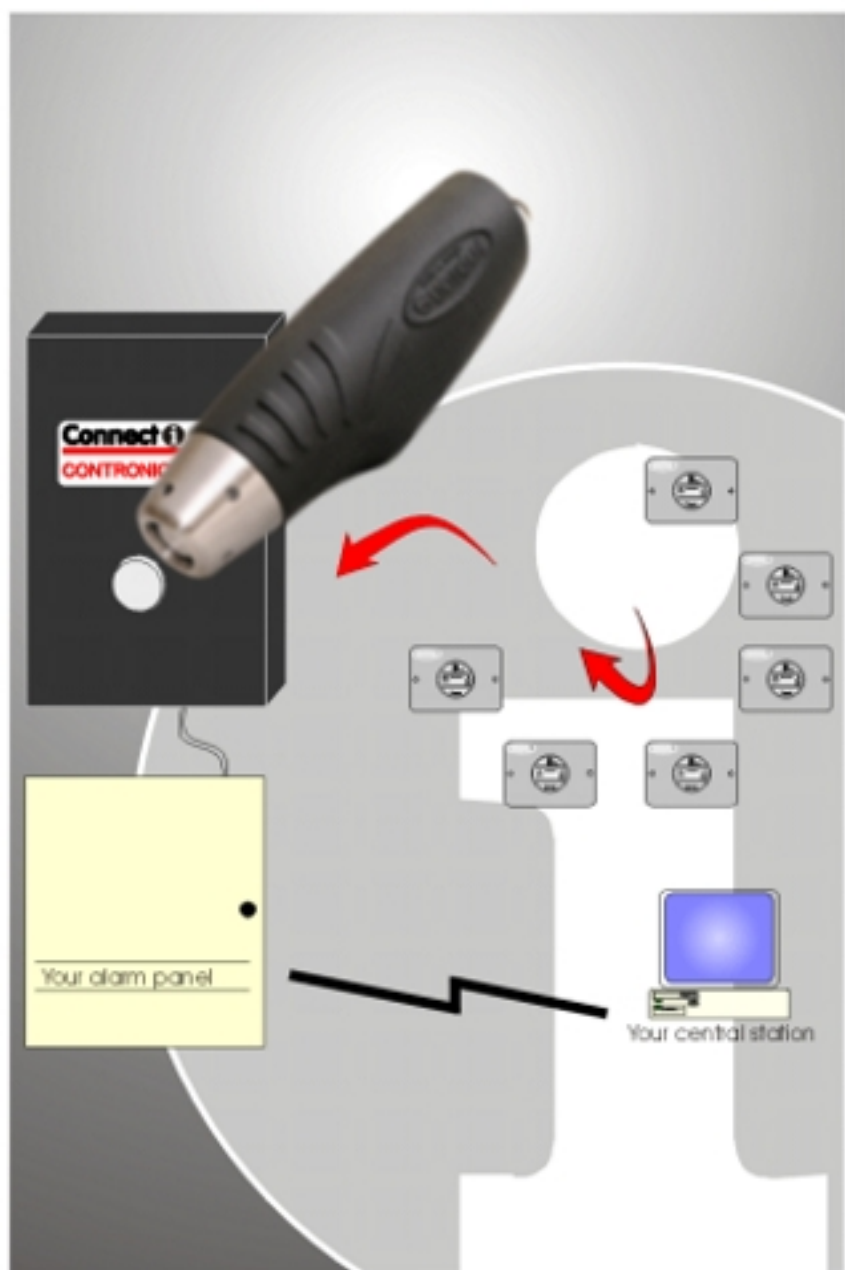




Connect*i*

User's Manual



Connect-i

User's Manual

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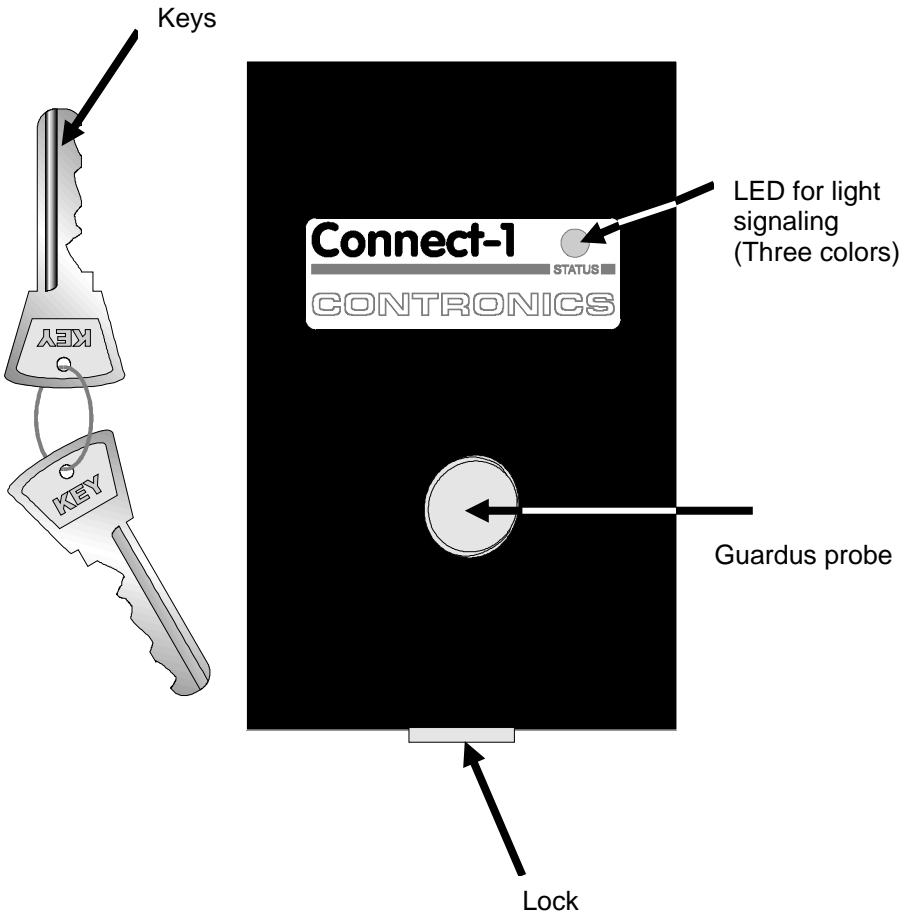
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Introduction

This manual describes the procedures for installation and operation of Connect-i, a device intended to integrate a Guardus tour controller with any monitored central alarm station that works with wired sensors. Connect-i is directly installed into an alarm or control panel, which will generate an alarm when there is a problem in the tours controlled by a Guardus associated to that Connect-i. Alternatively, an alarm can be generated when the controlled tour is successfully completed. The connection is done with the use of wires, identically to the way PIR (Passive InfraRed) and reed sensors and smoke detectors are installed. Each Connect-i is capable of interconnecting one Guardus to a central alarm station; to monitor tours that are controlled by more than one Guardus, one Connect-i is required for each Guardus used. With the Guardus/Connect-i integration, you can add guard tour control capabilities to virtually any monitoring system, adding significant value to existing installations.

