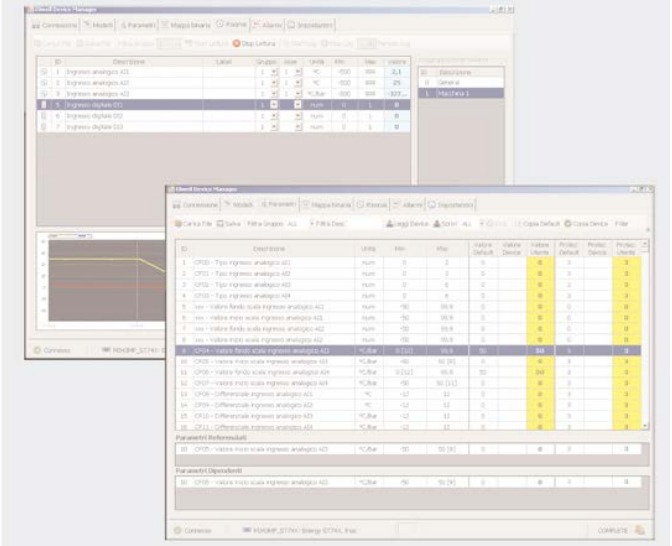
eliwell
by Schneider Electric

DEVICE MANAGER

CONFIGURATION SOFTWARE

Device Manager



USER MANUAL

1. HOW TO USE THIS MANUAL

USER LEVEL SYMBOLS:

All functions marked with this symbol only are for use EXCLUSIVELY by the DMI Manufacturer.

All functions marked with this symbol only are for use EXCLUSIVELY by DMI Service.

All functions marked with this symbol only are for use EXCLUSIVELY by the DMI End User.

All functions marked with this symbol only are for use EXCLUSIVELY by both DMI Manufacturer and DMI Service interfaces

This symbol means that the function is valid for ALL user level

2. MINIMUM SYSTEM REQUIREMENTS

Operating System:
Windows 10 Professional, Windows 10 Home 32 bit / 64 bit versions, Italian and English.

Software components required in addition to operating system.

NET Framework 2.0

Note: As regards the operating systems supported and the minimum hardware requirements for the running of .NET Framework 2.0 on 32-bit client PCs, the information provided by Microsoft (*) can be summarised as follows:

Minimum Hardware:
1024x768 graphic resolution.
1.6 GHz CPU
RAM 2 GB.
HD 100 GB.
Mouse or other pointing devices.

((*) "Guide for .NET Framework developers – System requirements for version 2.0", Microsoft Developers Network (MSDN), http://msdn2.microsoft.com/it-it/library/ms229070(VS.80).aspx

Note. A typical installation requires about 500 Mbyte of disk space.

3. INTRODUCTION

3.1. GENERAL DESCRIPTION

The purpose of this Device Manager software is to simplify and aid the installation and management of Eliwell-compatible devices.

3.2. MAIN FEATURES

- Device parameters management.
- Real-time monitoring and recording of system variables.
- Device alarms records management.
- Firmware updating

3.3. DEVICE MANAGER COMPONENTS

All the basic components and accessories are described below.

3.3.1. Software Components

The software application has a graphic interface and its functions will be illustrated in this manual.
The functionalities available to the customer depend on which Device Manager hardware interface he/she has purchased.

3.3.2. Device Manager Interface Components

The USB/TTL hardware interface, used in association with the software package, allows:
- The use of the software itself.
- Connection to device/s for controlling it/them.
- Connection to Multi Function Key component.

There can be three different types of interface, corresponding to three user levels:
- DMI 100-1 END USER.
- DMI 100-2 SERVICE.
- DMI 100-3 MANUFACTURER.

The functionalities available to the user are listed in the DMI – User Table, according to which type has been purchased.

3.3.3. Multi Function Key Components

This is a memory support, which allows:
- The updating of the device's parameter values.
- The updating of the device's firmware.
- The downloading of the parameter values from the device.
- The downloading of the alarms records from the device

3.3.4. Connection cables

- Blue cable, see Connection Modes chapter for use instructions.
- Yellow cable, see Connection Modes chapter for use instructions.
- Purple cable, see Connection Modes chapter for use instructions.
- USB-A/A extension lead, 2 m.

3.3.5. Network connection device

- BusAdapter 150.

3.4. ABBREVATIONS E DEFINITIONS

Device Manager: software described in this specification, abbreviated to "DM".
Device: name given to the control, in other words "instrument".
Parameters model: file containing the parameters map structure, with preset values. The device is distinguishable by its structure and values.
DMI: Device Manager Interface.
MFK: Multi Function Key.

4. CONNECTION MODE

The user can interact with the device/s in a number of different ways:

Network connection mode:

- Direct network with device.
- Network with device/s via BusAdapter150

MFK connection mode:

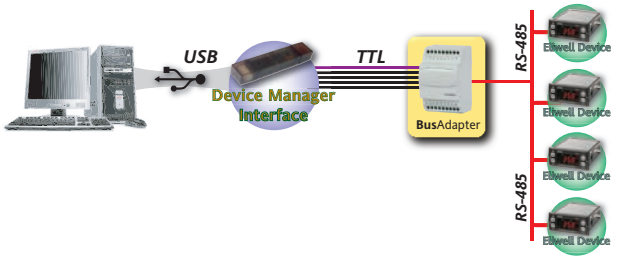
- "PC – MFK" connection.
- "Device – MFK" connection.

Offline mode

- The user interacts with the software only, disconnected from all devices (for example for parameter configuration processing).

4.1. NETWORK CONNECTION MODE

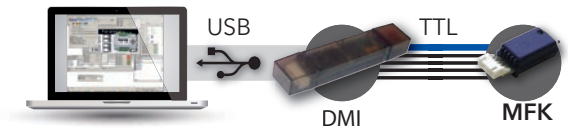
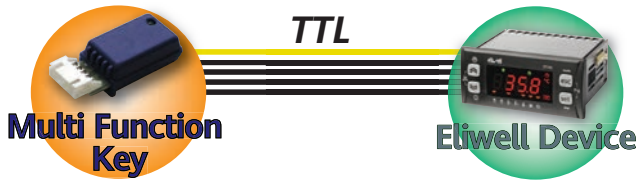
The network connections are illustrated in the table below:

Type of connection	Scenario	Notes
Direct		The yellow cable is used for the connection between the DM interface and the device.
Network connection		The purple cable is used for the connection between the DM interface and the busAdapter

See the Network Connection Mode chapter for a description of the use of the Device Manager software in a system with a Network Connection Diagram.

4.2. MFK CONNECTION MODE

The MFK connection is an indirect type connection in that it is made at 2 different times with 2 different connections, as shown in the table:

Type of connection	Scenario	Notes
PC - MFK		The blue cable is used for the connection between DM interface and MFK.
Device - MFK		The yellow cable is used for the connection between MFK and device.

See the MFK Connection Mode chapter for a description of the use of the Device Manager software in a system with an MFK Connection Diagram.

4.3. OFFLINE MODE

The Local connection mode is illustrated in the table below:

Type of Connection	Scenario	Notes
Local Connection		Map processing in local

See the Offline Connection Mode chapter for a description of the use of the Device Manager software in a system with a Local Connection Diagram.

4.4. OPERATING/CONNECTION MODE

The table below illustrates what operations can be done with the different types of connection

Tipo di macro funzionalità	Modalita Connessione
Parameter managment	• Network • MFK • Offline
Real-time variables managment	• Network
Allarm record managmet	• Network • MFK
Firmware managment	• Network (no BusAdapter) • MFK

5. SOFTWARE INSTALLATION

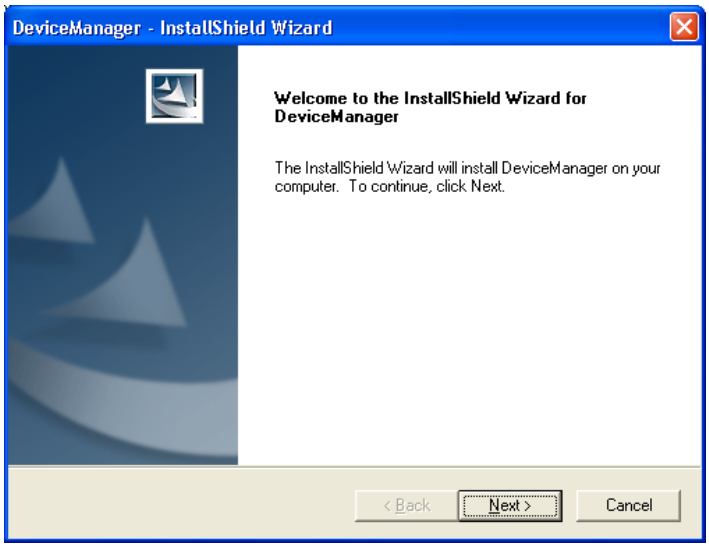
Shut down running applications.

5.1. "DEVICE MANAGER" SOFTWARE INSTALLATION

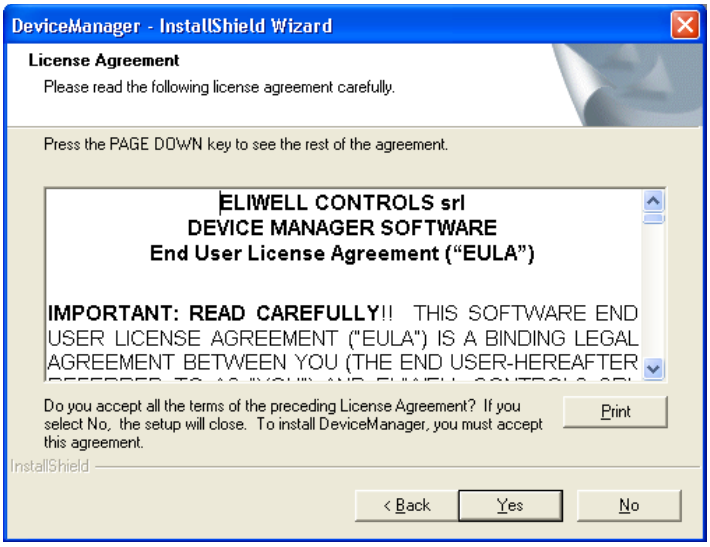
Start the "Setup.exe" installation program in the supplied CD-ROM or download the software from www.eliwell.com.
The steps to be followed are described below

Please note: the "Cancel" button stops the installation procedure, notifying the user that the procedure is being stopped. If confirmed, the situation goes back to what it was before the installation started.

1. On the start page, click "Next";

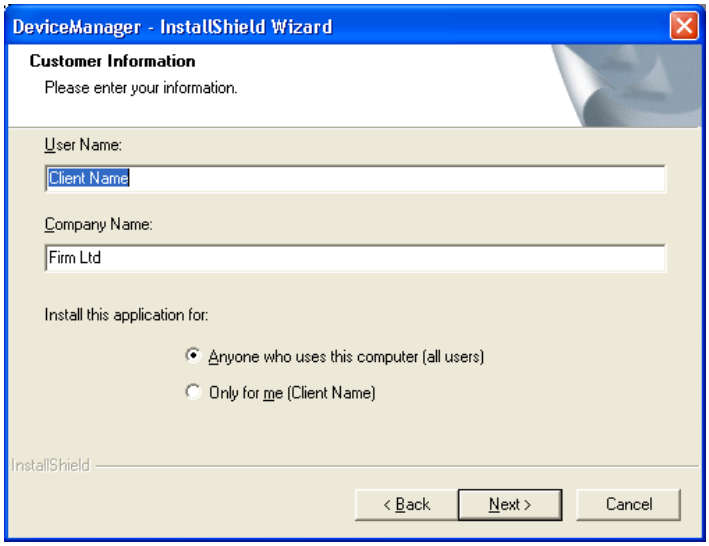


2. To continue with the installation, you must accept the License Agreement. Click on "Yes";

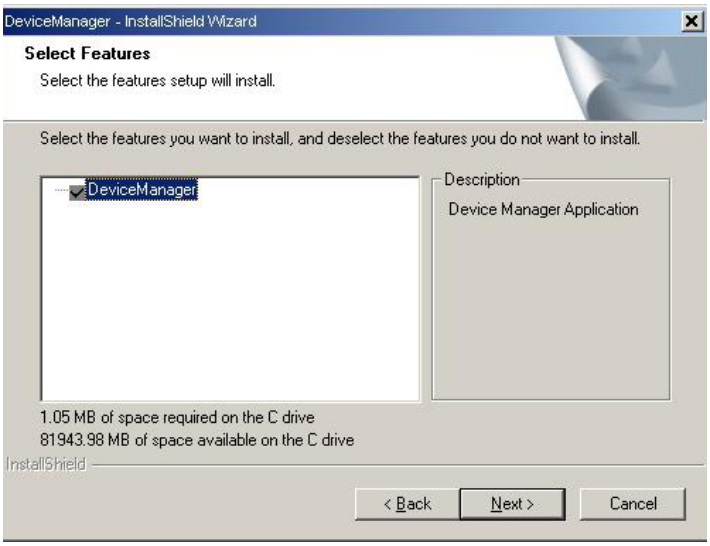


3. Next, enter your details to register the program;
4. Select one of the options to decide whether the installation should be on one specific user's account or for all users.

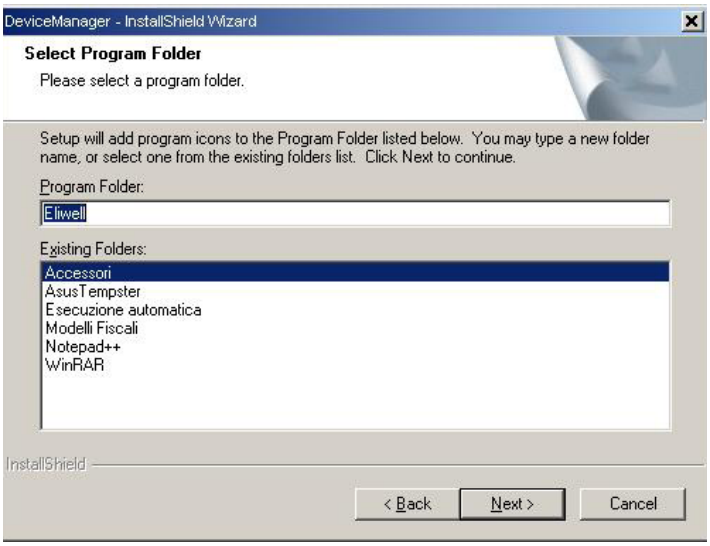
5. Click "Next";



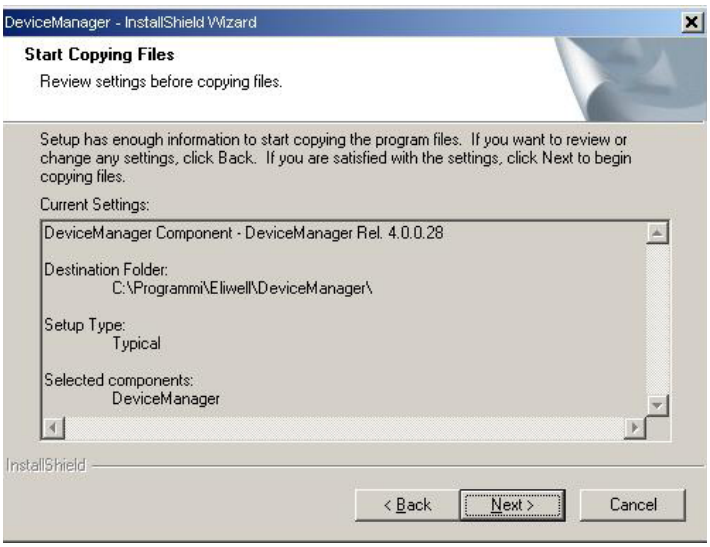
6. Click "Next";



