User Guide Optiflex (TDR) Device

Asset Management Solutions (AMS)

HART Communicator 375

Version 1.1
January 2008

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Table of Contents

1 HART® Transmitter Revisions and Instrument Firmware ... 3
1.1 Device Revision ... 3
1.2 DD Revision ... 3
2 Installation of DDL in AMS ... 3
3 Menu ... 3
3.1 Access Rights ... 3
3.1.1 Password protection implementation ... 3
3.1.2 Supervisor Password ... 4
3.1.3 Service Password ... 6
3.2 Save Device Parameters ... 6
3.3 Diagnostic and Test ... 7
3.3.1 Internal Test ... 7
3.3.2 Set Output1 ... 8
3.3.3 Set Output2 ... 9
3.4 Calibration ... 9
3.4.1 Output1 Lower ... 9
3.4.2 Output1 Upper ... 10
3.5 Tables ... 12
3.5.1 Volume/Mass Table ... 12
3.5.2 Linearisation Table ... 15
3.5.3 Delete Tables ... 16
3.6 Reset ... 17
3.6.1 Factory Reset ... 17
3.6.2 Customer Reset ... 18
3.6.3 Device Reset ... 18
3.7 Threshold Calculation ... 20
3.7.1 Level Threshold ... 20
3.8 Application Setup ... 21
3.9 Calculated Er Value ... 24
3.10 Snapshot ... 24
3.11 Auto Probe Length Calculation ... 27
3.12 Device Configuration ... 29
3.12.1 Installation Parameters1 ... 29
3.12.2 Installation Parameters2 ... 30
3.12.3 Output Selection ... 31
3.12.4 Primary Output Setting ... 32
3.12.5 Secondary Output Setting ... 33
3.12.6 Quick Setup Summary ... 34
3.12.7 Service Parameters 1 ... 35
3.12.8 Service Parameters 2 ... 35
3.12.9 HART ... 36
3.12.10 Device ... 38
3.13 Process Variable ... 39
3.14 Device Diagnostic ... 40
4 Status Meaning ... 41
5 HART® Communicator 375 (HC375) ... 42
5.1 Offline Restriction ... 42
5.2 Save Device Parameters ... 42

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1 HART® Transmitter Revisions and Instrument Firmware

1.1 Device Revision

The Optiflex HART® transmitter has only one revision: *Device revision 1*.

1.2 DD Revision

Optiflex 1300C has the *DD revision 2*.
DD is tested with AMS 9.0 but can be used with AMS version 6.1 up to 9.0.

2 Installation of DDL in AMS

Refer to the AMS help to install the “Optiflex 1300” DD into an AMS System.

3 Menu

3.1 Access Rights

3.1.1 Password protection implementation

There will be two user login, Supervisor & Service which is implemented in <Access Rights> menu. By default, Supervisor can see & edit all parameters except service parameter. After service person is logged in he can see & edit all the parameters including the service parameters and tables.

Password can be numeric digits from 0-9. There may be maximum six digits password. As we can’t store the password directly in AMS, we are validating the password in AMS by reading the password from device. Password setting facility is not given from AMS to avoid conflicts to know the password to login from HMI. After validation it will give following messages “Supervisor Password OK” or “Service Password OK” as per the login.

On clicking the Access Rights on the main menu, two submenus appear as Supervisor and Service.

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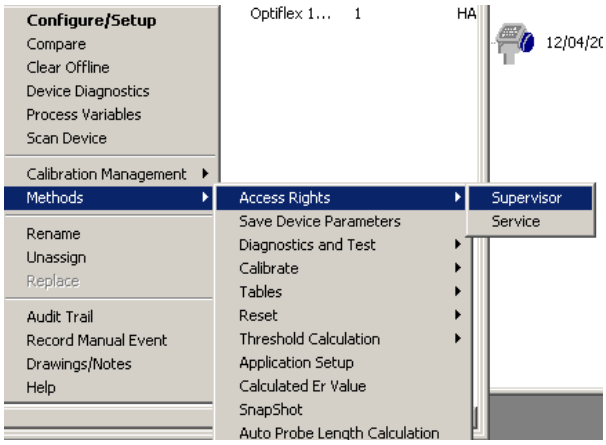
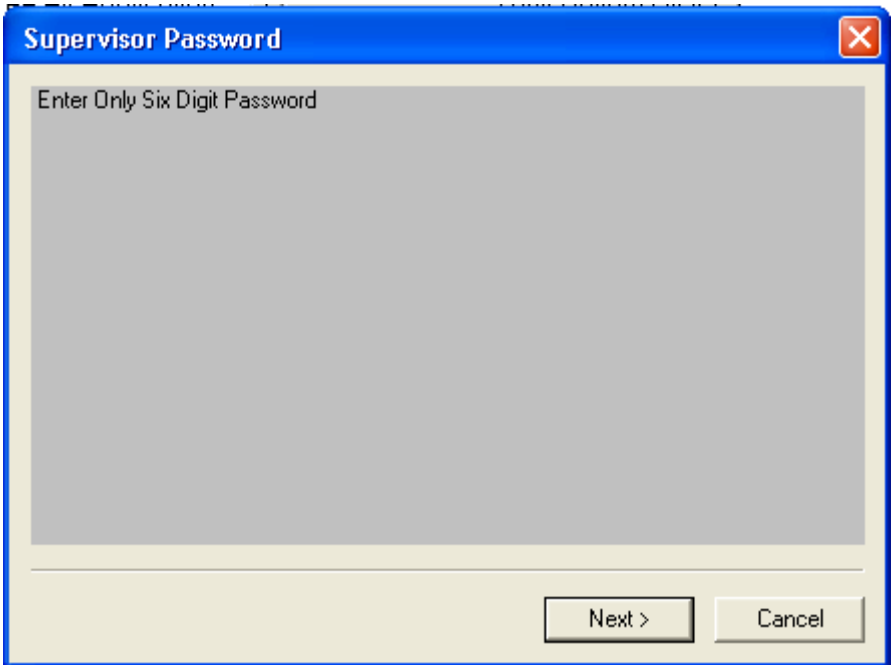
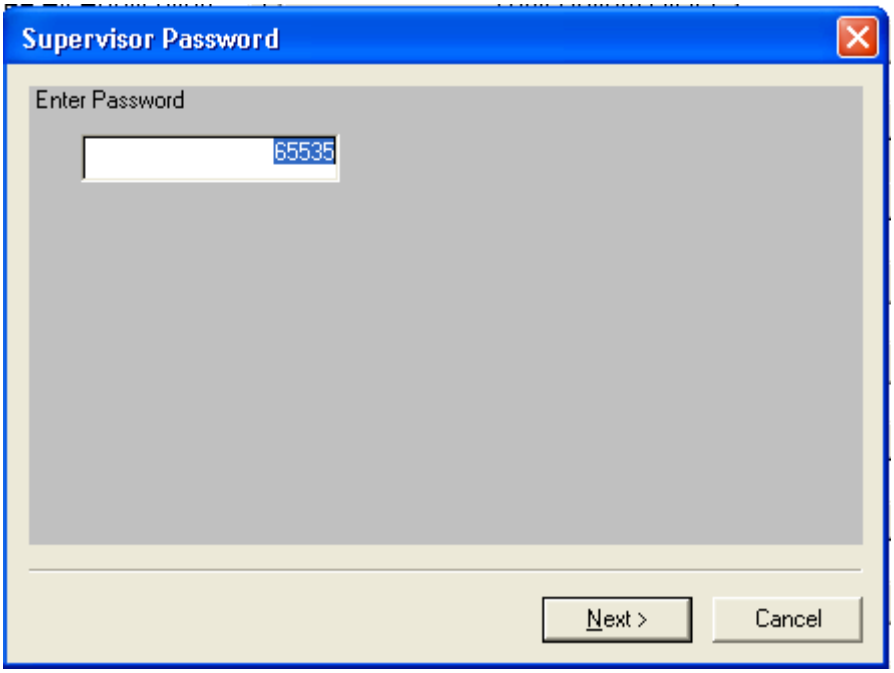


3.1.2 Supervisor Password

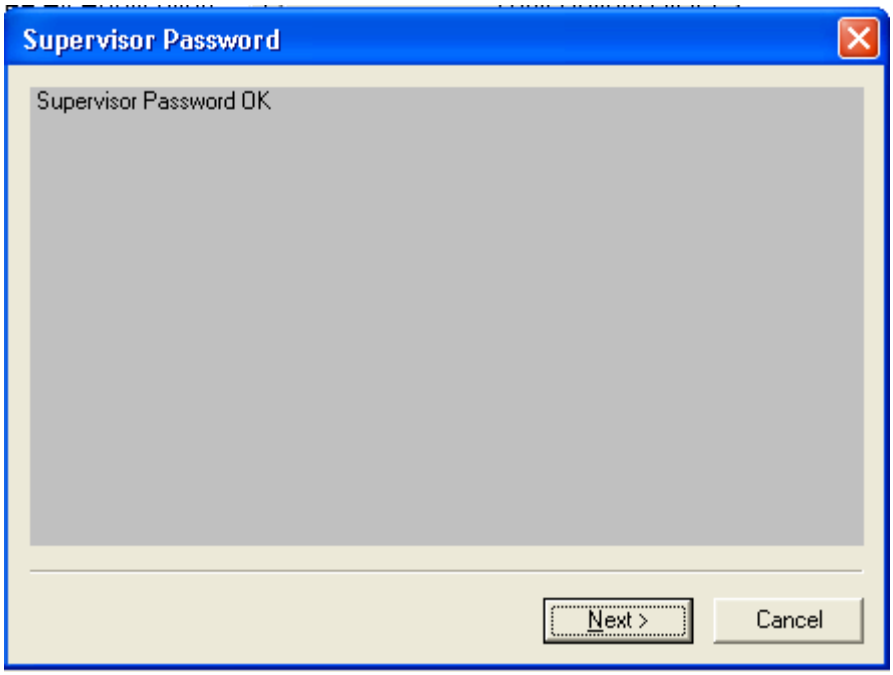
On clicking Supervisor it shows the following screen.
Note: Before accessing this menu user needs to select the "configuration variables" for synchronization of all device parameters and for proper validation of the device parameters.



On clicking next, it shows the following window, which asks user to enter the Supervisor Password with the default value as 65535.



After entering the valid password and clicking next, it shows the following screen:



For success: "**Supervisor Password OK**"
For invalid password: "**Supervisor Password Invalid**"

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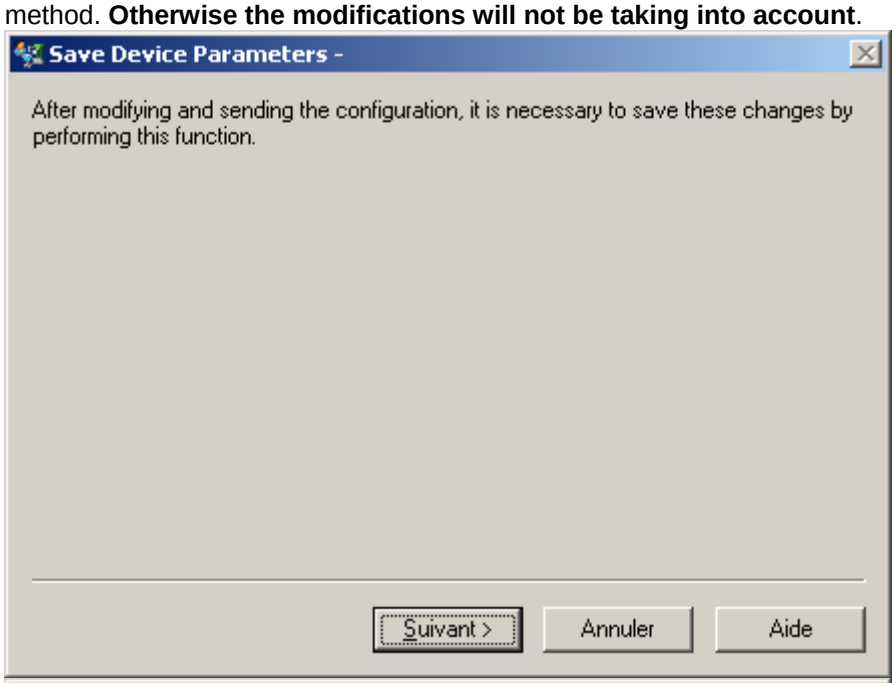
3.1.3 Service Password

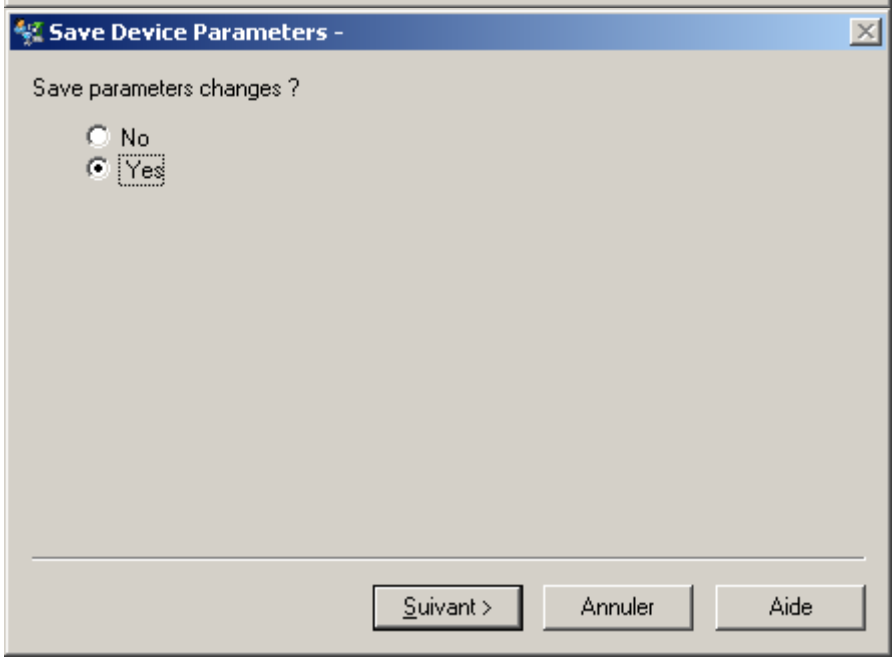
See “Supervisor Password” method.

3.2 Save Device Parameters

ATTENTION**: This is a very important method**.

Each time the device configuration is modified (after applying changes) it is necessary to execute this method. **Otherwise the modifications will not be taking into account**.

