

## GENERAL DESCRIPTION

### TWILIGHT SENTINEL

The Twilight Sentinel (available as optional equipment) is a semi-automatic electronic device that can automatically control the on-off operation of the headlights, taillights, and instrument lights of the car on which it is installed. A time delay turn-off control permits the car lights to remain on if desired, for a pre-selected period of time after the ignition switch is turned off. The complete system consists of three units: a photocell unit, an amplifier unit, and a variable time delay turnoff and master on-off control, Fig. 15-40.

The photocell unit, the light sensing device, is mounted with the sensing surface facing upward so it is exposed to direct outside light through the windshield. Mounting location, on cars equipped with stereo, is on the underside of the small speaker grille in the left end of the upper instrument panel cover. Mounting location, on cars without stereo, is on the underside of the regular front speaker grille in the upper instrument panel, Fig. 15-40. Light strikes the sensing surface through an opening in the speaker grille. The internal resistance of the photocell varies according to amount of light striking the sensing surface. As the amount of light is reduced, the internal resistance of the photocell increases until finally it actuates the amplifier to turn the lights on.

The amplifier unit, which consists of a transistor amplifier, sensitive relay, power relay, and transistor turn-off time delay, switches the car lights on or off in response to signals from the photocell. The amplifier is located just to the left of the glove box opening. A serial number label, Fig. 0-1, is attached to the underside of the unit.

The time delay turn-off control ring, Fig. 15-41, is located directly behind and is concentric with the standard headlight switch knob. This ring controls the time delay turn-off feature and also operates the manual-automatic switch. The electrical circuit for the Twilight Sentinel is shown in Fig. 15-42.

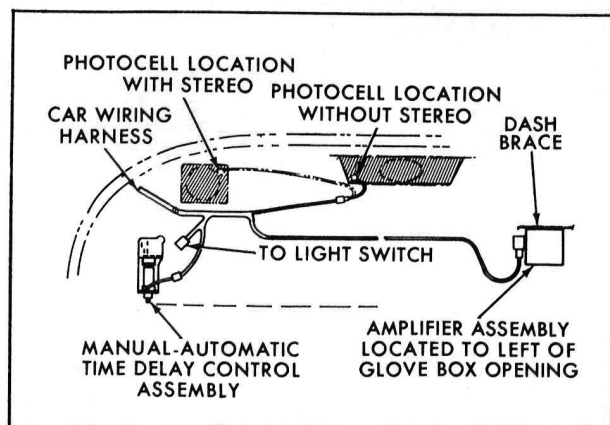


Fig. 15-40 Twilight Sentinel Components

### Operation—Automatic

With the time delay turn-off control ring pointer in ON position (anywhere counterclockwise of OFF), ignition switch turned on, and headlight switch off, the Twilight Sentinel provides completely automatic on-off operation of the car lights. As daylight reduces to the point where lights are needed for illumination, the Twilight Sentinel will automatically turn the car lights on.

The time delay circuit in the amplifier, which reduces the possibility of lights turning on when passing under viaducts or trees, or turning off when passing under bright lights, has a nominal fifteen to thirty second delay. In some sets the maximum time delay could be as high as sixty seconds.

The variable time delay turn-off control permits the car lights to remain on for a pre-selected period after the ignition is turned off. The driver may choose any delay period from two or three seconds to a maximum of one to three minutes by rotating the control ring pointer to the desired position. Additional side lighting can be obtained by turning on a cornering light.

### Operation—Manual

If the driver desires to turn on his car lights at any time, which may be necessary to identify the car in such conditions as fog, rain or when driving through a tunnel, he may do so by operating the regular light switch. This overrides the Twilight Sentinel, and the regular light switch must be turned off before the Twilight Sentinel can regain control.

