pAdvisor - Quick Guide
- Tool for SATRON pressure and dp Smart/Hart transmitters

1. Software features

Features:

- **Configuration**
  Via this window transmitter's configuration can be uploaded from the transmitter, edited and downloaded back to the transmitter. Configuration can also be saved to a file and reopened in pAdvisor when needed and printed with PC's printer.

- **Trim and Calibration**
  Via these windows dp/pressure transmitter can be trimmed and calibrated.

- **Recorder**
  Via this window process pressure and temperature values can be measured, monitored on screen and saved to a file for later analysis.

- **Diagnostic**
  Via this window transmitter's output current and output current loop can be tested. HART communication information and all alarm/error messages can be read from transmitter.

With pAdvisor you will always have:

- **All Special features for Satron Smart transmitters**
  You have full access to all Satron Smart transmitter's special definitions and functions (User Function definitions for pressure/output response, VDU transmitter's settings, trim and process values monitoring, transmitter status information ...).

- **Free software upgrades**
  The latest version of the Satron pAdvisor software can be downloaded from www.satron.com (free of charge).

SATRON **pAdvisor** software (for Windows XP / Vista / 7 / 8 / 10 / 11)

2. Installation and setup

2.1   Download packed 'pAdvisor_vxxx_InstallFiles.zip' file from Satron web page 'www.satron.com'. Extract this file to your hard drive.

2.2   Locate the extracted 'setup.exe' file on your hard drive.

2.3   To start the setup procedure, run the 'setup.exe' file with adequate user privileges, preferably as an Administrator.

2.4   Follow the on screen instructions.

2.5   Start pAdvisor:
       - select Windows 'Start' → 'Programs' → 'pAdvisor'

When starting pAdvisor software for the first time:

2.6   Check that the supply voltage (24VDC) and HART modem are connected to the transmitter.

2.7   When pAdvisor software is running click 'Settings / Asetukset'-button in the 'Start Window' and select your HART modem's COM port from the serial port list. Click 'Save and Close' and in the 'Start Window' click 'Start communication!'. When the transmitter answers, this COM port will be set as default port for the HART modem in the future.

2.8   See the connections examples; click 'Program info' → 'View calibration connections' and select Example1, -2, -3 or -4).

If the HART communication is not working with the transmitter make sure the needed drivers for your HART modem are installed correctly. Change the HART modem to some other COM port, go to 'Settings / Asetukset'-window again and select this new COM port, click 'Save and Close'-button.
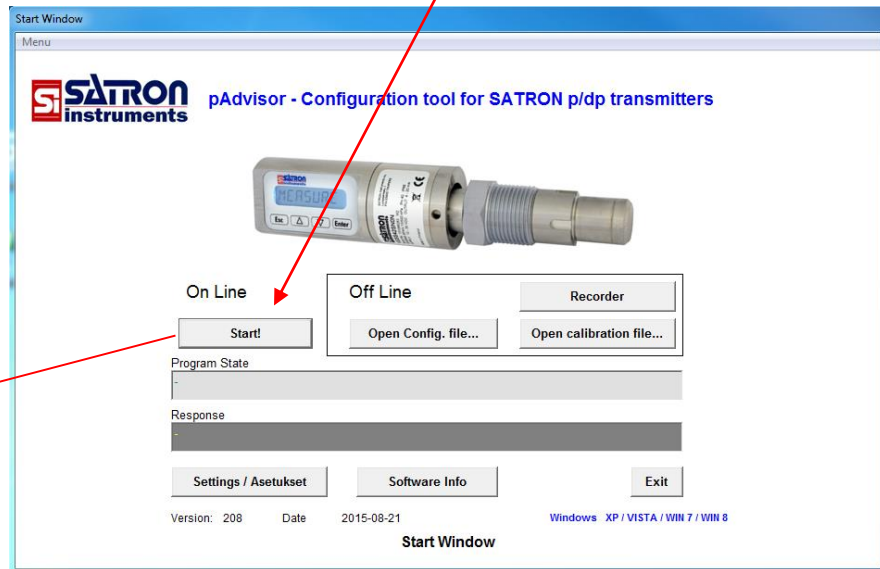Try to establish a new connection in the pAdvisor 'Start Window', click 'Start communication!'.

