User Manual

Revision 1.100
English

CANopen / Modbus Slave - Converter

(Order Code: HD67502-A1)

For Website information:
www.adfweb.com?Product=HD67502

For Price information:
www.adfweb.com?Price=HD67502

Benefits and Main Features:

- Slave Modbus
- Galvanic isolation
- Temperature range: -40°C/+85°C (-40°F/+185°F)

For others Gateways / Bridges:
CANopen to Modbus
See also the following links:
www.adfweb.com?Product=HD67001 (Modbus RTU Master)
www.adfweb.com?Product=HD67004 (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=HD67014 (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

User manual

INDEX:

UPDATED DOCUMENTATION:

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- Updated
- Related to the product you own

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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.

REVISION LIST:

Revision	Date	Author	Chapter	Description
1.001	02/07/2009	Ml Dp	All	Revision
1.002	07/02/2013	Nt	All	Added new chapters
1.100	23/07/2025	Mdb	All	New design

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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

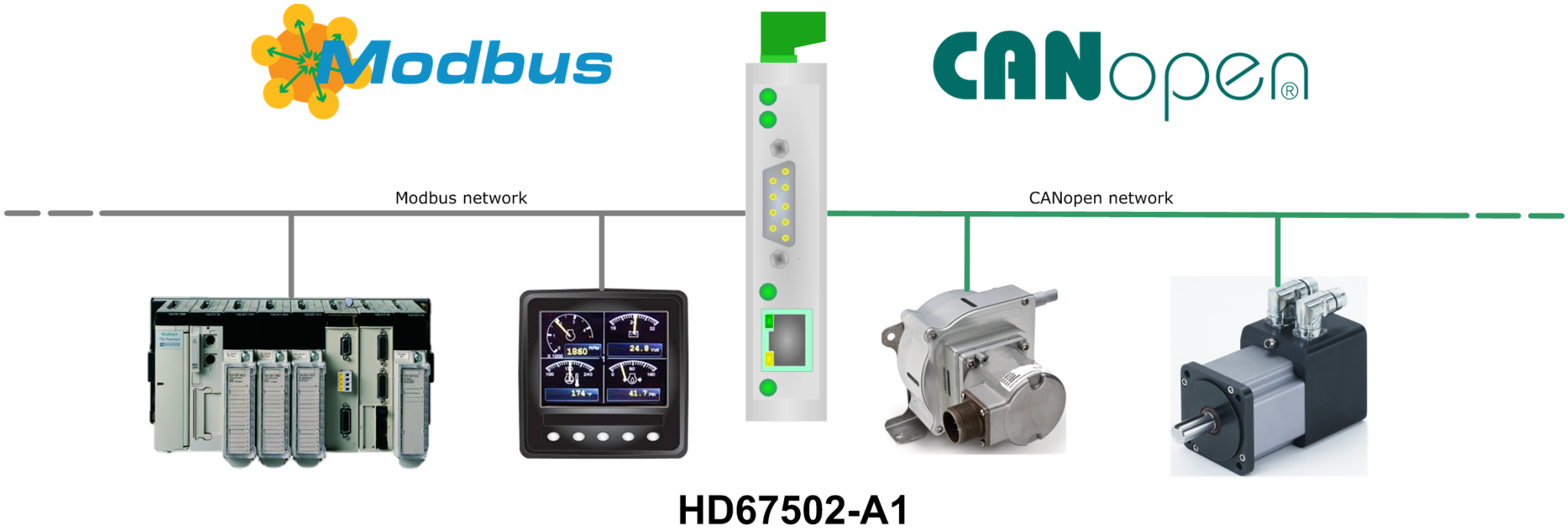
The device is state of the art and is safe. The instrument can represent a potential hazard if they are inappropriately installed and operated by personnel untrained. These instructions refer to residual risks with the following symbol:

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 or give us a call if you need it.

EXAMPLE OF CONNECTION:



CONNECTION SCHEME:

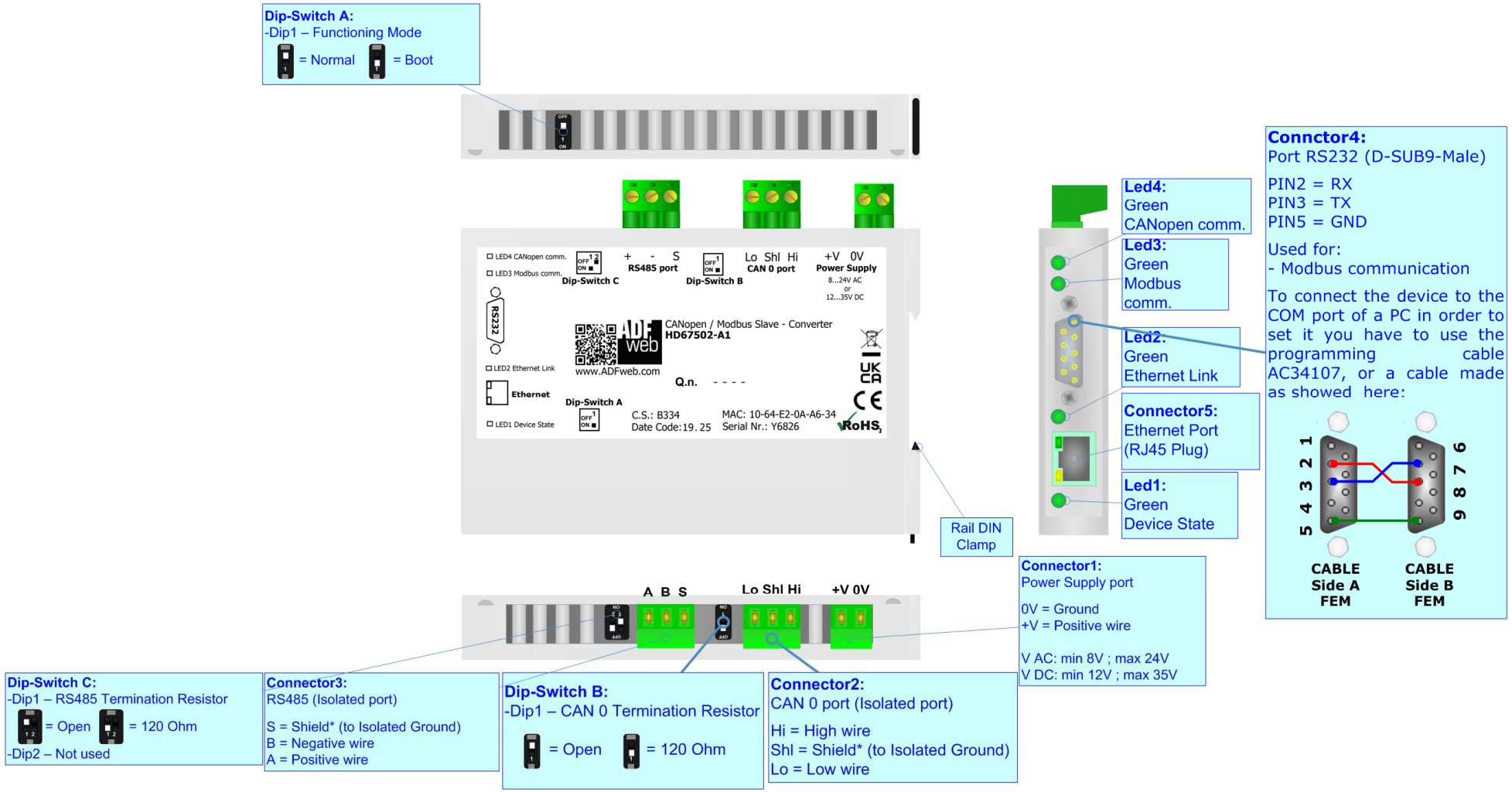


Figure 1: Connection scheme for HD67502-A1

CHARACTERISTICS:

The HD67502-A1 is a CANopen / Modbus Converter.

