Installation and Setting-Up Instructions

Contents:

DOCUMENTS
Technical Specifications: BCs220
Installation and Setting-Up Instructions: BCs220AV

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1. INSTALLATION

1.1 Mounting location

Installation recommendations: Figure 1-1

- transmitters should be installed as a general rule turbulence flow.
- Recommended installation location (1)
- An alternative mounting location (2)

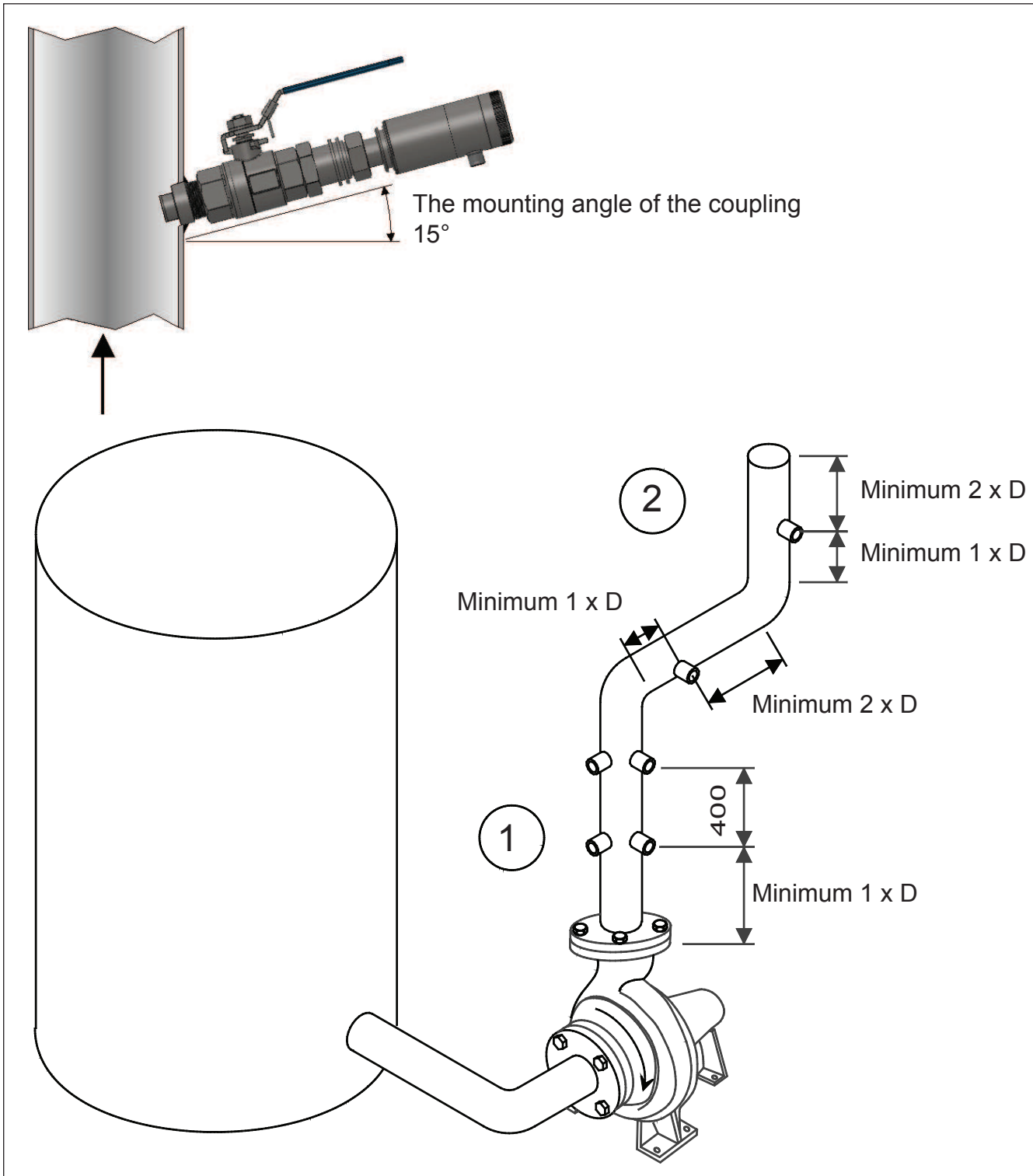
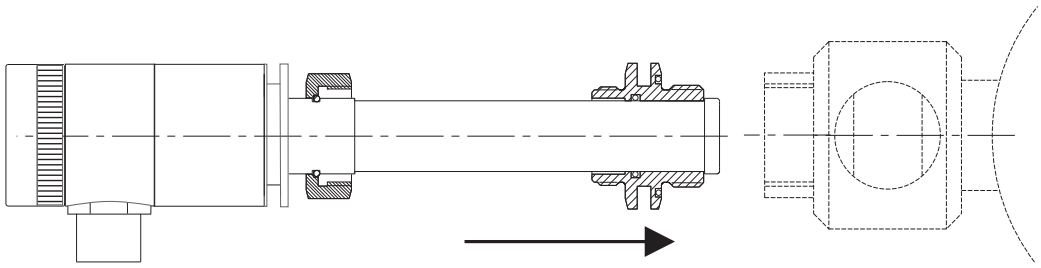
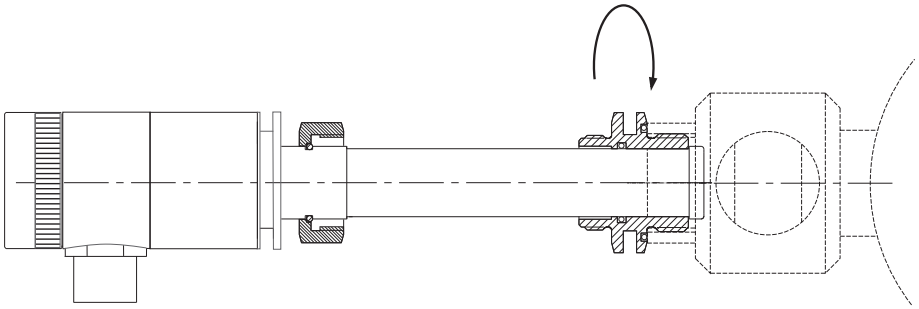


Figure 1-1 Recommended mounting location

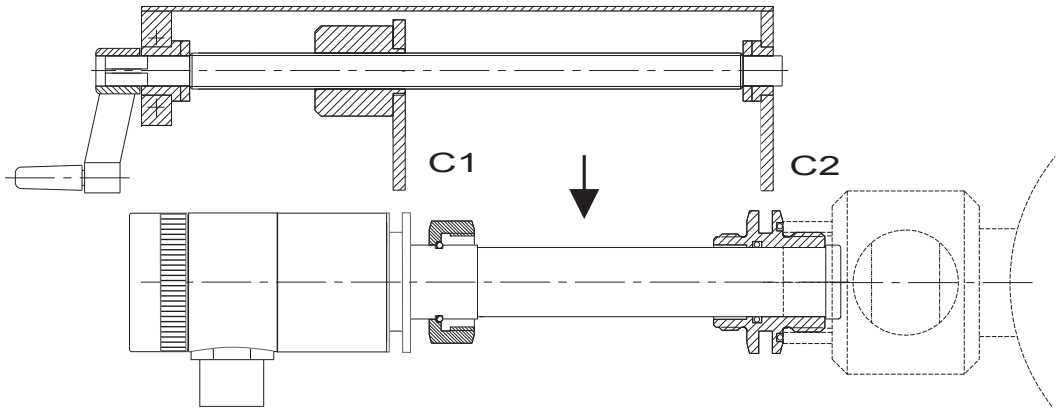
1.2 Installing the transmitter



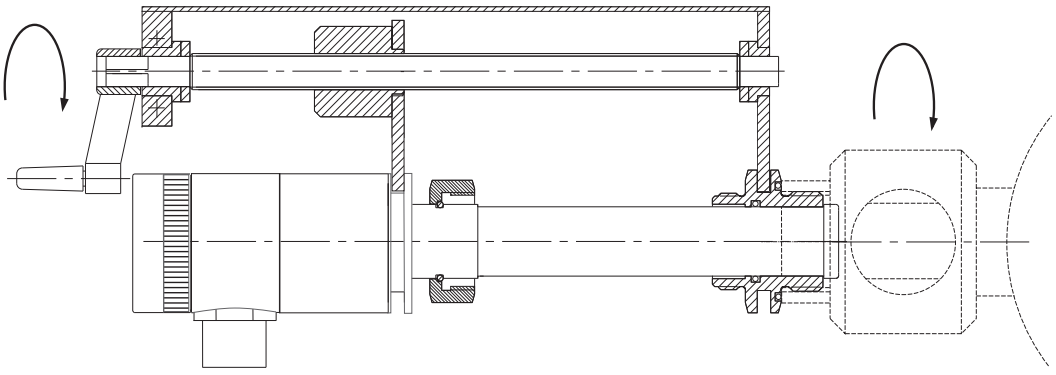
1. Ensure that the installation valve is clean from process media which could damage the transmitter prior to inserting the transmitter into it.