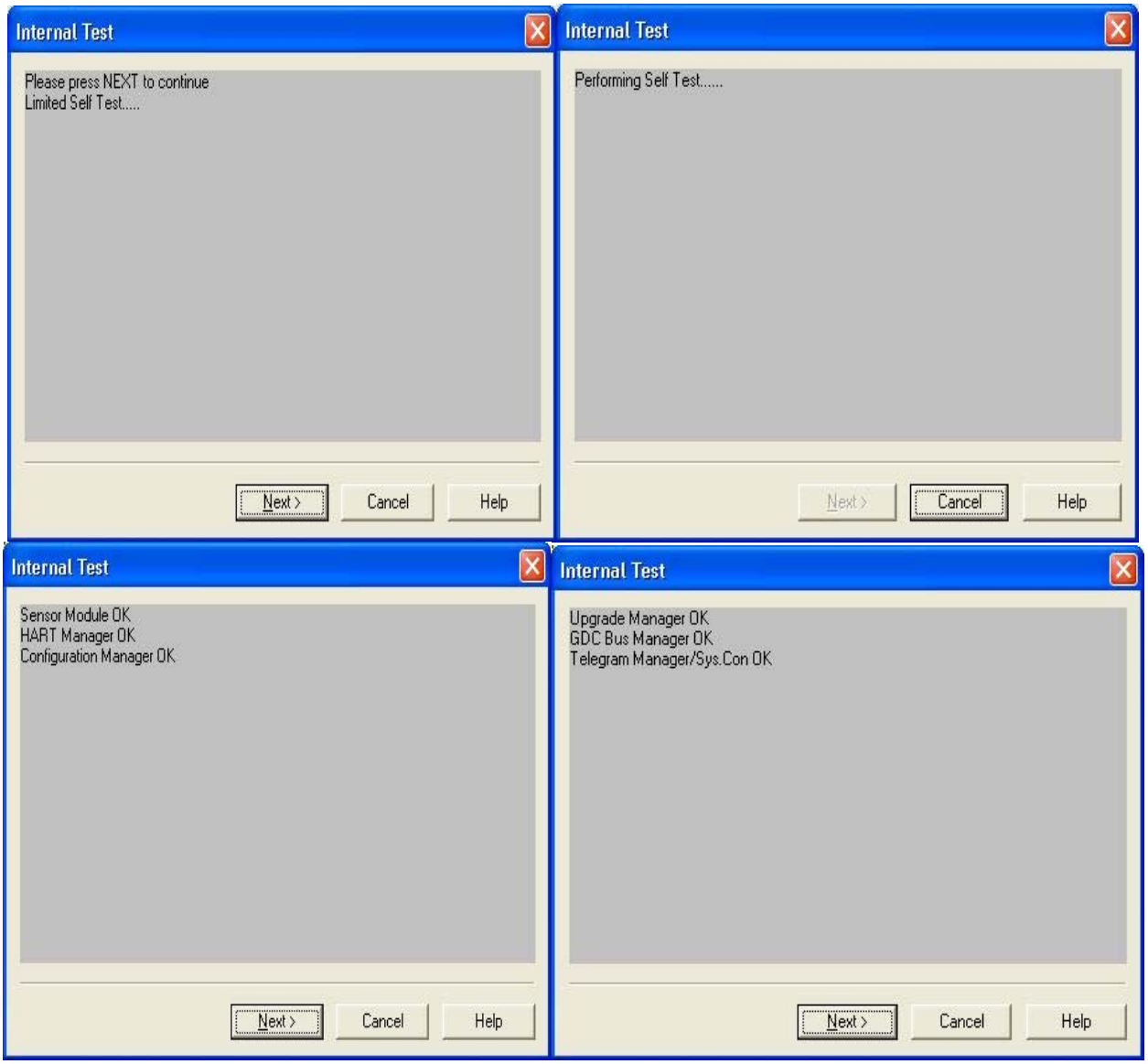


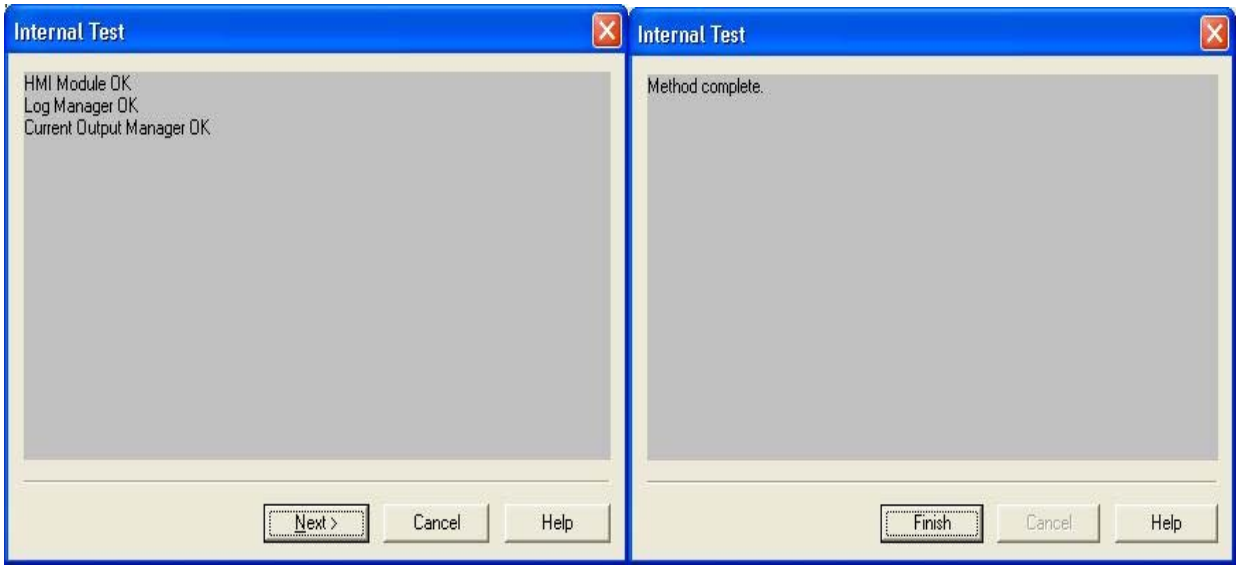


3.3 Diagnostic and Test

3.3.1 Internal Test

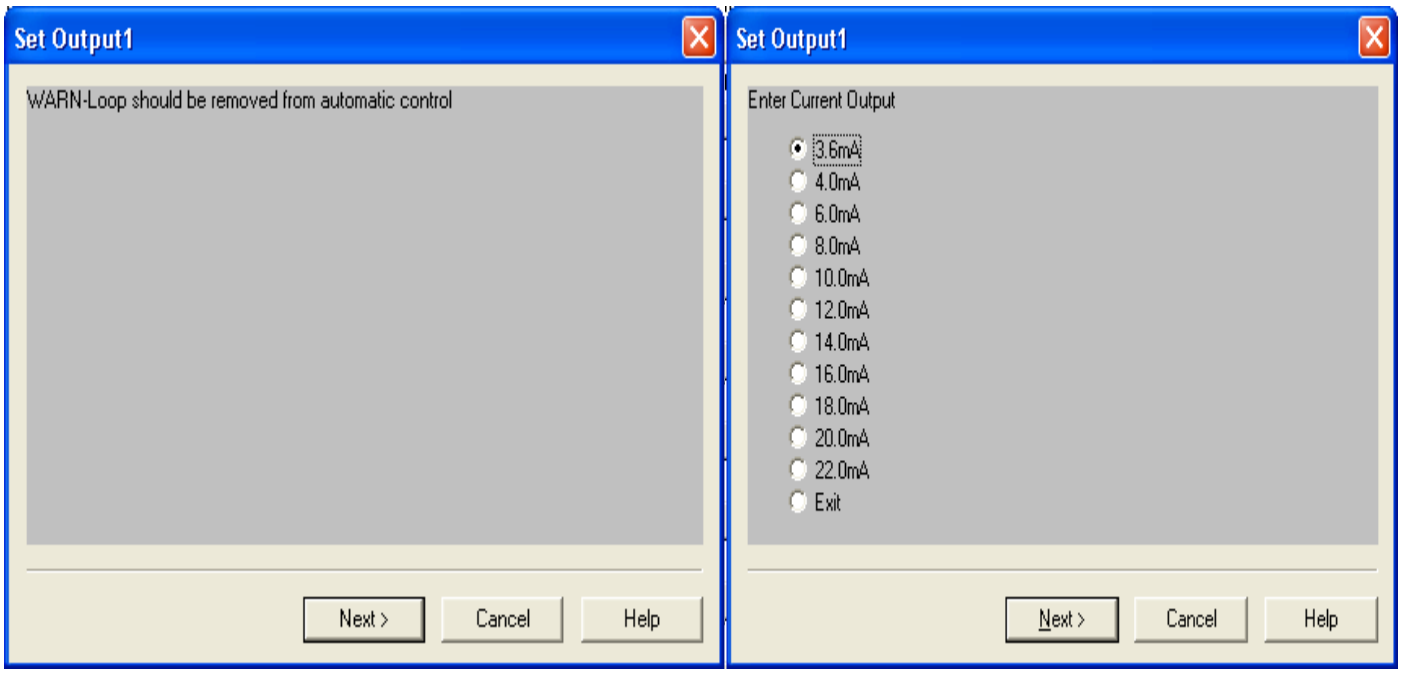
On selecting “Internal Test” from the main menu, device performs self test and displays results as following:





3.3.2 Set Output1

It allows fixing different values to the current output1 . It is a test mode. User can check the loop currents in output1 and output2. The list of currents are displayed in the list box.
Once the appropriate current is selected the loop current is fixed to that current value. Check the loop current by ammeter and validates the current as selected from the device. The loop current exits from the current mode after clicking on 'Exit' or 'Cancel' from the method.



3.3.3 Set Output2

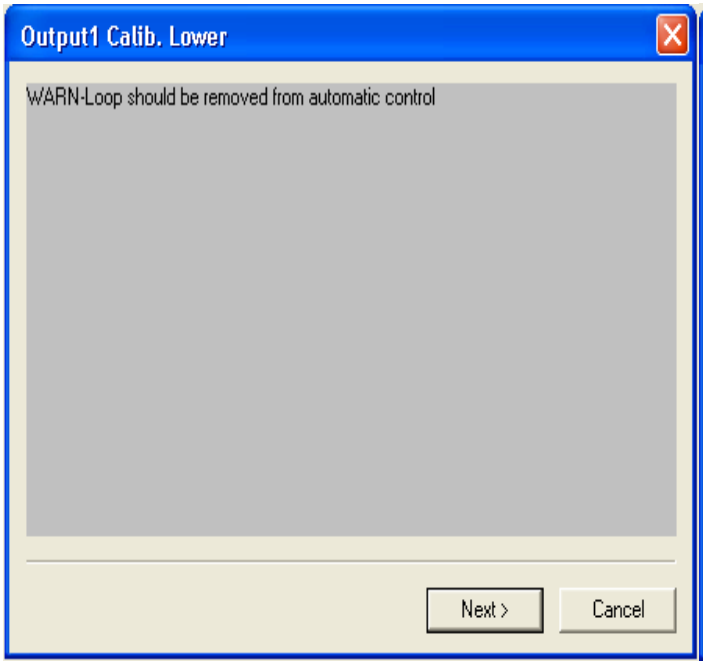
See “Set Output1”

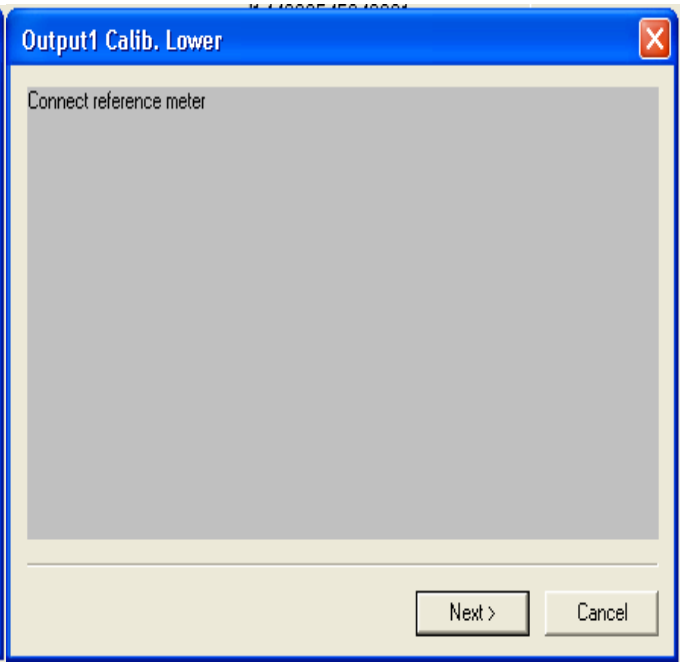
3.4 Calibration

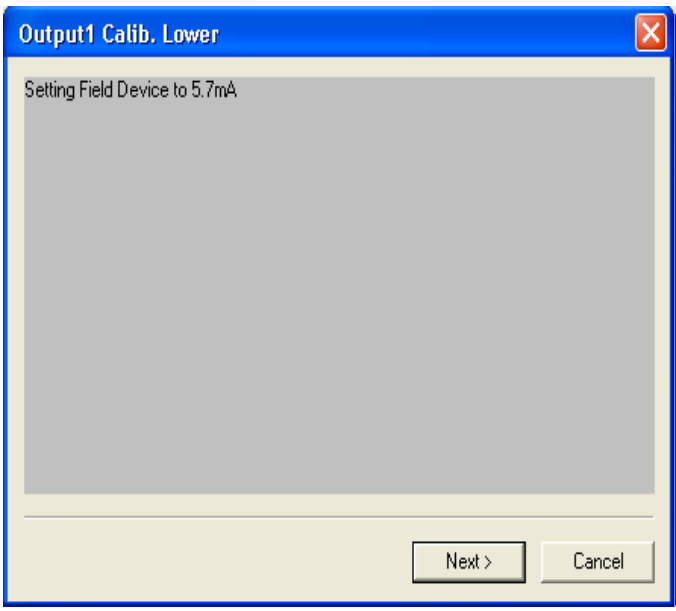
The Calibration can be done for the output1 and output2. Here the following sections will describe the detailed about the calibration screen options for the output1 lower and upper.

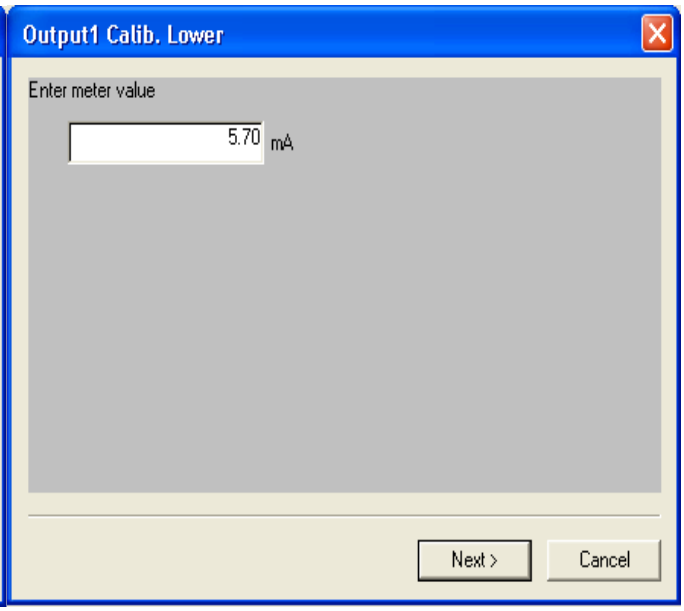
3.4.1 Output1 Lower

In Output1 Lower, it allows user to trim current output1.
The user starts to fix the current to 4mA, after entering the current value he reads on a voltmeter, this value is sent to the device. This method allows adjusting to have exactly the good current value of output1 loop.



