User Manual

Revision 1.100
English

PROFINET / SNMP Agent - Converter

(Order Code: HD67613-A1)

For Website information:
www.adfweb.com?Product=HD67613

For Price information:
www.adfweb.com?Price=HD67613-A1

Benefits and Main Features:

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

For other PROFINET products see also the following link:

Converter PROFINET to

www.adfweb.com?Product=HD67078	**(M-Bus)**
www.adfweb.com?Product=HD67090	**(M-Bus Wireless)**
www.adfweb.com?Product=HD67178	**(SNMP Manager)**
www.adfweb.com?Product=HD67600	**(NMEA 2000)**
www.adfweb.com?Product=HD67601	**(Serial)**
www.adfweb.com?Product=HD67602	**(Modbus Master)**
www.adfweb.com?Product=HD67603	**(Modbus Slave)**
www.adfweb.com?Product=HD67604	**(PROFIBUS Master)**
www.adfweb.com?Product=HD67605	**(PROFIBUS Slave)**
www.adfweb.com?Product=HD67606	**(CAN)**
www.adfweb.com?Product=HD67607	**(CANopen)**
www.adfweb.com?Product=HD67608	**(DeviceNet Master)**
www.adfweb.com?Product=HD67609	**(DeviceNet Slave)**
www.adfweb.com?Product=HD67610	**(J1939)**
www.adfweb.com?Product=HD67611	**(Modbus TCP Master)**
www.adfweb.com?Product=HD67612	**(Modbus TCP Slave)**
www.adfweb.com?Product=HD67614	**(DMX)**
www.adfweb.com?Product=HD67660	**(EtherNet/IP)**
www.adfweb.com?Product=HD67679	**(BACnet Slave)**
www.adfweb.com?Product=HD67719	**(BACnet Master)**
www.adfweb.com?Product=HD67818	**(KNX)**
www.adfweb.com?Product=HD67848	**(DALI)**

Do you have your customer protocol? Then go to:
www.adfweb.com?Product=HD67003

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

User Manual

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	25/05/2015	Ff	All	First Release
1.100	02/03/2017	Ff	All	New software 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

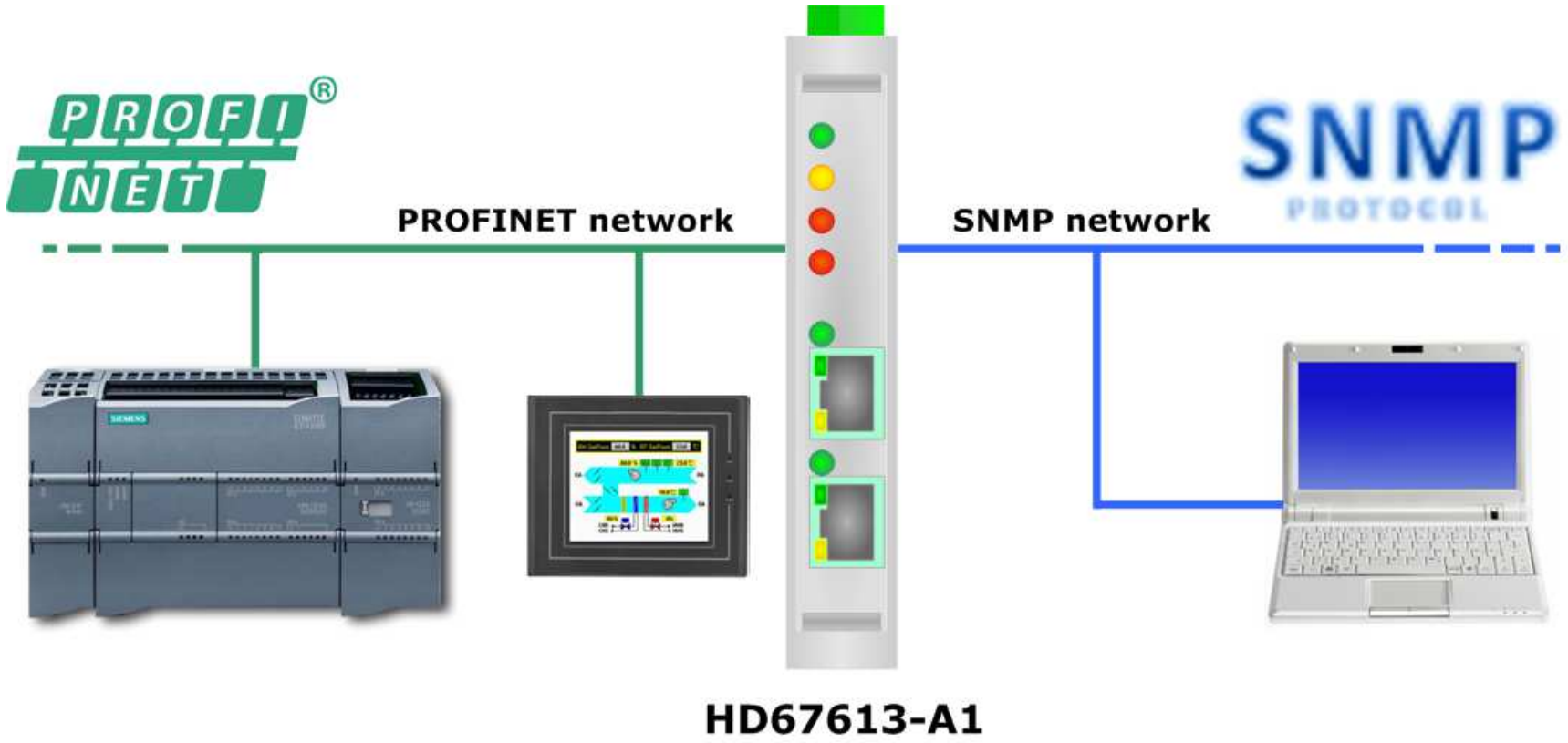
The device is state-of-the-art and is safe. The instruments can represent a potential hazard if they are inappropriately installed and operated by untrained personnel. These instructions refer to residual risks with the following symbol:

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.

