

User Manual

Revision 1.005
English

CAN / PROFIBUS Slave - Converter

(Order Code: HD67552)

for Website information:

www.adfweb.com?Product=HD67552

for Price information:

www.adfweb.com?Price=HD67552

Benefits and Main Features:

- ▶ Very easy to configure
- ▶ Low cost
- ▶ PROFIBUS Baudrate up to 12M
- ▶ Wide supply input range
- ▶ Isolation between two buses
- ▶ Industrial temperature range:
-40°C / 85°C (-40°F / 185°F)



HD67552

For others Gateways / Bridges:

CANopen to Modbus

See also the following links:

- www.adfweb.com?Product=HD67001 (Modbus RTU Master)
- www.adfweb.com?Product=HD67502 (Modbus RTU Slave)
- www.adfweb.com?Product=HD67504 (Modbus TCP Master)
- www.adfweb.com?Product=HD67505 (Modbus TCP Slave)

For others Gateways / Bridges:

For **CAN bus 2.0A** and/or **CAN bus 2.0B** to **Modbus**

See also the following links:

- www.adfweb.com?Product=HD67011 (Modbus RTU Slave)
- www.adfweb.com?Product=HD67012 (Modbus RTU Master)
- www.adfweb.com?Product=HD67514 (Modbus TCP Slave)
- www.adfweb.com?Product=HD67515 (Modbus TCP Master)

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

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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/ 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
1.001	27/02/2009	FI	All	Added new features
1.002	08/07/2009	MI	All	Revision
1.003	28/04/2010	Dp	All	Revision
1.004	29/04/2010	Dp	All	CS Revision
1.005	14/01/2013	Nt & FI	All	Added new chapters

WARNING:

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TRADEMARKS:

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

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

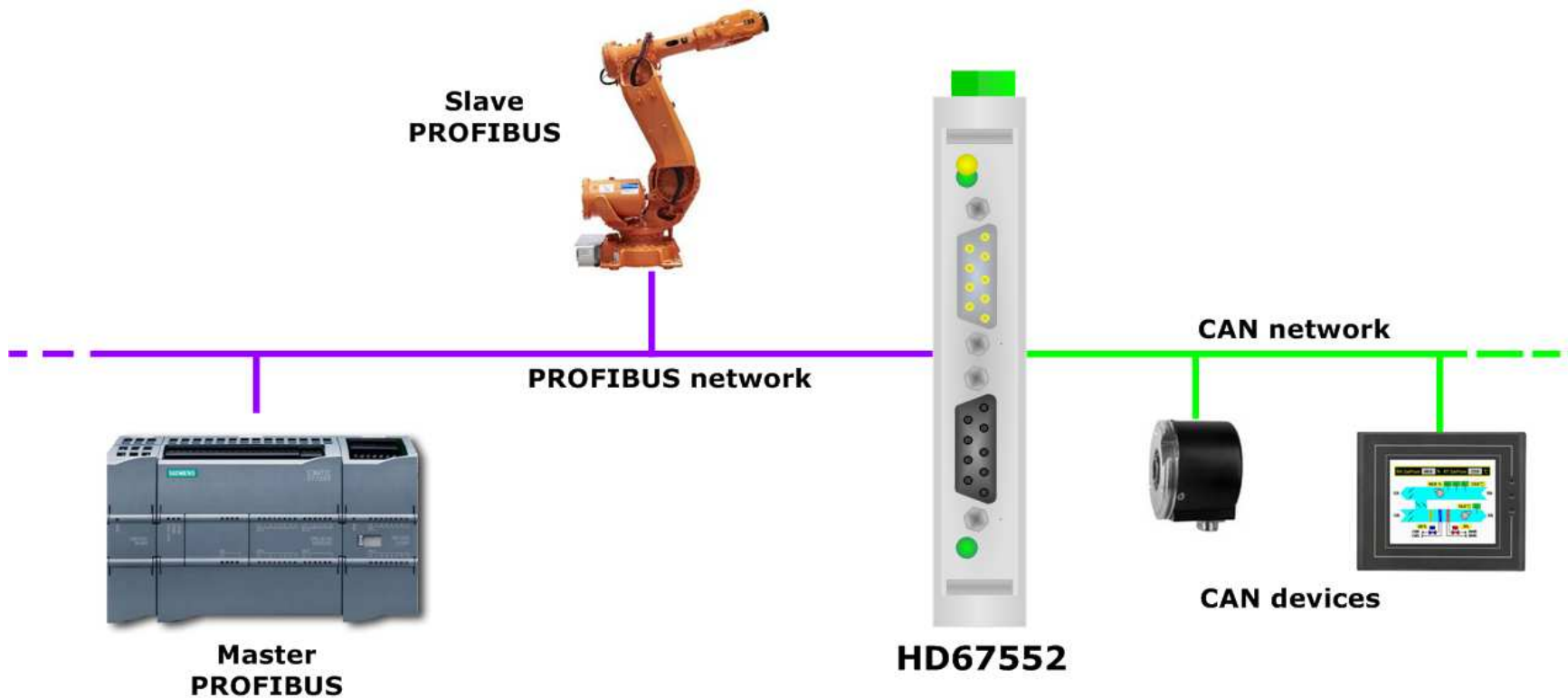
The device is state of the art and is safe. The instrument can represent a potential hazard if they are inappropriately installed and operated by personnel untrained. These instructions refer to residual risks with the following symbol:

 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:



CONNECTION SCHEME:

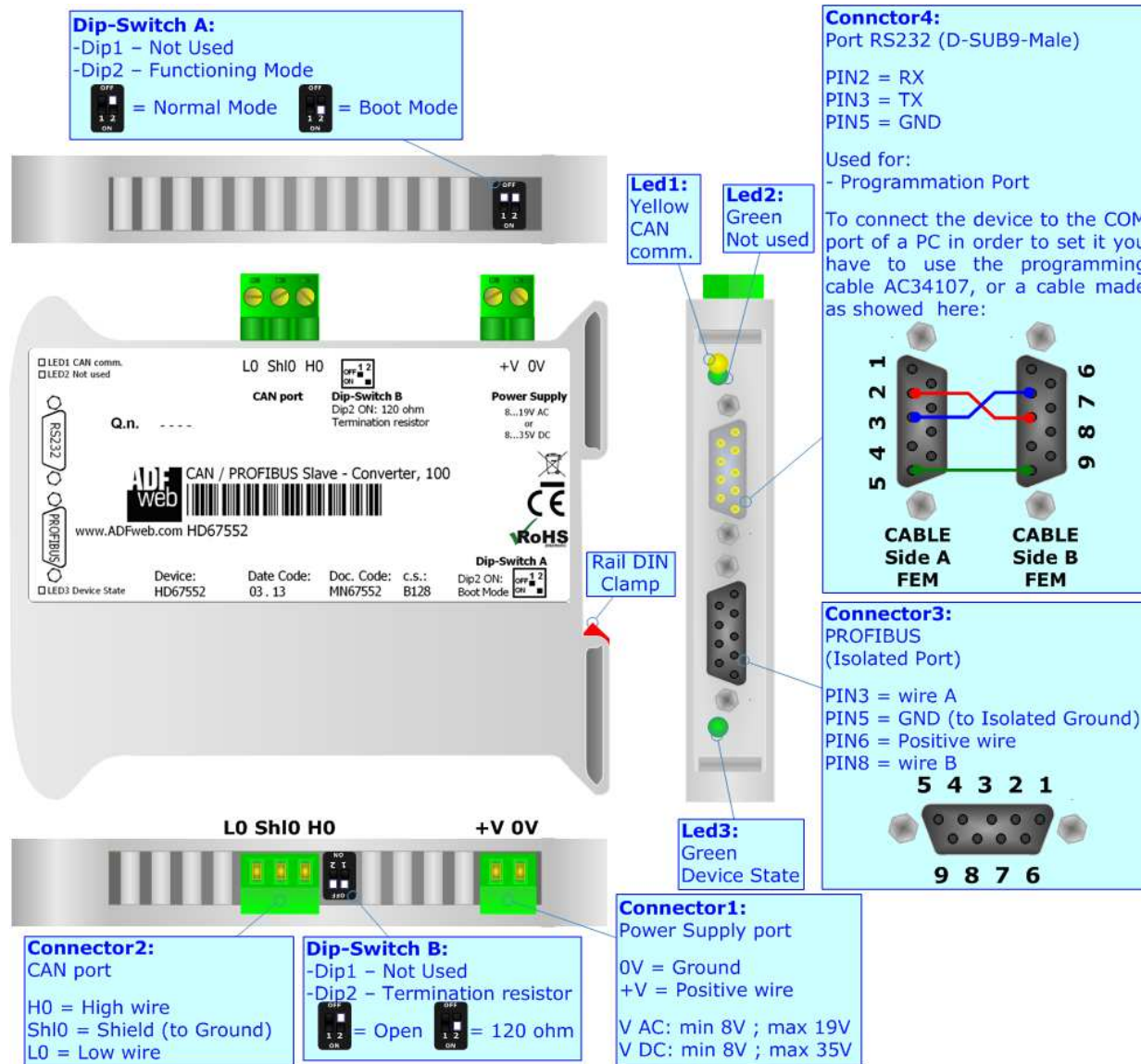


Figure 1: Connection scheme for HD67552

CHARACTERISTICS:

The Configurable CAN / PROFIBUS Slave - Converter allows the following characteristics:

- Two-directional information between CAN network and PROFIBUS;
- Electrical isolation between two buses;
- Up to 244 bytes in reading and 244 bytes in writing on PROFIBUS;
- Power Supply 8...19V AC or 12...35V DC;
- Mountable on 35mm Rail DIN;
- Temperature range -40°C to 85°C.



CONFIGURATION:

You need Compositor SW67552 software on your PC in order to perform the following:

- Define the parameter of the CAN;
- Define the parameter of the PROFIBUS;
- Receive CAN frames;
- Transmit CAN frames;
- Create a GSD File;
- 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

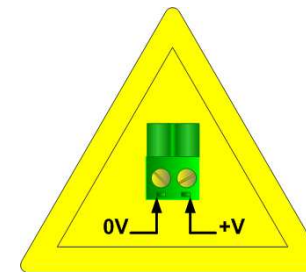