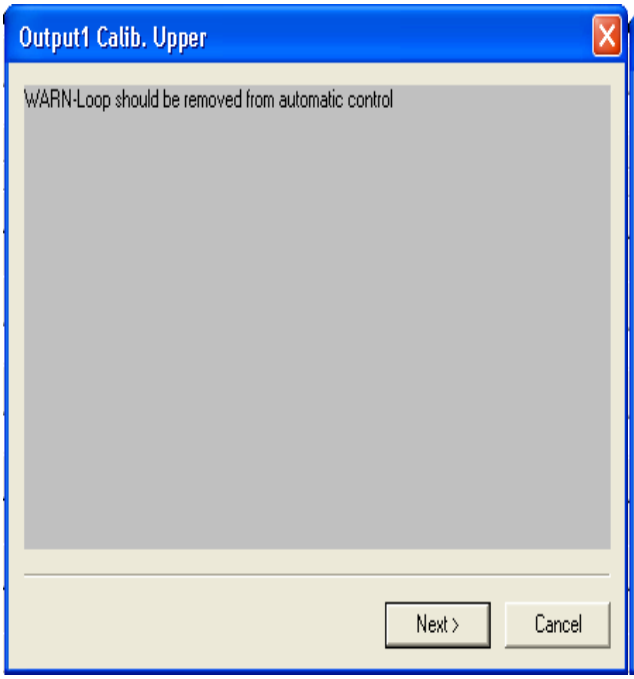


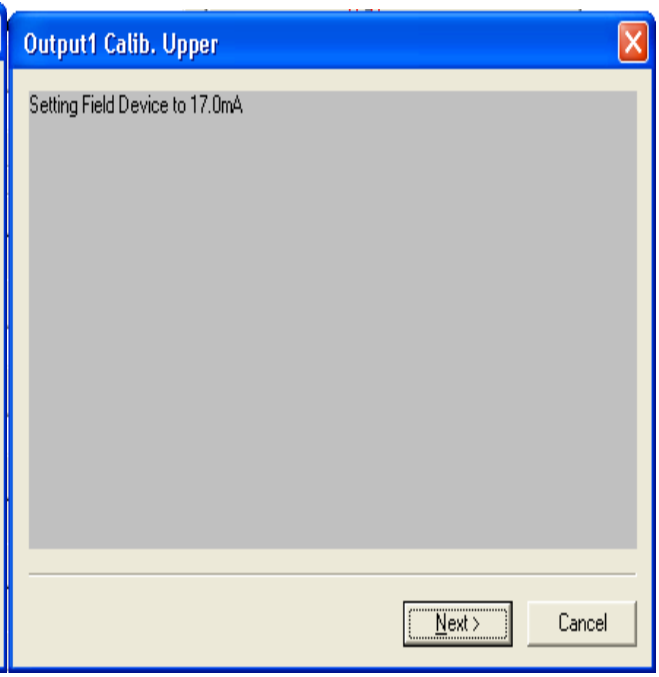


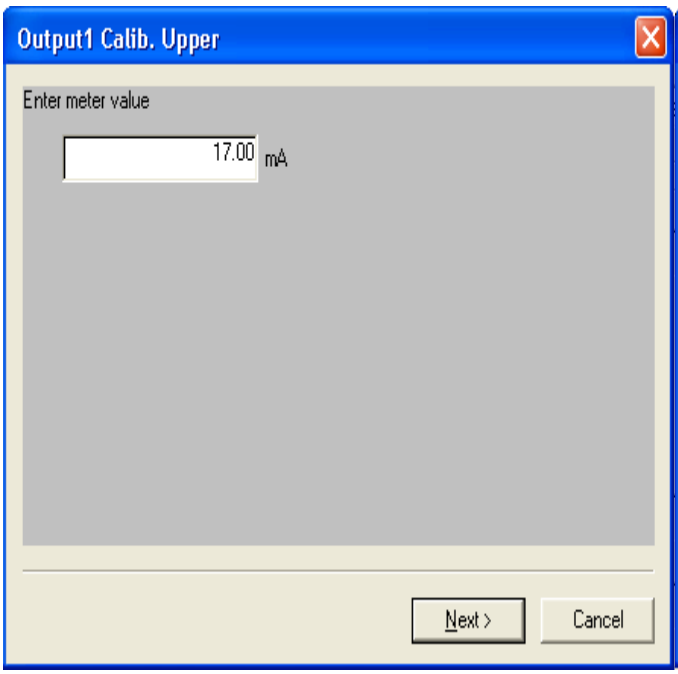


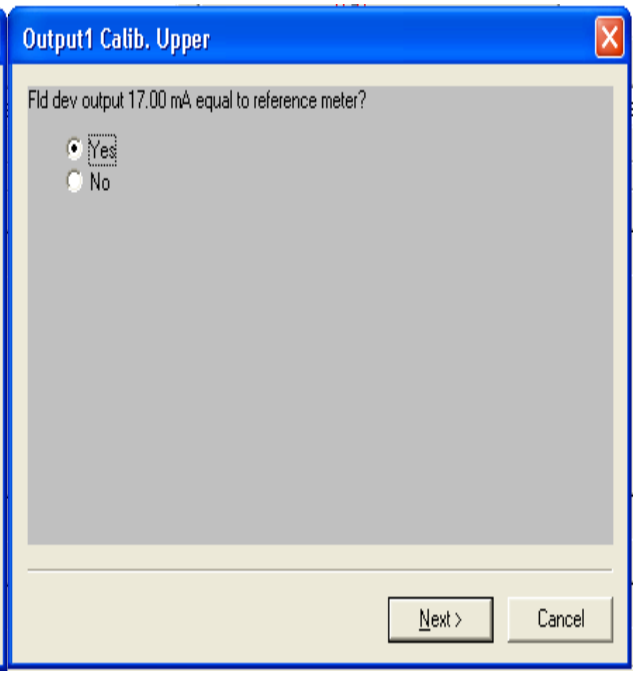
3.4.2 Output1 Upper

In Output1 Upper, user allows to trim current output1.
The user start to fix the current to 20mA, after entering the current value he read on a voltmeter, this value is sent to the device. This method allows adjusting to have exactly the good current value of output1 loop.






Output1 Calib. Upper
Enter meter value
17.00
mA
Next >
Cancel

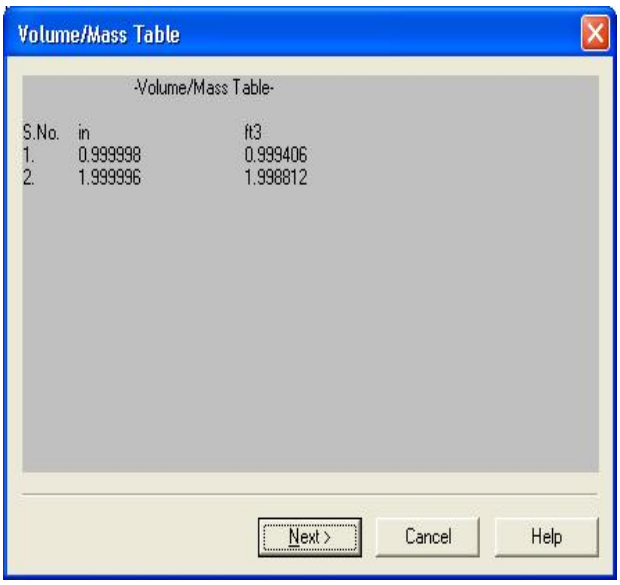

Output1 Calib. Upper
Fld dev output 17.00 mA equal to reference meter?
Yes
No
Next >
Cancel

3.5 Tables

3.5.1 Volume/Mass Table

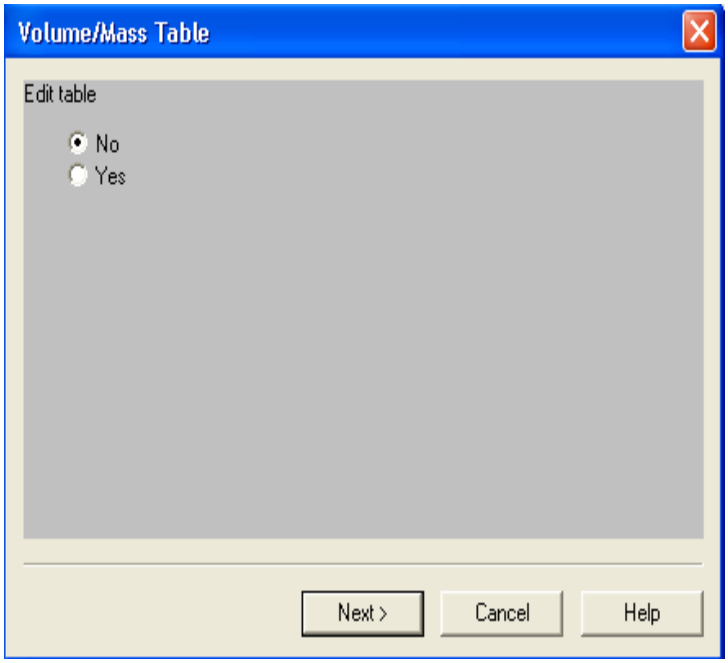
Double Click on “Volume/Mass Table” will display all the entries of conversion table in ‘2 x 2’ format.

Display will be in following steps:

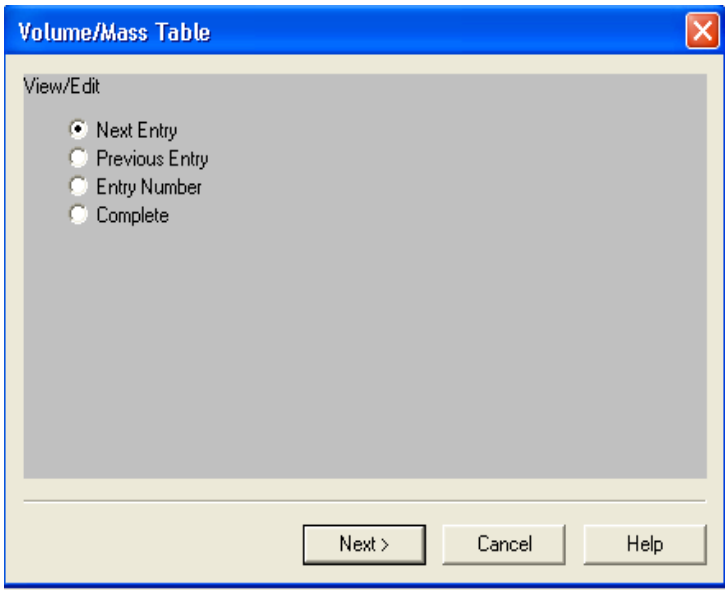


1. After Displaying all entries:

If yes is selected, it permits user to edit or add new entries.



2. Selection of Next Entry will show next entry Level to edit, after clicking Next, Volume/Mass is displayed for next Entry to edit. After editing Level & Volume/Mass for current entry, above shown menu is displayed again.



3. Selection of Previous Entry will show previous entry Level to edit, after clicking next, Volume/Mass is displayed for previous Entry to edit. After editing Level & Volume/Mass for current entry, above shown menu is displayed again.

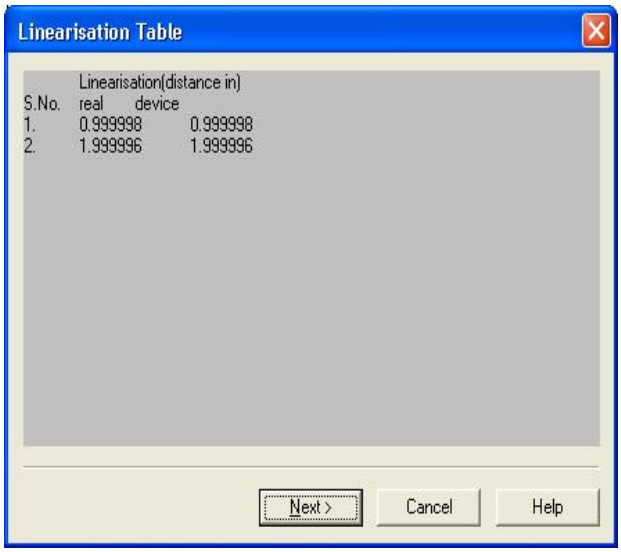
4. Selection of Entry Number will take Entry Number from user and will display that entry Level to edit, after clicking next; Volume is displayed for given Entry number to edit. After editing Level & Volume for entry, above shown menu is displayed again.

   If Entered Entry Number is greater than Entries+1, Entry Number is made equal to Number of Entries + 1.

If Yes is entered, table with edited values is stored in to the Device (If table entered is monotonous).
Note: All values entered for Level and Volume should be in increasing order with Entry numbers (Corresponding warnings are displayed). Level value entered can not exceed Tank Height.

3.5.2 Linearisation Table

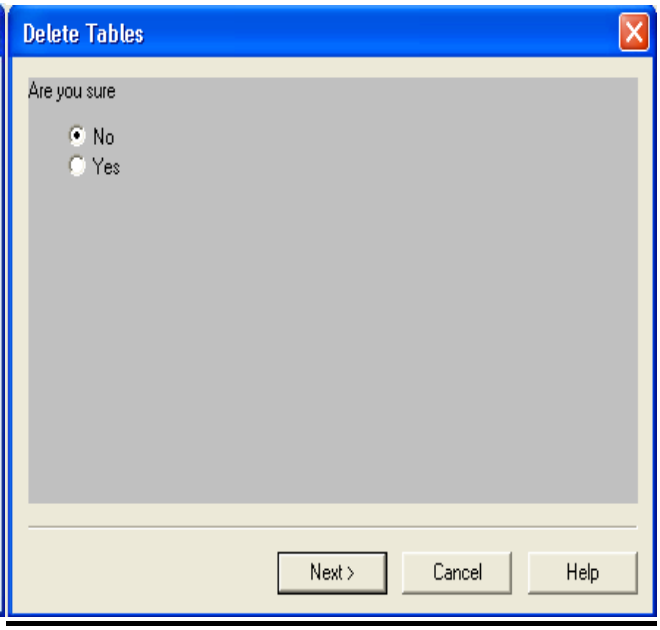
Above explained steps for volume/mass Table are to be followed, with Distance Real, Distance Device instead of Level and Volume respectively. The editing and displaying wizard is the same as that of volume/mass table .The display of the Linearisation table is shown below



Note: The length and volume/mass unit can be changed from installation plate2

3.5.3 Delete Tables

Delete tables allow user to delete the volume/mass and Linearisation tables entirely.

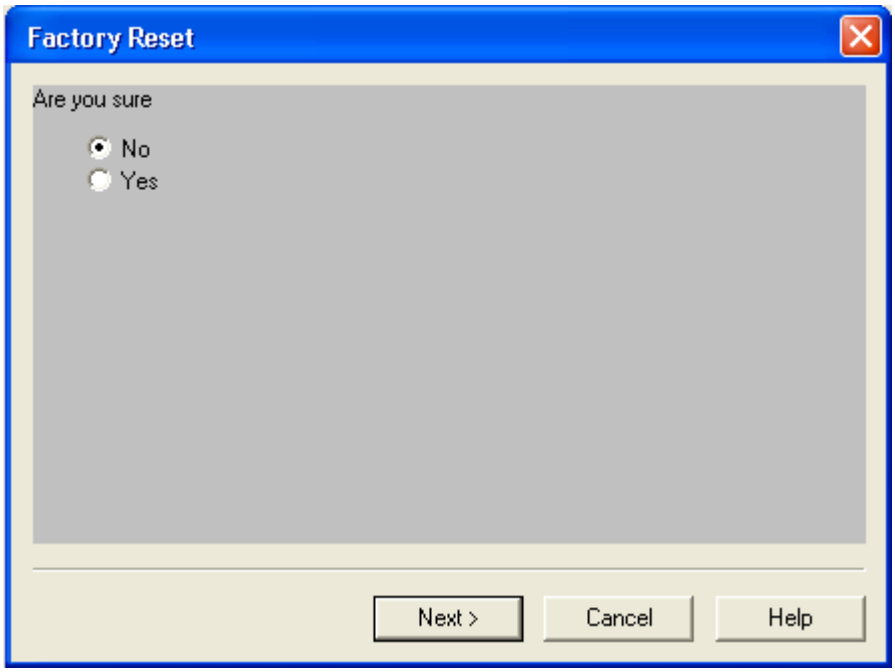


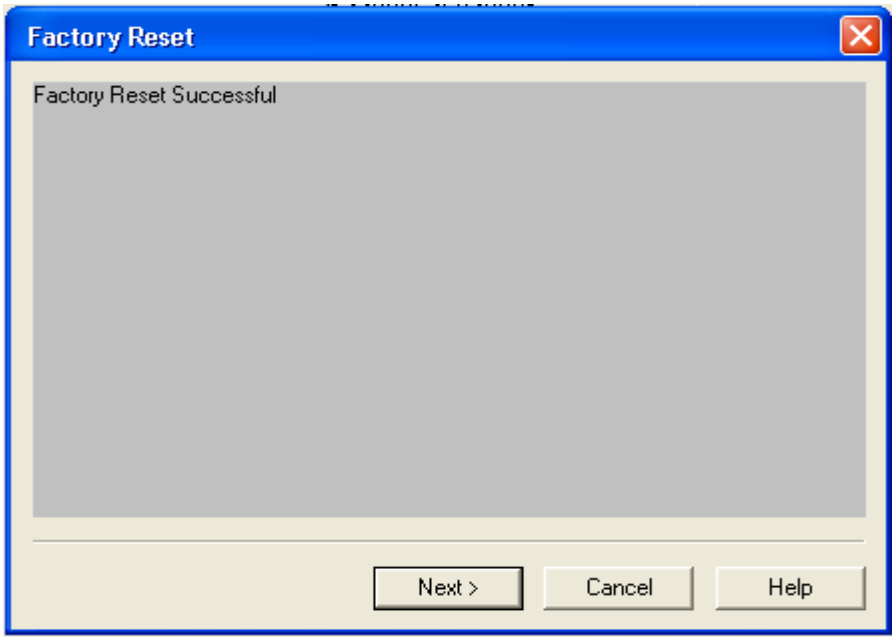
3.6 Reset

There are three types of reset. For the security reasons it re-ensures for the reset.

3.6.1 Factory Reset

In the Factory Reset, the device or configurations are set to the factory default values. This method will be invoked by Service validation.



