PTL Operations, OH&S and Maintenance Manual

Your Portable Traffic Lights are a compact lightweight trailer set. As such correct operation for Set-up and Take-down procedure is essential. Please ensure this manual is read and understood before attempting to operate the Data Signs' Portable Traffic Lights (PTL).

Set-up, Take-down and Maintenance requirements of the PTL is covered by this Manual.

The ***PTL Controller User Manual*** is the second section in this booklet.

CAUTION:

The Data Sign Portable Traffic Lights should only be operated by qualified traffic managers.

If you have hired out this PTL, contact the Hire Company for assistance.

PTL Dimensions

When towing the PTL's, bridges and other low obstacles may be encountered. Keep the following heights in mind when towing and setting up.

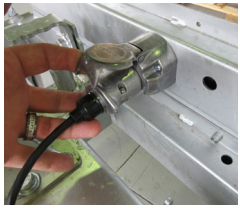
Towing height: 2020 mm
Raised height: 3500 mm

Trailers MUST NEVER be towed when lights are raised.

Separating the Front and Back Trailers

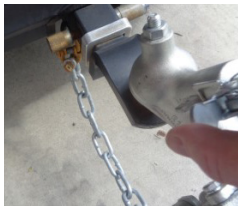
Illustrated instructions for Separation and Coupling can be found on the inside lid of the Rear trailer Control Box.

OH&S: Wear PPE when working with the PTL's.



1. Remove the Trailer Light cable from the Rear trailer. We recommend storing the cable in the Rear trailer Control box, or connect it onto the Front trailer if it has to be towed to another location.

2. Lower the Jockey wheel on the Front trailer and make sure it is locked into place with the pin. Use the jockey wheel to assist with Unhooking from the Vehicle and to level out the Front trailer.

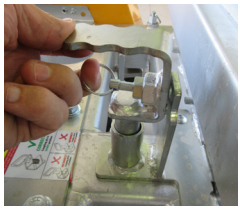


3. Unhook the tow coupling on the Front trailer from the Vehicle to allow for levelling. Leave the security chains attached to the Vehicle.

4. Unscrew the D-links holding the Rear Trailer chains to the Front Trailer. Loosen and place the D-Links back onto the chains.

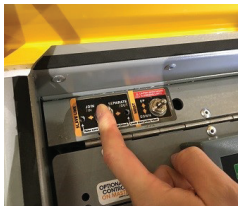
5. Lower the Jockey wheel on the Rear trailer and use this to level out the trailer. Level out both the Front and Rear trailers as much as possible. *Use the Water Level Marker on the Front trailer draw bar to assist with this process.*

6. The jockey wheel on the Rear trailer should face inwards so the rear trailer rolls out easily.



7. Pull out the locking pin on the Front trailer.
If the locking pin is too tight to lift up, adjust trailer levels using both jockey wheels.

8. Open the Control Box. A lock catch holds the lid in place. Push the catch lever to the right —> to release the lock.



9. ***CAUTION:** The Rear trailer jockey wheel must be lowered before the SLAVE-LINK actuator will work. A warning buzzer and light will indicate if it is still up.*

Press and hold the SLAVE LINK switch to push trailers apart using the actuator.

10. The actuator engages to push the trailers apart.

11. Hook the tow coupling of the Front trailer back to the vehicle if it needs to be towed elsewhere. *Don't forget to connect the trailer light cable to the Front trailer from the vehicle.* Otherwise undo the safety chains still connected to the Front trailer and the vehicle and move the Front trailer into position.

Setting up the PTL trailer

1. Rotate the trailer to ensure the Traffic Lights face the on-coming traffic.

   When positioning the trailer, ensure solar panels are never going to be in the shade during the course of the day.

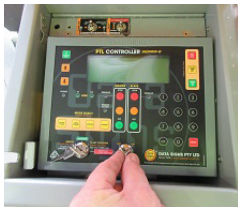
2. Extend the back outriggers.
   Find the handle in the Control Box, wind down all four Jackstands. Use the legs to level the unit. Raise to allow the wheels to spin freely, which stops the unit moving in windy conditions. A drill adaptor bit for the Legs is also supplied.

3. The Control box contains the Hoist UP/DOWN switch.

   CAUTION: *Check to ensure there are no obstructions overhead as the Traffic Light is raised.*

   Push the Hoist switch to the UP position to raise the Traffic Light. Once the lights are raised, return the Hoist Switch back to the middle position.

4. Pull the wheel chains through the wheel and padlock to secure.



5. Turn the Controller on by turning the key-switch to the ON position.

   Data Signs recommends securing the Control box and Wheel chains with good-quality locks; combination locks are useful. Remove any keys from in the Controllers' key switches also.

To ensure the PTL is set-up correctly for the site, refer to the Master Controller and the ***Portable Traffic Lights Controller User Manual*** *in the second section of this booklet.*

PTL trailer take-down and towing

It is crucial that the PTL is correctly taken down and hitched to the towing vehicle.
If the PTL comes loose during towing, serious injury or death may result.
The correct take-down and hitching procedure is detailed below.

