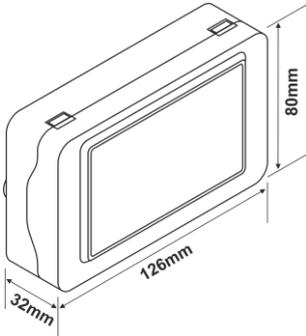
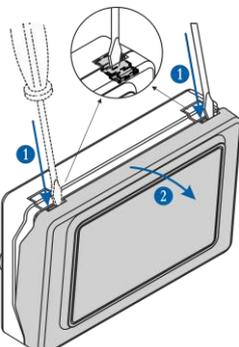
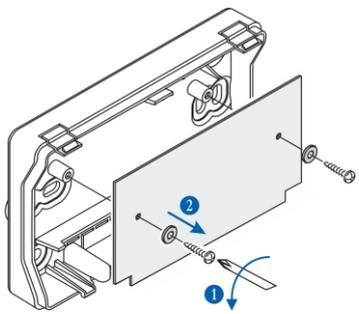
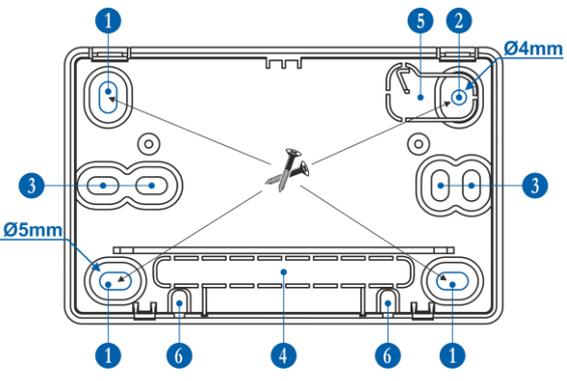
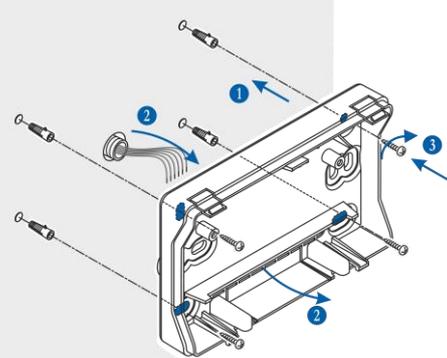
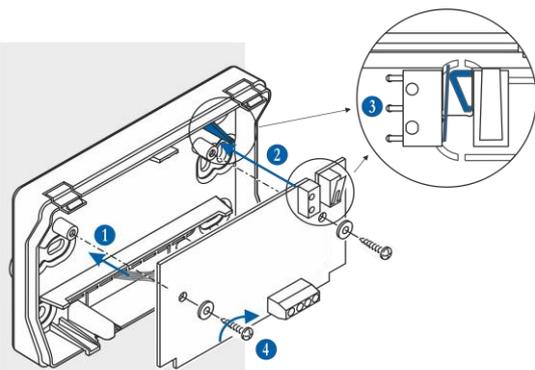
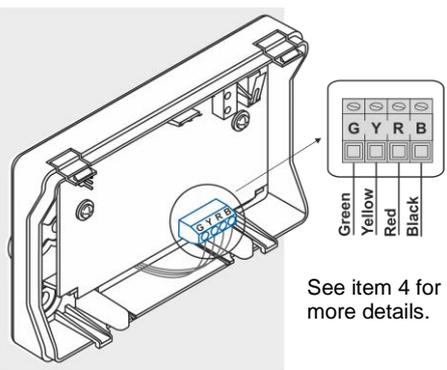
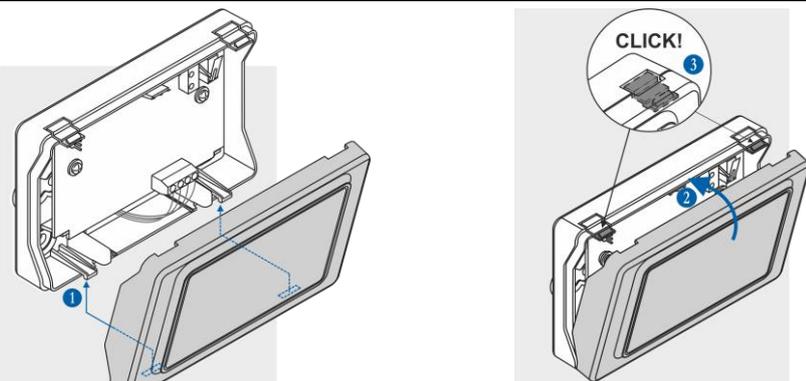
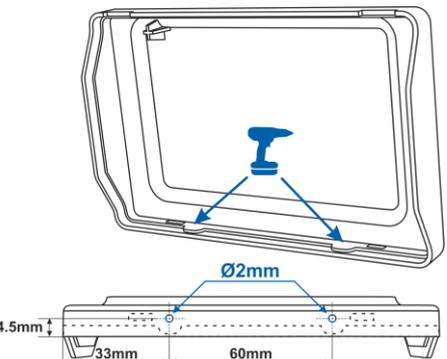


