Industrial Electronic Devices

User Manual

Revision 2.011
English

PROFIBUS Master / Ethernet - Converter

(Order Code: HD67575-A1)

for Website information:
http://www.adfweb.com/?Product=HD67575

for Price information:
http://www.adfweb.com/?Price=HD67575-A1

Benefits and Main Features:

► Very easy to configure

► PROFIBUS up to 6Mbps

► Free software for interfacing to the device

► Commands available for develop your own program

► Temperature range:
-40°C / 85°C (-40°F / 185°F)

For others PROFIBUS devices, see also the following links:

PROFIBUS Master from/to …

www.adfweb.com?Product=HD67570	(… **DeviceNet Slave**)
www.adfweb.com?Product=HD67577	(… **CAN**)
www.adfweb.com?Product=HD67579	(… **Modbus TCP Slave**)
www.adfweb.com?Product=HD67580	(… **Modbus Slave**)
www.adfweb.com?Product=HD67593	(… **EtherNet/IP**)
www.adfweb.com?Product=HD67604	(… **PROFINET**)

PROFIBUS Slave from/to …

www.adfweb.com?Product=HD67045	(… **Serial**)
www.adfweb.com?Product=HD67053	(… **M-Bus Master**)
www.adfweb.com?Product=HD67252	(… **NMEA 2000**)
www.adfweb.com?Product=HD67551	(… **CANopen**)
www.adfweb.com?Product=HD67552	(… **CAN**)
www.adfweb.com?Product=HD67553	(… **J1939**)
www.adfweb.com?Product=HD67555	(… **DeviceNet Master**)
www.adfweb.com?Product=HD67561	(… **Modbus Master**)
www.adfweb.com?Product=HD67562	(… **Modbus Slave**)
www.adfweb.com?Product=HD67563	(… **Ethernet Server**)
www.adfweb.com?Product=HD67564	(… **Modbus TCP Client**)
www.adfweb.com?Product=HD67565	(… **Modbus TCP Server**)
www.adfweb.com?Product=HD67574	(… **DeviceNet Slave**)
www.adfweb.com?Product=HD67576	(… **Ethernet Server**)

Do you need to choose a device? do you want help?

Ask it to the following link:
www.adfweb.com?Cmd=helpme

INDEX:

UPDATED DOCUMENTATION:

Dear customer, we thank you for your attention and we remind you that you need to check that the following document is:

 - Updated;
 - Related to the product you own.

To obtain the most recently updated document, note the "document code" that appears at the top right-hand corner of each page of this document.

With this "Document Code" go to web page www.adfweb.com/download/ and search for the corresponding code on the page. Click on the proper "Document Code" and download the updates.

To obtain the updated documentation for the product that you own, note the "Document Code" (Abbreviated written "Doc. Code" on the label on the product) and download the updated from our web site www.adfweb.com/download/

REVISION LIST:

Revision	Date	Author	Chapter	Description
2.000	08/08/2012	Fl	All	Software changed (v1.300)
2.010	11/12/2012	Fl	All	Software changed (v1.400)
2.011	09/01/2013	Nt	All	Added new chapters
2.012	08/04/2013	Fl	All	Revision

WARNING:

ADFweb.com reserves the right to change information in this manual about our product without warning.
ADFweb.com is not responsible for any error this manual may contain.

TRADEMARKS:

All trademarks mentioned in this document belong to their respective owners.

Industrial Electronic Devices

SECURITY ALERT:

GENERAL INFORMATION
To ensure safe operation, the device must be operated according to the instructions in the manual. When using the device are required for each individual application, legal and safety regulation. The same applies also when using accessories.

INTENDED USE
Machines and systems must be designed so the faulty conditions do not lead to a dangerous situation for the operator (i.e. independent limit switches, mechanical interlocks, etc.).

QUALIFIED PERSONNEL
The device can be used only by qualified personnel, strictly in accordance with the specifications.
Qualified personnel are persons who are familiar with the installation, assembly, commissioning and operation of this equipment and who have appropriate qualifications for their job.

RESIDUAL RISKS
The device is state of the art and is safe. The instrument can represent a potential hazard if they are inappropriately installed and operated by personnel untrained. These instructions refer to residual risks with the following symbol:

⚠ This symbol indicates that non-observance of the safety instructions is danger for people to serious injury or death and / or the possibility of damage.

CE CONFORMITY
The declaration is made by us. You can send an email to support@adfweb.com or give us a call if you need it.

EXAMPLE OF CONNECTION:
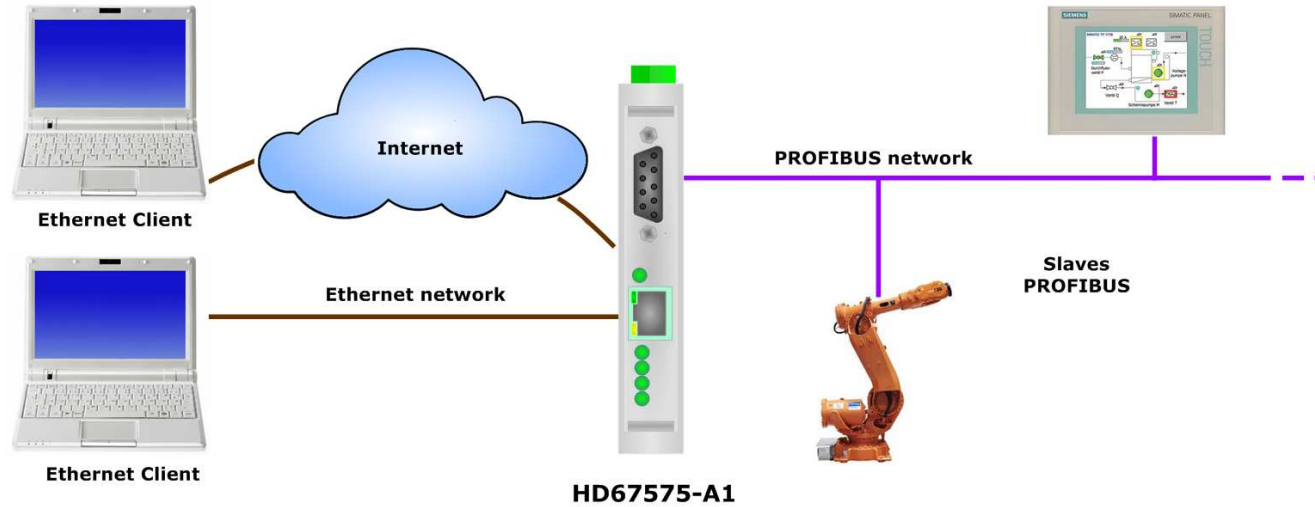
Used in pair with the HD67576-A1, allows to make a tunneling over Ethernet. In both cases you can also connect them to Internet.

CONNECTION SCHEME:

Dip-Switch A:
-Dip1 – Must be at ON
-Dip2 – Functioning Mode   = Normal   = Boot

Connector3:
PROFIBUS (Isolated port)
(D-SUB9-Female)

-PIN3 = wire A
-PIN5 = Shield** (to Isolated Ground)
-PIN8 = wire B

5 4 3 2 1

9 8 7 6

Led5:
Green
Ethernet Link

Connector2:
Ethernet port
(RJ45 Plug)

Led4:
Green
PROFIBUS comm

Led3:
Green
Device State

Led2:
Green
Ethernet comm

Led1:
Green
Power

Connector1:
Power Supply port

0V = Ground
+V = Positive wire

V AC: min 8V ; max 24V
V DC: min 12V ; max 35V

Rail DIN Clamp

Ethernet / PROFIBUS Master - Converter

www.ADFweb.com HD67575-A1

Q.n. - - - -

LED5 Ethernet Link
LED4 PROFIBUS comm
LED3 Device State
LED2 Ethernet comm
LED1 Power

Dip-Switch A

Serial Nr.: B5921   Date Code: Doc. Code: c.s.:
MAC: 10-64-E2-07-18-49 51. 12   MN67575   B153

+V   0V
Power Supply
8...24V AC
or
12...35V DC

Figure 1a: Connection scheme for HD67575-A1 with c.s.: B153

Connector3:
PROFIBUS (Isolated port)
(D-SUB9-Female)

-PIN3 = wire A
-PIN5 = Shield** (to Isolated
        Ground)
-PIN8 = wire B

5 4 3 2 1

9 8 7 6

Led5:
Green
Ethernet Link

Connector2:
Ethernet port
(RJ45 Plug)

Led4:
Green
Power

Led3:
Green
PROFIBUS comm

Led2:
Green
Device State

Led1:
Green
Ethernet comm

+V 0V
Power Supply
8...24V AC
or
12...35V DC

Ethernet / PROFIBUS Master - Converter

www.ADFweb.com HD67575-A1

Q.n. - - - -

Serial Nr.: B5921   Date Code: Doc. Code: c.s.:
MAC: 10-64-E2-07-18-49 51. 12   MN67575   B150

LED5 Ethernet Link
LED4 Power
LED3 PROFIBUS comm
LED2 Device State
LED1 Ethernet comm

