KNX INTEGRATION MODULE

INT-KNX

int-knx_en 09/11

The INT-KNX module integrates the INTEGRA alarm system with the KNX system, so the control panel can control the actuators connected to the KNX bus, and the bus devices can control the alarm system. The module interfaces with the INTEGRA control panels with software version 1.10 or later. This manual applies to the module with electronics version 1.2.

Note: *The INT-KNX module has no integrated Bus Coupling Unit (BCU). The BCU in BTM version must be purchased separately (e.g. Bus Coupling Unit (BTM) UP117/11 made by Siemens).*

1. Features

- Expansion of the alarm system by adding virtual outputs dedicated to control actuators connected to the KNX bus.
- The number of virtual outputs determined by means of DIP switches (from 8 to 64 – a multiple of 8).
- Sending a predefined telegram after changing the virtual output status.
- The status of virtual outputs automatically changes with changing the status of communication objects having the same group address as the output.
- Capability to control the KNX system with macro commands available in the INT-KSG keypad, without using the virtual outputs.
- Receiving commands sent by the bus devices and sending them to the alarm system zones (support for "On" and "Off" commands).
- RS-232 port for connecting the module to the BCU.
- Dedicated adapter (interface) and cable for connecting the module to the BCU.

2. Installation

Disconnect power before making any electrical connections.

The INT-KNX module should be installed indoors, in spaces with normal air humidity.

1. Secure the module electronics board in its 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 (see: DIP SWITCHES).
3. Connect the CK, DT and COM terminals with wires to the appropriate terminals of the control panel expander bus. To make a connection, it is recommended to use an unscreened straight-through cable. When using the twisted-pair type of cable, the CK (clock) and DT (data) signals must not be sent through one twisted pair. The wires must be run in one cable. The cable length should not exceed 1000 m. If it exceeds 300 meters, it may be necessary to use several wires connected in parallel for each signal.
4. Connect the tamper switch wires of the enclosure where the module is installed to the TMP and COM terminals. If the status of tamper switch is not to be controlled by the module, short-circuit the TMP and COM terminals.
5. 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).

Note: *If the power source (alarm control panel, expander with power supply, power supply unit) is testing the battery presence by periodically lowering the voltage, make sure that the battery is present for correct operation of the INT-KNX module.*

6. Install and connect the BCU to the KNX bus (in accordance with the BCU manufacturer's recommendations).
7. Connect the adapter delivered with the INT-KNX module to the BCU (see: Fig. 1).

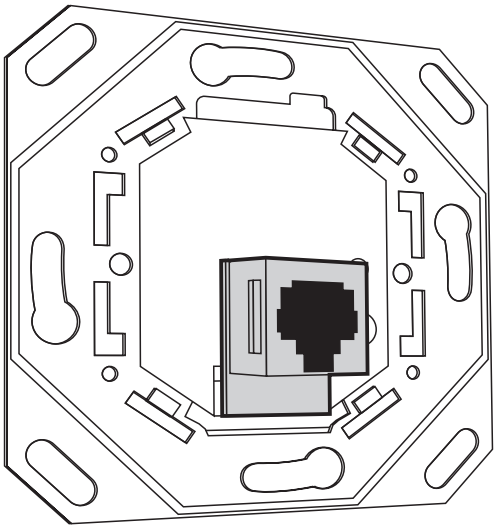

Fig. 1. Correct connection of the adapter to BCU.

8. Connect the adapter to the INT-KNX module with the cable included in the module delivery set.

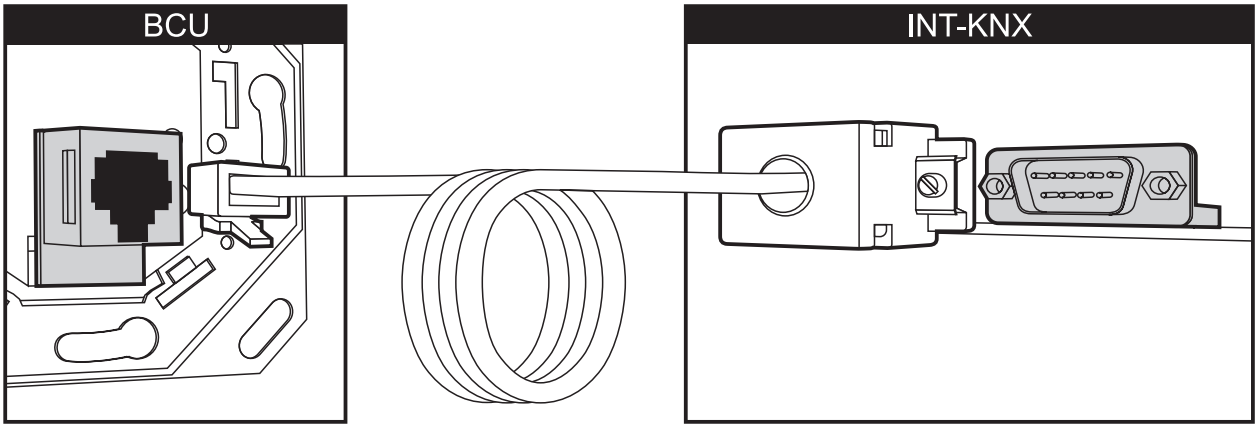

Fig. 2. Connecting adapter and INT-KNX module with cable.

