User Manual

Revision 1.000
English

SNMP Agent / EtherNet/IP Slave - Converter

(Order Code: HD67159-A1)

for Website information:
http://www.adfweb.com/?Product=HD67159

for Price information:
http://www.adfweb.com/?Price=HD67159-A1

Benefits and Main Features:

- Triple electrical isolation
- Two Ethernet ports
- Temperature range: -40°C/+85°C (-40°F/+185°F)

User Manual

For others SNMP Agent devices, see also the following links:

Converter SNMP to	
www.adfweb.com?Product=HD67040	**(DMX)**
www.adfweb.com?Product=HD67092	**(M-Bus Wireless)**
www.adfweb.com?Product=HD67155	**(CAN)**
www.adfweb.com?Product=HD67156	**(CANopen)**
www.adfweb.com?Product=HD67158	**(EtherNet/IP Master)**
www.adfweb.com?Product=HD67160	**(DeviceNet Master)**
www.adfweb.com?Product=HD67161	**(DeviceNet Slave)**
www.adfweb.com?Product=HD67162	**(J1939)**
www.adfweb.com?Product=HD67163	**(M-Bus Master)**
www.adfweb.com?Product=HD67164	**(Modbus Master)**
www.adfweb.com?Product=HD67165	**(Modbus Slave)**
www.adfweb.com?Product=HD67166	**(Modbus TCP Master)**
www.adfweb.com?Product=HD67167	**(Modbus TCP Slave)**
www.adfweb.com?Product=HD67168	**(PROFIBUS Master)**
www.adfweb.com?Product=HD67169	**(PROFIBUS Slave)**
www.adfweb.com?Product=HD67613	**(PROFINET Slave)**
www.adfweb.com?Product=HD67626	**(S7comm)**
www.adfweb.com?Product=HD67693	**(BACnet Slave)**
www.adfweb.com?Product=HD67726	**(BACnet Master)**
www.adfweb.com?Product=HD67753	**(IEC 61850 Server)**
www.adfweb.com?Product=HD67779	**(IEC 61850 Client)**
www.adfweb.com?Product=HD67820	**(KNX)**
www.adfweb.com?Product=HD67850	**(DALI)**
www.adfweb.com?Product=HD67878	**(IO-Link Master)**
www.adfweb.com?Product=HD67913	**(HART)**
www.adfweb.com?Product=HD67954	**(MQTT)**
www.adfweb.com?Product=HD67987	**(IO-Link Slave)**
www.adfweb.com?Product=HD67B23	**(OPC UA Client)**
www.adfweb.com?Product=HD67B48	**(OPC UA Server)**
www.adfweb.com?Product=HD67B77	**(PROFINET Master)**
www.adfweb.com?Product=HD67C79	**(EnOcean)**
www.adfweb.com?Product=HD67D41	**(LoRaWAN)**
www.adfweb.com?Product=HD67E25	**(EtherCAT Slave)**
www.adfweb.com?Product=HD67E75	**(EtherCAT Master)**
www.adfweb.com?Product=HD67F41	**(LoRaWAN Gateway)**

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	08/03/2024	Ln	All	First release version

WARNING:

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ADFweb.com is not responsible for any error this manual may contain.

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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

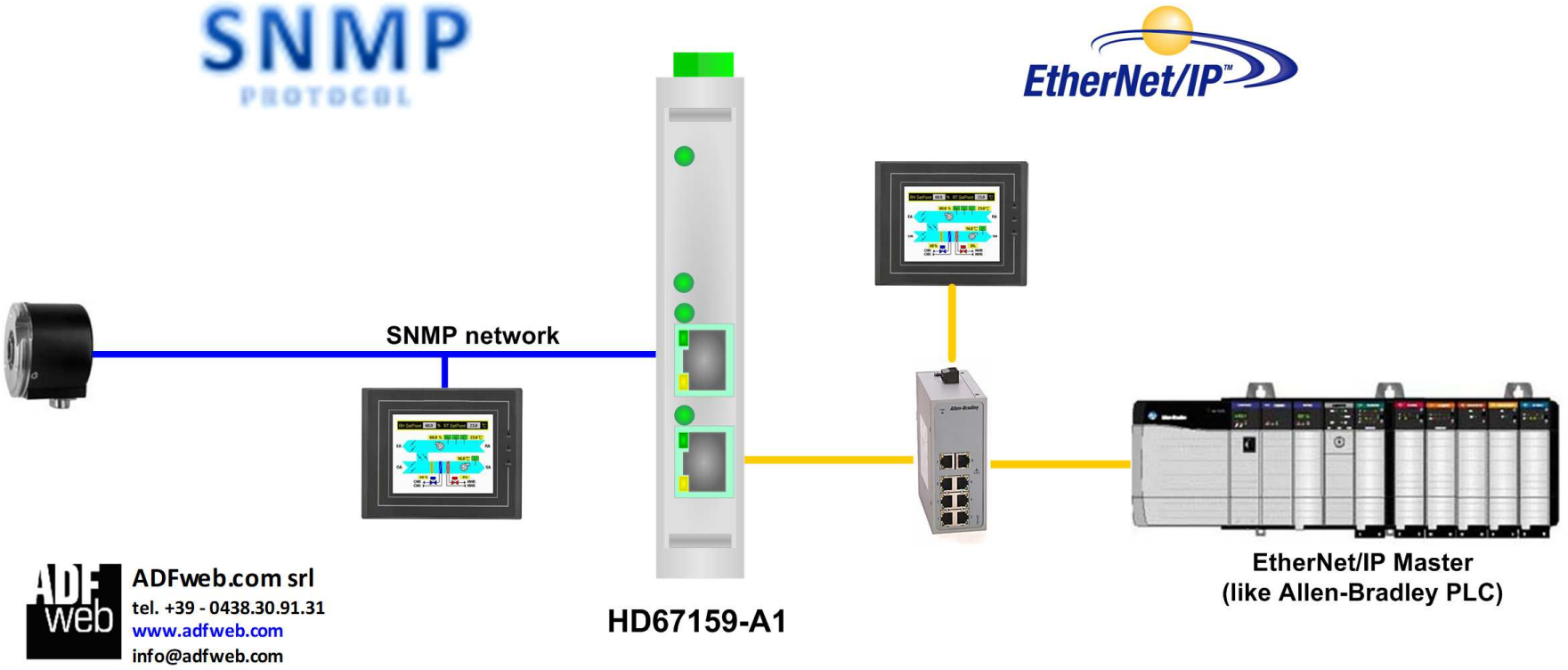
The device is state-of-the-art and is safe. The instruments can represent a potential hazard if they are inappropriately installed and operated by untrained personnel. These instructions refer to residual risks with the following symbol:

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.