It has the following characteristics:

- two-directional information between networks CANopen and Modbus;
- electrical isolation between two BUSes;
- to write SDO from Modbus Word;
- to read SDO from ModBUS Word;
- to read EMCY from Modbus Word;
- to read PDO from ModBUS Word;
- Communication Serial RS232/485 ;
- Mountable on 35mm Rail DIN;
- Wide power supply input range: 8…24V AC or 12…35V DC;
- Wide temperature range: -40°C / +85°C [-40°F / +185°F].

The Gateway can be configured up to a maximum 1500 SDO, 64 RPDO and 32 TPDO.

CONFIGURATION:

You need Compositor SW67502 software on your PC in order to perform the following:

- Define that the SDO of the CANopen are accessible from Modbus;
- Define how to update SDO in CANopen from Modbus;
- Define that the EMCY of the CANopen are accessible from Modbus;
- Define how and which EMCY generated in CANopen can be filtered;
- Define which and how the PDO of CANopen are accessible from Modbus;
- Update the new configurations of the device;
- Save, duplicate, modify, export the configurations.

POWER SUPPLY:

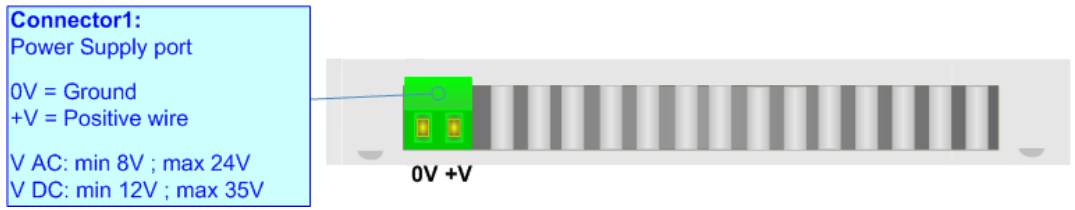
The devices can be powered at 8…24V AC and 12…35V DC. For more details see the two tables below.

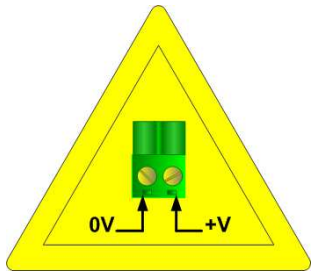
VAC ~		VDC ⎓	
Vmin	**Vmax**	**Vmin**	**Vmax**
8V	**24V**	**12V**	**35V**

Consumption at 24V DC:

Device	Consumption [W/VA]
HD67502-A1	3.5

Caution: Not reverse the polarity power





HD67502-A1

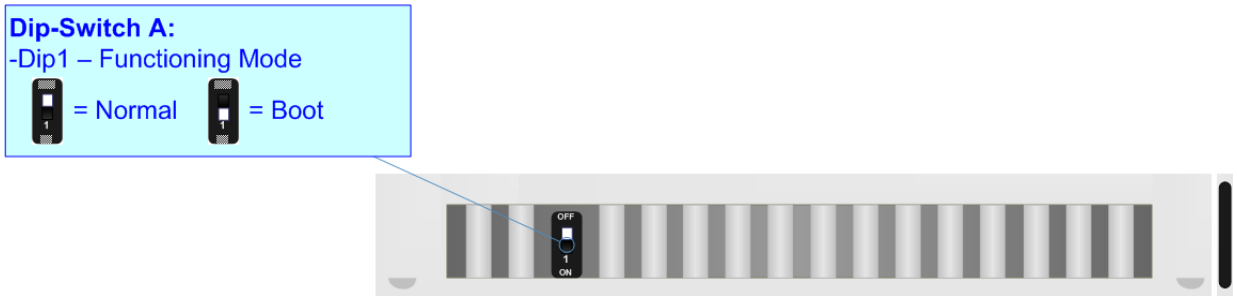
FUNCTION MODES:

The device has got two function modes depending on the position of the 'Dip1 of Dip-Switch A':

- The first, with 'Dip1 of Dip-Switch A' at "OFF" position, is used for the normal working of the device.
- The second, with 'Dip1 of Dip-Switch A' at "ON" position, is used for uploading the Project and/or Firmware.

For the operations to follow for the updating, see 'UPDATE DEVICE' section.

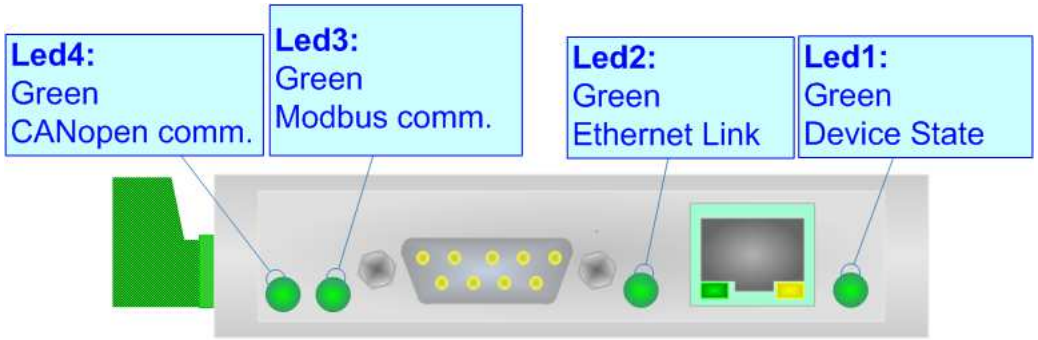
According to the functioning mode, the LEDs will have specific functions, see 'LEDS' section.



LEDS:

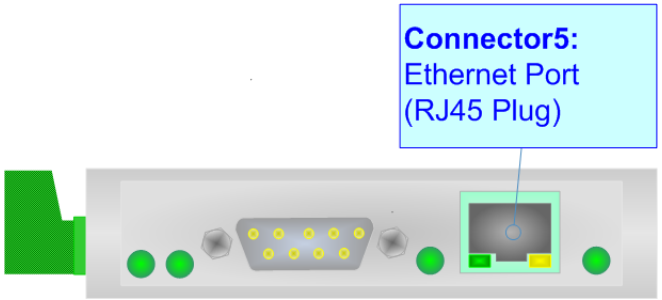
The device has got four LEDs that are used to give information about the functioning status.
The various meanings of the LEDs are described in the table below.

LED	Normal Mode	Boot Mode
1: Device State (green)	Blinks slowly (~1Hz)	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
2: Ethernet link (green)	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected
3: Modbus comm. (green)	It blinks when Modbus communication is running	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
4: CANopen comm. (green)	It blinks when CANopen communication is running	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress



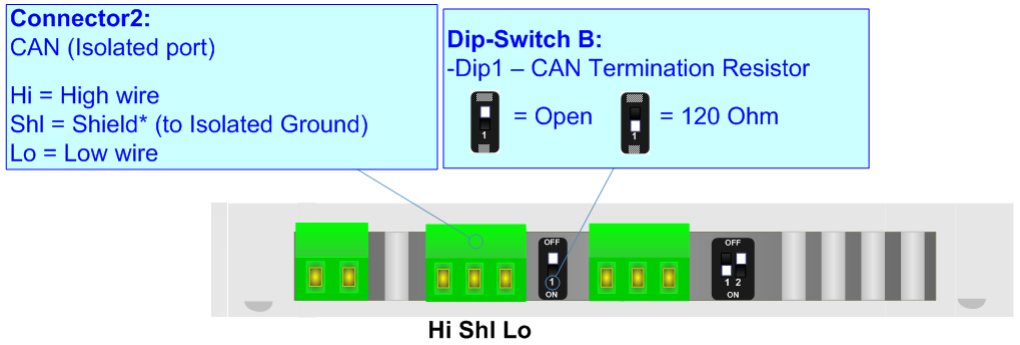
ETHERNET:

The updating of the converter must be made using Connector5 of the HD67502-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 terminating the CAN line with a 120Ω resistor it is necessary that the 'Dip-Switch B' is at ON position.