Rail DIN
Clamp

+V 0V

Connector1:
Power Supply port

0V = Ground
+V = Positive wire

V AC: min 8V ; max 24V
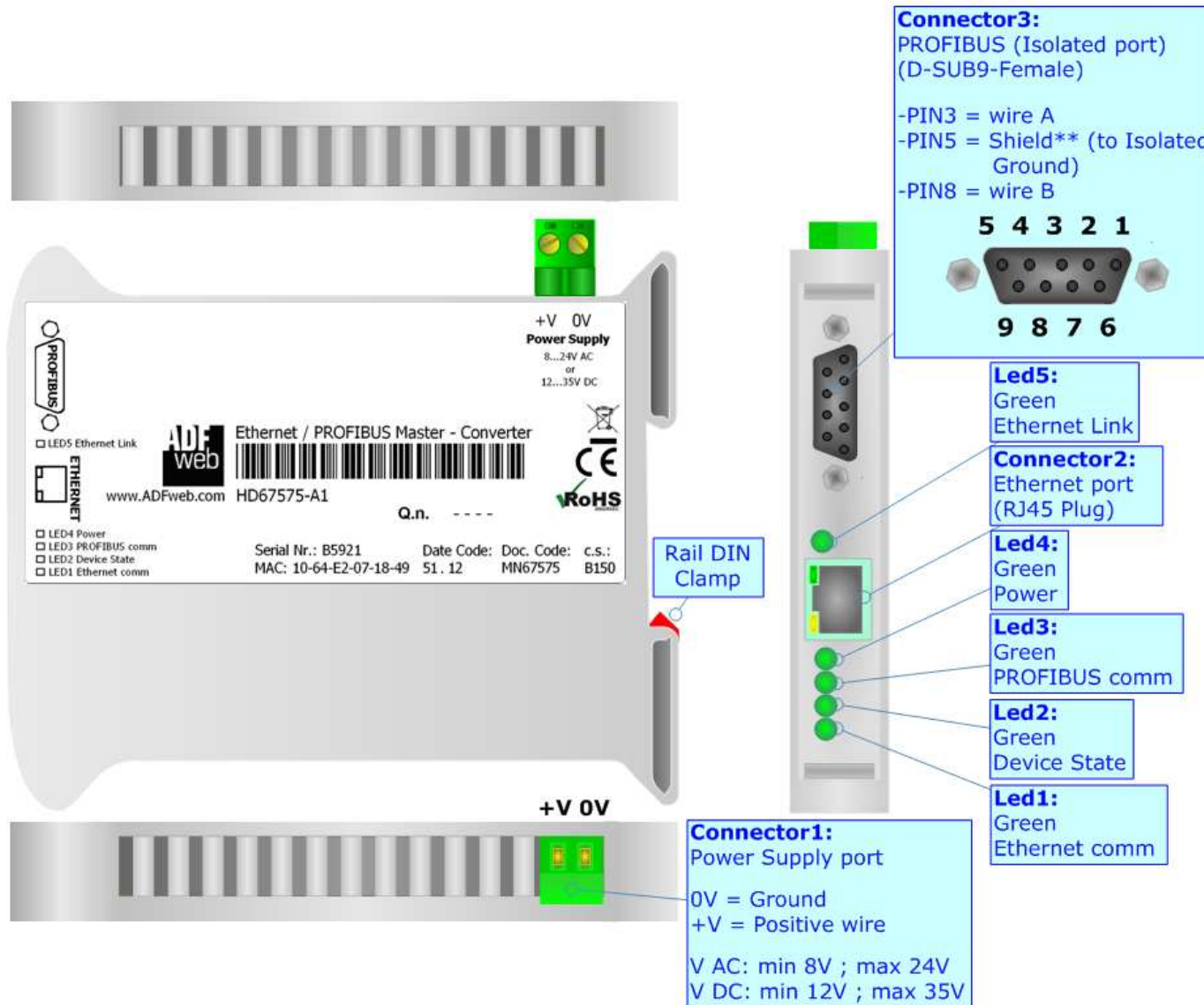V DC: min 12V ; max 35V

Figure 1b: Connection scheme for HD67575-A1 with c.s.: B150

CHARACTERISTICS:

The configurable "PROFIBUS Master / Ethernet" converter allows the following characteristics:

- TCP/IP and UDP protocol at Ethernet side;
- Triple isolation between Ethernet /PROFIBUS, Ethernet /Power Supply, PROFIBUS/Power Supply.
- Mountable on 35mm Rail DIN;
- Power Supply 8...24V AC or 12...35V DC;
- Temperature range -40°C to 85°C.

CONFIGURATION:

You need Compositor SW67575 software on your PC in order to perform the following:

- Define the parameter of the PROFIBUS;
- Define the parameter of the Ethernet;
- Define the PROFIBUS network.

POWER SUPPLY:

The device can be powered between a wide range of tensions. For more details see the two tables below.

	VAC		VDC	
	Vmin	**Vmax**	**Vmin**	**Vmax**
HD67575-A1	**8V**	**24V**	**12V**	**35V**

Consumption at 24V DC:

Device	W/VA
HD67575-A1	4

⚠️ **Caution: Not reverse the polarity power**

0V ⌐ ⌐ +V
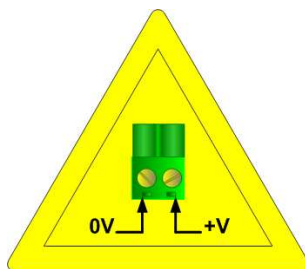
HD67575-A1

Connector1:
Power Supply port

0V = Ground
+V = Positive wire

V AC: min 8V ; max 24V
V DC: min 12V ; max 35V

0V +V

FUNCTION MODES:

HD67575-A1 WITH C.S. B153

The device has got two functions mode depending of the position of the Dip2 of 'Dip-Switch A':

➕ The first, with Dip2 in Off position (factory setting), is used for the normal working of the device.
➕ The second, with Dip2 in On position, is used for upload the Project/Firmware.

⚠️ Warning:
Dip1 of 'Dip-Switch A' must be at ON position for working even if the Ethernet cable isn't inserted.

HD67575-A1 WITH C.S. B150

The device has got two functions mode:

➕ The first, Normal Mode, is used for the normal working of the device.
➕ The second, Boot Mode, is used for upload the Project.

For the operations to follow for the updating (see 'UPDATE DEVICE' section).

According to the functioning mode, the LEDs will have specifics functions (see 'LEDS' section).

LEDS:

The device has got five LEDs that are used to give information of the functioning status.
The various meanings of the LEDs are described in the table below.

HD67575-A1 WITH C.S. B153

LED	Normal Mode	Boot Mode
1: Power (green)	**ON:** Powered **OFF:** Not powered	**ON:** Powered **OFF:** Not powered
2: Ethernet comm (green)	Blinks quickly when receive Ethernet commands	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
3: Device State (green)	Blinks slowly (~1Hz)	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
4: PROFIBUS comm (green)	Blinks quickly when there is PROFIBUS communication	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
5: Ethernet Link (green)	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected

HD67575-A1 WITH C.S. B150

LED	Normal Mode	Boot Mode
1: Ethernet comm (green)	Blinks quickly when receive Ethernet commands	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
2: Device State (green)	Blinks slowly (~1Hz)	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
3: PROFIBUS comm (green)	Blinks quickly when there is PROFIBUS communication	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
4: Power (green)	**ON:** Powered **OFF:** Not powered	**ON:** Powered **OFF:** Not powered
5: Ethernet Link (green)	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected

Led5:
Green
Ethernet Link

Led4:
Green
Power

Led3:
Green
PROFIBUS comm

Led2:
Green
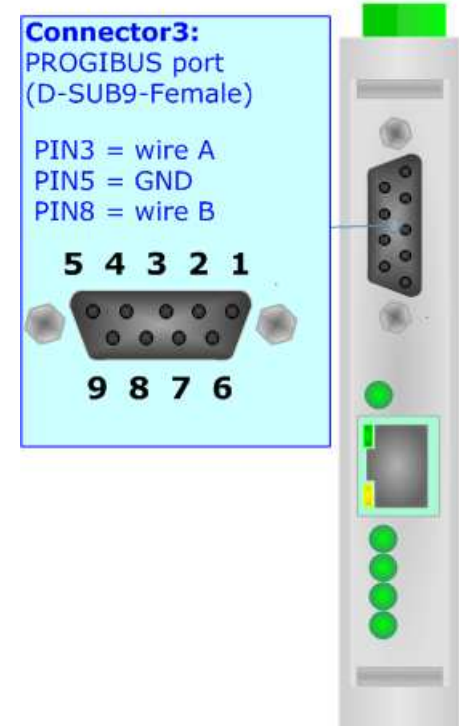Device State

Led1:
Green
Ethernet comm

PROFIBUS:

The PROFIBUS uses a 9-pin D-SUB connector. The pin assignment is defined like in the right figure.

Here some codes of cables:

➤ Belden: p/n 183079A - Continuous Armor DataBus® ISA/SP-50 PROFIBUS Cable.