2. Insert the transmitter into the valve and turn to fasten the valve coupler. Tightening torque 40 Nm.

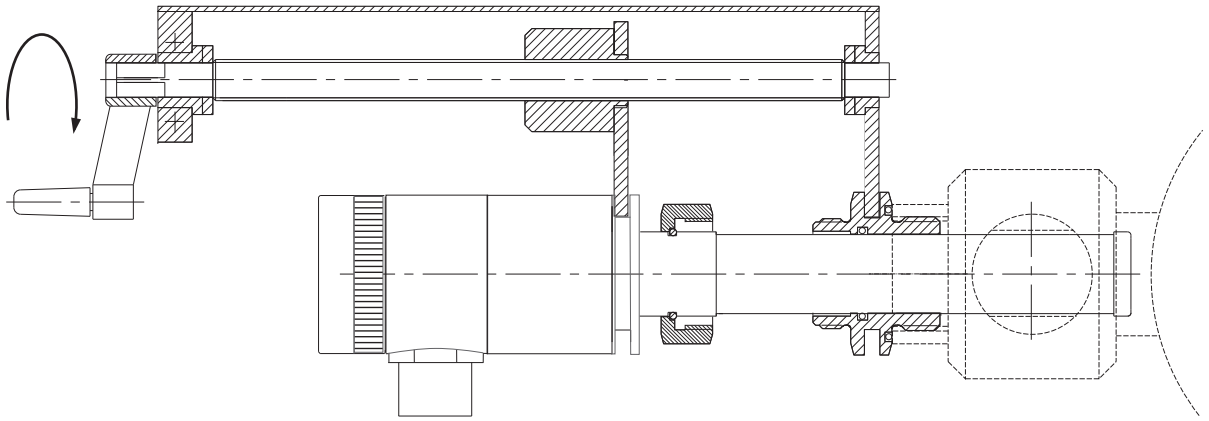


3. Align the installation tool slots (C1 and C2) with the transmitter slots and connect the installtion tool.

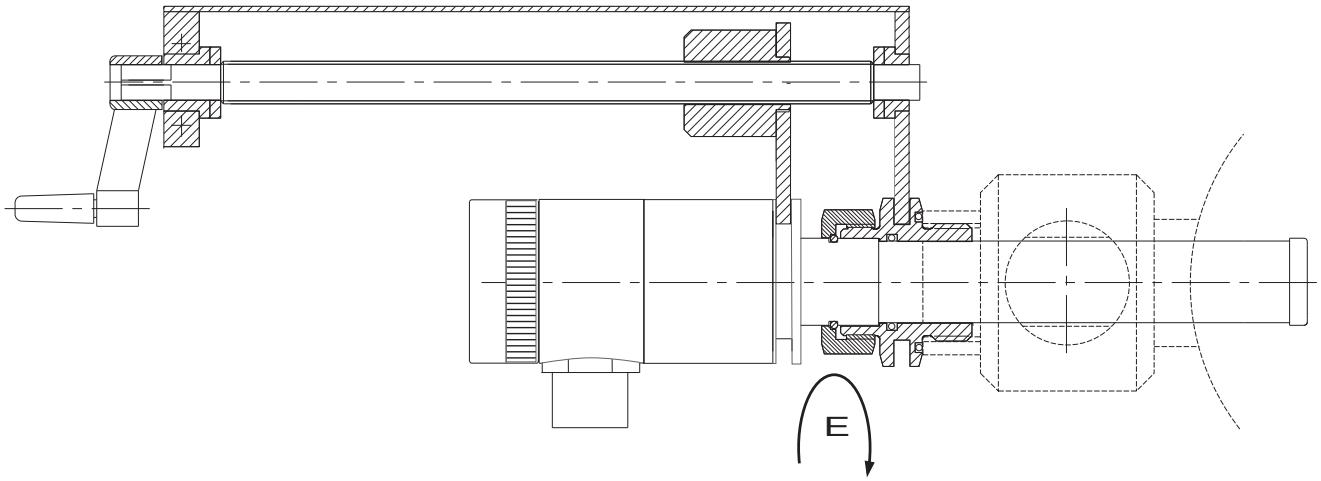


4. Turn the installation ball valve fully open and insert the trasmitter into the process, by turning the installation tool lever clockwise.

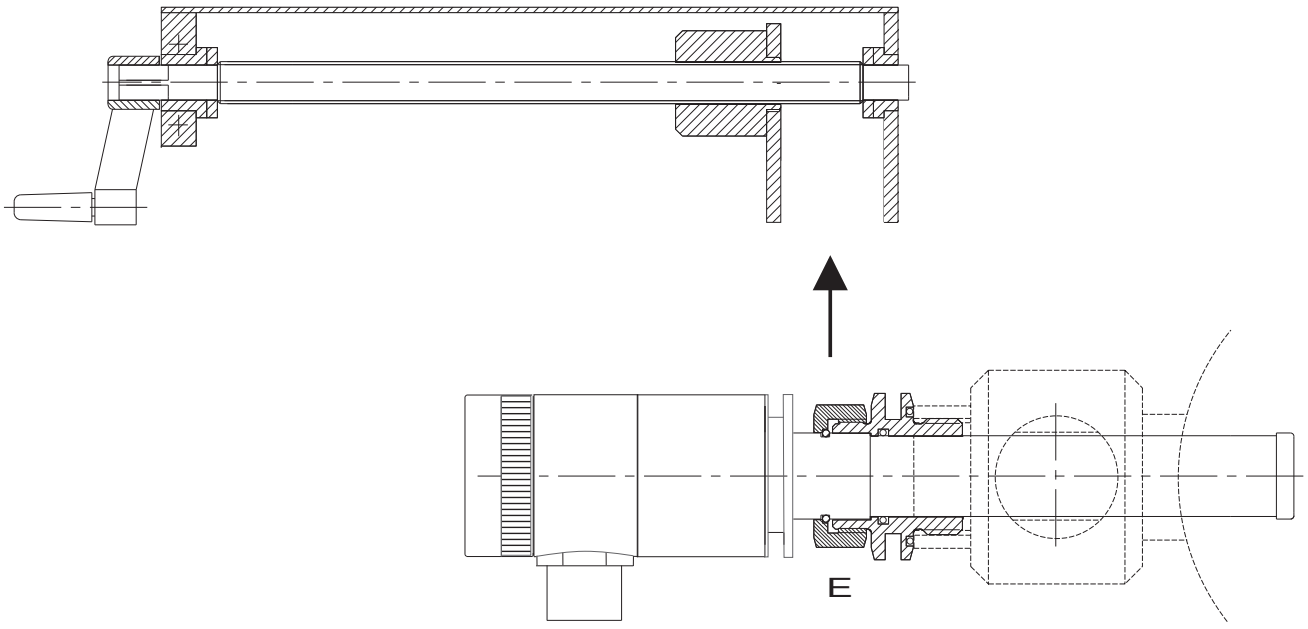
Figure 1-2a Mounting the transmitter on the coupling



