

# User Manual

Revision 1.004  
English

## PROFIBUS Slave / Ethernet - Converter

(Order Code: HD67563M)

for Website information:

[www.adfweb.com?Product=HD67563M](http://www.adfweb.com?Product=HD67563M)

for Price information:

[www.adfweb.com?Price=HD67563M](http://www.adfweb.com?Price=HD67563M)

### Benefits and Main Features:

- ▶ Mountable on Rail DIN
- ▶ TCP/UDP protocols changeable with software
- ▶ Easy to use software configuration
- ▶ Galvanic isolation
- ▶ Industrial temperature range:  
-40 °C / 85°C (-40°F / 185°F)



HD67563M

Similar Products  
→

For others Gateway / Adapters:

#### PROFIBUS to

See also the following link:

- [www.adfweb.com?Product=HD67551](http://www.adfweb.com?Product=HD67551)
- [www.adfweb.com?Product=HD67552](http://www.adfweb.com?Product=HD67552)
- [www.adfweb.com?Product=HD67553](http://www.adfweb.com?Product=HD67553)
- [www.adfweb.com?Product=HD67554](http://www.adfweb.com?Product=HD67554)
- [www.adfweb.com?Product=HD67564M](http://www.adfweb.com?Product=HD67564M)
- [www.adfweb.com?Product=HD67565M](http://www.adfweb.com?Product=HD67565M)

- (CANopen)
- (CAN)
- (J1939)
- (DeviceNet)
- (Modbus TCP Client)
- (Modbus TCP Server)

For others Converter / Adapter:

#### Ethernet to

See also the following link:

- [www.adfweb.com?Product=HD67503](http://www.adfweb.com?Product=HD67503)
- [www.adfweb.com?Product=HD67513](http://www.adfweb.com?Product=HD67513)
- [www.adfweb.com?Product=HD67213](http://www.adfweb.com?Product=HD67213)

- (CANopen)
- (CAN)
- (J1939)

Do you have an your customer protocol?

See the following link:

[www.adfweb.com?Product=HD67003](http://www.adfweb.com?Product=HD67003)

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

Ask it to the following link:

[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
1.001	22/01/2009	Fl	All	Software changed
1.002	14/07/2009	MI	All	Revision
1.003	14/05/2009	FT	All	Revision
1.004	11/01/2013	Nt	All	Added new chapters

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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 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.

