

User Manual

Revision 1.010
English

PROFIBUS DP Master from/to CAN

(Order Code: HD67577-A1)

for Website information:

<http://www.adfweb.com/?Product=HD67577>

for Price information:

<http://www.adfweb.com/?Price=HD67577-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 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) |

PROFIBUS Master from/to ...

- | | |
|--|------------------------|
| www.adfweb.com?Product=HD67575 | (... Ethernet) |
|--|------------------------|

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:

	Page
INDEX	2
UPDATED DOCUMENTATION	2
REVISION LIST	2
WARNING	2
TRADEMARKS	2
CONNECTION SCHEME	3
CHARACTERISTICS	4
CONFIGURATION	4
POWER SUPPLY	5
FUNCTION MODES	6
LEDS	7
PROFIBUS	8
ETHERNET	8
CAN	9
USE OF COMPOSITOR SW67577	10
NEW PROJECT / OPEN PROJECT	10
SET COMMUNICATION	11
PROFIBUS NETWORK	12
RECEIVE FRAMES	13
INFO RECEIVE	14
SENDS FRAME	15
INFO SEND	16
UPDATE DEVICE	17
MECHANICAL DIMENSIONS	19
ORDER CODE	19
ACCESSORIES	19
WARRANTIES AND TECHNICAL SUPPORT	20
RETURN POLICY	20
PRODUCTS AND RELATED DOCUMENTS	20

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	24/11/2011	FI	All	First release version
1.010	08/05/2012	FI	All	Software changed (v1.001)

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.

CONNECTION SCHEME:

