Industrial Electronic Devices

User Manual

Revision 1.001
English

M-Bus Wireless - Repeater

(Order Code: HD67085-B2-868MHz)

For Website information:
www.adfweb.com?Product=HD67085

For Price information:
www.adfweb.com?Price=HD67085-B2-868MHz

Benefits and Main Features:

⊕ Very easy to configure

⊕ Triple electrical isolation

⊕ Temperature range: -40°C/85°C (-40°F/185°F)

User Manual

For others M-Bus products see also the following link:

Converter M-Bus Wireless to
www.adfweb.com?Product=HD67082   (Modbus Slave)
www.adfweb.com?Product=HD67083   (Modbus TCP Slave)

Converter M-Bus to
www.adfweb.com?Product=HD67021   (RS232)
www.adfweb.com?Product=HD67022   (RS485)

Analyzer / Scanner /Sniffer M-Bus
www.adfweb.com?Product=HD67031

Isolator/Repeater M-Bus
www.adfweb.com?Product=HD67032M

Gateway M-Bus / Modbus RTU
www.adfweb.com?Product=HD67029M-232   (on RS232)
www.adfweb.com?Product=HD67029M-485   (on RS485)

Gateway M-Bus / Modbus TCP
www.adfweb.com?Product=HD67044

Gateway M-Bus / PROFIBUS
www.adfweb.com?Product=HD67053M

Gateway M-Bus Concentrator
www.adfweb.com?Product=HD67054M

Gateway M-Bus Slave / Modbus RTU master
www.adfweb.com?Product=HD67059M-232

Do you have an your customer protocol?
www.adfweb.com?Product=HD67003

Do you need to choose a device? do you want help?
www.adfweb.com?Cmd=helpme

ADFweb.com S.r.l.

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INDEX:

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.

REVISION LIST:

Revision	Date	Author	Chapter	Description
1.000	25/03/2015	Ff	All	First Release
1.001	16/07/2018	Ff	All	New hardware version

WARNING:

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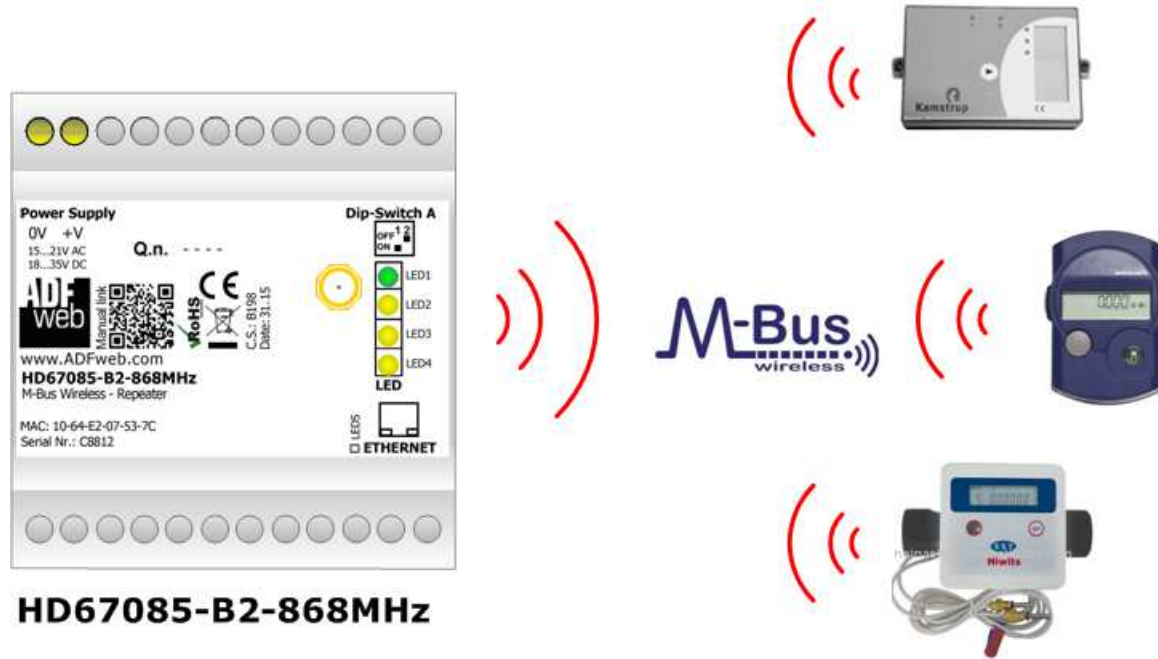
⚠ This symbol indicates that non-observance of the safety instructions is a danger for people that could lead to serious injury or death and / or the possibility of damage.