EXAMPLE OF CONNECTION:



CONNECTION SCHEME:

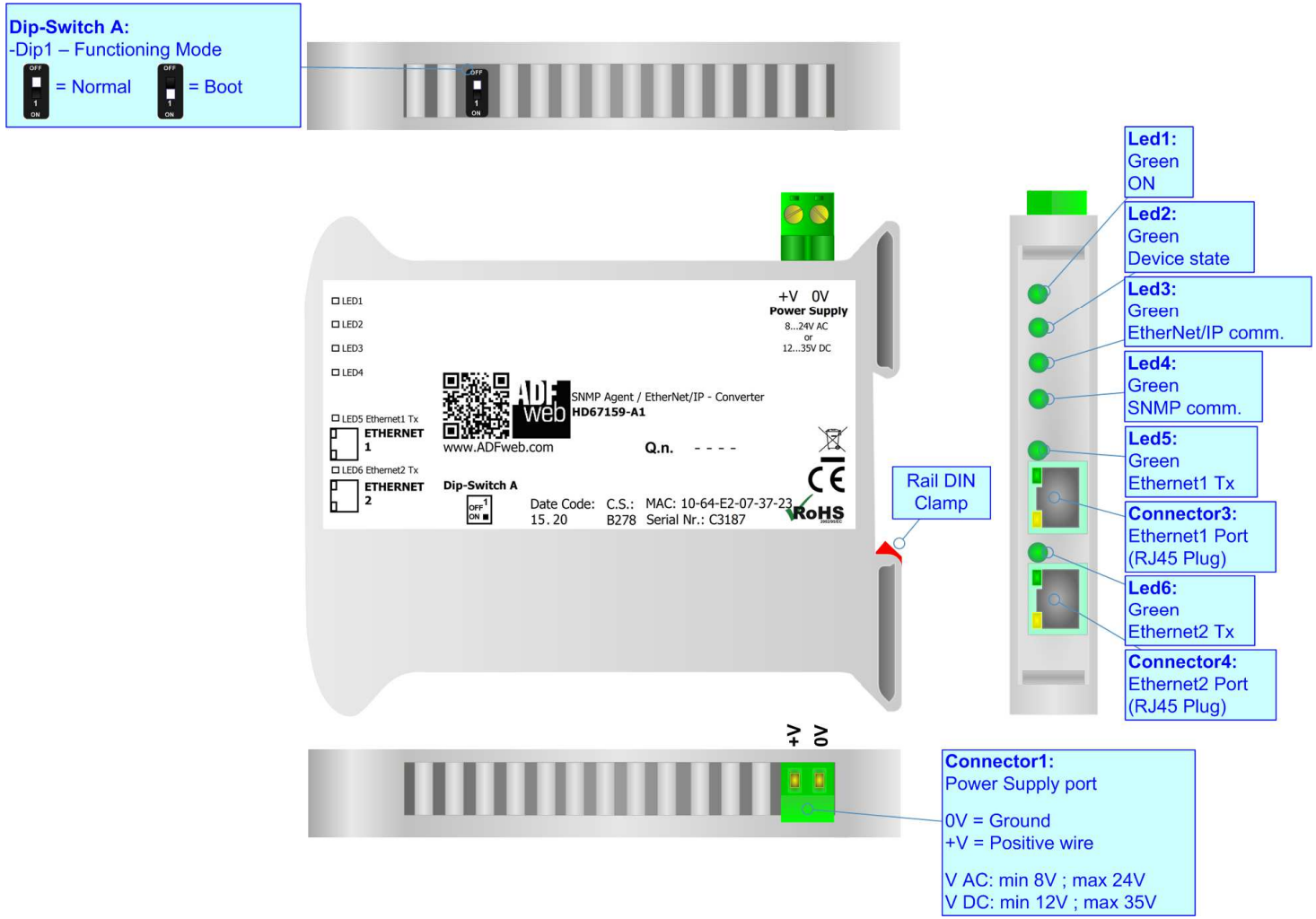


Figure 1: Connection scheme for HD67159-A1

CHARACTERISTICS:

The HD67159-A1 is a SNMP Agent / EtherNet/IP Slave converter.

It allows the following characteristics:

- Up to 496 bytes in reading and 496 bytes in writing;
- Two-directional information between EtherNet/IP and SNMP;
- 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 SW67159 software on your PC in order to perform the following:

- Define the parameters of the SNMP;
- Define the parameters of the EtherNet/IP;
- Define SNMP variables to be read by the EtherNet/IP master;
- Define SNMP variables to be written by the EtherNet/IP master;
- Update the device.

POWER SUPPLY:

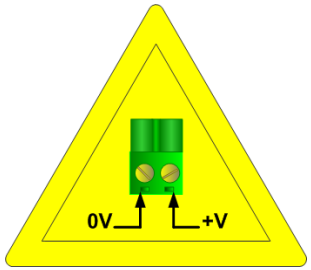
The devices can be powered between a wide range of tensions. For more details see the two tables below.

	VAC ~		VDC ⎓	
	Vmin	**Vmax**	**Vmin**	**Vmax**
HD67159-A1	**8V**	**24V**	**12V**	**35V**

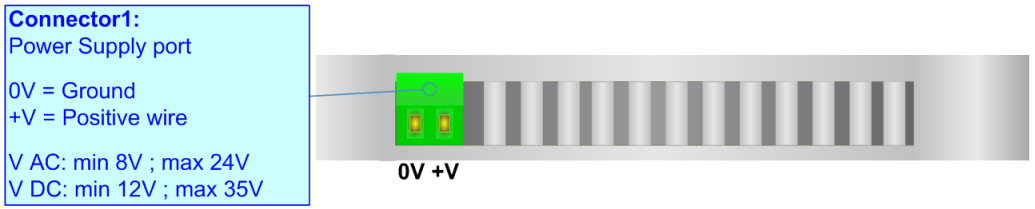
Consumption at 24V DC:

Device	W/VA
HD67159-A1	4

Caution: Not reverse the polarity power



HD67159-A1



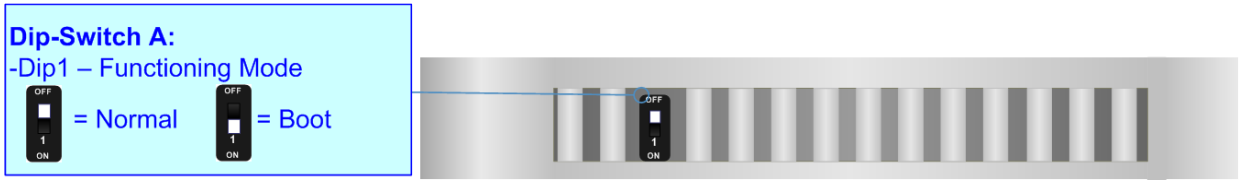
FUNCTION MODES:

The device has got two functions mode depending of the position of the Dip1 of 'Dip-Switch A':

- The first, with Dip1 in Off position (factory setting), is used for the normal working of the device.
- The second, with Dip1 in On position, is used for upload the Project/Firmware.

