NOW MADE FOR

DS-Live™

- Full Status Monitoring
- Pedestrian Lights
- Scheduled Phase Control
- Bluetooth Remote
- VMS Integration
- Red Light Countdown Timer
- Advanced Diagnostics and Equipment Usage
- GPS Location
- DS-Live internet communication Mode

Portable Traffic Lights Controller PTL-300

Advanced Features

SERIES-II

PTL 300 Controller Advanced Features

SERIES-II

IMPORTANT NOTICE FOR ADVANCE USE OF PTL.

WHEN MORE THAT A SET (AS ORIGINALY SUPPLIED) IS USED WITH ANOTHER SET (AS ORIGINALY SUPPLIED). THESE MUST, MUST BE OF THE SAME SOFTWARE VERSION IF OPERATING WITH ANOTHER SET, SO MORE THAN 2 PTL UNITS OPERATING TOGETHER.

IF THIS IS NOT POSSIBLE TO UPGRADE OLDER CONTROLLERS TO THE SAME SOFTWARE THEN THE ONLY OPTION IS TO UPGRADE THE ACTUAL CONTROLLERS THEMSELVES.

This manual covers the Advance features of the PTL 300 Product.
For further Training for this product contact Data Signs on 1300 785 850.
This User Manual applies to Controllers operating on firmware 06.03.xx or later.

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

Table of Contents

MAIN MENU for Controllers set as MASTER

From this Screen, Diagnostics, Quick Set-Up and Individual unit set-up is managed.

- The VIEW PTL STATUS menu item is used to check how this unit has been set up and configured for operational mode. ***This Menu item is covered extensively later on pages 21-22.***
- The QUICK START menu item is covered in the Operations and Maintenance Manual and is not repeated here.
- The UNIT SETTINGS menu is covered in greater detail below.

Menu: UNIT SETTINGS

Use this menu to set the Communication and Vehicle Detection settings.

Sub-menu: COMMUNICATION

Select the type of communication. ***Wireless-Link (RF)*** is the default type of communication.
If the units are joined together with twisted pair wire for direct wired communications, select ***Direct-Link.***
See page 17 for more details.

For ***Wireless link (RF)***, Enter the ***RF channel*** then press the ENTER button.
Note: you will also need to change this value to match on the other unit(s) communicating with a Master unit.
Select the RF Power mode. These values are set by using the QUICK START, they can however still be changed from 1 to 99%.

Sub-menu: INTERNET MODE

This is an advanced programming mode using the DS-Live programming platform.
See page 24 for details.

Sub-Menu: STREAMS MODE

See page 24 for details.

Sub-menu: DEMAND FOR PLANT CROSSING *Default: Disabled*

This will allow Demand option to be set for Plant Crossing Operation.

Note: *If Demand is required for Plant Crossing Mode, the Vehicle detector fitted must be fitted with a swivel adaptor available from Data Signs. This is so it can face the direction that the actual Plant. i.e. Truck crosses the road.*
If using this option, ensure AUTO Return option is set.

Sub-menu: DTC LOW SPEED *Default: 10, Minimum: 2, Maximum: 99 km/h*

If an optional Vehicle Detector is fitted, allows the minimum detection speed to be set, in km/h.
Please note: This setting will only take effect on the individual unit. Set separately on the Slave unit.

Sub-menu: DTC HIGH SPEED *Default: 80, Minimum: 2, Maximum: over 100 km/h*

If an optional Vehicle Detector is fitted, allows the maximum detection speed to be set, in km/h.
Please note: This setting will only take effect on the individual unit. Set separately on the Slave unit.

Sub-menu: DTC SENSITIVITY *Default: 20, Minimum: 10, Maximum: 99%*

If an optional Vehicle Detector is fitted, allows the sensitivity of the Vehicle Detector to be set.
Please note: This setting will only take effect on the individual unit. Set separately on the Slave unit.

Sub-menu: PING INTERVAL *Default: 200, Minimum: 100, Maximum: 999 milliseconds*

To set the amount of time between each attempt by the Master unit to connect to the Slave units.

Do not change unless advised by Data Signs.

Menu: OPERATING SETTINGS for controller set as MASTER ONLY

*For Primary Operational Menus see **PTL Operations, OH&S and Maintenance Manual.***

Sub-Menu: DEMAND CYCLE

In DEMAND mode, if there are no vehicles detected, you can set the 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.

Sub-menu: CONTACT TIMEOUT *Default: 5 seconds*

Use this menu item to modify the RF contact timeout period.
*See the **RF Link Explained, page 18**.*

Sub-menu: SHUTTLE TYPE *Default: NORMAL*

Select the type of SHUTTLE CONTROL you are setting up with this menu item.
SHUTTLE CONTROL types are discussed further below including T-Junction, 1 way, 3-Way and 4-Way intersection.
For greater explanation of this menu item see pages 7-12.

Sub-menu: PLANT TYPE *Default: NORMAL*

PEDESTRIAN CROSSING
COPY MASTER
RAMP SIGNAL (future option)

Sub-menu: TIME FORMAT *Default: Seconds*

The time display refers to the All-Red and Green time shown on the display panel of the Master Controller during normal operation. You can choose to view the time in seconds, or minutes and seconds.

Sub-menu: BEACON *Default: Enabled*

The Beacon lamp located on the back of the lights can be disabled. When enabled, the Beacon Lamp flashes when the Red Light is ON.
Note: this the Beacon is very useful for PLANT crossing, as when BOTH beacons are flashing, Both Red Lights are on and it is safe for crossing. When used in SHUTTLE operation it provides as a caution / hazard warning while the vehicle is in the controlled work zone area.

Sub-Menu: Tilt Alarm

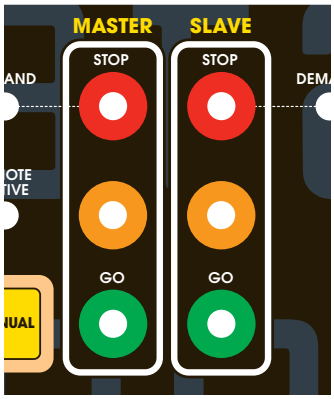
This is to indicate that the unit has fallen over and need attention.

Sub-menu: LIGHT INHIBIT

This menu item is used primarily for testing. If required, the Controllers on the Master and Slave units can operate without activating any lights.

Menu: Light Test

The Lights Test diagnostic function is very useful for testing the units individual Red, Yellow and Green Lights.



These are selected by Pressing the MASTER RED, YELLOW or GREEN button.

To test the BEACON light or PEDESTRIAN WALK and DONT WALK lights (if fitted), use SLAVE RED for Dont Walk, SLAVE GREEN for WALK (this also activates the Pendant Sound) and the YELLOW button activates the Rear BEACON.

If a light is faulty then for example the message "RED Failed" will display after 2 seconds.

The lights remain on until another button is pressed.

To test the Pendant Light (if fitted), push the button as shown.

Menu: FAULT LOG

Sub-menu: VIEW LOGS

Select this menu item to scroll through the fault log file.
More information regarding the fault log file is provided in the Fault Log section of this manual on page 23.

Sub-menu: ERASE ALL

Selecting this menu item deletes the fault log file that is stored on the SD memory card.

Menu: FACTORY SETTING

This menu item is restricted to Data Signs internal factory use.

Login Pin

The Login Pin is used for the Bluetooth Remote Control.
When using the PTL-Connect APP on your phone for the first time, the PIN must match the number set in this menu function.

Controller Type

This Menu Item will set the PTL Controller to operate as Type 1 or Type 2 Traffic lights. Type 2 is normally used on Trailer units. Type 2 can also be used for the PTL-Compact traffic lights.

Type 1 is only used for the Data Signs PTL-Stop-n-Go traffic lights.

This controller can also be set up to operate in Type 1. The PTL-Remote can **ONLY** be used to control the PTL Operation when set to Type-1. When using Type-1 ONLY, GATING, SHUTTLE and PLANT Modes are possible.

Menu: PTL Extender.

This option allows for a PTL Extender to extend the range of a set of PTL's
This is used when direct line of sight is not possible i.e. a Hill or other obstructions is between the 2 units.
For PTL Extender setup see page 15.

Factory Reset & Alternate values

Use this function with CAUTION as ALL the values and modes are returned back to the Default. See the default list as per below.

