INFRARED SAFETY BEAMS

PHOTON SMART
POCKET INSTALLATION GUIDE

Photon™ SMART

Centurion Systems (Pty) Ltd
www.centsys.com

Doc number: 1227.D.01.0004_2
SAP Code: DOC1227D0104

After Hours International Technical Support Call Centre
+27 11 699 2481 (16:00 to 02:00 - Australian Eastern Time)

Call: 1300 CENTSYS (1300 236 879)

www.centsys.com.au

Call Technical Support: +27 11 699 2481
from 07h00 to 18h00 (UTC+2)

Call Centurion Systems (Pty) Ltd - South Africa
Head Office: +27 11 699 2400

Subscribe to the newsletter:
www.centsys.com/subscribe

centurion.systems
@askcenturion
YouTube YouTube.com/centurionsystems
facebook.com/centurionsystems

Connect with us on:

www.centsys.com

1. Introduction

The **Photon SMART** infrared gate safety beams/ photocells have been designed to provide an integral element of safety to an automated system while at the same time affording the installer considerable freedom during the installation process. Both the transmitter and recievers are completely wireless – being powered via two AA Alkaline batteries each – obviating the need for tunnelling and digging for the purpose of running cables. Not only does this arrangement allow for extremely easy installation when it comes to mounting the beams, but it dramatically reduces material and labour costs.

The Photon SMART infrared beams/ photocells are only compatible with Centurion Systems (Pty) Ltd SMART Controllers!

2. Safety Instructions

1. All installation, repair, and service work to this product must be done by a suitably qualified person.
2. Do not in any way modify the components of the system.
3. Do not leave packing materials (plastic, polystyrene, etc.) within reach of children as such materials are potential sources of danger.
4. Dispose of all waste products like packing materials, according to local regulations.
5. We do not accept any liability caused by improper use of the product, or for use other than that for which the product was intended.
6. This product was designed and built strictly for the use indicated in this documentation. Any other use, not expressly indicated here, could compromise the service life/operation of the product and/or be a source of danger.
7. Anything not expressly specified in these instructions is not permitted.

3. Icons used in this manual

This icon denotes variations and other aspects that should be considered during installation.

This icon indicates warning, caution or attention! Please take special note of critical aspects that MUST be adhered to in order to prevent injury.

4. Operation

When connected to an automated system such as a gate motor or garage door operator, the **Photon SMART** beams/photocells aid in preventing personal injury, and/or property damage due to crushing, when used in a closing beam configuration.

When used in an opening beam configuration, the **Photon SMART** beams/photocells dramatically reduce the hazardous actions associated with a gate that is opening, such as dragging or shearing.

The operation of the **Photon SMART** beams/photocells relies upon the infrared beam being interrupted by a person or object, and notifying a device it is connected to via a wireless link, of the interruption.

In addition, **Photon SMART** infrared beams/photocells are compatible with the unique Ambush Alarm functionality found in some of our gate operators.

These operators allow the **Photon SMART** beams/ photocells to act as sophisticated perimeter security devices by activating an alarm on the operator's controller, or a third-party alarm system, whenever the beams/photocells remain obstructed for a predefined period of time[1].

1. Refer to the relevant product documentation for further information about Intruder-detection Alarm functionality.

5. Technical Specifications

Power Supply	2 x AA Alkaline batteries[1] (supplied for each transmitter and receiver)
Battery Life	>2 years
Battery Low Indication	Notified via MyCENTSYS Pro Mobile Application
Maximum Operating Distance	30m
Alignment between beams[2]	Automatic - 1m² @ 10m
Maximum Operating Distance Photon SMART Receiver to SMART Controller	10m
Operating Temperature	-15°C to +65°C
Operating Humidity	0 to 90% non-condensing
Housing Material	ABS
Lens Material	PC
Degree of Protection	IP54

TABLE 1

1. Only replace with alkaline batteries; do not use rechargeable batteries.
2. Circular area – assuming a parallel surface.

6. Physical Dimensions

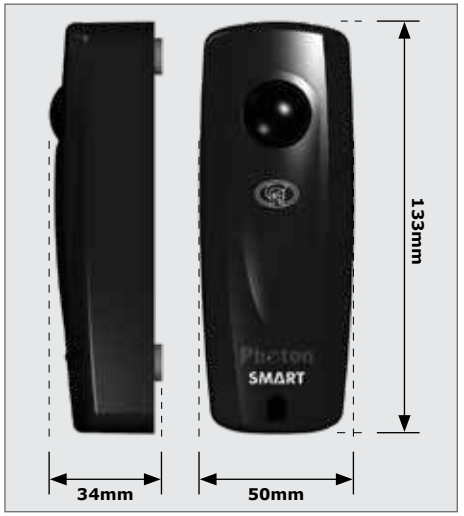

FIGURE 1

7. Installation

7.1 Site Considerations

It is important that the beams/ photocells are mounted on surfaces that are reasonably parallel to one another. Small differences in the angle between the opposing parallel surfaces can lead to large offsets in alignment between the transmitter and the receiver - the greater the distance that the infrared beam travels between the transmitter and the receiver, the larger the offset.