**ATTENTION:** Read carefully this installation Instructions before installing the device! This manual is subject to change without notice!

## 1. Installation

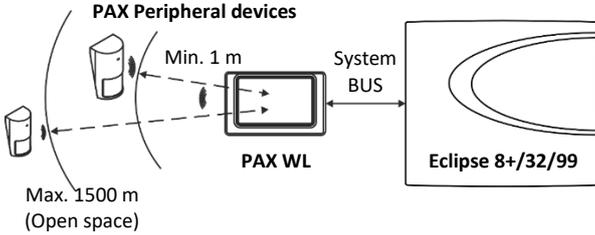
<p><b>1</b> General view &amp; Dimensions</p> 	<p><b>2</b> Opening the front cover</p> 	<p><b>3</b> Dismantling the PCB</p> 
<p><b>4</b> Elements of the enclosure box bottom</p>  <ul style="list-style-type: none"> <li>1 - Main mounting holes Ø5mm</li> <li>2 - Back-tamper mounting hole Ø4mm</li> <li>3 - Additional mounting holes Ø5mm</li> <li>4 - 75x8mm knock out opening for running cables</li> <li>5 - Back-tamper knock out plate (against unauthorized dismantling of the box)</li> <li>6 - Boss with hole Ø2mm for fixing the cover of the box to the bottom with a screw (optional, against unauthorized opening, according EN50131-1 and EN50131-3) – see 9</li> </ul>	<p><b>5</b> Wall mounting</p> 	
<p><b>6</b> PCB mounting and back-tamper positioning</p>  <ul style="list-style-type: none"> <li>1 - Place the PCB to the box bottom</li> <li>2 - Observe the position of the back-tamper relative to the special form element on the knock out plate – it must coincide with the PCB open space between the two tamper switches</li> <li>3 - In mounted position, the back-tamper switch must be closed</li> <li>4 - Use the sealing washers and screws to fix PCB back to the bottom</li> </ul>	<p><b>7</b> Cable connection</p>  <p>Green Yellow Red Black</p> <p>See item 4 for more details.</p>	
<p><b>8</b> Closing the front cover</p>  <p>CLICK!</p>	<p><b>9</b> Securing the front cover (option)</p>  <p>Ø2mm</p> <p>4.5mm</p> <p>33mm</p> <p>60mm</p>	

## 2. General Information

PAX WL is a wireless expander module designed for building of hybrid systems with Eclipse series wired control panels (models Eclipse 8+/32/99) and PAX series wireless devices.

PAX WL module is supplied mounted in a small plastic box suitable for wall mounting. Optionally, the module's PCB can be mounted directly into the enclosure box of the Eclipse control panel.

PAX WL is connected to the system bus of the Eclipse panel and it is added to the system configuration like other Eclipse modules.



Functional operation diagram of Eclipse hybrid system.

**Attention:** The minimum distance between PAX WL Expander and enrolled to it wireless PAX devices must be 1 meter to guarantee the correct operation of the system.

**Important:** The radio coverage distance of PAX WL Expander module could vary according the construction and the building materials of the site, where the wireless detectors are installed.

