ADFweb
Industrial Electronic Devices

User Manual

Revision 1.000
English

DeviceNet Slave from/to PROFIBUS Master

(Order Code: HD67570-A1)

for Website information:
http://www.adfweb.com/?Product=HD67570

for Price information:
http://www.adfweb.com/?Price=HD67570-A1

Benefits and Main Features:

▶ Very easy to configure

▶ Low cost

▶ Industrial temperature range:
   -40°C / 85°C (-40°F / °F)

For others PROFIBUS devices, see also the following links:

PROFIBUS Master from/to ...
www.adfweb.com?Product=HD67575   (... Ethenet Server)

PROFIBUS Slave from/to ...
www.adfweb.com?Product=HD67045   (... Serial)
www.adfweb.com?Product=HD67053   (... M-Bus Master)
www.adfweb.com?Product=HD67551   (... CANopen)
www.adfweb.com?Product=HD67552   (... CAN)
www.adfweb.com?Product=HD67553   (... J1939)
www.adfweb.com?Product=HD67554   (... DeviceNet Slave)
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=HD67576   (... Ethernet Client)

Do you have an your customer protocol?
See the following links:
www.adfweb.com?Product=HD67003

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
1.000	14/11/2011	FI	All	First release version

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.

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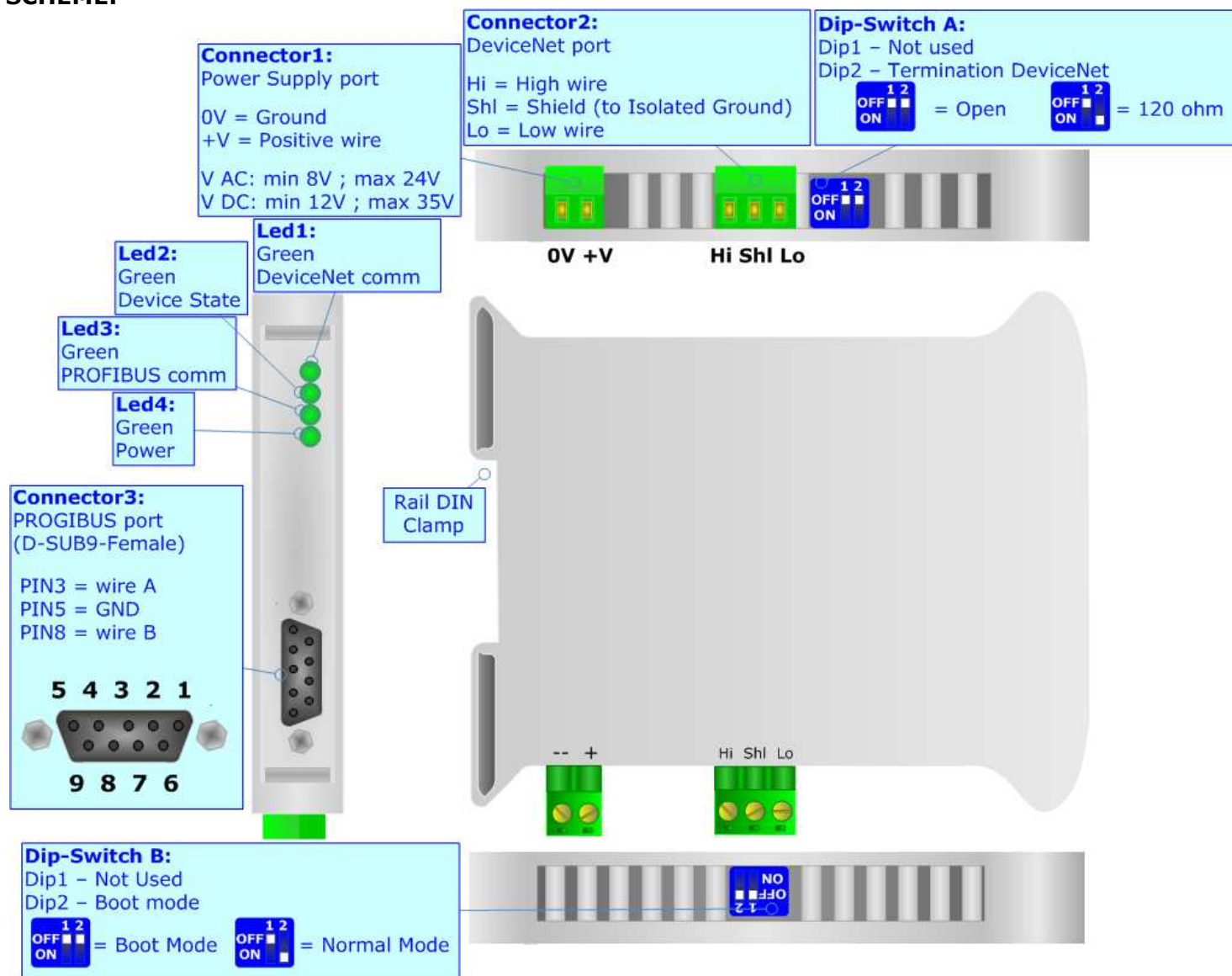
CONNECTION SCHEME:

