

User Manual

Revision 1.001 English

EtherNet/IP / MQTT - Converter

(Order Code: HD67945-B2)

Benefits and Main Features:

Very easy to configure

Power Supply 18...35V DC and 8...24 V AC

Temperature range: -40°C/+85°C (-40°F/+185°F)

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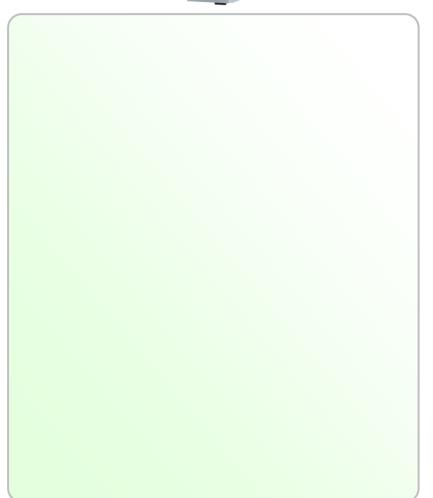
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Document code: MN67945_ENG Revision 1.001 Page 1 of 33







INDEX:

| | Page |
|------------------------------------------------|------|
| INDEX | 2 |
| UPDATED DOCUMENTATION | 2 |
| REVISION LIST | 2 |
| WARNING | 2 |
| TRADEMARKS | 2 |
| SECURITY ALERT | 3 |
| EXAMPLE OF CONNECTION | 4 |
| CONNECTION SCHEME | 5 |
| CHARACTERISTICS | 6 |
| CONFIGURATION | 6 |
| POWER SUPPLY | 7 |
| FUNCTION MODES | 8 |
| LEDS | 9 |
| ETHERNET | 10 |
| USE OF COMPOSITOR SW67945 | 11 |
| NEW CONFIGURATION / OPEN CONFIGURATION | 12 |
| SOFTWARE OPTIONS | 13 |
| SET COMMUNICATION | 15 |
| MQTT SET TOPIC | 21 |
| UPDATE DEVICE | 23 |
| TEMPLATE STRING: DEFINITION OF MQTT PAYLOAD | 25 |
| PLC CONFIGURATION | 26 |
| MECHANICAL DIMENSIONS | 30 |
| ORDERING INFORMATIONS | 31 |
| ACCESSORIES | 31 |
| DISCLAIMER | 32 |
| OTHER REGULATIONS AND STANDARDS | 32 |
| WARRANTIES AND TECHNICAL SUPPORT | 33 |
| RETURN POLICY | 33 |

| User Manual | EtherNet/IP | / MQTT |
|-------------|-------------|--------|
|-------------|-------------|--------|

Document code: MN67945_ENG Revision 1.001 Page 2 of 33

UPDATED DOCUMENTATION:

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- Updated
- ✤ Related to the product you own

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REVISION LIST:

| Revision | Date | Author | Chapter | Description |
|----------|------------|--------|---------|-----------------------|
| 1.000 | 05/12/2017 | Ff | All | First release version |
| 1.001 | 11/03/2019 | Ff | All | Revision |
| | | | | |
| | | | | |

WARNING:

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Document code: MN67945_ENG Revision 1.001 Page 3 of 33

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.

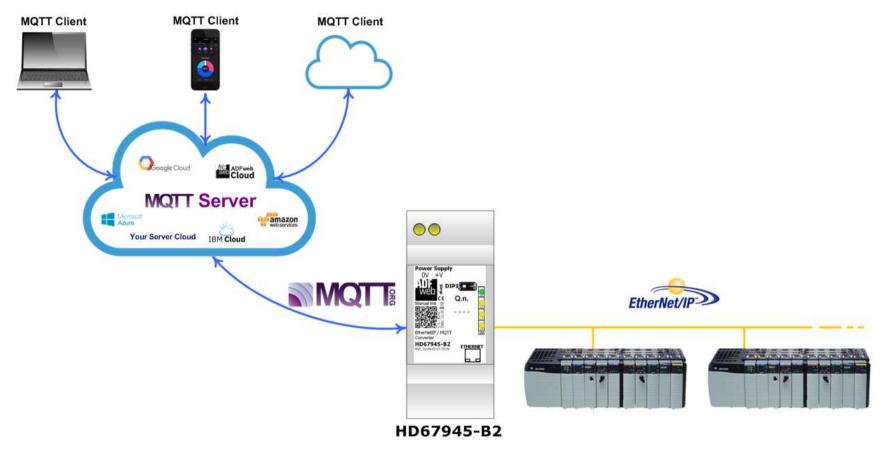
CE CONFORMITY

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

User Manual EtherNet/IP / MQTT

Document code: MN67945_ENG Revision 1.001 Page 4 of 33

EXAMPLE OF CONNECTION:







Document code: MN67945_ENG Revision 1.001 Page 5 of 33

CONNECTION SCHEME:

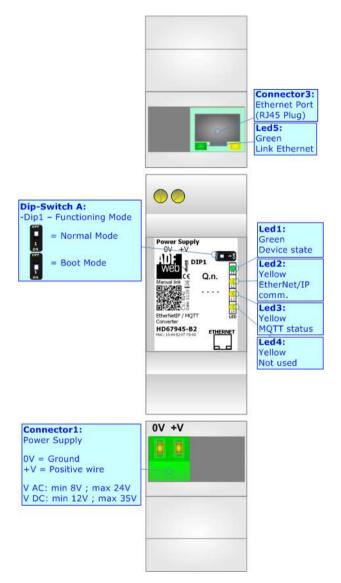


Figure 1: Connection scheme for HD67945-B2



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User Manual EtherNet/IP / MQTT

Document code: MN67945_ENG Revision 1.001 Page 6 of 33

CHARACTERISTICS:

The HD67945-B2 is a EtherNet/IP / MQTT Converter.

It allows the following characteristics:

- ✤ Electrical isolation between Ethernet and Power Supply;
- Mountable on 35mm Rail DIN;
- ✤ Wide power supply input range: 18...35V DC and 8...24V AC;
- ✤ Wide temperature range: -40°C / 85°C [-40°F / +185°F].

CONFIGURATION:

You need Compositor SW67945 software on your PC in order to perform the following:

- Define the parameter of MQTT;
- Define the parameter of EtherNet/IP line;
- Define the list of MQTT topic to publish;
- Define the list of MQTT topic to subscribe;
- Update the device.



Document code: MN67945_ENG Revision 1.001 Page 7 of 33

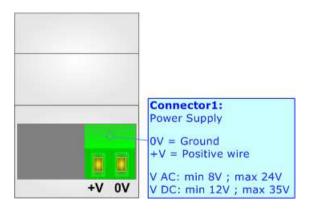
POWER SUPPLY:

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

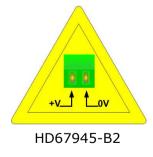
| VAC ~ | | VDC | |
|-------|------|------|------|
| Vmin | Vmax | Vmin | Vmax |
| 8V | 24V | 12V | 35V |

Consumption at 24V DC:

| | Device | Consumption [W/VA] |
|--------|--------|--------------------|
| HD6794 | 5-B2 | 3.5 |



Caution: Not reverse the polarity power





User Manual EtherNet/IP / MQTT

Document code: MN67945_ENG Revision 1.001 Page 8 of 33

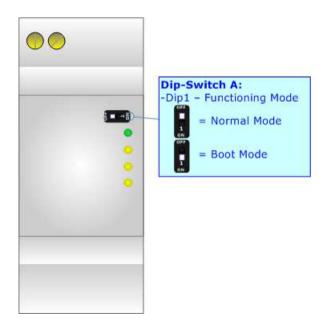
FUNCTION MODES:

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.



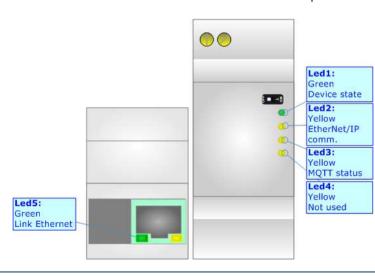


Document code: MN67945_ENG Revision 1.001 Page 9 of 33

LEDS:

The device has got five 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: Device State (green) | Blinks slowly (~1Hz) | Blinks quickly: Boot state Blinks very slowly (~0.5Hz): update in progress |
| 2: EtherNet/IP communication (yellow) | Blinks when EtherNet/IP communication is running | Blinks quickly: Boot state Blinks very slowly (~0.5Hz): update in progress |
| 3: MQTT status (yellow) | ON: MQTT not connected OFF: MQTT connected Blinking: MQTT communication | Blinks quickly: Boot state Blinks very slowly (~0.5Hz): update in progress |
| 4: Not used (yellow) | OFF | Blinks quickly: Boot state Blinks very slowly (~0.5Hz): update in progress |
| 5: Ethernet Link (green) | ON: Ethernet cable connected OFF: Ethernet cable disconnected | ON: Ethernet cable connected OFF: Ethernet cable disconnected |



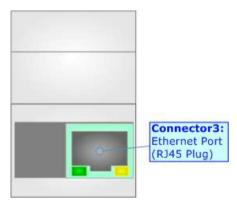


User Manual EtherNet/IP / MQTT

ETHERNET:

The Ethernet port is used for programming the device, for MQTT communication and for EtherNet/IP communication.