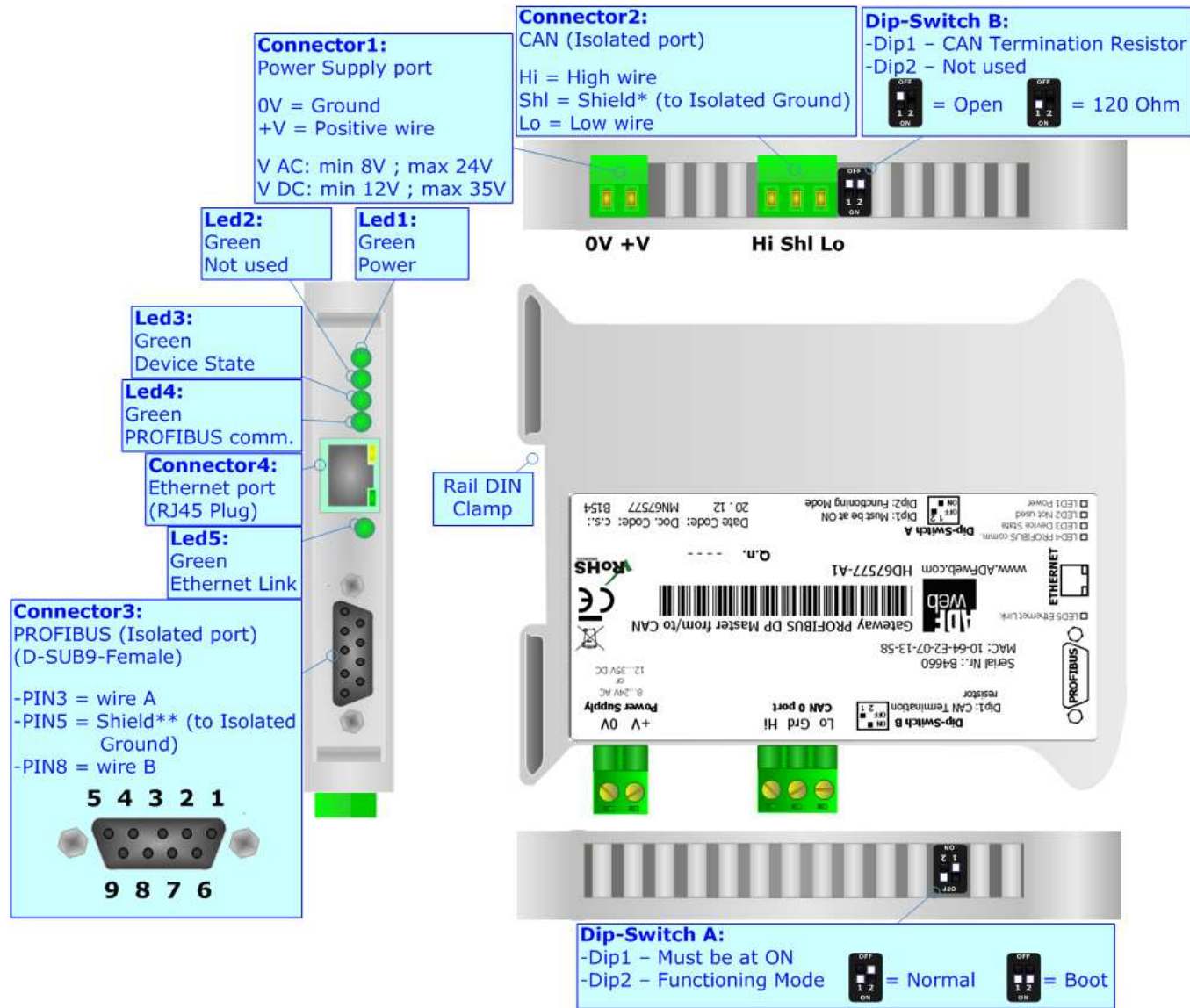


Figure 1: Connection scheme for HD67577-A1

CHARACTERISTICS:

The configurable "PROFIBUS DP Master from/to CAN" Gateway allows the following characteristics:

- Triple isolation between CAN/PROFIBUS, CAN/Power Supply, PROFIBUS/Power Supply.
- Mountable on 35mm Rail DIN;
- Power Supply 12...24V AC or 12...35V DC;
- Temperature range -40°C to 85°C.

CONFIGURATION:

You need Compositor SW67577 software on your PC in order to perform the following:

- Define the parameter of the PROFIBUS;
- Define the parameter of the CAN line;
- Define the PROFIBUS network;
- Define which CAN frames contains PROFIBUS information;
- Define which PROFIBUS data saves on CAN frames.

POWER SUPPLY:

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

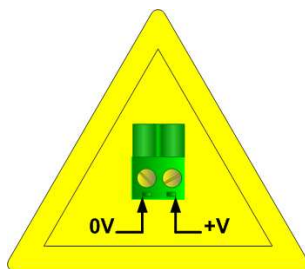
	VAC		VDC	
	Vmin	Vmax	Vmin	Vmax
HD67577-A1	8V	24V	12V	35V

Consumption at 24V DC:

Device	W/VA
HD67577-A1	4



Caution: Not reverse the polarity power



HD67577-A1

Connector1:
 Power Supply port
 0V = Ground
 +V = Positive wire
 V AC: min 8V ; max 24V
 V DC: min 12V ; max 35V



FUNCTION MODES:

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.

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).



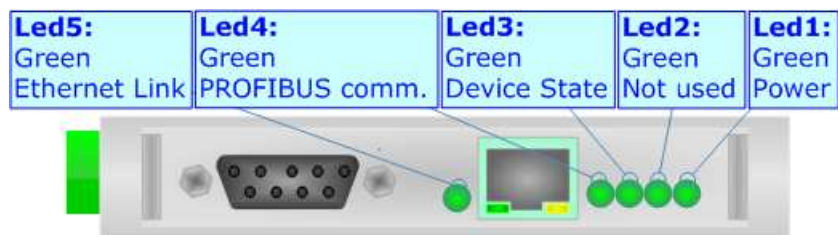
Warning:

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

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: Power (green)	ON: Powered OFF: Not powered	ON: Powered OFF: Not powered
2: Not used (green)	OFF	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)	OFF: No PROFIBUS communication Blinks quickly: 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