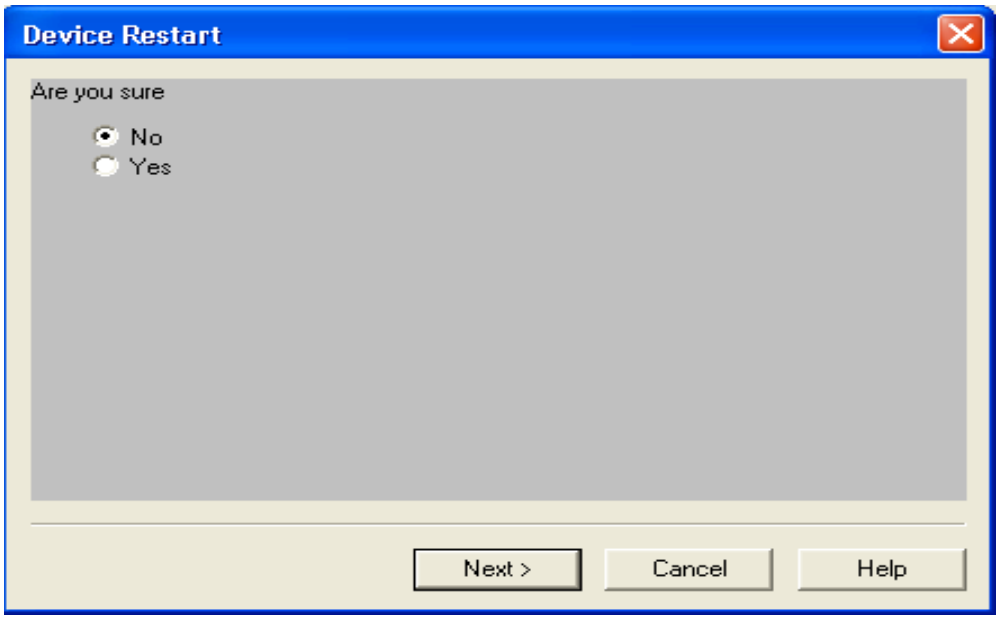


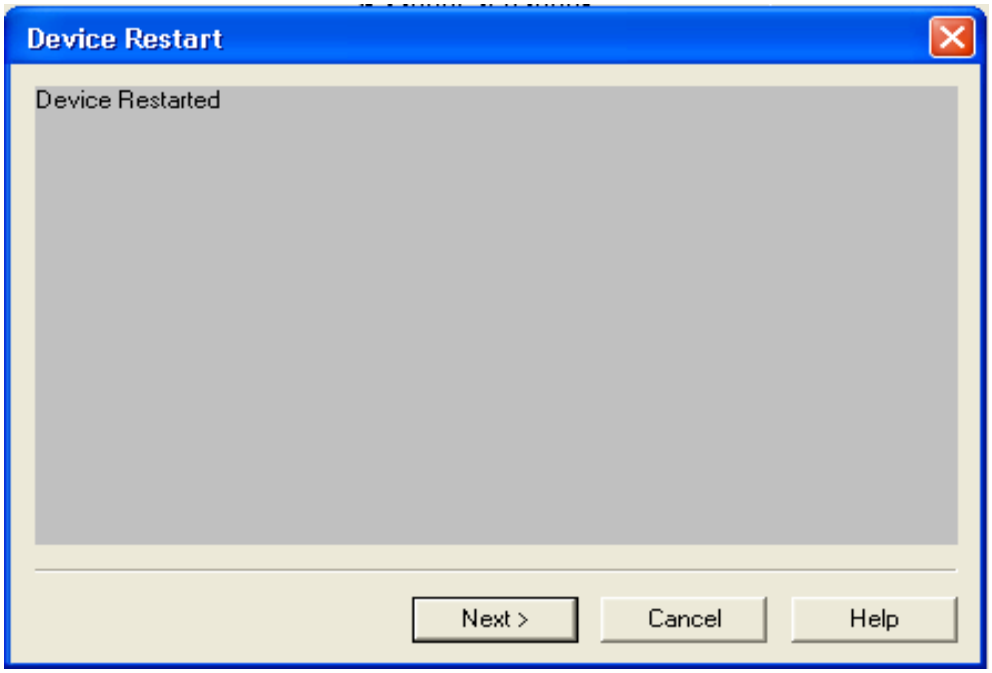
3.6.2 Customer Reset

See “Factory Reset”.

3.6.3 Device Reset

It is used to restart the device.

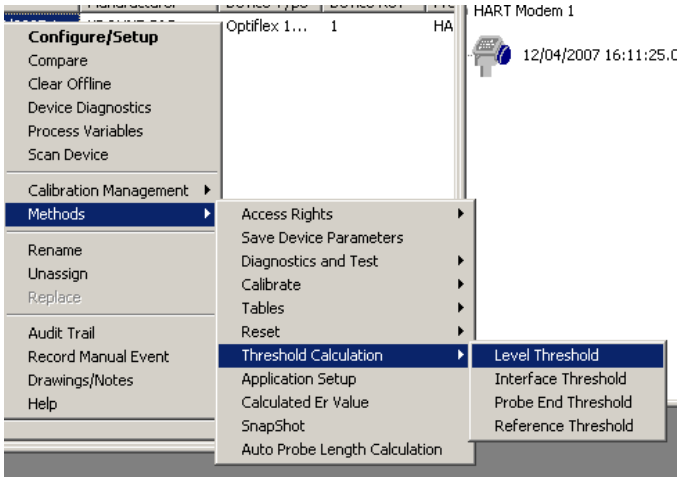




(Some time the communication can be lost when the device is restarting.)

3.7 Threshold Calculation

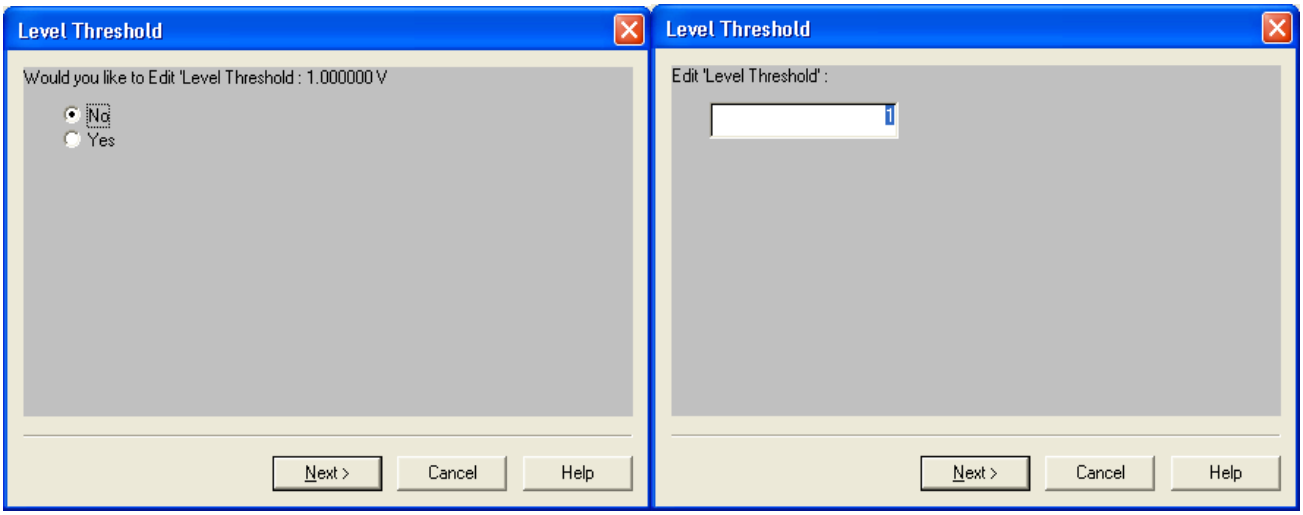
All the threshold parameters can be configured and viewed in this menu.

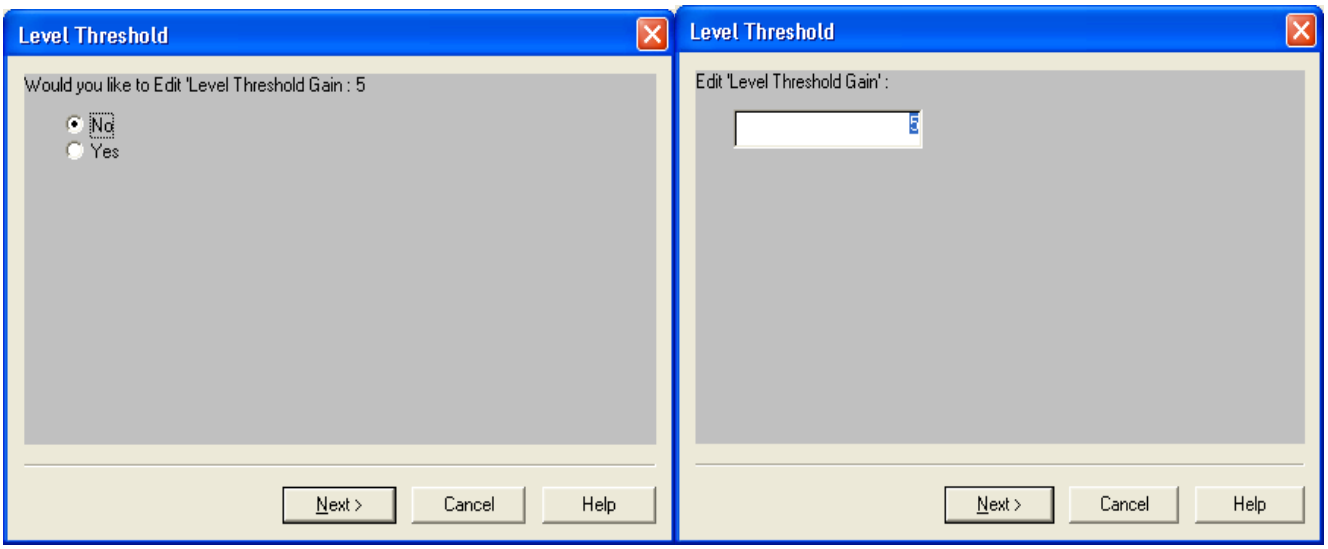


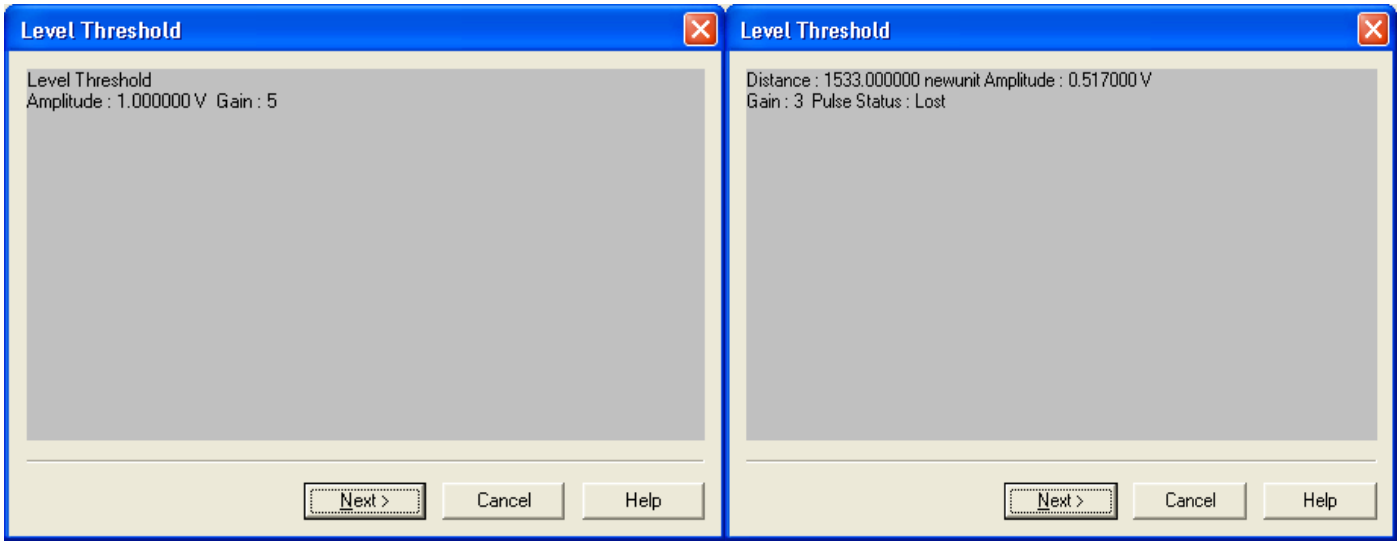
The display interface for all the threshold related parameters are the same. The description of one of the threshold parameter is explained below.

3.7.1 Level Threshold

This function allows modifying the Threshold and the Gain of the Level pulse.

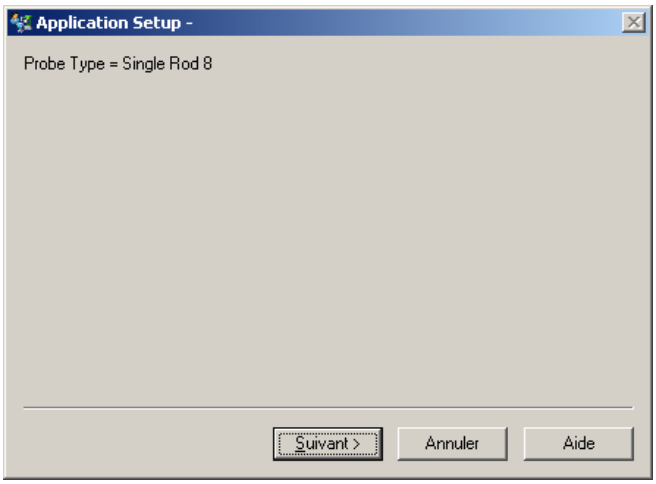


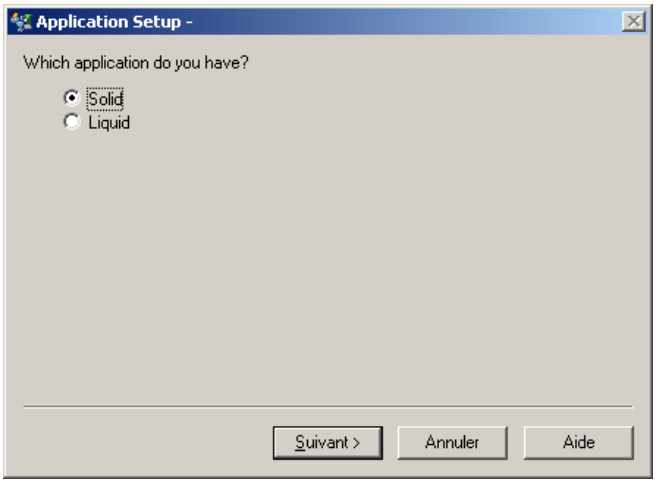


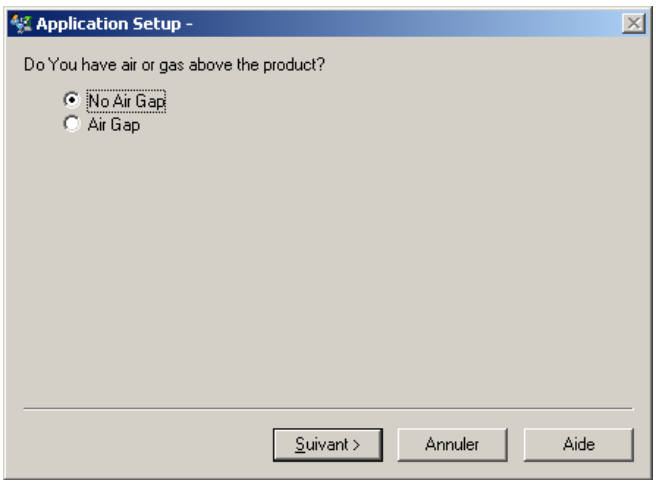


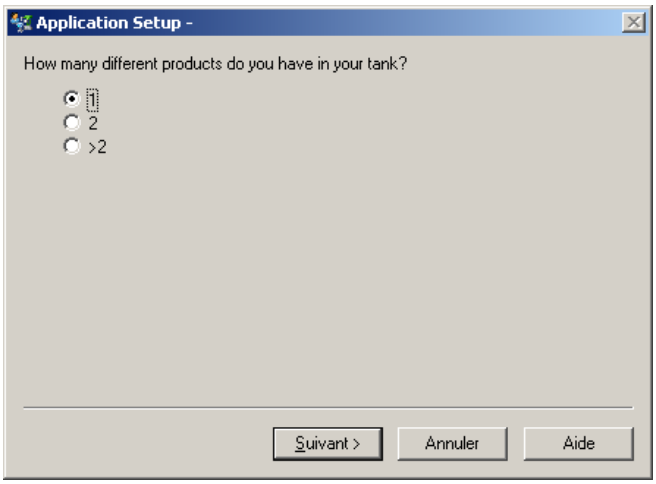
3.8 Application Setup

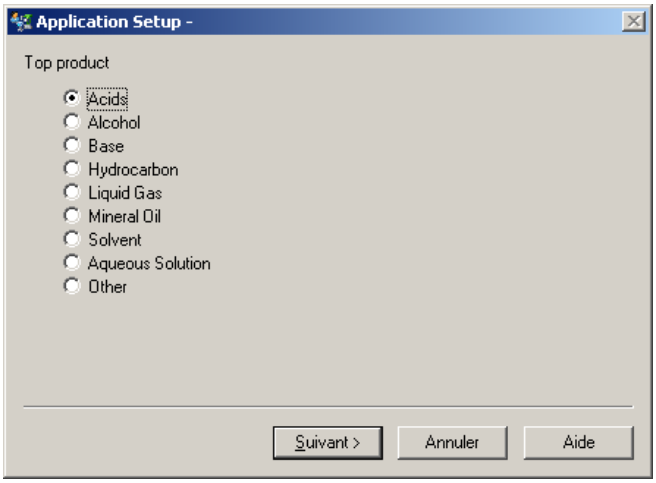
It is used to configure the device for a particular application .The various dependencies of the parameters will change according to the parameters settings. All the settings made in this can be viewed in the Quick Setup Summary Plate. This is one of the prime method through which the application type can be changed. The display box is shown below.