EXAMPLES OF CONNECTION:



CONNECTION SCHEME:

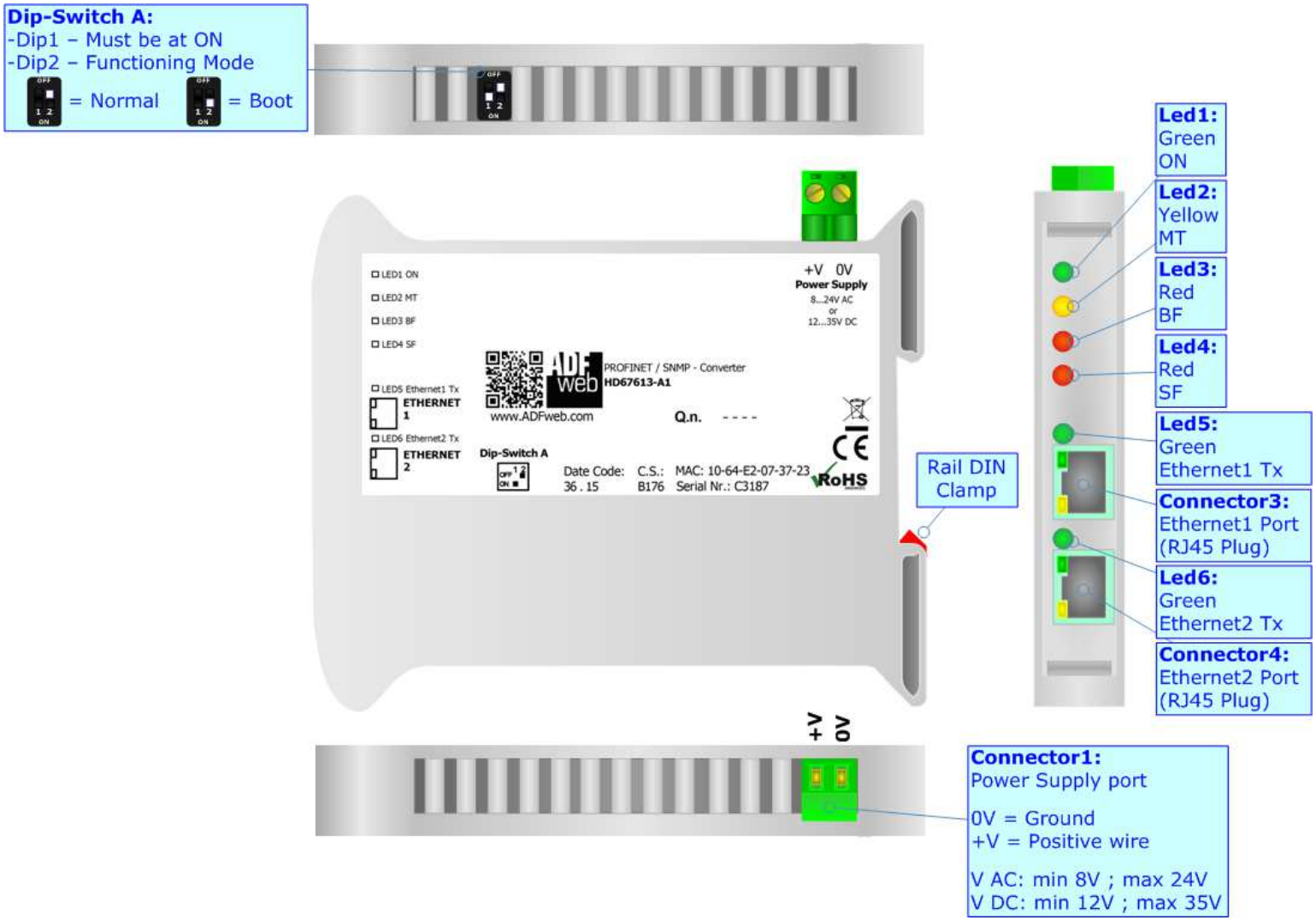


Figure 1: Connection scheme for HD67613-A1

CHARACTERISTICS:

The HD67613-A1 is a PROFINET / SNMP Converter.

It allows for the following characteristics:

- Up to 1024 bytes in reading and 1024 bytes in writing;
- Isolation between Ethernet - Power Supply;
- Two-directional information between SNMP bus and PROFINET 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 SW67613 software on your PC in order to perform the following:

- Define the parameters of PROFINET line;
- Define the parameters of SNMP line;
- Define the SNMP OID in Read and in Write;
- Define the SNMP Trap messages;
- Update the device.

POWER SUPPLY:

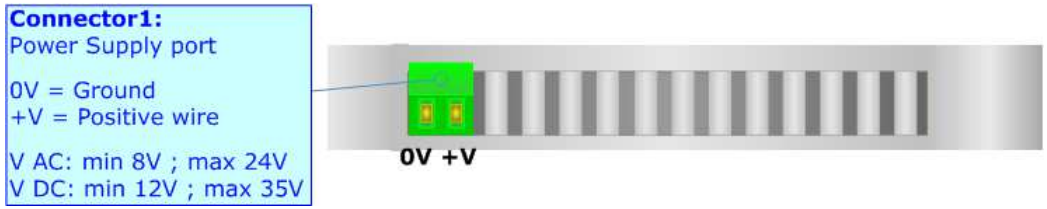
The devices can be powered at 8…24V AC and 12…35V DC. For more details see the two tables below.

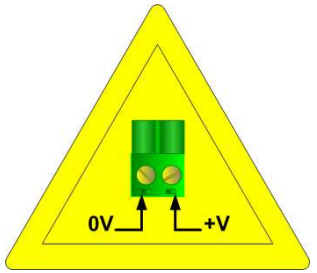
VAC ~		VDC ⎓	
Vmin	**Vmax**	**Vmin**	**Vmax**
8V	**24V**	**12V**	**35V**

Consumption at 24V DC:

Device	Consumption [W/VA]
HD67613-A1	3.5

Caution: Do not reverse the polarity power





HD67613-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.

