

## User Manual

Revision 1.002  
English

### EtherNet/IP / Modbus Master - Converter

(Order Code: HD67591-232-A1, HD67591-485-A1,  
HD67591-422-A1)

For Website information:

[www.adfweb.com?Product=HD67591](http://www.adfweb.com?Product=HD67591)

For Price information:

[www.adfweb.com?Price=HD67591-232-A1](http://www.adfweb.com?Price=HD67591-232-A1)

[www.adfweb.com?Price=HD67591-485-A1](http://www.adfweb.com?Price=HD67591-485-A1)

[www.adfweb.com?Price=HD67591-485-A1](http://www.adfweb.com?Price=HD67591-485-A1)

#### Benefits and Main Features:

- ⊕ Electrical isolation
- ⊕ Two EtherNet/IP ports
- ⊕ Temperature range: -40°C/85°C (-40°F/185°F)



User manual

For others Ethernet/IP products see also the following link:

#### Converter EtherNet/IP to

[www.adfweb.com?Product=HD67077](http://www.adfweb.com?Product=HD67077)  
[www.adfweb.com?Product=HD67091](http://www.adfweb.com?Product=HD67091)  
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[www.adfweb.com?Product=HD67F25](http://www.adfweb.com?Product=HD67F25)

(M-Bus)  
(M-Bus Wireless)  
(SNMP Agent)  
(SNMP Manager)  
(DMX)  
(NMEA 2000)  
(Serial)  
(Modbus Slave)  
(PROFIBUS Master)  
(PROFIBUS Slave)  
(CAN)  
(CANopen)  
(DeviceNet Master)  
(DeviceNet Slave)  
(J1939)  
(PROFINET Slave)  
(Modbus TCP Slave)  
(Modbus TCP Master)  
(BACnet IP Slave)  
(BACnet IP Master)  
(IEC 61850 Server)  
(KNX)  
(DALI)  
(IO-Link Master)  
(HART)  
(MQTT)  
(IO-Link Slave)  
(OPC UA Client)  
(OPC UA Server)  
(PROFINET Master)  
(EnOcean)  
(LoRaWAN)  
(EtherCAT Slave)  
(EtherCAT Master)  
(LoRaWAN Gateway)

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)

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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.

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/](http://www.adfweb.com/download/)

**REVISION LIST:**

Revision	Date	Author	Chapter	Description
1.000	21/06/2012	Fl	All	First release version
1.001	05/03/2013	Dp	All	Add New Chapters
1.002	19/04/2024	Ln	All	Revision

**WARNING:**

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**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 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**

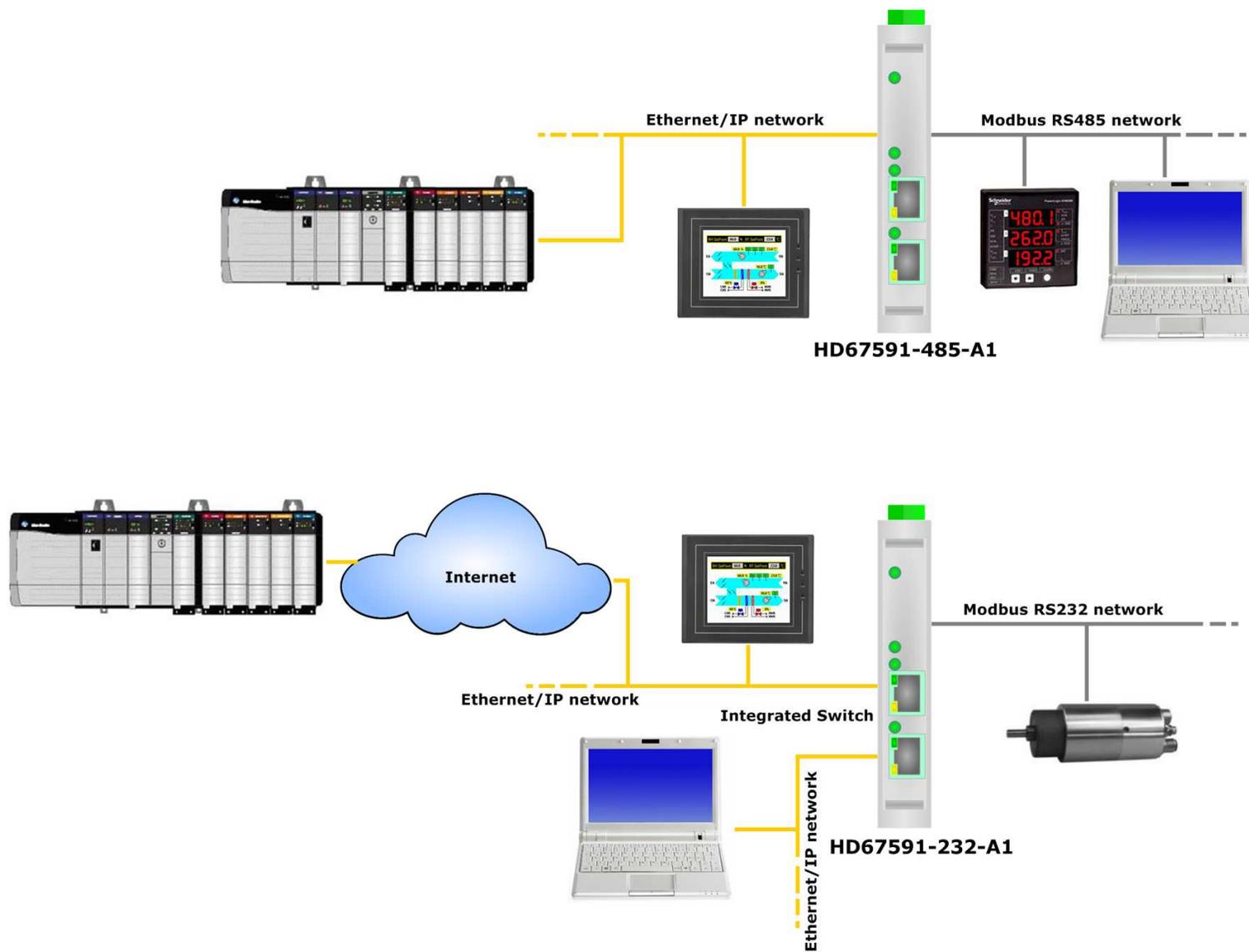
The device is state of the art and is safe. The instrument can represent a potential hazard if they are inappropriately installed and operated by personnel untrained. These instructions refer to residual risks with the following symbol:

 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](mailto:support@adfweb.com) or give us a call if you need it.