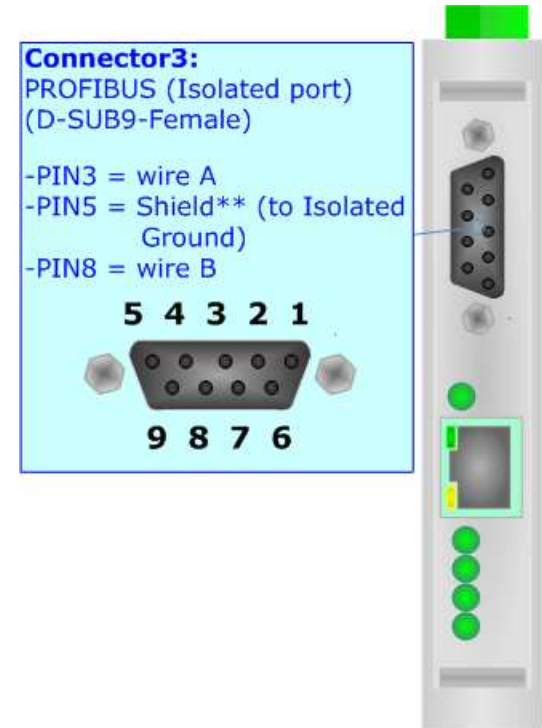


PROFIBUS:

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.



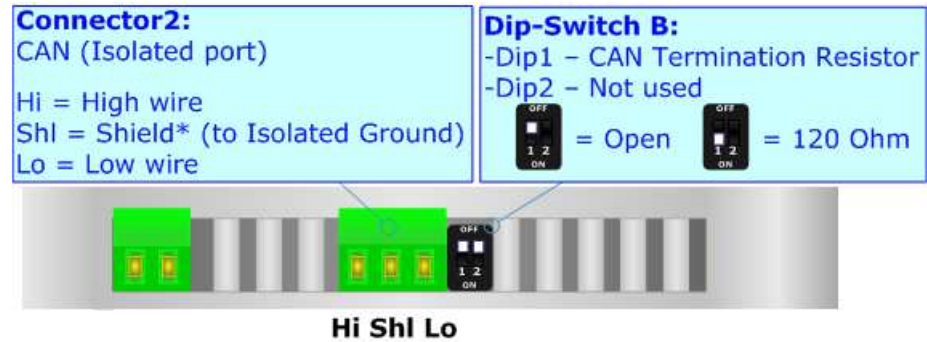
ETHERNET:

The Ethernet connection must be made using Connector3 of HD67577-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.



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 SW67577:

To configure the Gateway, use the available software that runs with Windows, called SW67577. 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 SW67577 the right window appears (Fig. 2).



Note:

It is necessary to have installed .Net Framework 4.



Figure 2: Main window for SW67577

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 DP Master from/to CAN" 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 CAN.

By pressing the **"Set Communication"** button from the main window for SW67577 (Fig. 2) the window "Set Communication" appears (Fig. 3).

The window is divided in three sections, one for the PROFIBUS , one for CAN and the other for the Ethernet (used for the programmation).

The means of the fields for "PROFIBUS" are:

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

The means of the fields for "CAN" are:

- In the **"Baud rate"** field the CAN baudrate is defined.

The means of the fields for "Ethernet (Program Port)" are:

- In the **"IP ADDRESS"** field insert the IP Address that you want to assign to the device;
- In the **"SUBNET Mask"** field insert the Subnet Mask of the network where the device is put.

The screenshot shows a dialog box titled "SET COMMUNICATION". It is divided into three sections. The first section, "PROFIBUS", contains a text field for "ID Dev." with the value "20" and a dropdown menu for "Baudrate" set to "6.0M". The second section, "CAN", contains a dropdown menu for "Baudrate" set to "1000K". The third section, "Ethernet (Program Port)", contains two rows of four text fields each. The first row is labeled "IP ADDRESS" and contains the values "192", ".168", ".0", and ".5". The second row is labeled "SUBNET Mask" and contains the values "255", ".255", ".255", and ".0". At the bottom of the dialog, there are two buttons: "OK" with a green checkmark icon and "Cancel" with a red X icon.

Figure 3: "Set Communication" window

PROFIBUS NETWORK:

By pressing the **"PROFIBUS Network"** button from the main window for SW67577 (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;

- If the field **"Use modules configuration readed from device"** is checked the HD67577-A1 uses the configuration inside the slave device and not the one loaded with the .gsd file.

