

# User Manual

Revision 1.000  
English

## Modbus TCP Slave / SNMP - Converter

(Order Code: HD67167-A1)

for Website information:

[www.adfweb.com?Product=HD67167](http://www.adfweb.com?Product=HD67167)

for Price information:

[www.adfweb.com?Price=HD67167-A1](http://www.adfweb.com?Price=HD67167-A1)

### Benefits and Main Features:

- ⊕ Very easy to configure
- ⊕ Electrical isolation
- ⊕ Temperature range: -40°C/85°C (-40°F/185°F)



For others SNMP products, see also the following links:

#### Converter SNMP to

- [www.adfweb.com?Product=HD67155](http://www.adfweb.com?Product=HD67155)
- [www.adfweb.com?Product=HD67156](http://www.adfweb.com?Product=HD67156)
- [www.adfweb.com?Product=HD67159](http://www.adfweb.com?Product=HD67159)
- [www.adfweb.com?Product=HD67160](http://www.adfweb.com?Product=HD67160)
- [www.adfweb.com?Product=HD67161](http://www.adfweb.com?Product=HD67161)
- [www.adfweb.com?Product=HD67162](http://www.adfweb.com?Product=HD67162)
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- [www.adfweb.com?Product=HD67169](http://www.adfweb.com?Product=HD67169)
- [www.adfweb.com?Product=HD67613](http://www.adfweb.com?Product=HD67613)
- [www.adfweb.com?Product=HD67693](http://www.adfweb.com?Product=HD67693)
- [www.adfweb.com?Product=HD67726](http://www.adfweb.com?Product=HD67726)

- (CAN)
- (CANopen)
- (EtherNet/IP)
- (DeviceNet Master)
- (DeviceNet Slave)
- (J1939)
- (M-Bus Master)
- (Modbus Master)
- (Modbus Slave)
- (Modbus TCP Master)
- (PROFIBUS Master)
- (PROFIBUS Slave)
- (PROFINET)
- (BACnet Slave)
- (BACnet Master)

Do you have an your customer protocol?

[www.adfweb.com?Product=HD67003](http://www.adfweb.com?Product=HD67003)

Do you need to choose a device? do you want help?

[www.adfweb.com?Cmd=helpme](http://www.adfweb.com?Cmd=helpme)



User Manual

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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	05/01/2015	Ff	All	First Release

**WARNING:**

ADFweb.com reserves the right to change information in this manual about our product without warning.  
ADFweb.com is not responsible for any error this manual may contain.

**TRADEMARKS:**

All trademarks mentioned in this document belong to their respective owners.