Consumption at 24V DC:

Device	Consumption [W/VA]
HD67552	3.5

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



Caution: Not reverse the polarity power



HD67552

FUNCTION MODES:

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

- The first, with 'Dip2 of Dip-Switch A' at "OFF" position, is used for the normal working of the device.
- The second, with 'Dip2 of Dip-Switch A' at "ON" position, is used for upload the Project and/or Firmware.

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 three 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: CAN comm. (yellow)	Change state when receive a CAN frame defined in the Compositor	Not used
2: Not used (green)	Not used	Not used
3: Device State (green)	Blinks slowly (~1Hz)	Blinks quickly: Boot state Blinks very slowly (~0.5Hz): update in progress

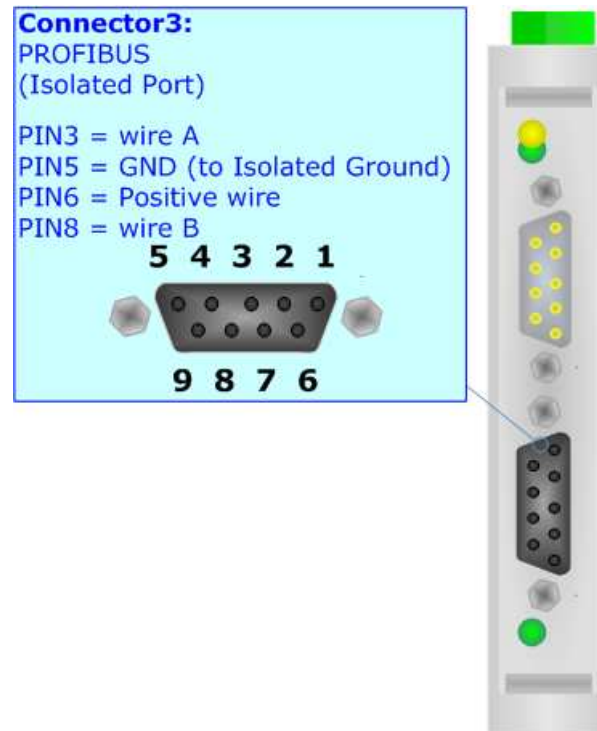


PROFIBUS:

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

Here some codes of cables:

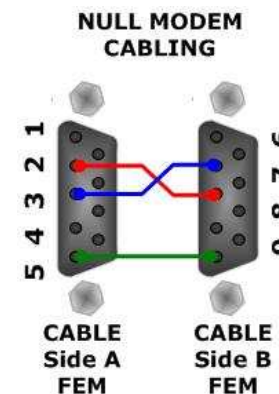
- Belden: p/n 183079A - Continuous Armor DataBus® ISA/SP-50 PROFIBUS Cable;



RS232:

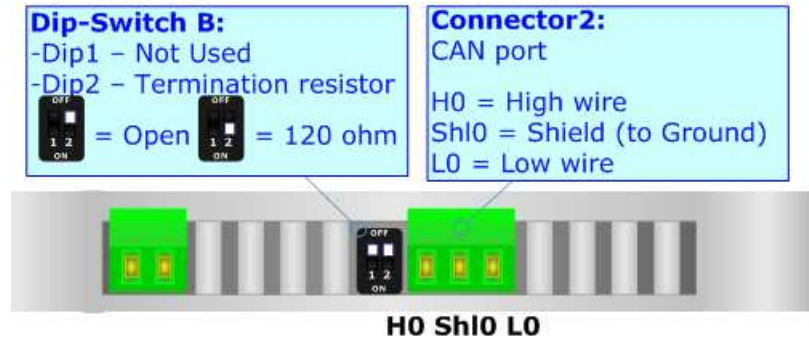
The connection from RS232 socket to a serial port (example one from a personal computer), must be made with a Null Modem cable (a serial cable where the pins 2 and 3 are crossed). It is recommended that the RS232C Cable not exceed 15 meters.

The serial port is used for programming the device.



CAN:

For terminate the CAN line with a 120Ω resistor it is necessary that the Dip1 of 'Dip-Switch B' is at ON position.



Cable characteristics:

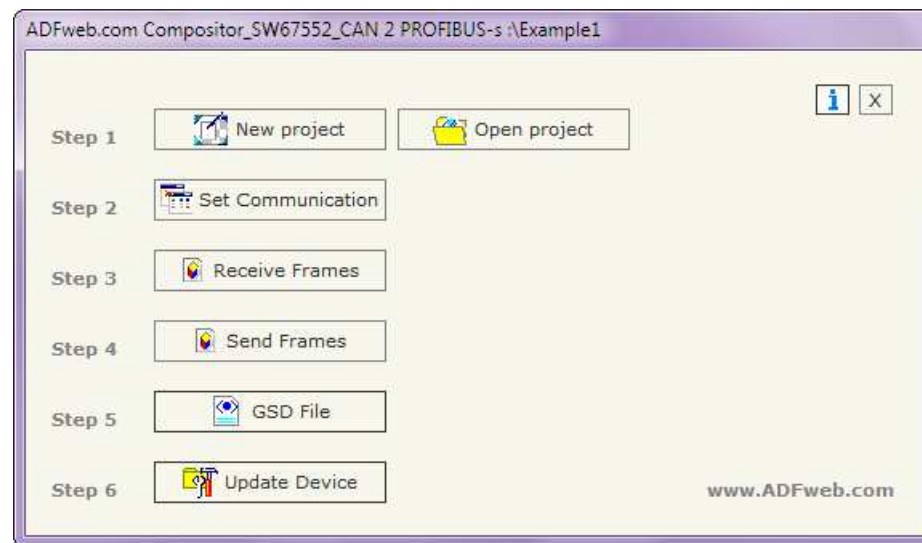
DC parameter:	Impedance	70 Ohm/m
AC parameters:	Impedance	120 Ohm/m
	Delay	5 ns/m
Length	Baud Rate [bps]	Length MAX [m]
	10 K	5000
	20 K	2500
	50 K	1000
	100 K	650
	125 K	500
	250 K	250
	500 K	100
	800 K	50
	1000 K	25

USE OF COMPOSITOR SW67552:

To configure the Converter, use the available software that runs with Windows, called SW67552. 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).

