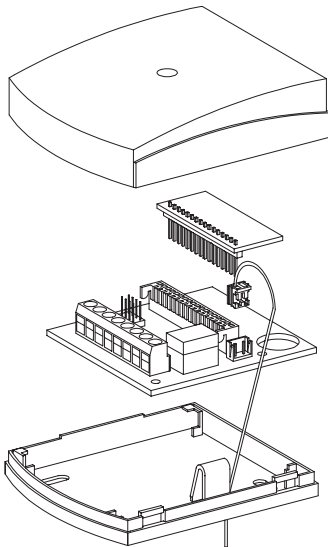


INSTALLATION NOTES



SCR SINGLE CHANNEL RECEIVER

Part No. 100-187



- Receives ARM / Disarm / PANIC / Low Batt channels from Ness Radio Keys or Radio PIRs / Radio Reeds.
- Supports up to four transmitters.
- Simple "Learn Mode" programming of radio Keys.
- 1 x Relay output, (Selectable Toggle or Pulse).
- 2 x Open Collector outputs, (Panic/Low batt)



INTRODUCTION

The Ness SCR Standalone Receiver is a unique high performance radio receiver designed to operate in conjunction with any Ness proprietary radio transmitting device including Ness Radio Keys, Radio Key pendants, Radio Reed switches and Radio PIRs.

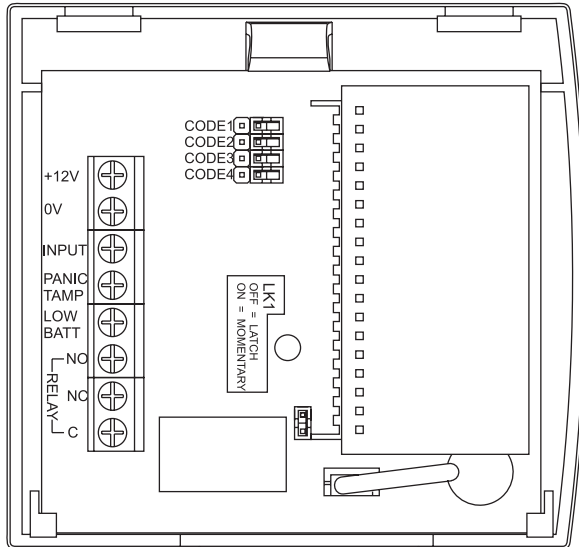
The SCR is ideal for connecting to alarm panels which do not provide a wireless facility and can be used for connecting wireless devices for zone alarms, Panic buttons or Radio Keys for Arming and Disarming the Panel.

The Inhibit input on the SCR gives it the unique ability to identify the Armed/Disarmed status of an alarm panel. When used with a Ness radio key it allows the receiver to always correctly Arm or Disarm the Panel.

The SCR is also ideally suited for applications that require a remotely switched relay output for low voltage switching applications e.g. garage door opening.

The SCR has separate Arm/Disarmed or Alarm dry contact relay output, Panic output and Low Battery output. The Relay output can be selected to be Pulsing or Latched to suit your application.

The SCR will accept up to four individual Radio Keys and Panic Buttons or up to four alarm transmitting devices (Radio Reed Switches or PIRs).



PROGRAMMING

The SCR can be programmed with up to four similar Ness transmitting devices i.e. either Radio Key devices or Alarm transmitting devices, i.e. Reed Switches or Radio PIR's.

In Program Mode, the SCR will learn the radio code of up to four transmitters into four "codes". The data is stored in non-volatile memory and is retained even if power is removed.

Note - You cannot mix Alarm devices with Radio Key type devices, the receiver will only accept one type.

PROGRAMMING STEPS

1. Select a Radio device to be programmed into the SCR and bridge the Code link (1-4) for the code you will program first.

The LED will change from a slow flash to either,

a) A faster flash indicating that the Code slot is not yet programmed with any device.

b) Or the LED will turn on steady indicating that there is already a device programmed into that slot.

2. Send three transmissions from the device to be programmed into the Standalone Receiver transmit 3 times.

To send a transmission,

- Radio Key: Press the OFF Button 3 times.
- Radio Key Pendant: Press the Panic button 3 times (be aware of the 1.5 second delay on the button press).
- Radio PIR: Place the PIR in Test Mode and trigger an alarm 3 times.
- Radio Reed Switch: Trigger an Alarm by moving the magnet away from the Reed Switch then a Restore Alarm by moving the Magnet back and finally another Alarm by moving the magnet away.

