

# PROTOCOL CONVERTER RS232 / RS485/422 Half/Full Duplex Z107

## GENERAL SPECIFICATIONS

- Communications Mode: 2 wire Half Duplex , 4 wire Full Duplex, point to point or multidrop
- Baud Rates: 9600 , 19200 , 38400 , 57600 , 115200 baud selectable
- Flow Control : Automatic or RTS line
- Indication : 4 LEDs, Power ON, Rx, Tx and RTS active
- Power Supply : 19–40 Vdc, 19–28 Vac 50-60Hz , max 2.5W
- Transmission Distance : up to 1200m.
- Isolation : 1000Vac between RS232 & RS485, 1000Vac between supply & RS485
- RS232 Connection : screw terminal block or RJ connector
- RS485 Connection : screw terminal block or Seneca bus

## TECHNICAL SPECIFICATIONS

Power Supply	19-40 Vdc, 19-28 Vac, 50-60 Hz, max 2.5 W
Communications Ports	Serial RS232, serial RS485/422
Operating Conditions	0..55°C, 30% to 90% RH @ 40°C (non condensing)
Protection	IP20
Dimensions & Weight	Approx 100x17,5x112 mm. 140g
Standards CE	The instrument conforms to the following standards: <ul style="list-style-type: none"><li>▪ EN50081-2 (electromagnetic emissions, industrial)</li><li>▪ EN50082-2 (electromagnetic immunity, industrial)</li><li>▪ EN61010-1 (safety)</li></ul>

## INSTALLATION

The 107 module is designed to be fitted on DIN 46277 guide, in a vertical position. For optimal operation and long-life, adequate ventilation must be provided for the module(s), avoiding positioning channel or other devices that obstruct the ventilation louvers. Avoid fitting modules above equipment that generates heat; you are advised to fit them at the bottom of the panel.

### HARSH OPERATING CONDITIONS:

When modules are fitted side by side it may be necessary to separate them at least 5 mm in the case that panel temperature is above 45°C and voltage power supply is above 30 Vdc or 26 Vac.

NOTE: Use of the DIN guide connectors ensures practical fitting and correct ventilation of the modules.

- Always use screened, twisted pair cable – particularly in electrically noisy environments or when using long cable runs. (See the SERIAL INTERFACE section)
- Set the Dip Switches and make all serial connections BEFORE applying power to the converter
- The converter may be used at Baud rates lower than 9,600 – but the RTS line MUST be used



**SENECAUK**

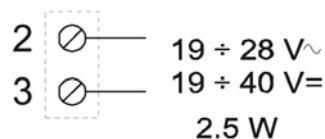
Web: [www.SenecaUK.com](http://www.SenecaUK.com) Mail: [Sales@SenecaUK.com](mailto:Sales@SenecaUK.com)  
Tel: 01943 602001 Fax 01943 816796

If the Z107 does not appear to function as expected, please refer to the troubleshooting chart below :

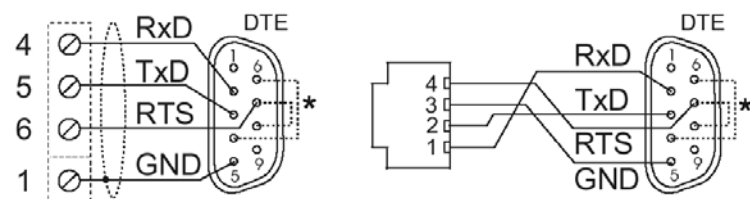
Symptom	Solution
The green "POWER" LED is not lit	Check that the polarity of the DC supply and that 230V mains is available to the adapter.
The red "Rx" LED always lit.	Try reversing the RS485 "A" and "B" connections
Data is corrupt	Check that the converter is set at the same Baud rate as the Computer and for the same flow control (RTS or Auto)

## ELECTRICAL CONNECTIONS

### Power Supply



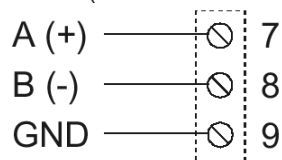
### RS 232



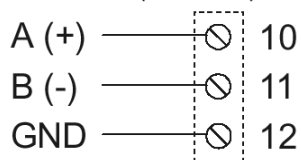
\* Verify the need of connections basing on the kind of application on DTE (PC or other device)

