

Theory of Operation

Module : T180AC

Description: AC power motion sensing transmitter with PAR lamp fixture.

T180AC, is a motion sensing transmitter light fixture. It is powered by 120VAC, 60 HZ and can be wall mount or eve mount and is rated for outdoor use only. The module consists of a passive infra-red motion detector, control circuit, relay to switch on the PAR fixture connected to the transmitter, encoder and 315 MHz SAW resonator and utilizes a 22 AWG wire antenna, 245mm in length. The detector has 4 modes of operation: test, auto-4 minutes, auto-12 minutes and manual override; and one sensitivity adjustment for motion detection and one house code selection.

The detector also has a built-in photo sensor with dual functions; first is to disable motion detection in auto mode or manual override mode during the day. Secondly, switch the fixture out of manual override at a higher light level.

During test mode, if motion is detected, it will turn on its PAR fixture and also send an encoded RF signal, "ON" command, with carrier frequency of 315MHz to the receiver. The internal timer will time out in 8 seconds after motion ceased. It will then turn off its PAR fixture and send an encoded RF signal, "OFF" command to the receiver.

Auto 4 minutes and Auto 12 minutes work the same as test mode except the photo circuit will disable motion detection during the day and the internal timer is either 4 minutes or 12 minutes, depending on the settings, instead of 8 seconds in the test mode.

Manual override. During Auto-4 and Auto-12 at night, cutting power off-on-off-on within 2 seconds to the transmitter fixture will force the fixture engaged into manual override mode. The PAR fixture will turn on and stay on until the photo sensing circuit has detected a higher level of ambient light or the same power interruption off-on-off-on occurred in the input. However, the same power interruption off-on-off-on within 3 seconds in test mode will keep the fixture stay on no matter what the day light level is. The transmitter will send "ON" command and "OFF" command to the receiver based on the status of the PAR lamp fixture.