The LED will do the following,

- Turn off on the first code received.
- Blink once quickly on the second code received.
- Turn on steady on the third code received

indicating the code has been accepted and programmed into memory.

4. To program more devices repeat steps 1 and 2 otherwise remove the program link and park it on a single pin for future use.

Once the Program Link is removed the LED should flash slowly indicating normal operation.

NOTE - Code 1 is factory programmed with a Radio Key for test purposes only.

TO ERASE A CODE

If you wish to clear an already programmed transmitter code carry out the following steps, otherwise if you simply wish to over-write a code with a new one then carry out the steps described in Programming Steps above.

1. Place the Program Link onto the number of the code you wish to clear (Code 1 to code 4)
2. The LED should be on steady indicating that the code has a device programmed into it.
3. Using any standard Ness Radio Key press the ON Button once.
4. The LED should change from being on steady to a fast flash indicating that the code has been erased and is now clear.
5. Remove the Program link and park it on a single pin for future use.

LINKS

LATCH/MOMENTARY LINK LK1

The Relay can be selected to either toggle or pulse for 2 seconds when a valid code is received.

LK1 Link OFF = Latching operation
LK1 Link ON = Momentary operation

LATCHED OPERATION

Link set to Latch. (Only use with Radio Keys and Reed switches). The Inhibit Input has no effect.

APPLICATION 1. Relay Turns On and Off using a Radio Key.

Pressing the ON button on a Ness Radio Key will turn the Relay on. Further presses of the ON button when the relay is on will have no effect.

Pressing the OFF button on a Ness Radio Key will turn the relay off. Further presses of the OFF button when the relay is off will have no effect.

APPLICATION 2. Relay follows the state of the Reed Switch.

When a single reed switch alarms the relay will turn on. When the reed switch restores the relay will turn off.

If more than one reed switch is programmed then the relay will turn on when any reed switch alarms but will only turn off when all reed switches have restored.

MOMENTARY OPERATION

Link set to Momentary. (Can be used with Radio Keys or Alarm Devices).

Application 1. PIRs and Reed Switch used in Normal Alarm operation.

Use this application if you simply wish to add alarm device to your control panel. The Inhibit Input is "High" or left open.

The relay will pulse on for 2 seconds every time a valid code is received from any of the programmed devices (PIR or Reed Switch) when they alarm.

Application 2. PIRs and Reed Switches Alarm operation with Inhibit.

Use this special application if you need to inhibit the alarm relay at certain times

The Inhibit input is switched between "High" and "Low" (less than 1 Volt).

While the Input is "High" the Relay will pulse on for 2 seconds every time a valid code is received from any of the programmed devices (PIR or Reed Switches) when they alarm.

When the Input is changed to "Low" then all alarms will be ignored from the programmed devices. Only use this feature if you specifically wish to ignore alarms from devices.

Application 3. Radio Key Simple Pulsing Relay output.

Use this application if you want a simple pulsing output with a Radio Key. Only the ON button on the Radio Key will pulse the Relay.

The Inhibit input is "High" or left open.

Every time the ON button is pressed on the Radio Key the Relay will pulse, pressing the OFF button while the Inhibit is "High" will not pulse the relay.

Application 4. Control Panel Arming using an Armed/Disarmed output from the Panel.

Use this application for correctly Arming and Disarming a control Panel using the ON and OFF buttons on a Radio Key as long as the control panel has an Armed/Disarmed output which can be wired into the Inhibit Input on the SCR.

When the Panel is Armed the Inhibit Input will require a "LOW" or less than 1 Volt and when the Panel is Disarmed the Inhibit Input will require a "HIGH" or greater than 4 Volts. When wired correctly the relay output will do the following:

With the panel Disarmed (Inhibit Input "High") pressing the OFF button will have no effect, pressing the ON button will pulse the relay output which can be used to Arm the control panel.

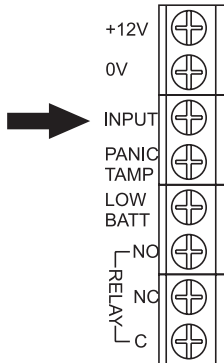
With the control panel Armed (Inhibit Input Low) pressing the ON button will have no effect, pressing the OFF button will pulse the relay which can be used to Disarm the control panel.

INHIBIT INPUT

INPUT

This terminal serves as an inhibit for the relay output depending on the state of the input. Applying less than 1 Volt to this input makes it "LOW" and applying greater than 4 Volts or leaving this input open makes this input "HIGH". The inhibit feature is only functional when Momentary action is selected, this is more fully described below.