The Ethernet connection must be made using Connector2 of HD67945-B2 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 is recommended the use of a cross cable.





User Manual EtherNet/IP / MQTT

Document code: MN67945_ENG Revision 1.001 Page 11 of 33

USE OF COMPOSITOR SW67945:

To configure the Converter, use the available software that runs with Windows called SW67945. It is downloadable on the site <u>www.adfweb.com</u> and its operation is described in this document. The software works with MS Windows (XP, Vista, Seven, 8, 10; 32/64bit).

When launching the SW67945, the window below appears (Fig. 2).



It is necessary to have installed .Net Framework 4.

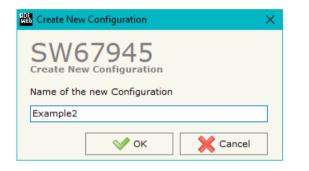
| WE ADFweb. | om - Configurator SW67945 - EtherNet/IP / MQTT | × |
|------------|-----------------------------------------------------|----------------|
| | 67945 /IP / MQTT - Converter | |
| Begin | Opened Configuration of the Converter : Example1 |] |
| Step 1 | New Configuration |] |
| Step 2 | Set Communication | |
| Step 3 | MQTT Set Topic | |
| Step 4 | X Update Device UDP | www.ADFweb.com |
| | | |
| | | |
| | | |

Figure 2: Main window for SW67945



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 / MQTT 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".

| 🚻 Open Configuration | - | | × |
|-------------------------------------------------------------------------------|---|-------|----|
| SW67945 Open an Existing Configuration List of Avaliable Configurations | | | |
| Example1 | | | |
| Example2 Example3 | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
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User Manual EtherNet/IP / MQTT

Document code: MN67945_ENG Revision 1.001 Page 12 of 33



Document code: MN67945_ENG Revision 1.001 Page 13 of 33

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.

| 🟙 Software Options | \times |
|-----------------------------------------------------------------------------------------------------|----------|
| SW67945 Software Options | |
| Language Connection Options Software Settings | |
| Enable Internet Connection Check Software Update at Start of Program Check Available Update | |
| | |
| | |
| | |
| OK Cancel | |

| Web Software | e Options | × |
|--------------|--------------------------------------|---|
| | 67945 | |
| Language | Connection Options Software Settings | |
| Selected | Language : | |
| | English | |
| | | |
| | | |
| | Page 1 / 1 | |
| | OK Cancel | |

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 SW67945 check automatically if there are updatings when it is launched.



| User | Manual | EtherNet/IP | / MQTT |
|------|--------|-------------|--------|
|------|--------|-------------|--------|

Document code: MN67945_ENG Revision 1.001 Page 14 of 33

| 📸 Software Options | > |
|-----------------------------------------------------------------------------------------------------------------------|---|
| SW67945 Software Options | |
| ☐ Jump into next field in the tables by pressing the Enter Key ☐ Enable Auto Size of Table Columns by Double Click | |
| V OK X Cancel | |

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 SW67945 (Fig. 2) the window "Set Communication" appears (Fig. 3).

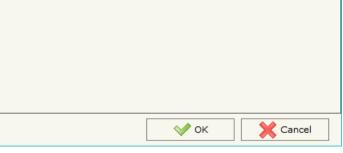
The window is divided in different sections in order to define the different parameters of the converter:

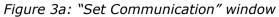
- EtherNet/IP
- + MQTT
- Ethernet
- + Wi-Fi
- TLS (Transport Layer Security)
- NTP (Network Time Protocol)

User Manual EtherNet/IP / MQTT

Document code: MN67945_ENG Revision 1.001 Page 15 of 33

Set Communication × SW67945 • Set Communication Setting • 1. EtherNet/IP • 2. MQTT • 3. Ethernet • 4. Wi-Fi • 5. TLS (Transport Layer Security) • 6. NTP (Network Time Protocol) •







ETHERNET/IP:

This section is used to define the main parameters of EtherNet/IP 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. 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 used for EtherNet/IP communication is defined (fixed to 44818);
- 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.

