SENECA R-SG3 Analog I-O Modules Installation Guide

R-SG3 Analog I-O Modules
Installation Guide

INSTALLATION MANUAL
R-SG3
R-SG3-P

Contents

PRELIMINARY WARNINGS

The word **WARNING** preceded by the symbol ⚠ indicates conditions or actions that put the user's safety at risk. The word **ATTENTION** preceded by the symbol ⚠ indicates conditions or actions that could damage the instrument or connected equipment.
The warranty shall become null and void in the event of improper use or tampering with the module or devices supplied by the manufacturer as necessary for its correct operation, and if the instructions contained in this manual are not followed.

⚠ **WARNING:** The full content of this manual must be read before any operation. The module must only be used by qualified electricians. Specific documentation is available using the QR-CODE shown on page 1.

 The module must be repaired and damaged parts replaced by the Manufacturer. The product is sensitive to electrostatic discharges. Take appropriate measures during any operation.

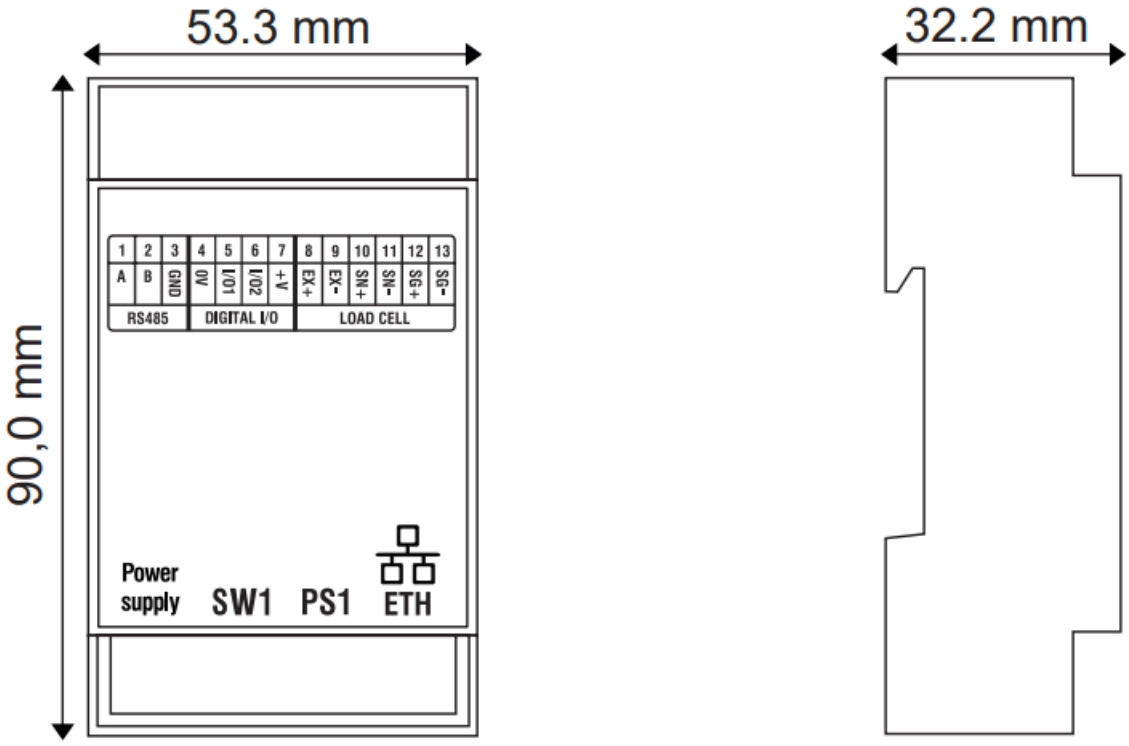
Electrical and electronic waste disposal (applicable in the European Union and other countries with recycling). The symbol on the product or its packaging shows the product must be surrendered to a collection centre authorized to recycle electrical and electronic waste.

