

RS232/RS485 - Interface-Converter: GRS485




General information:

The GRS485 is a bi-directional interface converter RS232 <-> RS485, for the connection of up to 16 GIA10 or GIA1000/GIR1002 to the serial interface of your PC.

Signals are transmitted in "half-duplex"-mode, with the RTS-line of the RS232-interface being used to activate the transmitter. The receiver is always active. ("ECHO"-mode).

Specification:

Supply voltage:	12 V DC / 300mA  by means of power pack (incl. in scope of supply): 220 - 240 V AC / 50 - 60 Hz
Working temperature:	0 to 50°C
Storage temperature:	-20 to 70°C
Relative atmosph. humidity:	0 to 80 % r.h. (non condensing)
Dimensions:	50 x 65 x 30 mm (W x L x H; housing only)
EMC:	The devices correspond to the essential protection ratings established in the Regulations of the Council for the Approximation of Legislation for the member countries regarding electromagnetic compatibility (89/336/EWG) Tested in accordance with EN50081-1 and EN50082-1 for unlimited use in commercial and residential areas.

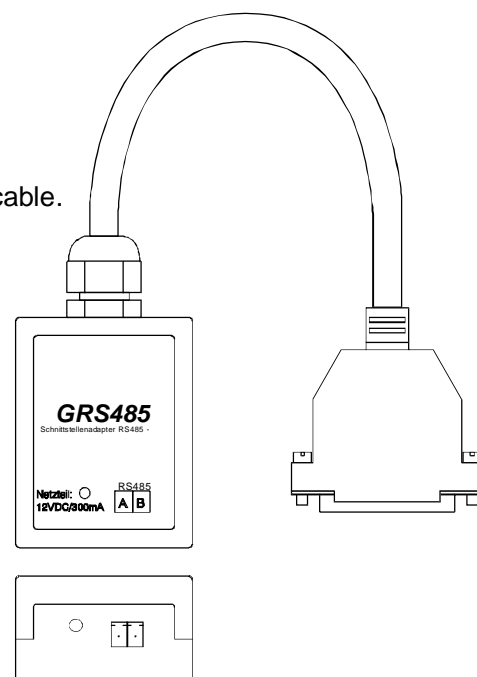
RS485:

Transmission mode:	half-duplex
Connection:	2pin screw-type/plug-in terminal: PHOENIX: MC1,5/2-ST-3,81, max. terminal range: 1.5mm ²
Connection cable:	2-pin, twisted (recommended)
Length of line:	max. 1000 meters
Baud rate:	max. 9600 Baud

RS232:

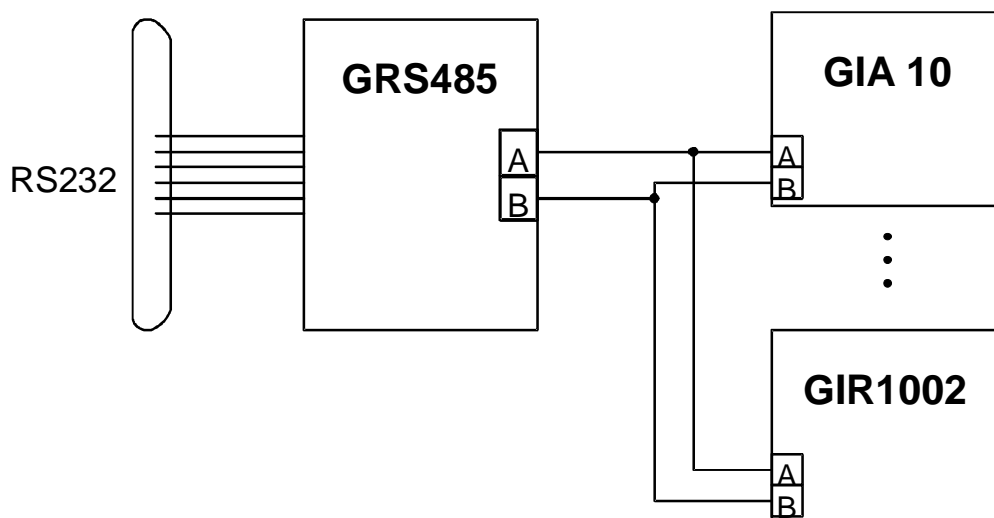
Connection:	25 pin Dsub-bushing, with approx. 30cm cable. (can be directly connected to the 25pin Dsub-connector of your PC)
Operating modes:	transmitter active if RTS high (U > 3V) Receiver: always active ("Echo")

