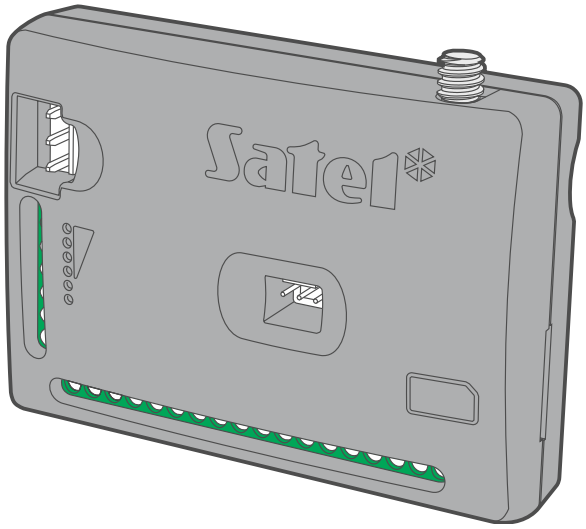
GPRS-A LTE

Universal monitoring module



Quick installation guide

Full manual is available on **www.satel.eu**

EN

Firmware version 1.04 / 2.00

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IMPORTANT

The module should be installed by qualified personnel.

Prior to installation, please read carefully this manual in order to avoid mistakes that can lead to malfunction or even damage to the equipment.

Disconnect power before making any electrical connections.

Changes, modifications or repairs not authorized by the manufacturer shall void your rights under the warranty.

The name plate of the device is located on the enclosure base.

FreeRTOS is used in this device (www.freertos.org).

SATEL aims to continually improve the quality of its products, which may result in changes in their technical specifications and software. Current information about the changes being introduced is available on our website.
Please visit us at:
https://support.satel.eu

Hereby, SATEL sp. z o.o. declares that the radio equipment type GPRS-A LTE is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.satel.eu/ce

The following symbols may be used in this manual:

 - note,

 - caution.

This manual describes how the GPRS-A LTE module should be installed. For further information related to the module, including its configuration and operation, please refer to the full version of manual, available at **www.satel.eu**

1. GPRS-A LTE module installation

Disconnect power before making any electrical connections.

It is not advisable to power up the module if the antenna is not connected.

The installation to which the module is to be connected should be provided with:

- **2-pole disconnector,**
- **short-circuit protection with a 16 A time delay circuit breaker.**

The GPRS-A LTE module should be installed indoors, in spaces with normal air humidity. When selecting the mounting location, remember that thick masonry walls, metal partitions, etc. will reduce the range of radio signal. It is not advisable to install the module in close vicinity to electrical installations, because this can result in malfunctioning of the device.

If the module is to comply with requirements of the EN50131 standard for Grade 2, it must be installed in an additional enclosure that will enable it to meet requirements of the tamper standards (e.g. in the SATEL OPU-3 or OPU-4 enclosure).

1.1 Preparing the cabling

Run the cables to be used for connecting the module with other devices to the module installation place. Do not lay the cables in immediate vicinity of the low-voltage electrical network wires, especially those used for supplying the high-power equipment (such as electric motors).

It is recommended that unshielded non-twisted cable to be used.

1.2 Installation of the module

The module enclosure base makes it possible to secure the module to the mounting surface by using e.g. a cable tie or angle hooks.

Description of terminals

+12V – power input (12 VDC ±15%).

COM – common ground.

RING, TIP – terminals for connecting the control panel telephone communicator.

S1…S3 – 1-Wire bus (1-Wire digital temperature sensors can be connected to the bus):
S1 – common ground,
S2 – data,
S3 – power supply.

I1…I8 – inputs. They can be programmed as digital (NC or NO type) or analog ones.

O1...O2 – programmable OC type outputs (disconnected from common ground / shorted to common ground).

O3...O4 – programmable relay outputs. When the module power is off, the relays are open (NO). When the power is on, the output operates as defined by the “Polarity” option (see full module manual).

AC – input for supervision of AC voltage presence.