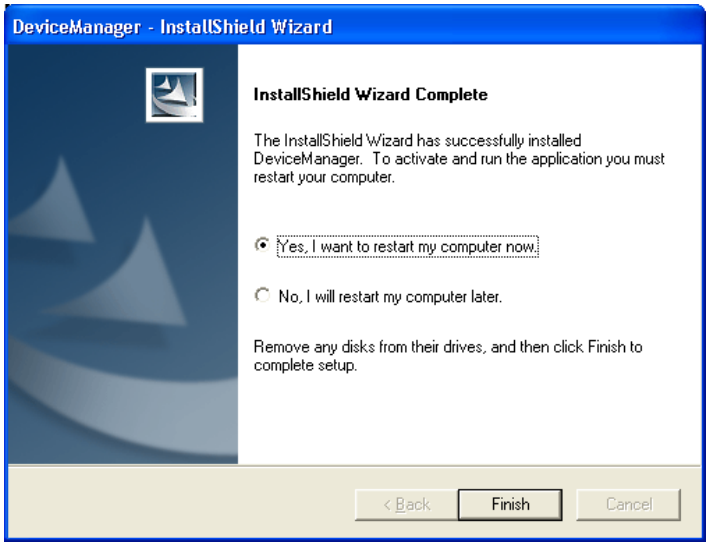
7. Click "Next";



8. The next page gives a summary of the previously selected/set settings. Click "Next";



9. Reboot the computer before using the software;



10. Click on "Finish" to complete the installation. The computer will restart, if the restart option was selected previously

5.2. CHANGING, RE-INSTALLING OR REMOVING THE "DEVICE MANAGER" SOFTWARE

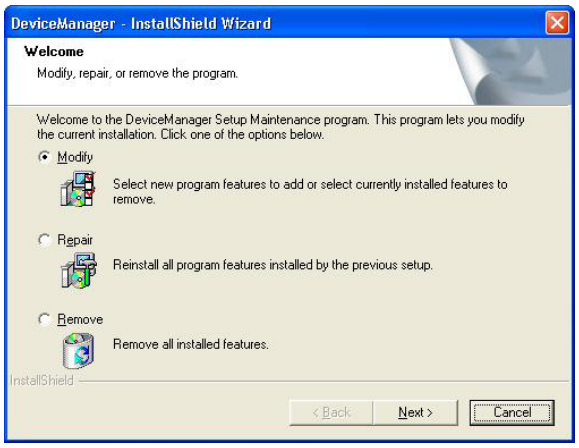
To add and/or remove one or all of the components of the "Device Manager" software, simply open the operating system's "Control panel", select the "Add or Remove Programs" function, select "DeviceManager" from the list of installed programs and click on the "Change Remove" button.
The installation program will start as shown in the picture

THE OPTIONS LISTED ARE:

"MODIFY" current installed

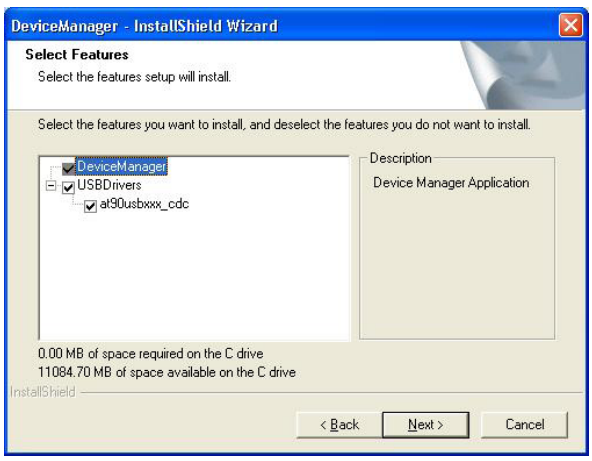
"REPAIR" or Re-installations the entire software package

REMOVE software.



You can select and add or remove single software features, in the figure is an example of change

Can then choose one of the options and press "NEXT" to perform as required.



6. HARDWARE INSTALLATION

Do not connect up the DM interface until the Device Manager software has been installed and the PC restarted.
Please shut down all applications that might interfere with the installation.

6.1. DM INTERFACE INSTALLATION

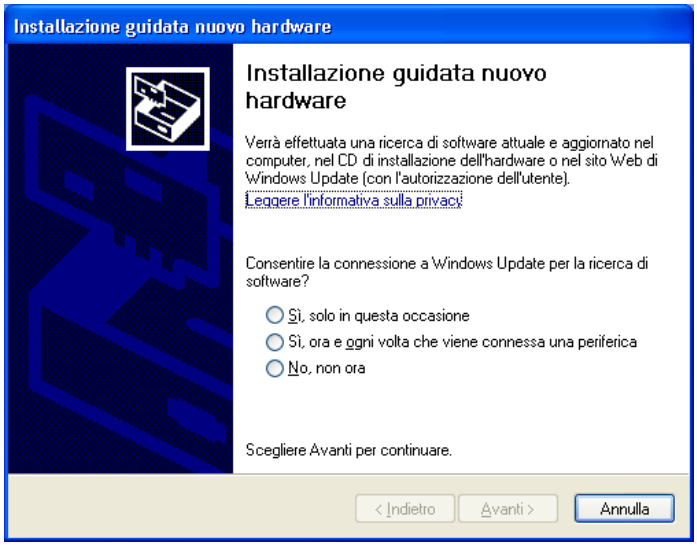
6.1.1. Connecting the interface to the PC

Connect the DM interface to one of the PC USB ports.
You are advised to use the supplied USB extension lead for the connection.

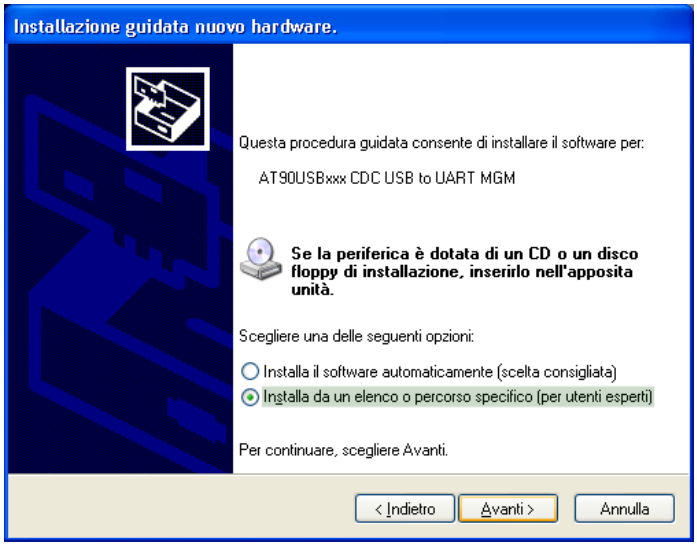
6.1.2. DMI Interface Setup

As soon as the DM interface is connected, the Windows Operating System installation wizard will start the installation procedure.
The steps to be followed are described below..

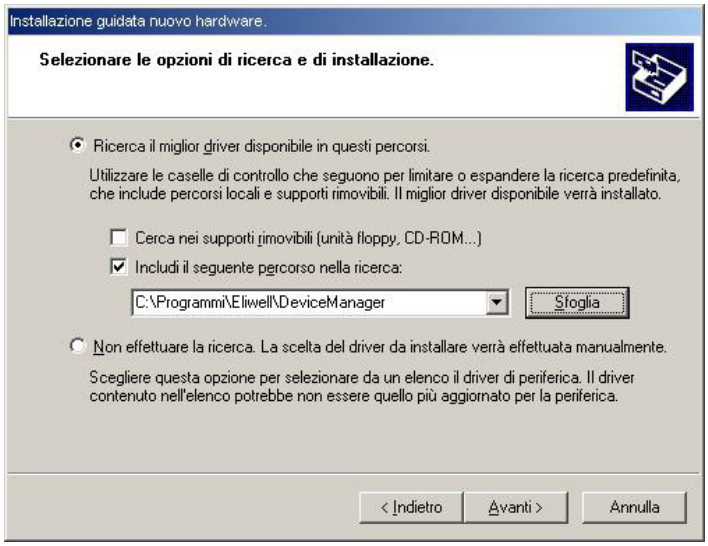
1. On the start page, select the "No, not this time" option and click on "Next";



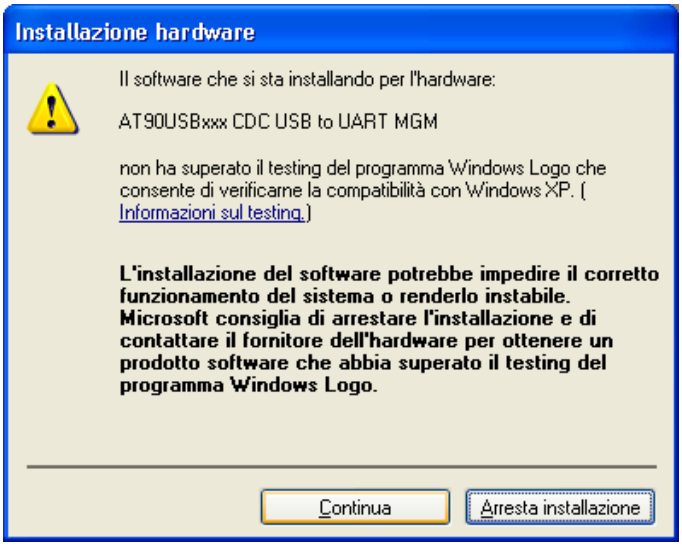
2. Set the second option, as shown, and press 'Next'. The path to specify is the path of the installation programme directory;



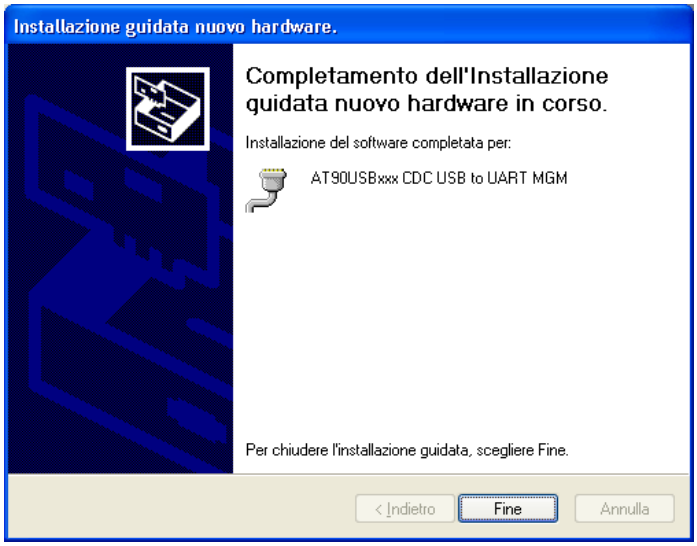
3. Click on 'Next' and/or browse the suggested path;



4. The operating system will prompt for confirmation for installing the drivers. Click on "Continue Anyway



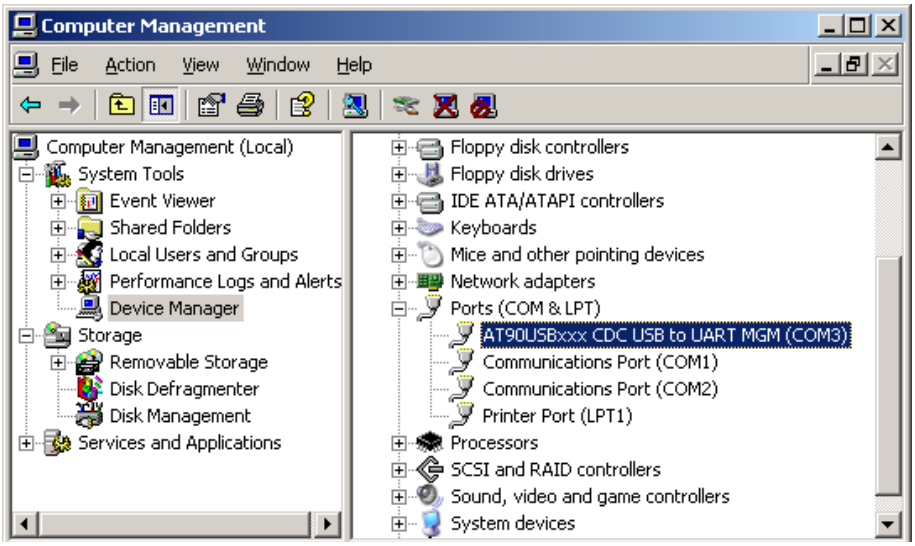
5. When the operating system recognises the device as "AT90USBxxx CDC USB to UART MGM", click on "Finish".



6.1.3. Reading the DM interface COM port

Follow the steps below to check which COM port the operating system has assigned to the DM interface.

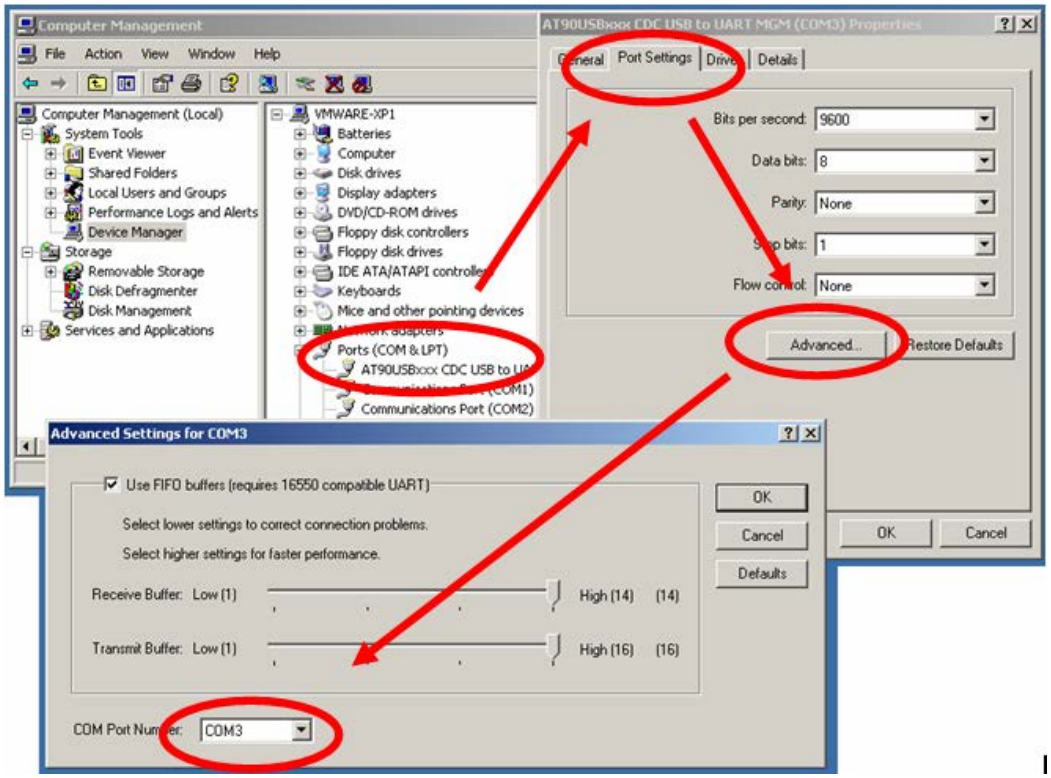
1. Click the right mouse button on the "Resources" icon.
2. Select the "Computer Management" option in the contextual menu.
3. Click on "Peripherals Management" in the left window.
4. Open the "Ports (COM & LPT)" options in the right window.
5. Read the port setting at the end of the "AT90USBxxx CDC USB to UART MGM" string or the string giving the DM interface data.
6. In the example shown in the illustration, the setting is : COM 3.



6.1.4. Changing the COM port setting

If there are contradictions, or for any other reason, another port can be assigned to the interface, as show in the illustration below

1. Right mouse click on the COM port in question.
2. Click on "Properties".
3. Select the port settings window.
4. Click on the Advanced button.
5. Change the COM port number as desired.