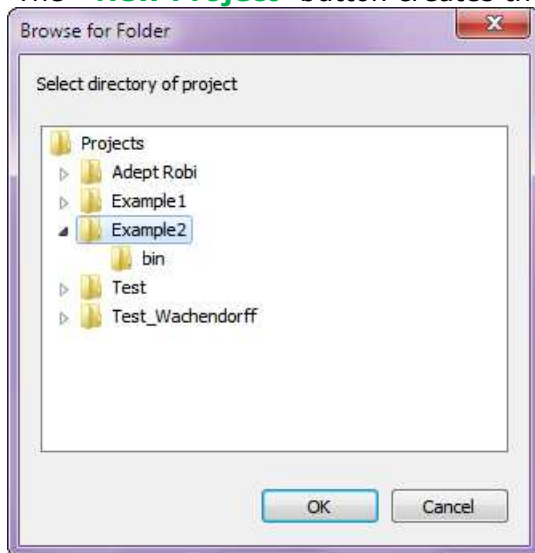
When launching the SW67552 the right window appears (Fig. 2).

Figure 2: Main window for SW67552



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 “CAN / PROFIBUS Slave – 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, CAN bus and PROFIBUS.

By Pressing the **"Set Communication"** button from the main window for SW67552 (Fig. 2) the window "Set Communication" appears (Fig. 3).

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

The means of the fields for "CAN" are:

- In the field **"Baud Rate"** the velocity of the CAN bus is defined;
- If the field **"CAN Bus 2.0A"** is checked, the CAN with a CobID of 11Bit is used; otherwise if the field **"CAN Bus 2.0B"** is checked the CAN with a CobID of 29Bit is used;
- If the field **"Send Frame on Data Change"** is checked, the frame is sent when the data are changed from the PROFIBUS Master. Otherwise if the field **"Send Frame Every xx ms"** is checked all CAN frames will be sended in cyclic way, with the delay decided by user between every cicle;
- In the field **"Time out Data"** insert a time; when this time is elapsed and the data are not reliable, the data are setted to 0xFF.

The means of the fields for "PROFIBUS" are:

- In the field **"ID Dev."** the address for the PROFIBUS side is defined;
- If the field **"Create GSD file from CAN Mapping"** is checked, when you create the "GSD File" every CAN Frame is insert in a Module, otherwise if this field isn't checked a Module contains up to 64 byte.

The screenshot shows the 'SET COMMUNICATION' dialog box. It has a title bar with the text 'SET COMMUNICATION'. The dialog is divided into two main sections: 'CAN' and 'PROFIBUS'.
Under the 'CAN' section:
- 'Baud rate' is a dropdown menu showing '250K'.
- 'CAN Type' has two radio buttons: 'CAN Bus 2.0A (CobID 11Bit)' and 'CAN Bus 2.0B (CobID 29Bit)'. The second one is selected.
- 'Send Data' has two radio buttons: 'Send Frame on Data Change' (selected) and 'Send Data Every 150 ms'.
- 'TimeOut Data' has a text input field with '2' and a unit 's'.
Under the 'PROFIBUS' section:
- 'ID Dev.' is a text input field with '10'.
- 'Baud rate' is a dropdown menu showing 'Auto Baudrate'.
- There is a checkbox labeled 'Create GDS file from CAN Mapping' which is currently unchecked.
At the bottom of the dialog are two buttons: 'OK' (with a green checkmark icon) and 'Cancel' (with a red X icon).

Figure 3: "Set Communication" window

RECEIVE FRAMES:

By pressing the "Receive Frames" button from the main window for SW67552 (Fig. 2) the window "Receive Frames" appears (Fig. 4).

