

Biffi ICON3000

Profibus EDD for PDM



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NOTICE

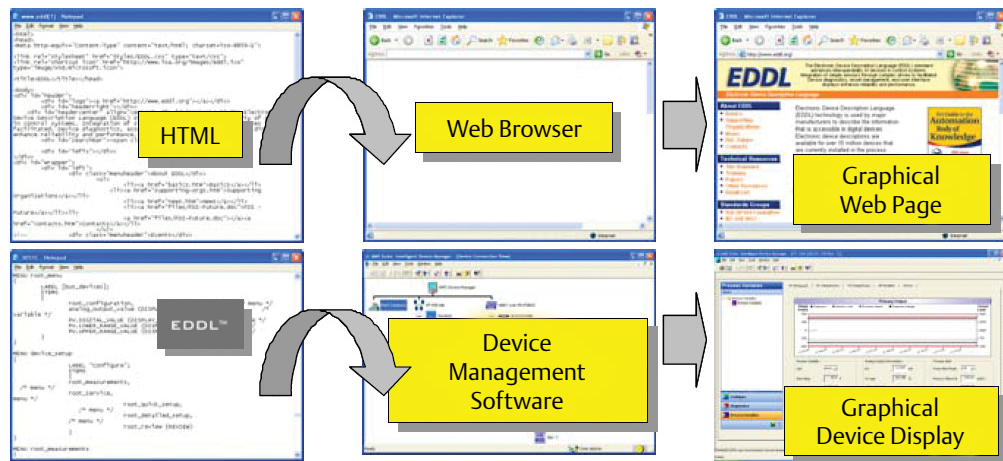
Biffi Italia has taken every care in collecting and verifying the documentation contained in this Installation, Operation and Maintenance Manual. The informations herein contained are reserved property of Biffi Italia.

Section 1: The EDDL Technology

The Electronic Device Description Language (EDDL) is a text-based language that may be used to describe the characteristics of field devices.

It is very similar to HTML web pages concept. There's an EDDL text file that tells which commands to send to request data, how to decode answers from the field device and how to display data on the user interface. The text file is managed by an "EDDL interpreter" in the same way as a "web browser".

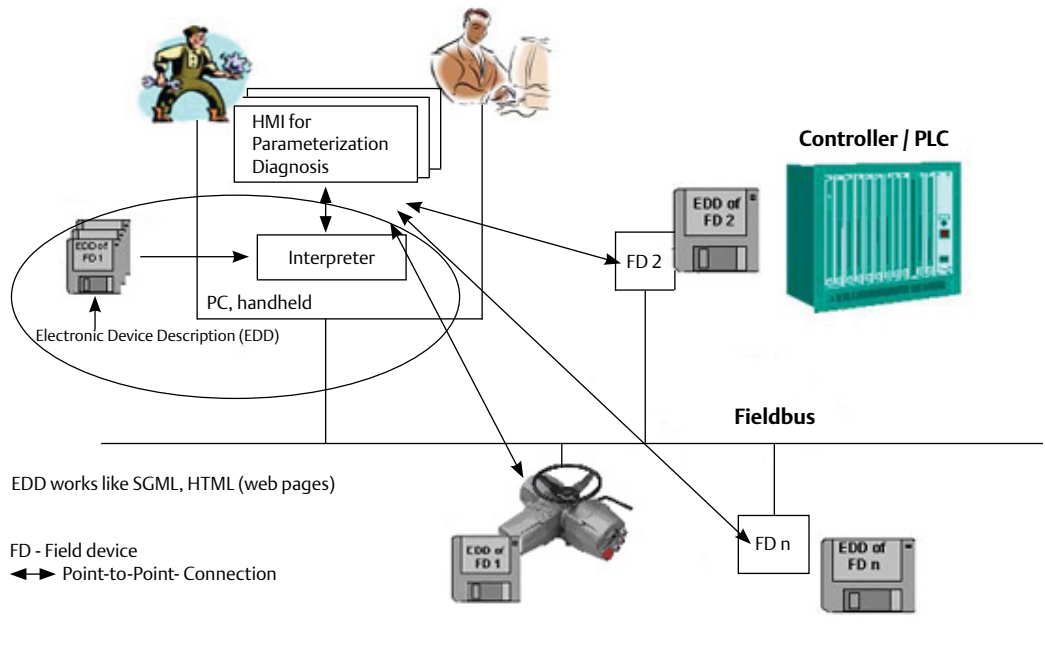
Figure 1



The EDDL is used to create Electronic Device Description (EDD) files that are used by host systems (e.g. Siemens PDM) to communicate with field devices independently by communication protocol and operating system of the field device.

With EDD, files are provided a standardized access to filed devices data: online data are displayed in a graphical way that makes devices easy to use.

Figure 2



Section 2: ICON3000 Profibus EDD for PDM

This EDD, developed by Biffi, provides to customers an easier access to parameters of ICON3000 and ICON3000v2 actuators equipped with ICON2000v4_DPV1 module interface. It is designed and tested for SIMATIC PDM ver. 6.0 sp5 under Windows XP Operating System, and above.

The ICON3000v2 actuator can be recognized because when it is switched on, the name "ICON3000v2" appears on the local screen, as shown in Figure 3.

This manual has been written by capturing some screenshot from a laboratory system that uses the following devices and tools:

Frame application:	SIMATIC PDM ver. 6.0 sp5
Ethernet/PROFIBUS gateway:	Softing FG-100 PB
DP Master Class 1:	SyCon CIF 60-PB

Figure 3



Section 3: Installation

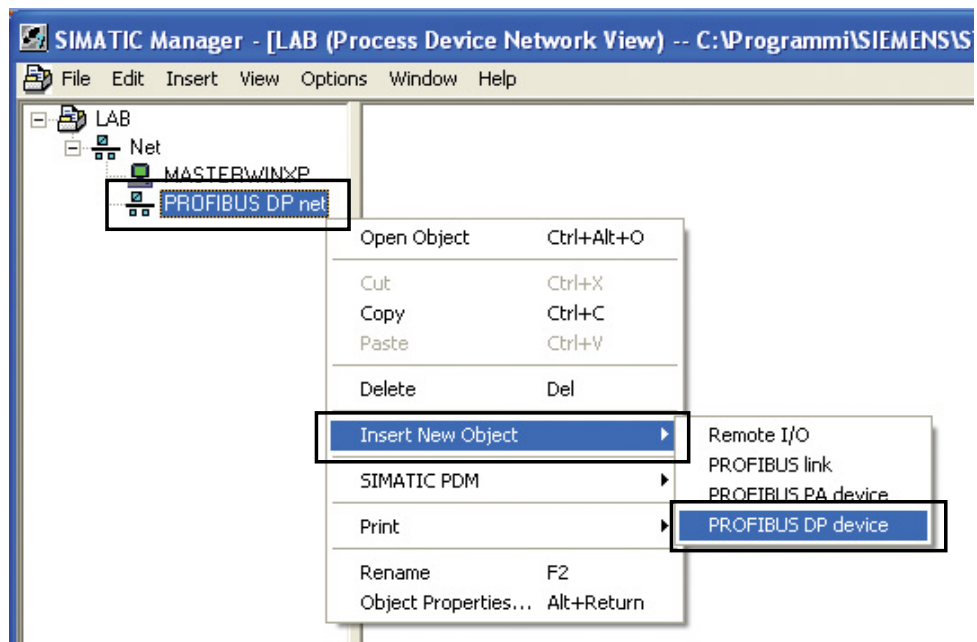
3.1 EDD Installation and Device Configuration for PDM 6.0 SP5

This section must only be carried out if the SIMATIC manager device catalogue does not yet contain the Biffi ICON3000 EDD.