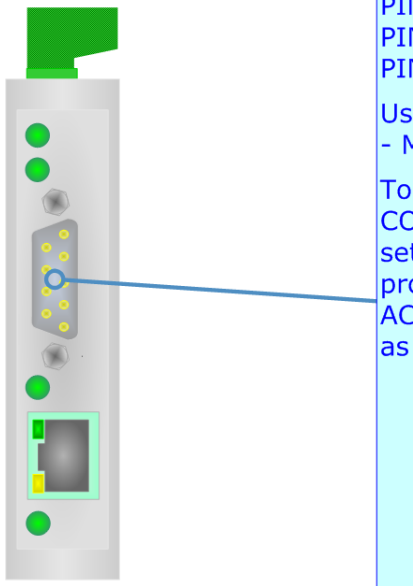
Cable characteristics:

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

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 RS232 cable not exceed 15 meters.

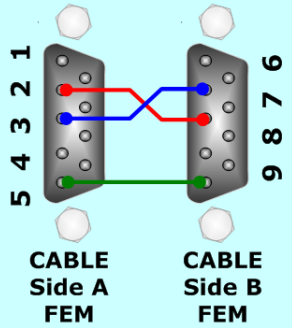


Connctor4:
Port RS232 (D-SUB9-Male)

PIN2 = RX
PIN3 = TX
PIN5 = GND

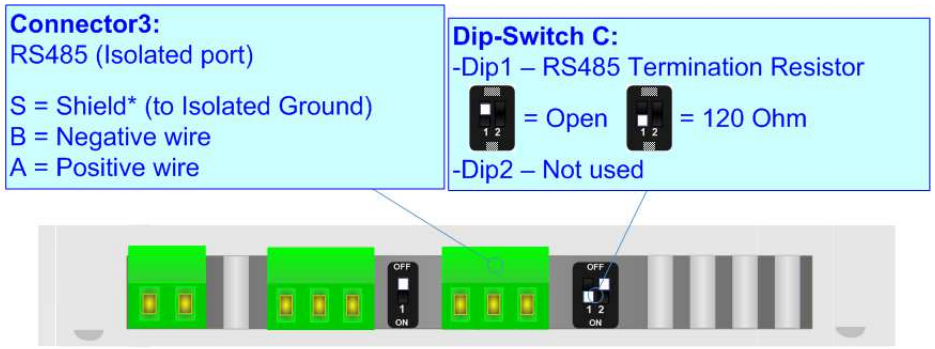
Used for:
- Modbus communication

To connect the device to the COM port of a PC in order to set it you have to use the programming cable AC34107, or a cable made as showed here:



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 SW67502:

To configure the Converter, use the available software that runs with Windows called SW67502. 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 (XP, Vista, Seven, 8, 10 or 11; 32/64bit).

When launching the SW67502, the window below appears (Fig. 2).

Note:
It is necessary to have installed .Net Framework 4.

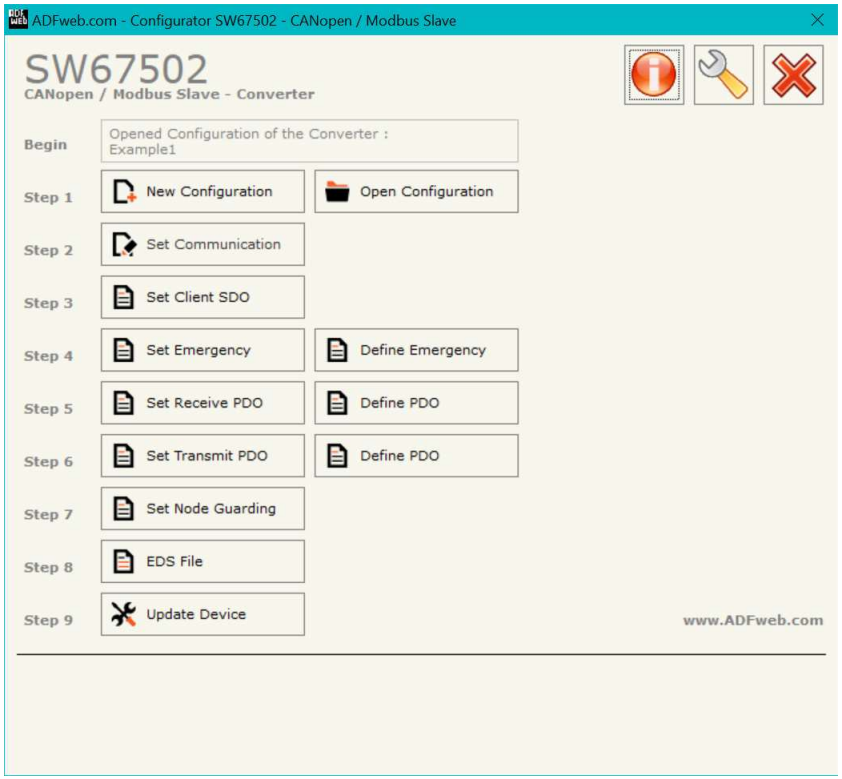
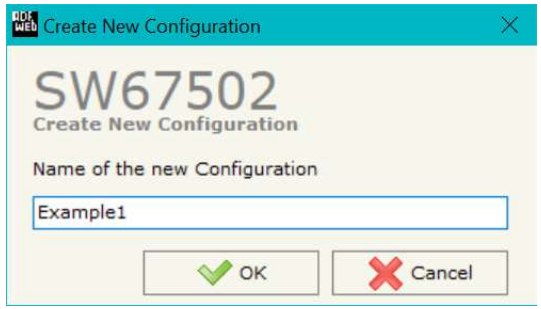


Figure 2: Main window for SW67502

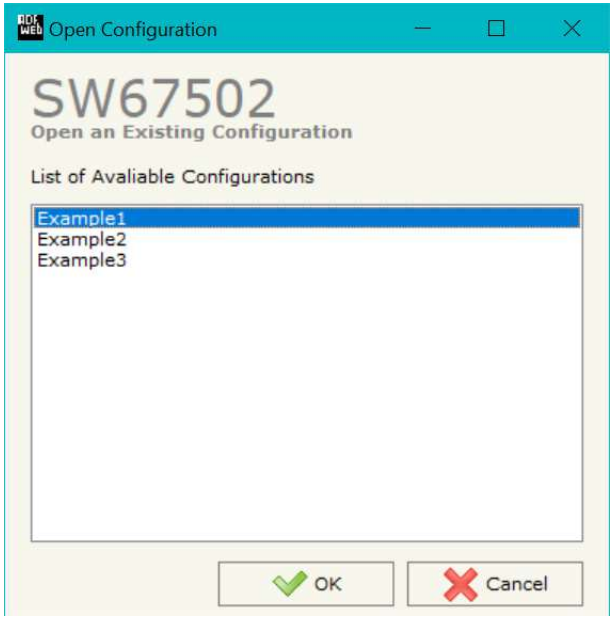
NEW CONFIGURATION / OPEN CONFIGURATION:

The "**New Configuration**" button creates the folder which contains the entire device's configuration.



