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Isolated converter
RS232 ←→ RS485 / 422
SS 3580

FEATURES

- Asynchronous serial data transmission
- Automatic baud-rate fitting up to 115.2 Kbps
- Distance up to 1200 m
- Point to point connection or multipoint connection up to 32 modules
- DC or AC power supply
- Galvanic isolation on all ways
- RS232 connection on DB9 or removable terminals
- EMC compliance – CE mark
- Suitable for DIN rail mounting in compliance with EN-50022

GENERAL DESCRIPTION

The device SS3580 is an isolated interface converter between asynchronous serials lines RS232 and RS485 or RS422 that guarantees a full isolation between power supply, serial line RS-232 and serial line RS-485 or 422 removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

It is designed to operate either on serial interface RS-422 full-duplex 4 wires or RS485 half-duplex 2 wires, with a baud-rate transmission up to 115.2 Kbps.

The transmission is asynchronous without settings of protocol, data format and baud rate.

On the line RS-232 are not necessary handshake commands (RTS, CTS, etc..) to control the baud rate.

SS3000 series devices are designed to be easily mounted on DIN rail, optimizing the space encumbrance. Whereas the thermal dissipation allows it, the devices can be mounted side by side, allowing a relevant reduction of space requiring. The connections are made by means of removable screw terminals, to simiplify the handling of the devices.

The SS 3580 is in compliance with the 89/336/EEC directive on the electromagnetic compatibility.

The device is housed in a rough self-extinguishing plastic container which, thanks to its thin profile of 22.5 mm only, allows a high density mounting on EN-50022 standard DIN rail.

USER INSTRUCTIONS

Before to install the device, please read the "Installation Instruction" section.

The device SS3580 converts the serial transmission from RS-232 to RS-485 (2 wires) or RS-422 (4 wires) as follows.

The data incoming from the line TX of RS-232 (DB9 connector pin 3) are converted and transmitted to the terminals D-E of RS-485 and RS-422.

The data incoming from the line RX of RS-485 (terminal D and E) or RS-422 (terminal B and C) are converted and transmitted to the terminal RX of RS-232 (DB9 connector pin 2).

The transmission of the signal follows the logic state of every single bit, then there is not necessary to set the protocol, the data format and the baud-rate.

When the transmission line from the RS-232 is off, the RS-485 driver is in the receive condition (high impedance); when the transmission line from the RS-232 goes on, the RS-485 driver switch immediately to the transmission condition (low impedance). The low impedance is kept for about 150 us, then the line returns automatically in high impedance (receiver).

TECHNICAL SPECIFICATIONS (Typical @ 25 °C and in the nominal conditions)

In compliance with	EIA RS232, RS485 and RS422	Power Supply	10 ÷ 30 Vdc
			9 ÷ 18 Vac
RS485 Interface			(18 ÷ 30 Vac optional)
Baud-rate	up to 115.2 Kbps	Current consumption	35 mA typ. @ 24Vdc
Max. distance / baud-rate ratio	1,2 Km @ 38400 bps	**Isolations**	
(recommended) (1)	2 Km @ 19200 bps	Power supply / RS232	2000 Vac, 50 Hz, 1 min.
	3 Km @ 9600 bps	Power supply / RS485-422	2000 Vac, 50 Hz, 1 min.
	4 Km @ 4800 bps	RS232 / RS485-422	2000 Vac, 50 Hz, 1 min.
	5 Km @ 2400 bps		
	7 Km @ 1200 bps	**EMC**	
		Immunity	EN 61000-6-2
Number of modules in multipoint	up to 32	Emission	EN 61000-6-4
Switching time TX/RX (RS485)	150 us.	**Temperature & Humidity**	
		Operative temperature	-20 ÷ +60 °C
Internal terminator resistance (optional)	120 Ohm	Storage temperature	-40 ÷ +85 °C
		Relative humidity (not condensed)	0 ÷ 90 %
		Connection	
		RS-232	DB9 and removable screw terminals
		RS-485/422	removable screw terminals
		Housing	
		Material	Self-extinguishing plastic
		Mounting	DIN rail in compliance with EN-50022
		Dimensions in mm.(W x H x T)	100 x 120 x 22.5
		Weight	about 160 gr.

(1) – The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

INSTALLATION INSTRUCTIONS

The SS 3580 device is suitable for fitting to DIN rails in the vertical position.
For optimum operation and long life follow these instructions:

When the devices are installed side by side it may be necessary to separate them by at least 5 mm in the following case:
- If panel temperature exceeds 45°C and high power supply value(> 27Vdc).

Make sure that sufficient air flow is provided for the device avoiding to place raceways or other objects which could obstruct the ventilation slits. Moreover it is suggested to avoid that devices are mounted above appliances generating heat; their ideal place should be in the lower part of the panel. Install the device in a place without vibrations.

Moreover it is suggested to avoid routing conductors near power signal cables (motors, induction ovens, inverters, etc...) and to use shielded cable for connecting signals.