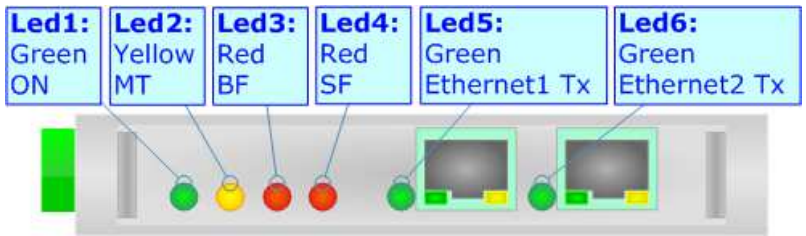
According to the functioning mode, the LEDs will have specific functions, see 'LEDS' section.

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

LEDS

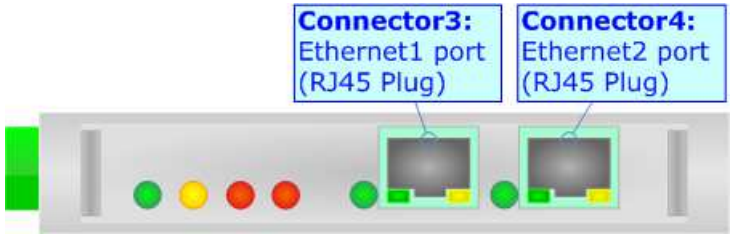
The device has got six LEDs that are used to give information about the functioning status.
The various meanings of the LEDs are described in the table below.

LED	Normal Mode	Boot Mode
1: ON [supply voltage] (green)	**ON:** Device powered **OFF:** Device not powered	**ON:** Device powered **OFF:** Device not powered
2: MT [maintenance display] (yellow)	**ON:** Maintenance problem is present **OFF:** No maintenance problems are present	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
3: BF [bus fault] (red)	**ON:** The Ethernet connection is defective; the IP address exists several times in the network; the own NameOfStation exists several times in the network; no IP address has been set **Flashing:** At least one configured AR is no longer in the data exchange **OFF:** No errors are present	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
4: SF [group error] (red)	**ON:** At least one AR is not in the data exchange **OFF:** No errors are present	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
5: Ethernet1 Tx (green)	Blinks when Ethernet frames are transmitted	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
6: Ethernet2 Tx (green)	Blinks when Ethernet frames are transmitted	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress



ETHERNET:

The PROFINET and SNMP connection and the updating of the converters must be made using Connector3 and/or Connector4 of HD67613-A1 with at least a Category 5E cable. The maximum length of the cable should not exceed 100m. The cable has to conform to the T568 norms relative to connections in cat.5 up to 100 Mbps. To connect the device to an Hub/Switch is recommended the use of a straight cable, to connect the device to a PC/PLC/other is recommended the use of a cross cable.



USE OF COMPOSITOR SW67613:

To configure the Converter, use the available software that runs with Windows called SW67613. It is downloadable on the site www.adfweb.com and its operation is described in this document. *(This manual is referenced to the last version of the software present on our web site)*. The software works with MSWindows (XP, Vista, Seven, 8, 10; 32/64bit).

When launching the SW67613, the window below appears (Fig. 2).

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

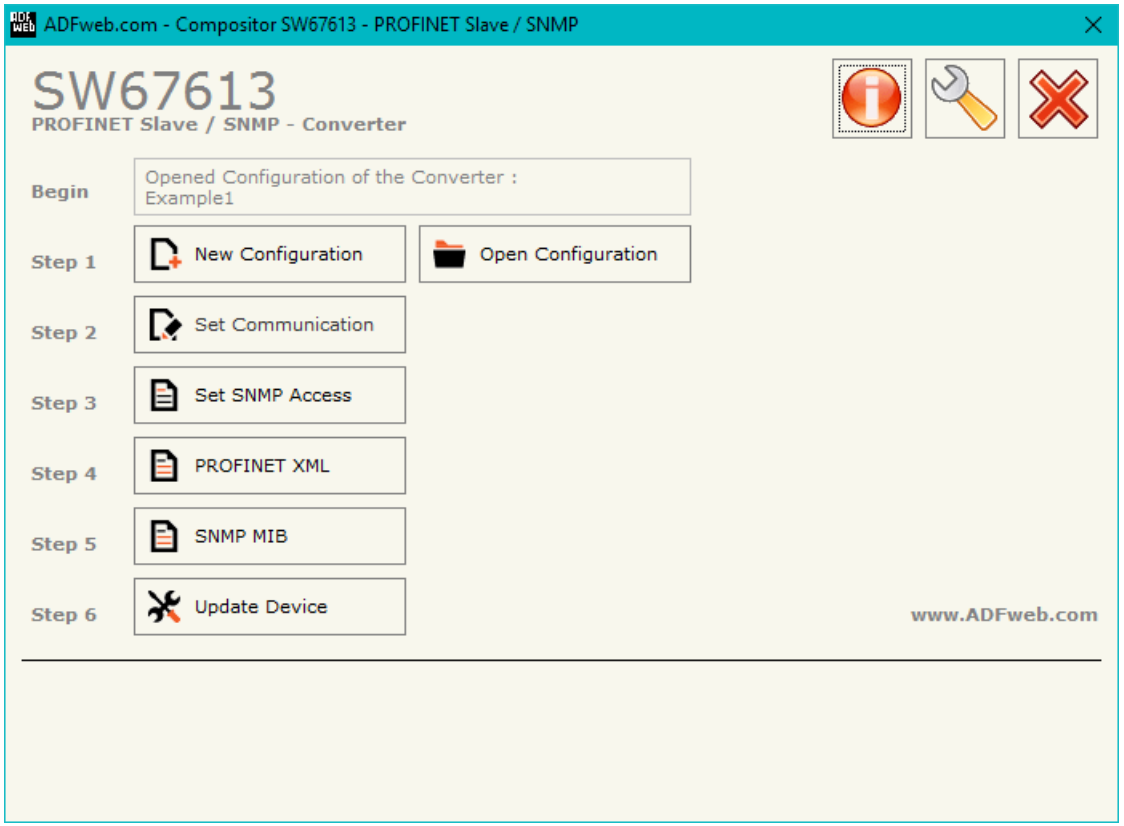
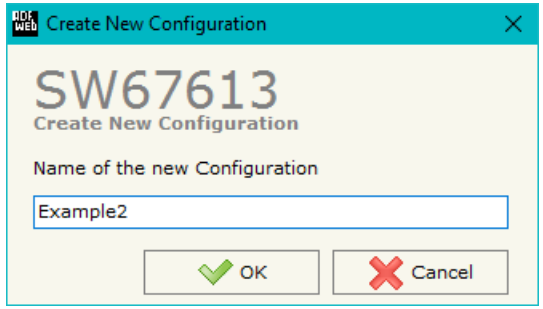


