### ADFweb

Industrial Electronic Devices

# User Manual

Revision 1.113
English

## Modbus TCP Slave / Modbus Master - Converter

(New Order Codes: HD67507-A1 – HD67507-B2)
(Old Order Codes: HD67507 – HD67507M)

for Website information:
www.adfweb.com?Product=HD67507

for Price information:
www.adfweb.com?Price=HD67507-A1
www.adfweb.com?Price=HD67507-B2

## Benefits and Main Features:

► Very easy to configure
► Low Cost
► 32mm Rail DIN mount
► Wide supply input range
► Galvanic Isolation of RS485
► Industrial temperature range:
-40°C / +85°C (-40°F / +185°F)

*HD67507-A1*

*HD67507-B2*

For others products, see also the following links:

**RS232 / RS485 / USB / Ethernet**

www.adfweb.com?Product=HD67118 (RS232 / RS485 - Converter)
www.adfweb.com?Product=HD67119  (USB / RS485 - Converter)
www.adfweb.com?Product=HD67038  (RS485 / RS232 / Ethernet - Converter)

**CAN / CANopen / Modbus / Modbus TCP**

www.adfweb.com?Product=HD67001  (CANopen / Modbus Master - Converter)
www.adfweb.com?Product=HD67502  (CANopen / Modbus Slave - Converter)
www.adfweb.com?Product=HD67011  (CAN / Modbus Master - Converter)
www.adfweb.com?Product=HD67012  (CAN / Modbus Slave - Converter)
www.adfweb.com?Product=HD67514  (CAN / Modbus TCP Master – Converter)
www.adfweb.com?Product=HD67515  (CAN / Modbus TCP Slave – Converter)

**Modbus RTU Slave / Modbus TCP Master - Converter**

www.adfweb.com?Product=HD67510

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

## 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.

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:

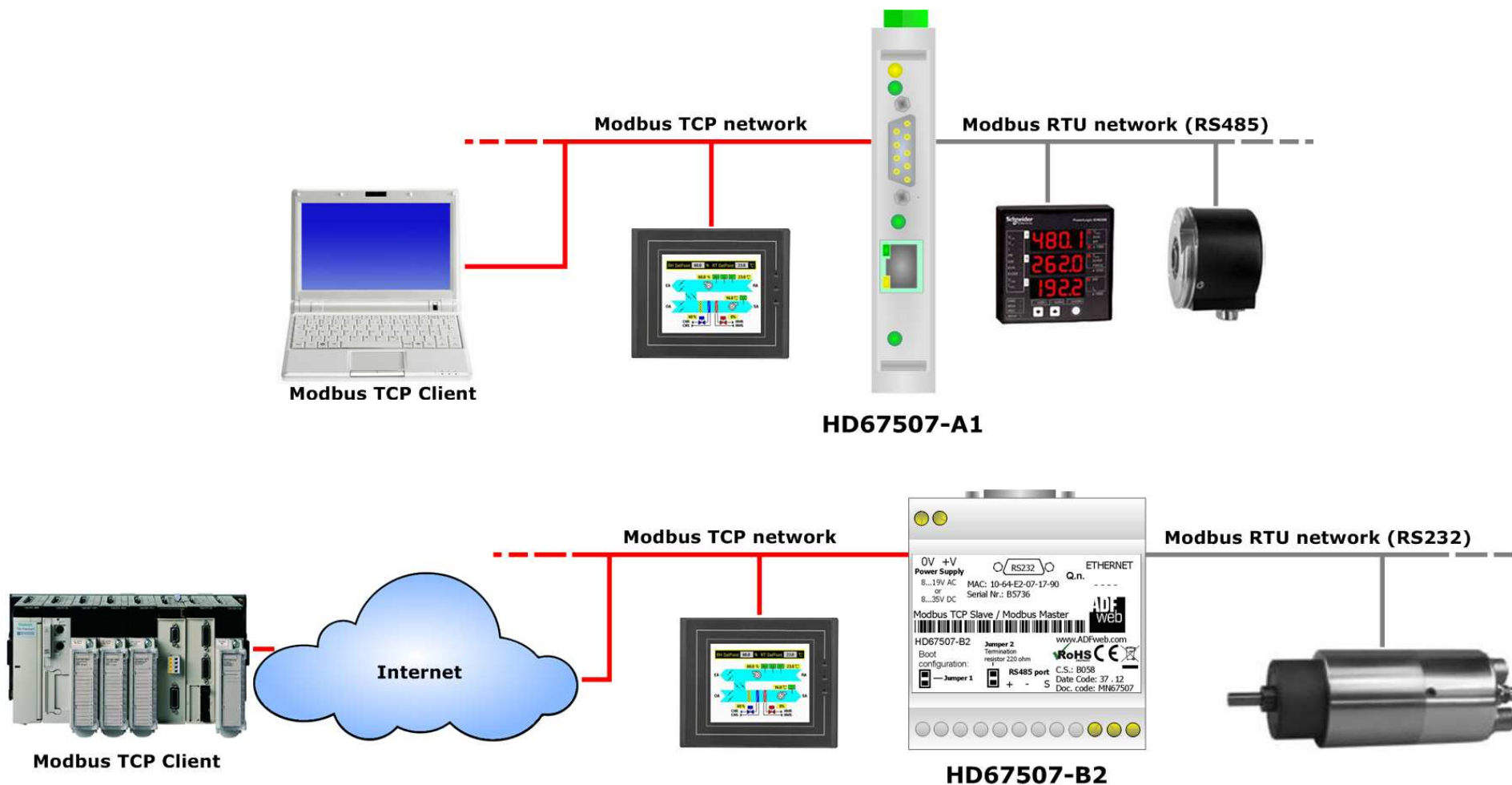| Revision | Date | Author | Chapter | Description |
|---|---|---|---|---|
| 1.102 | 03/07/2009 | Ml | All | Revision |
| 1.103 | 05/05/2010 | Dp | All | Revision |
| 1.104 | 27/06/2011 | DP | All | Revision |
| 1.110 | 03/09/2012 | Fl | All | Software changed (v1.800) |
| 1.111 | 18/12/2012 | Fl | All | Revision |
| 1.112 | 07/02/2013 | Nt | All | Added new chapters |
| 1.113 | 10/06/2013 | Fl | All | Revision |

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**EXAMPLES OF CONNECTION:**



HD67507-A1



HD67507-B2

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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.

