

# User Manual

Revision 1.100  
English

## CAN / Ethernet – Converter

(Order Code: HD67413)

For Website information:

[www.adfweb.com?Product=HD67413](http://www.adfweb.com?Product=HD67413)

For Price information:

[www.adfweb.com?Price=HD67413](http://www.adfweb.com?Price=HD67413)

### Benefits and Main Features:

- ✦ Very easy to configure
- ✦ Wide supply input range
- ✦ Electrical isolation
- ✦ Industrial temperature range:
- ✦ -40°C / 105°C (-40°F / 221°F)



User Manual



For other Gateways / Bridges:

### CAN from/to Modbus

See also the following links:

[www.adfweb.com?product=HD67012](http://www.adfweb.com?product=HD67012)

(Modbus RTU Slave)

[www.adfweb.com?product=HD67514](http://www.adfweb.com?product=HD67514)

(Modbus TCP Master)

[www.adfweb.com?product=HD67515](http://www.adfweb.com?product=HD67515)

(Modbus TCP Slave)

### CANopen from/to Modbus

See also the following links:

[www.adfweb.com?product=HD67001](http://www.adfweb.com?product=HD67001)

(Modbus RTU Master)

[www.adfweb.com?product=HD67502](http://www.adfweb.com?product=HD67502)

(Modbus RTU Slave)

[www.adfweb.com?product=HD67504](http://www.adfweb.com?product=HD67504)

(Modbus TCP Master)

[www.adfweb.com?product=HD67505](http://www.adfweb.com?product=HD67505)

(Modbus TCP Slave)

Do you have an your customer protocol?

See the following links:

[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.

## REVISION LIST:

Revision	Date	Author	Chapter	Description
1.000	04/12/2012	Ff	All	First release version
1.001	04/09/2013	Ff	All	Revision
1.100	09/05/2016	Ff	All	New hardware version

## WARNING:

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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, legal and safety regulation are required for each individual application. 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 instruments can represent a potential hazard if they are inappropriately installed and operated by untrained personnel. These instructions refer to residual risks with the following symbol:

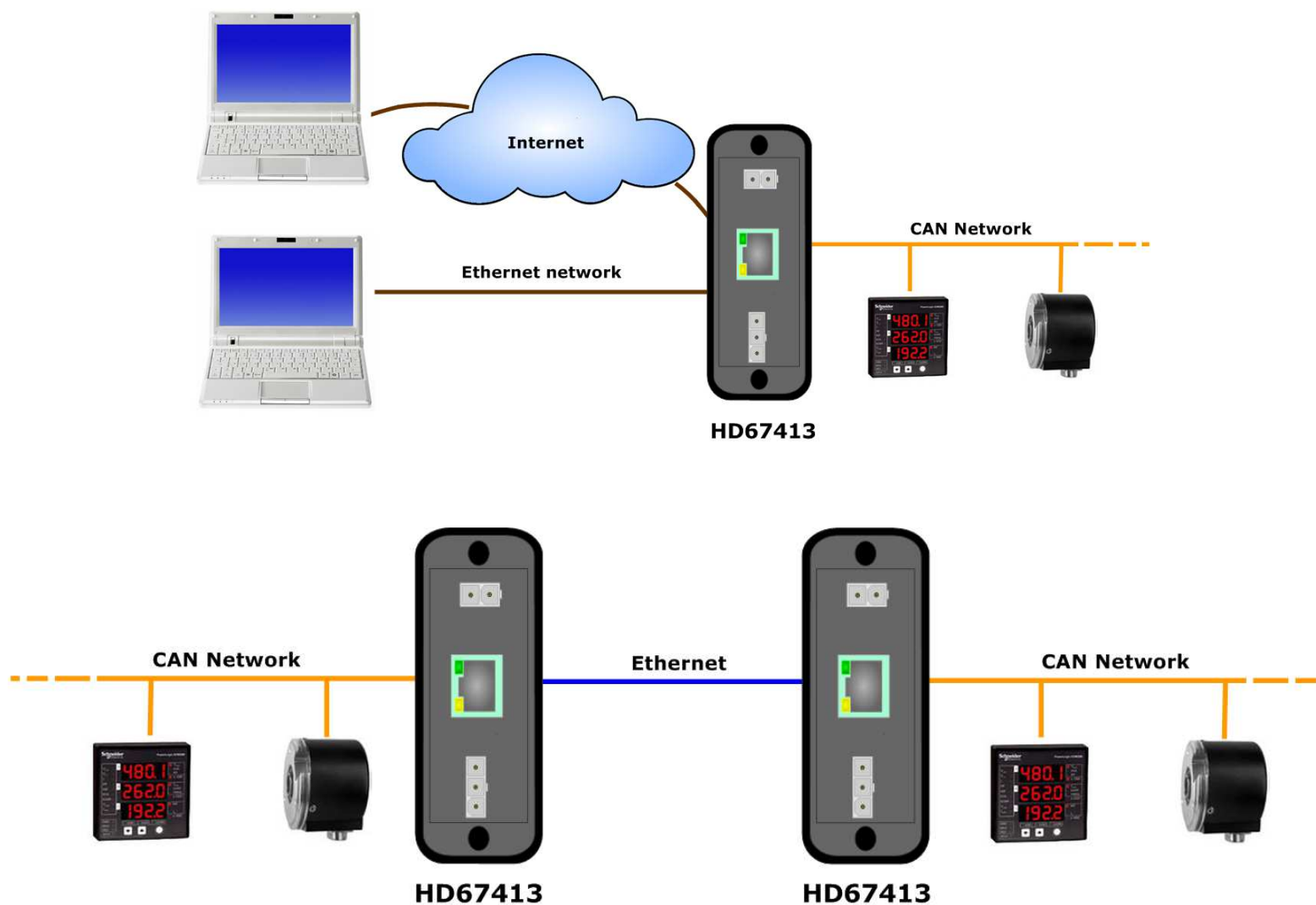


This symbol indicates that non-observance of the safety instructions is a danger for people that could lead to serious injury or death and / or the possibility of damage.

**CE CONFORMITY**

The declaration is made by our company. You can send an email to [support@adfweb.com](mailto:support@adfweb.com) or give us a call if you need it.

