

User Manual

Revision 1.000
English

Multi Protocol - HUB with 8AI and 8DI

(Order Code: HD67M02-A1-8AI-8DI, HD67M02-A1-8AI-8DI-WM, HD67M02-A1-8AI-8DI-TM)

For Website information:

www.adfweb.com?Product=HD67M02-A1

For Price information:

www.adfweb.com?Price=HD67M02-A1-8AI-8DI
www.adfweb.com?Price=HD67M02-A1-8AI-8DI-WM
www.adfweb.com?Price=HD67M02-A1-8AI-8DI-TM

Benefits and Main Features:

- ⊕ Power Supply 18...24V DC
- ⊕ Temperature range: -40°C/+85°C (-40°F/+185°F)



User Manual

For others IO-Link Slave products, see also the following links:

Converter IO-Link Slave to

www.adfweb.com?Product=HD67961
www.adfweb.com?Product=HD67962
www.adfweb.com?Product=HD67961
www.adfweb.com?Product=HD67964
www.adfweb.com?Product=HD67965
www.adfweb.com?Product=HD67966
www.adfweb.com?Product=HD67967
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www.adfweb.com?Product=HD67984
www.adfweb.com?Product=HD67985
www.adfweb.com?Product=HD67986
www.adfweb.com?Product=HD67987

(Modbus Master)
(Modbus Slave)
(Modbus TCP Master)
(Modbus TCP Slave)
(BACnet Master)
(BACnet Slave)
(CAN)
(CANopen)
(DeviceNet Master)
(DeviceNet Slave)
(EtherCAT Slave)
(EtherNet/IP Master)
(EtherNet/IP Slave)
(J1939)
(MQTT)
(NMEA0183)
(NMEA2000)
(PROFINET Master)
(PROFINET Slave)
(S7comm)
(SNMP Manager)
(SNMP Agent)

Do you have an your customer protocol?

www.adfweb.com?Product=HD67003

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

www.adfweb.com?Cmd=helpme

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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/ 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	10/11/2025	Ln	All	First release version

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:

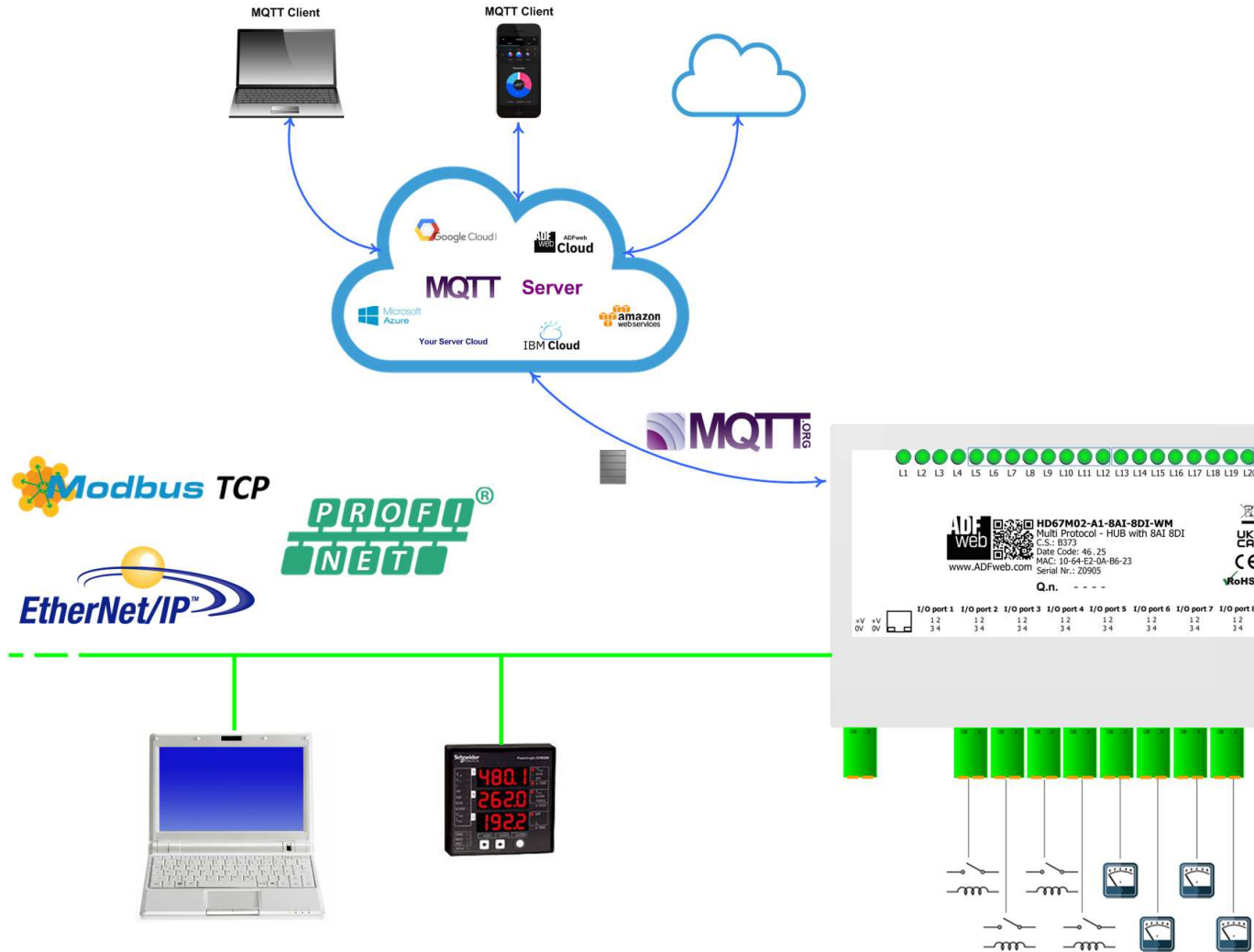


This symbol indicates that non-observance of the safety instructions is a danger for people that could lead to serious injury or death and / or the possibility of damage.

CE CONFORMITY

The declaration is made by our company. You can send an email to support@adfweb.com or give us a call if you need it.

EXAMPLE OF CONNECTION:



CONNECTION SCHEME:

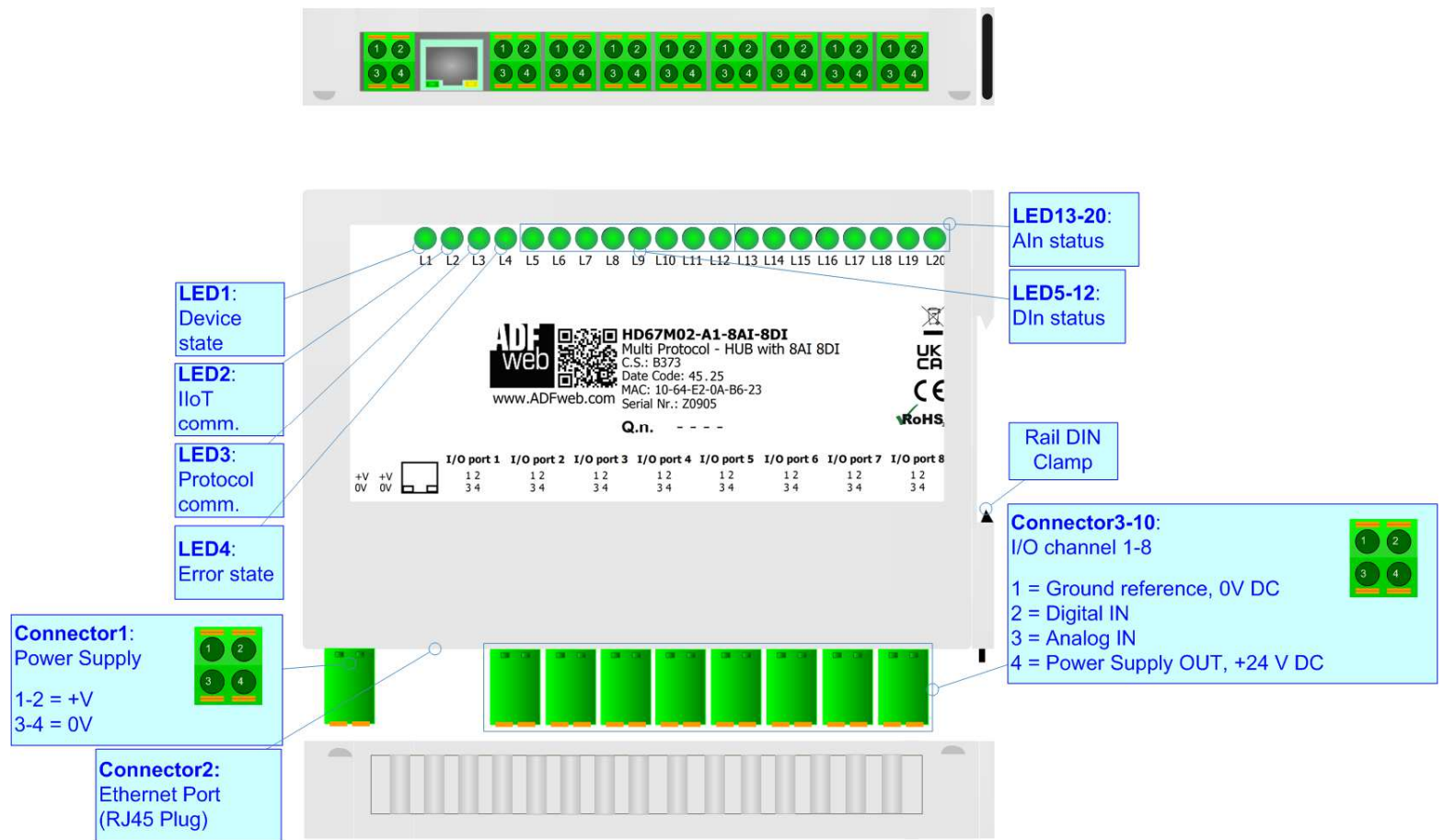


Figure 1a: Connection scheme for HD67M02-A1-8AI-8DI

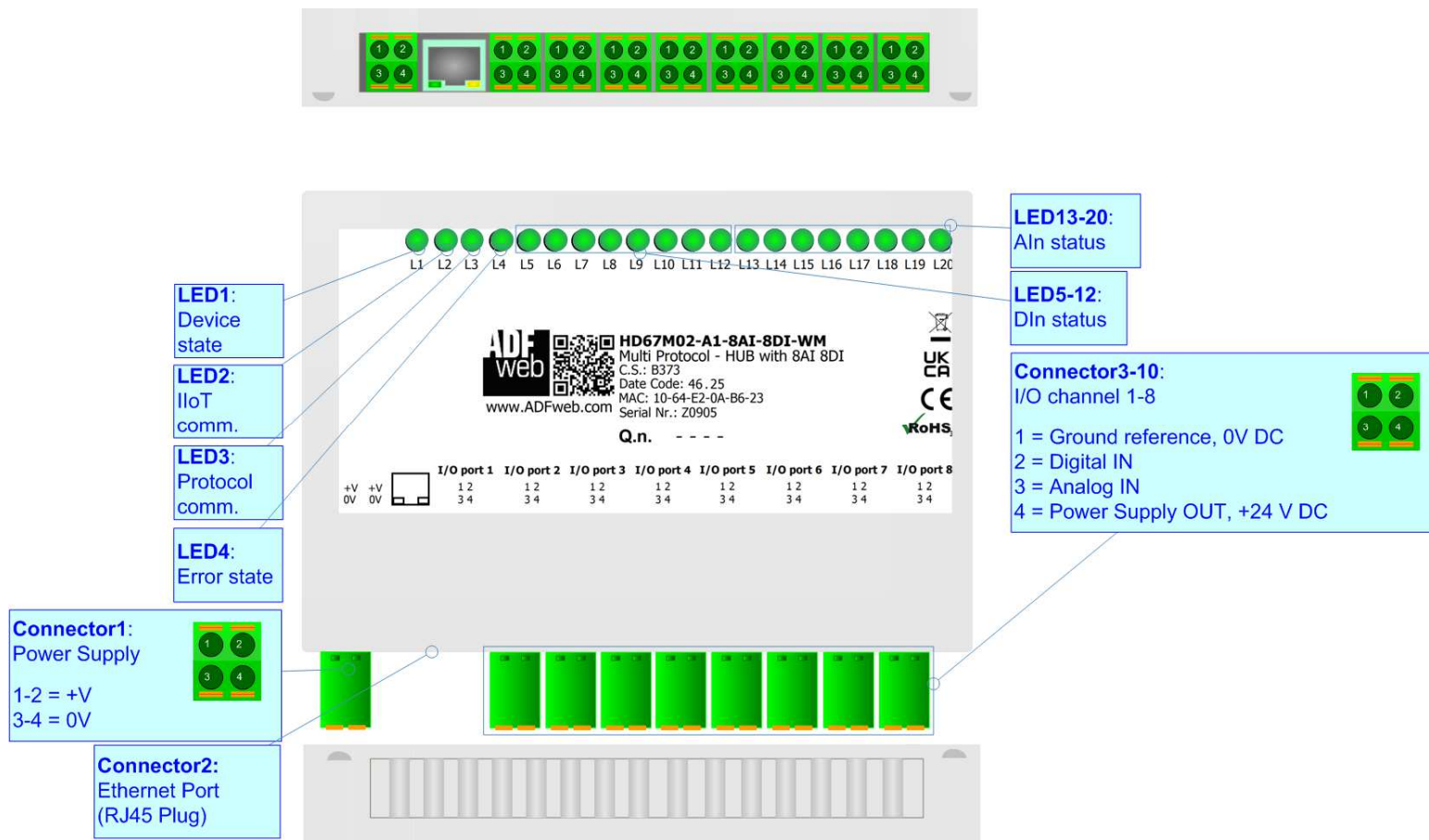


Figure 1b: Connection scheme for HD67M02-A1-8AI-8DI-WM

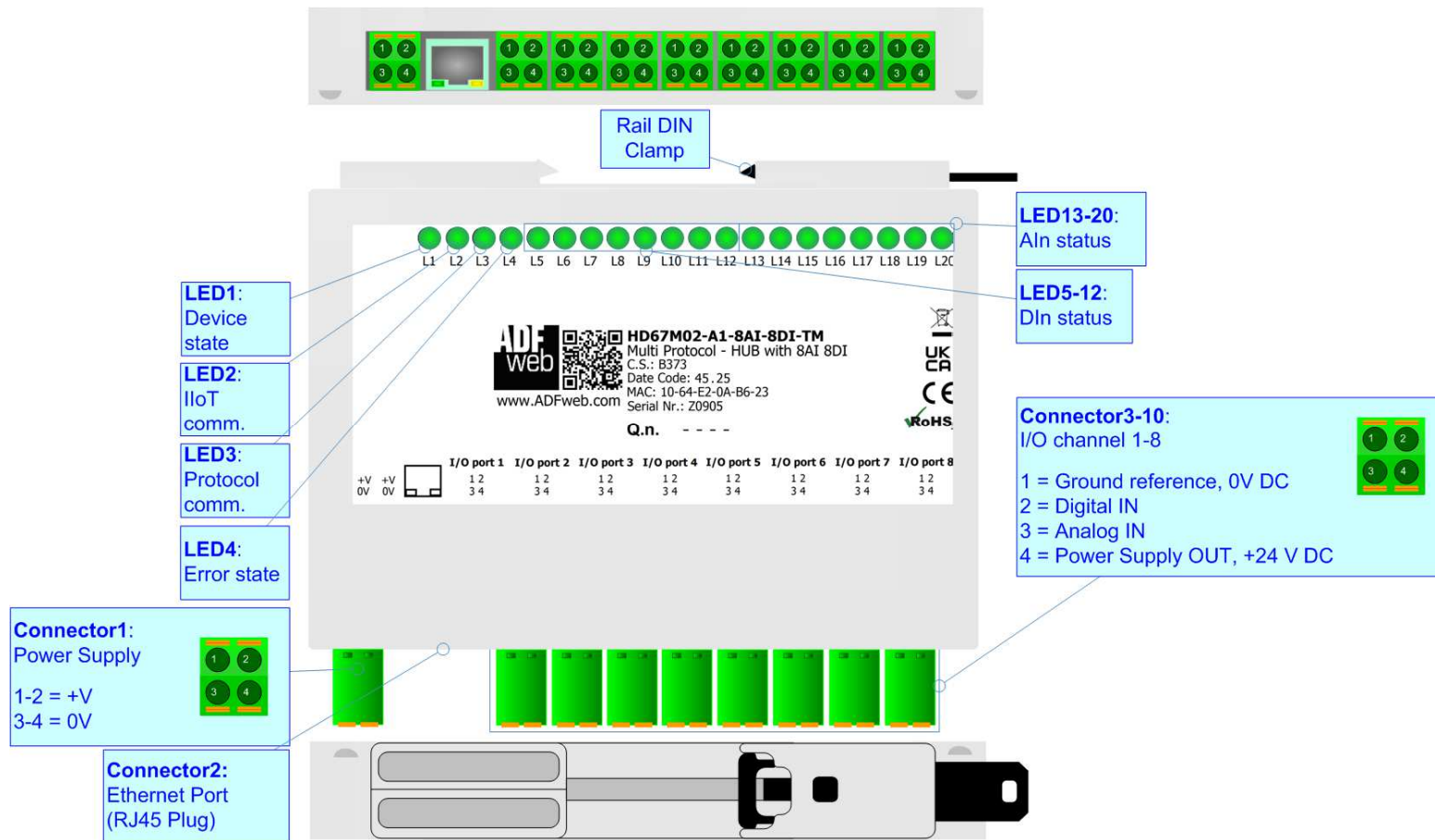


Figure 1c: Connection scheme for HD67M02-A1-8AI-8DI-TM

CHARACTERISTICS:

The HD67M02-A1 is a Multi-Protocol Hub with analog and digital I/O .

It allows the following characteristics:

- Configurable analog and digital signals;
- Configurable protocol on Ethernet port (PROFINET, EtherNet/IP, Modbus TCP and MQTT, OPC UA);
- Mountable on 35mm Rail DIN or on wall with the specific accessory;
- Wide temperature range: -40°C / +85°C [-40°F / +185°F].

CONFIGURATION:

You need the SW67-HUB to configure I/O channels and general settings of the Hub. It is possible to:

- Configure the analog signals (-10 / +10 V DC or 0-20 mA);
- Configure the digital signals (dry contact or voltage);
- Configure the LED functioning;
- Calibrate the analog signals;
- Configure Ethernet port;
- Update the device.

POWER SUPPLY:

The devices can be powered at 24 V DC. For more details see the two tables below.

VDC
24V

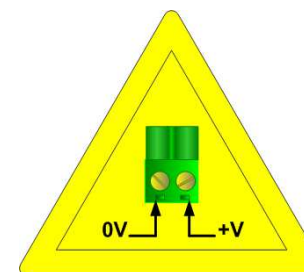
Consumption at 24V DC:

Device	Consumption [W/VA]
HD67M02-A1-xx	5

Connector1:
 Power Supply
 1-2 = +V
 3-4 = 0V



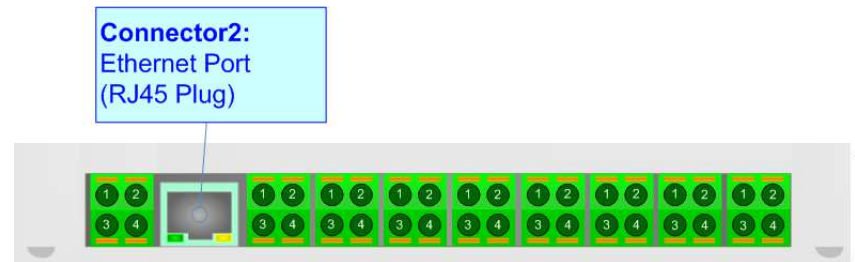
Caution: Not reverse the polarity power



HD67M02-A1-xx

ETHERNET:

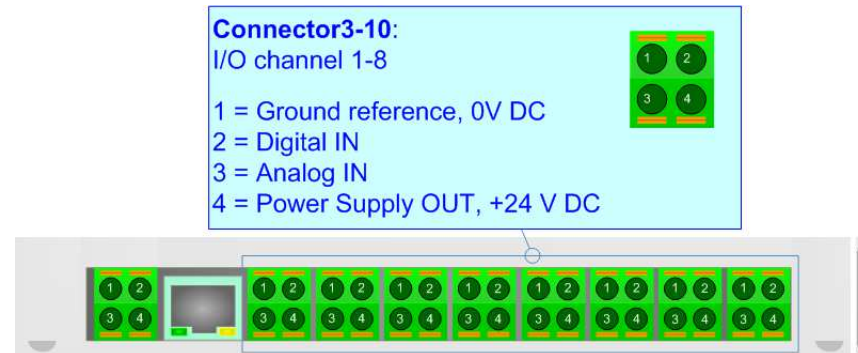
The Ethernet connection must be made using Connector2 of HD67M02 with at least a Category 5E cable. The maximum length of the cable should not exceed 100m. The cable has to conform to the T568 norms relative to connections in cat.5 up to 100 Mbps. To connect the device to an Hub/Switch is recommended the use of a straight cable, to connect the device to a PC/PLC/other is recommended the use of a cross cable.



I/O CHANNELS:

The HD67M02-A1-8AI-8DI-xx has 8 x I/O channels with different available pins:

- 8 x Digital input;
- 8 x Analog input;
- 8 x power supply OUT for feeding the sensors.



Digital Inputs

The HD67M02-A1-8AI-8DI-xx has 8 Digital input channels.

It is possible to drive the digital input using clean contact or applying a positive voltage between 5 and 24 V DC.

