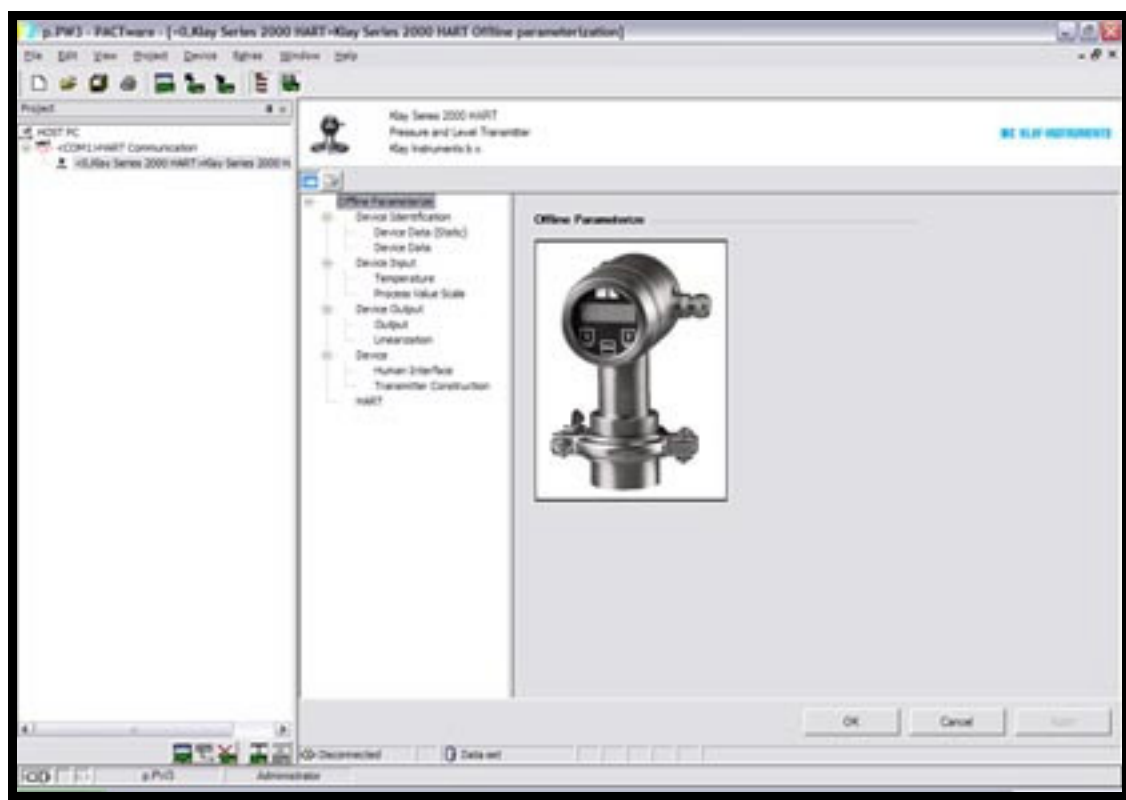


KLAY-INSTRUMENTS

MANUAL **"DTM Klay Series 2000 HART"**



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1 INTRODUCTION:

This instruction manual is a guide for installing and using the Klay Series 2000 HART DTM. This DTM is developed to make configuration changes of Klay Series 2000 HART transmitters easy. This DTM can be used with almost every FDT-container.

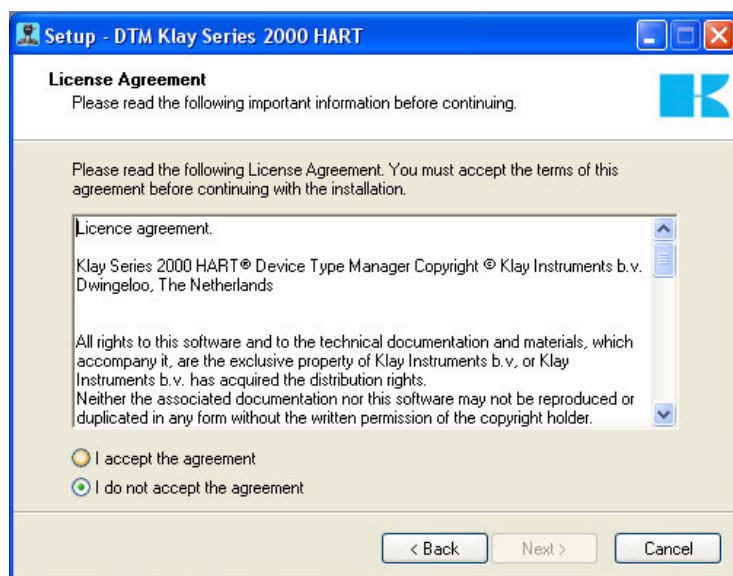
This DTM can also be used to change the configuration of a Klay Hydrobar I transmitter.