### Technical Specifications:

- Operation frequency ..... ~ 868MHz
- Communication type ..... Bi-directional
- Protocol type ..... Beacon+
- Radio distance (open space) ..... up to 1500 m
- Power supply from the panel ..... 9-18VDC
- Consumption:
  - Typical ..... max. 15mA
  - Maximal ..... max. 20mA
- Operating temperature ..... from 0°C to +40°C
- Storage temperature ..... from -10°C to +50°C
- Dimensions plastic box ..... 126x80x32mm
- Dimensions PCB only ..... 119x55mm
- Weight ..... ~120g
- Weight PCB only ..... ~26g

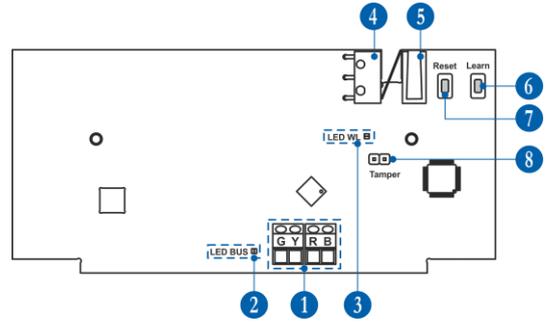
### Main Functional Features:

- Up to 32 wireless PAX devices\*
- Up to 99 PAX remote key fobs\*
- Up to 4 PAX WL Expander modules connected to an Eclipse control panel
- 2 anti-sabotage tamper switches
- 45° connection terminals for easy cable installation
- LED indication for current status and wireless communication
- Beacon+ protocol type for wireless communication

\* To a single PAX WL Expander module. The maximal number of devices and control key fobs depends on the type of the Eclipse panel:

Device type/Control key fob	Eclipse Control panel		
	8+	32	99
PIR, MC, FLD, FIRE, SIRD, KBD	Max. 16	Max. 32	Max.99
REMT	Max. 32	Max. 64	Max.99

## 3. PCB Elements



1 - 45-degree terminals for serial interface connection to Eclipse control panels – see item 4.

2 - LED indication of the module operation status (LED BUS):

Color	Lights on	Blinking
Red	No communication between the module and the panel	Low voltage
Orange	Short circuit of the system bus	Wrong connection of the system bus
Green	Selected device	Normal operation mode

3 - LED indication for wireless connection (LED WL) – blinks in green at random intervals in normal operation mode.

4 - Back-tamper switch. The switch is closed when the PCB is mounted to the box bottom.

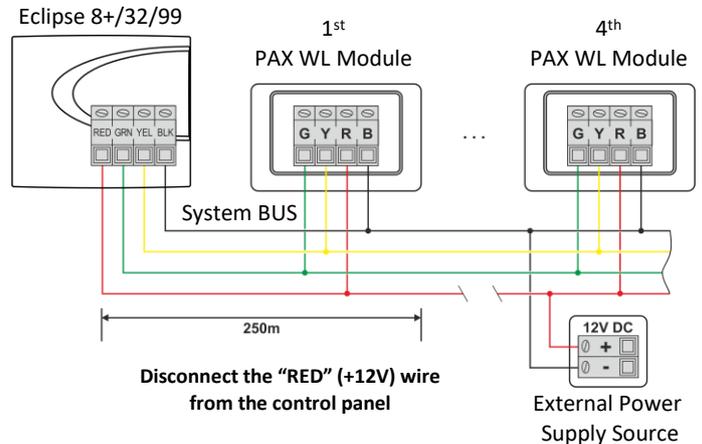
5 - Tamper-switch for self-protection of the plastic box against unauthorized opening of the cover. The switch is closed automatically when mounting the cover of the box.

6 - Learn button - see item 6.

7 - Reset button - see item 11.

8 - Tamper terminals. Use it optionally, when the PCB of the PAX WL Expander module is mounted directly into the box of the Eclipse control panel. Set a jumper to terminate the operation of the two tamper (positions 4 and 5) for self-protection of the box.

## 4. Connection to Eclipse Serial Bus



Up to 4 PAX WL wireless expander modules can be connected to one Eclipse control panel. The maximal number depends on the panel version and system capacity – see item 2 for Eclipse panels compatibility.

**ATTENTION:** When connecting PAX WL to the system bus, assure first to turn off the main and the backup power supply of the control panel and strictly observe the polarity of wires.