2.1 Description of the electronics board

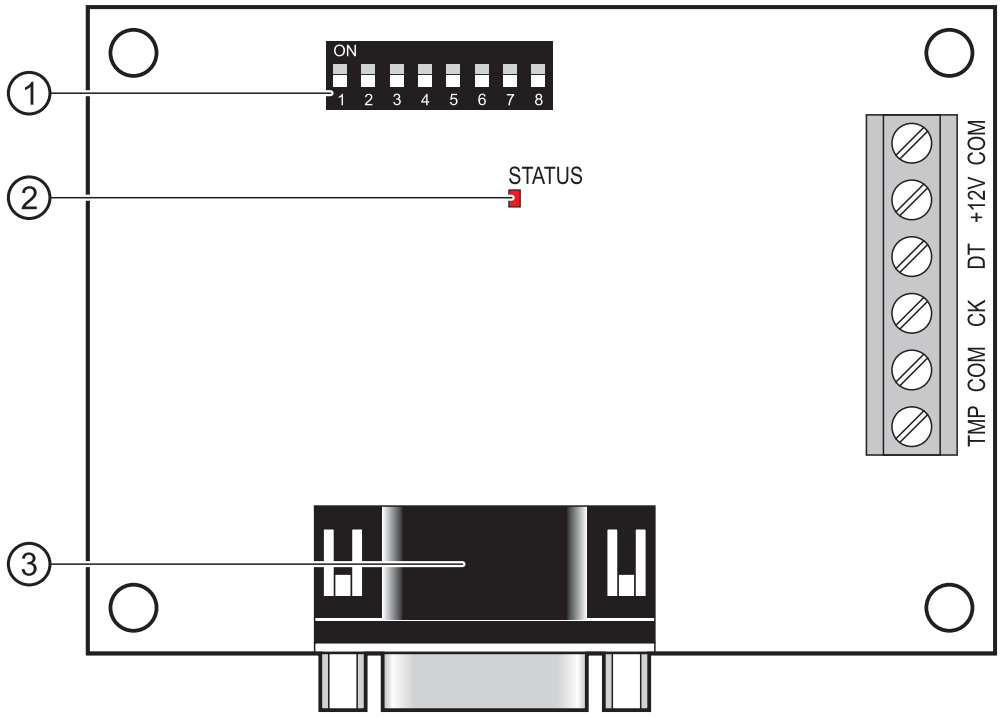

Fig. 3. View of the INT-KNX module electronics board.

Explanations for Fig. 3:

1 - **DIP switch package** for setting the individual address and the number of virtual outputs (see DIP SWITCHES).

2 - **STATUS LED** indicator:
- blinking – data exchange with the control panel;
- steady light – no communication with the control panel.

3 - **male socket DB-9 (RS-232 port)** to connect the module to the Bus Coupling Unit (BCU), using the cable included in the delivery set.

Description of terminals:

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

COM - common ground.

CK - clock.

DT - data.

+12V - power input.

2.2 DIP switches

Switch number	1	2	3	4	5	6	7	8
Numerical value	**1**	**2**	**4**	**8**	**16**	**1**	**2**	**4**

Table 1. Numerical values corresponding to the switches set to ON position (in the OFF position, the value 0 is assigned to each switch).

Switches 1-5 are used for setting the module address. The address must be different than that in the other modules connected to the expander bus. The address is the sum of numerical values set on the switches 1-5 (see Table 1).

Switches 6-8 allow you to specify the number of outputs that will be added to the system. 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. The relationship between the numerical value set on the switches 6-8 and the number of outputs that will be assigned to the INT-KNX module.