2 INSTALLATION:

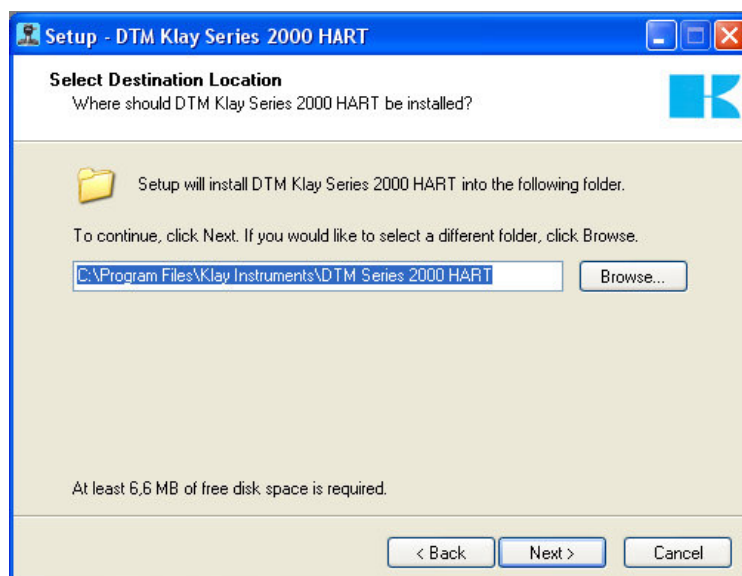
To be able to install the DTM Klay Series 2000 HART on your system, you have to download the installation file. This file can be downloaded from the Klay Instruments site or via the following link: <http://www.klay.nl/dtm>. The installation can be started by opening the “**DTM Klay Series 2000 HART V1-2-0-1.exe**” file. (You must have administrator rights to install this DTM to your system). After opening the following window appears.



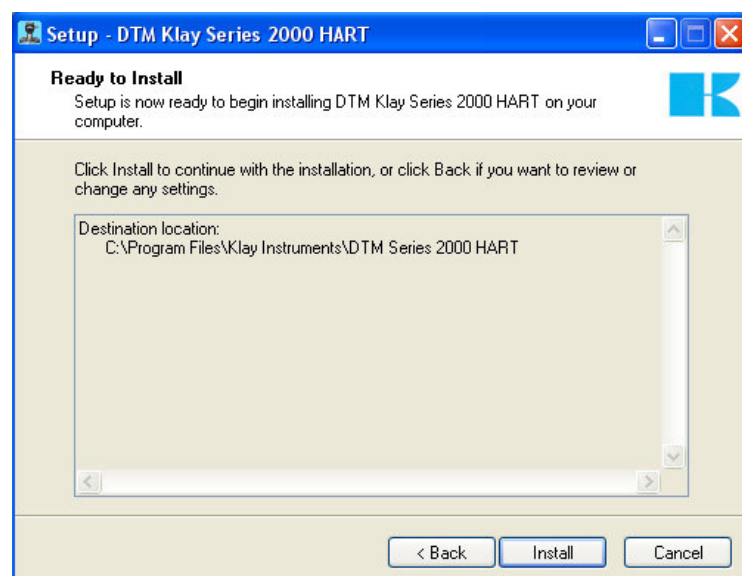
Click the “next”-button to continue. After continuing the next screen appears asking to accept the License Agreement. You have to accept to continue.



After accepting the license agreement, the installation continues. The next screen asks you to fill in the path where to install the DTM.



When the “Install”-button is pressed, the actual installation will be started.