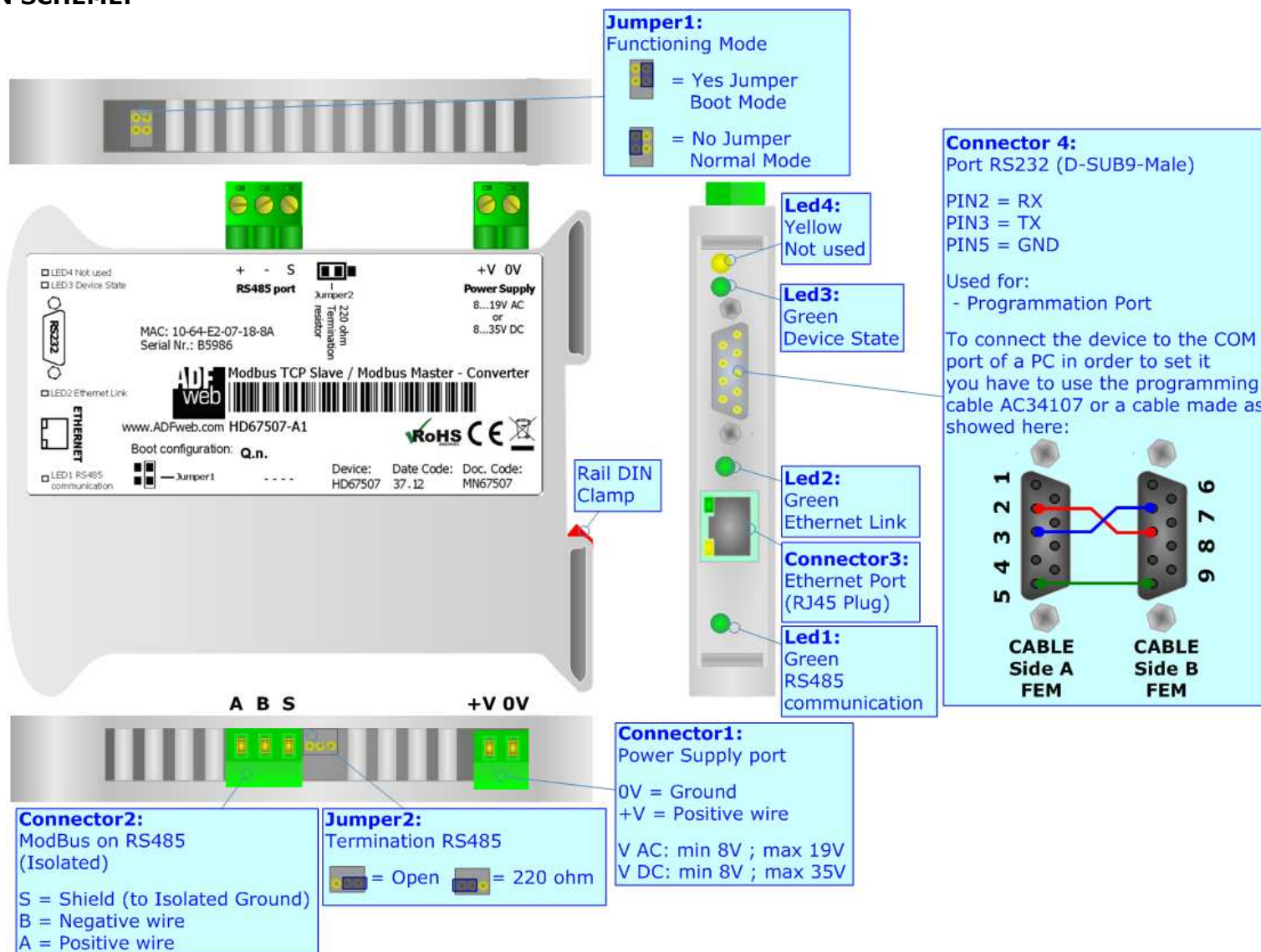Industrial Electronic Devices

**CONNECTION SCHEME:**



*Figure 1a: Connection Scheme for HD67507-A1, HD67507*

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**Jumper1:**
Functioning Mode

= Yes Jumper
Boot Mode

= No Jumper
Normal Mode

**Led4:**
Yellow
Not used

**Led3:**
Green
Device State

**Jumper2:**
Termination RS485

= Open     = 220 ohm

**Connector 2:**
Modbus on RS485
(Isolated port)

S = Shield (to Isolated Ground)
B = Negative wire
A = Positive wire

A   B   S

**Connector 4:**
Port RS232 (D-SUB9-Male)

PIN2 = RX
PIN3 = TX
PIN5 = GND

Used for:
- Programmation Port
- Modbus on RS232

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:

CABLE
Side A
FEM

CABLE
Side B
FEM

0V  +V
Power Supply

8...19V AC
or
8...35V DC

RS232     ETHERNET
Q.n.