Connector3:
PROGIBUS port
(D-SUB9-Female)

PIN3 = wire A
PIN5 = GND
PIN8 = wire B

5 4 3 2 1

9 8 7 6

ETHERNET:

The Ethernet connection must be made using Connector2 of HD67575-A1 with at least a Category 5E cable. The maximum length of the cable should not exceed 100m. The cable has to conform to the T568 norms relative to connections in cat.5 up to 100 Mbps. To connect the device to an Hub/Switch is recommended the use of a straight cable, to connect the device to a PC/PLC/other is recommended the use of a cross cable.

Connector2:
Ethernet port
(RJ45 Plug)

USE OF COMPOSITOR SW67575:

To configure the Converter, use the available software that runs with Windows, called SW67575. It is downloadable on the site www.adfweb.com and its operation is described in this document. *(This manual is referenced to the last version of the software present on our web site)*. The software works with MSWindows (MS 2000, XP, Vista, Seven, 8; 32/64bit).

When launching the SW67575 the right window appears (Fig. 2).
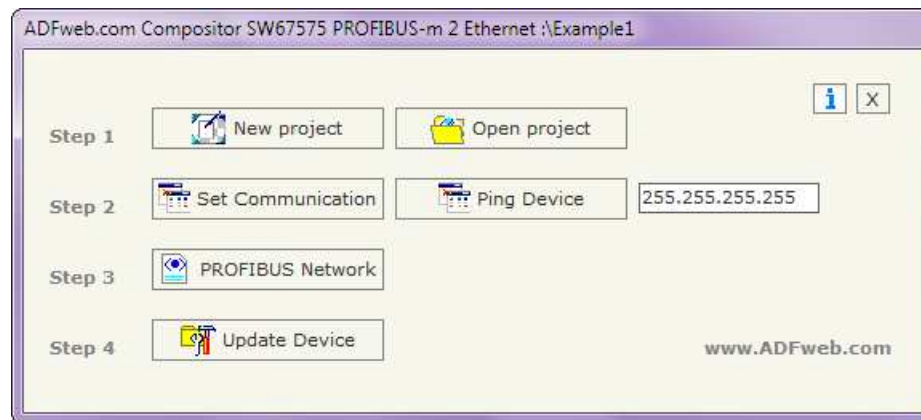
Figure 2: Main window for SW67575

NEW PROJECT / OPEN PROJECT:

The "**New Project**" button creates the folder which contains the entire device configuration.

A device configuration can also be imported or exported:

- ➕ To clone the configurations of a programmable "PROFIBUS Master / Ethernet" Converter in order to configure another device in the same manner, it is necessary to maintain the folder and all its contents;
- ➕ To clone a project in order to obtain a different version of the project, it is sufficient to duplicate the project folder with another name and open the new folder with the button "**Open Project**".

SET COMMUNICATION:

This section defines the fundamental communication parameter of two buses, PROFIBUS and Ethernet.

By pressing the "**Set Communication**" button from the main window for SW67575 (Fig. 2) the window "Set Communication" appears (Fig. 3).

The window is divided in two sections, one for the PROFIBUS and the other for the Ethernet.

The means of the fields for "PROFIBUS" are:

- In the field "**ID Dev.**" the address of the PROFIBUS side is defined;
- In the field "**Baud rate**" the baud rate for the PROFIBUS side is defined;

The means of the fields for "Ethernet" are:

- In the field "**IP ADDRESS**" insert the IP address;
- In the field "**SUBNET** Mask" insert the SubNet Mask;
- If the "**GATEWAY**" field is checked it is possible to insert, in the field under, the IP Address for going out to the net;
- In the field "**Port**" insert the number of the port;
- In the field "**COMPANION BOARD IP ADDRESS**" insert the IP address of the Ethernet Client device that communicates with the HD67575-A1;
- In the field "**COMPANION Port**" insert the number of the port of the Ethernet Client device that communicates with the HD67575-A1.

Figure 3: "Set Communication" window

⚠ Warning:
  Fields "**COMPANION BOARD IP ADDRESS**" and "**COMPANION Port**" are used only if the HD67575 device is connected to the HD67576-A1.

PROFIBUS NETWORK:

By pressing the "**PROFIBUS Network**" button from the main window for SW67575 (Fig. 2) the window "PROFIBUS Network" (Fig. 4) appears.

In this window is possible to:

- Modify the PROFIBUS Master Options ("**Master PROFIBUS Options**");
- Add a PROFIBUS Slave in the Network of the Master ("**Add Slave PROFIBUS**");
- Modify a PROFIBUS Slave in the Network ("**Modify Slave PROFIBUS**");
- Remove a PROFIBUS Slave from the Network ("**Remove Slave PROFIBUS**").
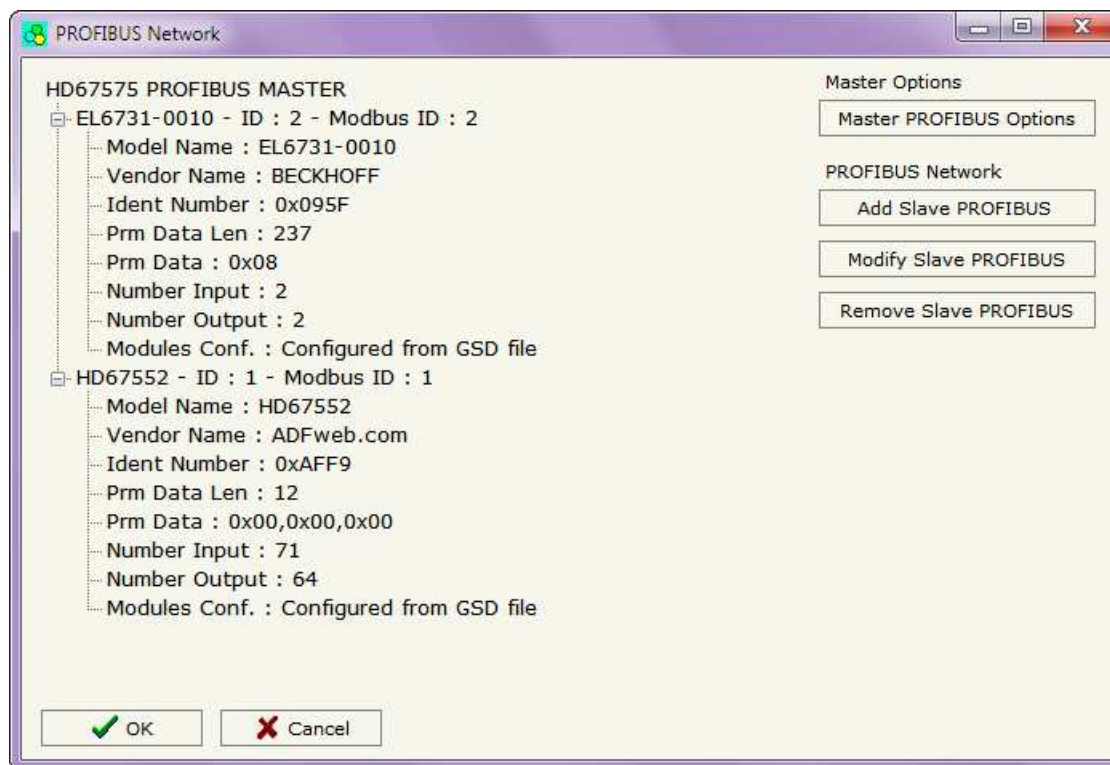
Figure 4: "PROFIBUS Network" window

MASTER PROFIBUS OPTIONS:

By pressing the "**Master PROFIBUS Options**" button from the "PROFIBUS Network" window (Fig. 4) the "PROFIBUS Master Options" window appears (Fig. 5).

In this window is possible to set the WatchDog Time for the PROFIBUS Slaves.

Figure 5: "PROFIBUS Master Options" window

Note:
 Fact1 and Fact2 could be write in decimal o hexadecimal (with prefix "0x" or "$") and the values must between 1 and 255

Warning:
The WatchDog time must be between 200 and 650250 milliseconds.

Industrial Electronic Devices

PROFIBUS DEVICE:

By pressing the "**Add Slave PROFIBUS**" and "**Modify Slave PROFIBUS**" button (or double click above an existent PROFIBUS Slave) from the "PROFIBUS Network" window (Fig. 4) the "PROFIBUS Device" window appears (Fig. 6).