Note: minimum 250 ohm load resistance must be connected in the mA loop.

3. Basic functions

3.1 Start pAdvisor

Start pAdvisor, browse: 'Start → Programs → pAdvisor'
-when the software is running, click 'Start'-button

-when 'Start'-button is clicked and HART communication is ok,
you will see the next view:

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3.2 Configuration

In the 'Configuration'-window, configuration (range, units, damping, transfer function etc…) can be uploaded from transmitter, edited and downloaded back to the transmitter. After the download is finished, the software reads back the configuration data from the transmitter and the set configuration can be verified.

The configuration can be saved to a file, opened from the file back to pAdvisor software and printed out.

3.3 Trim, Sensor zero and span trim

The pAdvisor software can be used to perform transmitter's pressure and output current trim procedures with the help of suitable external calibration equipment.
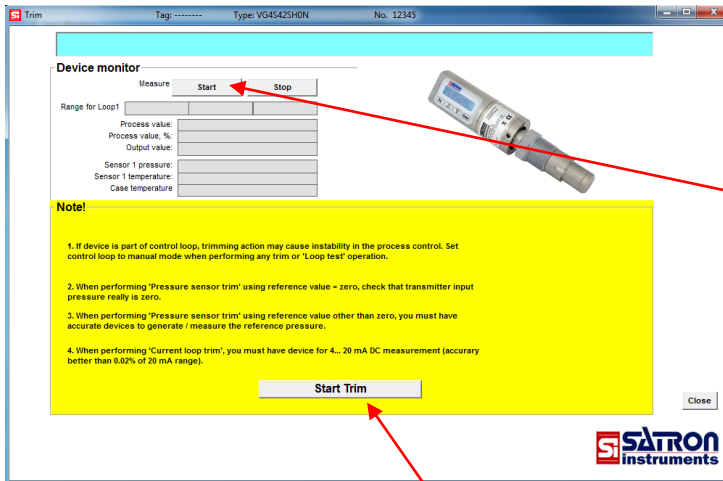
-Click 'Start'-button and check measured values from transmitter
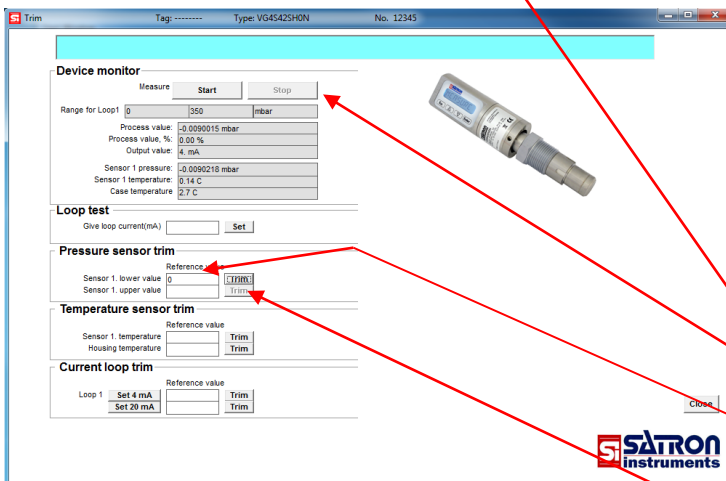
Example1. Sensor zero trim

If true pressure input to transmitter is zero, and you want to set transmitter's measurement value (= process value) to zero, follow these next steps:
- Click 'Start Trim'-button
- If 'Device monitor' is running, stop it, click 'Stop'-button
- Give true pressure (in this case = 0) to 'Reference value'-textbox on the line 'Sensor 1. lower value'
- Click 'Trim'-button
- Click 'Start'-button and check that the transmitter's pressure value is now zero.

4. Special functions

4.1 Recorder

In the 'Recorder'-window the process value, mA value and temperature values can be monitored on screen and saved to a file for later analysis.