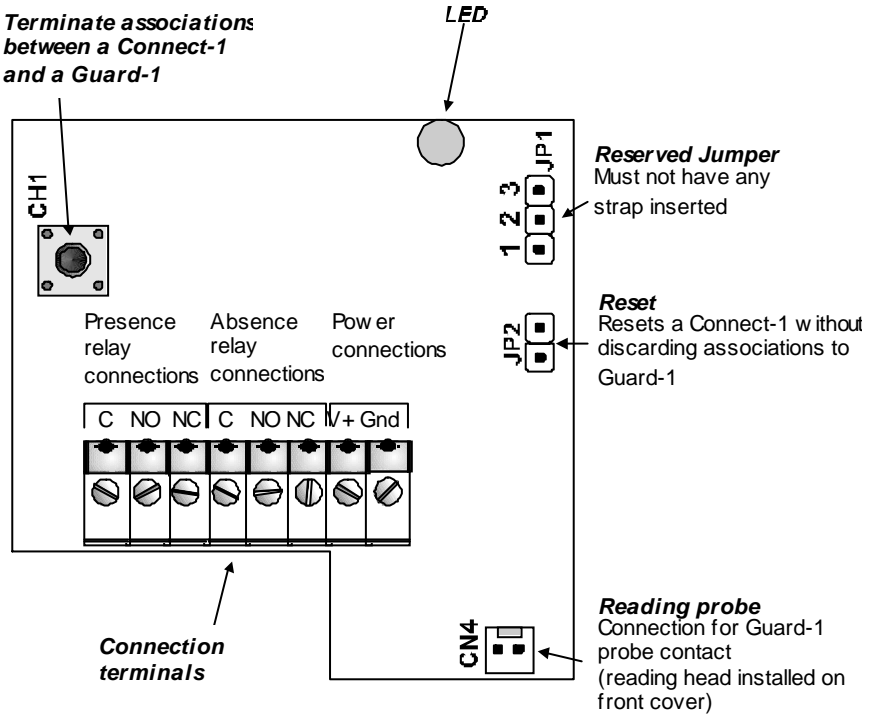
Overview

External view



Overview

Internal view



Connection terminal block for the presence relay

There are three terminals to the left. They are used when a Connect-i must send warnings to the central station informing that a tour was completed. If these terminals are used, the central stations will receive a message whenever a guard successfully completes a round.

Overview

Connection terminal block for the absence relay

There are three terminals right next to the terminals for the presence relay, to right. They are used when a Connect-i must send warnings to the central station informing that a tour was NOT completed. If these terminals are used, the central stations will receive a message whenever a guard fails to complete a round.

Power terminal block

These are the two terminals to the right. They must be necessary connected to an external power supply, such as that that exists within alarm panels. (Alarm panels, in its majority, have connections where power is supplied.) It must be connected to direct current, at a minimum of +5V and at a maximum of +18V.

CH1: undo association button

When this button is pressed, Connect-i will be completely dissociated from any Guardus.

Reset

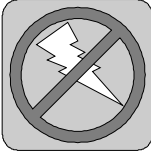
A short circuit momentarily established between these two pins will reset Connect-i, without discarding any existing associations.

To reset, short-circuit the pins (do not keep them shorted). When the short circuit is terminated, the reset procedure will start (see further chapter "Installation", item "Reset procedure").

CN1

CN1 is the connector for the cable that connects to the Guardus probe located on the outside of the front cover.

Opening and Closing a Connect-i

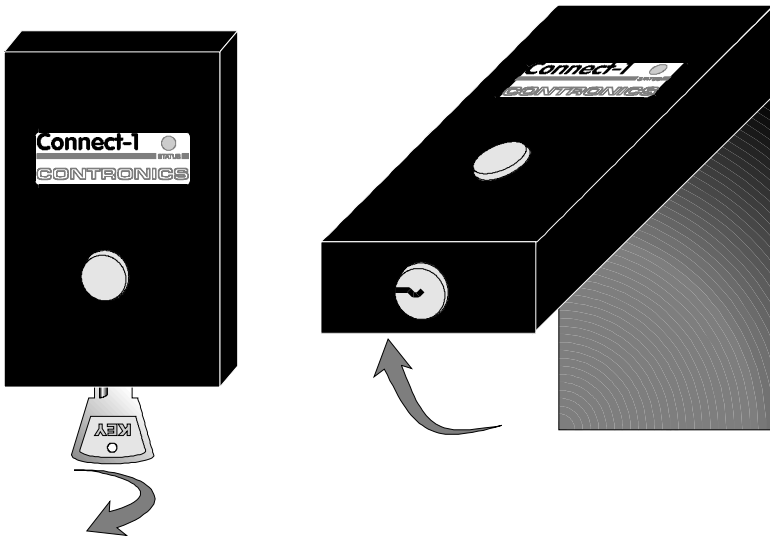


WARNING! Static electricity can damage electronic circuits. Avoid touching on the internal Connect-i electronic circuit.

Before doing the connections, touch a properly grounded metal surface or use a grounded anti-static wristband during the connection procedure. Make sure you follow

these instructions when manipulating any electronic circuit, not only Connect-i.

Before installing, you will need to open your Connect-i. This will require either one of the keys that comes with the product. The key must be inserted in the lock at the base of your Connect-i and wound clockwise. Next, lift the cover from the base, as shown in the picture below.



Opening and Closing a Connect-i

To close Connect-i again, all you have to do is to snap back the front cover and push in the lock cylinder. You do not require a key to close your Connect-i.