Connector1:
Power Supply port

0V = Ground
+V = Positive wire

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

Connector2:
DeviceNet port

Hi = High wire
Shl = Shield (to Isolated Ground)
Lo = Low wire

Dip-Switch A:
Dip1 – Not used
Dip2 – Termination DeviceNet

= Open   = 120 ohm

0V +V   Hi Shl Lo

Led1:
Green
DeviceNet comm

Led2:
Green
Device State

Led3:
Green
PROFIBUS comm

Led4:
Green
Power

Connector3:
PROGIBUS port
(D-SUB9-Female)

PIN3 = wire A
PIN5 = GND
PIN8 = wire B

5 4 3 2 1

9 8 7 6

Rail DIN
Clamp

-- +   Hi Shl Lo

Dip-Switch B:
Dip1 – Not Used
Dip2 – Boot mode

= Boot Mode   = Normal Mode

Figure 1: Connection scheme for HD67570-A1

CHARACTERISTICS:

The configurable "DeviceNet Slave from/to PROFIBUS Master" gateway allows the following characteristics:

- Up to 455 byte IN and 455 byte OUT at DeviceNet side;
- 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 SW67570 software on your PC in order to perform the following:

- Define the parameter of the PROFIBUS;
- Define the parameter of the DeviceNet line;
- Define the PROFIBUS network;
- Define which PROFIBUS/DeviceNet data pass to DeviceNet/PROFIBUS network.

POWER SUPPLY:

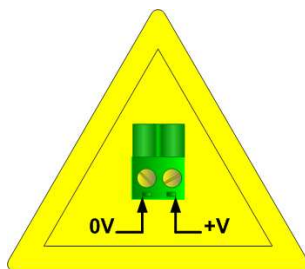The devices can be powered between a wide range of tensions. For more details see the two tables below.

	VAC		VDC	
	Vmin	**Vmax**	**Vmin**	**Vmax**
HD67570-A1	**8V**	**19V**	**8V**	**35V**

Consumption at 24V DC:

Device	W/VA
HD67570-A1	4

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

0V⌐   ⌐+V

HD67570-A1

Connector1:
Power Supply port

0V = Ground
+V = Positive wire

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

0V +V
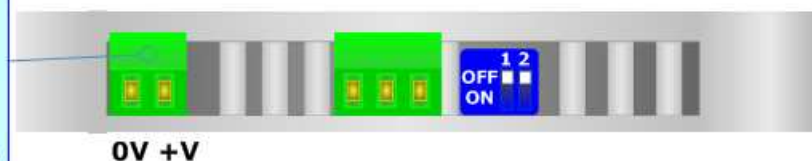
FUNCTION MODES:

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

- The first, with 'Dip2 of Dip-Switch B' at "OFF" position, is used for the normal working of the device.
- The second, with 'Dip2 of Dip-Switch B' at "ON" position, 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).
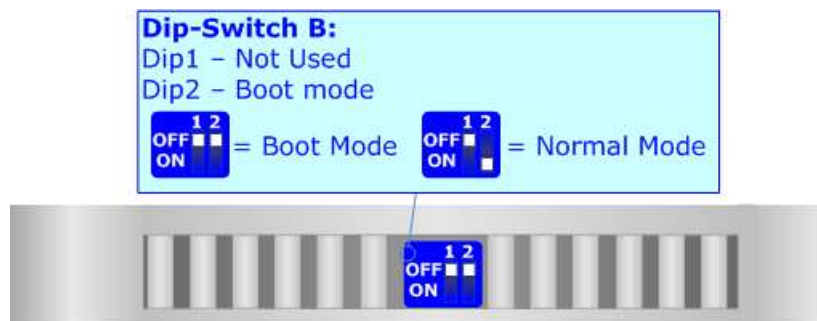
LEDS:

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.

LED	Normal Mode	Boot Mode
1: DeviceNet Comm (green)	Blinks quickly when there is DeviceNet communication	**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:** Power supply inserted **Off:** Power supply not inserted	**On:** Power supply inserted **Off:** Power supply not inserted

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.

DEVICENET:

The termination of DeviceNet line, with a 120Ω resistor, in the HD67570-A1 is made by acting Dip2 of Dip-Switch A.

Cable characteristics:

DC parameter:		Impedance	70	Ohm/m

AC parameters:		Impedance	120	Ohm/m
		Delay	5	ns/m

Length		Baud Rate [bps]	Length MAX [m]
		125 K	500
		250 K	250
		500 K	100
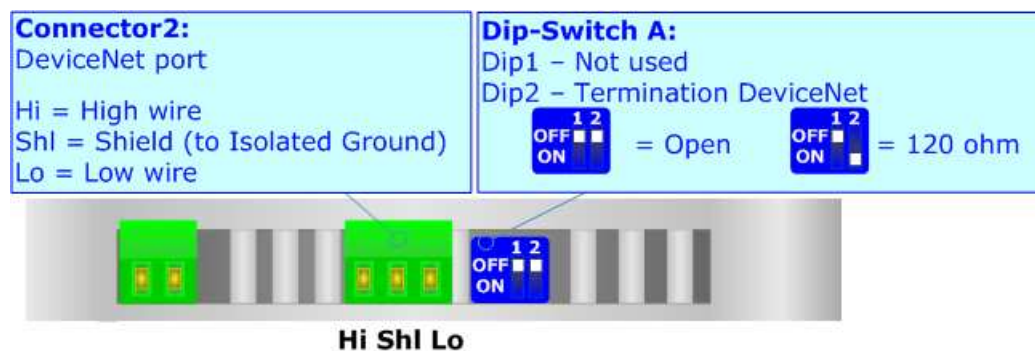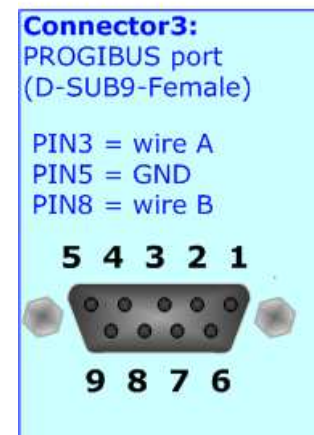
USE OF COMPOSITOR SW67570:

To configure the Gateway, use the available software that runs with Windows, called SW67570. 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).

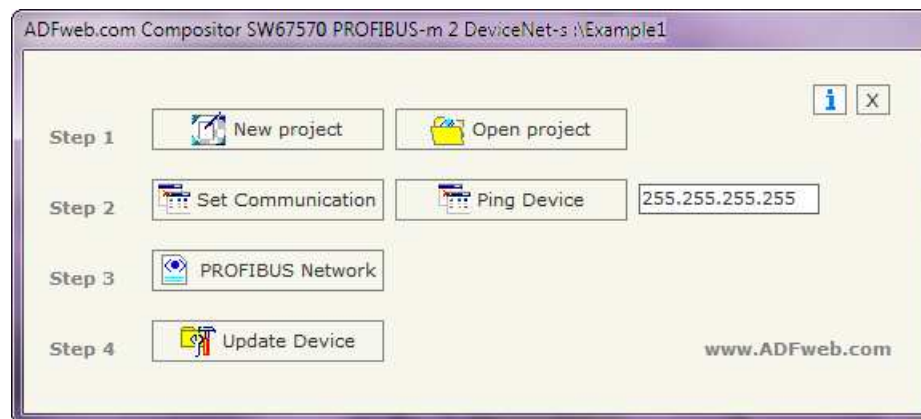When launching the SW67570 the right window appears (Fig. 2).