Figure 2: Main window for SW67613

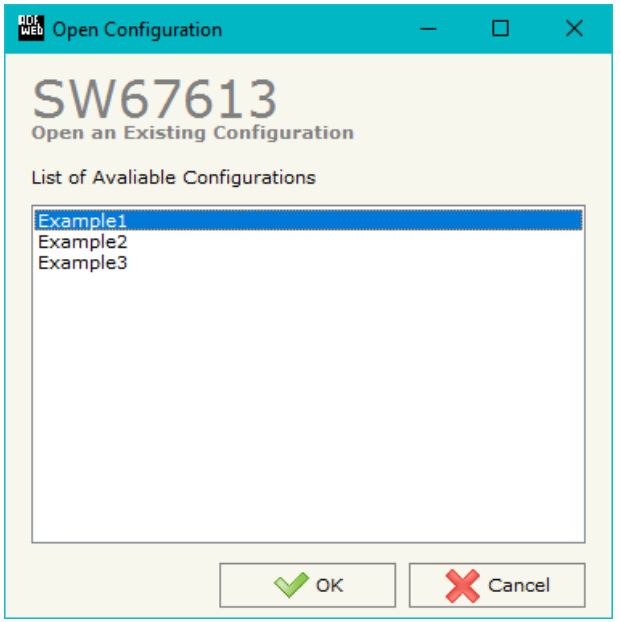
NEW CONFIGURATION / OPEN CONFIGURATION:

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



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

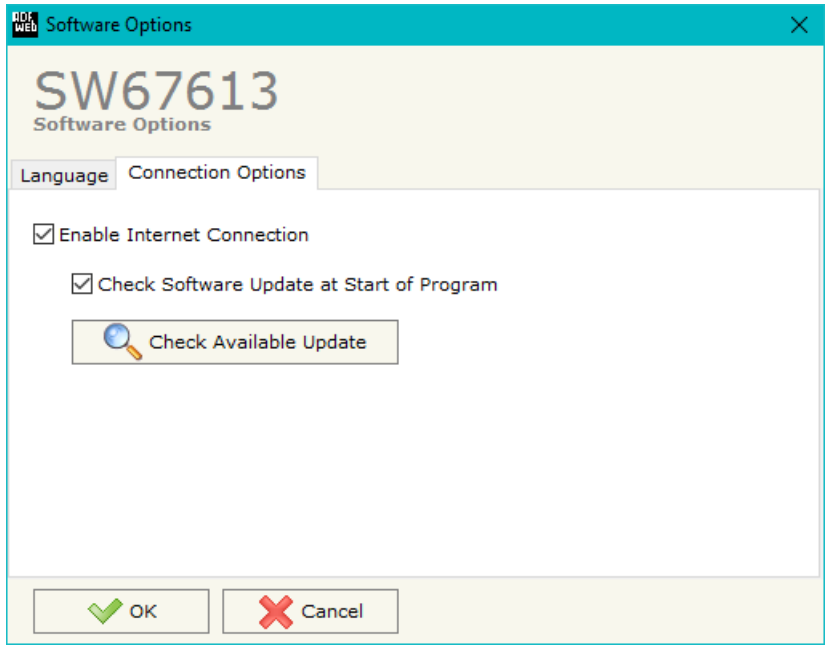
- To clone the configurations of a programmable "PROFINET / SNMP Agent - Converter" in order to configure another device in the same manner, it is necessary to maintain the folder and all its contents;
- To clone a project in order to obtain a different version of the project, it is sufficient to duplicate 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 SW67613 check automatically if there are updatings when it is launched.

SET COMMUNICATION:

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

By Pressing the "**Set Communication**" button from the main window for SW67613 (Fig. 2) the window "Set Communication" appears (Fig. 3).

The means of the fields for "PROFINET" are:

- In the fields "**IP ADDRESS**" the IP address of PROFINET side of the converter is defined;
- In the fields "**SUBNET Mask**" the SubNet Mask of PROFINET side of the converter is defined;
- In the fields "**GATEWAY**" the default gateway of the network is defined. 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**" the port number used for PROFINET communication is defined (fixed at 34964);
- In the field "**PROFINET Name of Station**" the name of PROFINET side of the converter is defined;
- In the fields "**Number Byte IN**" the number of input byte of PROFINET side of the converter is defined;
- In the fields "**Number Byte Out**" the number of output byte of PROFINET side of the converter is defined.

The means of the fields for the "SNMP" section are:

- In the fields "**IP ADDRESS**" the IP address of SNMP side of the converter is defined;
- In the fields "**SUBNET Mask**" the SubNet Mask of SNMP side of the converter is defined;
- In the fields "**GATEWAY**" the default gateway of the network is defined. 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**" the name of SNMP side of the converter is defined;
- In the field "**Contact**" the contact for SNMP Agent station is defined;
- In the field "**Location**" the location for SNMP Agent station is defined.