1. Gain access to the Control box. Turn the ON/OFF key-switch on the Controller to OFF position to turn the PTL's off.
   Note: Controllers that are still on and were connected to this Controller via radio link will enter ***Flashing Yellow*** *mode.*

2. Lower the Traffic Light using the Hoist DOWN switch located in the Control box.

   CAUTION: *DO NOT TOW TRAILERS WHILE TRAFFIC LIGHTS ARE STILL RAISED!*

   When the lights are lowered, return the Hoist Switch back to the middle position.

3. If chains are locked through wheels, unlock and pull chains through and secure onto the trailer. Do this on both wheels.

4. Ensure the Dolly wheel is lowered and locked into place with the pin.
   Wind up each of the Jack Stands and secure in place with the pins, push in the two extended outriggers.

5. Hook the trailer up to the towing vehicle. Attach the safety chains using D-links. Attach the trailer light cable.

6. Make sure that the tow hitch is locked down and clicked into place. A spring clip can be in-serted to lock the release pin for added safety. Also check the tow coupling to ensure proper fit, see Tow Coupling Adjustment section for more info.

Coupling the two PTL trailers together (Slave to Master)

Complete the trailer take-down procedure on the first trailer as it will usually need to be towed to the location of the second trailer.

1. The Dolly wheel on the Rear trailer should be faced outwards to couple the trailers together.

Assuming the Front trailer is hooked to the Vehicle...

2. Unhook the tow coupling from the vehicle and lower the Dolly wheel. Leave the security chains attached.
Use the Dolly wheels on the Front and Rear trailers to level out and align together.

3. Retract and position all Jackstands as shown. i.e. For the Jackstands in the middle of the trailers, the front Jackstands are in a higher position than the rear Jackstands.

***CAUTION:** If using a drill, slow it down to avoid kickback as the Jackstands get to the end.*

4. Pull out the locking pin.
Move the trailers until position as shown.
The link actuator should be fully extended at this point.

5. Push the trailers together, insert the Locking pin back in so that it drops back on the front trailer tow section.

6. Fully extend the actuator and push down onto the lip on the Front trailer.

Continued over page...

7. Press and hold the SLAVE LINK switch to the JOIN /IN position to join the trailers together using the actuator.

8. When trailers are joined, the locking pin will drop into place. Use the spring pin as shown to lock the pin into place. It can be further secured with a lock if necessary.

CAUTION:
ENSURE LOCKING PIN IS ALL THE WAY DOWN

NOW LIFT THE ACTUATOR UP AND AWAY FROM THE FRONT TRAILER, RETRACT IT INWARDS ALL THE WAY
DO NOT LEAVE IT CONNECTED!!!

9. Use the safety chains from the Rear trailer and connect to the Front trailer as shown, lock on to the Front trainer safetychains using the D-links.
DO THIS FOR BOTH CHAINS!

10. Plug in the trailer light cable onto the plug on the back trailer.

11. Raise the Dolly wheels up on both the Front and Back trailers, and ensure they lock into place.

NOTE: *LIFT REAR DOLLY WHEEL ALL THE WAY UP BEFORE STOWING AS SHOWN (or lowering may be difficult later).*

12. Check that the lights are working on the Rear trailer before travelling.

Portable Traffic Lights — Maintenance

This section details the PTL maintenance procedures. It is important that your PTL's are regularly maintained to make certain that your PTL is in continued working order. Note: The Warranty associated with your PTL may be voided if ad-hoc repairs outside the scope of this maintenance section are attempted.

Data Signs offer extended Warranty, Service and Maintenance programs, contact Data Signs for more information.

Solar Panels

Keeping the Solar panels clean will ensure they are providing as much energy to charge the battery as possible. To clean the Solar panels, ensure the PTL head is lowered and that the Stabilizing Legs and Outriggers are fully deployed.

With a damp and soapy cloth, clean each of the panels, or hose them down (see General Cleaning notes). The solar panels should be cleaned every month; or as often as possible, since they can quickly become dusty.

Battery & Circuit Breakers

12V, 120 AH AGM SEALED BATTERY

Battery Dimensions (approximate): 331 W x 213 H x 173 L mm

CAUTION:
LEAD ACID BATTERIES CAN PRODUCE FLAMMABLE GASES WHILE CHARGING. NO NAKED FLAME SHOULD BE ALLOWED NEAR THE PTL'S. TAKE CARE WHEN OPENING AND CLOSING THE BATTERY BOX LID. USE TWO HANDS.

Before attempting any maintenance work on your PTL batteries, make sure the PTL is not in the sun and that it is located in a well ventilated area.

- ***Remove the fuses.***
- ***Re instate correct fuses afterwards.***
- ***Solar should be 25 Amp***
- ***Sign Supply should be 25 Amp***

Corrosion inhibitor lacquer has been applied to the battery terminals, if replacing battery, use the same after installation to maintain this protection.

If replacing the battery, use the same rating and type of batteries. See the "About Batteries" document for more details regarding the batteries used in Data Signs' products.

Notes for Undercover storage: Storage outside is recommended so the battery can maintain charge via the solar array. If storing the trailer undercover for a long-term, unplug the SIGN SUPPLY fuse. Please be aware that the battery will drain over time; therefore fitting a battery charger is recommended.

Continued over page...

Trailer Wheels and Wheel Bearings

Regularly check the tyre pressure. At the same time check tyre condition and that the wheel nuts are tight. Every 6 months—and after a few months of use have a qualified mechanic check the wheel bearings. Grease the wheel bearings every 12 months under normal operating conditions. More frequently for adverse/harsh road or operating conditions. Further, check after having travelled 1500 km.