**CONNECTION SCHEME:**

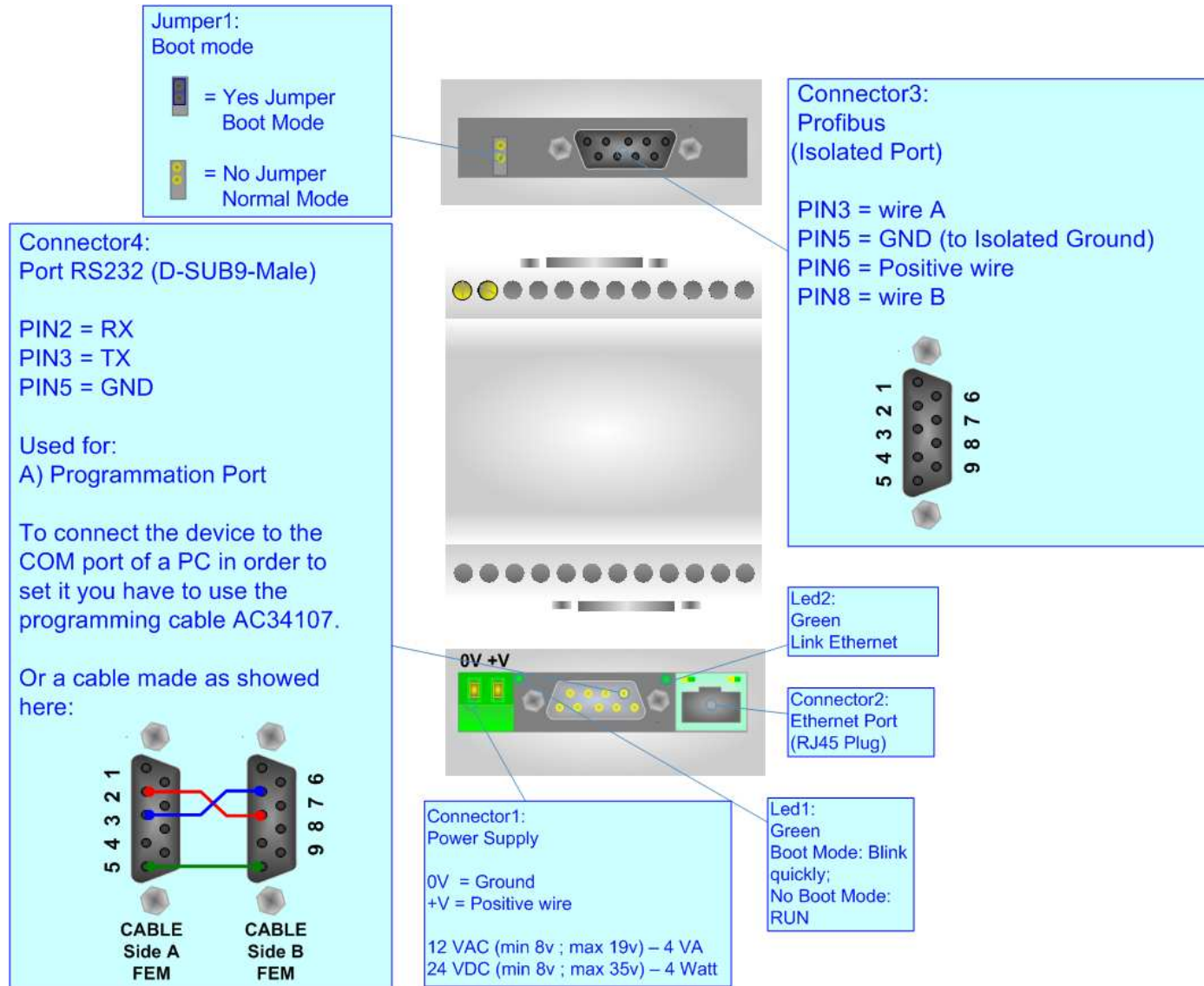


Figure 1: Connection scheme for HD67563M

**CHARACTERISTICS:**

The Configurable PROFIBUS Slave / Ethernet – Converter allows the following characteristics:

- Two-directional information between Ethernet network and PROFIBUS;
- Electrical isolation between two buses;
- Up to 244 bytes in reading and 244 bytes in writing;
- Power Supply 8...19V AC or 12...35V DC;
- Mountable on 35mm Rail DIN;
- Temperature range -40°C to 85°C.



**CONFIGURATION:**

You need Compositor SW67563 software on your PC in order to perform the following:

- Define the parameter of the PROFIBUS;
- Define the parameter of Ethernet;
- Define which Modbus registers save in the PROFIBUS arrays;
- Create a GSD file;
- Update the device.

**POWER SUPPLY:**

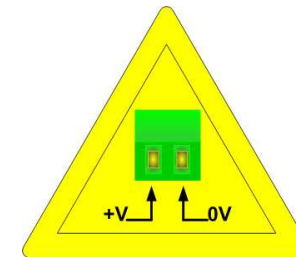
The devices can be powered at 8...19V AC and 8...35V DC. The consumption depends to the code of the device. For more details see the two tables below.

VAC 		VDC 	
Vmin	Vmax	Vmin	Vmax
8V	19V	8V	35V

Consumption at 24V DC:

Device	Consumption [W/VA]
HD67563M	3.5

**Caution: Not reverse the polarity power**



HD67563M

### USE OF COMPOSITOR SW67563:

To configure the Converter, use the available software that runs with Windows, called SW67563. 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 (MS 2000, XP, Vista, Seven, 8; 32/64bit).