**EXAMPLE OF CONNECTION:**



**CONNECTION SCHEME:**

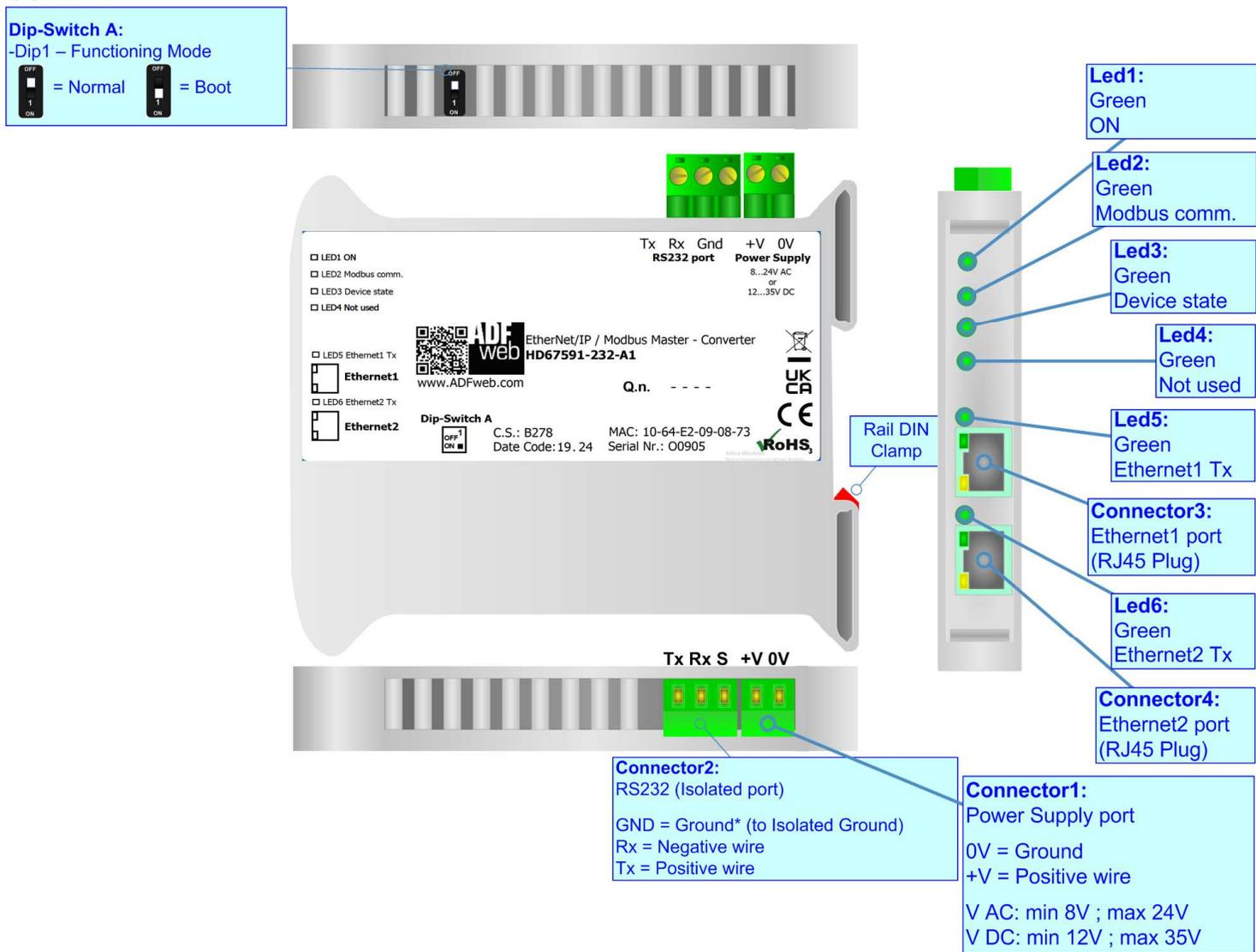


Figure 1a: Connection scheme for HD67591-232-A1

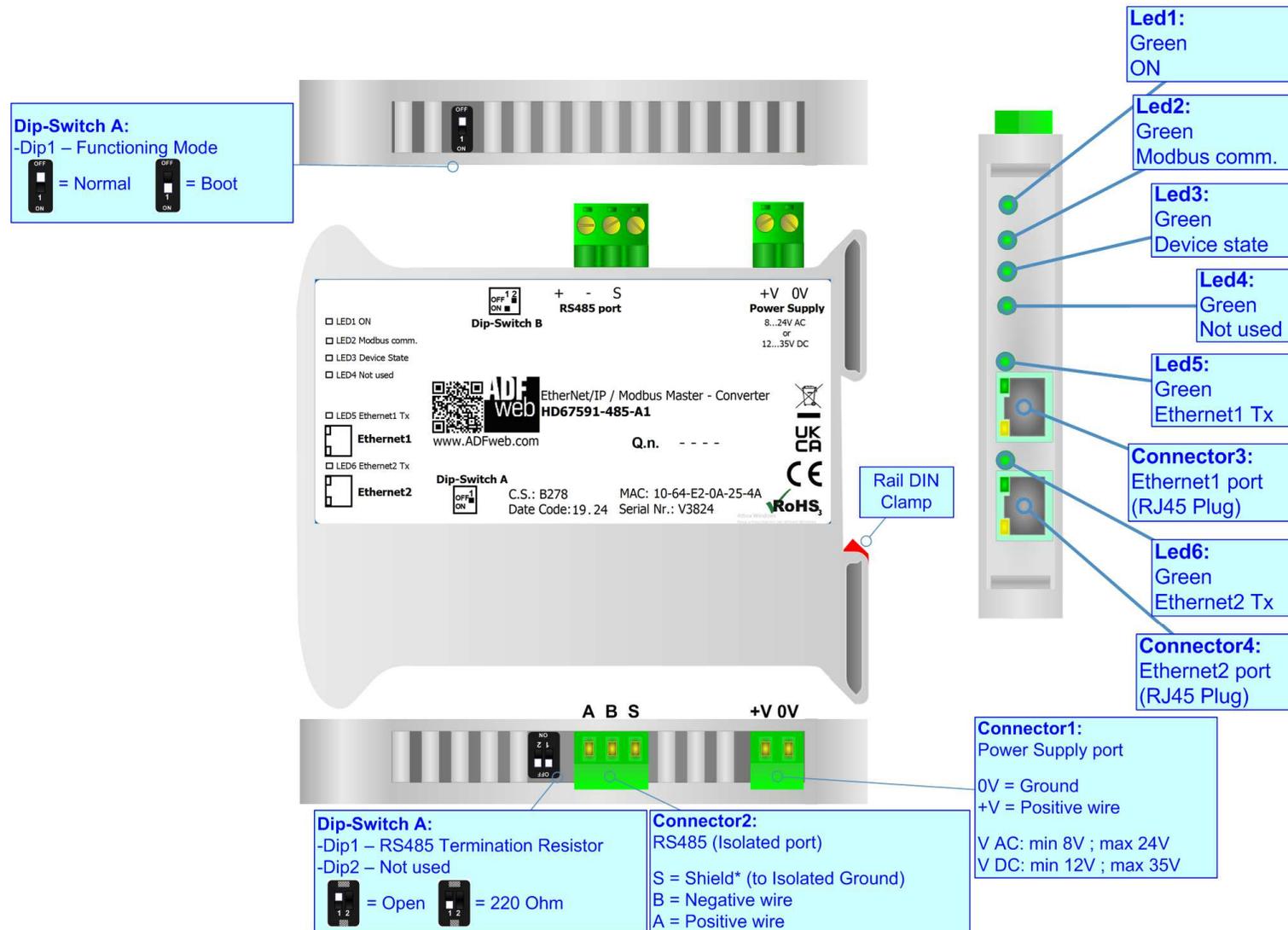


Figure 1b: Connection scheme for HD67591-485-A1

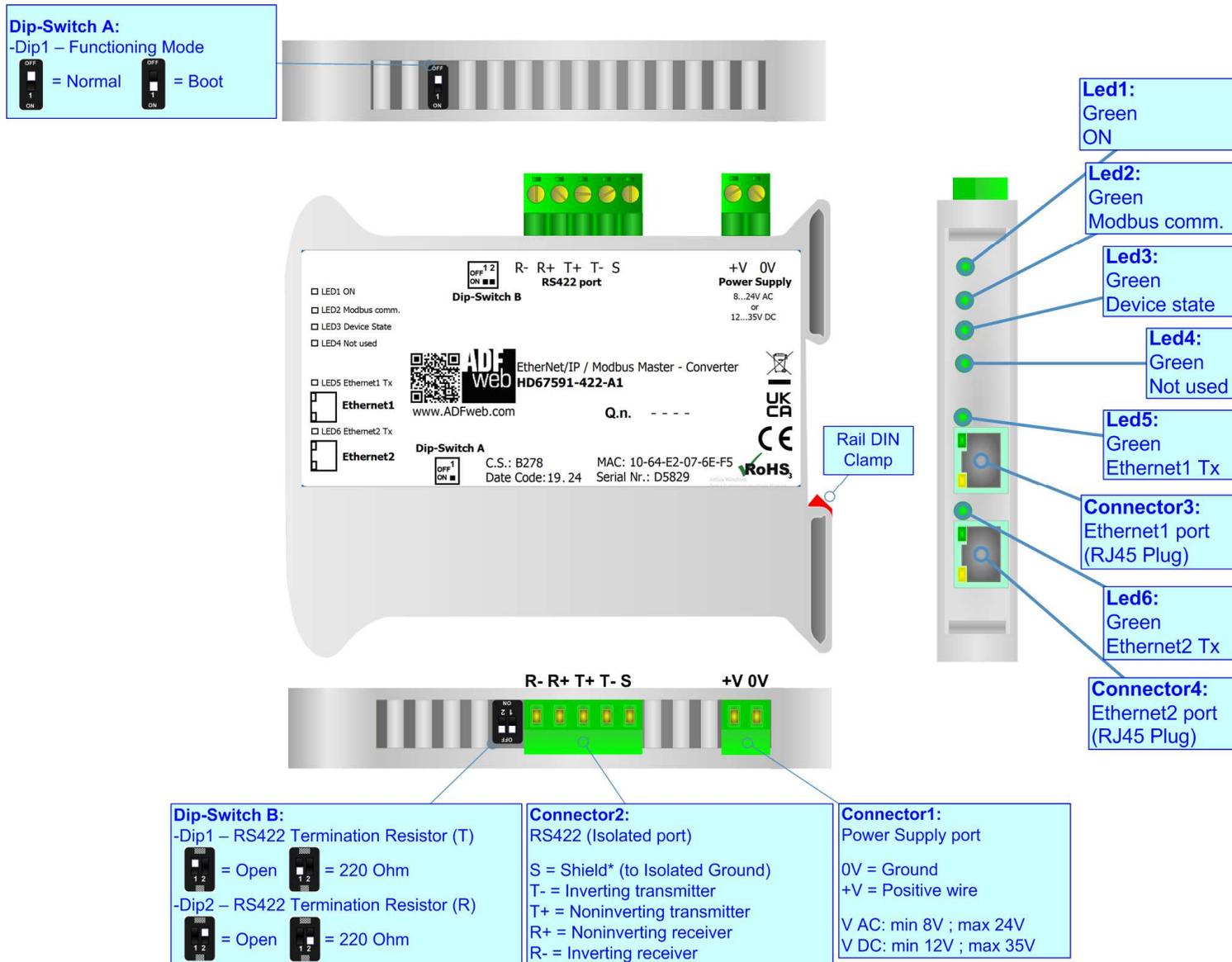


Figure 1c: Connection scheme for HD67591-422-A1

**CHARACTERISTICS:**

The HD67591-232-A1, HD67591-485-A1 and HD67591-422-A1 are a EtherNet/IP / Modbus Master Converter.

It allows the following characteristics:

- Up to 496 bytes in reading and 496 bytes in writing;
- Two-directional information between Modbus bus and EtherNet/IP bus;
- Mountable on 35mm Rail DIN;
- Power Supply 8...24V AC or 12...35V DC;
- Temperature range -40°C to 85°C.

**CONFIGURATION:**

You need Compositor SW67591 software on your PC in order to perform the following:

- Define the parameter of Ethernet/IP line;
- Define the parameter of Modbus line;
- Define the data to read from Modbus Slaves and where mapping the data into the EtherNet/IP array;
- Define the data to write to Modbus Slaves and from where to taking the data from the EtherNet/IP array;
- 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

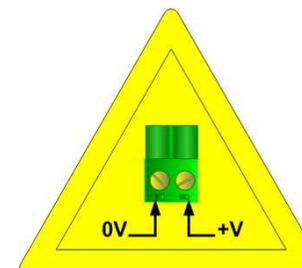
Consumption at 24V DC:

Device	Consumption [W/VA]
HD67591-232-A1	3.5
HD67591-485-A1	3.5
HD67591-422-A1	3.5