5. Turn the installation tool level until the transmitter is fully inserted into the process.



6. Fasten the transmitter in place with the locking nut E, Tightening torque 40Nm.

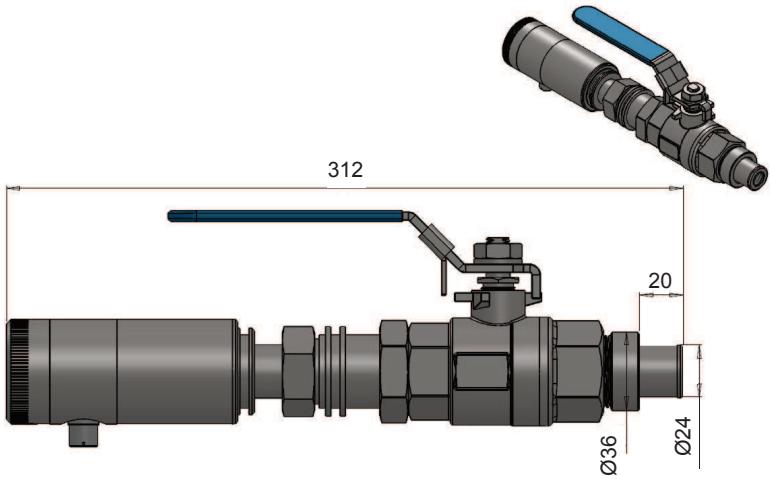


7. Remove the installtion tool.

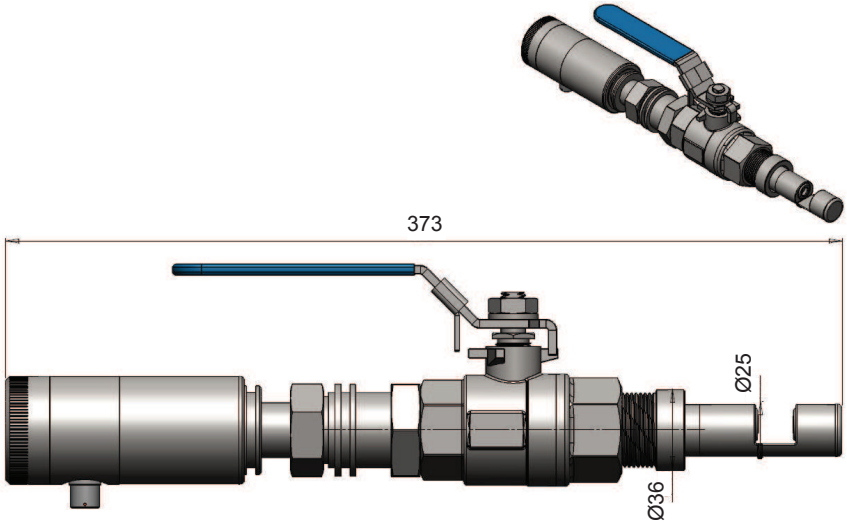
8. To remove the transmitter from the process, reverse the steps shows for inserting the transmitter.

Figure 1-2b Mounting the transmitter on the coupling

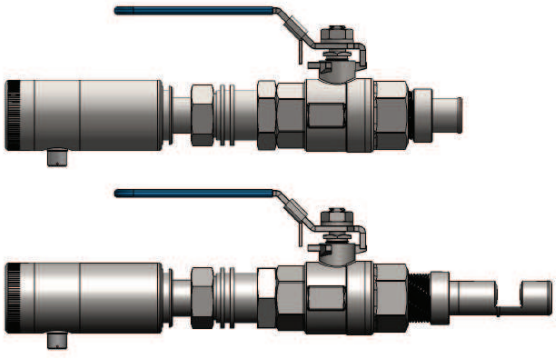
SATRON VC Optical Consistency Transmitter



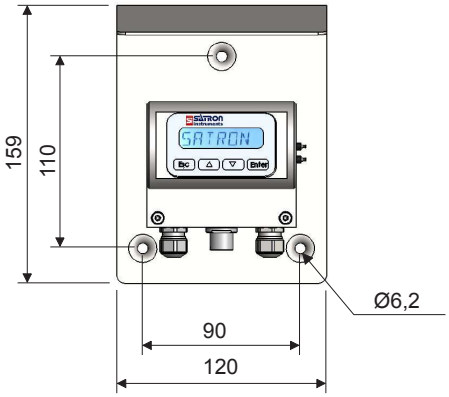
Dimensions Satron VCT

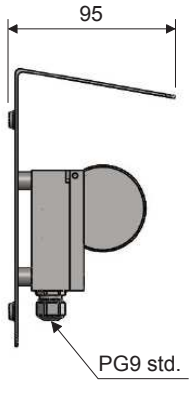


Dimensions Satron VCF



Standard 15 m





Satron VC with L-housing

1.2 Electrical connections

Supply voltage and load of the transmitter according to the Figure 1-10.

We recommend shielded twisted-pair cable as signal cable.

The signal cable should not be installed near high-voltage cables, large motors or frequency converters.

The shield of the cable is grounded at the power supply end or according to the recommendations of the manufacturer of the used control system.

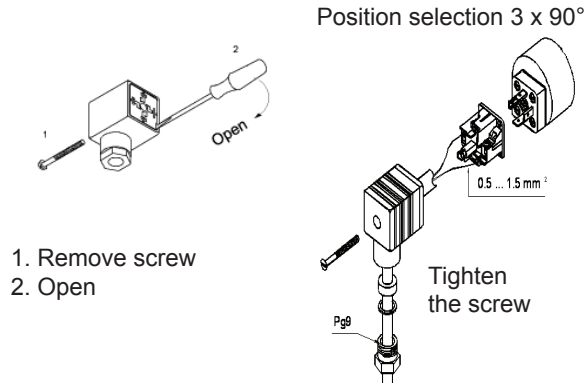
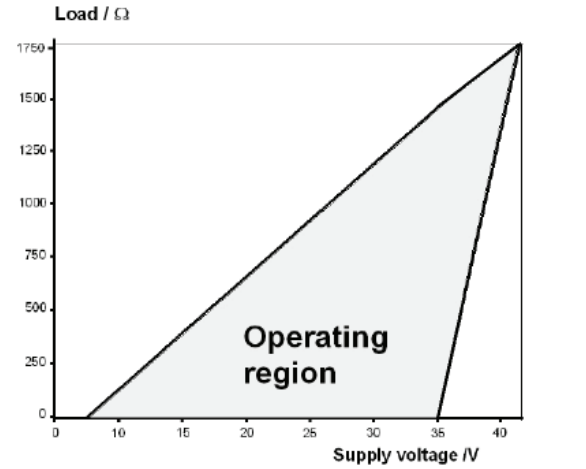


Figure1-9 Removing the PLUG junction box



Min. load using HART® - communication 250 Ω

$$R_{max} = \frac{\text{Supply voltage} - 5\ V}{I_{max}}$$

I_{max} = 20.5 mA using HART®-communication

I_{max} = 23 mA (when the alarm current 22,5 mA is on)

Figure 1-10 Supply voltage and load capacity

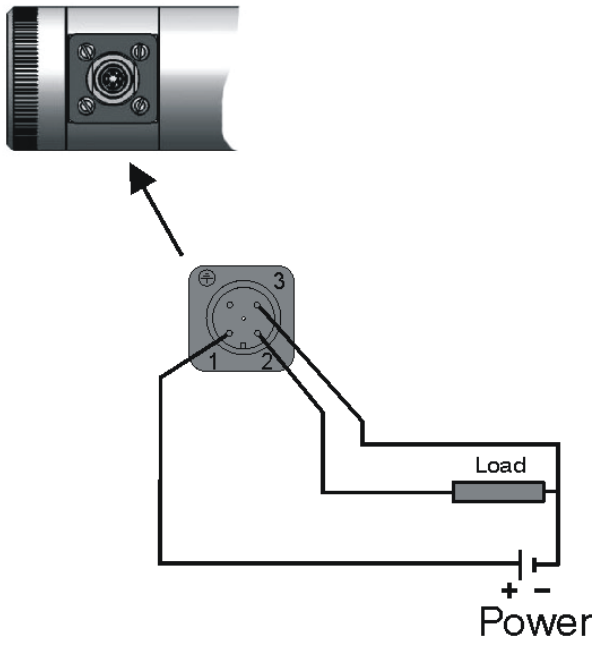


Figure 1-11 Wiring
Housing with M12-connector, code **HT**

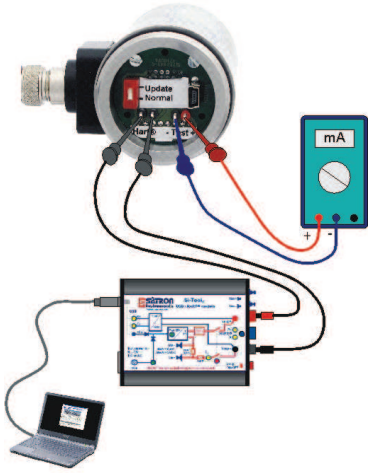


Figure 1-12 Wiring
Housing with PLUG DIN43650- and M12-connector, test connector box, codes **HT** and **HS**

