Satel®

GPRS-A

Universal monitoring module

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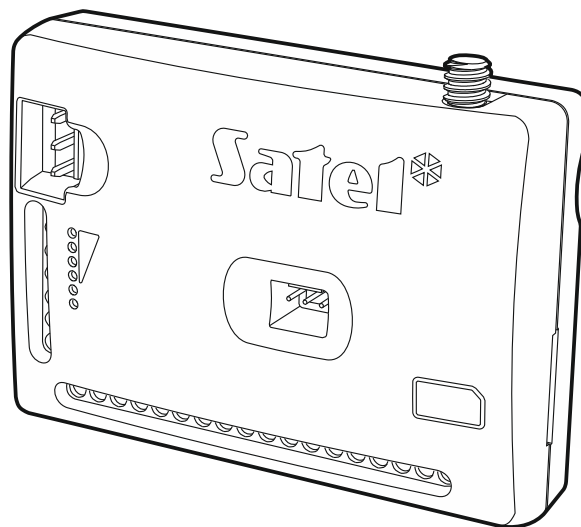
Quick installation guide

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

WARNINGS

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's goal is to continually upgrade the quality of its products, which may result in some changes of their technical specifications and firmware. The current information on the introduced modifications is available on our website.
Please visit us:
http://www.satel.eu

Hereby, SATEL sp. z o.o., declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. The declaration of conformity may be consulted at www.satel.eu/ce

The following symbols may be used in this manual:

i - note,

⚠ - caution.

This manual describes how the GPRS-A 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 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 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.

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.
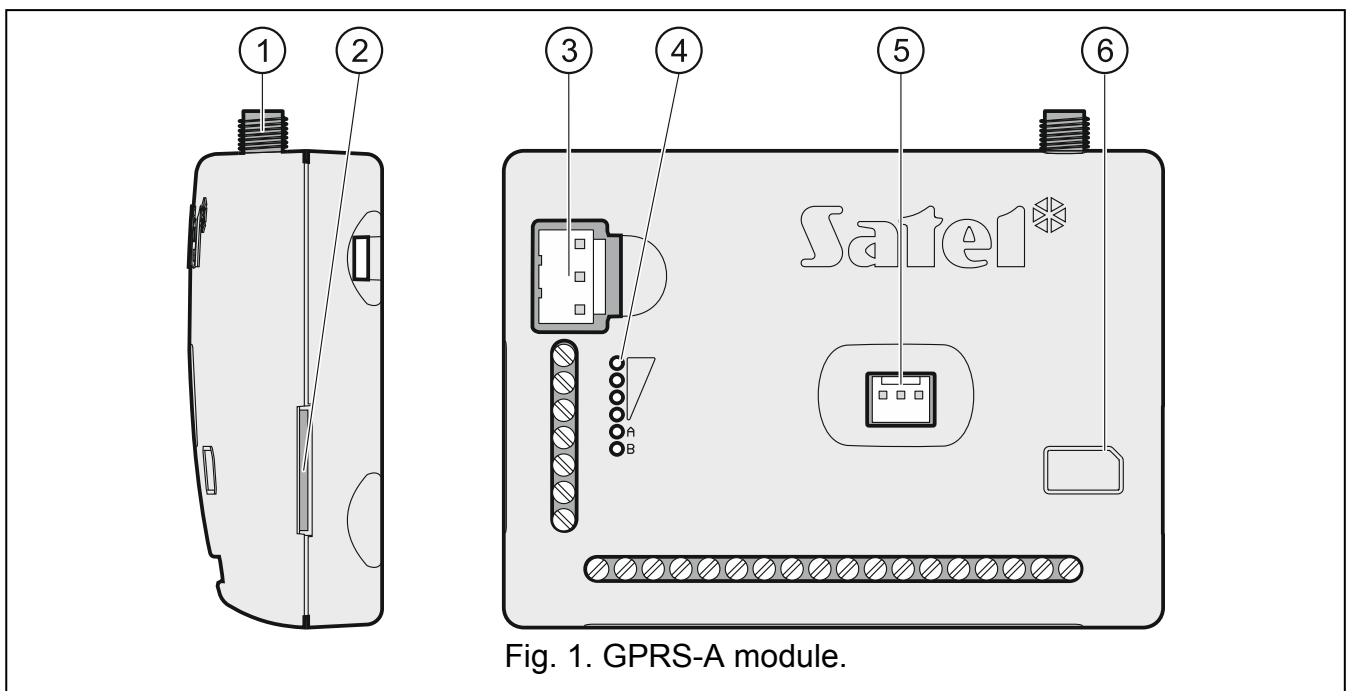

Fig. 1. GPRS-A module.

① antenna connector (the antenna is delivered with the module).

② SIM card slot.

i | *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-612).

④ LEDs indicating the module status.

⑤ RS-232 (TTL) port.

⑥ information on how to install the SIM card.

Description of terminals

+12V – power input (12 V DC ±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 – OC type outputs (shorted to common ground when in active state).

O3...O4 – NO type relay outputs (normally open).

AC – input for supervision of AC voltage presence.

1.2.1 Antenna

The GPRS-A 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 monitor the presence of AC voltage fed into the device from which the module is supplied, the wire from the secondary winding of transformer from which that device is supplied is to be connected to the AC input terminal (see Fig. 2).