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);

Document code: MN67945_ENG Revision 1.001 Page 16 of 33

| 1. EtherNet/IP | | Ξ |
|---------------------|---------------------|---|
| IP Address | 192 .168 .0 .5 | |
| SubNet Mask | 255 . 255 . 255 . 0 |] |
| Gateway | 192 .168 .0 .1 | |
| Port | 44818 | |
| Number Bytes Input | 496 |] |
| Number Bytes Output | 496 | |

Figure 3b: "Set Communication \rightarrow EtherNet/IP" window

| 2. MQTT | | |
|----------------------|--------------------|--|
| Server URL | test.mosquitto.org | |
| Server Port | 1883 | |
| Client ID | | |
| Keep Alive (seconds) | 60 | |
| Clean Session | | |
| 🗹 Will Flag | | |
| Topic Name Will | | |
| Message Will | | |
| Retained Will | | |
| QoS Will | 0 ~ | |
| Username | | |
| Password | | |

Figure 3c: "Set Communication \rightarrow MQTT" window

- 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;
- Im 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.

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. 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 "DNS" the DNS address is defined. This field is required if the server address is define by URL and not IP Address.

| SubNet Mask | 255 | . 255 | . 255 | . 0 |
|-------------|-----|-------|-------|-----|
| Gateway | 192 | . 168 | . 0 | . 1 |
| | 8 | . 8 | . 8 | .8 |
| | | | | |

168

. 0

. 10

Ξ

Figure 3d: "Set Communication → Ethernet" window

192

3. Ethernet

IP Address

User Manual EtherNet/IP / MQTT

Document code: MN67945_ENG Revision 1.001 Page 17 of 33





Document code: MN67945_ENG Revision 1.001 Page 18 of 33

<u>WI-FI:</u>

This section is used to define the general parameters of Wi-Fi. It is possible to defined the type of Wi-Fi communication:

- Access Point;
- Client.

The means of the fields for Access Point configuration 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. 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 "DNS" the DNS address is defined. This field is required if the server address is define by URL and not IP Address.
- In the field "Port" the port used for MQTT communication is defined;
- In the field "SSID" the name of the Wi-Fi network to create is defined;
- In the field "Password" the password used for Wi-Fi connection is defined;
- In the field "Type" the type of security protocol used by the Wi-Fi network is defined;
- If the field "Enable DHCP" is checked, the converter acts as DHCP Server for the Clients connected. If the option is enabled, in the fields "DHCP First IP Address" and "DHCP SUBNET Mask" the IP Addresses range used for DHCP is defined. In the field "Lease Time (seconds)" the required time for the renewing of the IP Address assigned to the Client is defined;
- In the field "Max Client" the maximum number of Wi-Fi Clients accepted is defined;
- ✤ In the field "Channel" the channel for Wi-Fi communication is defined.

| 4. Wi-Fi | Θ |
|-------------|---------------------|
| Туре | Access Point ~ |
| IP Address | 192 . 168 . 0 . 11 |
| SubNet Mask | 255 . 255 . 255 . 0 |
| Gateway | 192 . 168 . 0 . 1 |
| | 8.8.8.8 |
| Port | 502 |
| SSID | |
| Secure Type | Unsecured ~ |
| Enable DHCP | |
| Max Client | 1 ~ |
| Channel | 1 ~ |

Figure 3e: "Set Communication → Wi-Fi" window

Document code: MN67945_ENG Revision 1.001 Page 19 of 33

Industrial Electronic Devices

The means of the fields for Client configuration are:

- If the field "Obtain an IP Address automatically" is checked, the converter gets the IP Address using DHCP. Otherwise, the IP Address is defined as static;
- 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. 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 "DNS" the DNS address is defined. This field is required if the server address is define by URL and not IP Address.
- In the field "Port" the port used for MQTT communication is defined;
- In the field "SSID" the name of the Wi-Fi network to connect is defined;
- In the field "Password" the password used to connect to the Wi-Fi network is defined.

| 4. Wi-Fi | (| Ξ |
|----------------------------|------------------|---|
| Туре | Client Mode 🗸 🗸 | |
| Obtain an IP Address autor | natically | |
| IP Address | 192 .168 .0 .11 | |
| SubNet Mask | 255 .255 .255 .0 | |
| Gateway | 192 .168 .0 .1 | |
| | 8.8.8.8 | |
| Port | 502 | |
| SSID | | |
| Password | | |

Figure 3f: "Set Communication → Wi-Fi" window



TLS (TRANSPORT LAYER SECURITY):

User Manual EtherNet/IP / MQTT

Document code: MN67945 ENG Revision 1.001 Page 20 of 33

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:
 - o 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.