Torque setting for wheel nuts: **65ibs.ft or 90Nm**
Tyre Pressure for PTLs: **45 psi**

Ensure wheel nuts are tightened according to manufacturer specifications for this trailers' tire size. If unsure, contact your local mechanic. 155 size, Ford stud pattern.

General Cleaning

The aspects and trailer can be hosed. No abrasive solvents or thinners can be used anywhere on the PTL.

Take care when hosing down the Control Box that water ingress does not occur through the louvers on the box.

Charging the *optional* Remote Control

The Remote Control is charged from within the Control box on the Master trailer only.

Plug the Remote Control into the Control box firmly.
To ensure it is charging you can turn the unit on first. The charging symbol will be displayed on the screen.

Battery Charger, *optional*

A separate Battery Charger User Manual is provided if a battery charger is fitted. The Battery Charger is an option and may not be fitted.

The slot on the box allows the 240V cable to feed through. The slot holds the cable in place when the shelf and lid are down.

To charge the battery, plug the power cable into 240V Mains power. Ensure the charger is turned on.

SIM cards

—if the 4G/GPS option is fitted to Master Controller

NEVER INSERT OR REMOVE THE SIM-CARD OR SD-CARD WITH THE POWER ON, SWITCH KEY TO OFF POSITION FIRST.

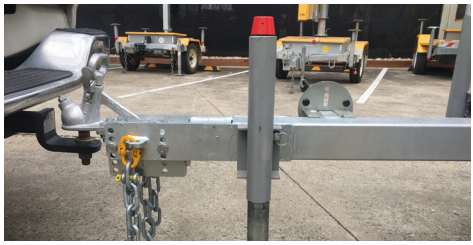
The Data Signs-PTL Master Controller can be fitted with a SIM card to provide remote communications options.

Instructions on how to fit a SIM card into the controller is in the ***Portable Traffic Light Controller User Manual Advanced Features.***

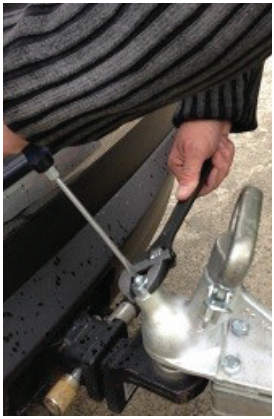
Tow Coupling Adjustment

Adjust the tow coupling to fit snugly onto the tow ball of the towing vehicle to improve tow ride. This adjustment is not completed during manufacture as each vehicle tow ball may be a slightly different diameter due to wear, or other factors. In Australia, the tow coupling is de-signed to fit a 50mm ball. Flathead screw driver and shifter required. This is a guide only, please view the disclaimer at the end of the document.

CAUTION: *ENSURE THE TOW BALL IS AT THE CORRECT HEIGHT TO THE TOWING VEHICLE AS INCORRECT AND UNLEVEL TOWING WILL CAUSE DAMAGE TO THE REAR TRAILER COUPLING MECHANISM.*



CORRECT HEIGHT ADJUSTMENT IS MADE BY ADJUSTING THE TOW COUPLING HEIGHT ON THE DRAW BAR ITSELF USING THE REMOVABLE PINS AS SHOWN ABOVE.



Adjusting the Tow Coupling

1. Fit the tow coupling to the vehicle and lock in place. Raise the jockey wheel.
2. Release the locking nut.
3. Undo the locking nut to give some leeway.
4. Using a flat-head screw driver on the slot on top of the pin-bolt, turn until tight, and then loosen very slightly. This will pull the coupling forward onto the tow ball and grip it.
5. Check that you can still unhook the coupling without too much effort, but maintaining a tight fit on the tow ball when attached. Use the jockey wheel to assist if re-quired.
6. Hold the Pin-bold with the screwdriver and then Tight-en the locking nut firmly with a shifter.

PTL Controller QuickStart Guide

SERIES-II

PTL Controller

Optional Remote

The operational aspects of this Guide also apply to the PTL-Compact units, though they are not trailer-mounted.

This QuickStart Guide covers the PTL Controller Operation as per Australian Standards AS- 4191:2015 and Various State Authority requirements. For Advanced Features, download the Portable Traffic Lights Advanced Features Document, this covers the sections as follows:

1. **All-Red Time, Yellow and Green Manual programming.**
2. **Additional operational modes. These are not part of the Australian Standards and may not apply to specific state Type approvals.**
3. **Additional features, Radio Link explained, Fault logging as per Australian Standards, troubleshooting guide.**

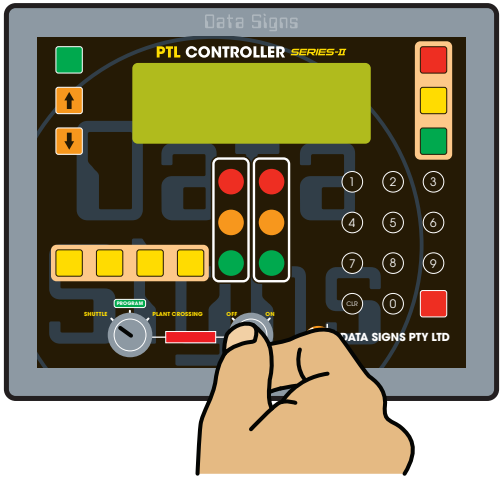
Ensure the units are setup as described in the first section of this booklet, *PTL Operations, OH&S and Maintenance Manual*.