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.
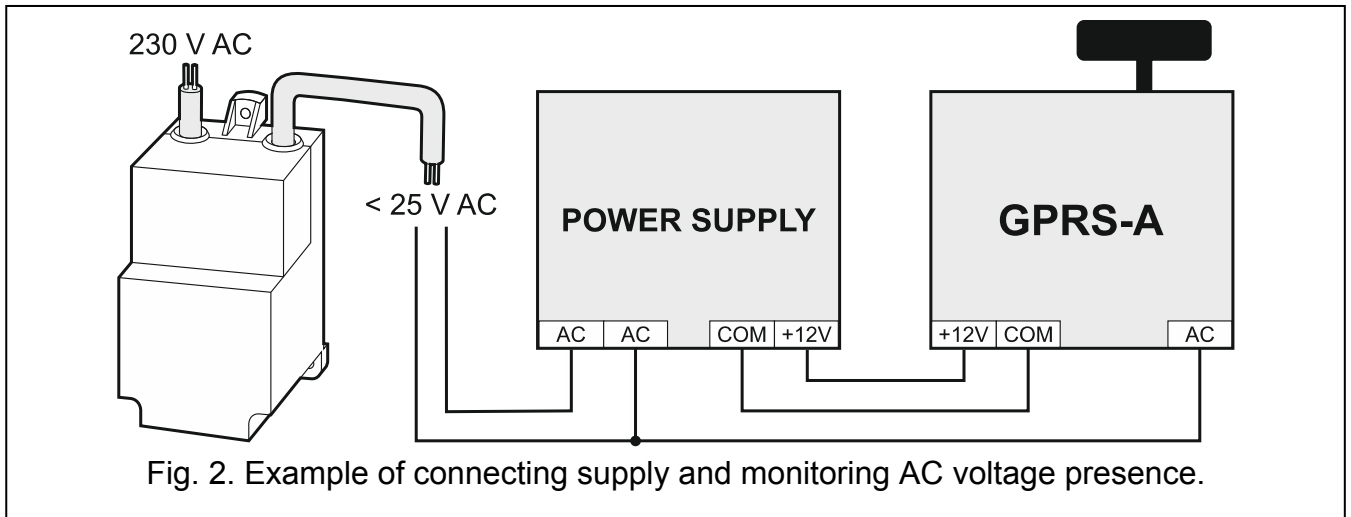
1.5   Connecting the digital temperature sensors (1-Wire)

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** waterproof temperature sensors. They make it possible to measure temperatures ranging from -35°C to 60°C. They are designed for surface mounting indoors or outdoors. To secure them to the mounting surface, you may use adhesives or screws. The DS-T1 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.
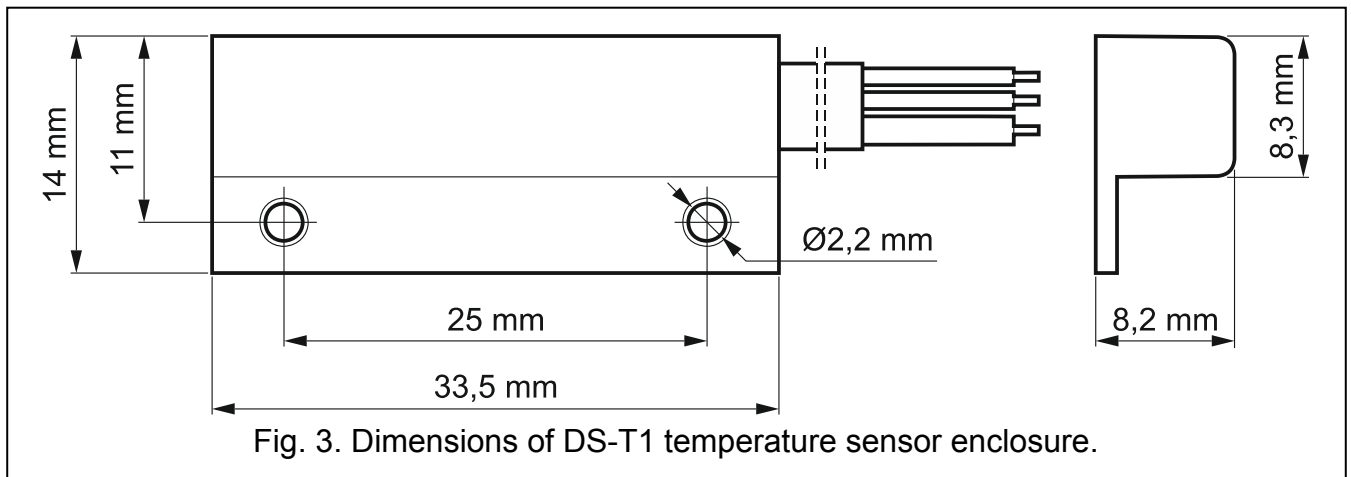
1.6   Connecting the power supply and starting the module

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 3 A. SATEL offers power supplies (e.g. APS-612), which can be connected to the APS connector on the electronics board.

The required output current of power supply is at least 250 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. It can be installed on computers with WINDOWS VISTA/7/8/10 operating system. 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 GSM network may take a few minutes.

i | *If the module is to send data in GPRS technology, 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 V DC ±15%
Standby current consumption		80 mA
Maximum current consumption		220 mA
Maximum permissible voltage on AC input		25 V AC
O1…O2 outputs (OC type)		50 mA / 12 V DC
O3…O4 outputs (relay, NO type)		1000 mA / 30 V DC
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		110 g