Installation of the EDD provided by Biffi Italia, must be done by following these procedures:

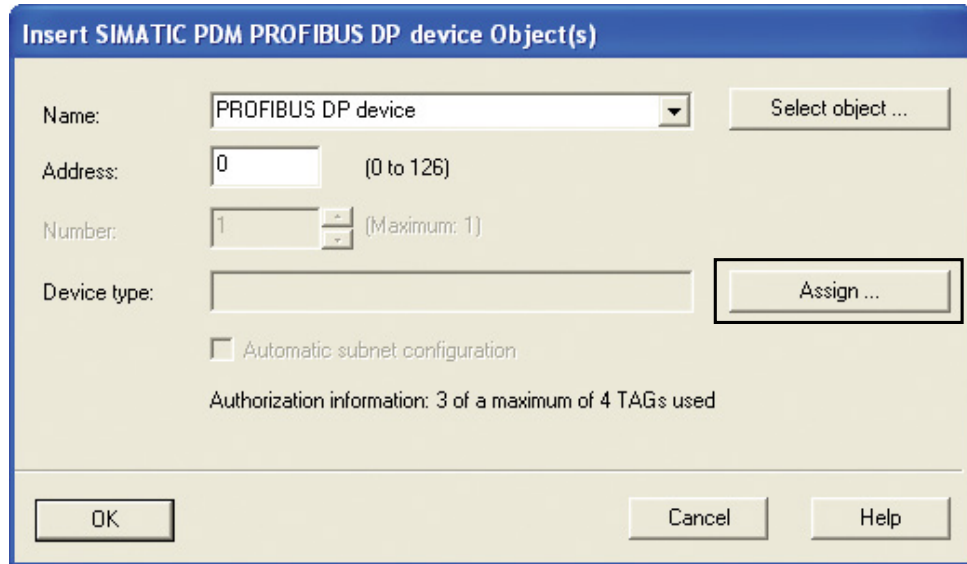
1. Select "Profibus DP Net"; press the right button of the mouse to open the associated task list and select "Insert New Object"/"Profibus DP Device".

Figure 4



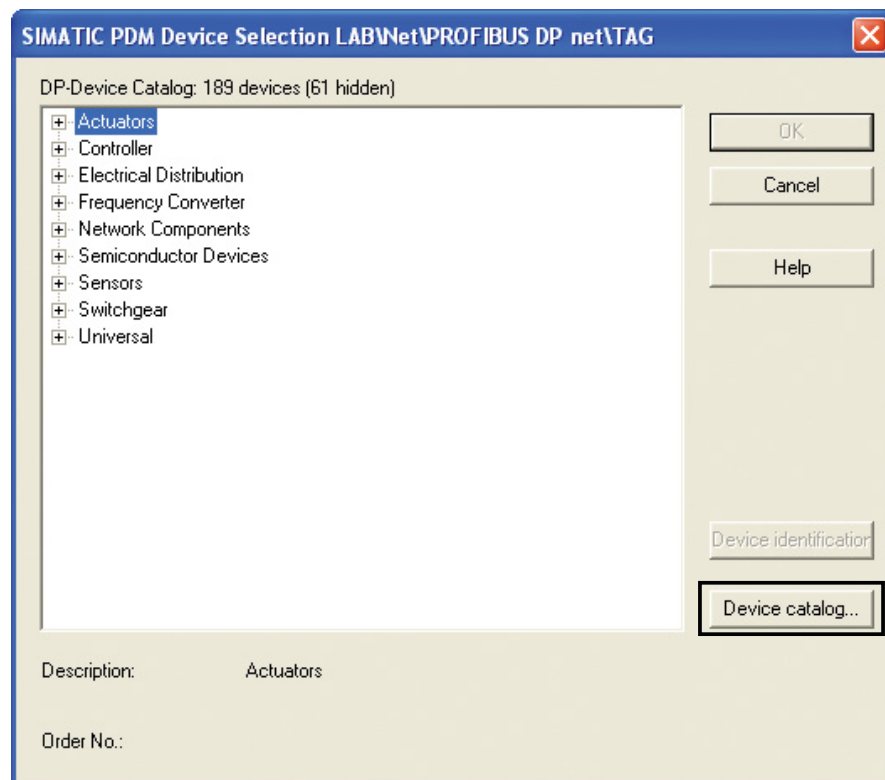
2. A new page will be displayed: select the “Assign” button.

Figure 5



3. A new page will be displayed: select the “Device Catalog” button to install the desired EDD.

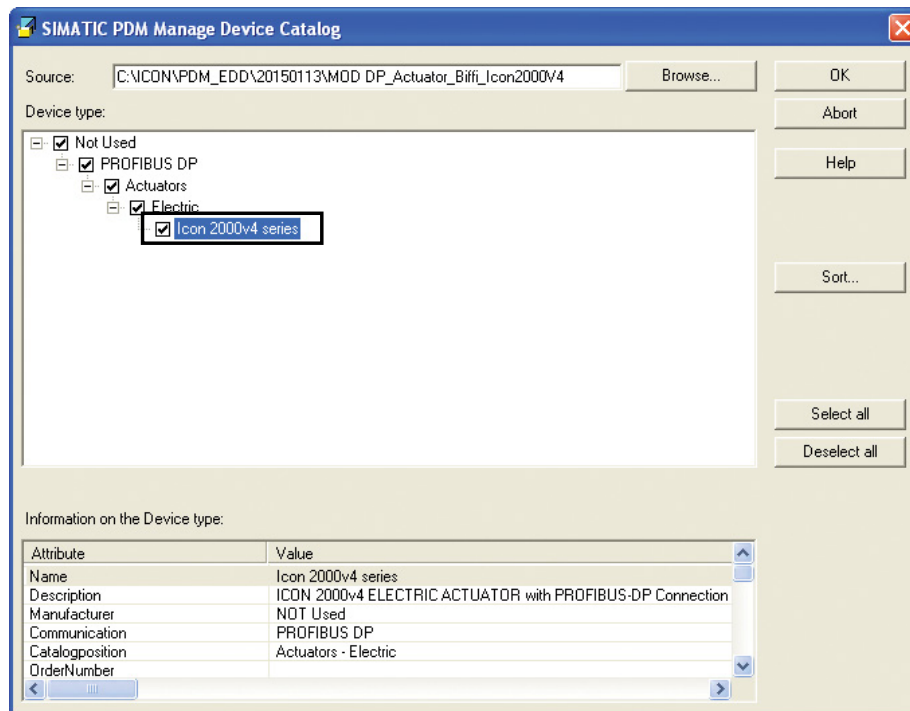
Figure 6



- A new page will be displayed. Select the “Browse” button to define the area where the EDD installation kit is saved. The selected area will be shown on field “Source”.

Check the “ICON2000v4 series” item into the “Device Type” list, as shown on Figure 7.

