



3380 Isaacs Avenue, Walla Walla, WA 99362
Phone: 509-529-2286 or 800-237-2286
Fax: 509-529-2291 E-mail: isaacs@isaacstech.com
www.isaacstech.com

INSTALLATION & USER GUIDE MODEL

RD810

SINGLE-OUTPUT RECEIVER (INCLUDING KIT KR800)

Description

The Isaacs RD810 Single Output Receiver continuously monitors the radio frequency band for signals from its valid transmitter (the Isaacs transmitter that is specifically programmed to this receiver). The valid transmitter signal causes the RD810 receiver to respond by switching its output relay per the programming established for the valid transmitter. The receiver also provides a relay output for system faults including low transmitter battery voltage and lost communication.

Specifications RD810 Receiver

Power Requirement: 11 – 14 VDC; 180 mA typical, 400 mA maximum

Operation: 902 – 928 MHz frequency-hopping, spread spectrum.

Maximum valid transmitters: 1

Receiver Outputs: SPDT (Form C) relays (Rated 0.5 A@ 12 VDC)

Physical: Weatherproof, polyurethane coated PVC, 4.8 in. diameter x 10.6 in. height (122mm x 269 mm) with 1" FNPT mount fitting

Weight: 2.8 lb. (1.23 kg)

Site considerations

The Isaacs wireless controls have maximum range when used as line-of-sight communications. All units should be mounted high enough to allow a minimum ten feet of clearance between the line of sight and the terrain below and any intervening foliage. The line of sight should be clear of all metal buildings and chain-link fences, and preferably clear of all buildings and foliage. Failure to maintain these clearances may reduce range.

The Isaacs PR810 Repeater is available for sites with significant obstacles or extreme range.

Installation

!! SAFETY FIRST !!

DISCONNECT ALL POWER SOURCES BEFORE INSTALLING THE ISAACS SYSTEM.

The installer and user are responsible to ensure safe and effective application of these products.

Mount the receiver and transmitter (models TD810-817) vertically, on rigid conduit masts, with the one-inch NPT fitting at the bottom. Mount both units at least ten feet above grade on vibration-free solid structures. The wiring may be spliced and extended only as specified in this install guide and in the transmitter supplement.

The units are weatherproof, but in some environments it is possible for liquids or gases to enter the unit through the base fitting. Where there is such a possibility, before installing a unit on conduit, seal the base fitting around the wires and grommet, with a non-corrosive curing RTV compound such as Dow 748 (Isaacs TS0658).

The transmitter is omnidirectional and, when mounted upright, may point in any direction. The RD810 receiver has better signal-detection capability on the front side (Isaacs label side). Mount the receiver so that the transmitter is always within the 180 degree arc on the front side of the receiver.

Connection

The RD810 receiver requires continuous 12 Volt DC power, normally from a regulated power supply but a battery or solar supply may be used if it meets the power requirement specification. The power source must be free of voltage surges and spikes, and capable of continuously supplying receiver current.

Connect the RD810 receiver to the power and external control circuits with the #18 lead wires extending from the receiver base. Follow the wire color codes as shown in the diagram on page 3. The wires may be spliced as necessary to reach the power supply and the external circuits, but always ensure that the wire size is adequate to maintain 12 volts DC at the full rated load of the receiver, plus any external devices connected to the power supply. Use care in wire splicing, as poorly made wire splices are a common source of operational problems.

See the listing of Isaacs power supplies and receiver accessories that are available on page 4.

Operation and Maintenance

As shown in the photo below, the three LEDs in the receiver base indicate receiver power (red illuminated), a fault (yellow illuminated), and/or the output relay is energized (green illuminated). During initial power-up, the receiver will self-test and may briefly illuminate all the LEDs, but only the red LED should remain "on" which indicates the receiver is powered. There will be no further LED activity until the receiver detects a signal from the valid transmitter with its contacts in an active state (green LED), or until a fault is detected (yellow LED).