A device's configuration can also be imported or exported:

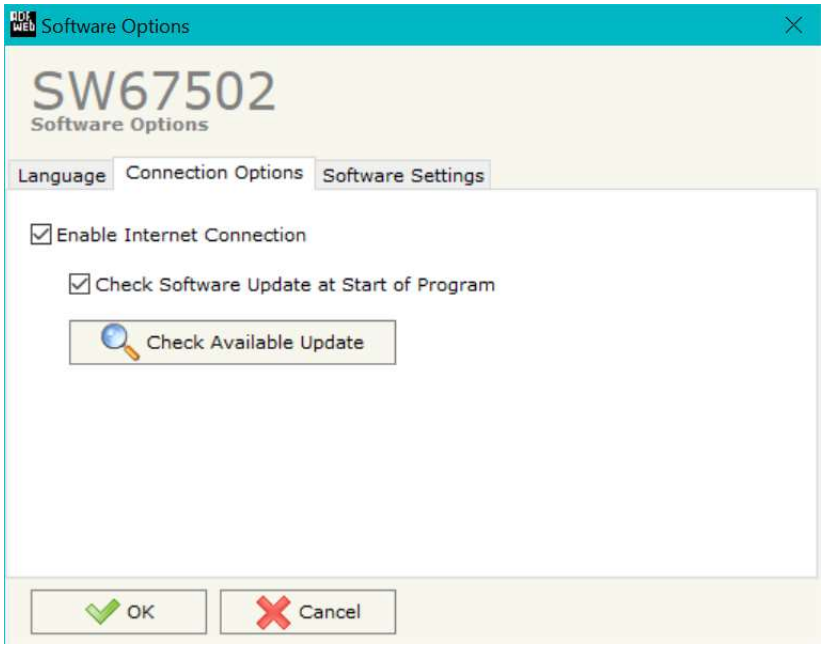
- To clone the configurations of a programmable "CANopen / Modbus Slave - Converter" in order to configure another device in the same manner, it is necessary to maintain the folder and all its contents;
- To clone a project in order to obtain a different version of the project, it is sufficient to duplicate the project folder with another name and open the new folder with the button "**Open Configuration**".



SOFTWARE OPTIONS:

By pressing the "**Settings**" () button there is the possibility to change the language of the software and check the updatings for the compositor.

In the section "Language" it is possible to change the language of the software.



In the section "Connection Options", it is possible to check if there are some updatings of the software compositor in ADFweb.com website.
Checking the option "**Check Software Update at Start of Program**", the SW67502 checks automatically if there are updatings when it is launched.

In the section "Software Settings", it is possible to enable/disable some keyboard's commands for an easier navigation inside the tables contained in the different sections of the software.

SET COMMUNICATION:

This section defines the fundamental communication parameters of two Buses, CANopen and Modbus.
By pressing the "Set Communication" button from the main window for SW67502 (Fig. 3) the window "Set communication" appears (Fig. 4):

In the section "**Select Device**" is possible to select the type of converter used:

- Device Without Ethernet Port;
- Device With Ethernet Port.

The means for the fields for the "**CANopen**" are:

- In the field "**ID Device**" the CANopen ID of the converter is defined;
- In the field "**Baudrate**" the baudrate of the CAN is defined;
- In the field "**Set Operational State at Start-Up**" the state of the CANopen is defined. I.e. If it is checked the board starts in Operational State, else it starts in Pre-Operational;
- In the field "**Network Start at Start-Up**" the state of the CANopen network is defined. I.e. If it is checked the board sends a command to set the Operational State of all the devices present in the network, after the time defined in the "Delay" field;
- In the field "**Delay (s)**" the delay before sending the "Start" command for the CANopen is defined;
- The checkbox "**CANopen Start on Modbus Command**" is used to send the Modbus command (sender word) of Operational/Pre-Operational State to one or to all the devices in CAN network:
  - The sender word must have:
    - The high byte with the value of 1 for Operational or 2 for Pre-Operational;
    - The low byte must have the address of the device that is commanded to do the action (Operational/PreOperational). If you set 0, in this byte, all the devices in network take this command.
      - ❖ Example if you want to set the state of Operational to the device CANopen with address 3, you must write the word "259" in the field "Add. Word Modbus". Note: 259=0x0103;

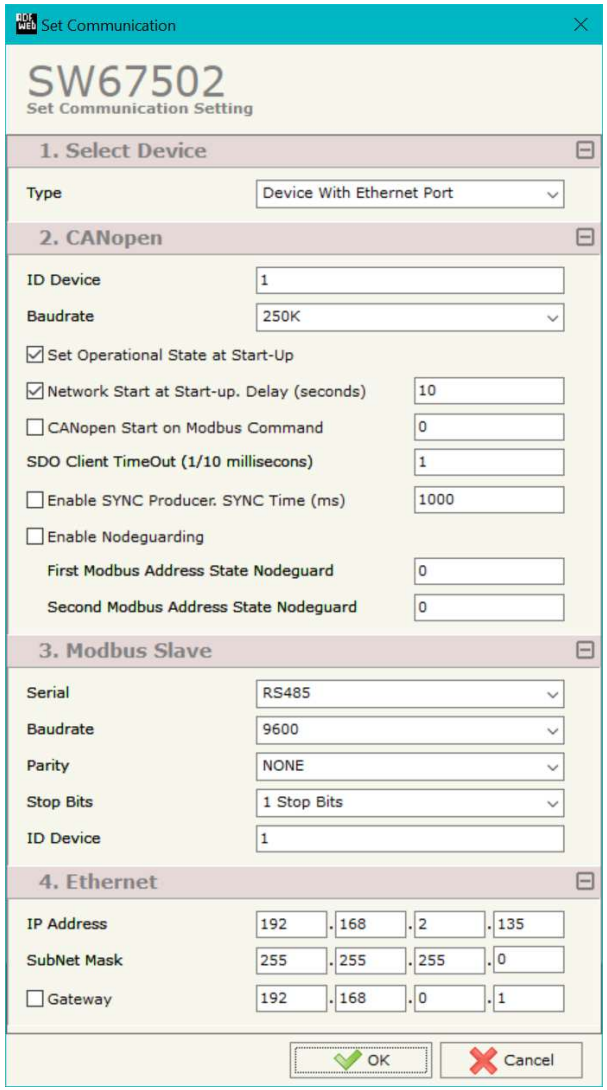


Figure 3: "Set communication" window

- "**SDO Client Timeout (1/10 ms)**" is the is the maximum time that the device attends for the answer from the CANopen Server interrogated;
- In the field "**Enable SYNC Producer**" it is possible to enable the transmission of SYNC message. The delay used for the transmission will be defined in the field "**SYNC Time (ms)**";
- In the field "**Enable NodeGuarding**" it is possible to enable the NodeGuarding function. In the fields "First Modbus Address State Nodeguard" and "Second Modbus Address State Nodeguard" it is possible to indicate the Modbus registers where saving the state of the CANopen device. Every bit represents a CANopen device, if the device is present the bit is equal to '1', otherwise '0'.

The means of the fields for the "Modbus Slave" section are:

- In the field "**Serial**" the serial port to use is defined (RS232 or RS485);
- In the field "**Baudrate**" the baudrate for the serial line is defined;
- In the field "**Parity**" the parity of the serial line is defined;
- In the field "**Stop Bits**" the number of Stop Bits of the serial line is defined;
- In the field "**ID Device**" the ID of Modbus side is defined;

The means for the fields for "Ethernet" are:

- In the field "**IP ADDRESS**", insert the IP address that you want to give to the converter;
- In the field "**SUBNET Mask**" insert the SubNet Mask;
- In the field "**GATEWAY**", insert the default gateway that you want to use. This feature can be enabled or disabled pressing the Check Box field. This feature is used for going out of the net.

SET SDO CLIENT:

By pressing the "**Set Client SDO**" button from the main window for SW67502 (Fig. 2) the window "**SDO Client Access Definition**" appears (Fig. 4).