For a summary of the action of this feature see the Table on the next page.



NORMAL OPERATION

The SCR requires a DC regulated supply from 10–14 Volts to operate correctly.

When operating normally the LED on the SCR will flash slowly.

When a valid radio transmission is received the LED will turn on for 2 seconds. Always ensure that the SCR is kept well away from potential sources of RF interference, i.e. televisions, computers, Wi-Fi products. If you experience reception problems move the SCR well away from other devices then connect with a battery only and re-test to attempt to isolate the cause of the problem.

Always keep the antenna J1 well away from your control panel and wiring and potential sources of radio Interference. The antenna should be kept straight and not coiled up tightly or tied into a knot. NEVER SHORTEN OR LENGTHEN THE ANTENNA AS IT IS A CRITICALLY TUNED LENGTH.

For details on the connection of external antenna contact your nearest Ness branch.

OUTPUTS

RELAY - The relay output is a single pole changeover dry contact rated at 1amp @ 28 Volts. The Relay output is used to provide either Alarm output or Arm/Disarm output. The function is more fully described above.

PANIC/TAMPER - Open collector (switched low) output rated at 20 mA. Pulses for 2 seconds when,

- a) The panic button is pressed on a Radio Key or a Radio Key pendant is activated or,
- b) A Tamper Alarm is generated on a Radio PIR or a Reed Switch.

Note - The Momentary/Latch Link has no effect on the operation of the Panic/Tamper output.

LOW BATTERY - Open collector output (switched low) output rated at 20mA. Pulses for 2 seconds when a Low Battery signal is received from either a Radio Key or an Alarm Device. Connect a 12V beeper or optional relay for connection to an alarm zone if required.

Note - The SCR provides no means of identifying which device has caused the Low Battery alarm however all Ness Radio Keys and Alarm Devices display Low Battery by flashing their LED instead of turning it on steady when they are transmitting. The Low Battery output should only be used as a warning that batteries require changing

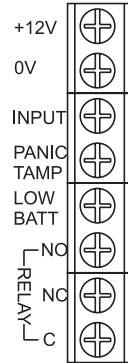


TABLE - OUTPUT OPERATION

| ACTION | LINK | INPUT | RELAY |
|---------------------------|-----------|---------------|-----------|
| Radio Key or Reed Switch | Latching | Input Ignored | Toggle |
| Device Alarm, PIR or Reed | Momentary | Low < 1V | No Change |
| Device Alarm, PIR or Reed | Momentary | High > 4V | Pulse |
| Key ON | Momentary | Low < 1V | No Change |
| Key ON | Momentary | High > 4V | Pulse |
| Key OFF | Momentary | Low < 1V | Pulse |
| Key OFF | Momentary | High > 4V | No Change |

SPECIFICATIONS

| | |
|------------------------|-----------------------------------|
| OPERATING VOLTAGE | 10–15V DC |
| QUIESCENT CURRENT DRAW | 15mA |
| RELAY OUTPUT | C.O. contacts rated 1A @ 28V max. |
| PANIC/TAMPER OUTPUT | open collector output 20mA @ 12V |
| LOW BATTERY OUTPUT | open collector output 20mA @ 12V |
| RADIO FREQUENCY | 303.85MHz |
| RADIO TYPE | Superhetrodyne |
| BANDWIDTH (3db) | 300Khz |
| SENSITIVITY | > -100db |
| COMPATIBILITY | Ness 304MHz transmitters |
| MAX. RADIO DEVICES | 4 |
| DIMENSIONS | 73(h) x 73(w) x 27(d) mm |
| WEIGHT | 73g |



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Ness SCR Single Channel Receiver
Installation Notes
Rev 3.1 May 2013

Document Part No: 890-129
Revised April 2013

For the product: 100-187 SCR Receiver



Ness Corporation manufacturing processes are accredited to ISO9001 quality standards and all possible care and diligence has been applied during manufacture to ensure the reliable operation of this product. However there are various external factors that may impede or restrict the operation of this product in accordance with the product's specification.

These factors include, but are not limited to:

1. Erratic or reduced radio range. Ness radio products are sophisticated low power devices, however the presence of in-band radio signals, high power transmissions or interference caused by electrical appliances such as wireless routers, cordless phones, computers, TVs and other electronic devices may reduce the range performance. While such occurrences are unusual, they are possible. In this case it may be necessary to either increase the physical separation between the Ness receiver and other devices or if possible change the radio frequency or channel of the other devices.
2. Unauthorised tampering, physical damage, electrical interruptions such as mains failure, electrical spikes or lightning.

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