For the operations to follow for the updating (see 'UPDATE DEVICE' section).

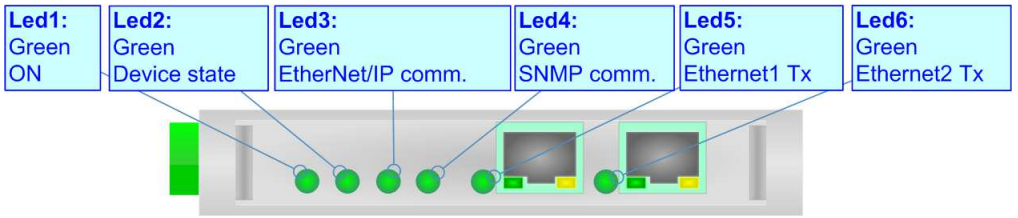
According to the functioning mode, the LEDs will have specifics functions (see 'LEDS' section).



LEDS:

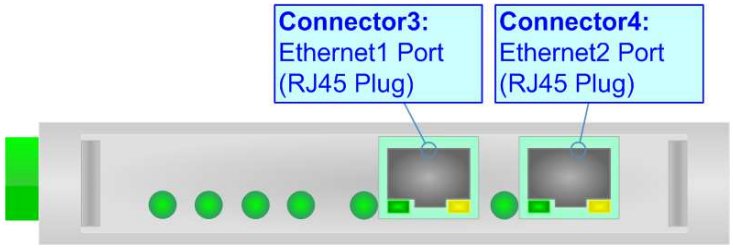
The device has got six LEDs that are used to give information of the functioning status.
The various meanings of the LEDs are described in the table below.

LED	Normal Mode	Boot Mode
1: ON [supply voltage] (green)	**ON:** Device powered **OFF:** Device not powered	**ON:** Device powered **OFF:** Device not powered
2: Device State (green)	Blinks slowly (~1Hz)	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
3: EtherNet/IP comm. (green)	**Flashing:** EtherNet/IP communication **OFF:** No EtherNet/IP communication	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
4: SNMP comm. (green)	**Flashing:** SNMP communication **OFF:** No SNMP communication	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
5: Ethernet1 Tx (green)	Blinks when is transmitting Ethernet frames	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
6: Ethernet2 Tx (green)	Blinks when is transmitting Ethernet frames	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress



ETHERNET:

The Ethernet connection must be made using Connector3 or Connector4 of HD67159-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 SW67159:

To configure the Converter, use the available software that runs with Windows called SW67159. 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 or 11; 32/64bit).

When launching the SW67159, the window below appears (Fig. 2).

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

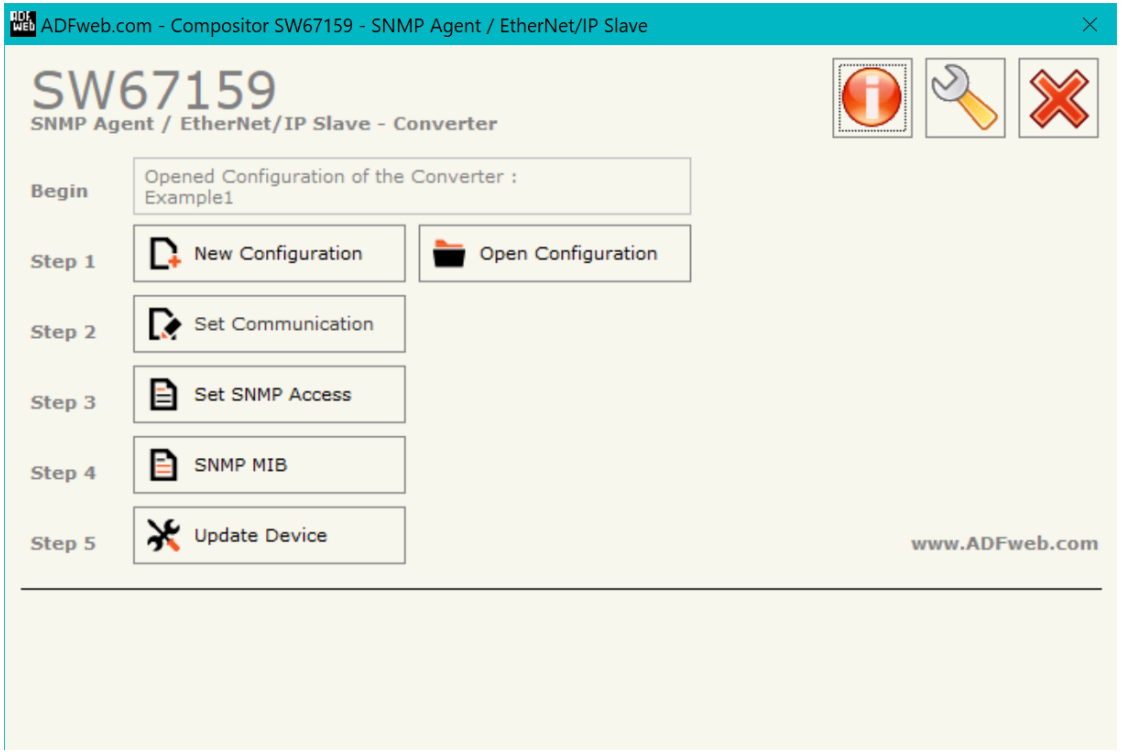
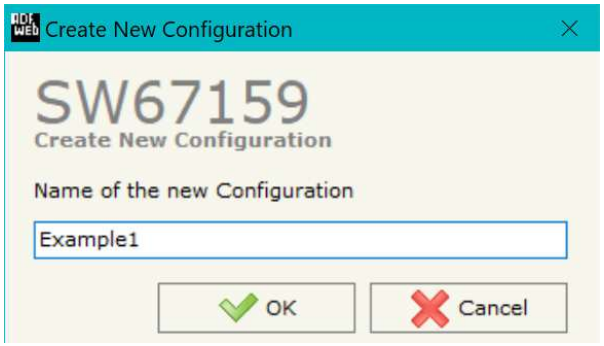


