User Manual

Revision 1.004
English

Gateway
ProfiBus Slave to Serial Communication Master

(Order Code: HD67561)

HD67561

Benefits and Main Features:

- Very easy to configure
- Low cost
- Industrial temperature range:
  -30°C / 70°C (-22°F / 158°F)

INDEX:

UPDATED DOCUMENTATION:

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REVISION LIST:

Revision	Date	Author	Chapter	Description
1.000	11/09/2008	Fl	All	First release version
1.001	13/11/2008	Fl	All	New software version
1.002	15/04/2010	Dp	All	Add new features
1.003	15/07/2010	FT	All	Revision
1.004	03/11/2010	Dp	All	Add new features

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CONNECTION SCHEME:

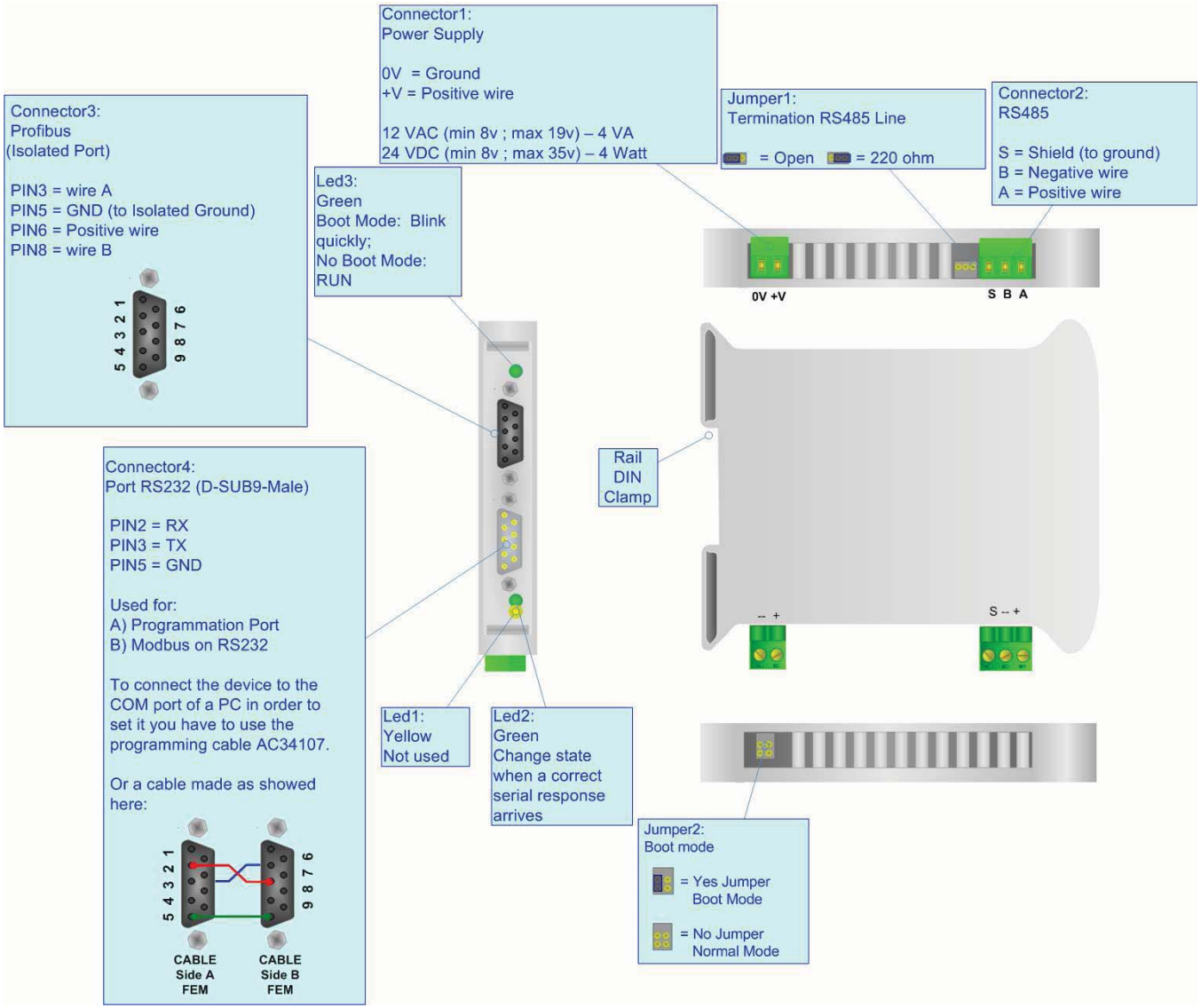


Figure 1: Connection scheme for HD67561

CHARACTERISTICS:

The Configurable ProfiBus Slave to Serial Communication Master Gateway allows the following characteristics:

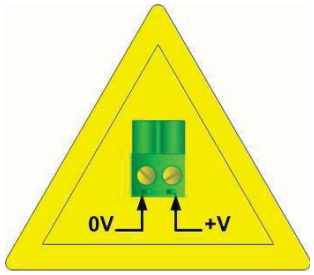
- Baud Rate and Parity changeable with software;
- Mountable on Rail DIN;
- Temperature range -30°C to 70°C;
- Serials Protocols supported:
  - Simple ASCII Protocol;
  - Simple Binary Protocol;
  - Modbus;
  - JBUS.

POWER SUPPLY:

Recommended Power Supply	
VDC	**VAC**
24v	**12v**

VDC		**VAC**	
Vmin	**Vmax**	**Vmin**	**Vmax**
8v	**35v**	**8v**	**19v**

Caution: Not reverse the polarity power .



HD67561

CONFIGURATION:

You need Compositor SW67561 software on your PC in order to perform the following:

- Define the parameter of the ProfiBus;
- Define the parameter of the Serial lines;
- Define the frames to read or write.

USE OF COMPOSITOR SW67561:

To configure the Gateway, use the available software that runs with Windows, called SW67561. It is downloadable on the site and its operation is described in this document.
When launching the SW67561 the right window appears (Fig. 2).

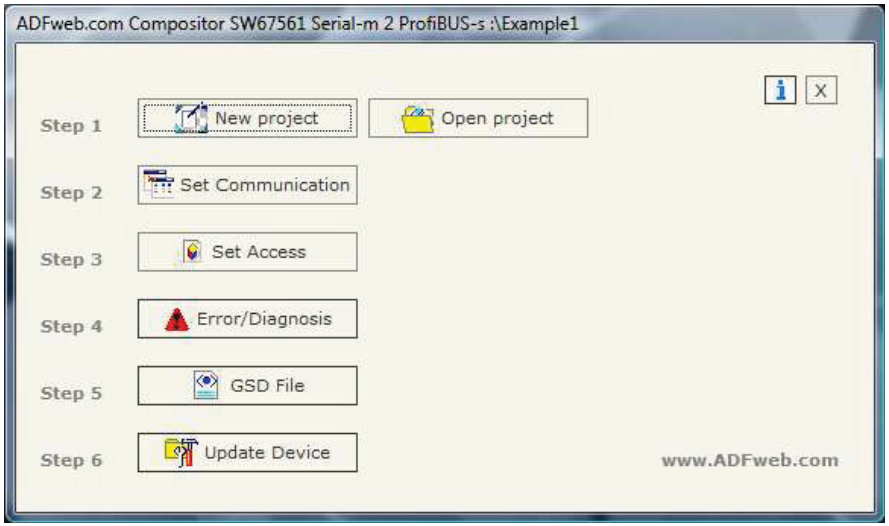


Figure 2: Main window for SW67561

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 to Serial Communication 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".

SET COMMUNICATION:

This section defines the fundamental communication parameter of two Buses, Serial and ProfiBus.

By pressing the "Set Communication" button from the main window for SW67561 (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 Serial.

The means of the fields for "Serial" are:

- If the field "RS232" is checked, the serial line in use is the RS232, otherwise if the field "RS485" is checked, the serial line in use is the RS485;
- In the field "Baud Rate" the baudrate for the serial line is defined;
- In the field "Parity" the parity of the serial line is defined;
- In the field "TimeOut" there is the maximum time that the device attends for the answer from the Slave interrogated;
- In the field "Cyclic Delay" the delay between two requests is defined;
- In the subsection "Protocol" it is possible to select the protocol that you wish to use between the following:
  - "Modbus RTU";
  - "Modbus ASCII";
  - "JBUS";
  - Simple "Binary" Protocol;
  - Simple "ASCII" Protocol.
- If the field "Write on Change Data" is checked, only when data change the value in PROFIBUS the data are writen in serial.
- If the field "Cyclic Write" is checked, the data are writen every time by gateway.