PAX WL is connected to the system bus of the panel – power and data terminals, labelled as: G and Y (both for data transfer), R (+12V) and B (0V).

**Note:** For cable distances exceeding 250m (up to 1km) you need an external 12V DC power supply source connected to the system bus – B (black) (0V) and R (red) (+12V) terminals.

## 5. Basic steps for adding PAX WL to the system configuration

The PAX WL is added to the system configuration like the other modules of Eclipse series.

- With main and back-up power supply of the control panel switched off, connect PAX WL module to the system bus and observe the polarity.
- Power on the main and backup supply of the control panel.
- Enter in Engineer programming menus and add PAX WL to a free address of the system configuration – see item 6.
- Enrol to the module wireless devices PAX series – see item 7.1.
- Enrol to the module remote key fobs PAX series – see item 7.2.
- Attach the wireless devices such as PIR, MC, FLD and FD to a free zone number in the system and set an appropriate zone type according the operation – entry-exit, follow, instant, fire, etc.
- Attach the wireless sirens PAX SIRM to a free PGM address numbers and set “Siren” option for operation.
- Set options for partial arming to the programmable buttons of the PAX remote key fobs.
- Enable partial (Stay and Sleep) arming with PAX KBD wireless keyboard.
- Test the system for correct operation according the set parameters.

## 6. Adding of PAX WL to the system configuration

At the initial connection of PAX WL to an Eclipse panel, the LED BUS (position 2, item 3) lights on permanently in red.

To add PAX WL to the system configuration, do in sequence:

- Enter in the engineer programming mode of the Eclipse panel.
- Enter in 9. DEVICES menu and choose a free address for device in the system.
- Enter in 1.ID menu. The screen displays: [Free][\_\_\_\_\_]
- Press LEARN button of PAX WL (position 6, item 3).
- The wireless expander is recognized from the panel and displayed on the display as [WPAX] device, together with its unique ID code.
- Press ENTER button of the keyboard to add the wireless expander module to the system configuration.
- The LED BUS of PAX WL lights on permanently in green, which means that the module is successfully added to the system configuration and it is selected in the moment.
- Go ahead with the enrolment of wireless devices to the PAX WL module.

### Programming menus of PAX WL

(Eclipse LCD keyboard; text menus structure set by default)

- 1. ID.** Reviewing the system ID number of the expander module.
- 2. AREAS.** Set the area numbers for operation. Area 1 is set by default. Use the arrows of the keyboard to set other area numbers (the max. number depends on the type of the Eclipse panel). To enable an area, press button 1 – a “check” mark appears in front of the number. To disable an area, press button 0. Confirm with ENTER button.  
**Note:** The enabled area numbers of the PAX WL expander module are set also to all enrolled wireless devices to its configuration.
- 3. OPTIONS.** At this menu is enabling the Partial arming (Stay and Sleep arming modes) through PAX KBD wireless control keyboard. To enable the option, press button 1; to disable the option – press button 0. Confirm with ENTER button.
- 4. RESOURCES.** Review the maximum number of wireless devices, that can be enrolled to PAX WL.
- 5. COMM QUALITY.** Review the communication signal quality between PAX WL and Eclipse control panel.
- 6. WL DEVICE.** Menu for enrolment of wireless devices - item 7.1.
- 7. WL REMOTE.** Menu for enrolment of control key fobs - item 7.2.

## 7. Enrolment of PAX series wireless devices to PAX WL

(Eclipse LCD keyboard; text menus structure set by default)

The following PAX series wireless devices are available for operation with PAX WL, as they appear on the screen with some specific system names:

Device	Description	Name
PAX PIR*	Indoor motion detector	[PIR]
PAX 2PIR/AM*	Outdoor motion detector with 2 PIR elements, anti-masking option	[PIR]
PAX 3Tech/AM*	Outdoor motion detector with 2 PIR elements, MW, anti-masking option	[PIR]
PAX MC1*	Magnetic contact with 1 input	[MC]
PAX MC2*	Magnetic contact with 2 inputs	[MC]
PAX FL*	Flood detector	[FLD]
PAX FD*	Fire alarm detector	[FIRE]
PAX SR Ext**	Outdoor siren	[SIRM]
PAX SR Intr**	Indoor siren	[SIRM]
PAX KBD	Wireless control keyboard	[KBD]
PAX RC**	Remote key fob with 4 buttons	[REMT]
PAX Panic***	Panic button	[REMT]

\* After the enrolment, the detectors must to be attached to a free zone number of the panel.