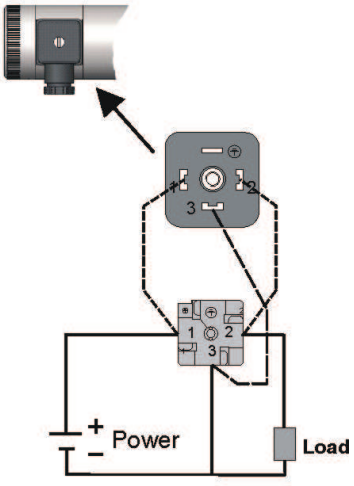
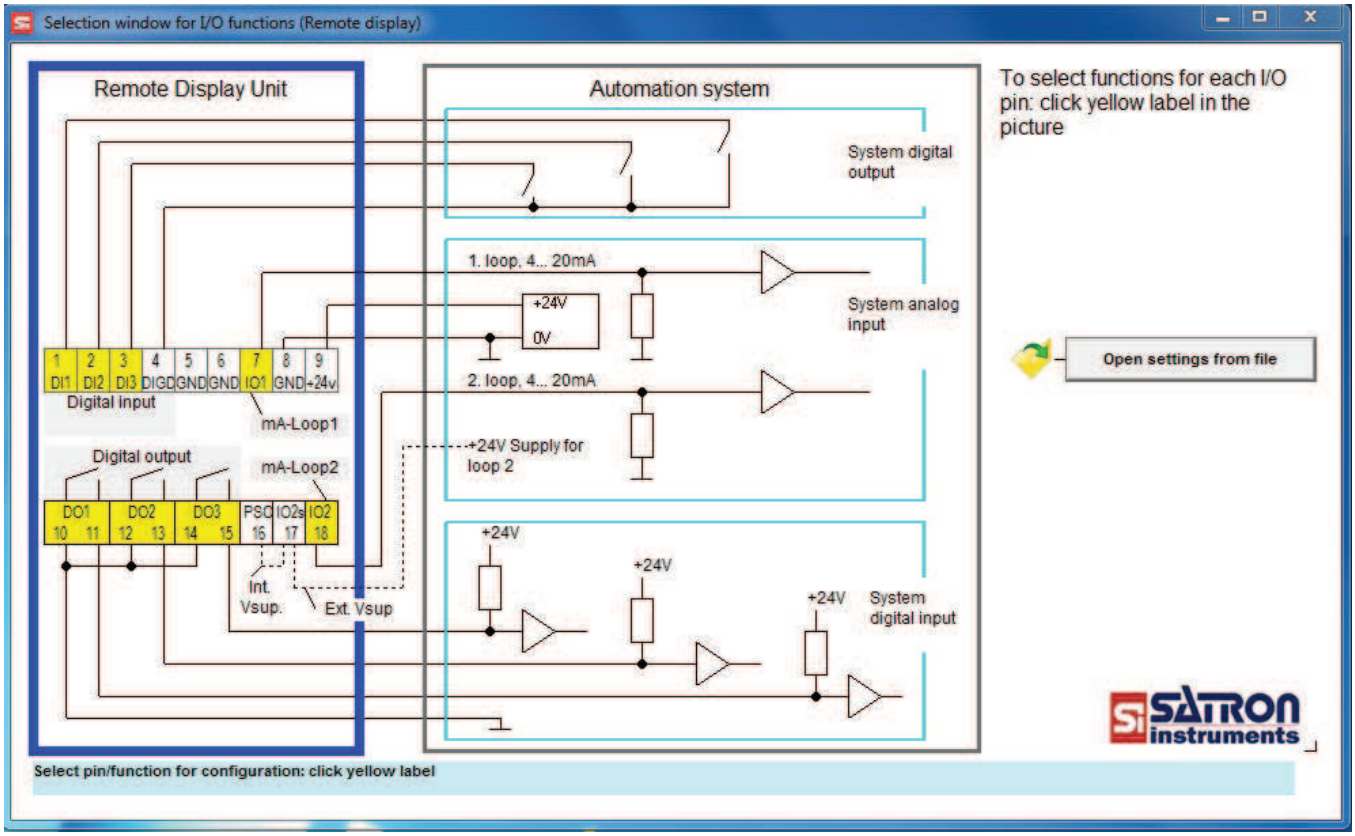


Figure 1-13 Wiring
housing with PLUG DIN 43650-connector, code **HS**



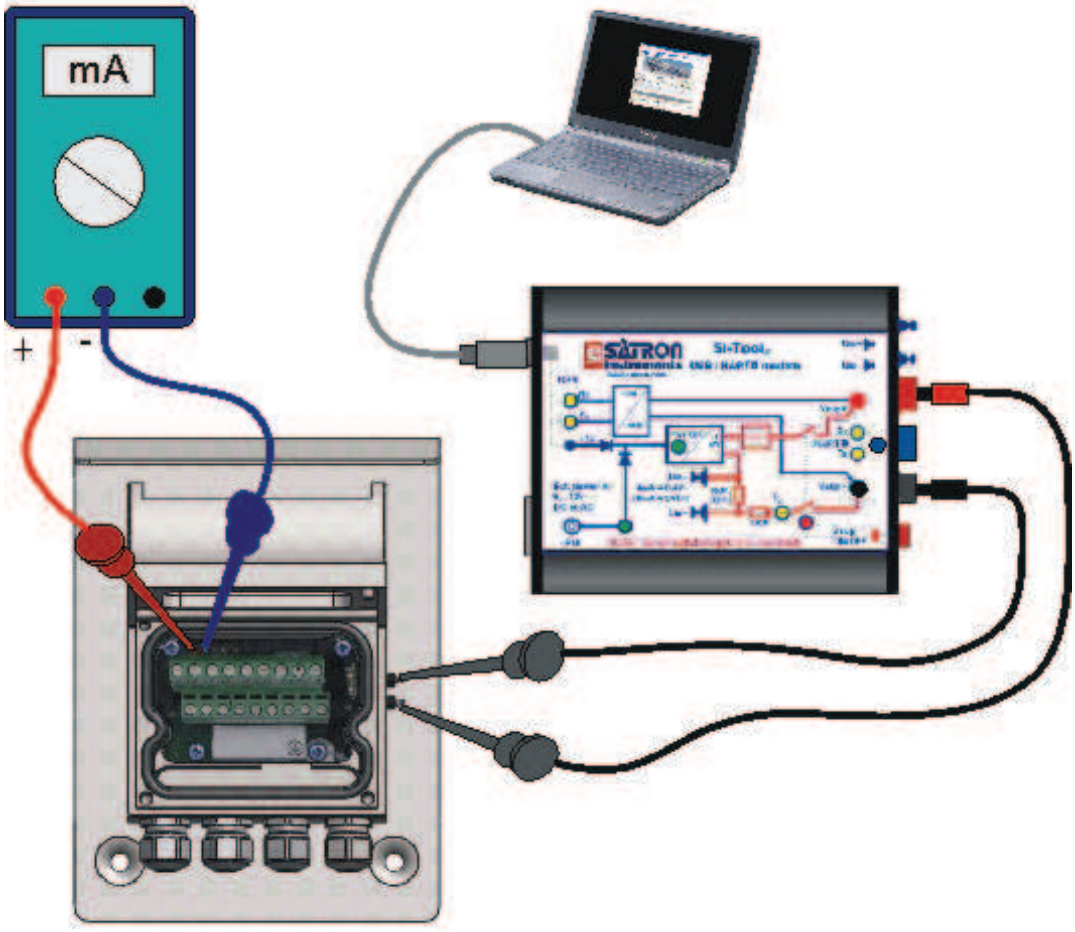


Figure 1-14 Wiring
Remote electronics housing with display, code **L**

2 SETTING-UP

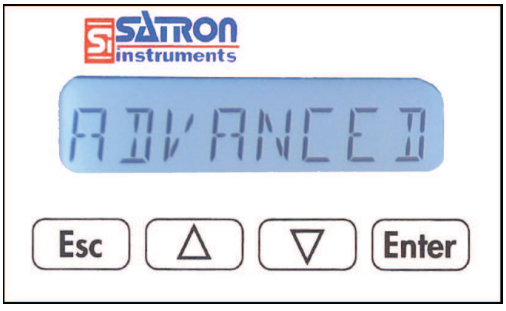
2.1 Setting-up with Satron VoAdvisor Software

When you want to have all the operations of the Smart transmitter, we recommend the use of Satron VoAdvisor Software program. Satron Instruments Inc. will deliver you the program and HART-modem (modem ordered separately).

Figure 2-1 VoAdvisor software

2.2 Setting-up with local switches

The additional instruction of display menus is enclosed to this manual. See chapter 4



Housing with display, code N

Keyboard :

Esc = Press **Esc** move back towards the top of the main menu.

▲ = Use the **UP** arrow key to move up on the current menu level or to increase the selected parameter value.

▼ = Use the **DOWN** arrow key to move down on the current menu level or to decrease the selected parameter value.

Enter = Press **ENTER** to move to a lower level in a menu or to accept a command or parameter valu

Figure 2-2 VC transmitter with display

2.3 Setting-up with remote unit.

The Satron VC transmitter remote unit can be provided with a wall box which is capable of having a 20m cable between the Sensing unit and the Display unit. Inside the Display unit is a terminal where up to 3 binary inputs, 3 relay outputs and 2 analog milliamp loops can be connected. All connections can be used simultaneously.
The signal cable between the Display unit and Sensing unit should not be installed near high-voltage cables, large motors or frequency converters.