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4.2 Calibration

A calibration certificate for Satron p/dp transmitter can be created, printed, saved to a file, and reopened for later analysis in the 'Calibration'-window.

Temperature calibration:

-Click 'Sen.temp.meas.'
1. -Input reference temperature
2. -Click '>>'-button

Pressure calibration:

-Click 'Pressure measurements'
1. -Input reference pressure
2. -Click '>>'-button

Repeat the functions (1… 2)
on the next row (continue until
all values are given into the table / or as many as it is needed)
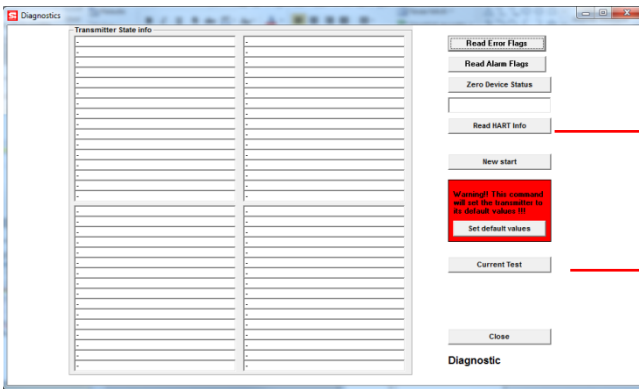
Current loop calibration:

-Click 'mA-output meas..
1. Click 'Set 4 mA' button
2. Give measured reference mA value
3. Click '>>' button at the end of this row

4. Click 'Set 12 mA' button
5. Give measured reference mA value
6. Click '>>' button at the end of this line

7. Click 'Set 20 mA' button
8. Give measured reference mA value
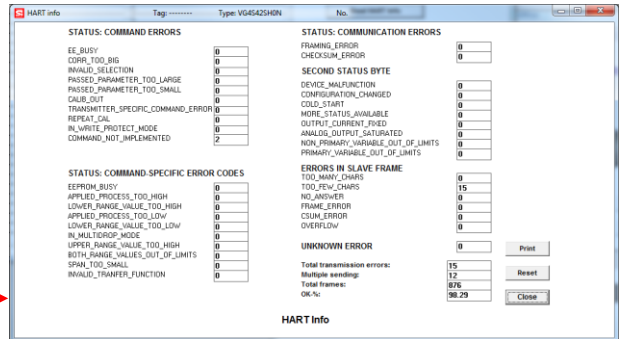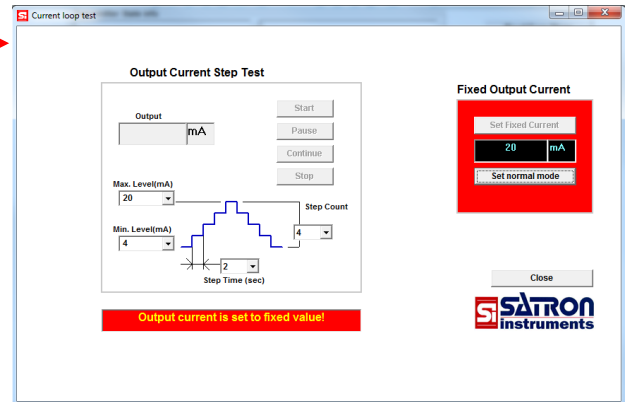9. Click '>>' button at the end of this row

4.3 Diagnostic

HART communication information and all alarm/error messages can be read from the transmitter in the 'Diagnostic'-window. Transmitter's output current can be tested in the 'Current loop test'-window. (Accessed via 'Diagnostic'-window)