ITEM	DEFAULT	ALTERNATE MODES, VALUES
Unit ID 0	Set to Master.	Slave 1 to 5.
Comms	RF	Wired, Internet, STREAMS
RF channel	1	2 to 8
Long Rage RF	Off	On
RF power	99%	1 to 99%
Local ping interval	200ms	100ms-2400m
Contact timeout	5s	5 to 10s
Modem dropout reset	300s	
Operating mode	Manual	Auto, Demand, Flash
Shuttle type	SHTL:2	T -Junction shuttle 1 to 6, Intersection
Plant type	Normal	PED-X, COPY, (future RAMP LIGHTS)
Gating control	Disabled	Type-1 only
Pedestrian crossing	Disabled	Active
Don't walk time	10s	10 to xxx
Walk time	10s	10 to xxx
Don't walk flash time	5s	5 to xxx
Light inhibit	Disabled	Active
Beacon	Enabled	Disabled
Auto return	Off	Master to RED, Master to GREEN
Display counter in min	Disabled	Active
All red time	20s	20 to xxx
All yellow time	5s	5 to 9
Green Minimum Time	10s	9 to xxx
Green Demand Extension time	5s	5 to xxx
Green Maximum Time	15s	15 to xxx
Radar low	10KPH	10-xx
Radar high	80KPH	xx-xx
Radar sensitivity	20%	10% to xx%
Demand auto cycle	3min	0=off, 1 to 9
Tilt sensor	On	Off
Lid open sensor	On	Off
PTL Extender	Off	On

Additional Operational Modes

NOTE: THESE ARE NOT PART OF THE AUSTRALIAN STANDARDS or INDIVIDUAL STATE TYPE Approval.

USE WITH LOCAL STATE AUTHORITY ONLY.

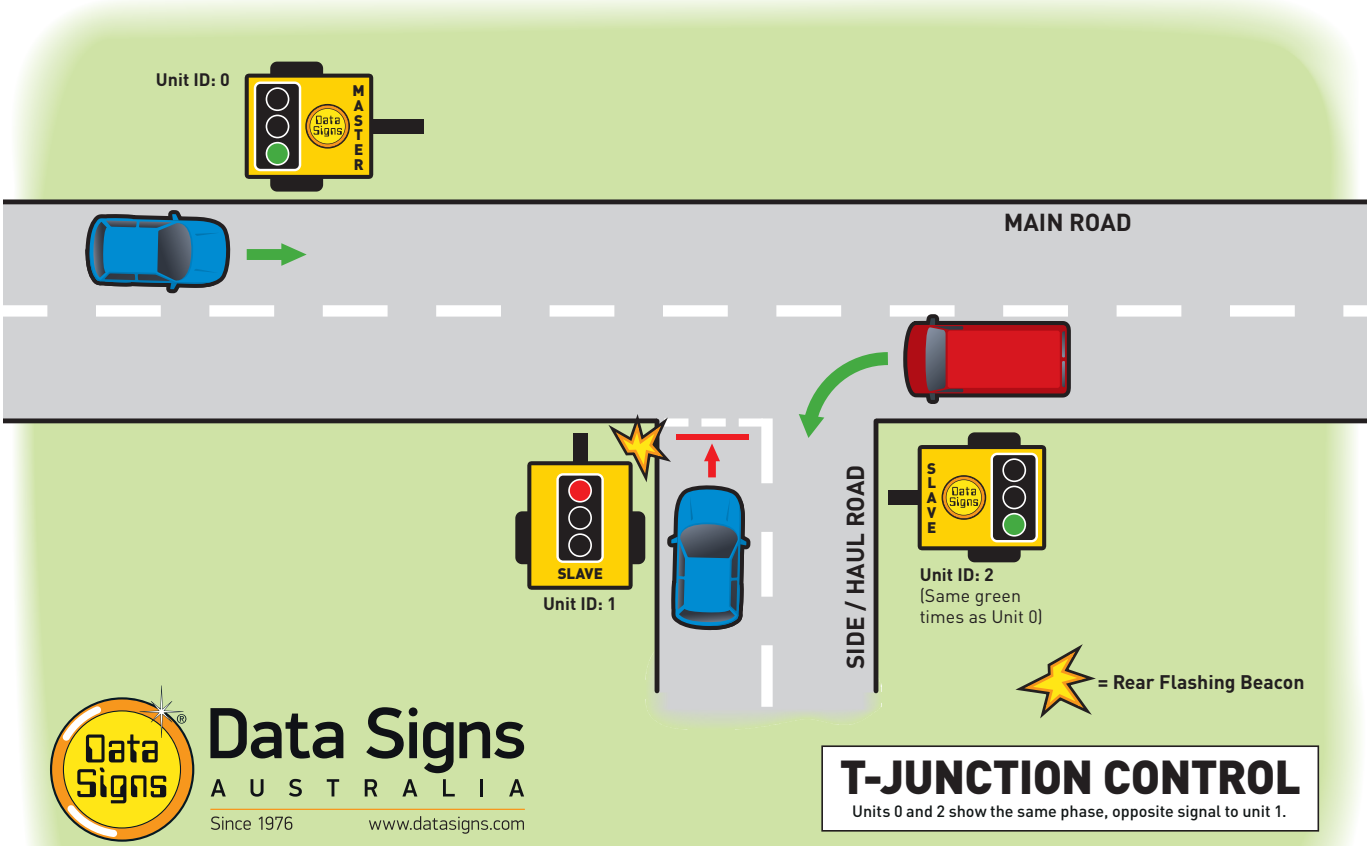
Many factors need to be considered using the following operation modes. i.e. units must be compatible with each other, same firmware, aerial configuration, etc.

If any unit encounters a critical fault (i.e. aspect fault or radio link failure) all units will enter Flashing Yellow mode.

- Make sure all units are set to the same RF Channel.
- For DEMAND mode, Vehicle detectors MUST be fitted to all units being used.
- The Master Controller will show the Master Lights on the Left and Slave 1 Lights on the Right, to see Slave 2 or higher use the Slave AMBER button to toggle, for the PTL-Remote simply slide the lights across.

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

Units 0 and 2 will show the green signal phase; while Unit 1 will show the red signal phase and then all units will move to All-Red. Then, Unit 1 will show the green signal phase, while Units 0 and 2 will stay on the red The Master and Slave 2 will show the same signal phase, opposite to Slave 1.



You can separate the green times using the GREEN TIME SET button. Use the menu that appears to select each green time in turn. Unit 0 and 2 will use the same green time.

The MANUAL, AUTO, and DEMAND modes are all available.

Setup T-Junction Control

Use **QUICK START** and for **MASTER**, SET **Length**, **speed** and **GREEN time**, Wait for menu to appear, then go to **OPERATING SETTING & Sub-Menu: SHUTTLE**, select **T-JUNCTION**, then return the key-switch to **SHUTTLE**.

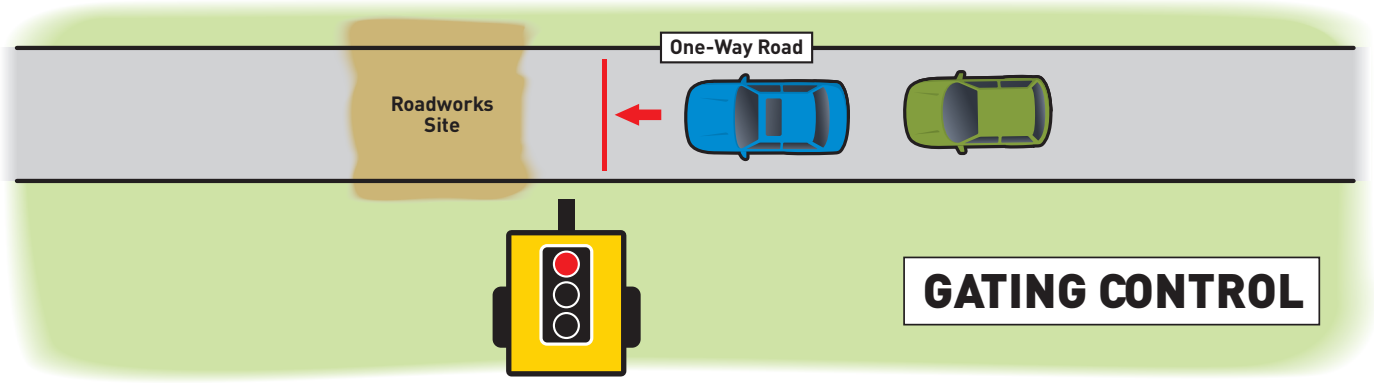
Use **QUICK START** for **Slave 1 & 2**, selecting length as the distance between the Master and the Slave, then return the key-switch to **SHUTTLE**.