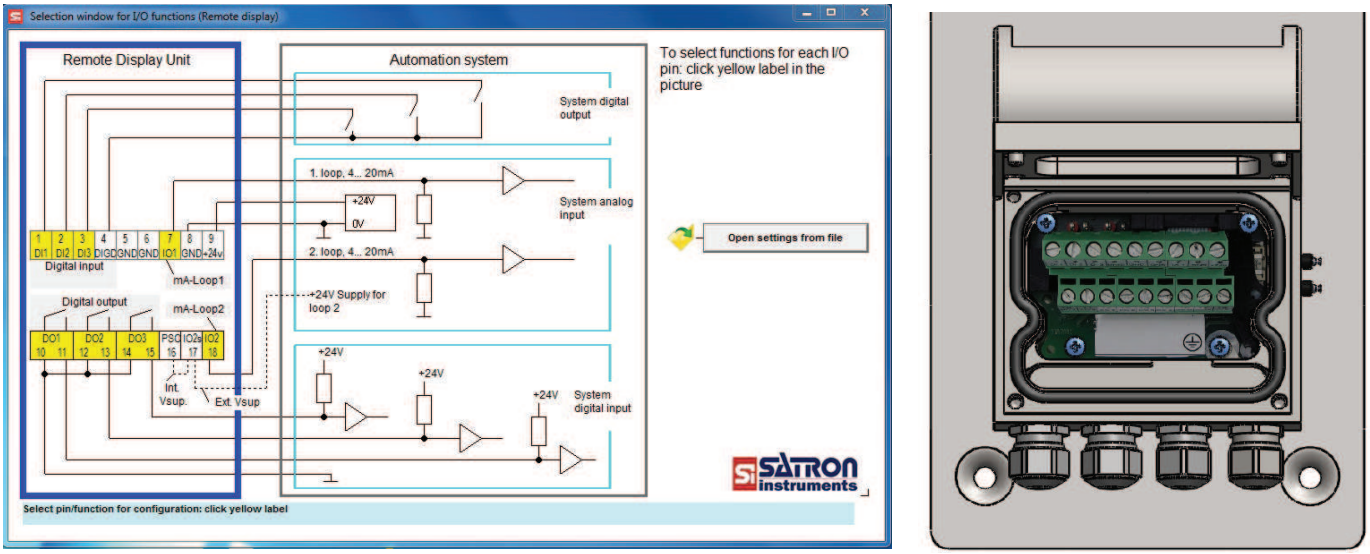


Figure 2 - 3 Remote Connections

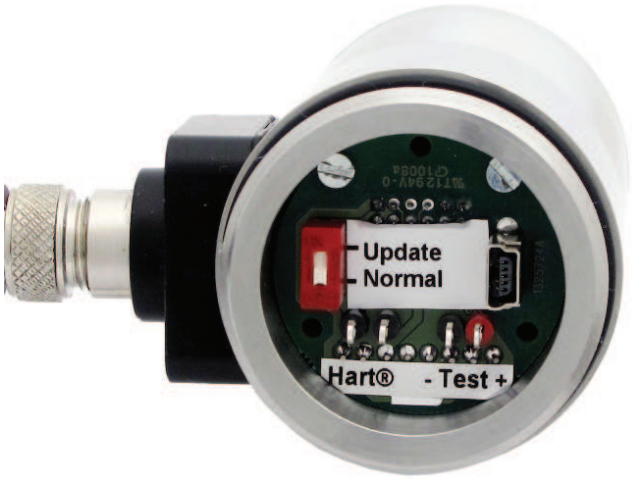
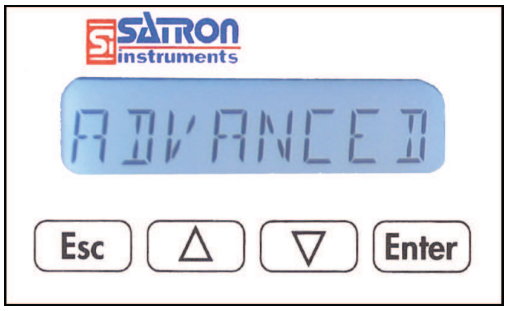


Figure 2 - 4 VC Sensing connections.
Inside the Sensing element is a dipswitch and a USB port. This is only used for updating the firmware.
DO NOT USE THE USB PORT UNLESS THERE NEEDS TO BE A NEW FIRMWARE INSTALLED.

3. USER GUIDE FOR MENUS

The user interface for the series VO analyzers, housing option N, consists of display and operating keys. Among other things, the user interface allows you to set process variables in the desired units on the display and to configure the analyzer e.g. by setting the lower and upper range-values.
In addition, you can perform diagnostic routines and view device information through the user interface.



The 8-character liquid crystal display (LCD) with backlight allows you to display information with letters and numbers.

OPERATING KEYS:
With the UP/DOWN arrow keys and the ENTER and ESC you can move in the menus.

ENTER: Enter
Press ENTER to move to a lower level in a menu or to accept a command or parameter value.

UP: △
Use the UP arrow key to move up on the current menu level or to increase the selected parameter value.

DOWN: ▽
Use the DOWN arrow key to move down on the current menu level or to decrease the selected parameter value.

ESC: Esc
Press the ESC to move back towards the top of the main menu or cancel the current action.

3.0 MEASUREMENTS VALUES MENU:

When the analyzer is powered up, it immediately shows the MEASUREMENT VALUES.

100 %CS

Use the UP/DOWN keys to move in the menu. The menu does not have any variables adjustable by the user.
Pressing DOWN shows you the following parameters in order.

%CS	the user calibrated information (% Cs)
6.286 MA	the value of the first mA loop
S 29.8 °C	the temperature of the sensor head
E 29.8 °C	the temperature of the electronics
RECIPE 1	active recipe name

Under the main menu are 6 submenus: Configuration, New Sample, Calibration, Diagnostics and Advanced. To enter these submenus press ESC for 3 seconds.

3.1 Configuration

The transmitter configuration settings CONFIGUR

RCP SEL RCP SEL

Active recipe selection menu.

RECIPE 1 RECIPE 1

Recipe selected options RECIPE (1 ... 4).
The basic factory tuning is stored in the recipe 1. To perform a new calibration is recommended to use a new recipe.

MAOUTPUT MAOUTPUT

The current output (mA circuit) settings.

LRV LRV
Lower range value (4 mA)

URV URV
Upper range value (20 mA)

DAMPING: DAMPING
Time constant, in seconds for output damping. The range is 0.000s to 60s. Set the value with the **UP/DOWN** keys and accept it with **ENTER** or press **ESC** if you do not want to change the value.

AVERAGE: AVERAGE
Time constant in Hz for averaging the output. The range is 1Hz to 50Hz. . Set the value with the **UP/DOWN** keys and accept it with **ENTER** or press **ESC** if you do not want to change the value.

ALARMTYP: ALARMTYP
The alarm current (3,7 mA or 22,5 mA).

SYSTEM CONFIGURATION SYSTCONF

(configure parameters that have an effect on the system like e.g. language and date.)

TAG: TAG
Tag code. You can enter free-format text one character at a time. When you select this option with **ENTER** the cursor will be at the left. Select characters with **ENTER** (to the right) and **ESC** (to the left). You can view the selectable characters one character at a time with the **UP/DOWN** keys until the desired character is found. When the cursor is at the right edge you can go back to the **SYSTCONF** menu either by accepting the new tag code with **ENTER** or by pressing exiting without changing the tag code by pressing the **ESC** key when asked to accept your entry. Apostrophe indicates the cursor position; at point, however, the cursor will disappear. A great deal of special characters are available besides letters and numbes.

SETCLOCK: SETCLOCK
Aika ja pvm(pp.kk.vvvv -hh.mm.ss) asetukset

HART: HART
Tässä valikossa tehdään Multidrop-toiminnan asetukset. Multidrop-toiminnassa kaikkien multidrop-väylään asetettujen lähettimien lähtöviesti asettuu 4 mA:iin. Osoitteella 0 on käytössä 4...20 mA:n virtasilmukka, jolloin lähetin toimii normaalisti 4...20 mA signaalilla.

DISPLAY: DISPLAY
In this menu you can select the looks in which the display will be read.
BACKLGHT: Select the intensity of the backlighting from **OFF, LOW, MEDIUM** and **HIGH**.
ANGLE: lets you select the angle of the text.
NORMAL: From left to right. Transmitter mounted horizontally with process connection directed to the right.
ROTATED: Rotates the text 180 degrees from NORMAL.

