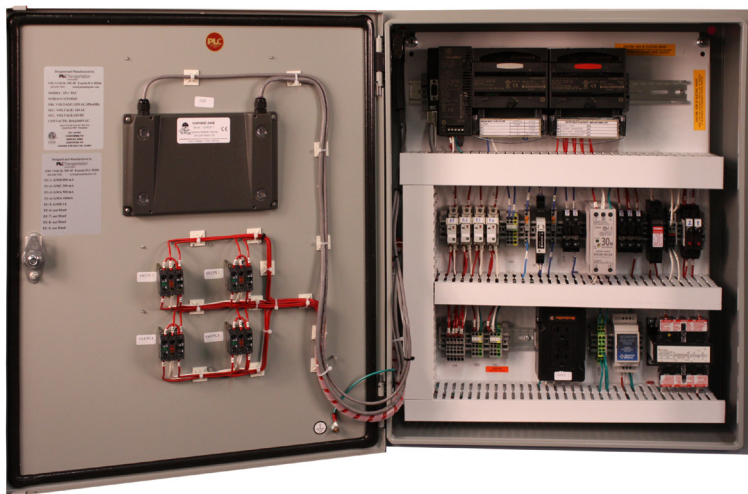


T51-4 SYSTEM

**ANALOG LED DIMMING
Tunnel Lighting Control System**

APPLICATIONS

- Bidirectional
- Short Tunnel Ramp
- Unidirectional
- Long Tunnel



DESCRIPTION

PLCTransportation's T51-4 system provides tunnel lighting control for long unidirectional and bidirectional lighting applications. The T51-4 system is a distributed I/O contactor based on an industrial microprocessor lighting controller, and is packaged with a lighting relays, fuses and power distribution in a NEMA rated enclosure.

The purpose of tunnel lighting controls is two fold. Safety, by providing vehicle drivers with sufficient visibility, so that they can avoid roadway hazards, especially in tunnel thresholds. Energy control, by illuminating the tunnel threshold to an appropriate lighting level proportional to sensed exterior light. The T51-4 controller can measure light at each portal with one of three PLC-Transportation 4-20mA sensors. Illuminance is detected by the MAS or TMAS, while luminance is sensed by the TLUM.

The system is cost-effective and easily-configurable. Six output channels can be programmed for night lighting control as well as five daytime light levels.

If you have any questions, please call us toll-free at 1-866-998-5483
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PROJECT	
LOCATION	

FEATURES

- Six Output Channels per direction for one night level and five day time levels for Long Tunnels or two daytime levels dual directions and one night level for Short Tunnels
- 0-10V LED dimming control
- Accumulated run time hours are logged
- Four adjustable timers for each level Ascending, Descending, Hold-On and Hold-Off
- Zero and span for sensor calibration using the built-in text keypad display
- 4-20mA input for PLC-Multipoint's MAS, TMAS and TLUM sensors
- 15A interposing relays for external contactor panels
- Programmable Configuration for optional Alternation sequence
- Separate Hi and Low setpoints form a deadband for more stability.
- Ethernet I/O for distributed system.

The 4-20mA signal to remote dimming enclosures and converts the signal to a voltage, resulting in 0V switching the LED light output off, 1V as minimum output and 10V as full output to control LED drivers. Hi/Low voltage trim (0-10V), Hi/Low output trim (0-100%). Hi/Low Setpoint value (0 - xx Fc) and Fade/Rise time is 0 - 60 seconds. Optional alternation sequence of lights and night/day crossover method can be configure providing a long life span on tunnel fixtures. RDE-1 or RDE-4 provide 0-100V dimming control of LED driver. See RDE data-sheet for more details of the remote dimming enclosure.

The T51-4 power and control component have been designed for tunnel Light Emitting Diode (LED) loads. The T51-4's architecture seonsor 4-20mA signals to remote dimming enclosure for multiple channels of controls allowing the system to be distributed in the tunnel. NEMA 3R,4X, or 12 enclosures are available. The system is pre-wired and tested to UL508A (CAN/CSA C22.2 NO.14-M91) requirements for Industrial Control Systems. Control power is 120VAC. Other voltages are available.

TECHNICAL DATA - T51-4 SYSTEM

Input Voltage: 120 VAC, (Additional Transformer 480/277 VAC)
 Output Switching: 15 Amp Electrically Held Relay
 Hardware Failsafe: Normally Closed Contactor

Controller: T51 Controller
 Power Failure Backup: Flash Memory
 Program Update: EZ-Store
 Input Controller Power: 24VDC
 Adjustment Interface: Text membrane keypad
 Operator Display: 2 line LCD text display
 Set points Adjustment: High and Low with adjustable deadband
 Output Level Control: Manual On, Off or Auto
 Auto Control Modes: RUN: Photo, timing, crossover, alternation or combinations:
 TEST: Photo setpoint control with no timing
 PROGRAM: Data Entry of setpoints, timing and operational values

HilLow Voltage Trim: 0-100
 HilLow Output Trim: 0-100%
 HilLow Setpoint Value: 0-xx Footcandle (Cd/m²)
 Fade/Rise Time: 0-60 seconds

Illuminance Sensor: PLC-Multipoint MAS or TMAS (separate datasheet)
 Luminance Sensor: PLC-Multipoint TLUM sensor (separate datasheet)
 Signal Input: 4-20mA with 24VDC compliance
 Sensor Calibration: Zero & Span configuration
 Heater: Thermostatically controlled with fan
 Front Door Operators: Local Hand - Off - Auto switch with LED pilot light

Enclosure: NEMA - 3R, 4X and 12 Surface Mount Enclosure
 Dimensions: 20"H x 20"W x 8"D Typical
 Temperature Range: 32° to 140°F (0° to 40°C)
 Remote I/O: Contactor output, Auxiliary and Switch input
 Remote Dimming Enclosure: PLC-Multipoint RDE-1 and RDE-4 (separate datasheet)
 Signal: 4-20mA
 Distance: Up to 2000ft loop
 Certification: UL 508A (CAN/CSA C22.2.0014-M91)

ONE-LINE BLOCK DIAGRAM