**EXAMPLE OF CONNECTION:**



## CONNECTION SCHEME:



Figure 1a: Connection scheme for HD67413-E4x-xx

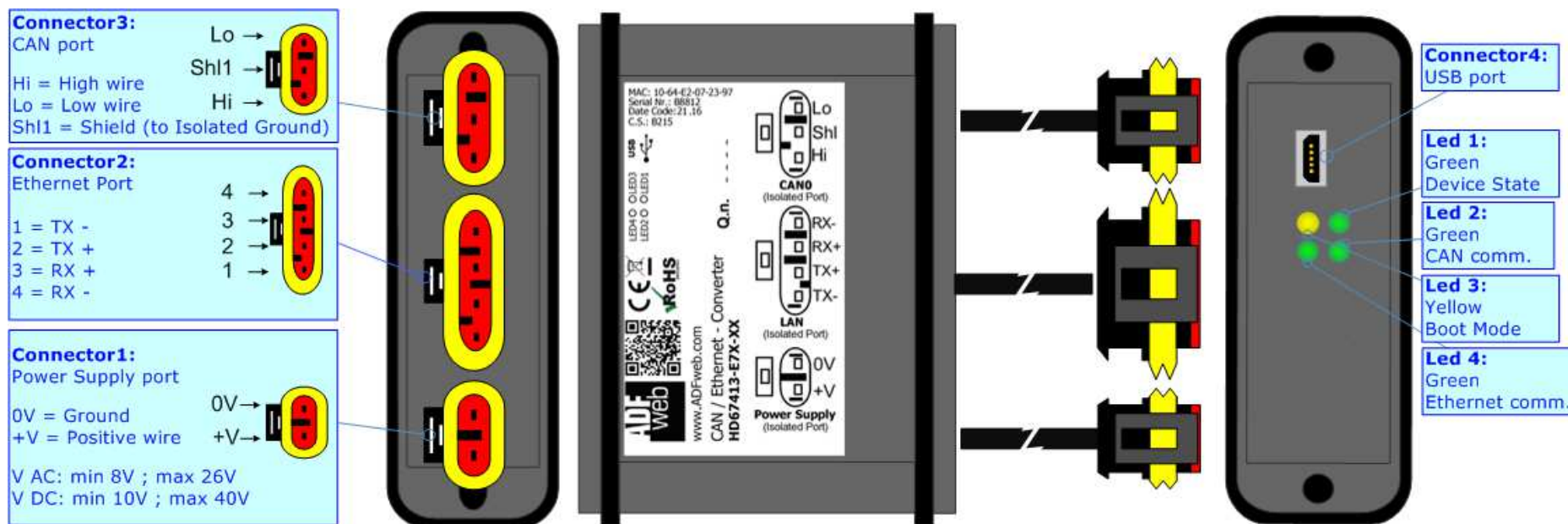


Figure 1b: Connection scheme for HD67413-E7x-xx

## CHARACTERISTICS:

The “**HD67413**” series are rugged devices used to interface CAN devices with Ethernet devices.

This converter can be completely transparent at the CAN frame (so it allows to extend the CAN networks through Ethernet) or can allow the interface between CAN devices and Ethernet devices and vice versa, through a very simple Ethernet protocol. The function can be selected through software compositor.

With his particular enclosure, equipped with four fixing lugs, makes available the mounting of the device in any plane surface (horizontal, vertical, oblique).

It is possible to have the device varnished or totally resined and also in both cases with “Mini-Fit®” connectors or “AMP SuperSeal 1.5” connectors. If is resined, the enclosure, like the “AMP SuperSeal 1.5” connectors, is waterproof (IP63).

All the four series have these characteristics:

- Triple 4kV isolation between Power Supply / Ethernet / CAN;
- Varnished / Resined (optionally);
- Wide power supply input range: 8...26V AC | 10...40V DC;
- Mini-Fit® / AMP SuperSeal 1.5 connectors;
- Metal enclosure with fixing lugs;
- Possibility to use Metal hose clamps for fixing it without using lugs;
- Microprocessor for data control;
- Wide temperature range: -40°C / 105°C (-40°F / 221°F).

## CONFIGURATION:



You need Compositor SW67413 software on your PC in order to perform the following:

- Define the parameter of the CAN bus;
- Define the parameter of the Ethernet;
- Select the working mode (Server Mode or Transparent Mode);
- Define a list of Receive COB (if you use the Server Mode);
- Update the Firmware and/or the Project.



## POWER SUPPLY:

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

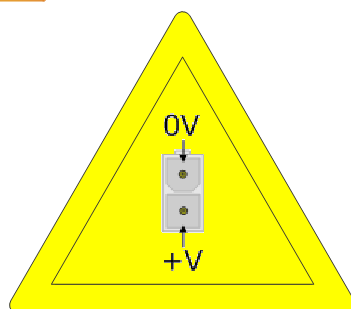
	VAC 		VDC 	
	Vmin	Vmax	Vmin	Vmax
HD67413-Exx-xx	8V	26V	10V	40V

Consumption at 24V DC:

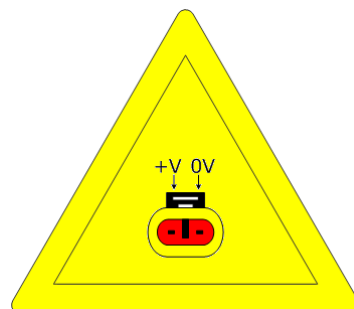
Device	W/VA
HD67413-Exx-xx	4



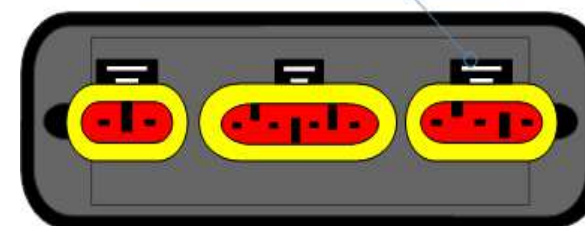
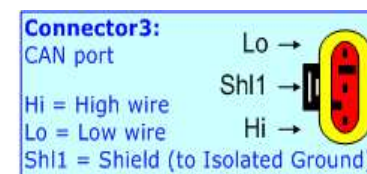
**Caution: Not reverse the polarity power**



HD67413-E4x-xx



HD67413-E7x-xx



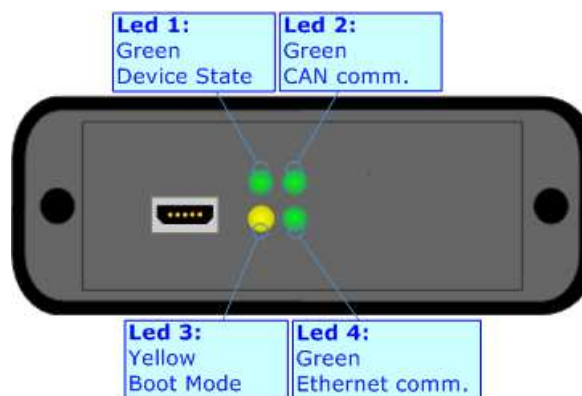
**Note:** It is possible to use also negative tensions. In this case the polarity must be inverted.



## LEDS:

The device has got four 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: Device state (green)	Blinks slowly (~1Hz)	<b>Blinks quickly:</b> Boot state <b>Blinks very slowly (~0.5Hz):</b> update in progress
2: CAN Communication (green)	Blinks when CAN frames are received	<b>Blinks quickly:</b> Boot state <b>Blinks very slowly (~0.5Hz):</b> update in progress
3: Boot Mode (yellow)	OFF	ON
4: Ethernet communication (green)	Blinks when Ethernet communication is working	<b>Blinks quickly:</b> Boot state <b>Blinks very slowly (~0.5Hz):</b> update in progress



## CAN:

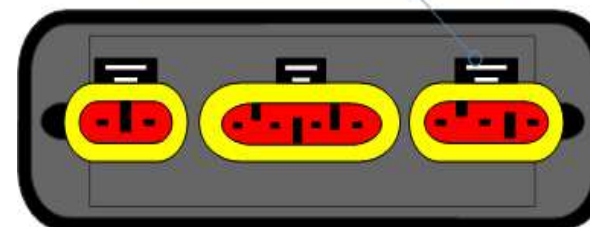
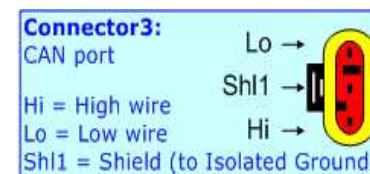
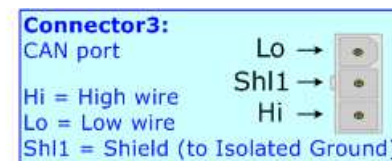
The connection of the CAN in the HD67413-E4x-xx device must be made with a 3way MiniFit Female connector. The pinout of Male MiniFit connector of the board is at right side of the page.

The connection of the CAN in the HD67413-E7x-xx device must be made with a AMP SuperSeal 1.5 Male connector. The pinout of Female connector of the board is at right side of the page.

The termination of CAN line, with a 120Ω resistor, in the HD67413-Exx-xx is made internally of the device; when the order is performed. If the device have the CAN terminated the code is the follow: HD67413-Exx-Yx; otherwise is this other: HD67413-Exx-Nx.

