INSTALLATION MANUAL

S6001 RTU
S6001 PUMP CONTROLLER

MODELS:

S6001-RTU4GWW ; 66001-RTU-E-4GWW ; S6001-PC-4GWW

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 might damage the instrument or the 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 via QR-CODE shown on page 1.
	The module must be repared 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.

DOCUMENTATION
S6001-RTU-4GWW

DOCUMENTATION
S6001-RTU-E-4GWW

DOCUMENTATION
S6001-PC-4GWW

SENECA

QUALITY MANAGEMENT SYSTEM
ISO 9001:2015

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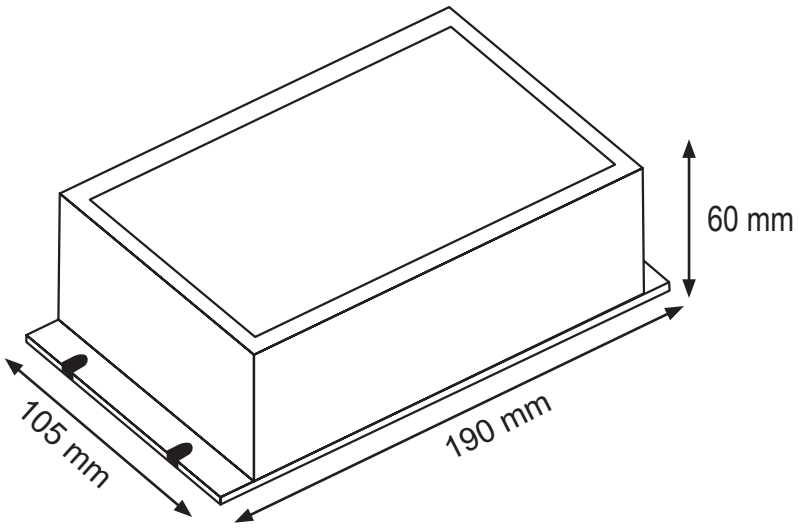
CONTACT INFORMATION

Technical support	support@seneca.it	Product information	sales@seneca.it

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MODULE LAYOUT

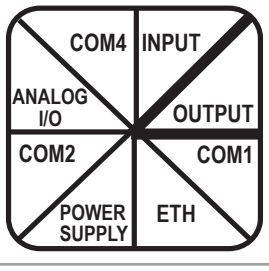


Weight: 720 g

SIGNALS VIA LED ON FRONT PANEL

LED	STATUS	LED meaning
DO (from terminal 1 to 15)	On	Output enabled
	Off	Output disabled
DI (from terminal 1 to 8)	On	Input activated
	Off	Input deactivated
Signal level	LED 6 ON	Maximum reception level
	LED 1 flashing	Minimum reception level
PWR	On	Device powered
RX (port COM2 and COM4)	On	RS485 connection check
	Flashing	Reception of data packet completed on RS485
TX (port COM2 and COM4)	On	RS485 connection check
	Flashing	Reception of data packet completed on RS485
L1 L2 (level control)	L1 OFF / L2 OFF	Liquid below the minimum level
	L1 ON / L2 OFF	Liquid between the minimum and maximum levels
	L1 ON / L2 ON	Liquid above the maximum level

TECHNICAL SPECIFICATIONS

CERTIFICATIONS	CE https://www.seneca.it/products/s6001/doc/CE_declaration
INSULATION	 1500 Vac 3000 Vac
POWER SUPPLY	Voltage: 24Vac/Vdc ± 15% @ 50/60Hz Absorption: 10VA max
ENVIRONMENTAL CONDITIONS	Operating temperature: -10°C ÷ +65°C Humidity: 10% ÷ 90% non condensing Storage temperature: -40°C ÷ +85°C Altitude: up to 2000 m above sea level