The data of the columns have the following meanings:

- In the field "Cob-ID" the COB_ID of the CAN bus is defined;
- In the field "Dimension" the number of byte of CAN frame is defined;
- In the field "Swap" if it is necessary it is possible to create a swap of data bytes;
- If the field "Delete" is checked the data in the frame will be erased after the "TimeOut Data" is expired;
- In the field "Mnemonic" the description for the frame is defined.

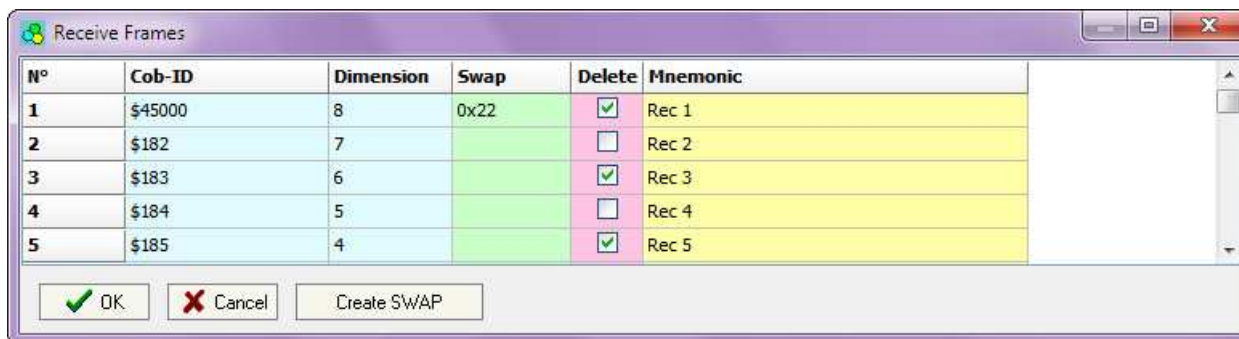


Figure 4: "Receive Frames" window

By pressing the "Create Swap" button from the "Receive Frames" window, the window "Byte Swap" appears (Fig. 5). This window help you to modify the "Swap" field.

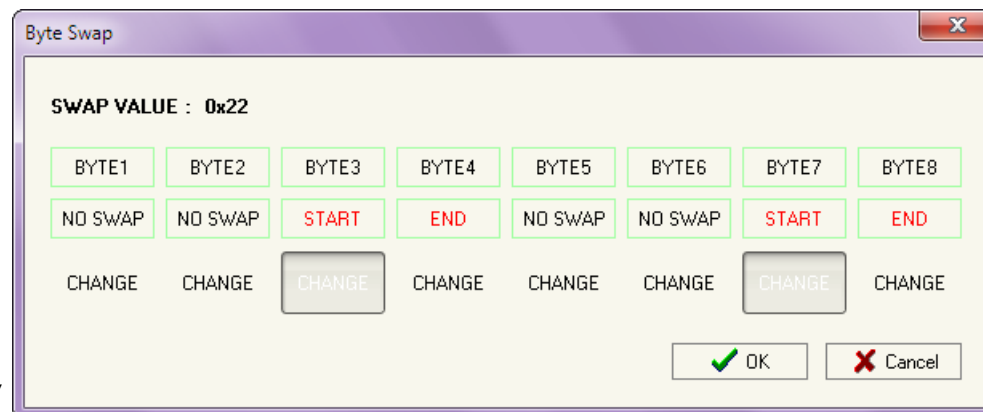


Figure 5: "Byte Swap" window

SEND FRAMES:

By pressing the **Send Frames** button from the main window for SW67552 (Fig. 2) the window "Send Frames" appears (Fig. 6).

The data of the column have the following meanings:

- In the field **COB ID** the COB_ID of the CAN bus is defined;
- In the field **Dimension** the number of byte of CAN frame is defined;
- In the field **Swap** if it is necessary it is possible to create a swap of data bytes;
- In the field **Mnemonic** the description for the frame is defined.