When launching the SW67563 the right window appears (Fig. 2).

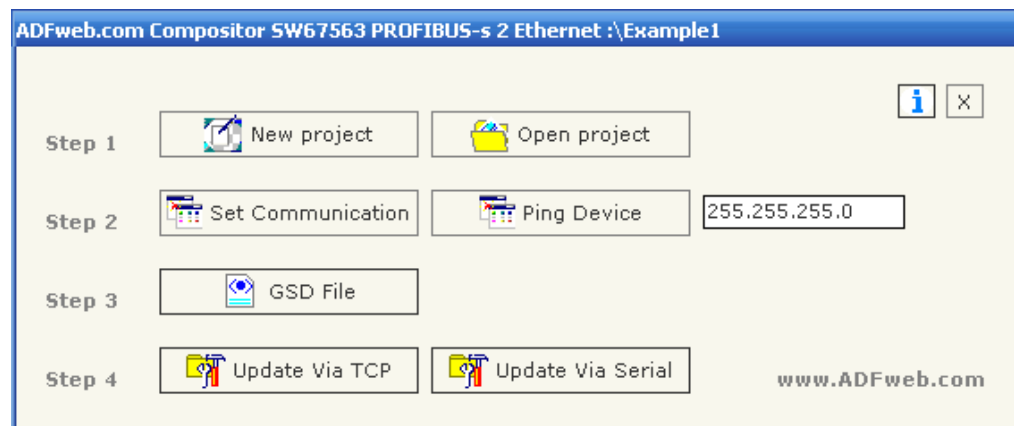
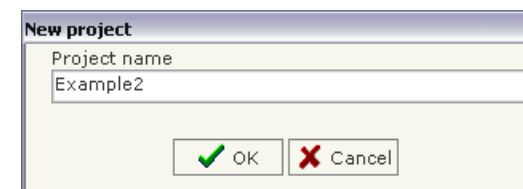


Figure 2: Main window for SW67563

### NEW PROJECT / OPEN PROJECT:

The “**New Project**” button creates the folder which contains the entire device configuration.



A device configuration can also be imported or exported:

- To clone the configurations of a programmable “PROFIBUS Slave / Ethernet – 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 Project**”.

## SET COMMUNICATION:

This section defines the fundamental communication parameter of two buses, PROFIBUS and Ethernet.

By pressing the **Set Communication** button from the main window for SW67563 (Fig. 2) the window "Set Communication" appears (Fig. 3).

The window is divided in two sections, one for the PROFIBUS and the other for the Ethernet.

The means of the fields for "Profibus" are:

- In the field **ID Dev.** the address of the PROFIBUS side is defined;
- In the field **N Byte IN** the number of byte writable from Ethernet is defined (at maximum it is possible to use 244 byte);
- In the field **N Byte OUT** the number of byte readable from Ethernet is defined (at maximum it is possible to use 244 byte).

The means of the fields for "Ethernet" are:

- In the field **IP ADDRESS** insert the IP address;
- In the field **SUBNET Mask** insert the SubNet Mask;
- In the field **Port** insert the number of the port;
- If the field **TCP** is checked, the Ethernet protocol used is the TCP, otherwise if the field **UDP** is checked the Ethernet protocol used is the UDP.

## PING DEVICE:

If is necessary to do a Ping on the net, before pressing the **Ping Device** button insert a value in the right field and then press the button. For doing this, the gateway must be in RUN mode.

## GSD FILE:

By pressing the **GSD File** button it is possible to save the GSD file for the PROFIBUS side. With this feature you can save the configuration of the gateway of the PROFIBUS side.



### Note:

When you import the .gsd file on your Master PROFIBUS you have to add all the modules that are present inside it.

The screenshot shows a dialog box titled "SET COMMUNICATION". It has two main sections: "PROFIBUS" and "Ethernet".

