User Manual

Revision 2.002
English

Gateway / Bridge
CAN to Ethernet
to connect a Modbus TCP Client

(Order Code: HD67015)

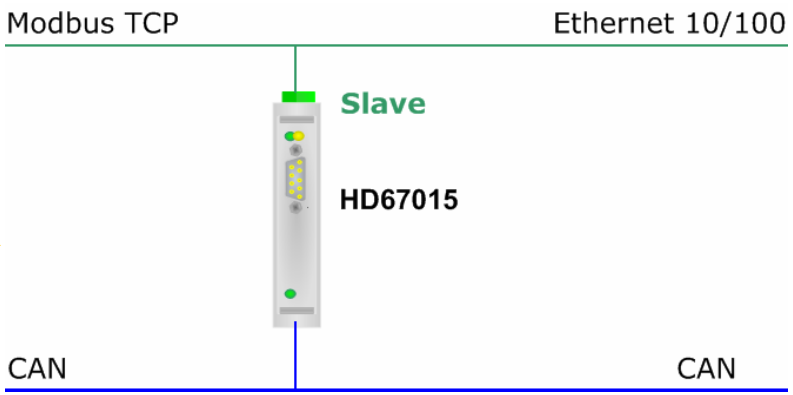
for Website information:
www.adfweb.com?Product=HD67015

for Price information:
www.adfweb.com?Price=HD67015

Benefits and Main Features:

- Very easy to configure
- Low cost
- Rail mountable
- Wide supply input range
- Galvanic isolation
- Industrial temperature range:
  -30°C / 70°C (-22°F / 158°F)

Logical Scheme



Similiar Products

For other 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=HD67004	(Modbus TCP Server)
www.adfweb.com?Product=HD67505	(Modbus TCP Client)

CAN to Modbus

See also the following links:

www.adfweb.com?Product=HD67011	(Modbus RTU Master)
www.adfweb.com?Product=HD67012	(Modbus RTU Slave)
www.adfweb.com?Product=HD67014	(Modbus TCP Client)
www.adfweb.com?Product=HD67515	(Modbus TCP Server)

CAN to Ethernet

See also the following links:

www.adfweb.com?Product=HD67513	(Ethernet)

Benefit

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	22/06/2007	Av	All	Revision
1.002	26/06/2007	Av	All	Revision
2.000	10/07/2007	Av	All	New document format
2.001			All	Change figure 2
2.002	29/06/2009	Ml	All	Revision

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

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CHARACTERISTICS:

The CAN bus Modbus TCP Server Gateway allows the following characteristics:

- two-directional information between networks CAN and Modbus;
- electrical isolation between two Buses;
- to read CAN frame from Modbus word;
- to write CAN frame from Modbus word;
- Temperature range -30°C to 70°C.

To configure the Gateway, use the available software that runs with Windows, called SW67015. It is downloadable on the site www.adfweb.com and its operation is described in this document.

The Gateway can be configured up to a maximum 250 CAN frame in reading and 250 CAN frame in writing.

CONNECTION SCHEME:

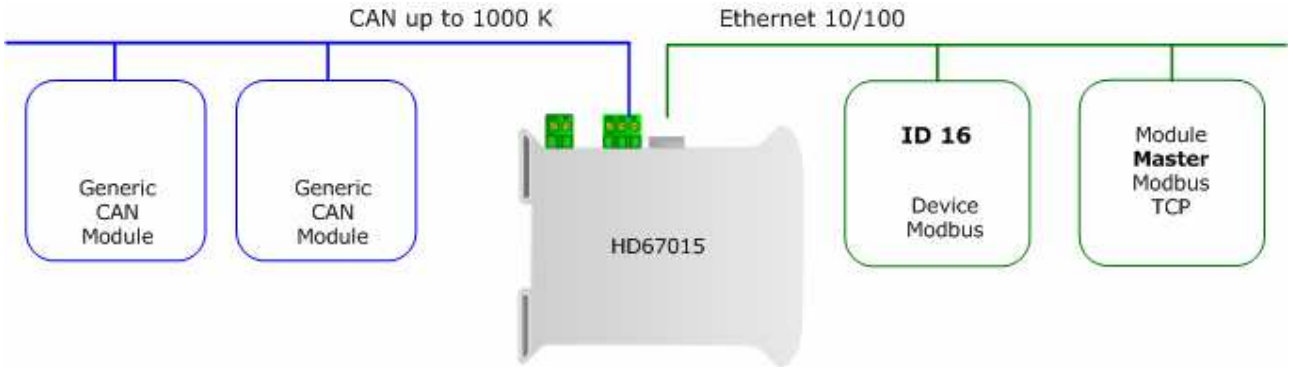

Figure 1: Connection scheme of HD67015 between a CAN bus and Modbus TCP

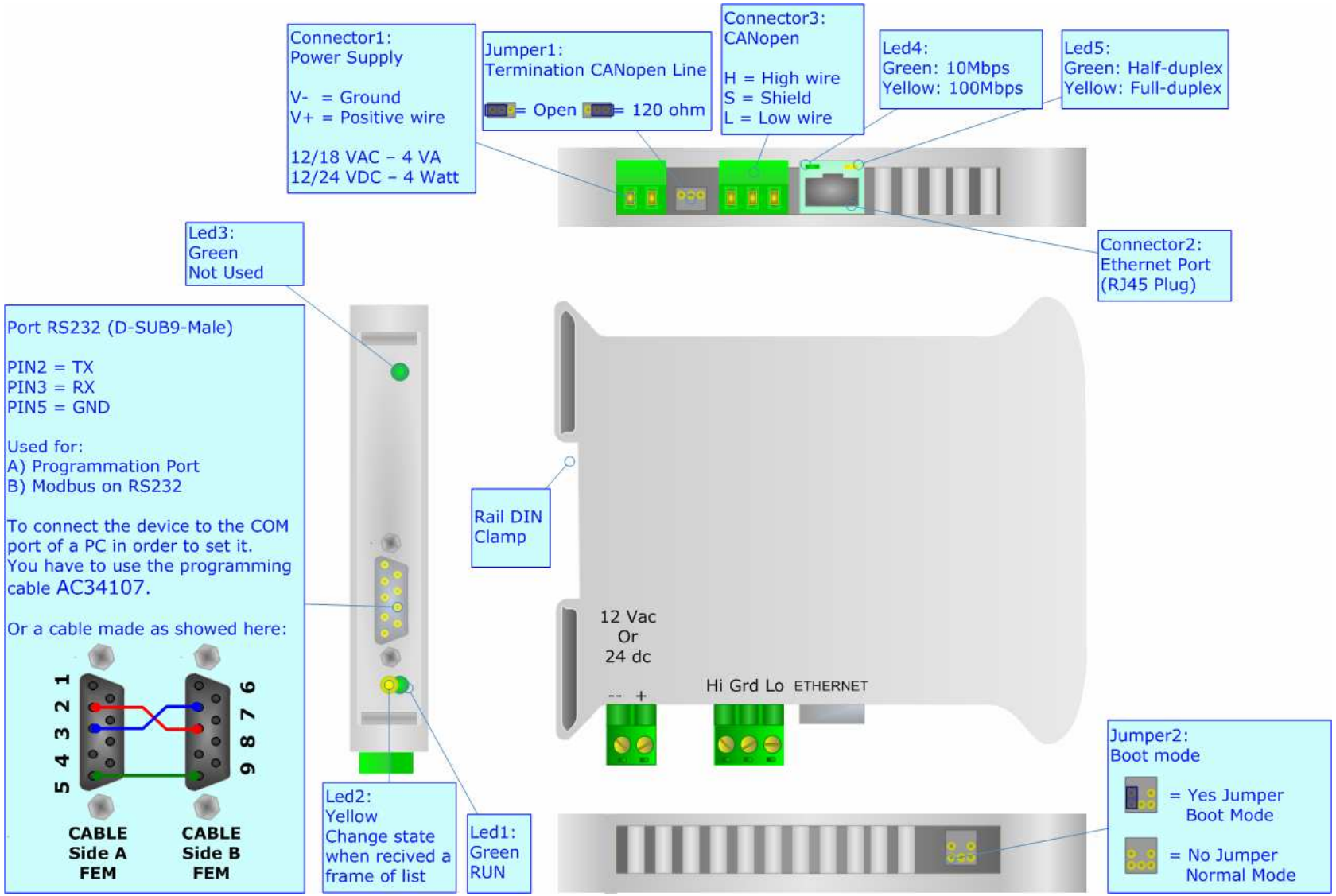

Figure 2: Connection scheme for HD67015

CONFIGURATION:

The "Gateway CANbus to Modbus" allows a CAN network to communicate with a Modbus network.

You need Compositor SW67015 software on your PC in order to perform the following:

- Define that the CAN frame is reading from the Modbus;
- Define that the CAN frame is writing from the Modbus.

USE OF COMPOSITOR SW67015:

When launching the SW67015 the following window appears
(The SW67015 is downloadable on the site http://www.adfweb.com/home/download/download.asp
This manual is referenced to the last version of the software present on our web site).

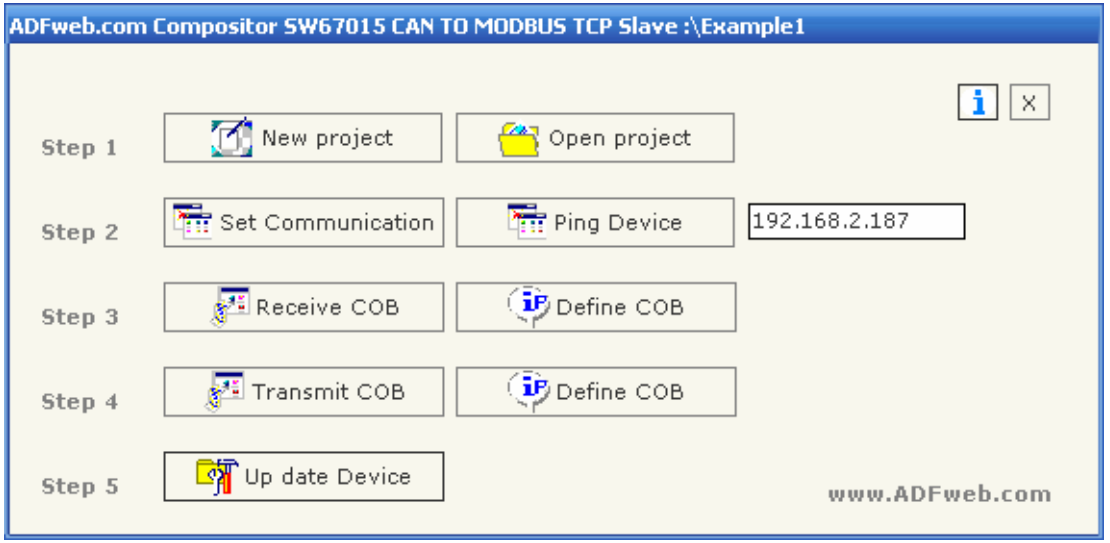

Figure 3: Main window for SW67015

The following explains the function of the buttons:

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 to Modbus 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".

When a new project is created or an existent project is open, it will be possible to access the various configuration section of the software:

- **Set Communication**
- **Recive COB**
    - Otherwise the **Define COB**
- **Transmit COB**
    - Otherwise the **Define COB**

SET COMMUNICATION:

This section defines the fundamental communication parameters of two Buses, CAN Bus and Modbus.

By pressing the "Set Communication" button from the main window for SW67015 (Fig.3) the window "Set communication" appears (Fig. 4):

- In the field "Baud rate" the velocity of the CAN is defined;
- Select the type of CAN (CAN Bus 2.0A CobID 11bit or CAN Bus 2.0B CobID 29bit);
- In the field "IP" insert the IP address that you want to give to slave Modbus;
- In the field "SubNet Mask" insert the SubNet Mask;
- In the field "Port" insert the number of port.