Figure 2: Main window for SW67159

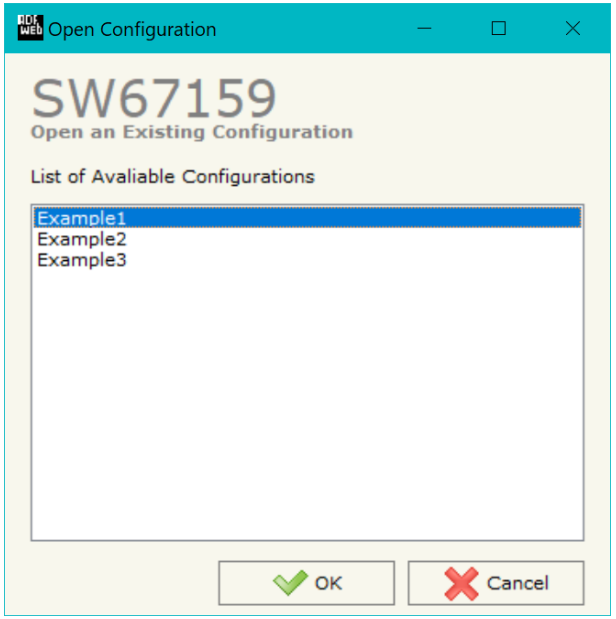
NEW CONFIGURATION / OPEN CONFIGURATION:

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



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

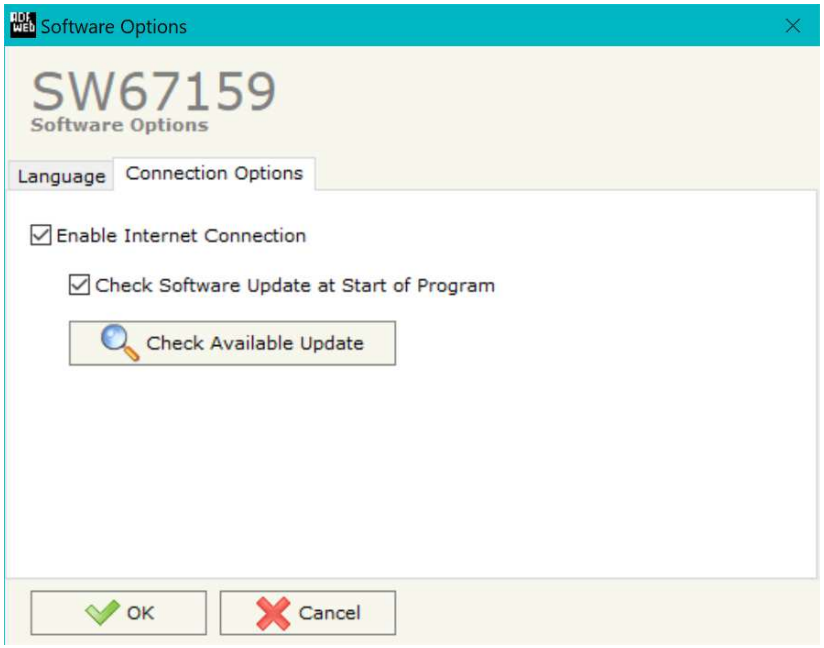
- To clone the configurations of a programmable "SNMP Agent / EtherNet/IP Slave - Converter" in order to configure another device in the same manner, it is necessary to maintain the folder and all its contents;
- To clone a project in order to obtain a different version of the project, it is sufficient 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 SW67159 check automatically if there are updatings when it is launched.

SET COMMUNICATION:

This section define the fundamental communication parameters of two buses, SNMP and EtherNet/IP.
By Pressing the "**Set Communication**" button from the main window for SW67159 (Fig. 2) the window "Set Communication" appears (Fig. 3).

The means of the fields for "SNMP" are:

- In the field "**IP ADDRESS**" the IP address of SNMP side of the converter is defined;
- In the field "**SUBNET Mask**" the SubNet Mask of SNMP side of the converter is defined;
- In the field "**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 for SNMP Agent station 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;
- In the field "**Version**" the version of SNMP is defined;
- If SNMP V3 is used, the following fields must be filled:
  - In the field "**User**" the user for the SNMP authentication is defined;
  - In the field "**Security Level**" the type of security used is defined;
  - In the field "**Authority**" the password for the SNMP authentication is defined;
  - In the field "**Authority Mode**" the mode used for the authentication is defined;
  - In the field "**Privacy**" the password for Privacy authentication is defined;
  - In the field "**Privacy Mode**" the mode used for Privacy is defined.

The means of the fields for "EtherNet/IP" are:

- In the fields "**IP ADDRESS**" the IP address for EtherNet/IP side of the converter is defined;
- In the fields "**SUBNET Mask**" the SubNet Mask for EtherNet/IP side of the converter is defined;
- In the fields "**GATEWAY**" the default gateway of the net 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 EtherNet/IP communication is defined (fixed to 44818);
- In the field "**Number Byte Input**" the number of input byte of the slave station is defined;
- In the field "**Number Byte Output**" the number of output byte of the slave station is defined.

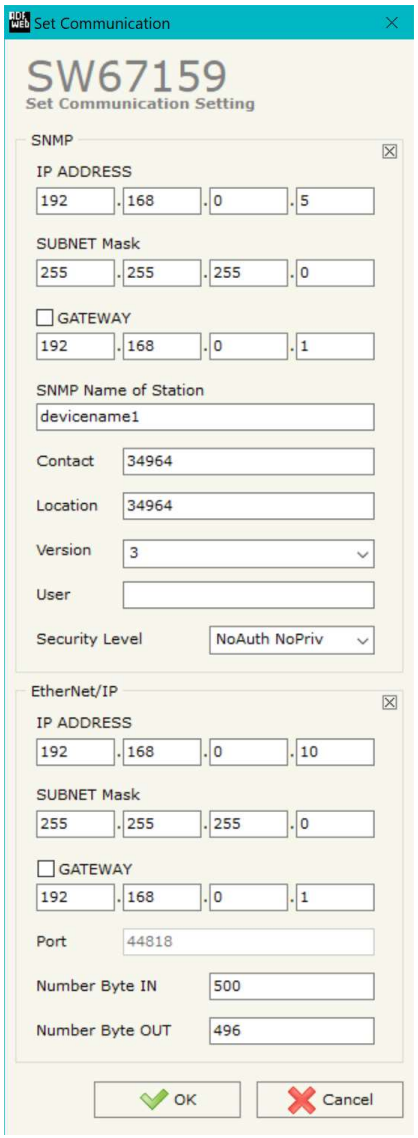


Figure 3: "Set Communication" window

SET SNMP ACCESS:

By pressing the "**Set SNMP Access**" button from the main window for SW67159 (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.