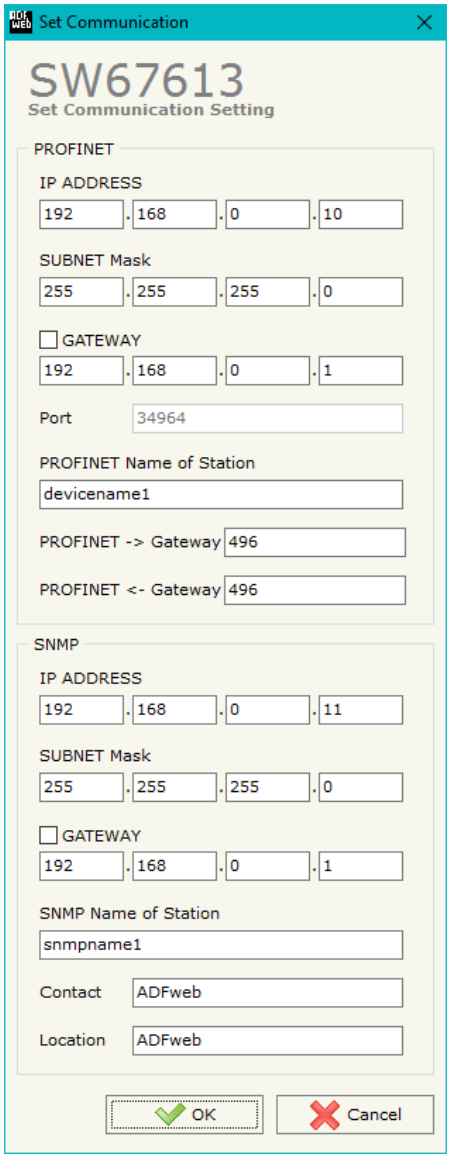
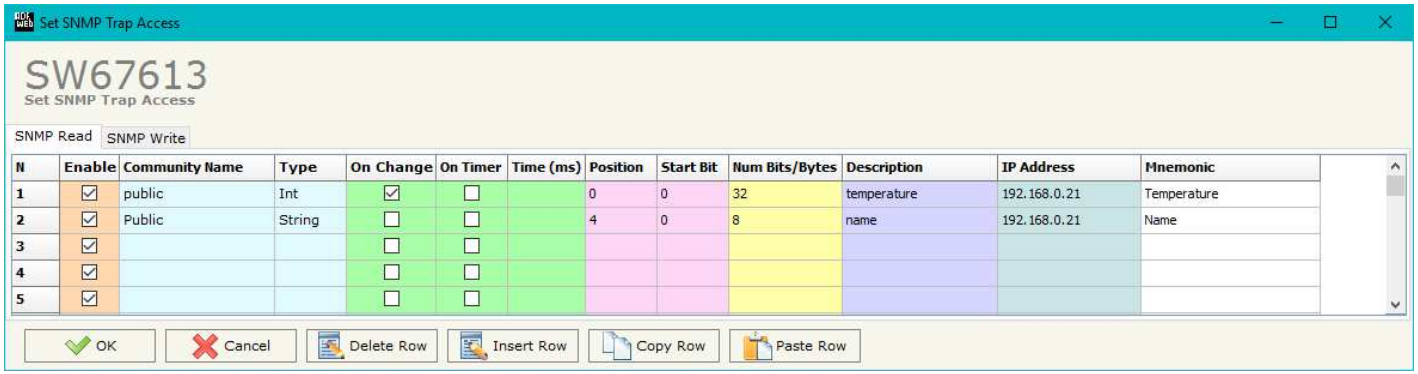


Figure 3: "Set Communication" window

SET SNMP ACCESS:

By pressing the "**Set SNMP Access**" button from the main window for SW67613 (Fig. 2) the "Set SNMP Access" window appears (Fig. 4). In this section, it is possible to create the OIDs for SNMP side to read or write using GET and SET commands or to be sent as TRAP messages. The window is divided into two tables, one for SNMP readings and one for SNMP writings.



N	Enable	Community Name	Type	On Change	On Timer	Time (ms)	Position	Start Bit	Num Bits/Bytes	Description	IP Address	Mnemonic
1	☑	public	Int	☑	☐		0	0	32	temperature	192.168.0.21	Temperature
2	☑	Public	String	☐	☐		4	0	8	name	192.168.0.21	Name
3	☑			☐	☐							
4	☑			☐	☐							
5	☑			☐	☐							

Figure 4a: "Set SNMP Access -> SNMP Read" window

The data of the columns in the "SNMP Read" have the following meanings:

- If the field "**Enable**" is checked, the SNMP OID is enabled;
- In the field "**Community Name**" the name of the Community is defined;
- In the field "**Type**" the type of data of the OID is defined (Octet String or Integer);
- If the field "**On Change**" is checked, the OID is sent as Trap when the data from PROFINET side change;
- If the field "**On Timer**" is checked, the OID is sent as Trap cyclically;
- In the field "**Time (ms)**" the delay time for the Trap send is defined (if "On Timer" option is checked);
- In the field "**Position**" the starting byte of the internal memory array where taking the data is defined;
- In the field "**Start Bit**" the starting bit of the selected Position is defined;
- In the field "**Num Bits/Bytes**" the dimension of the OID is defined. For 'Int' type the dimension is in bit, for 'String' type the dimension is in bytes;
- In the field "**Description**" the description/name of the OID is defined;
- In the field "**IP Address**" the IP Address of the SNMP device where addressing the Trap message is defined. This field is used only when 'On Change' or 'On CMD' or 'On Timer' option is checked;
- In the field "**Mnemonic**" a brief description of the OID is defined.

