

## pAdvisor - Quick Guide

- Tool for SATRON pressure and dp Smart/Hart transmitters

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## 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/tools/](http://www.satron.com/tools/) (free of charge):

**Satron pAdvisor software** (for Windows XP / Vista / 7 / 8 / 10 )**2. Installation and setup**

- 2.1 Insert 'Satron Tools CD' disk into CD-ROM drive.  
(Or download packed 'pAdvisor.zip' file from Satron web page '[www.satron.com/tools.html](http://www.satron.com/tools.html)'. Extract this file to your hard disc)
- 2.2 From Windows Explorer, locate 'setup.exe' file on your CD drive or your hard disk.
- 2.3 Start the setup procedure, double click 'setup.exe' file.
- 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 and HART modem are connected to the transmitter
- 2.7 When pAdvisor is running click 'Start'-button in the 'Start'-window. pAdvisor looks for the connected transmitter from all PC's COM ports.  
If a transmitter answers, this COM port will be set as default port for HART modem. The next time pAdvisor starts HART communication it uses this COM port as the default port.
- 2.8 See the connections examples; click 'Program info' → 'View calibration connections' and select Example1, -2, -3 or 4).

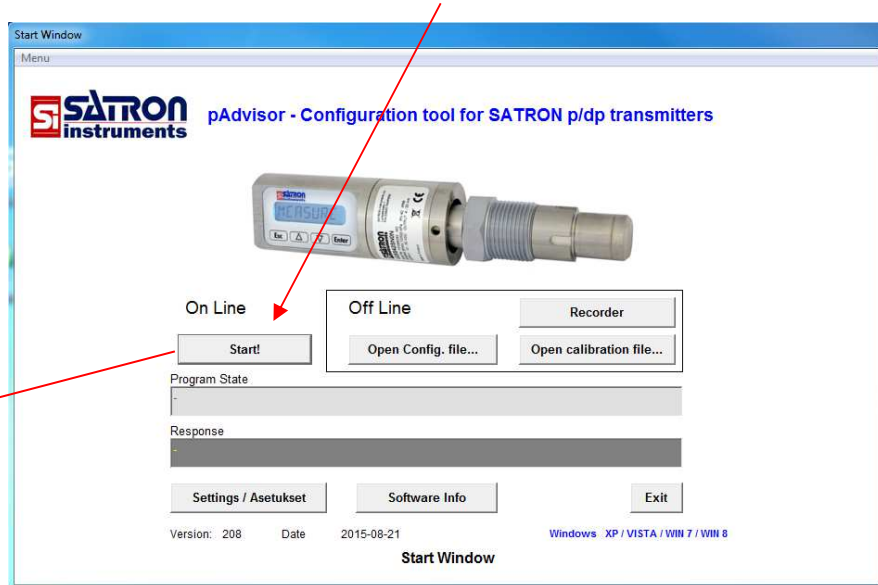
If the HART communication is not working with the transmitter, change the HART modem to some other COM port, go to 'Settings'-window and select this new COM port, click 'Close'-button. Try to establish a new connection in the pAdvisor 'Start'-window, click 'Start'.