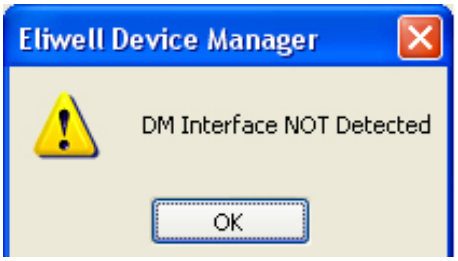
7. USING DEVICE MANAGER

7.1. PRELIMINARY OPERATIONS

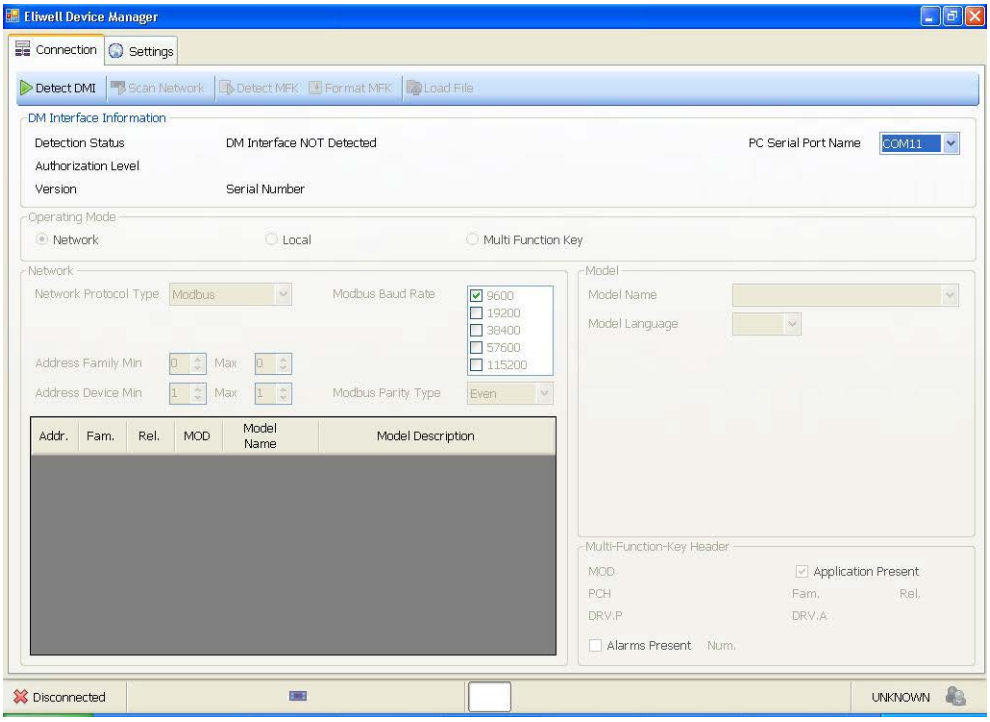
1. Connect the DM hardware interface to the PC before launching the program.
2. Make sure that the interface has been recognised by the program, as specified in the chapterSetup – COM port.

7.2. First program launch and program setup

If, after launching "Device Manager", it is found that the COM port the DM interface is connected to is different to the one set for the application, then a window will appear, as shown in the picture



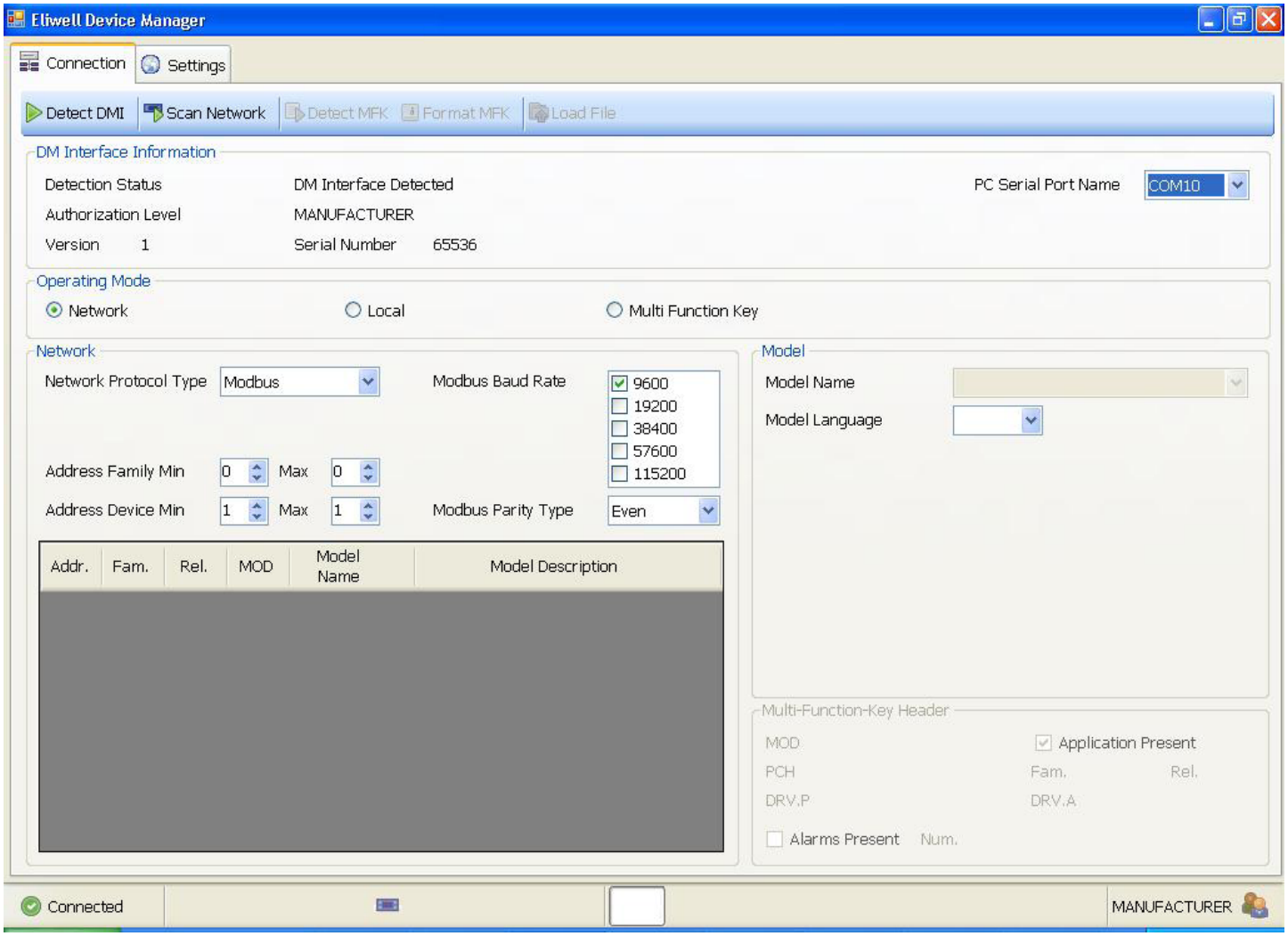
Click OK to close the window.
The program appears as shown in the picture:



The procedure for getting the DM interface recognised by the program is described in the next chapter.

7.2.1. Setup – COM port

In the drop-down menu, select the COM port read/set previously in "Peripherals Management" (see chapter on Setting COM port for DMI) and start the "DMI detection" procedure for recognising the DMI. If there are errors, refer to the section "DM interface connection error".
The value selected for the COM port will be saved and will reappear each time the program is accessed, until it is changed.
The next picture shows that the program, after launching the DMI detection function, has recognised the DM interface



7.2.2. DMI Detection function

If the program is to be operative, the DM interface must be recognised with the DMI Detection function.
If the DMI is recognised, the following information is displayed:

- The status of the communication port (in StatusBar, "Connected").
- The user level associated to the DMI, "Authorization Level". For example "Manufacturer"as shown.
- Version and Serial Number of the DMI.

The "DMI Detection" function is also useful when reinitializing the program, if you want to change connection mode or model.

7.3. DM INTERFACE CONNECTION ERROR

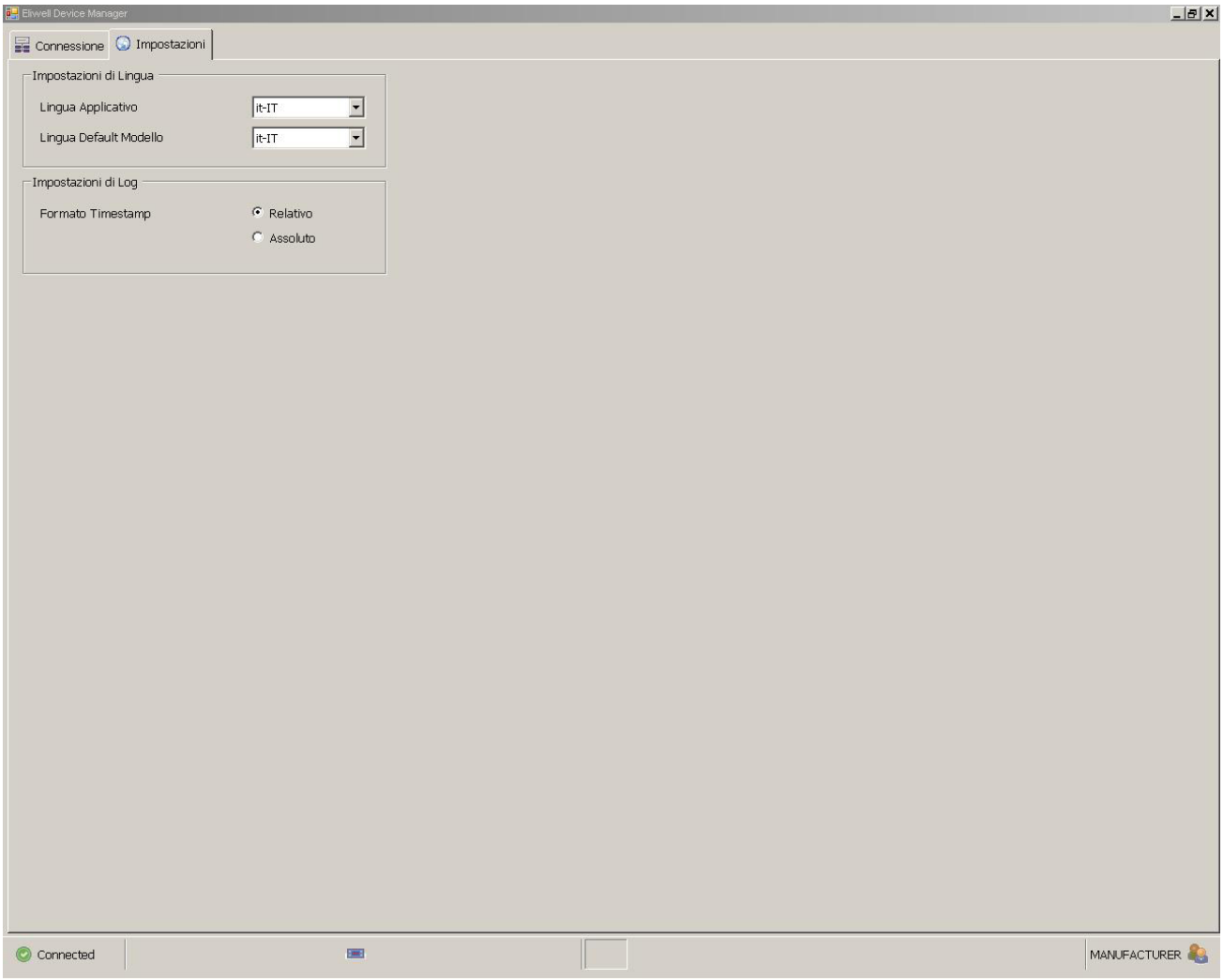
If the "Error opening serial port" message appears, proceed as follows:

1. Check that the COM port setting in the program is the same as one read in the COM port reading by the DM interface.
2. If they are the same, physically disconnect and reconnect the the DM interface from the USB port. This should make the operating system recognise the interface.
3. Repeat the DMI Detection function.

7.4. RECOGNITION OF DEVICE

The recognition of the device and the association of the parameters model are done automatically and correctly if the correct models are present and installed.
If there are devices in the network that suitable models have not been detected for, this will be stated in the list but without specifying the associated model.
If the detection of these devices does not lead to the detection of a model: an error message will appear and it will not be possible to control them.

7.5. SETTINGS TAB



The Settings Tab is used to program:

- Localization: Language Settings;
- Log: Log Settings.

7.5.1. Language settings

The user can select, via a drop-down menu:

- Application language: the default language of the application (for the description of commands, labels, etc.)
- Model Default language: the default language for models when they are loaded from the device or from file

7.5.2. LOG settings

The user can select the Timestamp format, i.e. the format of the report 'log on file' (logged values for the variables). The format may be:

- Relative (default): the first line of the report will indicate the date and time at which the data was logged, while subsequent lines display the date and time of the first log entry;
- Absolute: all lines list the 'absolute' date and time of the corresponding log entry.

8. USING DEVICE MANAGER IN NETWORK MODE

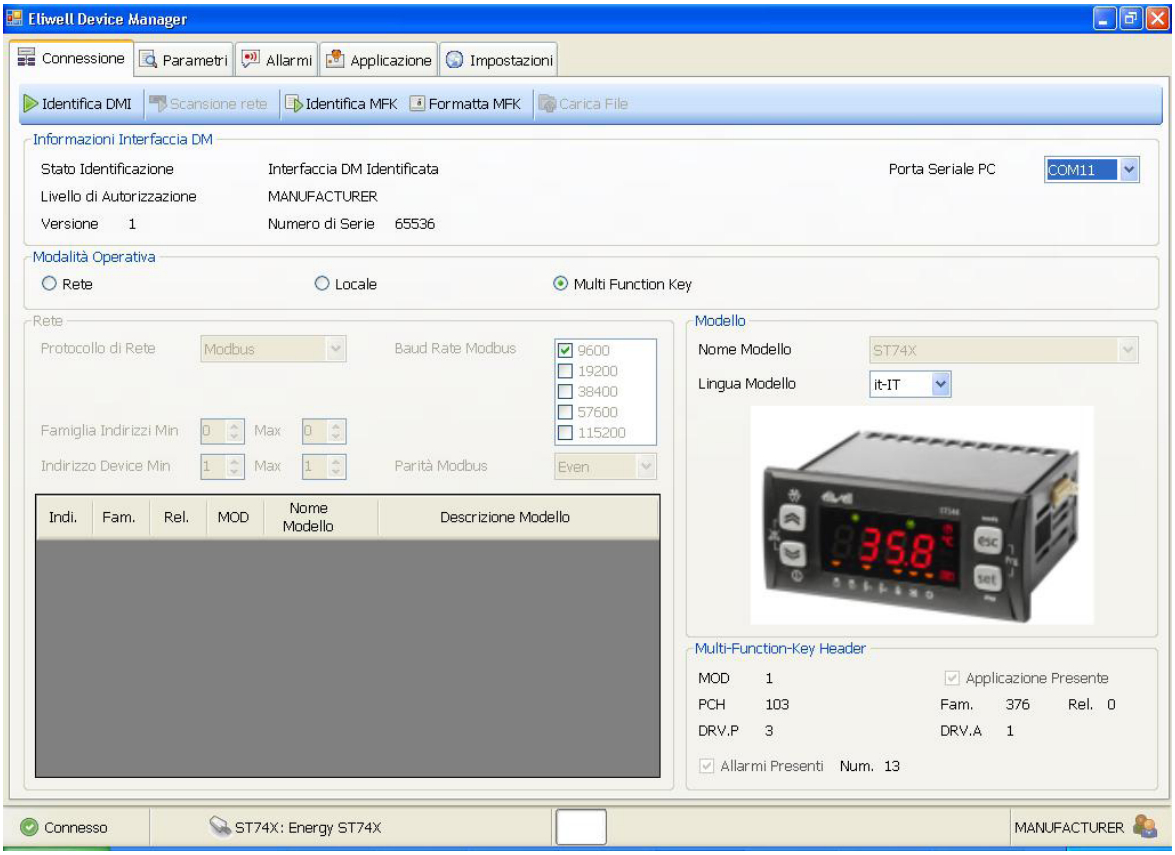
See the Connection Modes chapter for information on the physical connections.
Launch the program as described in the chapter Using Device Manager, Program Launch.

Each time the program is launched, the Network operating mode is selected by default.
The following settings are made in the Network section

1. Type of network - either Micronet or Modbus - of the connected devices;
2. The address interval of the family of devices;
3. The address interval of the devices.

The type of network and addresses can be taken directly from the parameters of the single devices. For further details, see the device user manuals.
In Modbus network the data transmission speed and parity type can also be selected. The program will automatically attempt to connect to the single device at the maximum speed allowed from amongst all those selected.

If the previously made settings are correct, the "Scan network" procedure will find the devices.
If the search is not successful, the settings made previously in the "Network setup" stage must be re-checked.
The picture below shows a network connection made with a single device.