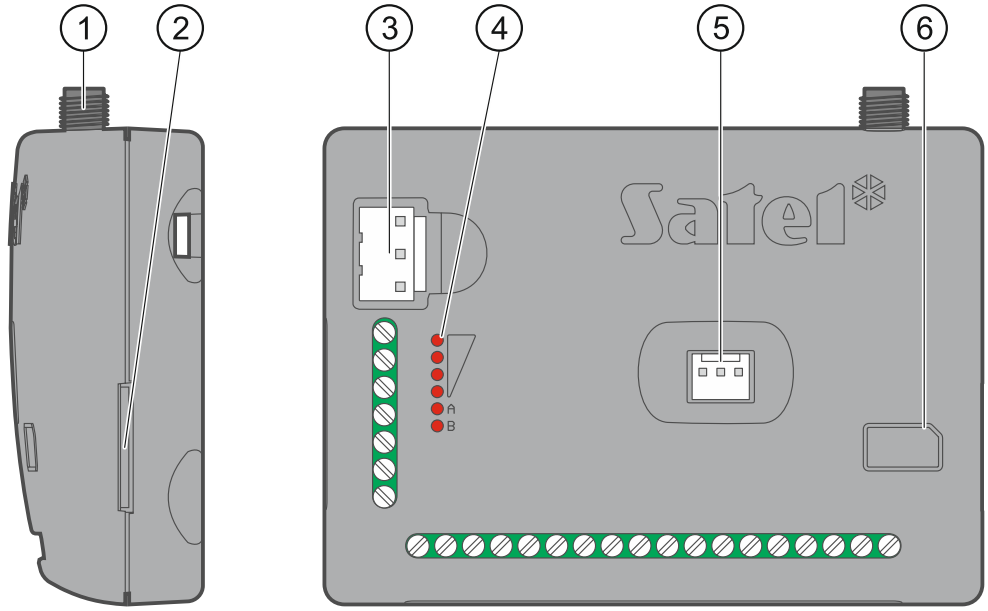

Fig. 1. GPRS-A LTE module.

1. antenna connector (the antenna is delivered with the module).
2. SIM card slot.

Inserting the SIM card into its slot before programming the card PIN code in the module is not recommended (if the card requires entering the PIN code).

3. APS connector for a SATEL power supply unit (e.g. APS-412).
4. LEDs indicating the module status.
5. RS-232 (TTL) port.
6. information on how to install the SIM card.

1.2.1 Antenna

The GPRS-A LTE module is delivered with an antenna. The antenna can be replaced with another antenna mounted on the enclosure or at some distance from it.

Using the antenna mounted at some distance from the enclosure is recommended wherever thick masonry walls, metal partitions etc. may decrease the range of radio signal at the module installation place.

The antenna must not be installed in parallel to low-voltage electrical wires, or it can affect performance of the antenna.

1.3 Connecting the alarm control panel

Connect the control panel telephone communicator to the TIP and RING terminals.

1.4 Connecting the devices to the inputs and outputs

1. Connect the devices whose operation is to be monitored by the module to the input terminals.
2. If the module is to be powered from the SATEL APS-15 or APS-30 power supply, you can connect to the AC input terminal the wire from the secondary winding of the transformer which supplies the AC voltage to the power supply (Fig. 2). This will enable the GPRS-A module to supervise the presence of AC voltage.

3. Connect the devices which are to be controlled by the module to the terminals of outputs.

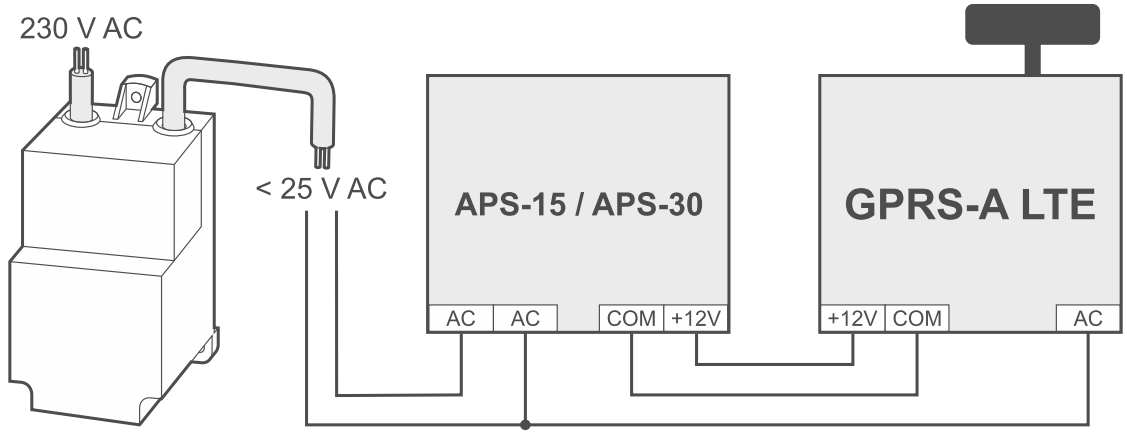

Fig. 2. Example of connecting supply and monitoring AC voltage presence if the module is powered from SATEL APS-15 / APS-30 power supply unit.

1.5 Connecting the digital temperature sensors (1-Wire)

You can connect up to 8 digital temperature sensors to the 1-Wire bus. The length of wires should not exceed 30 meters. If several sensors are to be connected to the bus, it is recommended that you use the distribution box module (MZ-2 or MZ-3).

