INT-KNX-2

KNX INTEGRATION MODULE

The INT-KNX-2 module integrates the INTEGRA / INTEGRA Plus alarm system with the KNX system. Using the module, the control panel can control the actuators connected to the KNX bus, and the bus devices can control the alarm system. This manual applies to the module with firmware version 2.00, which is supported by the INTEGRA and INTEGRA Plus control panels with firmware version 1.13 of 2015-03-11 (or newer).

1 Features

- 64 KNX communication objects.

- Expansion of the alarm system by adding virtual outputs dedicated to control the KNX devices.

- The number of virtual outputs determined by means of DIP switches (from 8 to 64 – a multiple of 8).

- Capability to control the KNX devices with macro commands.

- Alarm system control by means of KNX devices (via the alarm system zones).

- Bus Coupling Unit for direct connection of the module to the KNX bus.

- NC type tamper input.

- Connectable to RS-485 bus (firmware update through the bus).

2 Specifications

Supply voltage	12 V DC ±15%
Standby current consumption	43 mA
Maximum current consumption	50 mA
Environmental class according to EN50130-5	II
Operating temperature range	-10 °C...+55 °C
Maximum humidity	93±3%
Dimensions	80 x 57 mm
Weight	32 g

The declaration of conformity may be consulted at www.satel.eu/ce
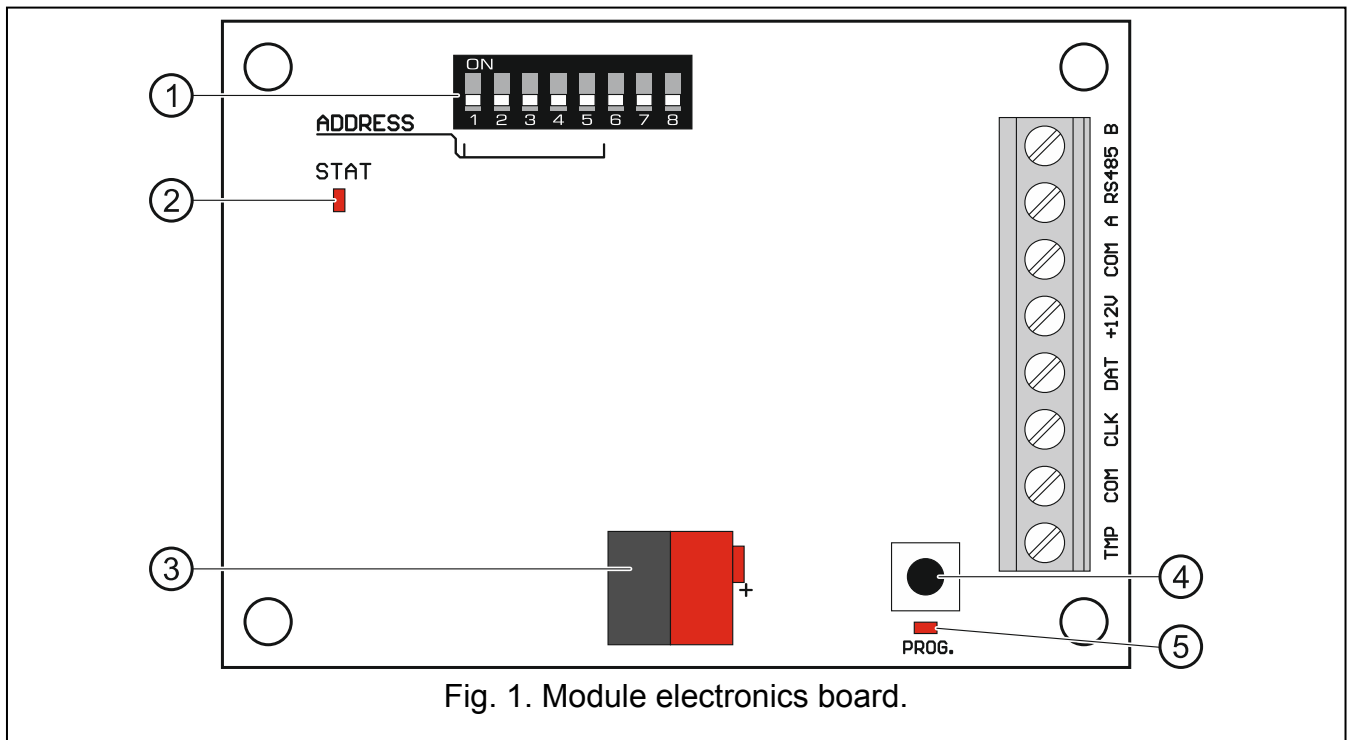
3 Electronics board

Fig. 1. Module electronics board.

Explanations to Fig. 1:

(1) DIP-switches (see: DIP-SWITCHES).

(2) STAT LED indicating the status of communication with the control panel:

ON – no communication with the control panel,

blinking – communication with the control panel OK.

(3) KNX bus connectors.

(4) button for future applications.

