

GSM 8

Remote control via GSM

8 inputs

4 outputs

Description

The GSM 8 is a remote control and telemetry system based on GSM/GPRS technology, that solves the monitoring of remote stations in a simple and effective way.

It has 8 digital inputs, 4 relay outputs and the ability to read up to 8 temperature and humidity probes.

It is powered by 220V and incorporates an internal battery that allows it to operate for several hours without external power supply, and to notify alarms in case of 220V mains failure without the need for an external battery or accessory.

GSM 8 offers two clearly defined functionalities: the transmission of technical alarms (temperature or humidity out of range, active digital signals, network failure, etc.), and the recording of data (datalogger) of any of its inputs, to be sent later to the Zeus server.



Indicator lights

INPUTS	Digital inputs status
OUTPUTS	Digital outputs status
STATUS	GSM modem status and coverage level
	Power failure

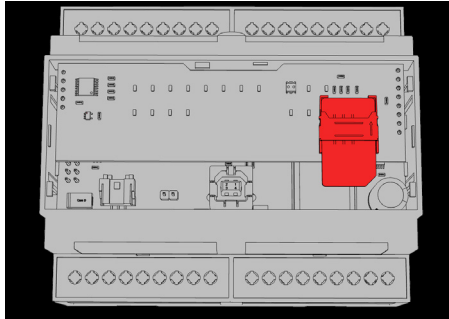
Status interpretation table according to GSM/ERR indicators

Flashing red GSM LED	Flashing green GSM LED	Flashing LED ERR	Meaning
1	0	0	Unregistered GSM modem
1	1	0	Registered GSM modem, insufficient field strength
1	2	0	Registered GSM modem, sufficient field strength
1	3	0	Registered GSM modem, good field strength
1	4	0	Registered GSM modem, excellent field strength
1	0	1	HW fault
1	0	2	SIM card not available
1	0	3	SIM card blocked by PIN or PUK

SIM card installation

Remove the front panel with a small flat screwdriver and insert it into the side recesses.

Insert the SIM card as shown:



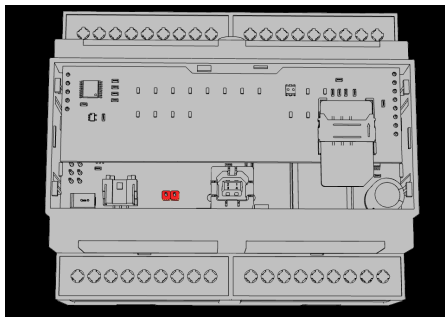
Internal battery

GSM 8 incorporates an internal lithium polymer battery which offers excellent characteristics in terms of energy density and charge/discharge cycles. However, some precautions must be taken to ensure maximum service life.

- GSM 8 is delivered with the battery disconnected from the factory, and must be switched on once it is ready for use.
- If the equipment is going to be without power for an extended period of time (more than one week), it is advisable to disconnect the battery to avoid damage due to over-discharge.
- The device should not be exposed to temperatures above 50° C as the battery life is significantly limited.

Respecting these conditions, a battery life of 5 years or more can be achieved.

The internal battery is easily connected and disconnected by means of the jumper installed for this purpose. Remove the front panel to access this jumper. Its location is shown below:



Aerial

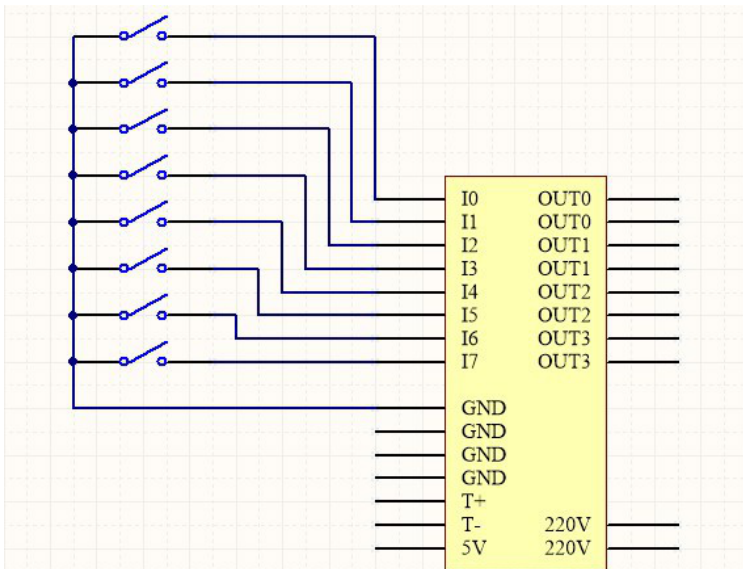
Connect the aerial to the equipment and check the signal strength according to the flashes of the GSM led (see point 2). If necessary, reposition the aerial in a more favourable position, e. g. near a window or door, avoiding the inside of metal cabinets, as radio frequency signals would be greatly attenuated.

If, despite following these recommendations, the GSM signal is insufficient, Toscano has different high gain aerial models that, in most cases, resolve the communication satisfactorily.

Digital inputs wiring

GSM 8 has 8 digital inputs that are activated by closing the circuit to any of the GND terminals. Sampling frequency is 100Hz. Therefore, the smallest pulse that the equipment will detect with warranty is 10ms. The inputs can be used as alarm signals, pulse totalizing counters or flowmeters.