**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:

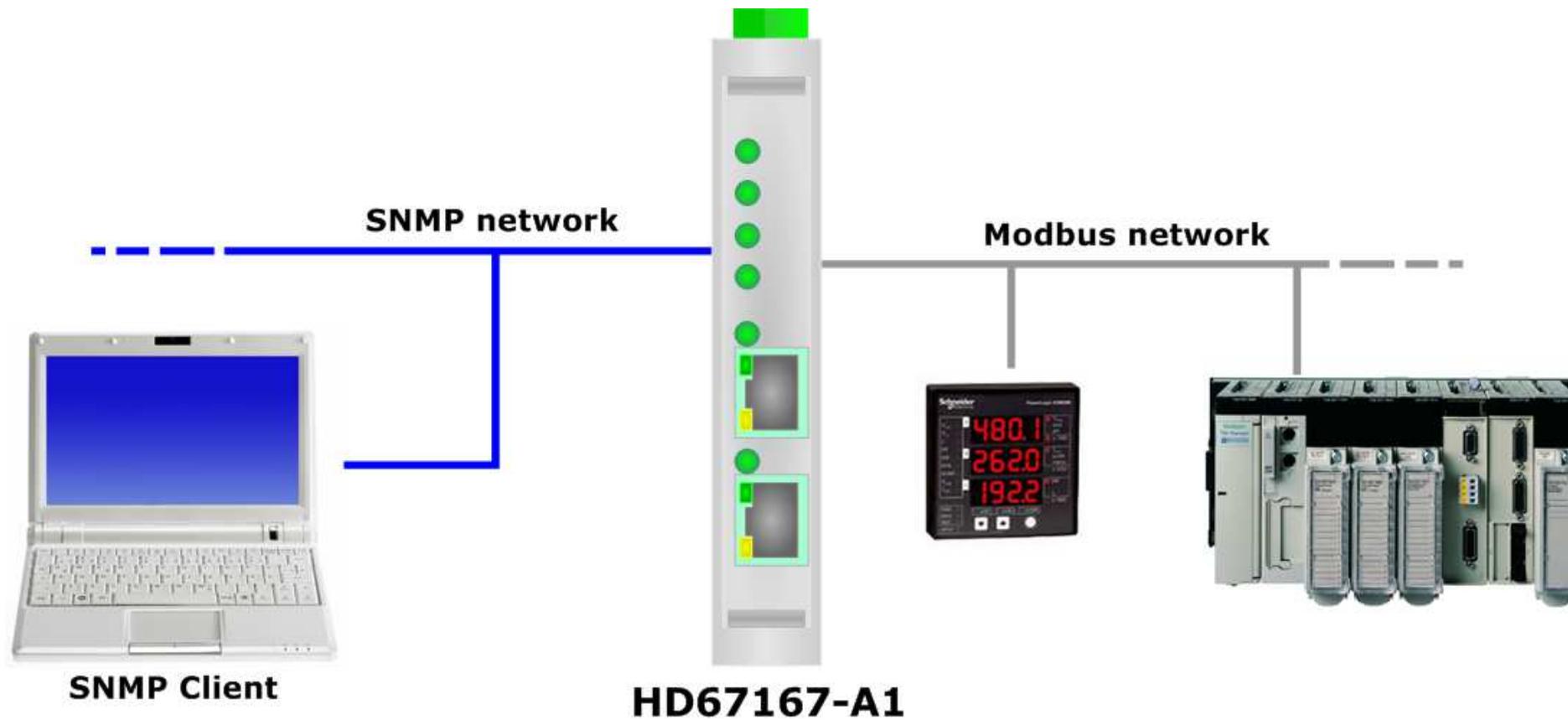


This symbol indicates that non-observance of the safety instructions is a danger for people that could lead to serious injury or death and / or the possibility of damage.