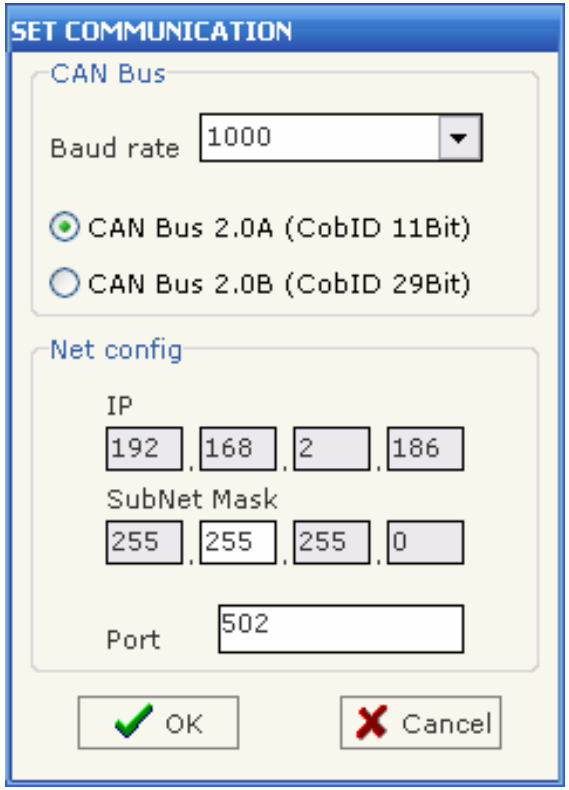

Figure 4: "Set communication" window

RECEIVE COB:

By pressing the "Receive COB" button from the main window for SW67015 (Fig.3) the window "Receive CAN Frame" appears (Fig. 5).

A user who has to read a CANbus frame from CANbus to Modbus needs to insert the coordinates of the CANbus frame in order to be transmitted in the field "Receive COB" of the window.

- In the field "CobID" insert the Cob_ID of the CAN frame;
- In the field "Dimension" insert the number of bytes of the CAN frame (the maximum dimension is 8 Bytes);
- In the field "Mnemonic" you can insert a brief description.

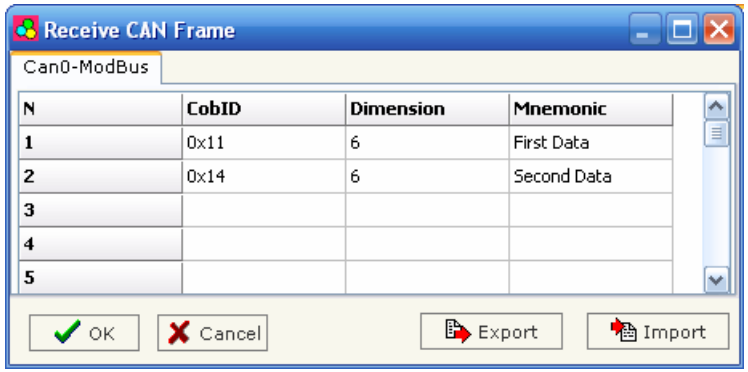

Figure 5: "Receive CAN Frame" window

DEFINE COB:

By pressing the "Define COB" button from the main window for SW67015 (Fig.3) the window "Receive CAN Frame Info" appears (Fig. 6).

- In the field "COB-ID Frame" there are the COB-ID that you insert in the list;
- In the field "MODBUS" there are the Modbus words (the maximum of words is 4;
- In the field "Index MODBUS" there is the address that contain the Modbus word;
- In the field "Selecet Frame Byte" you select the position of the byte.

For example:

Click on the "COB-ID Frame", insert the valid address in the field "Index MODBUS", select the byte position (B1 in "High MODBUS Byte" and B2 in "Low MODBUS Byte"), click the "New" button, then in the field "MODBUS" the names of Modbus words appear (The first word is name IND MB 0, the second IND MB 1, the third Ind MB 2, the fourth Ind MB 3).