\*\* After the enrolment, the sirens must be attached to a free PGM number with “Siren” option set.

\*\*\* The enrolled remote key fobs are automatically attached to the corresponding User numbers in the system - RC1 to User 1, RC2 to User 2 and so on.

### 7.1 Enrolment of PAX device type PIR, MC, FL, FD, SIRM or KBD

Note: For already used PAX wireless devices, first perform RESET procedure.

- Prepare the wireless device for enrolment to PAX WL – remove the cover to enable access to the PCB.
- Enter in the engineer programming mode of the Eclipse panel.
- Choose the menu of PAX WL and enter the “6. WL Device” submenu.
- Enter a number of a device from [01] to [16/32/99] (depends on the panel type).
- If the number is free, the screen displays: [Free][\_\_\_\_\_]
- Press the ENTER button of the keyboard – the message “Searching...” is displayed – a process for searching of wireless devices in the PAX WL radio distance is started.  
If the PAX device is new: Remove the protection folio from the battery – the device LED will blink in green for a while.  
If the PAX device is used: Press the ENROLL button on the PCB – the device LED will blink in red for a while.
- The enrolment is successful, if in a time interval up to 30 seconds, the device LED lights on in green, and after that starts blinking in orange, which means that the device is selected.
- The enrolled device is displayed on the keyboard screen with system name (see the table above) and unique ID code.
- Press the ENTER button of the keyboard to confirm the enrolment.
- Make a radio test on the place of installation of the device as press the ENROLL button once and wait for LED indication – see item 9.
- Proceed with the enrolment of wireless devices to PAX WL using the same working algorithm.

### 7.2 Enrolment of PAX remote control key fobs RC or Panic type

Note: For already used PAX remote control key fobs, first perform RESET procedure.

- Enter in the engineer programming mode of the Eclipse panel.
- Choose the menu of PAX WL and enter the “7. WL Remote” submenu.
- Enter a number of remote key fob from [01] to [32/64/99] (the max. number depends on the panel type).
- If the number is free, the screen displays: [Free][\_\_\_\_\_]
- Press the ENTER button of the keyboard – the message “Searching...” is displayed – a process for searching of remote key fobs in the PAX WL radio distance is started.

- Press a random button of the remote key fob – the device LED will blink fast in red for a while. If the enrolment is successful, in a time interval up to 30 seconds, the device LED lights on in green.
- The enrolled remote key fob is displayed on the keyboard screen with type [REMT] and unique ID code. Press the ENTER button of the keyboard to confirm the enrolment.
- Proceed with the enrolment of remote key fobs to PAX WL using the same working algorithm.

**Attention: Up to 4 different PAX WL expanders can be attached to a single Eclipse panel. To USER 1 are assigned all PAX key fobs attached to the 1<sup>st</sup> position of the expanders; to USER 2 – all key fobs attached to the 2<sup>nd</sup> position of the expanders, and so on. In this way to a User can be assigned up to 4 different PAX remote key fobs, as every of them will operate in the range covered of the expander to which it is attached.**

**Note:** The following trouble messages are possible to be displayed in the right upper corner of the keyboard screen during enrolment or reviewing wireless devices:

- **BL (Battery Low)** – Low level of the battery charge.
- **NC (Not Connected)** – There is no connection between the module and the device. This message is usually displayed if the power supply of the wireless expander is missing. After the power supply restoration, the wireless devices will restore the communication with the PAX WL within 15 minutes. To speed up the process of communication restore is necessary to activate a zone/ tamper or to press the ENROLL button of the respective wireless device.
- **ER (Error in Wireless Device Identification)** – Unknown type of the wireless device. To solve the problem, you have to update the panel to the last SW version via ProsTE software.