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

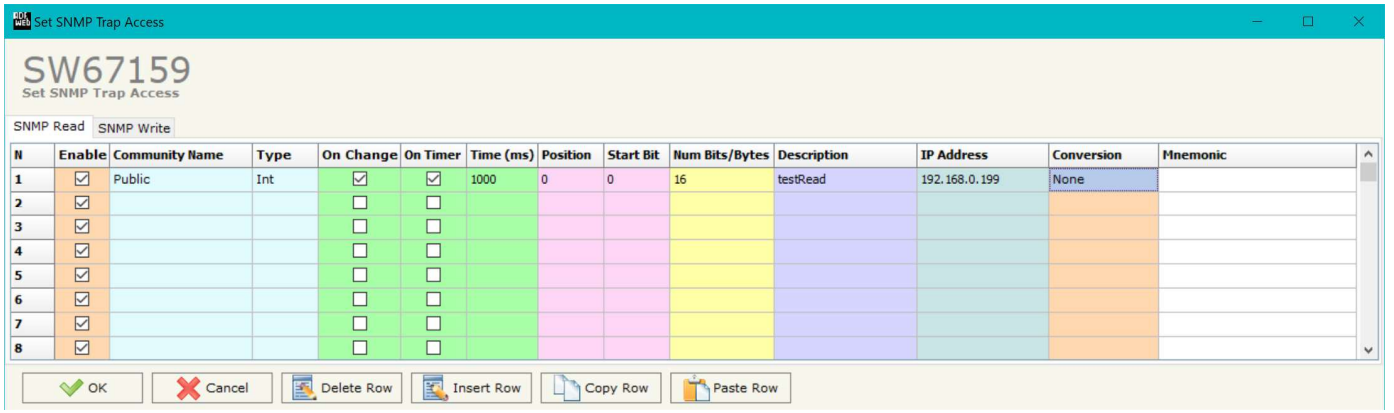


Figure 4a: "Set SNMP Access -> SNMP Read" window

- 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);
- If the field "**On Change**" is checked, the OID is sent as Trap when the data from Modbus 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 Timer' option is checked;
- In the field "**Conversion**" it is possible to select the data conversion to apply to the data (Float to Int);
- In the field "**Mnemonic**" a brief description of the OID is defined.

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

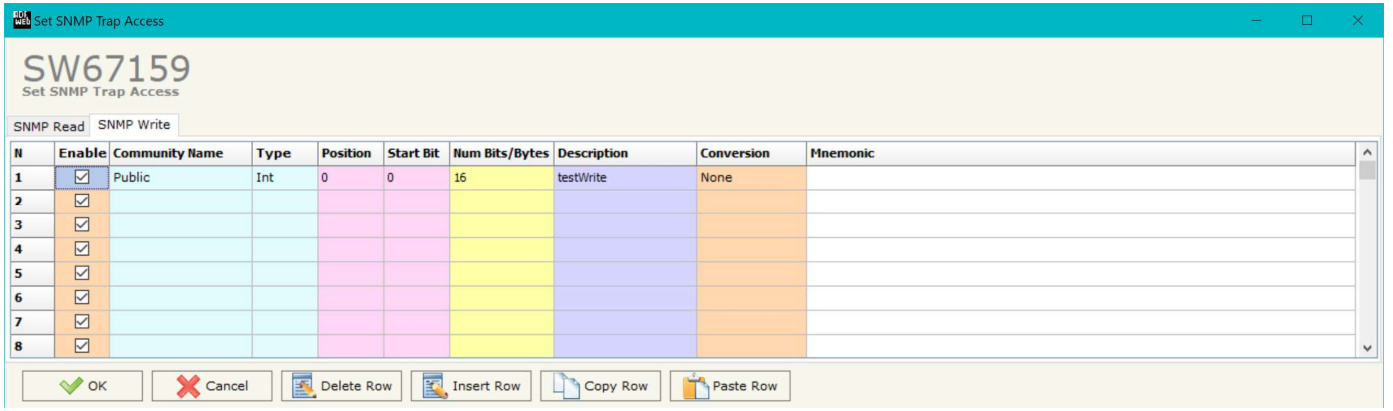


Figure 4b: "Set SNMP Access -> SNMP Write" window

- 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 "**Conversion**" it is possible to select the data conversion to apply to the data (Float to Int);
- In the field "**Mnemonic**" a brief description of the OID is defined.

Note:
If the fields "On Change" 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.

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. This by 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;
- Put Dip1 of 'Dip-Switch A' in ON position;
- Turn ON the device
- Connect the Ethernet cable;
- Insert the IP "**192.168.2.205**";
- 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' in OFF position;
- Turn ON the device.

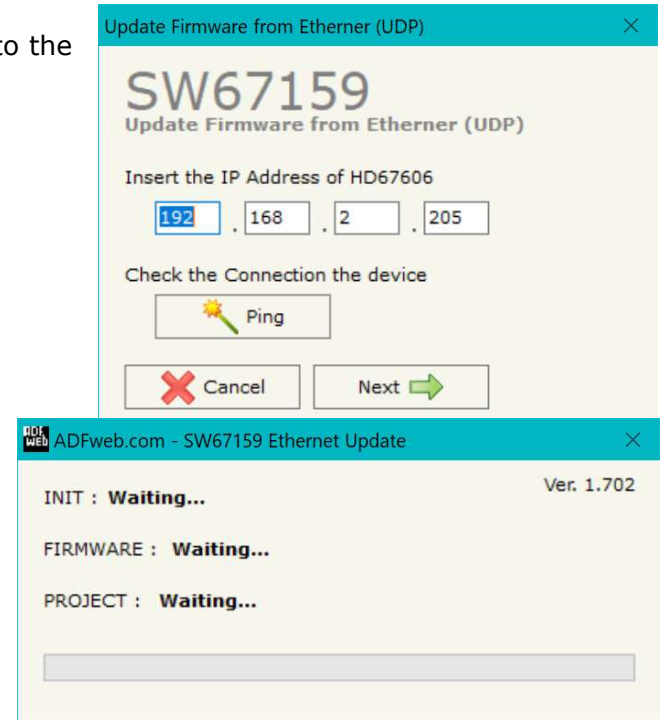


Figure 5: "Update device" windows

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;
- 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.

Note:
When you receive the device, for the first time, you also have to update the Firmware in the HD67159 device.

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

- Try to repeat the operations for the updating;
- Try with another PC;
- Try to restart the PC;
- Check the LAN settings;
- If you are using the program inside a Virtual Machine, try to use in the main Operating System;
- If you are using Windows Seven, Vista, 8, 10 or 11 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 or 11 you have to launch the "Command Prompt" with Administrator Rights;
- Pay attention at Firewall lock.