The transmitter and receiver are typically mounted directly opposite one another, but some leeway is given in the form of a wide beam being cast should absolute alignment not be possible.

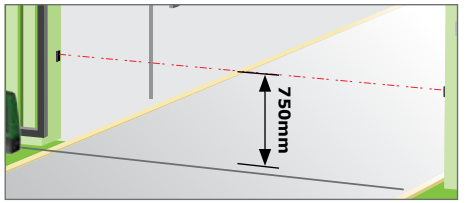

FIGURE 2

Centurion Systems (Pty) Ltd recommends a height of 750mm, but the height of the beam must be tailored to suit the specific requirements of the installation.

7.2 Removing the Cover and Preparing for Mounting

Lift the front cover off by leveraging it up from the bottom of the **Photon SMART** as illustrated.

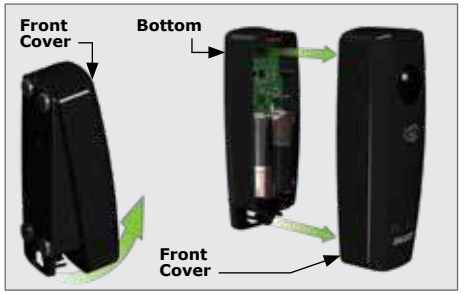

FIGURE 3

To expose the mounting holes, the PCB must be removed from the enclosure. Press the red plastic lever located at the top of the enclosure as shown in Figure 4.

Store the PCB safely to prevent damage.

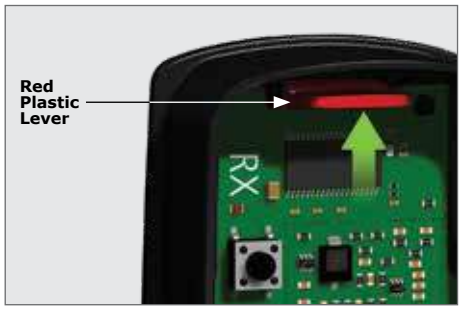

FIGURE 4

7.3 Mounting

Mark the mounting position of the receiver for a single or double fastener.

For masonry mounting, use a 5mm masonry drill bit.

For mounting to steel tubing, use a 2.3mm steel drill bit.

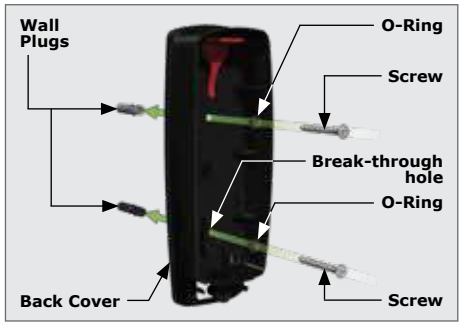

FIGURE 5

Mount the base of the reciever using the supplied hardware. Ensure that the rubber "O" ring is used to seal the **Photon SMART** enclosure against insect ingress. For double mounting screws, knock out the thin plastic film. Double mounting screws are recommended to better locate the **Photon SMART** infrared beams/photocells and prevent them from twisting.

7.4 Re-inserting the PCB

Tuck the base of the PCB into the ribs situated at the base of the plastic enclosure. Thereafter swing the PCB into place so that the top lever prevents it from falling out. There should be an audible "click" to lock the PCB in position. Refer to Figure 6.

FIGURE 6

7.5 Turning on the Receiver and Transmitter

The transmitter and receiver have been fitted with a 'power up' jumper. In order to preserve battery life, the units have been packed with the jumper in the **OFF** position.

To power them up, simply position the jumper so that it is bridging the **ON** and **COMMON** pins as illustrated.

