

FEATURES

- Interface Ethernet 10/100 Base-T MQTT, Modbus TCP
- RJ45 Connector
- Configuration via integrated web server
- Serial interface RS-485
- Modbus RTU/TCP Master
- Baud rate up to 115.2 Kbps
- Distance up to 1200 m, up to 32 modules connected in multipoint
- Connection by removable screw-terminals
- LED signalling for Link/Act Ethernet, power supply
- Galvanic isolation on all the ways
- EMC compliant – CE mark
- In compliance to EN-50022 DIN rail mounting



GENERAL DESCRIPTION

SS10680 gateway is a device that provides an RS485 serial interface for Modbus RTU master protocol and an ethernet interface for Modbus TCP master and SSL/TLS MQTT protocols featuring a low-profile format which makes it suitable for DIN rail mounting inside industrial electrical cabinets. Electrical connections are available via plug-in screw terminals. The full galvanic isolation ensures a good protection against interference present in industrial environments. A dedicated hardware Watch-Dog manages the automatic reset of the device. Signalling leds allow an immediate diagnosis of device operation. The device power supply requires a voltage between 10 Vdc and 30Vdc. The device is protected against power supply polarity inversion.

USER INSTRUCTIONS

SS10680 gateway is an industrial device specifically designed to implement data collection systems which operate according to the Internet of Things (IoT) paradigms; it allows bidirectional communication between field equipment and the Cloud software platform. It provides a Modbus RTU master interface on RS485 or Modbus TCP over Ethernet through which it interrogates devices distributed in the field. The variables read by Modbus slave devices are sent to the Cloud via MQTT protocol with SSL / TLS client certificate authentication on variation or fixed time. Through web pages it is possible to define the variables to be sampled of any Modbus device, or to recall the devices present in the library (Iolog series SS3000, SS8000, SS10000). It is possible to configure the MQTT message structure in order to better adapt to the different MQTT Brokers available (Amazon AWS, IBM Watson IoT, Mosquitto etc.). The configuration of the device is carried out via Web pages and it is possible to remotely update the firmware.

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

In compliance to	Ethernet IEEE 802.3 e RS485	POWER SUPPLY DC Power Supply	10 ÷ 30 Vdc
Ethernet interface Protocol	Ethernet 10/100Base-T Modbus TCP	Current consumption	300 mA max
RS485 Interface		ISOLATION	
Baud rate	configurable up to 115.2 Kbps	Ethernet / RS485	1500 Vac, 50 Hz, 1 min.
Parity	configurable as even / odd / space	Ethernet / Power Supply	1000 Vac, 50 Hz, 1 min.
Stop Bit	configurable as 1 or 2	Power supply / RS485	1500 Vac, 50 Hz, 1 min.
Max. Distance / Baud Rate Ratio (recommended) (1)	1.2 Km @ 38400 bps 2 Km @ 19200 bps 3 Km @ 9600 bps 4 Km @ 4800 bps 5 Km @ 2400 bps 7 Km @ 1200 bps	ENVIRONMENTAL CONDITIONS	
Number of modules in multipoint	32 max.	Operative Temperature	0°C .. +60°C
Switching time TX/RX (RS485)	150 us.	Storage Temperature	-20°C .. +70°C
Termination resistance	120 Ohm	Humidity (not condensed)	0 .. 90 %
Connections		Maximum Altitude	2000 m
Ethernet	RJ-45	Installation	Indoor
RS-485	removable screw terminals pitch 5.08 mm	Category of installation	II
Power supply	removable screw terminals pitch 5.08 mm	Pollution Degree	2
		MECHANICAL SPECIFICATIONS	
		Material	Self-extinguish plastic
		IP Code	IP20
		Mounting standard	in compliance to DIN rail EN-50022 and EN-50035
		Weight	about 200 g.
		CERTIFICATIONS	
		EMC (for industrial environments)	
		Immunity	EN 61000-6-2
		Emission	EN 61000-6-4

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

INSTALLATION INSTRUCTIONS

The SS10680 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.

When the devices are installed beside a power supply unit it is necessary to separate them by at least 10 mm.

To connect the serial line RS485 it is suggested to use the cable Belden type 9842 suitable for RS485.

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 to connect signals.