**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.

**EXAMPLES OF CONNECTION:**



**CONNECTION SCHEME:**

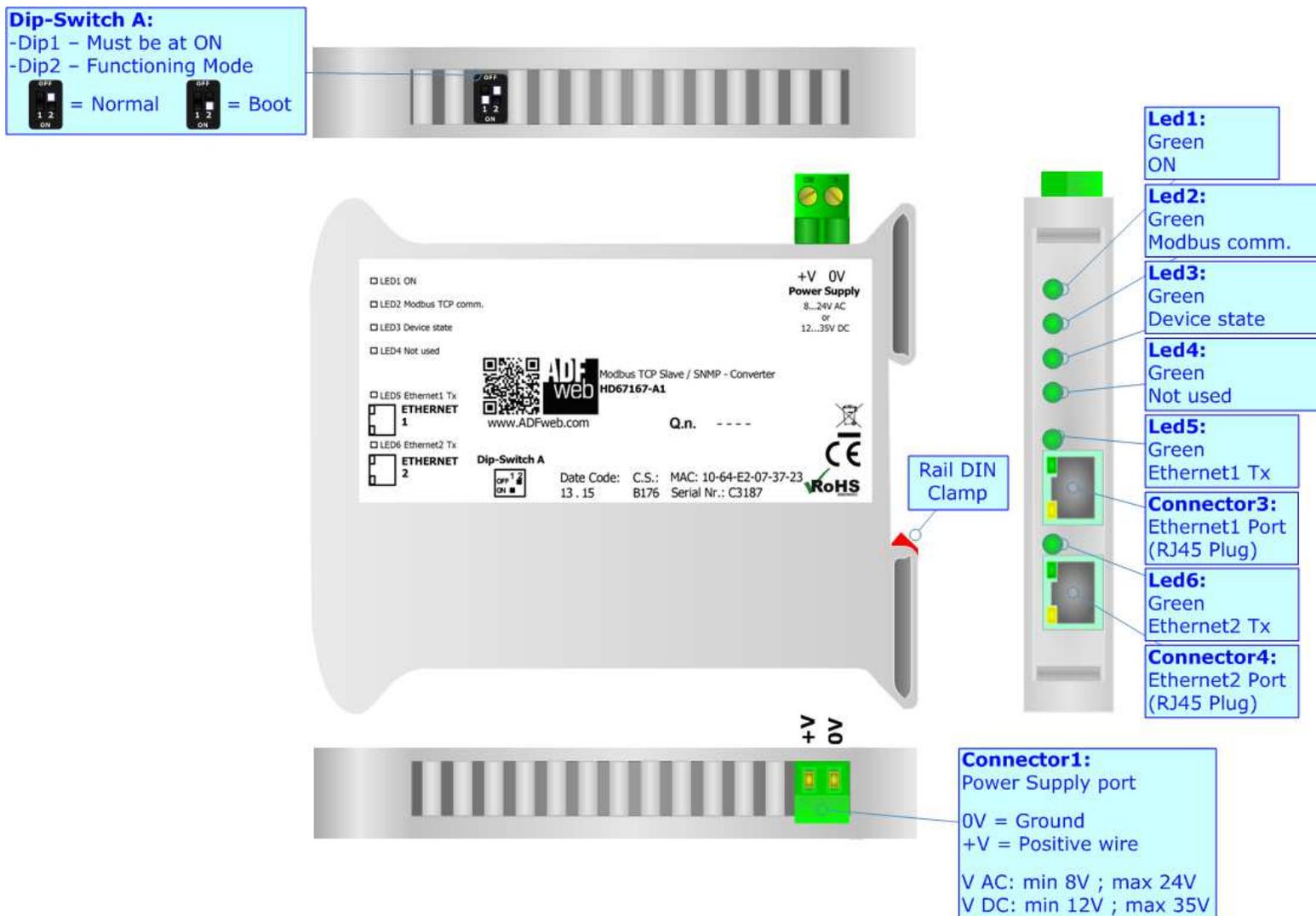


Figure 1: Connection scheme for HD67167-A1

**CHARACTERISTICS:**

The HD67167-A1 is a Modbus TCP Slave / SNMP Converter.

It has the following characteristics:

- Up to 1024 bytes in reading and 1024 bytes in writing;
- Isolation between Power Supply - Ethernet.
- Two-directional information between Modbus TCP bus and SNMP bus;
- 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].

**CONFIGURATION:**

You need Compositor SW67167 software on your PC in order to perform the following:

- Define the parameter of SNMP line;
- Define the parameter of Modbus TCP line;
- Update the device.

**POWER SUPPLY:**

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

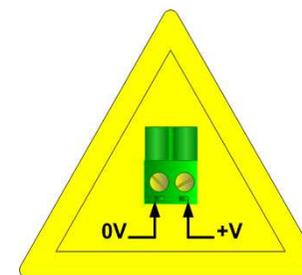
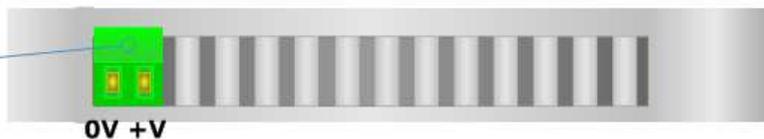
VAC 		VDC 	
Vmin	Vmax	Vmin	Vmax
8V	24V	12V	35V

Consumption at 24V DC:

Device	Consumption [W/VA]
HD67167-A1	3.5

**Caution: Do not reverse the polarity power**

**Connector1:**  
 Power Supply port  
 0V = Ground  
 +V = Positive wire  
 V AC: min 8V ; max 24V  
 V DC: min 12V ; max 35V



HD67167-A1

**FUNCTION MODES:**

The device has got two function modes depending on the position of the 'Dip2 of Dip-Switch A':

- The first, with 'Dip2 of Dip-Switch A' at "OFF" position, is used for the normal working of the device.
- The second, with 'Dip2 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.