MAC: 10-64-E2-07-17-90
Serial Nr.: B5736

Modbus TCP Slave / Modbus Master

HD67507-B2     Jumper 2
Termination
Boot          resistor 220 ohm
configuration:
— Jumper 1     RS485 port
+   -   S

www.ADFweb.com

RoHS  CE

C.S.: B058
Date Code: 37 . 12
Doc. code: MN67507

A   B   S

**Led2:**
Green
Link Ethernet

**Connector3:**
Ethernet Port
(RJ45 Plug)

0V +V

**Connector1:**
Power Supply port

0V = Ground
+V = Positive wire

V AC: min 8V ; max 19V
V DC: min 8V ; max 35V

**Led1:**
Green
RS485
communication

*Figure 1b: Connection Scheme for HD67507-B2, HD67507M*

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### CHARACTERISTICS:

The "Modbus TCP Slave / Modbus Master – Converter" allows the following characteristics:

- Opto-isolated RS485;
- Choice possibility between RS232 or RS485 on Modbus RTU;
- Ethernet 10Base-T / 100Base-T, autosensing for Modbus TCP ;
- Mountable on 35mm Rail DIN;
- Temperature range -40°C / +85°C;
- EMS EN 61000-6-2.

This device is able to manage a maximum of ten simultaneous connections from Ethernet side.

To configure the Converter, use the available software that runs with Windows, called SW67507. It is downloadable on the site www.adfweb.com and its operation is described in this document.

It can be used in two operative ways: routing and natting.
In the "**Routing Mode**" the command Modbus is forwarded on the serial line using the same requested addresses.
In the "**Natting Mode**" the device addresses and data are altered through a translation table of the addresses.

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**POWER SUPPLY:**

The devices can be powered at 8…19V AC and 8…35V DC. The consumption depends to the code of the device. For more details see the two tables below.

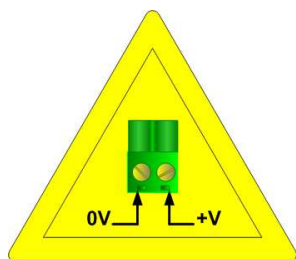| VAC 〜 | | VDC ▬▬ | |
|---|---|---|---|
| **Vmin** | **Vmax** | **Vmin** | **Vmax** |
| **8V** | **19V** | **8V** | **35V** |

Consumption at 24V DC:

| Device | Consumption [W/VA] |
|---|---|
| HD67507-A1 | 4 |
| HD67507-B2 | 5 |

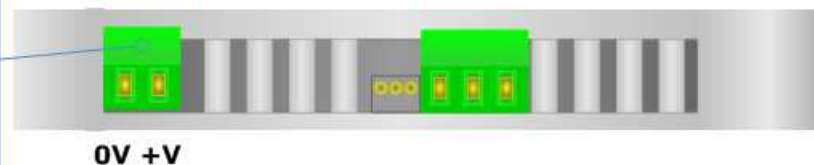⚠️ **Warning:  Not reverse the polarity power**



HD67507-A1
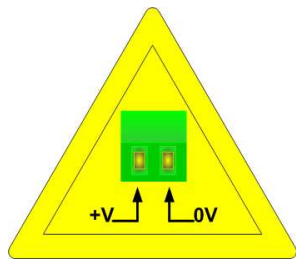
HD67507-B2

**Connector1:**
Power Supply port

0V = Ground
+V = Positive wire

V AC: min 8V ; max 19V
V DC: min 8V ; max 35V

**Connector1:**
Power Supply port

0V = Ground
+V = Positive wire

V AC: min 8V ; max 19V
V DC: min 8V ; max 35V

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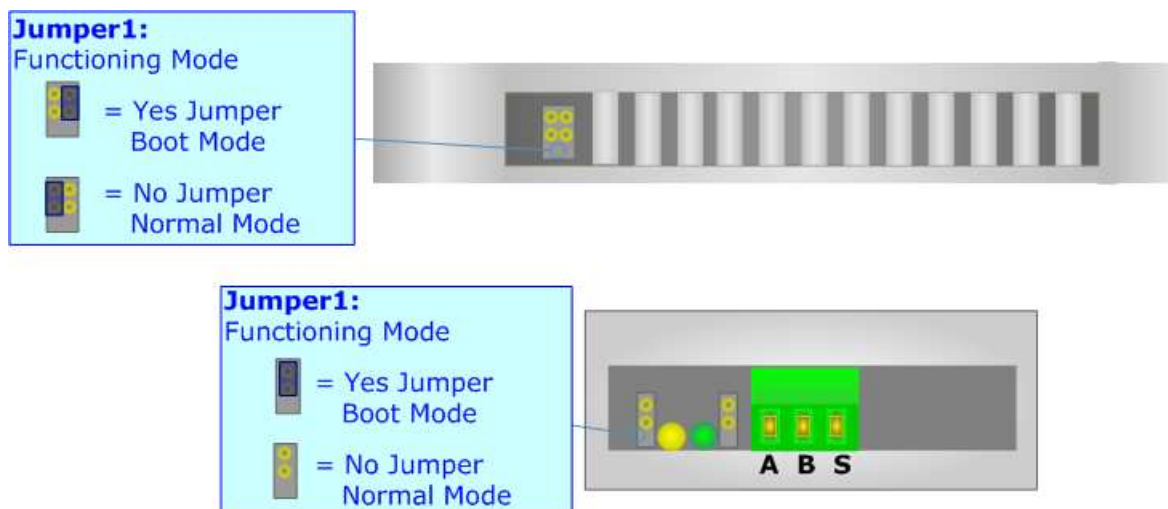
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**FUNCTION MODES:**

The devices has got two functions mode depending of the position 'Jumper1':

➔ The first, without Jumper1 (factory setting), is used for the normal working of the device;
➔ The second, with Jumper1, is used for upload the Project/Firmware into the device.

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.

