

**EN** **ZC-107FO**  
CAN-bus optical fiber repeater.

**Installation Manual**



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PARAMETERS OPTICAL FIBER	
Type	Multimodal optical-fiber (62.5/125 o 50/125 micron)
Plug-in	Frontal connector ST-ST.
ENVIRONMENTAL CONDITION	
Operating temperature	-30..+60 °C
Storage temperature	-30..+85 °C
Humidity	30 .. 90 % non-condensing
Altitude	Up to 2000m asl
CONNECTIONS	
Terminal Block	Removable 3-way screw terminals, 5,08 mm pitch
Rear connector	IDC10 for DIN Rail socket (Z-PC-DIN)
Size and weight	100 x 112 x 17,5 mm; 140 g
Case	PBT, black
ISOLATIONS/STANDARDS	
Standards	EN61000-6-4/2007 (electromagnetic emission, industrial environment) EN61000-6-2/2005 (electromagnetic immunity, industrial environment) EN61010-1/2001 (safety). <i>All circuits must be insulated from the other circuits under dangerous voltage with double insulation. The power supply transformer must comply with EN60742: "Insulated transformers and safety transformers"</i>

CAN connections standard		
1) Install the modules on the DIN rail (max 120).		
2) Connect the remote modules using cables of proper length. On the table the following data about the cables length are provided:		
- <b>Bus Length:</b> CAN network maximum length as a function of the Baud rate. It is the length of the cables which connects the two bus terminators modules (see <i>Scheme 1</i> ).		
- <b>Drop Length:</b> maximum length of a drop line (see <i>Scheme 1</i> ) as a function of the Baud Rate.		
<b>Baud rate</b>	<b>Bus length</b>	<b>Branch length</b>
20 kbps	2500 m	150 m
50 kbps	1000 m	60 m
125 kbps	500 m	5 m
250 kbps	250 m	5 m
500 kbps	100 m	5 m
800 kbps	50 m	3 m
1000 kbps	25 m	0,3 m

For the best performances, the use of special shielded cables is recommended (**BELDEN 9841** cable for example).

3) CANbus net must be terminated setting to the ON position the DIP-switch on the Z-PC-DINAL accessory.

General description	
The ZC-107FO is a CAN signal repeater through optical fiber. The device can be used to increase a number of nodes connection into the same logical bus, and its length can be extended up to 2 Km even at 1 Mb data rate.	

General features	
HW	<ul style="list-style-type: none"> <li>Optical fiber communication up to 2 Km.</li> <li>500 VAC isolation between input and power supply.</li> <li>Simplified assembly trough DIN rail socket.</li> <li>Power supply 12-40 Vdc or 12-28 Vac.</li> <li>Operating temperature -30C/60C.</li> <li>Operating status shows by frontal LED.</li> <li>Possibility of communication between different Baud Rate.</li> <li>300us delay repetition message.</li> </ul>

SW	
SW	<ul style="list-style-type: none"> <li>Communication configuration settings from Dip switch.</li> <li>Maximum Baud rate: 1Mbps .</li> <li>Communication interface CAN protocol with CANBUS 2.0A: Transmission rate up to 1Mbps.</li> <li>Baud rate configuration from Dip Switch.</li> <li>Possible conversion of transmission rate communication.</li> </ul>

Technical Specification	
POWER SUPPLY	
Voltage	12-40 Vdc or 12-28 Vac(50-60 Hz)
Consumption	1,2 Watt max.

Installation Rules	
The module is designed to be installed in vertical position on a DIN 46277 rail. In order to ensure optimum performance and the longest working life, the module(s) must be supplied adequate ventilation and no raceways or other objects that obstruct the ventilation slots. Never install modules above sources of heat; we recommend installation in the lower part of the control panel.	
<b>Inserting on the DIN rail as it is illustrated in the figure:</b>	
1) Insert the rear IDC10 connector on a free DIN rail socket slot (the inserting is univocal since the connectors are polarized).	
2) Tighten the two locks placed at the sides of the rear connector to fix the module.	

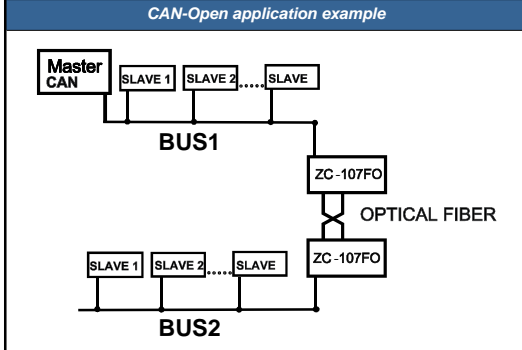
**Electrical connections**  
**POWER SUPPLY AND CAN INTERFACE**

Power Supply and Can interface are available also by using the Seneca DIN rail, by the rear IDC10 connector or by Z-PC-DINAL-A/B accessory.

