

# User Manual

Revision 1.002  
English

## CANopen / DeviceNet Slave - Converter

(Order Code: HD67136)

for Website information:

[www.adfweb.com?Product=HD67136](http://www.adfweb.com?Product=HD67136)

for Price information:

[www.adfweb.com?Price=HD67136](http://www.adfweb.com?Price=HD67136)

### 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)



HD67136

For others Gateways / Bridges:

#### CANopen to Modbus

See also the following links:

- [www.adfweb.com?Product=HD67001](http://www.adfweb.com?Product=HD67001) (Modbus RTU Master)
- [www.adfweb.com?Product=HD67502](http://www.adfweb.com?Product=HD67502) (Modbus RTU Slave)
- [www.adfweb.com?Product=HD67004](http://www.adfweb.com?Product=HD67004) (Modbus TCP Master)
- [www.adfweb.com?Product=HD67505](http://www.adfweb.com?Product=HD67505) (Modbus TCP Slave)

#### CANopen to CANopen

See also the following link:

[www.adfweb.com?Product=HD67121](http://www.adfweb.com?Product=HD67121)

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 update.

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	08/08/2008	Fl	All	First release version
1.001	10/05/2010	MI Dp	All	Revision
1.002	13/02/2013	Nt	All	Added new chapters

**WARNING:**

ADFweb.com reserves the right to change information in this manual about our product without warning. ADFweb.com is not responsible for any error this manual may contain.

**TRADEMARKS:**

All trademarks mentioned in this document belong to their respective owners.