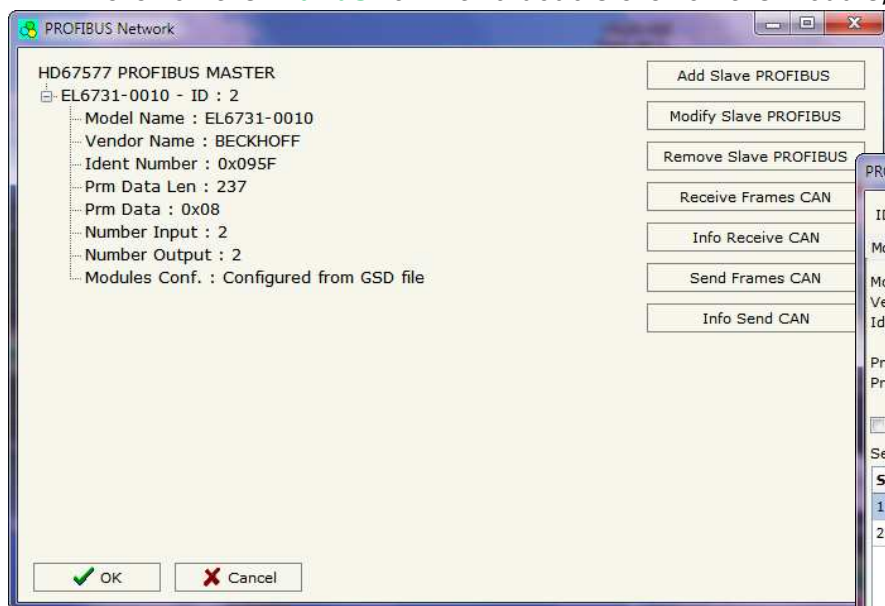


Figure 4: "PROFIBUS Network" window

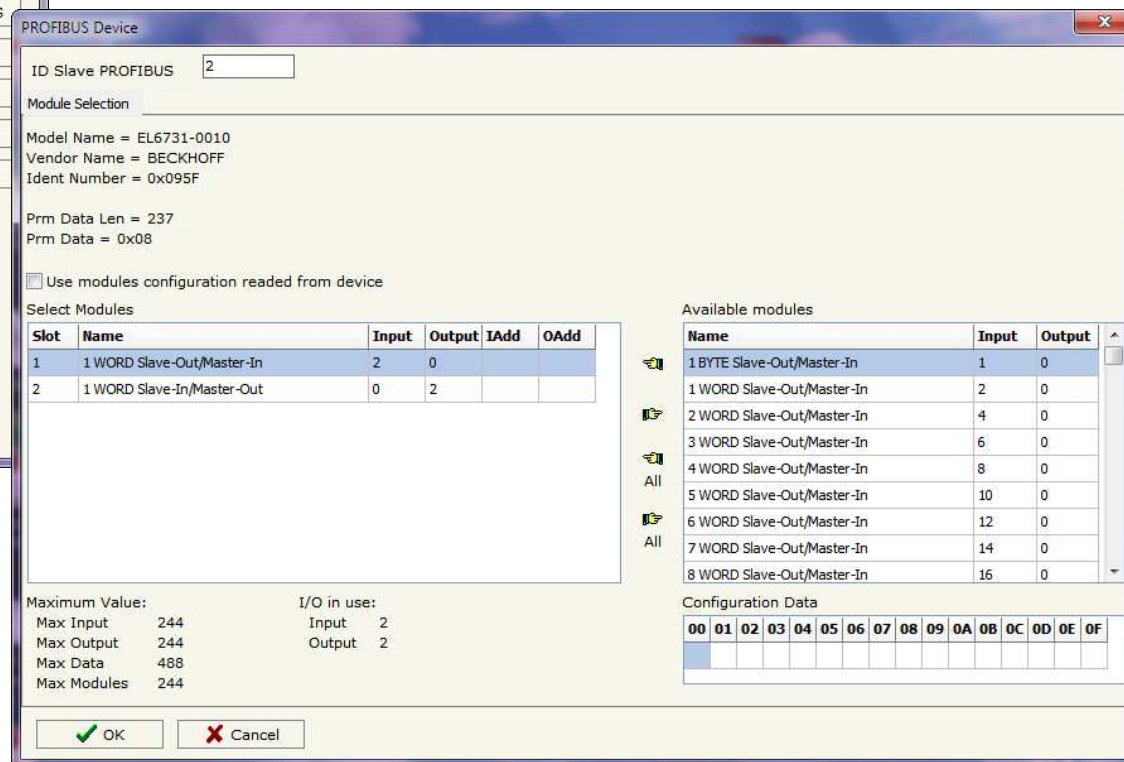


Figure 5: "PROFIBUS Device" window

RECEIVE FRAMES CAN:

By pressing the "Receive Frames CAN" button from the "PROFIBUS Network" window (Fig. 4) the "Receive Frames" window appears (Fig. 6).