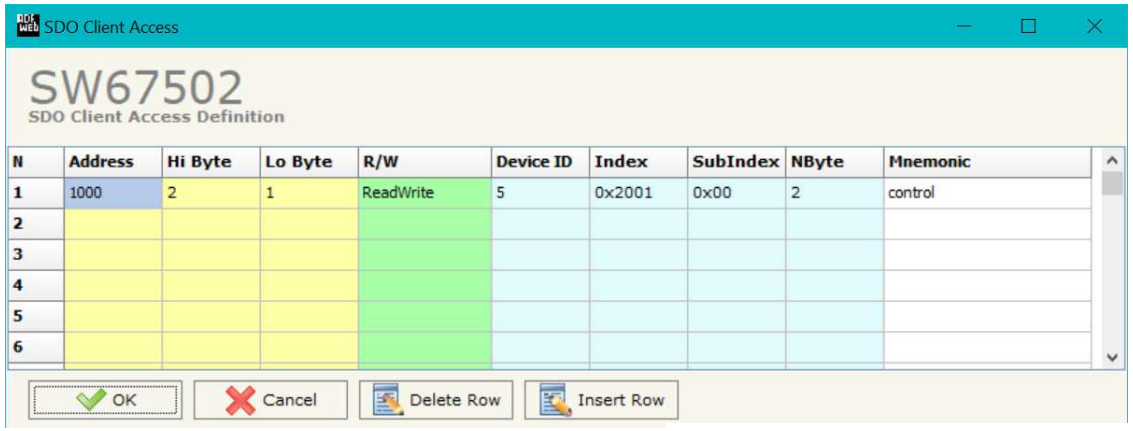


Figure 4: "SDO Client" window

The data of the columns have the following meanings:

- In the field "**Address**" insert the address of the SDO that supports the ModBUS word;
- In the field "**Hi Byte**" insert the correspondence between the high byte of the ModBUS word and a SDO byte
  (note: its number can be 0, 1, 2, 3, 4):
  - 1 = First byte of the SDO;
  - 2 = Second byte of the SDO;
  - 3 = Third byte of the SDO;
  - 4 = Fourth byte of the SDO;
  - 0 = No byte.
- In the field "**Lo Byte**" insert the correspondence between the low byte of the ModBUS word and a SDO byte
  (note: its number can be 0, 1, 2, 3, 4):
  - 1 = First byte of the SDO;
  - 2 = Second byte of the SDO;
  - 3 = Third byte of the SDO;
  - 4 = Fourth byte of the SDO;
  - 0 = No byte.
- In the field "**R/W**" insert number "0" if the SDO is only in reading or insert number "1" if the SDO is also in writing;
- In the field "**Device ID**" insert the address of the CANopen device;
- In the fields "**Index**", "**SubIndex**" insert the coordinates of the SDO in the CANopen;
- The field "**NByte**" indicates the length of the SDO;
- In the field "**Mnemonic**" you can insert a brief description.

Example 1:

If you want to write data in the form of SDO in the CANopen from the ModBUS network on the device at the address:

- Address 16;
- Index 0x2003;
- Subindex 0;
- By dimensions 2 bytes;
  By the following word ModBUS;
- Addr Word 3000.

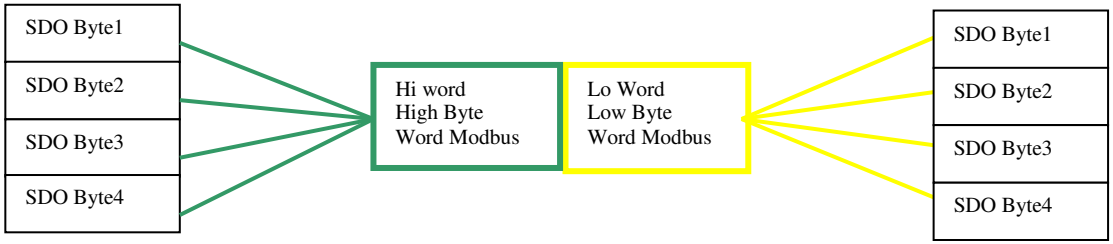


Figure 5: Scheme of the word configuration

In the above scenario (Fig 5):

The Modbus master can read or write (note RW=1):

- to the address of the ModBUS side Gateway slave (note the one specified in the "Set communication");
- to the word ModBUS 3000 (note: Addr word 3000);
- the first byte of the SDO found in the low byte of the ModBUS word (note: Lo Word=1);
- the second byte of the SDO found in high byte of the ModBUS word (note: Hi Word=2).

The SDO:

- two byte dimension (note: nByte=2);
- belonging to a CANopen device ID 16 (note: ID=16);
- of the following coordinates: Index 2003 and Subindex 0.

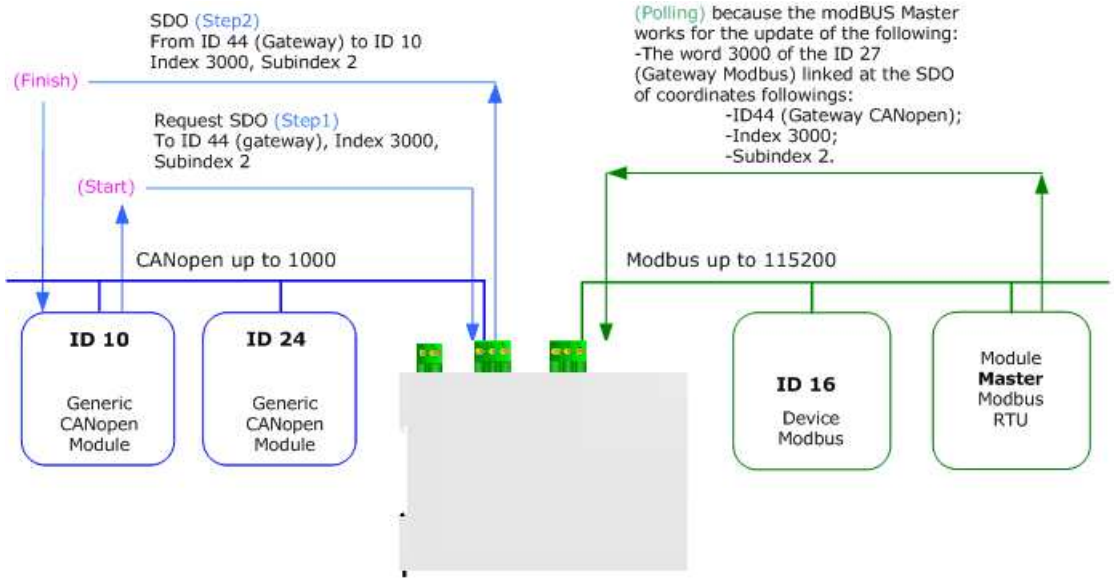


Figure 6: Chart of SDO request from Modbus side

SET EMERGENCY:

By pressing the "**Set EMERGENCY**" button from the Main Window for SW67502 (Fig. 2) the window "Emergency Access Definition" appears (Fig. 7).

A user who has to pass a EMCY from CANopen to Modbus needs to insert the coordinates of the EMCY to be transmitted in the field "Emergency Access" of the window.

- In the field "**Device ID**" insert the Node ID of your CANopen device that transmit the EMCY;
- In the field "**Error Code**" insert the value of your error code (the maximum value is 0xFFFF);
- In the field "**Error Register**" insert the value of your error register (the maximum value is 0xFF);
- In the field "**Mnemonic**" you can insert a brief description.