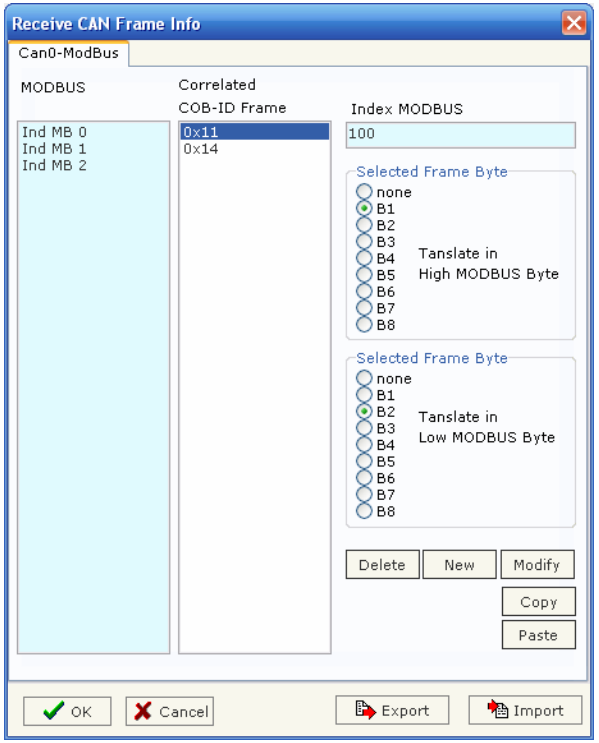

Figure 6: "Receive CAN Frame Info" window

TRANSMIT COB:

By pressing the "Transmit COB" button from the main window for SW67015 (Fig. 3) the window "Transmit CAN Frame" appears (Fig. 7).

A user who has to write a CANbus frame from Modbus to CANbus needs to insert the coordinates of the CANbus frame in order to be transmitted in the field "Trasmit COB" of the window.

- In the field "CobID" insert the Cob_ID of the CANbus frame
- In the field "Dimension" insert the number of bytes of the CANbus frame (the maximum dimension is 8 Bytes);
- In the field "Mnemonic" you can insert a brief description.

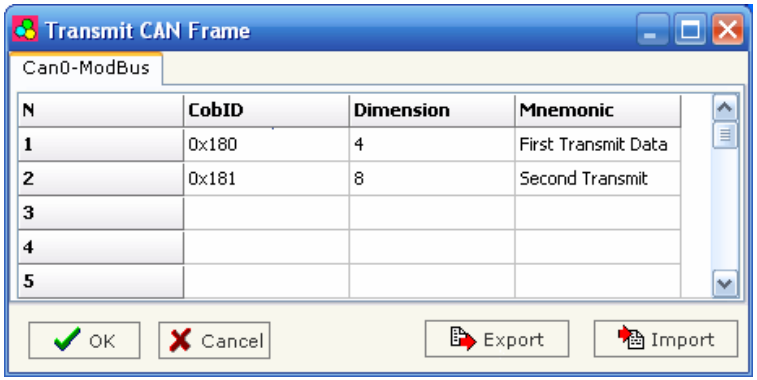

Figure 7: "Transmit CAN Frame" window

DEFINE COB:

By pressing the "Define COB" button from the main window for SW67015 (Fig. 3) the window "Transmit CAN Frame Info" appears (Fig. 8).

- In the field "COB-ID Frame" there are the COB-ID that you insert in the list;
- In the field "MODBUS" there are the Modbus words (the maximum of words is 4);
- In the field "Index MODBUS" there is the address that contain the Modbus word;
- In the field "Selecet Frame Byte" you select the position of the byte.

For example:

Click on the "COB-ID Frame", insert the valid address in the field "Index MODBUS", select the byte position (B1 in "High MODBUS Byte" and B2 in "Low MODBUS Byte"), click the "New" button, then in the field "MODBUS" the names of Modbus words appear (The first word is name IND MB 0, the second IND MB 1, the third Ind MB 2, the fourth Ind MB 3).