Rear Connector (IDC10)	
	In the figure the meaning of the IDC10 connector pins is showed, in the case the user decides to provide the signals directly through it.

Z-PC-DINAL-A / Z-PC-DINAL-B Accessories Use	
	In case of Z-PC-DINAL-A/B accessory use, the signals may be provided by terminal blocks. The figure shows the meaning of the terminals and the position of the DIP-switch (present on each DIN rail supports listed on Accessories) for CAN network termination.
<b>GND/SHLD:</b> Shield to protect the connection cables (always recommended).	

Main components position	
TERMINAL BLOCKS / LEDS / CONNECTOR / DIP-SWITCH	
The terminals numbering, the leds position on the frontal panel, the rear IDC10 connector for DIN rail and the DIP-switch on the rear side are illustrated below.	



Connections example			
CAN user example			
Led status message			
LED SP-Rx and FO-Rx : status communication			
In the tabel below there is a description of <b>SP-Rx</b> and <b>FO-Rx</b> .			
Meaning of Led SP-Rx (Red)			
N°	Led SP-Rx	STATUS	DESCRIPTION
1	OFF	No communication	a)The parameters of communication are wrong (see the DIP SWITCH settings). b)The connections of communication are wrong (see connection standards)
2	Blinking	Communication	The CAN communication work properly.
Meaning of Led FO-Rx (Red)			
N°	Led FO-Rx (Verde)	STATUS	DESCRIPTION
1	OFF	No communication	The device can't be connected properly..
2	blinking	Communication	The communication packet was received correctly from optical-fiber.
The ZC-107FO internally has a green led that blinks when the power supply and communication functioning properly.			

Dip-Switch setting																													
The DIP-switches position defines the module CAN communication parameters: Address and Baud Rate. In the following figure the Baud Rate and Address values are listed as a function of the DIP-switches position:																													
<table border="1"> <thead> <tr> <th>7 8 9 10</th> <th>Baud Rate</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>10 kbps</td> </tr> <tr> <td><input type="checkbox"/></td> <td>20 kbps</td> </tr> <tr> <td><input type="checkbox"/></td> <td>50 kbps</td> </tr> <tr> <td><input type="checkbox"/></td> <td>62,5 kbps</td> </tr> <tr> <td><input type="checkbox"/></td> <td>100 kbps</td> </tr> <tr> <td><input type="checkbox"/></td> <td>125 kbps</td> </tr> <tr> <td><input type="checkbox"/></td> <td>250 kbps</td> </tr> <tr> <td><input type="checkbox"/></td> <td>500 kbps</td> </tr> <tr> <td><input type="checkbox"/></td> <td>800 kbps</td> </tr> <tr> <td><input type="checkbox"/></td> <td>1000 kbps</td> </tr> </tbody> </table>	7 8 9 10	Baud Rate	<input type="checkbox"/>	10 kbps	<input type="checkbox"/>	20 kbps	<input type="checkbox"/>	50 kbps	<input type="checkbox"/>	62,5 kbps	<input type="checkbox"/>	100 kbps	<input type="checkbox"/>	125 kbps	<input type="checkbox"/>	250 kbps	<input type="checkbox"/>	500 kbps	<input type="checkbox"/>	800 kbps	<input type="checkbox"/>	1000 kbps	<table border="1"> <thead> <tr> <th>2</th> <th>Terminator 120 ohm</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>Not Enable</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Enable</td> </tr> </tbody> </table>	2	Terminator 120 ohm	<input type="checkbox"/>	Not Enable	<input type="checkbox"/>	Enable
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N.B.The DIP-SWITCH 1,3,4,5 and 8 are not used.

Accessories	
SUPPORTS FOR MOUNTING ON DIN RAIL GUIDE/ SERIAL CABLE	
Codice	Descrizione
Z-PC-DINAL-A	Bus Support: Terminal blocks + 2 slots to connect Z-PC line modules.
Z-PC-DINAL-B	Bus Support: Terminal blocks + 1 slot to connect Z-PC line modules.
Z-PC-DIN-A	Bus Support: 2 slots to connect Z-PC line modules.
Z-PC-DIN-B	Bus Support: 1 slots to connect Z-PC line modules.
Z-PC-DIN-8-A	Bus Support: 8 slots to connect Z-PC line modules.
Z-PC-DIN-8-B	Bus Support: 4 slots to connect Z-PC line modules.
Z-PC-FO	F.O. cable with ST/ST connection, L=2m

Disposal of Electrical & Electronic Equipment (Applicable throughout the European Union and other European countries with separate collection programs). This symbol, found on your product or on its packaging, indicates that this product should not be treated as household waste when you wish to dispose of it. Instead, it should be handed over to an applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate disposal of this product. The recycling of materials will help to conserve natural resources. For more detailed information about the recycling of this product, please contact your local city office, waste disposal service or the retail store where you purchased this product.