

The INT-RX expansion module is designed for operation in the intruder alarm systems. It can work in conjunction with the SATEL made control panels: INTEGRA (with firmware version 1.05 or newer) and VERSA. The module enables key fobs to be assigned to the security system users. Using the key fob enables up to 6 functions to be executed. The device supports up to 248 key fobs manufactured by the SATEL company (the number of supported key fobs depends on the control panel). Transmission from the key fob is dynamically encoded using the KEELOQ[®] technology, which ensures both the operation safety and immunity to spurious control signals, coming from other devices. The module can support all key fobs manufactured by SATEL, but only the T-4 and P-4 models enable the module features to be fully utilized.

1. Description of electronics board

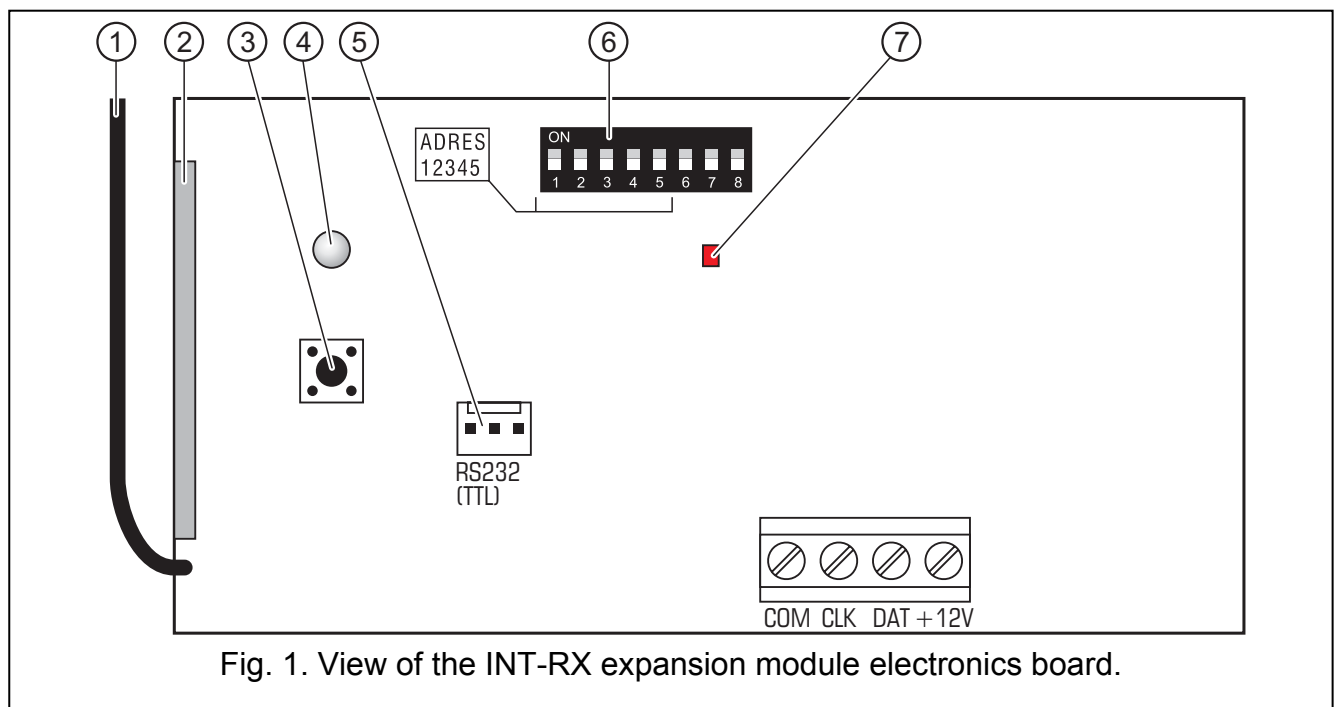


Fig. 1. View of the INT-RX expansion module electronics board.