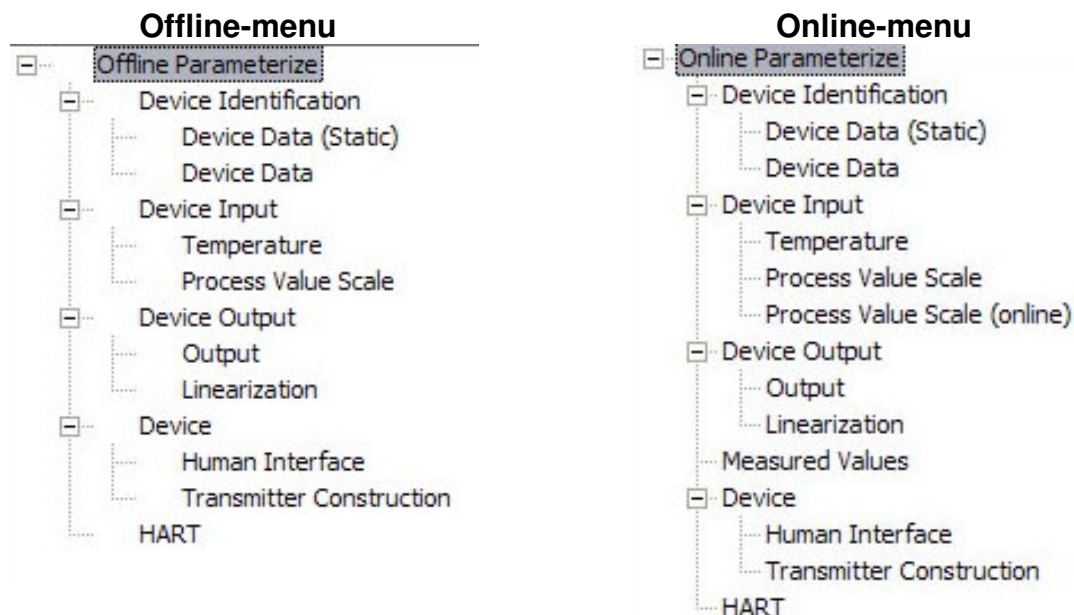


The last screen shows that the installation is completed. The next step, after closing this screen, is to update the catalogue of the FDT container / FDT application you are using.

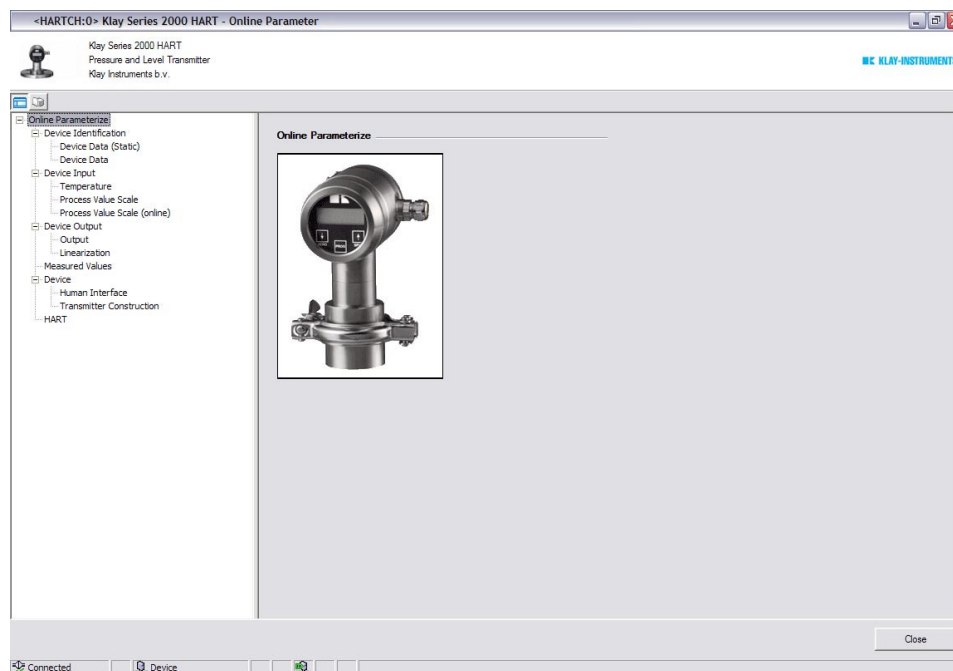


3 DTM:

There are two modes to use the DTM, in offline and online-mode. For both modes there are separate menu-structures. Both menu structures are almost similar, but the online menu structure has two extra menus. It's not possible to execute these two menus in offline mode.



The menus containing a “-“sign in front do have a submenu. These menus show the following screen.



Device Identification:

Device Data (Static):

This menu shows data about the transmitter. This data is read-only and cannot be changed. The data contains information about: the manufacturer, type of transmitter, serial number, revision numbers, etc.