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



**Caution: Not reverse the polarity power**



HD67591-xxx-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 of Dip-Switch A' at "OFF" position, is used for the normal working of the device.
- The second, with 'Dip1 of Dip-Switch A' at "ON" position, is used for upload the Project and/or Firmware.

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

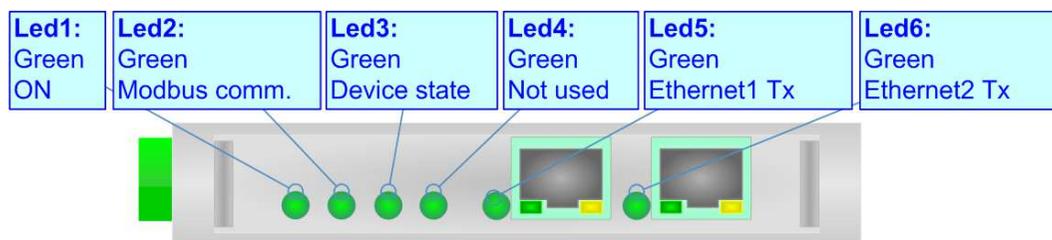
According to the functioning mode, the LEDs will have specifics functions, see 'LEDS' section.



**LEDS:**

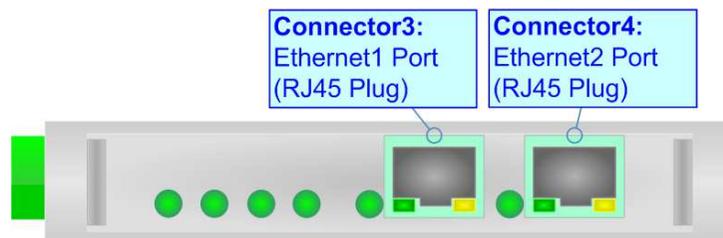
The device has got six LEDs that are used to give information about the functioning status.  
The various meanings of the LEDs are described in the table below.

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



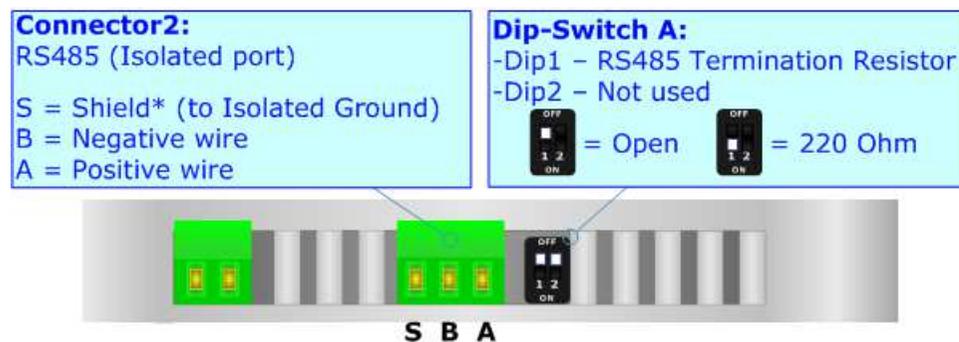
**ETHERNET:**

The Ethernet connection must be made using Connector3 and/or Connector4 of HD67591-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.



### RS485:

For terminate the RS485 line with a 220Ω resistor it is necessary to put ON dip 1, like in figure.



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

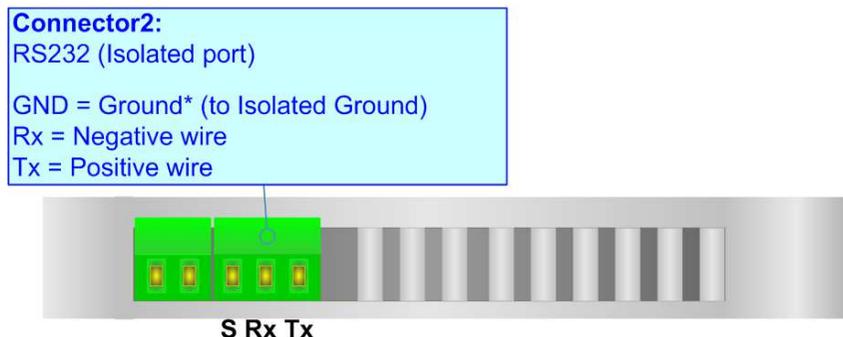
Here some codes of cables:

- 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.