**PROFIBUS section:**

- ID Dev.: 21
- Baud rate: Auto Baudrate (dropdown menu)
- N Byte IN: 244
- N Byte OUT: 244

**Ethernet section:**

- IP ADDRESS: 192.168.2.1
- SUBNET Mask: 255.255.255.0
- Port: 10001
- Protocol:  TCP,  UDP

At the bottom, there are two buttons: "OK" (with a green checkmark) and "Cancel" (with a red X).

Figure 3: "Set Communication" window



### UPDATE VIA TCP:

Section "Update Via TCP" (Fig. 4):

In order to load the parameters or update the firmware in the gateway, follow these instructions:

- Connect the Ethernet cable from your PC to the gateway;
- Insert the IP address of the Web Server;
- Press the "Ping" button to check the connection of the Gateway;
- Press the "Next" button;
- Select the operations you want to do. It is possible to select only "Firmware", only "Project" or both of them;
- Press the "Execute update firmware" button to start the upload.

At this point the configuration/firmware on the device is correctly updated.

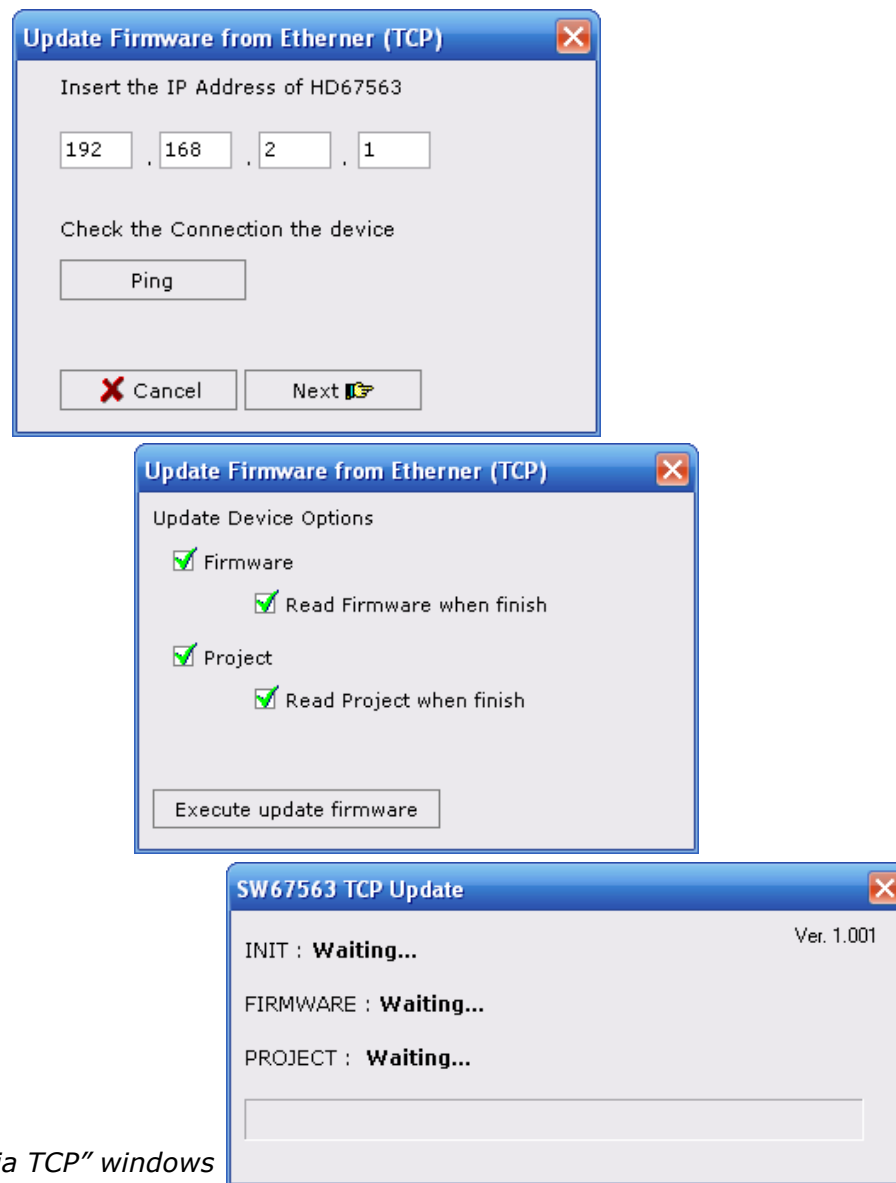


Figure 4: "Update Via TCP" windows

### UPDATE VIA SERIAL:

Section "Update Via Serial" (Fig. 5):