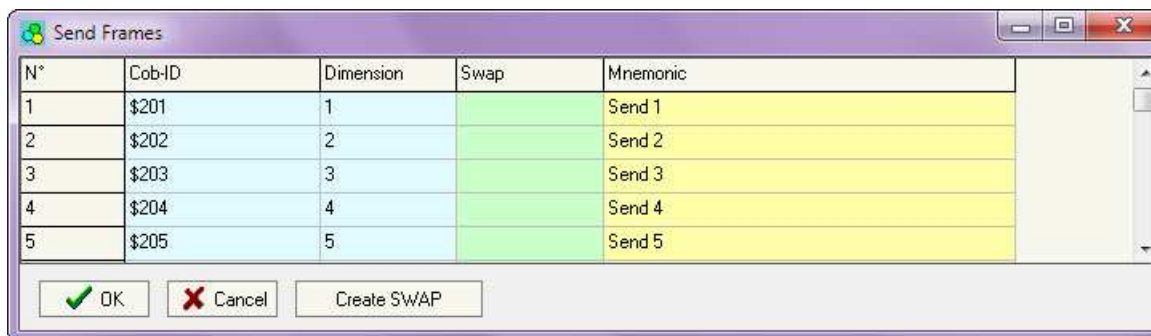


Figure 6: "Send Frames" window

By pressing the **Create Swap** button from the "Receive Frames" window, the window "Byte Swap" appears (Fig. 7). This window help you to modify the "Swap" field.

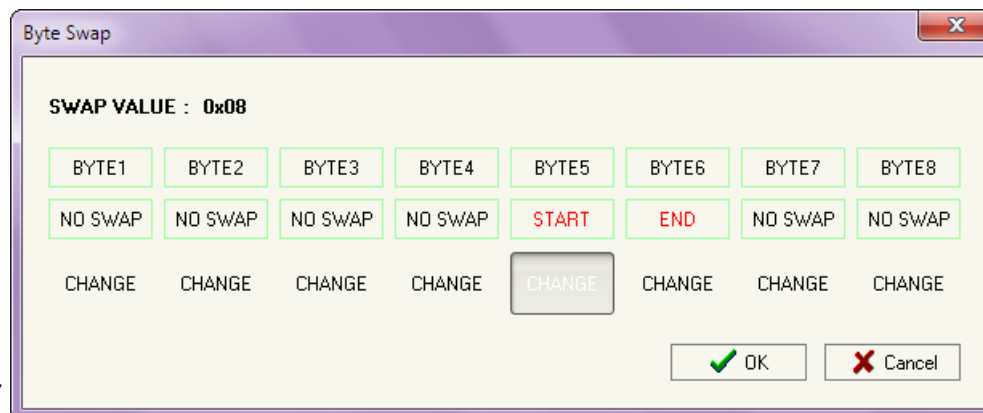


Figure 7: "Byte Swap" window

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.



Note:

When you import the .gsd file on your Master PROFIBUS you have to add all the modules that are present inside it.

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 Converter, follow these instructions:

- Turn off the Device;
- Connect the Null Modem Cable form your PC to the Converter;
- Put Dip2 of Dip-Switch A at "ON" position (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.
- 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;
- Disconnect the RS232 cable;
- Turn on the device.

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

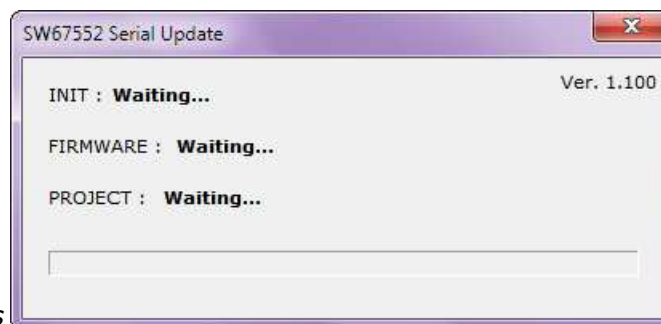
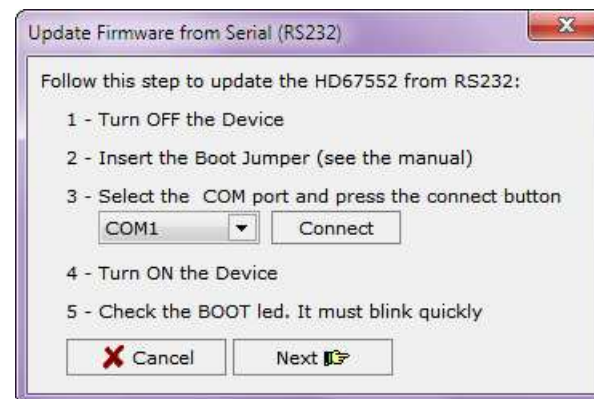