Single-Way Shuttle

(For Type-1 this is know as Gating Control)

MANUAL AND AUTO MODES ARE AVAILABLE.

For MANUAL Mode Auto Return can be set to OFF, Red or GREEN by pressing the MANUAL button.

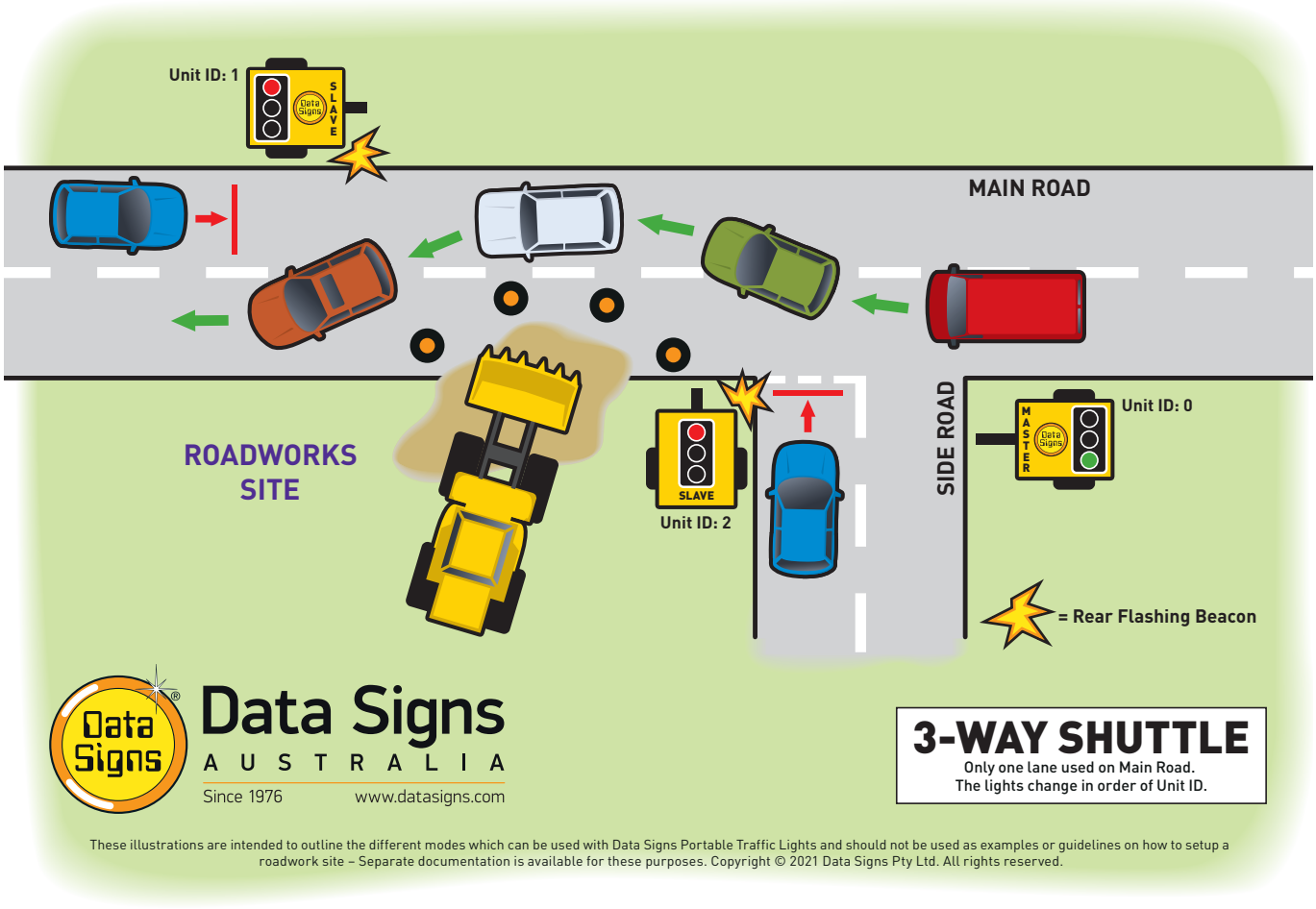


Setup Single way SHUTTLE

Use **QUICK START** and for **MASTER**, **SET Length**, **speed** and **GREEN time**, Wait for menu to appear, then go to **OPERATING SETTING & Sub- Menu: SHUTTLE**, select **MULTIWAY** and **Select 1**, Then return the key-switch to **SHUTTLE**.

3-Way Shuttle

As illustrated in the diagram below, three Portable Traffic Light units can be used to control a three-way intersection; using two Portable Traffic Light sets.
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.

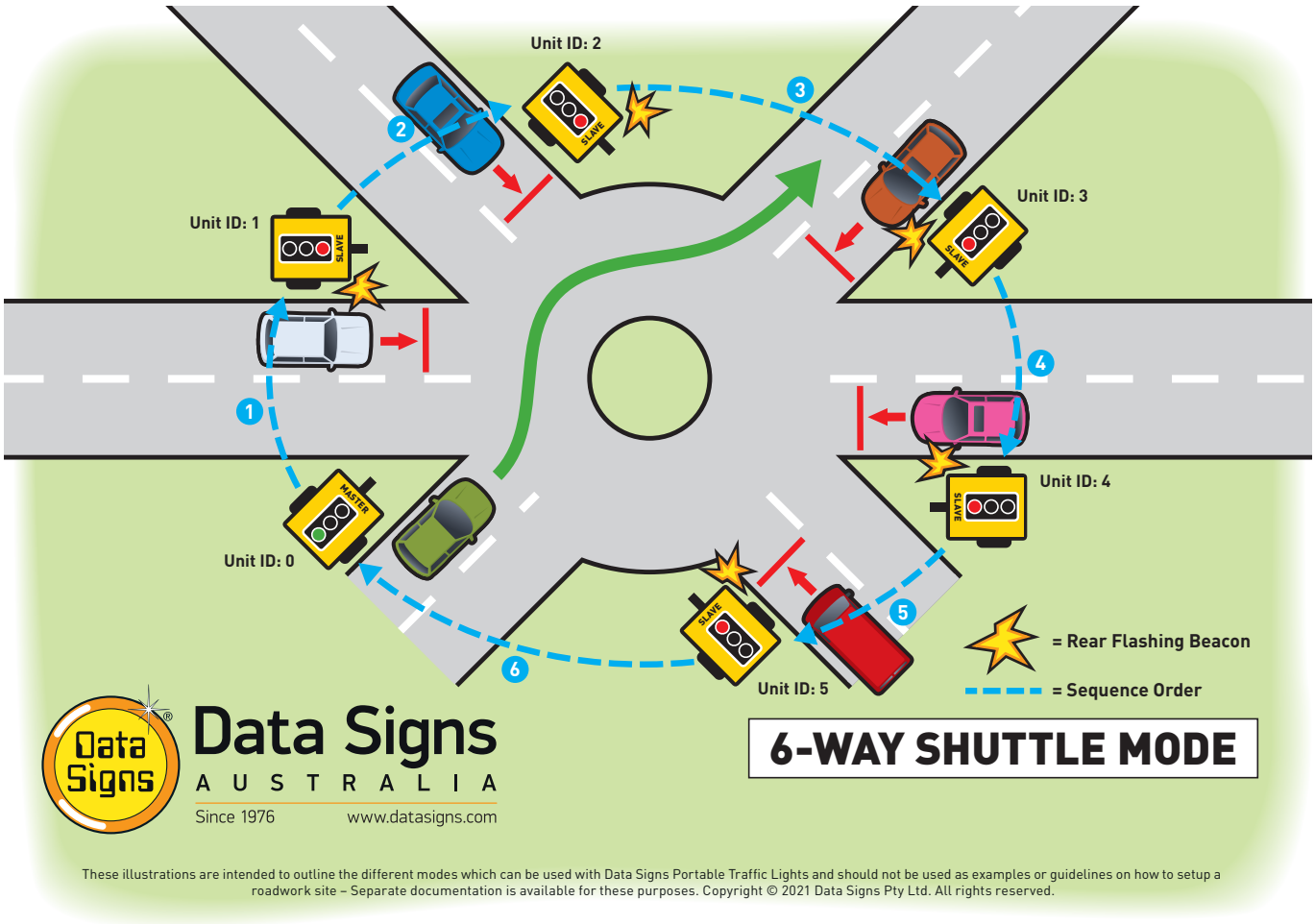
You can set separate green times using the GREEN TIME SET button.