**RS232:**

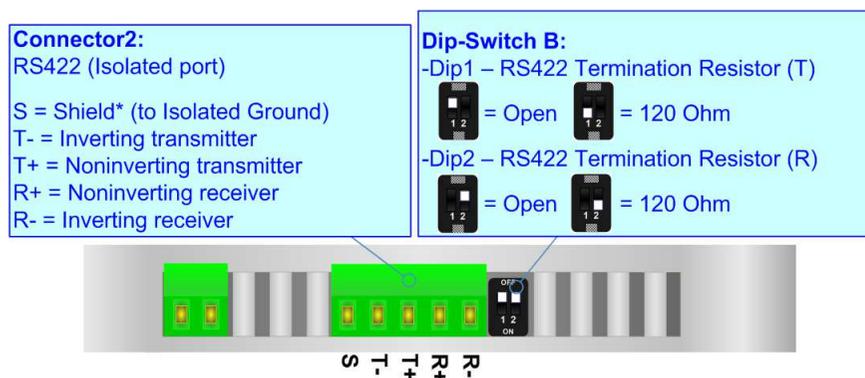
The connection from RS232 socket to a serial port (example one from a personal computer) must be made with a NULL MODEM cable (a serial cable where the pins 2 and 3 are crossed).

It is recommended that the RS232 cable not exceed 15 meters.



**RS422:**

For terminate the RS422 line with a 120Ω resistor it is necessary to put ON dip 1 for T line and/or put ON dip 2 for R line, like in figure. The maximum length of the cable should be 1200m (4000 feet).



**USE OF COMPOSITOR SW67591:**

To configure the Converter, use the available software that runs with Windows called SW67591. 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, 10 or 11; 32/64bit).

When launching the SW67591, the window below appears (Fig. 2).

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



Figure 2: Main window for SW67591

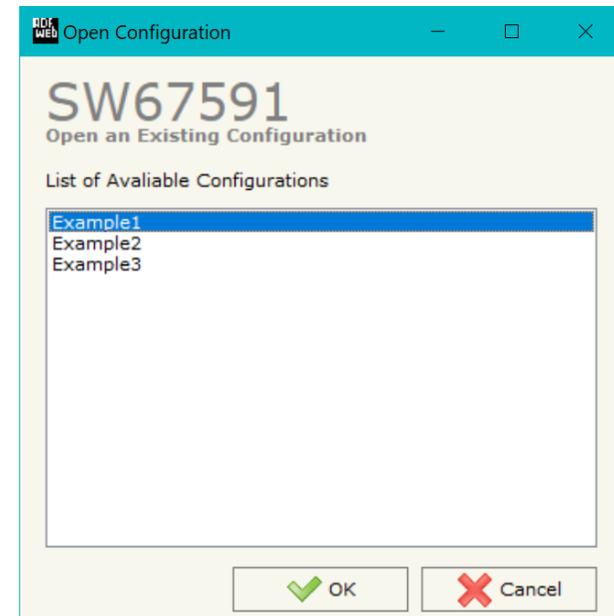
**NEW CONFIGURATION / OPEN CONFIGURATION:**

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



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

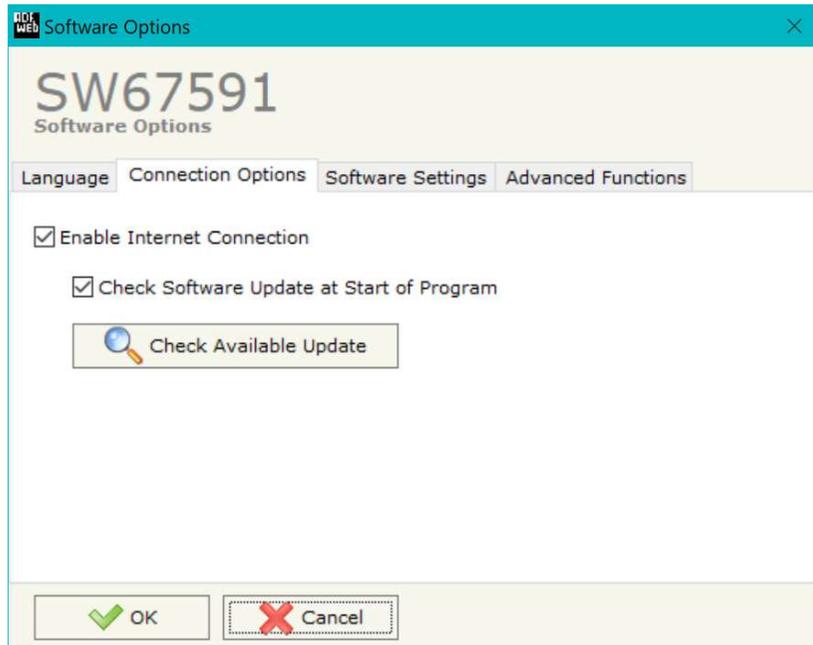
- To clone the configurations of a Programmable “EtherNet/IP / Modbus Master - Converter” in order to configure another device in the same manner, it is necessary to maintain the folder and all its contents;
- To clone a project in order to obtain a different version of the project, it is sufficient to duplicate the project folder with another name and open the new folder with the button “**Open 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.

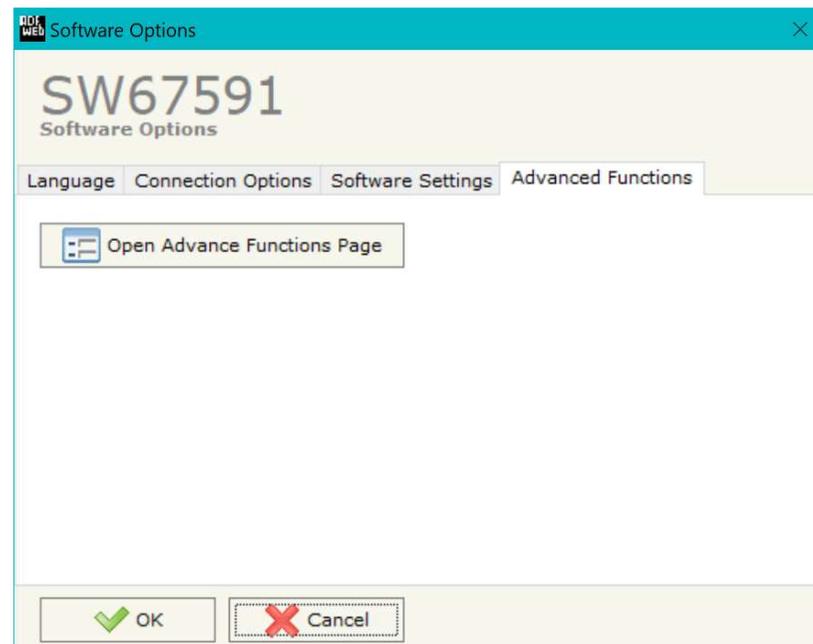


In the section “Connection Options”, it is possible to check if there are some updatings of the software compositor in ADFweb.com website. Checking the option “**Check Software Update at Start of Program**”, the SW67591 check automatically if there are updatings when it is launched.



In the section "Software Settings", it is possible to enable/disable some keyboard's commands for an easier navigation inside the tables contained in the different sections of the software.

In the section "Advanced Functions" it is possible to check the status of the communication and manage directly from SW67591 the commands described from page 25.



## SET COMMUNICATION:

This section define the fundamental communication parameters of two buses, EtherNet/IP and Modbus.

By Pressing the **"Set Communication"** button from the main window for SW67591 (Fig. 2) the window "Set Communication" appears (Fig. 3).

The window is divided in two sections, one for the EtherNet/IP and the other for the Modbus.