Cable characteristics:

<b>DC parameter:</b>		Impedance	70 Ohm/m
<b>AC parameters:</b>		Impedance	120 Ohm/m
		Delay	5 ns/m
<b>Length</b>		<b>Baud Rate [bps]</b>	<b>Length MAX [m]</b>
		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

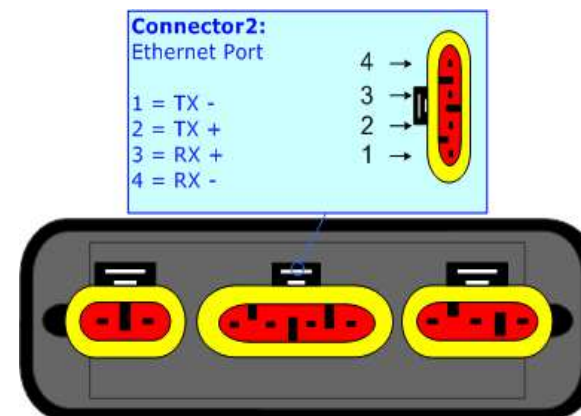


## ETHERNET:

The connection of Ethernet in the HD67413 device must be made 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.

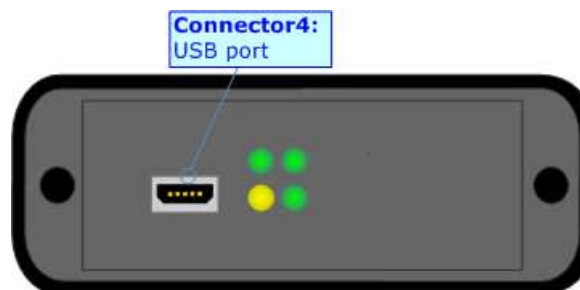
The connection of Ethernet in the HD67413-E4x-xx device must be made with RJ45 connector.

The connection of the Ethernet in the HD67413-E7x-xx device must be made with a AMP SuperSeal 1.5 Male connector. The pinout of Female connector of the board is at right side of the page.



## USB:

The USB port is used to start the converter in Boot Mode. It is necessary to use a Micro USB type C cable.



## USE OF COMPOSITOR SW67413:

To configure the Converter, use the available software that runs with Windows called SW67413. 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 (XP, Vista, Seven, 8, 10; 32/64bit).

When launching the SW67413, the window below appears (Fig. 2).



### Note:

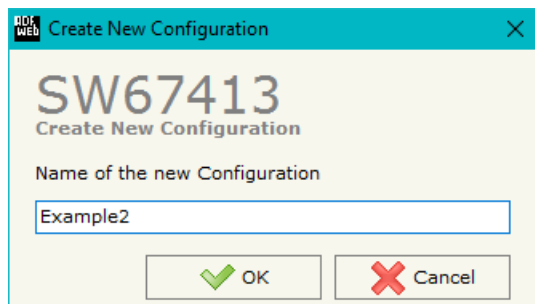
It is necessary to have installed .Net Framework 4.



Figure 2: Main window for SW67413

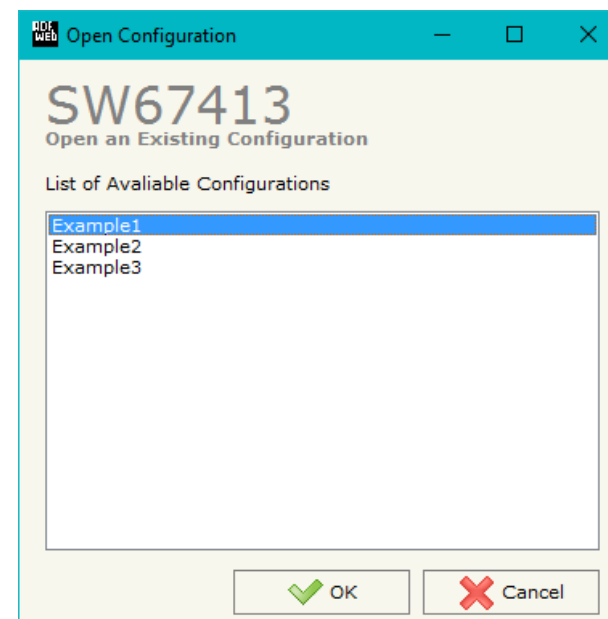
## NEW CONFIGURATION / OPEN CONFIGURATION:

The “**New Configuration**” button creates the folder which contains the entire device’s configuration.




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

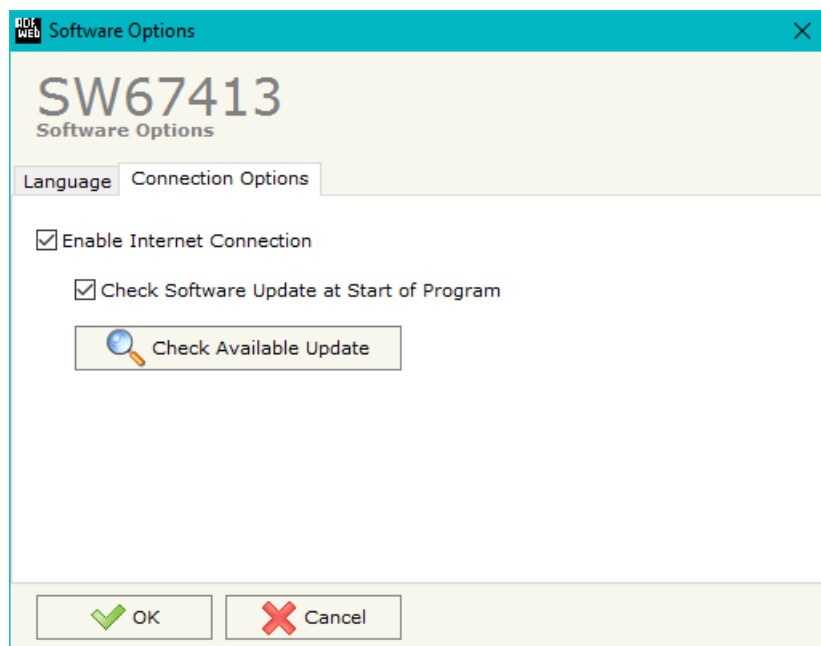
- To clone the configurations of a programmable “CAN / Ethernet - Converter” in order to configure another device in the same manner, it is necessary to maintain the folder and all its contents;
- To clone a project in order to obtain a different version of the project, it is sufficient to duplicate 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 SW67413 checks automatically if there are updatings when it is launched.

## SET COMMUNICATION:

This section define the fundamental communication parameters of two buses, CAN and Ethernet.

By Pressing the **"Set Communication"** button from the main window of SW67413 (Fig. 2) the window "Set Communication" appears (Fig. 3).

In the section **"Working Mode"** is possible to select Working Mode used:

- If the **"Transparent Mode"** option is set, the converter will send on Ethernet all the packets received from CAN and vice versa.
- If the **"Server Mode"** option is set, it is possible to read the data of some COB-IDs from CAN (defined in the section "Receive COB", see page 22) and write some CAN frames.



### Note:

For the Ethernet communication, see *"Ethernet Protocol"* chapter on page xx.

In the section "CAN", you can define the parameters for the CAN bus:

- In the section **"CAN"**, it is possible to set the data rate of the CAN.