Pin assignment:	Dsub 9	Dsub 25	
	3	2	TxD
	2	3	RxD
	7	4	RTS
	8	5	
	5	7	GND
	6	6	
	4	20	



Wiring diagram:

Connection of up to 16 GIA10 or GIA1000/GIR1002 via one GRS485 to the RS232-interface of your PC:



Installation and commissioning:

Connect the GIA 10, GIA1000 or GIR1002 (max. 16 devices) to be connected with the 2 interface converter via a 2-pin connection line (twisted line recommended) according to the information given in the wiring diagram.

Plug power pack supplied into the GRS485 and connect it to a mains voltage of 220 - 240 VAC.

Then connect the interface converter to the RS232-interface of your PC.

(In case your PC is not equipped with a 25-pin Dsub-connector or in case it has already been assigned, the GRS485 can also be connected to a 9-pin Dsub-connector via any commercial adapter.)

If the interface converter GRS485 is not handled properly, the converter itself or the devices connected may be subject to damage. In such a case we do not assume any warranty claims!

The manufacturer shall not be liable for any damage to other connected devices caused by the use of the GRS485.

Operation of the RS232/RS485 – interface converter GRS485

Using the GRS485 with the GIR/GIA1xxx devices the following has to be considered:

- The GRS485 is bi-directional serial interface converter for RS232<->RS485 interfaces.
- The GRS485 is operating in half-duplex mode using the RTS signal of the RS232 interface for the activation/deactivation of the transmitter. The receiver stays permanently active (echo mode).

For the communication with the GIR/GIA1xxx and GIA1 devices therefore the programmer has to follow the following signal sequence:

1. Activation of the RTS signal (RS232 voltage level > 3V)
2. Sending of the request string to the GIR/GIA. For detailed information please refer to the users manual of the device
3. Deactivation of the RTS signal (RS232 voltage level < 3V).
Note: The deactivation of the RTS signal must have been performed 25ms after the transfer of the last bit of the request string!
4. Reading the response of the request string

General purpose terminal programs (e.g. Hyperterminal) do not support this method of transmit – receive swapping.

Depending on the used programming language there may be a significant effort for the implementation of the described time critical signal swapping of the RTS signal.

An efficient way of decreasing this effort may be to use the “GRS 485 ISO” interface converter instead of the “GRS485”.

The “GRS 485 ISO” is also a bi-directional serial interface converter for RS232 <-> RS485 conversion. In contrast to the “GS485” converter the “GRS 485 ISO” supports automatic receive and transmit mode

swapping. The control of the RTS signal by the user's application software is not needed. Therefore the use of standard terminal programs is possible.

Safety advice:

This device has been designed and tested in accordance with the safety regulations for electronic devices. However, its trouble-free operation and reliability cannot be guaranteed unless the standard safety measures and special safety advises given in this manual will be adhered to when using the device.

1. Trouble-free operation and reliability of the device can only be guaranteed if it is not subjected to any other climatic conditions than those stated under "Specification".
2. Prior to opening it disconnect device from mains voltage. Make sure that all parts are finger-proof during the installation of the device and its connections .
3. Make sure to observe the standard regulations and safety instructions for electric, heavy and weak current plants, in particular the national safety regulations (e.g. VDE0100).
4. If device is to be connected to other devices (e.g. PC) the circuitry has to be designed most carefully. Internal connection in third party devices (e.g. connection GND and earth) may result in not-permissible voltages.
5. If there is a risk whatsoever involved in running it, the device has to be switched off immediately and to be marked accordingly to avoid re-starting.
Operator safety may be a risk if:
 - there is visible damage to the device
 - the device is not working as specified
 - the device has been stored under unsuitable conditions for a longer time.In case of doubt, please return device to manufacturer for repair and/or maintenance.