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

### 3. Basic functions

#### 3.1 Start pAdvisor

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



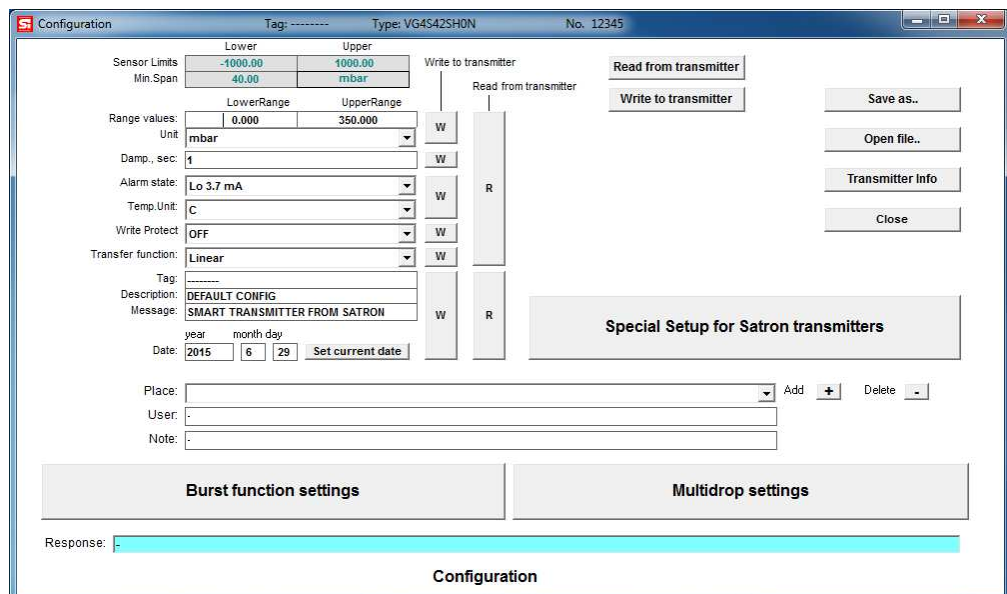
-when 'Start'-button is clicked and HART-communication is ok,  
you will see the next window:



### 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 with PC's printer.



Configuration window for Tag: -----, Type: VG4S42SH0N, No. 12345.

Sensor Limits: Lower: -1000.00, Upper: 1000.00, Min.Span: 40.00, mbar.

Range values: LowerRange: 0.000, UpperRange: 350.000, Unit: mbar.

Damp., sec: 1.

Alarm state: Lo 3.7 mA.

Temp. Unit: C.

Write Protect: OFF.

Transfer function: Linear.

Tag: -----

Description: DEFAULT CONFIG

Message: SMART TRANSMITTER FROM SATRON

Date: 2015 6 29 Set current date

Place: Add + Delete -

User: -

Note: -

Buttons: Read from transmitter, Write to transmitter, Save as.., Open file.., Transmitter Info, Close.