This User Manual applies to Controllers operating on firmware 04.04.XX or later.

THE PORTABLE TRAFFIC LIGHTS SHOULD ONLY BE OPERATED BY QUALIFIED TRAFFIC MANAGERS.

Contents

Turning the Controllers On



Both the Master and Slave Controllers are fitted with **ON/OFF key-switches** for security reasons.

As shown, insert the right-side key and turn the switch to the **ON** position for both units.

The POWER lights will come on and the Controllers will begin the start-up sequence.

The Master and the Slave controllers will begin to establish a radio link as indicated by the **TX** and **RX** green lights on the controllers.

Both the units will show Flashing Yellow aspects and progress to showing RED aspects during this process The Controllers will complete a self-diagnosis and check any connected external equipment such as the *optional* vehicle detectors.

The status of the external equipment will be shown on the display panel of the Master Controller.

During Start-up, the display on the Master will show the time remaining in seconds for start-up to complete.

SHUTTLE or **PLANT CROSSING** Control is selected with the left side key-switch.

The Master Controller will start up in the last selected mode if this key position was not changed since last use. If **PROGRAM** selection is activated with the left key-switch, the Controller will wait for further input and all connected traffic lights will display Flashing Yellow.

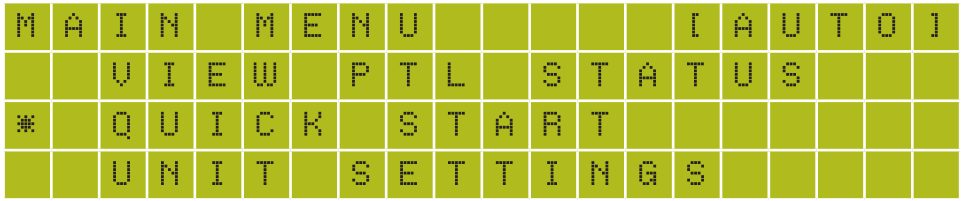
Note: The left side key cannot be removed from the key-switch while in the **PROGRAM** position. For safe operation, remove the keys after the PTL units have been setup and are operating.

Master Controller: Operational MODE SELECT

Enter **PROGRAM** selection by using the left key-switch on the Master Controller which then allows you to set the operational MODE for **Shuttle** or **Plant Crossing**, or to set the RED, YELLOW, GREEN times.

To select all other controller programmable functions, use the Up ↑ or Down ↓ buttons to scroll through the MENU selection, then press the ENTER Button ENTER to select the MENU item.

Press the PROGRAM MENU button PROGRAM MENU to exit the selected MENU.



QUICK START

This Main Menu item, lets you quickly set up all the necessary items to get the PTL set's going. It will guide you through the process to automatically calculate the correct signal timing for your specific site condition, and set the Mode Manual, Auto or Demand, and RF selection if Gating Operational Mode is set.

- Master or Slave. (If slave selected the QUICK START finishes after this.)
- Enter control area Length in meters i.e. 500 Meters
- Enter Site Speed limit in Km/H i.e. 40Km/h
- The signal timing is then calculated and set.
- Enter the Green Time.

Press any of the four MODE SELECT buttons YELLOW FLASH AUTO (TIMED) DEMAND MANUAL to make your selection. The current MODE setting is shown on the top display line in between square brackets, i.e. [AUTO] as per above display screen.

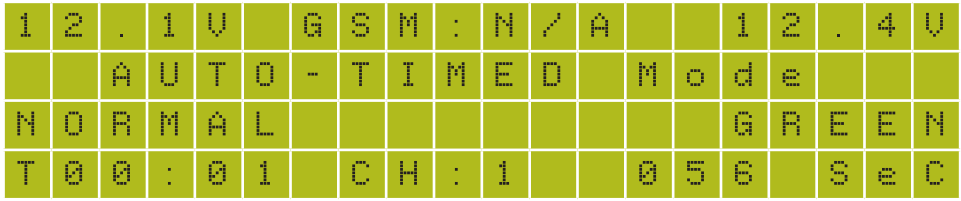
- **YELLOW FLASH** is Flashing Yellow MODE of operation.
- **AUTO (TIMED)** AUTO MODE of operation.
  For this Manual, AUTO will always mean (Automatic Timed Mode)
- **DEMAND** is Vehicle-actuated MODE of operation. Vehicle detectors MUST be fitted.
  For this Manual, DEMAND will always mean Vehicle-actuated
- **MANUAL** is Manual MODE of operation.

Return the key-switch back to either **Shuttle** or **Plant-Crossing** to save the changes you made

For Manual programming of any of these items see the Advance Functions Document.