In the section "Ethernet", you can define the parameters for the Ethernet bus:

- In the field **"IP ADDRESS"** insert the IP address of the Gateway;
- In the field **"SUBNET Mask"** insert the Subnet Mask;
- In the field **"GATEWAY"** insert the default Gateway. To enable the Gateway is needed to click on the checkbox;
- In the field **"IP ADDRESS DESTINATION"** insert the IP address of the device that receives the CAN frames packed in an Ethernet frame (only if "Transparent Mode" is set);
- In the field **"Port"** insert the number of port;
- If the field **"Protocol"**, the protocol used on Ethernet side is defined (TCP or UDP);

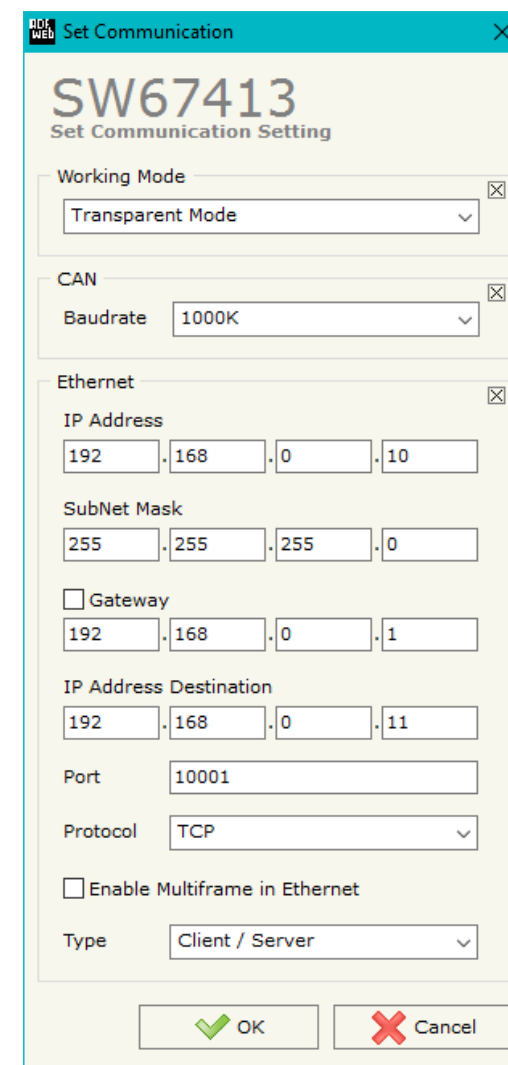


Figure 3: "Set Communication" window



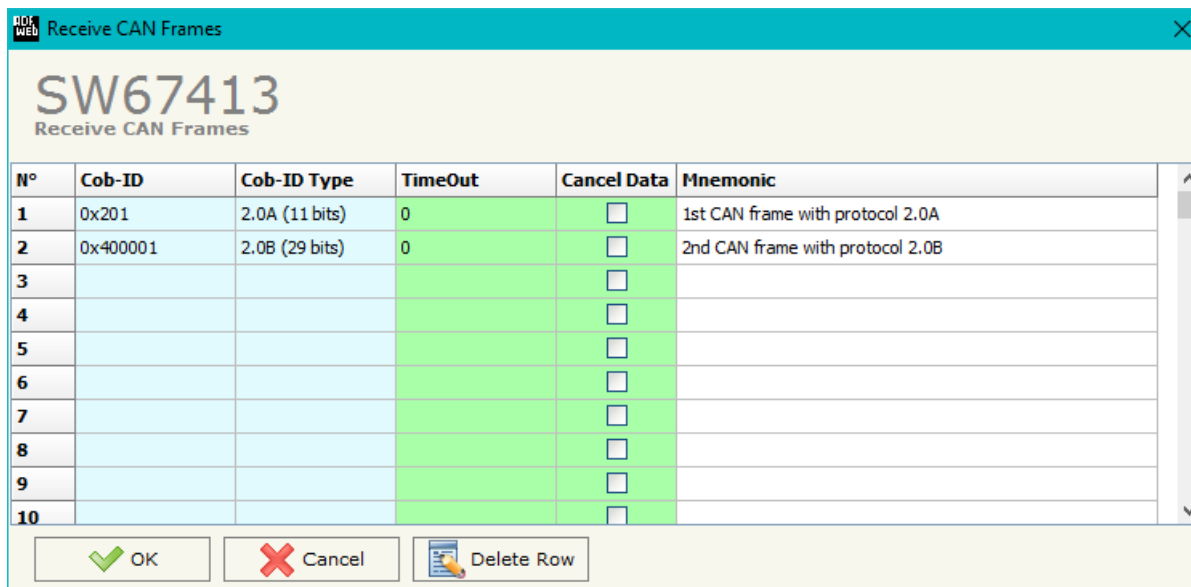
- If the field **"Enable Multiframe in Ethernet"** is checked the Gateway can send or receive in a single Ethernet frame more CAN frames. A single Ethernet frame can contain up to twenty CAN frames or the CAN frames that arrive within 5 ms after the first. Otherwise a single CAN frame is put in an Ethernet frame and sent (only if "Transparent Mode" is set);
- If the field **"Type"**, it is defined if the gateway works like client TCP and/or server TCP (only if TCP option is checked) (only if "Transparent Mode" is set and "TCP" protocol is selected);
- If the **"UDP Broadcast"** field is checked the gateway send the UDP packet in broadcast on the network (only if "Transparent Mode" is set and "UDP" protocol is selected);

## RECEIVE COB:

If the "Server Mode" is selected, by pressing the **"Receive COB"** button from the main window for SW67413 (Fig. 2) the window "Receive CAN Frame" appears (Fig. 4).

The means of the fields are:

- In the field **"Cob-ID"** insert the Cob\_ID of the CAN Bus frame;
- In the field **"Cob-ID Type"** select the CAN Protocol of the frame (CAN2.0A or CAN 2.0B);
- In the field **"TimeOut"** it is possible to indicate a timeout in ms;
- If the field **"Cancel Data"** is enabled, the data on Ethernet will be set to 0 if no data are received in the timeoutdefined;
- In the field **"Mnemonic"** you can insert a brief description.



N°	Cob-ID	Cob-ID Type	TimeOut	Cancel Data	Mnemonic
1	0x201	2.0A (11 bits)	0	<input type="checkbox"/>	1st CAN frame with protocol 2.0A
2	0x400001	2.0B (29 bits)	0	<input type="checkbox"/>	2nd CAN frame with protocol 2.0B
3				<input type="checkbox"/>	
4				<input type="checkbox"/>	
5				<input type="checkbox"/>	
6				<input type="checkbox"/>	
7				<input type="checkbox"/>	
8				<input type="checkbox"/>	
9				<input type="checkbox"/>	
10				<input type="checkbox"/>	

Figure 4: "Receive CAN Frame" 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.

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

- Connect the USB cable;
- Connect the Ethernet cable;
- Turn ON the converter;
- Insert the IP "**192.168.2.205**";
- Press the "**Ping**" button, "Device Found! must appear";
- 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 updating is done;
- Remove the USB cable;

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

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;
- 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.

**Note:**

When you install a new version of the software, if it is the first time it is better you do the update of the Firmware in the HD67413 device.