(5) LED for future applications.

Description of terminals:

TMP   -   tamper input (NC) – if not used, it should be shorted to the common ground.

COM   -   common ground.

CLK   -   clock (expander communication bus).

DAT   -   data (expander communication bus).

+12V   -   +12 V DC power input.

A RS485 B -   RS-485 bus.

4 DIP-switches

A numerical value is assigned to each switch. In OFF position, the value is 0. Numerical values assigned to individual switches in ON position are shown in Table 1.

DIP-switch number	1	2	3	4	5	6	7	8
Numerical value	**1**	**2**	**4**	**8**	**16**	**1**	**2**	**4**

Table 1.

The DIP-switches 1-5 are used for address setting. The sum of numerical values assigned to switches 1-5 means the address set on the module. The address must be different from that on the other modules connected to the communication bus of the control panel.

Switches 6-8 allow you to specify the number of outputs that will be added to the system (they will be assigned to communication objects). The numerical value (see Table 1) to which the desired number of outputs corresponds (see Table 2) must be set on the switches.

Note: *If the number of outputs set on the switches is higher than the available one, the correct identification of the module by the control panel will be impossible. In order to determine what number of outputs is available in the system, subtract the main board outputs and the outputs in expanders connected to the control panel from the maximum number of outputs supported by the panel.*

Numerical value	0	1	2	3	4	5	6	7
Number of outputs	8	16	24	32	40	48	56	64

Table 2.

1 address is allocated for each group of 8 outputs on the expander bus. The module can occupy up to 8 addresses on the expander bus. The control panel assigns consecutive addresses to the module after the address set on the DIP switches. This should be taken into consideration when designing the system and a sufficient number of free addresses should be left. If the number of free addresses is insufficient, it will be impossible to properly complete the identification procedure.
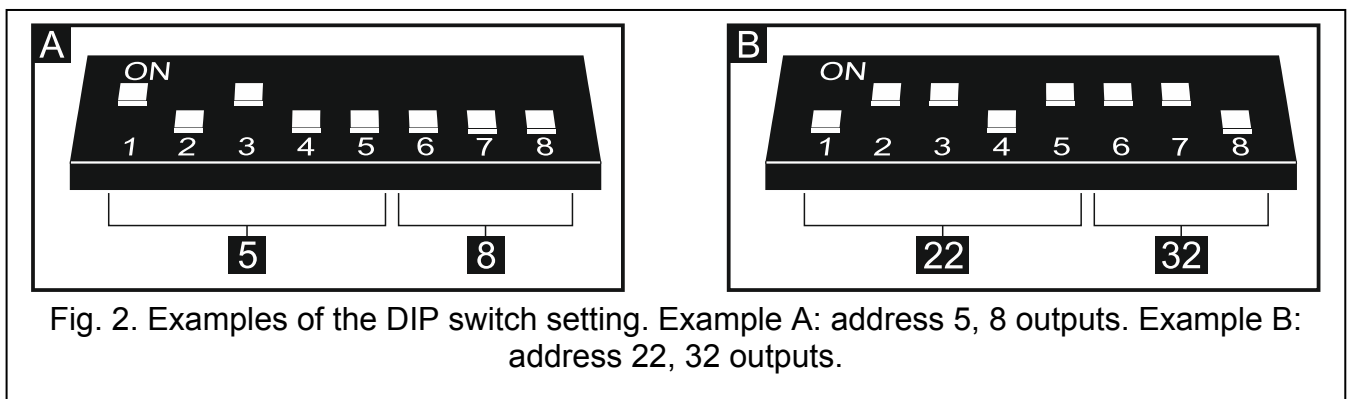

Fig. 2. Examples of the DIP switch setting. Example A: address 5, 8 outputs. Example B: address 22, 32 outputs.

5 Installation

⚠️ **Disconnect power before making any electrical connections.**

The expander is designed for indoor installation.

1. Fasten the module electronics board in the enclosure.
2. Using the DIP switches, set the appropriate address for the module and determine the number of outputs that will be added to the system.
3. Connect the CLK, DAT and COM terminals to the corresponding terminals of the control panel communication bus (see: installer manual for alarm control panel). It is recommended that an unshielded non-twisted cable be used to make the connection. If you use the twisted-pair type of cable, remember that CLK (clock) and DAT (data) signals must not be sent through one pair of twisted conductors. The conductors must be run in one cable.

4. If the module is to supervise the enclosure tamper contact, connect the wires of tamper contact to the TMP and COM terminals. If the module is not to supervise the enclosure tamper contact, connect the TMP terminal to the module COM terminal.

5. Connect the module to the KNX bus.

6. Connect the power leads to the +12 V and COM terminals. If the distance to the control panel is less than 300 meters, the module can be supplied directly from the control panel. If the distance to the control panel is higher, the module must be supplied from another power source, which is located at a closer distance (a power supply unit or an expander with power supply).