Figure 7

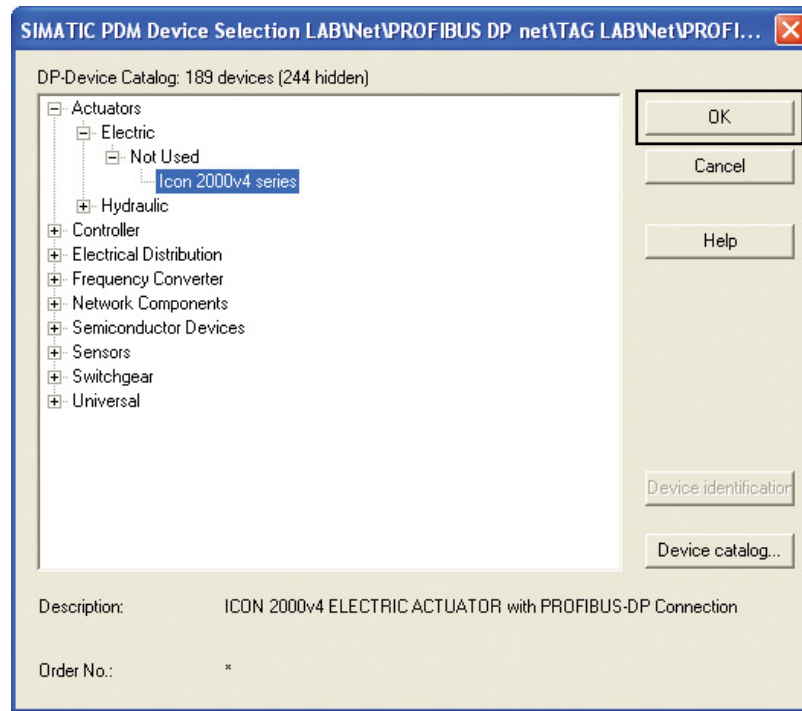


NOTICE

“Not Used” is the reference to Biffi Customer for PDM releases that don’t include Biffi Manufacturer.

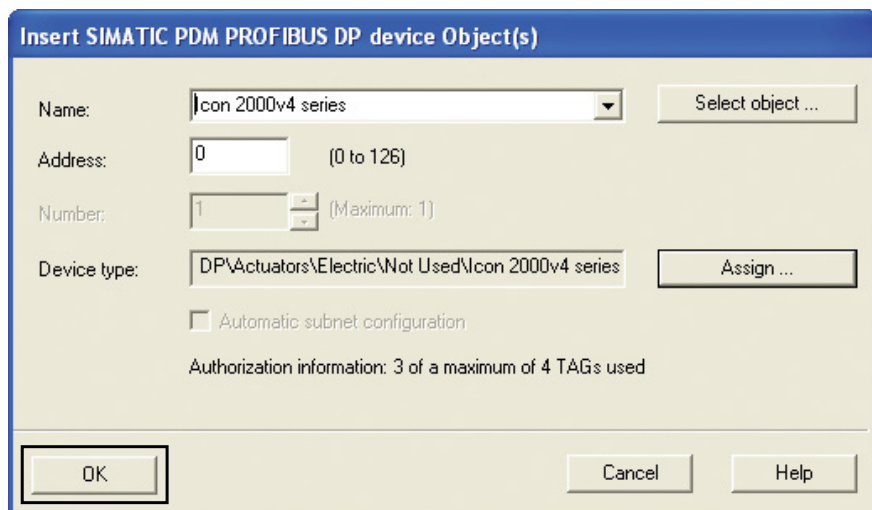
5. Select the “OK” button: the installation progress bar will be displayed during the EDD Import operation.
6. At the end of the Import Operation, the “Device Catalog” window will include the EDD “ICON2000v4 series” reference.
Select it and confirm with the “OK” button.

Figure 8



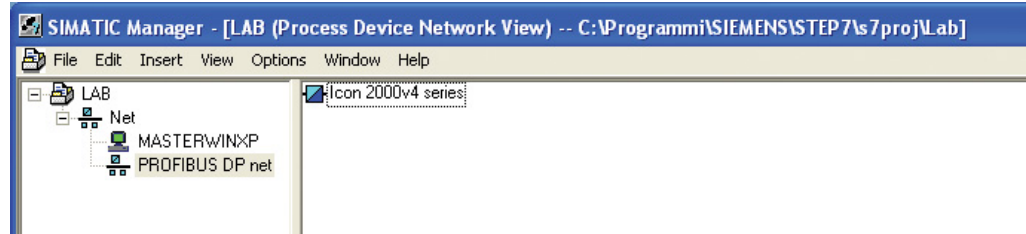
7. The device will be inserted into the “Insert Device” window. Select the “OK” button to complete the device installation.

Figure 9



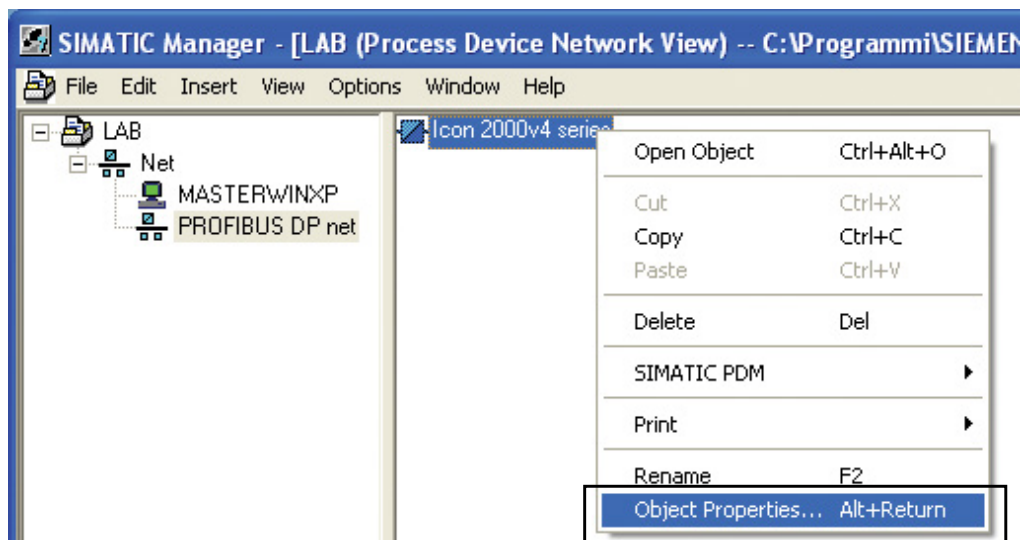
8. The device will be shown into the “PROFIBUS DP net” group.

Figure 10



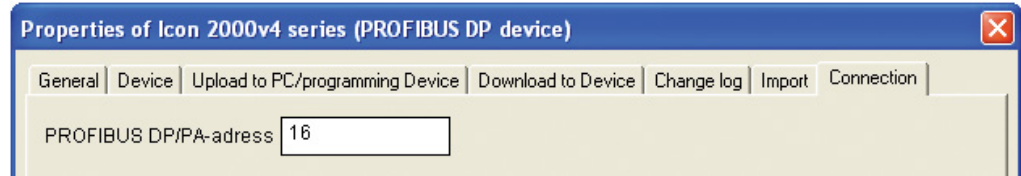
9. Press the right button of the mouse on the installed Device to open the device task list, and select “Object Properties...”