Analog Inputs

The HD67M02-A1-8AI-8DI-xx has 8 Analog input channels.

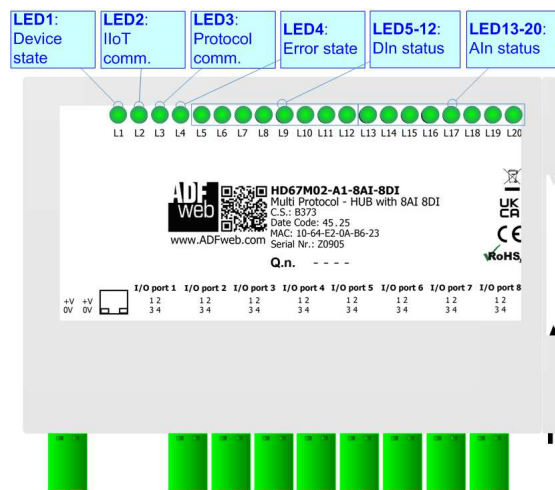
It is possible to apply analog signal as voltage (-10 / +10 V DC) and/or current (0-20 mA)

	ELECTRICAL DATA	
	-10 / +10 V DC	0-20 mA
Resolution	16 bit	14 bit
Accuracy	< 6 mV	< 70 uA

LEDS:

The device has got twenty 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 (during firmware update)
1: Device State	Blinks slowly (~1Hz)	Blinks quickly
2: Error state	An error occurs	Blinks quickly
3: IIoT communication	OFF: IIoT communication not working Blinking: IIoT communication working	Blinks quickly
4: Protocol communication	Blinks when Ethernet communication is running	Blinks quickly
5-12: Din status	Configurable via IODD file	Sequential lighting
13-20: AIn status	Configurable via IODD file	



USE OF COMPOSITOR SW67-HUB:

To configure the Converter, use the available software that runs with Windows called SW67-HUB. 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, 11; 32/64bit).

When launching the SW67-HUB, the window below appears (Fig. 2).



Note:

It is necessary to have installed .Net Framework 4.

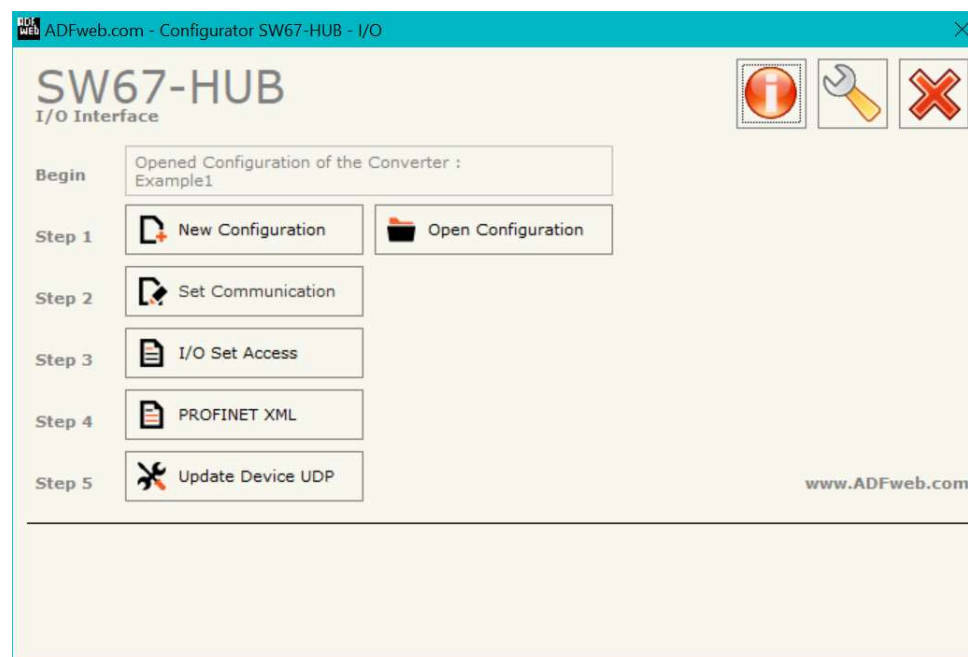


Figure 2: Main window for SW67-HUB

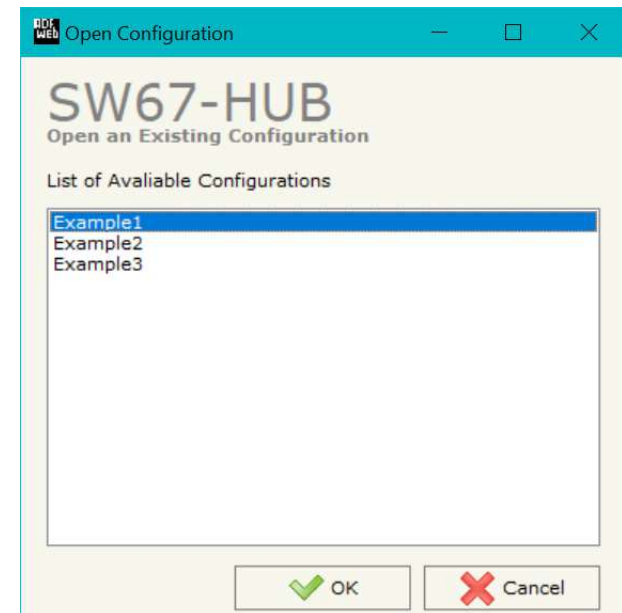
NEW CONFIGURATION / OPEN CONFIGURATION:

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




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

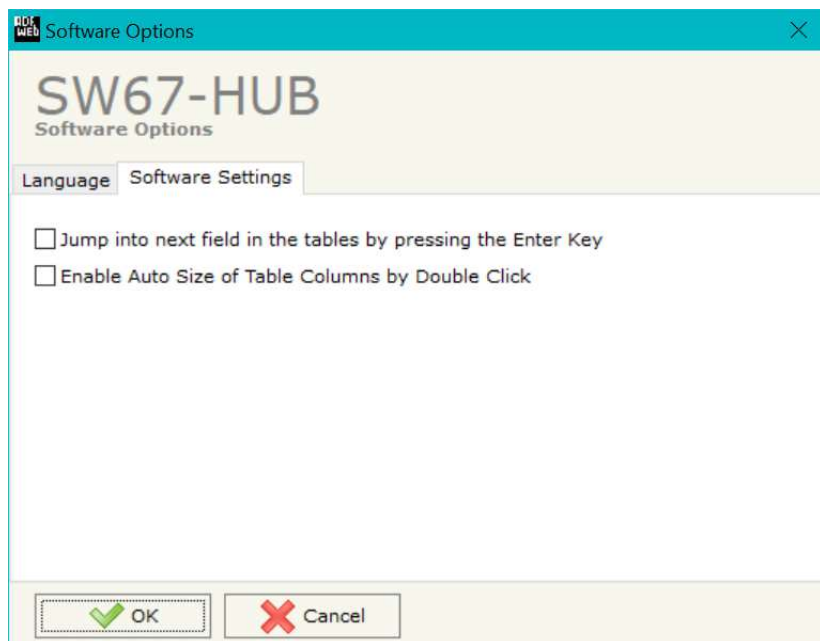
- To clone the configurations of a programmable “Multi Protocol – HUB” in order to configure another device in the same manner, it is necessary to maintain the folder and all its contents;
- To clone a project in order to obtain a different version of the project, it is sufficient to duplicate the project 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 “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.

SET COMMUNICATION:

By Pressing the “**Set Communication**” button from the main window for SW67-HUB (Fig. 2) the window “Set Communication” appears (Fig. 3).

The window is divided in different sections in order to define the different parameters of the converter:

- Select Device
- Select Protocol
- Select IIoT Protocol
- Ethernet Connection
- PROFINET or EtherNet/IP or Modbus TCP
- MQTT or OPC UA Client or OPC UA Server
- Ethernet
- TLS (Transport Layer Security)
- NTP (Network Time Protocol)
- PLC

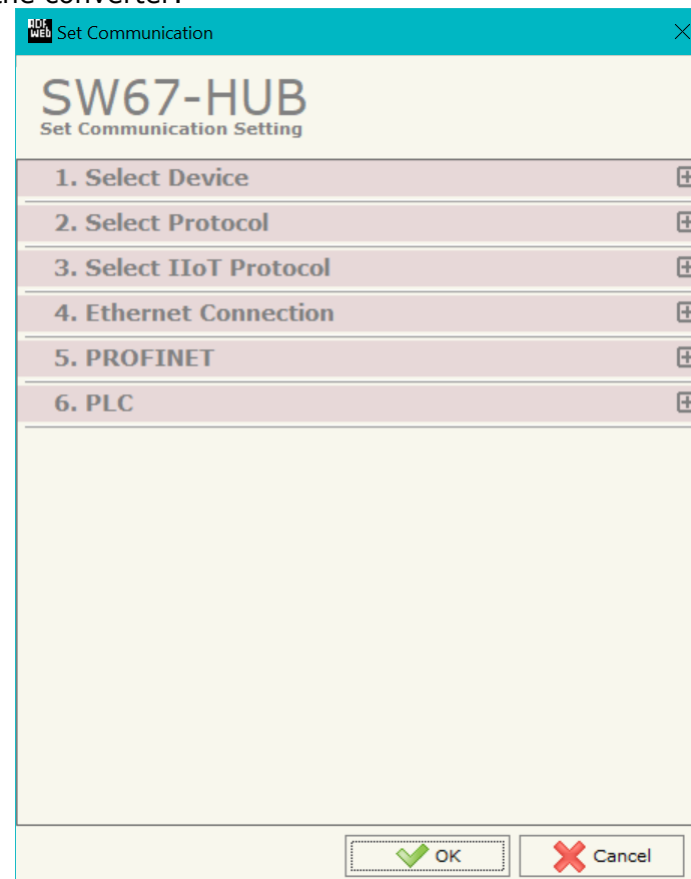


Figure 3a: “Set Communication” window

SELECT DEVICE:

This section is used to select the type of converter in use.

SELECT PROTOCOL:

This section is used to select the main protocol used. It is possible to select:

- PROFINET Slave;
- EtherNet/IP Slave;
- Modbus TCP Slave.

SELECT IIoT PROTOCOL:

This section is used to select the main protocol used. It is possible to select:

- MQTT;
- OPC UA Client;
- OPC UA Server.