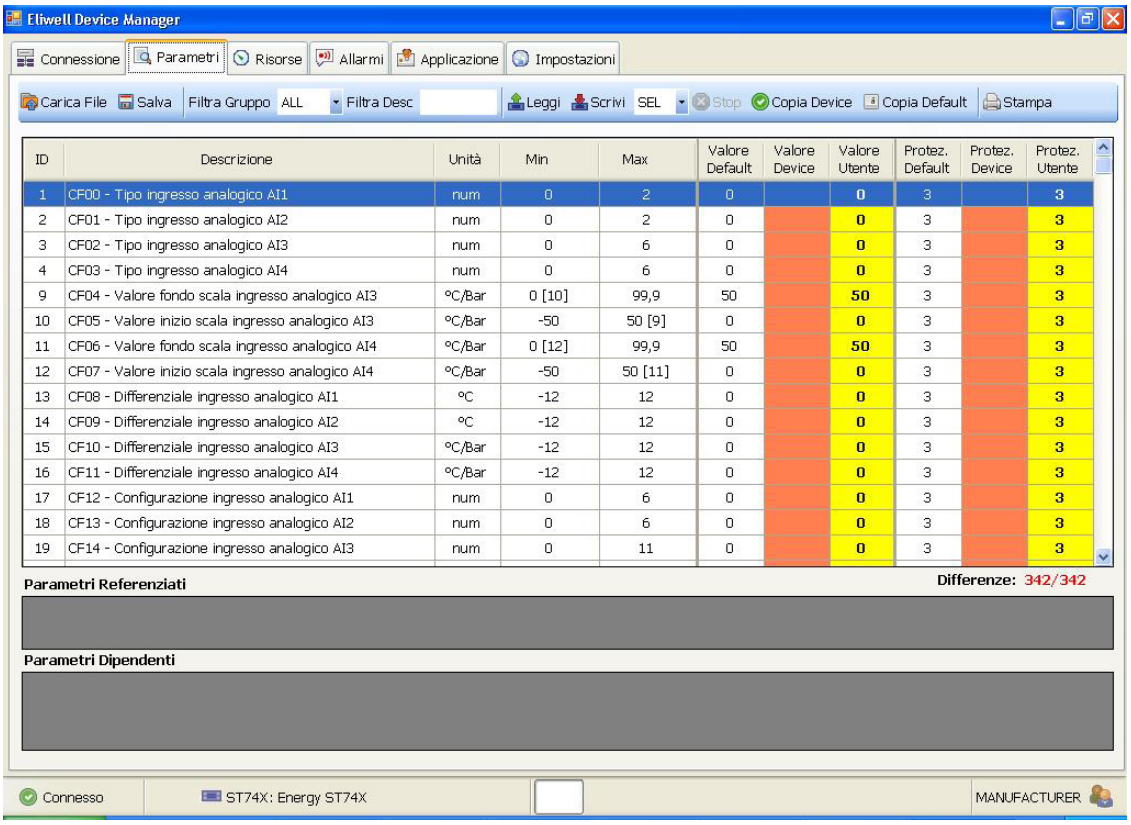
After recognising the device/s, the program will apply the model, if present in the PC, to the device and activate the related pages (Parameters, Resources, etc.).
If more than one device is detected, this information will be displayed for all the devices, ordered by address.

8.1. NETWORK PARAMETERS PAGE

As soon as a device is connected, the Parameters page can be viewed.
The following settings can be viewed simultaneously on the Parameters page:

- The parameter values preset by the model.
- The values read by the device.
- The values set by the user in a modification

8.1.1. Description of parameter Values Table



The parameter Values Table is illustrated below:

Parameter Values Table legend	
ID column	Parameter ID number.
Description	Parameter code (as displayed on the device) followed by a brief description.
Unit	Unit of measurement used by the model for each single parameter.
Min	Minimum interval value applicable to the parameter. The value of the referenced or dependent parameter is given in brackets.
Max	Maximum interval value applicable to the parameter. The value of the referenced or dependent parameter is given in brackets.
Default Value	The default value on the device model. The background is red if the value is different to the one in the User Value column.
Device Value	Value set on the device. The value is available as soon as it has been read. The background is red if the value is different to the one in the User Value column.
User Value	The value that the user sets to modify the parameter.
Default Protection	The default protection value on the device model. The background is red if the value is different to the one in the User Protection column.
Device Protection	The default protection value on the device. The background is red if the value is different to the one in the User Protection column.
User Protection	The protection value that the user sets to modify the parameter.

In the status bar under the table, the number of lines in which the Device Value/ User Value and Device Protection/User Protection columns are different is given in red.

8.2. PARAMETER VISIBILITY MANAGEMENT

There are four visibility levels, settable by allocating values to each parameter:

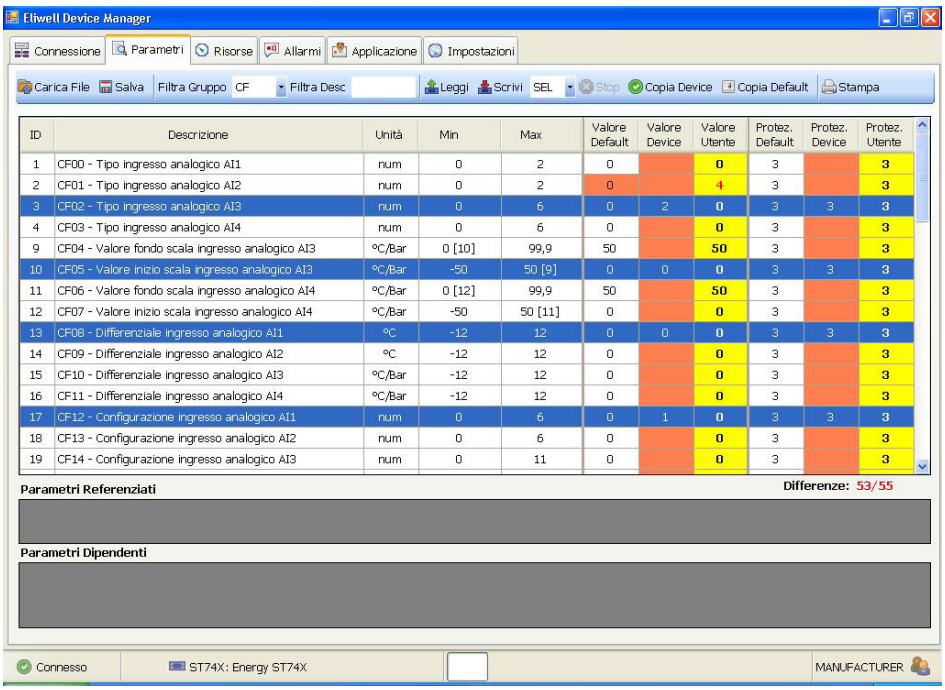
- 3 = parameter or folder always visible.
- 2 = Manufacturer level; these parameters will be visible only if the Manufacturer Password is entered (all parameters specified as always visible, the Service level parameters and the Manufacturer level parameters will be visible).
- 1 = Service level; these parameters will be visible only if the Service Password is entered (all parameters specified as always visible and the Service level parameters will be visible).
- 0 = parameter or folder NOT visible.

Parameters and/or folders with visibility level <>3 (i.e. password protected) will only be visible if the correct password is entered (Manufacturer or Service): Parameters and/or folders with visibility level =3 are always visible on the device and no password is required.

8.2.1. PARAMETERS SELECTION MODE

1 or more parameters can be selected at a time in the parameters table. This is useful for reading/writing parameter values when the Device Writing/ Reading mode is in "SEL".
The selection mode is the same as that of the operating system::

- Single interval mode, from parameter to parameter:
  - Select the first parameter of the interval.
  - Press and hold the "Shift" key while selecting the last parameter of the interval.
- Single parameter select/deselect mode
  - Select the parameter whilst pressing and holding the "CTRL" key. If the parameter has been selected previously this action will deselect it.



8.2.2. Description of Parameters Page tool bar

A description of the tool bar is given below:

8.2.2.1. Load File for Parameters Page function

Loads a configuration that is saved on the PC and applicable to the device into the User Value and User Protection column. A reading of the device parameters is done automatically. The configuration file extension is .DAX.

8.2.2.2. Save File for Parameters Page function

Saves a parameters configuration written in the User Value and User Protection columns.
The configuration file extension is .DAX.
The labels configured in the Resources page are also saved in the file.

8.2.2.3. Filter Group Function
Filters the parameters by parameter type (for example CF, Ui, tr, etc).
The default setting is ALL, i.e. view all parameters.
Works in combination with the "Device Writing/Reading Mode Function".

8.2.2.4. Filter Desc Function
Filters the viewing of the parameters by Description. The input string is not case-sensitive. This tool is useful for viewing a single parameter; in this mode the user will be prevented from accidentally changing the other parameters. If just the first two digits of the description are entered then the action of the filter is the same as in the Filter Group Tool. Works in combination with the "Device Writing/Reading Mode Function".

8.2.2.5. Read Device Function
Reads the device values that will be displayed in the columns:
- Device Value
- Device Protection

Works in combination with the "Device Writing/Reading Mode Function".

8.2.2.6. Write Device Function
Writes the device values that will be displayed in the columns:
- Device Value
- Device Protection

Works in combination with the "Device Writing/Reading Mode Function".

8.2.2.7. Device Writing/Reading Mode Function
The selection of the 2 ALL/SEL options affects the way that the program reads or writes the parameters on the connected device. The default Device Writing/Reading mode is "SEL".

Filter Group Function or Filter Desc Function	Device Writing/Reading Mode	Actions
UNFILTERED	SEL	Data reading/writing only for the individual parameters selected. See also Parameters Selection Mode.
FILTERED	SEL	Data reading/writing only for the individual parameters selected. See also Parameters Selection Mode.
FILTERED	ALL	Data reading for all parameters, mass mode. Data writing for Filtered group.
UNFILTERED	ALL	Data reading/writing in mass mode ("in toto"). See notes.

NOTE: The Unfiltered ALL mode implies the reading/writing of ALL the parameters, both visible or invisible to the user. The parameters are managed by the program and therefore the wrong order in the parameter management sequence cold cause unwanted errors

8.2.2.8. Stop function
Stops the enacting of the following commands:
- Load file.
- Save file.
- Read Device(1).
- Write Device(1).

(1) for the last 2 commands, if the Reading/Writing mode is in "SEL" the Stop Function is disabled

8.2.2.9. Copy Device Function
With this command the Device Value column is copied into the User Value column, according to the modes set in Device Writing/Reading Mode values.
Example: if the Device Writing/Reading Mode is in "SEL", only the selected parameters will be copied into the "yellow" User Value edit column

8.2.2.10. Copy Default Function
With this command the Default Value column is copied into the User Value column, according to the modes set in Device Writing/Reading Mode values.
You are advised to work with Device Writing/Reading Mode always in "SEL".

8.2.2.11. Print Parameters Function

This command is for printing the Parameters Table as it appears on the video. Thus, the information given will be according to the Filter Group Tool or Filter Desc Tool.

8.2.2.12. Copy Selection Function

The parameter Values Table or a selection of the values can be copied into the operating system's "notes".

- Press the "CTRL" + "C" keys on the keyboard.
- Right-click with the mouse to enable the "Copy selection into notes" command.

The copy can be pasted into applications such as Microsoft MS Excel.

8.3. RESOURCES PAGE

The variables controlled by the device can be displayed in real time on the Resources page:
Normally, the variables that can be managed are:

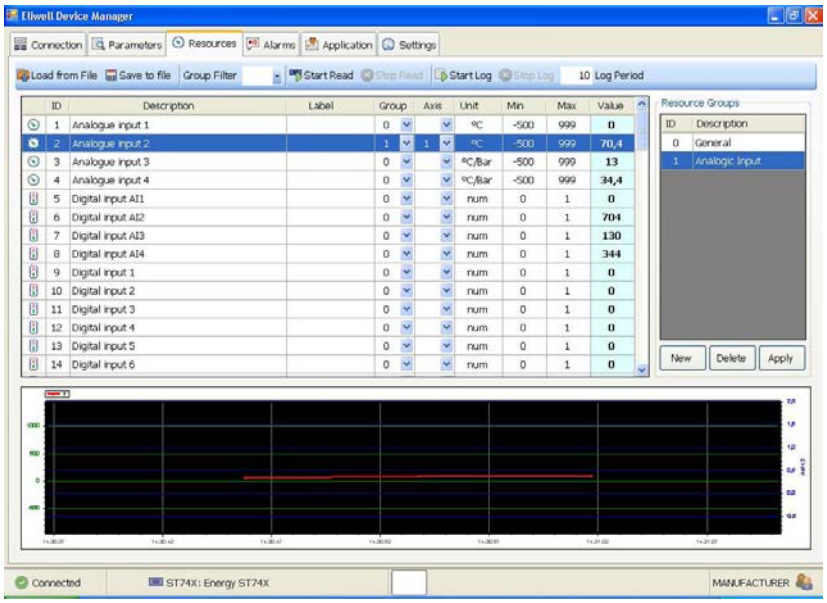
- values of analogue inputs (AI);
- values of digital inputs (DI);
- values of digital outputs (DO);
- values of analogue outputs (AO);
- values of variables in the RAM representing the Setpoints and related cooling and heating hysteresis… (setpoint, offset, hysteresis, differential);
- time and counter variables;
- alarm variables;
- state and mode variables;
- other variables.

With the options on the "Resources" page, the user can:

- define new groups for ordering the variables;
- associate selected variables to a chosen group;
- select a single group for monitoring the variables of that group alone (Read and Read Continuous) functions;
- In the same way, to create a log on file for the values of the variables in the selected group (function: Start Logging function). The LOG format (relative or absolute) is configured in the Settings Tab (see corresponding paragraph)
- in the same way, graphing the values of some of the variables in the selected group (by making a further selection);
- specify a Description (alphanumeric strings of maximum length…) associated to each variable.

8.3.1. Description of Resources Table

The Resources table is illustrated below



Resources Table legend	
ID	ID number of variable.
Description	Description of variable.
Label	Description left free for user. Can be saved together with all the other information by means of the "save file" tool.

Resources Table legend	
Group	A variable can be assigned to a group, to aid the action of the filter. See Grouping Resources.
Axis	To operate with variables in a different unit of measurement or scale, either the right axis can be set, in green, or the left axis, in blue. See Graph Management.
Unit	Unit of measurement used by the variable.
Min	Minimum interval value of the action of the variable.
Max	Maximum interval value of the action of the variable.
Value	Value of variable at the time of measuring the data.

8.3.2. Grouping Resources Function

With this tool, variables can be grouped at the user's discretion.
The previous picture shows how all the variables regarding Analogue Inputs in group 1 can be grouped together

8.3.2.1. Procedure for creating and assigning a resources group

To create a new group, simply:
1. Click the "New" button.
2. Enter the chosen item in the Description box.
3. Click the "Apply" button

To edit the description of a group:
1. Select the group.
2. Repeat steps 2 and 3 of creating a new group.

To delete a group:
1. Select the group.
2. Click the "Delete" button.

To assign a group to a variable:
1. Select the variable.
2. Select the chosen group ID from the Group column.

8.3.3. Resources Page tool bar

A description of the tool bar is given below:

8.3.3.1. Load File for Resources Page function

Loads a configuration that is saved on the PC and applicable to the device.
Note. The file is identical to the one used for the parameters. Therefore, these parameters will also be loaded. See Save File for Parameters Page Tool.

8.3.3.2. Save File for Resources Page

Saves a configuration on the PC.
Note, The file is identical to the one used for the parameters. Therefore, these parameters will also be saved. See Save File for Parameters Page Tool.

8.3.3.3. Filter Group for Resources Page Function

This tool filters the variables for the groups that are in Grouping Resources and properly set in the Group column.

8.3.3.4. Start/Stop Reading Function

These commands start or stop the procedure for reading the values of the selected variables, as described in the Graphs and Logs chapter.

8.3.3.5. Start/Stop Log Function

These commands start or stop the procedure for logging the values of the selected variables on file, as described in the Graphs and Logs chapter.

8.3.3.6. Log Period Function

Changes the period for the sampling of the data to be read/saved, from a minimum of 10 to a maximum of 3600 seconds.
The scanning is done in a continuous cycle.