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

- In the fields **"IP ADDRESS"** insert the IP address that you want to give to the Converter;
- In the fields **"SUBNET Mask"** insert the SubNet Mask;
- In the fields **"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 **"Tunneling Port"** is possible to define the port to use for the "Tunneling mode" (see page 28 for more details);
- In the field **"Number Byte Input"** the number of byte from the EtherNet/IP to the Converter is defined (at maximum it is possible to use 50 byte);
- In the field **"Number Byte Output"** the number of byte from the Converter to the EtherNet/IP is defined (at maximum it is possible to use 500 byte).
- In the field **"Diagnostic"** insert the starting byte of the EtherNet/IP array where you will save the diagnostic of Modbus. It is possible to enable/disable this function using the checkbox. For more informations about the diagnostic, see "Diagnostic" section on page 24.

The means of the fields for "Modbus Master" are:

- In the field **"Serial"** the serial to use is defined (RS232 or RS485);
- In the field **"Baudrate"** the baudrate for the serial line is defined;
- In the field **"Parity"** the parity of the serial line is defined;
- In the field **"TimeOut"** there is the maximum time that the device attends for the answer from the Slave interrogated in milliseconds;
- In the field **"Cyclic Delay"** the delay between two requests is defined;

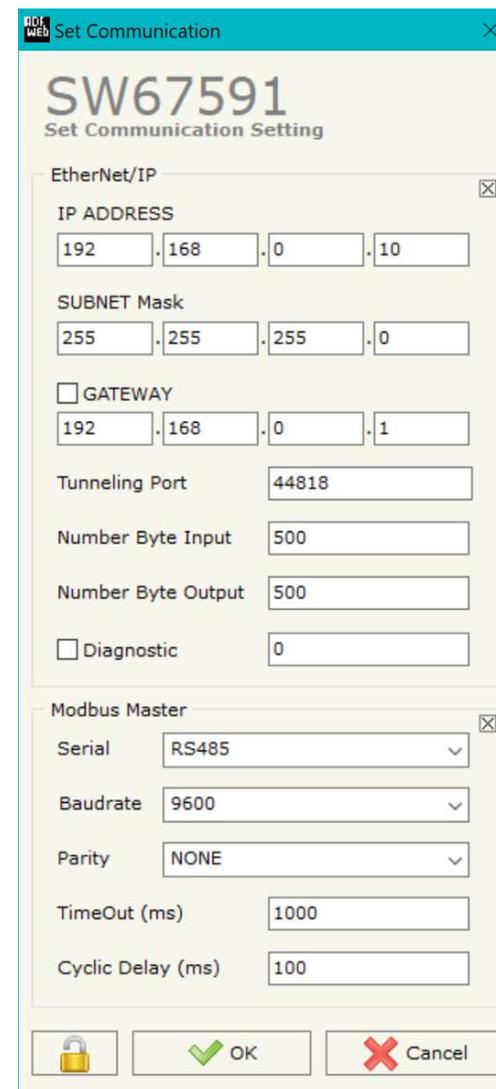


Figure 3: "Set Communication" window

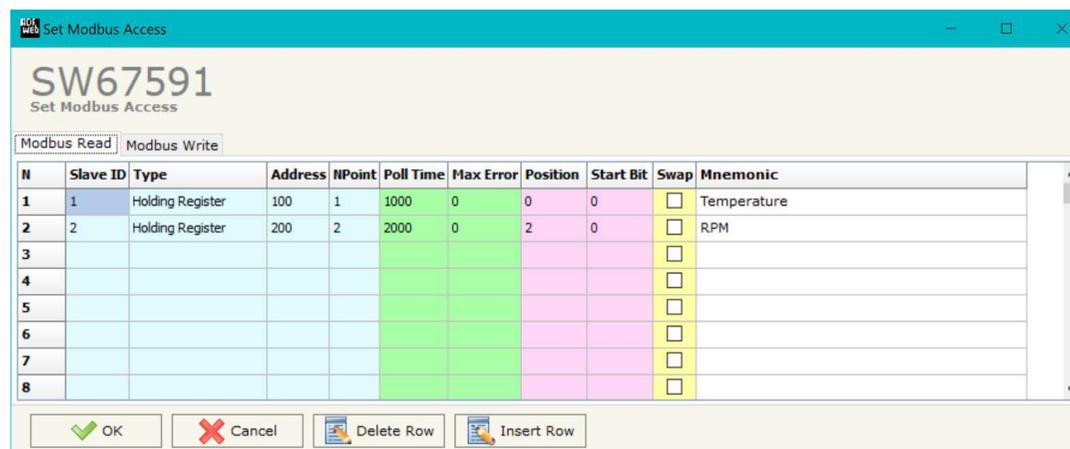
## SET ACCESS:

By pressing the **"Set Access"** button from the main window for SW67591 (Fig. 2) the window "Set Access" appears. This window is divided in two parts, the "Modbus Read" (Fig. 4a) and the "Modbus Write" (Fig. 4b). The first part "Modbus Read" is used to read the data that arrived from the EtherNet/IP. The second part "Modbus Write" is used to write the data that will be sent to the Slave EtherNet/IP.

## MODBUS READ

The means of the fields are:

- In the field **"Slave ID"** the address of the Modbus device you have to read is defined;
- In the field **"Type"** insert the data type of the register you would like to read. You can choose between the following:
  - Coil Status;
  - Input Status
  - Holding Register;
  - Input Register.
- In the field **"Address"** the start address of the register to be read is defined;
- In the field **"NPoint"** insert the number of consecutive registers to be read;
- In the field **"Poll Time"** insert the time to make this request;
- In the field **"Max Error"** is the number of errors continues that the gateway waits before suspending the poll until the next reboot. If is set to zero this function is disabled;
- In the field **"Position"** insert the address of the EtherNet/IP array where place the information;
- In the field **"Start Bit"** insert the start bit of the first byte of the field "Position" where start to insert the data read. Valid only for the "Coil Status" and "Input Status".
- If the field **"Swap"** is checked, the data from the Modbus registers are swapped;
- In the field **"Mnemonic"** the description for the request is defined.



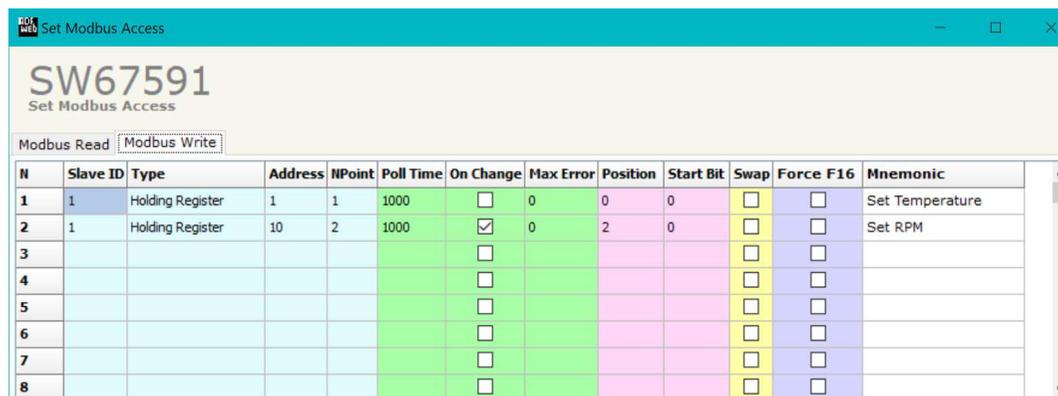
N	Slave ID	Type	Address	NPoint	Poll Time	Max Error	Position	Start Bit	Swap	Mnemonic
1	1	Holding Register	100	1	1000	0	0	0	<input type="checkbox"/>	Temperature
2	2	Holding Register	200	2	2000	0	2	0	<input type="checkbox"/>	RPM
3									<input type="checkbox"/>	
4									<input type="checkbox"/>	
5									<input type="checkbox"/>	
6									<input type="checkbox"/>	
7									<input type="checkbox"/>	
8									<input type="checkbox"/>	

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

## **MODBUS WRITE**

The means of the fields are:

- In the field "**Slave ID**" the address of the Modbus device that you must write is defined;
- In the field "**Type**" insert the data type of the register you would like to read. You can choose between the following:
  - Coil Status;
  - Holding Register;
- In the field "**Address**" the start address of the register to be written is defined;
- In the field "**NPoint**" insert the number of consecutive registers to be written;
- In the field "**Poll Time**" insert the time to make this request;
- If the field "**On Change**" is checked, the gateway send the Write request in Modbus when the data change the value.
- In the field "**Max Error**" is the number of errors continues that the gateway waits before suspending the poll until the next reboot. If is set to zero this function is disabled;
- In the field "**Position**" insert the address of the EtherNet/IP array where read the information;
- In the field "**Start Bit**" insert the start bit of the first byte of the field "Position" where start to read the data to write. Valid only for the "Coil Status".
- If the field "**Swap**" is checked, the data from the Modbus registers are swapped;
- If the field "**Force F16**" is checked, the Modbus writing function used will be in any case 15 (for Coil Status) or 16 (for Holding Register);
- In the field "**Mnemonic**" the description for the request is defined.