PASSWORD: PASSWORD
From this menu you can set a password (0…999) for the analyzer. If a password has been specified, you cannot set any parameters or make any other settings on the analyzer unless you enter the correct ID number in this menu. Password is not in use when **PASSWORD** is 000 after reset. You enter the **PASSWORD** in the same way as **TAG. PASSWORD** will be on when you define a value between 1 and 999. If you forget password get on to Satron Instruments Inc.

FACTORY: FACTORY
Restore Factory settings. After entering this menu you will get a warning message that the configurations will be lost after this point. To cancel the procedure press **ESC**.

LANGUAGE: LANGUAGE
Select the Display language.
ENGLISH, FRENCH.

T UNIT: T UNIT
Selected the temperature unit from this menu. The unit can be Celsius (°C) or Fahrenheit (°F).

PV UNIT: PV UNIT
Selected the unit for process value in the display from this menu. (mg/l, % CS ...)

LED CURR: LED CURR
(the LED intensity settings)
Select the amount of current, which is used for LED (%)

INFO INFO

You can select the device information menu from the Main Menu level with the ENTER key. Use the UP/DOWN keys to view these items. Press ESC key to return to the Main Menu level. You cannot change the data displyed in this menu.

MANUFACTURER: MANUFCTR
Manufacturer's name. (SATRON) Cannot be changed.

DEVICE TYPE: DEV TYPE
The type code of device. Cannot be changed.

VERSION: VERSION
Version numbers of the transmitter's electronics and software. Press ENTER to select this item. Press ESC to exit. With the UP/DOWN keys you can select either CPU HW, CPU SW, ADC HW, ADC SW or MAN REV (manual revision) revision number or CPU ID-number from this submenu.

ASSEMBLY NUMBER: ASSM NUM
The analyzers assembly number. Press ENTER to select this item. Press ESC to exit. For instance, assembly number 0901 shows that the transmitter was made in week 01 of the year 2009.

SERIAL NUMBER: SER NUM
Serial number. Cannot be changed.

OPERATION TIME: OP TIME
The value of the operation time save at 1 hour intervals. When the value of the counter is < 100 hours so value save 1- minute intervals. The value of the operation time counter on the display :
HH :MM :SS when the value of counter is <100 hours
HHHH : MM when the value of counter is <100000 hours
HHHHHHHH when the value of counter is ≥100000 hours

I/O CONFIGURATION I/O CONF

Configure parameters that have an effect on the INPUT and OUTPUT relays (VC transmitters with N- and L-housing) Satron highly recommends the use of the software package VOadviser to alter these settings!

I/O 1

Settings menu for input / output, I/O 1...3 (housing type N) or input PIN 1...3, output DOUT 1...3 and IO2 (housing type L)

TYPE: TYPE
Select the function (housing type N)
When "NONE" is selected in the I / O is turned off.
To use the digital input to select DIN1. To use the digital outputs, select the DOUT1. To use the second current output configurable external input IO2 select EXT (only I / O 2). To use the second current outputs configurable to select IO2 (only I / O 3)

FUNCTION: FUNCTION
The digital input / output function settings

HI LIMIT the digital output will change its state depending on the HI VALUE.
LO LIMIT the digital output will change its state depending on the LO VALUE.

ERROR AL the digital output will change its state when there is an error.
WARNG AL the digital output will change its state when there is a warning.
ERWNG AL the digital output will change its state when there is a error and/or warning.
HOLD when the digital input is ON the whole unit will be in a hold until the input is OFF.
NONE no function.
OFT ACKN the digital input mode [ON] setting off a timer to overfeed.
RECIPE+1 digital input status [ON]
RECIPE+2 increase the number of active prescription for one (RECIPE 1) or two (RECIPE 2) if the recipe is I / O SEL.
TRB ZERO the digital input mode [ON] to reset the value of the consistency of the factory.
DATA LOG the digital input mode is [ON] storing data logging is permitted if the DATA LOG parameter is set to DIGITAL I / O.
FLSH ON the digital input mode [ON] to set the flush mode to [ON].
FLSH OFF the digital input mode [ON] to set the flush mode [OFF].
FLSH OVT digital output is for flushing guidance.

SOURCE: SOURCE
Select the source to which the digital output will change its state.
PV is the process value selected by the user. (value which is behind "U" on the display).
MA is the 1st current loop
ST is the sensor temperature located 5 millimeter behind the optical lens
RANGE-% this will show a 0 to 100 % value correlating to 4…20mA.

ON DELAY: ON DELAY
On delays can be used to delay digital output state from OFF > ON transitions. The time can be selected in seconds in the range of 0…300s. By default the off delay is not used.

OF DELAY: OF DELAY
Off delays can be used to delay digital output state from ON > OFF transitions. The time can be selected in seconds in the range of 0…300s. By default the off delay is not used.

OF TIMER: OF TIMER
Overfeed timer limits the time that the digital output can be continuously in ON state.
The time can be selected in seconds in the range of 1…60000s. By default the overfeed timer is not used.
Note: overfeed timer does not function if digital output is overridden by HOLD function, when performing a I/O test in the DIAGNOST menu or with HART CPU Control/ DOOverride.

IO2 SOURCE: IO2 SRC
The source for 2 nd mA out (PV,ST, ET, ...).

IO2 LRV: IO2 LRV
The lower range value for 2 nd mA out (4 mA).

IO2 URV: IO2 URV
The upper range value for 2 nd mA out (20 mA).

IO2 DAMPING: IO2 DAMP
The time constant for 2 nd mA out (0 ... 60 s).

3.2 NEW SAMPLE NEW SAMP
The new sample menu

START: START ?
Store a new sample to memory.

SAMPLE H_2O: SAMPLH2O
Restore the water point to memory.

3.3 CALIBRATION CALIBRAT
The calibration menu.

RECIPE: RECIPE
The settings for active recipe.

OFFSET: OFFSET
The offset correction for calibration (default 0.0)

GAIN: GAIN
The gain correction for calibration (default 1.0)

USER.PNTS: USERPNTS
The number of points for multipoint calibration.
POINT.CNT calibrated count the number of points 1 ... 16.

Their point of entry is given a number in either the keyboard (EDIT) or by saving the real-time measurement (SAMPLE).
Point out the value of the pair (user selectable unit) is given a number in the keypad.
See the section of this manual for an example of tuning to get more information on the complete re-calibration.

USER MODE: USERMODE
Select the method of interpolation between the points.
INTERPL Select a linear interpolation.
SPLINE Select the spline curve with interpolation.

TEXT: TEXT
Select the user name for the recipe.

SAMPLES: SAMPLES
The history of the sample (10). Laboratory values input.

SAMPLE 01: SAMPL 01
Upload a sample 1.

SAMPLE 09: SAMPL 09
Upload a sample 9.

SAMPLE H_2O: SAMPLH2O
The water value

CALIBRATE: CALIBRAT
Calibration with sample (1/2-point).

SAMPLE 01: SAMPL 01

SAMPLE 09: SAMPL 09

SAMPLE H_2O: SAMPLH2O
The calibration list of suitable samples (samples recorded fed laboratory value).

CALIBRATION HISTORY: CALIBRAT
Transmitter calibration history.

0- 2013-

The date / time stamped list of calibrations.

3.4 DIAGNOSTICS DIAGNOST

(This submenu allows you to examine the transmitter's internal errors and faults, to set the transmitter to give out a fixed current, and to calibrate the transmitter.)

STATUS: STATUS
Here you can display and reset accumulated errors one at a time. The text OK will be displayed if there are no errors. Possible error messages (alarm means a serious fault/error that also puts the current signal in fault status and makes the display blink).
Table 1, the content of error word 1, page 18.

LOOPTEST: LOOPTEST
The transmitter can be set to give out a fixed current signal for testing the mA output. The first ENTER will switch the transmitter off from normal mode (AUTO OFF), the second ENTER will set it for 4 mA output, and the third ENTER for 20 mA output. The next ENTER after that will give default value 12 mA, which can be changed as desired with the UP/DOWN keys. The last ENTER will switch the transmitter back to normal mode (AUTO ON). The purpose of this test is to test the accuracy of the transmitter's current output with a reference meter.

TRB TRIM: TRB TRIM
The transmitter calibration factory units (FU).

TRB ZERO	measurement of zero
Calibration of measurement by two points	
LRW.TRIM	calibration of the lower point
UPR.TRIM	calibration of the upper point
REMOVE	delete of calibration

SENSOR TEMPERATURE TRIM: ST TRIM
Sensor Temperature Trim. Here you are able to calibrate the temperature probe which is placed in the head of the analyzer. (Maximum by 10 degrees.)