4.3.3 'Hart communication status'-window

4.3.2 'Transmitter status'-window
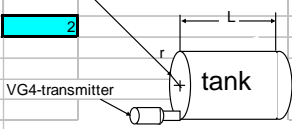

4.3.1 'Current loop test'-window
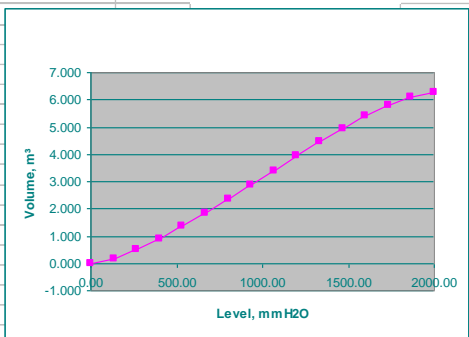
4.4 User Function settings

Example. Set the transmitter display value and output current to represent horizontal cylindrical tank volume with USER function (Access 'User Function', via 'Configuration'-window).
(USER transfer function options are USER/Linear or USER/Spline.)

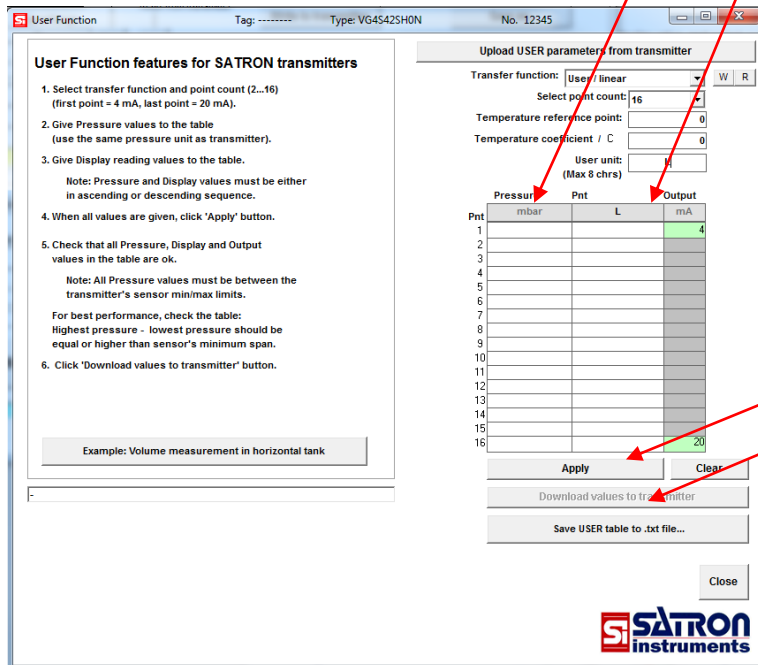Calculate first these values for transmitter display, based on the pressure values.

radius r = 1

lenght L = 2

VG4-transmitter

tank

point	level/m	Pressure mmH2O	Display Volume/m³	Iout mA
1	0.00	0.00	0.000	4.00
2	0.133	133.33	0.180	4.46
3	0.27	266.67	0.498	5.27
4	0.40	400.00	0.895	6.28
5	0.53	533.33	1.345	7.43
6	0.67	666.67	1.833	8.67
7	0.80	800.00	2.347	9.98
8	0.93	933.33	2.875	11.32
9	1.07	1066.67	3.408	12.68
10	1.20	1200.00	3.936	14.02
11	1.33	1333.33	4.450	15.33
12	1.47	1466.67	4.938	16.57
13	1.60	1600.00	5.389	17.72
14	1.73	1733.33	5.785	18.73
15	1.87	1866.67	6.103	19.54
16	2.00	2000.00	6.283	20.00

give these values here

User Function features for SATRON transmitters

1. Select transfer function and point count (2...16) (first point = 4 mA, last point = 20 mA).

2. Give Pressure values to the table (use the same pressure unit as transmitter).

3. Give Display reading values to the table.

   Note: Pressure and Display values must be either in ascending or descending sequence.

4. When all values are given, click 'Apply' button.

5. Check that all Pressure, Display and Output values in the table are ok.

   Note: All Pressure values must be between the transmitter's sensor min/max limits.

   For best performance, check the table:
Highest pressure - lowest pressure should be equal or higher than sensor's minimum span.

6. Click 'Download values to transmitter' button.

Example: Volume measurement in horizontal tank

Click 'Apply' then 'Download values to transmitter'

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