In this window is possible to:

- Set the PROFIBUS Slave ID ("**ID Slave PROFIBUS**");
- Select the Modules present in the PROFIBUS Slave from the Available Modules in GSD file ("**Module Selection**");
- Modify the User Parameters (if present) of the PROFIBUS device ("**User Parameters**");
- Modify the Parameters (if present) of the Module Selected ("**Module Parameters**");
- Watch Features and Baudrate supported from the PROFIBUS device ("**Capabilities**");
- Select the Sync, Freeze and Reset of Data Options ("**Options**").
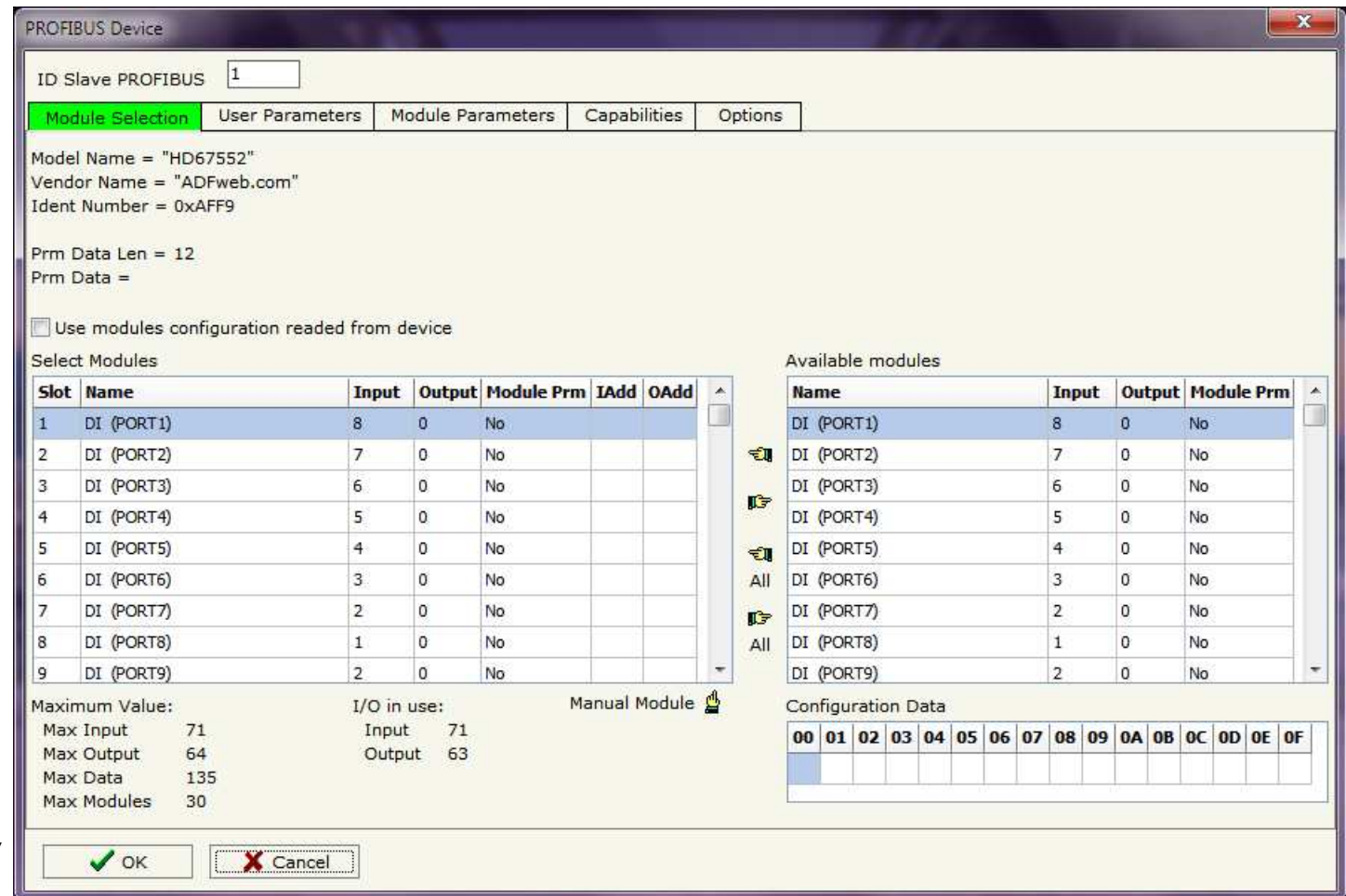
Figure 6: "PROFIBUS Device" window

MODULE SELECTION:

The section "Module Selection" is used to select which Modules are present in the Slave (Fig. 7).

In this section is possible to:

+ Check the list of the Modules selected ("Select Modules") (Fig. 7, point (1)) and the list of Modules Available in GSD file ("Available Modules") (Fig. 7, point (7));
+ Add a Module from the list of GSD file (Fig. 7, point (6));
+ Remove a Module from selected list (Fig. 7, point (5));
+ Add all Modules present in the GSD file (Fig. 7, point (4));
+ Remove all Modules from selected list (Fig. 7, point (3));
+ Insert a Module not present in the GSD file ("**Manual Module**") (Fig. 7 point (2)). For more info see the section "Manual Module" below;
+ Enable the read of configuration directly from the PROFIBUS Slave ("**Use module configuration readed from device**") (Fig 7, point (8)). If this option is enable the configuration of the modules is discorded and the device read the correct configuration directly to the PROFIBUS slave.
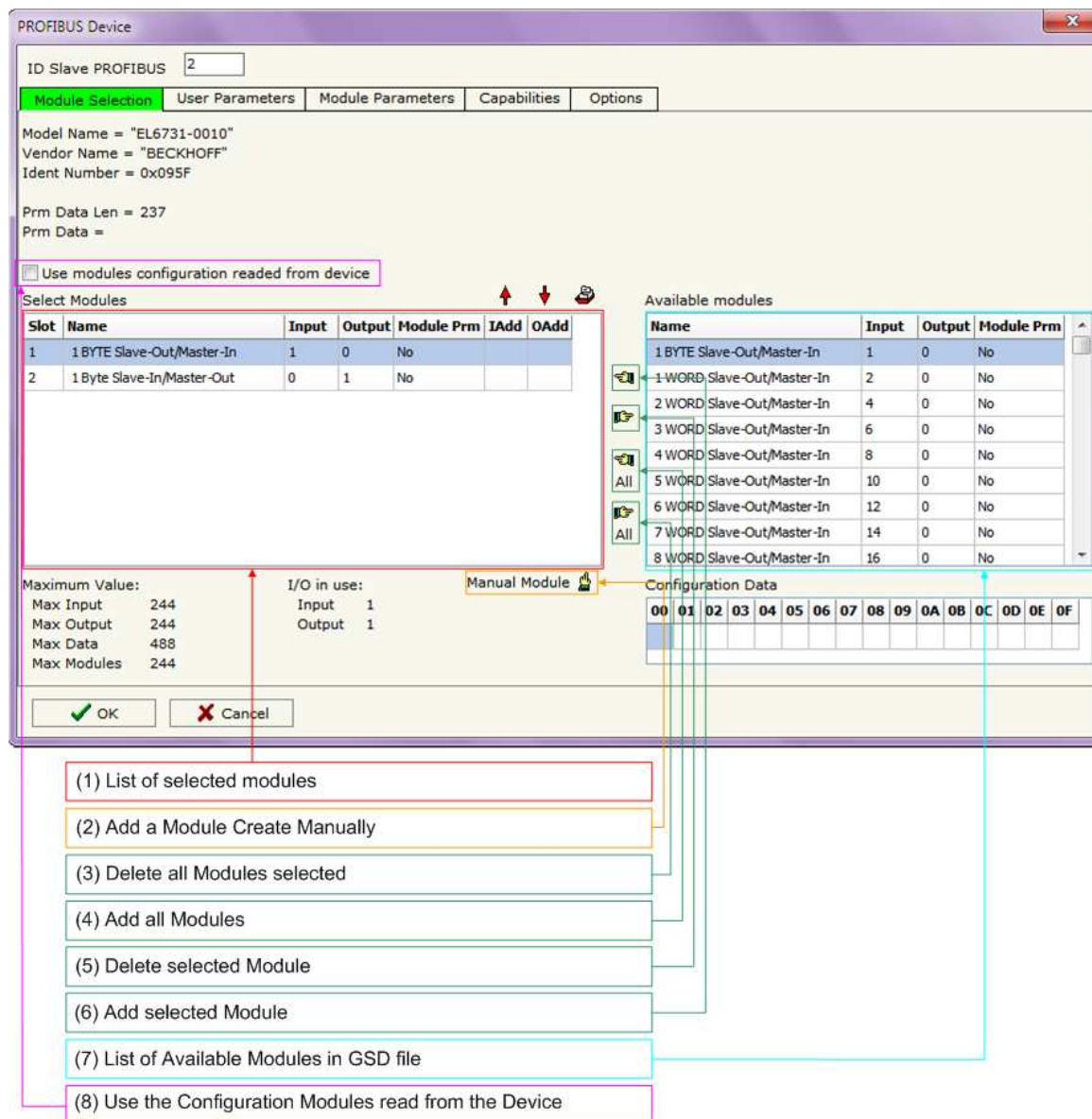
Figure 7: "PROFIBUS Device – Module Selection" window

Industrial Electronic Devices

By pressing the "**Manual Module**" button from the "PROFIBUS Device" window (Fig. 6) the "Add Module Manually" window appears (Fig. 8).

In this window is possible to add a Module manually, i.e. writing the configuration of the module (in hexadecimal).

The means of the fields are:

  * In the field "**Description of Module**" a name of the Module is defined;
  * In the field "**Insert the Configuration of Module (HEX)**" the configuration of the module is defined. The configuration must be write in hexadecimal mode (without prefix "0x" o "$").

To modify a Module inserted manually, is neccessary to do a double click on the module to change in the "Select Module" list (Fig. 7, point (1)). It is possible to change only the module inserted manually.