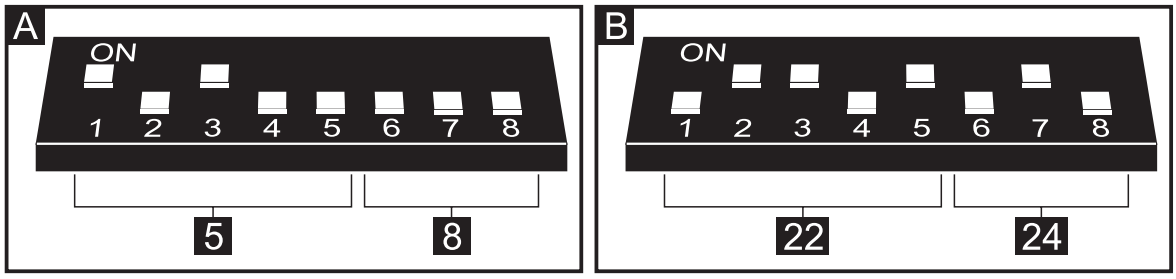

Fig. 4. Examples of the DIP switch setting.
A – address: 5, number of outputs: 8. B – address: 22, number of outputs: 24.

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.

3. 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 controls presence of the identified modules. Disconnecting the module from the bus, changing the DIP switch position or swapping for another module with the same DIP switch settings will trigger an alarm.

4. Programming the module

The module can be programmed by means of:

- LCD keypad: SERVICE MODE ▶STRUCTURE ▶HARDWARE ▶EXPANDERS ▶SETTINGS ▶*[module name]*;
- computer running DLOADX program: "Structure" window →"Hardware" tab →"Expansion modules" branch →*[module name]*.

Note: *Some parameters can only be programmed with the DLOADX program.*

4.1 Parameters and options

Some of the parameters and options are stored in the control panel memory, and some of them in the module memory. Prior to programming the module with the DLOADX program, use the "Read" button to read data from the module (see Fig. 5). The program can suggest reading the data itself when you click on the module name in the "Structure" window, "Hardware" tab. After programming, use the "Write" button to save the data to the module (see Fig. 5). The "Read" button is not intended to read the data from the control panel and the "Write" button – to write the data to the control panel.

