

# User Manual

Revision 1.010  
English

## PROFIBUS DP Slave / Serial - Converter

(Order Code: HD67045)

for Website information:

[www.adfweb.com?Product=HD67045](http://www.adfweb.com?Product=HD67045)

for Price information:

[www.adfweb.com?Price=HD67045](http://www.adfweb.com?Price=HD67045)

### Benefits and Main Features:

- ▶ Auto PROFIBUS baud rate (up to 12Mbps)
- ▶ Wide supply input range
- ▶ Isolation between PROFIBUS and Serial lines
- ▶ Industrial temperature range:  
-40°C to 85°C (-40°F / 185°F)



HD67045

Similar Products →

For others Gateway / Adapters:

#### PROFIBUS from/to

See also the following link:

[www.adfweb.com?Product=HD67551](http://www.adfweb.com?Product=HD67551)

[www.adfweb.com?Product=HD67552](http://www.adfweb.com?Product=HD67552)

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[www.adfweb.com?Product=HD67554](http://www.adfweb.com?Product=HD67554)

[www.adfweb.com?Product=HD67564M](http://www.adfweb.com?Product=HD67564M)

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(CANopen)

(CAN)

(J1939)

(DeviceNet)

(Modbus TCP Client)

(Modbus TCP Server)

For others Converter / Adapter:

#### Ethernet to

See also the following link:

[www.adfweb.com?Product=HD67503](http://www.adfweb.com?Product=HD67503)

[www.adfweb.com?Product=HD67513](http://www.adfweb.com?Product=HD67513)

[www.adfweb.com?Product=HD67213](http://www.adfweb.com?Product=HD67213)

(CANopen)

(CAN)

(J1939)

Do you have an your customer protocol?

See the following link:

[www.adfweb.com?Product=HD67003](http://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](http://www.adfweb.com?Cmd=helpme)

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**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/](http://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/](http://www.adfweb.com/download/)

**REVISION LIST:**

Revision	Date	Author	Chapter	Description
1.000	17/03/2009	FI	All	First release version
1.001	30/06/2009	MI	All	Revision
1.002	06/07/2010	Ft	All	Revision
1.010	20/03/2013	FI	All	Software changed

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ADFweb.com is not responsible for any error this manual may contain.

**TRADEMARKS:**

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**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**