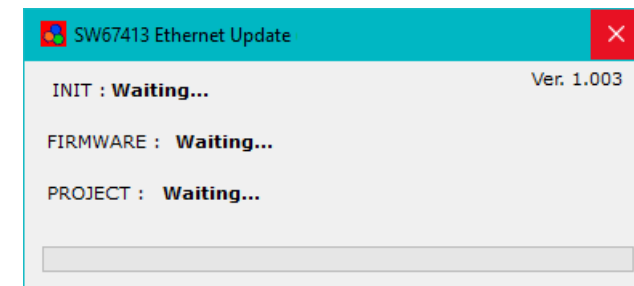
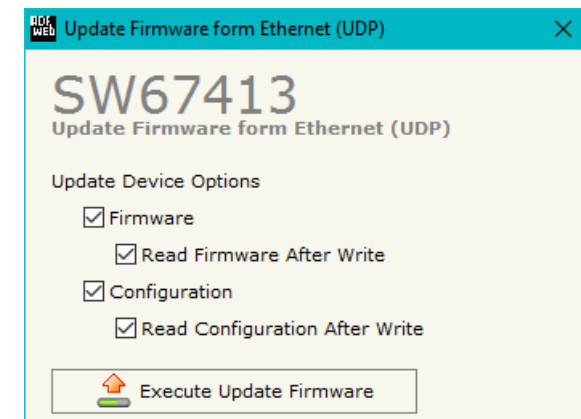
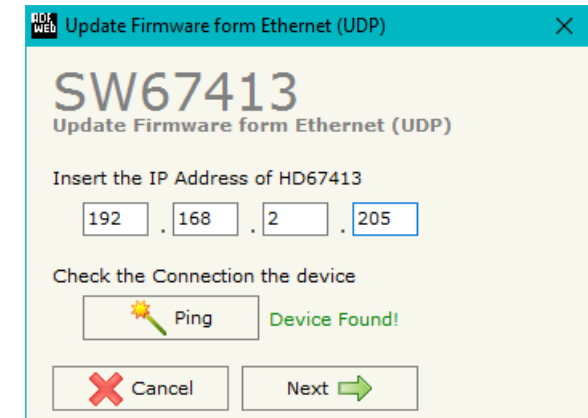


Figure 5: "Update Device" windows

**Note:**

When you receive the device, for the first time, you also have to update the Firmware in the HD67413 device.

**Warning:**

If Fig. 6 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 or 10 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 you have to launch the "Command Prompt" with Administrator Rights;
- Pay attention at Firewall lock.

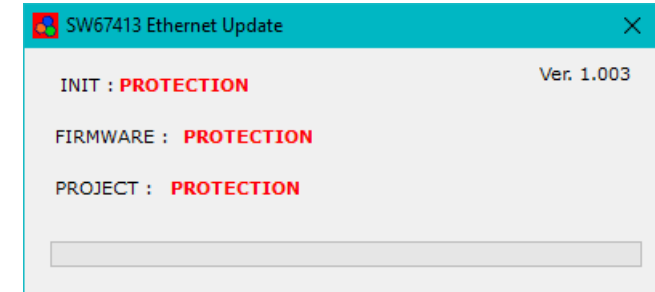


Figure 6: "Protection" window

In the case of HD67413 you have to use the software "SW67413": [www.adfweb.com/download/filefold/SW67413.zip](http://www.adfweb.com/download/filefold/SW67413.zip).

## ETHERNET PROTOCOL WITH TRANSPARENT MODE

### ETHERNET FRAME TO BE SENT TO OUR GATEWAY WITH "ENABLE MULTIFRAME IN ETHERNET" DISABLED

The Bytes that compose the frame are these:

Byte Number	Description
1 ÷ 4	Cob_ID
5 ÷ 12	Data (Byte 5 is the higher, byte 12 is the lower)
13	Number of Byte to send (0x00÷0x08)

To choose the type of CAN (2.0A or 2.0B) of the frame that the converter will send, it is necessary to put the most significant bit of the byte 1 to:

- 0: CAN 2.0A;
- 1: CAN 2.0B.

If the "Number of Byte to send" has got a value less than 0x08 the byte of Data unused must be put with value 0x00.

Example:

We want to write in CAN network a frame with the following characteristics: CAN Type=2.0B; Cob\_ID=0x01FECA02; Data=0x0123456789AB0000; Number of Byte to send=6.

So the string of hexadecimal numbers to be send to our Gateway is: [81][FE][CA][02][01][23][45][67][89][AB][00][00][06]

### ETHERNET FRAME TO BE SENT TO OUR GATEWAY WITH "ENABLE MULTIFRAME IN ETHERNET" ENABLED

The Bytes that compose the frame are these:

Byte Number	Description
1	Number of CAN frames in Ethernet frame
2 ÷ 5	Cob_ID
6 ÷ 13	Data (Byte 6 is the higher, byte 13 is the lower)
14	Number of Byte to send (0x00÷0x08)

If the "Enable Multiframe in Ethernet" field is checked the first byte of the frame contain the numbers of CAN frames to be sent in CAN network. If this byte is bigger than one, the bytes 2÷14 are repeated for every CAN frame. If the "Number of Byte to send" has got a value less than 0x08 the byte of Data unused must be put with value 0x00. A single Ethernet frame can contain up to 20 CAN frames or the frames that arrived within 5 ms after the first.

To choose the type of CAN (2.0A or 2.0B) of the frame that the converter will send, it is necessary to put the most significant bit of the byte 2 to:

- 0: CAN 2.0A;
- 1: CAN 2.0B.

Example:

We want to write in CAN network two frames with the following characteristics:

CAN Type=2.0B; Frame 1: Cob\_ID=0x01FECA02; Data=0x0123456789ABCDEF; Number of Byte to send=8;

CAN Type=2.0B; Frame 2: Cob\_ID=0x01FEBA04; Data=0x0102030405060000; Number of Byte to send=6.

So the string of hexadecimal numbers to be send to our Gateway is:

[02][81][FE][CA][02][01][23][45][67][89][AB][CD][EF][08][01][FE][BA][04][01][02][03][04][05][06][00][00][06]

**ETHERNET FRAME THAT CONTAIN CAN FRAMES ARRIVED IN THE GATEWAY WITH "ENABLE MULTIFRAME IN ETHERNET" DISABLED**

The Bytes that compose the frame are these:

Byte Number	Description
1÷4	Cob_ID
5÷12	Data (Byte 5 is the higher, byte 12 is the lower)
13	Number of Data Byte (0x00÷0x08)

To define the type of CAN (2.0A or 2.0B) of the frame that the converter has received, it is necessary to read the most significant bit of the byte 1:

- 0: CAN 2.0A;
- 1: CAN 2.0B.

If the "Number of Data Byte" has got a value less than 0x08 the byte of Data unused have the value 0x00.

Example:

The Gateway receives a CAN frame with the following characteristics: CAN Type=2.0B; Cob\_ID=0x01FECA02; Data=0x0123456789AB; Number of Data Byte=6.

So the string of hexadecimal numbers that we send in Ethernet is: [81][FE][CA][02][01][23][45][67][89][AB][00][00][06]



## ETHERNET FRAME THAT CONTAIN CAN FRAMES ARRIVED IN THE GATEWAY WITH "ENABLE MULTIFRAME IN ETHERNET" ENABLED

The Bytes that compose the frame are these:

Byte Number	Description
1	Number of CAN frames in Ethernet frame
2÷5	Cob_ID
6÷13	Data (Byte 6 is the higher, byte 13 is the lower)
14	Number of Data Byte (0x00÷0x08)

If the "Enable Multiframe in Ethernet" field is checked the first byte of the frame contain the numbers of CAN frames to be sent in CAN network. If this byte is bigger than one, the bytes 2÷14 are repeated for every CAN frame. If the "Number of Data Byte" has got a value less than 0x08 the byte of Data unused has the value 0x00. A single Ethernet frame can contain up to 20 CAN frames or the frames that arrived within 5 ms after the first.

To define the type of CAN (2.0A or 2.0B) of the frame that the converter has received, it is necessary to read the most significant bit of the COB-ID's bytes:

- 0: CAN 2.0A;
- 1: CAN 2.0B.

Example:

The Gateway receives two CAN frames with the following characteristics:

Frame 1: CAN Type=2.0B; Cob\_ID=0x01FECA02; Data=0x0123456789ABCDEF; Number of Byte to send=8;

Frame 2: CAN Type=2.0B; Cob\_ID=0x01FEBA04; Data=0x010203040506; Number of Byte to send=6.