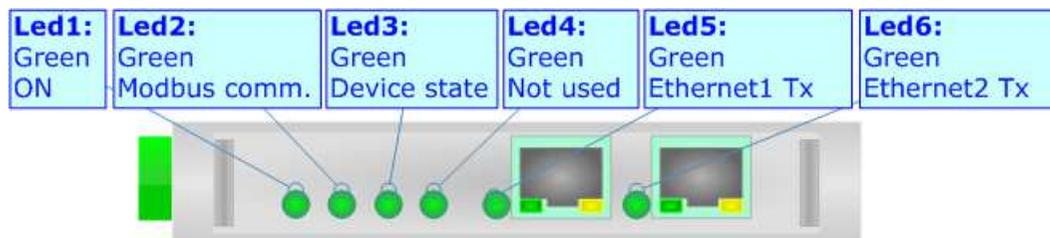
**Warning:**

Dip1 of 'Dip-Switch A' must be at ON position to work even if the Ethernet cable is not inserted.

**LEDS:**

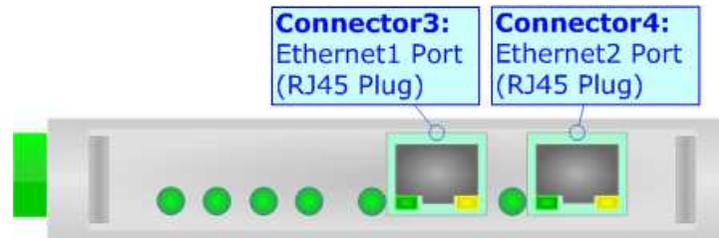
The device has got six LEDs that are used to give information about the functioning status.  
The various meanings of the LEDs are described in the table below.

LED	Normal Mode	Boot Mode
1: ON [supply voltage ] (green)	<b>ON:</b> Device powered <b>OFF:</b> Device not powered	<b>ON:</b> Device powered <b>OFF:</b> Device not powered
2: Modbus comm. (green)	Blinks when Modbus data are received	<b>Blinks quickly:</b> Boot state <b>Blinks very slowly (~0.5Hz):</b> update in progress
3: Device state (green)	Blinks slowly (~1Hz)	<b>Blinks quickly:</b> Boot state <b>Blinks very slowly (~0.5Hz):</b> update in progress
4: Not used (green)	OFF	<b>Blinks quickly:</b> Boot state <b>Blinks very slowly (~0.5Hz):</b> update in progress
5: Ethernet1 Tx (green)	Blinks when is transmitting Ethernet frames	<b>Blinks quickly:</b> Boot state <b>Blinks very slowly (~0.5Hz):</b> update in progress
6: Ethernet2 Tx (green)	Blinks when is transmitting Ethernet frames	<b>Blinks quickly:</b> Boot state <b>Blinks very slowly (~0.5Hz):</b> update in progress



**ETHERNET:**

The SNMP connection, Modbus TCP connection and the updating of the converters must be made using Connector3 and/or Connector4 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.



**USE OF COMPOSITOR SW67167:**

To configure the Converter, use the available software that runs with Windows called SW67167. 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; 32/64bit).

When launching the SW67167, the window below appears (Fig. 2).

**Note:**

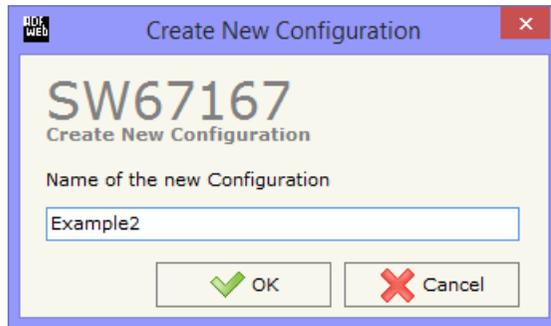
It is necessary to have installed .Net Framework 4.