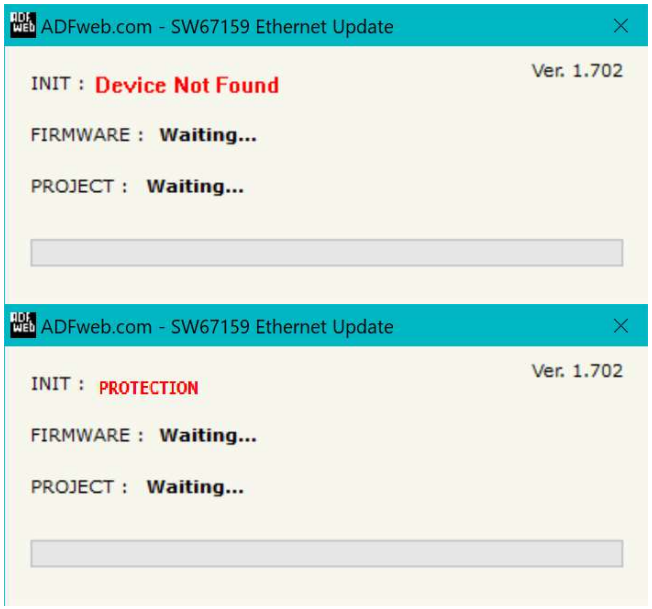


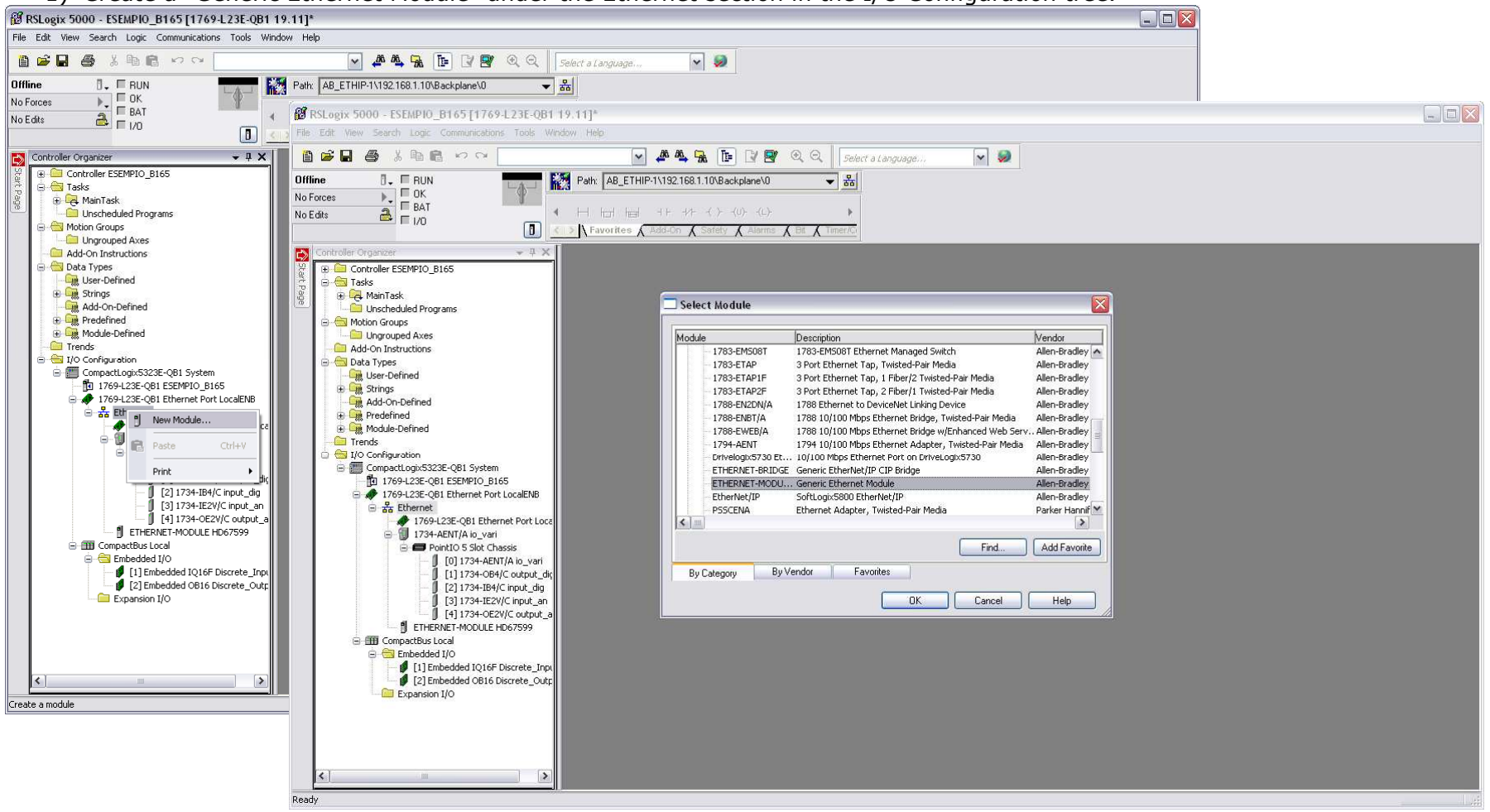
Figure 6: "Error" windows

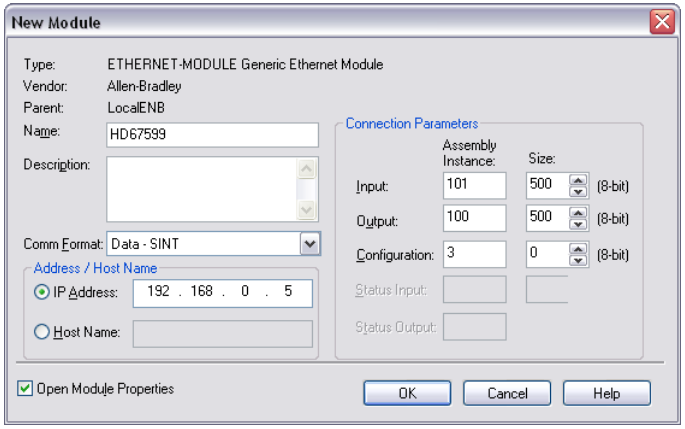
Warning:
In the case of HD67159 you have to use the software "SW67159": www.adfweb.com\download\filefold\SW67159.zip.

PLC CONFIGURATION:

The configuration and commissioning of the EtherNet/IP Converter as described on the following pages was accomplished with the help of the "RSLogix 5000" software of Rockwell Automation. In case of using a control system from another supplier please attend to the associated documentation.
These are the steps to follow:

1) Create a "Generic Ethernet Module" under the Ethernet section in the I/O Configuration tree.



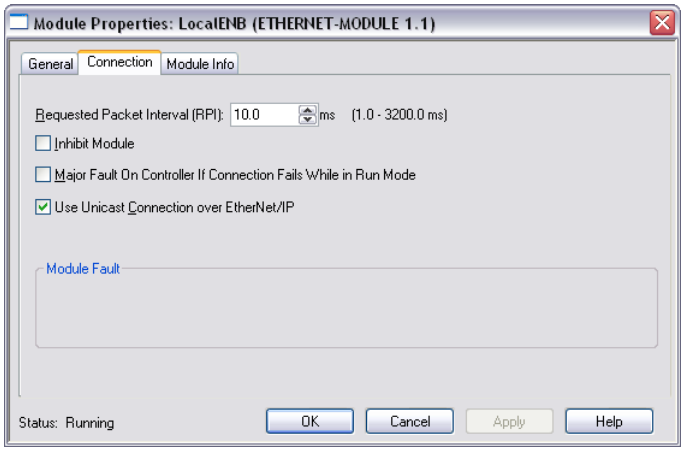


2) Edit the settings of the new Generic Ethernet Module. As shown in the screen shot below, the module was named "HD67159" and the IP-address assigned is 192.168.0.5.