So the string of hexadecimal numbers that we send in Ethernet is:

[02][81][FE][CA][02][01][23][45][67][89][AB][CD][EF][08][01][FE][BA][04][01][02][03][04][05][06][00][00][06]

## REMOTE TRANSMIT REQUEST (RTR) FRAME

It is possible to send or receive Remote Frames. For doing that it is necessary to use the fifth bit of the field "Number of Byte to send" if you want to send a CAN frame to the network from Ethernet, and also in the Ethernet frame sent by the gateway when a CAN frame arrives the field "Number of Data Byte" contain in the fifth bit the information of the Remote Frame.

If this bit is at 1 means that the frame is a Remote Frame, otherwise, if is at 0, means that is a normal frame.

To define the type of CAN (2.0A or 2.0B), it is necessary to read the most significant bit of the COB-ID's bytes. If this bit is 0, it means that it is CAN 2.0A, if this bit is 1, it is CAN 2.0B.

Examples:

- 1) We want to write in CAN network a frame with the following characteristics: CAN Type=2.0A; Cob\_ID=0x201; RTR bit active.  
So the string of hexadecimal numbers to be send to our Gateway is: [00][00][02][01][00][00][00][00][00][00][00][10]
- 2) The Gateway receives a two CAN frames with the following characteristics:  
Frame 1: CAN Type=2.0B; Cob\_ID=0x01FECA02; Data=0x0123456789ABCDEF; Number of Byte to send=8;  
Frame 2: CAN Type=2.0B; Cob\_ID=0x01FEBA04; RTR bit active.

So the string of hexadecimal numbers that we send in Ethernet is:

[02][81][FE][CA][02][01][23][45][67][89][AB][CD][EF][08][81][FE][BA][04][00][00][00][00][00][00][00][00][10]

## ETHERNET PROTOCOL WITH SERVER MODE

This protocol is able to read and write frames in the CAN net.

### Write Frames

The transmission is very simple; it requires only what are the packets to send. In a single request it is possible to write at maximum 19 frames in the CAN net. The Bytes that composed the request are these:

Byte Number	Description
1	Write Identifier (0x02)
2	Number of frames to send
3÷6	Cob_ID
7	Number of Byte to send (0x01÷0x08)
8÷15	Data (Byte 8 is the higher, byte 15 is the lower)

A single frame is composed by 13 bytes (byte 3 to byte 15). If the "Number of frame to send" (Byte Number 2) has got a value greater than zero, the next frame is composed from byte 3 to byte 15 and so for all the frames.

If the "Number of Byte to send" has got a value less than 0x08 the byte of Data unused must be put with value 0x00.

To choose the type of CAN (2.0A or 2.0B) of the frame that the converter will send, it is necessary to put the most significant bit of the byte 3 to:

- 0: CAN 2.0A;
- 1: CAN 2.0B.

The response is composed only by one byte. It can have two values:

- 0x00: No Errors;
- 0x01: Parameter Error.

Example:

We want to write three frames with the following characteristics:

Frame 1: CAN Type=2.0A; Cob\_ID=0x0000018A; Number of Byte to send=8; Data=0x0102030405060708;

Frame 2: CAN Type=2.0B; Cob\_ID=0x000413CB; Number of Byte to send=6; Data=0x1122334455660000;

Frame 3: CAN Type=2.0A; Cob\_ID=0x00000001; Number of Byte to send=8; Data=0x123456789A9B9C9D.

So the string of hexadecimal numbers is:

REQ:[02][03][00][00][01][8A][08][01][02][03][04][05][06][07][08][80][04][13][CB][06][11][22][33][44][55][66][00][00][00][00][00][01][08][12][34][56][78][9A][9B][9C][9D]

RES:[00]

## Read Frames

For reading Data it is necessary to have a map in the RAM memory that contains the Data that passing in the bus. This map is implemented in the "Compositor SW67413" but it has some standard addresses given by the software. It is possible to see this map in Fig. 6.

The Bytes that composed the request are these:

Byte Number	Description
1	Read Identifier (0x01)
2	Starting Address Hi
3	Starting Address Lo
4	Number of Byte to read Hi
5	Number of Byte to read Lo

The Bytes that composed the respons are these:

Byte Number	Description
1	Error
2÷n+1	Data

n=Number of Byte

The Error Byte (Byte 1) can have three values:

- 0x00: No error;
- 0x01: Starting Address doesn't exist;
- 0x02: Too many Data to read;
- 0x10: At least one CAN message defined is not received in the timeout defined.

Example:

- 1- We want to read the data of the first COB-ID defined in Fig. 6.. So the string of hexadecimal numbers is:

REQ:[01][00][00][00][06]

RES:[00][01][02][03][04][05][06]

- 2- We want to read the data of the second COB-ID defined in Fig. 6.. So the string of hexadecimal numbers is:

REQ:[01][00][01][00][08]

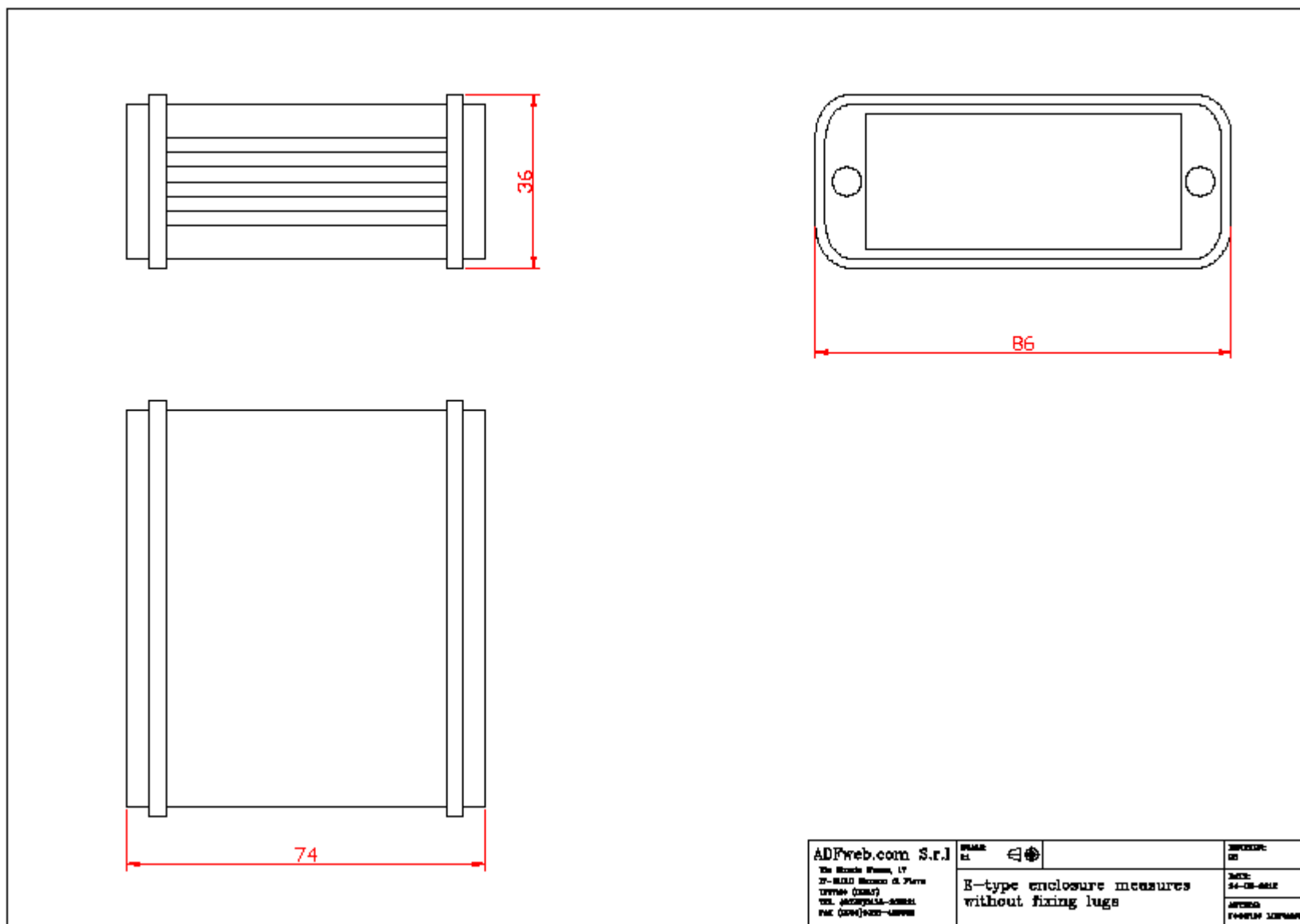
RES:[00][11][22][33][44][55][66][77][88]