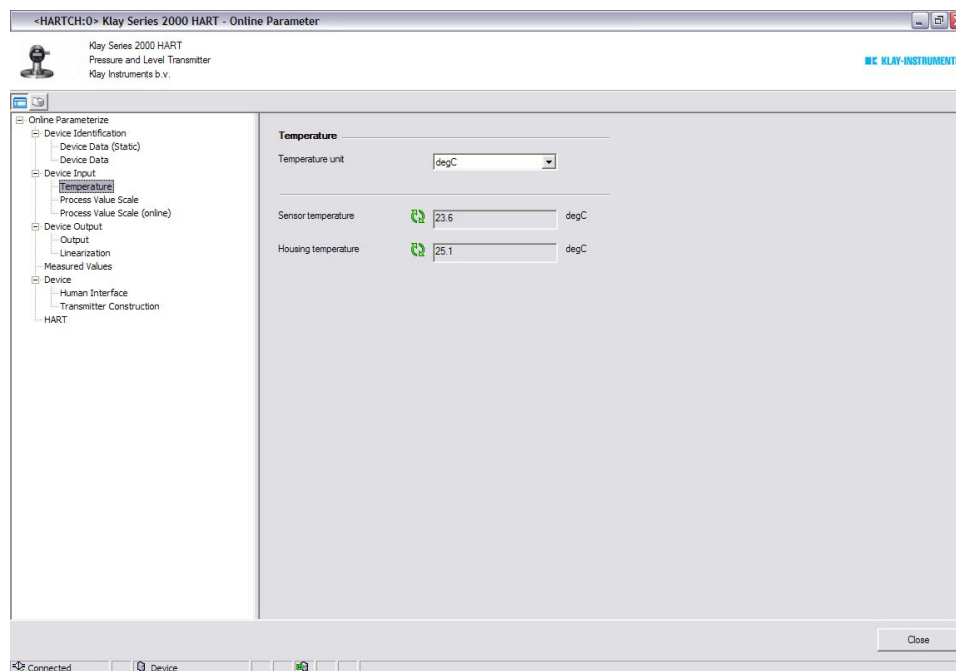
Device data:

This menu contains some data like TAG Descriptor, message and date. This data can be changed.

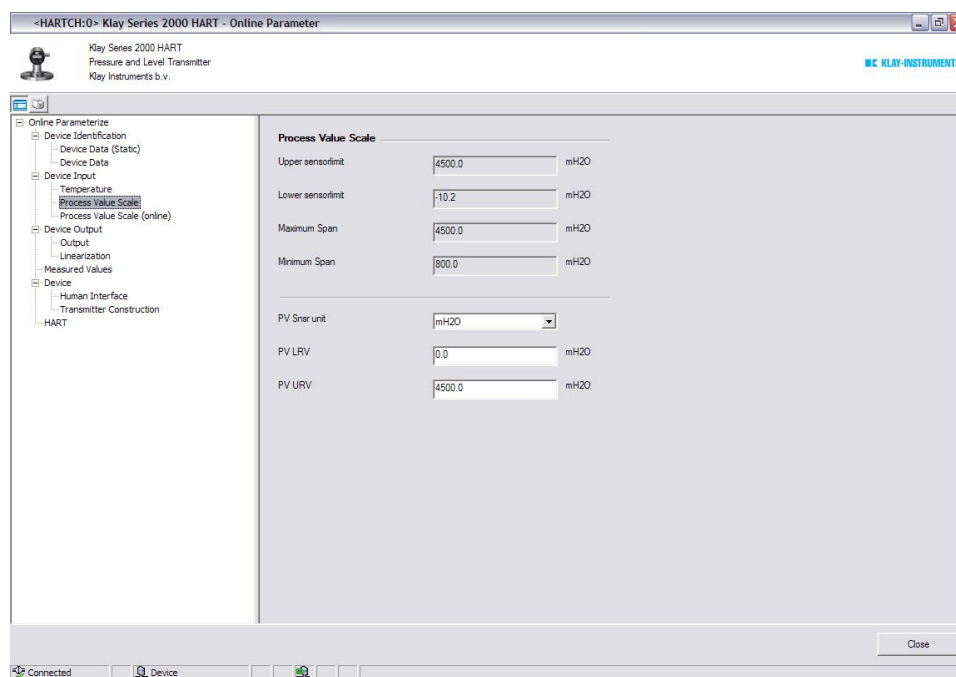
Device Input:**Temperature:**

In this menu it is possible to change the units of the measured temperatures. It also shows the measured process and ambient temperature.