Figure 11



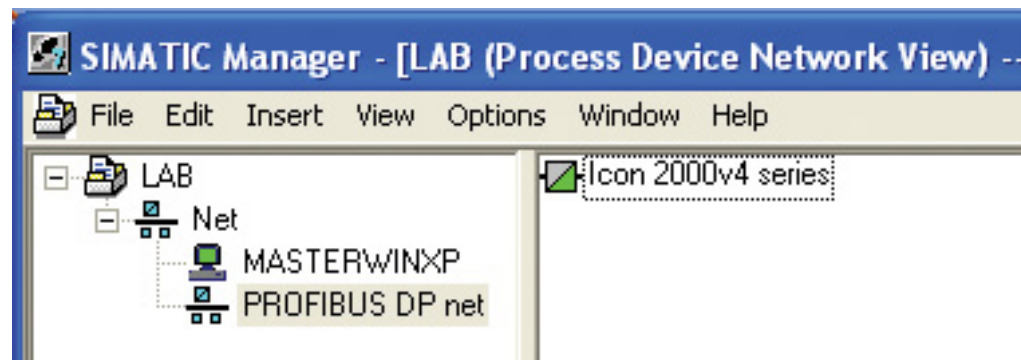
10. Define the correct Profibus address.

Figure 12



When the correct address is defined, the actuator will be displayed into the “PDM” application as shown on Figure 13.

Figure 13



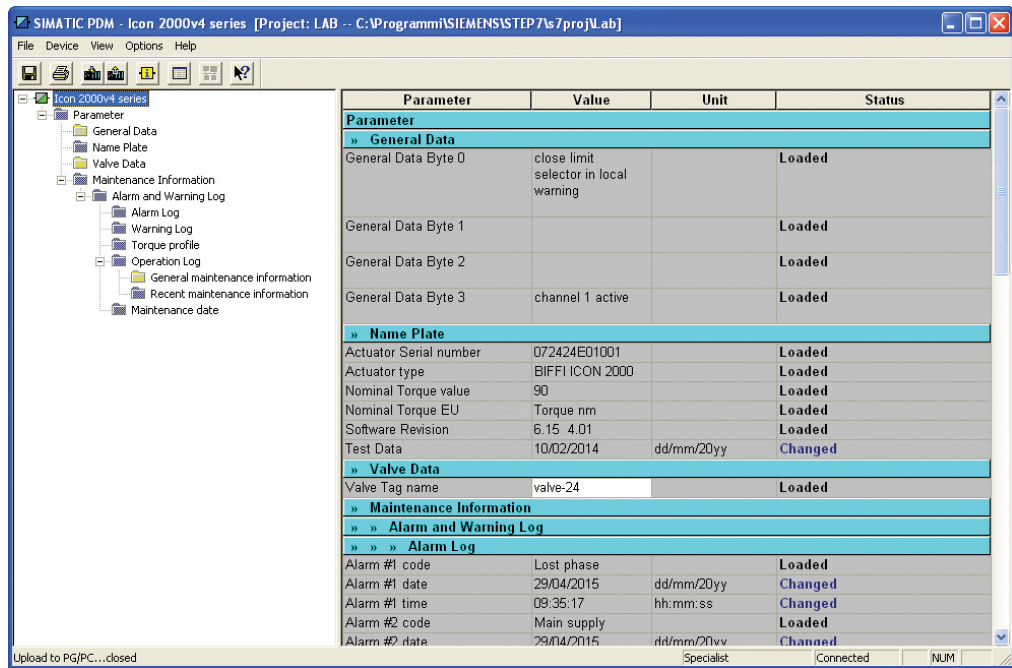
Section 4: EDD Display

This will be the page display when you double click the PDM actuator, and then “Upload to PG/PC” is selected for read actuator data.

On the left side of the page, there’s a menu, on the right side the data is shown.

The display on the right side will contain only the data of the selected menu item.

Figure 14



4.1 General Data

General data menu collects information about the actual status of the actuator.

Data are divided in 4 lines, each one is containing different conditions. “Value” field will only show active conditions. All these data are READ-ONLY.

Figure 15

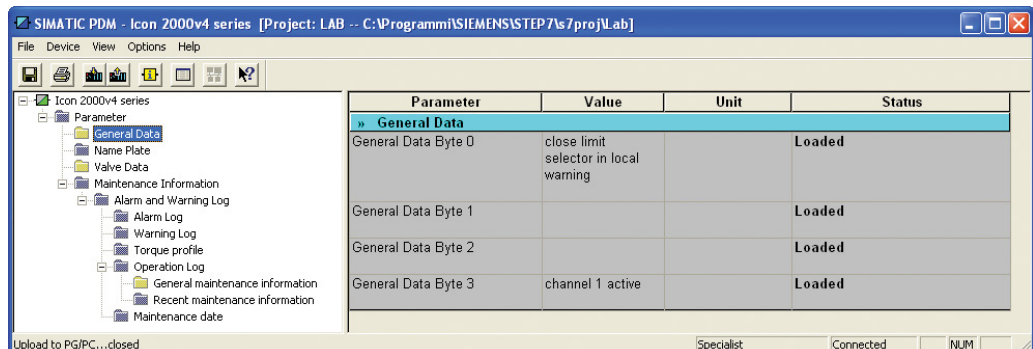


Table 1. Possible values of Parameter “General data Byte 0”, in line1:

Name	Description
close limit	The Valve is in close position
open limit	The Valve is in open position
Moving	The Valve is moving
monitor relay	Monitor relay status
selector in local	The Local selector in LOCAL position
selector in remote	The Local selector in REMOTE position
Alarm	Indicates that an alarm is present
Warning	Indicates that a warning is present

Table 2. Possible values of Parameter “General data Byte 1”, in line2:

Name	Description
din 1	Status of configurable DIN1 condition
din 2	Status of configurable DIN2 condition
din 3	Status of configurable DIN3 condition
din 4	Status of configurable DIN4 condition
din 5	Status of configurable DIN5 condition
din 6	Status of configurable DIN6 condition
interlock open	Interlock open active
interlock close	Interlock close active

Table 3. Possible values of Parameter “General data Byte 2”, in line3:

Name	Description
fail-safe action	The actuator is performing the Fail-Safe Action
opening	The Valve is moving in open direction
closing	The Valve is moving in close direction
selector in off	The Local selector is in OFF position
ESD active	ESD command active
HW remote mode	Hardwired mode enable
positioner mode	Actuator ready to follow the setpoint
motion inhibited	Motor will not open or close

Table 4. Possible values of Parameter “General data Byte 3”, in line4:

Name	Description
channel 1 active	Channel 1 active
aux in open	Auxiliary input open active
aux in close	Auxiliary input close active
aux in stop	Auxiliary input stop active
aux in bus on	Auxiliary input bus active

4.2 Name Plate

This menu displays information about the actuator Name Plate.
All the displayed data are READ-ONLY.