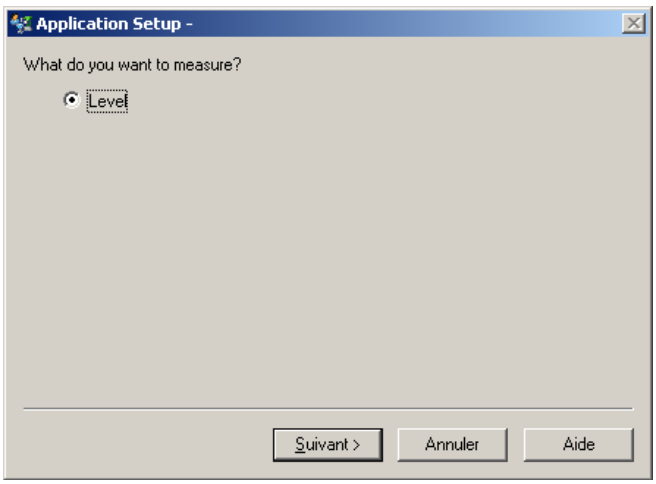

Application Setup -
Probe Type = Single Rod 8
Suivant >
Annuler
Aide


Application Setup -
Which application do you have?
Solid
Liquid
Suivant >
Annuler
Aide


Application Setup -
Do You have air or gas above the product?
No Air Gap
Air Gap
Suivant >
Annuler
Aide

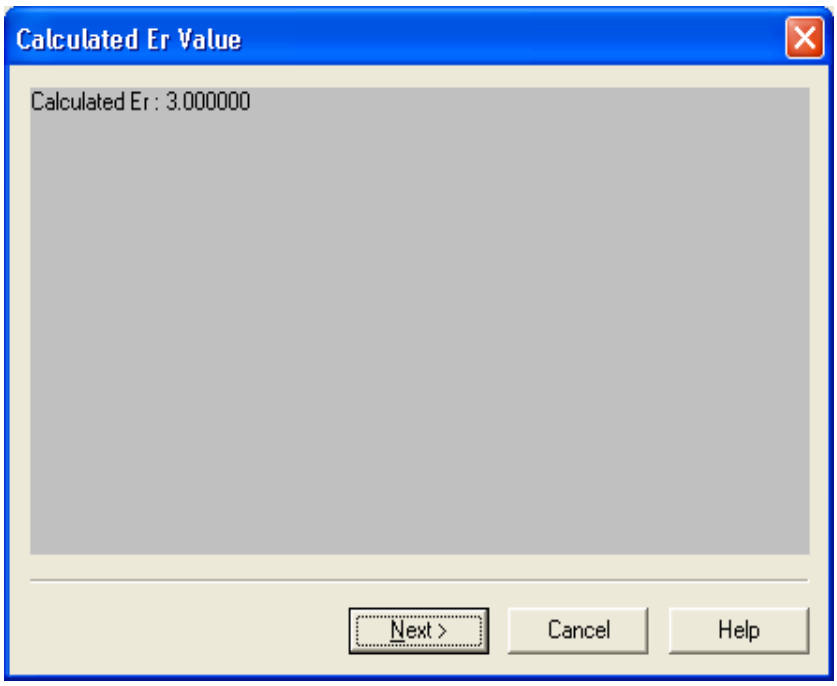

Application Setup -
How many different products do you have in your tank?
1
2
>2
Suivant >
Annuler
Aide


Application Setup -
Top product
Acids
Alcohol
Base
Hydrocarbon
Liquid Gas
Mineral Oil
Solvent
Aqueous Solution
Other
Suivant >
Annuler
Aide


Application Setup -
What do you want to measure?
Level
Suivant >
Annuler
Aide

3.9 Calculated Er Value

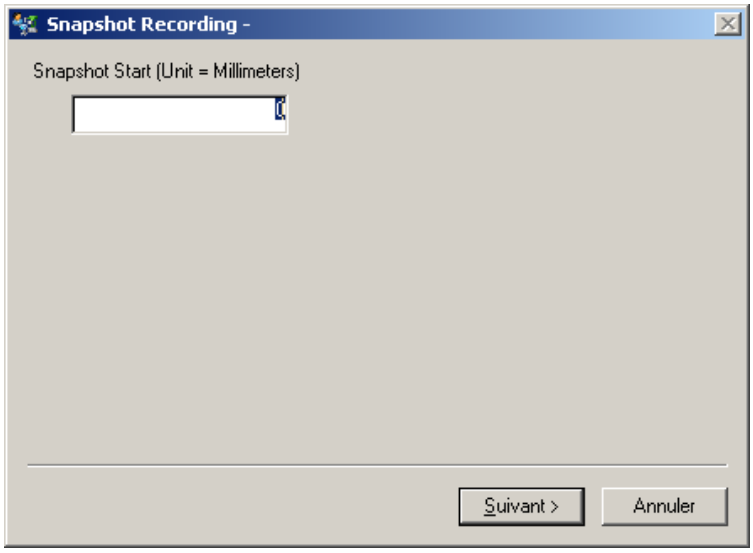
It is just used to show the calculated Er value from the device.



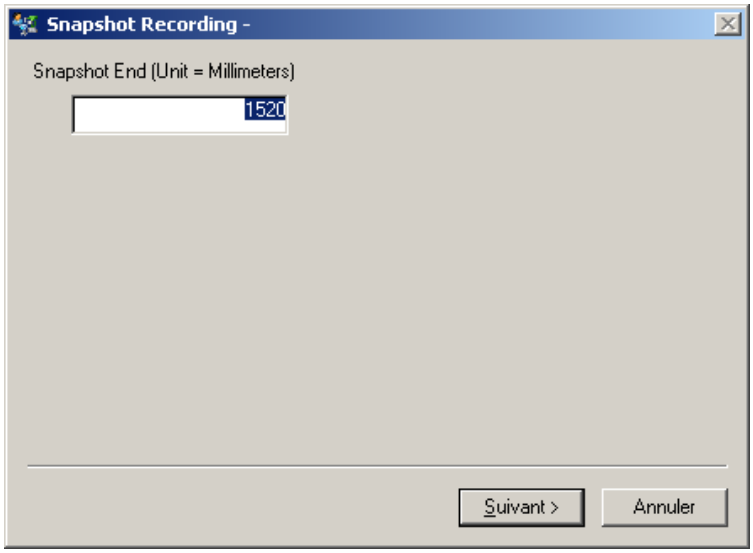
3.10 Snapshot

If the device version is > 77 then this function can be used.

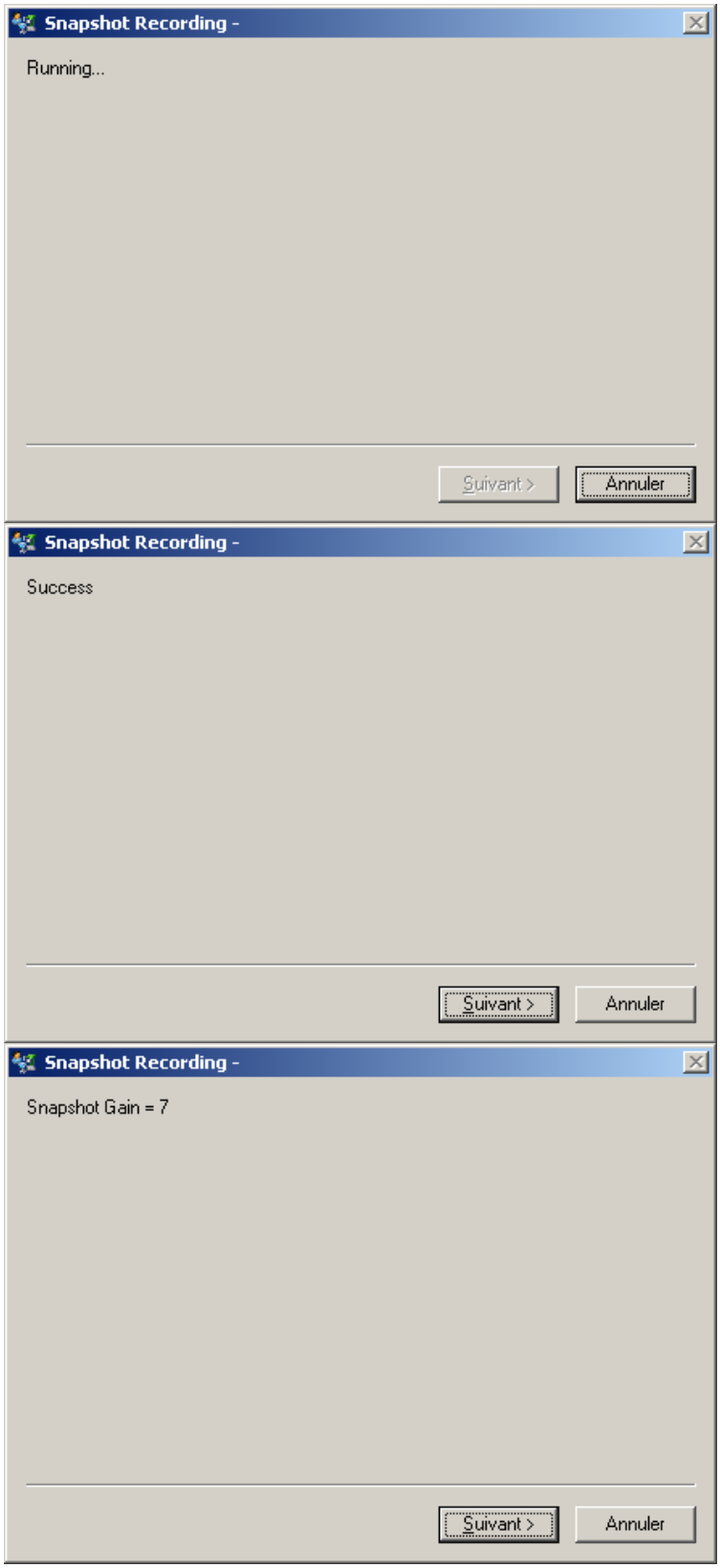
When the tank is empty, this function can be executed in order to record a snapshot of the probe. This function allows to hide “parasite” on the probe.

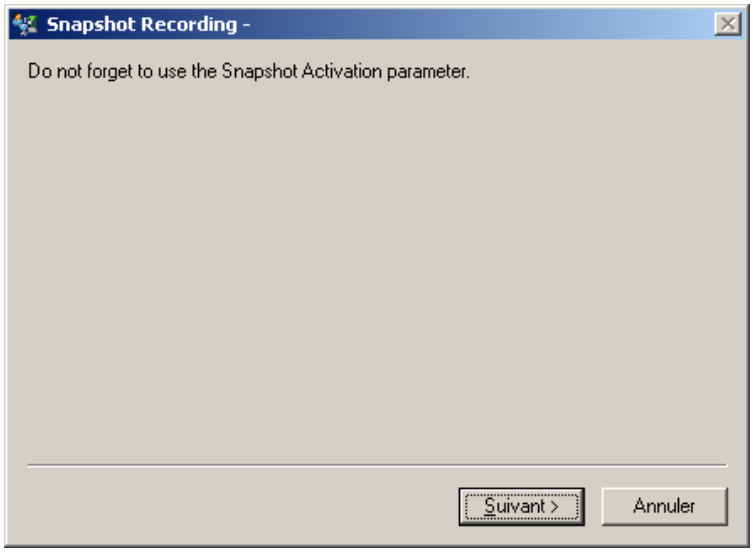


Enter the beginning of the snapshot.



Enter the end of the snapshot. The maximal value is the Sensor length (probe length minus counterweight height).

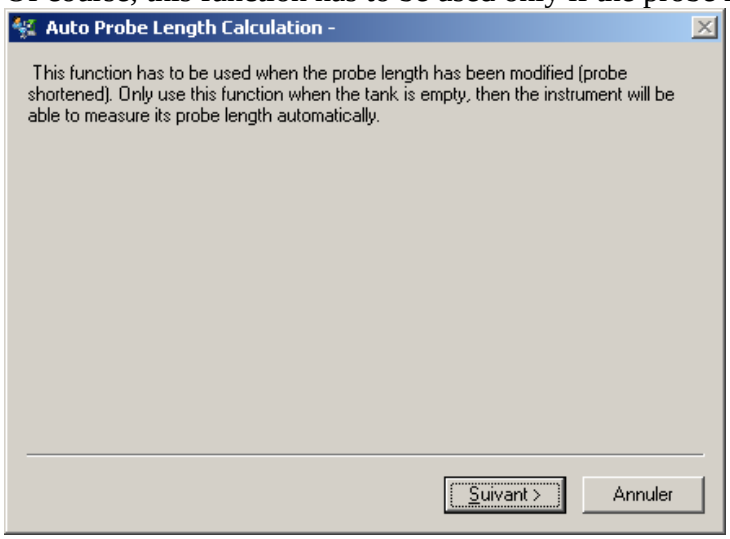

Snapshot Recording -
Running...
Suivant >
Annuler
Snapshot Recording -
Success
Suivant >
Annuler
Snapshot Recording -
Snapshot Gain = 7
Suivant >
Annuler

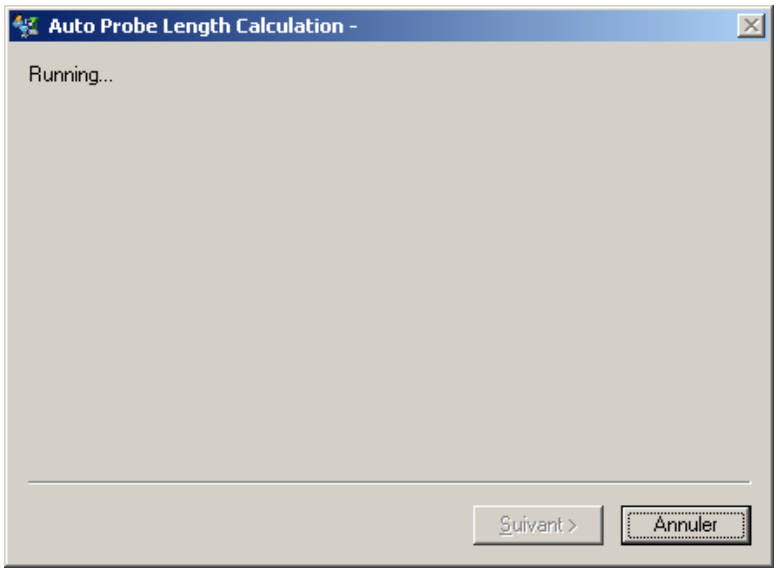


The snapshot is activated by a specific parameter (Snapshot Activation). That's why it is necessary to send its new value to the device.

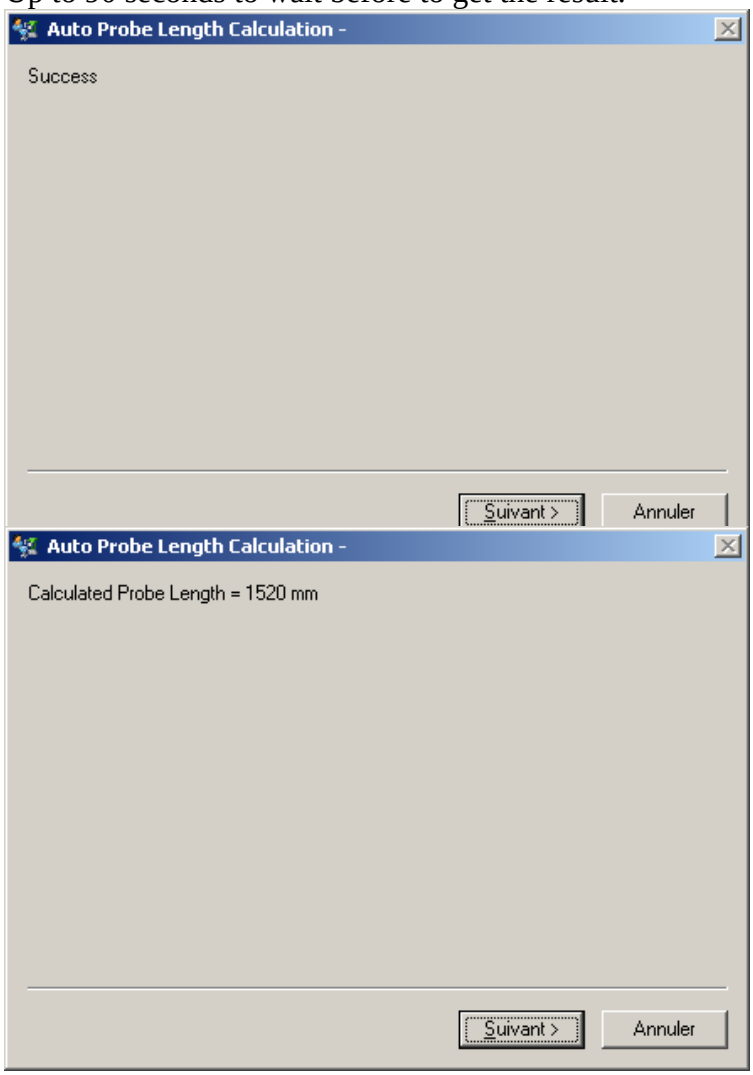
3.11 Auto Probe Length Calculation

If the device version is > 77 then this function can be used.
When the tank is empty and if the service parameter "Probe End Type" is not equal to zero then it is possible to use this function in order to calculate automatically the probe length.
Of course, this function has to be used only if the probe has been shortened.