Installation

Necessary tools and accessories

- 2 two-wire cables or 1 four-wire cable;
- 2 to 5 screws of 4 mm of diameter;
- Screwdriver (or Phillips, depending on the type of screws used);
- Small screwdriver for terminal screws;
- External power supply from 5 to 18 V DC (normally supplied by the alarm panel);
- Termination resistors (if required by your alarm panel; normally supplied with alarm panel);
- 1 wire for grounding (optional).

Mounting Connect-i

Connect-i has six mounting holes. You can fasten it to a standard 2"x4" light switch wall box through the two middle holes. If you wish to mount it in a firmer way, you can alternatively use the four holes on the corners.

Please note you will need to open Connect-i before starting the installation, as explained before.



Attention: before definitively affixing Connect-i, please remember to pass the wires that will be used for the connection through the orifice in the back panel of the device, as described in the next section.

Preparing the connections

To operate, Connect-i must be connected to an alarm panel and properly powered through an external power supply. For such, at least

Installation

two two-wire cables or one four-wire cable are required (two wires for the connection with the alarm panel and two for power supply).



Important: Connect-i operates with a voltage of 5 to 18 V DC. ***Do not connect it directly into AC power!*** You need an external AC adapter (not included) or to use power supply from the alarm panel.

Compatibility

Connect-i is compatible with alarm panels that work with wired sensors. If the panel is capable of supplying power to the sensors, make sure the voltage supplied is between 5 and 18 V DC. In case the alarm panel used is not capable of complying with these specifications, an external power supply must be used.

The connection of Connect-i to the alarm panel is done roughly in the same manner as for a regular sensor. It is possible to use any type of loop for the connection of the device, regardless if it is intended for normally open sensors (NO) or to normally closed sensors (NC), no matter if the panel works with grounded or powered loops (as it is the case for smoke detectors). The installation instructions for the panel must be thoroughly followed.

If your panel works with powered loops, requiring a resistor (normally of 2.2K) after the last sensor, it will accept the coexistence of NO and NF sensors. If not, it will operate only with one type of sensor per loop.

Using more than one Connect-i per loop

It is possible to install more than one Connect-i (or a Connect-i and other sensor types) within a single line (or zone) from the panel. However, this procedure is not recommended, since it does not allow for positive identification of which Connect-i generated an alarm situation.

Installation

Connecting the wires

The Connect-i connection terminal block is found in the interior of the device. Right below the terminal block, there is an orifice on the back panel of the Box, which will allow the passage of wires for alarm activation and power supply.

The Connect-i must be open for this operation, as illustrated in section “Opening and Closing Connect-i”.

To connect a wire to one of the terminals, one must loosen the screw found on top of the desired terminal, insert the tip of the wire with the isolation removed in the front hole of the terminal and tighten again the screw.

Receiving warnings in a central station when the round is not complete

To generate warnings (alarms) at your central alarm station only when the guard did NOT complete the pre-programmed tour, follow the instructions below.

This is the most common Connect-i operation scenario, since the alarm panel will only make a call to the central station when there is really a tour failure.

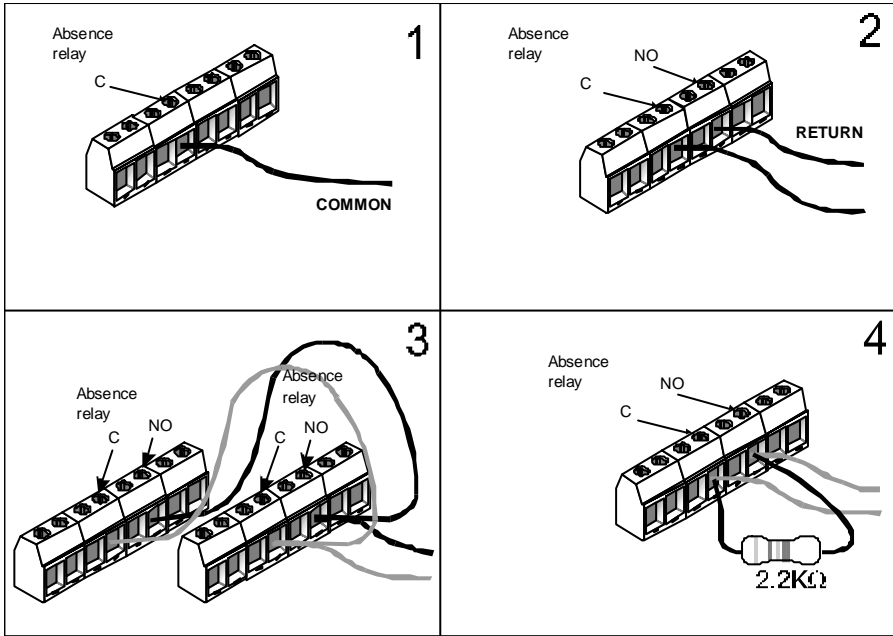
Please note that in this operating mode, we will always use the connection terminals related to the **Absence relay**.