The data of the columns in the "SNMP Write" have the following meanings:

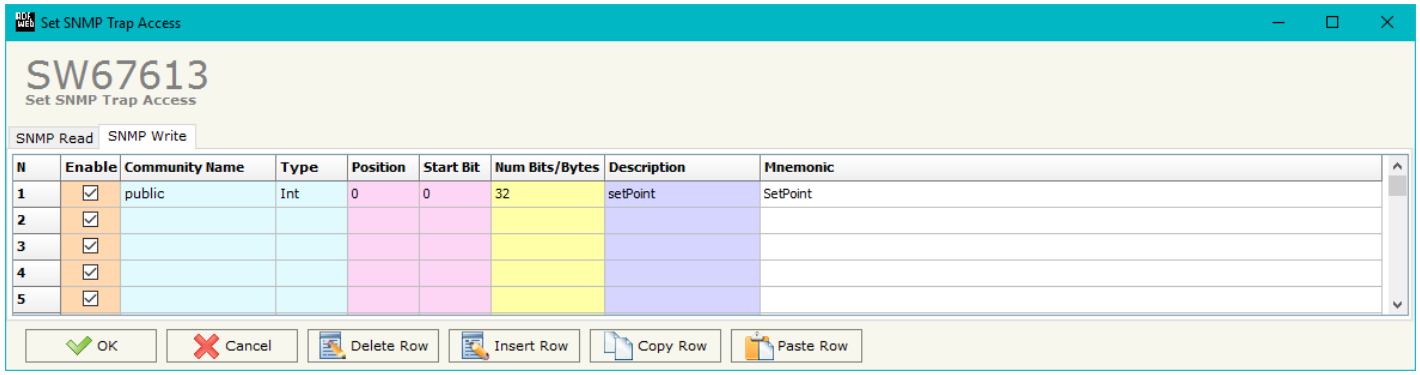


Figure 4b: "Set SNMP Access -> SNMP Write" window

- If the field "**Enable**" is checked, the SNMP OID is enabled;
- In the field "**Community Name**" the name of the Community is defined;
- In the field "**Type**" the type of data of the OID is defined (Octet String or Integer);
- In the field "**Position**" the starting byte of the internal memory array where mapping the data is defined;
- In the field "**Start Bit**" the starting bit of the selected Position is defined;
- In the field "**Num Bits/Bytes**" the dimension of the OID is defined. For 'Int' type the dimension is in bit, for 'String' type the dimension is in bytes;
- In the field "**Description**" the description/name of the OID is defined;
- In the field "**Mnemonic**" a brief description of the OID is defined.

Note:
If the fields "On Change", "On CMD" and "On Timer" are disabled, the OID is readable using standard GET command. If one of these fields is enabled, the OID is sent as Trap and it is readable by GET command too.

Note:
The field "Description" must start with lowercase letter and it cannot contain special chars (just letters and numbers). All the "Description" fields must be different between them.

PROFINET XML:

By pressing the "**PROFINET XML**" button it is possible to save the xml file for the PROFINET side.
With this feature you can save the configuration of the converter of the PROFINET side.

SNMP MIB:

By pressing the "**SNMP MIB**" button it is possible to save the MIB file for the SNMP Manager.

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' 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 update.

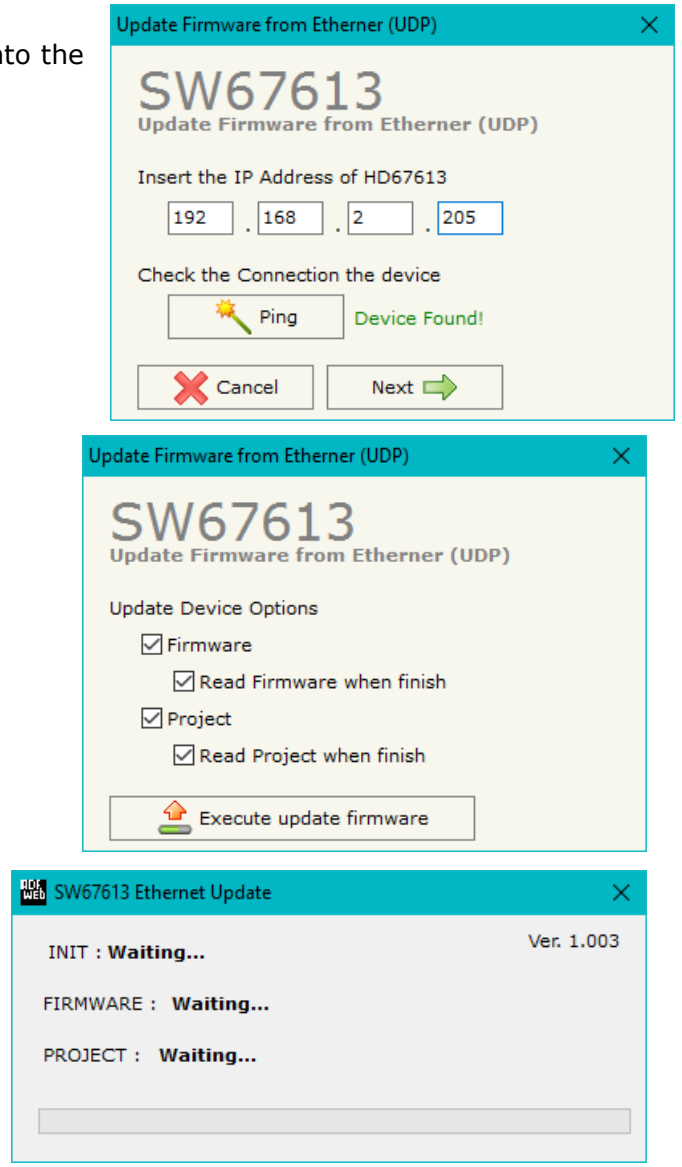


Figure 5: "Update device" windows

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 HD67613 device.

Note:
When you receive the device, for the first time, you also have to update the Firmware in the HD67613 device.

Warning:
If Fig. 6 appears when you try to do the Update try these points before seeking assistance:

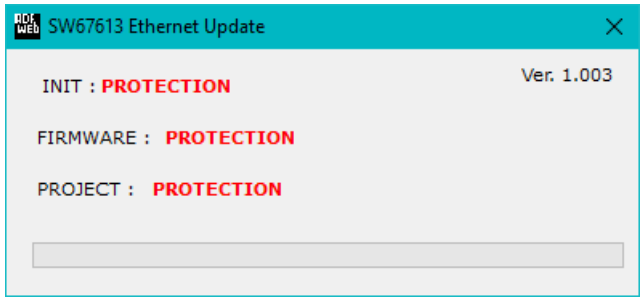


Figure 6: "Protection" window

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

In the case of HD67613 you have to use the software "SW67613": www.adfweb.com\download\filefold\SW67613.zip.