Figure 2: Main window for SW67570

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 "DeviceNet Slave from/to PROFIBUS Master" Gateway 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 DeviceNet.

By pressing the "**Set Communication**" button from the main window for SW67570 (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 DeviceNet.

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 "DeviceNet" are:

  ➤ In the "**ID Dev.**" field the Gateway address of the DeviceNet is defined.
  ➤ In the "**Baud rate**" field the DeviceNet baud rate is defined;
  ➤ In the field "**Number Byte IN**" the number of byte from the DeviceNet to the gateway is defined (at maximum it is possible to use 455 byte);
  ➤ In the field "**Number Byte OUT**" the number of byte from the gateway to the DeviceNet is defined (at maximum it is possible to use 455 byte).

Figure 3: "Set Communication" window

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PROFIBUS NETWORK:

By pressing the "**PROFIBUS Network**" button from the main window for SW67570 (Fig. 2) the window "PROFIBUS Network" (Fig. 4) appears.
In this section you can add/modify/remove the GSD files of the PROFIBUS slaves.
When you select the slave, by double click or by the "**Modify Slave PROFIBUS**" button, the window "PROFIBUS Device" (Fig. 5) appears:

- In the section "**ID Slave PROFIBUS**" you must write the PROFIBUS address of your slave.

- In the section "**Available modules**" there are all the modules you can select for this slave, to add a modules you can select it and click on the "**hands**" or with a double click on the module.
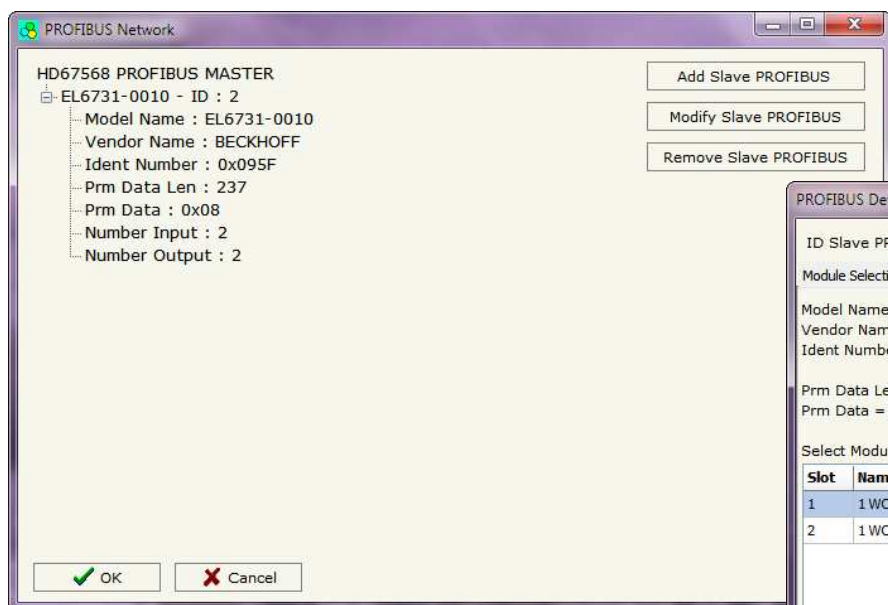
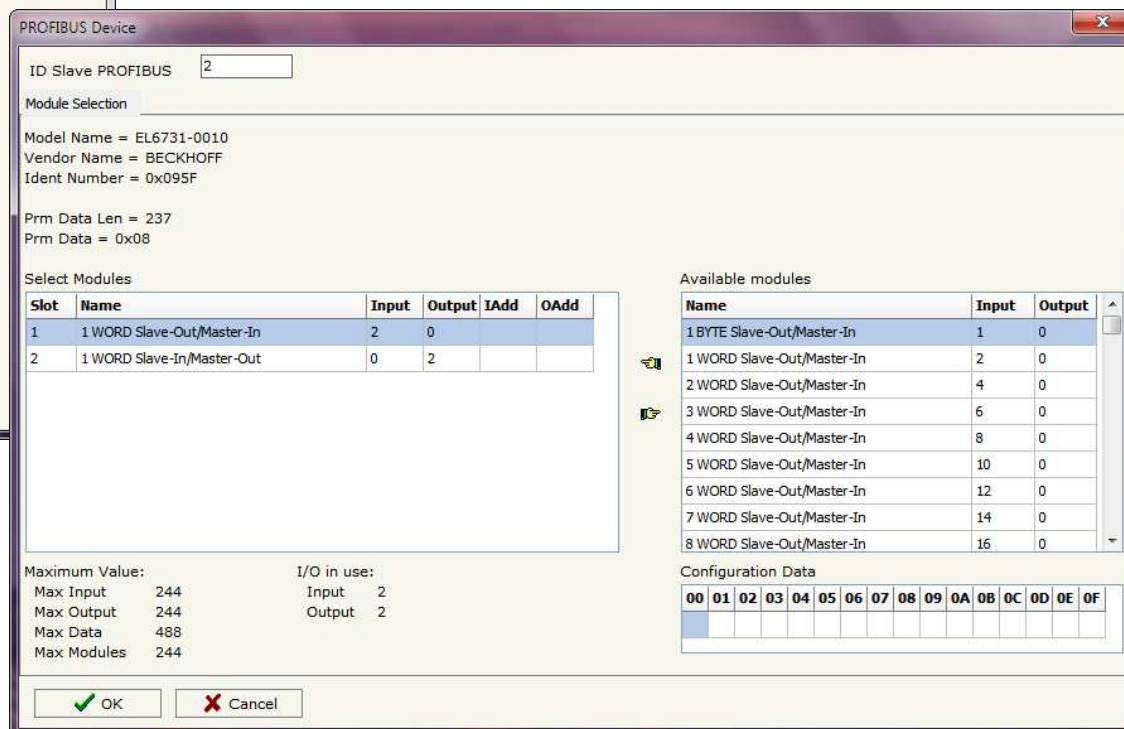Figure 4: "PROFIBUS Network" window

Figure 5: "PROFIBUS Device" window

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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:

- Turn off the Device;
- Connect the HD67119 or another USB ←→ RS485 converter to the PC and to the RS485 port of the Gateway;
- Put the device on Boot Mode (see "FUNCTION MODES" section);
- Select the COM port and press the "**Connect**" button;
- Turn on the device;
- Check the BOOT Led. It must blink quickly (see "LEDS" section);
- Press the "**Next**" button;
- Select which operations you want to do. You can select only "Firmware", only "Project" or both of them;
- Press the "**Execute update firmware**" button to start the upload;
- When all the operations are "OK" turn off the device;
- Put the device on Normal Mode (see "FUNCTION MODES" section);
- Disconnect the RS485 Cable;
- Turn on the device.

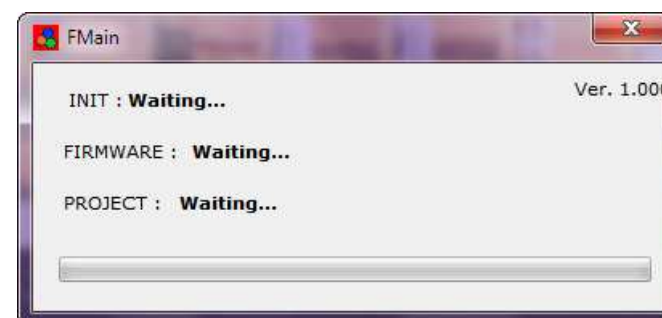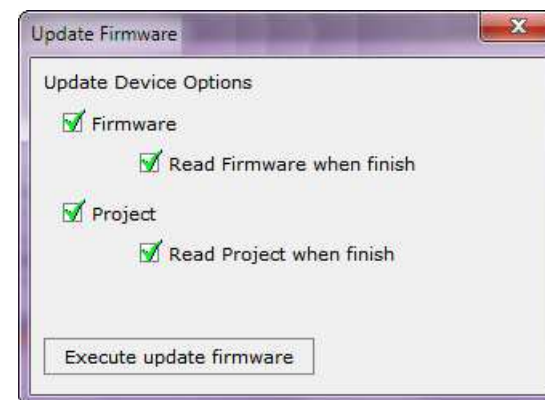At this point the configuration/firmware on the device is correctly updated.