These values are refreshed every 10 seconds.

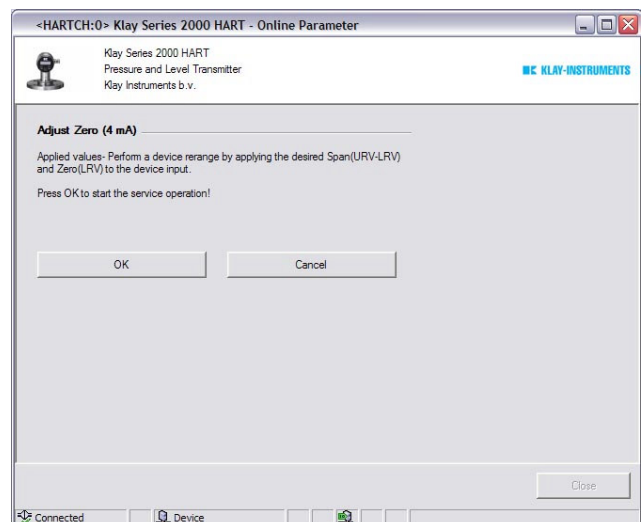
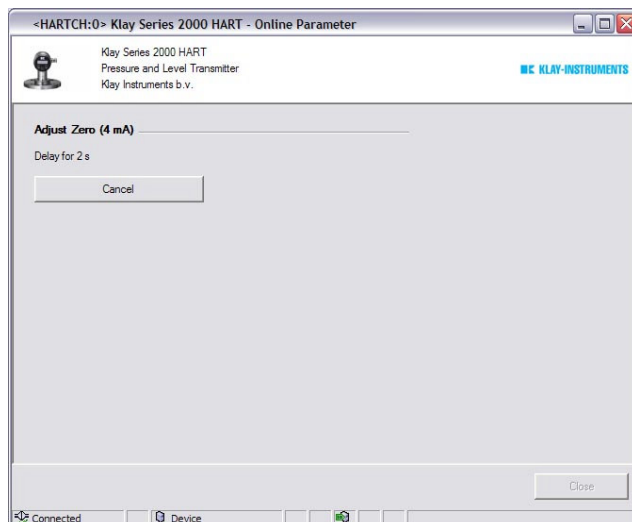
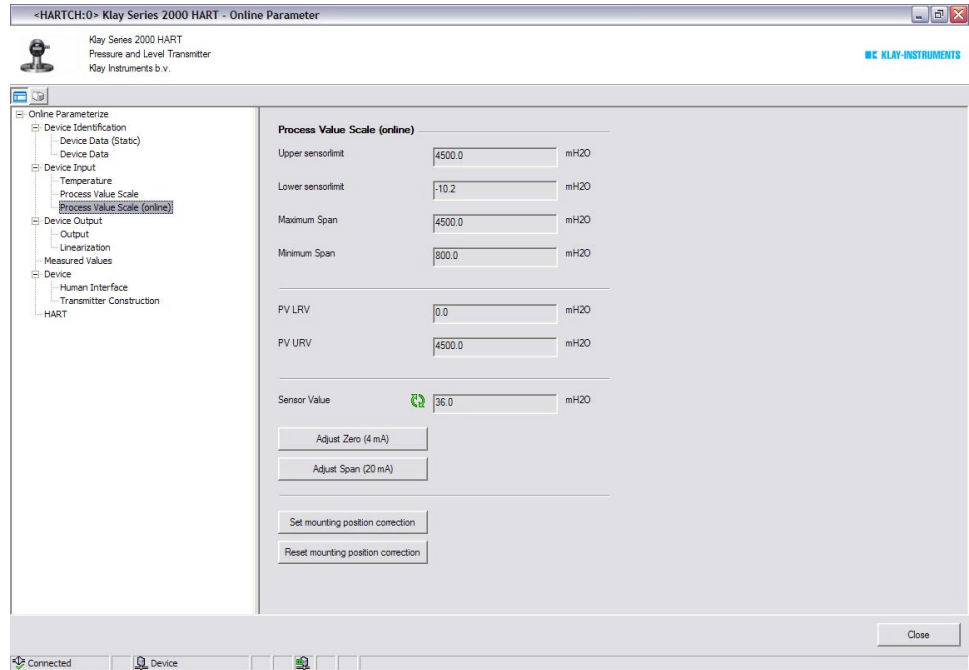
**Process Value Scale:**

This menu shows the maximum and minimum values for measuring ranges. The bottom half of the screen is showing the (engineering) units and the actual measuring range. These values can be changed.