CABLING
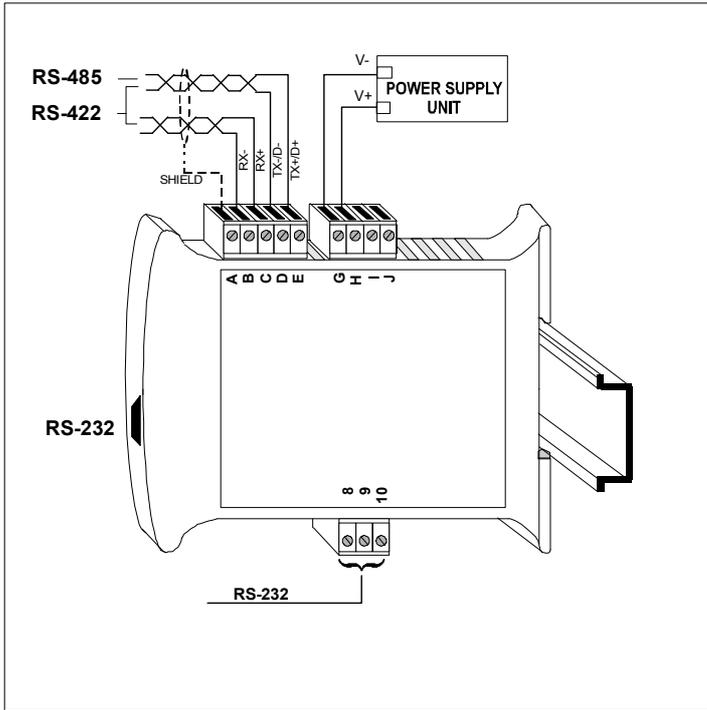
## LIGHT SIGNALLING

LED	COLOUR	STATE	DESCRIPTION
PWR	GREEN	ON	Device powered
		OFF	Device not powered / Wrong RS-485 cabling.
		RAPID BLINK	Communication in progress (blink frequency depends to baud-rate)

DIMENSIONS (mm)
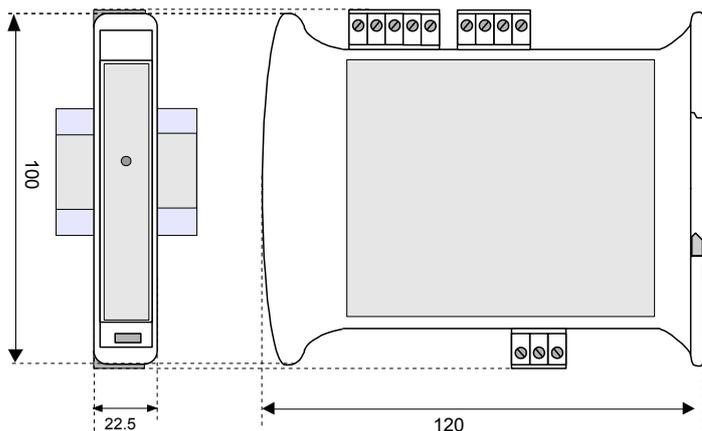
WIRING
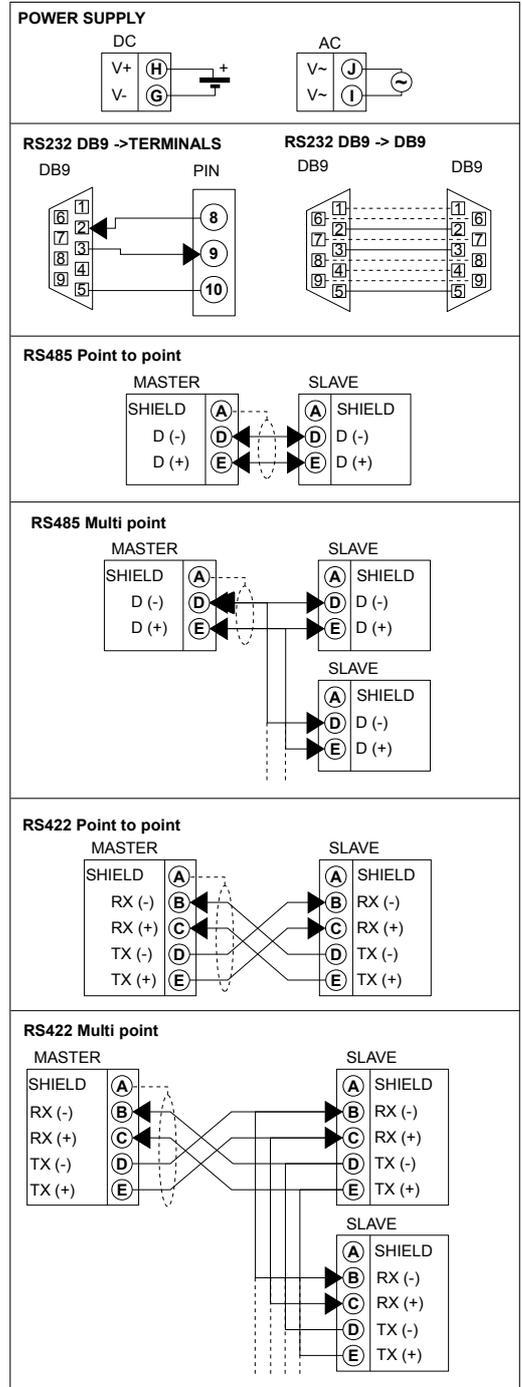
ISOLATION STRUCTURE
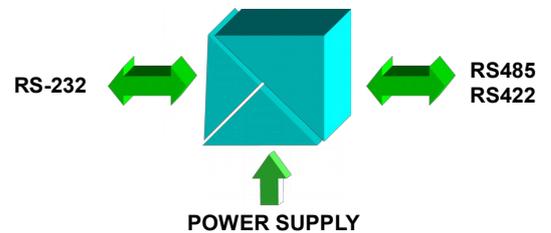
HOW TO ORDER
In phase of order it is necessary to specify the type of interface (RS485 or RS422) and, if required, the 24Vac power supply option.

SS 3580 / 2W / 24

Type of interface:
2W: RS-485 (2 wires)
4W: RS-422 (4 wires)

AC power supply option:
24 : 24Vac (18÷30Vac)

■ = Requested
□ = Optional

Sielco Sistemi s.r.l. reserves its right to modify the characteristics of its products totally or in part without warning at any time.

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