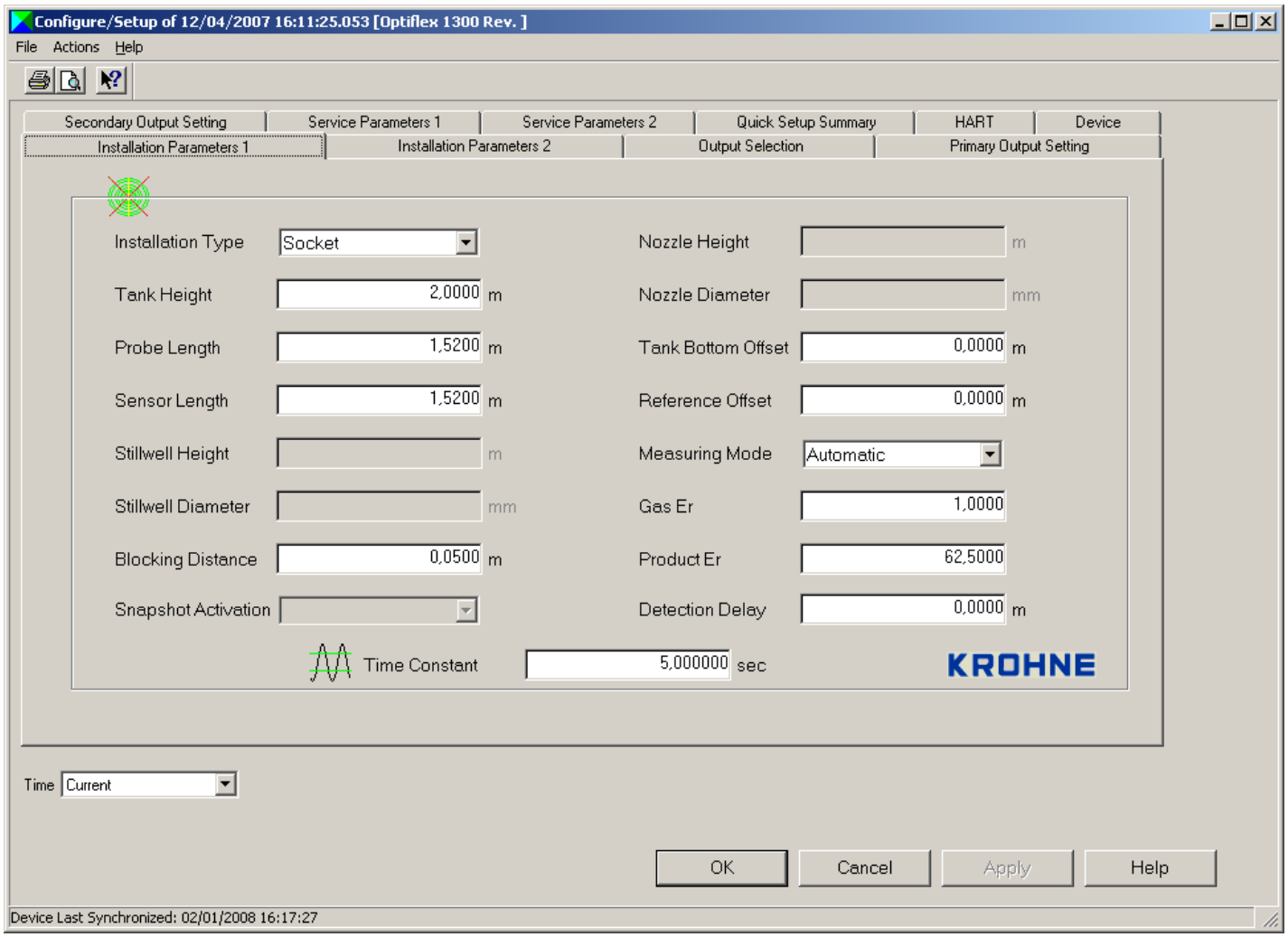
Up to 90 seconds to wait before to get the result.



3.12 Device Configuration

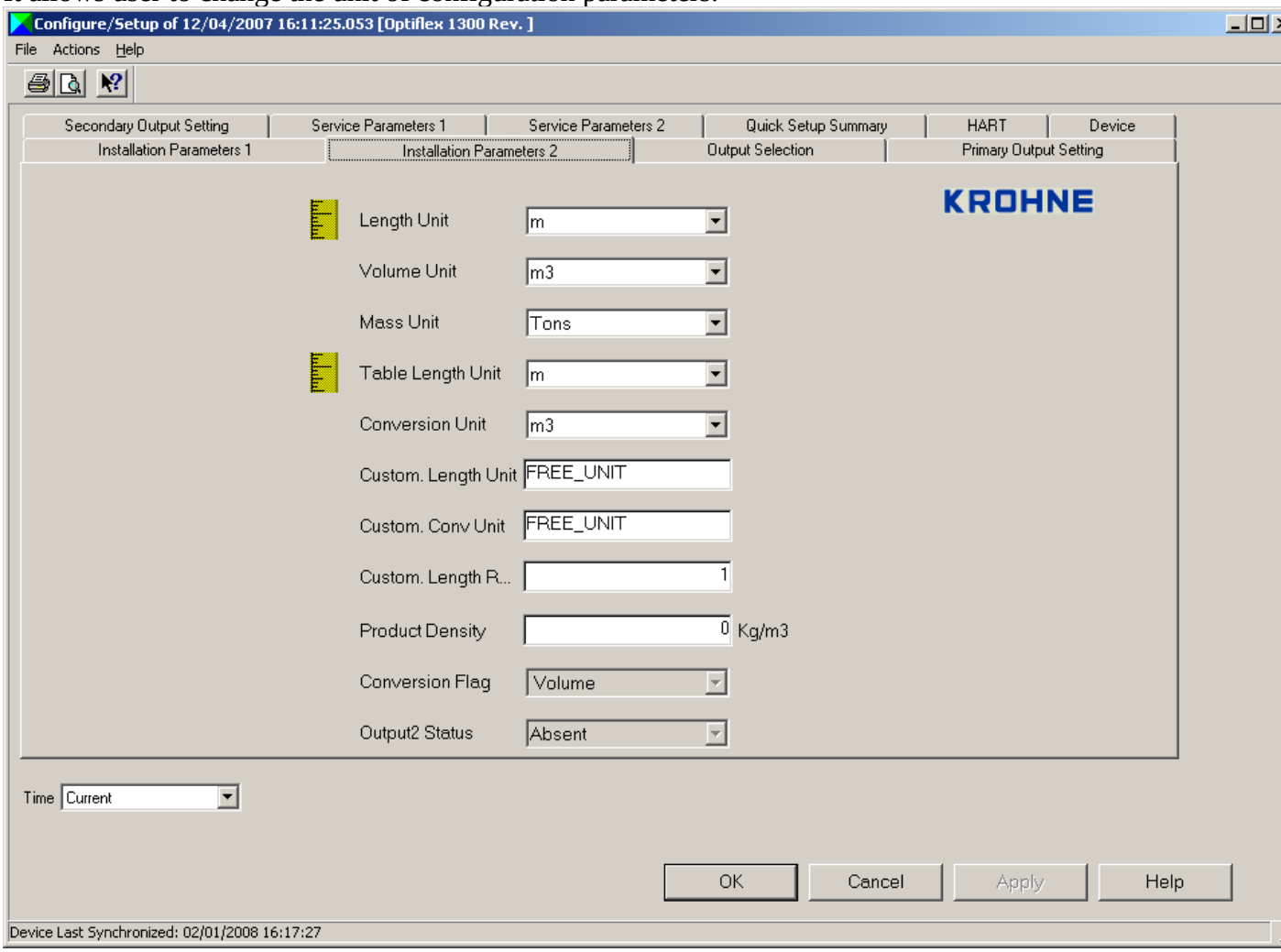
3.12.1 Installation Parameters1

This plate consists of the editable parameters of the device like Installation Type, Tank Height etc. In this plate some of the parameters are dependent on other parameters like Probe Length, Blocking Distance etc is dependent on Installation Type and Probe Type. Some of the parameters will be hidden like when Installation Type is Stillwell then Nozzle Height and Nozzle Diameter will be hidden. On editing particular parameter it gets yellow in color and **Apply** button get activated. On clicking, **Apply** Button the new value gets stored in the parameter.



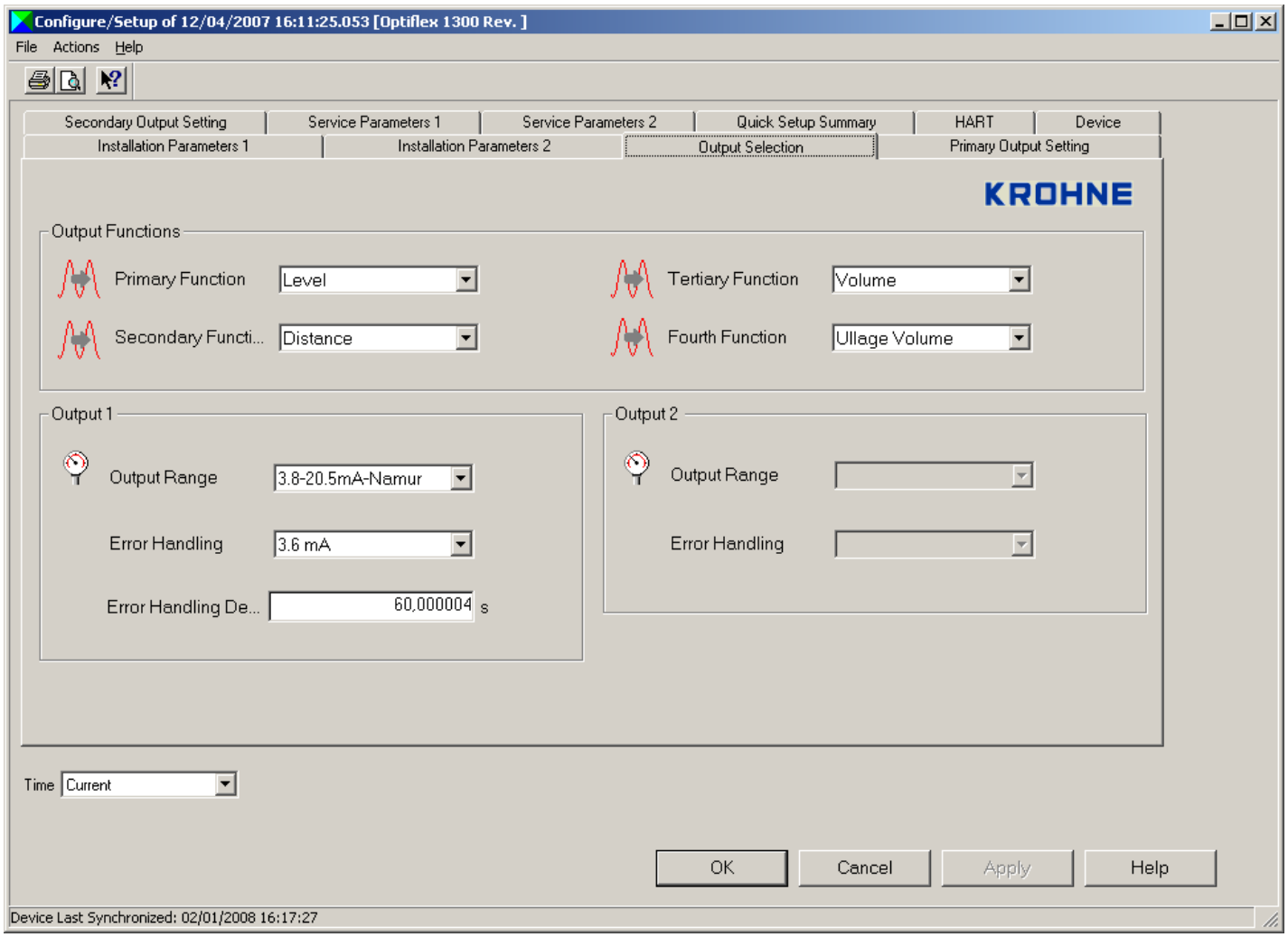
3.12.2 Installation Parameters2

It allows user to change the unit of configuration parameters.



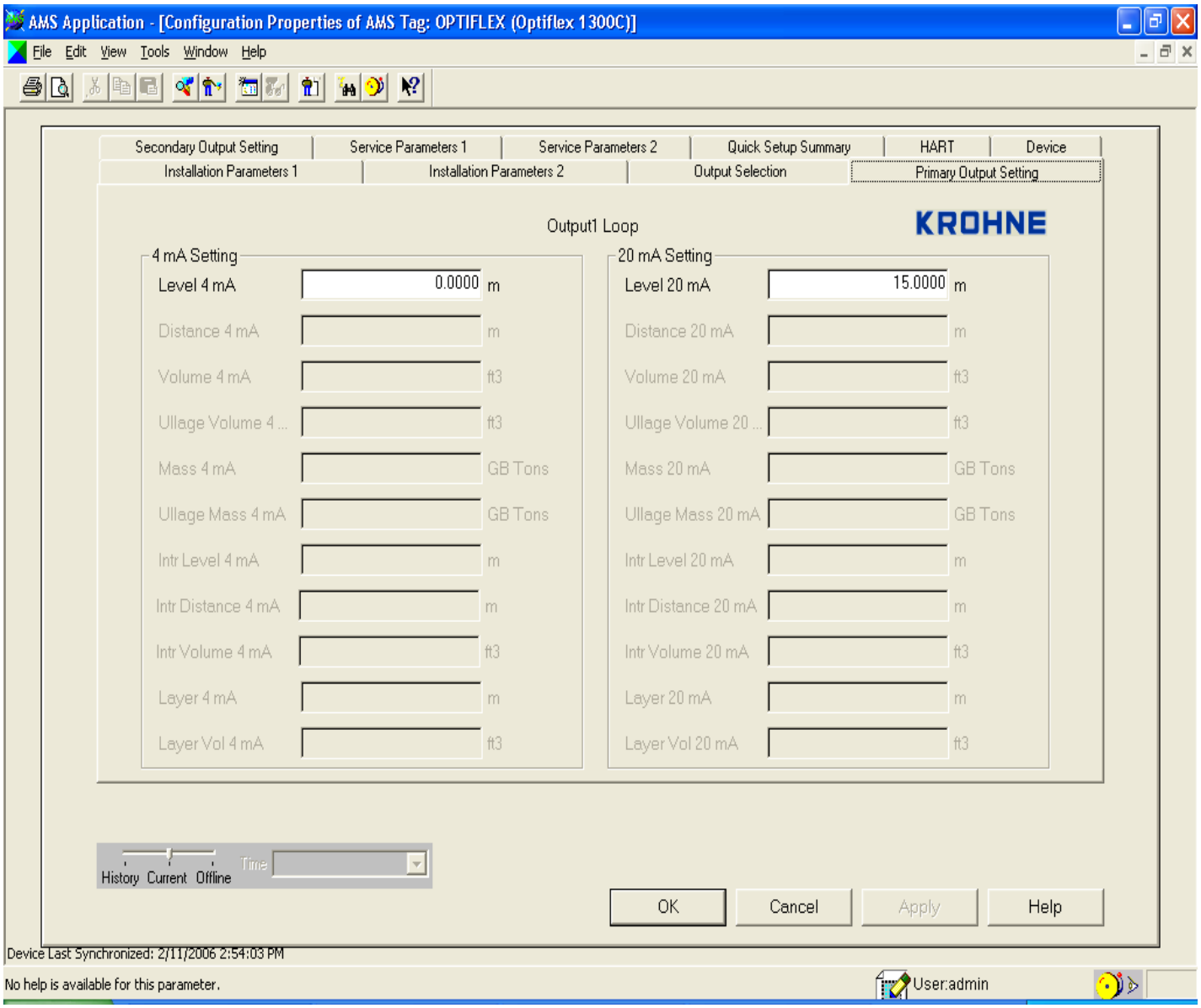
3.12.3 Output Selection

It allows user to change the Primary Output Function, Secondary Output Function, Tertiary Output Function and Fourth Output function. Beside this it provides detail's of primary and secondary output as differentiated by the group box namely output1 and output2.