Setup 3-Way Shuttle

Use **QUICK START** and for **MASTER**, **SET Length, speed** and **GREEN time**, wait for menu to appear, then go to **OPERATING SETTING, Sub- Menu: SHUTTLE**, select **MULTIWAY** and select **3**, then return the key-switch to **SHUTTLE**.

Use **QUICK START** for **Slave 1 & 2**, selecting length as the distance between the Master and the Slave, then return the key-switch to **SHUTTLE**.

Other Shuttle Mode example setup shown below:



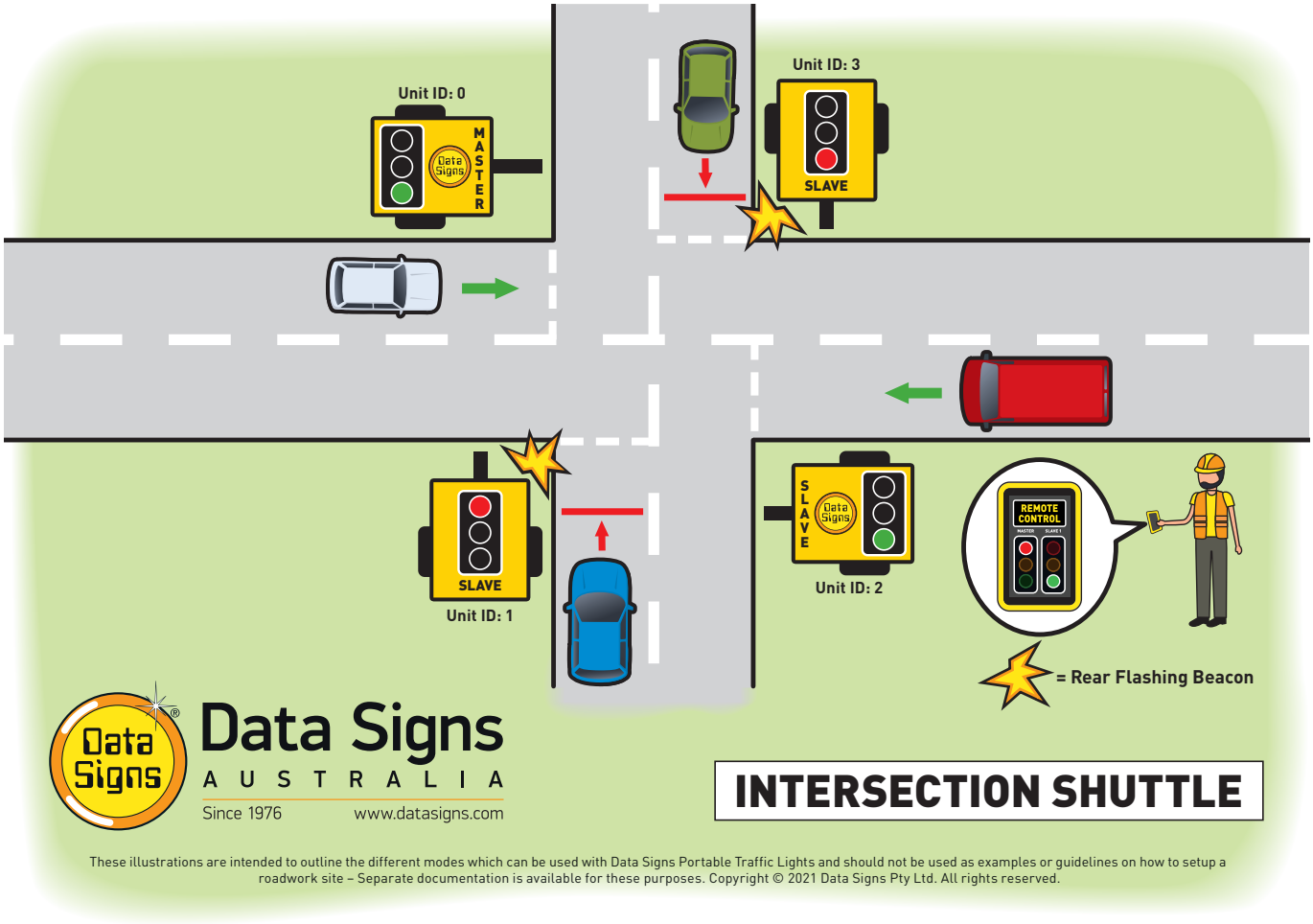
Setup 6-Way Shuttle

Use **QUICK START** and for **MASTER**, SET **Length, speed and GREEN time**. Wait for **menu** to appear, then go to **OPERATING SETTING, Sub- Menu: SHUTTLE** , select **MULTIWAY** and select **6**, then return the key-switch to **SHUTTLE**.

Use **QUICK START** for **Slave 1 to 5**, selecting length as the distance between the Master and the Slave, then return the key-switch to **SHUTTLE**.

Intersection Shuttle

As illustrated in the diagram below, ***four*** Portable Traffic Light units can be used to control an intersection; using two Portable Traffic Light sets.
Note: This diagram should not be used as a guideline for setting up a roadwork site, it is provided as an example only. Data Signs recommends short-range setup only for this type of Control. This Control type does not form part of the PTL Type Approval.



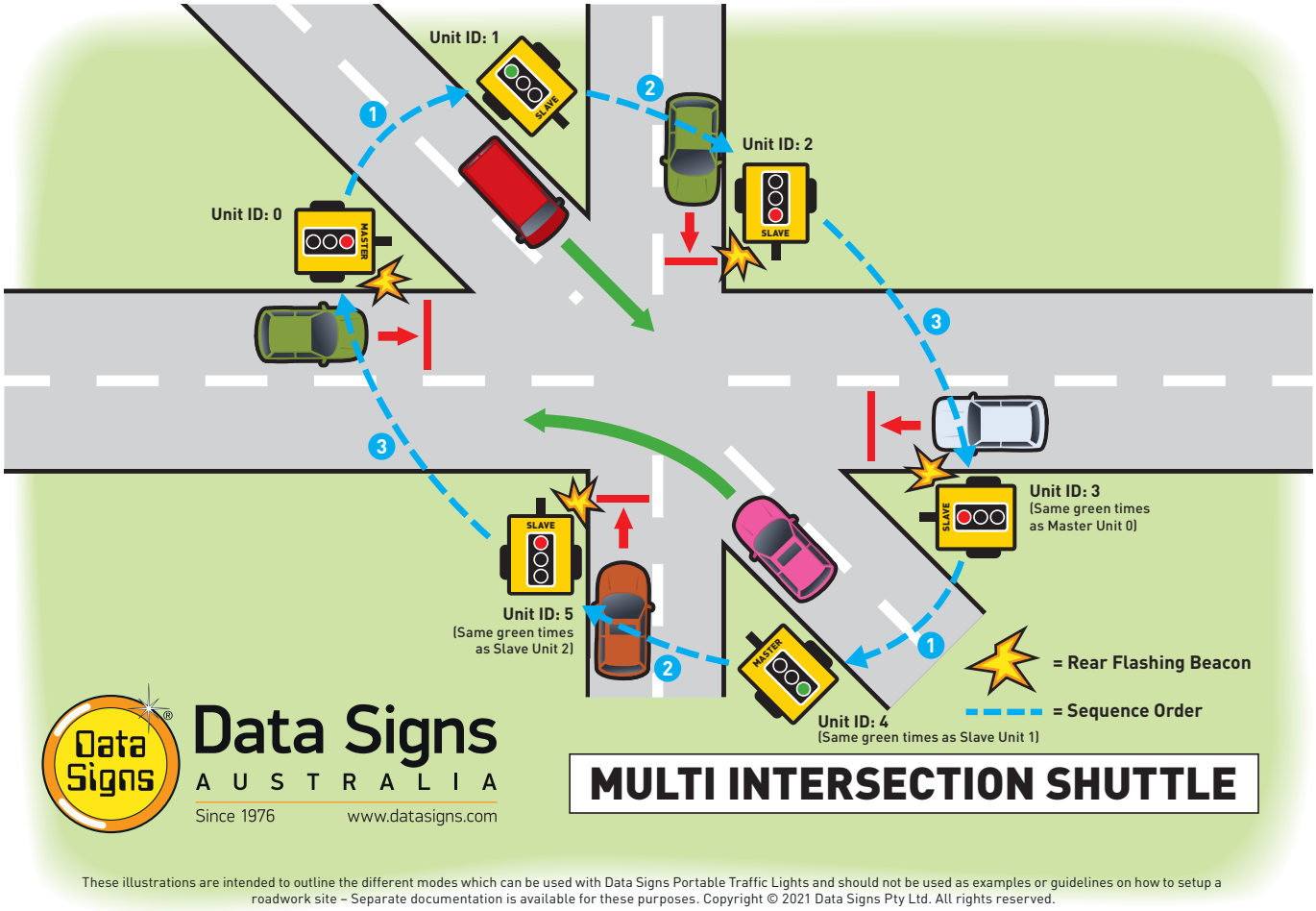
The Slave unit 2 (**Unit ID: 2**) will show the same signal light as the Master (**Unit ID: 0**).
The Slave unit 3 (**Unit ID: 3**) will show the same signal light as the Slave (**Unit ID: 1**).
The Manual, AUTO, and DEMAND modes are all available.