Note:
     The Values inserted in the table must between 00 and FF
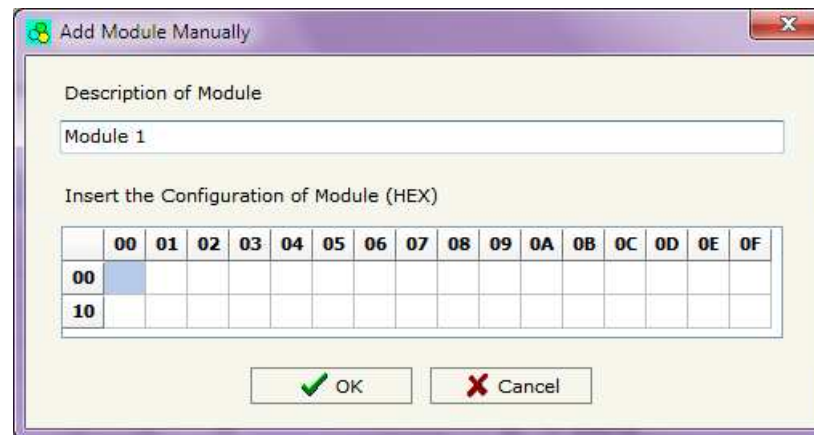
Figure 8: "Add/Modify Module Manually" window

USER PARAMETERS:

The section "User Parameters" is used to modify the parameters of the PROFIBUS slave (Fig. 9).

In this section there are:

 ➔ The List of all Parameters available for the PROFIBUS device ("User Parameters") (Fig. 9, point (1));

 ➔ The Configuration of all parameters in RAW ("Parameters in RAW (Hex)") (Fig. 9, point(2));

 ➔ The "**Use Parameter Inserted Manually**", enable this option is possible to insert manually the parameters of Device and also of the Modules. Using the "**Modify User Parameters Manually**" button is possible to insert/modify the parametrization of the device (and/or modules). For more info see below. (Fig. 9, point(3));

 ➔ The admited value for the selected parameter. It is possible to select the value desired and confirm it with the "**Apply**" button. If no value appears in this table, the "Min Value" and "Max Value" are the limit of the parameter. (Fig. 9, point(4));

 ➔ The "**Apply**" button is used to confirm the new value of the parameter, the "**Default**" button is used to load the factory value for the parameter. In "**New Value**" edit box it is possible to set the new value. (Fig. 9, point(5)).
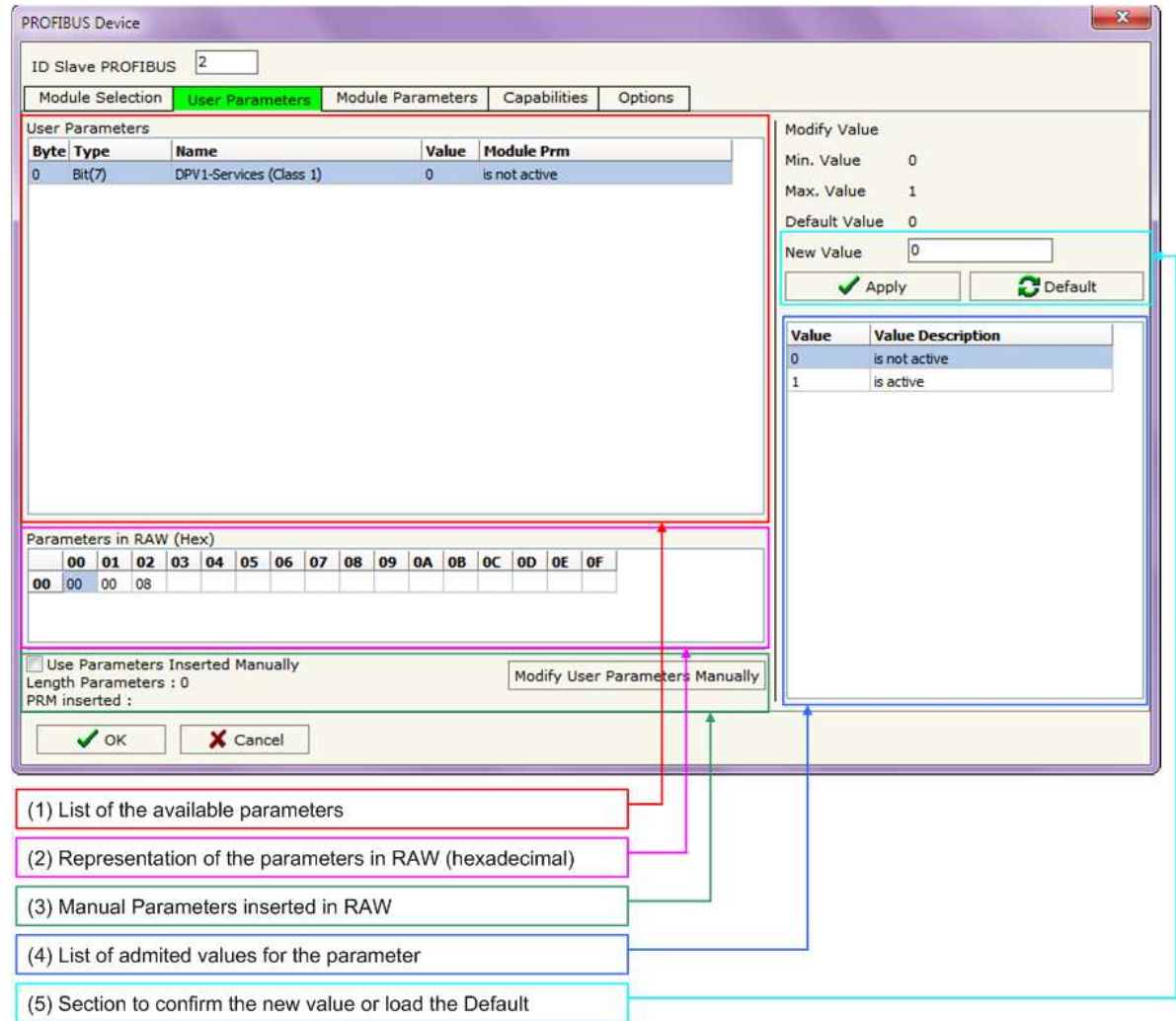
Figure 9: "PROFIBUS Device – User Parameters" window

By pressing the "**Modify User Parameters Manually**" button from the "PROFIBUS Device" window (Fig. 6) the "Add Module Manually" window appears (Fig. 10).

In this window is possible to add/modify the User and/or Modules Parameters manually, i.e. writing the configuration of the parameters (in hexadecimal).

The means of the fields are:

➤ In the field "**Insert the number of User Parameter**" the number of byte for the parameter have to be inserted;

➤ In the field "**Insert the Configuration of Module (HEX)**" the configuration of the User and/or Modules Parameters is defined. The configuration must be write in hexadecimal mode (without prefix "0x" o "$").

Note:
   The Values inserted in the table must between 00 and FF
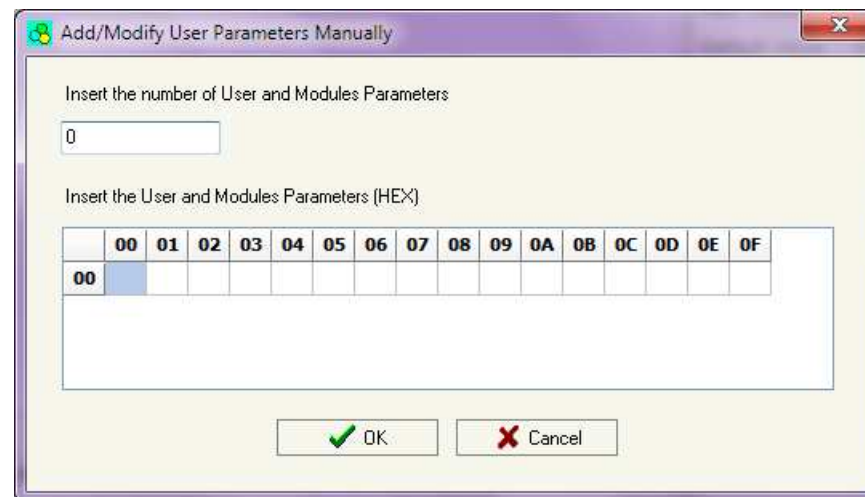
Figure 10: "Add/Modify User Parameters Manually" window

Industrial Electronic Devices

MODULE PARAMETERS:

The section "Module Parameters" is used to modify the parameters of the Modules (Fig. 11).