Figure 16

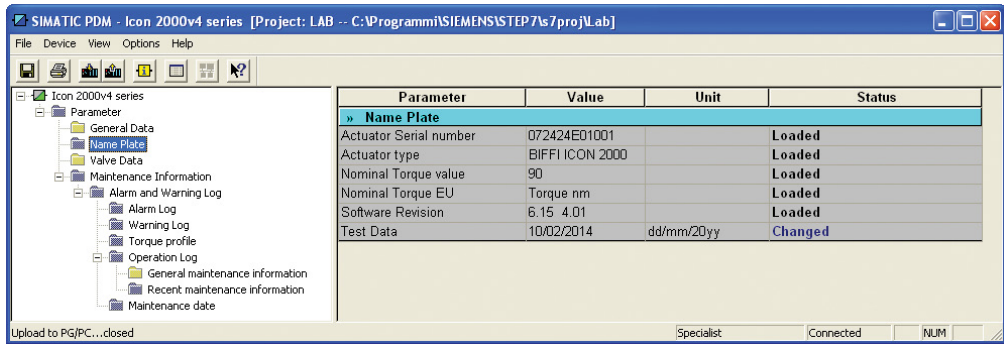


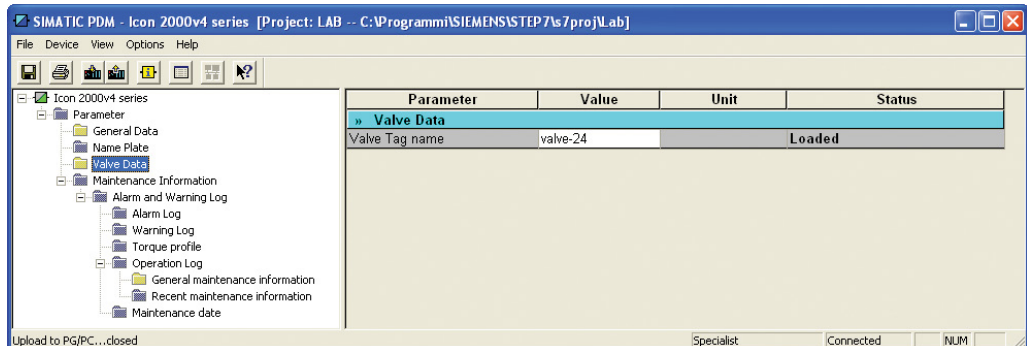
Table 5.

Name	Description
Actuator Serial number	Actuator serial number
Actuator Type	Actuator Type: ICON3000 or F01
Nominal Torque value	Nominal torque/thrust
Nominal Torque EU	Torque engineering unit
Software Revision	Base and fieldbus cards Software version
Test Date	Date of factory commissioning

4.3 Valve Data

In this menu, the “Valve tag name” parameter is displayed and can be modified.

Figure 17



4.4 Maintenance Information/Alarm Log

The “Alarm Log” menu is a submenu of “Maintenance Information” menu. It shows the last 5 alarms occurred on ICON3000 or ICON3000v2 actuator. The Alarm #1 is the more recent and the Alarm #5 is the oldest.

All the displayed data are READ-ONLY.

Figure 18

Parameter	Value	Unit	Status
» » » Alarm Log			
Alarm #1 code	Lost phase		Loaded
Alarm #1 date	29/04/2015	dd/mm/20yy	Changed
Alarm #1 time	09:35:17	hh:mm:ss	Changed
Alarm #2 code	Main supply		Loaded
Alarm #2 date	29/04/2015	dd/mm/20yy	Changed
Alarm #2 time	09:35:17	hh:mm:ss	Changed
Alarm #3 code	Lost phase		Loaded
Alarm #3 date	28/04/2015	dd/mm/20yy	Changed
Alarm #3 time	17:18:03	hh:mm:ss	Changed
Alarm #4 code	Main supply		Loaded
Alarm #4 date	28/04/2015	dd/mm/20yy	Changed
Alarm #4 time	17:18:03	hh:mm:ss	Changed
Alarm #5 code	Lost phase		Loaded
Alarm #5 date	28/04/2015	dd/mm/20yy	Changed
Alarm #5 time	11:24:29	hh:mm:ss	Changed

Each alarm log includes the information mentioned in Table 6.

Table 6.

Name	Description
Code	Is the Alarm text
Date	Is the Alarm occurrence date
Time	Is the Alarm occurrence time

4.5 Maintenance Information/Warning Log

The “Warning Log” menu is a submenu of “Maintenance Information” menu. It shows the last 5 warnings occurred on ICON3000 or ICON3000v2 actuator. The Warning #1 is the more recent and the Warning #5 is the oldest.

All the displayed data are READ-ONLY.

Figure 19

The screenshot shows the SIMATIC PDM interface for an Icon 2000v4 series actuator. The left sidebar shows a tree view with 'Warning Log' selected under 'Maintenance Information'. The main window displays a table with the following data:

Parameter	Value	Unit	Status
» » » Warning Log			
Warning #1 code	Bus error		Loaded
Warning #1 date	29/04/2015	dd/mm/20yy	Changed
Warning #1 time	17:04:22	hh:mm:ss	Changed
Warning #2 code	Main voltage near li		Loaded
Warning #2 date	29/04/2015	dd/mm/20yy	Changed
Warning #2 time	09:35:17	hh:mm:ss	Changed
Warning #3 code	Bus error		Loaded
Warning #3 date	29/04/2015	dd/mm/20yy	Changed
Warning #3 time	09:32:37	hh:mm:ss	Changed
Warning #4 code	Main voltage near li		Loaded
Warning #4 date	28/04/2015	dd/mm/20yy	Changed
Warning #4 time	17:18:03	hh:mm:ss	Changed
Warning #5 code	Bus error		Loaded
Warning #5 date	28/04/2015	dd/mm/20yy	Changed
Warning #5 time	11:25:17	hh:mm:ss	Changed

Each warning log includes the information mentioned in Table 7.

Table 7.

Name	Description
Code	Is the Warning text
Date	Is the Warning occurrence date
Time	Is the Warning occurrence time

4.6 Maintenance Information/Torque Profile

The Torque profile menu collects the information about the ICON3000 or ICON3000v2 torque profile. All the displayed data are READ-ONLY.

Figure 20

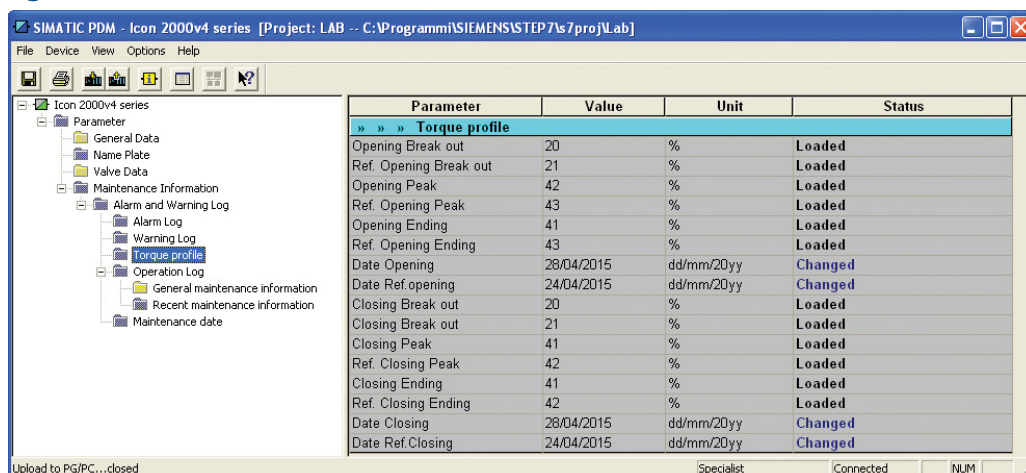


Table 8.