CE CONFORMITY
The declaration is made by our company. You can send an email to support@adfweb.com or give us a call if you need it.

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EXAMPLE OF CONNECTION:

HD67085-B2-868MHz
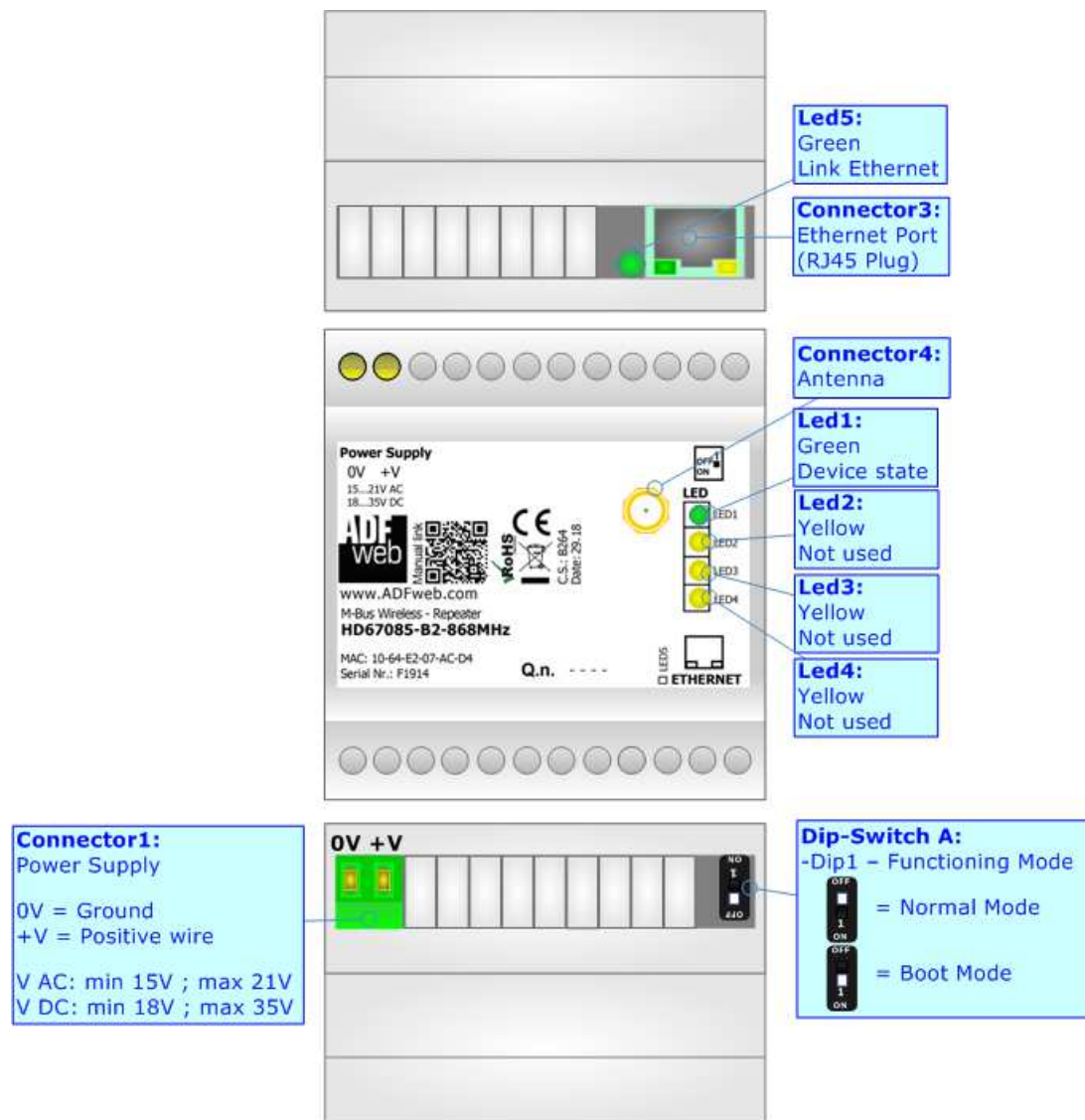
CONNECTION SCHEME:

Figure 1: Connection scheme for HD67085-B2-868MHz

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CHARACTERISTICS:

The HD67085-B2-868MHz are M-Bus repeaters that allows to extend the range of the M-Bus Wireless communication.

They allows the following characteristics:

- Electrical isolation between Ethernet and M-Bus Wireless;
- Mountable on 35mm Rail DIN;
- Wide power supply input range: 15…21V AC or 18…35V DC;
- Wide temperature range: -40°C / 85°C [-40°F / +185°F].

CONFIGURATION:

You need Compositor SW67085 software on your PC in order to perform the following:

- Define the parameter of Ethernet;
- Define the parameter of M-Bus Wireless line;
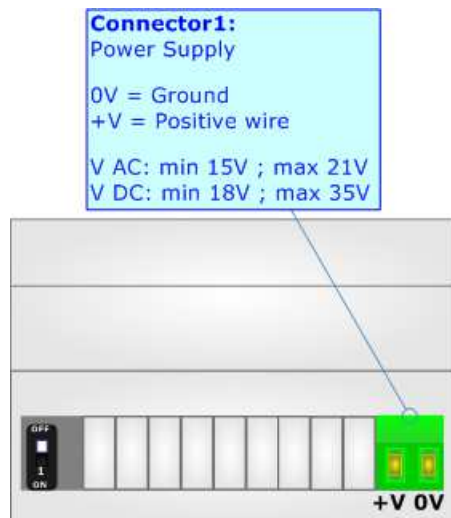- Update the device.

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POWER SUPPLY:

The devices can be powered at 15…21V AC and 18…35V DC. The consumption depends to the code of the device. For more details see the two tables below.
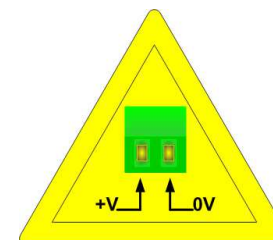
VAC		VDC	
Vmin	**Vmax**	**Vmin**	**Vmax**
15V	**21V**	**18V**	**35V**

Consumption at 24V DC:

Device	[W/VA]
HD67085-B2-868MHz	3.5

Caution: Not reverse the polarity power

HD67085-B2-xxxMHz

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FUNCTION MODES:

The device has got two functions mode depending of 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 specifics functions, see 'LEDS' section.

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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: Device state (green)	Blinks slowly (~1Hz)	Blinks quickly
2: Not used (green)	OFF	Blinks quickly
3: Not used (green)	OFF	Blinks quickly
4: Not used (green)	OFF	Blinks quickly
5: Link Ethernet (green)	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected

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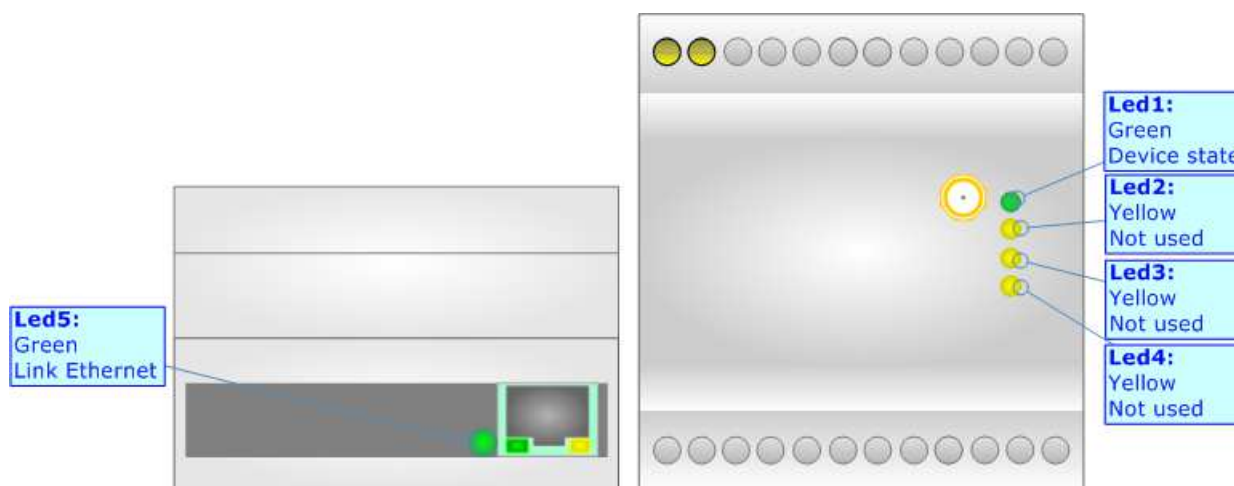
ETHERNET:

The Ethernet port is used for the Ethernet communication and for programming the device.
The Ethernet connection must be made using Connector2 of HD67085-B2-868MHz 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.
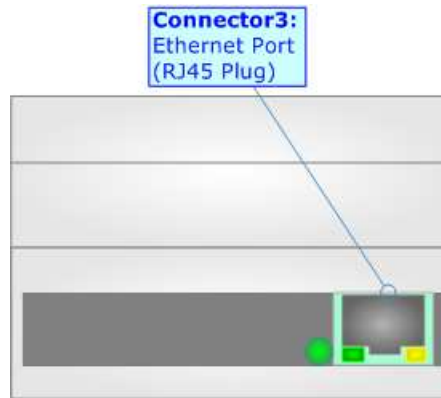
M-BUS WIRELESS:

The standards of M-Bus Wireless are specified in EN 13757-4. The signal is @ 868Mhz. Our repeater supports M-Bus Mode Wireless S and Mode T.
The Antenna connector is a SMA Female ('Female Outer Shell' and 'Female Receptacle') so the Antenna must have a SMA Male connector.

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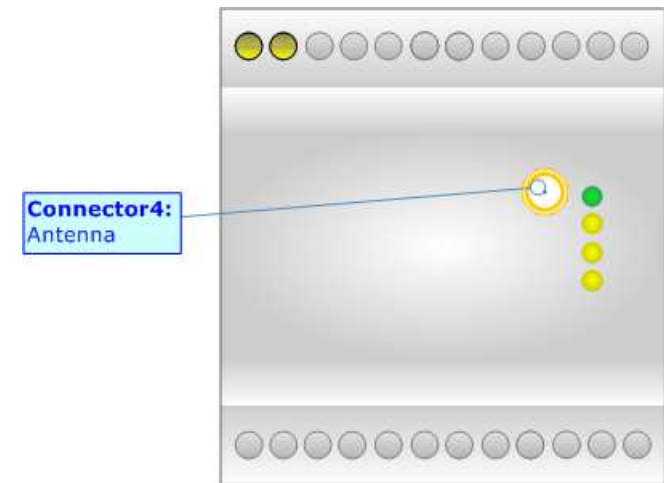
USE OF COMPOSITOR SW67085:

To configure the Converter, use the available software that runs with Windows called SW67085. It is downloadable from 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; 32/64bit).