Connecting to a normally open (NO) loop

If your alarm panel uses “NO” sensors, the following connections must be made:

1. The common wire must be connected to terminal “C” of the absence relay, as shown in the figure below.
2. The return wire must be connected to the “NO” terminal of the absence relay, as shown in the figure below.
3. If you wish to install more than one Connect-i or other sensors on the same line (zone) of the alarm panel, connect them all in “parallel”.

Installation



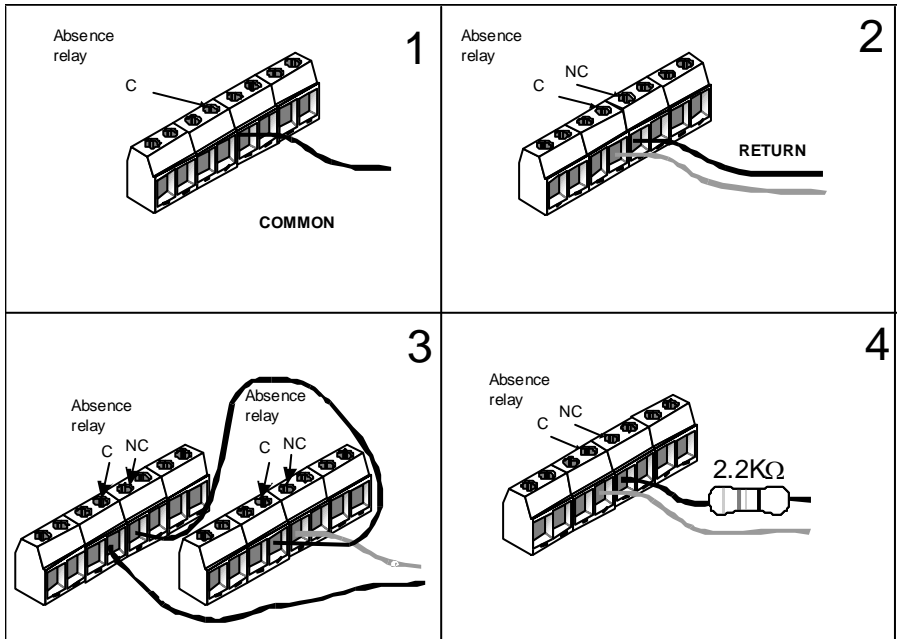
4. If your panel works with a powered loop, which is the case for smoke detectors loops, it will usually require the installation of a 2.2K resistor at the end of the line. Check the installation instructions of your panel to see whether you must install this resistor, and how to do it. Please note that if necessary, this resistor must be installed interconnecting terminals "C" and "NO" of your Connect-i absence relay. In the event there is more than one Connect-i or sensor on the same line (zone) of the alarm panel, only one resistor must be used, installed into the Connect-i or sensor that is furthest from the alarm panel.

Connecting to a normally closed (NC) loop

If your alarm panel uses "NC" sensors, the following connections must be made:

Installation

1. The common wire must be connected to terminal “C” of the absence relay, as shown in the figure below.
2. The return wire must be connected to the “NC” terminal of the absence relay, as shown in the figure below.
3. If you wish to install more than one Connect-i or other sensors on the same line (zone) of the alarm panel, connect them all “serially”.
4. If your panel works with a powered loop, which is the case for smoke detectors loops, it will usually require the installation of a 2.2K resistor at the end of the line. Check the installation instructions of your panel to see whether you must install this resistor, and how to do it. Please note that if necessary, this resistor must be installed “serially” with the Connect-i. In the event there is more than one Connect-i or sensor on the same line (zone) of the alarm panel, only one resistor must be used in series.



Installation

Receiving warnings in a central station whenever a round completed

The following instructions show how to connect your Connect-i to an alarm panel to generate alarms whenever the guard successfully completes a tour.