Name	Description
Opening Break out	Max. % of torque to unseat the valve in last opening stroke
Ref. Opening Break out	Max. % of torque to unseat the valve in reference opening stroke
Opening Peak	Max. % of torque when the valve runs from breakout to ending in last opening stroke
Ref. Opening Peak	Max. % of torque when the valve runs from breakout to ending in reference opening stroke
Opening Ending	Max. % of torque to seat the valve in last opening stroke
Ref. Opening Ending	Max. % of torque to seat the valve in reference opening stroke
Date Opening	Date of the last opening stroke
Ref. Date Opening	Date of the reference opening stroke
Closing Break out	Max. % of torque to unseat the valve in last closing stroke
Ref. Closing Break out	Max. % of torque to unseat the valve in reference closing stroke
Closing Peak	Max. % of torque when the valve runs from breakout to ending in last closing stroke
Ref. Closing Peak	Max. % of torque when the valve runs from breakout to ending in reference closing stroke
Closing Ending	Max. % of torque to seat the valve in last closing stroke
Ref. Closing Ending	Max. % of torque to seat the valve in reference closing stroke
Date Closing	Date of the last closing stroke
Ref. Date Closing	Date of the reference closing stroke

It is possible to set reference data to the last actual data, see Section 5.

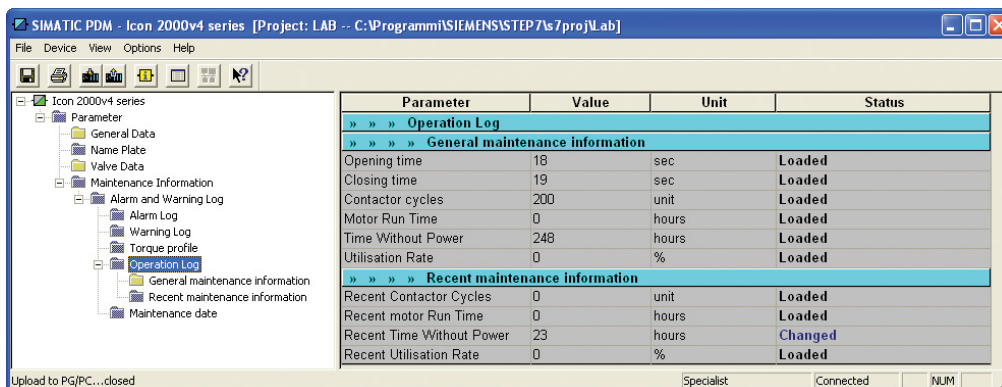
4.7 Maintenance Information/Operation Log

This menu collects the Operation Log information of ICON3000 or ICON3000v2 actuators.

It is divided into two submenus: the first dedicated to “General Maintenance Information”, the second to “Recent Maintenance Information”.

All the displayed data are READ-ONLY.

Figure 21



The displayed data for “General Maintenance information” submenus are:

Table 9.

Name	Description
Opening time	Time necessary to the valve to move from the close to the open position
Closing time	Time necessary to the valve to move from the open to the close position
Contactor cycles	Count of the cycles of contactors K1 and K2
Motor Run Time	Count of the hours with motor energized
Time Without Power	Count of the hours without electrical power
Utilization Rate	Incremented every 200 full stroke of the actuator

The displayed data for “Recent Maintenance information” submenus are:

Table 10.

Name	Description
Recent Contactor cycles	Count of the cycles of contactors K1 and K2
Recent Motor Run Time	Count of the hours with motor energized
Recent Time Without Power	Count of the hours without electrical power
Recent Utilization Rate	Incremented every 200 full stroke of the actuator

It is possible to reset recent maintenance information, see Section 5.

4.8 Maintenance Information/Maintenance Dates

This menu collects the dates of important actuator services.

Figure 22

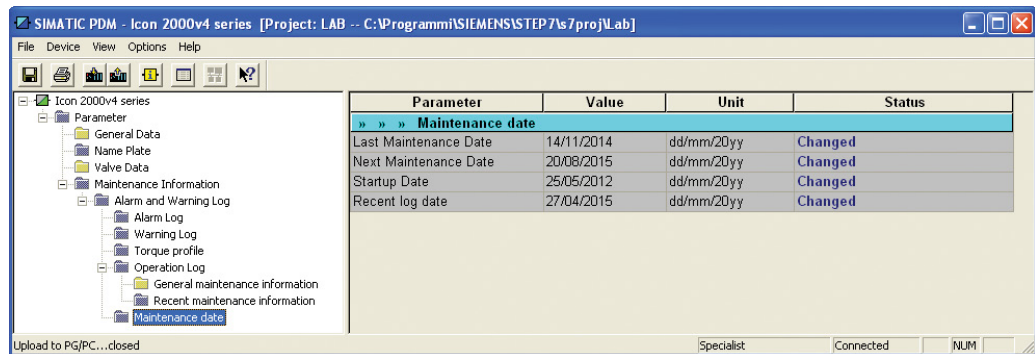


Table 11.

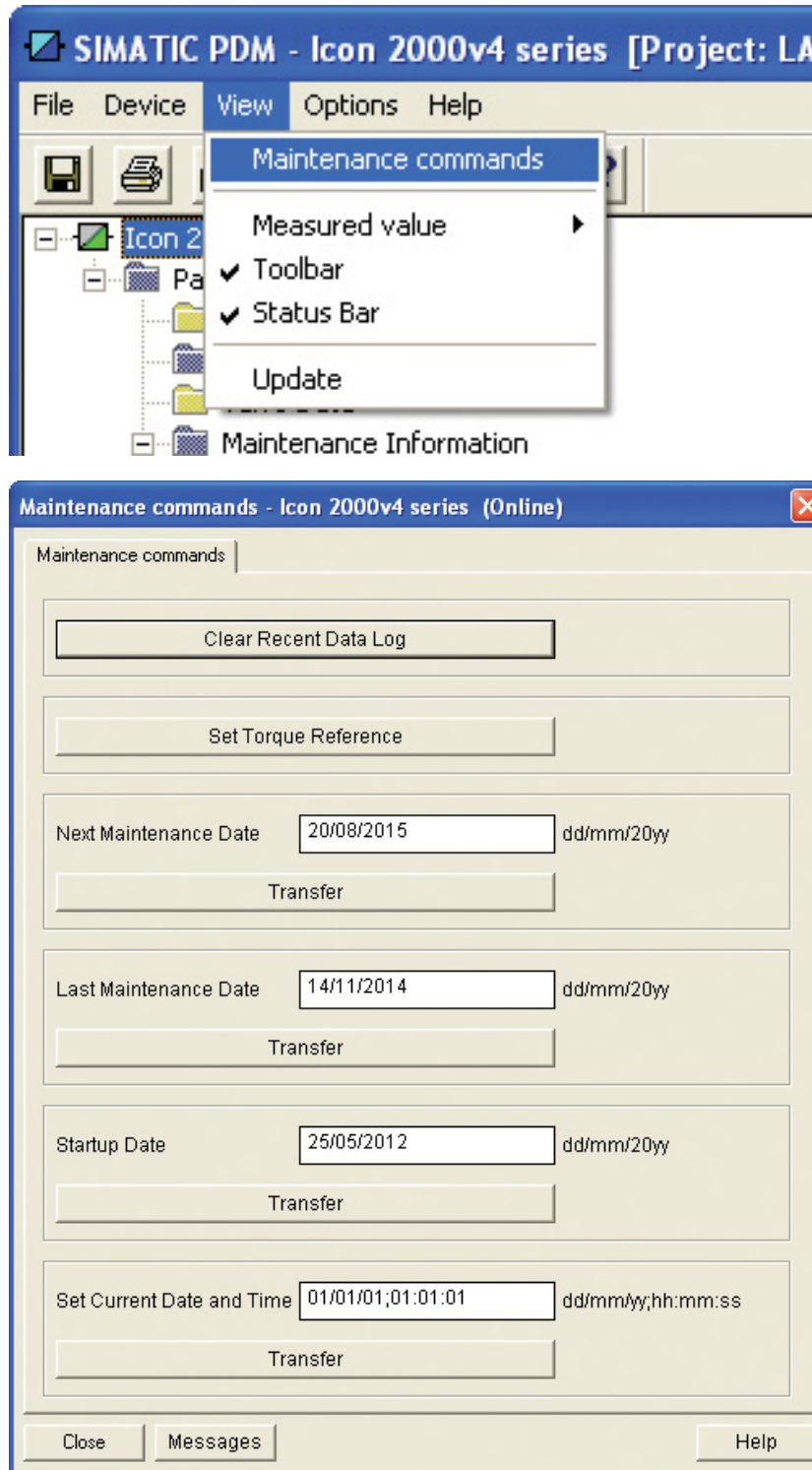
Name	Description
Last Maintenance Date	This is the date of the last maintenance operation
Next Maintenance Date	This is the date of the next scheduled actuator maintenance
Start-up Date	This is the date of the actuator start-up
Recent log date	The date of the last clearing of recent Log. This is updated after entering the command “Clear recent data log”