SATEL's product offering includes the **DS-T1** and **DS-T2** waterproof temperature sensors. The **DS-T1** sensors measure temperatures ranging from -35°C to 60°C, while the **DS-T2** – from -40°C to 110°C. They are suitable for indoors or outdoors mounting. The **DS-T1** sensors can be secured to the mounting surface with adhesives or screws. The **DS-T2** sensors are designed for flush mounting (they are 6 mm in diameter). The DS-T1 / DS-T2 sensor wires are to be connected to the bus terminals in the following manner:

black wire – terminal S1 (common ground),

green wire – terminal S2 (data),

white wire – terminal S3 (power).

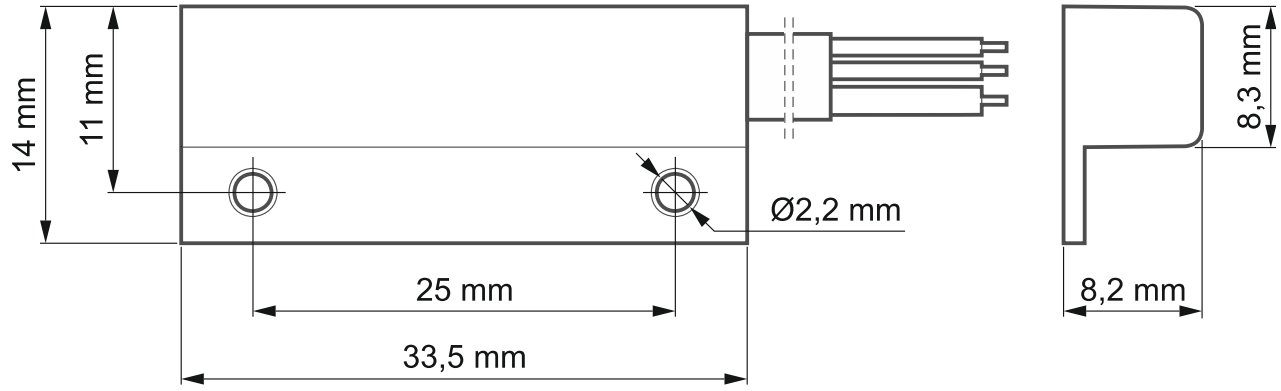

Fig. 3. Dimensions of DS-T1 temperature sensor enclosure.

1.6 Connecting the power supply and starting the module

The module may be powered from the control panel, from an expander with power supply, or from a power supply unit with current limitation up to 4 A. SATEL offers power supplies (e.g. APS-412), which can be connected to the APS connector on the electronics board.

The required output current of power supply is at least 500 mA.

1. Depending on the selected method of module powering, connect the power supply unit to the APS connector or connect the power leads to the +12V and COM terminals (use flexible conductors with a cross-section of 0.5-0.75 mm^2, or rigid conductors with a cross-section of 1-2.5 mm^2).

Never connect power supply to APS connector and terminals at the same time.

2. Power up the module. The module will start up.

1.7 Connecting the computer to the module

Connect the computer to the module RS-232 (TTL) port. To make the connection, use the USB-RS converter offered by SATEL. Having connected the computer to the module, you can:

- configure the module by using the GX Soft program. You can download the GX Soft program from the www.satel.eu website. Required program version: 2.0 (or newer). See full manual for more information.
- update the module firmware (see full manual of the module).

1.8 Installing the SIM card

1. If PIN code is required by the SIM card, use the GX Soft program to program the code.
2. Power down the module.
3. Insert the SIM card into its slot as shown on the enclosure.
4. Power up the module. Logging the telephone into the cellular network may take a few minutes.

If the module is to send data via the cellular network, it is recommended that you use SIM cards with a dedicated tariff plan for M2M (machine-to-machine) communication.

If the programmed PIN code is invalid, the module will report a trouble. Programming a correct PIN code will clear the trouble.

Restarting the module with a wrongly programmed PIN code three times will block the SIM card. To unblock the SIM card, remove it and insert into a mobile phone. Then, enter the PUK code.

2. Specifications

Number of inputs		8
Number of outputs	OC type	2
	relay, NO type	2
Supply voltage		12 VDC ±15%
Standby current consumption		60 mA
Maximum current consumption		400 mA
Maximum permissible voltage on AC input		25 VAC
O1…O2 outputs (OC type)		50 mA / 12 VDC
O3…O4 outputs (relay, NO type)		1000 mA / 30 VDC
Environmental class according to EN50130-5		II
Operating temperature range		-10...+55°C
Maximum humidity		93±3%
Enclosure dimensions		83 x 65 x 23 mm
Weight		112 g