Figure 2: Main window for SW67167

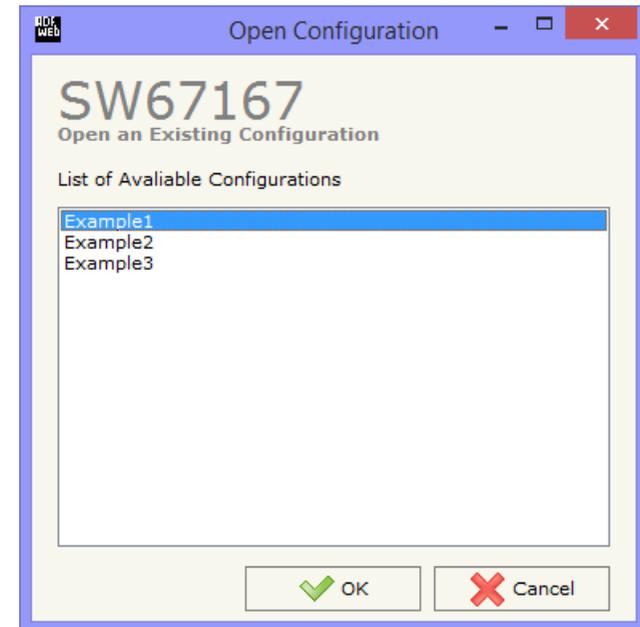
**NEW CONFIGURATION / OPEN CONFIGURATION:**

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



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

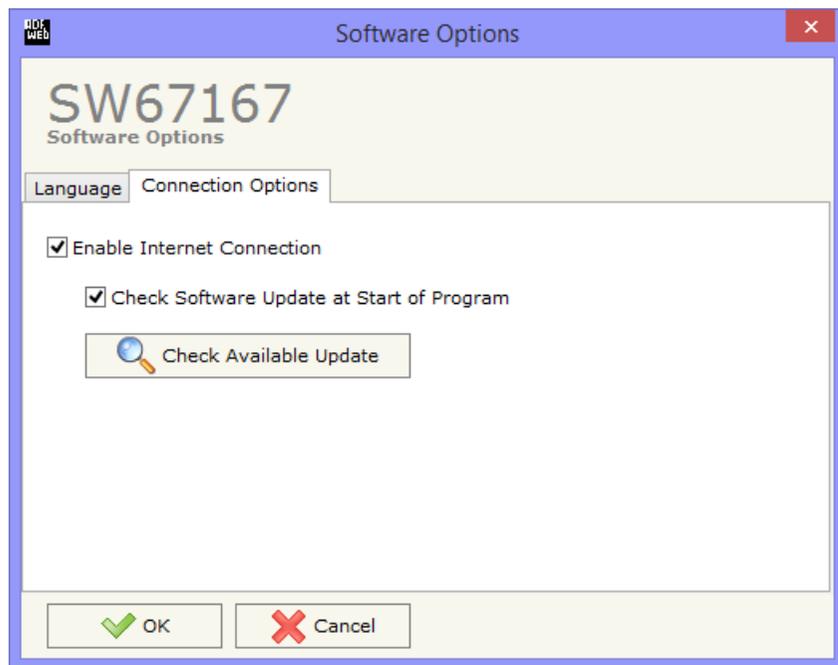
- To clone the configurations of a programmable “Modbus TCP slave / SNMP - Converter” in order to configure another device in the same manner, it is necessary to maintain the folder and all its contents;
- To clone a project in order to obtain a different version of the project, it is sufficient to duplicate 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 SW67167 check automatically if there are updatings when it is launched.

## SET COMMUNICATION:

This section define the fundamental communication parameters of two buses, SNMP and Modbus TCP.

By Pressing the "**Set Communication**" button from the main window for SW67167 (Fig. 2) the window "Set Communication" appears (Fig. 3).

The window is divided in two sections, one for the SNMP and the other for the Modbus Slave.

The means of the fields for "SNMP" are:

- In the field "**IP ADDRESS**" insert the IP address that you want to give to the SNMP side;
- In the field "**SUBNET Mask**" insert the SubNet Mask of the SNMP side;
- 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;
- In the field "**SNMP Name of Station**" is possible to assign a name to the SNMP node.

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

- In the field "**IP ADDRESS**" insert the IP address that you want to give to the Modbus TCP side;
- In the field "**SUBNET Mask**" insert the SubNet Mask of the Modbus TCP side;
- 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;
- In the field "**Port**" insert the TCP port for the Modbus TCP communication.

The screenshot shows a web-based configuration window titled "Set Communication" for device "SW67167". The window is split into two main sections. The top section, labeled "SNMP", contains fields for "IP ADDRESS" (192.168.0.10), "SUBNET Mask" (255.255.255.0), a "GATEWAY" checkbox (checked), and a text field for "SNMP Name of Station" (devicename1). The bottom section, labeled "Modbus TCP Slave", contains fields for "IP ADDRESS" (10.0.0.20), "SUBNET Mask" (255.255.255.0), a "GATEWAY" checkbox (unchecked), and a "Port" field (502). At the bottom of the window are "OK" and "Cancel" buttons.

