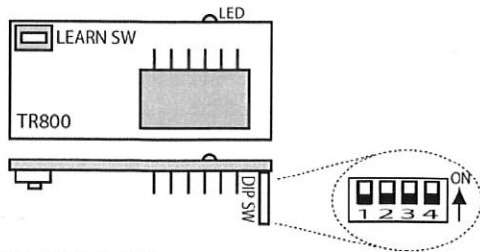


## PARADOX™ Compatible Radio Receiver Module, 433MHz for use with Livewire Relay Boards (RLDP-V, RLSPHC-V)

### 1.0 Overview



- ✓ 433MHz radio receiver.
- ✓ Compatible with Paradox™ Magellan™ series keyfobs.
- ✓ Plugs on to Livewire RLDP-V or RLSPHC-V relay boards.
- ✓ Two outputs: (1) relay on relay board and (2) logic level output.
- ✓ Remote trigger input for wired pushbutton control.
- ✓ Paradox, Magellan, REM1, REM15, REM101 are trademarks of Paradox Security Systems.

### 2.0 Specifications

Parameter	Description
Dimensions (mm)	36w x 9d x 18h
Frequency	433.92MHz
Modulation	ASK
Compatible keyfob transmitters	(a) Paradox™ Magellan™ keyfobs.
Compatible relay boards	(a) Livewire RLDP-V (b) Livewire RLSPHC-V
Outputs	(a) 2 (one relay, one logic level)
Output timers	(a) Seconds: 1-255 (b) Minutes: 1-100
Max transmitters	16 <b>Except REM2</b> transmitters where each learned button occupies one slot.
Operating temp	0 deg C – 55 deg C
Operating voltage	12VDC (11.5V min, 13.8V max)
Operating current	(a) Relay off: 24mA (b) Relay on: 35mA

### 3.0 Switch Settings, Receiver Mode and Outputs

Sw	Function	Off (0)	On (1)	Default	Note
S1	OUT2 or Trigger	TP=OUT2	TP=Remote Trigger Input	Off	1, 2,3
S2	Reserved	n/a	n/a	Off	
S3	Ch Mode	See Output Channel Mode table		Off	
S4	Ch Mode			Off	

**Note 1:** Remote Trigger Input, triggered on negative edge. Pulled high via 10k to 3.3V. See Section 5.0.

**Note 2:** Second output (OUT2), TP is connected to microcontroller (3.3V), positive logic via 470R (max 7mA). See Section 6.0.

**Note 3:** OUT2 is **not** supported by REM2 remotes.

#### Output Channel Mode Table

Switches S3 and S4 set the mode of operation for the two outputs. **Force On/Force Off:** Setting S3=On and S4=On is a special case where transmitter buttons force OUT1 on or off as shown. These buttons override the learned button order but if S3/S4 are changed back to Pulse/Toggle, the stored button settings will again be used.

S3	S4	OUT1	OUT2
Off	Off	Pulse	Pulse
Off	On	Toggle	Toggle
On	Off	Pulse	Toggle
On	On	Force On/Force Off: B3: OUT1 On B4: OUT1 Off	TP=Remote Trigger Input if S1 is On

**Note 1:** Buttons B1-B4 refer to Keyfob Transmitter buttons.

**Note 2:** REM2 keyfobs do not support **Force On/Force Off** mode.

### 4.0 Setting Pulse Output Time (Default: 2 Secs)

To set the pulse output time:

- a) Remove power.
- b) Press **LEARN** button.
- c) Apply power, still holding **LEARN**. LED will light then turn off when ready to count pulses.
- d) Press **LEARN** 'x' times to set the pulse output time to 'x'. LED flashes once per push.
- e) After entering the desired pulse output time, set the units:
  - (i) **Seconds:** Do nothing, the heartbeat will restart and the timer will be set in units of seconds. Range 1-255.
  - (ii) **Minutes:** Press and hold **LEARN**. When LED lights solid, release. Units will be set to minutes. Range 1-100m.

If no button press is detected within 5 secs, pulse count mode is aborted and TR800-433B returns to normal receive mode.