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;
- "**Poll Time (seconds)**" the polling time for the time Figure 3h: "Set Communication \rightarrow NTP" window In the field synchronization is defined.

| 5. TLS (Transport La | yer Security) | Ξ |
|-----------------------|---------------|---|
| Enable TLS | | |
| Server Authentication | | |
| Server Certificate | | |
| Client Authentication | | |
| Client Certificate | | |
| Client Key | | |
| Client Key Password | | |

Figure 3q: "Set Communication \rightarrow TLS" window

| 6. NTP (Network Time Protocol) | | | |
|--------------------------------|--------------|--|--|
| Server URL | pool.ntp.org | | |
| Poll Time (seconds) | 1000 | | |



User Manual EtherNet/IP / MQTT

Document code: MN67945_ENG Revision 1.001 Page 21 of 33

MQTT SET TOPIC:

By Pressing the "**MQTT Set Topic**" button from the main window for SW67945 (Fig. 2) the window "Set MQTT Topics" appears (Fig. 4). This section is used to define the MQTT topics where the converter will publish the data from EtherNet/IP and the topic that the converter will subscribes for writing the data to EtherNet/IP.

MQTT PUBLISH

| WE Se | MQTT Topics | | | | | | | | | | | - | × |
|-------|------------------------|----------|-----|-----------|------------|----------|-------------------|------------|-------------------|------------------------------|----------|------------|----------|
| Set | W67945 | | | | | | | | | | | | |
| MQTT | Publish MQTT Subscribe | 0 | 0-5 | D.t. T | Discourtes | 0 | The second second | O. Channel | 0.000 | 0.7 | Ti | | <u>^</u> |
| N | Торіс | Retained | Qos | Data Type | Dimension | Position | Template | OnChange | Collection of the | and the second second second | Time(ms) | Mnemonic | ^ |
| 1 | Test1 | | 0 | Int | 4 | 0 | \$VALUE\$ | | | | 1000 | Desc Test1 | |
| 2 | Test2 | | 0 | Int | 4 | 4 | \$VALUE\$ | | | | | Desc Test2 | |
| 3 | | | | | | | | | | | | | 1 |
| 4 | | | | | | | | | | | | | 1 |
| 5 | | | | | | | | | | | | | |

Figure 5a: "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 EtherNet/IP are changed;
- If the field "On CMD" is checked, the converter publishes the topic when an explicit message from EtherNet/IP is received;
- If the field "On Timer" is checked, the converter publishes the topic cyclically with the delay defined in the field "Time (ms)";
- ✤ In the field "Mnemonic" a description of the topic is defined.



Document code: MN67945_ENG Revision 1.001 Page 22 of 33

MQTT SUBSCRIBE

| Web Se | t MQTT Topics | | | | | | | | - | | × |
|--------|-------------------------------------------------|-----|-----------|-----------|----------|-----------|----------------|--|---|--|---|
| Set | W67945 MQTT Topics Publish MQTT Subscribe | | | | | | | | | | |
| N | Торіс | QoS | Data Type | Dimension | Position | Template | Mnemonic | | | | ^ |
| 1 | Test_Sub | 0 | Int | 4 | 0 | \$VALUE\$ | Desc Subscribe | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | ~ |
| | V OK X Cancel Isotronom Copy Row Paste Row | | | | | | | | | | |

Figure 5b: "Set MQTT Topics → MQTT Subscribe" 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 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;
- ✤ In the field "Mnemonic" a description of the topic is defined.



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.

| Update Device by Ethernet (UDP) | × | | | | | |
|---------------------------------------------------------------------------------|------------|--|--|--|--|--|
| SW67945 Update Device Using the Ethernet Port | | | | | | |
| Insert the IP Address of Device 192 . 168 . 2 . 205 Select Update Options | | | | | | |
| Firmware + Configuration ~ | | | | | | |
| Read Back | | | | | | |
| Cancel | | | | | | |
| 👪 ADFweb.com - Ethernet Update | × | | | | | |
| INIT : Waiting | Ver. 1.500 | | | | | |
| FIRMWARE : Waiting | | | | | | |
| PROJECT : Waiting | | | | | | |
| | | | | | | |
| | | | | | | |

Figure 5: "Update device" windows

User Manual EtherNet/IP / MQTT

Document code: MN67945_ENG Revision 1.001 Page 23 of 33

Note:

When you receive the device, for the first time, you also have to update the Firmware in the HD67945 device.