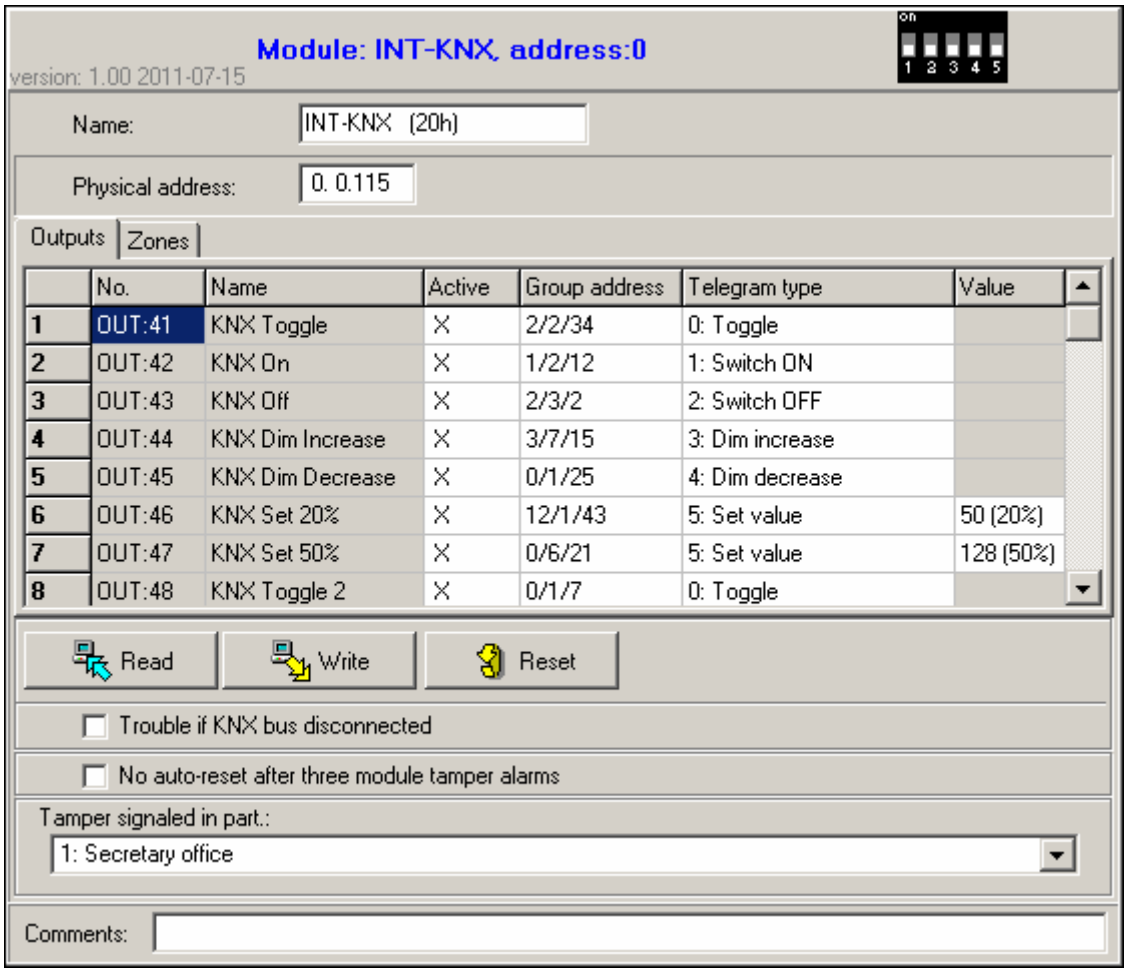

Fig. 5. Programming the INT-KNX module parameters and options in the DLOADX program.

You can restore the factory settings to the parameters and options stored in the module memory by using the "Reset" button in the DLOADX program or the FACTORY SETS function in the keypad.

The names of parameters and options stored in the module memory are shown in white text on black background.

Name – individual device name (up to 16 characters). In the LCD keypad, the name is programmed in the NAMES submenu (SERVICE MODE ▶STRUCTURE ▶HARDWARE ▶EXPANDERS ▶NAMES ▶*[module selection from list]*).

Physical address – physical address of the BCU port.

Trouble if KNX bus disconnected – if communication with the BCU is lost, the module can report a KNX network communication trouble.

No auto-reset after three module tamper alarms – it is possible to disable the feature limiting the number of tamper alarms from the expander to three (this feature prevents the same events from being repeatedly recorded and applies to consecutive, non-cleared alarms).

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

Outputs

Parameters for the control of KNX bus devices by virtual outputs are programmed in the module. The other output parameters (output type, cut-off time, etc.) are programmed in the control panel.

No. – the number of output in the system.

Name – the name of output in the system.

Active – the option determines whether the change in output status will result in sending a telegram to the KNX network.

Group address – the output group address (it will be inserted in the telegram sent after activating / deactivating the output).

Telegram type – depending on the selected telegram type:

0. Toggle – on activating the output, a telegram with "On" command is sent, and on deactivating the output, a telegram with "Off" command is sent;
1. Switch ON – on activating the output, a telegram with "On" command is sent;
2. Switch OFF – on deactivating the output, a telegram with "Off" command is sent;
3. Dim increase – on activating the output, a telegram with "Increase, 100%" command is sent, and on deactivating the output – a telegram with "Increase, Break" command;
4. Dim decrease – on activating the output, a telegram with "Decrease, 100%" command is sent, and on deactivating the output – a telegram with "Decrease, Break" command;
5. Set value – on activating the output, a telegram with "Value" command is sent.

Note: *When programming the virtual output parameters in the control panel, please note that in case of reverse polarity the above described logic will be reversed.*

Value – if the "Set value" type of telegram is selected, you should define the value that will be included in the telegram. You can enter numbers from 0 to 255.

Zones

The parameters related to the control of alarm system zones by KNX bus devices are programmed in the module. The other zone parameters (wiring type, zone type, etc.) are programmed in the control panel. The zone to be controlled by means of telegrams sent by the bus devices should not exist physically. It must have a different wiring type programmed than NOT USED and FOLLOW OUTPUT. You can program any zone type (function) for the zone.

Group address – group address, whose presence in the received telegram will enable control of the given zone.

Zone – the number of zone to be controlled by telegrams sent by the bus devices. Receiving a telegram with the "On" command by the INT KNX module will violate the zone (if it has already been violated, its status will not change), and receiving a telegram with the "Off" command will restore the zone (if it has not been violated, its status will not change).

Negation – when this option is active, the logic of zone operation will be reversed (the zone will be violated on receiving a telegram with the "Off" command by the INT KNX module, and the zone restore will occur on receiving a telegram with the "On" command.

Note: *The data are not read from / written to the module when using the*  *and*  *buttons in the main menu of DLOADX program.*

5. Specifications

Supply voltage ..... 12 V DC ±15%
Standby current consumption ..... 35 mA
Maximum current consumption ..... 35 mA
Environmental class II
Operating temperature range ..... -10 °C...+55 °C
Maximum humidity ..... 93±3%
Electronics board dimensions ..... 57 x 80 mm
Weight ..... 140 g

Note: *If the telegrams sent by the INT-KNX module are blocked by the line/area couplers, use the so-called "dummy application" available from the manufacturer of BCU or another company (e.g. GIRA large dummy application 900201). This will allow group addresses to be added to the project. Do not load the application onto the device.*

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

SATEL sp. z o.o.
ul. Schuberta 79
80-172 Gdańsk
POLAND
tel. + 48 58 320 94 00
info@satel.pl
www.satel.pl