Note:

The COB inserted in this table contains the Output data of PROFIBUS. These frames are accepted by the gateway.

The data of the columns have the following meanings:

- In the field "Cob-ID" insert the COB of the CAN frame;
- In the field "Type" you can select the type of CAN frame (2.0A (11Bits) or 2.0B (29Bits));
- In the field "Dimension" insert the number of byte of the COB (from 1 to 8);
- In the field "TimeOut" insert the number of milliseconds that the HD67577 waits before cancel the data of that Cob-ID if the frame don't arrives every xx ms. If the value is 0, means that you don't want to cancel the data if the frame don't arrives;
- In the field "Mnemonic" it is possible to insert a brief description.

N°	Cob-ID	Type	Dimension	TimeOut	Mnemonic
1	0x123	2.0A (11 bits)	2	10000	
2					
3					
4					
5					
6					
7					
8					
9					

Figure 6: "Receive Frames" window

INFO RECEIVE CAN:

By pressing the “**Info Receive CAN**” button from the “PROFIBUS Network” window (Fig. 4) the “Receive Frames Info” window appears (Fig. 7):

- In the “**COB ID**” field there are the COB ID that you have inserts in the “Receive Frames CAN” section;
- In the “**Bytes**” field select the correspondence of the byte in PROFIBUS that contains the CAN byte information.

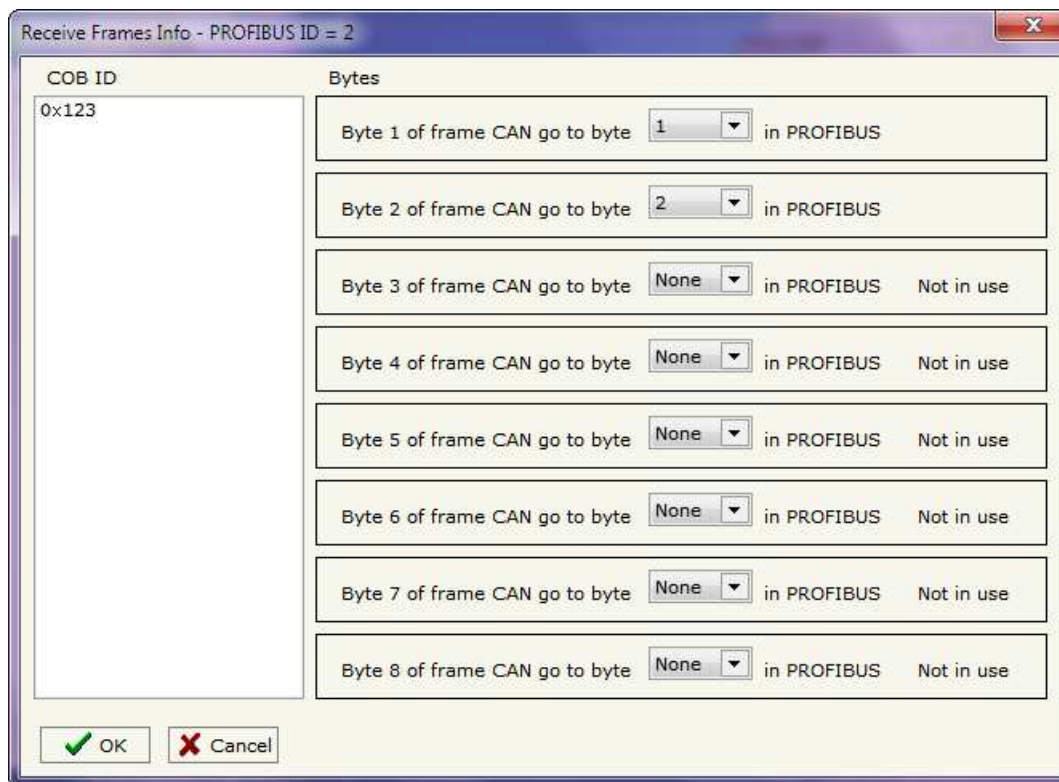


Figure 7: “Receive Frames Info” window

SEND FRAMES CAN:

By pressing the **Send Frames CAN** button from the "PROFIBUS Network" window (Fig. 4) the "Send frames" window appears (Fig. 8).