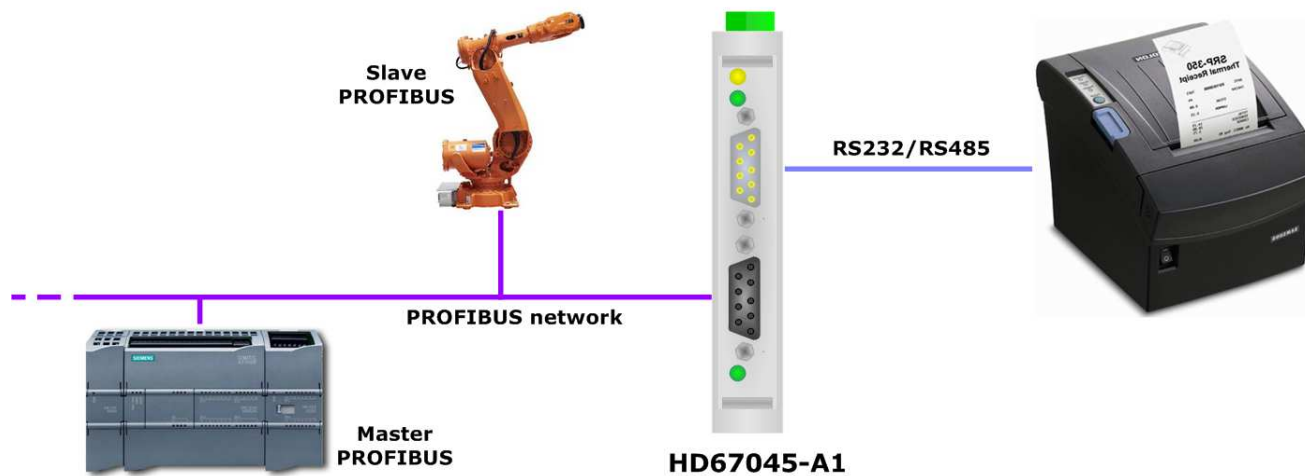
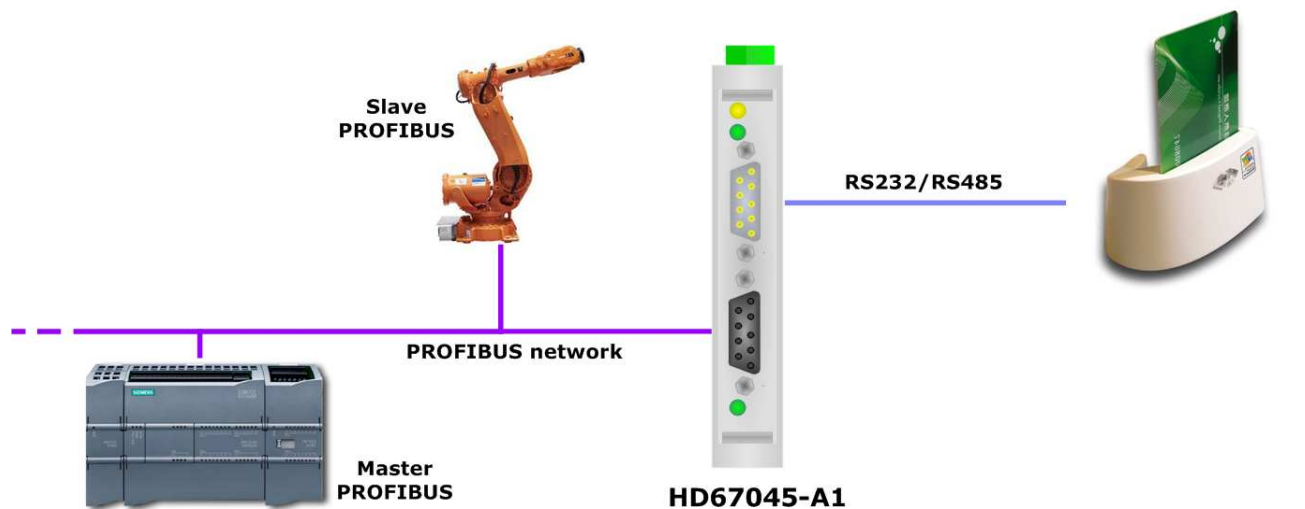
The device is state of the art and is safe. The instrument can represent a potential hazard if they are inappropriately installed and operated by personnel untrained. These instructions refer to residual risks with the following symbol:

 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](mailto:support@adfweb.com) or give us a call if you need it.

