

# User Manual

Revision 1.002  
English

## Modbus RTU / Modbus ASCII - Converter

(Order Code: HD67075-A1)

for Website information:

[www.adfweb.com?Product=HD67075](http://www.adfweb.com?Product=HD67075)

for Price information:

[www.adfweb.com?Price=HD67075-A1](http://www.adfweb.com?Price=HD67075-A1)

### Benefits and Main Features:

- ▶ Very easy to configure
- ▶ Low Cost
- ▶ Rail mountable
- ▶ Wide supply input range
- ▶ Galvanic Isolation
- ▶ Industrial temperature range:  
-40°C / 85 °C (-40°F / 185°F)



HD67075-A1

For others products for Modbus:

#### Converters / Adapters

See also the following links:

- [www.adfweb.com?Product=HD67118](http://www.adfweb.com?Product=HD67118) (Modbus RTU Slave)
- [www.adfweb.com?Product=HD67119](http://www.adfweb.com?Product=HD67119) (Modbus TCP Master)
- [www.adfweb.com?Product=HD67120](http://www.adfweb.com?Product=HD67120) (Modbus TCP Slave)

For others Gateways / Bridges:

#### Modbus RTU Master / Slave

See also the following links:

- [www.adfweb.com?Product=HD67001](http://www.adfweb.com?Product=HD67001) (CANopen)
- [www.adfweb.com?Product=HD67502](http://www.adfweb.com?Product=HD67502) (CANopen)
- [www.adfweb.com?Product=HD67011](http://www.adfweb.com?Product=HD67011) (CAN bus)
- [www.adfweb.com?Product=HD67012](http://www.adfweb.com?Product=HD67012) (CAN bus)

#### Modbus TCP Client to Modbus RTU Slave

See also the following link:

[www.adfweb.com?Product=HD67510](http://www.adfweb.com?Product=HD67510)

Do you have an your customer protocol?

See the following links:

[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
1.000	25/08/2011	FI	All	First release version
1.001	02/11/2011	FI	All	Revision
1.002	15/02/2013	Nt	All	Added new chapters

**WARNING:**

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**TRADEMARKS:**

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**SECURITY ALERT:****GENERAL INFORMATION**

To ensure safe operation, the device must be operated according to the instructions in the manual. When using the device 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:**