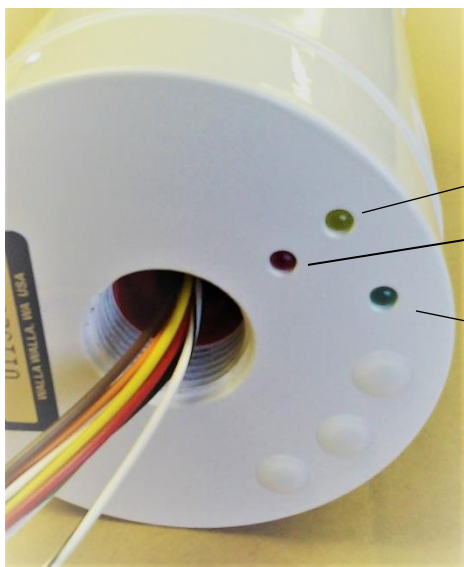
A fault condition at the receiver indicates either a transmitter problem such as low battery voltage, or that the receiver has lost communication with the transmitter for an extended interval (typically set for 2 hours).

The RD810 receiver requires no routine maintenance. Refer to the Isaacs Wireless Troubleshooting Guide if operational problems occur.

System programming

The term "system" refers to the wireless units mated by programming. Only those units that interact because of their unique programming comprise a particular system. Multiple systems may operate in a given area without interference. The components and operation of this specific system are as follows:

Receiver Ser. No. _____



FAULT (Yellow)

POWER (Red)

OUTPUT

TRANSMITTER
Model Ser. No.

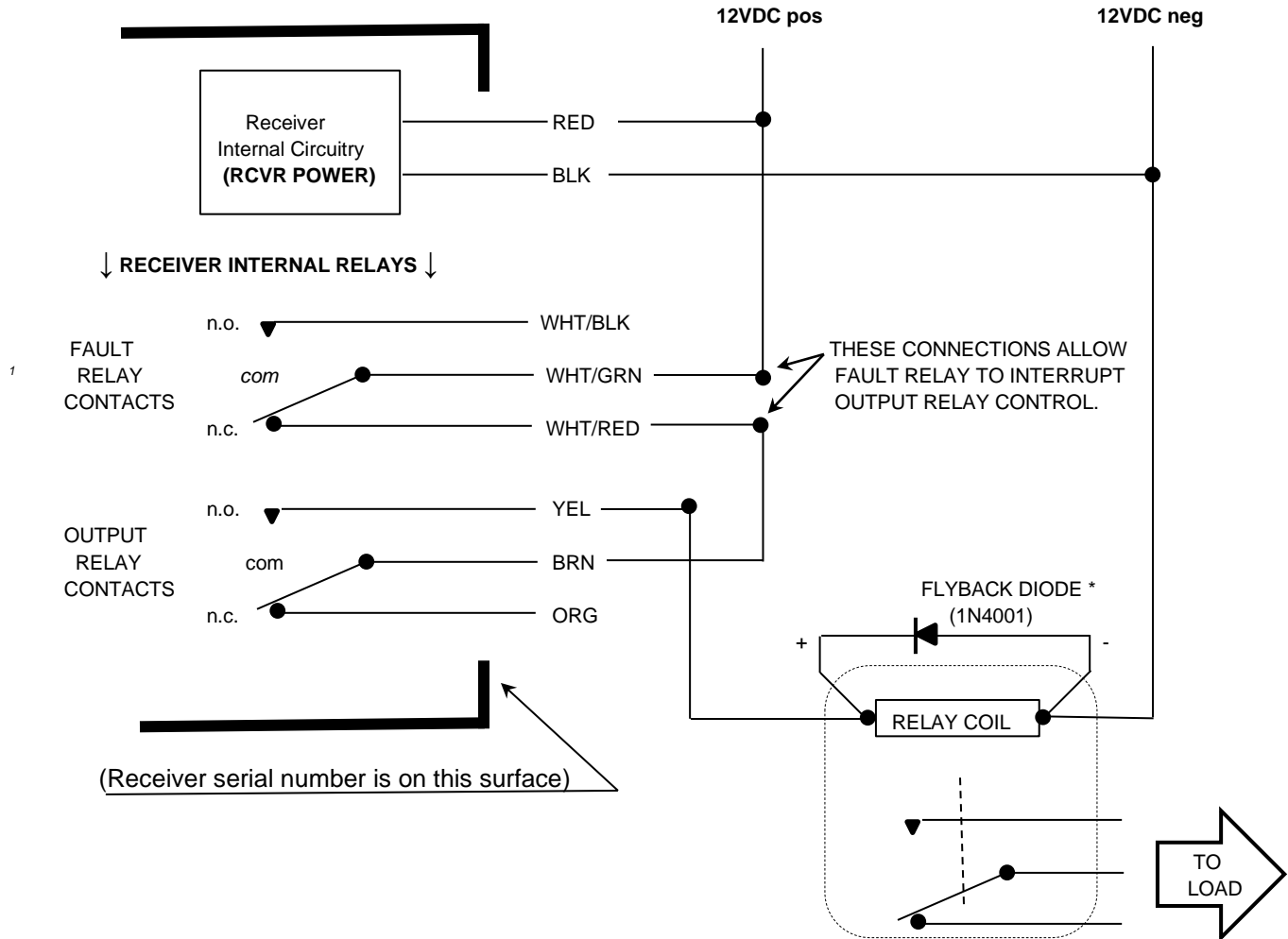
LED "ON" WHEN
TX contacts are:

Additional programming information (see pg. 5): YES ___ NO ___

RD810 Receiver Connections

SCHEMATIC FOR FAULT INDICATION WITH OVERRIDE (common leads in series)

A fault condition indicates low transmitter battery voltage, or that the receiver has lost communication.



*** NOTE:**

For proper operation of the FAULT and OUTPUT LED indicators, 12VDC(+) must be supplied to the common of each relay.

Isolate unused relay and fault leads with wire nuts or similar to prevent electrical short circuits.

To protect sensitive receiver electronics, use flyback diode suppression across the coil of all external DC interface relays.

EXTERNAL INTERFACE RELAY
(MUST BE USED WHEN THE LOAD EXCEEDS INTERNAL RECEIVER RELAY SPECIFICATION)

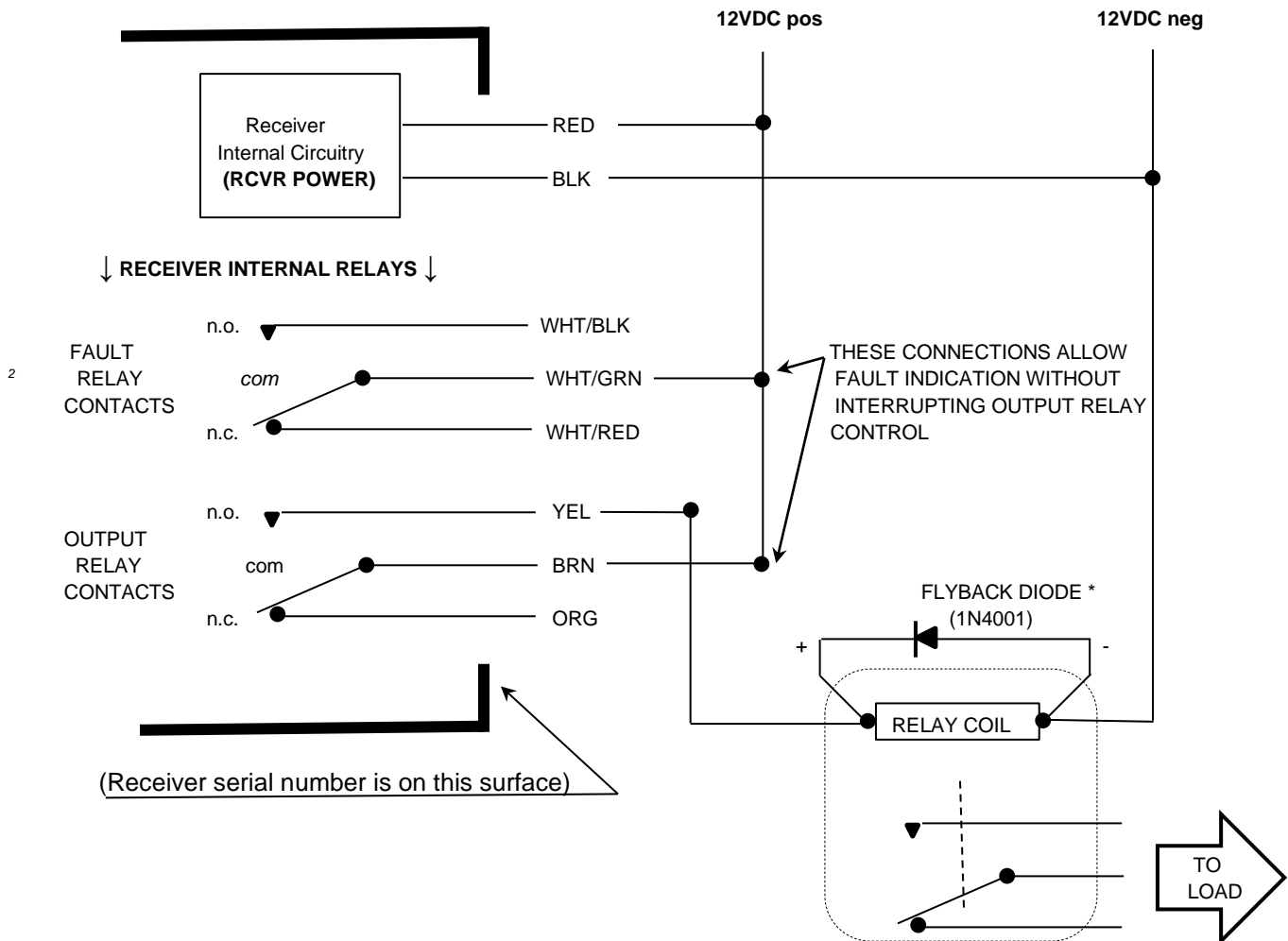
INTERNAL RECEIVER RELAY SPECS

Two each: Form C relays
Contact rating: 0.5 Amp @ 12VDC

RD810 Receiver Connections

SCHEMATIC FOR FAULT INDICATION ONLY (common leads in parallel)

A fault condition indicates low transmitter battery voltage, or that the receiver has lost communication.