Warning:

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

- Check if the serial COM port selected is the correct one;
- Check if the serial cable is connected between the PC and the device;
- Try to repeat the operations for the updating;
- Try with another PC;
- Try to restart the PC;
- Check the LAN settings;
- If you are using the program inside a Virtual Machine, try to use in the main Operating System;
- If you are using Windows Seven, Vista, 8 or 10 make sure that you have the administrator privileges;
- In case you have to program more than one device, using the "UDP Update", you have to cancel the ARP table every time you connect a new device on Ethernet. For do this you have to launch the "Command Prompt" and write the command "arp -d". Pay attention that with Windows Vista, Seven, 8, 10 you have to launch the "Command Prompt" with Administrator Rights;
- Pay attention at Firewall lock.

| Man ADFweb.com - Ethemet Opdate | |
|--------------------------------------|------------|
| INIT : Device Not Found | Ver. 1.500 |
| FIRMWARE : Waiting | |
| PROJECT : Waiting | |
| | |
| 🕮 ADFweb.com - Ethernet Update | × |
| INIT : PROTECTION | Ver. 1.500 |
| | |
| FIRMWARE : Waiting | |
| FIRMWARE : Waiting PROJECT : Waiting | |
| | |

Figure 6: "Error" window

Warning:

In the case of HD67945 you have to use the software "SW67945": <u>www.adfweb.com\download\filefold\SW67945.zip</u>.



Document code: MN67945_ENG Revision 1.001 Page 24 of 33



Document code: MN67945_ENG Revision 1.001 Page 25 of 33

TEMPLATE STRING: DEFINITION OF MQTT PAYLOAD

In the section "Set Communication" of the SW67945, it is possible to define a Template string for the MQTT messages. The template is necessary in order to define the structure of the payload of the MQTT message and the info contained. It is possible to have a simple text format or a JSON format.

The definition of the template can be done using Key words, used to link a specific information EtherNet/IP. The key words used and their meanings are:

- ✤ <u>VALUE</u>: value of the EtherNet/IP variable
- ✤ <u>TIME</u>: date and time of the MQTT message
- ✤ <u>DESC</u>: description of the message



Warning:

The key words must be defined between "\$" chars in order to be recognized (Ex.: \$VALUE\$).



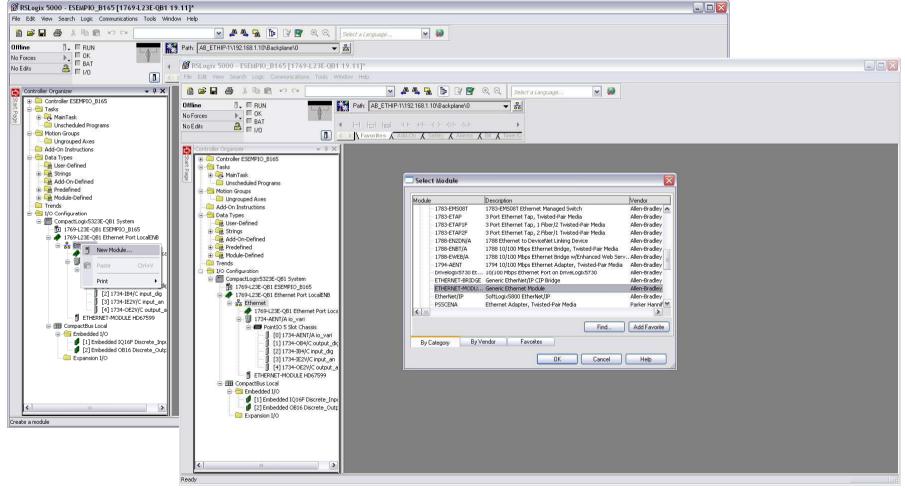
Document code: MN67945_ENG Revision 1.001 Page 26 of 33

PLC CONFIGURATION (for EtherNet/IP):

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:







| New Module | | | | | | X |
|-----------------------------|--------------------------------------------------------------|-----------------------|------------------|--------------|-----------|---|
| Type: Vendor: Parent: | ETHERNET-MODULE Generic Etherne Allen-Bradley LocalENB | t Module | | | | |
| Na <u>m</u> e: | HD67599 | C Connection Para | Assembly | c.: | | |
| Descri <u>p</u> tion: | | Input: | Instance: 101 | Size: 500 | 💌 (8-bit) | |
| | | O <u>u</u> tput: | 100 | 500 | 😩 (8-bit) | |
| Comm <u>F</u> ormat | | Configuration: | 3 | 0 | 💌 (8-bit) | |
| OIP Addre | ss: 192 . 168 . 0 . 5 | <u>S</u> tatus Input: | | | | |
| <u>⊖ H</u> ost Na | ne: | Status Output: | | | | |
| 🔽 Open Modu | le Properties | OK | Cano | el | Help | |

2) Edit the settings of the new Generic Ethernet Module. As shown in the screen shot below, the module was named "HD67945" 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.