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ASSEMBLY	35mm DIN rail IEC EN60715 or panel
CPU AND MEMORIES	CPU: 32 bits, 400MHz; CPU I/O: 8 bits, 24MHz Flash: 1GB RAM: 64MB FeRAM: 8KB FeRAM, divided into two (4KB) partitions for redundancy
DIGITAL INPUTS	Type: PNP: Number of channels: 15; Connections: Removable terminals from 1 to 18 Optical isolation: YES; Current ON: > 4mA: Current OFF: < 3mA
DIGITAL OUTPUTS	Type: SPDT free contact relay; Number of channels: 8; Maximum current: 3A; Maximum voltage: 250Vac; Minimum load: 0.5W; Isolation: 3kV
ANALOGUE INPUTS	Number of channels: 4; All in 0 – 20mA current; Resolution: 12 bit; Precision: ± 0.3% compared to full scale; Input impedance: 50Ω
ANALOGUE OUTPUTS	Number of channels: 1 @ 0 – 10Vdc; 1 @ 0 – 20mA Resolution: 12 bit; Precision: ± 0.3% compared to full scale Output impedance: Voltage: ≥ 1 kΩ; Current: ≤ 500 Ω
LIQUID LEVEL CONTROL INPUTS	Type: Conductive level control; Number of channels: 2 Sensitivity: Adjustable
COMMUNICATION PORTS AND MEMORIES	Ethernet: 10/100 Base Tx with RJ45 connector RS485 #COM2: Isolated serial port from 110 to 115200 bit/s (terminals 57-58-59) RS485 #COM4: Isolated serial port from 110 to 115200 bit/s (terminals 54-55-56) RS232 #COM1: Serial port complete with DB9 male connector USB#1 host: USB A maximum current 300 mA @ 5Vdc SD card supported: MicroSD card, max. 32 GB SIM card (optional with Modem): Mini SIM type @ 3V with pressure slot
4G / LTE WORLD WIDE MODEM	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/ B19/B20/B25/B26/B28 LTE-TDD: B38/B39/ B40/B41/B66 - WCDMA: B1/B2/B4/B5/B6/B8/B19 GSM: B2/B3/B5/B For further information, refer to the User Manual. Certifications: Deutsche Telekom (Europe) Verizon*/AT&T*/T-Mobile*/Sprint* (North America)
TRANSMISSION POWER	Class 4 (33 dBm ±2 dB) for GSM850 Class 4 (33 dBm ±2 dB) for EGSM900 Class 1 (30 dBm ±2 dB) for DCS1800 Class 1 (30 dBm ±2 dB) for PCS1900 Class E2 (27 dBm ±3 dB) for GSM850 8-PSK Class E2 (27 dBm ±3 dB) for EGSM900 8-PSK Class E2 (26 dBm ±3 dB) for DCS1800 8-PSK Class E2 (26 dBm ±3 dB) for PCS1900 8-PSK Class 3 (24 dBm +1 / -3 dB) for WCDMA bands Class 3 (23 dBm ±2 dB) for LTE-FDD bands Class 3 (23 dBm ±2 dB) for LTE-TDD bands

ETHERNET PORT

The Ethernet port with RJ45 connector can be used to connect an HMI display such as the VISUAL4 Seneca display or a DCS or SCADA device.

RS232 / RS485 SERIAL PORTS

RS232 SERIAL PORT:

The entire RS232 serial port is available through the male DB9 connector on the left side of the S6001.

To connect the RS232 devices, the **CS-DB9F-DB9F** cable is supplied on request.

The signals of the RS232 port in the DB9 connector are listed in the following table:

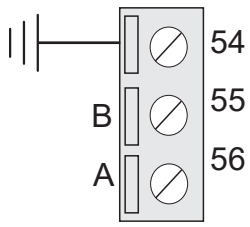
Pin	Name / Description	Type
1	DCD; Data carrier detect;	In
2	RXD; Receive data;	In
3	TXD; Transmit data;	Out
4	DTR; Data terminal ready;	Out
5	SG; Signal Ground;	
6	DSR; Data set ready;	In
7	RTS; Request to send;	Out
8	CTS; Clear to send;	In
9	RI; Ring indicator;	In

RS485 SERIAL PORT (COM2 and COM4):

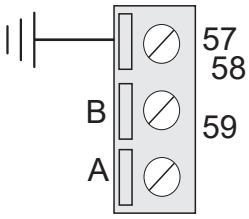
S6001 provides two RS485 ports with removable terminals: COM2 and COM4.

For more information, see the **User Manual**.

COM4:



COM2:



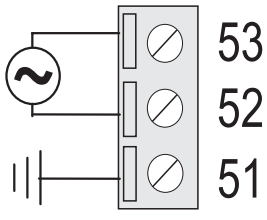
Terminals 60 - 61 - 62 provide an optional communication bus.

ELECTRICAL CONNECTIONS

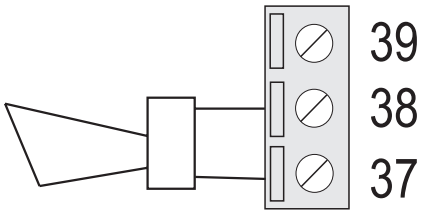
⚠ CAUTION

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 (transformers, inverters, motors, etc...).