LOOP CALIBRATION: LOOPCAL
Here you can calibrate the current signal given by the transmitter. The first ENTER will switch the transmitter off from normal mode (AUTO OFF). The next ENTER will make the transmitter give out a signal which it assumes to be 4 mA. Use the UP/DOWN keys to change this value in accordance with the reading on the reference meter. Then press ENTER for 20 mA output, which you must also set in accordance with the reference meter. Press ENTER to accept the new reading.
Note: Use a sufficiently accurate reference meter.

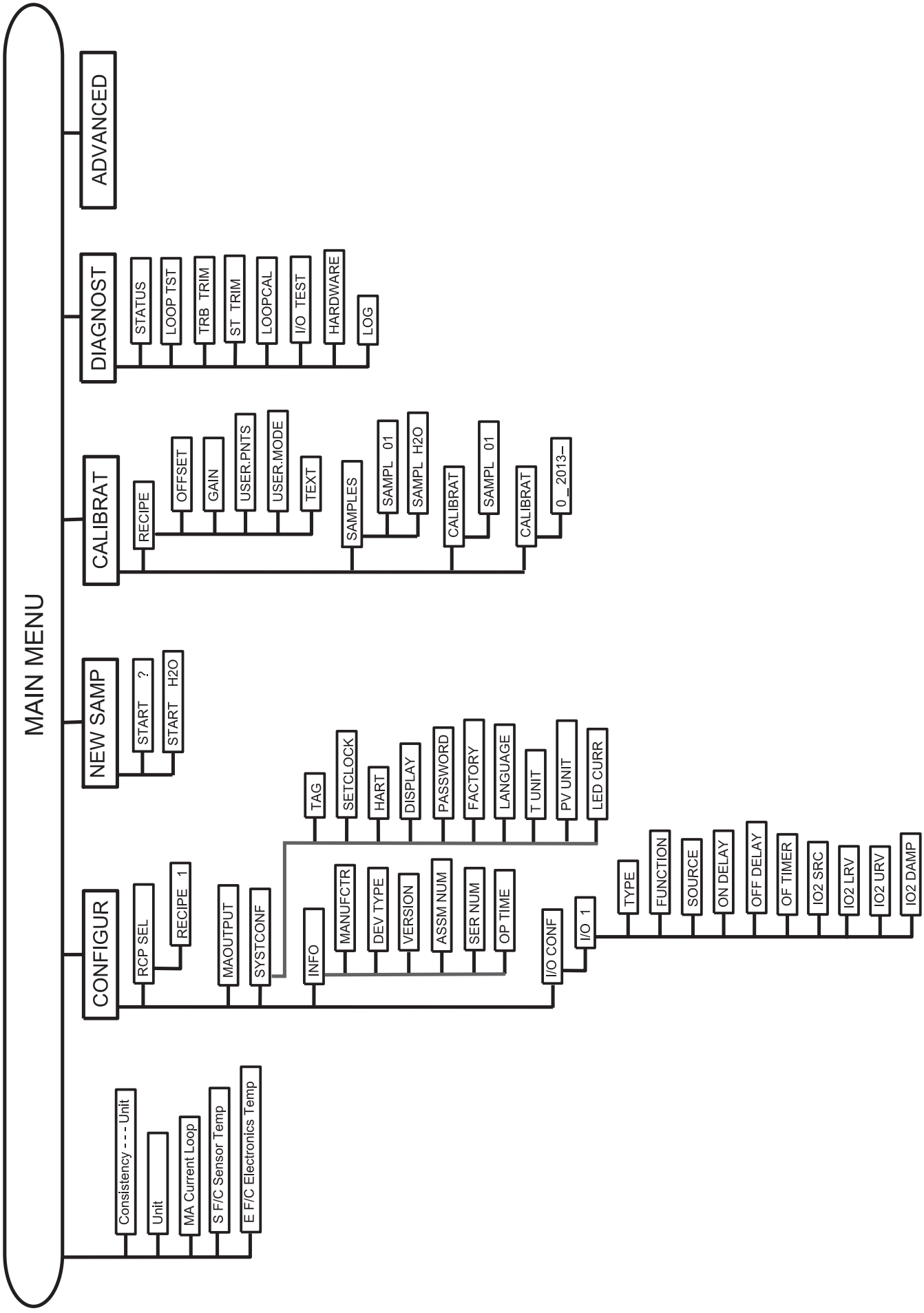
I/O TEST: I/O TEST
The digital inputs and outputs, as well as the power output of the second test. Income status is displayed on the screen and change the status of the outputs

HARDWARE: HARDWARE

VOLTAGES	the voltage diagnostics
I/O COMM	device I / O communication diagnostic diagnostics (only housing type L)

LOG: LOG

ADD TXT	text (8 characters) increase in the event log
DATA LOG	data log mode:
CYCLIC	continuous (default)
DIC I/O	selected with digital inputs
OFF	off


MAIN MENU
ADVANCED
DIAGNOST
STATUS
LOOP TST
TRB TRIM
ST TRIM
LOOPCAL
I/O TEST
HARDWARE
LOG
CALIBRAT
RECIPE
OFFSET
GAIN
USER.PNTS
USER.MODE
TEXT
SAMPLES
SAMPL 01
SAMPL H2O
CALIBRAT
SAMPL 01
CALIBRAT
0_2013–
NEW SAMP
START ?
START H2O
CONFIGUR
RCP SEL
RECIPE 1
MAOUTPUT
SYSTCONF
INFO
MANUFCTR
DEV TYPE
VERSION
ASSM NUM
SER NUM
OP TIME
TAG
SETCLOCK
HART
DISPLAY
PASSWORD
FACTORY
LANGUAGE
T UNIT
PV UNIT
LED CURR
I/O CONF
I/O 1
TYPE
FUNCTION
SOURCE
ON DELAY
OFF DELAY
OF TIMER
IO2 SRC
IO2 LRV
IO2 URV
IO2 DAMP
Consistency - - - Unit
Unit
MA Current Loop
S F/C Sensor Temp
E F/C Electronics Temp

MAIN MENU

4. SETTINGS

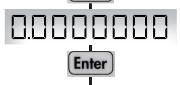
4.1 Basic settings

Press the ESC-button to enter the menu.

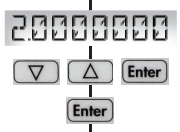
Select CONFIGURATION and press the ENTER-button.

Press [▼]-button and select MAOUTPUT and press the ENTER-button.

Select LRV (mA-output lower range value 4mA) and press the ENTER-button.



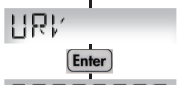
Place the decimal separator with the [▼] [▲] and press the ENTER-button.

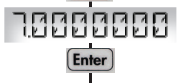


Insert lower range value (4 mA) with the [▼] [▲] and press ENTER-button, until upper separator reaches the right end of display.

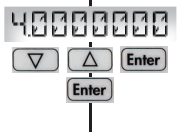
Press ENTER-button to store the lower range value for mA-output.

Press the [▼]-button and select URV (mA-output upper range value 20mA) and press ENTER-button.





Place the decimal separator with [▼] [▲]-buttons and press ENTER-button.



Insert upper range value (20 mA) with the [▼] [▲] and ENTER-buttons, until upper separator reaches the right end of display.

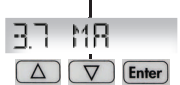
Press ENTER-button to store the upper range value for mA-output.

Press the [▼]-button and select DAMPING (time constant for mA-output damping) and press the ENTER-button.

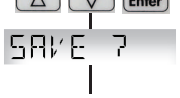
Set the time constant with the [▼] [▲]-button and press the ENTER-button.

Press the ENTER-button to store the time constant for mA-output damping.

Press [▼]-button and select ALARMTYP and press the ENTER-button.



Set alarm current with the [▼] [▲]-buttons (3.7 or 22.5mA) and press the ENTER-button



Press the ENTER-button to store the alarm current value.

Press the ESC-button to return to the main measuring screen.

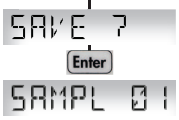
4.2 Collect sample

Press the ESC-button to enter the menu.

Press the [▼]-button and select NEW SAMPLE and press the ENTER-button.

Press the ENTER-button and activate sampling.

The screen will blink SAMPLING text during sampling process. Press the ENTER-button when sample has been taken to end sampling.



The sampling time stamp, average and min and max cs-values during the sampling process are shown on display. Press the ENTER-button to store the sample or press ESC to cancel.

4.3 Laboratory values

Press the ESC-button to enter the menu.

Press the [▼]-button and select CALIBRATION and press the ENTER-button.

Press the [▼]-button and select SAMPLES and press the ENTER-button.

Select with the [▼] [▲]-buttons the desired sample point to which laboratory value will be inserted and press the ENTER-button.