In order to load the parameters or update the firmware in the gateway, follow these instructions:

- Turn OFF the device;
- Connect the Null Modem cable from your PC to the Gateway;
- Insert the Boot Jumper (For more info see the "Connection scheme");
- Turn ON the device;
- Check the "BOOT Led". It must blink quickly (For more info see the "Connection scheme");
- Select the COM port and press the "Connect" button;
- Press the "Next" button;
- Select the operations you want to do. You can select only "Firmware", only "Project" or both of them;
- Press the "Execute update firmware" button to start the upload;
- When all the operations are "OK" turn OFF the device;
- Disconnect the Boot Jumper;
- Disconnect the RS232 Cable;
- Turn ON the device.

At this point the configuration/firmware on the device is correctly updated.

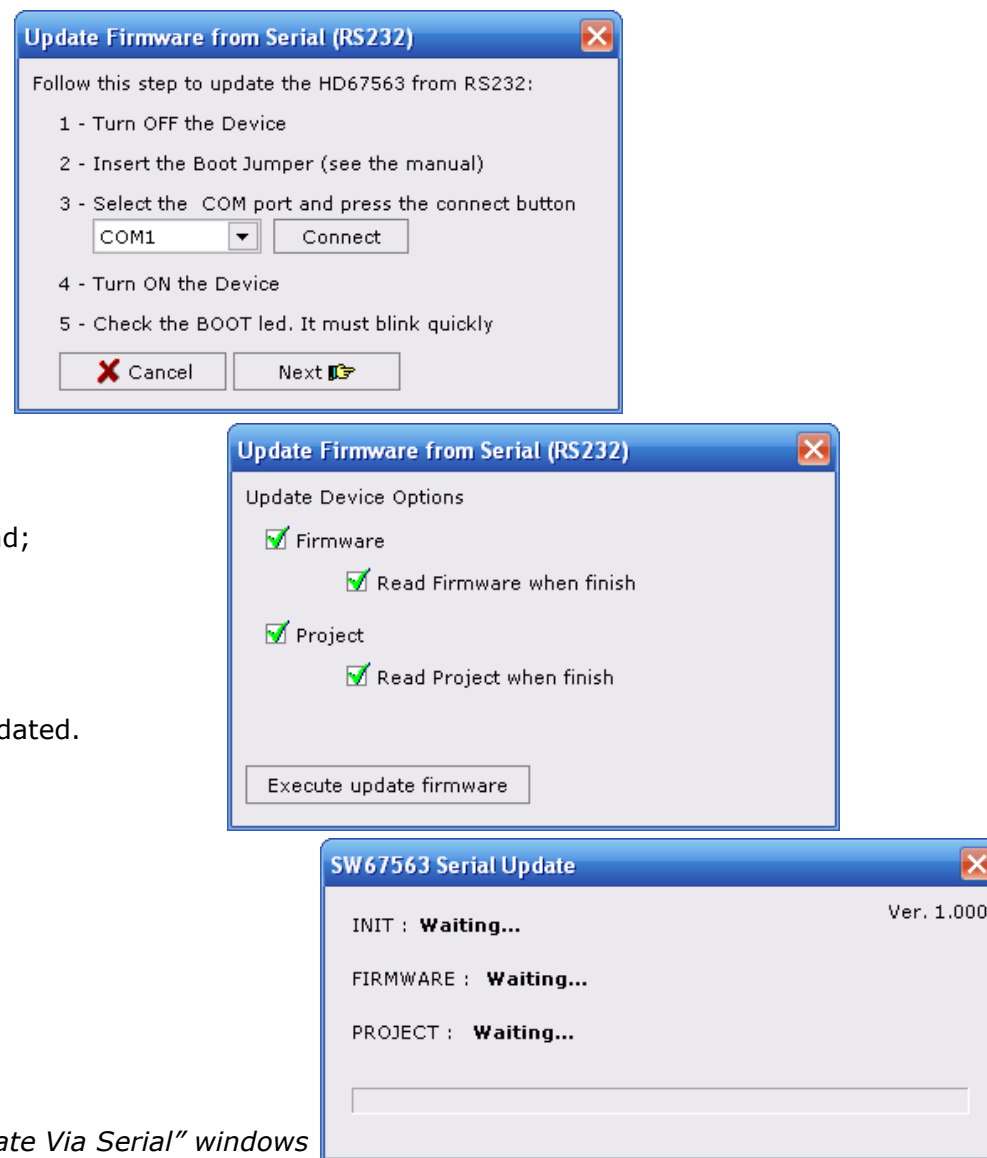


Figure 5: "Update Via Serial" windows

**CHARACTERISTICS OF THE CABLES:**

The connection at Ethernet socket must be with a Ethernet Cable with a RJ45 plug.

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.

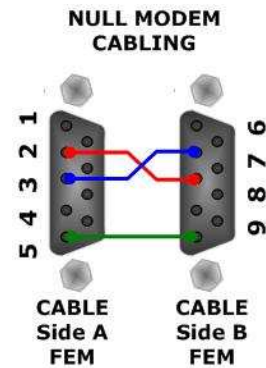


Figure 6: Null modem cabling