<u>Warning:</u>

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

| 🗖 Module Properties: LocalENB (ETHERNET-MODULE 1.1) |
|-----------------------------------------------------------------|
| General Connection Module Info |
| Bequested Packet Interval (RPI): 10.0 🐡 ms (1.0 - 3200.0 ms) |
| Major Fault On Controller If Connection Fails While in Run Mode |
| Use Unicast Connection over EtherNet/IP |
| Module Fault |
| Status: Running OK Cancel Apply Help |

User Manual EtherNet/IP / MQTT

Document code: MN67945 ENG Revision 1.001 Page 27 of 33

Document code: MN67945_ENG Revision 1.001 Page 28 of 33

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

| gix 5000 - ESEMPIO_B165 [1769-L23E-QB1 | | a | /1 | | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------|--------------------|-----------|-------------|----------|-------------------|-------------------|--|
| 日本 | | | (A) Q Select a law | novana | ¥ 👂 | | | | |
| | | | 11:1 | iyuaye | | | | | |
| Controller OK | Path: AB_ETHIP-1\192.1 | 168.1.10\Backplane\0 | ▼ 器 | | | | | | |
| | | | | | | | | | |
| 📑 🖬 1/0 OK 🚺 🧹 | > Favorites Add-On | | Bit K Timer/C | | | | | | |
| oller Organizer | | | | | | | The second second | normal American S | |
| Controller ESEMPIO_B165 | Scope: BESEMPIO_B16 | | | | | | Y. Enter N | | |
| 🖉 Controller Tags | Name === A Valu | | | Data Type | Description | Constant | | | |
| Controller Fault Handler | - HD67599:1 | {} | {} Decimal | SINT[500] | | - | | | |
| Tasks | + HD6759 + HD6759 | 0 | Decimal Decimal | SINT | | - | | | |
| 🖻 🤯 MainTask | + HD6755 | 0 | Decimal | SINT | | - | | | |
| 🕀 🕞 MainProgram | + HD6759 | 0 | Decimal | SINT | | - | | | |
| Motion Groups | + HD6759 | 0 | Decimal | SINT | | - | | | |
| 🗀 Ungrouped Axes | ± HD6759 | 0 | Decimal | SINT | | | | | |
| Add-On Instructions | ± HD6759 | 0 | Decimal | SINT | | | | | |
| Data Types | + HD6759 | 0 | Decimal | SINT | | | | | |
| E R Strings | ± HD6759 | 0 | Decimal | SINT | | | | | |
| Add-On-Defined | + HD6759 | 0 | Decimal | SINT | | _ | | | |
| General Action General Genera | + HD6759 + HD6759 | 0 | Decimal Decimal | SINT | | | | | |
| Trends | + HD6759 | 0 | Decimal | SINT | | | | | |
| I/O Configuration | + HD6759 | 0 | Decimal | SINT | | _ | | | |
| CompactLogix5323E-QB1 System | + HD6759 | 0 | Decimal | SINT | | | | | |
| 1769-L23E-QB1 Ebernet Port LocalENB | + HD6759 | 0 | Decimal | SINT | | | | | |
| 🖻 🚠 Ethernet | + HD6759 | 0 | Decimal | SINT | | | | | |
| 9 1769-L23E-QB1 Ethernet Port Loca 9-9 1734-AENT/A io_vari | + HD6759 | 0 | Decimal | SINT | | | | | |
| T734-AENT/A Io_Vari PointIO 5 Slot Chassis | ± HD6759 | 0 | Decimal | SINT | | | | | |
| 🚺 [0] 1734-AENT/A io_vari | | 0 | Decimal | SINT | | | | | |
| [1] 1734-OB4/C output_dic | HD6759 | 0 | Decimal | SINT | | | | | |
| 🗍 [2] 1734-IB4/C input_dig 🗍 [3] 1734-IE2V/C input_an | + HD6759 + HD6759 | 0 | Decimal Decimal | SINT | | _ | | | |
| 🗍 [4] 1734-OE2V/C output_a | + HD6759 | 0 | Decimal | SINT | | | | | |
| ETHERNET-MODULE HD67599 | ± HD6759 | 0 | Decimal | SINT | | | | | |
| e-m CompactBus Local | ± HD6759 | 0 | Decimal | SINT | | | | | |
| [1] Embedded IQ16F Discrete_Inpu | + HD6759 | 0 | Decimal | SINT | | | | | |
| [2] Embedded OB16 Discrete_Outp | ± HD6759 | 0 | Decimal | SINT | | | | | |
| Expansion I/O | I HD6759 | 0 | Decimal | SINT | | | | | |
| | ± HD6759 | 0 | Decimal | SINT | | | | | |
| | | 0 | Decimal | SINT | _ | _ | | | |
| | + HD6759 + HD6759 | 0 | Decimal Decimal | SINT | | _ | | | |
| | + HD6753 | 0 | Decimal | SINT | | | | | |
| | + HD6759 | 0 | Decimal | SINT | | _ | | | |
| | ± HD6759 | 0 | Decimal | SINT | | | | | |
| | + HD6759 | 0 | Decimal | SINT | | | | | |
| | ± HD6759 | 0 | Decimal | SINT | | | | | |
| | ± HD6759 | 0 | Decimal | SINT | | | | | |
| | + HD6759 | 0 | Decimal | SINT | | | | | |
| | | 0 | Decimal | SINT | | | | | |
| | | 0 | Decimal | SINT | | | | | |
| | + HD6759 + HD6759 | 0 | Decimal Decimal | SINT | | | | | |
| | + HD6759 | 0 | Decimal | SINT | | | | | |
| | + HD6759 | 0 | Decimal | SINT | | | | | |
| | + HD6759 | 0 | Decimal | SINT | | | | | |
| | ▲ Monitor Tags (Ec | Nit Togo I | | | | | < | | |