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

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

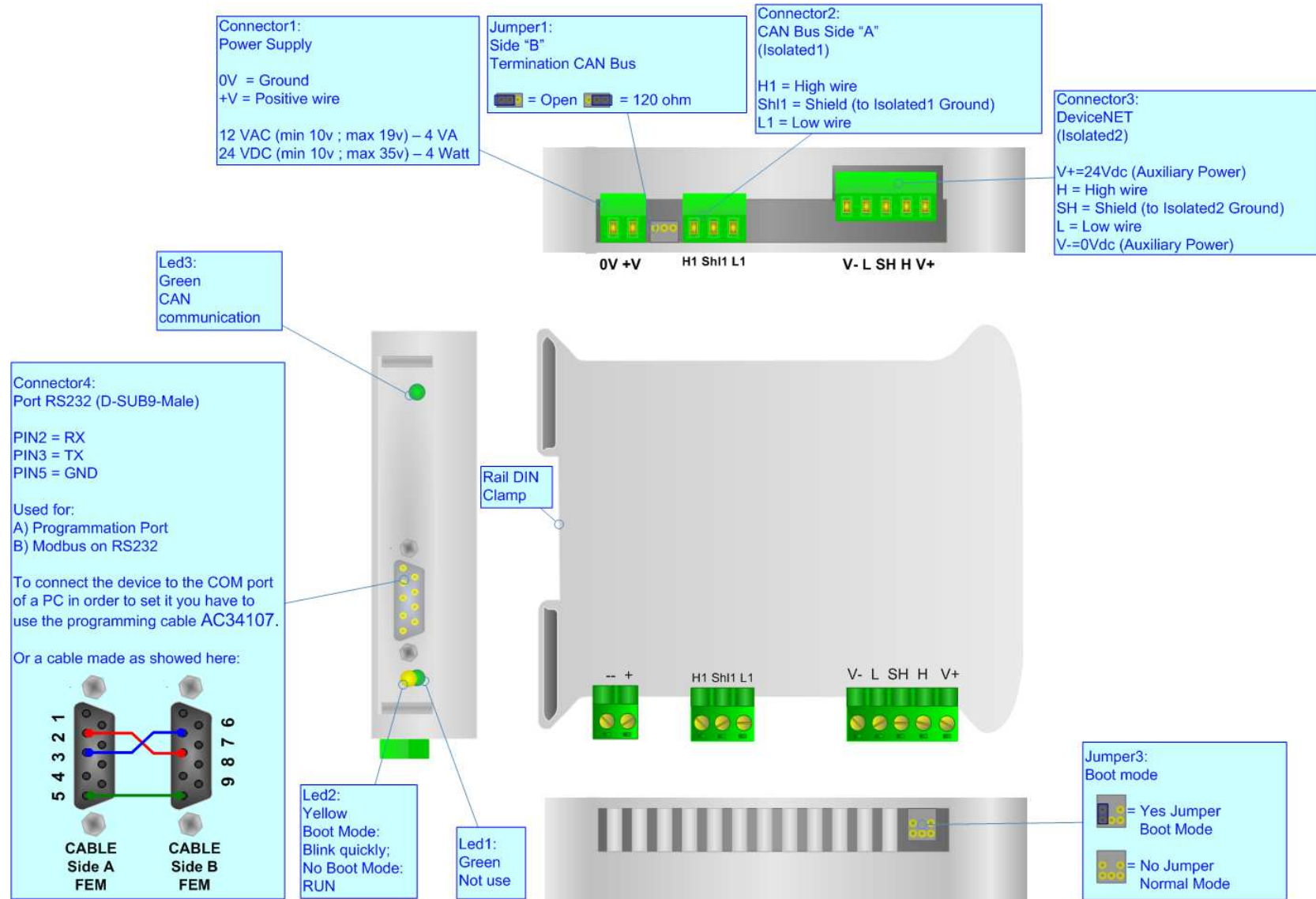


Figure 1: Connection scheme for HD67136

**CHARACTERISTICS:**

The configurable DeviceNet to CANopen gateway allows the following characteristics:

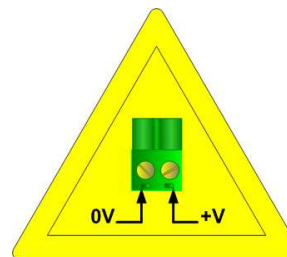
- Baud Rate changeable with software;
- Mountable on Rail DIN;
- Temperature range from -40°C to 85°C.

This device is a slave in both lines. The devices connected to this gateway are able to read / write the data present in HD67136 gateway.

**POWER SUPPLY:**

Recommended Power Supply	
VDC	VAC
24v	12v

**Caution: Not reverse the polarity power .**



HD67136

VDC		VAC	
Vmin	Vmax	Vmin	Vmax
10v	35v	10v	19v

**CONFIGURATION:**

You need Compositor SW67136 software on your PC in order to perform the following:

- Define the parameter of CANopen line;
- Define the parameter of DeviceNet line;
- Define the data accessible from the DeviceNet that goes through the SDO of CANopen;
- Define the data accessible from the DeviceNet that goes through the PDO of CANopen.

**USE OF COMPOSITOR SW67136:**

To configure the gateway use the available software that runs with Windows, called SW67136. It is downloadable on the site [www.adfweb.com](http://www.adfweb.com) and its operation is described in this document.

When launching the SW67136 the right window appears (Fig. 2).

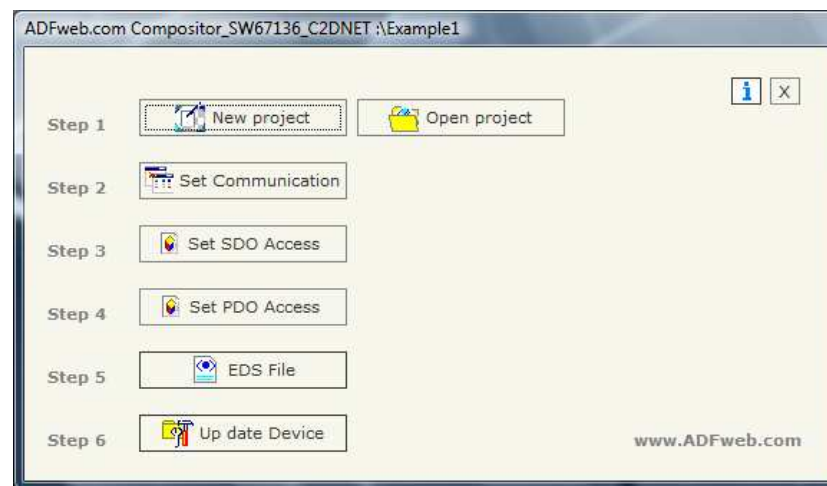


Figure 2: Main window for SW67136

**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 CANopen to DeviceNet 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:

- **"Set Communication";**
- **"Set SDO Access";**
- **"Set PDO Access".**

## SET COMMUNICATION:

This section defines the fundamental communication parameters of two Buses, CANopen and DeviceNet.

By pressing the "Set Communication" button from the main window for SW67136 (Fig. 2) the "Set communication" window appears (Fig. 3).

This window is divided in two sections, one to configure the CANopen network and the other for the DeviceNet.

The means of the fields for "CANopen" are:

- In the field "ID Dev." the address of the CANopen is defined;
- In the field "Baud rate" the baudrate of the CANopen line is defined;
- In the "Set Operational State at Start-Up" field you define the state of Operational at start-up;
- In the "Network Start at Start Up" field you define a command of start (operational) to all the devices in the CANopen network;
- In the "Delay" field the delay before sending the network command for the CANopen is defined.