It is possible to set maintenance dates, see Section 5.

Section 5: Maintenance Commands

Maintenance commands can be activated using a page that can be selected by the main EDD menu.

Figure 23



Into this page are grouped maintenance operations that can be done on the ICON3000 or ICON3000v2 actuators.

Operation that can be executed:

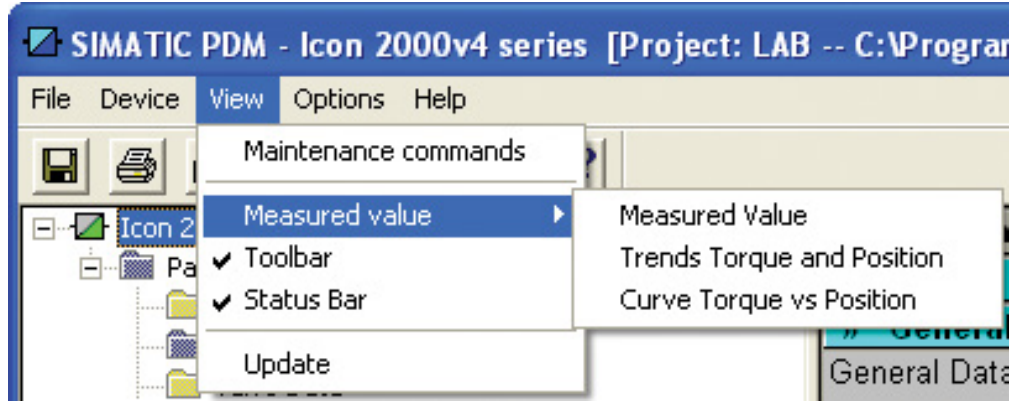
Table 12.

Name	Description
Clear Recent Data Log	Allows to clear the counters of the recent operation log
Set Torque Reference	Allows to set the last torque profile as to be the Reference
Next Maintenance Date	This is the date of the next scheduled actuator maintenance
Last Maintenance Date	This is the date of the last maintenance operation done
Start-up Date	This is the date of the actuator start-up
Set Current Date and Time	This sets are the current date and time

Section 6: Measured Values

Three different kinds of variable analysis can be activated by EDD menu.

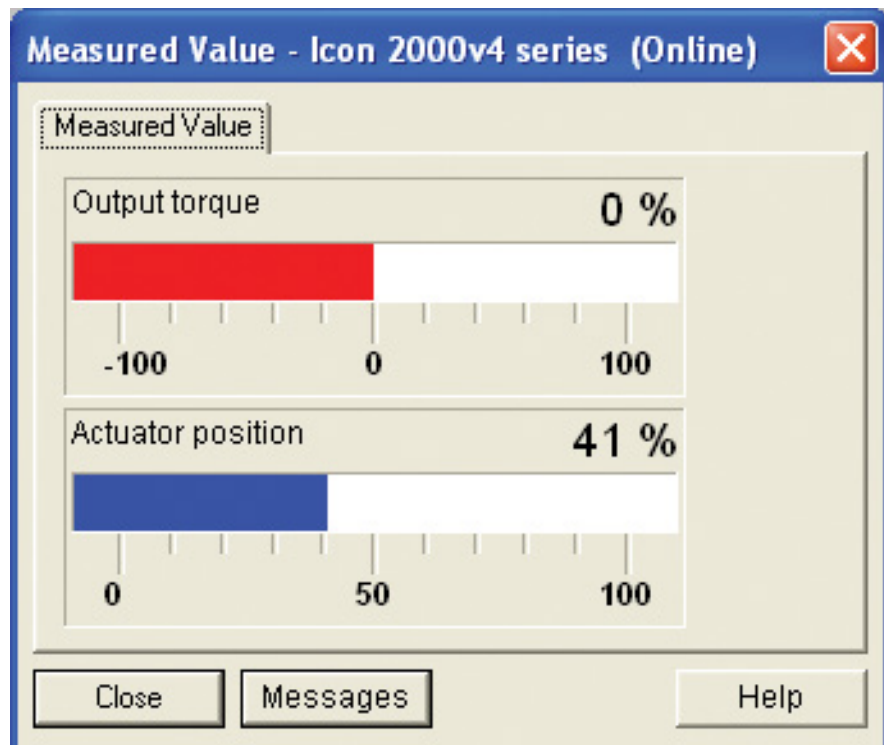
Figure 24



6.1 Measured Value

This window shows the actual position and the output torque of ICON3000 or ICON3000v2 actuators.

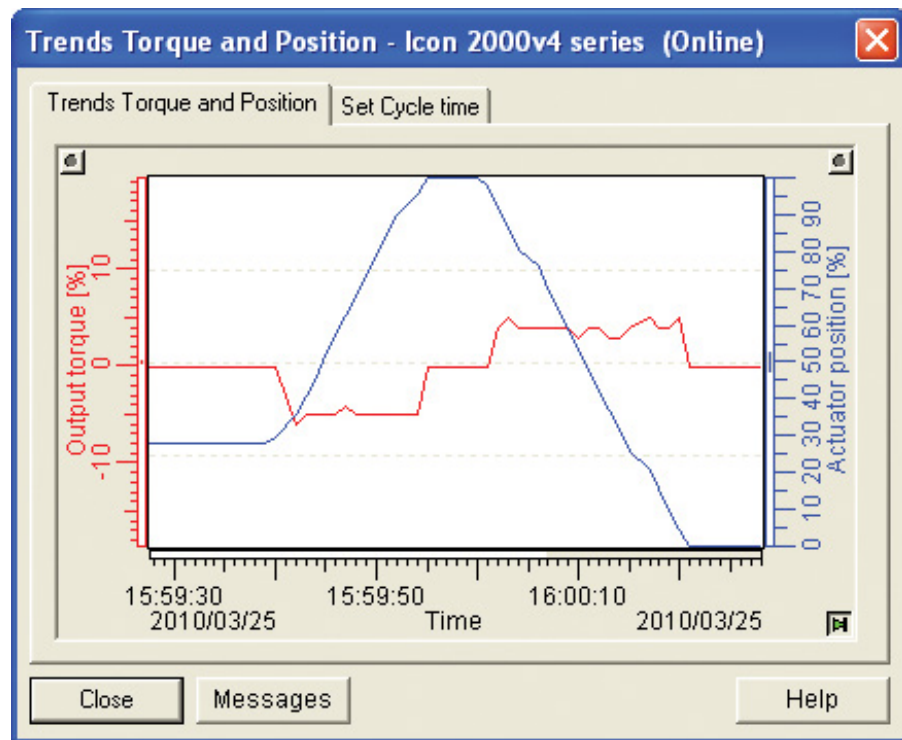
Figure 25



6.2 Trends Torque and Position

This window shows in a single graph, the trends curve of torque and position of ICON3000 or ICON3000v2 actuators.