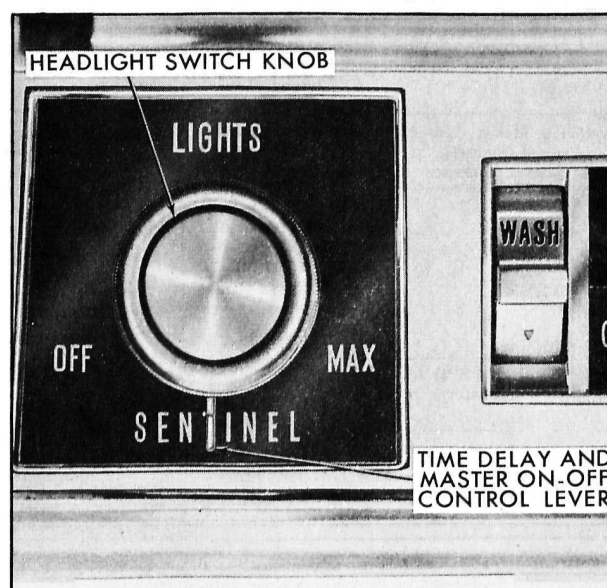


Fig. 15-41 Twilight Sentinel Control Lever

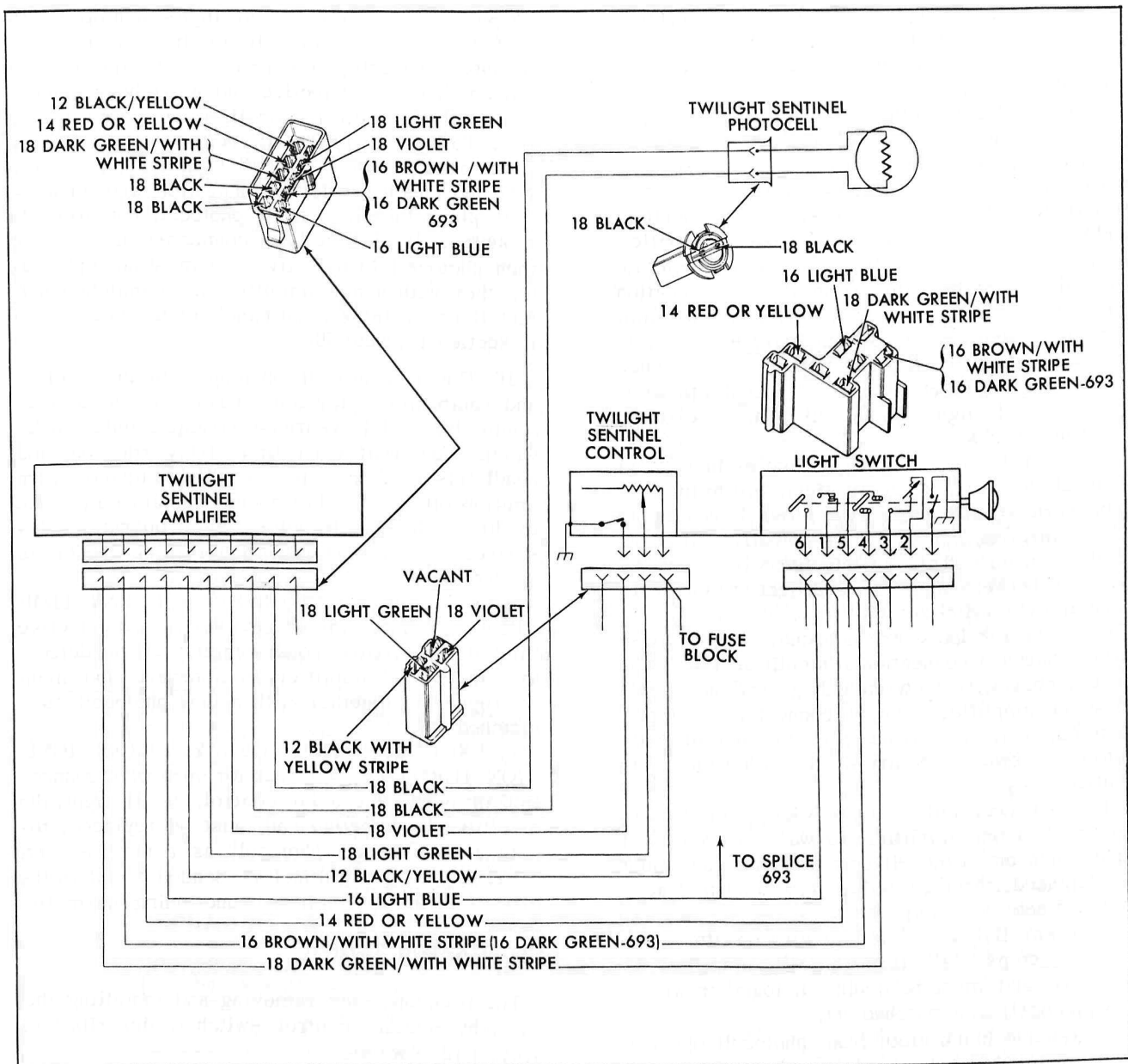


Fig. 15-42 Twilight Sentinel Circuit Diagram

To obtain manual operation of the car lights, place time delay turn-off control pointer in OFF

position (extreme clockwise position). Lights will now operate only by the regular light switch.

## SERVICE INFORMATION

### 37. Preliminary Checks

If trouble is reported, the condition will generally be one of the following:

- Lights turn on too early or too late in the evening.
- Lights remain on during daytime driving.
- Lights fail to turn on automatically.
- No turn-off time delay.
- Excessive turn-off time delay or lights fail to turn off after ignition is turned off.

The following checks should be performed in sequence during diagnosis to determine the cause

and correction and to eliminate unnecessary service work.

- Check time delay control ring pointer for possibility of being rotated to "off position."
- Make sure owner is not covering photocell opening with some object such as notebook cigarette package or hat.
- If photocell is suddenly exposed to light or darkness, the time delay must run out (15 to 60 seconds) before amplifier can switch.
- Make sure owner is operating unit with regular light switch turned off.
- Check taillight fuse for possible burnout.