ETHERNET CONNECTION:

This section is used to define the general parameters of Ethernet communication. The means of the fields are:

- In the field "**Device Name (Hostname)**" the Hostname to assign to the converter is defined;
- If the field "**Obtain an IP Address Automatically (DHCP for Cable Connection)**" is checked, DHCP for LAN connection is enabled;
- If the field "**Obtain an IP Address Automatically (DHCP for Wi-Fi Connection)**" is checked, DHCP for Wi-Fi connection is enabled;
- If the field "**Enable DNS**" is checked, DNS protocol is enabled;

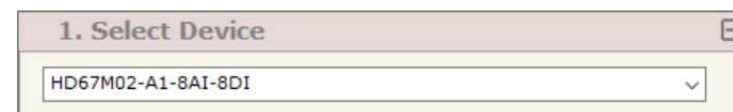


Figure 3b: "Set Communication → Select Device" window

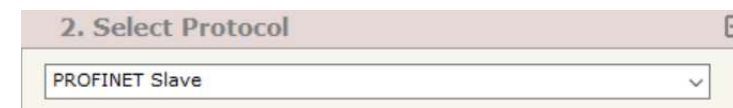


Figure 3c: "Set Communication → Select Protocol" window



Figure 3d: "Set Communication → Select IIoT Protocol" window

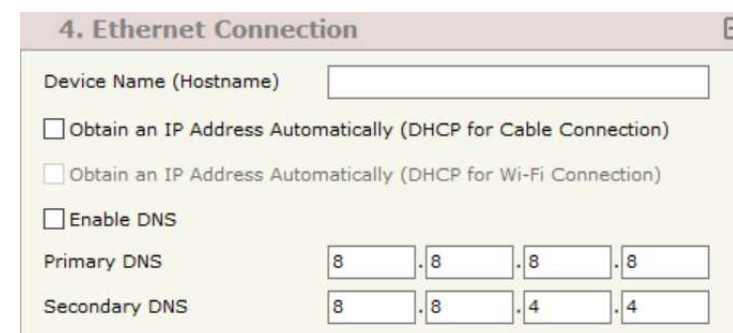


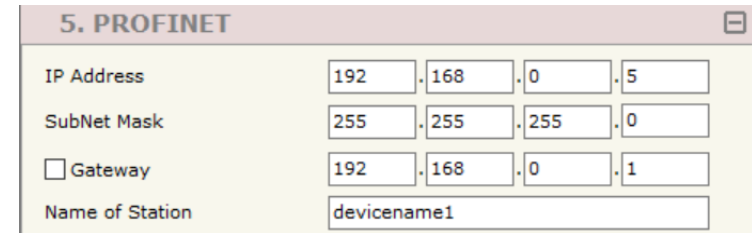
Figure 3e: "Set Communication → Ethernet connection" window

- In the field "**Primary DNS**" the IP Address of the primary DNS server is defined;
- In the field "**Secondary DNS**" the IP Address of the secondary DNS server is defined.

PROFINET:

This section is used to define the general parameters of PROFINET communication. The means of the fields are:

- In the field "**IP Address**" the IP address to assign to the converter is defined;
- In the field "**Subnet Mask**" the SubNet Mask is defined;
- In the field "**Gateway**" the default gateway of the net is defined;
- In the field "**Name of Station**" the name of the PROFINET node is defined.



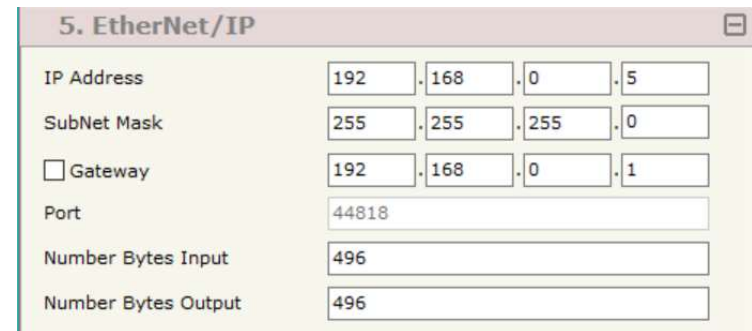
5. PROFINET				
IP Address	192	.168	.0	.5
SubNet Mask	255	.255	.255	.0
<input type="checkbox"/> Gateway	192	.168	.0	.1
Name of Station	devicename1			

Figure 3f: "Set Communication → PROFINET" window

ETHERNET/IP:

This section is used to define the general parameters of EtherNet/IP communication. The means of the fields are:

- In the field "**IP Address**" the IP address to assign to the converter is defined;
- In the field "**Subnet Mask**" the SubNet Mask is defined;
- In the field "**Gateway**" the default gateway of the net is defined;
- In the field "**Port**" the port used for EtherNet/IP communication is defined;
- In the fields "**Number Byte IN**" the number of input byte of the slave station is defined;
- In the fields "**Number Byte Out**" the number of output byte of the slave station is defined.



5. EtherNet/IP				
IP Address	192	.168	.0	.5
SubNet Mask	255	.255	.255	.0
<input type="checkbox"/> Gateway	192	.168	.0	.1
Port	44818			
Number Bytes Input	496			
Number Bytes Output	496			

Figure 3g: "Set Communication → EtherNet/IP" window

MODBUS TCP SLAVE:

This section is used to define the main parameters of Modbus TCP line. The means of the fields are:

- In the field "**IP Address**" the IP address of the converter is defined;
- In the field "**SubNet Mask**" the Subnet Mask of the converter is defined;
- In the field "**Gateway**" the default gateway of the net is defined;
- In the field "**Port**" the TCP port to use for Modbus TCP communication is defined;
- If the field "**Read with Input Register / Status Function**" is checked, it is possible to read the data of I/O signals with Input Registers (Function 04) and write the data of I/O side with Holding Registers (Function 06/16). The Output bytes are readable with Function 03. Otherwise, only Holding Registers will be used and the Output bytes of IO-Link side cannot be read back.

5. Modbus TCP Slave				
IP Address	192	.168	.0	.5
SubNet Mask	255	.255	.255	.0
<input type="checkbox"/> Gateway	192	.168	.0	.1
Port	502			
<input type="checkbox"/> Read with Input Register / Status Function				

Figure 3h: "Set Communication → Modbus TCP Slave" window

MQTT:

This section is used to define the main parameters of MQTT line. The means of the fields are:

- In the field "**Server URL**" the URL or the IP Address of the MQTT Server is defined;
- In the field "**Server Port**" the port used for MQTT communication is defined;
- In the field "**Client ID**" the Client ID of the converter is defined (if ned);
- In the field "**Keep Alive (seconds)**" the delay with which the Keep Alive message is sent on MQTT is defined;
- If the field "**Clean Session**" is checked, the last MQTT messages are deleted by the Server and the Client in case of missing ACK. If unchecked, the Server and the Client hold the last MQTT messages and, in case of incorrect disconnection or missing ACK, they try to send again them since all the ACK messages are exchanged correctly (valid only for QoS 1 and QoS 2);
- If the field "**Will Flag**" is checked, the converter will publish the Will topic at the connection to the Server. With this feature, in case of incorrect disconnection, the Server will publish this topic to all the MQTT Clients that subscribed it;
- In the field "**Topic Name Will**" the topic used for Will message is defined;
- In the field "**Message Will**" the payload of the Will message is defined;
- In the field "**Retained Will**" the converter will send the Will message with Retain flag enabled. In this way, the Server will hold the last Will message;
- In the field "**QoS Will**" the QoS type for Will message is defined;
- If the field "**Publish Topic on Connection**" is checked, the converter will publish a topic at the connection to the Server;
- In the field "**Topic Name Connection**" the topic used for the connection message is defined;
- In the field "**Message Connection**" the payload of the connection topic is defined;
- In the field "**Retained Connection**" the converter will send the connection topic with Retain flag enabled. In this way, the Server will hold the last Connection message received;
- In the field "**Username**" the username for the connection to the MQTT server is defined;
- In the field "**Password**" the password for the connection to the MQTT server is defined.

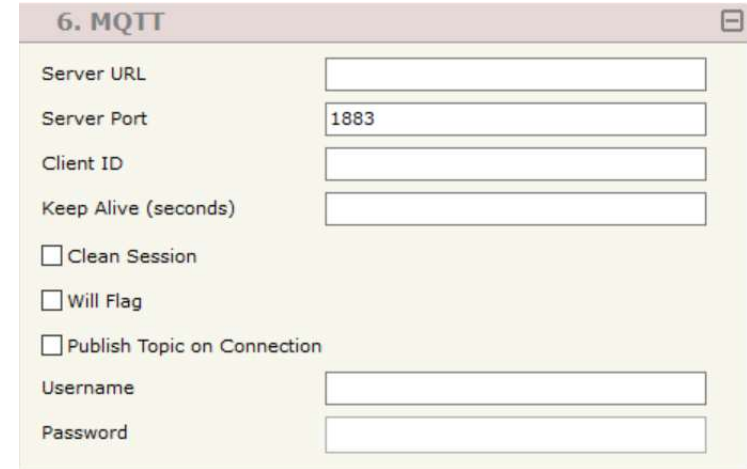


Figure 3i: "Set Communication → MQTT" window

OPC UA CLIENT:

This section is used to define the main parameters of OPC UA line. The means of the fields are:

- In the field "**IP Address**" the IP address of the converter is defined;
- In the field "**SubNet Mask**" the Subnet Mask of the converter is defined;
- In the field "**Gateway**" the default gateway of the net is defined;

OPC UA SERVER:

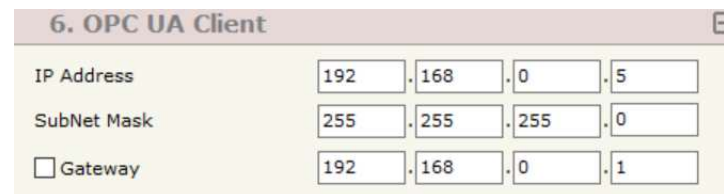
The means of the fields for "OPC UA Server" are:

- In the field "**IP Address**" the IP address for OPC UA side of the converter is defined;
- In the field "**SubNet Mask**" the SubNet Mask for OPC UA side of the converter is defined;
- In the field "**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 of OPC UA Server is defined.

ETHERNET:

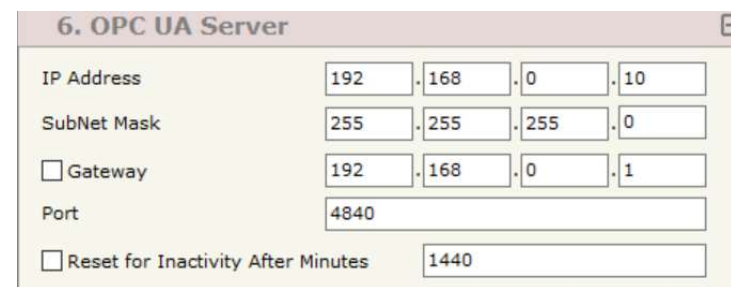
This section is used to define the general parameters of Ethernet. The means of the fields are:

- In the field "**IP Address**" the IP address of the converter is defined;
- In the field "**SubNet Mask**" the Subnet Mask of the converter is defined;
- In the field "**Gateway**" the default gateway of the net is defined.