Explanations for the figure:

- 1 – **antenna**.
- 2 – **superheterodyne receiver**, high sensitivity, immune to spurious signals.
- 3 – **tamper contact**.
- 4 – **two-color LED** indicating as follows:
 - steady green light – normal communication with the control panel;
 - blinking green light – no communication with the control panel;
 - steady red light – the expansion module is receiving transmission from a key fob with good battery;
 - blinking red light – the expansion module is receiving transmission from a key fob with low battery.

- 5 – **RS-232 port (TTL standard)** for connection of the computer (the connection can be made by using the cables included in the set manufactured by the SATEL and designated DB9FC/RJ-KPL). The port enables updating of the module firmware.
- 6 – **package of DIP-switches** intended for setting an individual address of the module (see section DIP-SWITCHES).
- 7 – **red color LED** indicating as follows:
 - blinking light – data being exchanged with the control panel;
 - steady light – no communication with the control panel.

Description of the terminals:

- COM** - common ground
- CLK** - clock
- DAT** - data
- +12V** - supply input

1.1 DIP-switches

The DIP-switches from 1 to 5 are to be used for address setting. The address must be different from that of the other modules connected to the communication bus of alarm control panel. In order to determine the expander address, add up the values set on individual switches as shown in Table 1.

DIP-switch number	1	2	3	4	5
Numerical value (for switch in ON position)	1	2	4	8	16

Table 1.

DIP-switches 6, 7 and 8 are not used.

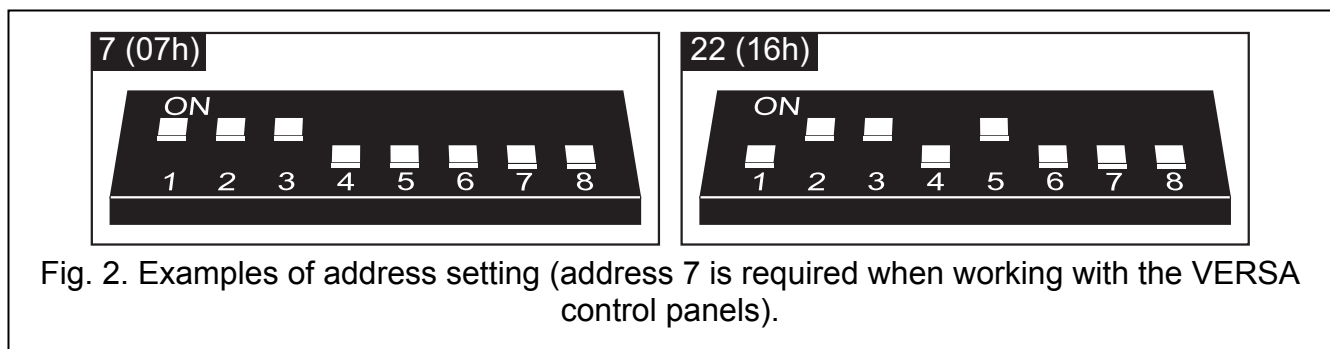


Fig. 2. Examples of address setting (address 7 is required when working with the VERSA control panels).

2. Installation and start-up



Disconnect power supply before making any electrical connections.

The INT-RX expansion module electronics board includes some static sensitive components which should be discharged before installation. Avoid touching the onboard components during installation.

The INT-RX expansion module is designed for indoor installation in spaces with normal humidity of air. When selecting the place of mounting, take into consideration that thick masonry walls, metal partitions, etc. reduce the range of radio signal. It is recommended that the module be installed at a high point, so as to achieve a better radio communication range

and avoid the risk of the module being accidentally masked by personnel moving around the site. The module installation place is to ensure protection against unauthorized access.

Connection to the control panel expander bus and to the power supply source is to be made with a typical unscreened straight cable, as used in the security alarm systems (using the “twisted pair” type of cable is not recommended). All the signal wires must be run in one cable (running the signal wires in separate cables is not allowed).

