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Relcross Ltd IR Receiver

Instructions for Infra-Red Receiver/Transmitter System

Transmitter

The IR beam covers an angle of about 30 degrees; the Receiver should be somewhere within this area for reception to occur. The range is reduced in direct sun light. Battery state may also limit range, if the transmitter is not to be used, store in a cool dry place.

The range of the transmitter depends on operating conditions & receiver placement. The receiver will be less sensitive in sunlight but around 10 meters dependant on conditions. Longer ranges may be achieved but the transmitter has to be aimed at the receiver. The receiver has also been tested to work behind a 20 mm thick plate glass window at a range of 5 meters.

Battery replacement

The transmitter uses a GP27A alkaline cell, or equivalent (e.g.: Duracell MN21/3LR50) To replace the battery, unscrew the case and fit the new cell, taking note that the battery polarization (+/-) is correct.

Receiver installation

The receiver requires a 12V DC supply & should not be mounted where direct sunlight may affect its sensitivity & thus transmitter range. The internal receivers need to be mounted on a standard single gang back box. The external receivers need to have cable access holes drilled in the back & fitted with watertight glands and sealed, a cut out in the lower part of the circuit board allows access for drilling.

The receiver back plate (internal) or die cast enclosure (external) must be connected to an electrical ground for LVD ESD protection.

For internal receivers, a steel back box is recommended. When using the Wiegand data output a screened cable must be used.

Follow this procedure once the receiver is installed & powered up

Hold down the 'Learn' button on the back of the receiver whilst transmitting from the desired IRF transmitter, note the LED will glow RED. This will set the code accepted by the Receiver, If the code is accepted, then both the Red and Green LED's will stay on for about 5 seconds. Now try the transmitter and see if the code is accepted – GREEN LED.

Receiver Operation

The receiver must be supplied with 12 volts DC only, it has dual LED red / green indication. The green LED indicates that the receiver is ready to receive a code. The red LED indicates that the receiver accepted a valid code.



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Once a matching signal is received, the receiver transmits the received code on its Wiegand interface, and activates its output relay. The relay time may be set to one of four values via DIP-3 and DIP-4 (see below). Once the code is received, the green LED turns off, and the red LED turns on, this indicates successful reception. After two seconds the red LED turns off, and the green LED indicates that a further code may be sent.

If the relay time has not yet expired, the relay will remain active. However, a further code may now be sent, and this will re-start the relay timer. The relay may thus be kept on by repeated transmission. All codes received will appear on the Wiegand interface. Note that the green LED turns off when a signal is detected by the receiver. This gives a visible indication of the signal, and can be used to check that a fob is transmitting correctly. (The LED will blink very briefly as each bit of the code is transmitted).

Dipswitch configuration for relay timings

The receiver is set up for use via 4 DIP switches, numbered DIP 1 to 4.

DIP switch 1 must be **OFF** for Infrared (only switch to **ON** for Radio)

DIP switch 2 normally set to **Off** (The receiver requires the full code, i.e. Site & Pin).

DIP switch 2 is set to ON when using with access control system.

Relay time	DIP-4& DIP-3 control relay on time delay as follows:	
1 second	OFF	OFF
5 seconds	OFF	ON
10 seconds	ON	OFF
30 seconds	ON	ON

Connections are as per the PCB The unit must be supplied with 12 Volts DC only

Relay Contacts

C Common
NO Normally open
NC Normally closed

12 VDC Supply – IR receiver is protected from reverse polarity connection

+ +12VDC
- 0 volts

Wiegand outputs

W1 data
W2 data
G Ground