**EXAMPLES OF CONNECTION:**



**CONNECTION SCHEME:**

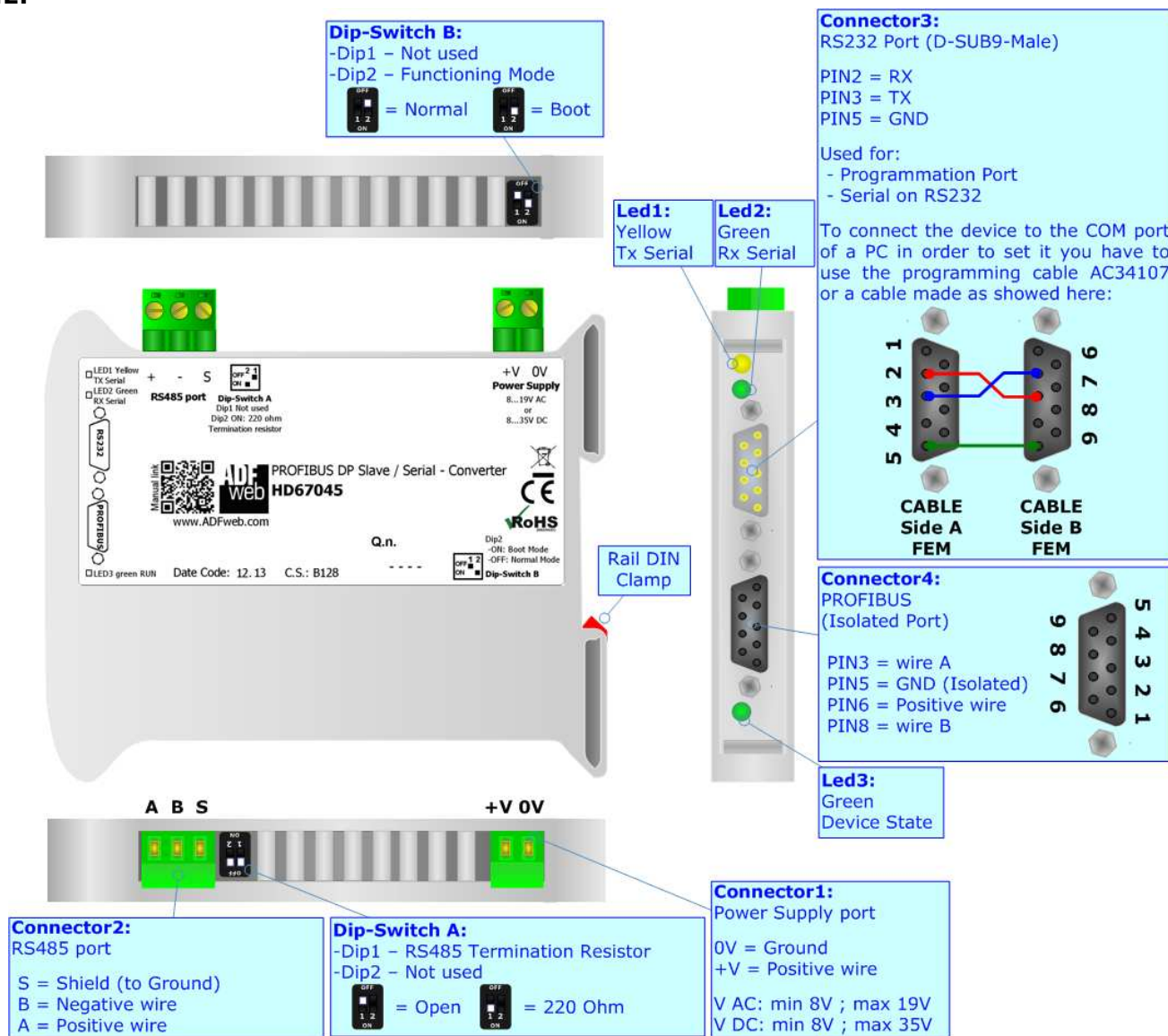


Figure 1: Connection scheme for HD67045

**CHARACTERISTICS:**

The configurable PROFIBUS from/to Serial Gateway allows the following characteristics:

- Mountable on 35mm DIN Rail;
- Serial RS232 or RS485 selectable via software;
- Serial baud rate and Parity changeable with software;
- Possible Serial baud rates: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps;
- Auto PROFIBUS baud rate (up to 12Mbps);
- Electrical isolation between PROFIBUS and Serial lines;
- Temperature range -40°C to 85°C.

**CONFIGURATION:**

You need Compositor SW67045 software on your PC in order to perform the following:

- Define the parameter of Serial RS232 or RS485;
- Define the parameter of PROFIBUS;
- Create the GSD file to import on your PLC or other;
- Update the device.

**POWER SUPPLY:**

The devices can be powered at 8...19V AC and 8...35V DC. The consumption depends to the code of the device. For more details see the two tables below.

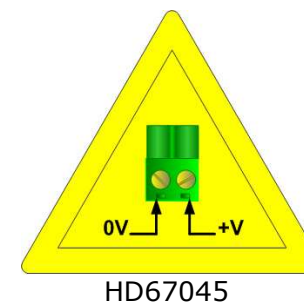
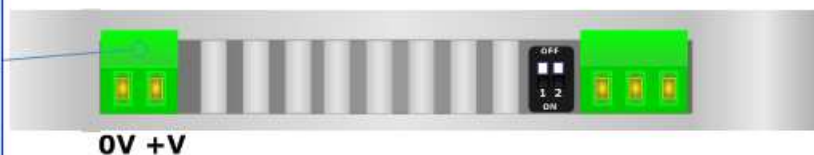
VAC		VDC	
Vmin	Vmax	Vmin	Vmax
8V	19V	8V	35V

