# The ENGAGER™

Part No. 20096

## TRAILER BREAK-AWAY SYSTEM

# BATTERY MONITOR with WIRELESS IN-CAB RECEIVER

# INSTALLATION & OPERATING INSTRUCTIONS


## INCLUDED IN KIT:

1 x TRANSMITTER

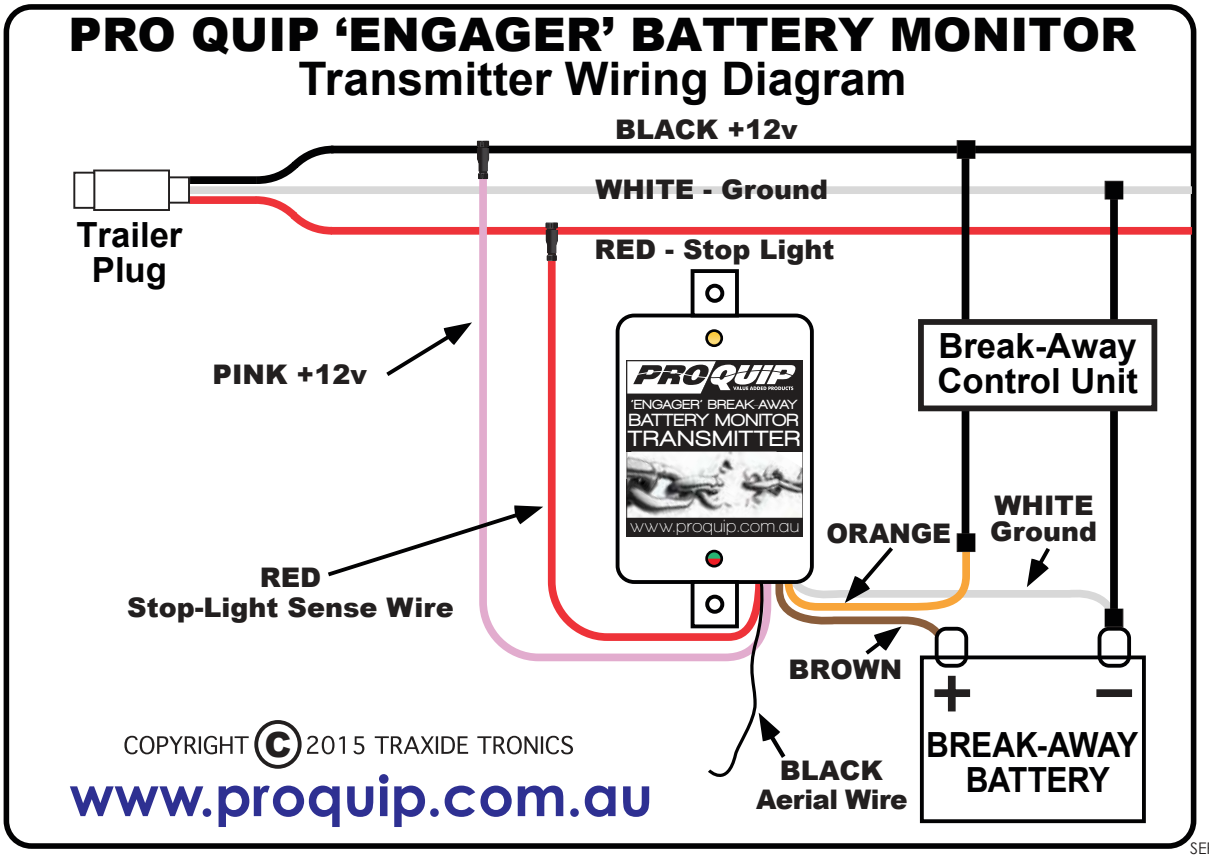
1 x WIRELESS IN-CAB RECEIVER

2 x SMALL SCREWS

1 x PAIR OF STICKY VELCRO DOTS

2 x POSI-TAP 12-18 AWG WIRE CONNECTORS


## PRO QUIP 'ENGAGER' BATTERY MONITOR
### Transmitter Wiring Diagram



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# INSTALLATION of the BREAK-AWAY BATTERY MONITOR TRANSMITTER

**Introduced in 2011, Pro Quip have created the first wireless Battery Monitor designed to ensure the fail-safe operation of trailer Break-Away batteries in Australia.**

**NOTE:** The BREAK-AWAY BATTERY MONITOR TRANSMITTER unit can only be fitted to **12V VEHICLES**, including Trailers, Caravans and Horse Floats.

For best results, we recommend that you mount the unit next to the Engager Break-Away Battery **using the two small screws provided**.

If the Engager Break-Away Battery is in a metal box, the BREAK-AWAY Transmitter Box MUST NOT be fitted inside the metal box, otherwise the wireless range will be greatly reduced to the point that the signal may not reach the tow vehicle.