R-SG3 DOCUMENTATION	R-SG3-P DOCUMENTATION
http://www.seneca.it/products/r-sg3	http://www.seneca.it/products/r-sg3-p
SENECA	QUALITY MANAGEMENT SYSTEM ISO 9001:2015

CONTACT INFORMATION

Technical support	supporto@seneca.it	Pro

MODULE LAYOUT

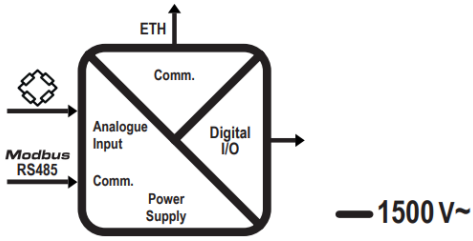


Dimensions (LxWxH) 53.3 x 90 x 32.2 Weight 80 g Case Self-extinguishing UL94-V0 PC / ABS material

SIGNALS VIA LED ON FRONT PANEL

LED	STATUS	LED meaning
RX	Flashing	Reception of packet completed on RS485
	ON	Anomaly / Check connection on RS485
TX	Flashing	Transmission of packet completed on RS485
101	ON	Digital input/output activated
	Off	Digital input/output deactivated
102	ON	Digital input/output activated
	Off	Digital input/output deactivated
PWR	ON	The device is powered correctly
	Flashing	Waiting for IP address from DHCP (R-SG3 only)
	Flashing	No IP address configured (R-SG3-P only)
FL	Flashing	Load cell overload
COM (Only R-SG3-P)	Flashing	Profinet communication active
	Off	No Profinet communication
MD	ON	Factory calibration in use
	Off	Field calibration in use
ETH TRF (Yellow)	Flashing	Packet transit on Ethernet port
ETH LNK (Green)	Flashing	Ethernet port connected

TECHNICAL SPECIFICATIONS

CERTIFICATIONS	https://www.seneca.it/products/r-sg3/doc/CE_declaration
INSULATION	 **WARNING** the maximum working voltage between any terminal and ground must be less than 50 Vic / 75Vdc
POWER SUPPLY	Voltage: 10 – 40 Vdc; 19 – 28 Vic 50 – 60 Hz Absorption: Max: 1.5 W

ENVIRONMENTAL CONDITIONS	Temperature: -20 + + 65°C Humidity: 30%+ 90% non condensing. Storage temperature: -30 + + 85° Protection rating: IP20.
ASSEMBLY	IEC EN60715, 35mm DIN rail in vertical position.
CONNECTIONS	5 mm pitch removable screw terminals
ANALOGUE INPUT CHARACTERISTICS	Input impedance: > 1M0 Full scale: ± 30mV + ± 460mV Error: 0.01% of the electrical full scale in “factory calibration mode * Thermal stability: 0.0010%/C° of full scale. Cell supply voltage: 5 Vdc (supplied by the device) Resolution: ADC 24bit Response time with filter activated: 2 + 850ms configurable
LOAD CELL CHARACTERISTICS	4 or 6 wires; Cell minimum impedance: 87 0 equivalent (possibly deriving from several load cells) Cell sensitivity: From ±1 maven to ±64 maven;
DIGITAL INIOUT	Opto-insulated digital input: Min. voltage: 12 V / Max. voltage: 30 V Opto-insulated digital output: Max. current: 50 mA / Max. voltage: 30 V
COMMUNICATION	Serial communication ports: RS485, 1200 + 115200 Baud 10/100Mbit/s Ethernet port

* In the case of “calibration with sample weight” mode, the accuracy is given by the linearity error (0.003% of the electric full scale)

Modbus CONNECTION RULES

1. Install the modules in the DIN rail (120 max)
2. Connect the remote modules using cables of an appropriate length. The following table shows cable length data:

   – Bus length: maximum length of the Modbus network according to the Baud Rate. This is the length of the

cables that connect the two farthest modules (see Diagram 1).

– Derivation length: maximum length of a derivation 2 m (see Diagram 1).

For maximum performance, it is recommended to use special shielded cables, such as BELDEN 9841.

FACTORY IP ADDRESS (R-SG3 ONLY)
The module's default IP address is static: 192. 168. 90. 101
WEB SERVER
Use the following credentials to access the Maintenance Web Server:
Default user: admin
Default password: admin

⚠ CAUTION
DO NOT USE DEVICES WITH THE SAME IP ADDRESS IN THE SAME ETHERNET NETWORK.