1. Open the module housing.
2. Remove the module electronics board.
3. Make the cable entry holes in the housing rear panel.
4. Pass the cable through the prepared opening.
5. Secure the housing rear panel to the mounting surface.
6. Install the module electronics board in the housing.
7. Using the DIP-switches, set a suitable module address.
8. Connect the CLK, DAT and COM terminals by means of wires to the expander bus on the control panel mainboard.
9. Connect the power wires to the +12V and COM terminals. The module supply voltage need not necessarily be provided from the control panel mainboard. Modules installed far from the control panel may be supplied locally from an independent power source (additional power supply unit, expander with power supply).
10. Close the module housing.
11. Turn on power supply of the alarm system.
12. Start the identification function in the control panel.

3. Expansion module interaction with INTEGRA control panel

The key fob data are stored in each module. If you connect the module which contains key fob related data to the alarm control panel, key fobs will be automatically assigned to the users of that control panel. This will only apply to the users created up to that time.

Several INT-RX expansion modules can be connected to one control panel of the INTEGRA series. The user can only have one key fob, but it will be supported by all modules. The key fob related data are automatically written to all the INT-RX expansion modules.

Note: *When connecting a new INT-RX expansion module to the INTEGRA system, in which one such module is already operating, you should copy the data from one module to the other so as to synchronize the key fob related data. The data can be copied by using the COPY RX KEYFOBS function, available in the LCD keypad service menu (→SERVICE MODE →STRUCTURE →HARDWARE →EXPANDERS →COPY RX KEYFOBS).*

3.1 Adding and removing key fobs

Only the service (i.e. the person using the installer password code) is authorized to add/remove the administrators' key fobs. In case of the other users, the key fob can be added/removed by the service (if authorized by the administrator), administrator, or a user having the EDIT USER authority level.



In order to add a key fob, enter its serial number manually or read its serial number during transmission to be sent on pressing the push-button.

Note: *You cannot assign the same key fob to two users.*



Available in the service menu of LCD keypad is the REM. RX KEY FOBS function (→SERVICE MODE →STRUCTURE →HARDWARE →EXPANDERS →REM. RX KEY FOBS), which makes it

possible to erase all key fob data in the INT-RX expansion modules connected to the control panel. The same also applies to the information about zones assigned to the push-buttons in individual users' key fobs. Removal of the key fob in any other way will not reset the push-button settings.


3.1.1 Adding a key fob by means of LCD keypad

You can add key fobs by using the NEW RX KEY FOB function ([installer's code]  →MASTERS →NEW MASTER/EDIT MASTER →NEW RX KEY FOB or [code]  →USERS →NEW USER/EDIT USER →NEW RX KEY FOB).




Actually, the key fob will only be added to the system after the function of adding/editing administrator or user is completed, i.e. after the function is exited by using the  key and the made changes are saved by pressing the  key.

Entering the serial number manually

1. Select ENTER MANUALLY from the list.
2. Enter the key fob number and press the  key.

Reading the serial number during transmission

1. Select from the list the INT-RX module, by means of which a key fob is to be added.
2. Following the prompts displayed on the keypad, press the key fob button twice, and, when the KEY FOB READ message appears, press .

3.1.2 Adding a key fob by means of DLOADX program

You can add key fobs by using the KEYFOBS INT-RX window (see Fig. 2). To open the window, click on the KEYFOBS INT-RX item in the USERS menu, or on the EDIT KEYFOBS button, which is available after selecting the INT-RX expansion module from the list of devices (tab HARDWARE, window STRUCTURE). Prior to adding a new key fob, you have to read the data from the module. In order to do so, click on the READ button. This will update the information presented in the KEYFOBS INT-RX window. The name(s) of the module(s), the control panel can communicate with (displayed at the top of the window – see Fig. 2), will be highlighted in green.

Notes:

- After you click on the READ button, the program will read data from the INT-RX expansion module having the lowest address. You should take this into consideration when connecting new expansion modules to the control panel.
- When you click on the WRITE button before entering any change to the read data, the data read from the expansion module having the lowest address will be written to all modules. This function is useful when connecting new INT-RX expansion modules to the system in which such modules are already functioning. It enables the key fob related data to be synchronized (similarly as with the COPY RX KEYFOBS function, available in the service menu of the LCD keypad).
- Where several INT-RX expansion modules are interfacing with the control panel, the loss of communication with any of them will render the writing of key fob data to any module impossible.