Figure 6: "Update Device" windows

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 HD67570-A1 device.

Warning:
If the Fig. 7 appears when you try to do the Update before require assistance try these points:

- Check if the serial COM port selected is the correct one;
- Check if the USB or serial cable is connected between the PC and the device
- 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.

Figure 7: "Protection" window

In the case of HD67570-A1 you have to use the software "SW67570": www.adfweb.com\download\filefold\SW67570.zip.

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MECHANICAL DIMENSIONS:
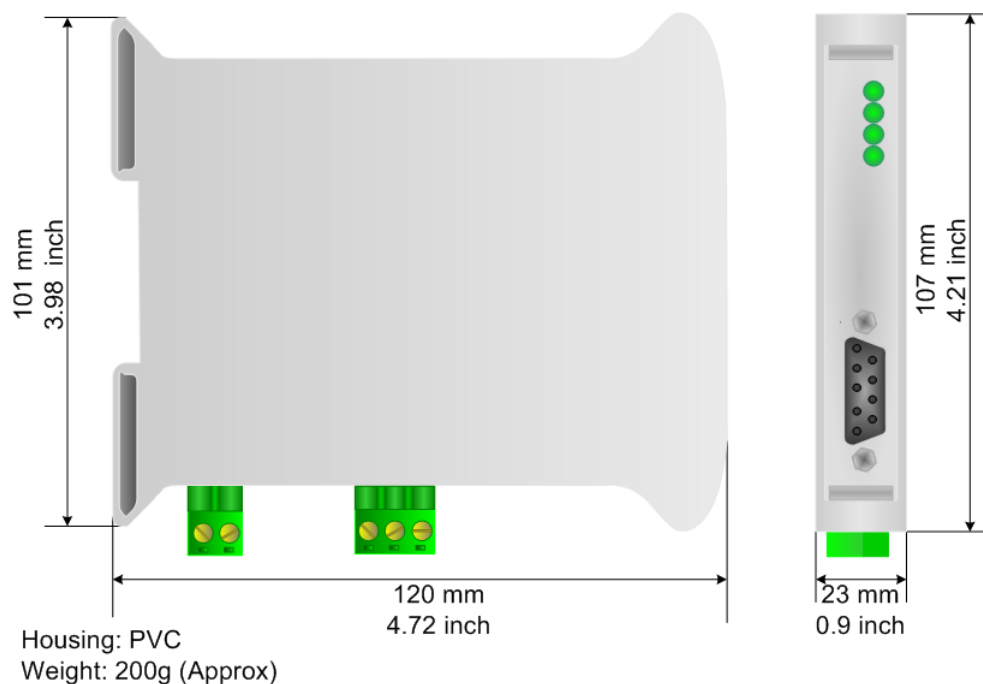

Housing: PVC
Weight: 200g (Approx)

Figure 8: Mechanical dimensions scheme

ORDER CODE:

Order Code: **HD67570-A1-**   Gateway – DeviceNet Slave from/to PROFIBUS Master

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

Order Code: **HD67119**   -   USB ←→ RS485 Converter

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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
HD67181	CAN bus Repeater	www.adfweb.com?product=HD67181
HD67316	CAN bus Analyzer	www.adfweb.com?product=HD67316
HD67119	USB ←→ RS485 Converter	www.adfweb.com?product=HD67119