### RS 485

RS-485 (HALF / FULL-Tx)



RS-485 (FULL-Rx)












Clamp	Function
7	A(+) RS485 (HALF o Tx in FULL D.)
8	B(-) RS485 (HALF o Tx in FULL D.)
9	GROUND
10	A(+) RS485 ( Rx in FULL D.)
11	B(-) RS485 ( Rx in FULL D.)
12	GROUND



## ***DIP SWITCH SETTINGS***

The dip-switches on the side of the module are useful to set some functions:

<b><i>Baud rate setting</i></b>	
OFF  9.6000 baud ON	
OFF  19.200 baud ON	
OFF  38.400 baud ON	NOTE : It is only necessary to set the Baud Rate if you are using the AUTO setting
OFF  57.600 baud ON	
OFF  115.200 baud ON	
<b><i>Half duplex setting</i></b>	<b><i>Transmit / Receive Switching</i></b>
OFF  Half Duplex ON	OFF  RTS ON
OFF  Full Duplex ON	OFF  Auto ON



**SENECAUK**

Web: [www.SenecaUK.com](http://www.SenecaUK.com) Mail: [Sales@SenecaUK.com](mailto:Sales@SenecaUK.com)  
 Tel: 01943 602001 Fax 01943 816796

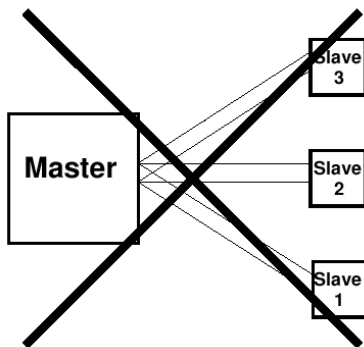
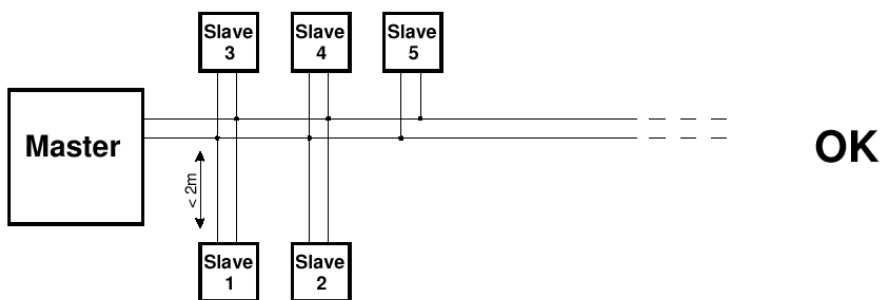
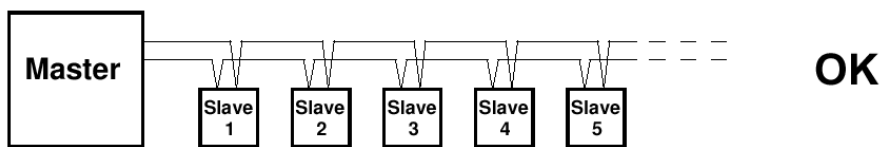
## SERIAL INTERFACE

The RS485 serial interface is based on balanced line differential with a typical impedance of 120 Ohms. The maximum distance is not actually defined as it depends on the speed of communication, the signal to noise ratio and the quality of cable used.

Generally, 1200m is taken to be the maximum distance that reliable communication can be guaranteed. For distances of up to a few meters in a low noise environment, almost any cable can be used. For cable lengths up to about 100m almost any screened twisted pair cable will suffice. Above this, the use cables that meet the RS485 standard such as CEAM CPR 6003 or BELDEN 9841.

The recommended cabling layout is "daisy chain" although short "spurs" up to about 2m can be tolerated. The "star" topology is not recommended and should be avoided. The communications line should be terminated by switching the line termination dip switch ON (if using the Seneca Z-PC line modules) on the last module, or by putting a 120Ohm resistor across the two lines at the end of the cable.