Entering the serial number manually

1. Click your mouse on the field in the S/N column, next to the name of the user to whom you want to assign a key fob.

2. Enter the serial number of the key fob and confirm it by pressing ENTER. The background color of the field where the serial number is displayed will change to pink.
3. Click on the WRITE button. The data will be written to the module(s). The background color of the field where the serial number is displayed will change to white.

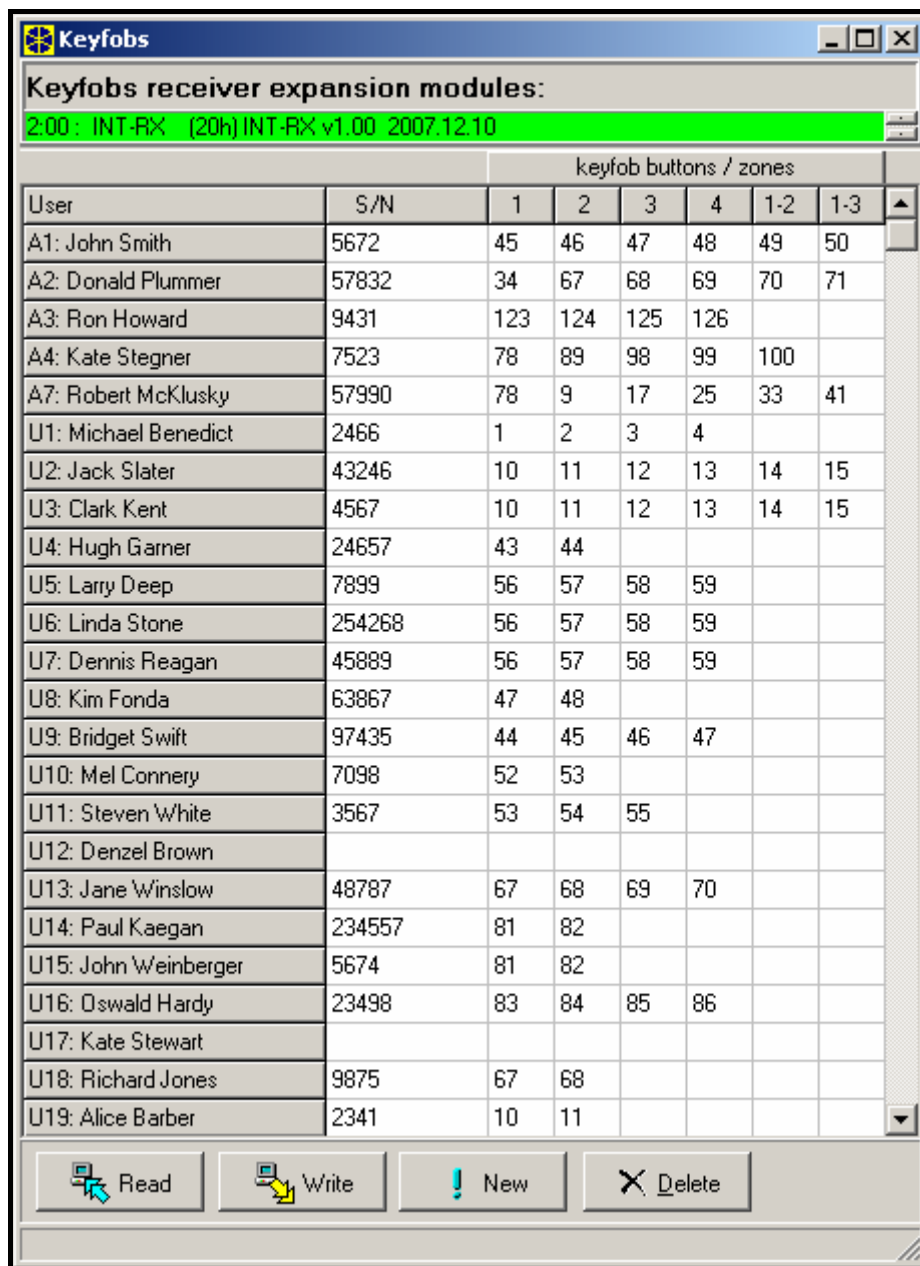


Fig. 2. View of the KEYFOBS INT-RX window in DLOADX program (interaction with INTEGRA control panel).

Reading the serial number during transmission

1. Click your mouse on the field in the S/N column, next to the name of user to whom you want to assign a key fob.
2. Click on the NEW button. The NEW window will open.
3. According to the command displayed in the window, press the key fob button, and, after the key fob serial number appears in the window, press OK. The NEW window will close. In the S/N column, the key fob serial number will be displayed next to the user name. The background color of the field where the serial number is displayed will change to pink.

- Click on the WRITE button to write the data to the module(s). The background color of the field where the serial number is displayed will change to white.

3.1.3 Removing a key fob by means of LCD keypad

- Start the REM. RX KEY FOB function ([installer code] [*] →MASTERS →NEW MASTER/EDIT MASTER →REM. RX KEY FOB or [code] [*] →USERS →NEW USER/EDIT USER →REM. RX KEY FOB).
- After the key fob number is displayed, press the **1** key.



The key fob will only be removed from the system after completion of the master/user editing function, i.e. after you exit the function by pressing the [*] key and save the made changes by pressing **1.**

3.1.4 Removing a key fob by means of DLOADX program

- Open the KEYFOBS INT-RX window (see Fig. 2).
- Click on the READ button. The program will read out and display the data from the module.
- Click your mouse on the field in the S/N column, next to the name of the user whose key fob you want to remove.
- Click on the REMOVE.
- In the window which will be displayed, click on the YES button to confirm your intention to remove the key fob. This will delete the key fob serial number. The background color of the field where the serial number is displayed will change to pink.