When launching the SW67085, the window below appears (Fig. 2).
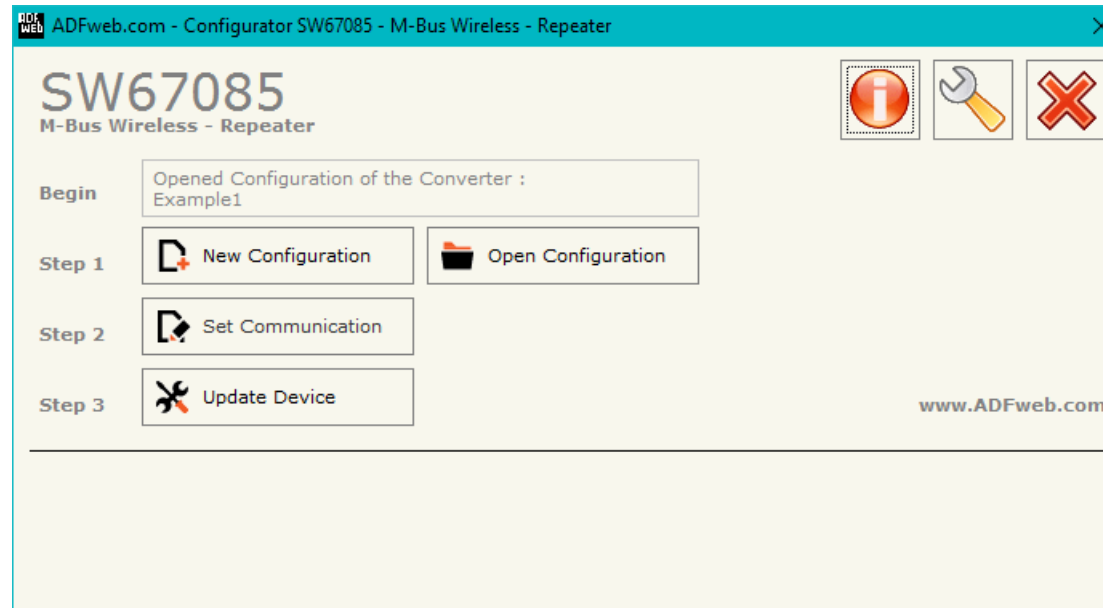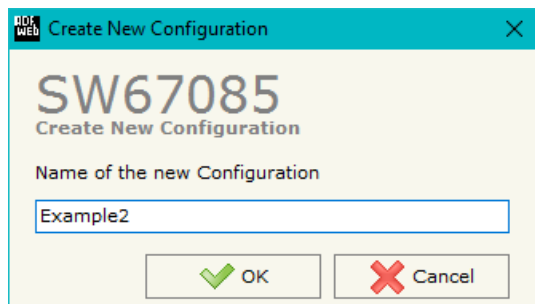
Note:
It is necessary to have installed .Net Framework 4.


Figure 2: Main window for SW67085

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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 "M-Bus Wireless – Repeater" 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**".

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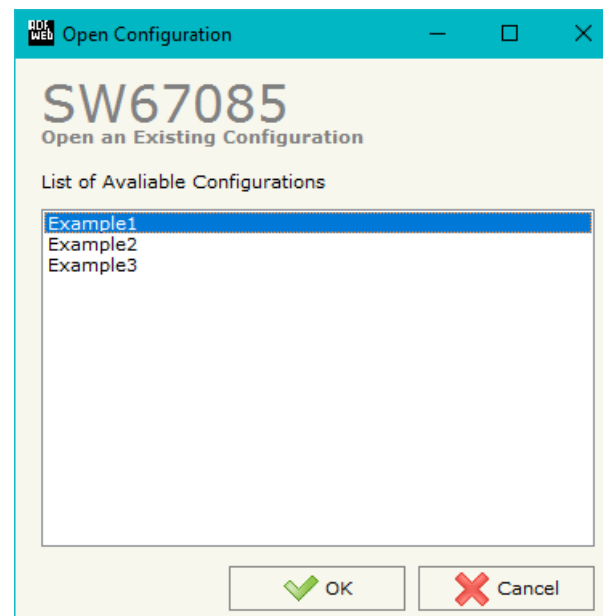
SOFTWARE OPTIONS:

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.
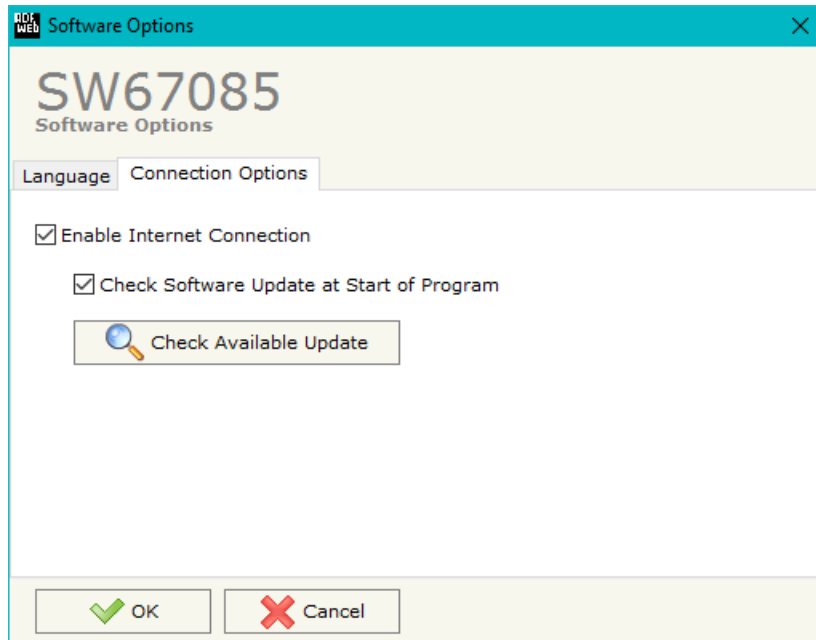
In the section "Connection Options", it is possible to check if there are some updatings of the software compositor in ADFweb.com website.
Checking the option "**Check Software Update at Start of Program**", the SW67085 check automatically if there are updatings when it is launched.

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SET COMMUNICATION:

This section define the fundamental communication parameters of the two buses, Ethernet and M-Bus Wireless.

By Pressing the "**Set Communication**" button from the main window for SW67085 (Fig. 2) the window "Set Communication" appears (Fig. 3). The window is divided in two sections.

The means of the fields for "wM-Bus" are:

➔ In the field "**Mode**" it is possible to select the communication mode.

The means of the fields for "Ethernet" are (programming port):

➔ In the field "**IP ADDRESS**" the IP address of the converter is defined;
➔ In the field "**SUBNET Mask**" the SubNet Mask of the converter is defined;
➔ In the field "**GATEWAY**" the default gateway of the network is defined. This feature can be enabled of disabled pressing the Check Box field.

Figure 3: "Set Communication" 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:

- Turn OFF the Device;
- Put Dip1 of 'Dip-Switch A' at ON position;
- Turn ON the device
- Connect the Ethernet cable;
- 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" turn OFF the Device;
- Put Dip1 of 'Dip-Switch A' at OFF position;
- Turn ON the device.

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.