Note:

The COB inserted in this table contains the Input data of PROFIBUS. These frames are sent by the gateway.

The data of the columns have the following meanings:

- In the field **Cob-ID** insert the COB of the CAN frame;
- In the field **Type** you can select the type of CAN frame (2.0A (11Bits) or 2.0B (29Bits));
- In the field **Dimension** insert the number of byte of the COB (from 1 to 8);
- In the field **Send Frame Type** you can select when send the frame, or when a data is changed (by selecting 'On Data Change'), or Ciclically (by selecting 'On Timer');
- In the field **Timer Send** insert the number of milliseconds used for the "Send Frame Type" → 'On Timer'. Every "Timer Send" milliseconds the frame is sent;
- In the field **Mnemonic** it is possible to insert a brief description.

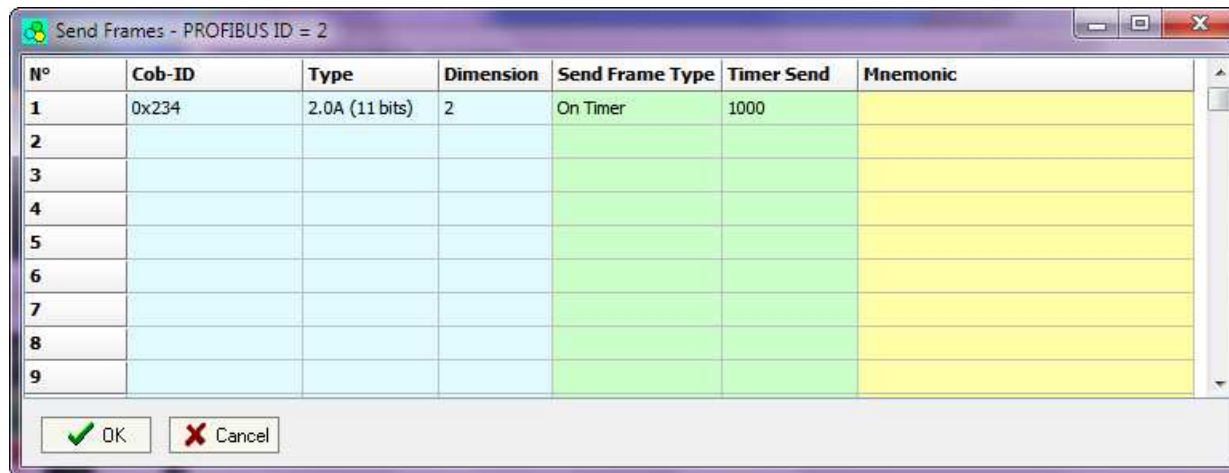


Figure 8: "Send Frames" window

INFO SEND CAN:

By pressing the “**Info Send Frames**” button from the “PROFIBUS Network” window (Fig. 4) the “Send Frames Info” window appears (Fig. 9):

- In the “**COB ID**” field there are the COB ID that you have inserts in the “Send Frames CAN” section;
- In the field “**Bytes**” select the correspondence of the byte of PROFIBUS that you want to put in the byte of CAN frame.