**Jumper1:**
Functioning Mode

= Yes Jumper
Boot Mode

= No Jumper
Normal Mode

**Jumper1:**
Functioning Mode

= Yes Jumper
Boot Mode

= No Jumper
Normal Mode

A  B  S

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**LEDS:**

The devices 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: RS485 communication (green) | Change state when receive a Modbus frame | **Blinks quickly:** Boot state<br>**Blinks very slowly (~0.5Hz):** update in progress |
| 2: Ethernet Link (green) | **ON:** Ethernet cable connected<br>**OFF:** Ethernet cable disconnected | **ON:** Ethernet cable connected<br>**OFF:** Ethernet cable disconnected |
| 3: Device State (green) | Blinks slowly (~1Hz) | **Blinks quickly:** Boot state<br>**Blinks very slowly (~0.5Hz):** update in progress |
| 4: Not used (green) | OFF | **Blinks quickly:** Boot state<br>**Blinks very slowly (~0.5Hz):** update in progress |



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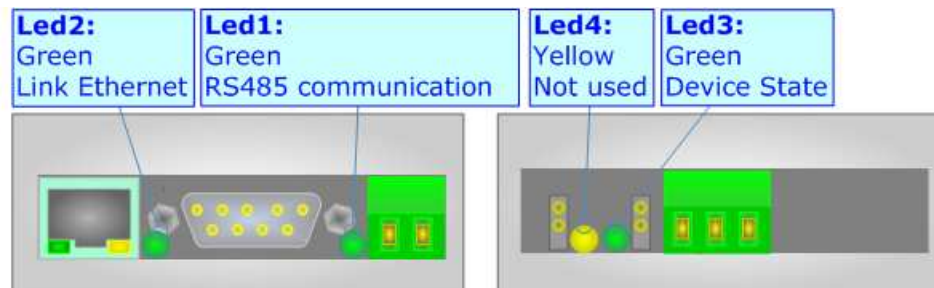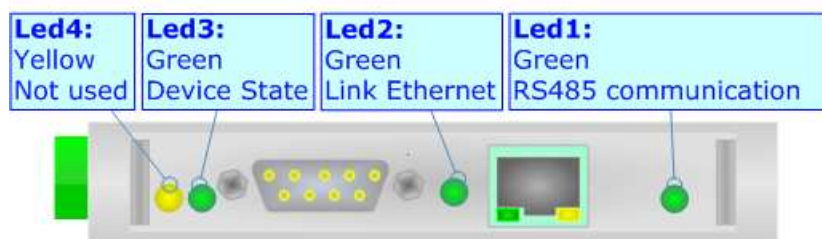
### ETHERNET:

The Ethernet connection must be made using Connector3 of HD67507-A1/HD67507-B2 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.
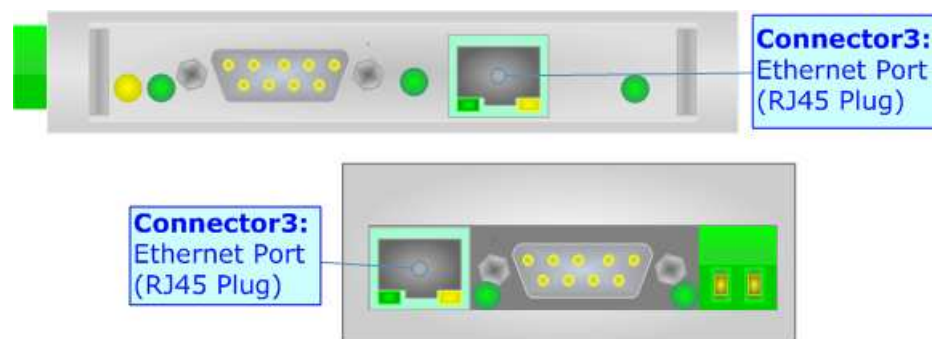


### RS232:

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 RS232C Cable not exceed 15 meters.
The serial port is used for programming the device and for Modbus communication.

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**RS485:**

For terminate the RS485 line with a 220Ω resistor it is necessary to insert the Jumper2 like in figure.
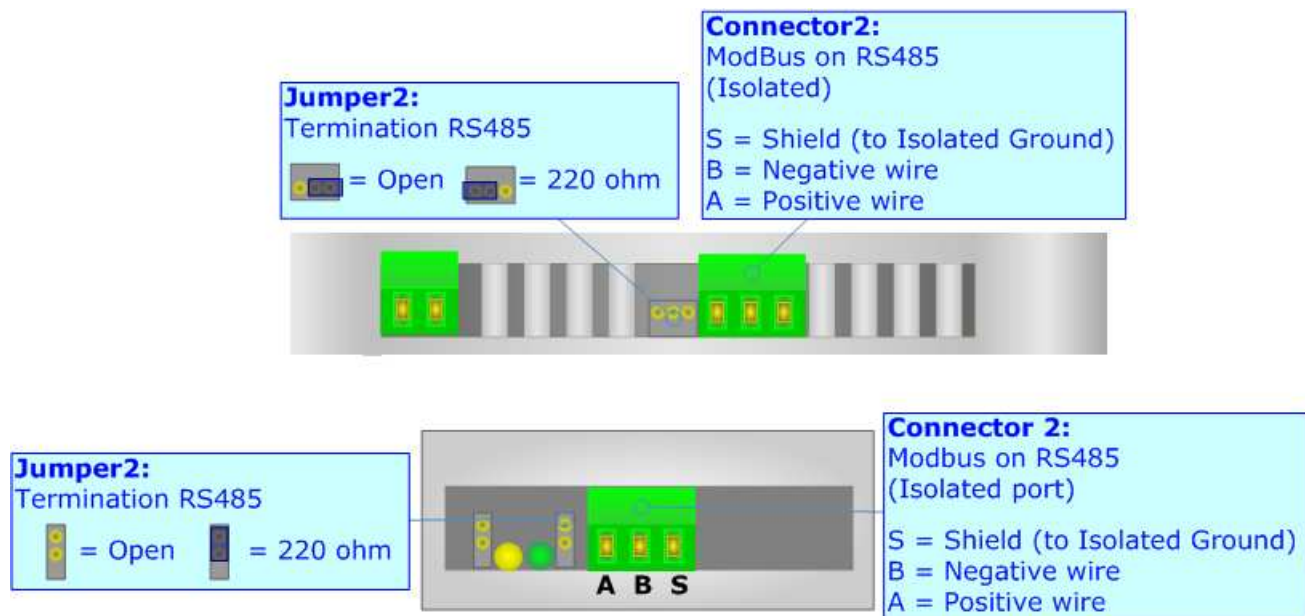


The maximum length of the cable should be 1200m (4000 feet).