Consumption at 24V DC:

Device	W/VA
HD67045	4

**Caution: Not reverse the polarity power**

**Connector1:**  
 Power Supply port  
 0V = Ground  
 +V = Positive wire  
 V AC: min 8V ; max 19V  
 V DC: min 8V ; max 35V



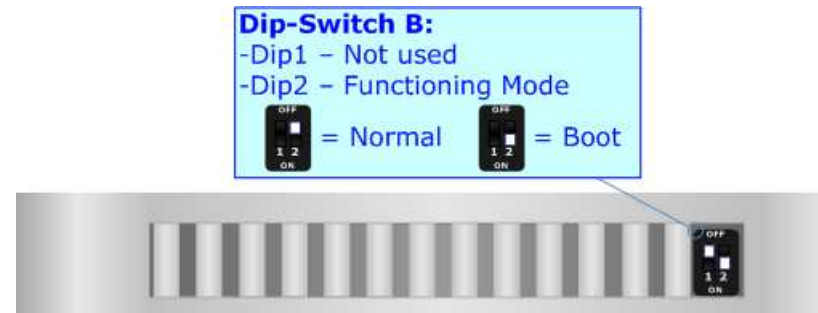
**FUNCTION MODES:**

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" 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 HD67045 device has got three LEDs that are used to give information of the functioning status. The various meanings of the LEDs are described in the table below.

<b>LED</b>	<b>Normal Mode</b>	<b>Boot Mode</b>
1: Tx Serial	Change state when the serial transmit something	Off
2: Rx Serial	Change state when the serial receive something	Off
3: Device State	Blinks slowly (~1Hz)	Blinks quickly

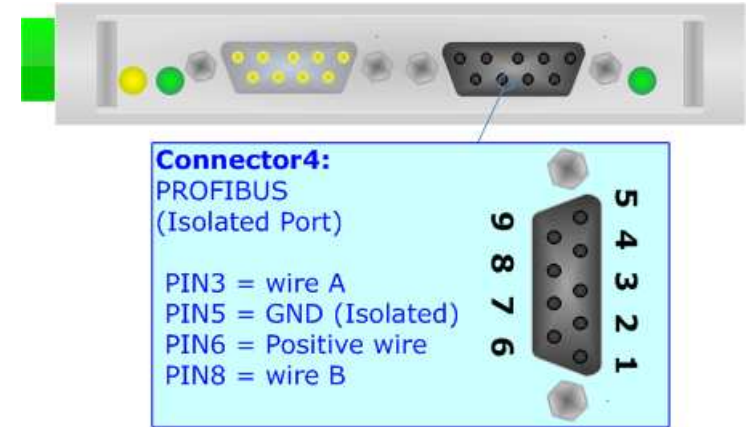


**PROFIBUS:**

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

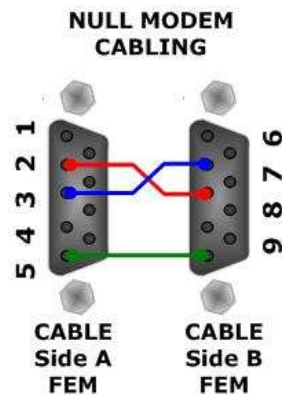
Here some codes of cables:

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



**RS232:**

The connection from RS232 socket to a serial port (example one from a personal computer), must be made with a Null Modem cable (a serial cable where the pins 2 and 3 are crossed). It is recommended that the RS232C Cable not exceed 15 meters.



**RS485:**

For terminate the RS485 line with a 220Ω resistor it is necessary to put ON dip 1, like in figure.



The maximum length of the cable should be 1200m (4000 feet).

Here some codes of cables:

- Belden: p/n 8132 - 2x 28AWG stranded twisted pairs conductor + foil shield + braid shield;
- Belden p/n 82842 - 2x 24AWG stranded twisted pairs conductor + foil shield + braid shield;
- Tasker: p/n C521 - 1x 24AWG twisted pair conductor + foil shield + braid shield;
- Tasker: p/n C522 - 2x 24AWG twisted pairs conductor + foil shield + braid shield.