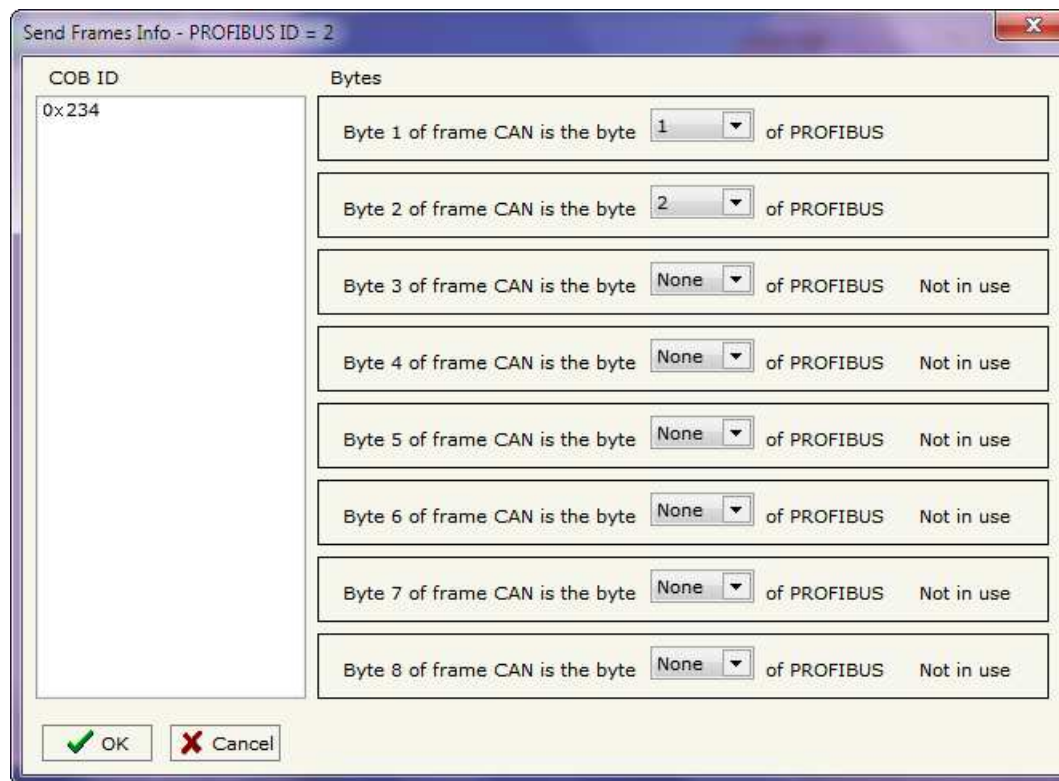


Figure 9: “Send Frames Info” window

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:

- 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.

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

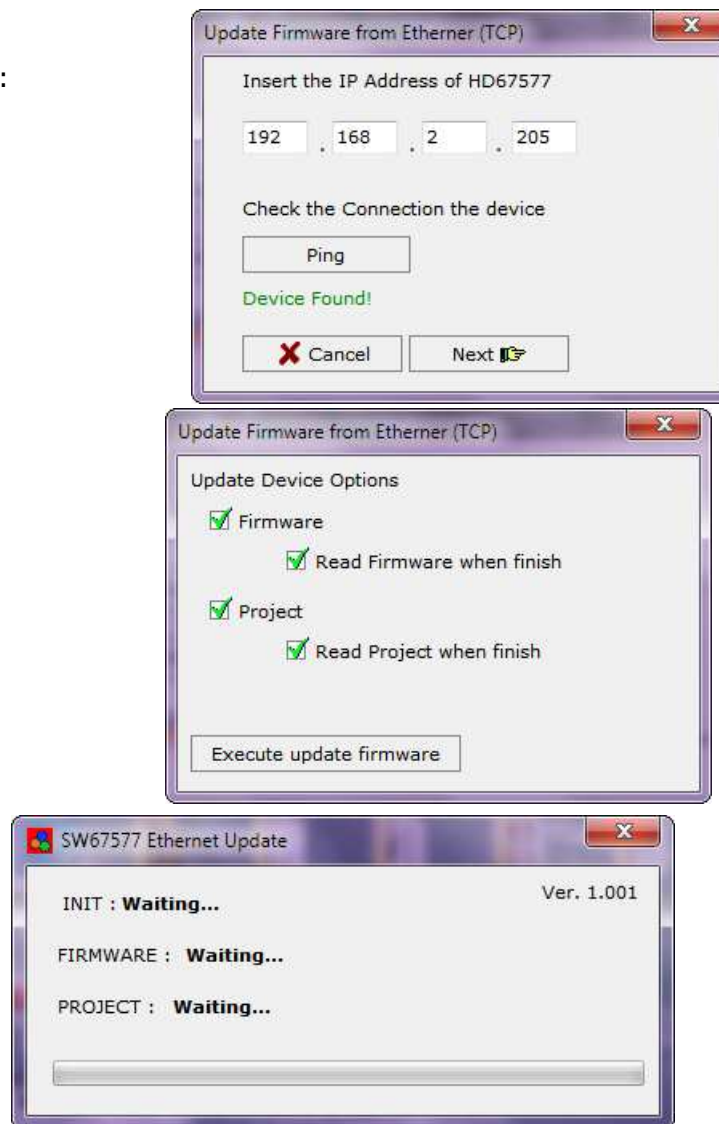
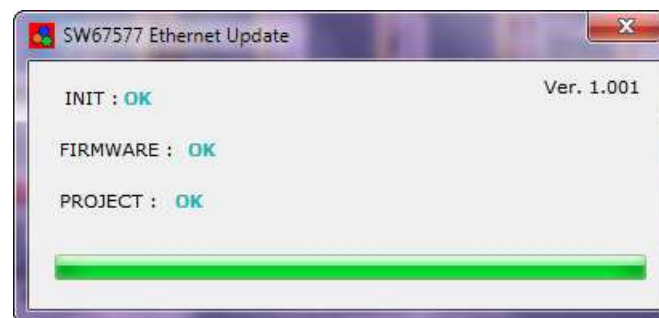


