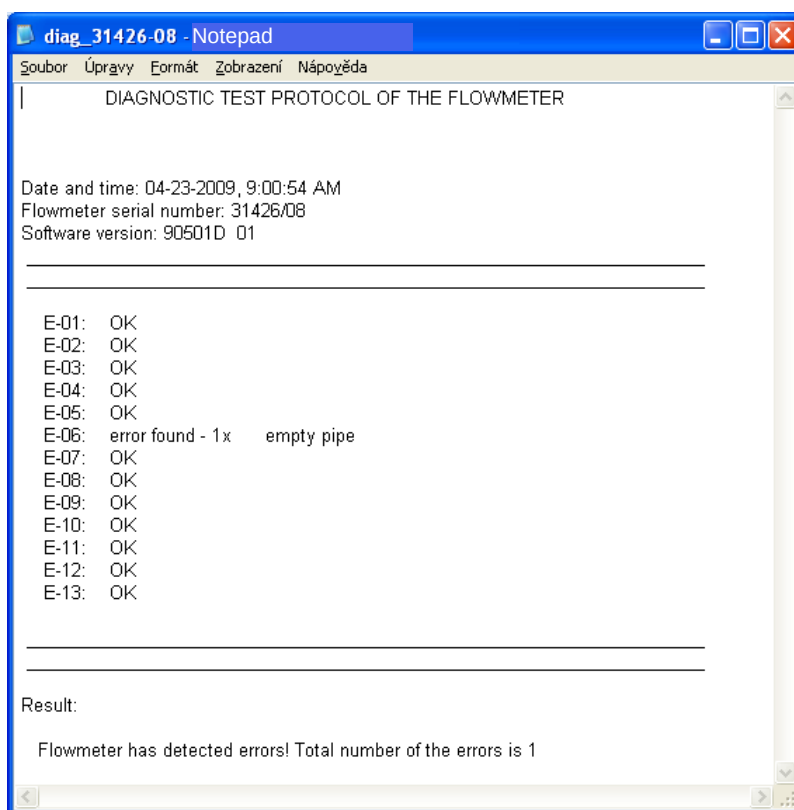
error type	count	
E-1: EEPROM CRC failed	0	✓
E-2: OUT1 pulse overflow	0	✓
E-3: OUT2 pulse overflow	0	✓
E-4: OUT3 pulse overflow	0	✓
E-5: WATCHDOG	0	✓
E-6: empty pipe	1	✗
E-7: sensor disconnected	0	✓
E-8: power supply error +5V	0	✓
E-9: power supply error +24V	0	✓
E-10: power supply error -5V	0	✓
E-11: analog output out of range	0	✓
E-12: serial communication error	0	✓
E-13: incorrect input from sensor	0	✓

Total error count: 1

Clear all errors

Save protocol Print protocol

- After you press Diagnostic test, overall check of the flowmeter will run and then you can see results in the list of possible errors.
- You have a choice to save the protocol to text file or print it immediately.



Production data	
Identification	Elis 3
Serial number	31426/08
Production date	1. 4.2009
Calibration date	
Software version	90501D 01
Sensor number	31427/08
Sensor dimension	50
Operational time	23h 10m 29s

 ELIS PLZEŇ a. s.	Handbook to software FLOSET 2.0, FLOSET 2.1	Page 20 of 20
--	--	----------------------

Manufacturer's address:

ELIS PLZEŇ a. s.
Luční 15, P. O. BOX 126
304 26 Plzeň
CZECH REPUBLIC
Phone: +420 377 517 711
Fax: +420 377 517 722
E-mail: sales@elis.cz
<http://www.elis.cz>

Issue No. 2