Setup Intersection Shuttle

Use **QUICK START** and for **MASTER**, **SET Length**, **speed** and **GREEN time**. Wait for menu to appear, then go to **OPERATING SETTING & Sub- Menu: SHUTTLE**, select **INTERSECTION** then select **2**, then return the key-switch to **SHUTTLE**.

Use **QUICK START** for **Slave 1, 2 & 3**, selecting length as the distance between the Master and the Slave, then return the key-switch to **SHUTTLE**.

Multi Intersection Shuttle



Setup Intersection Shuttle

Use **QUICK START** and for **MASTER**, SET **Length, speed** and **GREEN time**. Wait for menu to appear, then go to **OPERATING SETTING & Sub- Menu: SHUTTLE**, select **INTERSECTION** then select **3**, then return the key-switch to **SHUTTLE**.

Use **QUICK START** for **Slave 1 to 5**, selecting length as the distance between the Master and the Slave, then return the key-switch to **SHUTTLE**.

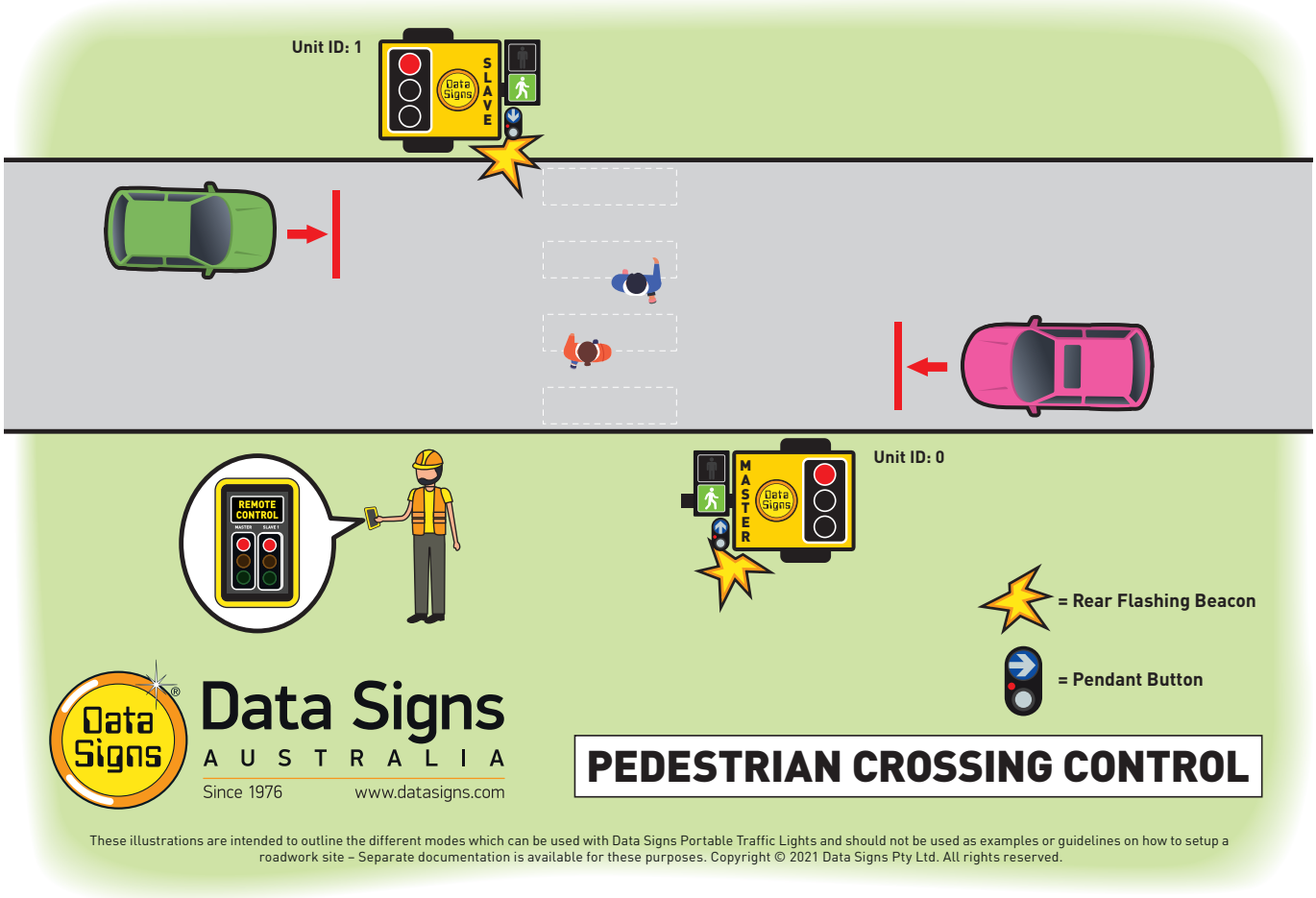
Pedestrian Crossing [if fitted]

The Current model PTL Trailer sets (2019 onwards) can be fitted with optional Pedestrian Crossing Lights and Pendant Buttons.

When enabled, it operates in the Plant Crossing Mode **exclusively** *(Key switch to the right side position)*.

The Pedestrian Mode can only be used on a PTL Set, *it cannot be operated by more than a Set of Master and Slave.*

Full option Pedestrian Crossing shown with Double Lights Fitted.