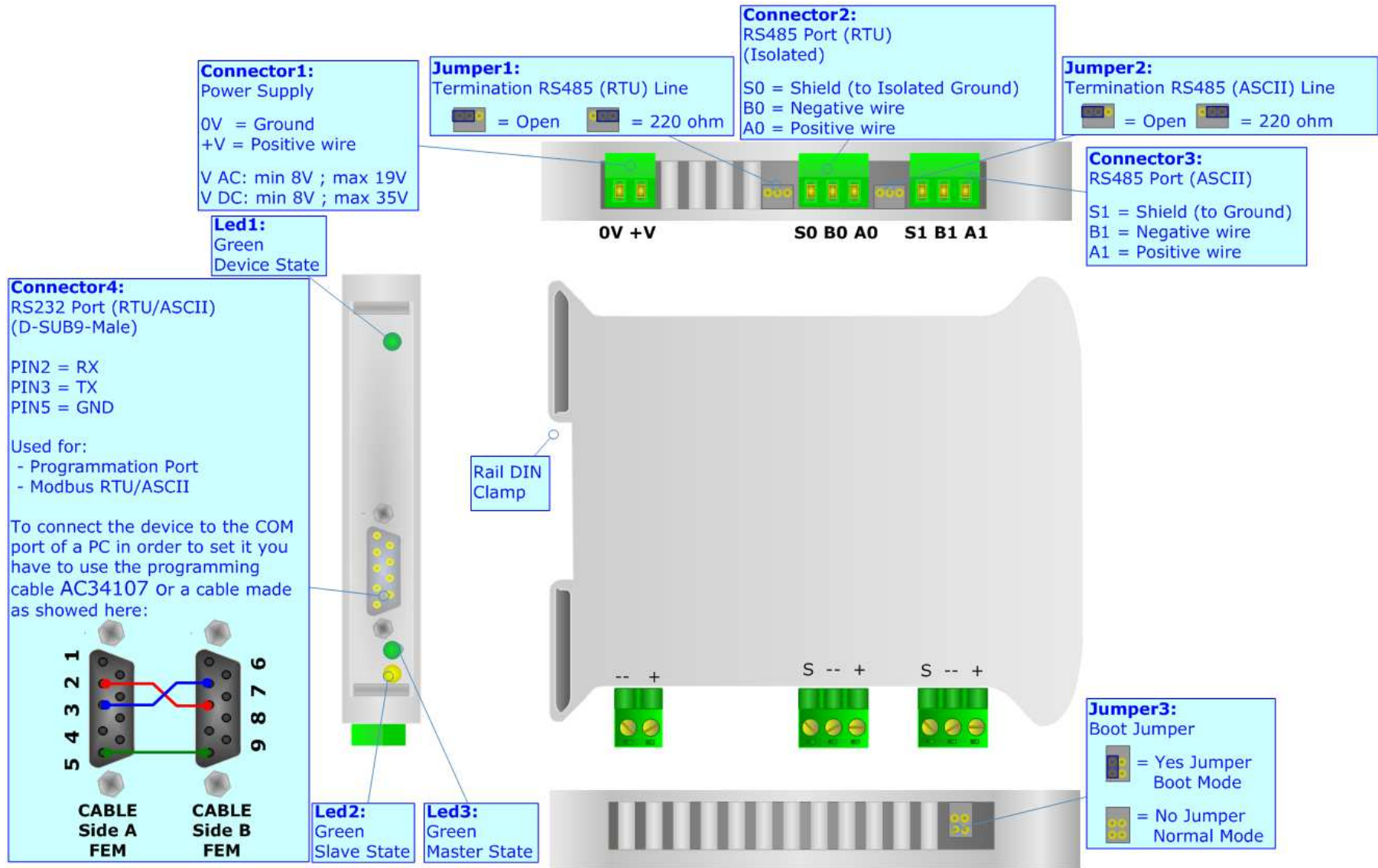


Figure 1: Connection Scheme for HD67075-A1

**CHARACTERISTICS:**



This "Modbus RTU from/to Modbus ASCII" Gateway is used for connect Modbus RTU devices and Modbus ASCII devices together, in a same network. The gateway has the possibility to select which side is used for the Modbus RTU and which for the ASCII, for both cases Master and Slave.

The device has the following characteristics:

- Galvanic isolation between the two RS485;
- Free configuration software;
- Mountable on 35mm DIN Rail;
- Temperature range -40°C to 85°C.

**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.

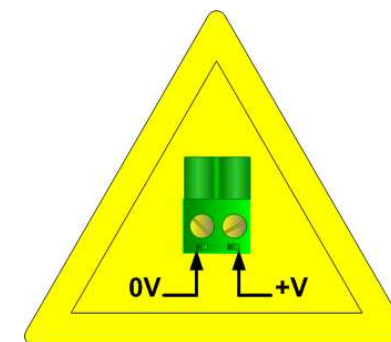
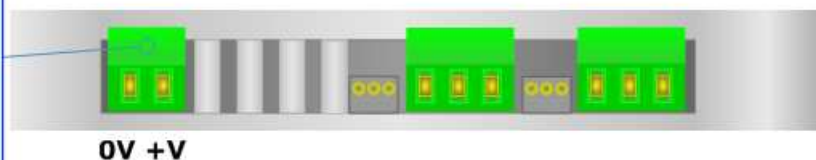
VAC 		VDC 	
Vmin	Vmax	Vmin	Vmax
8V	19V	8V	35V

Consumption at 24V DC:

Device	W/VA
HD67075-A1	4

**Caution: Not reverse the polarity power**

**Connector1:**  
Power Supply  
0V = Ground  
+V = Positive wire  
V AC: min 8V ; max 19V  
V DC: min 8V ; max 35V



HD67075-A1

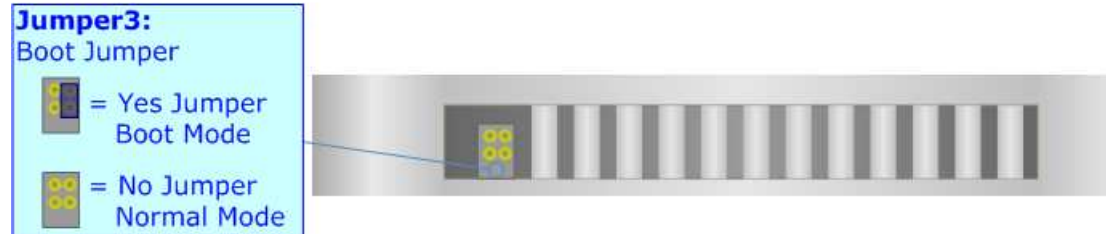
**FUNCTION MODES:**

The device has got two functions mode depending of the position of the 'Jumper3':

- The first, without the jumper inserted (factory setting), is used for the normal working of the device.
- The second, with the jumper inserted, is used for upload the Firmware/Project.

