SOLAR TRAFFIC CONTROLS

"Wireless" Traffic Control Solutions

Warehouse / Industrial Traffic Controller

Model 80ITSWHTC-4uW-SO 60010

Approach-Only Microwave Sensors, Rev. 3.0, 05/25/06, Software: WHTC-4Uw-SO60010-B

General

This system is designed to increase safety for users in single lane traffic control situations where basic traffic control is required in private/industrial facilities such as baggage/freight handling facilities, warehouses or mining locations where a restriction exists that limits two-way traffic. The system consists of four directional microwave detectors, the control unit and two 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.

Figure 1: Typical single lane application with approach only sensors

Theory of Operation

This system is sensor activated. The sensors are configured as directional sensing devices at each end of the single lane path. Sensors 1 and 4 are at one end of the tunnel (A side) and arranged as approach-only detectors. Sensors 2 and 3 are located at the other end of the tunnel (B side) and are configured as approach-only detectors.

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 A side, 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 B and green indication at A thus allowing traffic into the path through the A side. Side A 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 10 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. Sensors 1 and 3 inputs are ignored at this point.

As vehicles travel from side A to B a RED CLEAR timer is counting up (field adjustable value, 1.5 minutes default, programmed in fractions of a minute, RED CLR). During this time vehicles in the path must clear the pathway at point B. 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 A to B is that the vehicles in the pathway will not stop or slow down since they were given the right of way by the controller. Upon exiting at B, sensor 2 will detect the vehicle approaching the end of the pathway. Both lamps remain in a red solid state but an EXIT TIMER is started. This timer holds the system in solid red until it times out and resets the system thereby returning it to red flash. The EXIT TIMER is field programmable and should not be set to less than half the IN TIMER 1 value since some time for multiple vehicles to clear the pathway after the first one is detected approaching point B is required prior to returning to red flash. The exit timer for travel from A to B is XT2 TMR and is preset to a value of 6 seconds.

Vehicles traveling from side B to side A will cause the system to function as described above except that the lamp at B will go green and sensors 3 and 4 will drive the controller functions.

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