- Click on the WRITE button to write the data to the module(s). The background color of the field where the serial number is displayed will change to white.

3.2 Controlling zones

In case of the INTEGRA control panels, the function is effected by controlling the zone status in the system. By using a key fob you can control up to 6 zones in the security alarm system. The zones should not physically exist and the type of line programmed for them must be different from NOT USED and FOLLOW OUTPUT. You can program any function for these zones. Pressing a key (or, simultaneously, two keys: 1 and 2 or 1 and 3) in the key fob will result in violation of the zone (the zone will be violated as long as the key fob button is held down) and a corresponding reaction of the control panel.

A button/combination of buttons can control one zone in the system. The zones are individually assigned to the buttons/button combinations for each user. It can be done by means of the LCD keypad or DLOADX program.

Pressing any button/combination of buttons in the key fob will generate an event informing that a key fob has been used. In case of working in conjunction with the INTEGRA control panel with firmware in version 1.06 or later, generating such events can be enabled or disabled, so as to reduce the number of events in the system.

Note: *The dependencies between key fob buttons and alarm system zones, which have been defined for a user, will not be deleted after the key fob is removed (the only exception being the REM. RX KEY FOBS function, available in the service menu of LCD keypad). After a new key fob is added to the user, its buttons will control exactly the same zones as those controlled by the buttons of removed key fob.*

3.2.1 Assigning a zone to the button by means of LCD keypad

In LCD keypad, zones can be assigned to a button/combination of buttons by means of the functions available when adding/editing administrator ([installer code] [*] →MASTERS →NEW

MASTER/EDIT MASTER →BUTTON 1 / BUTTON 2 / BUTTON 3 / BUTTON 4 / BUTTON 1 and 2 / BUTTON 1 and 3) or adding/editing user ([code] * →USERS →NEW USER/EDIT USER →BUTTON 1 / BUTTON 2 / BUTTON 3 / BUTTON 4 / BUTTON 1 and 2 / BUTTON 1 and 3).