POWER SUPPLY



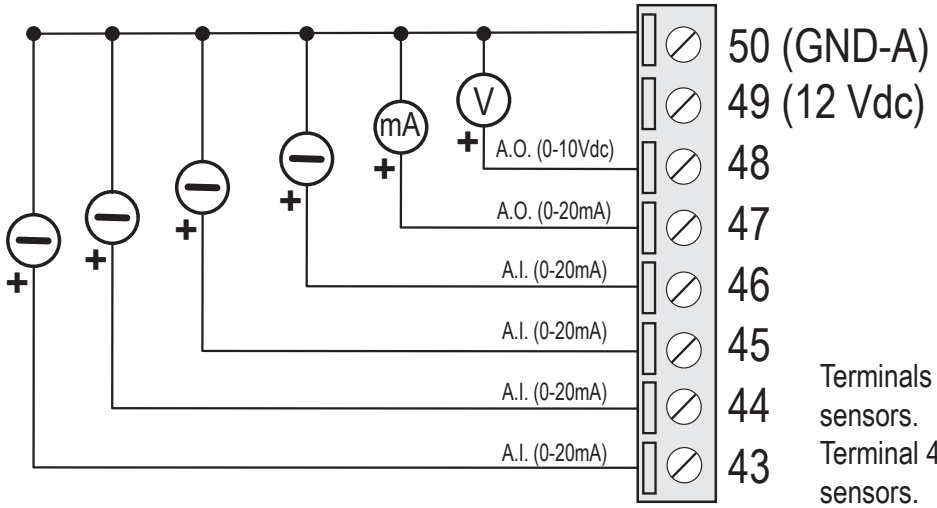
ALARM OUTPUT



Terminals 37 and 38 can be used to connect, for example, a 12 Vdc 50mA max acoustic alarm.
Terminal 39 must remain unconnected.

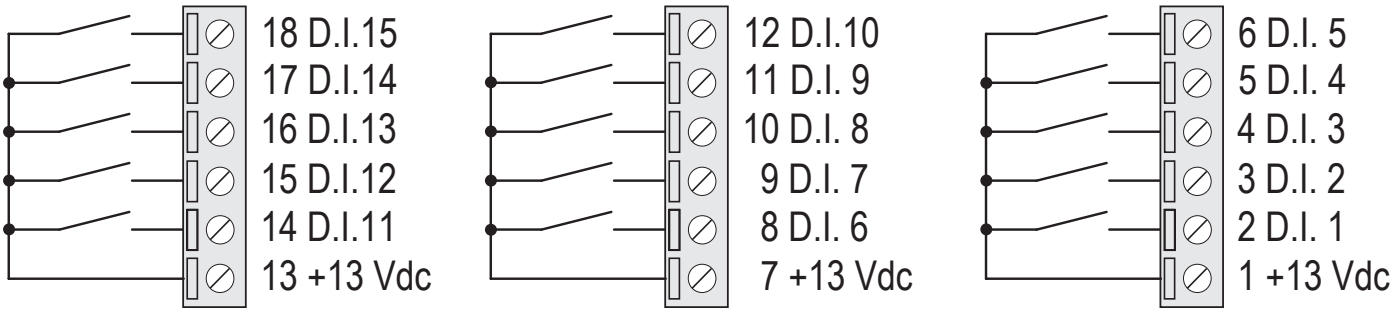
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ANALOGUE INPUTS AND OUTPUTS



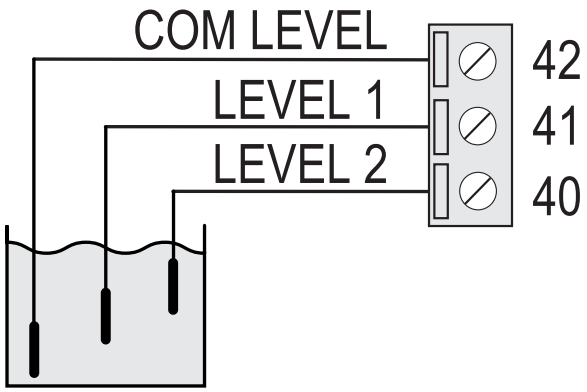
Terminals 43 to 46 allow the connection of active sensors.
Terminal 49 is a power output for passive current sensors.

DIGITAL INPUTS



All PNP type inputs are optically isolated.