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 Dip2 of 'Dip-Switch A' in 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 Dip2 of 'Dip-Switch A' in OFF position;
- Turn on the device.

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

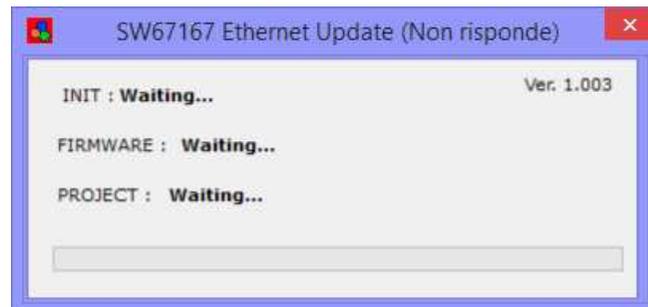
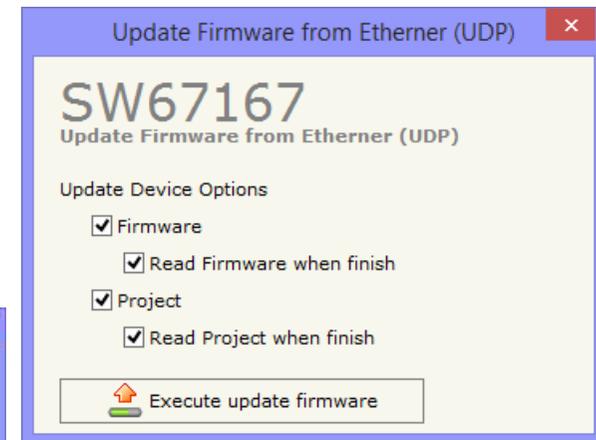
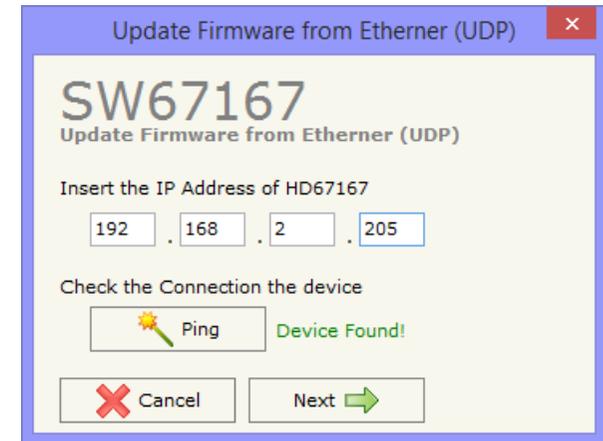


Figure 4: “Update device” windows

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;
- 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, if it is the first time it is better you do the update of the Firmware in the HD67167-A1 device.

 **Note:**  
When you receive the device, for the first time, you also have to update the Firmware in the HD67167-A1 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 update;
- Try with another PC;
- Try to restart the PC;
- If you are using the program inside a Virtual Machine, try to use it in the main Operating System;
- If you are using Windows Seven or Vista or 8, make sure that you have the administrator privileges;
- Pay attention to the Firewall lock;
- Check the LAN settings.

 In the case of HD67167-A1 you have to use the software "SW67167": [www.adfweb.com/download/filefold/SW67167.zip](http://www.adfweb.com/download/filefold/SW67167.zip).

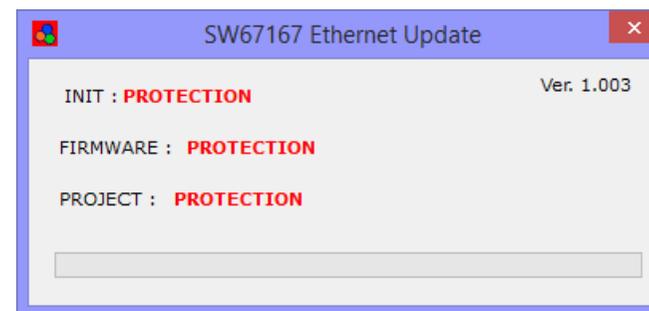


Figure 5: "Protection" window



Writing Modbus TCP data from SNMP:

In order to write the data to the HD67167-A1 it is necessary to use the "snmpset" command. The Output array is contained to this internal directory: 1.3.6.1.4.1.33118.1.1.1.5.x,0, where 'x' is the number of data block. Each data block has a dimension of 128 bytes.