*** NOTE:**

For proper operation of the FAULT and OUTPUT LED indicators, 12VDC(+) must be supplied to the common of each relay.

Isolate unused relay and fault leads with wire nuts or similar to prevent electrical short circuits.

To protect sensitive receiver electronics, use flyback diode suppression across the coil of all external DC interface relays.

EXTERNAL INTERFACE RELAY
(MUST BE USED WHEN THE LOAD EXCEEDS INTERNAL RECEIVER RELAY SPECIFICATION)

INTERNAL RECEIVER RELAY SPECS

Two each: Form C relays
Contact rating: 0.5 Amp @ 12VDC

Additional programming information and notes

LIST OF ISAACS RECEIVER ACCESSORIES AVAILABLE: (KR8xx series kits will have some of these items.)

TS0340B 12VDC power supply, 1.25A
TS0340C 12VDC power supply 3.3A.
TS0380 Surge Suppressor kit
TS0330 Low Voltage Disconnect kit

TZP05078 Interface Relay, 12VDC, SPDT, 25A
TZP05179 Interface Relay, 12VDC, DPDT, 25A
TS0100 Transformer 50VA (480/240VAC to 120VAC)
EX359 Transformer 100VA (480/240VAC to 120VAC)



TS0340B

TS0380

TS0331

TZP05078

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