**ETHERNET PROTOCOL:**

This protocol has got a single function for write and/or read frames. This routine can use both the UDP protocol and the TCP by setting the parameter wanted with the Compositor SW67563.

The request include the following byte:

Byte Number	Description
1	Starting Address Read Hi
2	Starting Address Read Lo
3	Number of Byte to Read Hi
4	Number of Byte to Read Lo
5	Starting Address Write Hi
6	Starting Address Write Lo
7	Number of Byte to Write Hi
8	Number of Byte to Write Lo
9÷n+8	Data Write

n=Number of Byte to Write

If the “Number of Byte to Write” has got the value 0x0000 there are not data and so the frame has got only eight byte.

The response includes the following byte:

Byte Number	Description
1	Write Error Byte
2	Read Error Byte
3÷n+2	Data Read

n=Number of Byte to Read

The “Write/Read Error Byte” (Byte 1/Byte 2) can have three values:

- 0x00: No error;
- 0x01: Starting Address doesn’t exist;
- 0x02: Too many Data to Read/Write.

If you do not want to Read/Write it is necessary to insert the value 0x0000 in the bytes “Starting Address Read/Write” and “Number of Byte to Read/Write”.

If there are not Data to read (Starting Address Read = 0x0000, Number of Byte to Read = 0x0000) only the first two bytes are present.

**Table of errors:**

In the case with this feature (N Byte IN=0x0F, N Byte OUT=0x14)