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.

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## USE OF COMPOSITOR SW67507:

To configure the "Modbus TCP Slave / Morbus Master - Converter", use the available software that runs with Windows, called SW67507. It is downloadable on the site www.adfweb.com and its operation is described in this document. *(This manual is referenced to the last version of the software present on our web site)*. The software works with MSWindows (MS 2000, XP, Vista, Seven, 8; 32/64bit).
When launching the SW67507 the right window appears (Fig. 2).

*Figure 2: Main window for SW67507*

## 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 "Modbus TCP Slave / Morbus Master - 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 Project**".

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**GENERAL PARAMETER:**

This section defines the fundamental communication parameters of two buses, Modbus TCP and Modbus RTU.

By pressing the "**General Parameter**" button from the main window for SW67507 (Fig. 2) the window "General Parameter" appears (Fig. 3).

The section "Operation Mode" defines the operation of the Converter in "**Routing Mode**" or "**NAT Mode**" (see the description at page 15).

The means for the fields of "MODBUS TCP" are:

+ In the field "**IP Address**" insert the IP address that you want to give to the slave Modbus TCP;
+ In the field "**Subnet Mask**" insert the Subnet Mask;
+ In field "**Gateway**" insert the Defualt Gateway IP address for use the Converter in WAN or Internet. For enable this feature is necessary to check the Gateway option.
+ In the field "**Port**" insert the number of port;
+ Checking "**Enable UDP Port**" field it is possible to do a Broadcast request. This request must be made at Port 64223 ($FADF) with these six byte of data: $53, $45, $41, $52, $43, $48. Each device in response sends a total of 10 Bytes. These bytes are four for the IP and the other for the MAC address (Example of response: 0xC0, 0xA8, 0x01, 0x2A, 0x11, 0x22, 0x33, 0x44, 0x55, 0x58. So the IP is: 192.168.1.42; and the MAC Address: 11-22-33-44-55-58 ).

*Figure 3: "General Parameter" window*

+ If the field "**Enable Special Command**" is checked, it is possible to send a no-Modbus request through the gateway. i.e. a TCP frame with the first two characters 0x55 and 0xAA is sent in the Modbus RTU line as is. If you don't want to send the first two bytes (0x55, 0xAA) in the RTU line it is possible to check the field "**Cancel the first two bytes**".
+ If the field "**Fast StartUp (only 100Mb/s)**" is checked, the Converter take less time to go online. This command can use only if the gateway is used in a 100Mb/s network;
+ If the field "**No TCP frame on RTU Timeout**" is checked the Converter don't sends back the reply on TCP (error response) if the Slave RTU interrogated has not replied.

The means for the fields of "MODBUS RTU" are:

- If the field "**RS232**" is checked the serial line in use is the RS232, otherwise is the "**RS485**";
- In the field "**Baud rate**" the velocity of the Modbus RTU is defined;
- In the field "**Parity**" the Modbus RTU parity is defined;
- "**Timeout**" is the maximum time that the device attends for the answer from the Slave interrogated;
- In the field "**RS485 Stop bits**" the number of Stop-Bit of Modbus RTU is defined;
- If the field "**Enable delay from last receive**" is checked the Converter, before send another Modbus RTU request, waits the time written in the field below (expressed in ms).

**PING DEVICE:**

If it is necessary to do a Ping on the net, before pressing the "**Ping Device**" button insert a value in the field on the right and then press the button. To use this feature in Vista and 7 you have to open the software with Administrator right.

Note:
In order to do this, the Converter must be in Normal Mode.

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**OPERATION MODE:**

<u>ROUTING:</u>

A few characteristics of the Modbus RTU package have been modified in the standard of the Modbus TCP protocol. Two bytes of the final CRC were eliminated (no longer necessary for the information to reach its already corrected destination). The first byte of the slave identification was changed, leaving the one that is called PDU. A frame denominated as MBAP header with dimensions of 7 bytes was added to the head of the PDU.
It is composed by the following:

- Word transaction identifier (recopied from the slave in the response phase);
- Word protocol identifier (0=Modbus protocol);
- Word length (number of successive bytes);
- Byte unit identifier (used for the routing operation).

By using the last byte of the MBAP header, it is possible to carry out the routing from a requested Modbus TCP toward a serial line using the address  from the slave which is specified by the byte unit identifier.

Example:
A requested Modbus TCP made in the device as the address 192.168.0.200 for the holding register address $2000, which is MBAP unit identifier has the value of 2. It will be followed by the request on the serial  for the device with the address 2 at the word $2000.
After the request is made, the RTU will respond. The master TCP will be given the same response which will be reconstructed according to the specifications of the Modbus TCP.

If the RTU slave responds with an exception, that exception code will be transmitted again to the TCP master. If the RTU slave does not respond in the estimated time defined by the Timeout parameter, an exception response will be given: error code $0B.

<u>NATTING:</u>

When using the operation mode, Natting, the requested data will be processed through a table of translations of the Modbus network addresses.

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**TRANSLATE TABLE:**

Within the section "Translate Table" you can define the variables that can be read or written by the TCP bus on the RTU bus when the device is in NAT mode.