8.3.4. Graphs and Logs

The program has a dedicated function for displaying the trends of the selected variables (Analogue Input variables only) in graphic mode (within the individual selected group).
The same function can also be used to select the variables to be graphed with reference to the left scale and those to be graphed with reference to the right scale. The allocation of the resources to the axis follows a simple rule:

- 0 = RESOURCE NOT GRAPHED
- 1 = RESOURCE GRAPHED WITH REFERENCE TO LEFT AXIS
- 2 = RESOURCE GRAPHED WITH REFERENCE TO RIGHT AXIS

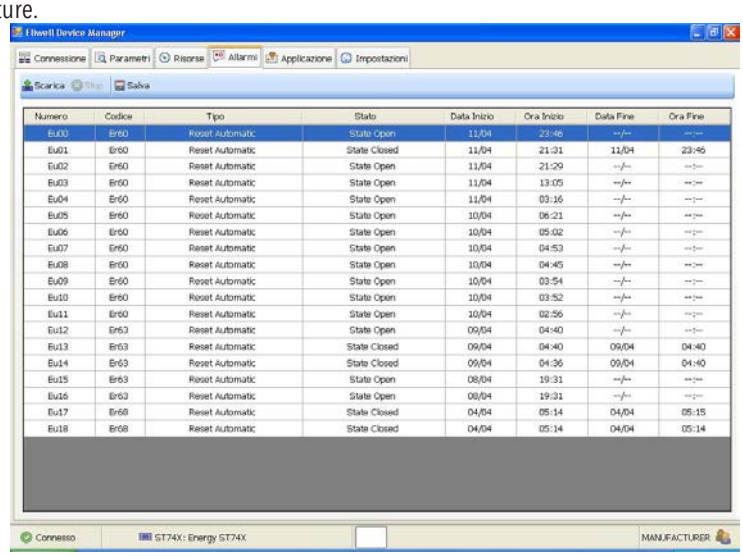
Operations that can be done with the mouse in the graphic section

- Zoom in/out with mouse wheel
- With right mouse button
  - Copy graph in "Notes"
  - Show value of Points
  - Zoom out
  - Cancel zoom

Zoom in, selecting specific areas with the cursor for zooming in.

8.4. ALARMS - NETWORK PAGE

On the "Alarms" page, downloads can be done from the device (or MFK) using the "Download" buttonand the Alarm records can be viewed, with the same information that can be obtained directly from the ST device: alarm code, alarm start and end date and time, etc. For example, as shown in the picture.



This information can also be saved to file by clicking the "Save" button: the file name and destination are requested.
The file will be in text format, the same format as the variables log file (table form).
Below is an example of an alarm records file

[Alarm of M343MP]
31/01/2008 13.05.14

Number	Code	Type	State	Time Start	Date Start	Time End	Date End
Eu00	Er05	Reset Automatic	State Closed	22:03	17/01	22:03	17/01
Eu01	Er62	Reset Automatic	State Open	22:02	17/01	--:--	--/--

The alarm records can also be read from MFK (but not vice versa). The procedure is the same, but in the MFK Operating Mode.
The number of actual alarms (= number of alarm records) loaded in the MFK is indicated at header level, and the alarms in the MFK are ordered starting from the oldest to the most recent.

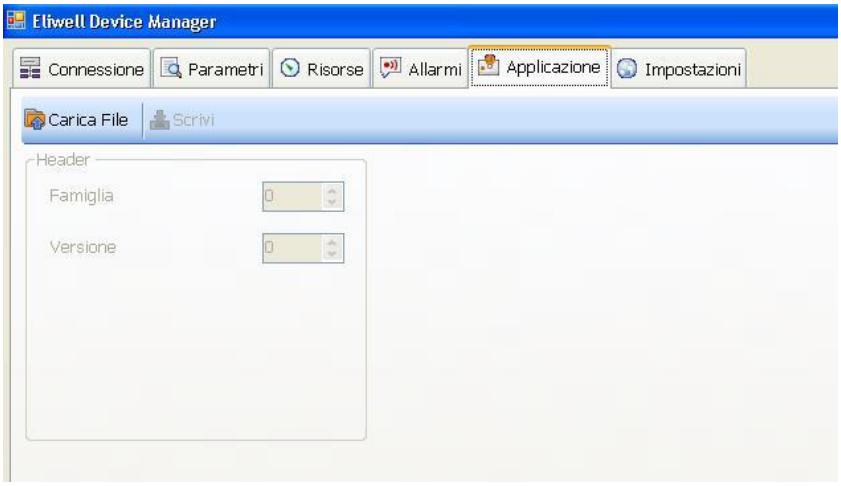
8.5. APPLICATION - NETWORK PAGE

The firmware can be upgraded directly, i.e. via PC – individual device connection. The firmware can be upgraded from PC to device, but an upgrade cannot be downloaded from device to PC.ì See also the chapter Application – MFK Page.

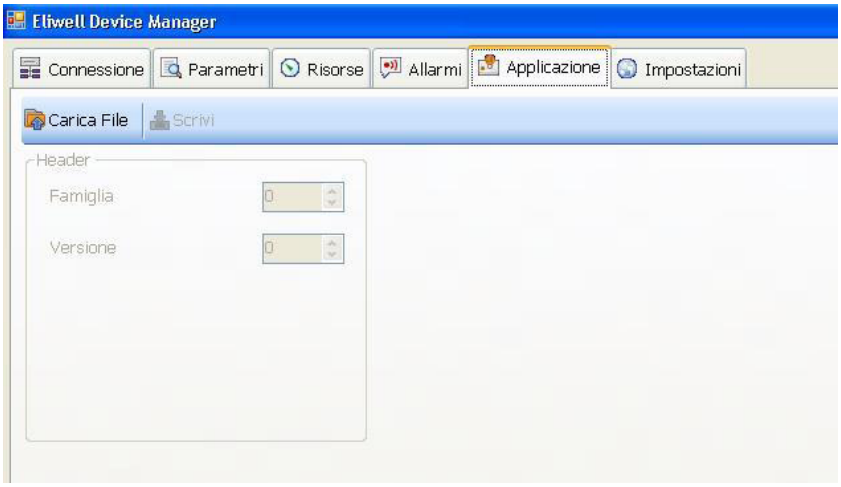
8.5.1. Procedure for upgrading firmware in Network

1. Check the release version of the firmware on the Connections page, on the line where the device is selected;
2. Go to the Application page;

3. Initially, the program appears as shown in the picture.



4. Click the Load File button to import the firmware file. The file extension is .fwX. The program will appear as shown in the example in the picture, where values have been entered in the Family and Release fields;



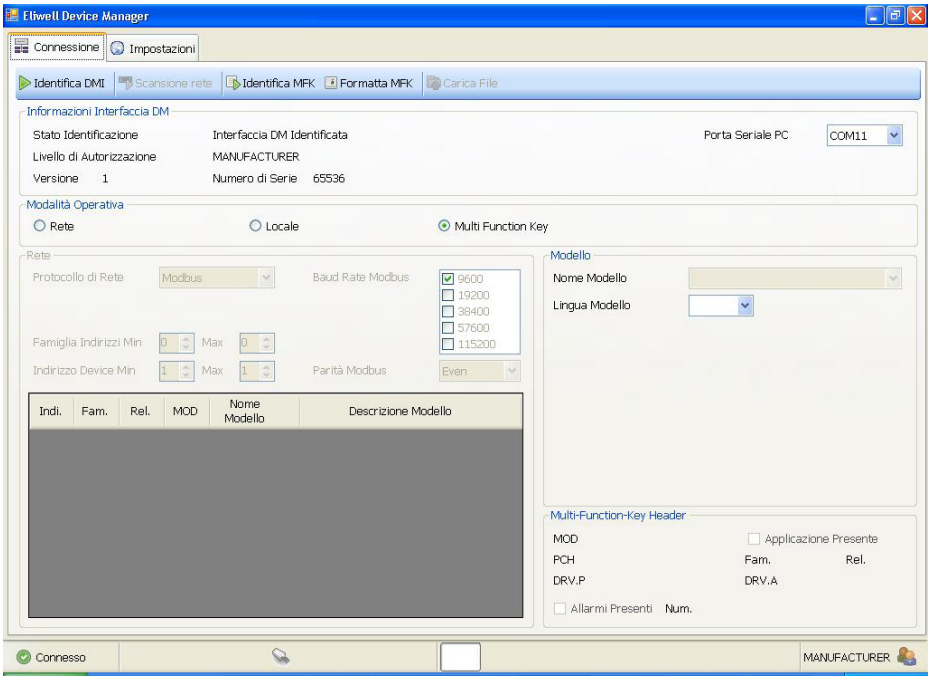
5. Click the "Write" button";
6. **Note**. during this procedure the device must not be powered from other sources, as this would make it impossible to do the reset during the sequence;
7. Wait until the program writes in the device and then restart iti;
8. When the upgrade is finished, a window will appear saying that the operations have been completed.

9. USING DEVICE MANAGER IN MFK MODE

9.1. USING DEVICE MANAGER IN MFK MODE

See the MFK Connection Mode chapter for information on the physical connections.

1. Launch the program as described in the chapter Using Device Manager, Program Launch.
2. Select the Multi Function Key operating mode. As shown in the picture.



The operating scenarios with MFK are shown below.

9.1.1. MFK not connected

If the interface is connected but the MFK is not connected, the program will display the message: "Unable to communicate with Multi Function Key".

9.1.2. MFK not formatted

Format the MFK from the device and then do an upload, again from the device.
If the MFK is not formatted, but connected, the program will display the message: MFK NOT Detected.

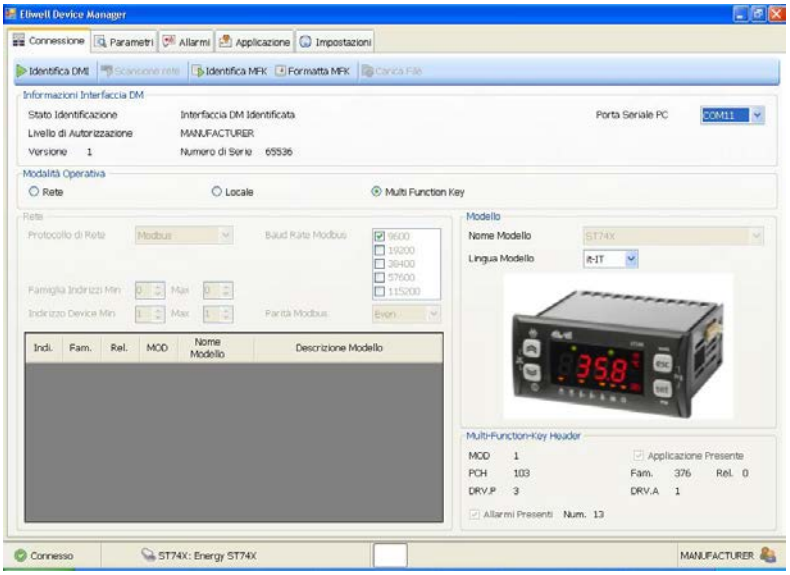
NOTE: Formatting and loading parameters directly from the program will mean that the default values of the model's parameters will be written on the device and will not be visible to the user.
These values could be different in the device, and overwriting them could cause errors.

9.1.3. MFK containing a configuration different to the one requested

If the MFK contains a configuration different to the one requested, but is connected, the program will display the message: "Model not detected".
Proceed as if the MFK were not formatted

9.1.4. MFK containing a requested configuration of the deviceo

1. Click on the "Detect MFK" button. An example of how the program may appear is given in the picture below;



Note that the program will detect the device if present in the MFK.
The characteristics of the device will be shown in the "Multi-Function-Key Header" box on the bottom right".

9.2. MFK PARAMETERS PAGE

To configure the parameters correctly, you are advised to proceed as described below.

The correct sequence is as follows:

1. Formatting MFK (see the device's manual for instructions).
2. UPLOAD from device to MFK (see the device's manual for instructions). Connection and identification of the MFK with the program, with the automatic detection of the model contained in the MFK.
3. READING the MFK from the Parameters page.
4. COPY DEVICE, Parameters Tab (to transfer the device settings, both visible and invisible, to the User column). If necessary, editing parameters or opening .DAX files compatible with the model.
5. WRITING the MFK from the Parameters page

Note. The opening of a .DAX file will automatically enable the read and copy device actions (pts. 3+4).
Note. If you want to write directly on the MFK without doing a Formatting + UPLOAD (pts. 1+2) on MFK from Device
The program will display a warning message about overwriting the hidden parameters. See Mass Writing message.

See Description of Parameters Page tool bar for a description of the commands.

9.3. ALARMS - MFK PAGE

See Alarms - Network Page.

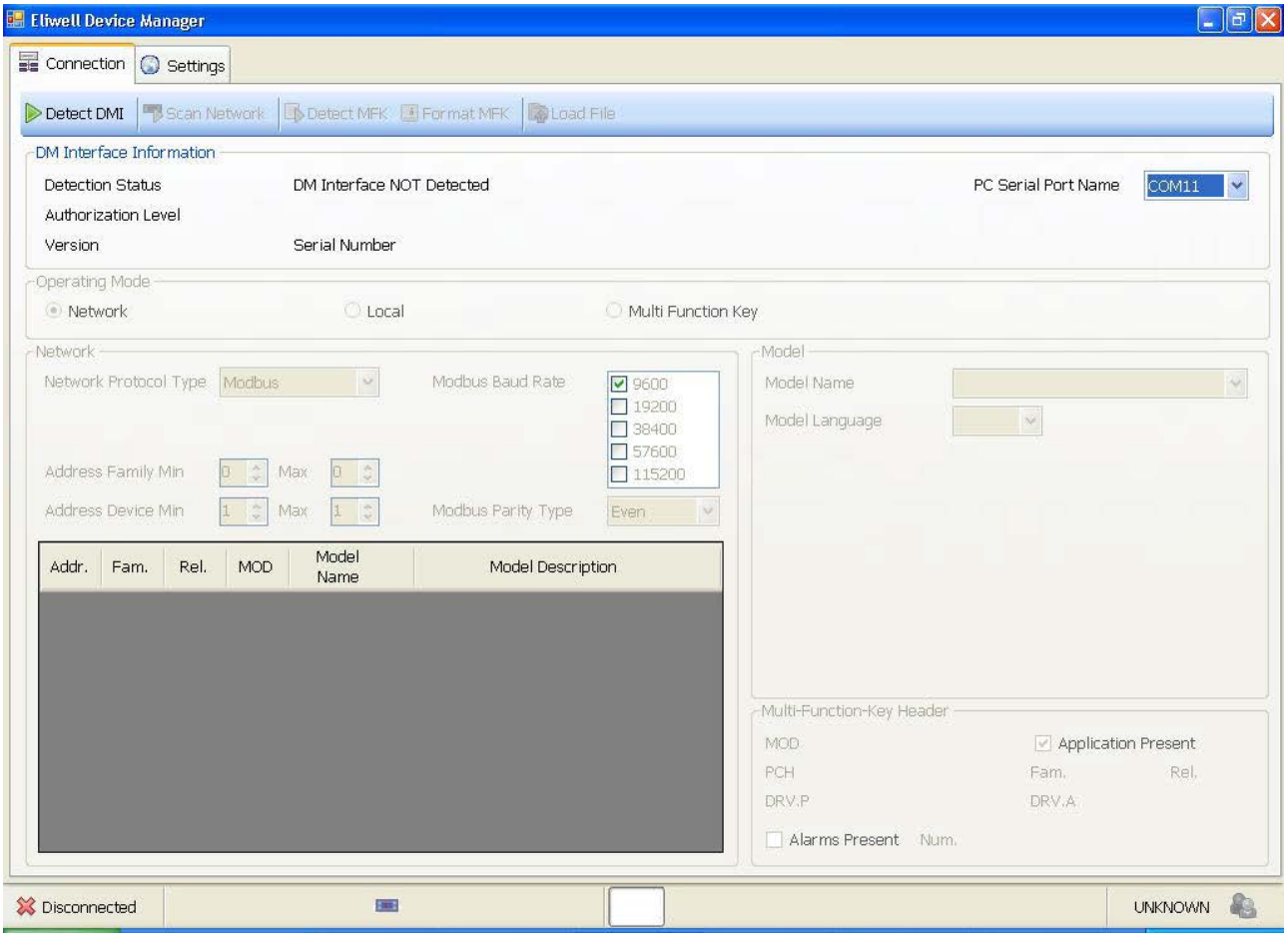
9.4. APPLICATION - MFK PAGE

1. The user can also upgrade the firmware via MFK;
2. Formatting MFK (see the device's manual for instructions);
3. Connection and identification of the MFK with the program;
4. Import the Firmware file from the page with the Load File command;
5. Check the firmware version;
6. Writing the MFK from the Application page;
7. Notification of completion of upload;

8. Uploading firmware from MFK to device.

10. USING DEVICE MANAGER IN OFFLINE MODE

After launching the "Device Manager" application and checking that the DM interface has been detected, the user must select the "Local" setting, as shown in the picture.