This operating mode is not commonly used due to the high number of phone calls that will be made.

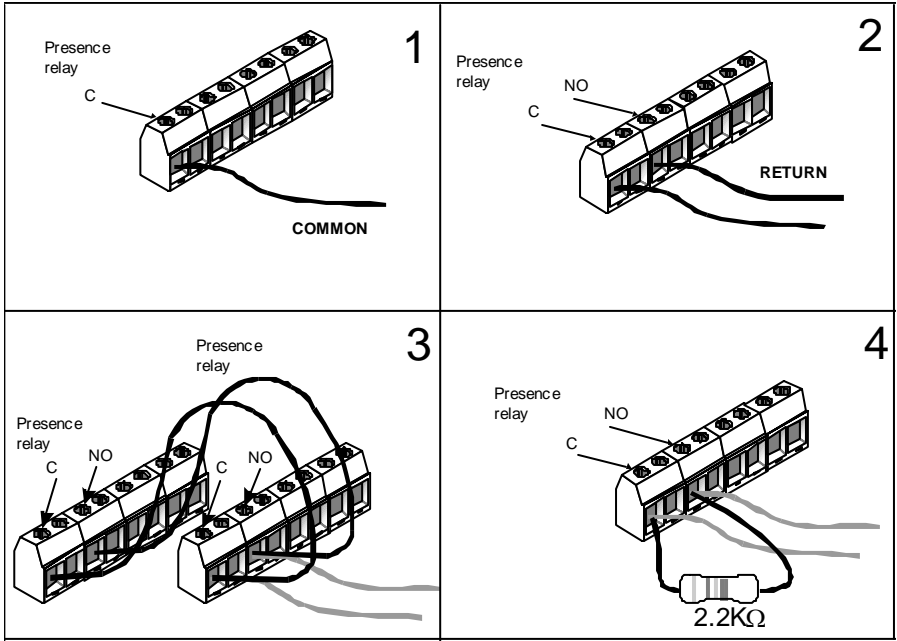
Please note that in this operating mode, we will always use the connection terminals related to the **Presence relay**.

Connecting to a normally open (NO) loop

If your alarm panel uses “NO” sensors, the following connections must be made:

1. The common wire must be connected to terminal “C” of the presence relay, as shown in the figure below.
2. The return wire must be connected to the “NO” terminal of the presence relay, as shown in the figure below.
3. If you wish to install more than one Connect-i or other sensors on the same line (zone) of the alarm panel, connect them all in “parallel”.
4. If your panel works with a powered loop, which is the case for smoke detectors loops, it will usually require the installation of a 2.2K resistor at the end of the line. Check the installation instructions of your panel to see whether you must install this resistor, and how to do it. Please note that if necessary, this resistor must be installed interconnecting terminals “C” and “NO” of your Connect-i presence relay. In the event there is more than one Connect-i or sensor on the same line (zone) of the alarm panel, only one resistor must be used, installed into the Connect-i or sensor that is furthest from the alarm panel.

Installation



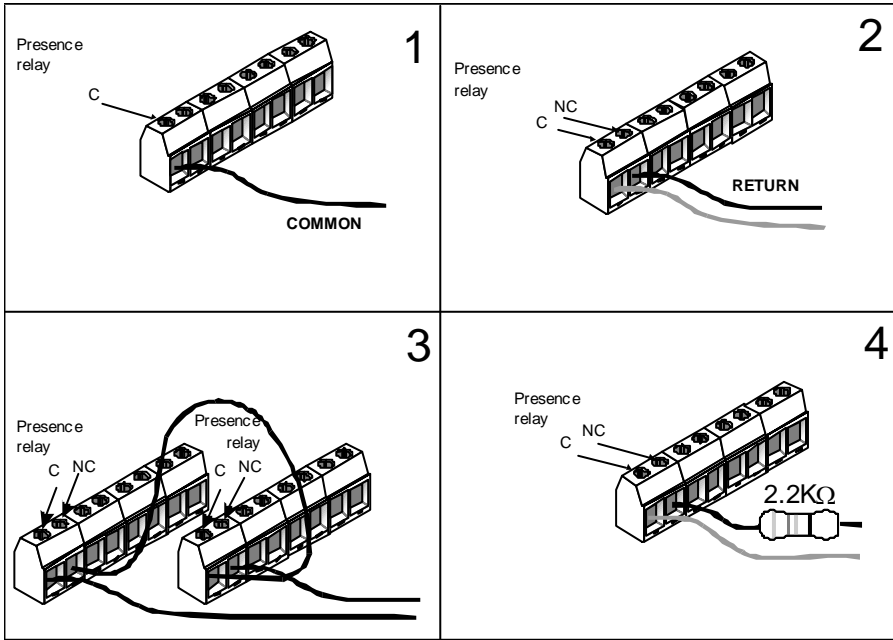
Connecting to a normally closed (NC) loop