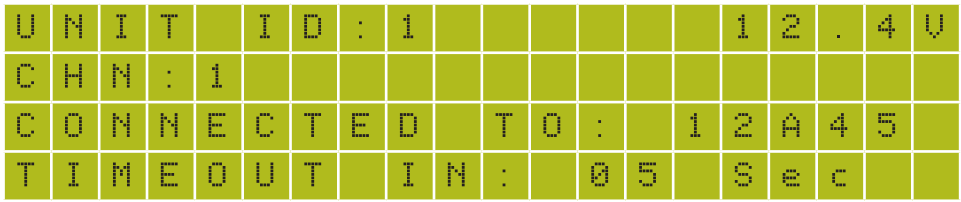
Controller display screens for Master and Slave

Master ID=0 The following values will be shown on the display panel during normal operation



First line: Master Battery Voltage, GSM status. Right side, Slave Battery Voltage. & Signal Strength
Second line: Current MODE in use.
Third line: Control Type (i.e. NORMAL). Right side, Current light sequence
Fourth line: Current time if GSM module fitted, current RF Channel, or RS485
Right side, Current state remaining time

Slave ID=1 (or more) The following values will be shown during normal operation:

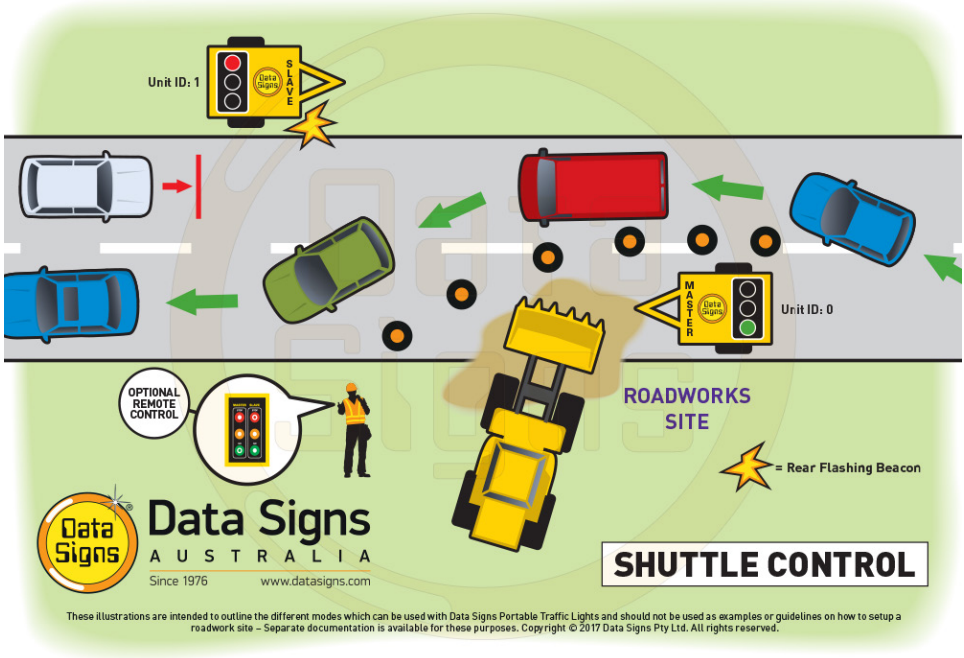


First line: The ID of this unit. Right side, current Battery Voltage.
Second line: RF Channel set on this unit.
Third line: The Serial Number of the Master Controller this unit is connected to.
Fourth line: The current RF timeout value. If this starts to count down there are interruptions to the RF communications. For more information regarding the radio link, see the Radio Link Explained in the PTL Advance Features Document.

Shuttle Control – Single-Lane Usage

Shuttle Control is a form of traffic control used where a portion of the roadway is closed so that only a single lane can be used alternatively by traffic from opposite directions. Only one Portable Traffic Light unit can show the Green signal phase at any time; either the Master or the Slave. The diagram below illustrates the traffic control scenario where Shuttle control would typically be used.

Note: This diagram should not be used as a guideline for setting up a roadwork site, it is provided as an example only.



Each PTL unit will go to the Green signal phase in turn, with the All Red sequence in between each green phase. See Appendix for more details.

Shuttle Control is active while the left key-switch on the Master Controller is in the SHUTTLE position. Each operating mode using Shuttle Control is described in more detail on the following page.

SHUTTLE: MANUAL MODE.

For PTL Type 1, this can only be operated via the PTL Remote

Buttons used:

MASTER: STOP 

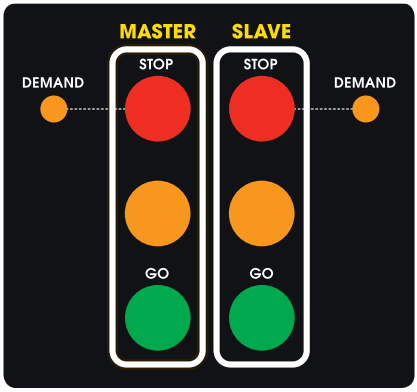
or GO 

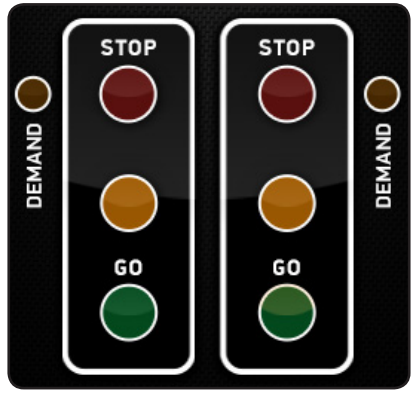
REMOTE: STOP 

or GO 

Manual mode is used when an operator wants to control the traffic; a demand for Green or Red signal phase on the Master or Slave is entered on either the Master Controller or Remote Control unit. For Shuttle Control, on start-up, both the Master and Slave will rest on All-Red phase until a demand for Green phase is entered.