The user can now decide whether to:

- Work on a new configuration based on loaded models:
  - Select a model from the drop-down text box.
- Work on a configuration that has been saved previously
  - Either launch the "load file" procedure from the Connections page;
  - Or select the model, go to the Parameters page, now visible, and load a configuration compatible with the selected model, using the "load file" procedure.

After loading the model, proceed with configuring the parameters.
The settings can be saved at the end of the work session; see Save File for Parameters Page Function.

11. USING DEVICE MANAGER WITH EWCM EO

11.1. USING DEVICEMANAGER WITH EWCM EO

This chapter refers to using Device Manager with EWCM EO controllers for compressor rooms.
Software, hardware installation and operations common to Eliwell controllers are illustrated in the other manual chapters. This chapter just describes operations using EWCM EO.
Note: the firmware release can be checked on the EWCM display in the Service Menu (requires Administrator password, see EWCM EO user manual.

SERVICE 03/03 Service Password FW 504.01 16/11/12

Note: only available from versions 504.01 onwards.
If there are any doubts over the firmware mask, please contact Eliwell Technical Support

11.1.1. SOFTWARE INSTALLATION

Before using EWCM EO for any purpose, install the DEVICE MANAGER software as instructed in the relevant chapter.

11.2. CONNECTION MODE

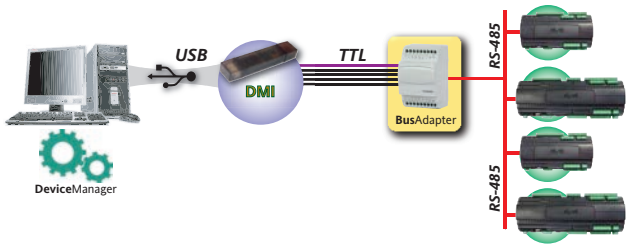
Note. USB Copy Card is seen as a mass USB storage peripheral by the PC.
Its operation does not depend on the correct installation of DeviceManager.
The user can interact with EWM EO in two different ways:

Network connection mode:
- Network mode with EWCM EO through BusAdapter150.

USB Copy Card mode:
- The user interacts with the software only, disconnected from EWCM EO (for example for Parameter configuration processing).

11.2.1. Network connection mode

The network connections are illustrated in the table below.

Type of connection	Scenario	Notes
Connection Network		The purple cable is used for the connection between the DMI interface and the BusAdapter.

11.3. USB COPY CARD MODE

Type of connection	Scenario	Notes
Connection Local USB Copy Card		Local map processing

11.4. OPERATING/CONNECTION MODESI

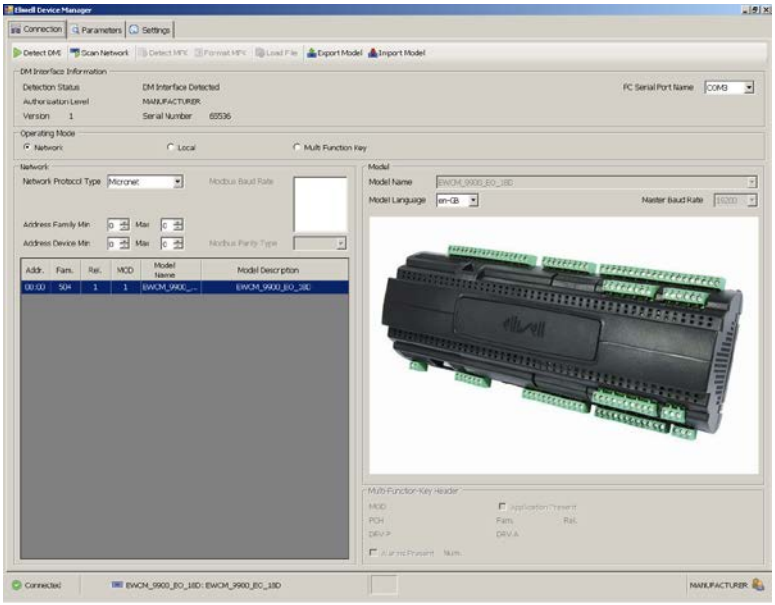
The table below illustrates what operations can be done with the different types of connection

Type of macro function	Connection mode
Parameter management	• Network • USB Copy Card

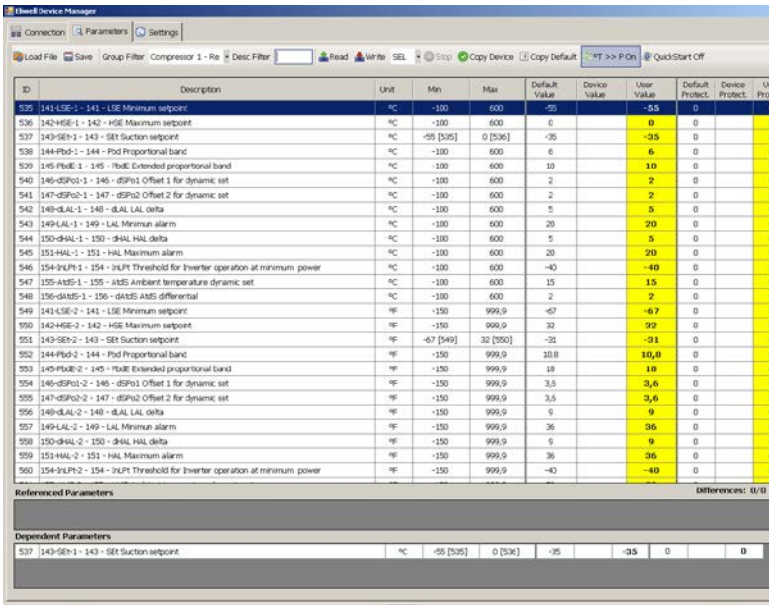
11.4.1. USING DEVICE MANAGER WITH EWCM EO

Network connection mode
Once the DMI has been identified

Select "Connection" tab.
From "Operating Mode" section, select "Network" and "Scan Network" to detect the EWCM EO model connected.



To operate on the parameter table, select "Parameters"



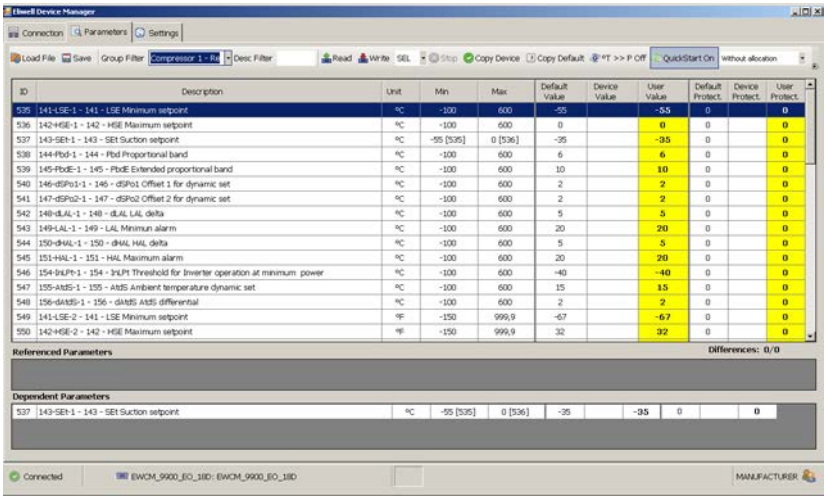
11.4.2. Parameter filter for Folders and Units of Measurement

EWCM EO foresees a group of parameters representing the same variable in different units of measurement
Parameters are duplicated / quadrupled depending on the unit of measurement displayed.
For example, the parameter for the Compressors folder 131 – LSE minimum setpoint is quadrupled like this:

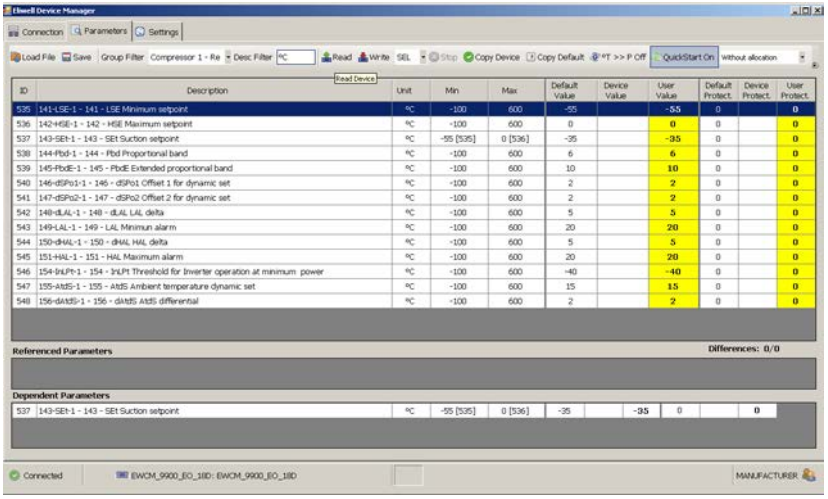
- 141 – LSE – 1 minimum setpoint °C
- 141 – LSE – 2 minimum setpoint °F
- 141 – LSE – 3 minimum setpoint bar
- 141 – LSE – 4 minimum setpoint PSI

In the Device Manager parameter table, the parameter is repeated 4 times in 4 different lines with suffix – 1,…-4.
Once the folder has been filtered using the 'Group Filter' drop-down menu, you can 'filter' further for the description entering the Unit of Measurement (for example centigrades °C)

Folder filter



U.M. filter



If you change and select one (or more) lines or just change one or more measurement units of the same parameter (present with more UMs) EWCM EO also converts the other "connected" parameters automatically using specific conversion tables. To disable conversion EWCM EO provides a dedicated command illustrated below.

11.5. PARAMETER MANAGEMENT

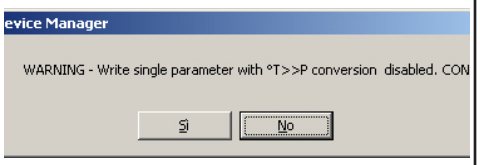
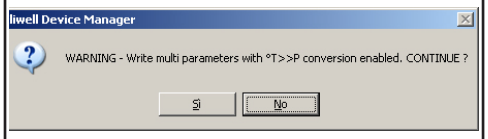
Unlike other Eliwell instruments, there are two buttons on the tool bar and a drop-down menu to the top right (also see the Note at the end of the chapter):

Button	Description	Note
°T >> P On	enables automatic conversion	The buttons are in On or Off mode based on the state of EWCM EO
°T >> P Off	manually disables automatic conversion	
Quick Start Off	QuickStart Parameters disabled for writing	
Quick Start On	QuickStart Parameters enabled for writing	
Menu	**Description**	**Notes**
Without allocation	Leaves I/O allocation unchanged	English language selection. The relative description in the language appears in the other languages
With allocation	Modifies the I/O allocation automatically	

11.5.1. Management of parameters and UMs

The T >> P On→Off button disables automatic conversion manually before writing the parameters

You have two cases, writing just one parameter and writing 2 or more parameters: a 'warning' message appears based on mode or writing without manual user confirmation

	Single writing	Multiple writing
	 **'warning' message**	**Writing parameters**
	**Writing parameters**	**'warning' message'**  **DO NOT use this mode for parameters presenting the same variable in several units of measurement** **Use the single mode to allow automatic conversion** (*)

(*) **Note. Multiple writing for some parameters is allowed for all parameters that do not involve conversion of measurement units.**

Managing Quick Start parameters
The Quick Start >> Off→On button manually enables writing of central compressor 'system' parameters, present in the Quick Start folder

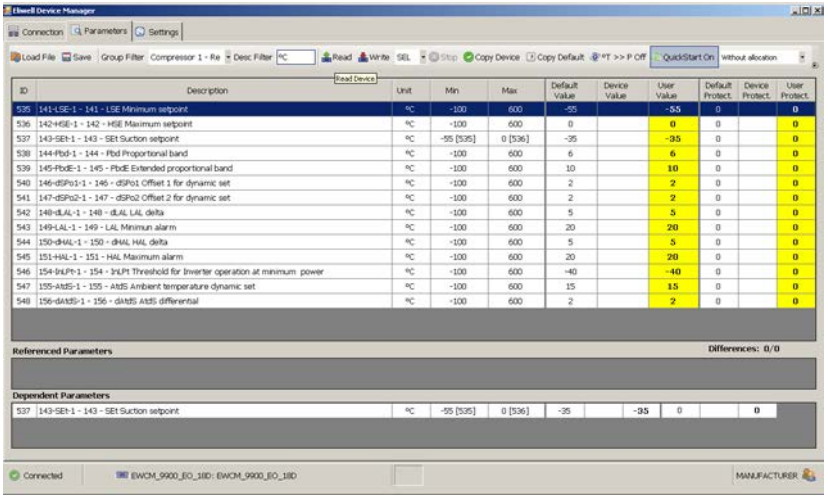
To be able to modify the Quick Start parameters, the EWCM EO must be in Configuration mode, that is the QUICK START screen visible from EWCM EO keypad must be as in the example (Enable = Yes)

Pressing the Quick Start >> Off→On button the EWCM keypad displays Enable No→ Yes

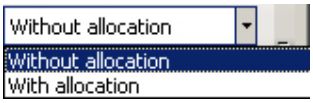
QUICK START	01/01
Enable	Yes
Parameters	
Manual	Yes

For the description of Quick Start parameters, please refer to the EWCM EO manual

The list of parameters is as follows:



Manual I/O "allocation"



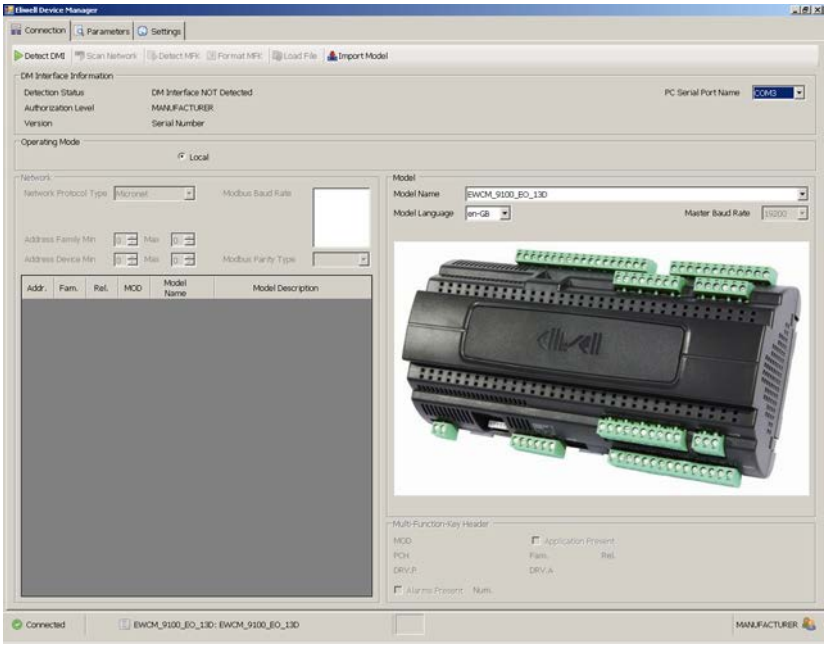
The drop-down menu Without allocation >> With allocation allocates inputs/outputs or not automatically, associating settings set with with compressor room 'system' parameters, present in the Quick Start folder, with physical resources:

Without allocation leave this default setting if you do not want to change the I/O allocation
On the EWCM EO keypad display this corresponds to Manual Yes

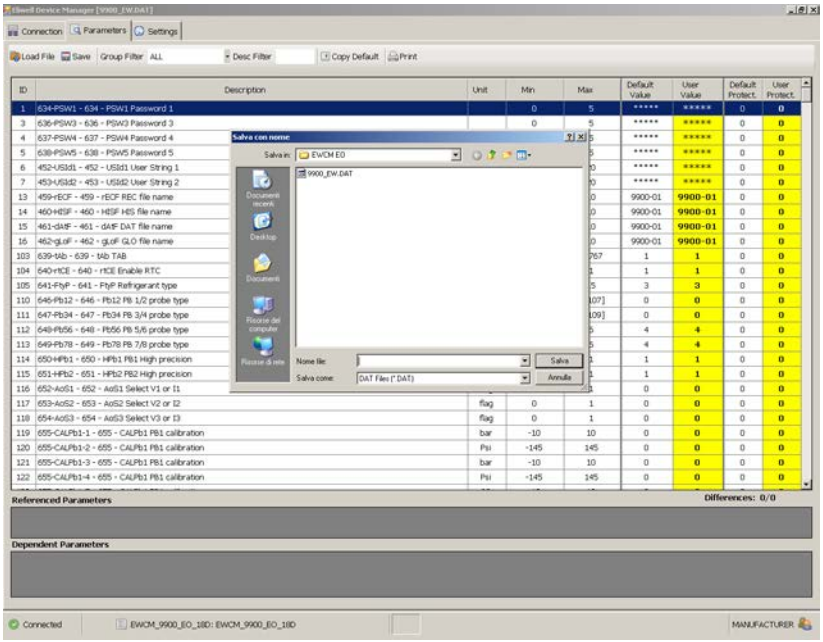
With allocation on the contrary this setting automatically changes I/O allocation
On the EWCM EO keypad display this corresponds to Manual No.