DEFAULT ETHERNET CONFIGURATION

- IP address : 192.168.1.100
- Subnet Mask : 255.255.255.0
- Gateway Mask: 192.168.1.1

CONFIGURATION BY WEB SERVER

To configure the device by web server:

- Connect to the device via an internet browser
- Insert User Name (admin) and Password (password)
- Select the language
- Click on CHANNEL, DEVICES or MQTT
- Modify the parameters as desired
- Click on "Save"

FUNCTION BUTTON "RST"

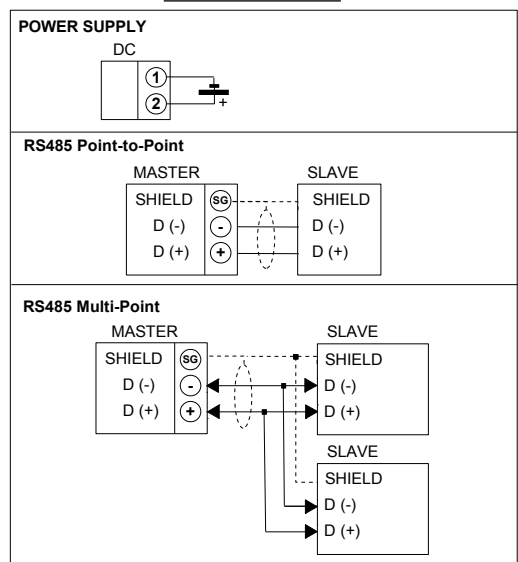
If it is necessary to restore device default parameters, power the gateway by keeping the "RST" button on the front of the instrument pressed for at least 5 seconds; the device will start in Recovery Mode. Perform restore according to your needs:

- Full reset
- Hostname reset
- Network interface reset
- Login credentials reset
- Configuration reset

In Recovery Mode it is also possible to:

- Check and correct file system errors
- Download stored logs
- Clean temporary files, logs, etc.
- Update firmware

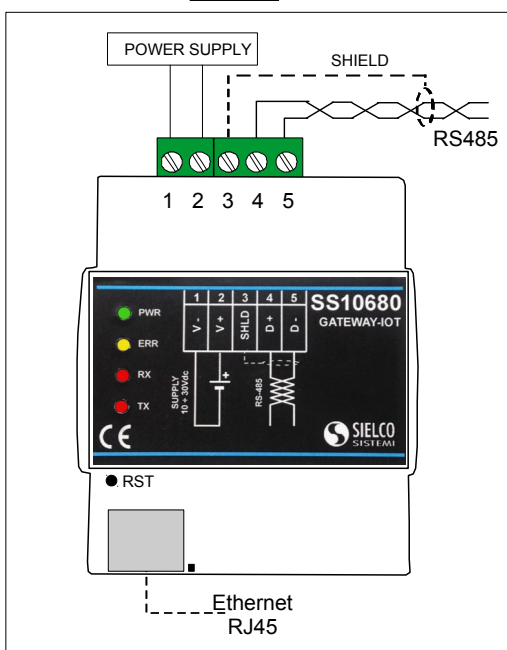
CONNECTIONS



LIGHT SIGNALLING

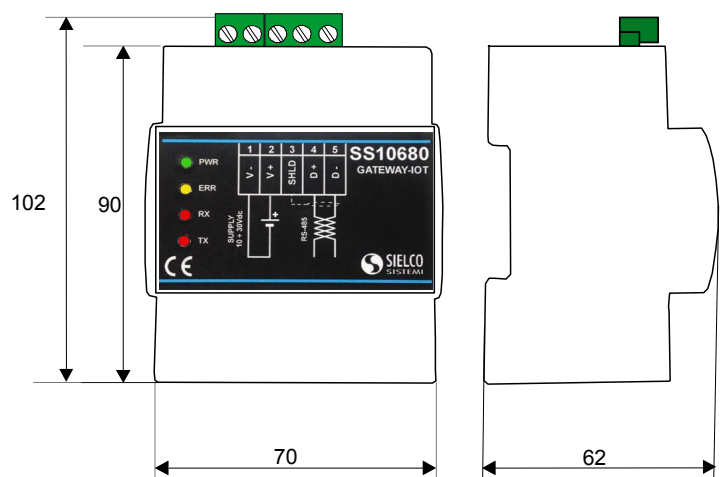
LED	COLOR	STATE	DESCRIPTION
PWR	GREEN	ON	Device powered
		OFF	Device not powered
ERROR	YELLOW	OFF	No error
		BLINK SLOW-FAST-FAST-FAST	Boot (about 60 sec, few minutes for the first boot)
		BLINK SLOW	Communication error (Modbus, MQTT etc.)
		BLINK FAST	Watchdog Restart
TX	RED	BLINK	Stream of data over transmission line of RS-485
		OFF	No data over transmission line of RS-485
RX	RED	BLINK	Stream of data over receiving line of RS-485
		OFF	No data over transmission line of RS-485

WIRING



MECHANICAL DIMENSIONS (mm)

VIEW WITH TERMINAL COVER



ISOLATIONS STRUCTURE



HOW TO ORDER

" SS 10680 "

Configuration:

IP Address: . . .

SubNet Mask: . . .

Gateway: . . .

RS485 settings: Baud Rate, bit, parity, stop bit

= Requested

= Optional