The means of the fields for "ProfiBUS" are:

- In the field "ID Dev." the address of the ProfiBus side is defined;
- In the field "Baud Rate" the baudrate for the ProfiBus is defined;
- In the field "N Byte IN" the number of byte from the slave ProfiBus to the gateway is defined;
- In the field "N Byte OUT" the number of byte from the gateway to the slave ProfiBus is defined.

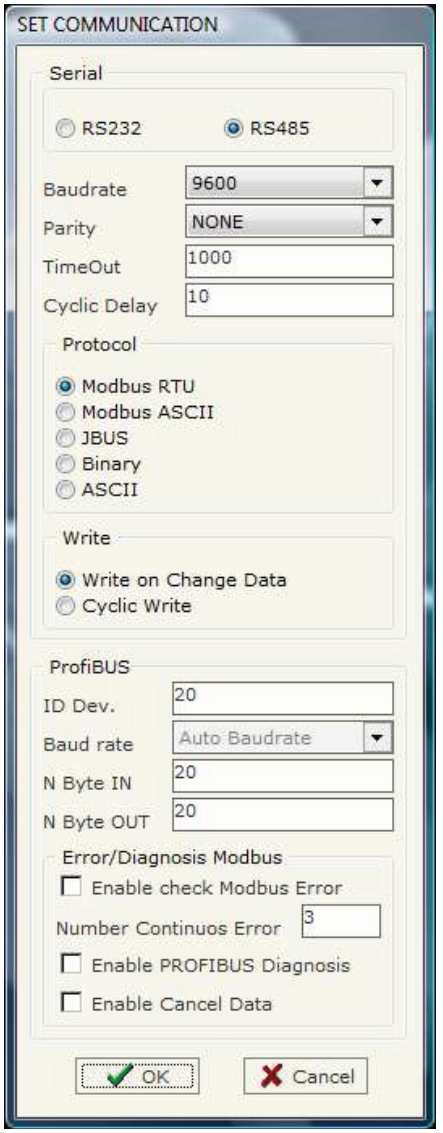


Figure 3: "Set Communication" window

- If the field “Enable check Modbus Error” is checked, the gateway can advice a problem with one or more devices in Modbus network.
- In the field “Number Continuos Error” the number of continue errors to the same Modbus device before signed the error/diagniostic.
- If the field “Enable PROFIBUS Diagosis” is checked, the gateway use the Diagnosis to show an error of one or more Modbus device. (The “Enable check Modbus Error” must be selected for enable this option).
- If the field “Enable Cancel Data” is checked, the gateway set to zero all the data of that modbus devices. (The “Enable check Modbus Error” must be selected for enable this option).

SET ACCESS:

By pressing the "Set Access" button from the main window for SW67561 (Fig. 2) the window "Set SDO Access" appears.

This window is divided in two parts, the "ProfiBus IN --> Serial Read" (Fig. 4) and the "Serial Write --> ProfiBus OUT" (Fig. 5).
The first part ("ProfiBus IN --> Serial Read") is used to read the data that arrived from the Slave ProfiBus.
The second part ("Serial Write --> ProfiBus OUT") is used to write the data that will be sent to the Slave ProfiBus.

ProfiBus IN --> Serial Read

The means of the fields are:

- In the field "Slave ID" the address of the Modbus device you have to read is defined;
- In the field "Type" insert the data type of the Register you would like to read. You can choose between the following:
  - Coil Status;
  - Input Status
  - Holding Register;
  - Input Register.
- In the field "Address Register" the start address of the register to be read is defined;
- In the field "NPoint" insert the number of consecutive registers to be read;
- If the field "SWAP" is checked, the data read is swapped
- In the field "Address ProfiBUS" the address for the ProfiBus is defined;
- In the field "Mnemonic" the description for the request is defined.