To enter a demand for either Red or Green phase, press the **STOP** or **GO** buttons on either the Master Controller or Remote Control. The DEMAND LED is activated indicating a demand for either the Master or Slave.





Shuttle Control, Manual mode example:

1. Slave unit is currently showing the Green signal phase.
2. Master: **GO** button is pressed (on either Master or Remote Control).
3. If the Minimum Green time (5 seconds) has expired, the Slave will cycle immediately to Yellow and then Red signal phase. If the Minimum Green time has not expired, the Master DEMAND LED will flash.
4. Once the Minimum Green time has expired, the Master DEMAND LED will extinguish and the Slave will cycle to Yellow and then Red.
5. Both Master and Slave now show Red signal phase for the pre-set All-Red interval.
6. The Master then cycles to Green **and remains on Green** until a Slave **GO** or a Master **STOP** button is pressed, the sequence can then be repeated.

In Manual mode the signal phases can remain indefinitely on Green/Red, Red/Green or All-Red.

SHUTTLE: AUTO MODE

Buttons available for HOLD-RED/RESUME feature:

MASTER: STOP 

or GO 

REMOTE: STOP 

or GO 

In AUTO mode, the Portable Traffic Lights will operate in cyclic order according to the pre-set times.

To set the correct Site-Signal-Timing, Use 'QUICK START' Menu and follow the prompts.

IT IS EXTREMELY IMPORTANT THAT THE ALL-RED INTERVAL IS SET CORRECTLY FOR EACH TRAFFIC CONTROL SITUATION.

PAUSE – HOLD ALL-RED / RESUME

Also for this mode, the operator can Pause and (hold) on All-Red
Press the **STOP** button on either the Master Controller or Remote Control to hold All-Red for as long as required – while actually in All-Red phase. The display will show 'PAUSING'. To resume the AUTO mode cycle, press the **GO** buttons on either the Master Controller or Remote Control.

SHUTTLE: DEMAND MODE

(optional Vehicle detector must be fitted)

Buttons available to introduce artificial demands:

MASTER: STOP 

or GO 

REMOTE: STOP 

or GO 

REAR BEACON LAMP

When enabled, the Beacon Lamps mounted behind the aspects flash when the Red Aspects is ON.

This acts as a visual indicator to the Traffic controller that the Aspect is on Red, it also serves as a 'caution light' to oncoming traffic.

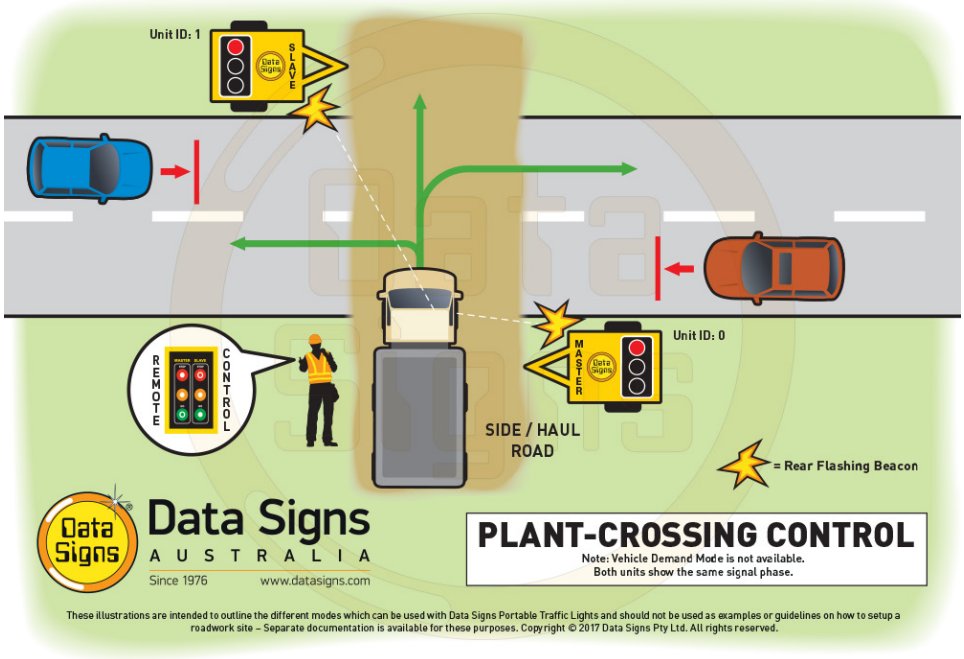
For DEMAND mode to operate, the optional Vehicle Detector must be fitted to each Portable Traffic Light unit. A "NO VEHICLE DETECTOR" message will appear on the Master Controller display if no vehicle detector is attached and the DEMAND mode is selected. In Demand mode, all units must be equipped with vehicle detectors for DEMAND mode to function; only fully-actuated is allowed.

The vehicle detector is pre-set to detect and create a DEMAND signal when vehicles approach the Portable Traffic Light at speeds between 10 km/h and 80 km/h. However, this can be changed, using the UNIT SETTINGS menu on both the Master and Slave units.