### USE OF COMPOSITOR SW67045:

To configure the Converter, use the available software that runs with Windows, called SW67045. It is downloadable on the site [www.adfweb.com](http://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 SW67045 the right window appears (Fig. 2).

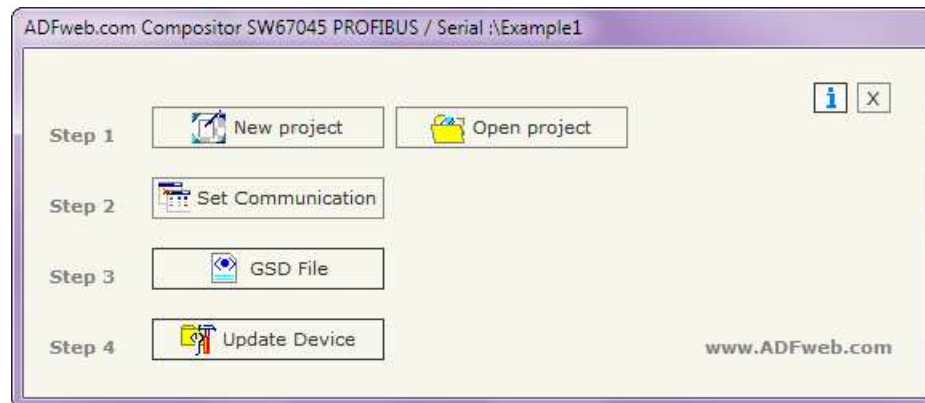


Figure 2: Main window for SW67045

### 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 / Serial – 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 define the fundamental communication parameters of two Buses, PROFIBUS and Serial. By Pressing the **"Set Communication"** button from the main window for SW67045 (Fig. 2) the window "Set Communication" appears (Fig. 3).

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

The means of the fields for Serial are:

- If the field **"RS232"** is checked, the serial line in use is the RS232; otherwise is the **"RS485"**;
- If the field **"Only Receive from Serial"** is checked, the Gateway can only receive data from the serial; otherwise if the field **"Receive and Transmit"** is checked the Gateway can do both the operations;
- If the field **"Transmit Every"** is checked the Gateway transmit (only if the field "Receive and Transmit" is checked) cyclically with a time between the two frames defined in the field in the same line; otherwise if the field **"Transmit on Change DATA"** is checked the gateway transmit only if a data is changed;
- If the field **"Character for end frame"** is checked, in the field in the right side you have to insert the value (in decimal format) of the character used to indicate the end of the frame; otherwise if the field **"Timeout end frame ms"** is checked, in the field in the right side you have to insert the time (expressed in milliseconds) to wait before considering the frame concluded;
- In the field **"Baudrate"** the baud rate of the serial is defined;
- In the field **"Parity"** the parity of the serial is defined;
- In the field "Data Bits" the number of data bits is defined (only for RS485 selection).

The means of the fields for PROFIBUS are:

- In the field **"ID Dev."** the address for the PROFIBUS side is defined;
- In the field **"N Byte IN"** the number of byte writable with the serial is defined;
- In the field **"N Byte OUT"** the number of byte readable with the serial is defined.

## GSD FILE:

By pressing the **"GSD File"** button it is possible to save the GSD file for the PROFIBUS side. With this feature you can save the configuration of the gateway of the PROFIBUS side.

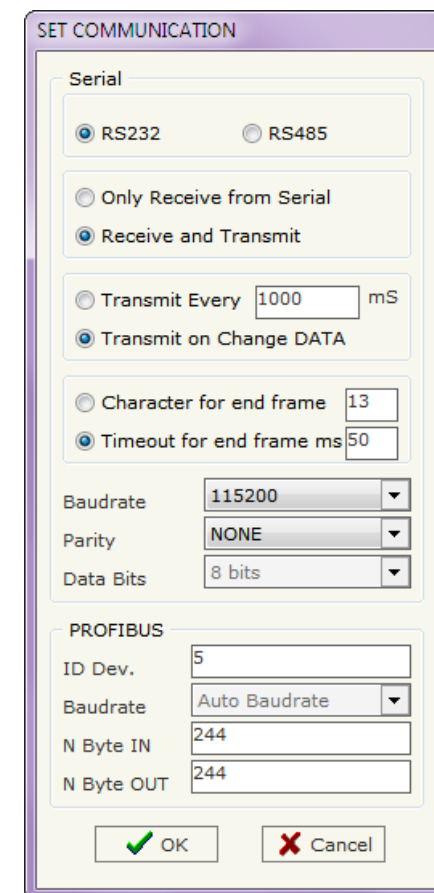


Figure 3: Set Communication window

**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.

In order to load the parameters or update the firmware in the device, follow these instructions:

- Turn off the Device;
- Connect the RS232 Null Modem Cable form your PC to the Gateway;
- Put Dip2 of Dip-Switch B at "ON" position;
- 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.
- 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 B at "OFF" position;
- Disconnect the USB or RS232 Cable;
- Turn on the device.

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

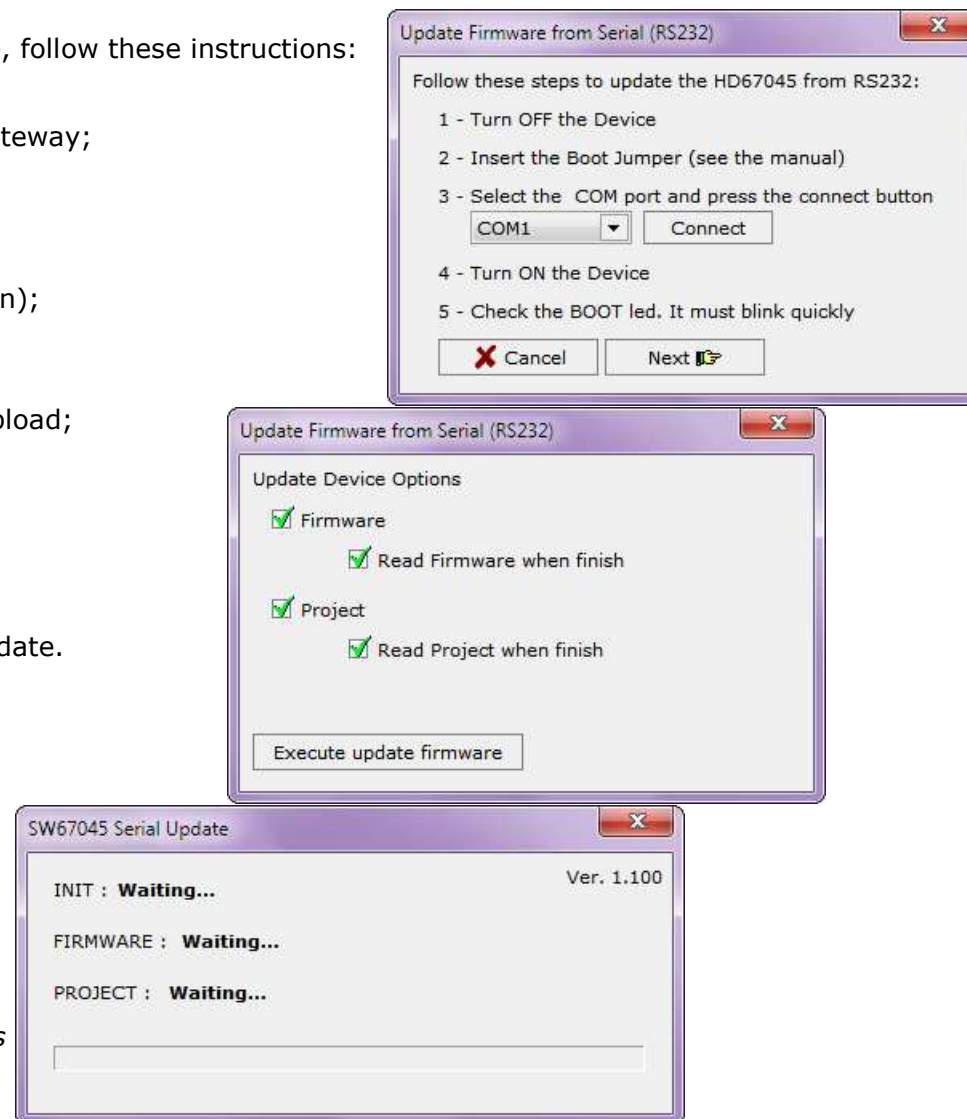





Figure 4: "Update Device" windows

 **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 HD67045 devices.


 **Note:**  
When you receive the device, for the first time, you have to update also the Firmware in the HD67045 devices.