Process Value Scale (Online):

This menu can be used to change the measuring range by using test pressure. The upper half of the screen is showing the maximum and minimum values of the measuring range. The second part is showing the actual range and the actual sensor value. This value is refreshed every 10 seconds. The lower half of the screen shows 4 buttons. The first two buttons can be used to adjust the zero (4 mA) and the span (20 mA), using test pressure. When one of these buttons is pressed, a procedure is started to adjust the 4 mA or 20 mA. The figures below give an example.



The last two buttons can be used to enable or disable a correction to cancel any mounting effect. Clicking the button “Set mounting position correction” the mounting effect is corrected and enabled. ***(It is important that no test pressure is applied when this button is pressed, to be sure that the correction is defined well).***

The button “Reset mounting position correction” disables this correction.

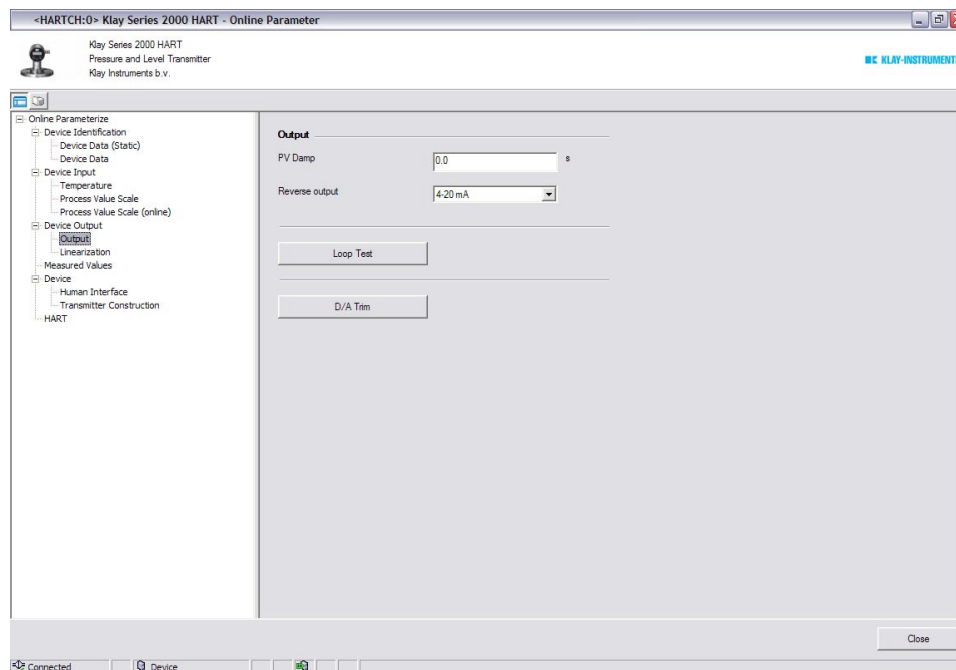
Device Output:

Output:

This menu contains parameters about the output of the transmitter.

It is possible to adjust a damping to the output, and to adjust the output acting like a reverse output (20-4 mA instead of 4-20 mA)

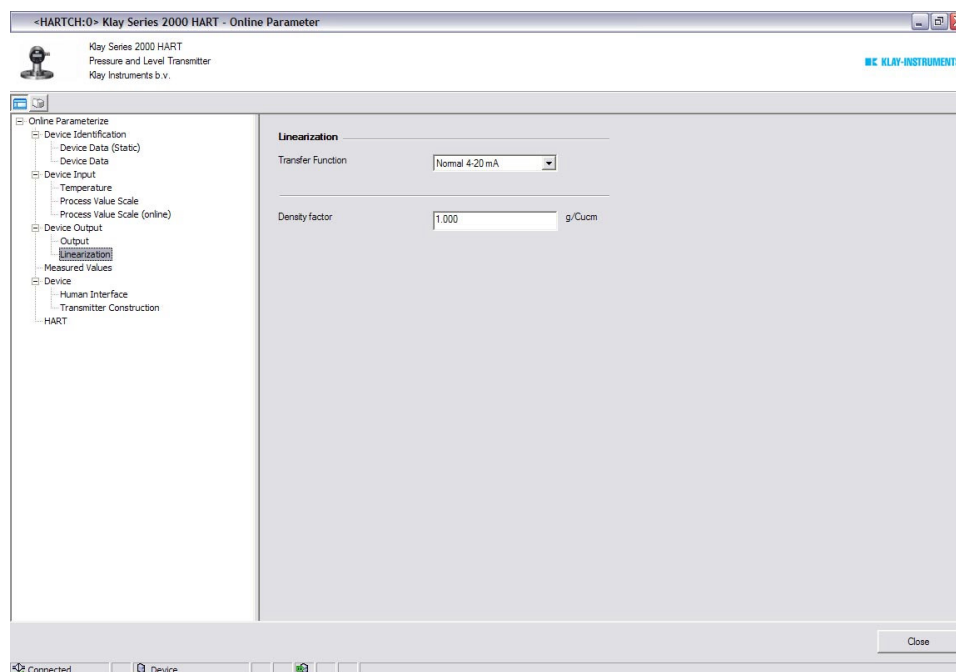
It is also possible to execute a simulation and, if necessary, to adjust the DA-converter.