Plant-Crossing Control (2-Way)

Plant-Crossing control is used to enable both directions of traffic flow along a roadway to be simultaneously stopped, e.g. to allow road construction vehicles to cross. The diagram below illustrates Plant-Crossing control usage.

Note: This diagram should not be used as a guideline for setting up a roadwork site, it is only provided as an example.



Plant-Crossing Control is active while the left key-switch is in the **PLANT CROSSING** position on the Master Controller. Change the operating Mode for plant crossing control by going into **PROGRAM** Mode with the key switch.

Normally, the operator would use a Remote Control to change the Master and Slave unit to the Red signal phase when a plant vehicle requires thoroughfare.

REAR BEACON LAMP

When enabled, the Beacon Lamps mounted behind the aspects flash on each unit when the Red Aspects are ON. This acts as a visual indicator to the Plant (vehicles) Crossing the road that it is safe to do so.

PLANT CROSSING: MANUAL MODE.

For PTL TYPE 1, this can only be operated via the PTL Remote

Buttons used:

MASTER: STOP 

or GO 

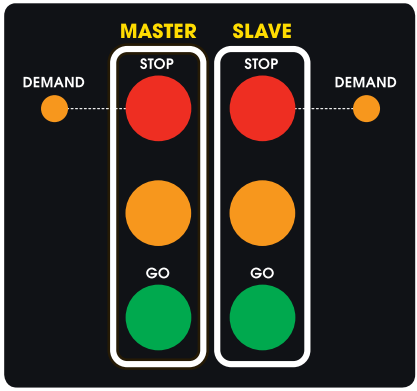
REMOTE: STOP 

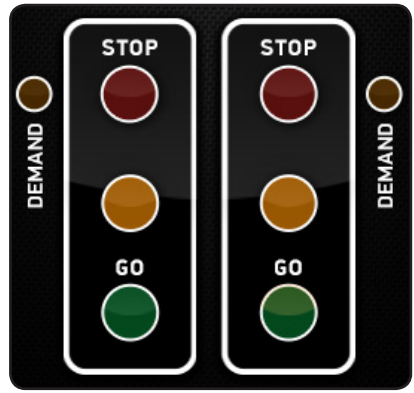
or GO 

On start-up, both the Master and Slave will rest on Green signal phase for Plant-Crossing Control until a demand for Red signal is entered by the operator.

The operator can enter a demand for All-Red signal using either the Master: **STOP** or Slave: **STOP** buttons on the Master Controller or the Remote. Both the Master and Slave units will then cycle to Yellow and the Red signal phase.

To change back to Green signal, either the Master: **GO** or Slave: **GO** button is pressed. When the All-Red time has expired, the lights will cycle back to the Green signal. If the Master: **STOP** or Slave: **STOP** button is pressed and the Minimum-Green time has not expired, the DEMAND LED will flash.





Plant-Crossing Control, Manual mode example:

1. Both the Master and Slave are on the Green signal phase.
2. Either the Master: **STOP** or Slave: **STOP** buttons are pressed (on either the Master Controller or Remote Control).
3. If the Minimum-Green time has expired *both* the Master and Slave will cycle immediately to Yellow and then to Red signal phase. Otherwise - if the Green time has not expired - the DEMAND LED's will flash.
4. Once the Green time has expired, the DEMAND LED's will extinguish and the Master and Slave will cycle to Yellow and then Red signal phase.
5. Both the Master and Slave now show Red signal phase for the preset All-Red interval.

6. **If the Auto-Return option is enabled,** the Master and Slave will cycle back to Green signal phase automatically after the All-Red interval has expired.
   Or, if the Master: **GO** or Slave: **GO** button is pressed (on either Master or Remote Control), the Master and Slave will cycle back to Green signal phase.

PLANT CROSSING: AUTO MODE

No buttons are active for this mode on the Master or Remote Control.

In AUTO mode, the Portable Traffic Lights will operate in cyclic order according to the pre-set times.

The pre-set All-Red Time is used as the All-Red signal phase time for Plant-Crossing Control, AUTO mode.

The pre-set Maximum Green Time is used as the All-Green signal phase time for Plant-Crossing Control.

AUTO mode allows plant vehicles to regularly cross over the road, or to turn onto the road. This would suit sites with heavy plant traffic.

Note: This mode is not permitted in some Australian states. Check the guidelines in your state before using this option.

See the PTL Advanced Features Document for more information.

PLANT CROSSING: DEMAND MODE

Demand mode is normally not used, if required see the PTL Advanced Features Document for more information.

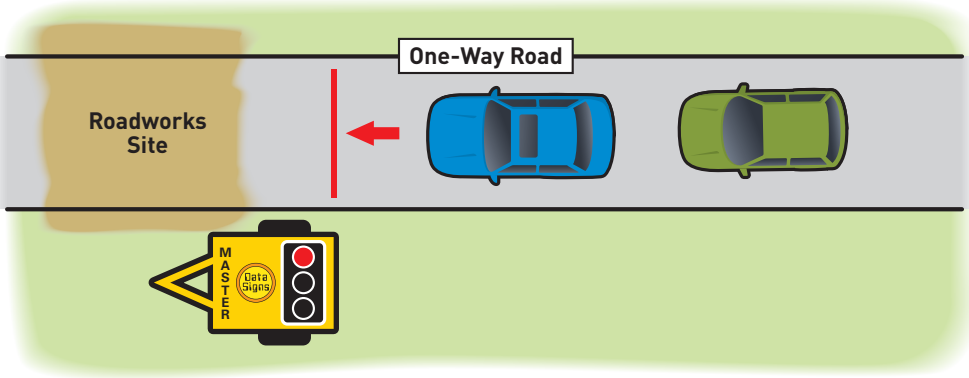
Gating Control

Single PTL unit use only. QLD Type 1 only

Gating Control is used to control the flow of traffic from a single traffic flow direction only.