6   Module identification

The control panel does not support the modules which have not been identified, therefore you must run the identification function after completion of the installation and power-up of the alarm system. You can do it by means of:

• LCD keypad: SERVICE MODE ▶STRUCTURE ▶HARDWARE ▶IDENTIFICATION ▶EXPANDERS ID.,

• DLOADX program: "Structure" window →"Hardware" tab →"Expansion modules" branch →"Exp. modules identification" button.

During the identification procedure, a number of outputs in the system, determined by means of DIP switches, is assigned to the module, and additional addresses are allocated if the number of outputs is greater than 8.

The control panel monitors presence of the identified modules. If the module is disconnected from communication bus, position of DIP-switches is changed, or the device is replaced with another one with DIP-switches set in the same way, a tamper alarm will be triggered.

7   Configuring the module

You can configure the module by means of the DLOADX program (version 1.13.008 or newer): "Structure" window →"Hardware" tab →"Expansion modules" branch →*[module name]*.

Some of the parameters and options are stored in the control panel memory, and some of them in the module memory. After clicking on the button in the main menu, the data are only read from the control panel. Before you proceed to programming, the data must also be read from the module. After clicking on the module name, the program may prompt you to read these data. Otherwise, click on the "Read" button (see Fig. 3).

After programming is completed, click on the "Write" button to write the data to the module, and on the button to write the data to the control panel.

7.1 Description of parameters and options

Name – individual name of the device (up to 16 characters).

Physical address – address of the INT-KNX-2 module.

KNX comm. delay after reset – the time that must elapse after starting the module, before the module begins sending KNX telegrams.

Two level address – if the option is enabled, the address has a two-level structure. If the option is disabled, the address structure is three-level.

Trouble if KNX bus disconnected – if the option is enabled, the module will report a trouble after loss of communication with the KNX bus.

No auto-reset after three module tamper alarms – if this option is enabled, the feature reducing the number of tamper alarms from the module to three is disabled (the feature prevents multiple logging of the same events and applies to successive uncleared alarms).

Tamper signaled in part. – partition where alarm will be triggered in the event of module tamper.

Fig. 3. DLOADX program: configuring the INT-KNX-2 module.

7.1.1 Communication objects

Communication objects are presented in the table. Click on an object to configure its settings in the panel on the right.

No. – number of the alarm system output assigned to the communication object. The output can control the INTEGRA OUTPUT communication object. The field is blank if no output is assigned to the communication object (see: DIP-SWITCHES).

Type/Name – type of the communication object and name of output / zone / macro command (depending on the selected object type).

Group addresses – group addresses of the communication object.

Flags – each communication object has flags. The default flags should only be changed in exceptional circumstances.

    C – **Communication**

    R – **Read**

    W – **Write**

I – **Read on init**

T – **Transmit**

U – **Update**

Data type – size and meaning of the communication object data.

Priority – priority of the communication object.

Object type – type of the communication object:

none – communication object is not used.

Integra Output – change of output status changes the communication object value.

Integra Zone – change of communication object value changes the zone status.

Virtual (macro) – running the macro command changes the communication object value (without involvement of virtual outputs). The macro command is a sequence of actions, composed of single commands, which are to be done by the control panel when running the macro command. The commands may include instructions to change the value of INT-KNX-2 communication objects. Macro commands are offered by some of the SATEL devices (e.g. INT-KSG, INT-TSG and INT-TSI keypads).

Parameters for communication object of INTEGRA OUTPUT type

Send on output ON – if the option is enabled, activating the output changes the object value to that entered in the field below.

Send on output OFF – if the option is enabled, deactivating the output changes the object value to that entered in the field below.

Cyclical transmmision period – time interval every which updated value of the communication object is sent to the KNX bus. Value 0 means that the object value is not cyclically sent.

Parameters for communication object of INTEGRA ZONE type

Zone no. – number of the alarm system zone whose status changes with the change of the communication object value.

Reaction on "1" – zone reaction to the object value change to 1:

0. none – zone status will not change,

1: violation – zone will be violated,

2. restore – zone violation will end,

3. impulse – zone will be violated for 5 seconds.

Reaction on "0" – zone reaction to the object value change to 0 (0. none / 1: violation / 2. restore / 3. impulse).

On KNX bus rest. – zone reaction to the KNX bus power restore (0. none / 1: violation / 2. restore).

On KNX bus off – zone reaction to the KNX bus power loss (0. none / 1: violation / 2. restore).

On power up – zone status after starting the module (1: violation / 2. restore).

Parameters for communication object of VIRTUAL (MACRO) type

Name – name of the communication object for the purpose of creating macro commands (up to 16 characters).

Value – value of the communication object after starting the module.

Cyclical transmmision period – time interval every which updated value of the communication object is sent to the KNX bus. Value 0 means that the object value is not cyclically sent.

8 Updating the module firmware

Using the RS-485 bus, connect the module to the ACCO-USB converter, and then connect the converter to the computer (see: ACCO-USB converter manual). You can find a program for updating the module firmware and a detailed description of the firmware update procedure on the www.satel.eu website.