Linearization:

In this menu it is possible to adjust a linearization. It is possible to choose between: *Normal 4-20 mA*, *Cylindrical Tank*, *V(ertical) Tank (cone)* (tank with cone) *en V Tank (sphere)* (tank with cylindrical cone).

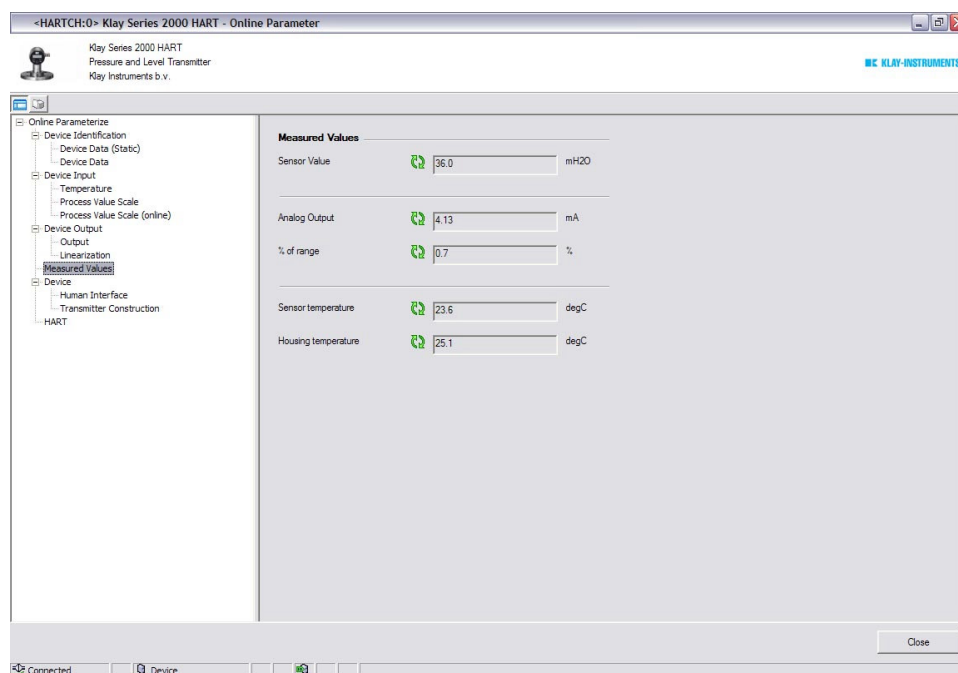
If an option is chosen the parameters that need to be give in, are automatically shown on the screen. Below the line there's a parameter that contains the density factor of the medium.