The means of the fields for "DeviceNet" are:

- In the field "ID Dev." the address of the DeviceNet is defined;
- In the field "Baud rate" the baud rate of the DeviceNet line is defined.

"TimeOut SDO" is the is the maximum time that the device attends for the answer from the Slave interrogated.

The screenshot shows a dialog box titled "SET COMMUNICATION". It is divided into two main sections: "CANopen" and "DeviceNET".

**CANopen section:**

- "ID Dev.": Text box containing "10".
- "Baud rate": Dropdown menu showing "250K".
- Two checked checkboxes: "Set Operational State at Start-up" and "Network Start at Start-up".
- "Delay": Spin box showing "20" with a range of "0-255 sec.".

**DeviceNET section:**

- "ID Dev.": Text box containing "10".
- "Baud rate": Dropdown menu showing "250K".
- "TimeOut SDO (1/10 ms)": Text box containing "1000".

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

Figure 3: "Set Communication" window



## SET SDO ACCESS

By pressing the "Set SDO Access" button from the main window for SW67136 (Fig. 2) the "Set SDO Access" window appears (Fig. 4).

It is divided in two parts: the first is "DeviceNet IN" and the second is "DeviceNet OUT".

The means of the fields are the same for the two tables and they are the following:

- In the field "Index" insert the index of the SDO (coordinated with that SDO);
- In the field "Subindex" insert the subindex of the SDO (coordinated with the SDO);
- In the field "nByte" insert the length of the SDO;
- In the field "Mnemonic" you can insert a description.

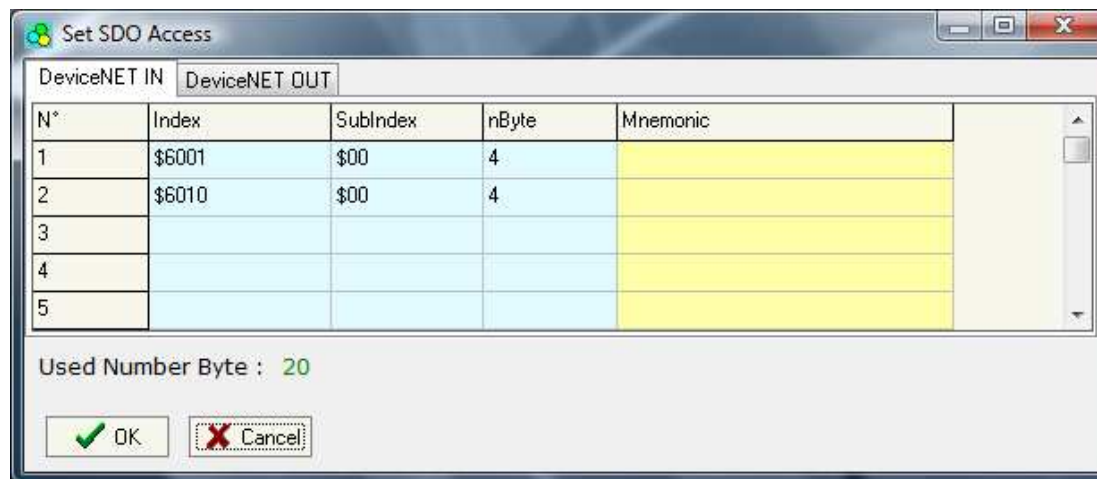


Figure 4: "Set SDO Access" window

### SET PDO ACCESS:

By pressing the "Set PDO Access" button from the main window for SW67136 (Fig. 2) the "Set PDO Access" window appears (Fig. 5).

It is divided in two parts: the first is "DeviceNet OUT --> Transmit PDO" and the second is "DeviceNet OUT --> Receive PDO".

The means of the fields are the same for the two tables and they are the following:

- In the field "Cob-ID" insert the complete address of the CANopen PDO that has the datas;
- In the field "Dimension" insert the length of PDO;
- In the field "Mnemonic" you can insert a description.