### 5.0 Remote Trigger Input (TP)

For wired pushbutton control. When enabled, the Remote Trigger Input is active on TP. Shorting TP to ground causes the relay to operate as if the appropriate keyfob transmitter button was pressed.

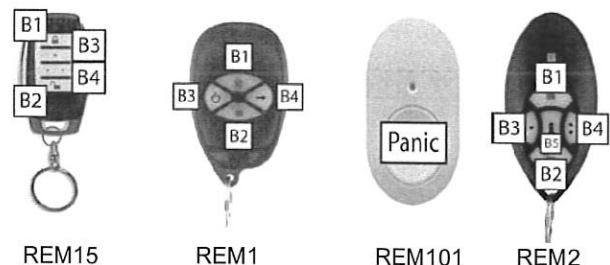
To enable, set DIPSW S1 ON (See also Section 14.0).

### 6.0 Second Output (OUT2 on TP)

When enabled, the second output is active on pin TP. Off=0V, On=3.3V.

To enable, set DIPSW S1 OFF (See also Section 14.0).

### 7.0 Compatible Transmitters



#### REM2 Notes:

- 1: B2 (unlock/disarm) cannot be used.
- 2: REM2 only controls OUT1 (not OUT2).
- 3: "I" button does not return status from TR800 but will retrieve it from the Paradox panel if in range.
- 4: REM2 does not support Force On/Force Off.
- 5: **Panic** is B3+B4 together and is treated like any other button.

### 8.0 Learning Transmitters, Assigning Relays to Buttons

To learn a transmitter (i.e., assign one or more buttons to outputs):

1. Press **LEARN** button for 1 second until LED goes off, release.
2. **All keyfobs:** To assign single button to OUT1, press desired button once. Press same button again (can be **Panic** = B3+B4).
3. **REM1/REM15:** To assign two buttons to two outputs, press desired button for OUT1 followed by desired button for OUT2.
4. Force mode will operate for any learned transmitter.

### 9.0 Install Mode

To enter Install Mode, press **LEARN** button and hold for 5 secs until LED does double flash.

If required, install mode can be used when installing wireless devices. It reduces the sensitivity of the TR800 so that devices which work in install mode will work even better in normal mode (i.e., it provides a margin of safety).

To exit Install Mode, press the **LEARN** button.

### 10.0 Deleting Transmitters

To delete all transmitters push **LEARN** and hold for 20 secs. You will see that:

- After 5 secs, LED does double flash (install mode).
- After 15 secs, LED does quick angry flash to warn that deleting data is imminent.
- After 20 secs, LED is on solid and all transmitters have been deleted.
- Release **LEARN**.

### 11.0 Installation Tips

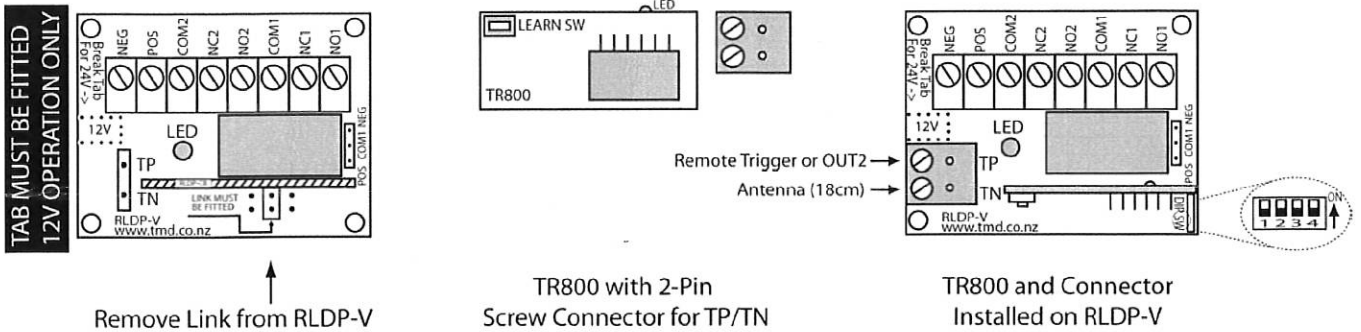
**IMPORTANT.** To achieve good performance from the TR800:

- Connect antenna (18cm length) into TN
- Antenna should be in horizontal plane. Don't curl up!
- Install away from wires and metal objects.