In this section there are:

➤ The List of all Module selected in the GSD file ("Available modules") (Fig. 11, point (1));

➤ The List of all Parameters available for the Module selected ("Parameters of module") (Fig. 11, point (2));

➤ The Configuration of all parameters in RAW for the Module selected ("Parameters in RAW (Hex)") (Fig. 11, point(3));

➤ The admited value for the selected parameter. It is possible to select the value desired and confirm it with the "**Apply**" button. If no value appears in this table, the "Min Value" and "Max Value" are the limit of the parameter. (Fig. 11, point(4));

➤ The "**Apply**" button is used to confirm the new value of the parameter, the "**Default**" button is used to load the factory value for the parameter. In "**New Value**" edit box it is possible to set the new value. (Fig. 11, point(5));
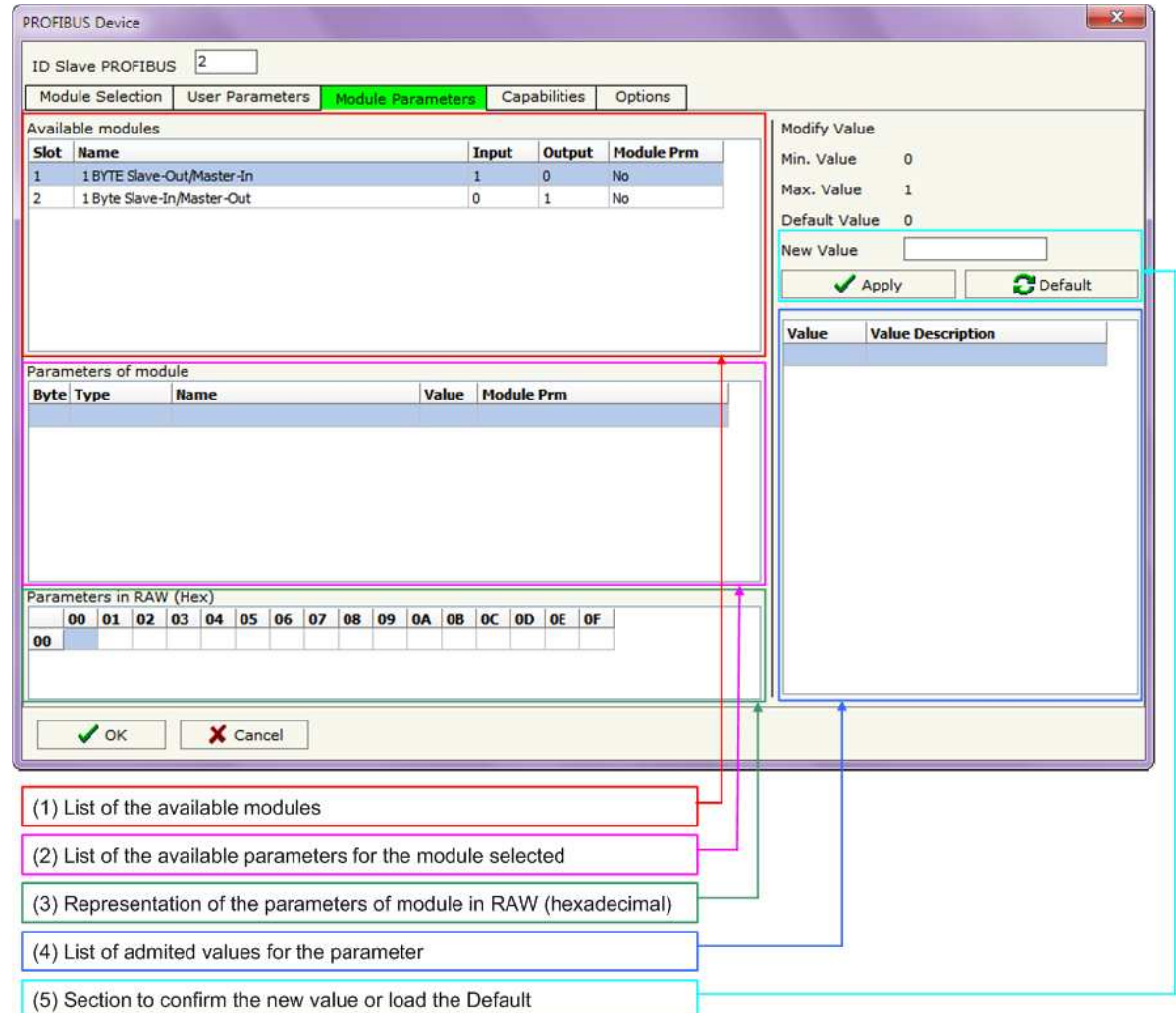
Figure 11: "PROFIBUS Device – Module Parameters" window

CAPABILITIES:

The section "Capabilities" is used only to show which features/baudrates available in the PROFIBUS device. The Green Icon indicate that capability/baudrate is available, the Red Icon indicate no compatibilities with that capability/baudrate (Fig. 12).
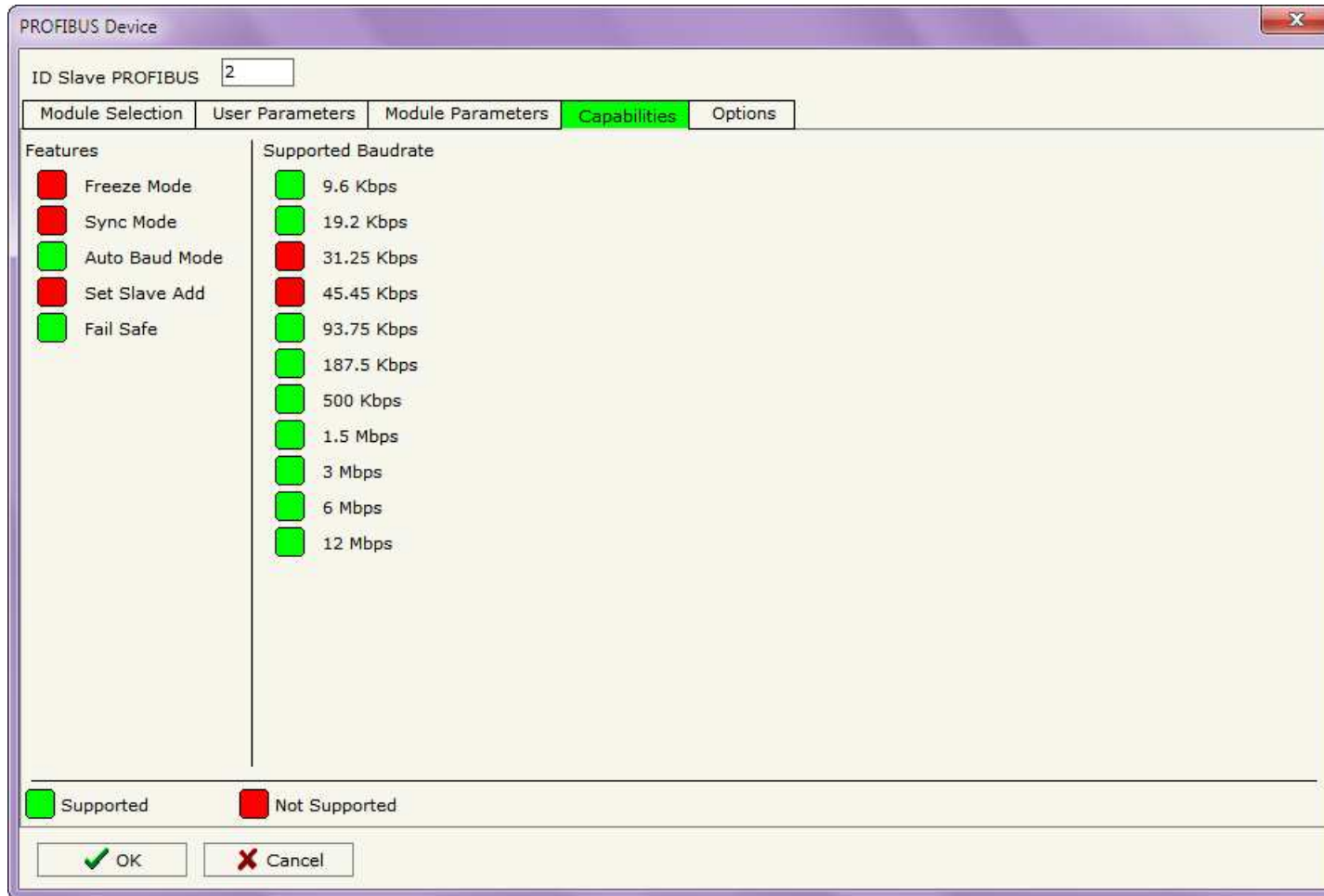
Figure 12: "PROFIBUS Device – Capabilities" window

OPTIONS:

The section "Options" is used to enable some option for each PROFIBUS device (Fig. 13).