For the Comm Format "Data – SINT" shall be selected as the data type.

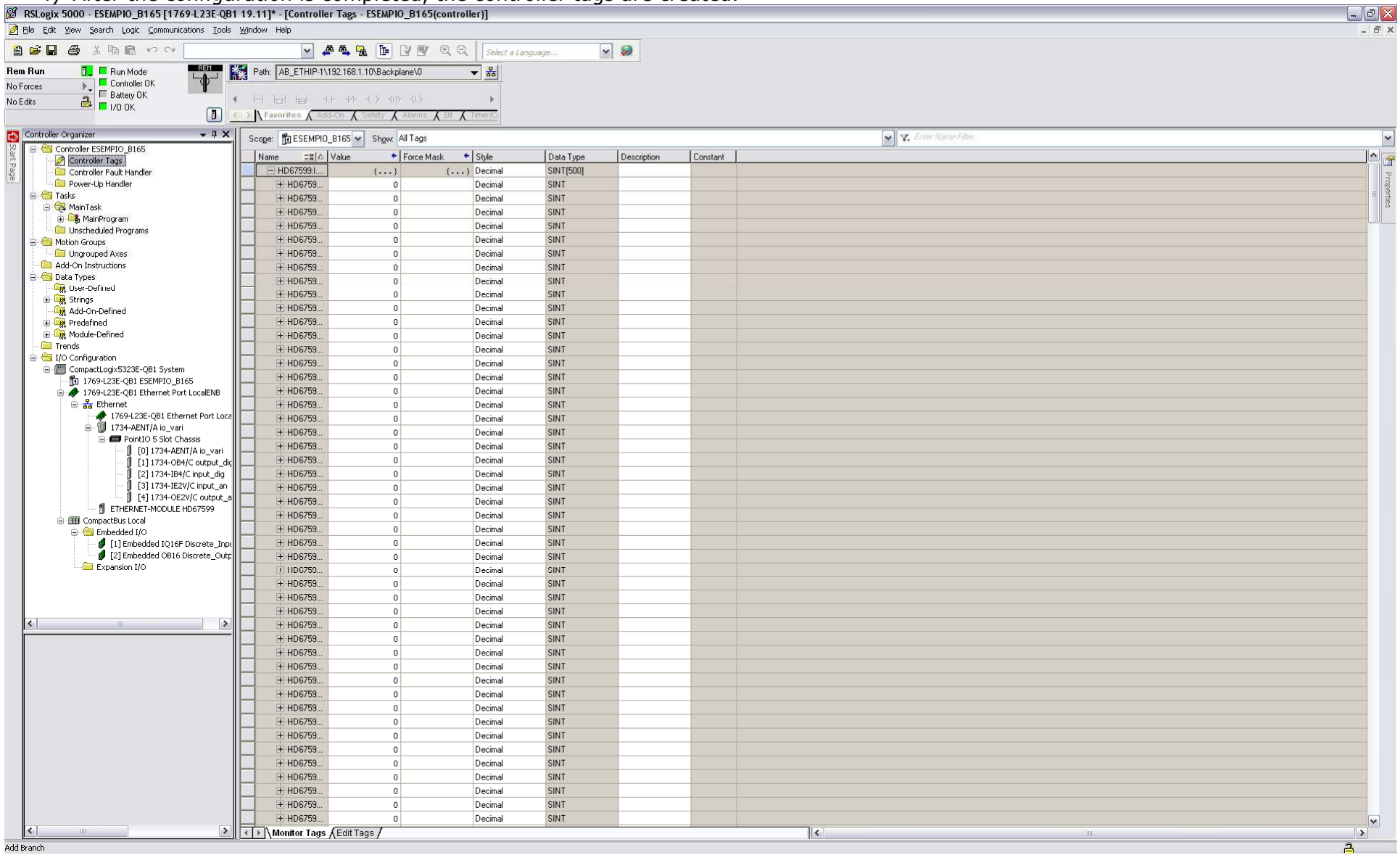
RSLogix 5000 requires a configuration assembly instance. Both modules do not provide a configuration assembly instance. Therefore it is allowed to select an instance of 3 and to set the value to zero.

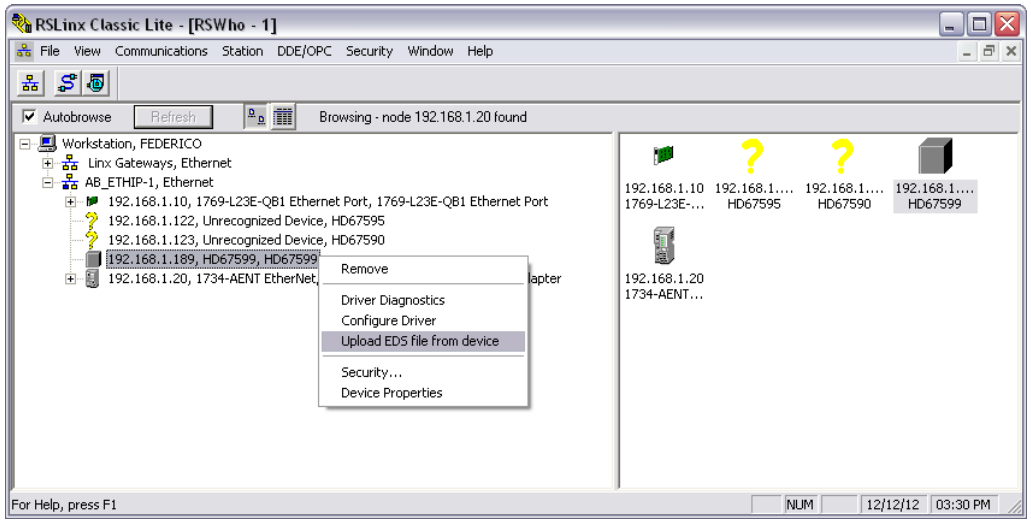
3) The setting of 10msec for the "Requested Packet Interval (RPI)" is adequate but it is possible to change this value as required. A lower value of 2ms shall not be selected.