Example: you want to write informations of the data block 3 with the data '0123456789' (ASCII). The structure of the command to send is:

snmpset -v1 -cprivate "IP Address of the converter" 1.3.6.1.4.1.33118.1.1.1.5.3.0 s "0123456789"

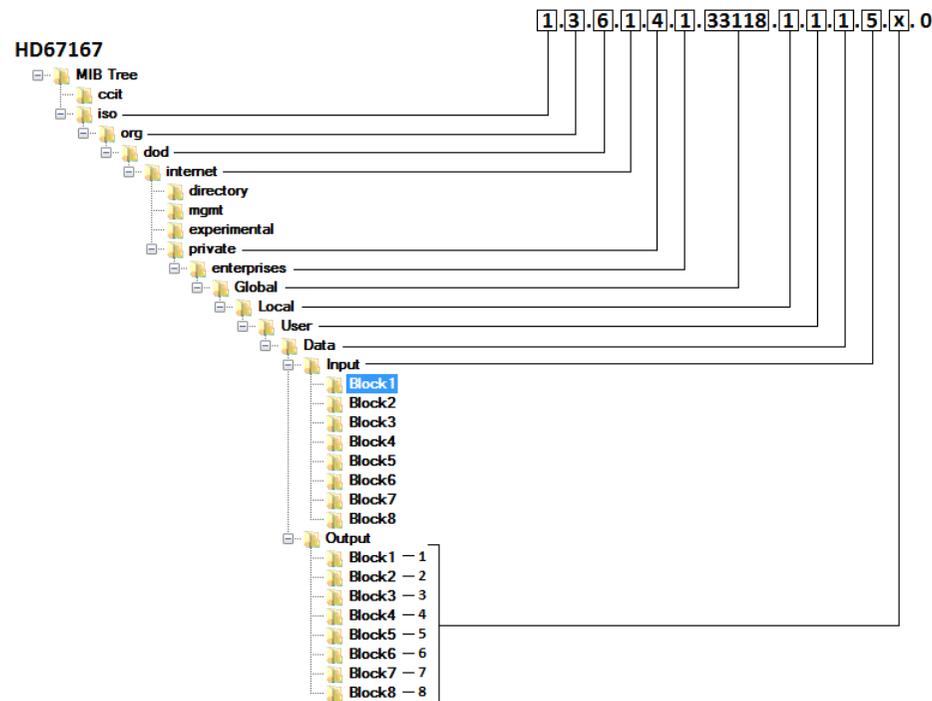
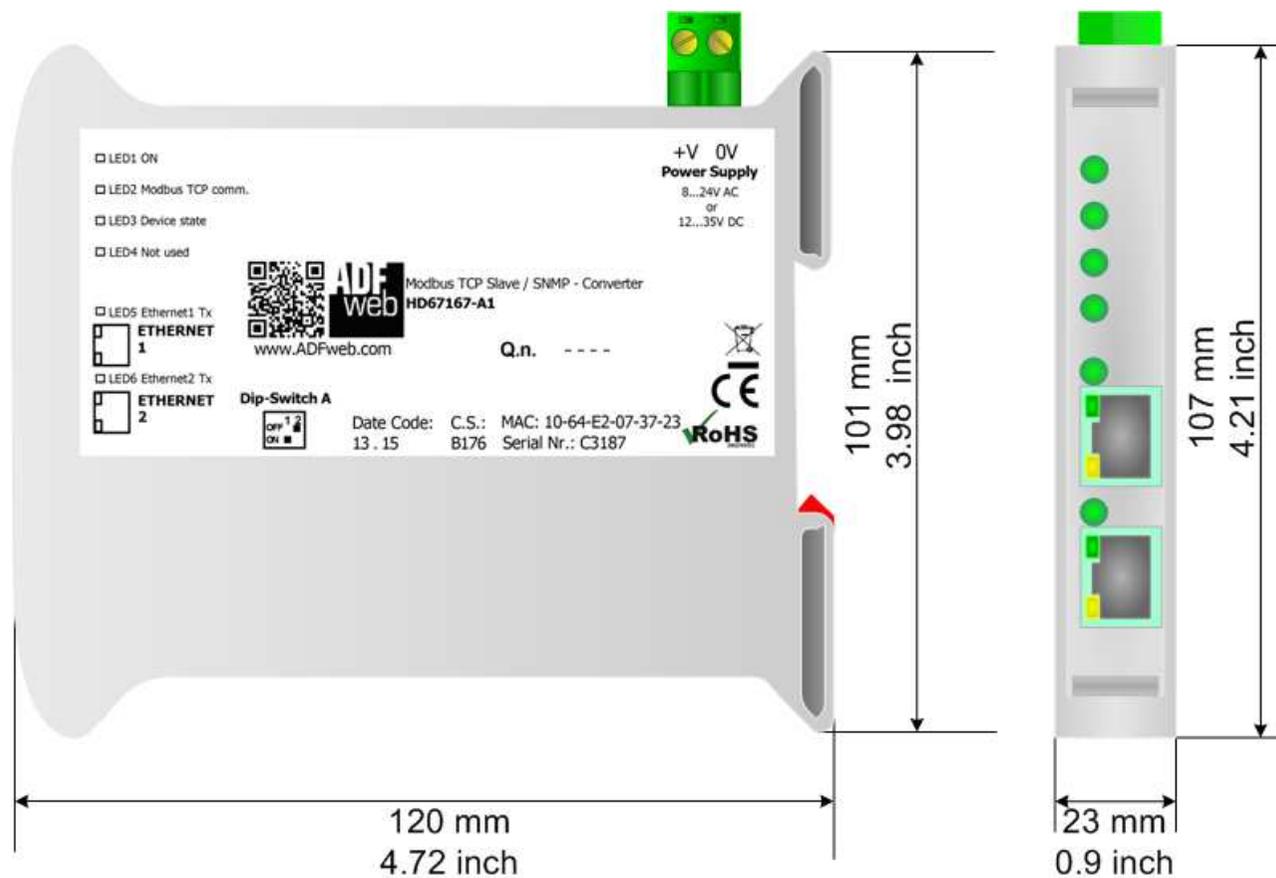