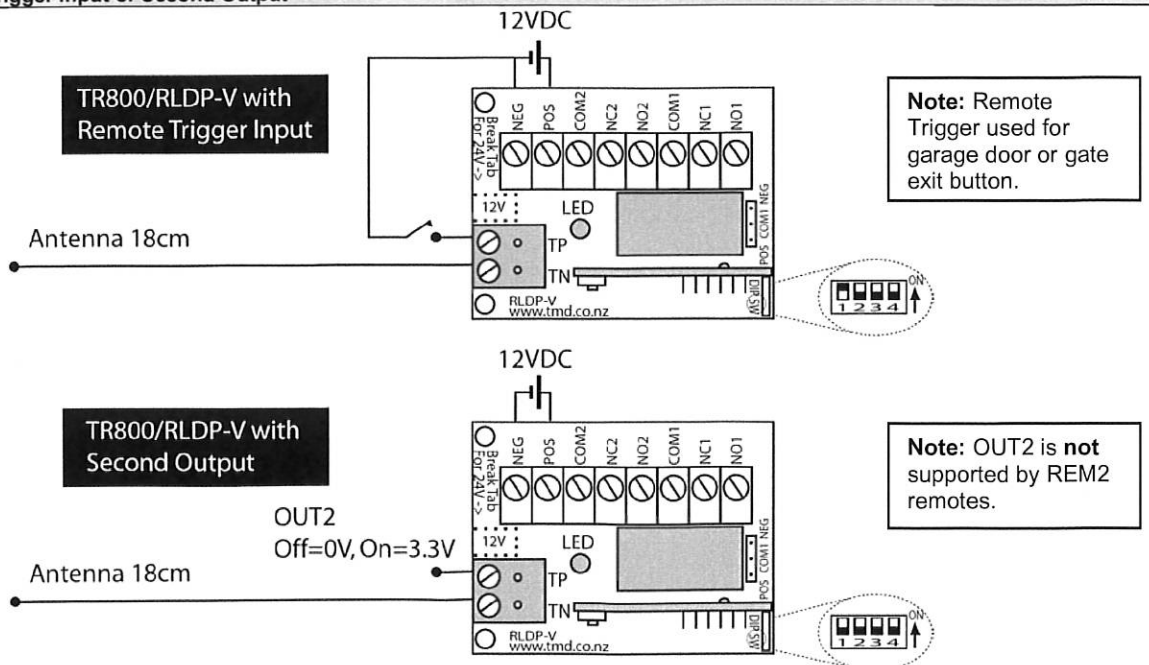
### 12.0 LED Operation

	State	LED	Comments
1	Idle.	Short flash every 2 secs.	Normal state when not receiving data.
2	Receiving data from learned transmitter.	Single long flash.	
3	Receiving data from unlearned transmitter.	Single short flash.	
4	Install mode.	Double short flash every sec.	Reduced sensitivity
5	Error.	On with short double blink off; or Double.	Data in system area (transceiver config) corrupted.
6	EE Corrupt (transmitter).	Double long flash every 2 secs.	One or more transmitter record corrupted.

### 13.0 Installing the TR800 on RLDP-V and RLSPHC-V Relay Boards



### 14.0 Using TP as Trigger Input or Second Output



This product is designed in New Zealand by Technology Marketing and Development Consulting Ltd (TMD Consultants).  
 Physical: 1st Floor 17 Rawene Rd, Birkenhead, Auckland.  
 Postal: P.O Box 34-338, Birkenhead, Auckland.  
 Ph: +64 9 419-1925, Fax: +64 9 419-7984.  
 Web: www.tmd.co.nz; Email: info@tmd.co.nz

**Warranty and Disclaimer:** All information provided in this document is carefully prepared and offered in good faith as a guide for the installation, use and servicing of this product. We accept no responsibility for the incorrect operation, installation or use of this product and reserve the right to change specifications at any time and without notice. Liability of TMD Consultants, or any party involved in the design and/or manufacture of this product is limited to the repair or replacement of faulty product returned to us within 12 months from purchase and specifically excludes consequential loss or damage. **Full terms and conditions are available on request.**