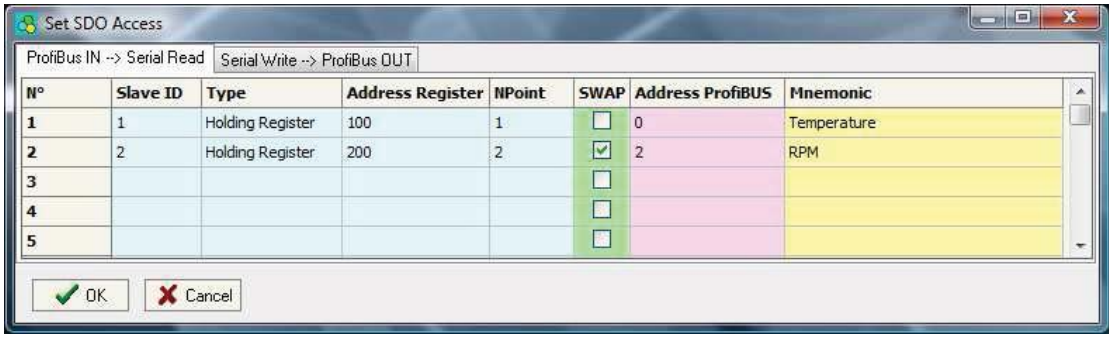


Figure 4: "Set SDO Access / ProfiBus IN --> Serial Read" window

Serial Write --> ProfiBus OUT

The means of the fields are:

- In the field "Slave ID" the address of the Modbus device that you must write is defined;
- In the field "Address Register" the start address of the register to be written is defined;
- In the field "NPoint" insert the number of consecutive registers to be written;
- If the field "SWAP" is checked, the data written is swapped
- In the field "Address ProfiBus" the address for the ProfiBus is defined;
- In the field "Mnemonic" the description for the request is defined.

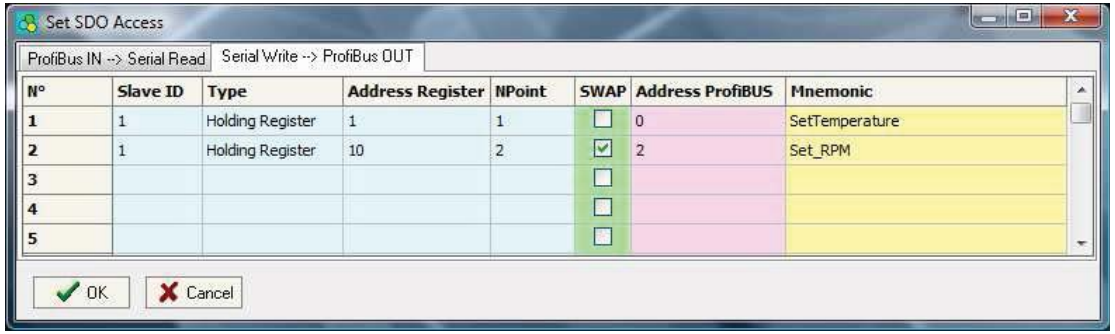


Figure 5: "Set SDO Access / Serial Write --> ProfiBus OUT" window

ERROR/DIAGNOSIS

By pressing the "Set Access" button from the main window for SW67561 (Fig. 2) the window "Error/Diagnosis" appears.

In this window is possible to insert all the Modbus devices checked by the gateway.
The table give the position of the bit that are set if the device is in error in the Diagnosis array in PROFIBUS.
The Diagnosis has always 6 byte fixed, then if there is some problem with some Modbus devices it increase the number of byte.
If there a problem in Modbus side, after the first 6 byte, there is a byte with a fix part (0x40) plus the number of follow bytes plus 1. For example if you want to monitor 10 Modbus devices you fond the first byte to the value 0x43 followed from 2 other byte that contain the status of each devices. If the bit is to 1 there is a problem on it device. Each byte can contain at maximum 8 Modbus devices.

For enable this feature you have to checked the "Enable check Modbus Error" option in the Set Communication section.