Figure 6b: MIB Tree Output

**MECHANICAL DIMENSIONS:**



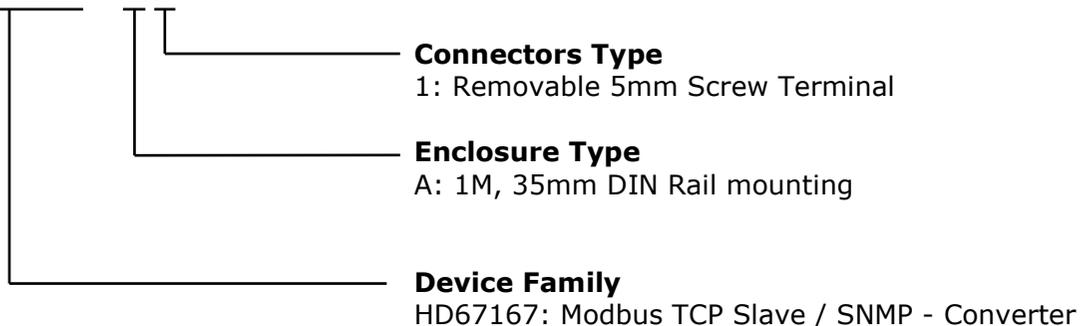
Housing: PVC  
Weight: 200g (Approx)

Figure 7: Mechanical dimensions scheme for HD67167-A1

**ORDERING INFORMATIONS:**

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

**HD67167 - A1**



Order Code: **HD67167-A1** - Modbus TCP Slave / SNMP - Converter

**ACCESSORIES:**

Order Code: **AC34001** - 35mm Rail DIN - Power Supply 220/240V AC 50/60Hz - 12 V AC

Order Code: **AC34002** - 35mm Rail DIN - Power Supply 110V AC 50/60Hz - 12 V AC

**DISCLAIMER:**

All technical content within this document can be modified without notice. The content of the document is a under continual renewal. 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 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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