11.5.2. USING DEVICE MANAGER IN LOCAL MODE / USB Copy Card

This mode is selected automatically whenever DeviceManager DOES NOT identify a DMI connected at programme start-up.
Mode used to process maps locally (on own PC) to be uploaded on EWCM EO later on

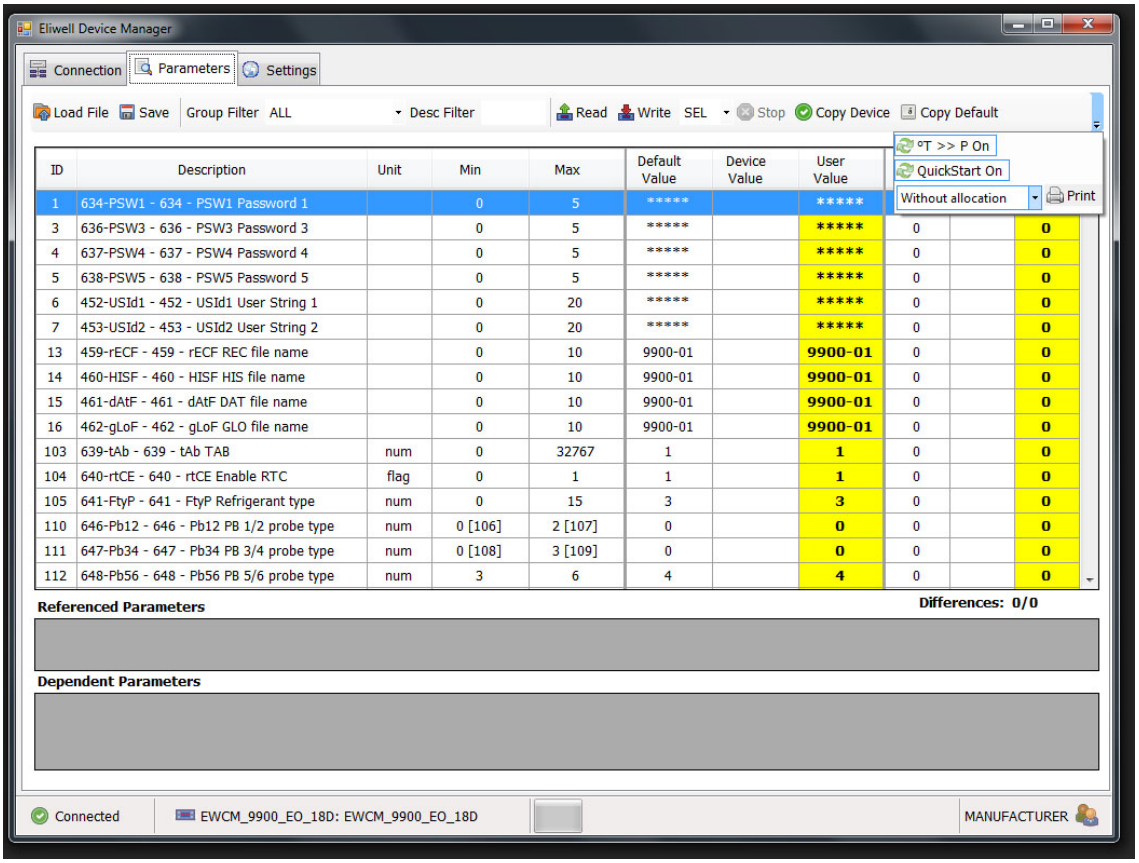


Having configured the parameters map from the "Parameters" panel save the map by pressing "Save"



The file name must have max. 8 characters ALL UPPER CASE (including the extension).
The file name will have a .DAT extension.
The .DAT file must then be saved on the USB Copy Card to download the map directly onto the device.
To modify an existing map upload from EWCM EO to USB Copy Card, copy the DAT file on your PC and import the file with Device Manager repeating the above procedure.
Consult the EWCM EO manual for all map upload/download operations.
Note: Based on screen size or resolution buttons

might not be visible; in that case click on the right menu bar to display the EWCM EO functions correctly.


Eliwell Device Manager
Connection
Parameters
Settings
Load File
Save
Group Filter ALL
Desc Filter
Read
Write
SEL
Stop
Copy Device
Copy Default
°T >> P On
QuickStart On
Without allocation
Print
ID
Description
Unit
Min
Max
Default Value
Device Value
User Value
1 634-PSW1 - 634 - PSW1 Password 1 0 5 ***** *****
3 636-PSW3 - 636 - PSW3 Password 3 0 5 ***** ***** 0 0
4 637-PSW4 - 637 - PSW4 Password 4 0 5 ***** ***** 0 0
5 638-PSW5 - 638 - PSW5 Password 5 0 5 ***** ***** 0 0
6 452-USId1 - 452 - USId1 User String 1 0 20 ***** ***** 0 0
7 453-USId2 - 453 - USId2 User String 2 0 20 ***** ***** 0 0
13 459-rECF - 459 - rECF REC file name 0 10 9900-01 9900-01 0 0
14 460-HISF - 460 - HISF HIS file name 0 10 9900-01 9900-01 0 0
15 461-dAtF - 461 - dAtF DAT file name 0 10 9900-01 9900-01 0 0
16 462-gLoF - 462 - gLoF GLO file name 0 10 9900-01 9900-01 0 0
103 639-tAb - 639 - tAb TAB num 0 32767 1 1 0 0
104 640-rtCE - 640 - rtCE Enable RTC flag 0 1 1 1 0 0
105 641-FtyP - 641 - FtyP Refrigerant type num 0 15 3 3 0 0
110 646-Pb12 - 646 - Pb12 PB 1/2 probe type num 0 [106] 2 [107] 0 0 0 0
111 647-Pb34 - 647 - Pb34 PB 3/4 probe type num 0 [108] 3 [109] 0 0 0 0
112 648-Pb56 - 648 - Pb56 PB 5/6 probe type num 3 6 4 4 0 0
Referenced Parameters
Differences: 0/0
Dependent Parameters
Connected
EWCM_9900_EO_18D: EWCM_9900_EO_18D
MANUFACTURER

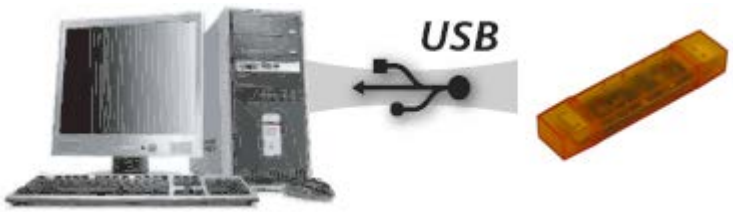
12. USING DEVICE MANAGER WITH UNICARD

12.1. USING DEVICEMANAGER WITH UNICARD

This document refers to the use of UNICARD when connected to the DeviceManager software via USB; for operation with an instrument, please refer to to the UNICARD documentation.
Note. UNICARD can also be used as an MFK; see chapter 9 for further information

12.1.1. SOFTWARE INSTALLATION

Before using UNICARD for any purpose, install the DEVICE MANAGER software as instructed in the relevant chapter. Remove the seal from the UNICARD cap and connect UNICARD to the PC by means of the USB connection, only after installing the software (see chapter 5).



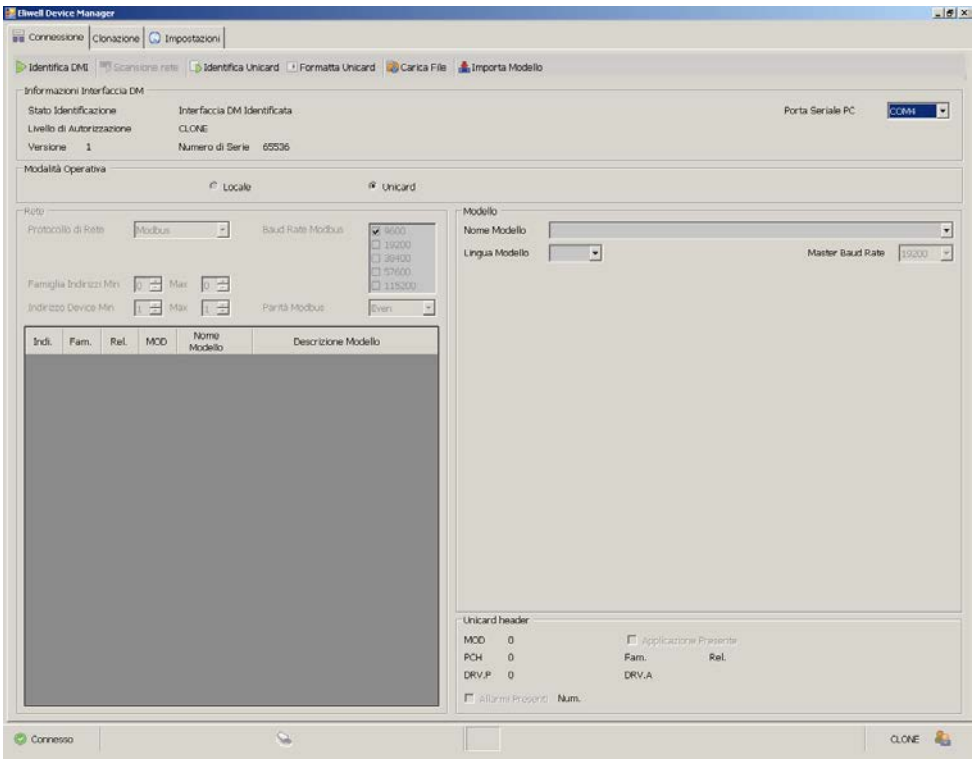
Note: UNICARD is not a USB mass storage device. Its operation does not depend on the correct installation of DeviceManager.

12.1.2. HARDWARE INSTALLATION

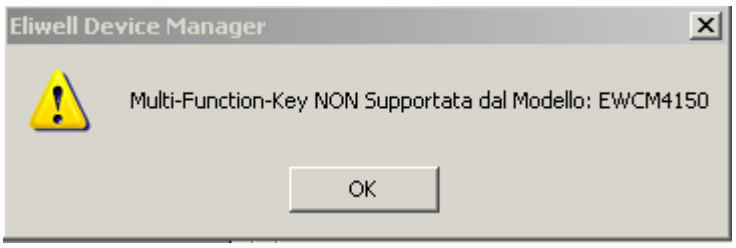
When installation is completed, connect UNICARD to the PC to install the respective driver (see chapter 6)
Note. If the DeviceManager software has already been installed and used with the DM interface (any version), you will not be asked to install the driver for UNICARD.

12.1.3. USING DEVICE MANAGER IN UNICARD MODE

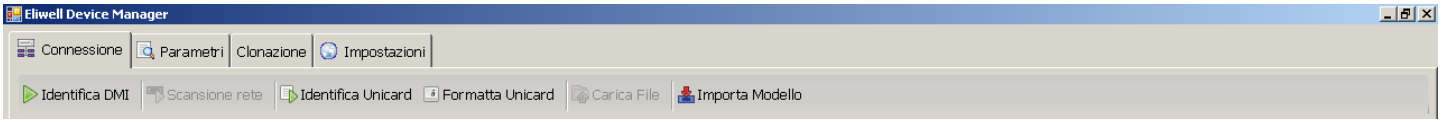
This mode is selected automatically whenever a UNICARD is found on start-up of the DeviceManager programme. After start-up, the following screen will appear if UNICARD does not contain any parameters list.



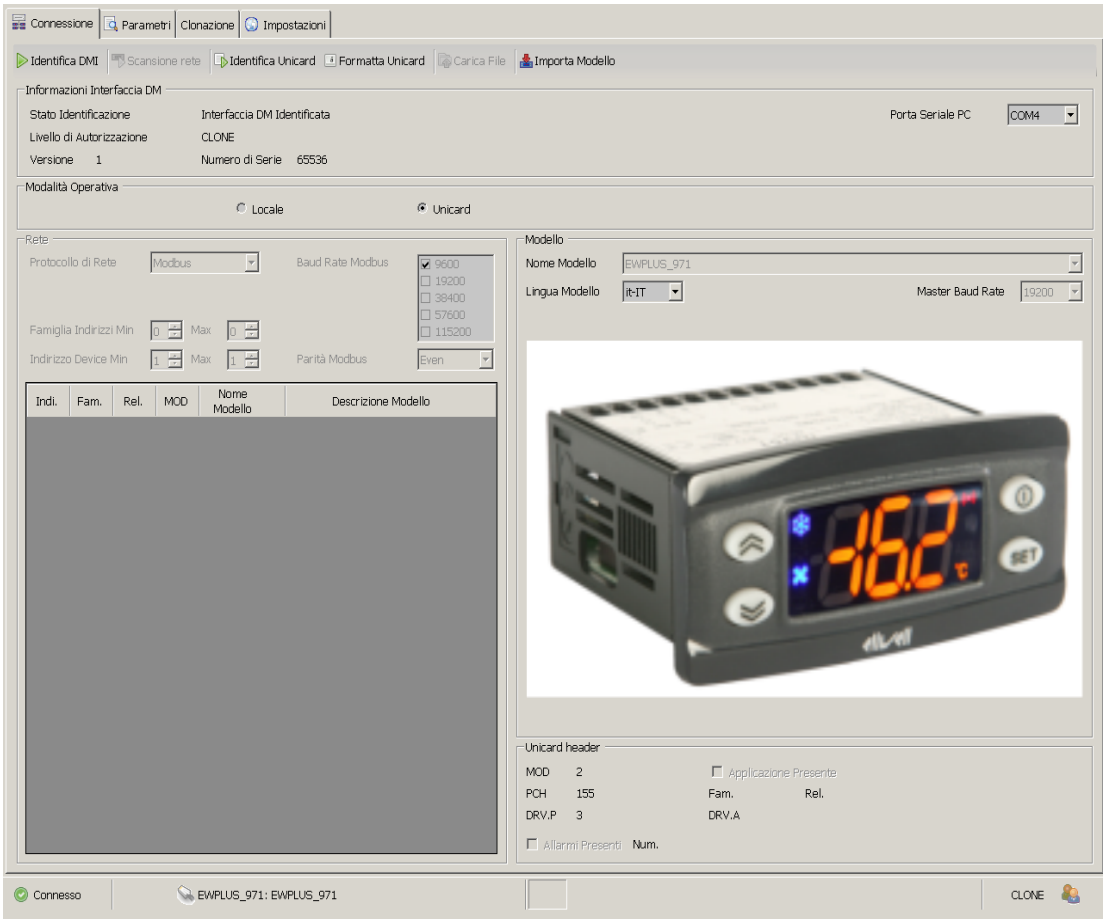
In order to be able to work on the parameters tables, select one of the compatible instruments from the "Model" box. If you select an instrument that is not compatible with UNICARD, the software will display the following error message:



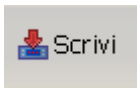
If you select a compatible model, the "Parameters" option will appear, enabling you to work on the table for the selected instrument.