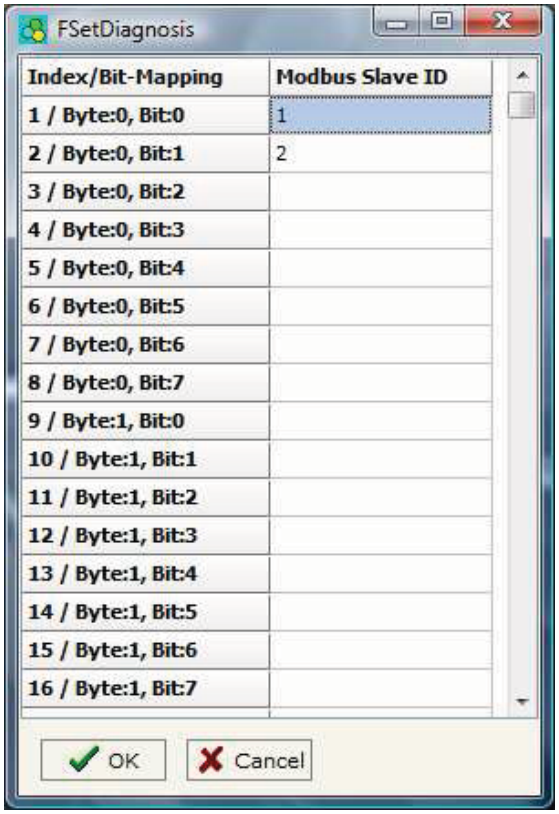


Figure 6: "Error/Diagnosis" window

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.

UPDATE DEVICE:

Section "Update Device" (Fig. 7):

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 update.