INPUTS FOR LIQUID LEVEL CONTROL

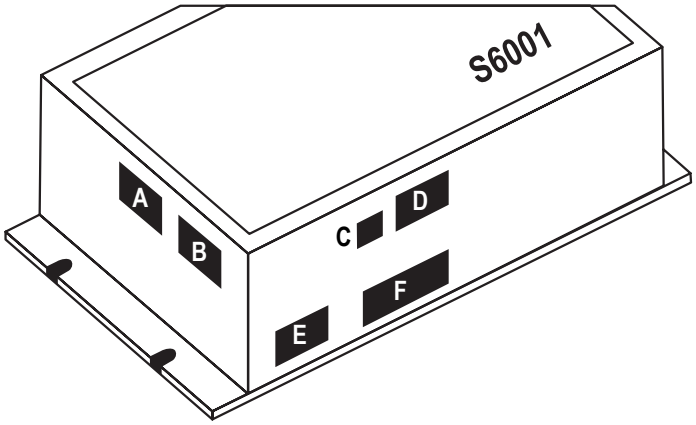


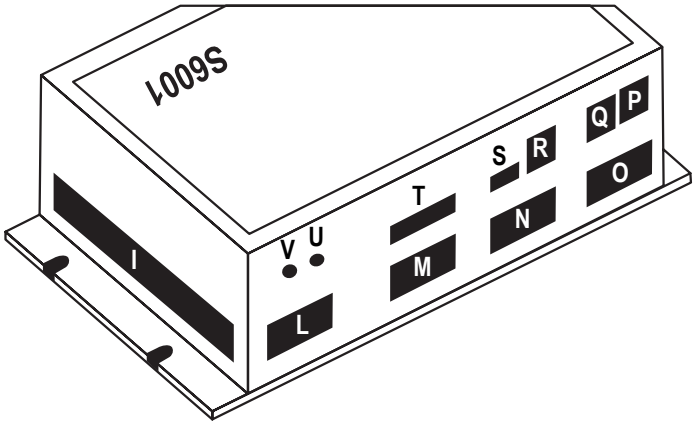
Terminals 40, 41 and 42 allow analogue control of the liquid level in a tank or a cistern.
The fluid level control inputs are software configurable.

CONNECTION IDENTIFICATION

A	RS 232c
B	Ethernet
C	Power supply
D, E	Analogue inputs /analogue outputs
F, I, L	Relay outputs
G	USB #1 Host

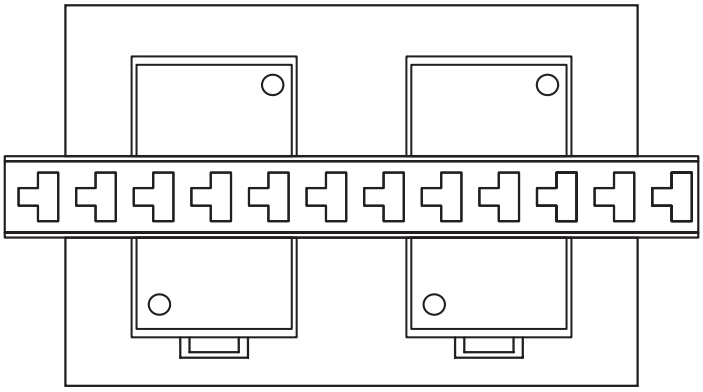
M, N, O	Digital inputs
P, Q	RS485
R	Optional bus
S	MicroSD card slot
T	SIM card slot
U	Main antenna
V	Mobile antenna





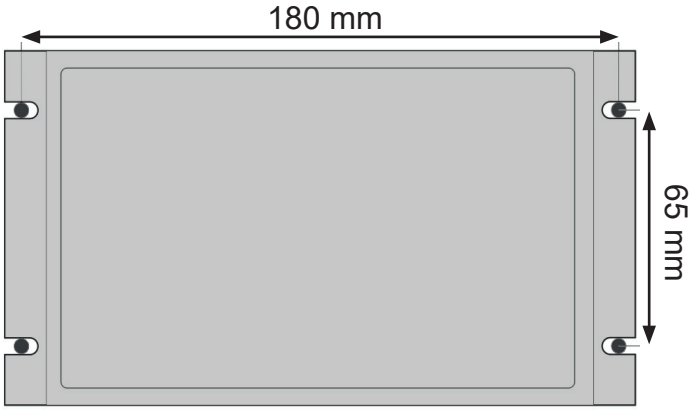
ASSEMBLY REGULATIONS

ASSEMBLY ON DIN RAIL



It is possible to install on DIN EN 60715 rail.
For installation on a DIN rail, use the supplied data supports.
Installation in the lower part of the electrical panel is recommended.

PANEL INSTALLATION



Drill 4 holes for the screws (diameter 5 mm max), with the distances marked in the figure. Fix the device with suitable fastening elements (screws or rivets).
Be careful not to drop the device during the fixing operations to avoid damaging it.
Installation in the lower part of the electrical panel is recommended.