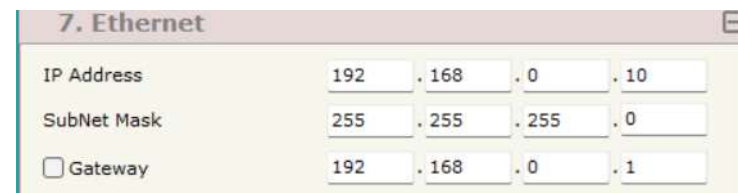
6. OPC UA Client				
IP Address	192	168	0	5
SubNet Mask	255	255	255	0
<input type="checkbox"/> Gateway	192	168	0	1

Figure 3j: "Set Communication → OPC UA Client" window



6. OPC UA Server				
IP Address	192	168	0	10
SubNet Mask	255	255	255	0
<input type="checkbox"/> Gateway	192	168	0	1
Port	4840			
<input type="checkbox"/> Reset for Inactivity After Minutes	1440			

Figure 3k: "Set Communication → OPC UA Server" window



7. Ethernet				
IP Address	192	168	0	10
SubNet Mask	255	255	255	0
<input type="checkbox"/> Gateway	192	168	0	1

Figure 3l: "Set Communication → Ethernet" window

TLS (TRANSPORT LAYER SECURITY):

This section is used to define the parameters of TLS protocol. The means of the fields are:

- If the field “**Enable TLS**” is checked, the TLS protocol for secure connection is enabled;
- If the field “**Server Authentication**” is checked, the authentication of the Server using TLS is enabled. If enabled, in the field “**Server Certificate**” the certificate from the Server is defined;
- If the field “**Client Authentication**” is checked, the authentication of the Client using TLS is enabled. If enabled:
 - in the field “**CA Certificate**” the CA certificate is defined;
 - in the field “**Client Certificate**” the certificate from the Client is defined;
 - in the field “**Client Key**” the private key of the Client is defined;
 - in the field “**Client Key Password**” the password for the private key of the Client is defined.



Figure 3m: “Set Communication → TLS” window

NTP (NETWORK TIME PROTOCOL):

This section is used to define the parameters of NTP protocol. The means of the fields are:

- In the field “**Server URL**” the URL or the IP Address of the NTP Server is defined;
- In the field “**Poll Time (seconds)**” the polling time for the time synchronization is defined.



Figure 3n: “Set Communication → NTP” window

PLC:

This section is used to define the parameters of the integrated PLC. The means of the fields are:

- If the field “**Enable PLC**” is checked, the internal PLC engine is enabled;
- In the field “**Type**” the type of PLC engine is defined.



Figure 3o: “Set Communication → PLC” window

MQTT SET TOPIC (if “MQTT” is enabled):

By Pressing the “**MQTT Set Topic**” button from the main window for SW67-HUB (Fig. 2) the window “Set MQTT Topics” appears (Fig. 4). This section is used to define the MQTT topics the converter will publish with the data from I/O signals and the topic that the converter will subscribes for writing the data to I/O signals.

MQTT PUBLISH

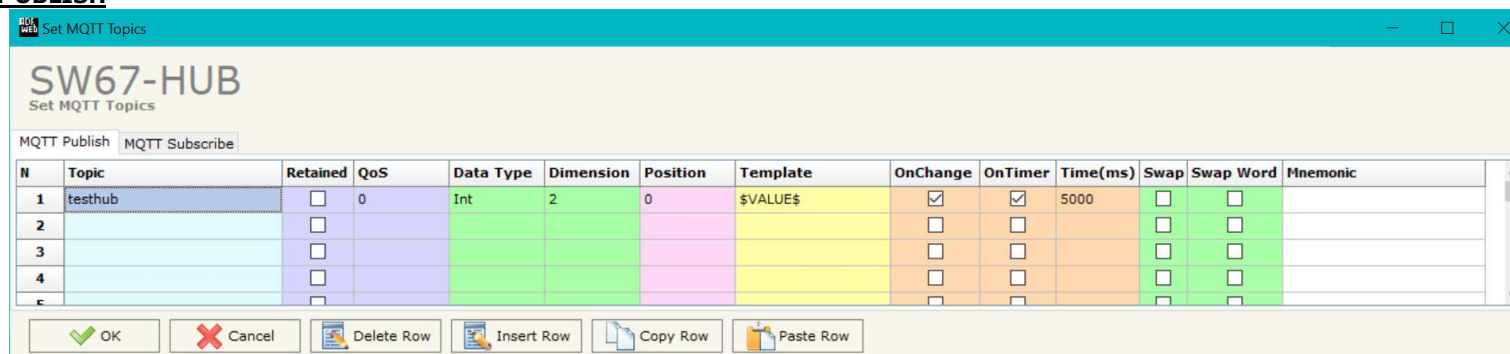


Figure 4a: “Set MQTT Topics → MQTT Publish” window

The means of the fields are:

- In the field “**Topic**” the MQTT topic is defined;
- If the field “**Retained**” is defined, the retained flag is enabled. The MQTT server will hold the last topic published;
- In the field “**QoS**” the QoS level is defined;
- In the field “**Data Type**” the type of data to use is defined;
- In the field “**Dimension**” the dimension in byte of the data is defined;
- In the field “**Position**” the starting byte of the internal memory array where taking the data is defined;
- In the field “**Template**” the structure of the MQTT payload is defined. With a double click on it, it is possible to open a window for editing it;
- If the field “**On Change**” is checked, the converter publishes the topic when the data from I/O side changes;
- If the field “**On Timer**” is checked, the converter publishes the topic cyclically with the delay defined in the field “**Time (ms)**”;
- If the field “**Swap**” is enabled, it is possible to change the bytes’ order;
- If the field “**Swap Word**” is enabled, it is possible to change the words’ order;
- In the field “**Mnemonic**” a description of the topic is defined.

MQTT SUBSCRIBE

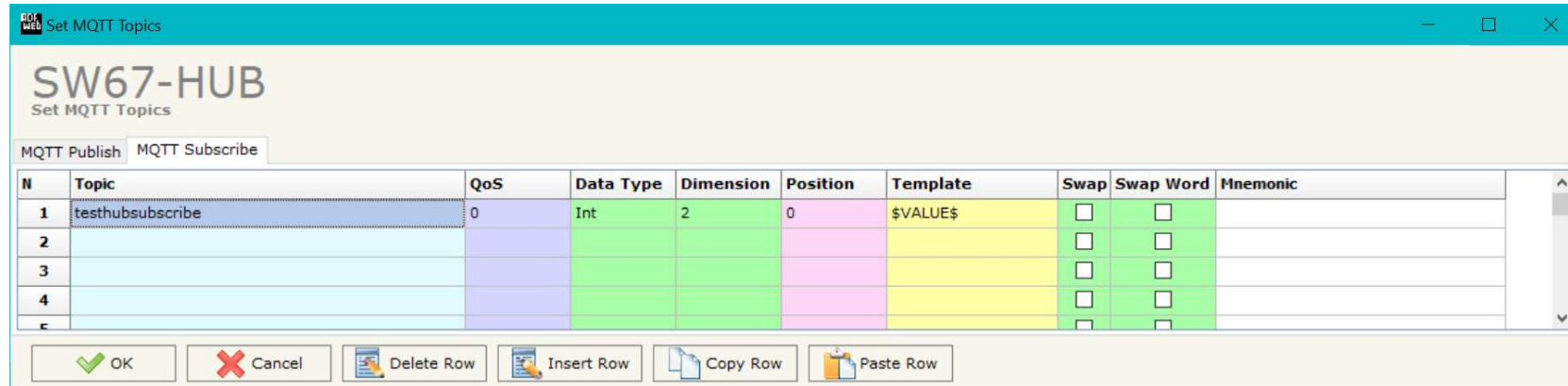


Figure 4b: "Set MQTT Topics → MQTT Subscribe" window

The means of the fields are:

- In the field "**Topic**" the MQTT topic is defined;
- In the field "**QoS**" the QoS level is defined;
- In the field "**Data Type**" the type of data to use is defined;
- In the field "**Dimension**" the dimension in byte of the data is defined;
- In the field "**Position**" the starting byte of the internal memory array where placing the data is defined;
- In the field "**Template**" the structure of the MQTT payload is defined. With a double click on it, it is possible to open a window for editing it;
- If the field "**Swap**" is enabled, it is possible to change the bytes' order;
- If the field "**Swap Word**" is enabled, it is possible to change the words' order;
- In the field "**Mnemonic**" a description of the topic is defined.

OPC UA ACCESS (if “OPC UA Client” is enabled):

By Pressing the “**OPC UA Client Access**” button from the main window for SW67-HUB (Fig. 2) the window “OPC UA Client Access” appears (Fig. 5).

This section is used to define the list of the OPC UA Servers to read/write with the OPC UA Client.

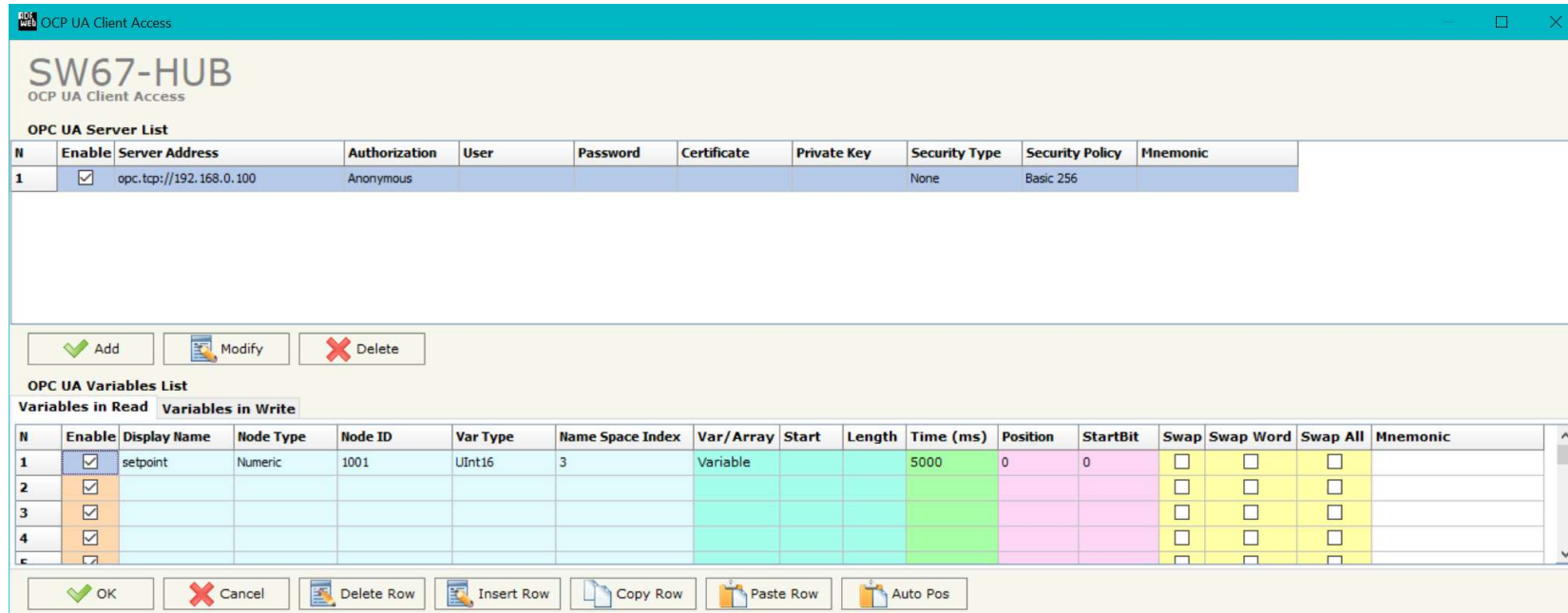
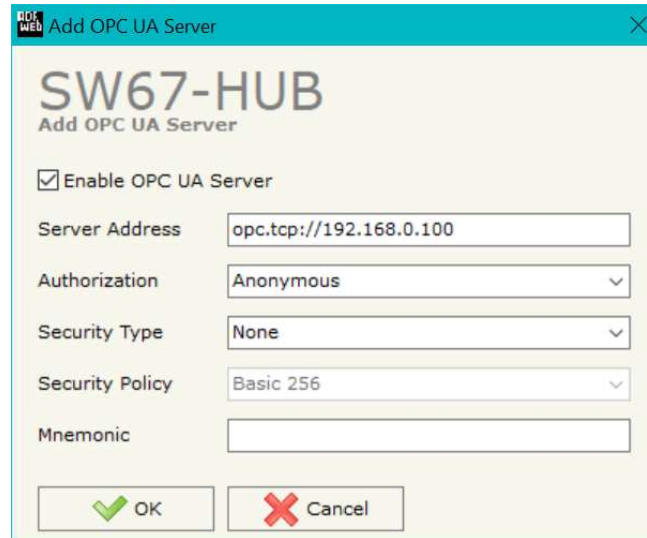