The means of the fields are:

➔ In the field "**Enable Sync**" the PROFIBUS Sync command is enable. This option is enable only if the "Sync Mode" is supported by the device (see Capabilities section to check it);

➔ In the field "**Enable Freeze**" the PROFIBUS Freeze command is enable. This option is enable only if the "Freeze Mode" is supported by the device (see Capabilities section to check it);

➔ In the field "**Reset data if PROFIBUS master loses communication from the slave**" is possible to select to cancel the data of the slave if the Master lost the connection with the device;

➔ In the field "**Reset data if Ethernet doesn't write data with slave in … milliseconds**" is possible to select to cancel the data sended to the slave PROFIBUS if the Converter don't receive a Ethernet frame within the time expressed in the field.
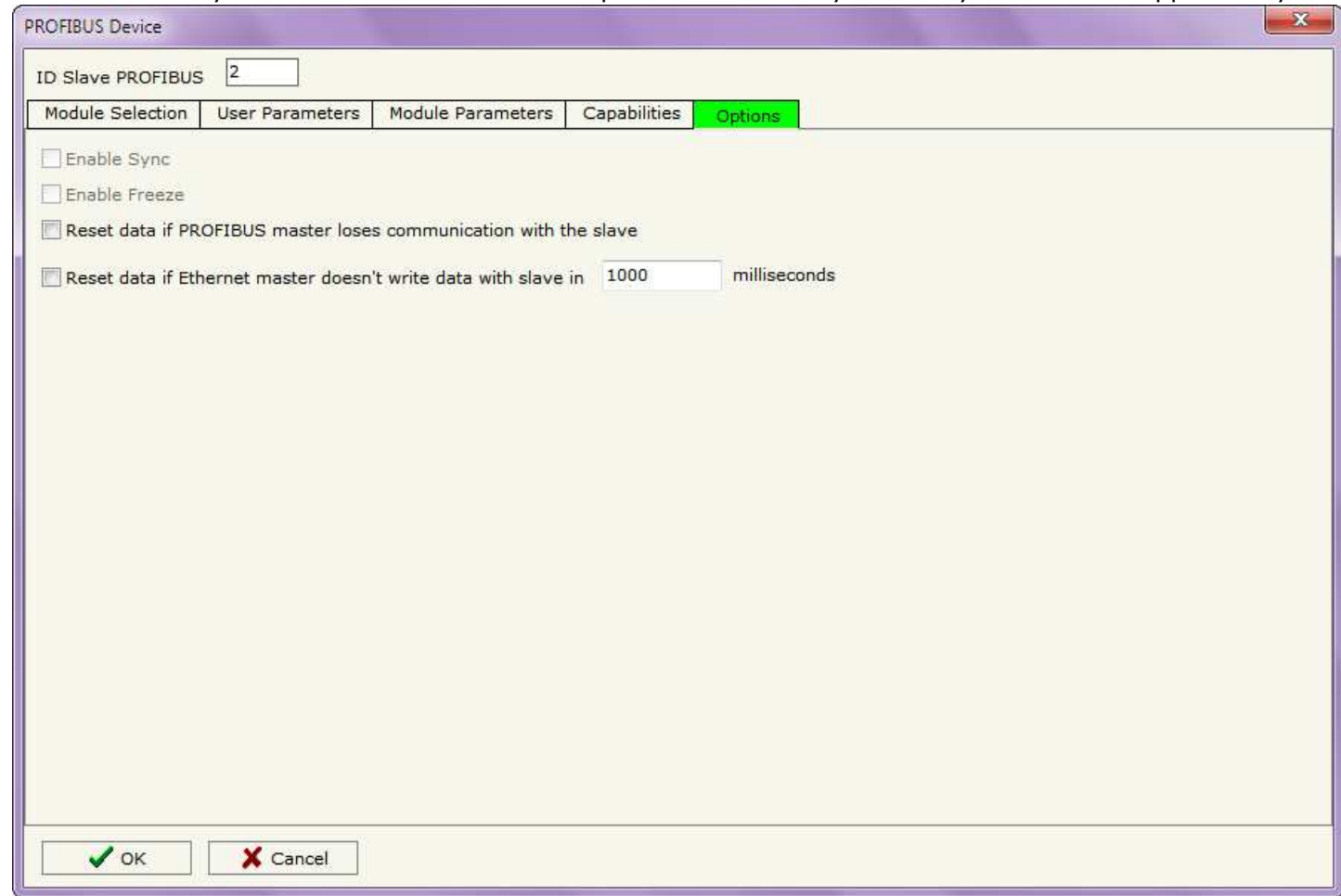
Figure 13: "PROFIBUS Device – Options" window

UPDATE DEVICE:

By pressing the "**Update Device**" button it is possible to load the created Configuration into the device; and also the Firmware, if is necessary.

If you don't know the actual IP address of the device you have to use this procedure:

   HD67575-A1 WITH C.S. B153

       ✦ Turn off the Device;
       ✦ Put Dip2 of 'Dip-Switch A' at ON position;
       ✦ Insert the IP "**192.168.2.205**";
       ✦ Turn on the device;
       ✦ Press the "**Ping**" button, must appear "Device Found!";
       ✦ Press the "**Next**" button;
       ✦ Select which operations you want to do;
       ✦ Press the "**Execute update firmware**" button to start the upload;
       ✦ When all the operations are "OK" turn off the Device;
       ✦ Put Dip2 of 'Dip-Switch A' at OFF position;
       ✦ Turn on the device.

   HD67575-A1 WITH C.S. B150

       ✦ Turn off the Device;
       ✦ Disconnect the Ethernet cable;
       ✦ Insert the IP "**192.168.2.205**";
       ✦ Turn on the device;
       ✦ Connect the Ethernet cable;
       ✦ Press the "**Ping**" button, must appear "Device Found!";
       ✦ Press the "**Next**" button;
       ✦ Select which operations you want to do;
       ✦ Press the "**Execute update firmware**" button to start the upload;
       ✦ When all the operations are "OK" the device automatically goes at Normal Mode.

Industrial Electronic Devices
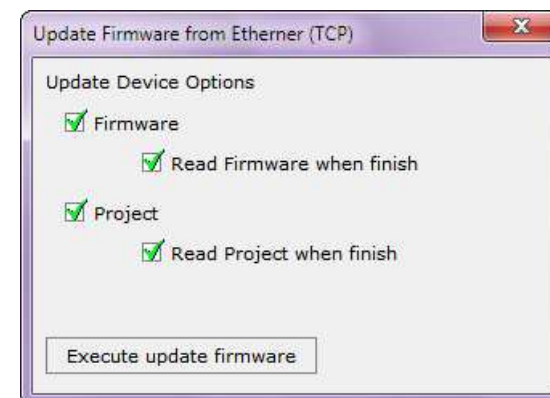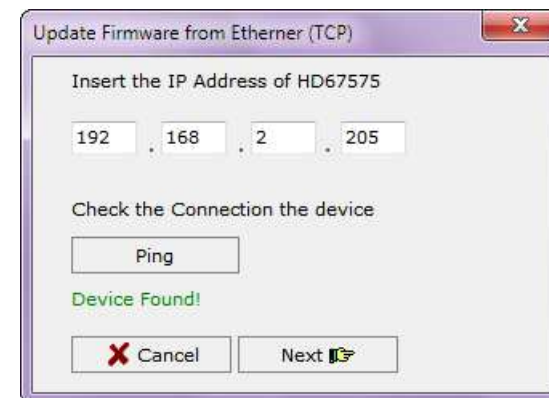
At this point the configuration/firmware on the device is correctly updated.

If you know the actual IP address of the device you have to use this procedure:

- Turn on the Device with the Ethernet cable inserted;
- Insert the actual IP of the Gateway;
- Press the "**Ping**" button, must appear "Device Found!";
- Press the "**Next**" button;
- Select which operations you want to do;
- Press the "**Execute update firmware**" button to start the upload;
- When all the operations are "OK" the device automatically goes at Normal Mode.
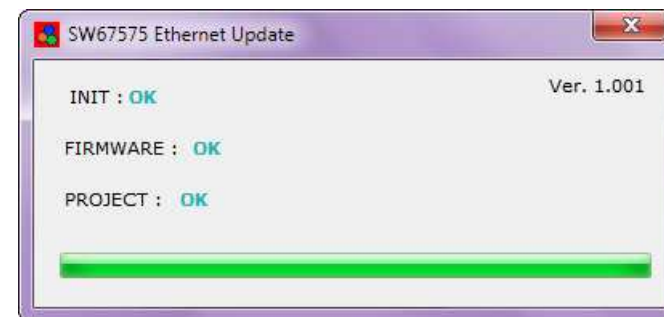
Figure 14: "Update Device" windows

At this point the configuration/firmware on the device is correctly update.

Note:
When you install a new version of the software it is better if the first time you do the update of the Firmware in the HD67575-A1 device.

Warning:
If the Fig. 15 appears when you try to do the Update before require assistance try these points:

- Try to repeat the operations for the updating;
- Try with another PC;
- Try to restart the PC;
- If you are using the program inside a Virtual Machine, try to use in the main Operating System;
- If you are using Windows Seven or Vista, make sure that you have the administrator privileges;
- Take attention at Firewall lock;
- Check the LAN settings.

Figure 15: "Protection"

In the case of HD67575-A1 you have to use the software "SW67575": www.adfweb.com\download\filefold\SW67575.zip.

ETHERNET PROTOCOL:

This protocol has got a single function for write and/or read frames. This routine can use both the UDP protocol and the TCP; is not necessary to select the protocol used by the Converter, it uses both.

Note:
We provide a free software tool that can be used together with the HD67575-A1. Is possible to download it from here: www.adfweb.com/download/filefold/SW67575-Tool.zip. The manual of this software can be found here: www.adfweb.com/download/filefold/MNSW67575-Tool_ENG.pdf.

STANDARD MODE:

The request include the following byte:

Byte Number	Description
1	Address PROFIBUS Slave
2	Starting Address Write
3	Number of Byte to Write (n)
4÷(4+n-1)	Data Write

n=Number of Byte to Write

If the "Number of Byte to Write (n)" has got the value 0x00 there are no data to write.