1. Start the selected function.
2. Using the ▲ and ▼ keys, select a zone from the list or enter the zone number from the keypad.
3. Press the # key.



The zone will only be assigned to the button after completion of the master/user adding/editing function, i.e. after you exit the function by using the * key and save the made changes by pressing 1.

3.2.2 Assigning a zone to the button by means of DLOADX program

In the DLOADX program, you can assign zones to a button/combination of buttons by using the KEYFOBS INT-RX window (see Fig. 2).

1. Click on the READ button. The program will read and display data from the module.
2. Click on the selected user in the column corresponding to the button/combination of buttons to which you want the zone to be assigned.
3. Using the keypad, enter the number of zone to be controlled by the button and confirm with the ENTER key. The background color of the field where the zone number is displayed will change to pink.
4. Click on the WRITE button. The data will be written to the module(s). The background color of the field where the zone number is displayed will change to white.

3.2.3 Configuring event generation rules by means of LCD keypad [INTEGRA 1.06 or later]

Enabling/disabling generation of events for particular key fob buttons is possible by using the RX EVENTS function, which is available when adding/editing administrator ([service code] * →MASTER →NEW MASTER/EDIT MASTER →RX EVENTS) or user ([code] * →USERS →NEW USER/EDIT USER →RX EVENTS). To enable/disable the event generation feature, press any numerical key. Event generation for the given button is enabled, when the □ symbol is displayed in the upper line.



The new rules of generating events will only take effect after the function of adding/editing administrator or user is completed, i.e. after the function is exited by using the * key and the introduced changes are saved by pressing the 1 key.

3.2.4 Configuring event generation rules by means of DLOADX program [INTEGRA 1.06 or later]

Enabling/disabling generation of events for particular key fob buttons is possible by using the KEYFOBS INT-RX window, after the key fob data have been read (see section ADDING A KEY FOB BY MEANS OF DLOADX PROGRAM).

1. Click at the selected user in the column corresponding to the button/combination of buttons for which you want to enable/disable the generation of events.
2. Using the SPACE button, enable/disable the event generation feature. The event generation for the given button is disabled, if the ✕ symbol is shown next to the number of zone controlled by the button (lack of the symbol means that the event generation is enabled). Any modification of the settings will change the background color in part of the field next to the zone number into pink.

3. Click on the WRITE button. The data will be written to the expander(s). Color in part of the field next to the zone number will change to white.

4. Expansion module interaction with VERSA control panel

The key fob related data are stored in the expander. Connecting the expander which contains key fob related data to the control panel will result in key fobs being automatically assigned to the users of that control panel. This is only applicable to the users who have already been created.

The functions which can be initiated by pressing a key fob button (combination of buttons 1 and 2 or 1 and 3) include:

- violating the selected control panel zone (the zone should not physically exist and the type of line programmed for it must be different from NOT USED);
- arming/disarming and alarm clearing in selected partitions;
- triggering the panic, fire or medical assistance alarm;
- controlling the status of selected control panel output (enabling, disabling or switching the output with function 15. CONTROLLED).

The functions can be individually assigned to buttons/combinations of buttons for each user. Optionally, it will be possible to use templates predefined by the installer.

Pressing a button/combination of buttons by the user can generate an event that will be written to the control panel memory irrespective of the event connected with the function which is initiated by means of the key fob (global option STORE KEY FOB EVENTS).

4.1 Adding/removing key fobs and assigning functions to the buttons


Key fobs can be added /removed by the service as well as by users having the USERS EDITING authority level.

In order to add a key fob, enter its serial number manually or read its serial number during transmission to be sent on pressing the push-button.

Note: *You cannot assign the same key fob to two users.*

The key fobs may be removed individually for each user or for all users at once (the function is only available in the keypad). Removing the user amounts to removing the key fob.