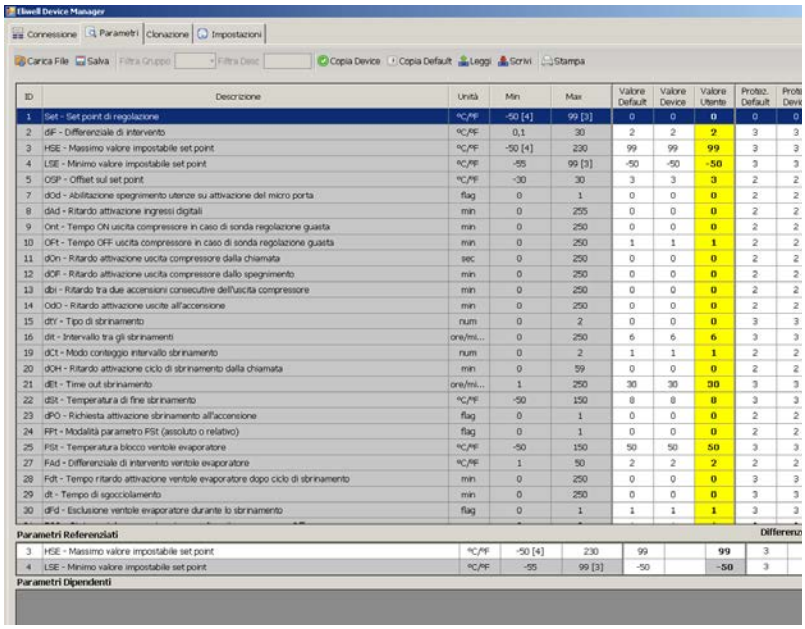
If, alternatively, DeviceManager identifies a UNICARD containing a parameters list upon start-up of the programme, the screen shown below will appear, and the software will automatically go to the model relating to the parameters list contained in UNICARD. The parameters page will already be active.



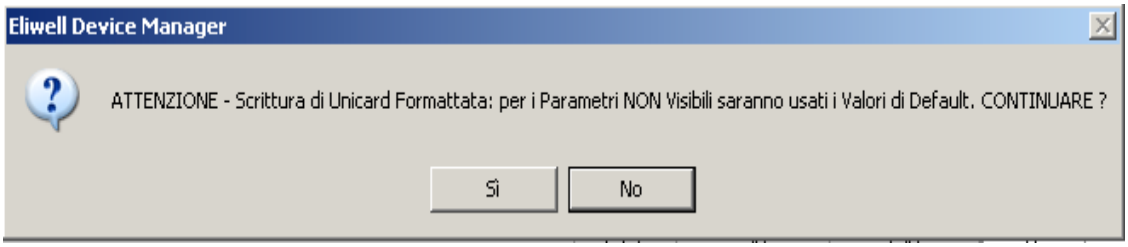
12.1.4. Writing parameters in UNICARD



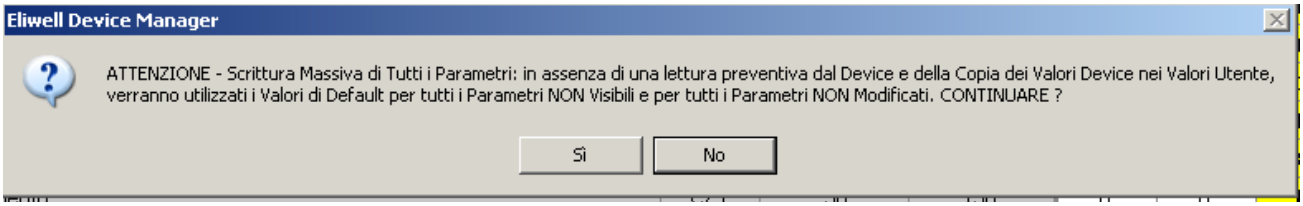
The message will appear when writing on a formatted UNICARD. In this case, all the parameters not visible in the DeviceManager table will be written on UNICARD with the Eliwell default value:



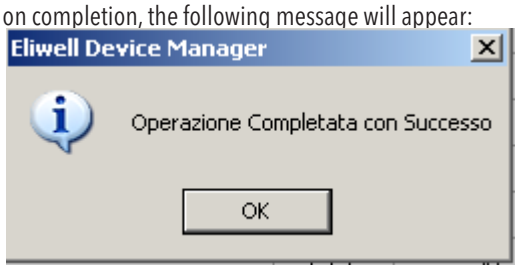
The message will appear when writing on a formatted UNICARD. In this case, all the parameters not visible in the DeviceManager table will be written on UNICARD with the Eliwell default value:



This message appears when UNICARD already contains a parameters list and alerts the user that all unmodified parameters (from the DeviceManager table) will be written with the default value shown in the software, and all the parameters not visible in the table of DeviceManager will be written on UNICARD with the Eliwell default value:



The parameters list will therefore be written in UNICARD. During the procedure, the LED inside UNICARD will illuminate, indicating that the operation is in progress; on completion, the following message will appear:

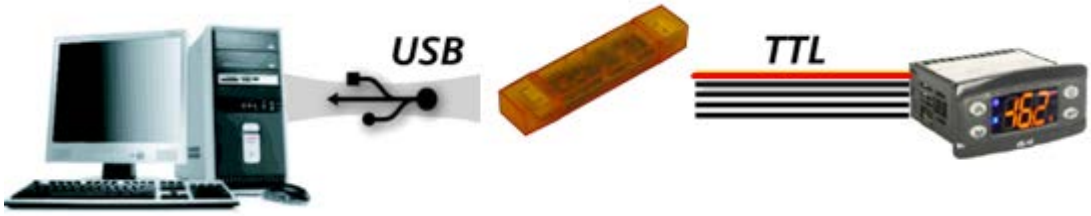


Note: you cannot save more than one parameters list on UNICARD simultaneously. To change parameters list, you need to format UNICARD first and then re-write the programming.

12.1.5. WRITING PARAMETERS TO THE CONNECTED DEVICE

When you have finished writing to UNICARD you can start the programming procedure on the connected device:
Keep UNICARD connected to the PC.

Connect the instrument by means of the TTL 5-way standard or mignon cable.



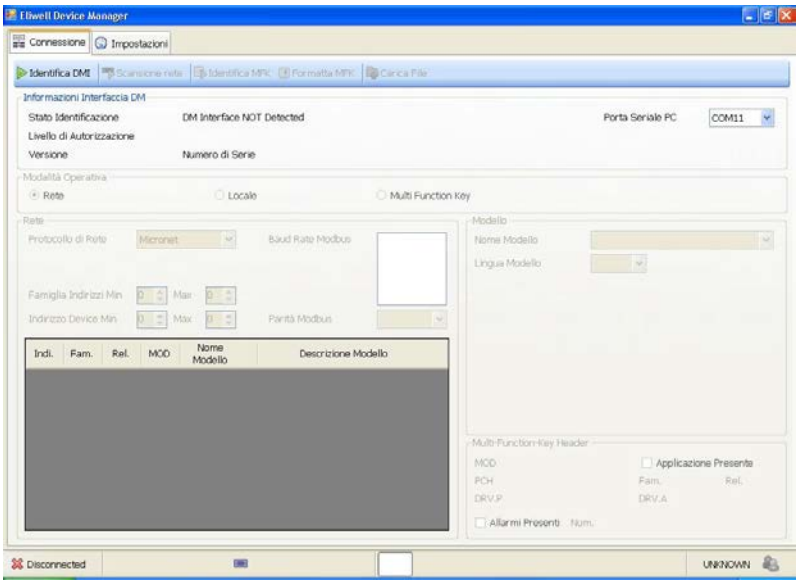
The red LED inside UNICARD will remain ON during the transfer, while the instrument's display will be OFF. On completion of the operation, the UNICARD LED switches off and the instrument's display switches on. The instrument's display will show the outcome of the operation (typically "dLy", see the specific documentation for each individual instrument for details).
Note. The operation indicated is only possible if the connected instrument supports automatic download-DL. See instructions for UNICARD and the devices for further details.
The operation is therefore divided into two phases: writing to UNICARD and connecting the instrument. It is not possible to write parameters directly to the instrument via UNICARD.

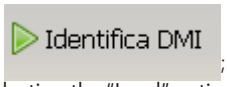
12.1.6. Reading parameters from UNICARD

The key is active only if UNICARD contains a parameters list, otherwise it is disabled. It enables you to load the parameters list from UNICARD for subsequent reading/editing.

12.1.7. USING DEVICE MANAGER IN LOCAL MODE

1. This mode is selected automatically whenever DeviceManager DOES NOT identify a connected UNICARD at programme start-up. After start-up, the following screen appears:

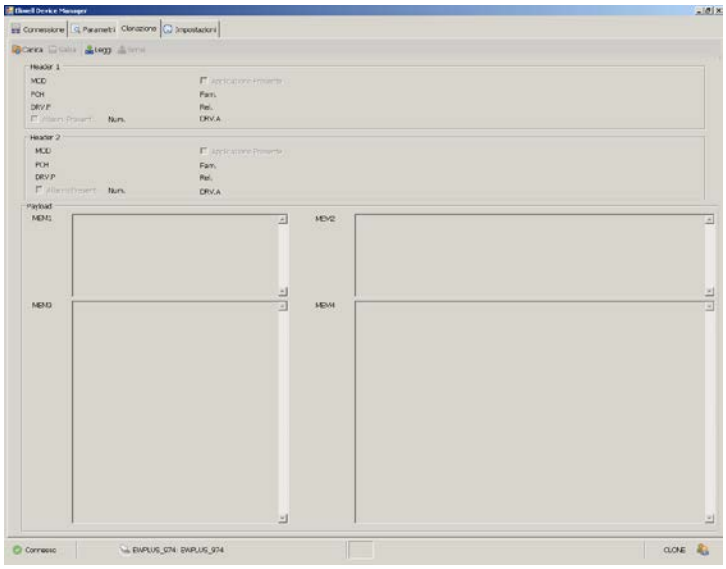


2. To recognise the UNICARD connected subsequently, press 

;
3. You can also access Local Mode from UNICARD mode, by selecting the "Local" option;
4. To work on the parameters table, select one of the instruments from the "Model" box.

12.1.8. CLONING FUNCTION

This function is only accessible if DeviceManager detects a UNICARD connected at start-up. The function is also active in Local mode, but selected from a previous UNICARD session.



If you press the key, the system will read the entire memory of the connected instrument. The operation is divided into 4 phases, and may take time, according to the instrument connected

By pressing the key, you can save the data read in a single file with extension .BIN to a customisable destination. The .BIN file will only be editable by Eliwell

It enables you to write the .BIN file made available to DeviceManager to UNICARD by pressing "Upload".

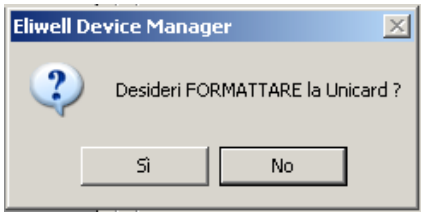
Using this key, you can make a previously created .BIN file available to DeviceManager; the file will be downloaded to UNICARD by pressing "Write" as previously explained

12.1.9. Other functions

The key enables the software to identify the type of UNICARD connected and its properties, which are then displayed in the "DM interface information" box

The key enables the software to identify and delete the contents of the UNICARD. The operation is preceded by the message shown below.

Note. Once activated, the formatting function cannot be interrupted



The key allows you to upload, from a selectable path, a .DRX file, with which a new model is added to DeviceManager without having to re-install the software.

12.1.10. COMPATIBLE INSTRUMENTS

Please refer to the file RDA17XX001 including package download DeviceManager.

13. APPENDIX A

The DM interface functionalities are shown in the table below.

	MANUFACTURER		
	PARAMETERS PAGE	APPLICATION PAGE	RESOURCES / ALARMS PAGE
Device programming	Reading/Writing of all parameters (according to the model), including protected values from/to device.	The uploading of the firmware on to the device is done: • Directly from PC via direct network connection; • Via MFK connection.	Alarms chronology: direct file acquisition/ saving.
MFK programming	Reading/Writing of parameters: from/to MFK.	Reading/Writing of file of (single) application from/to PC to MFK.	Alarms chronology: MFK reading/reset.
File management	Reading/Writing/Editing (from/to PC) of DAX files.	Loading application file (for MFK acquisition) from PC hard disk	Reading/Writing alarms chronology file.
Other	Manager of parameters of main functionalities if working on old model (ST500).		Monitoring. I/O/mode/ main setting. Defining/ saving labels for I/ OTimers and counters control (selection, max 60 variables). Alarms control. Recording I/O on file. Selectable interval from 10 sec to 1 h.
Display	Parameters on table, with code based on division/groups.		Alarms chronology: File display (in table form). Graph: Analogue inputs only.
Print	Print with parameter coding in division/groups.		

SERVICE - INSTALLER			
	PARAMETERS PAGE	APPLICATION PAGE	RESOURCES / ALARMS PAGE
Device programming	Reading/Writing of parameters (excluding protection parameters) from/to device.Importing parameters/structure from device (only those with protection value 1 and 3 visible).	The uploading of the firmware on to the device is done: • Directly from PC via direct network connection. • Via MFK connection	Alarms chronology: direct file acquisition/ saving.
MFK programming	Reading/Writing of parameters: from/to MFK	Reading/Writing of file of (single) application from/to PC to MFK.	Alarms chronology: MFK reading/reset.
File management	Reading/Writing/Editing (from/to PC) of DAX files. The visibility of the parameters is retrieved from the device anyway.	Loading application file (for MFK acquisition) from PC hard disk.	Reading/Writing alarms chronology file.
Display	Parameters on table, with code based on division/groups.		Alarms chronology: File display (in table form).
Print	Print with parameter coding in division/groups.		

SERVICE - END USER			
	PARAMETERS PAGE	APPLICATION PAGE	RESOURCES / ALARMS PAGE
Programming device	Reading/Writing of parameters (excluding protection parameters) from/to device. Importing parameters/ structure from device (visible only those with protection value 3 = no password).	NOT AVAILABLE	NOT AVAILABLE
MFK programming	Reading/Writing of parameters: from/to MFK		
File management	Reading/Writing (from/to PC) of DAX files. The visibility of the parameters is retrieved from the device anyway.		
Display	Parameters on table, with code based on division/groups.		
Print	Print with parameter coding in division/groups.		

14. APPENDIX B

DMI product codes		
	**CODE**	**Device Manager Interface**
	DMI1001002000	DMI 100-1 End User
	DMI1002002000	DMI 100-2 Service
	DMI1003002000	DMI 100-3 Manufacturer
	CODE	**Multi Function Key**
	MFK100T000000	Multi Function Key 100
	CODE	**BusAdapter**
	BA10000R3700	BusAdapter 150
	CODE	**USB extension lead**
---	COLV000016200	USB extension lead-A/A 2MT
	CODE	**UNICARD**
	CCA0BHT00UU00	UNICARD USB/TTL
	CODE	**USB Copy Card**
	CCA0BUI02N000	USB Copy Card

15. LIABILITY AND RESIDUAL RISKS

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel.
The liability of Schneider Electric and Eliwell is limited to the correct and professional use of the product according to the directives referred to herein and in the other supporting documents, and does not cover any damage (including but not limited to) the following causes:

- installation/use other than what is intended and, in particular, in deviation from the safety regulations set forth by the standards and/or included in this document;
- use on panels that do not guarantee suitable protection against electrical shock, water and dust in the assembly conditions;
- use on panels which allow access to dangerous parts without the aid of a keyed or tooled locking mechanism;
- product tampering and/or alteration;
- installation/use on panels that do not comply with the regulations in force in the country of installation.

16. DISCLAIMER

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