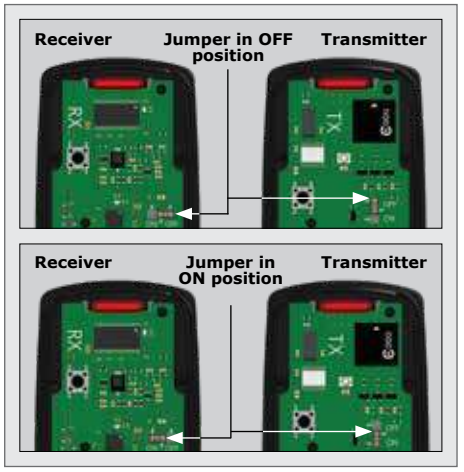

FIGURE 7

7.6 Indicators

The **Photon SMART** has an LED which provides the user with visual feedback, and is an alternative to using the Mobile Application thereby making it easy to commission the system.

To enter the Alignment Mode, the button shown in Figure 9 must be pressed for longer than 10 seconds; to indicate that the 10 seconds have expired, the LED will turn off for a short time and then turn on again.

During the alignment process, the LED will now remain on if the Beams are aligned and the LED will turn off if the Beams are misaligned or blocked.

To exit Alignment Mode, the button needs to be pressed for 10 seconds until it turns on and off for a short time.

8. Commissioning the System

1. Scan the QR Code in Figure 8.
2. Select the App Store applicable to the operating system being used, either Apple iStore or Android Google Play Store.
3. Download and install the application.

EXPLORE IT ON AppGallery

Download on the App Store

Get it on Google play

Minimum Requirements:

- BLE-enabled mobile phone
- iPhone 6s and above
- iOS13

Minimum Requirements:

- BLE-enabled mobile phone
- Android 5.0 (Lollipop)

FIGURE 8

Alternatively, go directly to the app store of the operating system being used, and search for the app "**MyCentsys Pro**". Download and install the application onto the smartphone.

1. Once installed, open the application.
2. From the list of operators, select the operator that is applicable to this installation.
3. Connect to the relevant operator.
4. Tap the three dots at the bottom of the screen, then enter the settings menu and tap IRBeams.
5. Choose whether this setup is for Closing IRBeams or Opening IRBeams. Closing IRBeams, is set to ON by default.
6. Tap **Photon SMART** to begin the configuration.
7. Tap **ADD NEW**.
8. The application will now scan for the **Photon SMART** infrared beams/photocells. It will then ask to press the button located on the top left of the receiver PCB, shown in Figure 9.

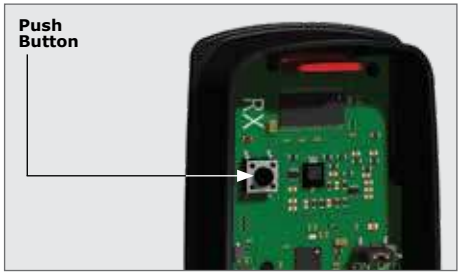

FIGURE 9

9. Once it is connected, it will provide the option to give the **Photon SMART** pair a custom name.

The beam lenses MUST be fitted on the receiver during the alignment procedure as they serve to focus the infrared beam. Failure to do so may result in an inability to achieve alignment. Refer to Figure 11. **Do not screw closed until the beams have been aligned.**

10. Tap NEXT, and the alignment process will begin. The transmitter's position may need to be adjusted until alignment is achieved. A minimimum of 10 seconds alignment is needed before being able to proceed.
11. Once alignment is acheived, mark the location of the transmitter on the mounting surface.
12. To prevent damage, switch off the transmitter.
13. Mount the transmitter following steps in Section 7.3, and switch on the transmitter.
14. Tap next, and finish.
15. The paired **Photon SMART** infrared beams/ photocells will be seen under the **IRB Photon SMART** screen.

9. Completing the Installation

9.1 Closing

Close the units by placing the front cover onto the base as shown in Figure 10. Do not force the cover, rather place it over as illustrated.

FIGURE 10

Insert and fasten the "shorter" screw provided to close the two enclosures together, followed by inserting the plastic cover provided as shown in Figure 12.

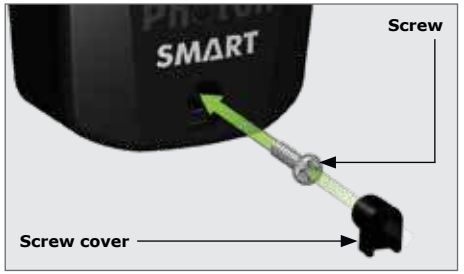

FIGURE 11

The installation is now complete.

9.2 Final Testing

To test the operation of the **Photon SMART** infrared beams/photocells, connect to the relevant SMART Controller via the MyCentsys Pro App, block and unblock the **Photon SMART** infrared beams/photocells with an object such as your hand; the relevant IRBeam symbol on the Overview Page will indicate if the **Photon SMART** infrared beams/photocells are obstructed or clear.