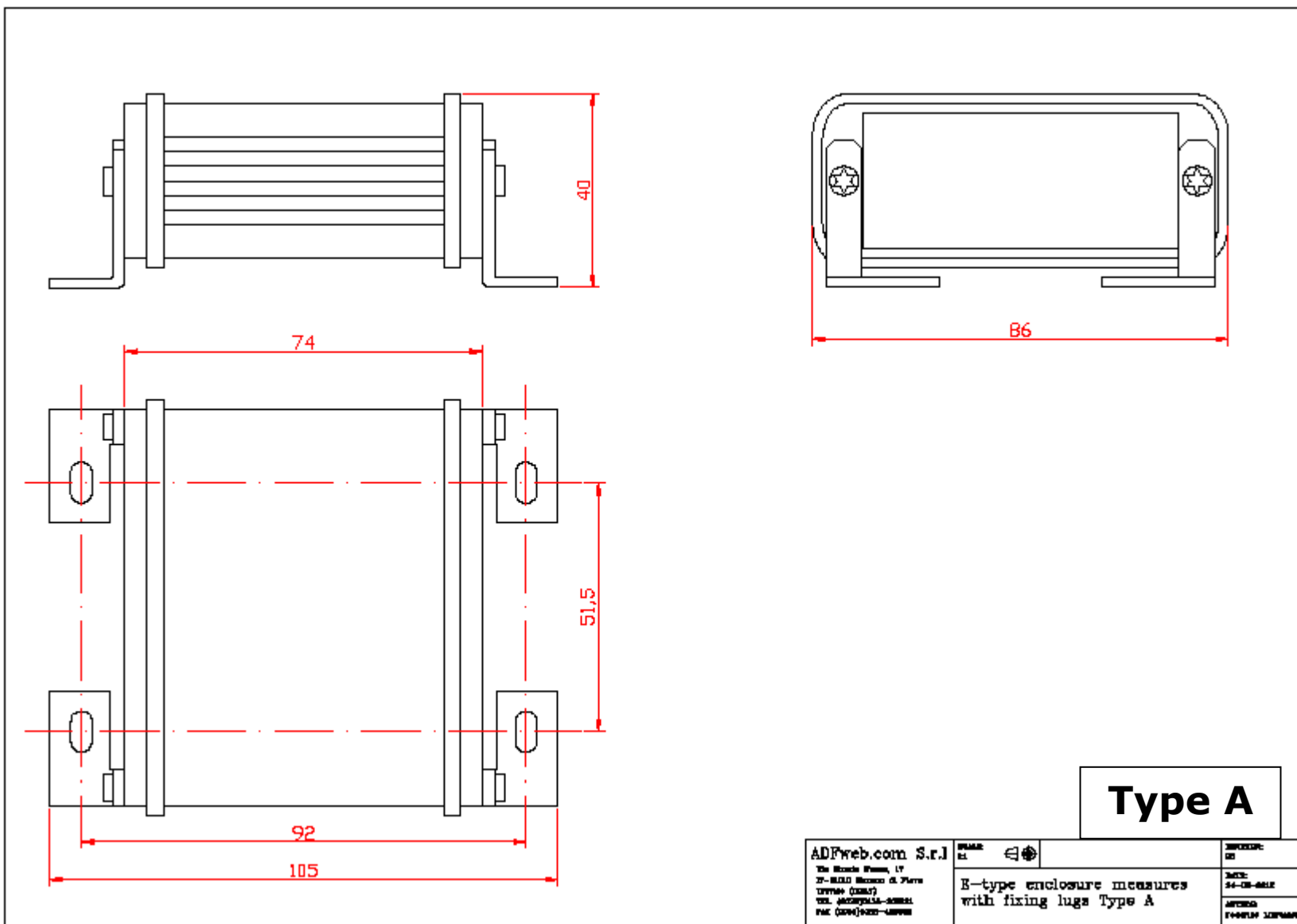
- 3- We want to read the data of the first and second COB-ID defined in Fig. 6. together. So the string of hexadecimal numbers is:

REQ:[01][00][00][00][0E]

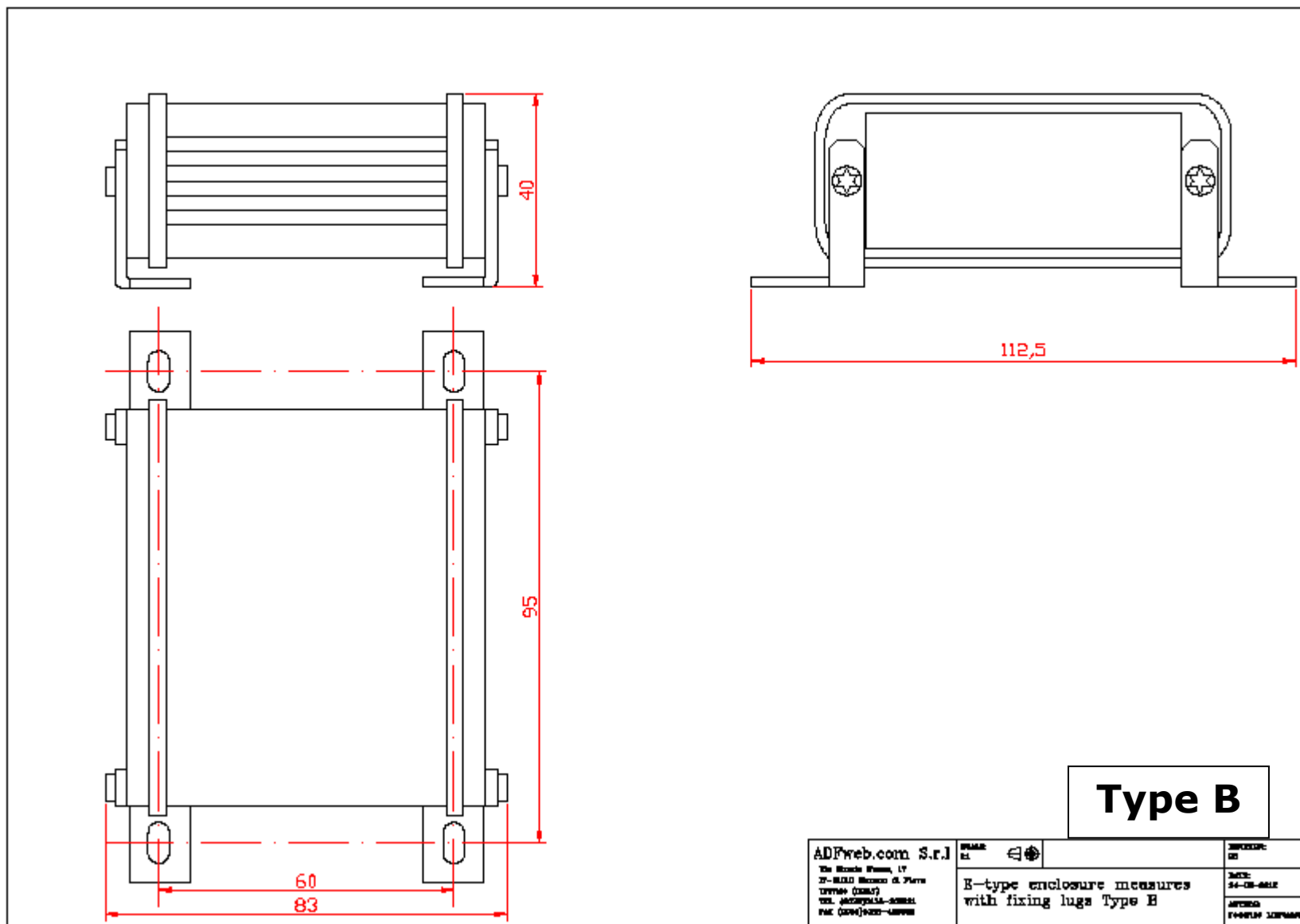
RES:[00][01][02][03][04][05][06][11][22][33][44][55][66][77][88]