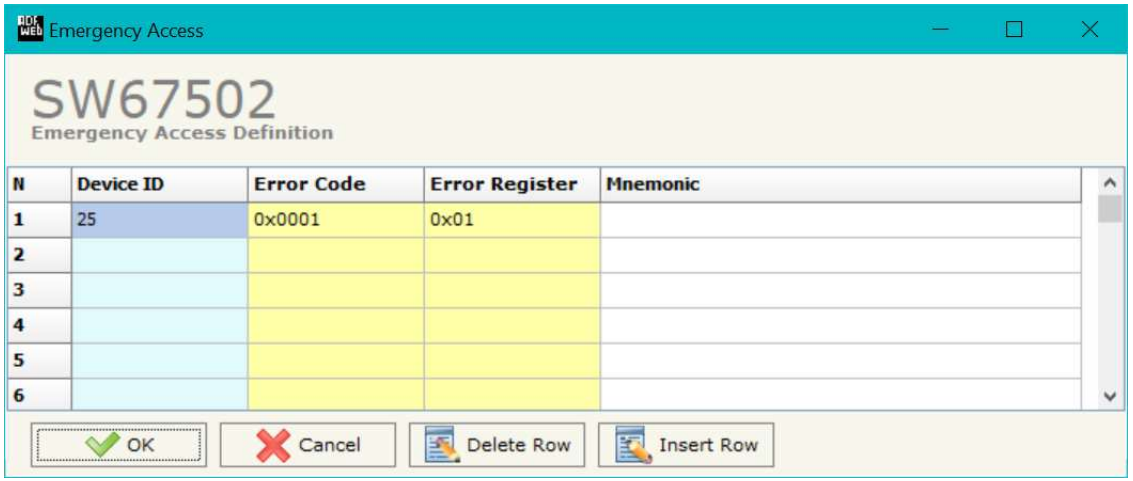


Figure 7: "Set EMERGENCY" window

DEFINE EMERGENCY:

By pressing the "**Define EMERGENCY**" button from the Main Window for SW67502 (Fig. 2) the window "Define Emergency Frames" appears (Fig. 8).

- In the field "**List of Emergency defined**" there are the EMCY that you insert in the list of window "Emergency Access;
- In the field "**List of Modbus Registers**" there are the Modbus registers that you insert;
- In the field "**Index of Modbus register**" insert the number of register that contain the Modbus word;
- In the field "**Hi Byte of Modbus register**" select which byte you would locate in the Hi position;
- In the field "**Lo Byte of Modbus register**" select which byte you would locate in the Lo position.

For example:

Click on the "List of Emergency defined", insert the valid address in the field "Number of Modbus Register", select the byte position (First byte in "Hi byte of Modbus Register" and Second Byte in "Lo byte of Modbus Register"), click the "New" button, then in the field "List of Modbus Register" appears the number of Modbus register.

The maximum number of setting byte is 500.

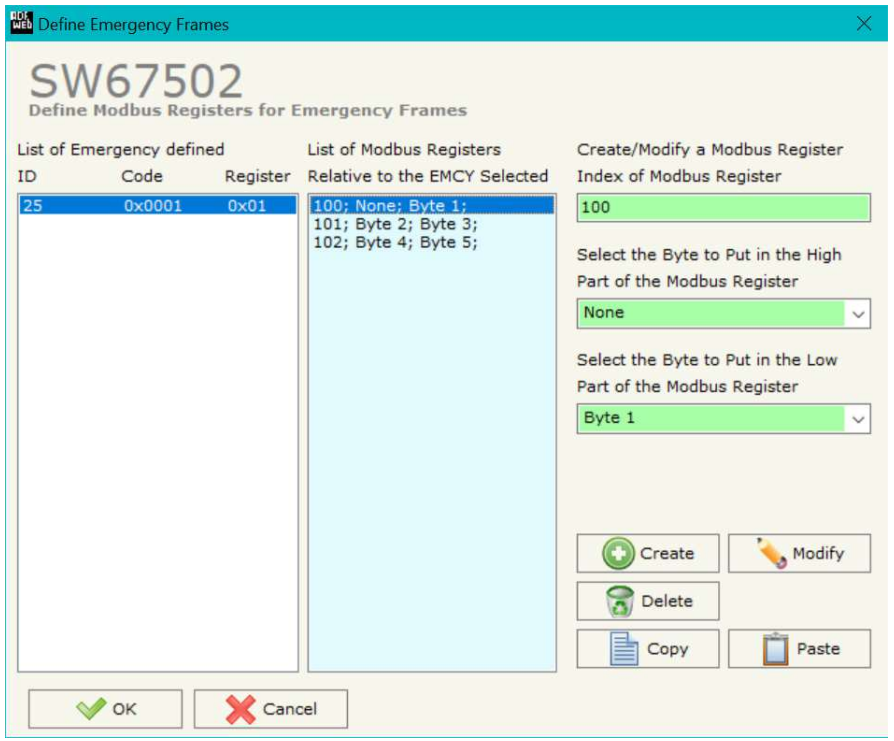


Figure 8: "Define Emergency Frames" window

SET RECEIVE PDO:

By pressing the "**Set Receive PDO**" button from the Main Window for SW67502 (Fig. 2) the window "Receive PDO Access" appears (Fig. 9).

A user who has to memorize a PDO from CAN open to Modbus needs to insert the coordinates of the PDO to be transmitted in the field "Define PDO" of the window.

- In the field "**Cob-ID**" insert the Cob-ID of the original PDO;
- In the field "**Dimension**" insert the number of byte of PDO;
- If the field "**TimeOut**" the TimeOut is defined; after the TimeOut defined, the value of the data of the PDO become "0";
- In the field "**Mnemonic**" you can insert a brief description.

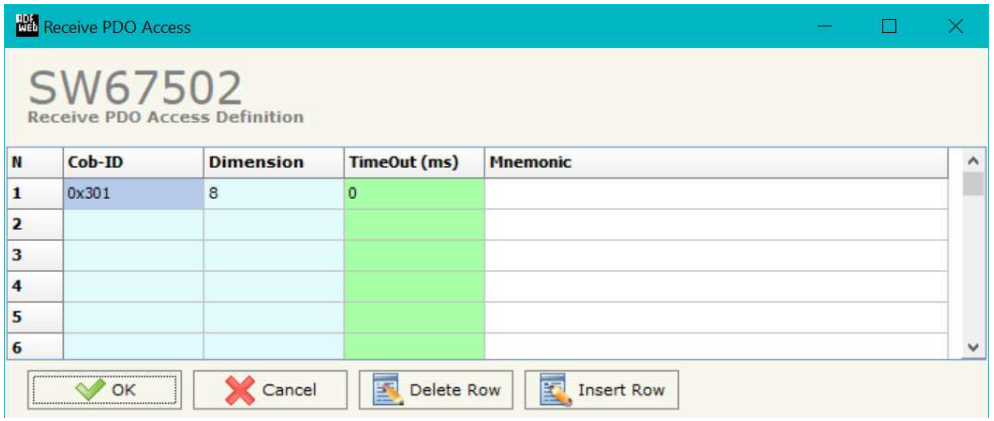


Figure 9: "RPDO" window

DEFINE PDO:

By pressing the "**Define PDO**" button from the Main Window for SW67502 (Fig. 2) the window "Define Receive PDO Frames" appears (Fig. 10).

- In the field "**List of Receive PDO Frames**" there is the list of PDO frames that you inserted in "Set Receive PDO" Section;
- In the field "**List of Modbus Registers**" there are the Modbus words;
- In the field "**Create/Modify a Modbus Register**" you can define the index of the Modbus register and the bytes of the PDO frame that you map in.

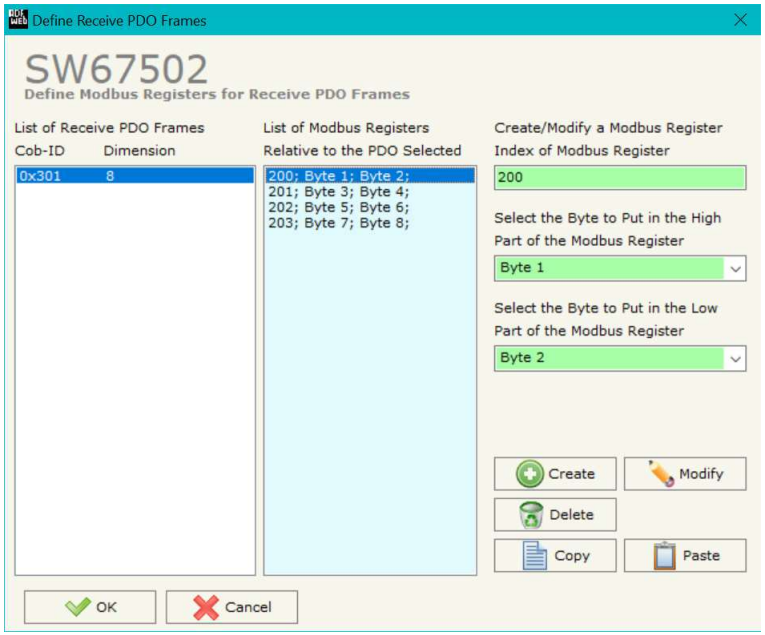


Figure 10: "Define COB" window

SET TRANSMIT PDO:

It is possible to write the PDOs using the Preset Multiple Registers Function (Modbus function 16). You have to write all the Modbus registers (that represent the PDO Data) with one Modbus command.