The response includes the following byte:

Byte Number	Description	Abbreviation	
1	Address PROFIBUS Master	/	
2	Address PROFIBUS Slave	/	
3	Writing state	/	
4	Slave informations	/	
5	Data length (read)	DLR	
6 ÷ (DLR + 5)	Data read	/	
DLR + 6	Configuration length (programmed)	CLP	
(DLR +7) ÷ (DLR + CLP + 6)	Configuration programmed	/	
DLR + CLP + 7	Fixed at 0	/	
DLR + CLP + 8	Fixed at 0	/	

Industrial Electronic Devices

The "Writing state" (Byte 3) can have these values:
- 0x00: Writing not required;
- 0x01: No error;
- 0x02: Slave does not exist, or does not respond in time or is not connected to line;
- 0x03: Writing not possible because the start byte is too big;
- 0x04: Writing cannot be made because the length is too high;
- 0x05: The data sent are insufficient for writing.

The "Slave informations" (Byte 4) gives informations about the slave interrogated. Every bit has a meaning:
- Bit0: Configuration corresponds;
- Bit1: Parameters OK;
- Bit2: Configuration OK;
- Bit3: Data OK.

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0

If all is correct, you have to read 0x0F.

Example1: Request to get data from address PROFIBUS 21, without writing nothing.

Request: 15 00 00

Response: 03 15 00 0F BA 27 28 45 65 71 00 00 00 00 00 00 00 00 6B 04 00 00 1A 00 00 00 00 00 A1 11 00 00 00 00 00 00
00 00 6B 04 00 00 1A 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 27 28 45 65 71 00 00 00 00 00
00 00 00 6B 04 00 00 1A 00 00 00 00 00 A1 11 00 00 00 00 00 00 00 00 00 6B 04 00 00 1A 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 36 10 13 13 13 13 13 13 13 13 13 13 13 13 13 13 11 11 13 11 11 13 13 11 13 13
11 13 13 10 13 13 13 13 13 13 13 13 13 13 13 13 13 11 11 13 11 11 13 13 11 13 13 11 13 13 00 00

Example2: Request to get data from address PROFIBUS 20, without writing nothing.

Request: 14 00 00

Response: 03 14 00 0F F4 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 20 42 3F
00 01 42 3F 00 02 42 3F 00 03 42 33 00 04 82 3F 00 05 82 3F 00 06 82 3F 00 07 82 33 00 08 00 00

Example3: Request to get data from address PROFIBUS 21 and writing of 5 bytes. In this case the Byte3 gives "No Error" response for writing.

Request: 14 01 05 01 02 03 04 05

Response: 03 14 01 0F F4 11 22 33 44 55 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 20 42 3F
00 01 42 3F 00 02 42 3F 00 03 42 33 00 04 82 3F 00 05 82 3F 00 06 82 3F 00 07 82 33 00 08 00 00

Example4: Request to get data from address PROFIBUS 21 and writing of 5 bytes (but only four bytes are written in the request). In this case the Byte3 gives an error response for writing.

Request: 14 01 05 01 02 03 04

Response: 03 14 05 0F F4 11 22 33 44 55 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 20 42 3F
00 01 42 3F 00 02 42 3F 00 03 42 33 00 04 82 3F 00 05 82 3F 00 06 82 3F 00 07 82 33 00 08 00 00

Industrial Electronic Devices

EXTENDED MODE:

The Extended Protocol is enabled by adding a +0x80 to Byte Number 1.
The <u>request</u> include the following byte:

Byte Number	Description
1	Address PROFIBUS Slave
2	Starting Address Write
3	Number of Byte to Write (n)
4÷(4+n-1)	Data Write

n=Number of Byte to Write

If the "Number of Byte to Write (n)" has got the value 0x00 there are no data to write.

The <u>response</u> includes the following byte:

Byte Number	Description	Abbreviation	
1	Address PROFIBUS Master	/	
2	Address PROFIBUS Slave	/	
3	Writing state	/	
4	Slave informations	/	
5	Data length (read)	DLR	
6 ÷ (DLR + 5)	Data read	/	
DLR + 6	Configuration length (programmed)	CLP	
(DLR + 7) ÷ (DLR + CLP + 6)	Configuration programmed	/	
DLR + CLP + 7	Data length (write)	DLW	
(DLR + CLP + 8) ÷ (DLR + CLP + DLW + 7)	Data write	/	
DLR + CLP + DLW + 8	Configuration length (of device)	CLD	
(DLR + CLP + DLW + 9) ÷ (DLR + CLP + DLW + CLD + 8)	Configuration of device	/	
DLR + CLP + DLW + CLD + 9	Fixed at 0	/	

The "Writing state" (Byte 3) can have these values:
- 0x00: Writing not required;
- 0x01: No error;
- 0x02: Slave does not exist, or does not respond in time or is not connected to line;
- 0x03: Writing not possible because the start byte is too big;
- 0x04: Writing cannot be made because the length is too high;
- 0x05: The data sent are insufficient for writing.

The "Slave informations" (Byte 4) gives informations about the slave interrogated. Every bit has a meaning:
- Bit0: Configuration corresponds;
- Bit1: Parameters OK;
- Bit2: Configuration OK;
- Bit3: Data OK.

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0

If all is correct, you have to read 0x0F.

Example5: Request to get data from address PROFIBUS 21, without writing nothing, Extended Mode.
Request: 95 00 00
Response: 03 15 00 0E BA 27 28 45 65 71 00 00 00 00 00 00 00 00 6B 04 00 00 1A 00 00 00 00 00 A1 11 00 00 00 00 00 00
00 00 6B 04 00 00 1A 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 27 28 45 65 71 00 00 00 00
00 00 00 6B 04 00 00 1A 00 00 00 00 00 A1 11 00 00 00 00 00 00 00 00 6B 04 00 00 1A 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 36 10 13 13 13 13 13 13 13 13 13 13 13 13 13 13 11 11 13 11 11 13 13 11 13 13
11 13 13 10 13 13 13 13 13 13 13 13 13 13 13 13 13 13 11 11 13 11 11 13 13 11 13 13 11 13 13 0A 01 02 03 04 05
06 07 08 09 55 36 10 13 13 13 13 13 13 13 13 13 13 13 13 13 11 11 13 11 11 13 13 11 13 13 11 13 13 10 13 13
13 13 13 13 13 13 13 13 13 13 11 11 13 11 11 13 13 11 13 13 11 13 12 00

INFO: www.adfweb.com   Phone +39.0438.30.91.31

MECHANICAL DIMENSIONS:

Figure 16: Mechanical dimensions scheme

ORDER CODE:

Order Code: **HD67575-A1**   **-**   PROFIBUS Master / Ethernet - Converter

ACCESSORIES:

Order Code: **AC34001**   **-**   Rail DIN - Power Supply 220/240V AC 50/60Hz – 12 V AC

Order Code: **AC34002**   **-**   Rail DIN - Power Supply 110V AC 50/60Hz – 12 V AC

DISCLAIMER

All technical content within this document can be modified without notice. The content of the document content is a recurring audit.
For losses due to fire, earthquake, third party access or other accidents, or intentional or accidental abuse, misuse, or use under abnormal conditions repairs are charged to the user. ADFweb.com S.r.l. will not be liable for accidental loss of use or inability to use this product, such as loss of business income. ADFweb.com S.r.l. shall not be liable for consequences of improper use.

OTHER REGULATIONS AND STANDARDS

WEEE INFORMATION

Disposal of old electrical and electronic equipment (as in the European Union and other European countries with separate collection systems).

This symbol on the product or on its packaging indicates that this product may not be treated as household rubbish. Instead, it should be taken to an applicable collection point for the recycling of electrical and electronic equipment. If the product is disposed correctly, you will help prevent potential negative environmental factors and human health, which could otherwise be caused by inappropriate disposal. The recycling of materials will help to conserve natural resources. For more information about recycling this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

RESTRICTION OF HAZARDOUS SUBSTANCES DIRECTIVE

The device respects the 2002/95/EC Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (commonly referred to as Restriction of Hazardous Substances Directive or RoHS).

CE MARKING

The product conforms with the essential requirements of the applicable EC directives.

WARRANTIES AND TECHNICAL SUPPORT:

For fast and easy technical support for your ADFweb.com SRL products, consult our internet support at www.adfweb.com.
Otherwise contact us at the address support@adfweb.com

RETURN POLICY:

If while using your product you have any problem and you wish to exchange or repair it, please do the following:
1) Obtain a Product Return Number (PRN) from our internet support at www.adfweb.com. Together with the request, you need to provide detailed information about the problem.
2) Send the product to the address provided with the PRN, having prepaid the shipping costs (shipment costs billed to us will not be accepted).

If the product is within the warranty of twelve months, it will be repaired or exchanged and returned within three weeks. If the product is no longer under warranty, you will receive a repair estimate.

PRODUCTS AND RELATED DOCUMENTS:

Part	Description	URL
HD67576-A1	PROFIBUS Slave / Ethernet - Converter	www.adfweb.com?product=HD67576