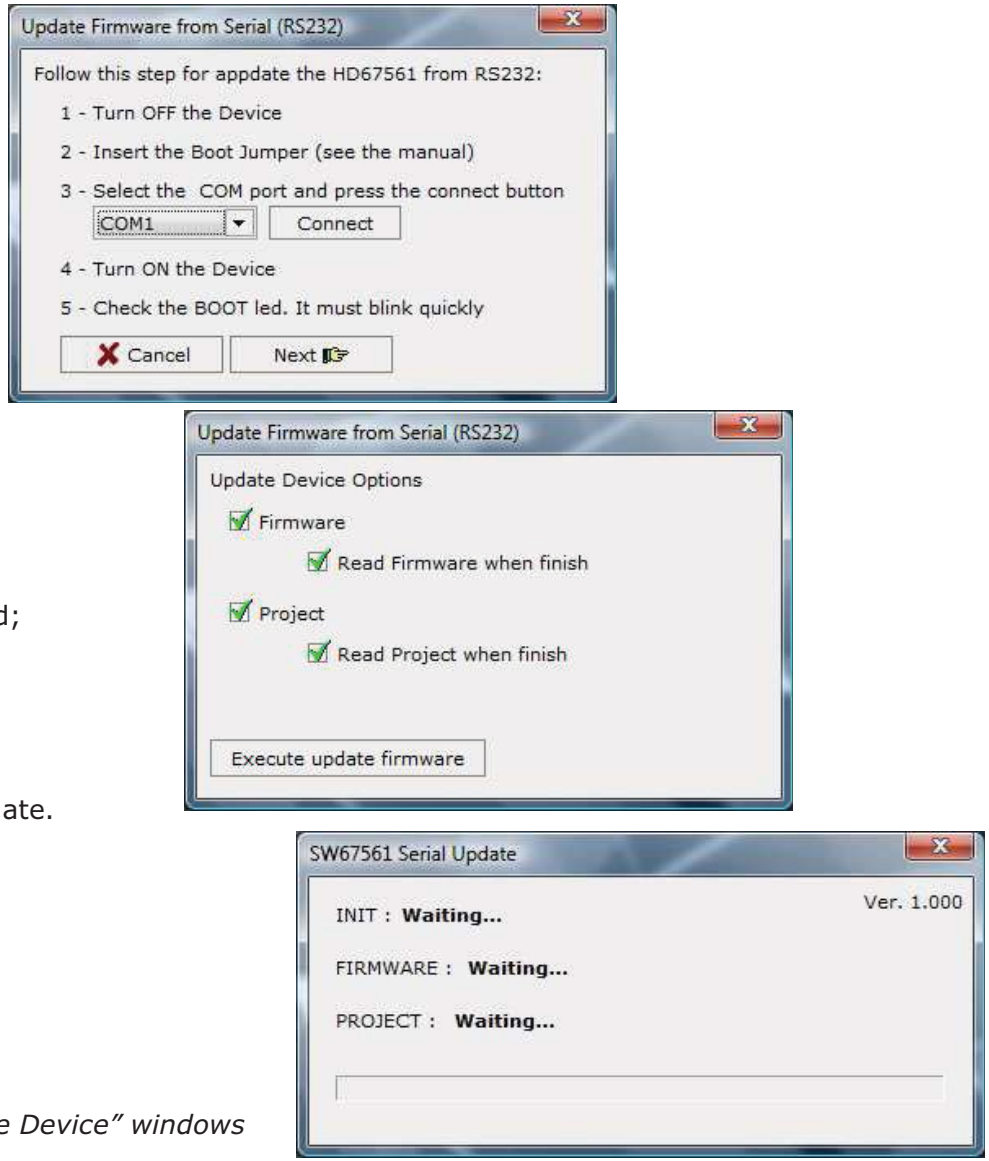


Figure 7: "Update Device" windows

CHARACTERISTICS OF THE CABLES:

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 RS232C Cable not exceed 15 meters.

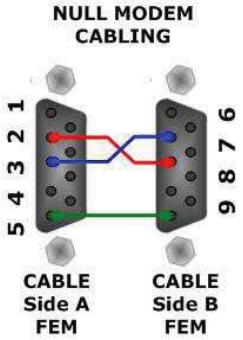


Figure 8: Null modem cabling

MECHANICAL DIMENSIONS:

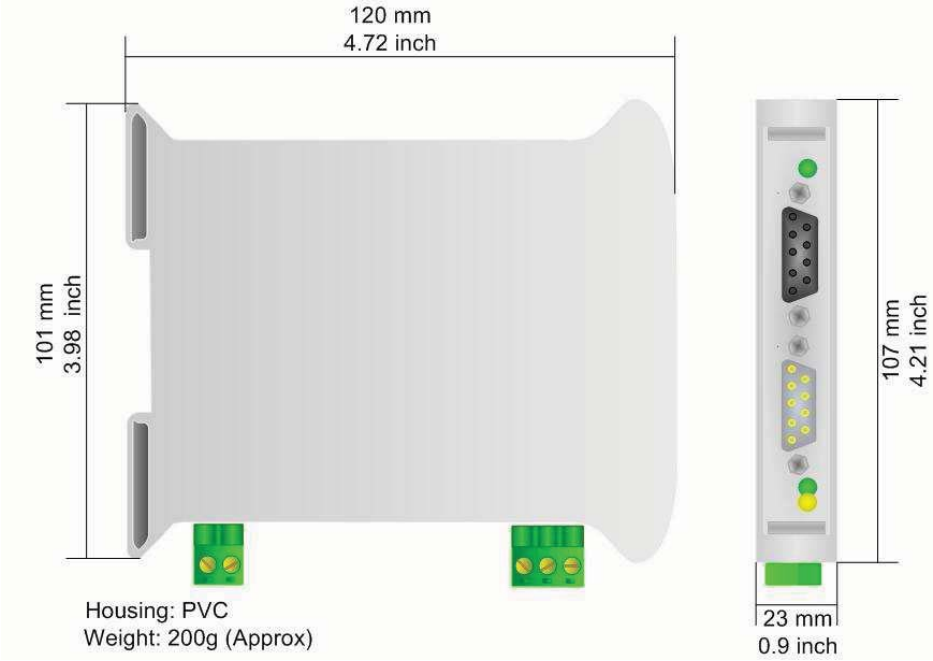


Figure 9: Mechanical dimensions scheme

ORDER CODE:

Order Code: **HD67561** **-** Gateway – ProfiBus Slave to Serial Communication Master

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

WARRANTIES AND TECHNICAL SUPPORT:

For fast and easy technical support for your ADFweb.com SRL products, consult our internet support at
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 . 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
HD67121	Gateway CANopen / Canopen
HD67502	Gateway CANopen / Modbus - RTU
HD67505	Gateway CANopen / Modbus – Ethernet TCP
HD67134	Gateway CANopen / DeviceNet
HD67117	CAN bus Repeater
HD67216	CAN bus Analyzer