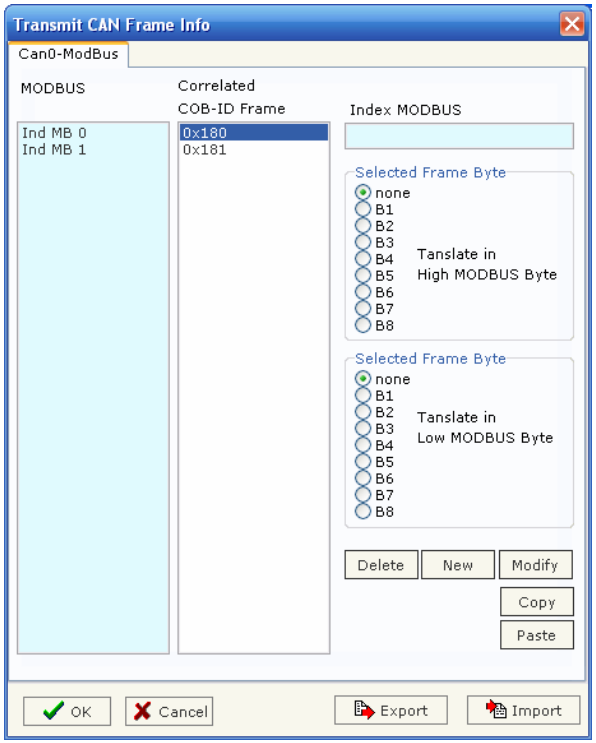

Figure 8: "Transmit CAN Frame Info" window

UPDATE DEVICE:

Section "Update Device":
Insert the boot jumper (see Figure 2).
In order to load the parameters after they are set, set the Com port you used for update, then you must click the button "Execute update firmware" in the principal window.