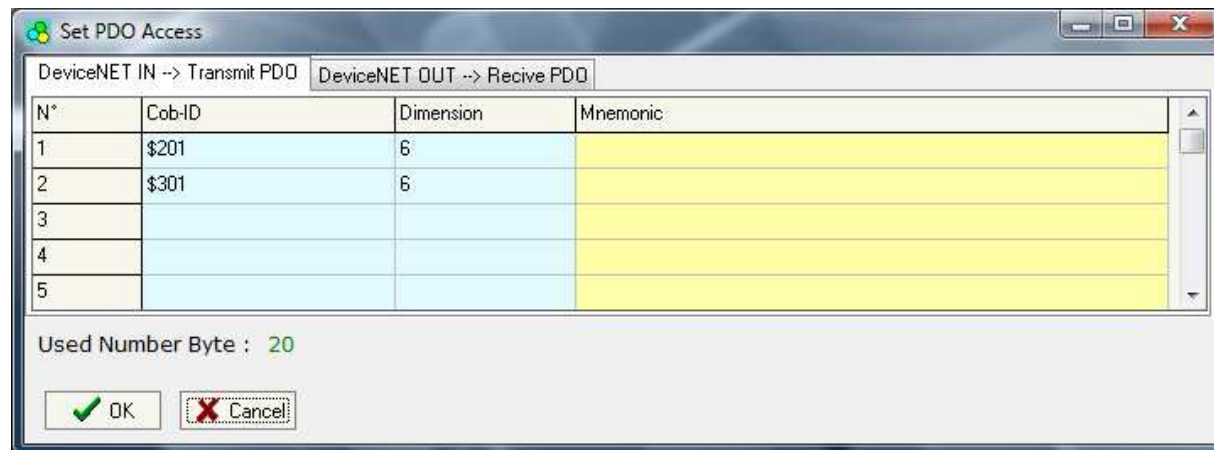


Figure 5: "Set PDO Access" window

### EDS FILE:

By pressing the "GDS File" button is possible to save the GDS file for the CANopen side. With this feature you can save the configuration of the gateway of the CANopen side.

**UPDATE DEVICE:**

Section "UP Date Device":

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 Fig. 1);
- Turn ON the Device;
- Check the Boot Led. It must blink quickly (For more info see Fig. 1)
- Select the COM port and press the "Execute update firmware" button to start the upload;
- When all the operation 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.

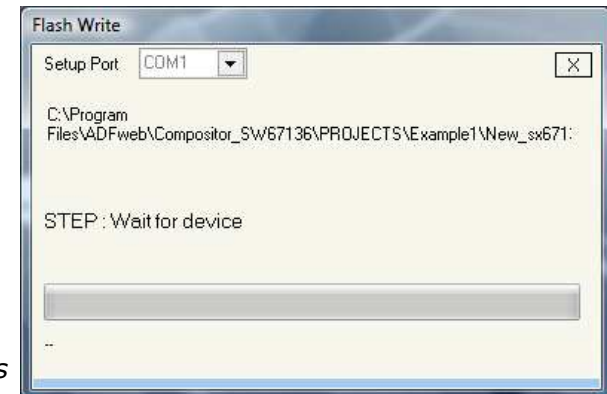
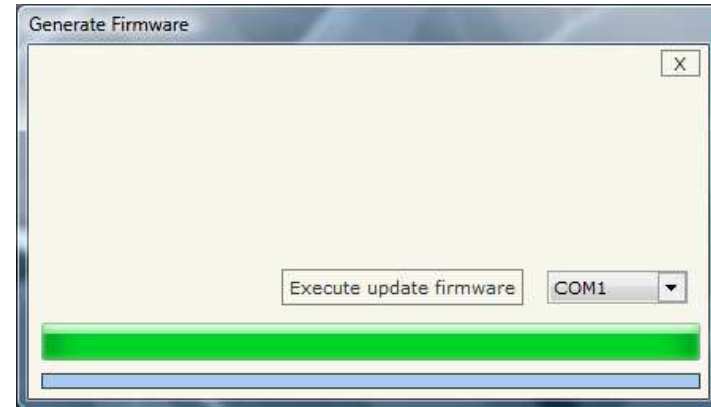
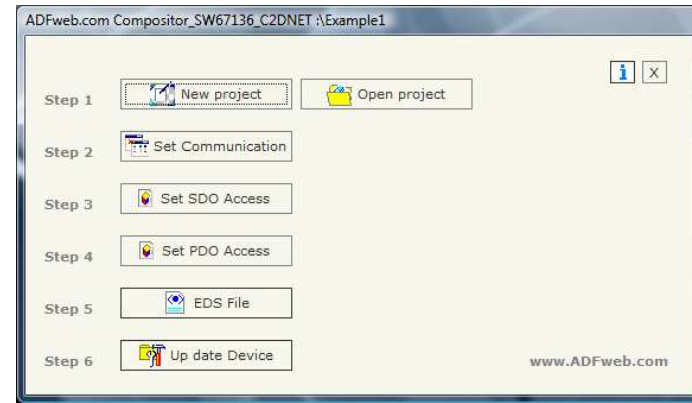