## 8. Attaching of PAX wireless devices to zones/PGM numbers in Eclipse panel

(Eclipse LCD keyboard; text menus structure set by default)

To attach a device from type PIR, MC, FL and FD to a free zone in the panel, do in sequence:

- Enter in the engineer programming mode of the Eclipse panel.
- For detectors PIR, MC, FL and FD, choose menu “4. INPUTS” and then menu “5. ZONES”.
- Choose a free zone in the system.
- Enter the number of PAX WL in the first section on the screen and the number of an enrolled to it wireless detector in the second section.
- Press the ENTER button to confirm. The exit is automatic one step back.
- Use arrow buttons to select “2. TYPE” submenu and press ENTER button. Choose a zone type according to the device type (see Programming Manual of Eclipse Alarm Control Panels).
- Use the same steps to attach other wireless detectors to free zones in the system.

To attach a device from type SIRM to a free PGM output in the panel, do in sequence:

- Enter in the engineer programming mode of the Eclipse panel.
- For sirens SIRM, choose menu “5. OUTPUTS” and then menu “2. PGMs”.
- Choose a free PGM output in the system.
- Enter the number of PAX WL in the first section on the screen and the number of an enrolled to it wireless siren in the second section
- Press the ENTER button to confirm. The exit is automatic one step back.
- Choose with the arrow buttons submenu “2. OPTIONS” and press the ENTER button.
- Choose the “SIREN” option – select with pressing button “1” and confirm with the ENTER button.
- Use the same steps to attach other wireless sirens to free PGMs in the system.

**Note:** The wireless keyboard PAX KBD is not attached to a zone number.

## 9. Radio Test of PAX Devices

**Note:** Perform the radio test just after the enrolment of the device and at the place of installation, as in that way you can choose the place with the best signal coverage.

The radio test should be performed in order to check the signal strength on the site and the quality of the communication between the control panel and the PAX wireless devices.

The radio test can be performed directly after the enrolment of the device and after that during the maintenance of the system.

To perform a radio test of a device:

- Remove the cover of the device to access the PCB.
- Press the ENROLL button - the LED(s) will blink single in green. Up to 30 seconds the device will inform for signal coverage with a new indication with the following meaning:
  - 3 blinks in green - the signal coverage is good and there is a stable communication between the device and the panel;
  - 3 blinks in red - no signal coverage and communication between the device and the panel;
  - 3 blinks in yellow – there is a signal coverage, but the communication between the device and the panel is unstable. In this case it is recommended to change the place of installation and to perform a new radio test.

## 10. Deleting of PAX series wireless devices from PAX WL configuration

(Eclipse LCD keyboard; text menus structure set by default)

- Enter in the engineer programming mode of the Eclipse panel.
- Choose the menu of PAX WL.
- Use the arrow buttons to select the submenu “6.WL Devices” or “7.WL Remote” and press the ENTER button.
- Enter a number of device or remote key fob.
- The device is displayed with type and unique ID number.
- Press continuously the “0” button until a confirmation sound from the keyboard is heard, the screen displays [Free][\_\_\_\_\_] for the number.
- Detach the numbers of deleted wireless devices from the set zone/PGM address numbers in Eclipse control panel. Or, you can save the attached zone/PGM numbers for future use without detaching as set the zone type to “UNUSED”. In that way is avoiding the reporting of messages for faults, because of the missing wireless devices.

**Note:** When deleting a wireless device from type PIR, MC, FD, FL, SR or KBD which is currently enrolled to PAX WL, the device is resetting automatically and it is prepared for enrolment to a new system. However, if the wireless device is not currently connected to PAX WL (because of missing battery, lost communication with the expander or other reason), it is obligatory the installer to reset it manually before enrolment to a new system.

When deleting a remote key fob, it is not resetting automatically and always before enrolment to a new system the installer must reset it manually.

## 11. Hardware Reset of PAX WL

The hardware reset of PAX WL expander module is a process of erasing of all enrolled to it wireless devices and remote key fobs.

To perform a hardware reset of PAX WL, do in sequence:

- With power supply on press and hold the RESET button of PAX WL for 3 seconds until the Status LED blinks three times in green.

**Note:** With the RESET procedure the installer erases all enrolled devices in the PAX WL expander only! Before enrolment of the wireless devices to a new system the installer must reset them manually. The zones and PGM outputs with attached wireless devices have to be reset manually too.