Figure 8: "Update Device" windows

 **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 HD67552 device.

 **Note:**
When you receive the device, for the first time, you have to update also the Firmware in the HD67552 device.

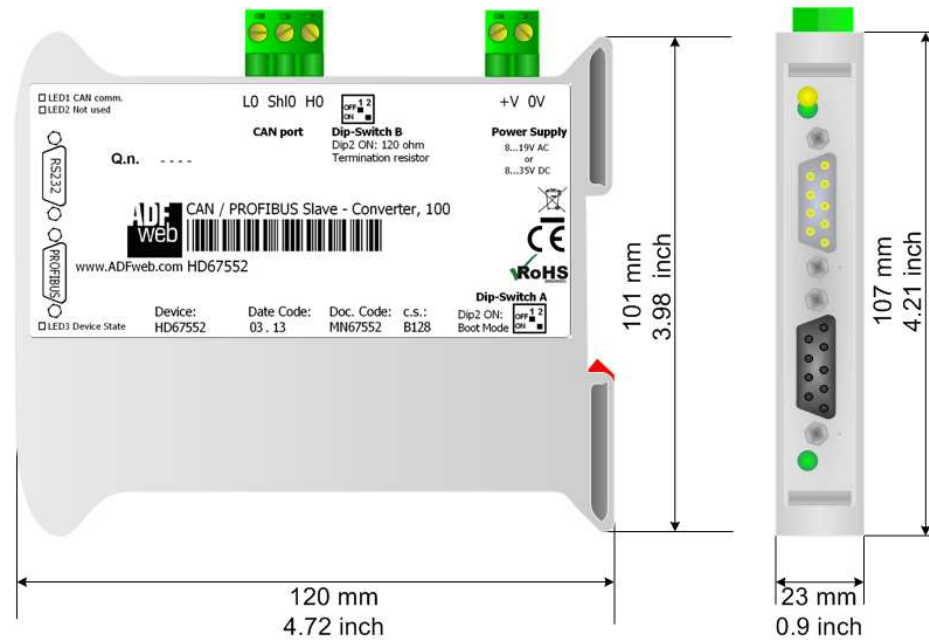
 **Warning:**
If the Fig. 9 appears when you try to do the Update before require assistance try these points:

- Check if the serial COM port selected is the correct one;
- Check if the serial is connected between the PC and the device;
- Try to repeat the operations for the updating;
- If you are using a dongle try with a native COM port or change the dongle;
- 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 or 8, make sure that you have the administrator privileges;
- Take attention at Firewall lock.



Figure 9: "Protection" window

MECHANICAL DIMENSIONS:



Housing: PVC
Weight: 200g (Approx)

Figure 10: Mechanical dimensions scheme

ORDER CODE:

Order Code: **HD67552** - CAN / PROFIBUS Slave - Converter

ACCESSORIES:

- Order Code: **AC34107** - Null Modem Cable Fem/Fem DSub 9 Pin 1,5 m
- Order Code: **AC34114** - Null Modem Cable Fem/Fem DSub 9 Pin 5 m
- 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

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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.

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
HD67121	Gateway CANopen / Canopen	www.adfweb.com?product=HD67121
HD67502	Gateway CANopen / Modbus - RTU	www.adfweb.com?product=HD67502
HD67505	Gateway CANopen / Modbus – Ethernet TCP	www.adfweb.com?product=HD67505
HD67134	Gateway CANopen / DeviceNet	www.adfweb.com?product=HD67134
HD67117	CAN bus Repeater	www.adfweb.com?product=HD67117
HD67216	CAN bus Analyzer	www.adfweb.com?product=HD67216