Figure 10: "Update Device" windows

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 (the one that you have given in Set Communication last time);
- 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.



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 HD67577-A1 device.



Warning:

If the Fig. 11 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 11: "Protection"



In the case of HD67577-A1 you have to use the software "SW67577": www.adfweb.com/download/filefold/SW67577.zip.

MECHANICAL DIMENSIONS:

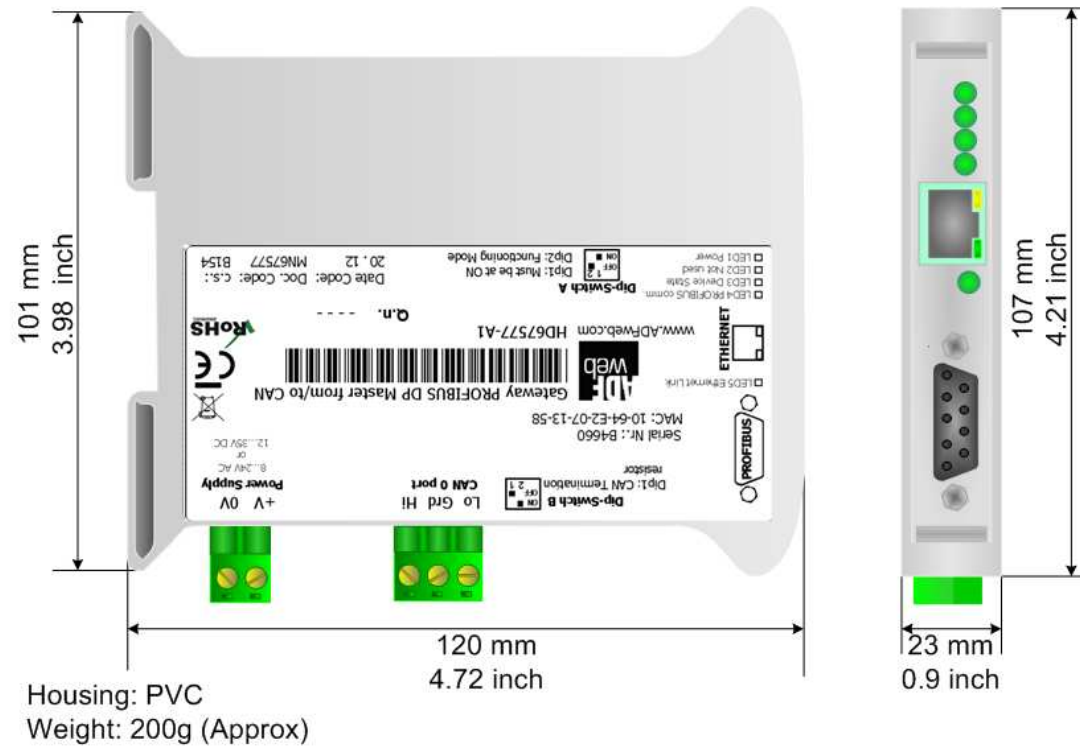


Figure 12: Mechanical dimensions scheme

ORDER CODE:

Order Code: **HD67577-A1** - Gateway –PROFIBUS DP Master from/to CAN

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

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
HD67181	CAN bus Repeater	www.adfweb.com?product=HD67181
HD67316	CAN bus Analyzer	www.adfweb.com?product=HD67316