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## WIRING INSTRUCTIONS

1. Connect **PINK** wire to trailer 12V Positive using one of the **Posi-Tap** Wire Connectors (NOT the Break-Away battery positive.) This should be the BLACK wire coming from a 7 pin plug, or it could be an ORANGE or PINK wire in a 12 pin plug.
2. If you have house batteries, then you can connect the TRANSMITTER'S **PINK** wire to the RED (+) wire going to the HOUSE BATTERIES Positive (+) Terminal.
3. Connect **RED** wire to the Red Stop Light wire using one of the **Posi-Tap** Wire Connectors.
4. Next, disconnect the Break-Away Battery's Positive (+) lead.
   Connect the **ORANGE** wire with the Male spade terminal into the Female terminal on the end of the Break-Away Battery's Positive (+) LEAD.
5. Connect the **BROWN** wire with the Female spade terminal onto the Break-Away Battery's Positive (+) TERMINAL.
6. The last wire to be connected is the **WHITE**, this is the earth/negative.
   Disconnect the Break-Away Battery's NEGATIVE (-) LEAD.
   Push the Female section of the terminal on the end of the **WHITE** wire onto the Break-Away Battery's NEGATIVE (-) TERMINAL.
   Now reconnect the Break-Away Battery's NEGATIVE (-) LEAD.

The short thin black wire is the aerial.
**DO NOT CUT THIS WIRE OFF**, just leave it hanging out of the box.

# TESTING of the TRANSMITTER

The BREAK-AWAY Transmitter now has two LEDs.
The **YELLOW** LED is used while testing the TRANSMITTER.
The Bi-Colour (**RED**/**GREEN**) indicates what you will see on the IN-CAB Receiver.

The BREAK-AWAY TRANSMITTER'S **YELLOW** LED will glow when power is first applied to the trailer (when the trailer plug is connected to the tow vehicle), and then the Bi-Colour LED will rapidly flash **RED** and **GREEN** until the Brake Pedal is pressed in the tow vehicle.

When the Brake Pedal is pressed, the **YELLOW** LED will start flashing and continue to flash for approximately 8 seconds, while a LOAD TEST is carried out on the BREAK-AWAY BATTERY. The data regarding the state of the battery is then transmitted to the IN-CAB Receiver.

**DATA RESULTS:**

- **RED & GREEN** LED'S flashing rapidly: This indicates the Break-Away battery is in a very low state (below 11.6V).
- **RED** LED glowing constantly: This indicates the battery is in a low state (between 11.6V and 12.2V)
- **GREEN** LED flashing slowly: This indicates the battery is not fully charged but is in a high state of charge (between 12.2V and 12.6V)
- **GREEN** LED glowing constantly: This indicates a fully charged battery (above 12.6V)

If all is wired correctly, the LED's on the IN-CAB Receiver will display the same results as the the LED's on the Transmitter unit on the trailer.

# OPERATION of the TRANSMITTER

To perform a Battery Test at any time when the trailer is attached to the tow vehicle, simply press the Brake Pedal. Even when the brake pedal is not pressed for some time, the Transmitter will still send the same data to the IN-CAB Receiver once every 20 seconds.
After each Brake Pedal press and subsequent LOAD TEST and Transmit cycle, the Transmitter will not test the battery again for a period of 60 seconds regardless of whether the brakes are applied again in those 60 seconds.
This is to allow the Break-Away Battery charging time between tests.

If you are stopped for a long period of time, e.g. at a set of traffic lights, and you have the brake pressed the entire time, the Transmitter will only test once every 60 seconds.
Every time the Transmitter does a Battery Test (when the brakes are applied), the Transmitter's **YELLOW** LED will flash for 60 seconds. This indicates that the 60 SECOND CHARGE CYCLE is in operation, and a LOAD TEST cannot be carried out.
Once the 60 Seconds has lapsed, the **YELLOW** LED will now glow constantly, indicating another BRAKE application can be made, and a LOAD TEST will then be carried out.

# OPERATION of the WIRELESS IN-CAB RECEIVER

The Wireless IN-CAB RECEIVER can be used in either **12V** or **24V** tow vehicles.

To mount the IN-CAB RECEIVER, choose a location that is easily visible on your dashboard from the drivers seat, and that also will allow the cord to reach the power (ACCESSORY) socket.
Simply stick one of the sticky **velcro dots** to the back of the Receiver, and one in the position you have chosen on the dashboard. The Receiver will now easily attach to your dash, and can be unplugged and stored when your trailer is not in use.

When the IN-CAB RECEIVER is first plugged into a power socket and the ignition is turned on, the **RED** and **GREEN** LEDs will flash alternately and the BEEPER will pulse.

When the trailer is connected, the brake pedal must be pressed to activate the BREAK-AWAY Transmitter, and the **YELLOW** LED will flash to indicate a Load Test.

**NOTE:** While the Transmitter is powered up as soon as the trailer plug is connected to the tow vehicle, the Transmitter will NOT start transmitting until the Electric Brake is used at least once.
This is a safety operation because the IN-CAB RECEIVER will continue to pulse the buzzer until it receives a signal from the trailer, telling it that the trailer is powered up and the brakes are working. This will not happen until the trailer plug is connected to the tow vehicle and the Electric Brake is applied and is working correctly.

After the Electric Brake is first operated, any additional operation of the Electric Brake will now cause the Transmitter to send a signal indicating the charge state of the Break-Away Battery.

The IN-CAB RECEIVER shows a fast flashing alternate **RED** and **GREEN** LED and pulses the BEEPER continuously until the Electric Brake is activated.

The IN-CAB RECEIVER's **RED** and **GREEN** LEDs will operate exactly the same as the **RED** and **GREEN** LEDs on the TRANSMITTER unit.

If the IN-CAB RECEIVER fails to receive a signal from the TRANSMITTER for more than 4 minutes, or if the BREAK-AWAY BATTERY LOAD TEST fails, the **RED** and **GREEN** LEDs will flash alternately and the BEEPER will pulse, to indicate a problem exists.