If your alarm panel uses “NC” sensors, the following connections must be made:

1. The common wire must be connected to terminal “C” of the presence relay, as shown in the figure below.
2. The return wire must be connected to the “NC” terminal of the presence relay, as shown in the figure below.
3. If you wish to install more than one Connect-i or other sensors on the same line (zone) of the alarm panel, connect them all “serially”.
4. If your panel works with a powered loop, which is the case for smoke detectors loops, it will usually require the installation of a 2.2K resistor at the end of the line. Check the installation instructions of your panel to see whether you must install this resistor, and how to do it. Please note that if necessary, this resistor must be installed

Installation

“serially” with the Connect-i. In the event there is more than one Connect-i or sensor on the same line (zone) of the alarm panel, only one resistor must be used in series.



Powering Connect-i

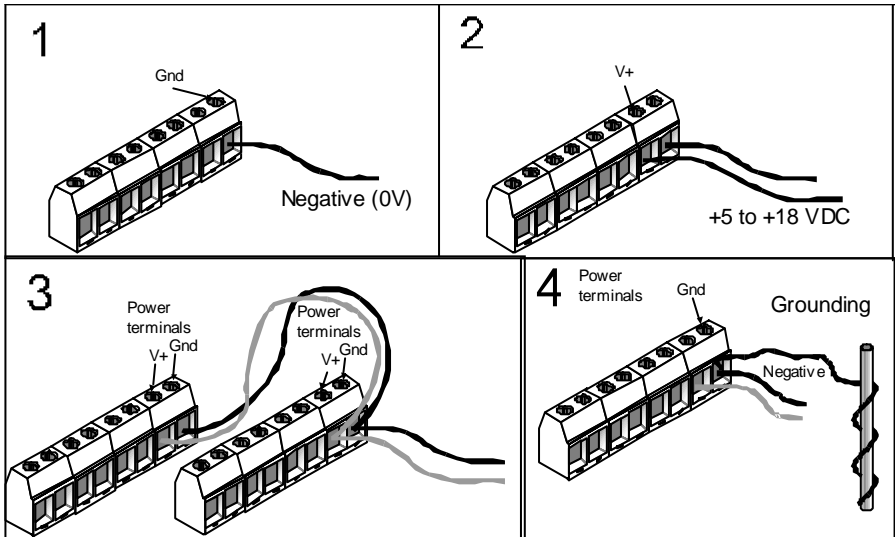
Connect-i works with an external power supply between 5V and 18V DC, and it cannot be directly connected to AC power. If your alarm panel is capable of supplying power to external sensors, make sure this supply complies with the Connect-i specifications before using it. If you use an AC adapter, make sure it also complies with the device specifications.

This is how the wiring for power connection must be done:

1. Connect the positive wire to “V+” in the internal Connect-i terminal.

Installation

2. Connect the negative wire to (ground) to “GND” in the internal Connect-i terminal.
3. If it is desirable to power more than one device through the same line, it is possible to extend the positive and ground wires from the “V+” and “GND” respectively (“parallel” connection).
4. Optionally, Connect-i can be grounded by connecting the “GND” terminal to a physical grounding line. This procedure reduces the risk of damage to the device.



When powered up, Connect-i will perform the reset procedure (see explanation next).

Configuring Connect-i

The last step to be taken before starting your work with Connect-i is to configure it to be used with a Guardus, creating an **association** between them. Each Connect-i can be associated to one Guardus; to control more than one Guardus; you must use more than one Connect-i.

Installation

Initially, Connect-i is not associated to any Guardus. This situation is easily identified by the LED on the front panel of the device, which will blink continuously, alternating between red and green.

If the LED is not blinking alternating between red and green, it is necessary to press the CH1 micro button (to learn about its location, see chapter “Overview”).