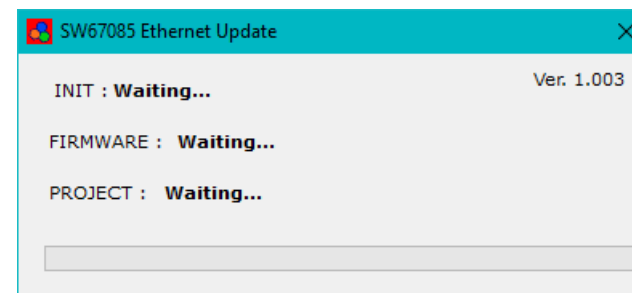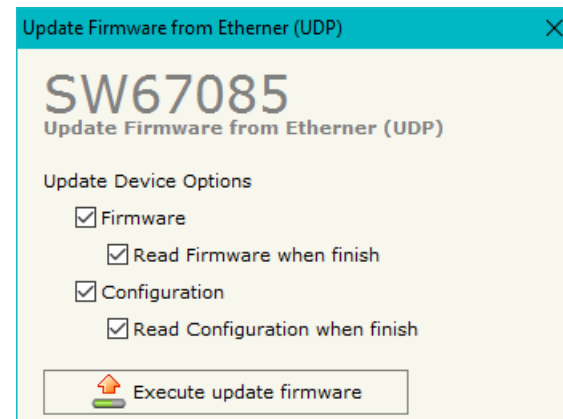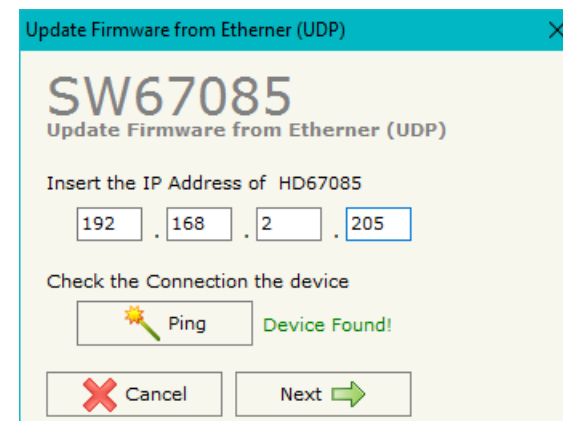At this point the configuration/firmware on the device is correctly updated.

Figure 4: "Update device" windows

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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 HD67085 device.

Note:
When you receive the device, for the first time, you also have to update the Firmware in the HD67085 device.

Warning:
If Fig. 5 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;
+ Check the Wi-Fi 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;
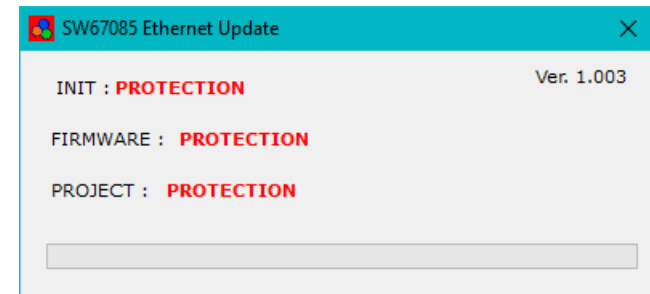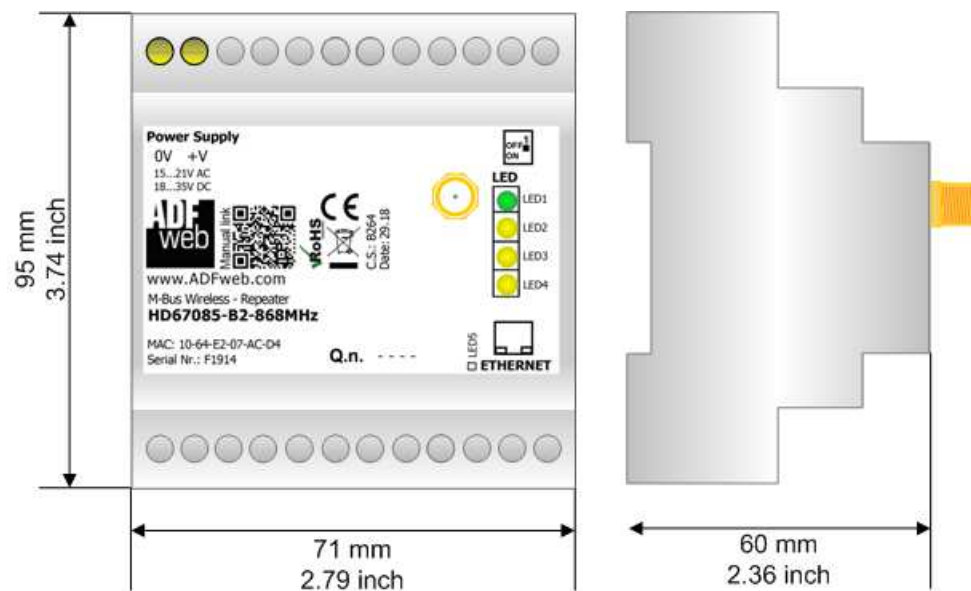+ Pay attention at Firewall lock.