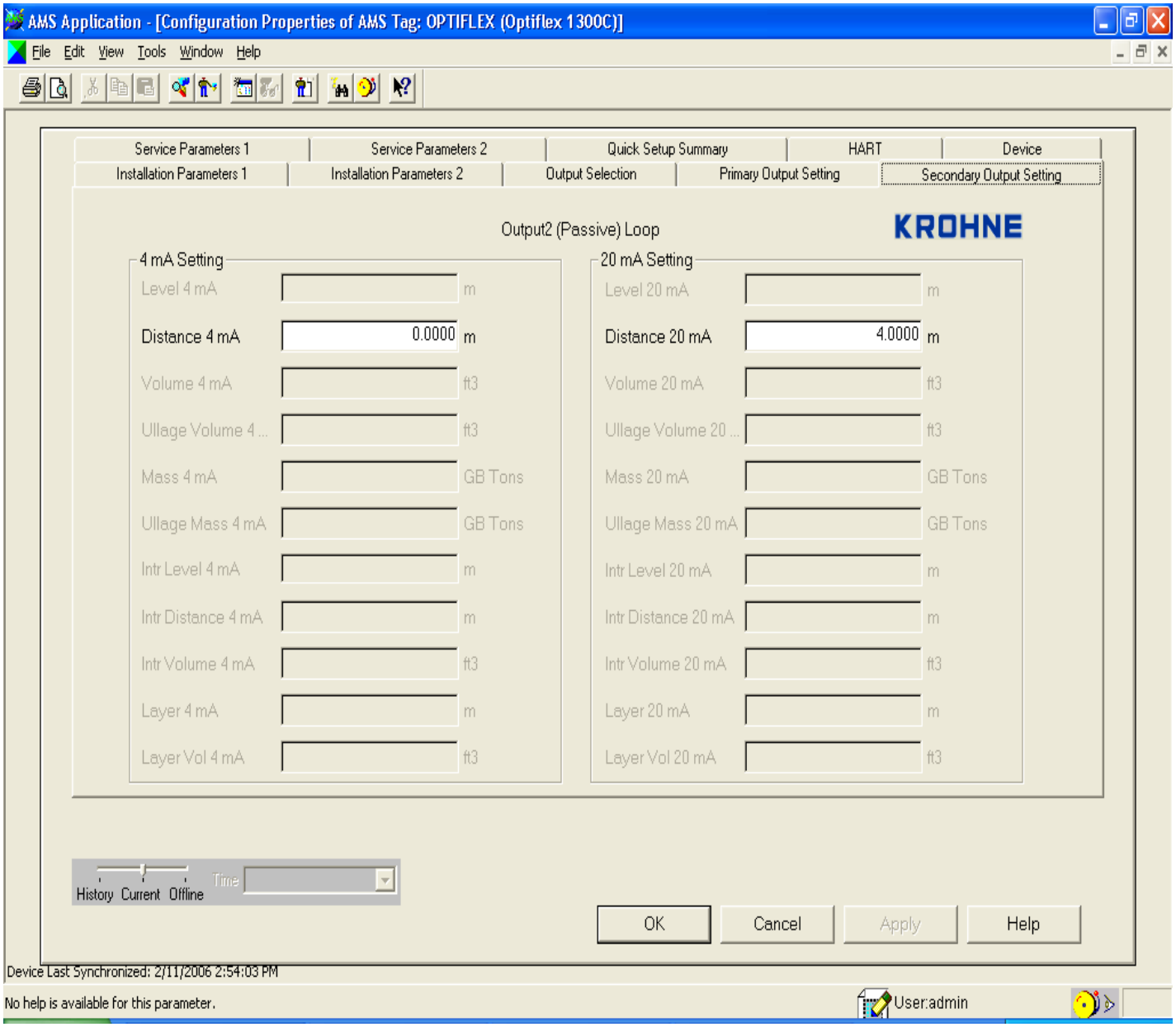
3.12.4 Primary Output Setting

It allows user to change the upper and lower limit of the parameters set in the output selection plate for the primary output function. The units of all these parameters are shown as set in the installation plate2. Since only one pair of parameters can be set to the primary output function, hence the rest of the parameters are disabled.



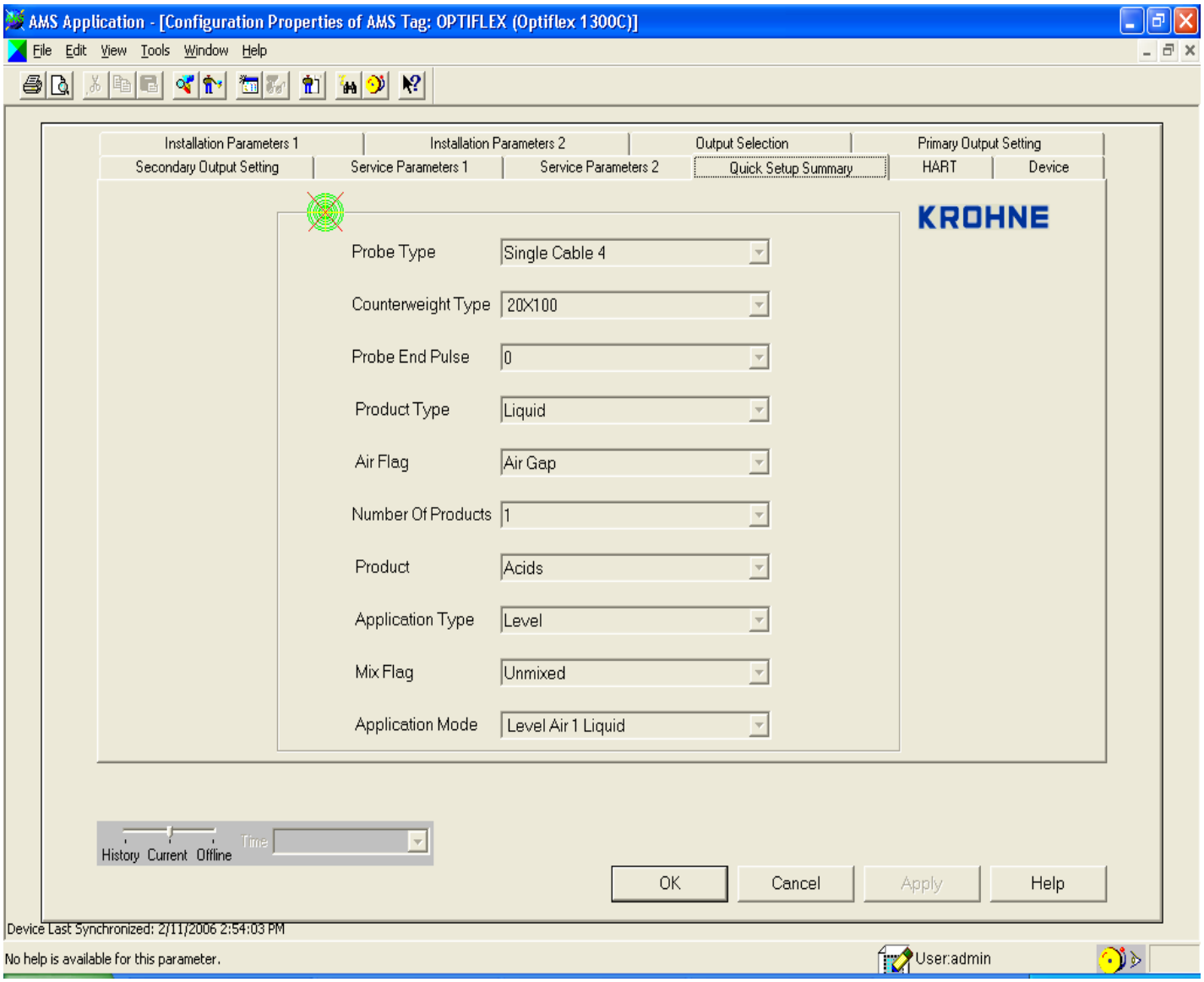
3.12.5 Secondary Output Setting

It allows user to change the upper and lower limit of the parameter set in the output selection plate for the secondary output function.



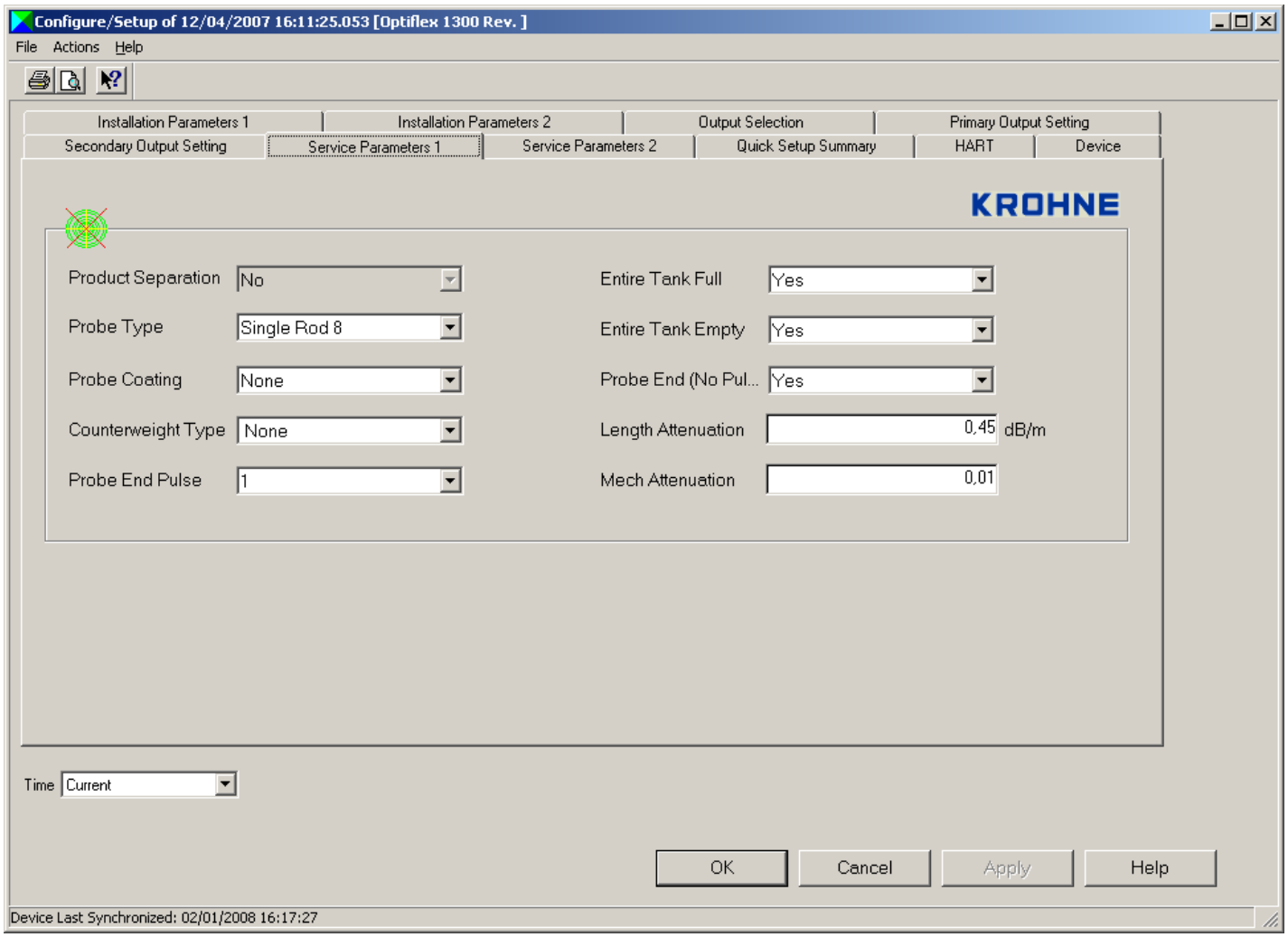
3.12.6 Quick Setup Summary

All the parameters in this plate are read only. It allows user to view all the settings made in the probe type setup selection



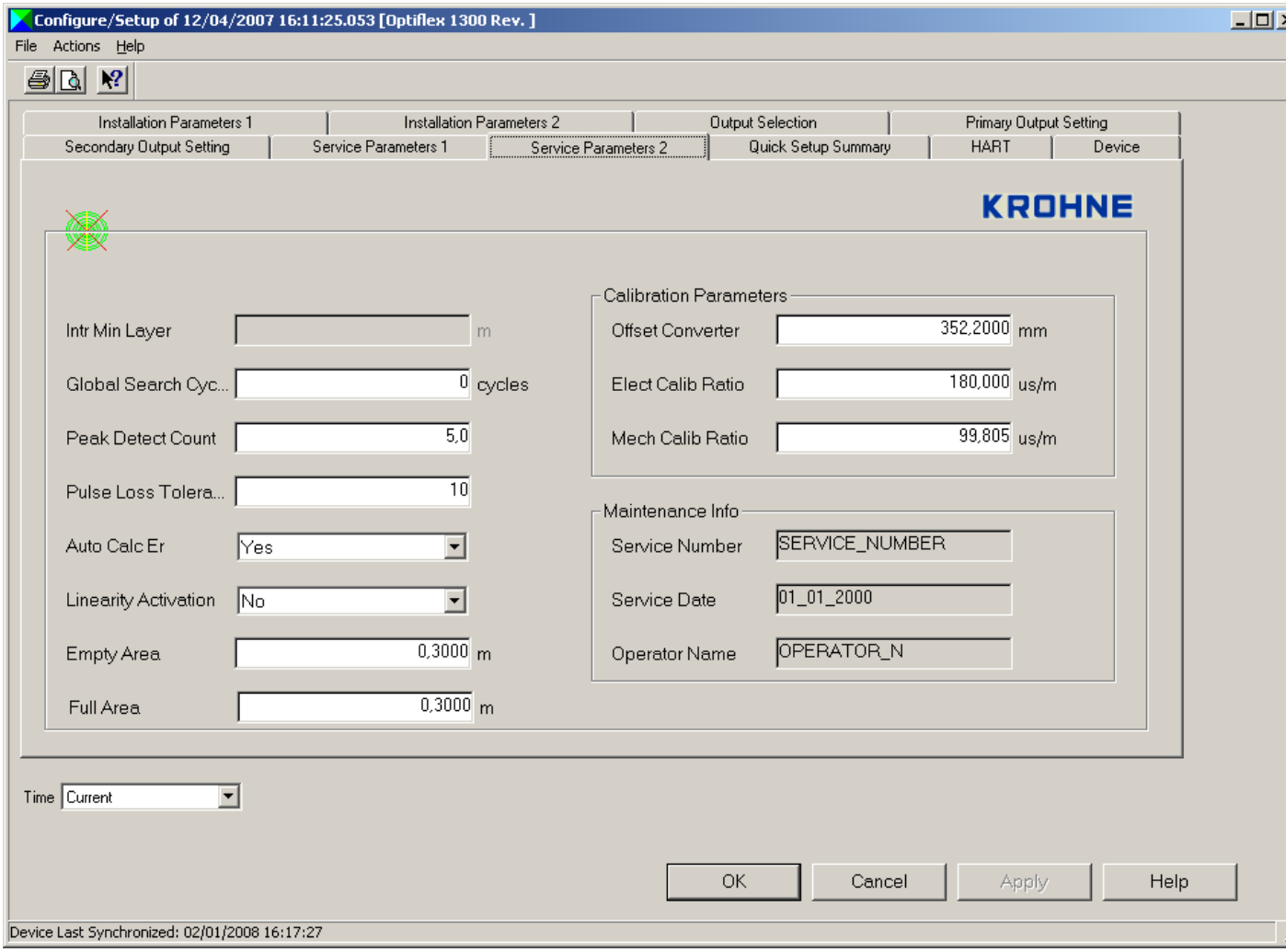
3.12.7 Service Parameters 1

It allows user to view most of the service parameters.
The service parameters are only activated by the service password.