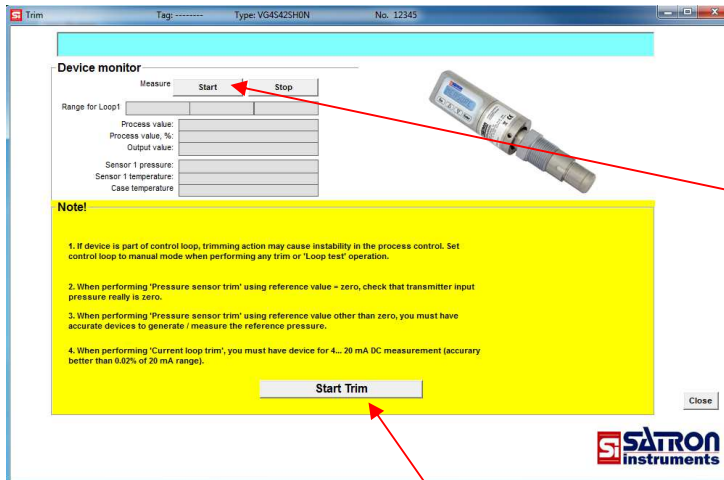
Special Setup for Satron transmitters

Burst function settings, Multidrop settings

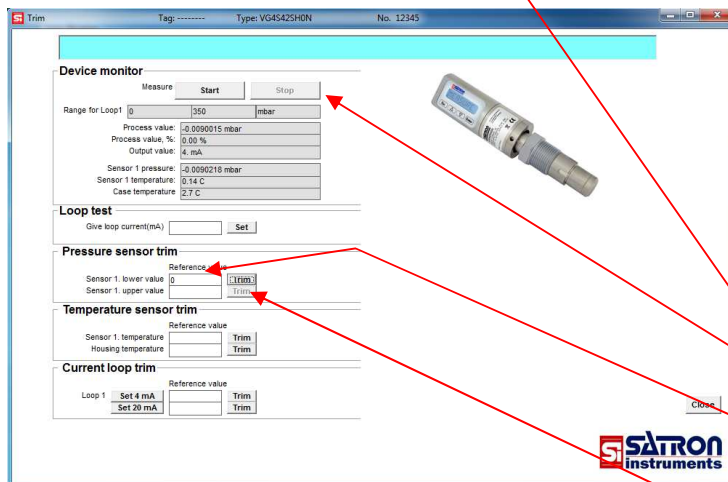
Response: Configuration

### 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

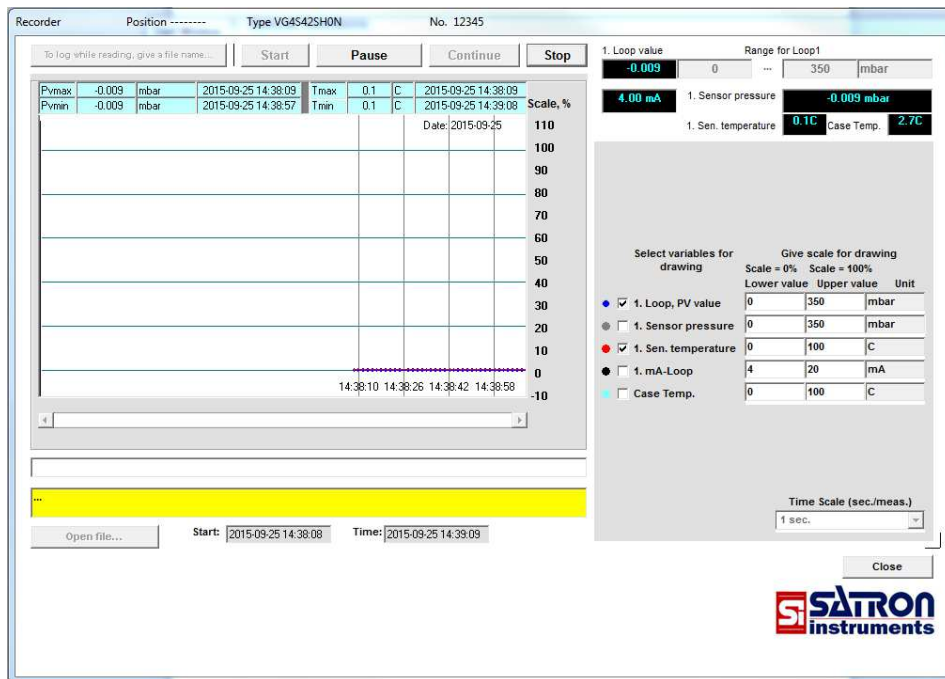
If true pressure input to transmitter is zero, and you want to set transmitter's measurement value (= process value) to zero, follow these next steps:

- 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 pressure value and temperature values can be monitored on screen and saved to a file for later analysis.



The Recorder window displays the following data table:

Pvmax	-0.009	mbar	2015-09-25 14:38:09	Tmax	0.1	C	2015-09-25 14:38:09
Pvmin	-0.009	mbar	2015-09-25 14:38:57	Tmin	0.1	C	2015-09-25 14:38:08
Date: 2015-09-25							

The graph shows a scale from -10 to 110. The x-axis has time markers at 14:38:10, 14:38:26, 14:38:42, and 14:38:58. A horizontal line is plotted at approximately 10 on the scale.

Configuration options on the right include:

- 1. Loop value: -0.009, Range for Loop1: 0 to 350 mbar
- 1. Sensor pressure: 4.00 mA, 1. Sensor pressure: -0.009 mbar
- 1. Sen. temperature: 0.1C, Case Temp.: 2.7C

Select variables for drawing:

Variable	Lower value	Upper value	Unit
<input checked="" type="checkbox"/> 1. Loop, PV value	0	350	mbar
<input type="checkbox"/> 1. Sensor pressure	0	350	mbar
<input checked="" type="checkbox"/> 1. Sen. temperature	0	100	C
<input type="checkbox"/> 1. mA-Loop	4	20	mA
<input type="checkbox"/> Case Temp.	0	100	C

Time Scale (sec./meas.): 1 sec.

