

Temporary Traffic Signals

An OEM product for integration into a complete supplier solution



The XL-TSS temporary traffic signal control solution provides dual and multiphase traffic signal operation where traffic control is best served by a non-permanent installation. The traffic control sequence may be operated in either fixed time cyclic, operator controlled or vehicle actuated mode with minimum site setup and planning – perfect solution for short term applications.

A traffic phase is described as a single direction traffic movement with an associated red, yellow and green signal display. The basic XL-TSS temporary traffic system caters for two vehicle traffic phases however more complex traffic management solutions with additional vehicle phases can be achieved using the multiphase function or 'sync' mode.



A Traffic phase is 'attached' to a signal head controller. The main street traffic phase is always associated with the master signal head controller. The system has a single 'master' controller module and multiple 'slave' modules or 'intelligent signal head' modules. The signal head is a lantern control module which incorporates lamp control, lamp monitoring, conflict monitoring, cable or radio transceiver interconnection and other operational integrity functions. The master unit is located at the primary signal head. Slave modules are located at signal heads located throughout the traffic control zone. Typically up to three slave signal heads may be connected to a single master signal head with a fourth unit providing an optional selected phase signal redundancy. The number of signal heads is optimised for failsafe operational requirements associated with monitoring and responding to lamp failure or equipment failure with a safety mode within 1 second.



Each signal head module may operate in electrical isolation by utilising either battery or convenient AC line source power local to the signal head. The master and slave signal head modules may be interconnected by a cable based RS422 communication link or preferably a spread spectrum radio transceiver network. This configuration minimises the installation and removal time while providing a reliable and safe operational traffic signal control platform.



Applications

- Traffic control installations from 1 day to user determined period
- Work zone sites where traffic paths change due to roadwork and cable installation is not possible
- Event based traffic management requirements
- Wherever permanent signal installation is considered impractical due to either costs or changing physical site attributes

Critical Functional Attributes:

- Signal aspects: LED, QH and incandescent lamp compatible
- Lamp monitoring - both continual ON and failure to illuminate (response 1 sec.)
- Signal display conflict monitoring (response 1 sec.)
- Critical failsafe operation – Power supply, logic and radio integrity monitoring
- Radio response: 5 seconds no comms or 5 comms errors in a 20 minute period
- Safety Flash supply independent of Green Signal supply – RED or YELLOW
- Preselected STARTUP/SWITCH ON state – user selectable
- Safety flash RED or YELLOW - user selectable
- Interlocked power ON-OFF with integrity failsafe signals OFF
- All times user configurable – time shown below are default values
- Green time minimum typically 15 seconds
- Green time maximum 20-150 seconds
- Yellow timer 3-5 seconds
- All RED timer 2-100 seconds
- Multiple level password access control for configuration parameters
- Operational Status display: system integrity, radio communications, each signal head power supply status, each signal head lamp status, each signal head detector status,
- Simple easy to install by unskilled personnel
- Rugged construction easy to install and remove

XL-TSS Temporary Traffic Control Applications

Modes of Operation

- Cyclic fixed time operation
- Vehicle actuated operation
- Manual control – cycle step function
- Multi-phase synchronisation mode
- Safety Flash – user configurable to RED or YELLOW

Multi-phase synchronisation mode provides a traffic management solution for complex traffic management applications. For example during the ALL RED period on the primary signal system a secondary system can facilitate a ‘cross through’ green vehicle phase with full integrity monitoring.

XL-TSS Temporary Traffic Control Specifications

Electrical:	External Power Supply connection 12VDC Battery or 12VDC / Mains supply Maximum Lamp switching current – 4amps @ 12VDC Typical controller module current 0.4amps @ 12VDC RS422 Electrical signal level compatible, 2 pair full duplex configuration operation With optional Galvanic Isolation-1500V for 30 seconds (Galvanic isolation Optional)
Protocol:	Intermodule asynchronous communication
Speed:	Baud rate 9600 baud radio mode with fallback
Connectors:	MIL-SPEC connectors
Switches	ON-OFF push buttons Control panel is 100% weatherproof touch sensitive
Weight:	Typical module weight 5kgs
Size:	Typical module size: 32cms x 25cms x 8cms

Environmental Specification:

Circuitry is rated to 65°C operation with a relative humidity of 90%. Circuit cards are conformal coated and will operate within Australian Standard Guidelines for Traffic Control Devices as per TSC/3 and TSC/4. The CONFORMAL coating material used to protect the circuit cards is labelled SCC3 CC from Electrolube. The conformal coating material has a dielectric strength of 90KV/mm and an operational temperature range of –70°C to +200°C and is self extinguishing when exposed to a flame.