



SOLAR TRAFFIC CONTROLS

“Wireless” Traffic Control Solutions

Warehouse / Industrial Traffic Controller

Model 80ITSWHTC-2uW-S080019

Approach Only Sensors and Time Of Day Priority, Rev. 1.0, 03/26/08

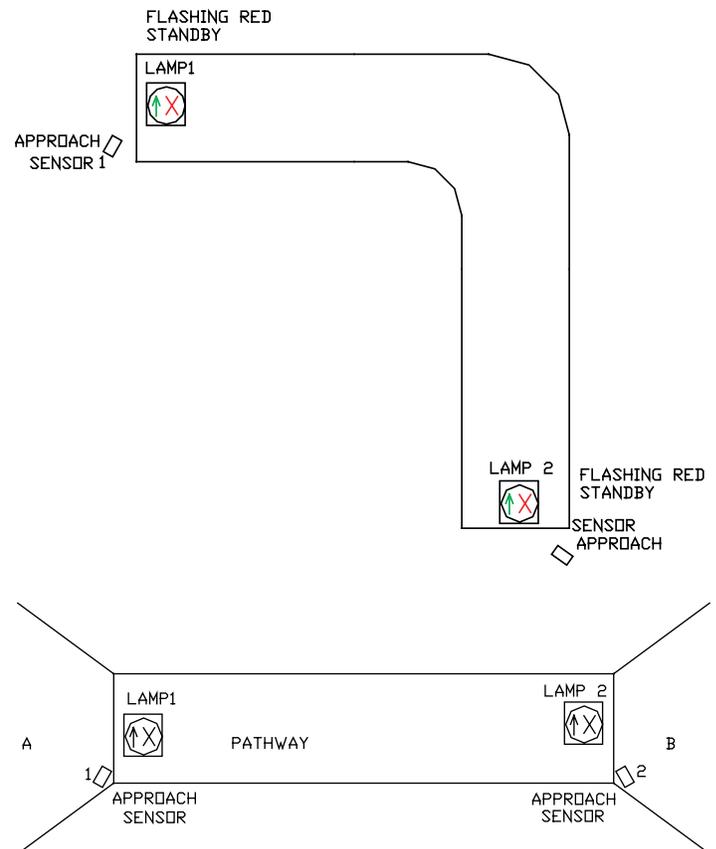
General

This version of the STC Industrial Traffic Controller is designed to increase safety for users in single lane traffic control situations where pathways are relatively short but feature a blind spot. Typical applications are underground parking garages, either at the main entry or between levels. The system consists of 2 directional microwave detectors, the control unit with Time Of Day (TOD) priority function and 2 red/green traffic indicators located at each end of single lane path. Figure 1 shows a diagram of the system set up on a single lane path.

Theory of Operation

This system is sensor activated. The sensors are configured as directional sensing devices at each end of the single lane path. Sensor 1 is located at one end of the tunnel (side 1) and arranged as approach-only detector to sense vehicles approaching the entry point. Sensor 2 is located at the other end of the tunnel (side 2) and is configured as an approach-only detector.

Under normal conditions the red lamps at each end of the single lane path will be in the red flash mode in an effort to have vehicles slow to a stop before proceeding into the pathway. Assuming a vehicle approaches from the side 1, sensor 1, an approach detector, will sense the vehicle and trigger the system. The lamps then change from a flashing state to a red solid at Lamp 2 (L2) and green indication at Lamp 1 (L1) thus allowing traffic into the path through side 1. Side 1 will remain in the green mode for a preset amount of time after the detection, which is referred to as the IN TIMER 1 (field adjustable variable, IN1 TMR) and set to a default value of 5 seconds. This value allows multiple vehicles to travel into the path after the first one is detected. At the end of the IN TIMER 1 period both lamps will change to the red solid state. Inputs from sensors 1 and 2 are ignored at this point.



Figures 1 and 2: Typical single lane applications with approach-only sensors

As vehicles travel from side 1 to 2 a RED CLEAR timer is counting up (field adjustable value, 10 seconds default, programmed in fractions of a minute, RED CLR). During this time vehicles in the path

must clear the pathway at point 2. If the RED CLEAR value reaches its maximum, the system will reset and return to the red flash state with both approach sensors inputs available. The logic behind travel from 1 to 2 is that the vehicles in the pathway will not stop or slow down since they were given the right of way by the controller.

Vehicles traveling from side 2 to side 1 will cause the system to function as described above except that the L2 will go green and sensor 2 will drive the controller functions. Entry time to the path from side 2 is controlled by IN TIMER 3 (IN TMR 3) and is factory default to 3 seconds.

This unit is equipped with the special Time Of Day (TOD) priority function. TOD priority allows the user to program the signals to grant transit preference from either side 1 or side 2 based on the time of day and day of the week. This function is used to speed transit through the signals in applications such as parking garages or single lane bridges when there is heavy traffic in one direction during certain times of the day. TOD allows the user to program up to three periods per day where entry or exit right of way is granted from a particular direction. Assuming a garage application and that side 1 is the street level and side 2 is in the garage. During morning hours most vehicles will be entering the garage so the TOD function places L1 in green standby and L2 in red flash. Sensor 1 is ignored and only S2 is enabled. If a vehicle needs to exit the garage during this period the car pulls up within range of sensor 2 thus triggering the system. L1 and L2 both go to solid red to allow any cars that entered from side 1 to clear the path. The lamps remain in red solid for the RED CLR time period after which the L2 goes green for the IN TIMER 3 period and the path closes again with solid red on both lamps. The lamps are held in red solid for the RED CLR time and then revert back to the TOD operation with L1 in green solid and L2 in red flash.

Operation for the TOD is controlled by the 2 control blocks ENTRY TM and EXIT TM. These allow the user to set the time of day by entering the start and stop times for the function. In addition the user can set the function to work only on certain days of the week. The TOD function also includes 10 holiday skip periods. These holiday skip periods allow a holiday skip period to last from one day to several months thus making this advantageous for school applications where there may be extended breaks.

Time of Day Operation Settings

Time of Day priority function allows the user to set timed operation of the system to facilitate the flow of traffic in and out of an area by setting a steady state green arrow in one direction for some portion of the daily operation. This is a convenient feature for applications such as parking garages where most traffic flow will be into the building in the morning and out of the building in the afternoon. If you have the optional Time of Day (TOD) priority function in your software you will need to set the real time clock in the Logic Control Module (LCM) for the correct time, day and date. You will also need to set the entry and exit TOD values including the days of the week that the feature is active. The software also allows up to 10 holiday skip periods of one day to several months in the event that the TOD priority function is not needed such as Christmas or New Year's day due to business closures.

Solar Traffic Controls, LLC • 1930 East Third Street, Suite 21 • Tempe, Arizona 85281-2929 USA
Phone: 480.449.0222 • Fax: 480.449.9367
Email: info@solar-traffic-controls.com • Website: www.solar-traffic-controls.com