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

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



**LEDS:**

The device has got three 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	Blink slowly	Blink quickly
2: Slave State	Changes state when arrives a correct Modbus request	Off
3: Master State	Changes state when arrives a correct reply to the request	Off





## USE OF COMPOSITOR SW67075:

The software allows the device parameters to be defined.

When launching the SW67075, the following window appears. (The SW67075 is downloadable on the site <http://www.adfweb.com/home/download/download.asp> This manual is referenced to the last version of the software present on our web site).

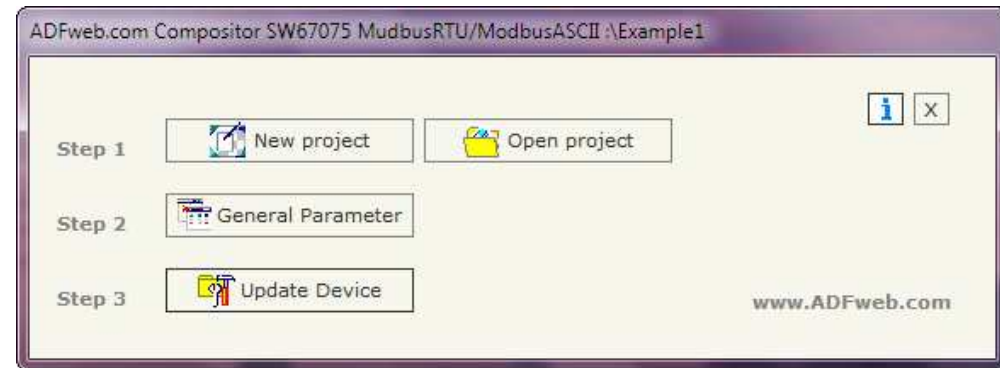


Figure 5: Main window for SW67075

## 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 "ModBus RTU from/to Modbus ASCII" Gateway 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"**;
- When a new project is created or an existent project is open, it will be possible to access the various configuration sections of the Software:
  - **"General Parameter"**.

**GENERAL PARAMETER:**

This section defines the fundamental communication parameters of two Buses, Modbus RTU and Modbus ASCII.

By pressing the **General Parameter** button from the main window for SW67075 (Fig. 1) the window "General Parameter" appears (Fig. 2).

The various meanings of the fields are:

- At the field "Operation Mode" it is possible to select the working mode of the device. The **"Modbus RTU Slave <--> Modbus ASCII Master"** is used for connect a Master Modbus RTU device like a PLC (or other) to one or more Modbus ASCII slaves devices; the **"Modbus ASCII Slave <--> Modbus RTU Master"** is used for connect a Master Modbus ASCII device like a PLC (or other) to one or more Modbus RTU slaves devices.
- If the field **"RS232"** is checked the serial line in use is the RS232, otherwise is the **"RS485"**;
- In the field **"Baud rate"** the velocity of the two buses is defined;
- In the field **"Parity"** the Modbus parity of the two buses is defined;
- **"Timeout"** is the maximum time that the device attends for the answer from the Slave interrogated.

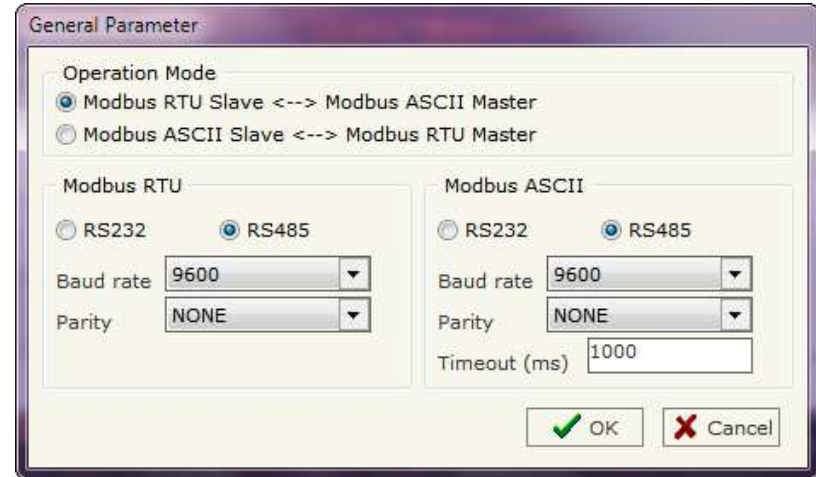


Figure 2: "General parameter" window

**UPDATE DEVICE:**

This section is used for update the Firmware and/or the Program on the device.