Figure 5: "Protection" window

In the case of HD67085 you have to use the software "SW67085": www.adfweb.com\download\filefold\SW67085.zip.

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MECHANICAL DIMENSIONS:

Figure 6: Mechanical dimensions scheme for HD67085-B2-868MHz

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ORDERING INFORMATIONS:

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

HD67085 – B 2 – xxxMHz

M-Bus Wireless Frequency
868MHz: M-Bus Wireless communication @ 868 MHz

Connectors Type
2: Fixed Screw Terminal

Enclosure Type
B: Modulbox 4M, 35mm DIN Rail mounting

Device Family
HD67085: M-Bus Wireless - Repeater
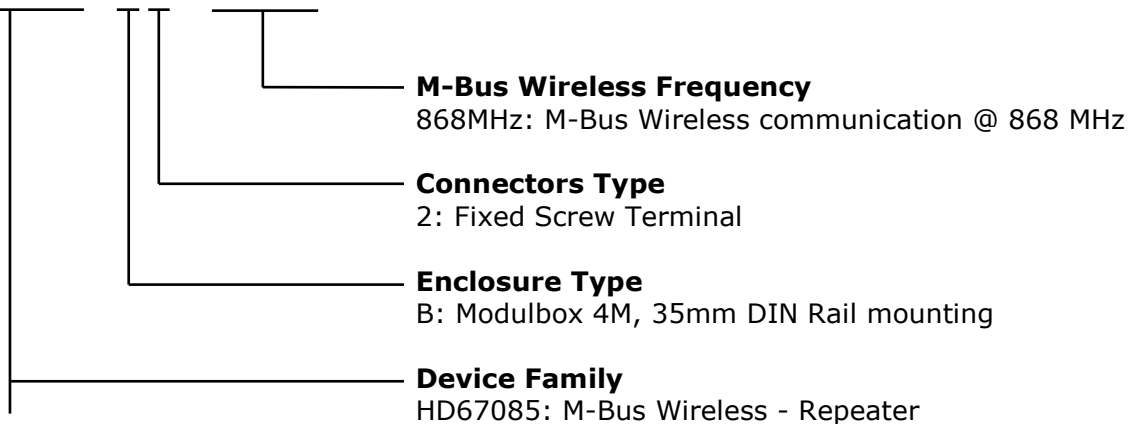
Order Code: **HD67085-B2-868MHz**   -   M-Bus Wireless - Repeater (@ 868 MHz)

ACCESSORIES:

Order Code: **APW020**   -   Power Supply for M-Bus Master device that supports up to 20 Slaves

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OTHER REGULATIONS AND STANDARDS:

WEEE INFORMATION

Disposal of old electrical and electronic equipment (as in the European Union and other European countries with separate collection systems).

This symbol on the product or on its packaging indicates that this product may not be treated as household rubbish. Instead, it should be taken to an applicable collection point for the recycling of electrical and electronic equipment. If the product is disposed correctly, you will help prevent potential negative environmental factors and 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.

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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:

- 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.
- 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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