 **Warning:**  
If the Fig. 5 appears when you try to do the Update before require assistance try these points:

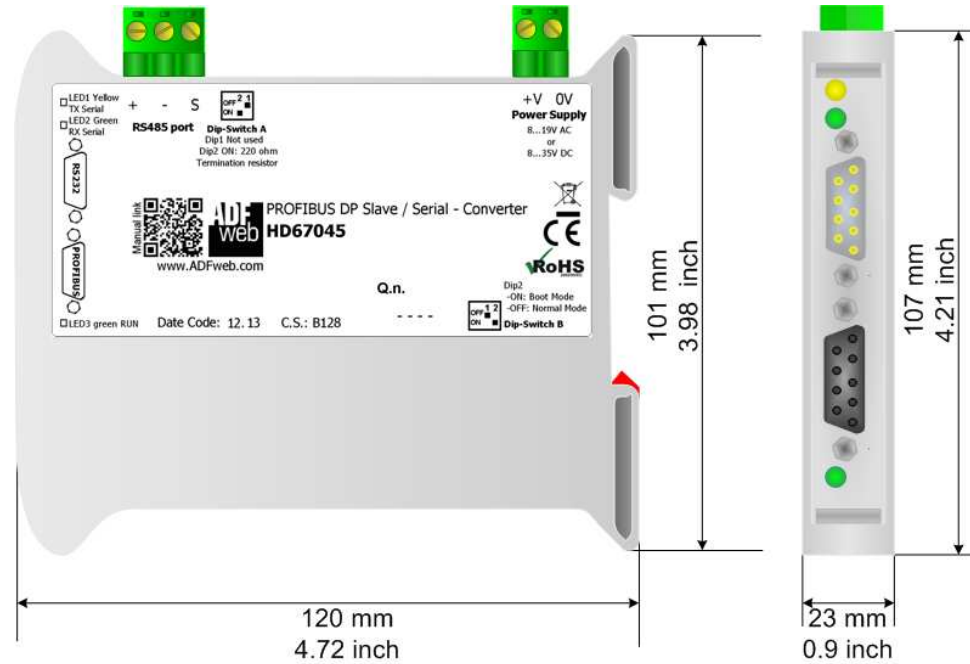
- Check if the serial COM port selected is the correct one;
- Check if the serial cable is connected between the PC and the device;
- Try to repeat the operations for the updating;
- If you are using a USB↔RS232 converter try with a native COM port or change the converter;
- Try with another PC;
- Try 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.



Figure 5: "Protection" window

 In the case of HD67045 you have to use the software "SW67045": [www.adfweb.com/download/filefold/SW67045.zip](http://www.adfweb.com/download/filefold/SW67045.zip).

**MECHANICAL DIMENSIONS:**



Housing: PVC  
Weight: 200g (Approx)

Figure 6: Mechanical dimensions scheme

**ORDER CODE:**

Order Code: **HD67045** - PROFIBUS / Serial - 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

Order Code: **AC34104** - European Input - Power Supply 230V AC 50Hz – 12 V DC



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## 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](http://www.adfweb.com). Otherwise contact us at the address [support@adfweb.com](mailto: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](http://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
HD67118	Converter RS232 to RS485 Isolated	<a href="http://www.adfweb.com?Product=HD67118">www.adfweb.com?Product=HD67118</a>
HD67119	Converter USB 2.0 to RS485 Isolated	<a href="http://www.adfweb.com?Product=HD67119">www.adfweb.com?Product=HD67119</a>
HD67507	Gateway Modbus TCP Server to RTU Master	<a href="http://www.adfweb.com?Product=HD67507">www.adfweb.com?Product=HD67507</a>
HD67510	Gateway Modbus TCP Client to RTU Slave	<a href="http://www.adfweb.com?Product=HD67510">www.adfweb.com?Product=HD67510</a>