When the Connect-i is in this operating mode, it is possible to easily associate it to a Guardus. To do so, follow the steps below:



1. Place the Guardus that will be associated in touch with Connect-i, firmly touching the iButton-shaped probe located on the Connect-i front panel with the Guardus reading head.
2. A BEEP-like sound signal will be emitted by the Guardus when the communication starts. Keep them firmly connected.
3. Wait for the association signal, which is another sound signal emitted by the Guardus. While that doesn't happen, keep the Guardus firmly in touch with the Connect-i. Please see the “Signaling” section in Guardus User's Manual to learn more about the success signal.

If the association was successful, the LED, which was formerly flashing alternating between green and red, will now remain lit in one of these colors.

After this operation, the Guardus will be ready to be normally used in guard tour control activities, being supervised by the Connect-i to which it is associated.

Terminating a Connect-i / Guardus association

In some situations, it might be desirable to terminate the association between a Connect-i and a Guardus (like in the event the Guardus is

Installation

lost and needs to be replaced). To do this, you must press the CH1 micro button (presented in chapter “Overview”).

Reset Procedure

Your Connect-i will execute the reset procedure each time it is powered up (that is, when its power supplied is turned on) or each time jumper JP2 is activated, as previously presented in section “Internal view”, item “Reset”. It’s important to emphasize that a reset will not terminate an existing association between a Connect-i and a Guardus.

Below is the description for the reset procedure:

1. The LED will quickly flash in green.
2. During the next 10 seconds (approximately) the Connect-i will be performing an auto test. If a defect is found in its memory, this will be reported by flashing the LED in yellow. (The 7 blinks are grouped in 2 groups of 3 blinks followed by one more blink.)
3. The Absence Relay will be activated for 5 seconds (this means an alarm message will be received at the central station, if connected to one).

Upon finishing the reset procedure, Connect-i resumes normal operation.

Operation

Once configured, your Connect-i becomes the equivalent to a final checkpoint required in the tour controlled by the associated Guardus. That is, after checking all checkpoints, the guard must end his round by touching the Connect-i with the Guardus.



When initiating the communication to a Connect-i in tour mode, Guardus will emit a communication signal (BEEP). After this signal, keep the Guardus firmly in touch with the Connect-i until you hear the Guardus success signal (WHEW-WHEW). See section “Signaling” in the Guardus User’s manual for more details on the sound signals.

In case this procedure is not properly followed, Connect-i will generate an alarm when the tour times out at the specified time.

Operation



Hint: if, after the communication between the Guardus and the Connect-i is started, the contact between them is interrupted for whatever reason, keep the devices away from each other for about seven seconds (or until a new BEEP is emitted by the Guardus).



Important: Connect-i will work with the exact same schedules as the associated Guardus. This means the alarm indicating tour failure will be generated when the maximum duration for the tour has elapsed.

During a predefined tour scheduled, Connect-i will keep the LED lit up in green, briefly flashing at regular intervals to indicate activity. While the LED is like that, the guard can finish his round by touching the Connect-i with his Guardus on the proper contact. When this occurs, the LED will light up in red, briefly flashing at regular intervals to indicate activity, until a new round starts. If the maximum duration for the tour elapses, and the guard has not downloaded the Guardus into the Connect-i, the LED will light up in red. At this point, an alarm will be generated at the panel to which it is connected, indicating the tour was not completed. Just like when the tour was normally finalized, the LED will remain lit in red until a new tour starts.



Attention: the precision of the Guardus and Connect-i clocks does not guarantee that they will be synchronized to the same second. This can cause differences of up to 30 seconds between the times the Guardus and the Connect-i consider the tour to be finalized.

Technical Specifications

Physical characteristics	Compact and resistant metal case with push-in lock in its base. A Connect-i will remain locked during all its operation.
Dimensions	120mm x 76.5mm x 32.4mm (4.725" x 3.0" x 1.275")
Weight	480g (16.9 oz)
Memory	32 Kbytes non-volatile.
Capacity	Holds complete programming information from any Guardus
Operating temperature	From 0°C to 55°C (From 32°F to 131°F).
Power supply	External from 5V to 18V DC.
Serial communication	Transfer rate of 115,200bps. Communication with a Guardus completes within 2 seconds.
Life expectancy	10 years
Signaling	Tricolor LED.
Alarm relays activation time	5 seconds