N	Slave ID	Type	Address	NPoint	Poll Time	On Change	Max Error	Position	Start Bit	Swap	Force F16	Mnemonic
1	1	Holding Register	1	1	1000	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	<input type="checkbox"/>	Set Temperature
2	1	Holding Register	10	2	1000	<input checked="" type="checkbox"/>	0	2	0	<input type="checkbox"/>	<input type="checkbox"/>	Set RPM
3						<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	
4						<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	
5						<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	
6						<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	
7						<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	
8						<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	

Figure 4b: "Set Access --> Modbus Write" 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. 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.

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.



Figure 5: "Update device" windows

**Note:**

When you receive the device, for the first time, you also have to update the Firmware in the HD67591 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.

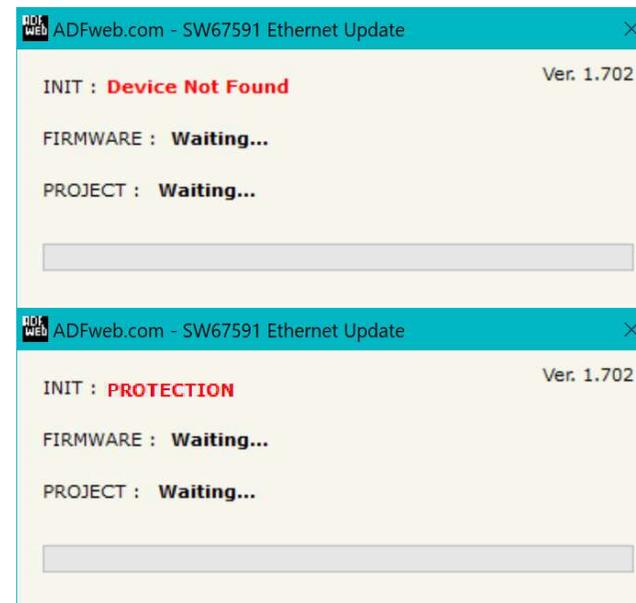


Figure 6: "Error" window

**Warning:**

In the case of HD67591 you have to use the software "SW67591": [www.adfweb.com/download/filefold/SW67591.zip](http://www.adfweb.com/download/filefold/SW67591.zip)

### MODBUS DIAGNOSTIC OVER ETHERNET/IP:

During the normal functioning of the device, if all the programmed Modbus requests have received a valid reply (not an exception error), every Ethernet/IP frame has the "Data Status" byte at the value of 0x35.

Otherwise, if at least one Modbus reply is not valid, the "Data Status" byte assumes the value 0x15; that means "Problem Indicator".

If this happens, using the port 5000 there is a UDP message that is possible to send in order to understand which Modbus modules have generated that error.

This command is described in the section "Advanced Functions" under the "B2 command".

Moreover, it is possible to save the Modbus Diagnostic on Output Ethernet/IP array using the field "Diagnostic" of the section "Set Communication".

In this case, the status of each Modbus request defined in the section "Set Access" is saved starting from the byte of the Ethernet/IP array defined in the section "Set Communication".

Each bit will represent the status of a Modbus request:

- If for a request the converter receives a correct response, the status bit is put to '0';
- If for a request the converter receives a wrong response or it doesn't receive any response, the status bit is put to '1'.

Example:

In the section "Set Access" are defined 8 Modbus reading requests ("Modbus Read" table) and 8 Modbus writing requests ("Modbus Write" table). The Modbus reading requests are working and the Modbus writing request are not working.

The status bits of the Modbus Diagnostic on Ethernet/IP will be:

Byte x								Byte x+1							
bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

where 'x' is the starting byte of the Ethernet/IP array where the Modbus diagnostic is saved.

**ADVANCED FUNCTIONS:**

In the HD67591-xxx-A1 are implemented some advanced commands that allows to check the functioning of the converter and send some Modbus commands directly from Ethernet side. To use them, it is necessary to send UDP messages to the port 5000.

The function of each command and the structure of the UDP messages are described below.

B0 command

This command allows to enable/disable the Modbus polls on Modbus side.

REQ:

Byte 0	B1/bit7	B1/bit6	B1/bit5	B1/bit4	B1/bit3	B1/bit2	B1/bit1	B1/bit0	...	Bn/bitn
0xB0	Poll 0	Poll 1	Poll 2	Pol 3	Poll 4	Poll 5	Poll 6	Poll 7	...	Poll x

1 = Poll disabled

0 = Poll enabled

If the message is received correctly, the same message will be sent back by the converter.

 **Note:** In the UDP message, after the command's identifier, you have to enable/disable the Modbus reading requests and then the Modbus Writing requests.

Example:

In the section "Set Access" are defined 8 Modbus reading requests ("Modbus Read" table) and 8 Modbus writing requests ("Modbus Write" table). We want to disable the firsts 4 Modbus reading requests and the firsts 4 Modbus writing requests.

Byte 0	Byte 1								Byte 2							
0xB0	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
	Poll0	Poll1	Poll2	Poll3	Poll4	Poll5	Poll6	Poll7	Poll8	Poll9	Poll10	Poll11	Poll12	Poll13	Poll14	Poll15
	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0

B1 command

This command allows to read the status of the enabling/disabling of the Modbus polls.

REQ:

Byte 0
0xB1

RES:

Byte 0	B1/bit0	B1/bit1	B1/bit2	...	Bn/bitn
0xB1	Poll 0	Poll 1	Poll 2	...	Poll x

1 = Poll disabled

0 = Poll enabled



Note:

In the UDP message, after the command's identifier (0xB1), you can read the status of the Modbus Reading requests and then the status of the Modbus writing requests.

Example:

Referring to the previous example, if we read the status of the enabling/disabling, the response from the converter will be:

Byte 0	Byte 1								Byte 2							
0xB0	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
	Poll0	Poll1	Poll2	Poll3	Poll4	Poll5	Poll6	Poll7	Poll8	Poll9	Poll10	Poll11	Poll12	Poll13	Poll14	Poll15
	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0

**B2 command**

This command allows to see the number of errors for each Modbus poll defined in the section "Set Access".

REQ:

Byte 0
0xB2

RES:

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8	...
0xB2	Number of errors for Poll 1				Number of errors for Poll 2				...



**Note:**

In the UDP message, after the command's identifier (0xB2), you can read the number of errors for the Modbus Reading requests and then for the Modbus writing requests defined in the section "Set Access".

Example:

We have defined one Modbus Reading request and one Modbus Writing request in the section "Set Access". We want to know the number of error for each poll, so we use the B2 command

REQ:

Byte 0
0xB2

RES:

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
Identifier	Number of error for poll 1				Number of error for poll 2			
0xB2	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x05

In this example, for the Modbus poll 1 (Modbus Reading request) the errors are 0 and for the Modbus poll 2 (Modbus Writing Request) the errors are 5.

**B3 command**

This command allows to enable the Transparent: it will be possible to send Modbus commands directly from Ethernet side. The converter will become completely transparent.

