PLC Transportation Control Systems

Data Sheet

T Series *Transportation*

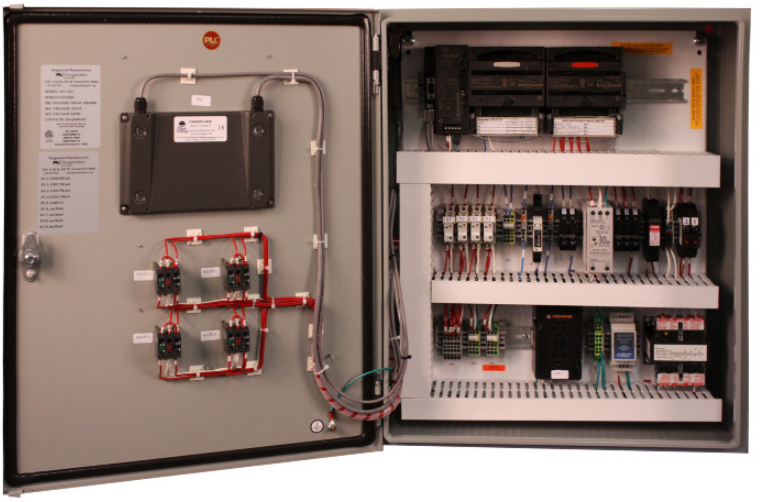
T51-1 SYSTEM

STAND ALONE MICROPROCESSOR
Tunnel Lighting Control System

PROJECT	
LOCATION	

APPLICATIONS

- *Bidirectional*
- *Short Tunnel Ramp*
- *Unidirectional*
- *Long Tunnel*



FEATURES

- *6 Output Channels 1 night and 5 daytime levels per direction*
- *4-20mA signal input MAS, TMAS and TLUM sensors*
- *Hand/Off/Auto Selector switch for each contactor*
- *15A Interposing Relays*
- *Weatherproof 2 Line LCD with membrane keypad*
- *Configure Setpoints, Timing, and Sensor Calibration*
- *Control Outputs, Operating Mode*
- *Monitor light sensor, control output, contactor status*
- *Optional Alternation sequence and time clock schedule*

DESCRIPTION

PLCTransportation's T51-1 system provides tunnel lighting control for long unidirectional and bidirectional lighting applications. The T51-1 system is a stand alone 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 T51-1 controller can measure light at each portal with one of three PLCTransportation 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.

All levels have separate On and Off setpoints. Each channel has an adjustable ascending and descending input time delay (0-99 min) to filter lightning strikes and fast moving clouds. Hold-On timers, (0-240 min) keep the output on for a minimum time to prevent short cycling of HID fixtures. Hold-Off timers, (0-99 min) allow fixtures to cool off before restriking. Optional alternation sequence of lights and night/day crossover method can be configure providing a long life span on tunnel fixtures.

The T51-1 system can handle controlling any light sources such as Fluorescent (FL), Low Pressure Sodium (LPS), High Pressure Sodium (HPS), Metal Halide (MH) and Light Emitting Diode (LED). The T51-1 architecture assembly is very simple, it's housed in a NEMA 3R, 4X or 12 enclosure depending on the location. The system is pre-wired and tested to UL508A (CAN/CSA C22.2.0014-M91) requirements for industrial control equipment. Incoming 120 VAC powers the system. Other source of power can be converted down by providing an additional transformer inside the system.

If you have any questions, please call us toll-free at 1-866-998-5483
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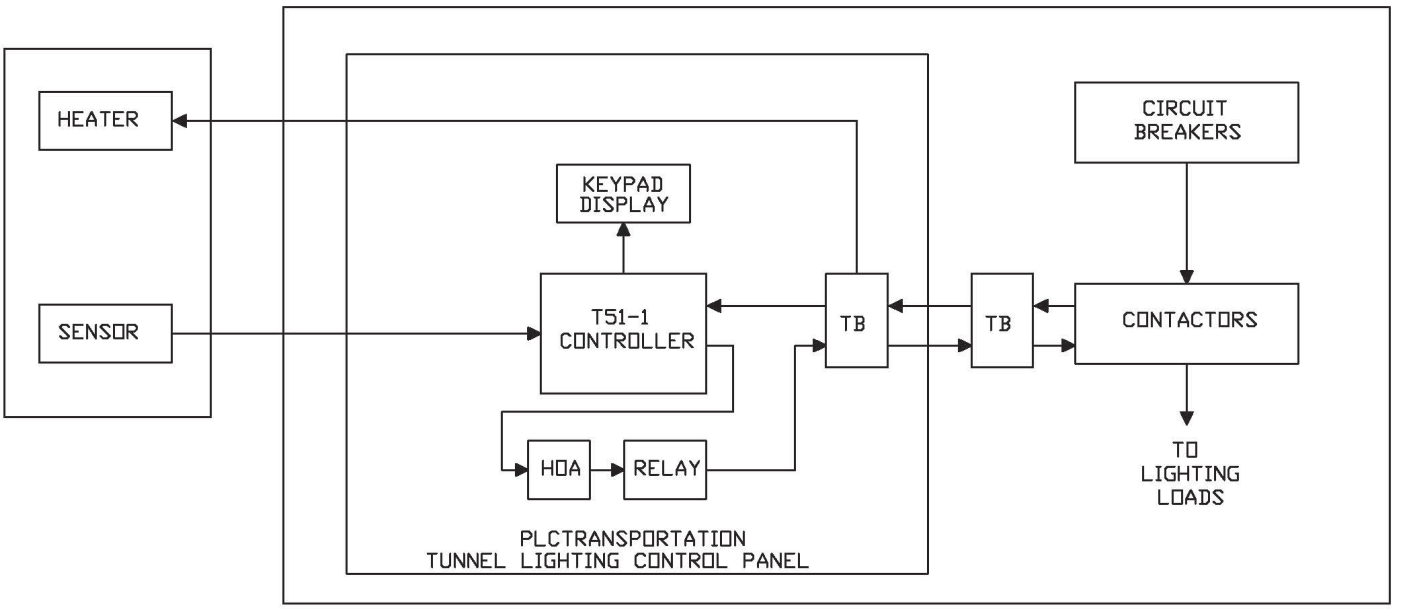
TECHNICAL DATA - T51-1 SYSTEM

Input Voltage:	*120 VAC, (Additional Transformer 480/277 VAC)*
Output Switching:	*20 Amp Electrically Held Relay*
Hardware Failsafe:	*N.C. Contactor*
Controller:	*T51 Controller*
Power Failure Backup:	*Flash Memory*
Program Update:	*Editor*
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*
Input Delay Timer:	*0-99 minutes ascending and descending*
Hold-ON-Timer:	*0-240 minutes interval*
Hold-OFF-Timer:	*0-99 minutes cool down*
Day & Night Crossover:	*0-10 minutes*
Simulator:	*Force Constant using keypad*
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 - 1 Enclosure*
Dimensions:	*20"H x 20"W x 8"D Typical*
Temperature Range:	*32° to 140°F (0° to 40°C)*
Communications:	*NA*
Certification:	*UL 508A (CAN/CSA C22.2.0014-M91)*

ONE-LINE BLOCK DIAGRAM



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