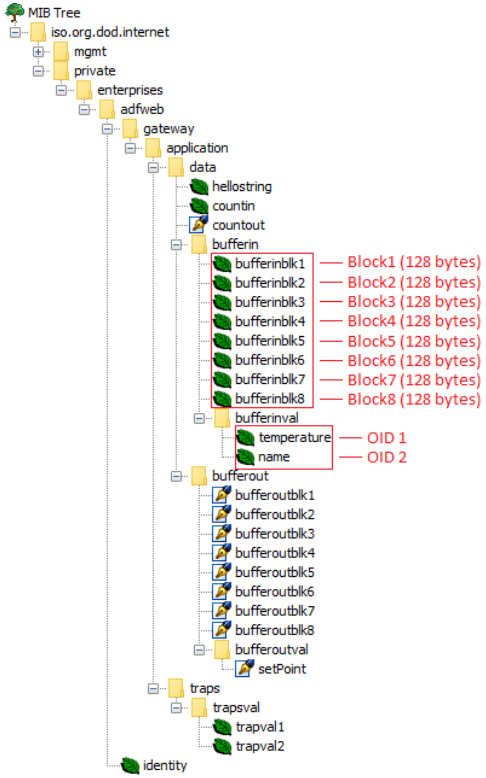
SNMP COMMUNICATION

In order to read/write the data from/to PROFINET side, it is necessary to use specific SNMP commands in order to see the SNMP Input and write the SNMP Output.

Reading PROFINET data from SNMP:

In order to read the data from the HD67613, it is necessary to use the GET command.
Each OID defined in the section "Set SNMP Access -> SNMP Read" will be placed in the MIB tree of the converter.

In addition, it will be possible to read the entire internal map of the converter in memory blocks of 128 bytes: this feature is helpful in phase of configuration of the converter.



Each SNMP variable created will have its own OID and it will be created following this rule:

- OID 1 (first row of "Set SNMP Access -> SNMP Read" table): .1.3.6.1.4.1.49314.1.1.1.4.9.**1**
- OID 2 (second row of "Set SNMP Access -> SNMP Read" table): .1.3.6.1.4.1.49314.1.1.1.4.9.**2**
- OID X (Xth row of "Set SNMP Access -> SNMP Read" table): .1.3.6.1.4.1.49314.1.1.1.4.9.**X**

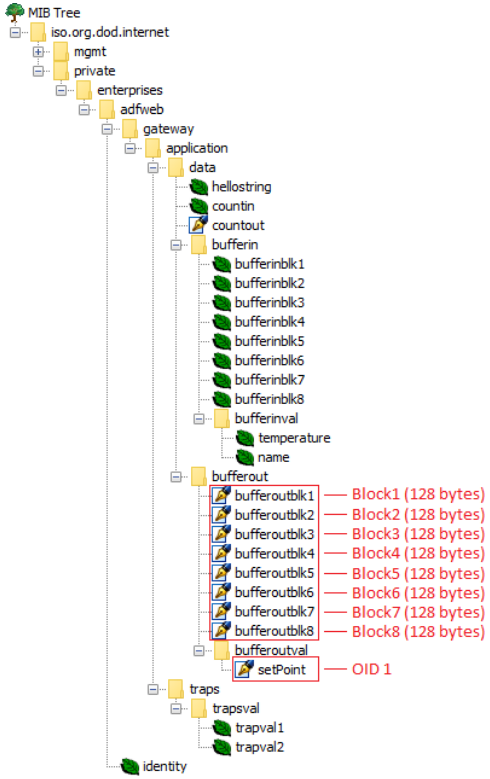
The memory blocks are accessible with these OIDs:

- Block1: .1.3.6.1.4.1.49314.1.1.1.4.1.0
- Block2: .1.3.6.1.4.1.49314.1.1.1.4.2.0
- Block3: .1.3.6.1.4.1.49314.1.1.1.4.3.0
- Block4: .1.3.6.1.4.1.49314.1.1.1.4.4.0
- Block5: .1.3.6.1.4.1.49314.1.1.1.4.5.0
- Block6: .1.3.6.1.4.1.49314.1.1.1.4.6.0
- Block7: .1.3.6.1.4.1.49314.1.1.1.4.7.0
- Block8: .1.3.6.1.4.1.49314.1.1.1.4.8.0

Writing PROFINET data from SNMP:

In order to write the data from the HD67613, it is necessary to use the SET command.
Each OID defined in the section "Set SNMP Access -> SNMP Write" will be placed in the MIB tree of the converter.

In addition, it will be possible to write the entire internal map of the converter in memory blocks of 128 bytes: this feature is helpful in phase of configuration of the converter.



Each SNMP variable created will have its own OID and it will be created following this rule:

- OID 1 (first row of "Set SNMP Access -> SNMP Write" table): .1.3.6.1.4.1.49314.1.1.1.5.9.**1**
- OID 2 (second row of "Set SNMP Access -> SNMP Write" table): .1.3.6.1.4.1.49314.1.1.1.5.9.**2**
- OID X (Xth row of "Set SNMP Access -> SNMP Write" table): .1.3.6.1.4.1.49314.1.1.1.5.9.**X**

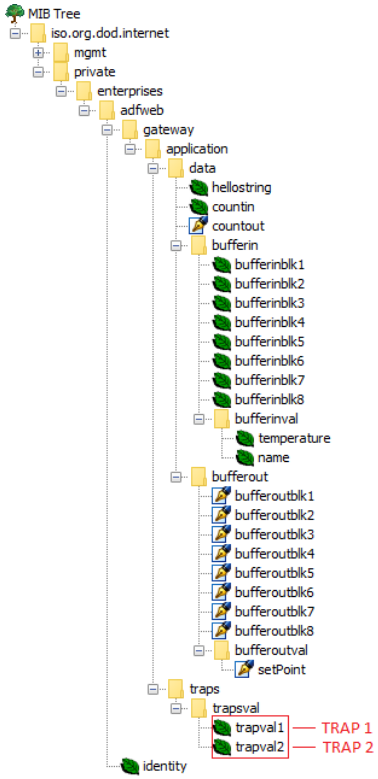
The memory blocks are accessible with these OIDs:

- Block1: .1.3.6.1.4.1.49314.1.1.1.5.1.0
- Block2: .1.3.6.1.4.1.49314.1.1.1.5.2.0
- Block3: .1.3.6.1.4.1.49314.1.1.1.5.3.0
- Block4: .1.3.6.1.4.1.49314.1.1.1.5.4.0
- Block5: .1.3.6.1.4.1.49314.1.1.1.5.5.0
- Block6: .1.3.6.1.4.1.49314.1.1.1.5.6.0
- Block7: .1.3.6.1.4.1.49314.1.1.1.5.7.0
- Block8: .1.3.6.1.4.1.49314.1.1.1.5.8.0

Note:
The OIDs in writing are readable too with GET command.