Byte 0	Byte 1
0xB3	Enabling/disabling of Transparent Mode

0x01 = Poll disabled

0x00 = Poll enabled

If the message is received correctly, the same message will be sent back by the converter.



**Note:**

When the Transparent Mode is enabled, the Modbus polling will stop on Modbus side.



**Note:**

The port used for send/receive the frames is defined in the section "Set Communication" step, in the field "Tunneling Port".

**B4 command**

This command allows to read the status of the Transparent Mode (enabled/disabled).

REQ:

Byte 0
0xB4

RES:

Byte 0	Byte 1
0xB4	Status

0x01 = Transparent Mode disabled

0x00 = Transparent Mode enabled

B5 command

This command allows to enable/disable the polling to a single Modbus slave.

REQ:

Byte 0	Byte 1	Byte 2
0xB5	Slave ID	0x00/0x01

0x01 = Disable polling for Modbus slave

0x00 = Enable polling for Modbus slave

If the message is received correctly, the same message will be sent back by the converter.

Example:

They are connected 3 Modbus slaves (Modbus IDs 1, 2, 3) to the converter and we want to stop the polling to the slave with ID = 2.

The message to send to the converter will be:

Byte 0	Byte 1	Byte 2
0xB5	0x02	0x01

B6 command

This command allows to enable/disable a single poll on Modbus side.

REQ:

Byte 0	Byte 1	Byte 2
0xB6	Poll No	0x00/0x01

0x01 = Disable poll

0x00 = Enable poll

If the message is received correctly, the same message will be sent back by the converter.

Example:

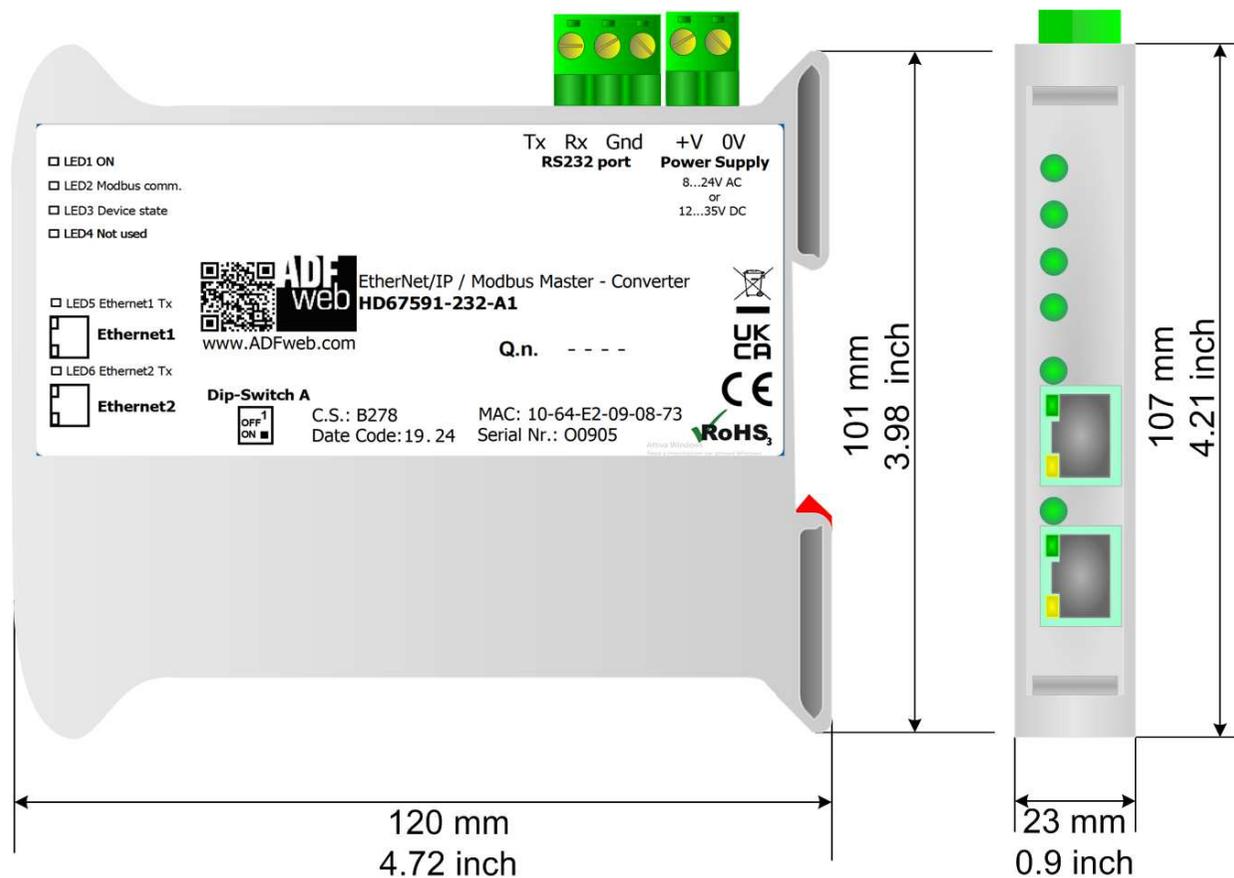
In the section "Set Access" are defined 3 Modbus reading requests and 3 Modbus writing requests.

We want to disable the first Modbus writing request (4th poll).

The message to send to the converter will be:

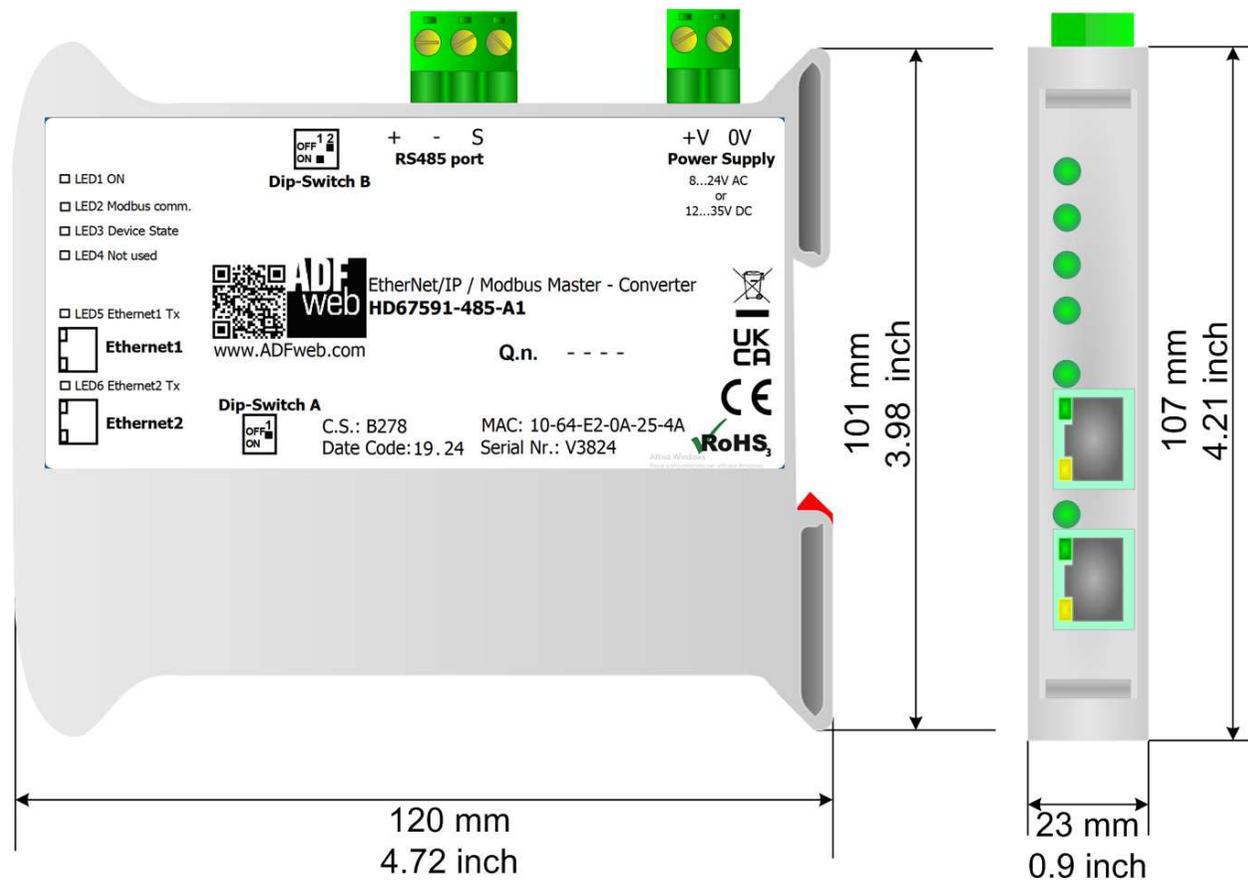
Byte 0	Byte 1	Byte 2
0xB6	0x04	0x01

**MECHANICAL DIMENSIONS:**



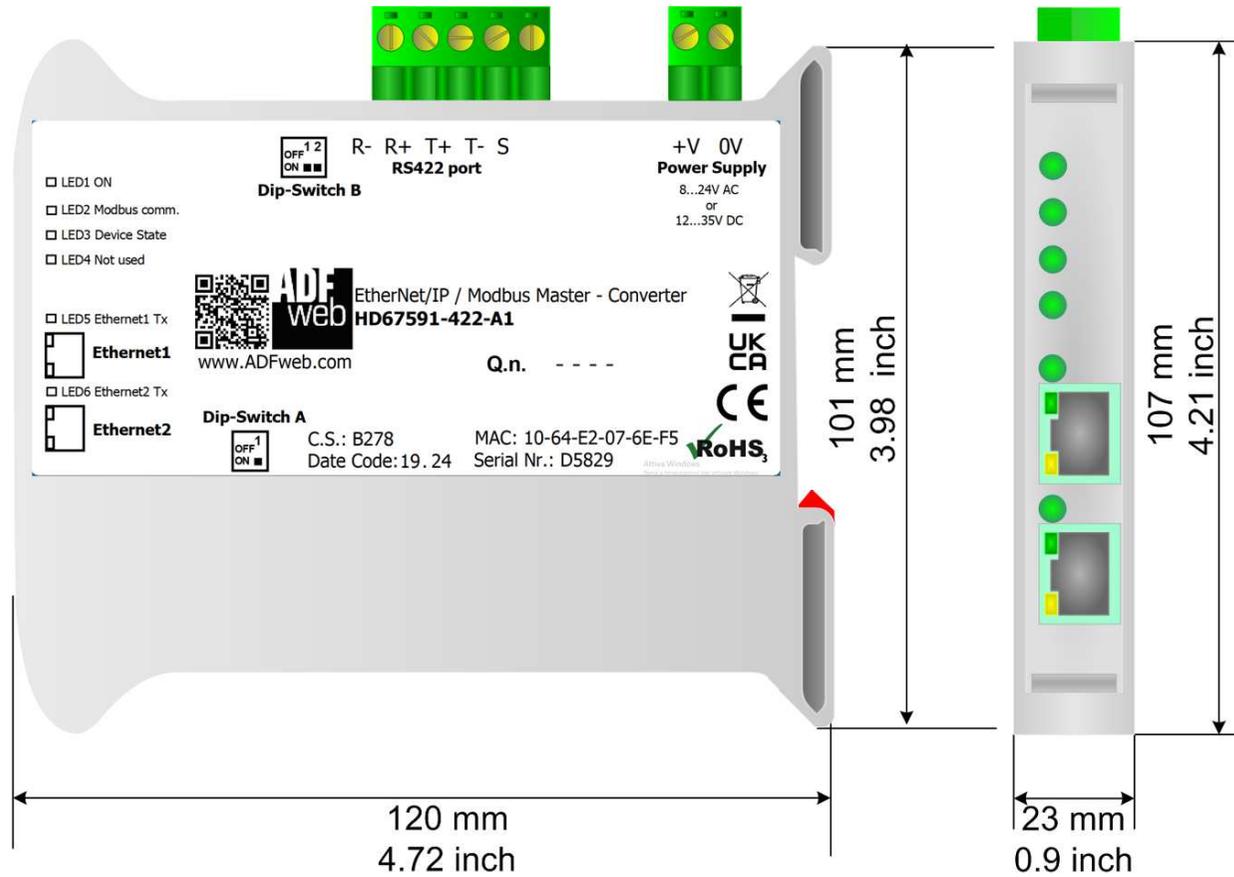
Housing: PVC  
 Weight: 200g (Approx)

Figure 7a: Mechanical dimensions scheme for HD67591-232-A1



Housing: PVC  
Weight: 200g (Approx)

Figure 7b: Mechanical dimensions scheme for HD67591-485-A1



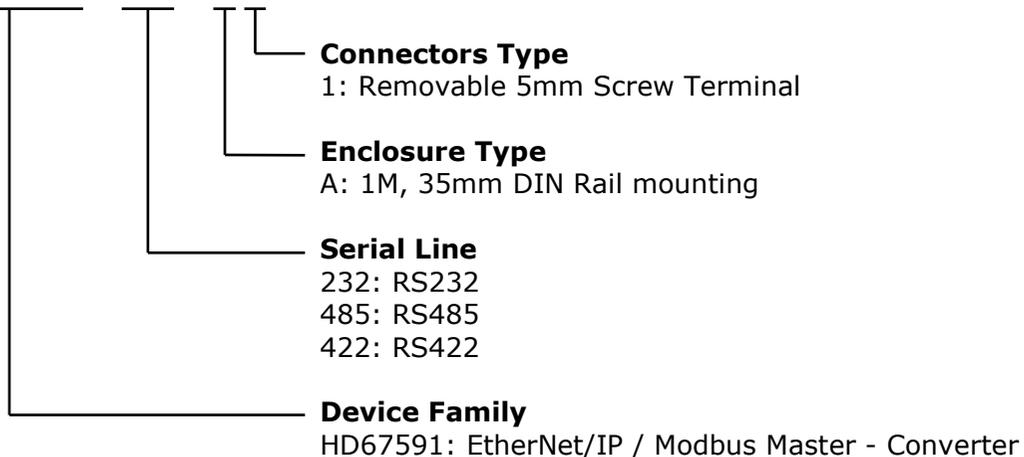
Housing: PVC  
 Weight: 200g (Approx)

Figure 7c: Mechanical dimensions scheme for HD67591-422-A1

## ORDERING INFORMATIONS:

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

**HD67591 - xxx - A 1**



- Order Code: **HD67591-232-A1** - Converter EtherNet/IP / Modbus Master Converter (RS232 serial)
- Order Code: **HD67591-485-A1** - Converter EtherNet/IP / Modbus Master Converter (RS485 serial)
- Order Code: **HD67591-422-A1** - Converter EtherNet/IP / Modbus Master Converter (RS422 serial)

## ACCESSORIES:

- Order Code: **AC34011** - 35mm Rail DIN - Power Supply 220/240V AC 50/60Hz – 12 V DC
- Order Code: **AC34012** - 35mm Rail DIN - Power Supply 220/240V AC 50/60Hz – 24 V DC

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**OTHER REGULATIONS AND STANDARDS:****WEEE INFORMATION**

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

— This symbol on the product or on its packaging indicates that this product may not be treated as household rubbish. Instead, it should be taken to an applicable collection point for the recycling of electrical and electronic equipment. If the product is disposed correctly, you will help prevent potential negative environmental factors and impact of human health, which could otherwise be caused by inappropriate disposal. The recycling of materials will help to conserve natural resources. For more information about recycling this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

**RESTRICTION OF HAZARDOUS SUBSTANCES DIRECTIVE**

The device respects the 2002/95/EC Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (commonly referred to as Restriction of Hazardous Substances Directive or RoHS).

**CE MARKING**

The product conforms with the essential requirements of the applicable EC directives.

**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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