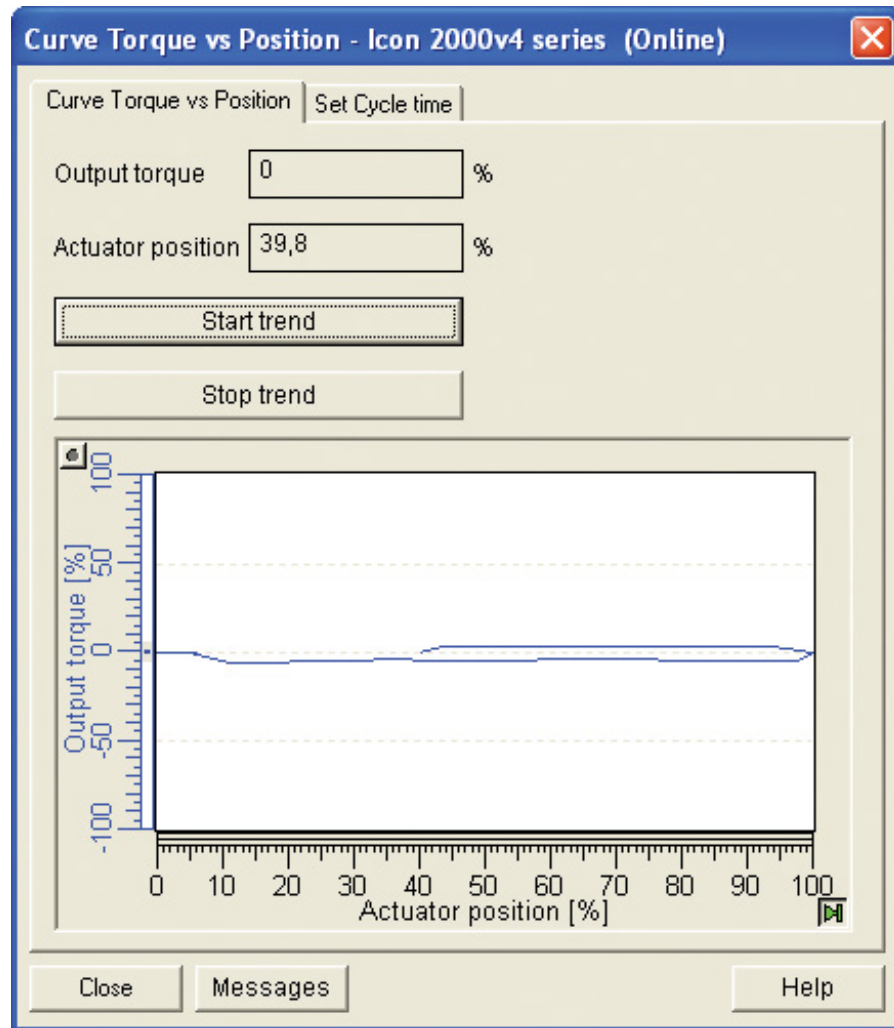
Figure 26



6.3 Curve Torque vs Position

This window shows in a single graph, the curve of torque versus position of ICON3000 or ICON3000v2 actuators.

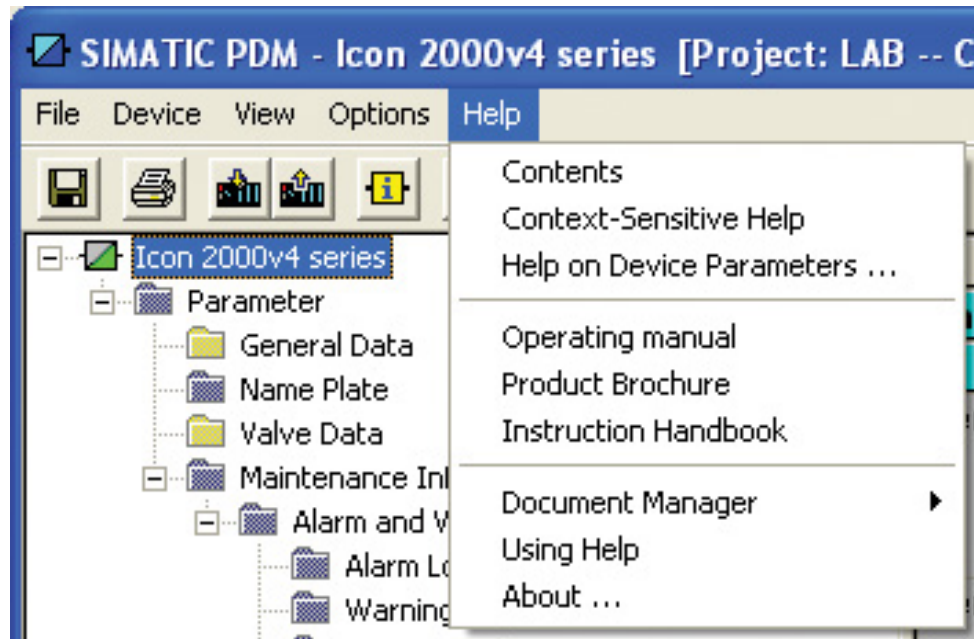
Figure 27



Section 7: Help


Selecting “Operation Manual” or “Brochure Products” or “Instruction Handbook” three Biffi documents in PDF format can be displayed.

Figure 28



Section 8: Certificate

Figure 29



ifak system

Certificate

SIMATIC PDM Integration Test

The product:


Actuator DP Icon 2000v4 series
Hardware-Revision: 01
Fieldbus Protocol: Profibus- DP V1

Manufacturer:
BIFFI Italia S.r.l.
Loc. Caselle San Pietro, 1
29017 Fiorenzuola d'Arda (PC)
ITALY

was stated, that the Electronic Device Description (EDD) for the product as specified in the following was submitted to a SIMATIC PDM integration test.

The examination includes the SIMATIC Process Device Manager from Siemens AG in the version V6.0 Service Pack5. The testing consists mainly of an offline and an online test of the file.

The EDD corresponds to the requirements for certification to the full extent. The EDD fulfilled the conditions in order to be published on the central SIMATIC PDM web page and to be integrated in the SIMATIC PDM device catalogue.

Test labor: 
ifak system GmbH, Oststr. 18,
D-39114 Magdeburg, GERMANY

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