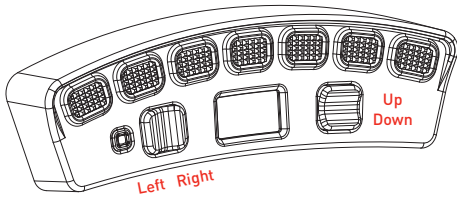# SHIFT P2

USER MANUAL

The Shift-P2 is a sophisticated RPM engine gauge, designed to be used in your peripheral vision. It has been engineered to give you a highly configurable gauge. The Shift-P2 is simple and intuitive to setup with an interactive display.

Ecliptech innovations

CONFIGURATION

There are two sets of buttons on the Shift-P2. **LEFT/RIGHT** and **UP/DOWN**.
Use Up or Down to enter into the vertical configuration menu.

Go deeper into an option using **RIGHT**.
Go back out of an option using **LEFT**.

The graphic display is for configuration convenience.
It is not intended as a display for general use while driving.

Up
Down
Left Right

Additional features or changes may be available in the future via USB firmware updates.

FEATURES ∧ ∨

Multi-functional - Channel 1* - Channel 2* - Channel 3*	Each of the 3 auxiliary channels can be used as an input or output. Use the "Set Function" to change a channels purpose. Only exit LEFT with the correct function shown. This is when a change takes effect. The associated menu options will change to suit the selected function. Each channel can be used as a low side output (open collector, up to 200mA) or as an analog voltage input. An internal 2.2kohm pull-up resistor can also be enabled.
	The channels can be configured for a range of functions. For example: Use of an external buzzer for warnings and/or when shift point is reached. Switch input to dynamically change between user profiles. Tacho output to drive other devices. Stall alert output. Analog warning threshold input. This could be used to display a warning from a compatible sensor or another device (such as an external knock sensor unit). Light threshold output. Switch on an RPM threshold. Output switched in relation to another channels input voltage.
	Some output functions provide options to pulse the output once, or pulse periodically. Trigger thresholds have adjustable on and off levels to provide switching hysteresis as well as to enable the logic to be inverted. Warnings are provided with a lights display and warning message on the display. These warnings can be cancelled using the front buttons or by configuring a channel as an cancel push button input.
	The provided functions have on-screen status, measurement readings and real time scope view. These convenient tools provide you with direct feedback to diagnose your setup. The available features are subject to change. Additional information about these features and their use is available at www.ecliptech.com.au.
Staging*	The staging mode is an advanced feature and hidden by default. If you want to use it, enable it here. You will then find a new main menu item "Staging", which provides all the related configuration items.
Stall Alert*	Configure an alert for an engine stall condition.
Cruise Dimming	If maintaining constant RPM, the lights will conveniently reduce brightness after the time you set. The display intensity will automatically restore to its pre-set level when the display changes sufficiently.
Voltage Alert	Provide a warning when the ignition voltage has been over a set voltage for more than 3 seconds.
Take Picture	If you want to take a picture, this feature gives you a static screen where you can set the lights stage.

INSTALL

Quick Setup. Use this to go through initial calibration and RPM setup.

LIGHTS

Start RPM	The starting RPM for the lights display.
Finish RPM	The RPM level for the last stage in the display sequence. This is usually the RPM you where you change up to the next gear.
Display Sequence	A range of display sequences are provided. You can select from traditional **Green**-**Amber**-**Red** schemes through to high contrast shift sequences. Shift-P2+ models also have two custom sequences*, which enable you to design your own sequence. Use up to 15 stages to create the sequence you want, using a range of colours.
Brightness	Lights are automatically dimmed to suit low light conditions, such as driving at night. Brightness of the lights can be adjusted for different daylight conditions. The lights are powerful and you must check the brightness is suitable prior to driving, particularly in dark conditions.

RPM Hysteresis	This is an important feature that provides anti-flicker between display stages. As the RPM increases and the next lights stage shows, the RPM will have to drop this hysteresis amount before going back to the previous stage.
Flash Rate	Change how rapidly the lights flash at your shift point.
Shown at Ignition On	Change what the lights do when you first turn ignition on.

SCREEN

Screen Brightness	Brightness adjustment for the configuration screen.
Auto Off Timer	Use to adjust the screen auto-off timer.
Shown at Ignition On	Choose what is shown on the display at ignition on.

SIGNAL

It is recommend to use the automatic "Install" menu for signal setup. You can however manually adjust the various settings here. Each setting has additional information on the Shift-P2 (go to the RIGHT).

Calibration to Engine	Set the Shift-P2 with the number of pulses per revolution to match the vehicles RPM signal.
Sensitivity Filter	Reduce the sensitivity to filter out high frequency electrical noise. Adjust only if necessary.
Stability Filter	Useful for some electrically noisy distributors. Adjust only if necessary.
Startup Input Delay	Delay reading the RPM signal at ignition on. Useful where ECUs sweep the tacho at ignition on.
Input Pull-up	Only required for installations where the OEM instrument is completely removed and the RPM signal from the ECU requires a pull-up resistor. Enable only if necessary and where the purpose of this function is understood.
Measure Voltage	Show the voltage levels on the RPM input.
Scope	Shows an oscilloscope view of the RPM input. Very useful to diagnose the RPM connection status.

STAGING*

This feature enables you to have a different RPM range and display sequence for launch. It automatically engages these settings when the engine is at idle, using adjustable RPM and time periods. It automatically exits staging when above the RPM and/or time period you set, or you reach the shift point.

This menu is hidden by default. If you want to use this feature, you can make this menu visible via Features -> Staging -> Shown.

On/Off*	Turn the staging feature on or off (Shift-P2+ only)
Start RPM	The starting RPM for the staging lights display.
Finish RPM	The RPM level for the last staging lights display.
Display Sequence	The display pattern selected for the staging mode.
Auto On Trigger	Adjustable settings for when at idle and staging mode activates.
Auto Off Trigger	Adjustable settings for when staging has finished and the normal driving display settings are used.

SYSTEM

User Profiles*	Switch between profile 1 and profile 2. You can use a multi-function channel to connect an external switch to control which profile to use.
Wiring Details	Wiring colour information for reference.
Demo Mode	Cycles the display continuously through the selected display sequence.
Calibrate Voltage	Feature to adjust the battery voltage reading to compensate for the wiring voltage drop.
Product Info	Serial number, firmware and model information.
Feature Unlock	Used to enter an unlock code for upgrading to the P2+ model.

SPECIFICATIONS

- Power: 9 to 18VDC, 0.02 to 0.2A, depending on light sequence and brightness.
- Multi-colour lights, 20 pre-programmed display sequences using 11 colours, 2 create your own sequences*.
- Automatic brightness control, user adjustable. Cruise mode dimming function, reduces light brightness while not in use.
- Designed to accommodate high RPM engines up to 25,000rpm. Actual limit may be over double this, depending on signal type.
- 2 configurable profiles*. Stored in non-volatile memory enabling disconnection from battery without loss of profile information.
- Staging function*, provides separate display sequence and RPM settings for launch. Automatic enable/disable.
- 3 configurable multi-function channels*. Low side switched with up to 200mA. 2.2k pull-up resistor can be enabled. Analog input.
- RPM input and multi-function channels have live analog scope function for convenient diagnostic purpose.
- Other features include stall alert*, over-voltage alert, flash rate adjustment and more.

* Feature available for Shift-P2 + models only.