Only a single PTL Unit is used for this type of Operation.

Note: For Type 1 which is the PTL-Compact, the Remote is the only method of control, the Master control is disabled. See the 'PTL Compact Operation and Maintenance Manual' provided with the unit.



See the PTL Advanced Features Document for more information.

YELLOW FLASH mode

No buttons are active for this mode on the Master, Slave or Remote Control.

This MODE applies to both Shuttle and Plant Crossing

The Flashing Yellow mode operates in response to specific fault conditions or it can also be manually selected. During Flashing Yellow mode, all aspects controlled by the Master - and the Master itself - will flash the Yellow signal at a flash rate of sixty flashes per minute.

The Remote Control

The Optional Remote Control is used by the operator to control traffic flow when the Master Controller has been set to Manual mode either in Shuttle or Plant-Crossing operation. It is recharged by placing it in the cradle in the Master Control box.

For Type 2 PTL's the Master and Slave units *must* be communicating together before the Remote Control will start communicating with the Master Controller.

When the Remote Control is turned on by pressing and holding the power button, it will begin to establish a radio link with the Master Controller.

To enter a Demand for either Red or Green signal phase, press the **STOP** or **GO** buttons. On each Demand, the DEMAND LED's will flash to indicate a demand on the Master or the Slave. Refer to previous sections regarding comprehensive use of the Remote Control in various operational modes.

The display screen will indicate whether the Master is in the correct mode to use the Remote Control. It will also show relevant status and time left for a selected phase. The current signal phase on the Master and Slave unit 1 is shown on the Remote Control.

Note: There may be a slight delay in the signal phase change shown for the Slave.

When the battery on the Remote Control gets low, a warning message will appear on the display panel. To recharge the Remote Control, plug it into the remote cradle in the Control box on the Master unit. When the Remote Control is charging, the battery indicator shows a lightning symbol.

SETTING THE RF CHANNEL ON THE REMOTE CONTROL

To set the RF Channel on the Remote Control, follow these instructions.

1. Press the MENU button  on the bottom/left of the screen to go to settings.
2. Press the RF Channel option. 

3. Enter the new channel number.
4. Press the ENTER button  to save.
5. To re-start normal operation, press the BACK button. 

ADDITIONAL MONITORING

If operating more than two PTL units, press the Slave AMBER button  to switch between the displays for each of the Slave units.

Note: For Type 1 which is the PTL-Compact, the Remote is the only method of control, the Master control is disabled. See the 'PTL Compact Operation and Maintenance Manual' provided with the unit.

MAIN MENU

While the Controller is in the **PROGRAM** setting, use the Up ↑ or Down ↓ buttons to navigate forward and back through the MENU's to select all other programming functions.
Note: for more comprehensive information see the PTL Advanced Function Document

MENU: **VIEW PTL STATUS**

When this menu item is selected, all the current settings and status of the PTL contoller are shown.

Use the Up ↑ or Down ↓ buttons to navigate forward and back through the list.

MENU: **QUICK START**

Use the **Site Quick Set-Up** Menu item, this will guide you through the process to automatically calculate the correct signal timing and Mode for your specific site condition.

MENU: **UNIT SETTINGS**

Use this menu to set the Unit ID, Communications and Vehicle Detection settings.

SUB-MENU: **ID**

The **ID** (unit ID) governs the traffic control sequence. **The Master is ALWAYS unit ID:1** the **Slave(s) are ID:1 or higher.** See the various Intersection Control sections later in this document and the PTL Advanced Features Document for more information.

MENU: **OPERATING SETTINGS** [Master only]

SUB-MENU: **ON-THE-FLY-MODE** [Default: Disabled]

You can change the Red, Yellow and Green Times without having to enter **PROGRAM** Mode.
You can also change from AUTO to MANUAL modes by selecting those buttons.
*Note: The new time **values** entered on-the-fly are not saved, they are only used while the PTL's are running. When the Master Controller are turned off, it reverts back to the previously saved times.*
To keep the time settings, change the times while in **PROGRAM** Mode.

SUB-MENU: **AUTO RETURN** [Default: Disabled]

This option should not be used in NSW - check your state or territory guidelines for more information.
Use this menu item to set the Auto Return function. See the Auto-Return Explained section for details.

SUB-MENU: **DEMAND CYCLE** [Default: 3 minutes]

In DEMAND mode, if there are no vehicles detected, you can set period of time that an automatic demand cycle is introduced. If the DEMAND CYCLE value is set to 0, no automatic demand cycle will be introduced. Otherwise specify the minutes to wait where no vehicles are detected before introducing an automatic demand cycle.

For more menu items under the 'Operating settings Menu', see the Advanced features document.

APPENDIX 1:
PTL CYCLE & PHASE INTERVALS FOR SHUTTLE AND PLANT CROSSING