By pressing the **"Update Device"** button from the main window for SW67075 (Fig. 1) the window "Update Firmware from Serial (RS232)" appears (Fig. 3).

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" of the Gateway);
- Turn ON the device;
- Check the "BOOT Led". It must blink quickly (more info see the "Connection scheme" of the Gateway);
- 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;
- Turn ON the device.

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

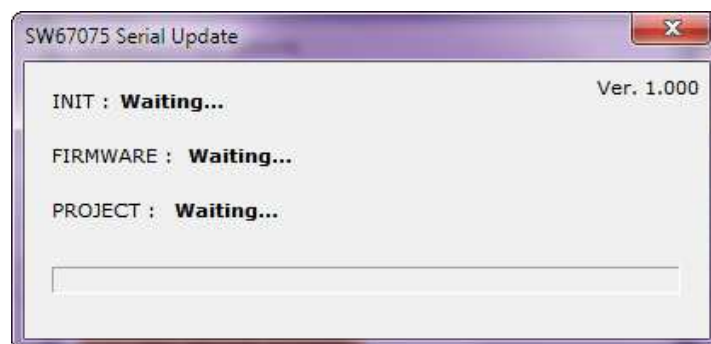


Figure 3: "Update Device" windows

**Note:**

When you install a new version of the software it is better if the first time you do the update of the Firmware in the HD67075-A1 device.

**Warning:**

If the Fig. 4 appears when you try to do the Update before require assistance try these points:

- Check if the serial COM port selected is the correct one;
- Check if the serial is connected between the PC and the device;
- Try to repeat the operations for the updating;
- If you are using a dongle try with a native COM port or change the dongle;
- Try with another PC;
- Try to restart the PC.

**Note:**

In the case of HD67075-A1 you have to use the software "SW67075":  
[www.adfweb.com/download/filefold/SW67075.zip](http://www.adfweb.com/download/filefold/SW67075.zip).



Figure 4: "Protection" window

**MECHANICAL DIMENSIONS:**

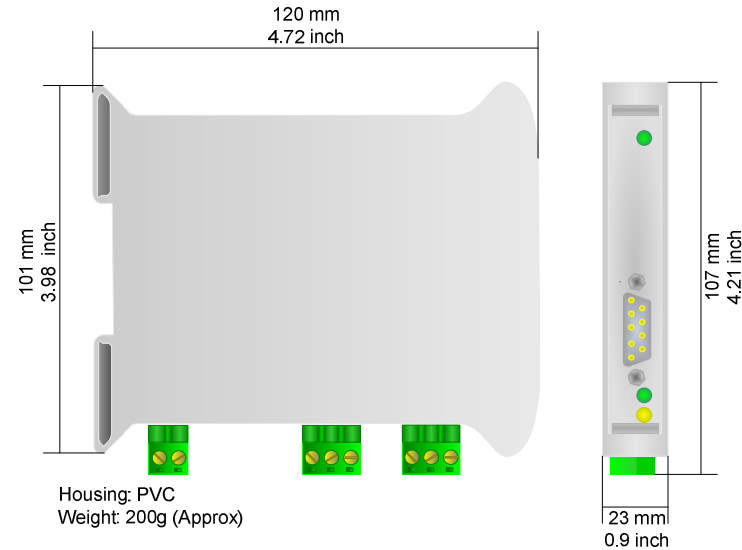


Figure 5: Mechanical dimensions scheme for HD67075-A1

**ORDER CODE:**

Order Code: **HD67075-A1** - Modbus RTU / Modbus ASCII - Converter

**ACCESSORIES:**

- Order Code: **AC34107** - Null Modem Cable Fem/Fem DSub 9 Pin 1,5 m
- Order Code: **AC34114** - Null Modem Cable Fem/Fem DSub 9 Pin 5 m
- 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

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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](mailto:support@adfweb.com)

**RETURN POLICY:**

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

- 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>