By pressing the "**Translate Table**" button from the main window for SW67507 (Fig. 2) the window "Set Translate Table" appears (Fig. 4).

| N° | Data Type | Address TCP | Address Device RTU | Address RTU | N° Point | Mnemonic |
|----|-----------|-------------|--------------------|-------------|----------|----------|
| 1 | Holding Register | 100 | 5 | 200 | 1 | Temprature |
| 2 | Input Register | 150 | 5 | 234 | 1 | SetPoint |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |

*Figure 4: "Set Translate Table" window*

The data of the columns have the following meanings:

➔ In the field "**Data Type**" insert the type of data that is being considered;
➔ In the field "**Address TCP**" insert the virtual address of the present data in a device in the TCP Modbus;
➔ In the field "**Address Device RTU**" insert the address of the device on the RTU Modbus that contains the data;
➔ In the field "**Address RTU**" insert the address of the data on the RTU device;
➔ In the field "**N° Point**" insert the number of consecutive data that you want to configure. For example, you create Address TCP=1000, Address RTU=100 and N° point = 5, the following gets set-up automatically: addresses TCP 1001, 1002, 1003, 1004 and the variables RTU 101, 102, 103, 104;
➔ In the field "**Mnemonic**" you can insert a brief description.

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Example 1:

If you want, from TCP network, write a data it the RTU network on the device at:

- Address 5;
- Through Gateway WORD 100 (Address RTU);
- Address TCP 1000.

In the above scenario:

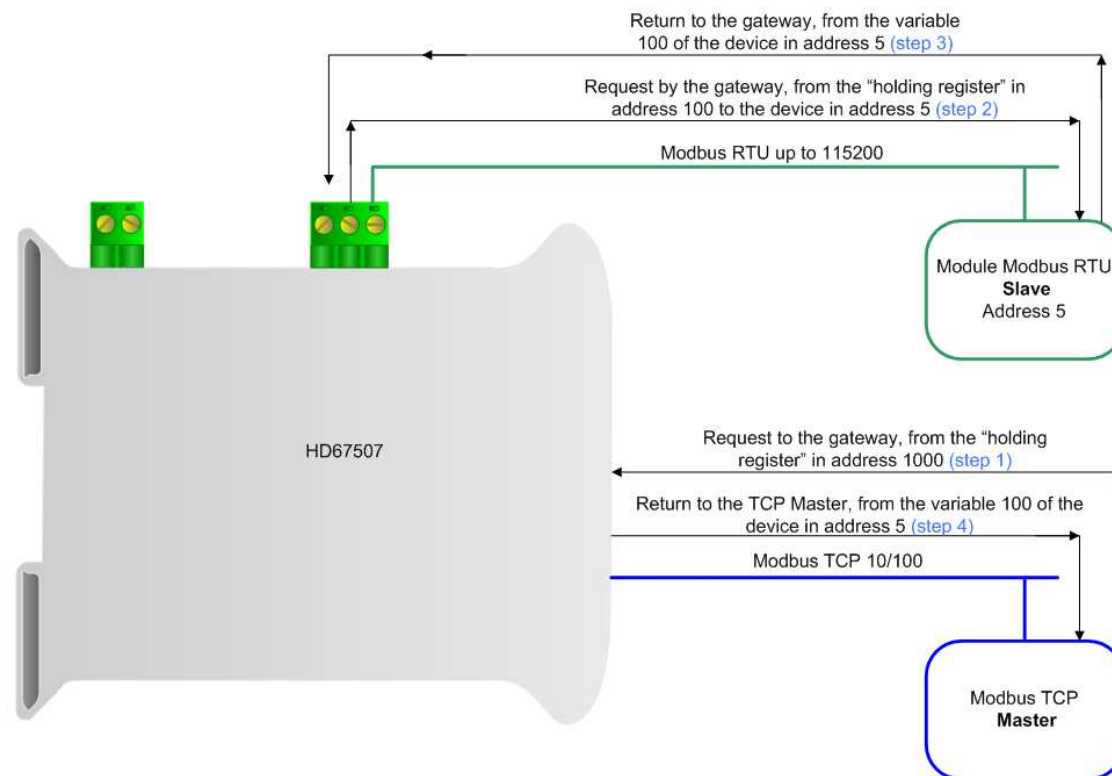Specify the type of data between:

- Coil Status (bit in read write);
- Input Status (bit in read);
- Holding Register (word in read and write);
- Input Register (word in read).

From the side of the MODBUS TCP:

- Address of data to read.

From the side of the MODBUS RTU:

- Address of the device to interrogate;
- Address of data to read on device.

Return to the gateway, from the variable 100 of the device in address 5 (step 3)

Request by the gateway, from the "holding register" in address 100 to the device in address 5 (step 2)

Modbus RTU up to 115200

Module Modbus RTU
**Slave**
Address 5

HD67507

Request to the gateway, from the "holding register" in address 1000 (step 1)

Return to the TCP Master, from the variable 100 of the device in address 5 (step 4)

Modbus TCP 10/100

Modbus TCP
**Master**

Note:
If the RTU slave responds with an exception, that exception code will be transmitted to the TCP Master. If the RTU slave does not respond within the estimated time defined by the Timeout parameter, an exception response will be given on TCP side: error code $0B.

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## UPDATE VIA SERIAL:

By pressing the "**Update Via Serial**" button it is possible to load the created Configuration into the device, and also the Firmware if is necessary, using the RS232 port.

In order to load the parameters or update the firmware in the device, follow these instructions:

- Turn off the Device;
- Connect the RS232 Null Modem Cable form your PC to the Converter;
- Insert the Boot Jumper (see "FUNCTION MODES" section);
- Select the "**COM port**" and press the "**Connect**" button;
- Turn on the device;
- Check the "Device State" Led. It must blink quickly (see "LEDS" section);
- 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;
- Remove the Boot jumper;
- Disconnect the RS232 Cable;
- Turn on the device.