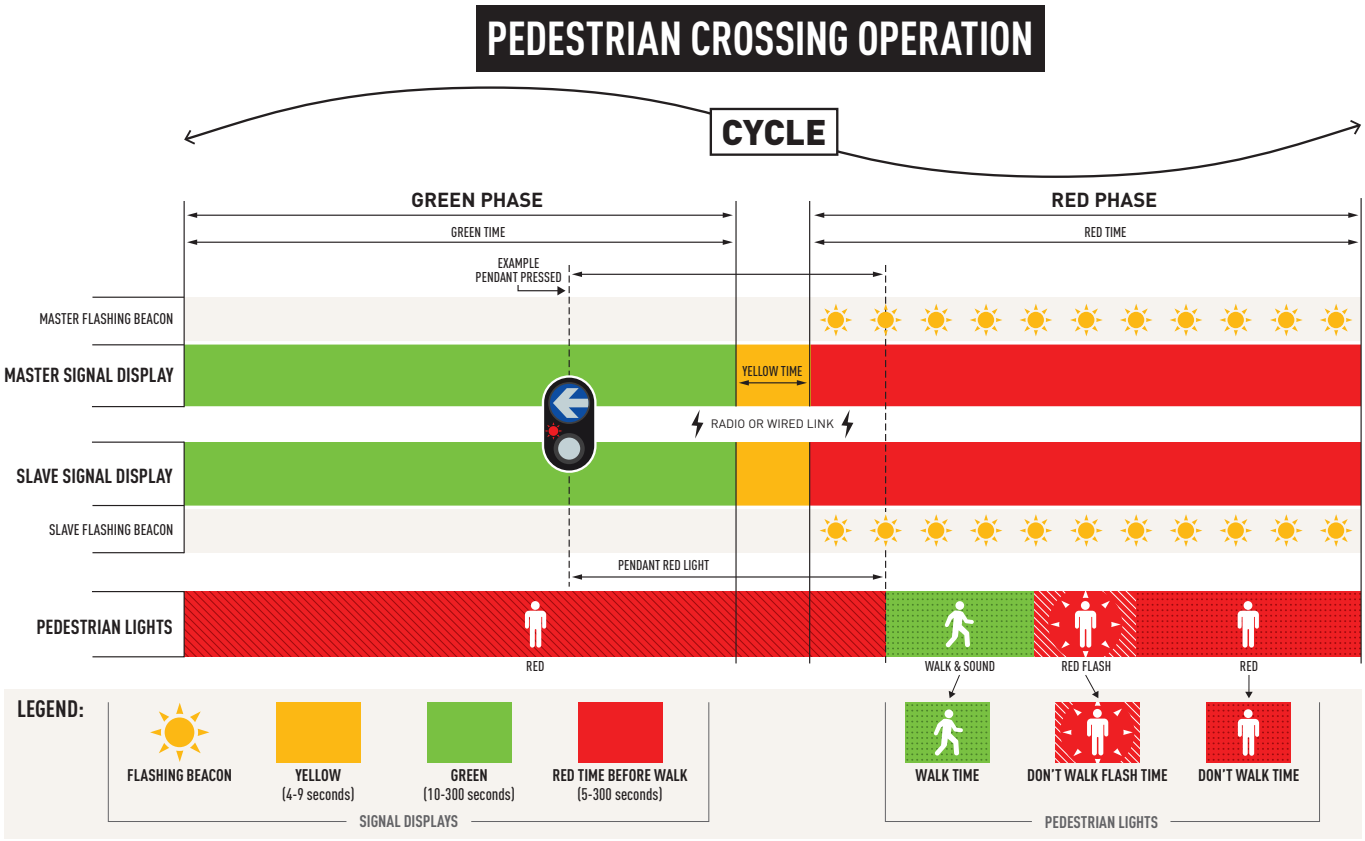
Once the physical installation of the Pedestrian Crossing Lights and Pendant Buttons is done on the PTL Set, use the **OPERATING SETTINGS** to select **PEDESTRIAN MODE**. Scroll down the Menu until **PEDESTRIAN** is displayed, then select **ENABLE**.

This then starts the Pedestrian Crossing Wizard.

1. Enter the **Walk Time**. This is the time that the Green Pedestrian Light will be ON for.
2. Enter the **Don't Walk Flash Time**. Set this to a long enough time for pedestrians to clear the road crossing.
3. Enter the **Don't Walk Time**. This is the time that BOTH Don't Walk Light AND the RED Traffic lights will remain ON before cycling to the Green Traffic light and vehicle traffic can resume.
4. ****Red Time before Walk**. This is the time the Vehicle Red light will be on before the Green Walk Light comes on.

5. **Yellow time. Time for Yellow light. i.e. Green, Yellow then RED.
6. **Green Time. This is the Minimum Green time for Vehicle Traffic. Once this cycles to 0 and a Pedestrian Demand is detected the lights will Cycle Immediately to Yellow and Red.
   If the Minimum Green Count has not been reached then the Pedestrian Pendant light will go to RED indicating a wait time is still active and they need to wait. The Master and Slave controllers will also flash the Demand lights.

See Chart below shows the signal timing.



When the wizard selection is done, select **PLANT CROSSING** with the Key-Switch to begin the Pedestrian Crossing Mode of operation. The PTL will begin the start-up sequence and after this the Pedestrian Lights will operate.

The main master display will show **PEDESTRIAN CROSSING**.

The Pedestrian Crossing Lights can be activated via the Pendant Button fitted to the Master or Slave Trailer or from the Remote Control by pressing the Walk button.

Environmental Sound Level and light output controls.

The sound level is automatically adjusted down if the crossing has not been used for some time

Power saving function. For the Pedestrian and Vehicle Lights, these detect ambient light levels and dim the lights accordingly. A further power saving functions that monitors no activity for the lights will also adjust the light output levels.

PTL Boom Gate

An optional boom gate can be fitted to the Trailer traffic lights or added as a stand alone unit for the PTL-Compact or Stop-n-Go portable lights.

Select the **Sub-Menu: BOOM Gate.** You will then have the following options:

- Activate boom on Red
- Activate delay after RED __
- Raise on Green
- Raise delay on Green

PTL Ramp Lights (in development)

A set of lights can be programmed as freeway entry RAMP lights.

These are used with the Vehicle detectors which are redirected to face the freeway traffic

Select the **Sub-Menu: RAMP LIGHTS.** You will then have the following options:

- Activate Ramps on __ __ detections per minute
- Set Interval __ __ cycles per minute

PTL Extender

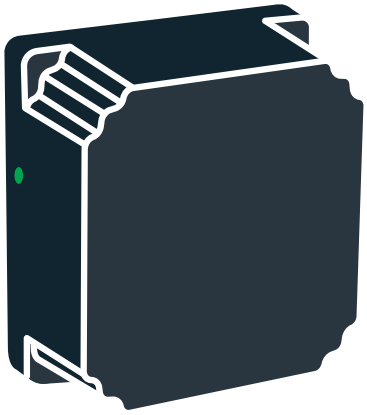
The PTL extender operates autonomously from it's own power system.
Like the PTL Trailers (or sets), it must be placed in a position where the sun shines on the solar panel during the day.

The Solar charger LCD panel indicates the system power status.

The PTL Extender menu options are:

- **Select RF Channel and power.**
  - The RF Channel must be set to the same as the PTL Sets it is extending the range on.
- **Set the RF Power to a range as follows:**
  - Do not use the extender if range is less than 200 meters
  - 200 to 400 Meters 33%
  - 400 to 800 Meter 66%
  - 600 Meters and greater 99%

  Note: A range of more than 800m (so total 1600 metres) will also extend the All Red time. Keep this in mind.



The Vehicle Detector [Optional]

The detection range is typically 90 to 100 Meters. The detection range is between 10kph and 80kph.

Vehicle detect, DEMAND Operation

For Shuttle Control, the Master and Slave will rest on the All-Red signal phase until a vehicle is detected on either the Master or Slave, at which point the signal will change to Green signal phase for that unit. During this time, if a vehicle is detected on the opposite unit, the DEMAND LED will flash on the Master, Slave Controller and Remote Control to indicate a DEMAND has been registered. Once this demand is processed, the DEMAND LED will go out.

If a unit is showing the Green signal and during this time another vehicle is detected by the unit, the Green time (or, time to remain on Green) will be extended by Green-Extension time. The Green time will only be extended to the Maximum-Green time.

A demand can also be generated for the Master or Slave using the appropriate 

or 

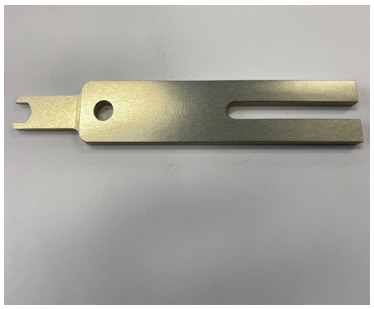
button on the Master Controller or Remote Control.

NOTE: For Plant Crossing using DEMAND mode, the lights will cycle to RED.

Automatic Demand

Use OPERATING SETTINGS - Sub-menu: Demand Cycle - Page 4.

If no demand is received from the vehicle detectors during the DEMAND CYCLE period, a Demand will be automatically introduced on both the Master and Slave PTL's. As specified in the Australian Standard, this caters for the situation where a vehicle is waiting on either side, but the vehicle was not detected. The DEMAND CYCLE period is set using the menu in PROGRAM Mode. This Automatic Demand is introduced every 3 minutes, by default. However it can be turned off or the time interval can be modified.