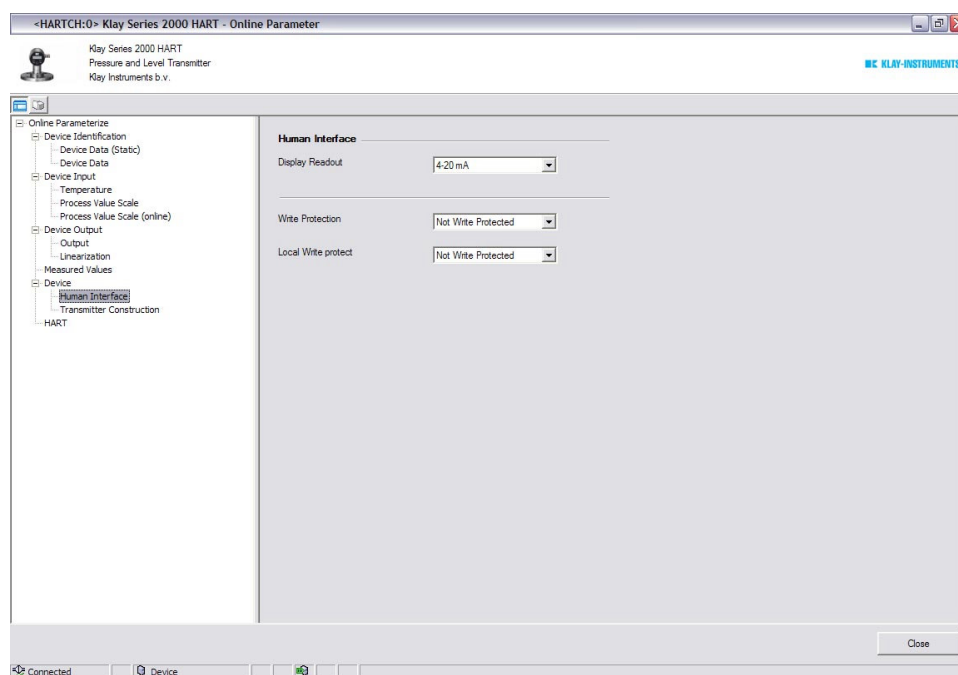
N.b. It is important to fill in a value bigger than 0 for these parameters: H1, H2, D and L. If one of these parameters contain the value 0, the output will be fixed to 4 mA.

Measured Value:

This menu shows some dynamic values. These values are refreshed every 10 seconds.

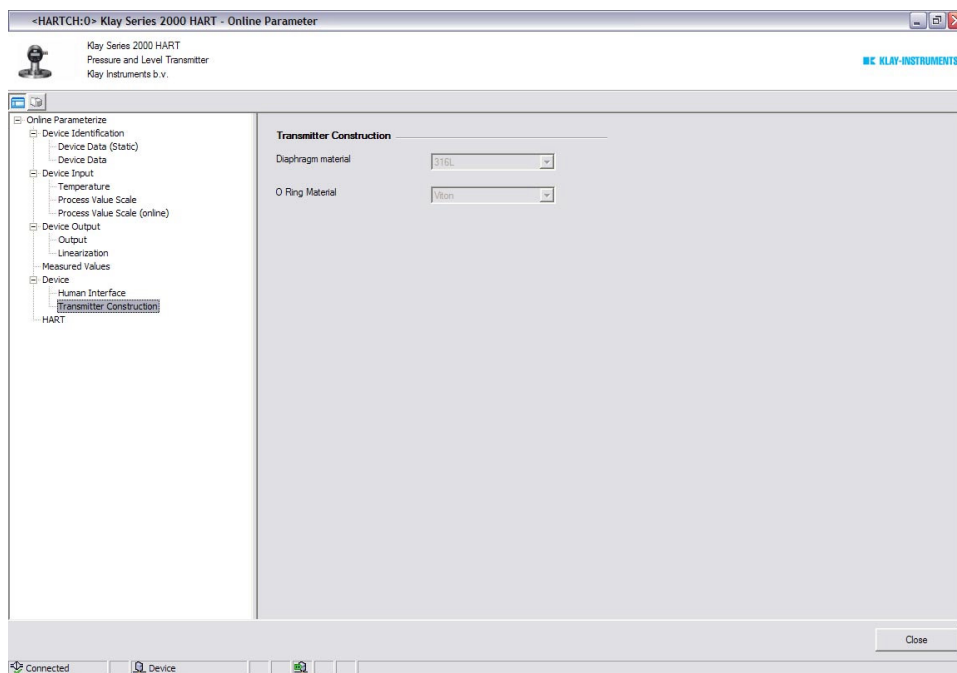
**Device:****Human Interface:**

This menu contains a parameter to adjust the display readout. It has the following options: *4-20 mA, Units, Percentage, Process Temperature, Hectoliter en Cubic meter*. The last two options are only possible when a linearization is active. It is also possible to enable or disable a write protection (WP). There is a WP for changes using HART communications and there is a WP for changes using the keys on the display. Both write protections can be adjusted separately.



Transmitter Construction:

This menu contains data about the construction of the transmitter.



HART:

This menu contains HART related data.