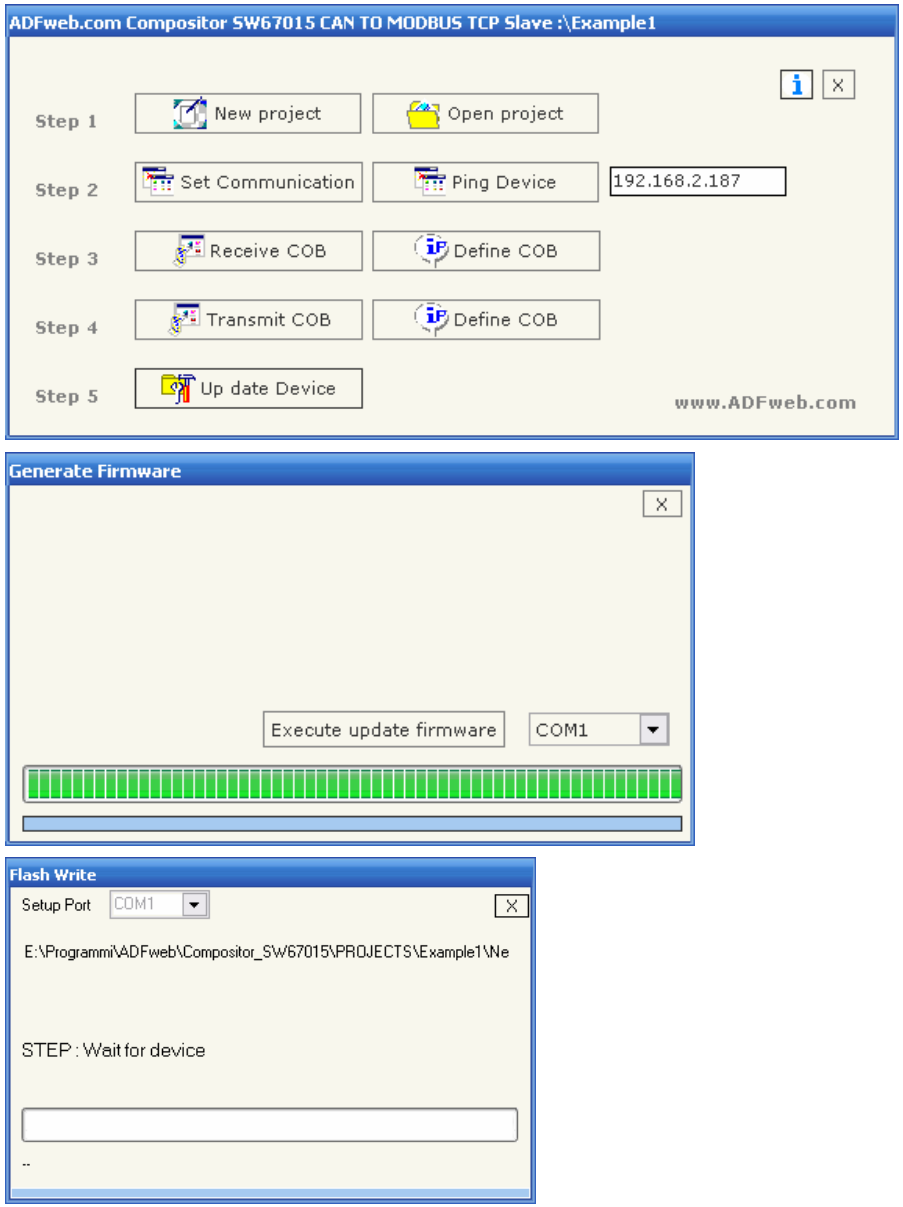

Figure 9: Update device procedure

CHARACTERISTICS OF THE CABLES:

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 RS232 Cable not exceed 15 meters.

The connection at Ethernet socket must be with a Ethernet Cable with a RJ45 Plug.

Can bus 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

MECHANICAL DIMENSIONS:

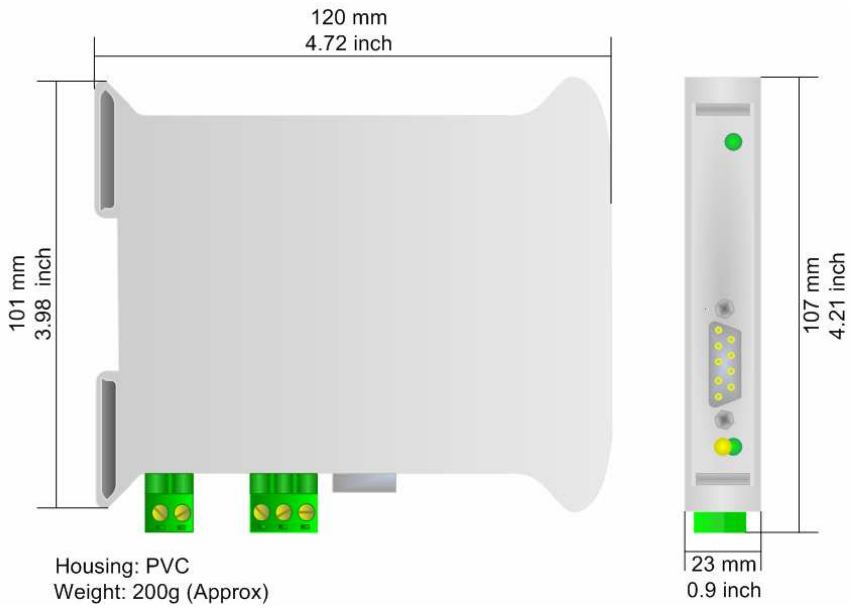

Figure 10: Mechanical dimensions scheme

ORDER CODE:

Order Code: **HD67015** - Gateway – CAN to Modbus TCP Server (to connect a Modbus TCP Client)

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

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
HD67117	CAN bus Repeater	www.adfweb.com?Product=HD67117
HD67216	CAN bus Analyzer	www.adfweb.com?Product=HD67216