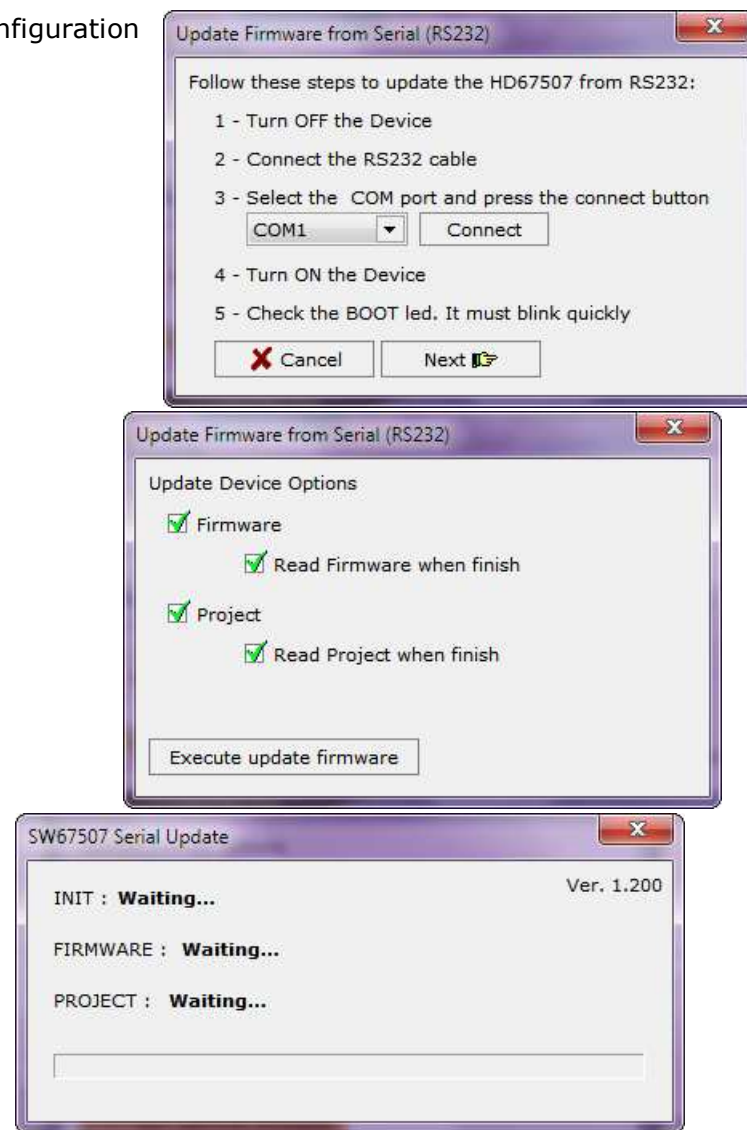At this point the configuration/firmware on the device is correctly updated.

*Figure 5: "Update Device" windows*

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### UPDATE VIA UDP:

By pressing the "**Update Via UDP**" button it is possible to load the created Configuration into the device, and also the Firmware if is necessary, 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;
- Insert the Boot Jumper (see "FUNCTION MODES" section);
- Insert the IP "**192.168.2.66**";
- Turn on the device;
- Press the "**Ping**" button, must appear "Device Found!";
- Press the "**Next**" button;
- Select which operations you want to do;
- Press the "**Execute update firmware**" button to start the upload;
- When all the operations are "OK" turn off the Device;
- Remove the Boot jumper;
- Turn on the device.

At this point the configuration/firmware on the device is correctly updated.
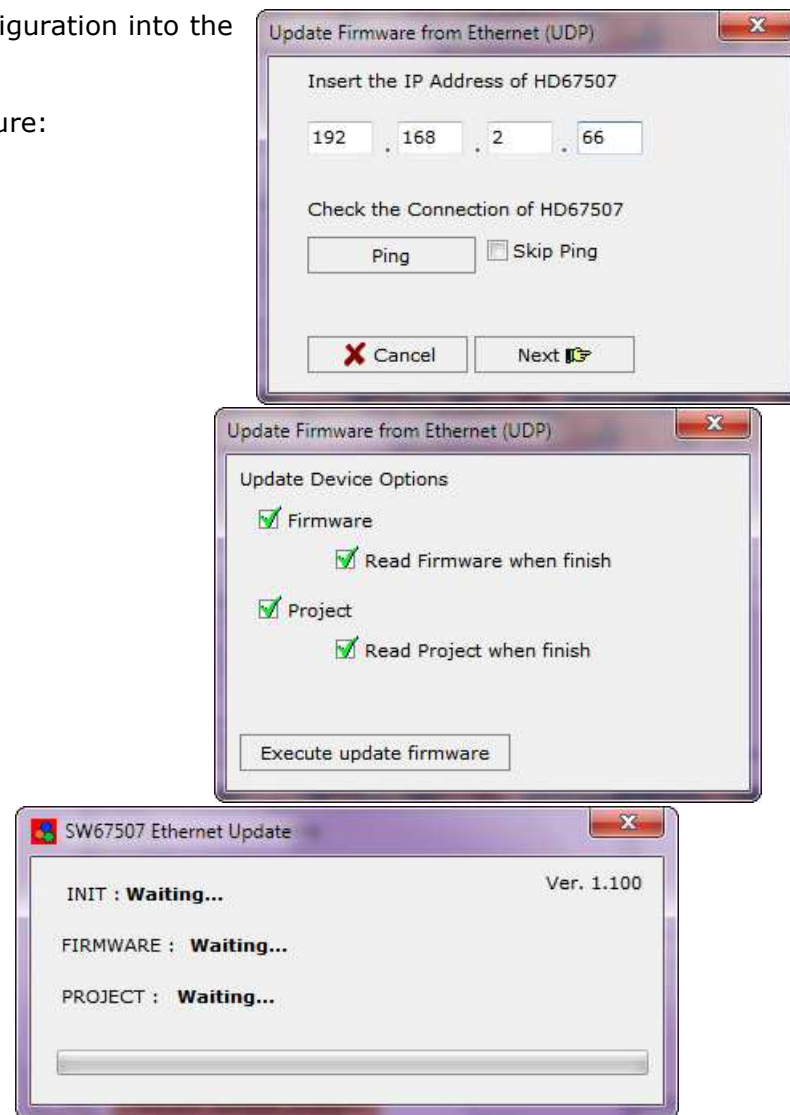
*Figure 6: "Update device" windows*

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If you know the actual IP address of the device you have to use this procedure:

- Turn on the Device with the Ethernet cable inserted;
- Insert the actual IP of the Gateway;
- Press the "**Ping**" button, must appear "Device Found!";
- Press the "**Next**" button;
- Select which operations you want to do;
- Press the "**Execute update firmware**" button to start the upload;
- When all the operations are "OK" the device automatically goes at Normal Mode.