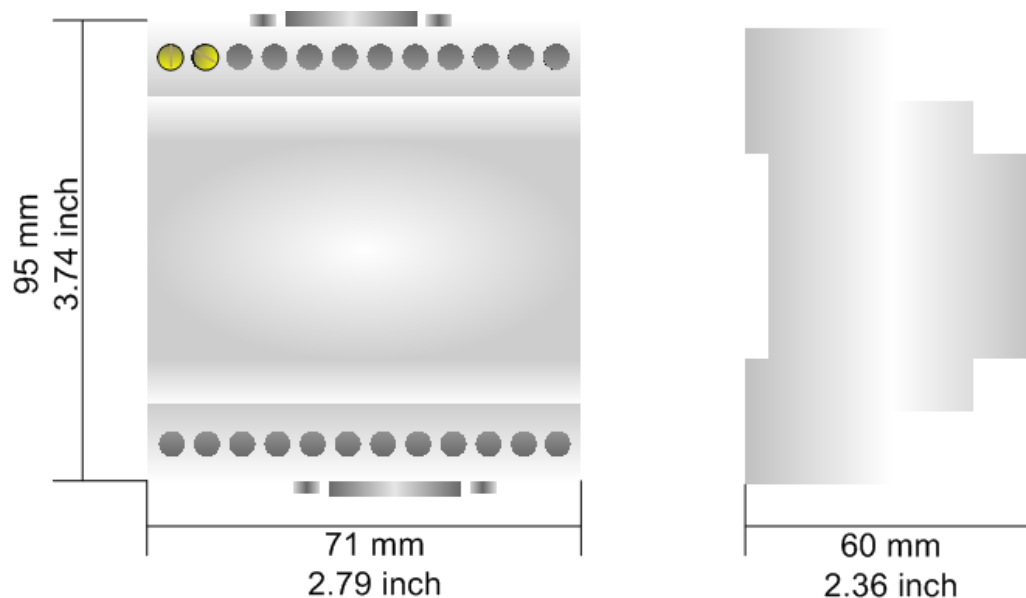
Starting Address Read	Number of Byte to Read	Read Error Byte
0x0007	0x0005	0x00
0x0000	0x0005	0x01
0x0003	0x0013	0x02
0x0005	0x0000	0x02
0x0015	0x0003	0x02

Starting Address Write	Number of Byte to Write	Write Error Byte
0x0006	0x0004	0x00
0x0000	0x0006	0x01
0x0002	0x0011	0x02
0x0004	0x0000	0x02
0x0010	0x0002	0x02

**Examples:**

- 1) We want to write ten bytes from Starting Address 1 and read ten bytes from Starting Address 15. So the string of hexadecimal numbers is:  
 REQ: [00][0F][00][0A][00][01][00][0A][10][11][12][13][14][15][16][17][18][19]  
 RES: [00][00][20][21][22][23][24][25][26][27][28][29]
- 2) We want to read five bytes from Starting Address 7. So the string of hexadecimal numbers is:  
 REQ: [00][07][00][05][00][00][00][00]  
 RES: [00][00][28][29][2A][2B][2C]
- 3) We want to write four bytes from Starting Address 9. So the string of hexadecimal numbers is:  
 REQ: [00][00][00][00][00][09][00][04][30][31][32][33]  
 RES: [00][00]

**MECHANICAL DIMENSIONS:**



Housing: PVC  
Weight: 200g (Approx)

*Figure 7: Mechanical dimensions scheme*

**ORDER CODE:**

Order Code: **HD67563M** - PROFIBUS Slave / Ethernet - Converter

**ACCESSORIES:**

Order Code: **AC34001** - Rail DIN - Power Supply 220/240V AC 50/60Hz – 12 V AC

Order Code: **AC34002** - Rail DIN - Power Supply 110V AC 50/60Hz – 12 V AC

Order Code: **AC34104** - European Input - Power Supply 230V AC 50Hz – 12 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 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

**RETURN POLICY:**

If while using your product you have any problem and you wish to exchange or repair it, please do the following:

- 1) 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.
- 2) 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.

**PRODUCTS AND RELATED DOCUMENTS:**

Part	Description	URL
HD67118	Converter RS232 to RS485 Isolated	<a href="http://www.adfweb.com?Product=HD67118">www.adfweb.com?Product=HD67118</a>
HD67119	Converter USB 2.0 to RS485 Isolated	<a href="http://www.adfweb.com?Product=HD67119">www.adfweb.com?Product=HD67119</a>
HD67507	Gateway Modbus TCP Server to RTU Master	<a href="http://www.adfweb.com?Product=HD67507">www.adfweb.com?Product=HD67507</a>
HD67510	Gateway Modbus TCP Client to RTU Slave	<a href="http://www.adfweb.com?Product=HD67510">www.adfweb.com?Product=HD67510</a>