## 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)

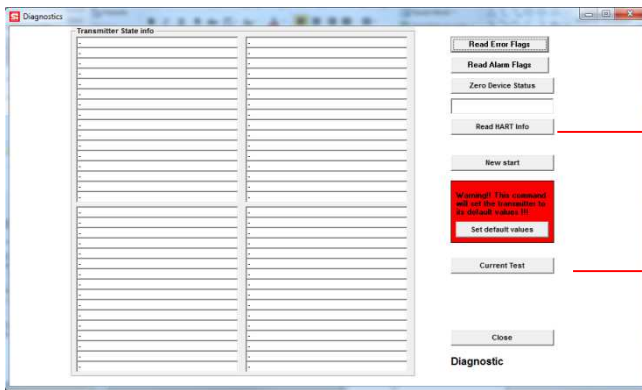
### Current loop calibration:

- 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

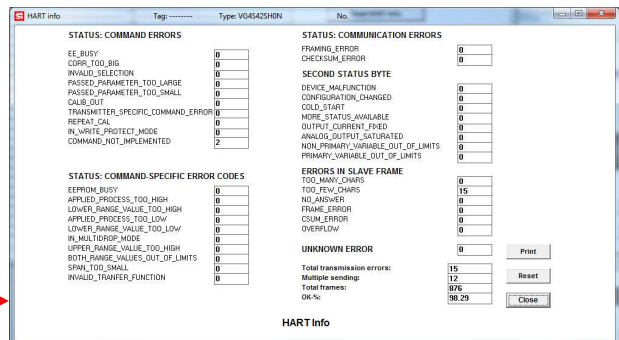


### 4.3 Diagnostic

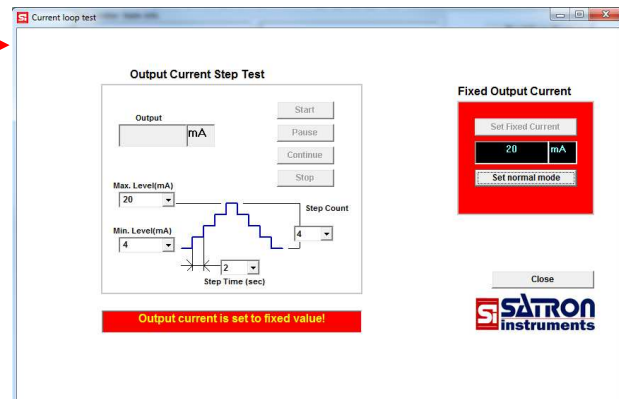
HART communication information and all alarm/error messages can be read from the transmitter in the Diagnostic window. Transmitter's output current can be tested in the Current loop test window. (Accessed via Diagnostic window)



4.3.2 Transmitter status window



4.3.3 Hart communication 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.

point	level/m	Pressure mmH2O	Display Volume/m <sup>3</sup>	lout 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**

- Select transfer function and point count (2...16) (first point = 4 mA, last point = 20 mA).
- Give Pressure values to the table (use the same pressure unit as transmitter).
- Give Display reading values to the table.  
Note: Pressure and Display values must be either in ascending or descending sequence.
- When all values are given, click 'Apply' button.
- 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.
- Click 'Download values to transmitter' button.

Example: Volume measurement in horizontal tank

Upload USER parameters from transmitter

Transfer function: User/linear  
Select point count: 16  
Temperature reference point: 0  
Temperature coefficient / C: 0  
User unit: mA (Max 6 chrs)

Pnt	Pressure mbar	L	Output mA
1			4
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			20
16			

Apply Clear  
Download values to transmitter  
Save USER table to .txt file...  
Close

click 'Apply' then 'Download values to transmitter'



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