SETTING THE SW1 DIP-SWITCHES:

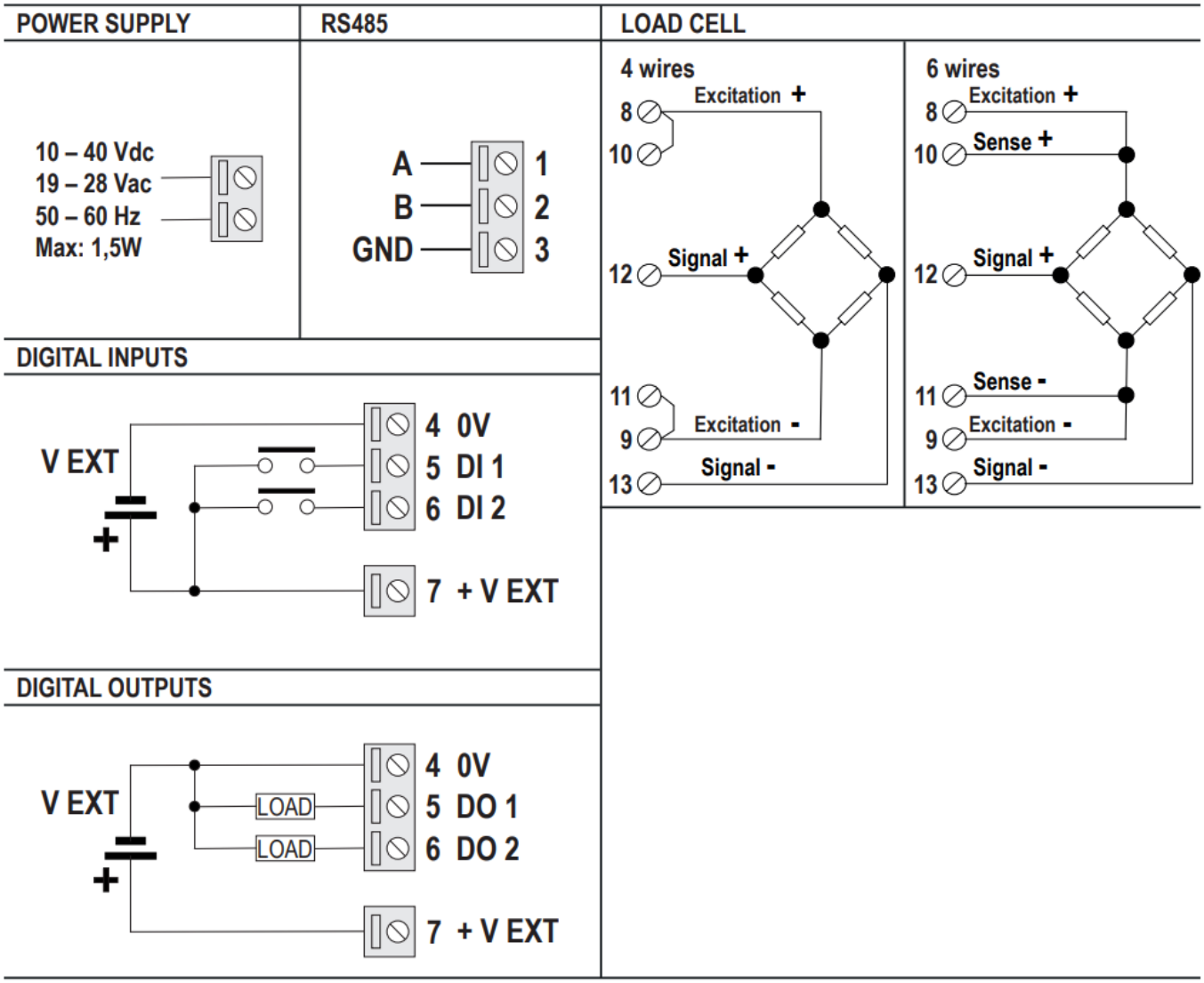
⚠ WARNING
The DIP-switch settings are read only at boot time. At each change, perform a restart.
For operation and settings via DIP-SWITCH see the user manual available on the product webpage.

PS BUTTON1
The tare is reset using the PS1 button.
To reset the tare it is necessary to hold down the PS1 button for three seconds.
The update of the value can be viewed via Webserver or Modbus.

ELECTRICAL CONNECTIONS

⚠ CAUTION
The upper power supply limits must not be exceeded, as this could cause serious damage to the module. Switch the module off before connecting inputs and outputs.
To meet the electromagnetic immunity requirements:

- use shielded signal cables;
- connect the shield to a preferential instrumentation earth system;
- separate shielded cables from other cables used for power installations (inverters, motors, induction ovens, etc…).



Connection to the load cell via 4 or 6 wires:
The terminals have the following meaning:
8: Load cell positive supply
10: Load cell positive supply reading
12: Cell reading positive
9: Load cell negative supply
11: Load cell negative supply reading
13: Cell reading negative
For the connections, the use of screened cables is required.

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Documents / Resources


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