4.1.1 Adding a key fob and assigning a function by means of keypad

Adding a key fob and assigning a function to its keys is possible during the procedure of adding / editing user ([code]* ►2. USERS ►1. NEW USER / 2. EDIT USER). Both procedures are described in the user manual for VERSA alarm control panels.

4.1.2 Adding a key fob and assigning a function by means of DLOADX program


Adding a key fob and assigning a function to its keys is possible in the "Versa – Structure" window, "Hardware" tab, after selecting the INT-RX expansion module in the list of devices. Before you proceed to adding a new key fob, data must be read from the expander. For this purpose, click your mouse on the READ button. The key fobs can be added in the same way, as when working with the INTEGRA control panel.

After adding the key fob, functions will be automatically assigned to the buttons, according to the template defined for the user's authority level. By default, the assigned functions can be substituted by other ones:

1. Click at the selected user in the column corresponding to the button (combination of buttons), to which you want the function to be assigned.

2. Right-click your mouse. A drop-down menu will be displayed, where you can select the required function. You can also enter the number of function by using the keyboard (the numbers of all available functions are shown in the programming manual and in the user manual for VERSA control panels) and confirm with the ENTER key. The background color of the field in which the zone number is shown will change into pink.
3. Click on the WRITE button. The data will be written into the expander. The background color of the field in which the zone number is shown will change into white.

4.1.3 Removing key fobs by means of keypad

Removing a key fob is possible during the user editing procedure ([code]* ►2. USERS ►2. EDIT USER), the description of which is included in the user manual for VERSA control panels.

Note: *Removing a user key fob by means of keypad does not mean automatically deleting the dependency between key fob buttons and functions executed by using them.*

The REMOVE KEY FOBS, available in the service menu (SERVICE MENU ►2. HARDWARE ►1. KPDS. & EXPS. ►9. REMOVE K-FOBS) makes it possible to clear all key fob related data in the INT-RX expander connected to the control panel. This is also applicable to the information on functions assigned to the buttons of individual users' key fobs.

4.1.4 Removing key fobs by means of DLOADX program

Removing a key fob is possible in the "Versa – Structure" window, "Hardware" tab, after selecting the INT-RX expansion module in the list of devices. The key fob can be removed in the same way, as when working with the INTEGRA control panel.



5. Specifications

5.1 INT-RX expansion module

Operating range in open area	up to 100 m (any obstacles between transmitter and receiver will reduce operating range of the device)
Supply voltage	12 V DC ±15%
Standby current consumption	25 mA
Maximum current consumption	30 mA
Working frequency range	433.05 – 434.79 MHz
Housing dimensions	72 x 118 x 24 mm
Environmental class.....	II
Working temperature range	-10 °C...+55 °C
Weight.....	74 g

5.2 T-4 key fob

Battery type.....	23A 12V
Housing dimensions	35 x 70 x 15 mm
Environmental class.....	II
Working temperature range	-10 °C...+55 °C
Weight.....	27 g

DECLARATION OF CONFORMITY		
Product: INT-RX – remote control set for INTEGRA and VERSA control panels.	Manufacturer: SATEL spółka z o.o. ul. Schuberta 79 80-172 Gdańsk, POLSKA tel. (+48) 0-58 320-94-00 fax. (+48) 0-58 320-94-01	
Product description: 433 MHz remote control set consisting of T-4 transmitters and a receiver, compatible with P-2, P-4, T-2, T-4 key fobs, intended for use with INTEGRA and VERSA control panels as a part of intruder alarm system.		
The product is in conformity with the following EU Directives: EMC 2004/108/EC R&TTE 1999/5/EC		
The product meets the requirements of harmonized standards: EMC: EN 55022:1998;EN 50130-4:1995; ETSI EN 301 489-1 v 1.4.1; ETSI EN 301 489-3 v 1.4.1 ETSI EN 300 220-2 v 2.1.1 EN 60950		
Gdańsk, Poland 2009-03-13	Head of Test Laboratory:  Michał Konarski	
The latest EC declaration of conformity and product approval certificates are available for downloading on website www.satel.pl		

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