



**IRR-30xx & IRR-31xx**  
**I/R Remote Control Relay Receivers**  
**Instruction Manual**

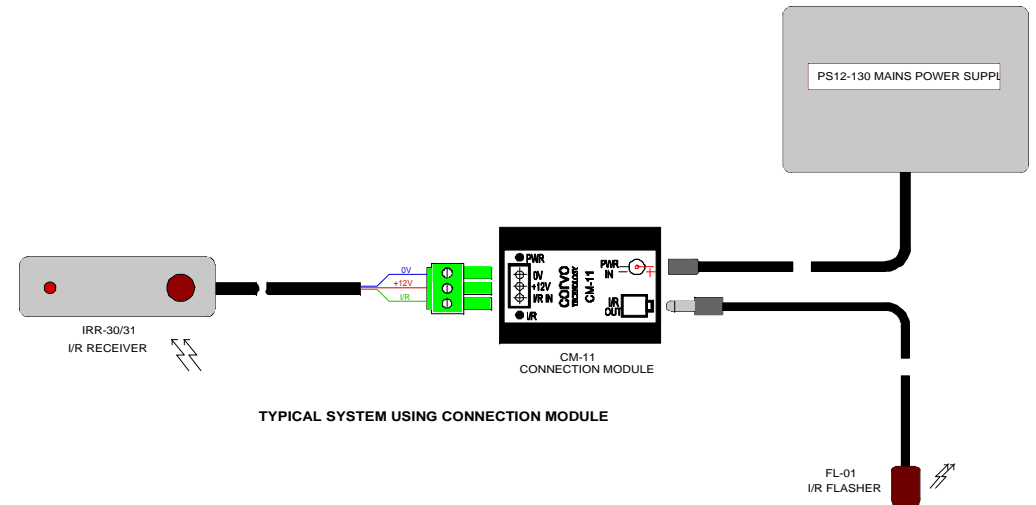
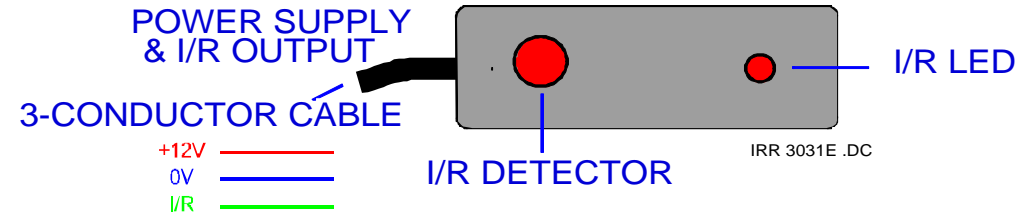
**Introduction**

The IRR-30 and IRR-31 Remote Control Relays are intended primarily for the wired transmission of radiated I/R remote control signals, allowing a separation, due to distance or obstacles, between the I/R remote control transmitter and its receiver. These devices are placed within operational distance and visible to the I/R remote control transmitter (TXIR) to receive the I/R signals, to regenerate them and, finally, to send the signals over a cable to the vicinity of the I/R receiver of the device being controlled. The wired I/R signals are radiated into the I/R receiver(s) through the use of flashers (small I/R diodes) fixed adhesively to the I/R receiver(s) window.

These I/R relay receivers are transparent to most I/R carriers and codes, therefore allowing their use with many TXIR devices in a given installation. The relays cannot simultaneously transmit several I/R codes but they can handle many different types of codes sequentially. The IRR-30 and IRR-31 Relays employ a digital regeneration technology in which incoming I/R codes are removed from their carrier and remodulated on a new carrier. This technique provides high sensitivity as well as very clean and stable output pulses. It also should be understood that the output carrier frequency is fixed at 40KHz, a frequency commonly used in these devices. Because the output is close-coupled by a flasher to the receiver, there is an abundance of energy to overcome the frequency mis-matches that this technology incurs when processing signals with other carrier frequencies.

Performance of the IRR-30 and IRR-31 are quite similar in all respects, the main difference between the two models being that the IRR-31 has additional noise rejection filtering, therefore making it more likely operate properly in the presence of difficult ambient light or radiation conditions.

**IRR-30 & IRR-31**  
**I/R RELAY RECEIVER**



## Connections

Care should be taken to correctly connect the power supply (+12V), ground (0V) and I/R output terminals. The basic connection diagram is as shown on the opposite page. The power supply can be connected at either the flasher or I/R remote relay receiver ends of the layout. If the power supply is connect at the receiver end, only a 2-conductor cable is required to connect the receiver to the flasher. Very small wire sizes are adequate for links of less than 20M (66 feet). The wire size should be increased for longer links reaching AWG18 for very long links. Shielding of the cable is very rarely necessary. Wiring is more convenient if a connection module is used, especially if there are several relay receiver devices and/or flashers used in the same installation.

Our optional connection modules are as follows :

- **CM-11** : One receiver input, one flasher (single or double) output, one power supply input
- **CM-14** : One receiver input, four flasher outputs, one power supply input
- **CM-41** : Four receiver actively combined, two flasher outputs, one power supply input
- **CM-28** : Two receiver inputs (buffered), eight flasher outputs, one power supply input

All these connection modules are compatible with the IRR-30 and IRR-31 relays. It should also be noted that all connection modules have a power supply LED and I/R LED to assist in trouble-shooting. When using more than one flasher it is essential to use a connecting block as the flashers will not work properly if simply connected in parallel. While it is possible to simply connect the receivers in parallel when more than one receiver is necessary to cover the operating area, it should be understood that this method can result in a loss of sensitivity due to the accumulation of ambient noise from all the receiver detectors. As a general rule, if more than two receivers are required, it is best to use the CM-28 or CM-41. The connecting modules are fitted with buffered inputs and digital signal summation, therefore avoiding the loss of sensitivity problem.

One of the most common reasons for these relays circuits to fail to perform reliably is an excess of I/R radiation onto the I/R receiver of the device being controlled from the flasher. Many I/R receivers have inadequate dynamic range to cope with the radiation level received from a flasher only several millimeters from its detector. In this case, placing the flasher slightly off-axis may cure the problem.

## Technical Specifications

### IRR-30 / IRR-31

Carrier detection frequency range	30 to 90 KHz
Minimum code pulsewidth	150 $\mu$ s
Output voltage, open circuit, hi state	8 V
Power supply	11-13Vdc/15mA
Dimensions	15 (H) x 42 (L) x 11 (P) MM
Mass	24 Grs
Operating Temperature Range :	0 to 40°C (32 to 104°F)
Storage Temperature Range :	-20 to 60°C (-4 to 140°F)
Case Colour :	<b>BL</b> =Black <b>WH</b> =White <b>BE</b> =Beige <b>LG</b> =Light Grey <b>BR</b> =Brown <b>OC</b> =Ocre