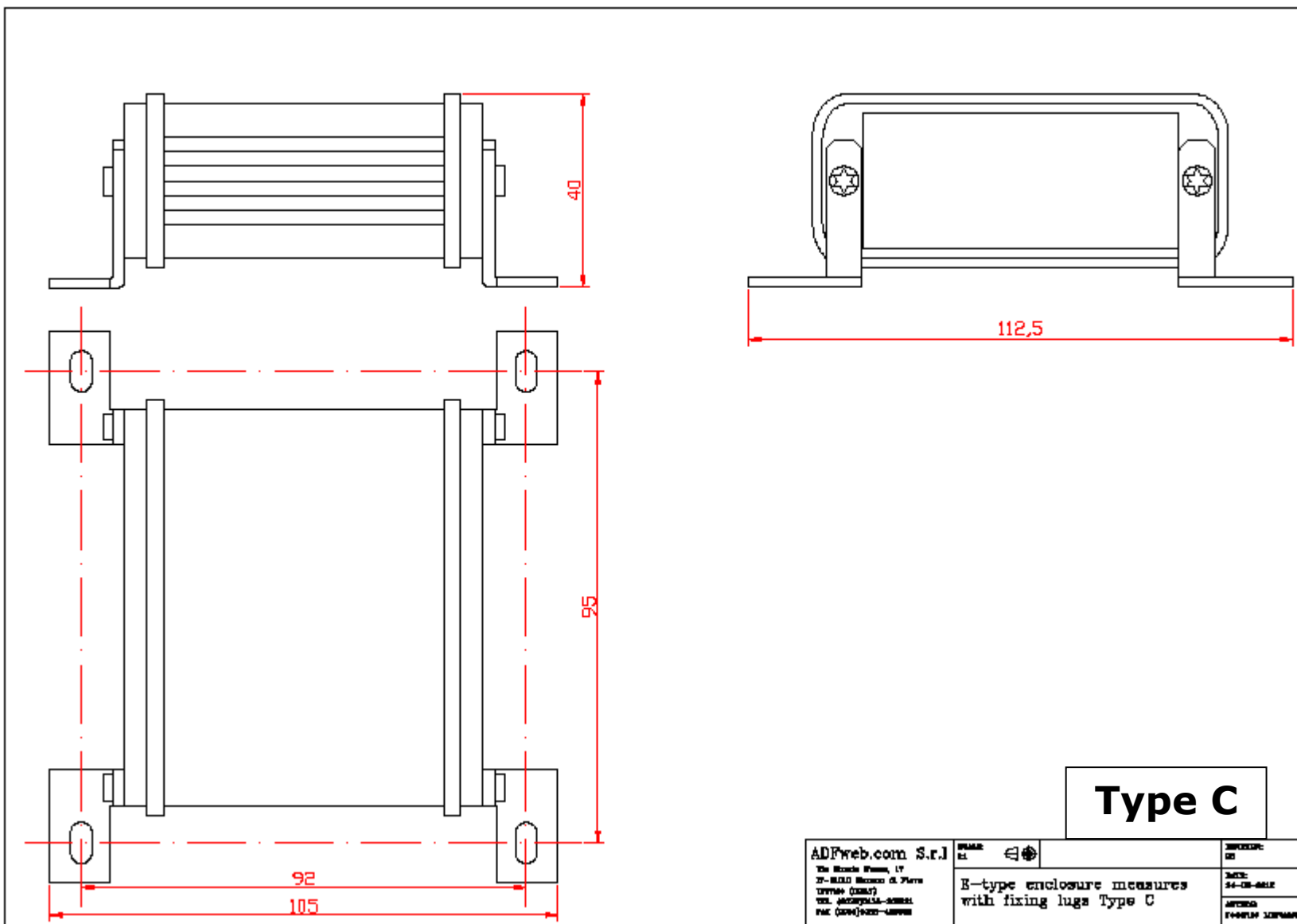
## MECHANICAL DIMENSIONS:







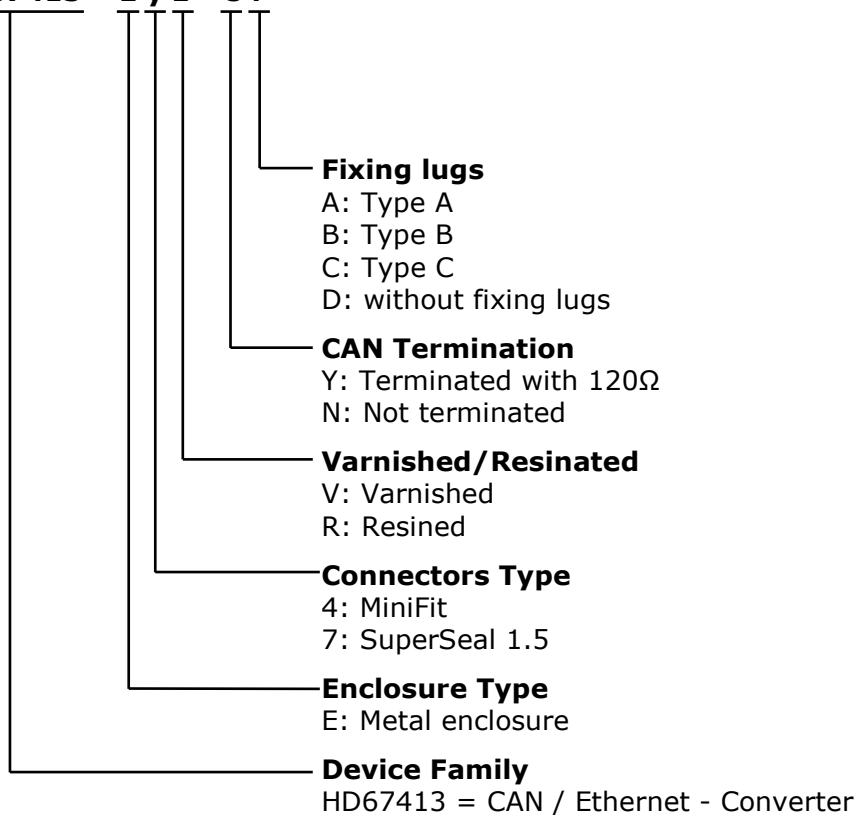




## ORDERING INFORMATION:

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

**HD67413 - E y z - s f**



## ACCESSORIES:

- |                            |   |   |
|----------------------------|---|---|
| Order Code: <b>AC34001</b> | - | Rail DIN - Power Supply 220/240V AC 50/60Hz – 12 V AC |
| Order Code: <b>AC34002</b> | - | Rail DIN - Power Supply 110V AC 50/60Hz – 12 V AC     |
| Order Code: <b>AC67410</b> | - | Accessory Automotive Devices - Support for rail DIN   |

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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 impact of 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:

- 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.
- 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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