TRAP messages from SNMP:

All the OIDs defined in the "Set SNMP Access -> SNMP Read" table can be sent as TRAP messages too.



The TRAP messages are contained in the MIB tree and they have these OIDs:

- TRAP 1 (first row of "Set SNMP Access -> SNMP Read" table): .1.3.6.1.4.1.49314.1.1.2.1.**1**
- TRAP 2 (second row of "Set SNMP Access -> SNMP Read" table): .1.3.6.1.4.1.49314.1.1.2.1.**2**
- TRAP X (Xth row of "Set SNMP Access -> SNMP Read" table): .1.3.6.1.4.1.49314.1.1.2.1.**X**

MECHANICAL DIMENSIONS:

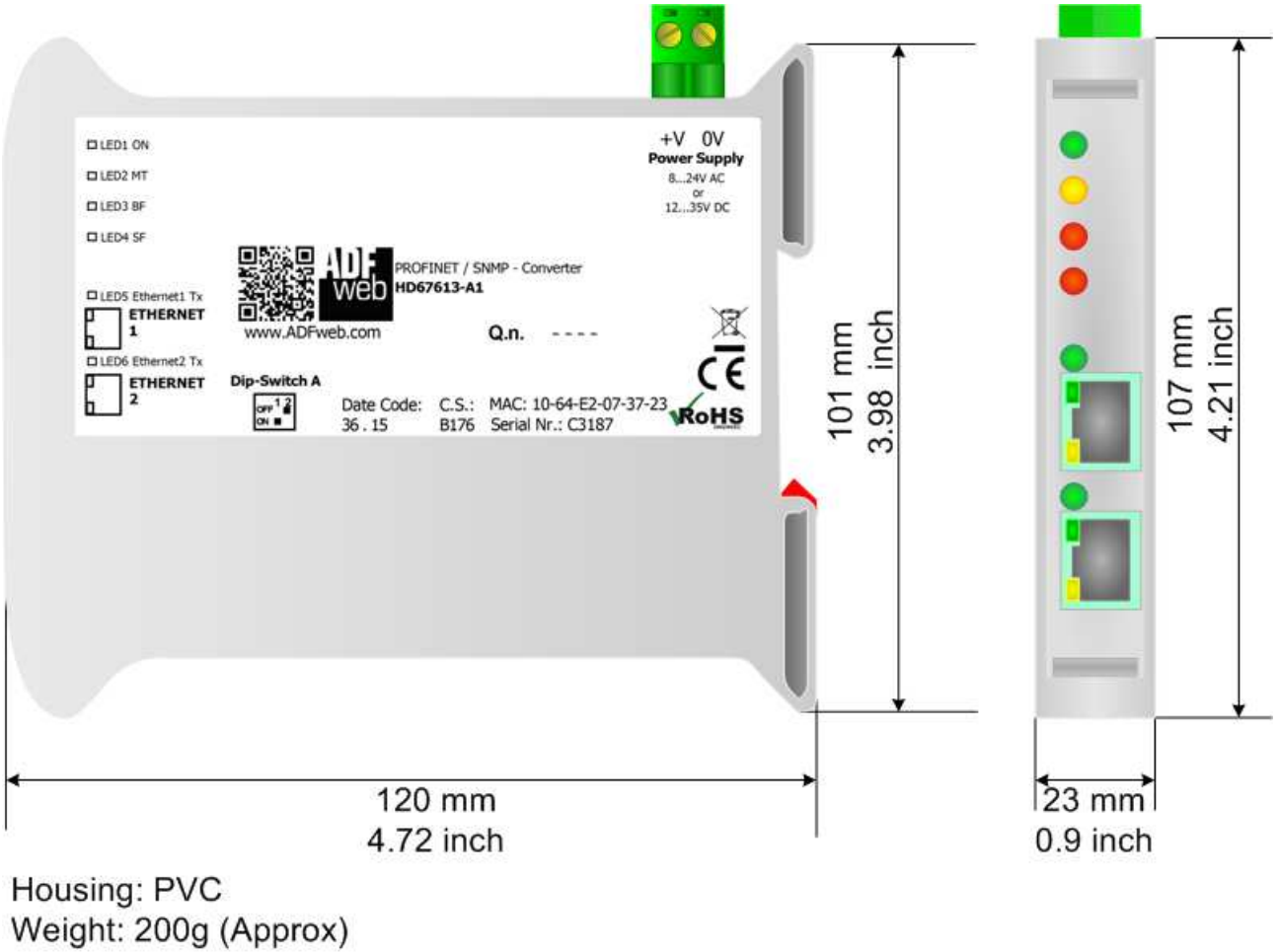
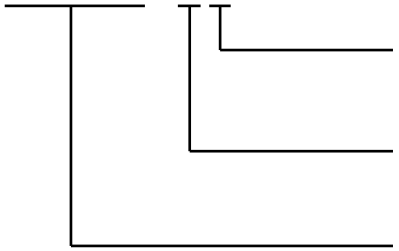


Figure 8: Mechanical dimensions scheme for HD67613-A1

ORDERING INFORMATIONS:

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

HD67613 – xx



Connectors Type
1: Removable 5mm Screw Terminal

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

Device Family
HD67613: PROFNET / SNMP Agent - Converter

Order Code: **HD67613-A1** **-** PROFINET / SNMP Agent – 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.
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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