Figure 5a: “OPC UA Client Access” window

By clicking on **"Add"** or **"Modify"**, it is possible to add or modify a new OPC UA Server inserting its characteristics (Server Address, Authorization, Security Type...). The window "Add OPC UA Server" appears (Fig. 5b).



The screenshot shows a dialog box titled "Add OPC UA Server" for the device "SW67-HUB". The dialog contains the following fields and controls:

- Enable OPC UA Server
- Server Address:
- Authorization:
- Security Type:
- Security Policy:
- Mnemonic:
- Buttons: and

Figure 5b: "Add OPC UA Server"

The “Variables in Read” section is used to define the OPC UA variables to read on Ethernet side (Fig. 5c).

OPC UA Variables List																
Variables in Read Variables in Write																
N	Enable	Display Name	Node Type	Node ID	Var Type	Name Space Index	Var/Array	Start	Length	Time (ms)	Position	StartBit	Swap	Swap Word	Swap All	Mnemonic
1	<input checked="" type="checkbox"/>	setpoint	Numeric	1001	Int16	3	Variable			5000	0	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	<input checked="" type="checkbox"/>												<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	<input checked="" type="checkbox"/>												<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	<input checked="" type="checkbox"/>												<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5	<input checked="" type="checkbox"/>												<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Figure 5c: “Variables in Read” section

The means of the fields are:

- If the field “**Enable**” is checked, the OPC UA variable is enabled;
- In the field “**Display name**” the name of the OPC UA variable is defined;
- In the field “**Node Type**” the type of the identification of the OPC UA variable in the server is defined;
- In the field “**Node ID**” the identification of the OPC UA variable is defined;
- In the field “**Var Type**” the data format of the OPC UA variable is defined;
- In the field “**Name Space Index**” the Name Space Index of the variable is defined;
- In the field “**Var/Array**” the format of the value is defined;
- In case of Array format, the fields “**Start**” and “**Length**” are used to define which bytes of the array taken;
- In the field “**Time (ms)**” the delay in ms between two readings of the variable is defined;
- In the field “**Position**” the starting byte of the internal memory array where saving the value is defined;
- If the field “**Swap**” is checked, the bytes’ of the words are swapped;
- If the field “**Swap Word**” is checked, the words are swapped each other;
- If the field “**Swap All**” is checked, the bytes’ order is fully reversed;
- In the field “**Mnemonic**” a description of the variable is defined.

The “Variables in Write” section is used to define the OPC UA variables to write from Ethernet side (Fig. 5d).

OPC UA Variables List																	
Variables in Read Variables in Write																	
N	Enable	Display Name	Node Type	Node ID	Var Type	Name Space Index	Str Length	On Change	On CMD	On Timer	Time (ms)	Position	StartBit	Swap	Swap Word	Swap All	Mnemonic
1	<input checked="" type="checkbox"/>	pressure	Numeric	1001	Int16	3	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	<input checked="" type="checkbox"/>							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	<input checked="" type="checkbox"/>							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	<input checked="" type="checkbox"/>							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5	<input checked="" type="checkbox"/>							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Figure 5d: “Variables in Write” section

The means of the fields are:

- If the field “**Enable**” is checked, the OPC UA variable is enabled;
- In the field “**Display name**” the name of the OPC UA variable is defined;
- In the field “**Node Type**” the type of the identification of the OPC UA variable in the server is defined;
- In the field “**Node ID**” the identification of the OPC UA variable is defined;
- In the field “**Var Type**” the data format of the OPC UA variable is defined;
- In the field “**Name Space Index**” the Name Space Index of the variable is defined;
- If the field “**On Change**” is checked, the OPC UA variable is written when the data from I/O side changes;
- If the field “**On CMD**” is checked, the OPC UA variable is sent when a I/O sample is made;
- If the field “**On Timer**” is checked, the OPC UA variable is sent cyclically;
- In the field “**Time (ms)**” the delay in ms between two writings of the variable is defined (if “On Timer” is checked);
- In the field “**Position**” the starting byte of the internal memory array where getting the value is defined;
- If the field “**Swap**” is checked, the bytes’ of the words are swapped;
- If the field “**Swap Word**” is checked, the words are swapped each other;
- If the field “**Swap All**” is checked, the bytes’ order is fully reversed;
- In the field “**Mnemonic**” a description of the variable is defined.

OPC UA ACCESS (if “OPC UA Server” is enabled):

By Pressing the “**OPC UA Access**” button from the main window for SW67-HUB (Fig. 2) the window “OPC UA Server Access” appears (Fig. 6).

This section is used to define the list of OPC UA variables to read/write.

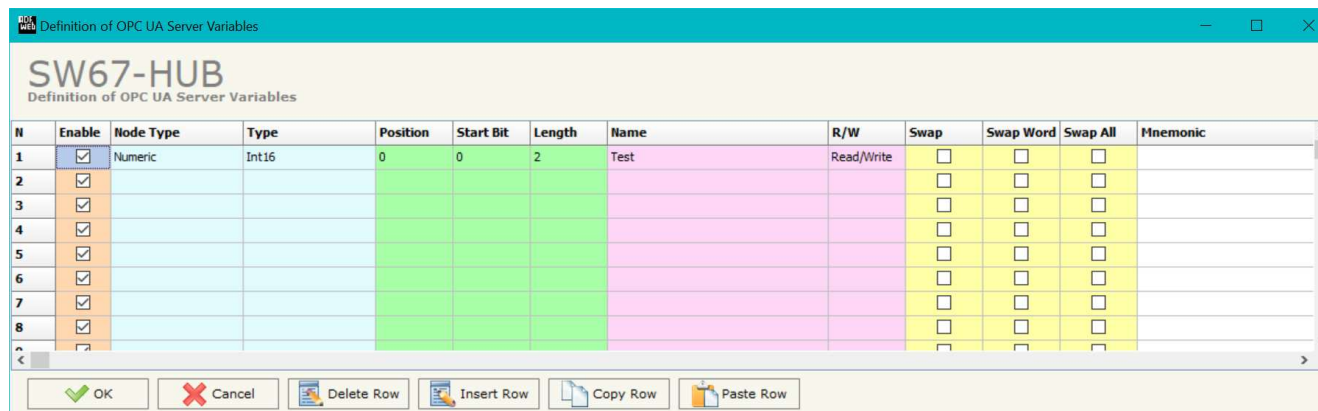


Figure 6: “OPC UA Server Access” window

The means of the fields in the table are:

- If the field “Enable” is checked, the OPC UA tag is enabled;
- In the field “Node Type” the format of the Node type for the specific variable is defined;
- In the field “**Type**” the data format of the OPC UA variable is defined;
- In the field “**Position**” the starting byte of the internal memory arrays where getting the value is defined;
- In the field “Start Bit” the bit of the selected Position where mapping the OPC UA variable is defined;
- In the field “**Length**” the byte length of the OPC UA variable is defined;
- In the field “**Name**” the name of the OPC UA variable is defined;
- In the field “**R/W**” the access type of the OPC UA variable is defined;
- If the field “**Swap**” is checked, the bytes’ of the words are swapped;
- If the field “**Swap Word**” is checked, the words are swapped each other;
- If the field “**Swap All**” is checked, the bytes’ order is fully reversed;
- In the field “**Mnemonic**” a description of the OPC UA variable is defined.

PROFINET XML (if "PROFINET Slave" is enabled):

By Pressing the "**PROFINET XML**" button from the main window for SW67-HUB (Fig. 2) it is possible to generate the GSDML file to be imported into the PROFINET Master.

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, it is possible to use the “Search” function and follow these steps:

- Turn OFF the device;
- Connect Ethernet cable;
- Click on “Search” button;
- Turn ON the device;
- The IP Address and the MAC Address of the device will appear;
- Press “Select” button;
- Set the IP Address of your PC in the same range of the IP Address of the device;
- Select which operations you want to do;
- Press the **“Execute update firmware”** button to start the upload;
- When all the operations are “OK, the update is complete and the window can be closed.

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

- Turn ON the device;
- Connect Ethernet cable;
- 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 update is complete and the window can be closed.



Figure 7: “Update device” windows

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 HD67M02 device.



Warning:

If Fig. 8 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, 11 you have to launch the "Command Prompt" with Administrator Rights;
- Pay attention at Firewall lock.

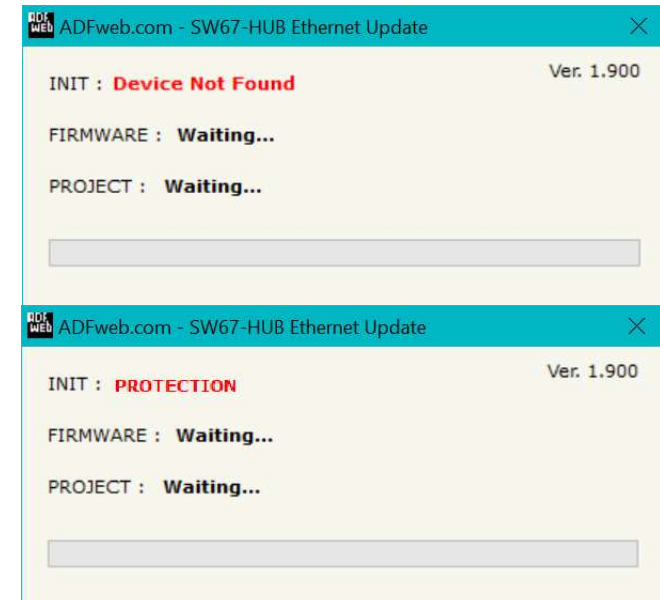


Figure 8: "Error" window



Warning:

In the case of HD67M02 you have to use the software "SW67-HUB": www.adfweb.com/download/filefold/SW67-HUB.zip.