Figure 6: "Update Device" windows

**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.

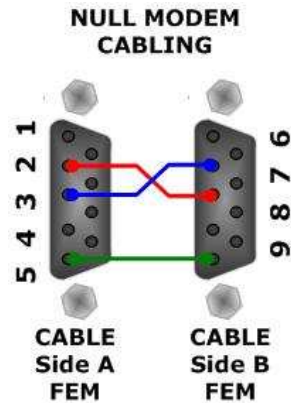
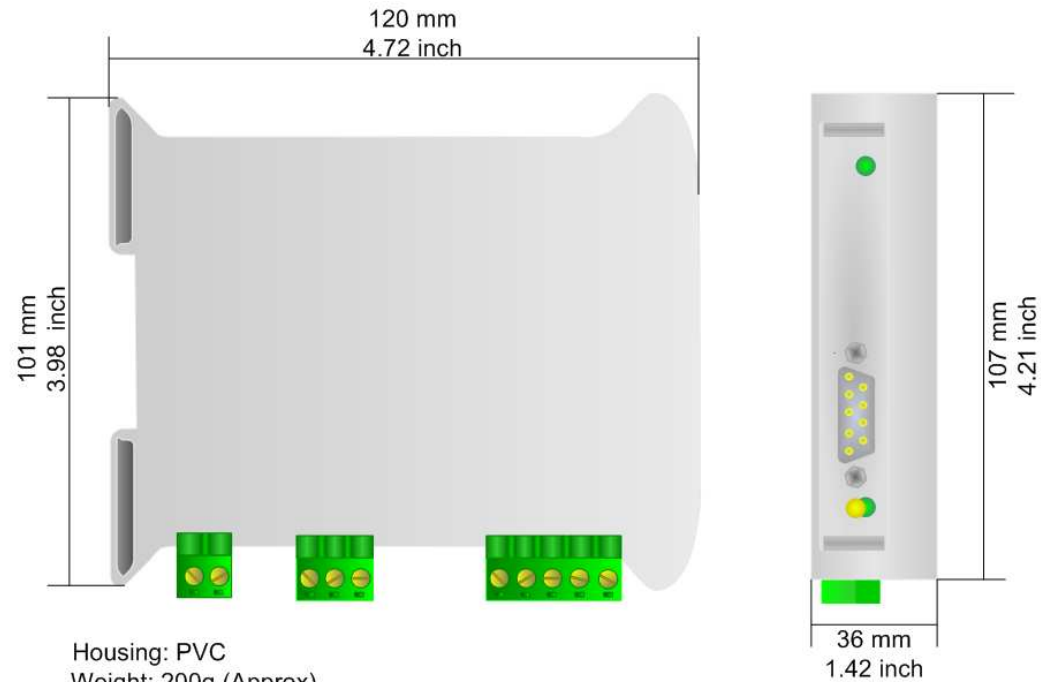


Figure 7: Null modem cabling

**CANOPEN BUS CABLE CHARACTERISTICS:**

<b>DC parameter:</b>	Impedance	70 Ohm/m
<b>AC parameters:</b>	Impedance	120 Ohm/m
	Delay	5 ns/m
<b>Length:</b>	<b>Baud Rate [bps]</b>	<b>MAX Length [m]</b>
	10 K	5000
	20 K	2500
	50 K	1000
	100 K	650
	125 K	500
	250 K	250
	500 K	100
	800 K	50
	1000 K	25

**MECHANICAL DIMENSIONS:**



Housing: PVC  
Weight: 200g (Approx)

*Figure 8: Mechanical dimensions scheme*

**ORDER CODE:**

Order Code: **HD67136** - CANopen / DeviceNet Slave - 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

## DISCLAIMER

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## OTHER REGULATIONS AND STANDARDS

### WEEE INFORMATION



Disposal of old electrical and electronic equipment (as in the European Union and other European countries with separate collection systems).

— This symbol on the product or on its packaging indicates that this product may not be treated as household rubbish. Instead, it should be taken to an applicable collection point for the recycling of electrical and electronic equipment. If the product is disposed correctly, you will help prevent potential negative environmental factors and 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).
- 3) 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
HD67117	CAN Repeater/Isolator	<a href="http://www.adfweb.com?Product=HD67117">www.adfweb.com?Product=HD67117</a>
HD67116	Can Analyzer	<a href="http://www.adfweb.com?Product=HD67116">www.adfweb.com?Product=HD67116</a>
HD67121	Translate CANopen Gateway	<a href="http://www.adfweb.com?Product=HD67121">www.adfweb.com?Product=HD67121</a>