Using the Tuning Fork to test the Vehicle Sensor

To check that the Vehicle Sensor is working you can use the Tuning Fork *(available from Data Signs).*

Set the operation Mode to DEMAND, and use the tuning fork to simulate a vehicle approach. The Lights will go to GREEN phase if the RED time has expired, otherwise the DEMAND light will be shown for the unit that is being checked, Master or Slave.

The Radar / Vehicle Detection Tool

Using the Radar / Vehicle detection tool you can check for correct operation or wiring harness is in good operating order. *This tool is available from Data Signs*.

Direct-Link [optional]

Direct-Link allows for direct connection of two PTL units via a cable. The RF between the lights is disabled. The PTL-Remote will still operate back to the Master via the RF.
Direct-Link is an option and must be fitted at a Data Signs Service Centre or by a qualified Auto Electrical service provider.

Direct-Link allows for a range of up to 1.6km maximum, depending on the type of cable used.
Data Signs supplies a 5m test cable when the Direct-Connect option is purchased.

Ensure weather proof cat5/6 cable and connectors are used when using cables and connectors to extend cables.

Setting up Direct-Link

Plug the cable into the plug on each end.

Note: 2 Connectors can be fitted where more than 2 units are needed, i.e. 3 way intersection.

On the PTL Master and Slave Controller complete the following:

- Go into **PROGRAM** Mode
- Select the UNIT SETTINGS menu
- Select COMMUNICATIONS
- Select Direct-Link, then press the **ENTER** button.

Then select either Shuttle or Plant Crossing using the left Key-switch to exit the **PROGRAM** Mode.

The PTL set will now be communicating via the cable through the Direct-Link option.
Note: The RF still operates for the PTL Remote Controller. Make sure the RF channel is the same.

Cable reels fitted with 300m of cable are available from Data Signs.

Wireless Link (RF) Explained

Each Traffic Light Trailer is fitted with a Directional antenna. This will provide reliable Wireless Radio (RF) communication between the PTL units; however, the units still need to be positioned line-of-sight to each other. The ends of each antenna should point *towards* the other. They can be adjusted on a swivel to help alight the correct direction.

With the Directional antennas fitted, a range of up to 1.6 kilometers between the Master and Slave units is achievable, line-of-sight. (No obstructions)

The physical range is also limited by the maximum allowed All-Red time, and safe roadwork site requirements. At the maximum All-Red Time of 100 seconds with vehicles traveling at 40 km/h works out a separation between Master and Slave of about 1.6km. States/territories may also have maximum operating distance guidelines.

The radio link module fitted to the PTL unit communicates on one of eight channels. This channel is set with **PROGRAM** Mode on the Controllers, as discussed previously. All units must be set to the same channel maintain wireless communication. This applies to the Master, Slave(s) and the Remote Control.

Radio Link Operation

If the radio link between the Master and a Slave unit is disrupted for a continuous five second period (the default time) all units will revert to Flashing Yellow mode. *"CONTACTING SLAVE..."* will be shown on the display panel on the Master Controller.

While the Australian Standard defines a 5-second timeout, the use of the CONTACT TIMEOUT setting within **PROGRAM** Mode on the Master Controller can increase this timeout delay, which may also improve communications over long distances or in areas of high RF noise.

As specified in section 2.8.3 of the Australian Standard, an automatic restart facility is in place to enable re-establishment of the radio link between the Master and Slave(s). However, only five attempts to restart (after a failure any time greater than the CONTACT TIMEOUT period) are allowed for any twenty-minute interval. If this is exceeded, the units will remain operating in Flashing Yellow mode. Manual intervention is required; power-cycle (reboot) all units to restart.

In the event of a radio link failure, check all connections as discussed above and for any interference that may be caused by equipment near one of the units. Change the RF options using **PROGRAM** mode.
See also Trouble shooting section, later in this manual.

PTL-Remote Signal Strength

The Remote Control will display the signal strength between the Master Controller and itself as a Graphic symbol in the top right corner on the display. The Master and Slave Controllers display the Signal Strength alternating with the Battery Voltage on the display. The RF Signal Strength is a value out of 5, where 5 is the strongest value.

NOTE: Internet operation mode can be used if it is not possible to get a reliable link due to line of sight or other conditions that cannot be resolved. ***See page 24 for more details.***

Fault Log

If any fault conditions occur as discussed throughout this document, the Portable Traffic Lights will go to Flashing Yellow mode.

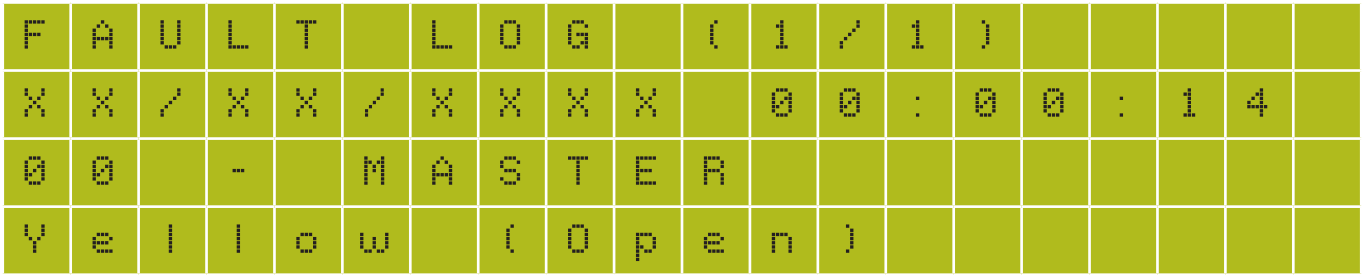
All critical faults are logged to a file on the SD card fitted to the Master Controller.

The faults logged are outlined below. Reference back to the Australian Standard is provided in the table.

Fault ID	Description
0	Yellow (Open)
1	Yellow (Short)
2	Red (Open)
3	Red (Short)
4	Green (Open)
5	Green (Short)
6	More than one light on at the same time (short between lights)
16	Excessive Link, tried to connect more than 5 times within a 20 minute period
17	Link Conflict, Another Master or Slave is active
18	Link Timeout, lost contact with Master or Slave
19	Radar, not responding during operation
20	Low Battery, low battery mode reached

To view the current fault log file, select **FAULT LOG → VIEW LOGS** from the PROGRAM Mode menu. Use the ↑ and ↓ arrow buttons to move through the fault log entries. The last fault logged is shown first.

A sample fault log entry may be:



The time shown with each fault log entry is the time that this fault occurred since the Master Controller was powered up. The second part is the Portable Traffic Light unit affected (i.e. Slave#2 or Master). The last part of the entry is the fault description.

You can also use an SD card reader on a laptop/PC to read the fault log files from the SD card. The file will be in the LOGS directory on the SD card.

Turn the Master Controller OFF and remove the SD card from its slot, leave the power OFF while re-inserting the SD card.

Diagnostics Guide

This section contains some tips on handling some of the issues that may arise when using the Portable Traffic Lights. If you cannot resolve the issue you are experiencing using the information below, please contact Data Signs via the Help Desk at datasigns.com.au
The Fault Log stored on the SD card in the Master Controller may assist in issue diagnosis.

Using the Main Menu PTL STATUS, the below items are listed and explained.

```
PTL STATUS (1/25)
FIRMWARE: 05.01.08
SERIAL NUMBER: 12345
UNIT ID: 0 (MASTER)
```

First Page of the PTL Status Menu, use the up down keys to scroll though all the status fields.

```
SERIAL NUMBER: 12345
```

Serial number this controller has been set to.

```
UNIT ID: 0 (MASTER)
```

The ID this controller is set to: if 0 it is set as a MASTER, if 1 or higher then it is a SLAVE.

```
COMMS: WIRELESS-LINK
```

Communication link the controller is using to connect to the other controller(s). Either RF (wireless), Direct Link (Wired), Internet Mode or Streams Mode.

```
RF MODEM (AC): ON
```

The RF Modem is connected to the controller and working.
Note, this does NOT check the aerial connector, if this is faulty/defective then this cannot be checked other than with the TX RX LEDs on the controller. Both TX and RX must flash to indicated a wireless link is working.

```
RF CHANNEL: 3 99%
```

Link Channel number. Both Master, Slave and PTL-Remote (if used) MUST be the same channel. The power output % is also indicated.

```
RF LONGRANGE: OFF
```

The long range setting is only used when units placed further than 500m apart.

```
TIMEOUT (SEC): 5
```