By pressing "**Set Transmit PDO**" button from the Main Window for SW67502 (Fig. 2) the window "Transmit PDO Access" appears (Fig. 11).

A user who has to write a PDO from Modbus to CANopen needs to insert the coordinates of the PDO to be transmitted in the field "SET Transmit PDO" of the window.

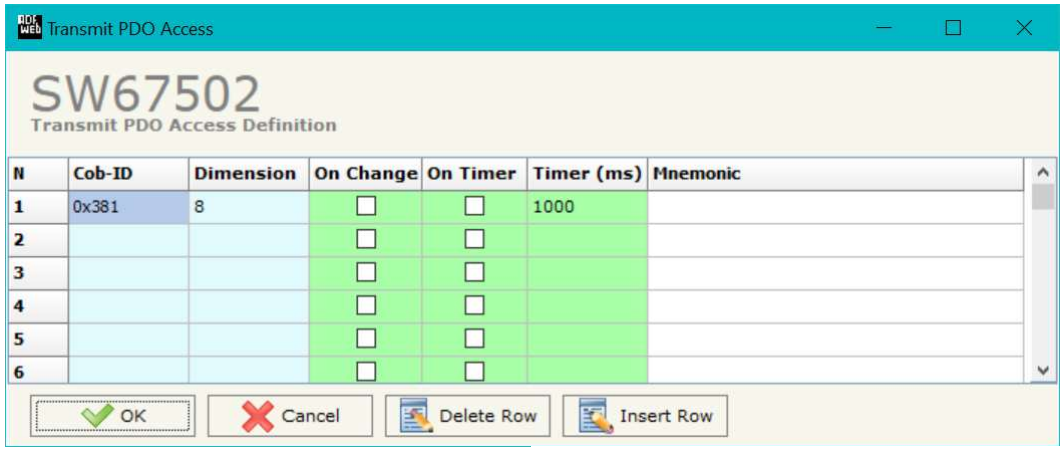


Figure 11: "Transmit PDO" window

- In the field "**Cob-ID**" insert the COB-ID of the PDO;
- In the field "**Dimension**" insert the number of byte of the PDO;
- If the field "**On Change**" is checked the CANopen frame is sent when the data written from Modbus side changes;
- If the field "**On Timer**" is checked the CANopen frame is sent cyclically;
- In the field "**Timer (ms)**" insert the cyclic delay;
- In the field "**Mnemonic**" you can insert a brief description.

DEFINE PDO:

By pressing the "**Define PDO**" button from the Main Window for SW67502 (Fig. 2) the window "Define Transmit PDO Frames" appears (Fig. 12).

- In the field "**List of Transmit CAN Frames**" there is the list of PDO that you inserted in "Set Transmit PDO" section;
- In the field "**List of Modbus Registers**" there are the Modbus words;
- In the field "**Create/Modify a Modbus Register**" you can define the index of the Modbus register and the bytes of the PDO frame where you write it;
- With the field "**Send PDO frame on Modbus Write**" it is possible to decide when to send the PDO frame. If a Modbus word has written "False "in this field, the PDO frame is not sent immediately but it is sent when another word that have this field "True" is written.

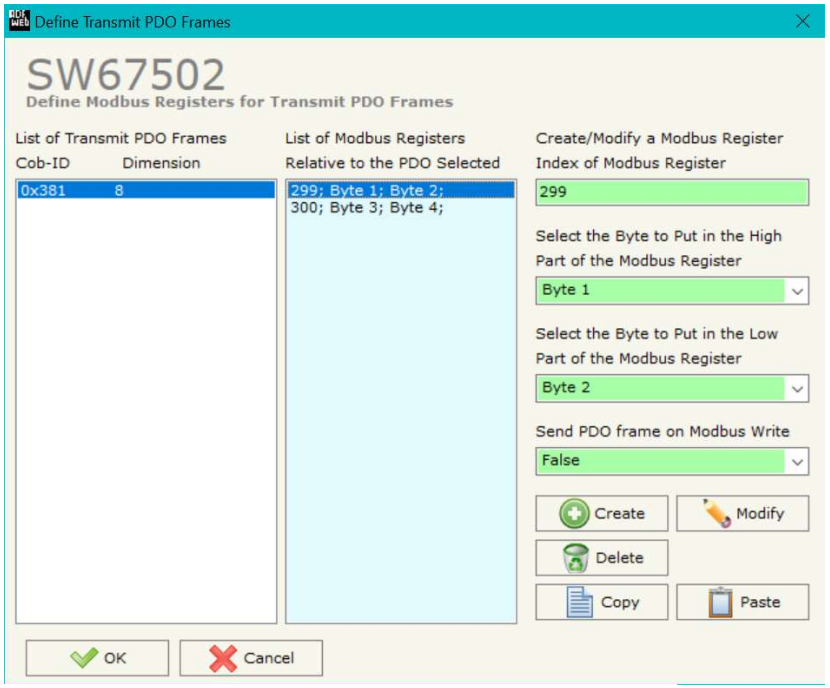


Figure 12: "Define Transmit PDO" window

SET NODEGUARDING

By pressing the "**Set Node Guarding**" button from the Main Window for SW67502 (Fig. 2) the right window appears (Fig. 13).

- In the field "**Device ID**" insert the address of the device that you want to control. It is possible to insert up to 32 address;
- In the field "**Guard Time**" insert a time. This value indicates the delay between two interrogations;
- In the field "**Life Time Factor**" insert the number of attempts before considering the device absent;
- In the field "**Mnemonic**" you can insert a brief description.

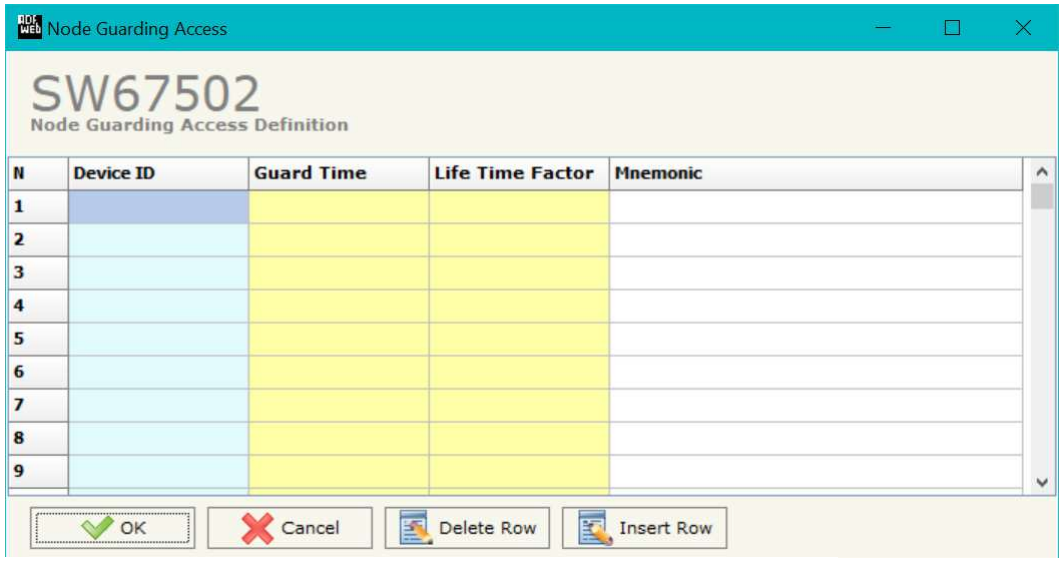


Figure 13: "Set Node Guarding" window

UPDATE DEVICE:

By pressing the "**Update Device**" button, it is possible to load the created Configuration into the device; and also the Firmware, if necessary. This by using the Ethernet port.