MODBUS MAP (if “Modbus TCP Slave” is enabled):

Read with Input Register / Status Function not enabled

Data in reading:

Type	Address	Function	Description
Holding Register	0	03	Input Bytes 0-1 of internal memory array
Holding Register	1	03	Input Bytes 2-3 of internal memory array
Holding Register	2	03	Input Bytes 4-5 of internal memory array
.	.	.	.
Holding Register	719	03	Input Bytes 1438-1439 of internal memory array

Data in writing:

Type	Address	Function	Description
Holding Register	0	06/16	Output Bytes 0-1 of internal memory array
Holding Register	1	06/16	Output Bytes 2-3 of internal memory array
Holding Register	2	06/16	Output Bytes 4-5 of internal memory array
.	.	.	.
Holding Register	719	06/16	Output Bytes 1438-1439 of internal memory array



Note:

The data can be read/written as single bits too using Coil Status (Function 01 and Functions 05/15).

Read with Input Register / Status Function enabled

Data in reading:

Type	Address	Function	Description
Input Register	0	04	Input Bytes 0-1 of internal memory array
Input Register	1	04	Input Bytes 2-3 of internal memory array
Input Register	2	04	Input Bytes 4-5 of internal memory array
.	.	.	.
Input Register	719	04	Input Bytes 1438-1439 of internal memory array

Data in writing:

Type	Address	Function	Description
Holding Register	0	R: 03 W: 06/16	Output Bytes 0-1 of internal memory array
Holding Register	1	R: 03 W: 06/16	Output Bytes 2-3 of internal memory array
Holding Register	2	R: 03 W: 06/16	Output Bytes 4-5 of internal memory array
.	.	.	.
Holding Register	719	R: 03 W: 06/16	Output Bytes 1438-1439 of internal memory array



Note:

The data can be read/written as single bits too using Input/Coil Status (Function 02 and Functions 01/05/15).

TEMPLATE STRING: DEFINITION OF MQTT PAYLOAD

Mode 1: mapping a single variable for each topic using tables

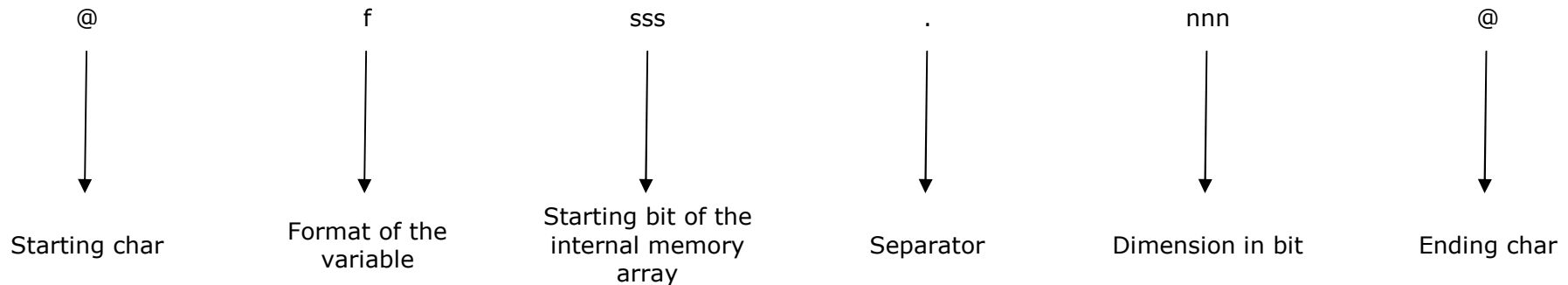
In this mode, it is possible to define which is the I/O data to map inside the MQTT topics using the Position field inside “MQTT Set Topic” section. This simplifies the configuration because the variable to be mapped is selected using the table, but it allows you to map a single variable for each topic.

In order to link the data into the MQTT topic, you can use the keyword \$VALUE\$. The keyword will be replaced with the real value coming from/to Ethernet protocols.

Mode 2: mapping more variables for each topic using keywords

In this mode, it is possible to define which is the I/O data to map inside the MQTT topics specific keywords. Position field, format and dimension of “MQTT Set Topic” section will be ignored.

In order to link the data into the MQTT topic, you can use these keywords:



Below the type of format allowed:

FORMAT	IDENTIFIER
Unsigned Integer	u
Signed Integer	i
Float	f
Binary	b
String	s
Hexadecimal	x
Base64	l

Example:

We have two variables mapped respectively into Position 0 and 4. The first one is an signed integer value of 16 bit, the second one is a floating point. In order to compose a JSON, the template can be filled in this way:

```
{  
  "var1": @i0.16@,  
  "var2": @f32.32@  
}
```



Note:

It is not possible to use both modes in the template.

MECHANICAL DIMENSIONS:

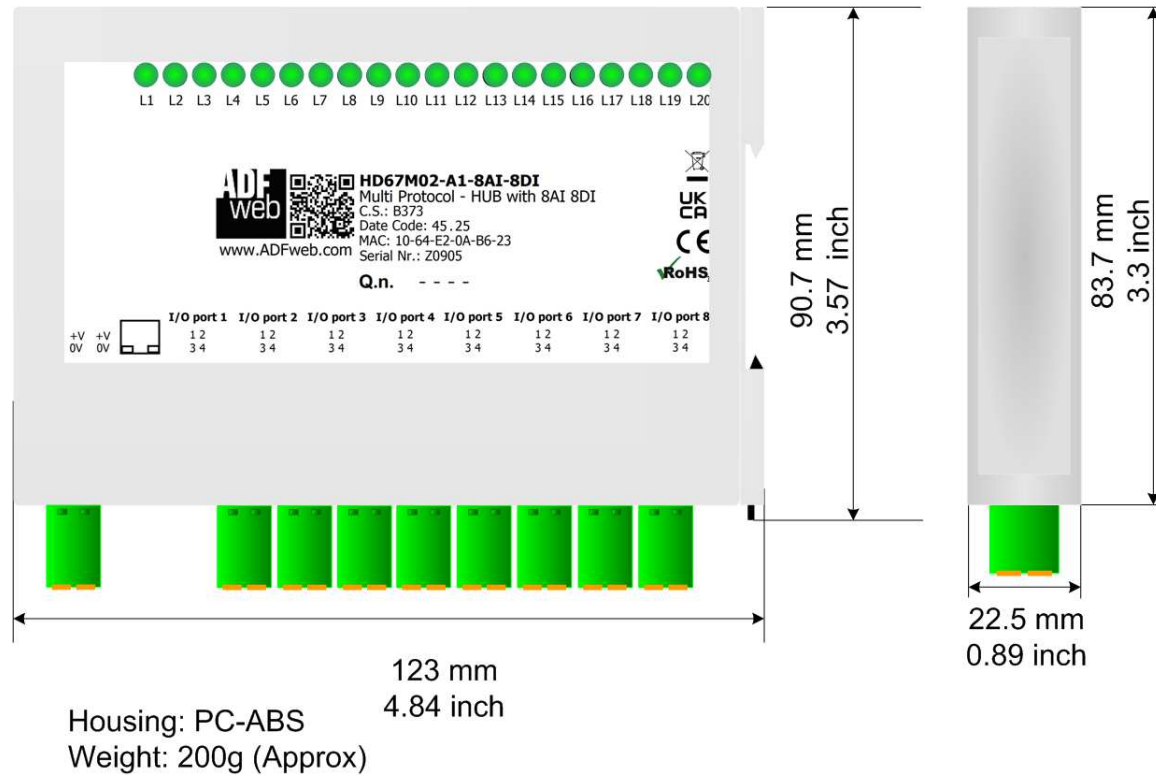


Figure 8a: Mechanical dimensions scheme for HD67M02-A1-8AI-8DI

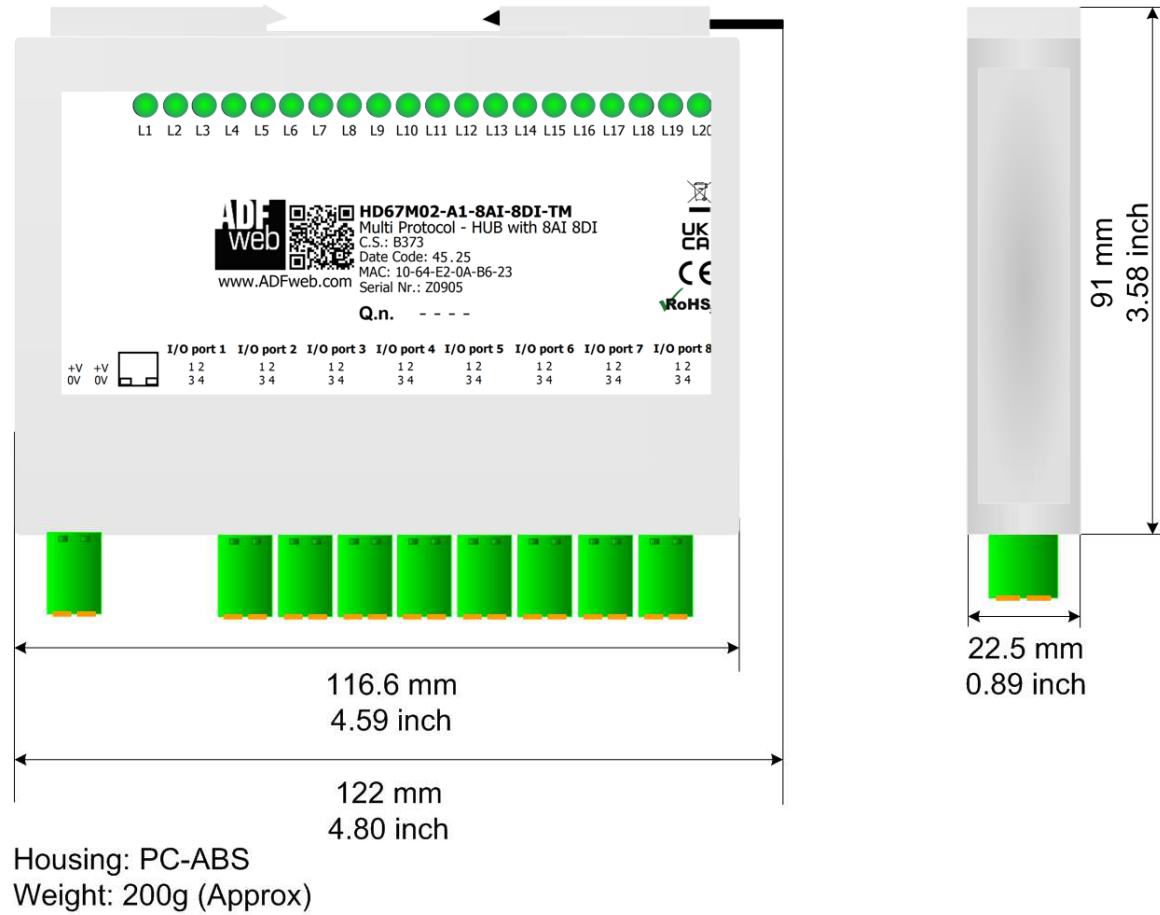


Figure 8b: Mechanical dimensions scheme for HD67M02-A1-8AI-8DI-TM

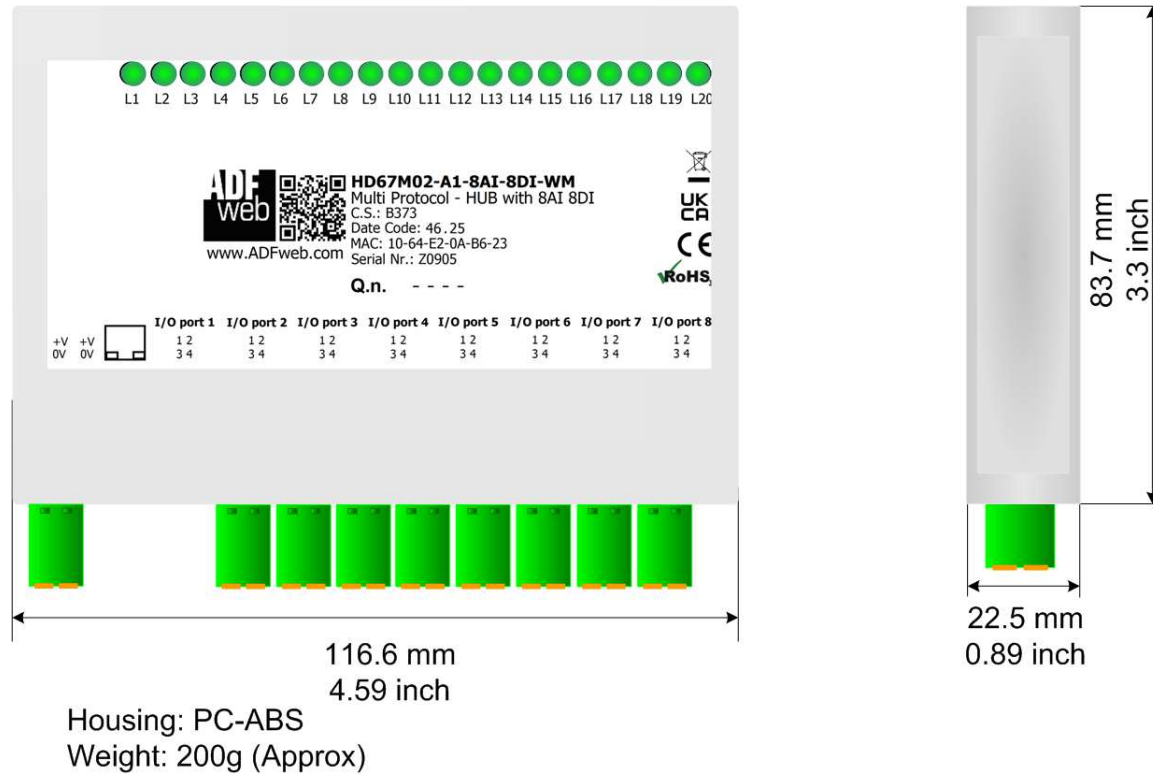


Figure 8c: Mechanical dimensions scheme for HD67M02-A1-8AI-8DI-WM

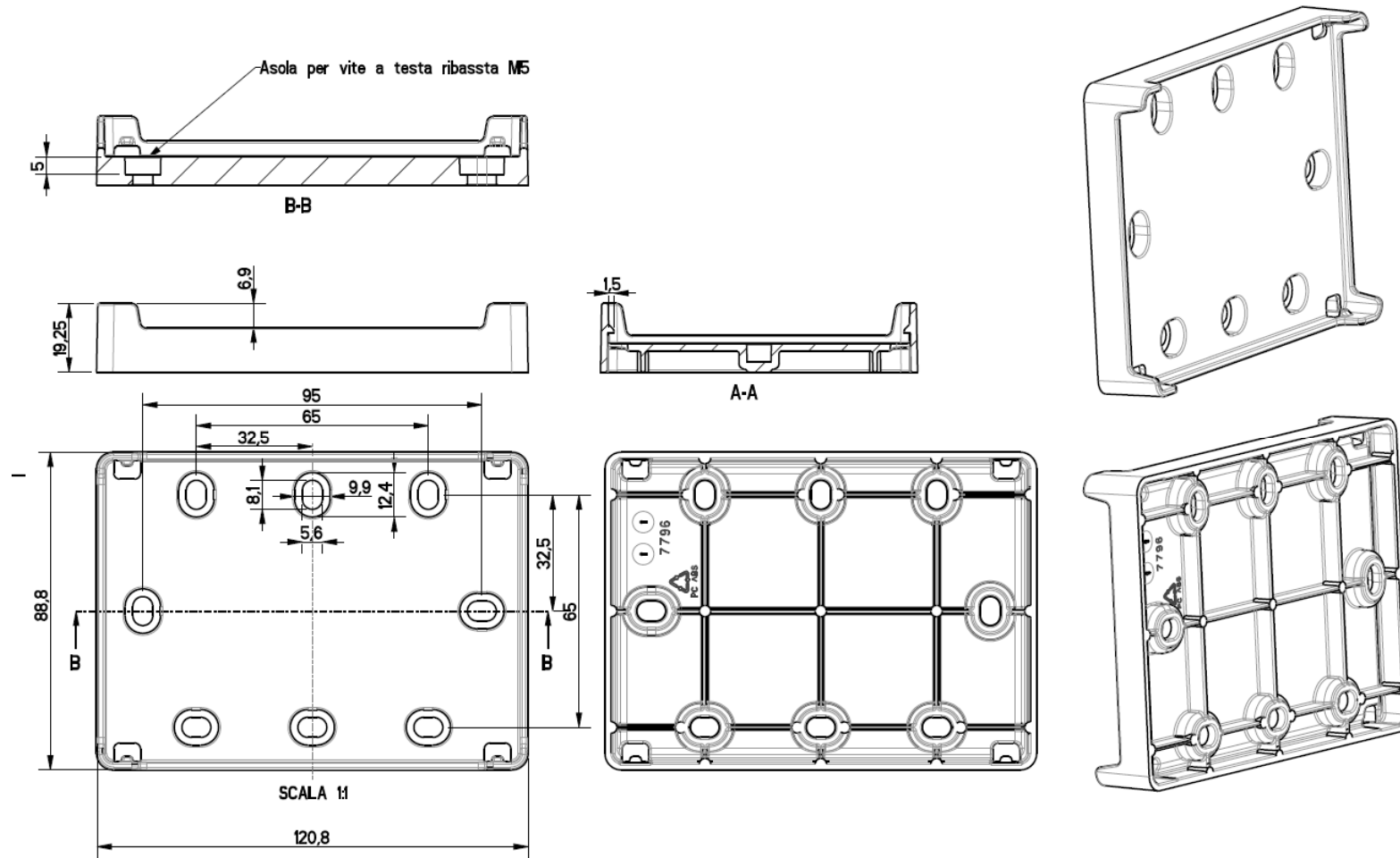
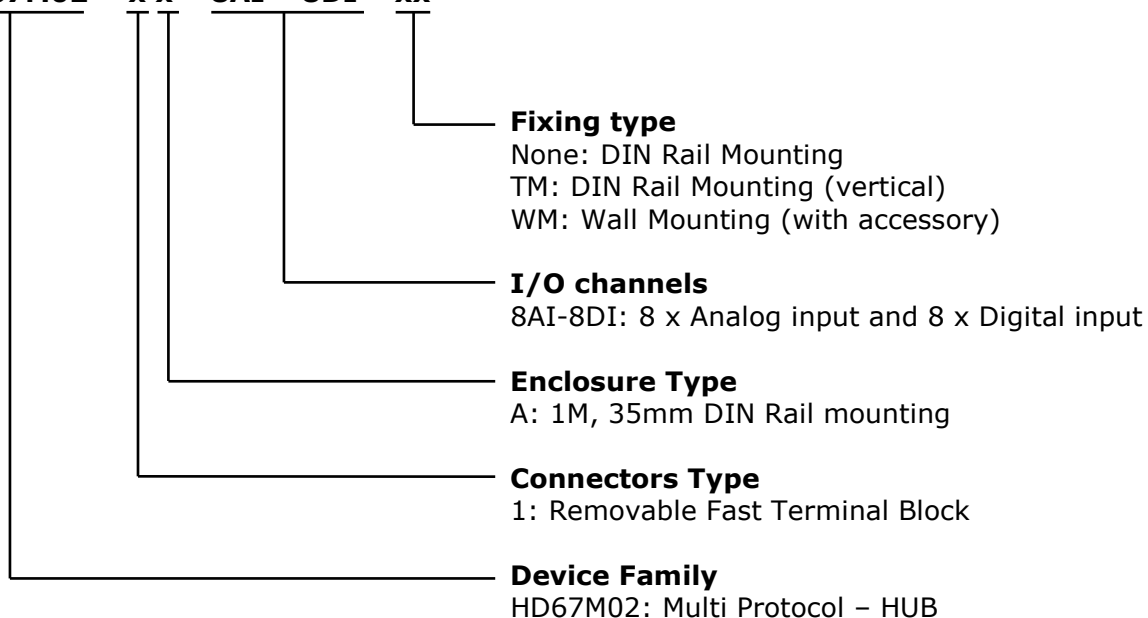


Figure 8d: Mechanical dimensions scheme for wall fixing

ORDERING INFORMATIONS:

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

HD67M02 - x x - 8AI - 8DI - xx



- Order Code: **HD67M02-A1-8AI-8DI** - Multi Protocol – HUB with 8AI and 8DI (Housing type: A, Terminal Blocks Connectors, DIN Mounting)
- Order Code: **HD67M02-A1-8AI-8DI-TM** - Multi Protocol – HUB with 8AI and 8DI (Housing type: A, Terminal Blocks Connectors, Vertical DIN Mounting)
- Order Code: **HD67M02-A1-8AI-8DI-WM** - Multi Protocol – HUB with 8AI and 8DI (Housing type: A, Terminal Blocks Connectors, Wall Mounting)

DISCLAIMER:

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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. 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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