Document code: MN67945 ENG Revision 1.001 Page 29 of 33

Reset Module

Help

🗞 RSLinx Classic Lite - [RSWho - 1] 器 File View Communications Station DDE/OPC Security Window Help - 8 × 옮 💲 👨 Autobrowse have the "Module Info" compiled. Browsing - node 192.168.1.20 found 🖃 💻 Workstation, FEDERICO 10 🗄 🚠 Linx Gateways, Ethernet 🖻 🚠 AB_ETHIP-1, Ethernet 192.168.1.10 192.168.1.... 192.168.1.... 192.168.1.... 🗄 📂 192.168.1.10, 1769-L23E-QB1 Ethernet Port, 1769-L23E-QB1 Ethernet Port 1769-L23E-... HD67595 HD67590 HD67599 Module Properties: LocalENB (ETHERNET-MODULE 1.1) — ? 192.168.1.122, Unrecognized Device, HD67595 192.168.1.123, Unrecognized Device, HD67590 General Connection Module Info 192.168.1.189, HD67599, HD67599 Remove 192.168.1.20, 1734-AENT EtherNet 192.168.1.20 apter Identification Status 1734-AENT... Driver Diagnostics Major Fault: Vendor Configure Driver Minor Fault: Product Type: Upload EDS file from device Product Code: Internal State: Security... Revision: Configured: Device Properties Serial Number: Owned: Product Name: Module Identity: 12/12/12 03:30 PM For Help, press F1 NUM **Before** R<u>e</u>fresh

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

| General Connection Vendor: Vendor: Product Type: Product Code: Revision: Serial Number: Product Name: | Communications Adapter (599) Unknown 1.1 E2071B2A HD67599 | Status Major Fault: Internal State: Configured: Owned: Module Identity: Refresh | None None (16#0065) unknown Yes Yes Mismatch |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------|

0K

Status: Offline

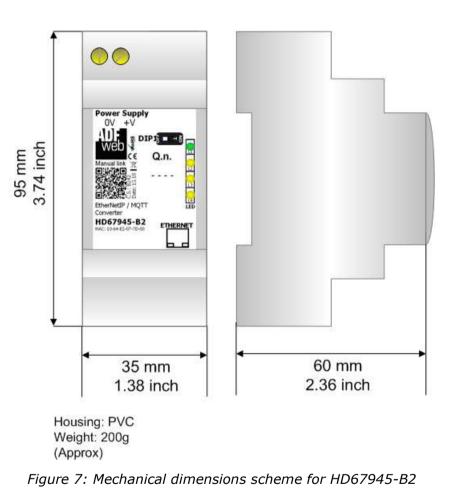
Cancel

Apply



Document code: MN67945_ENG Revision 1.001 Page 30 of 33

MECHANICAL DIMENSIONS:





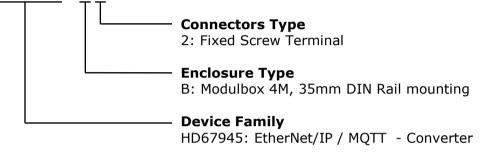
User Manual EtherNet/IP / MQTT

Document code: MN67945_ENG Revision 1.001 Page 31 of 33

ORDERING INFORMATIONS:

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

HD67945 – B 2



Order Code: HD67945-B2 - EtherNet/IP / MQTT – Converter

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 |



Document code: MN67945_ENG Revision 1.001 Page 32 of 33

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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

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



User Manual EtherNet/IP / MQTT

Document code: MN67945_ENG Revision 1.001 Page 33 of 33

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For fast and easy technical support for your ADFweb.com SRL products, consult our internet support at <u>www.adfweb.com</u>. 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 <u>www.adfweb.com</u>. 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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