If you don't know the actual IP address of the device you have to use this procedure:

- Turn OFF the Device;
- Put Dip1 of 'Dip-Switch A' in ON position;
- Turn ON the device
- Connect the Ethernet cable;
- Insert the IP "**192.168.2.205**";
- 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 Dip1 of 'Dip-Switch A' in OFF position;
- Turn ON the device.

Figure 14: "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 Converter;
- 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 updated.

Note:
When you receive the device, for the first time, you also have to update the Firmware in the HD67502 device.

Warning:
If Fig. 15 appears when you try to do the Update try these points before seeking assistance:

- Try to repeat the operations for the updating;
- Try with another PC;
- Try to restart the PC;
- Check the LAN settings;
- If you are using the program inside a Virtual Machine, try to use in the main Operating System;
- If you are using Windows Seven, Vista, 8, 10 or 11 make sure that you have the administrator privileges;
- In case you have to program more than one device, using the "UDP Update", you have to cancel the ARP table every time you connect a new device on Ethernet. For do this you have to launch the "Command Prompt" and write the command "arp -d". Pay attention that with Windows Vista, Seven, 8, 10 or 11 you have to launch the "Command Prompt" with Administrator Rights;
- Pay attention at Firewall lock.

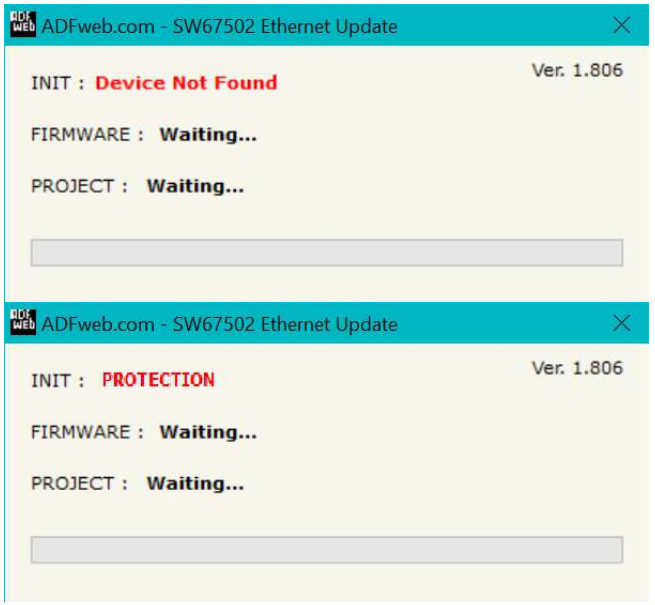


Figure 15: "Error" window

Warning:
In the case of HD67502 you have to use the software "HD67502": www.adfweb.com\download\filefold\SW67502.zip.

MECHANICAL DIMENSIONS:

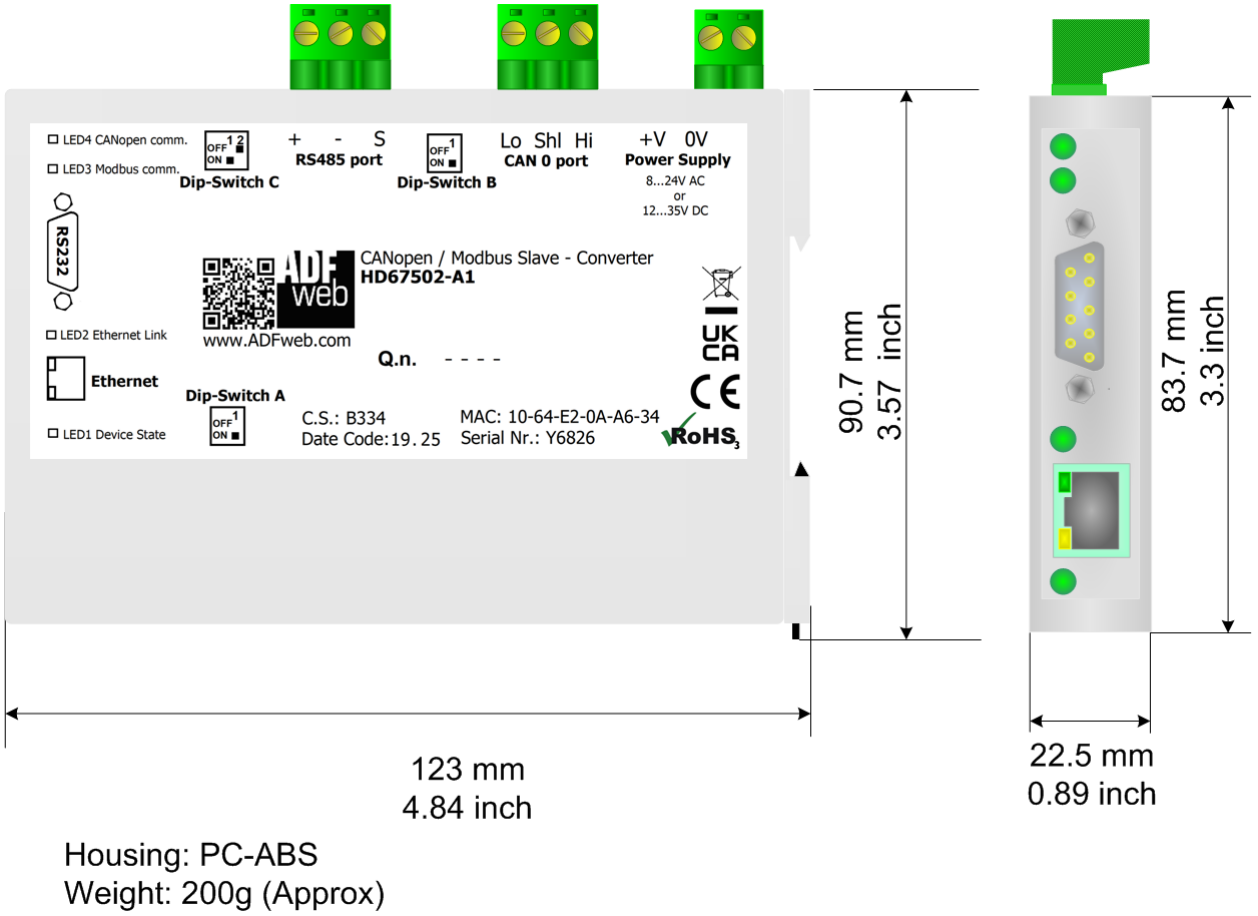


Figure 16: Mechanical dimensions scheme for HD67502-A1

ORDERING INFORMATIONS:

The ordering part number is formed by a valid combination of the following:

HD67502 – xx

Connectors Type
1: Removable 5mm Screw Terminal

Enclosure Type
A: 1M, 35mm DIN Rail mounting

Device Family
HD67502: CANopen / Modbus Slave - Converter

Order Code: **HD67502-A1** **-** CANopen / Modbus 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: **AC34011** **-** 35mm Rail DIN - Power Supply 220/240V AC 50/60Hz – 12 V DC
Order Code: **AC34012** **-** 35mm Rail DIN - Power Supply 220/240V AC 50/60Hz – 24 V DC

DISCLAIMER

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For losses due to fire, earthquake, third party access or other accidents, or intentional or accidental abuse, misuse, or use under abnormal conditions repairs are charged to the user. ADFweb.com S.r.l. will not be liable for accidental loss of use or inability to use this product, such as loss of business income. ADFweb.com S.r.l. shall not be liable for consequences of improper use.

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.

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