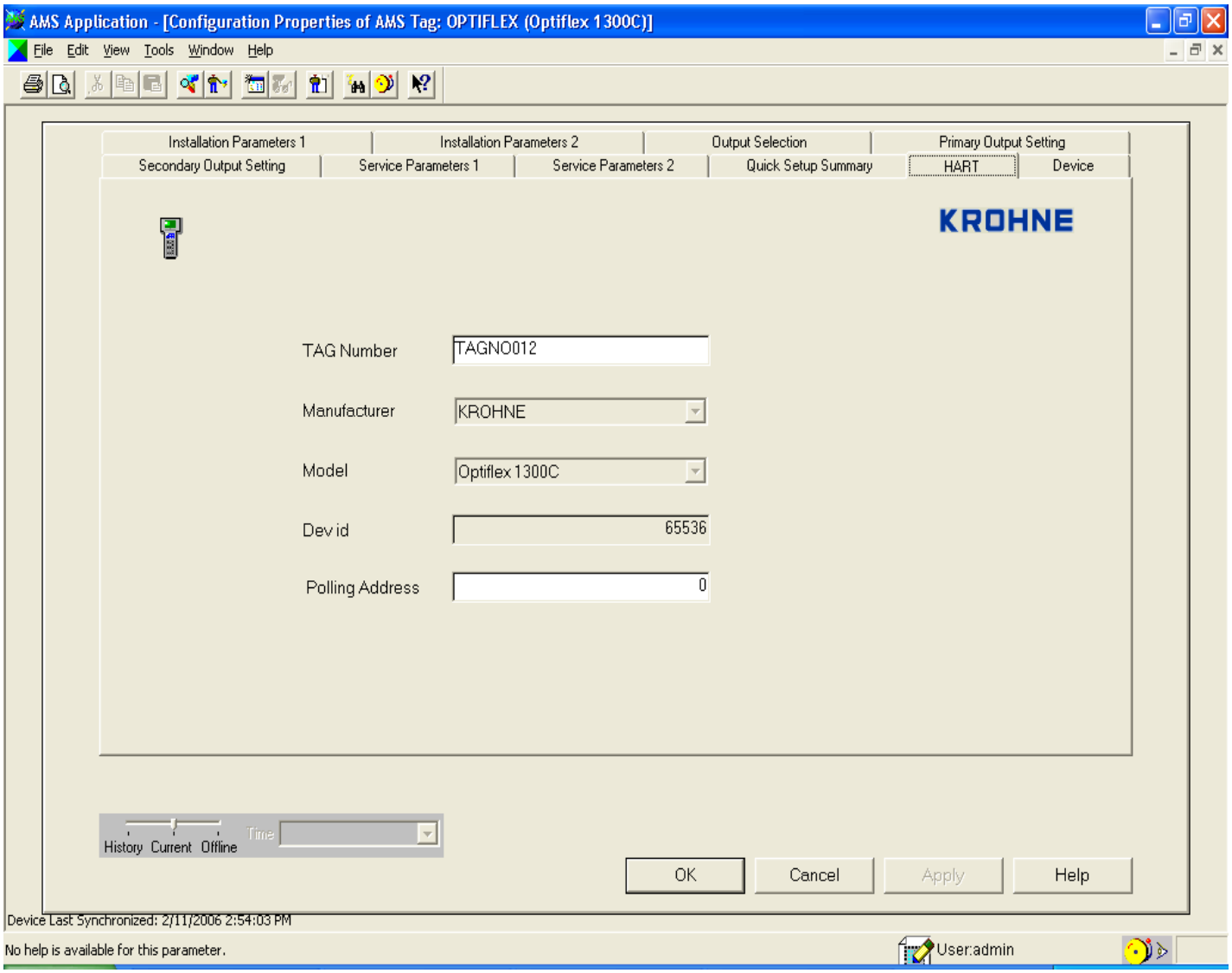
3.12.8 Service Parameters 2

It allows user to view service parameters. In addition all the calibration related parameters and maintenance information can be viewed in this plate.



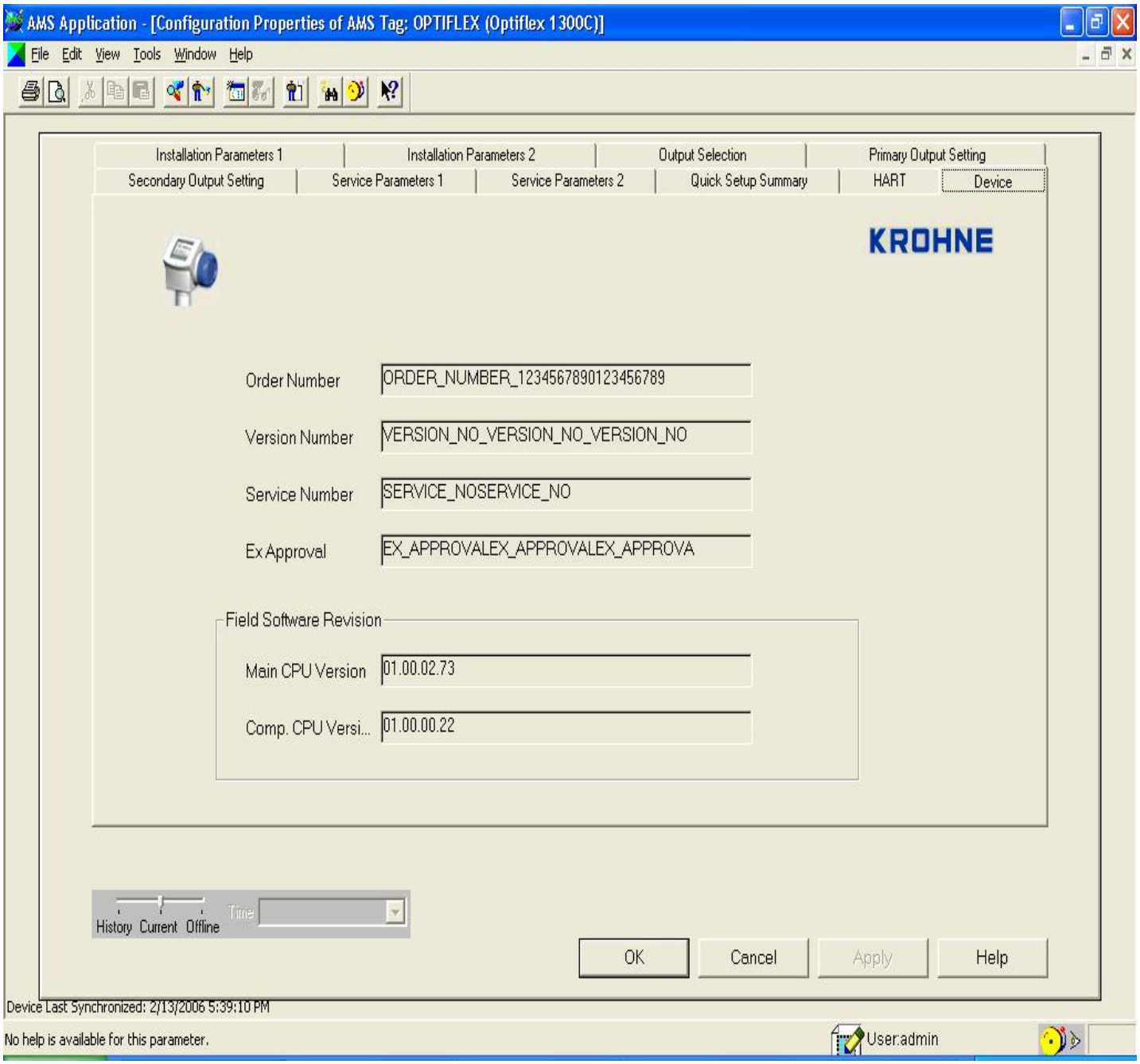
3.12.9 HART

It shows all the hart related parameters: manufacturer name, model name etc.


AMS Application - [Configuration Properties of AMS Tag: OPTIFLEX (Optiflex 1300C)]
File Edit View Tools Window Help
Installation Parameters 1
Installation Parameters 2
Output Selection
Primary Output Setting
Secondary Output Setting
Service Parameters 1
Service Parameters 2
Quick Setup Summary
HART
Device
KROHNE
TAG Number
TAGNO012
Manufacturer
KROHNE
Model
Optiflex 1300C
Dev id
65536
Polling Address
0
History Current Offline
Time
OK
Cancel
Apply
Help
Device Last Synchronized: 2/11/2006 2:54:03 PM
No help is available for this parameter.
User:admin

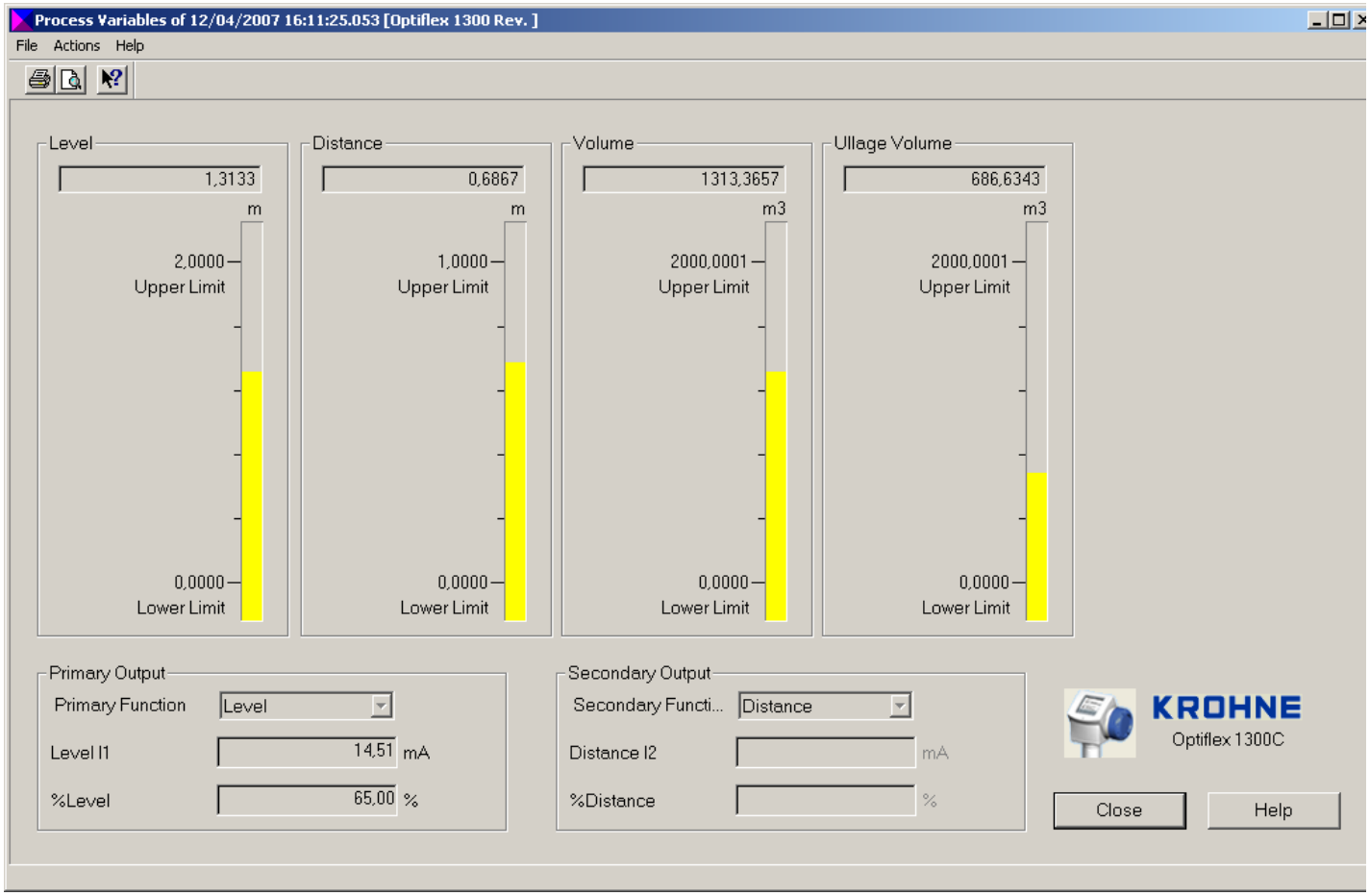
3.12.10 Device

It shows the device specific information. This plate doesn't require any authentication. All the parameters can be viewed with no password.



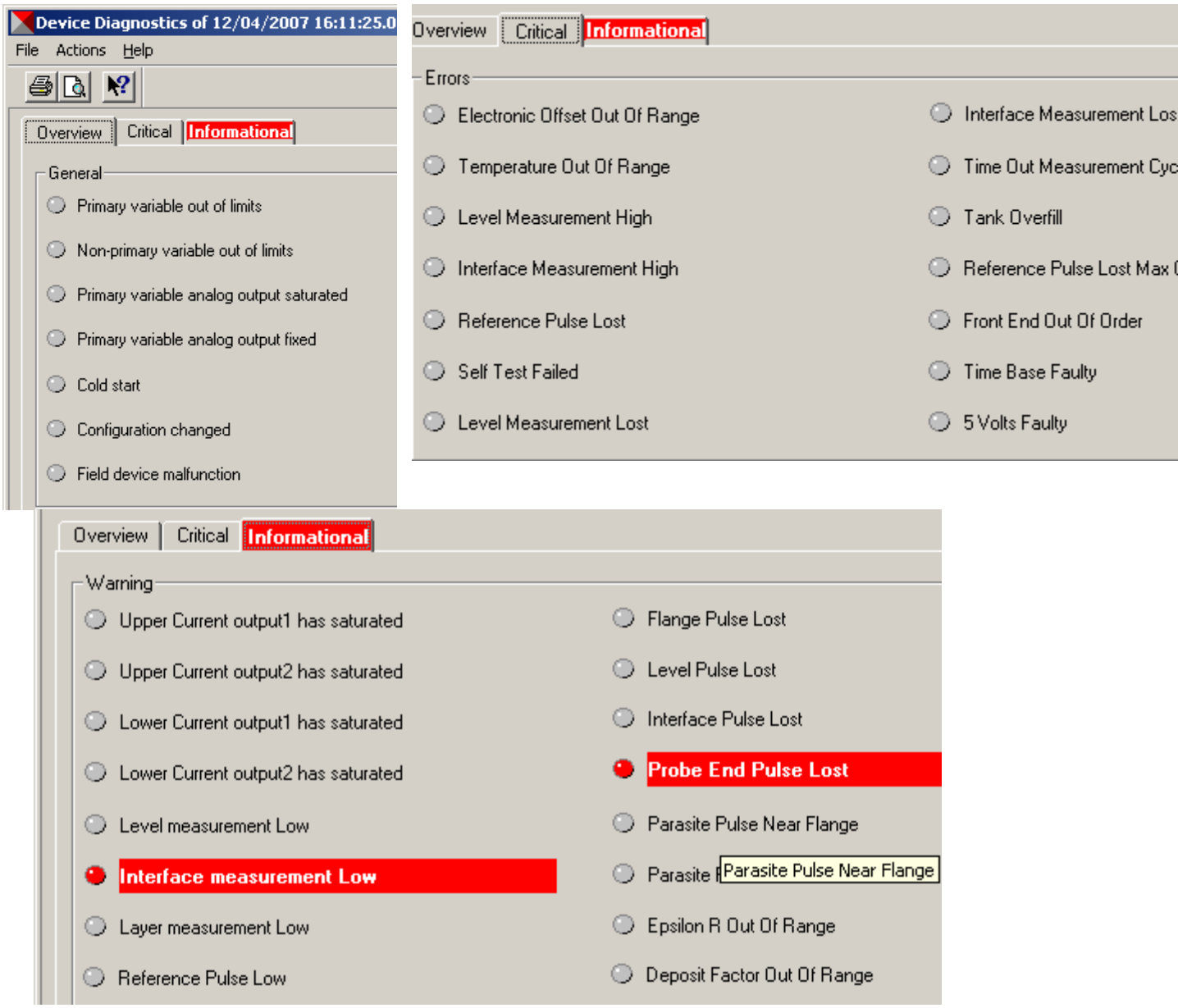
3.13 Process Variable

The Process Variables are displayed with magnitude and its corresponding unit along with upper & lower limits. Maximum four process variables are active on a single screen depending on the Output function setting.
Primary Output Function, Secondary Output Function, Tertiary Output Function, and Fourth Output Function are used to set Primary Process Variable, Secondary Process Variable, Tertiary Process Variable, & Fourth Process Variable respectively.



3.14 Device Diagnostic

It contains the status of the device.



4 Status Meaning

Status Message	Meaning
Supervisor Password OK	Entered password for Supervisor rights is correct.
Supervisor Password Invalid	Entered password for Supervisor rights is incorrect.
Simulation Service Password OK	Entered password for Service rights in Simulation mode is correct.
Service Password Invalid	Entered password for Service rights is incorrect.
Service Password OK	Entered password for Service rights is correct.
Simulation Supervisor Password OK	Entered password for Supervisor rights in Simulation mode is correct.
Dependency failure	It appears if the dependency of the parameter being modified is failed.
Update not possible	It appears if read only parameter is modified.
Reading data from device	It appears when the entries of table being read by the device.
Dependency Warning Message	It appears if the variable is modified and is dependent on other variables. Such scenario could violate its normal operation.
Max range failure	When the entered value is more than its maximum allowed value.
Min range failure	When the entered value is less than its minimum allowed value.
Table entered is not monotonous	If the entered value is less than the next entry.
Device busy	Appears when the device is busy. Normally it appears when the device is in search mode or if it is executing a function.
Access Restricted	This message appears if we try to modify a read only parameter.
Invalid Selection	You have selected a non valid item.
Too Few Bytes Received	There are not enough bytes received.
Invalid Command Request	Requested command is invalid.
Value out of range	This occurs if the entered value is out of range for that parameter.
Exceed precision	If the decimal value entered exceeds its range.

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Illegal character	If any invalid character is entered.
Max range failure occurred writing level 20mA.Restore device value	It appears if entered Value for 20mA is out of range.
Method is currently invalid	It appears if access right is not

5 HART® Communicator 375 (HC375)

5.1 Offline Restriction

In order to transfer an Offline configuration to the device the Service parameter "**Supervisor Password Enable**" (C.5.2.0) must be set to "**NO**".

In case this parameter has got the value "YES" the configuration is not transferred successfully to the device even if we don't see any error messages!

5.2 Save Device Parameters

ATTENTION**: This is a very important method**.

Each time the device configuration is modified (after sending new values) it is necessary to execute this method. **Otherwise the modifications will not be taking into account**.

This method is only accessible in case the supervisor or service password method has been executed.