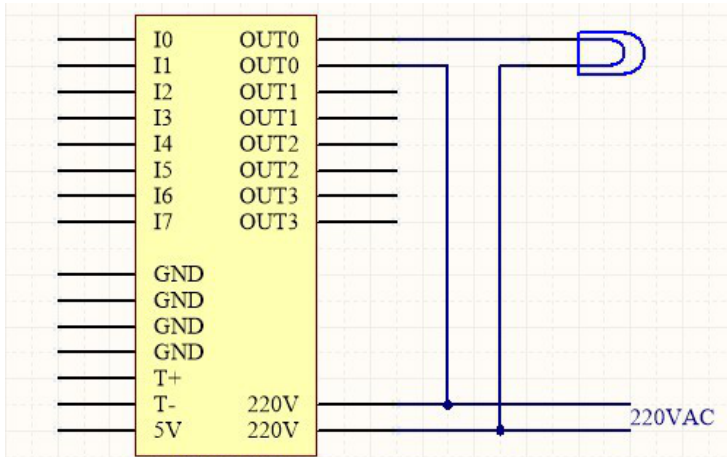
Connection of potential-free contacts:



Digital outputs wiring

GSM 8 has four relay outputs that support a maximum current of 3A and 220V.

The figure shows the connection for lighting a bulb:



Digital probes wiring

GSM 8 is equipped with a two-wire digital communication bus that allows the reading of Toscano digital probes. The communication between GSM 8 and the probes forms a “multi-drop” bus in which each probe has a unique identifier. Therefore, all probes are connected in parallel to terminals T+ and T-.

For reliable bus operation follow these recommendations:

- Maximum cable length: 300m.
- Cable type: Category 5 mains cable without mesh.
- Avoid parallel installation with power cables or mains voltage.

Recommended wiring for mains hose:

- Pair blue/white: Blue T+ / White T-.
- Pair orange/white: Orange 5V. White T-. (Only if probe requires 5v).

ZeusWeb, Monitoring via Internet

The purchase of your GSM 8 system entitles you to free use of the ZeusWeb monitoring portal. Request your device's registration and enjoy the convenience of monitoring your station from the internet or with the Android and iOS applications.



Troubleshooting common problems

Below, you will find a solution to the most common difficulties in operating with GSM 8 equipment:

The GSM status LED does not change to green. Equipment does not register.

- Check that the SIM card is unlocked (no PIN required) and works correctly in an ordinary mobile terminal.
- Check that the GSM signal level is sufficient, change the position aerial or install a higher gain aerial.

Status LED flashes in green, but the device does not send SMS.

- Check that the card has a balance.
- Check that the SMS service center is properly configured.
- Check that the list of authorized phones is correct.

The equipment notifies the alarms, but it does not respond to queries by SMS.

- Check that the cards have short numbers (corporate numbers); in this case, the short number must be entered in the list of authorized telephones. If these are standard numbering cards, check that the authorised numbers have been entered in international format.

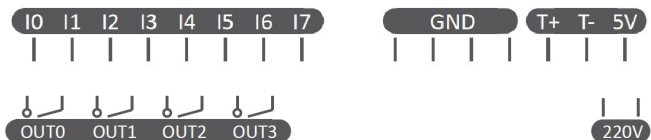
The equipment does not appear to be running the SINC command.

- Make sure that your own phone is properly configured and in international format. If the card inserted in the GSM 8 has short numbering, the short number must be entered in the own telephone parameter.

Common errors:

- Do not operate the equipment without the connected GSM aerial.
- You should not leave the list of authorized phones empty as this will allow any phone to access your equipment.

Connection table



SIGNAL	DESCRIPTION	NOTES
I0	Digital input 0	Activation by GND contact
I1	Digital input 1	Activation by GND contact
I2	Digital input 2	Activation by GND contact
I3	Digital input 3	Activation by GND contact
I4	Digital input 4	Activation by GND contact
I5	Digital input 5	Activation by GND contact
I6	Digital input 6	Activation by GND contact
I7	Digital input 7	Activation by GND contact
GND	Ground for activation of digital inputs	
GND	Ground for activation of digital inputs	
GND	Ground for activation of digital inputs	
GND	Ground for activation of digital inputs	
T+	Positive input temperature probe	Temperature probe red cable
T-	Negative input temperature probe	Temperature probe black cable
5V	5V output for probe	
220 V	Equipment power supply	Fusible interno 1A
OUT0	Salida a relé 0	3A 250V maximum
OUT1	Relay output 1	3A 250V maximum
OUT2	Relay output 2	3A 250V maximum
OUT3	Relay output 3	3A 250V maximum

Specifications

Power supply	230VAC
Consumption	5W
Internal battery	LiPo 3,7V 400mAh Autonomy >2h
Processor	ARM7
Recording memory	>30000 records
GSM radio modem	Cinterion BGS2 Quad Band
Dimensions	105 x 90 x 70 mm
Weight	250g
Operating temperature	0°...+50° C
Digital inputs	
Number	8, ground contact activation
Impedance	330 ohm
Sampling frequency	100Hz
BUS 1 Wire	
Number	1
Voltage	3.3V
Maximum distance	300m
Relay outputs	
Number	4
Voltage	250VAC
Maximum intensity	3A



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