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

Note:
When you install a new version of the software it is better if the first time you do the update of the Firmware in the HD67507-A1 or HD67507-B2 device.

Note:
When you receive the device, for the first time, you have to update also the Firmware in the HD67507-A1 or HD67507-B2 device.

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⚠ Warning:
    If the Fig. 7 appears when you try to do the Update before require assistance try these points:

➜ Check if the serial COM port selected is the correct one;
➜ Check if the serial cable is connected between the PC and the device;
➜ Try to repeat the operations for the updating;
➜ If you are using a USB←→RS232 converter try with a native COM port or change the converter;
➜ Try to repeat the operations for the updating;
➜ Try with another PC;
➜ Try to restart the PC;
➜ If you are using the program inside a Virtual Machine, try to use in the main Operating System;
➜ If you are using Windows Seven or Vista, make sure that you have the administrator privileges;
➜ In case you have to programming more than one device, using the "TCP 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 you have to launch the "Command Prompt" with Administrator Privileges.
➜ Take attention at Firewall lock.


*Figure 7: "Protection" windows*

⚠ In the case of HD67507-A1 or HD67507-B2 you have to use the software "SW67507": www.adfweb.com\download\filefold\SW67507.zip.

✎ Note:
    The "**Update via UDP**" can be used only with Hardware HD67507-A1 or HD67507-B2, and only with Software version from 1.800;
The "**Update via TCP**" can be used only with Hardware HD67507 or HD67507M, and only with Software version up to 1.400;
The "**Update via Serial**" can be used with all hardware, and with all Software versions.

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## MECHANICAL DIMENSIONS:
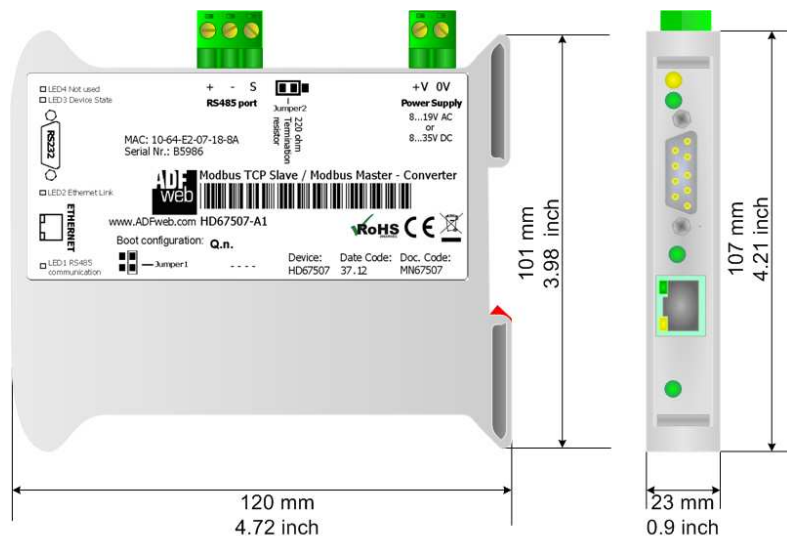


Housing: PVC
Weight: 200g (Approx)

*Figure 8: Mechanical dimensions scheme for HD67507-A1*
*(and Old Model HD67507)*
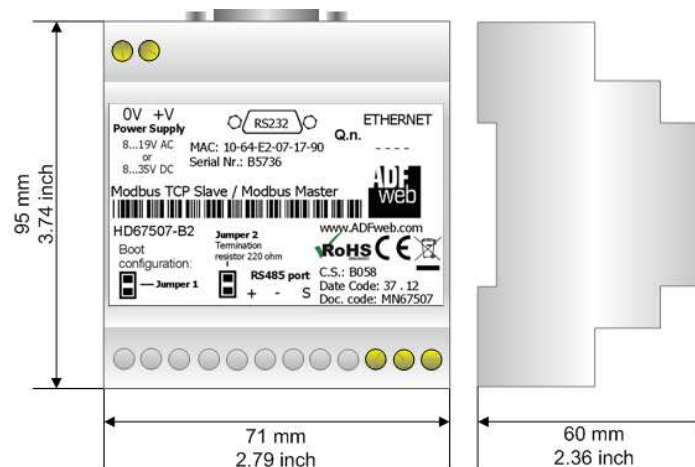


Housing: PVC
Weight: 200g (Approx)

*Figure 9: Mechanical dimensions scheme for HD67507-B2*
*(and Old Model HD67507M)*

## ORDER CODES:

Order Code: **HD67507-A1-**    Modbus TCP Slave / Modbus RTU Master - Converter ( Housing type: A, Terminal Blocks Connectors )

Order Code: **HD67507-B2-**    Modbus TCP Slave / Modbus RTU Master - Converter ( Housing type: B, Terminal Blocks Connectors )

## 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

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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 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:
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 |
|------|-------------|-----|
| HD67118 | Converter RS232 to RS485 Isolated | www.adfweb.com?Product=HD67118 |
| HD67119 | Converter USB 2.0 to RS485 Isolated | www.adfweb.com?Product=HD67119 |
| HD67507 | Gateway Modbus TCP Server to RTU Master | www.adfweb.com?Product=HD67507 |
| HD67510 | Gateway Modbus TCP Client to RTU Slave | www.adfweb.com?Product=HD67510 |