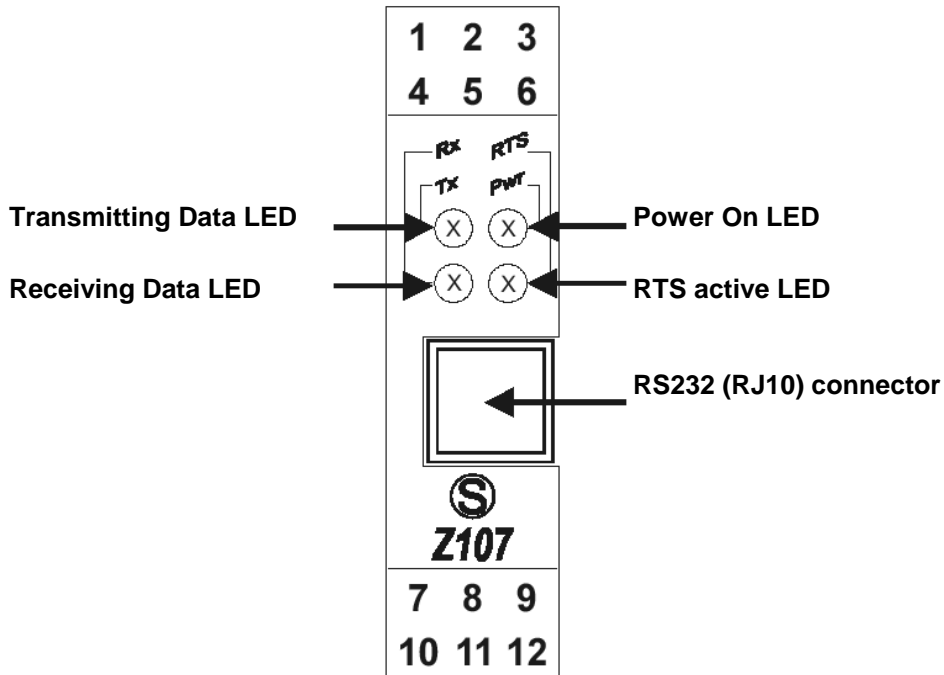
The screen should be connected to the GND terminals where they are available and the screen should also be connected to Earth in at least 1 place, via a 10 nF capacitor if necessary.



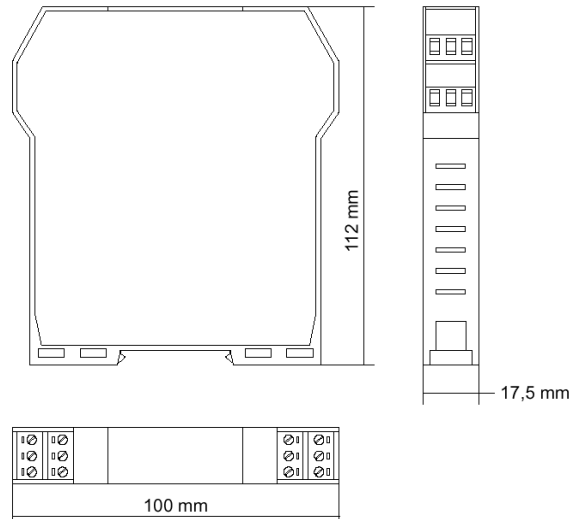
**SENECAUK**

Web: [www.SenecaUK.com](http://www.SenecaUK.com) Mail: [Sales@SenecaUK.com](mailto:Sales@SenecaUK.com)  
Tel: 01943 602001 Fax 01943 816796

## FRONT PANEL INDICATIONS



## DIMENSIONS



UNI EN ISO 9001



**SENECAUK**



CERTIFICATE  
Nr. 9115 SENE

This document is property of SENECAUK. Duplication and reproduction are forbidden, if not authorized. Contents of the present documentation refers to products and technologies described in it. All technical data contained in the document may be modified without prior notice Content of this documentation is subject to periodical revision.

[www.SenecaUK.com](http://www.SenecaUK.com) [Sales@senecaUK.com](mailto:Sales@senecaUK.com)

Tel: 01943 602001 Fax: 01943 816796

**SENECAUK**

Unit 1 Golden Butts Road

LS29 8HS Ilkley

West Yorkshire

United Kingdom



**SENECAUK**

Web: [www.SenecaUK.com](http://www.SenecaUK.com) Mail: [Sales@SenecaUK.com](mailto:Sales@SenecaUK.com)

Tel: 01943 602001 Fax 01943 816796