See Page 4, Contact Timeout for explanation.

```
NTC/LDR: 0274/0563
```

For internal use only.

```
LID OPEN ALERT: ON
```

The lid open alarm can be switched off.
NOT RECOMENDED!

```
VOLTS: 13.5
```

Battery voltage as read by the controller.

```
BLUETOOTH: NA
```

If a Bluetooth Module is fitted this will indicate the status. When starting up it will show INIT, then ON. If not connected it will show N/A.

```
TILT DETECTION: OFF
```

Tilt sensor on or off. Recommend to leave on.

```
VEHICLE DTC: ON
```

Vehicle detector is connected to the controller and working. *See page 16.*

```
DTC LOW SPEED: 10
```

Vehicle Detector parameter, can be changed using UNIT Setting Sub-Menu. *See page 3.*

```
DTC HIGH SPEED: 80
```

Vehicle Detector parameter, can be changed using UNIT Setting Sub-Menu. *See page 3.*

```
DTC SENSITIVITY: 20
```

Vehicle Detector parameter, can be changed using UNIT Setting Sub-Menu. *See page 3..*

```
SHUTTLE TYPE: NORMAL
```

This can be changed using OPERATOR SETTINGS and Sub-Menu: Shuttle type.
Multiway, normally set to 2, i.e. 2 units connected.
Intersection, T-Junction. *See pages 7-12.*

```
PLANT TYPE: COPY-2
```

Normaly set to Copy-2. i.e. 2 units in total.
Can also be set to:
PEDESTRIAN MODE or RAMP LIGHTS MODE (future)

ASPECT: ON

Lights (LIGHTS) on or off. Used for testing, can be set using OPERATING SETTING Sub-Menu: Light Inhibit.

BEACON: ON

Rear Beacon lamp on or off. Can be set using OPERATING SETTING Sub-Menu: Beacon.
See Page 4 for explanation.

AUTO RETURN: OFF

Refer to Main PTL Manual.

TIME FORMAT: SECOND

See Page 4 for explanation.

DEMAND CYC (MIN) 3

In demand mode, it will introduce an artificial demand on all units after 3 minutes of inactivity to clear traffic in-case of inactivity of Vehicle sensor failure.

4G/GPS: ON

A Mobile 3G/4G module is fitted to this controller and active. *See page 24 for more details.*

PEDESTRIAN: ENABLE

See pageS 13-14 for more details.

INTERNET MODE: ON

See page 24 for more details.

STREAMS MODE: ON

Turning the Controller On

If the POWER light or LCD Display does not come on when the key-switch is turned to **ON:**

- Check that the controller connector is inserted properly.
- Check the fuse inside the Controller and on the battery fuse board.
- Check that the battery voltage is above 10.5 Volts.

Radio Wireless Link failure

If the radio wireless link fails regularly, try changing the Channel set on all Controllers, as some interference may be occurring on the operating channel. Power-cycle each unit after the Channel has been set correctly.
See also Contact Time Out Page xx for more details, changing this may also reduce link failure.

Vehicle Detector Failure

If a vehicle detector unit is attached but the Controller check fails:

- Cycle the power.
- Check all connections between the detection unit and the Controller.
- If the unit continues to fail, contact Data Signs.

The vehicle detector on each unit is scanned for correct operation every five minutes. If the vehicle detector does not respond due to a fault, the display panel on the Master Controller will display the following error message:

VEHICLE DETECTOR
SLAVE FAILURE.
CHECK UNIT...

It may be that the connector has come loose on the vehicle detector, or the unit is not working as expected.
Temporary fix: Use **AUTO mode** until the fault can be identified and resolved.

Lights Not Working *(See also LIGHT TEST - page 5)*

Check that the lights have not been inhibited from the PROGRAM Mode menu.
Check the connections on the controller or the lights.
Note: Multiple LED failures on any light will cause them to not light up. This is a Standards requirement.

If you need to ship the Controller or parts back to Data Signs for repair. Download the ***Product Service Request form*** from the ***Book a Service page*** on the Data Signs website: *www.datasigns.com.au*
Fill this out and include with any equipment being shipped back for repair.

Note: If shipping Controllers it is recommended to ship as a set. I.e. Master, Slave, Remote.

Light Programing and Diagnostics

To gain access to the Light LED boards, use the custom tool provided by Data Signs.

DO NOT OVER EXERT PRESSURE IN ORDER TO NOT DAMAGE THE PLASTIC LOCK MECHANISM!

Once opened you can see the electronics, STATUS LED and Program button.

WARNING, DO NOT ATTEMP TO USE THIS UNLESS ADVISED BY DATA SIGNS.

Below is a list of controls and functions of the STATUS LED and programming button.

PTL Light LED Status

LED status will be a simple 2 flash sequence, indicating mode and condition. Each flash will be on for 50 milliseconds and off for 950 milliseconds, totalling 1 HZ for each flash. If multiple conditions have been met, only the highest priority one will be shown. To change switch between modes, simply hold the button for 3 seconds, the LED will flash white for 1 seconds then reset into new mode.

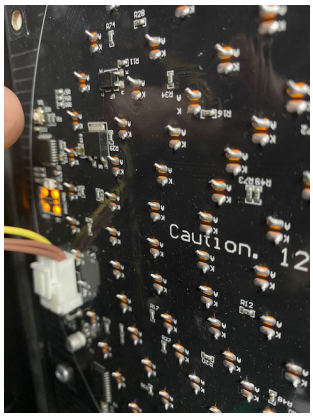
MODE	CONDITION (HIGHEST → LOWER)			
NORMAL	LED FAIL	LOW VOLT	LDR DIM	GOOD
AUTO DIM	LED FAIL	LOW VOLT	LDR DIM	GOOD
OVERRIDE	LED FAIL	LOW VOLT	LDR DIM	GOOD

Legend (MODE):

- NORMAL (green): Normal operation
- AUTO DIM (purple): Same as normal, except automatically set Light Detector DIM after 5 minutes
- OVERRIDE (blue): Same as normal, except ignore LED FAIL

Legend (CONDITION):

- LED FAIL (red): More than 20% of total LEDs have failed and Light is BLANKED out
- LOW VOLT (yellow): Light has detected voltage below 12V
- Light Detector DIM (aqua): Pre-set DIM Value*
- GOOD (same as mode): No error



*starts at 55%

DS-Live Interface:
A good mobile network signal is required for this mode (if your mobile phone works this is a good indication of suitability).
The DS-Live platform is a subscription based programming and control platform. If your PTL Controllers have been fitted with a Mobile network Module and Data Signs SIM card then this adds other options for your PTL units.

PTL Monitoring:
The PTL Master and Slave as a set can be monitored for operation and information such as mode, battery levels and GPS tracking showing current location (as shown on a map) .

ON/OFF Scheduling:
The PTL Lights can be programmed to operate for a set time during the day and shutdown when not needed.

RED/GREEN Phase time Scheduling:
This allows for scheduling of signal phase times for different times of the day, for example; peak traffic direction for one direction in the morning and the other direction in the evening.

DS-Live™ INTERNET Mode:

- This allows control for your lights from the DS-Live platform.
- Currently up to 2 units can be controlled with full programmable timing control.
- It allows use of the PTL units when line of sight limitations or conditions that prevent normal operation of the lights. For example; in hilly area or distances greater than what the RF link will provide.
- Note: All PTL units that are to be controlled from DS-Live must be fitted with a Mobile module and Data Signs SIM card and be subscribed the the DS-Live platform.

For use and instruction manual for this mode of operation refer to the DS-Live Platform

PTL STREAMS Mode (Future development)**:**
The PTL Controller can be connected via the RS-232 port (normally reserved for the Vehicle sensor) to a Streams control module.

When Active the Display will show: STREAMS CONTROL ACTIVE.
No further control is possible via the control panel in this mode.

The DataSign-PTL are designed and manufactured by Data Signs Pty Ltd to *Australian Standard AS 4191-2015 Portable traffic signal systems* plus options where fitted. Note: Some options may be in addition to the AS 4191-2015 Standards Specification and may not come under Type Approval.

Suggestions & Improvements

Data Signs develops its products with the end users in mind. As such, we are always open to suggestions for product improvement. Contact Data Signs, Head Office in Australia at: dsinfo@datasigns.com.au

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