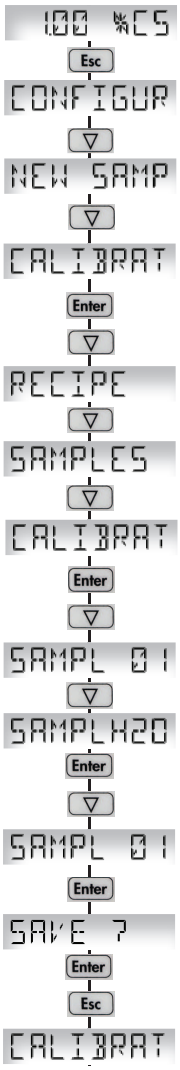
Place the decimal separator with [▼] [▲]-buttons and press the ENTER-button.

Insert the laboratory value with the [▼] [▲] and the ENTER-buttons and press the ENTER-button until upper separator reaches the right end of display.

Press the ESC-button to return to the main measuring screen.

4.4 Start-up calibration

2-point calibration with water and one sample point



Press the ESC-button to enter the menu

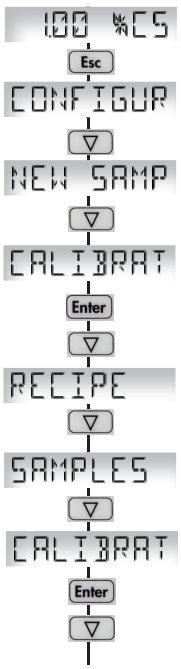
Press the [▼]-button and select CALIBRATION and press the ENTER-button

Press the [▼]-button and select CALIBRATE and press the ENTER-button

Press the [▲]-button and select the SAMPLEH_2O to be the 1st calibration point and press the ENTER-button

Press the [▼]-button and select the second point for calibration (SAMPL 01...09) and press the ENTER-button. The display rolls the new calculated OFFSET, GAIN values. Press the ENTER-button to store values or press the ESC-button to cancel. Press the ESC-button to return to measuring screen

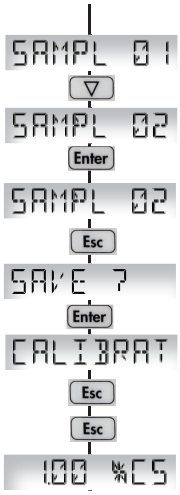
4.5 1-Point calibration



Press the ESC-button to enter the menu

Press [▼]-button and select CALIBRATION and press the ENTER-button

Press the [▼]-button and select CALIBRATE and press ENTER-button

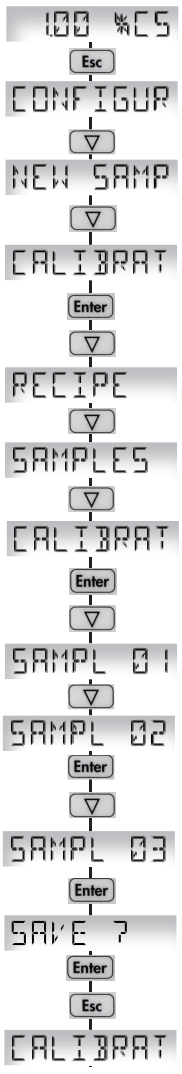


Press the [▼]-button and select the sample point (SAMPL 01...09) for 1-point calibration and press the ENTER-button.

Press the ESC-button (1-point calibration, no second point). The display rolls the new calculated OFFSET, GAIN values. Press the ENTER-button to store or the ESC-button to cancel. Press the ESC-button to return to the main measuring screen.

4.6 2-Point calibration

2-point calibration with two sample points



Press the ESC-button to enter the menu.

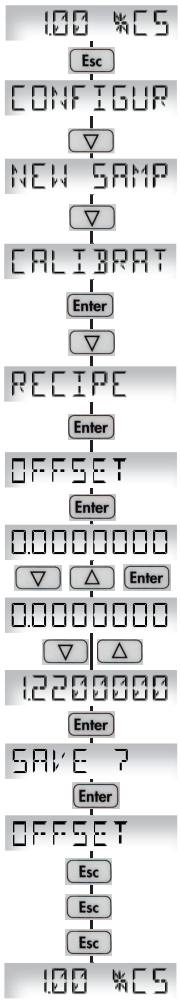
Press the [▼]-button and select CALIBRATION and press the ENTER-button

Press the [▼]-button and select CALIBRATE and press the ENTER-button.

Select with the [▼][▲] -buttons the first sample point for calibration (SAMPL 01...09) and press the ENTER-button

Select with the [▼][▲] -buttons the second sample point for calibration (SAMPL 01...09) and press the ENTER-button. The display rolls the new calculated OFFSET, GAIN values. Press the ENTER-button to store or the ESC-button to cancel. Press the ESC-button to return to the main measuring screen.

4.7 OFFSET adjustment



Press the ESC-button to enter the menu.

Press the [▼]-button and select CALIBRATION and press the ENTER-button.

Select RECIPE and press the ENTER-button.

Select OFFSET and press the ENTER-button.

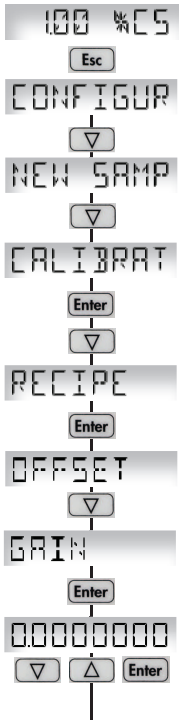
Place the decimal separator with [▼] [▲]-buttons and press ENTER-button.

Insert the OFFSET value with the [▼] [▲] and ENTER-buttons, until upper separator reaches the right end of display.

Press the ENTER-button to store the OFFSET value.

Press the ESC-button to return to main measuring screen.

4.8 GAIN adjustment



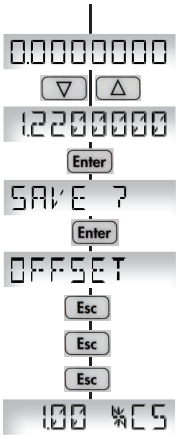
Press the ESC-button to enter the menu.

Press the [▼]-button and select CALIBRATION and press the ENTER-button.

Select RECIPE and press the ENTER-button.

Press the [▼]-button and select GAIN and press the ENTER-button.

Place the decimal separator with [▼] [▲]-buttons and press ENTER-button.

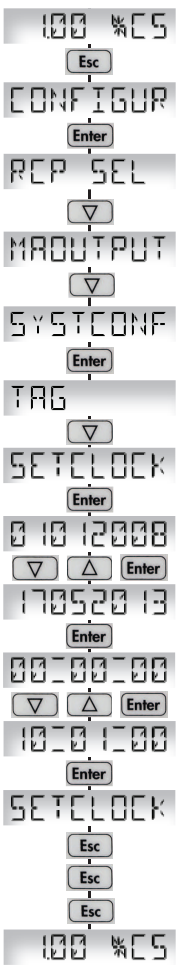


Insert the GAIN value with the [▼] [▲] and ENTER-buttons, until upper separator reaches the right end of display.

Press the ENTER-button to store the GAIN value.

Press the ESC-button to return to main measuring screen.

4.9 TIME and DATE settings



Press the ESC-button to enter the menu.

Press the [▼]-button and select CONFIGURATION and press the ENTER-button.

Press the [▼]-button and select SYSTCONF and press the ENTER-button.

Press the [▼]-button and select SETCLOCK and press the ENTER-button.

Insert date with the [▼] [▲] -buttons (dd.mm.yyyy), press the ENTER-button to move dd->mm->yyyy and press the ENTER-button.

Insert time with the [▼] [▲] -buttons (hh.mm.ss), press the ENTER-button to move hh->mm->ss and press the ENTER-button.

Press the ESC-button to return to main measuring screen.

Table 1.
The content of error word 1
(EW1=0…15)

Bit	Error message	Description
0	TU ER	Turbidity error
1	ST ER	Sensor temperature (ST) error
2	ET ER	Electronics temperature (ET) error
3	RANGE ER	Percentage of output under -10% or over 110% error
4	OUTSA WA	Output current saturated
5	ADCR ER	ADC converter runtime error
6		
7		
8	ADCS ER	ADC converter startup error
9	EEPRR ER	EEPROM checksum error
10	EEPRW ER	EEPROM write error
11	EECAL ER	EEPROM calibration error
12	HART ER	HART communication error
13	INTRN ER	Internal system error
14	OFTMR WA	Overfeed timer warning
15		

An example how to decipher the error word:

"EW1=0018" means 0018 (hex) = 0000 0000 0001 1000 (bin). This means that error word bits 3 and 4 are raised, (Error messages: RANGE ER and OUTSA WA).

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