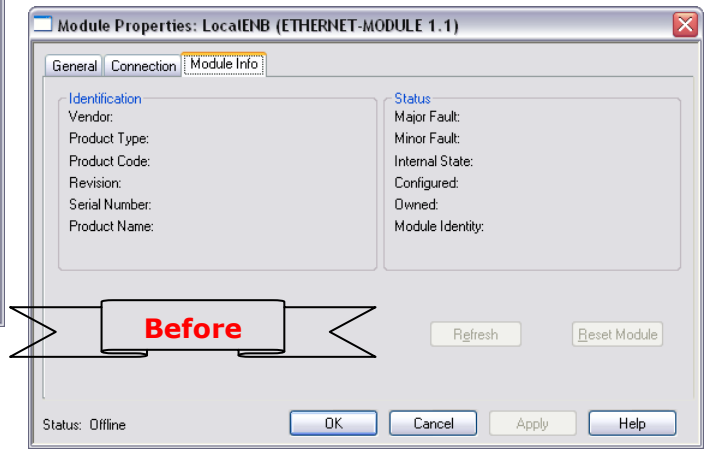
Warning:
The field "Use Unicast Connection over EtherNet/IP" must be checked.

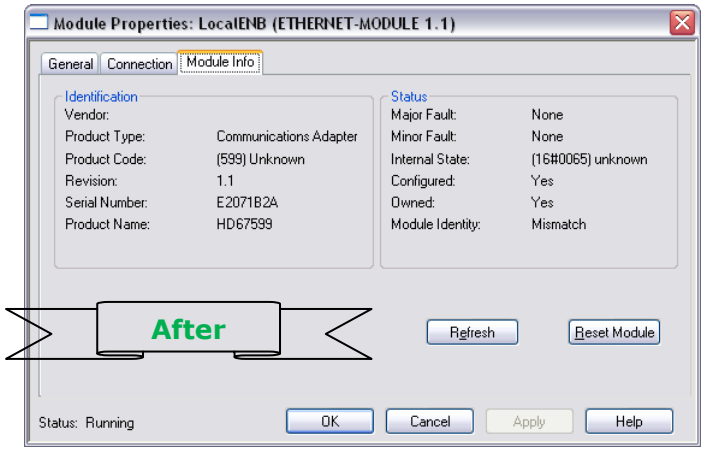
4) After the configuration is completed, the controller tags are created.





5) With "RSLinks Classic Lite", after have done a network scan (RSWho), and finding the EtherNet/IP device, it is possible to load the EDS file for the device in order to have the "Module Info" compiled.





MECHANICAL DIMENSIONS:

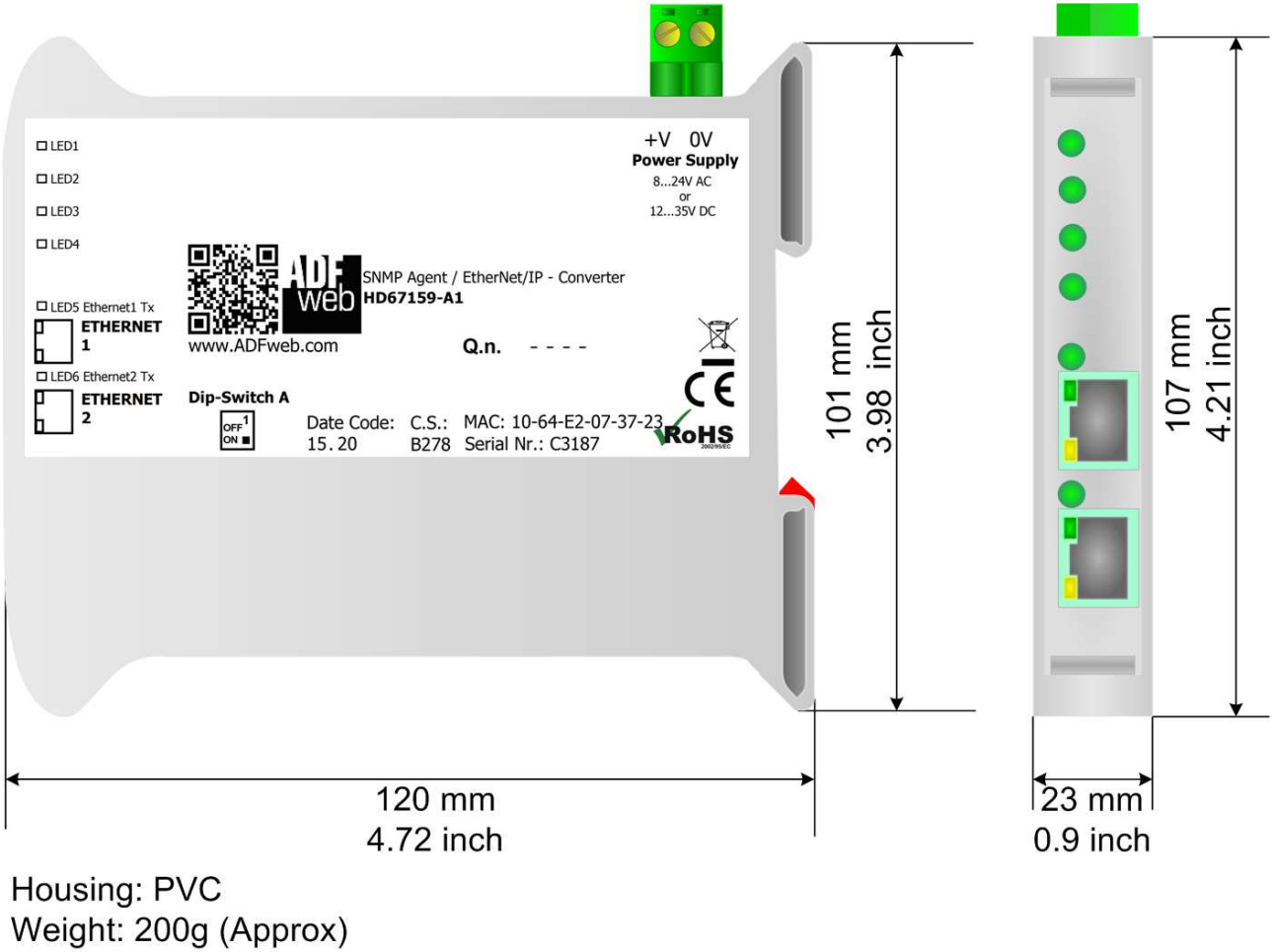


Figure 7: Mechanical dimensions scheme for HD67159-A1

ORDERING INFORMATIONS:

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

HD67159 – A 1

Connectors Type
1: Removable 5mm Screw Terminal

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

Device Family
HD67159: SNMP Agent / EtherNet/IP Slave - Converter

Order Code: **HD67159-A1** - SNMP Agent / EtherNet/IP Slave - Converter

ACCESSORIES:

Order Code: **AC34011** - Rail DIN - Power Supply 220/240V AC 50/60Hz – 12 V DC
Order Code: **AC34012** - Rail DIN - Power Supply 220/240V AC 50/60Hz – 24 V DC

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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