

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the General Electric Company.

3S7505GP105

PHOTOELECTRIC RELAY

INTRODUCTION

The 3S7505GP105 relay is a light sensitive electronic control device. It consists of a light sensitive cell a small relay and associated components, and a lens system, all mounted in a small case. A separate light source and transformer (933B262) are required.

The device requires $57\frac{1}{2}$ volts a-c power. This is supplied from transformer 933B262 which supplies the light source. The output is a single pole double throw relay. This relay is expected to have a life in excess of 100,000 operations with a 5 ampere, 115 volt a-c resistive load. At 1 amp, 115 volt a-c resistive load the expected life is 1,000,000 operations.

RECEIVING, HANDLING, AND STORAGE

Immediately upon receipt, the device should be carefully unpacked and examined for any damage sustained in transit. If injury or rough handling is evident, a damage claim should be filed immediately with the transportation company and the nearest General Electric Sales Office should be notified promptly. If the device is not to be used as soon as received, it should be stored in a clean dry place and protected from accidental damage. Care should be exercised to avoid storing units in locations where construction work is in progress.

INSTALLATION AND ADJUSTMENTS

The 3S7505GP105 relay should be solidly mounted on a vibration free structure. It may be mounted using the bracket provided or on rigid conduit. The light source should be mounted at the same time.

The distance between the light source and the relay should not exceed the maximum ratings given in the following table:

TABLE 1

Relay	Light Source	Max. Operating Distance	Voltage On Light Source	Min. Light Level at Relay Lens
3S7505GP105A1 ($1\frac{1}{2}$ " lens)	CR7505C201G2 ($1\frac{1}{2}$ " lens)	6 feet	4.8 V	25 ft. candles
3S7505GP105A2 (3" lens)	CR7505C203G2 (3" lens)	50 feet	4.8 V	3 ft. candles

The light beam from the light source should be aimed at the 3S7505GP105 relay, focussed, and adjusted so that it completely covers the lens. The back cover of the 3S7505GP105 should be removed and the case positioned so that the light beam passes through the aperture and completely covers the photo cell.

CAUTION: THIS IS IMPORTANT! FAILURE OF THE LIGHT BEAM TO COMPLETELY COVER THE CELL CAN RESULT IN BURNOUT OF THE CELL.

The aperture plate is provided to prevent stray light (which the lens will tend to focus on the plate) from reaching the photo cell. However, care should be taken to avoid aiming the -GP105 at other strong sources of light such as windows, light fixtures, etc. When the relay has been energized by a light beam, the light must then be reduced to a very low level before the relay will drop out. This requires that stray light from other sources be reduced to a minimum.

If stray light is a serious problem, a possible solution is to mask the edge of the relay to reduce the light gathering power of the lens. At the same time, the light source may have to be connected to a higher tap of the transformer.

Conversely, if stray light is not a problem, or if operating over short distances, it may be desirable to operate the lamp from a lower voltage tap of the transformer to provide longer lamp life. This may be checked by cutting off approximately $\frac{1}{2}$ of the light beam at the lens of the light source. If the output relay will still pick up with $\frac{1}{2}$ the light cut off, the lamp voltage may be safely reduced to the next lower tap.

The speed of operation of the relay is partly dependent on the amount of light allowed to fall on the photo cell. Increasing the amount of light, shortens the pickup time. The dropout time of the relay is not materially changed by light level.

MAINTENANCE

To prevent shutdowns, a regularly scheduled program of preventive maintenance should be carried out.

The following operations should be performed at least once every month:

1. Dust the lenses with a clean soft cloth.
2. Check the line-up between the light source and photocell holders.
3. Occasionally check the adjustments as outlined under "Installation and Adjustments".

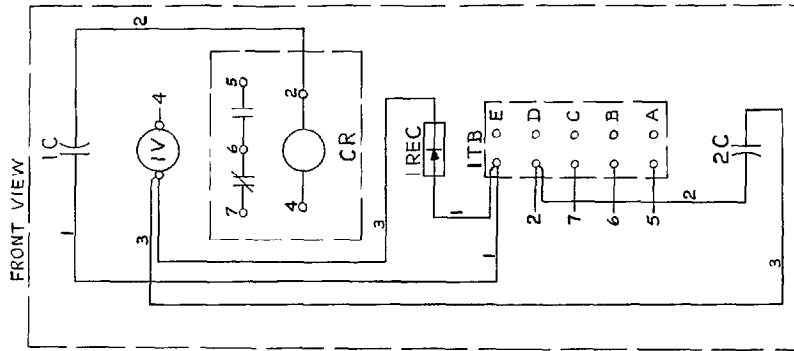
To prevent the possibility of a prolonged shutdown as the result of a photocell or lamp failure, it is recommended that spare cells and light source lamps always be kept on hand. To minimize shutdown caused by failure of light source lamps, the lamps can be replaced before their expected end of life. The lamps have an expected life of about 3500 hours when operated at 4.5 volts. Replacement lamps and photocells may be ordered from the nearest Sales Office of the General Electric Company.

RENEWAL PARTS

When ordering renewal parts, address the nearest General Electric Sales Office, specify the quantity required, and give the ratings and catalog numbers or describe the required parts in detail. In addition, give the 3S or CR number and the complete nameplate rating of the equipment.

PRINCIPAL RENEWAL PARTS LIST
FOR
3S7505GP105

DIAGRAM SYMBOL	QUANTITY	CATALOG NUMBER	DESCRIPTION
CR	1	124A1860	Relay
1 REC	1	1N1695	Rectifier
1C	1	K-8277646-G22	Capacitor
2C	1	K-9774721-J40	Capacitor
1V	1	7163	Photocell
	1	K-9385290-P1	Lens Barrel
	2	K-9381478	Lens
	2	M-9605846-P33C	Lens Retaining Ring



WIRE TABLE

USE M9729494P/G/B

CIRCUIT	CONNECTS
2	CR, ITB(D)
4	CR, IV
5	CR, ITB(A)
6	CR, ITB(B)
7	CR, ITB(C)

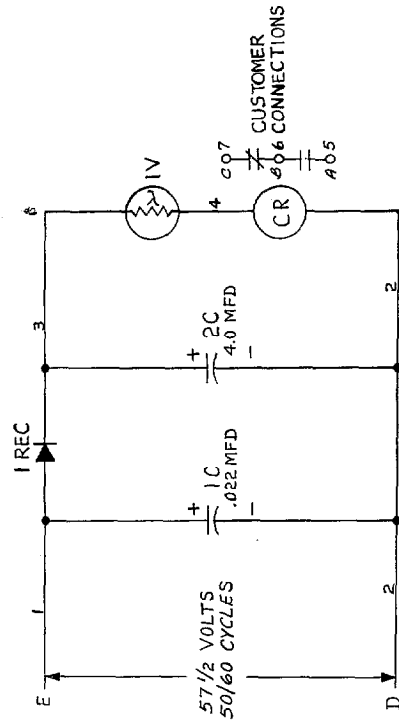
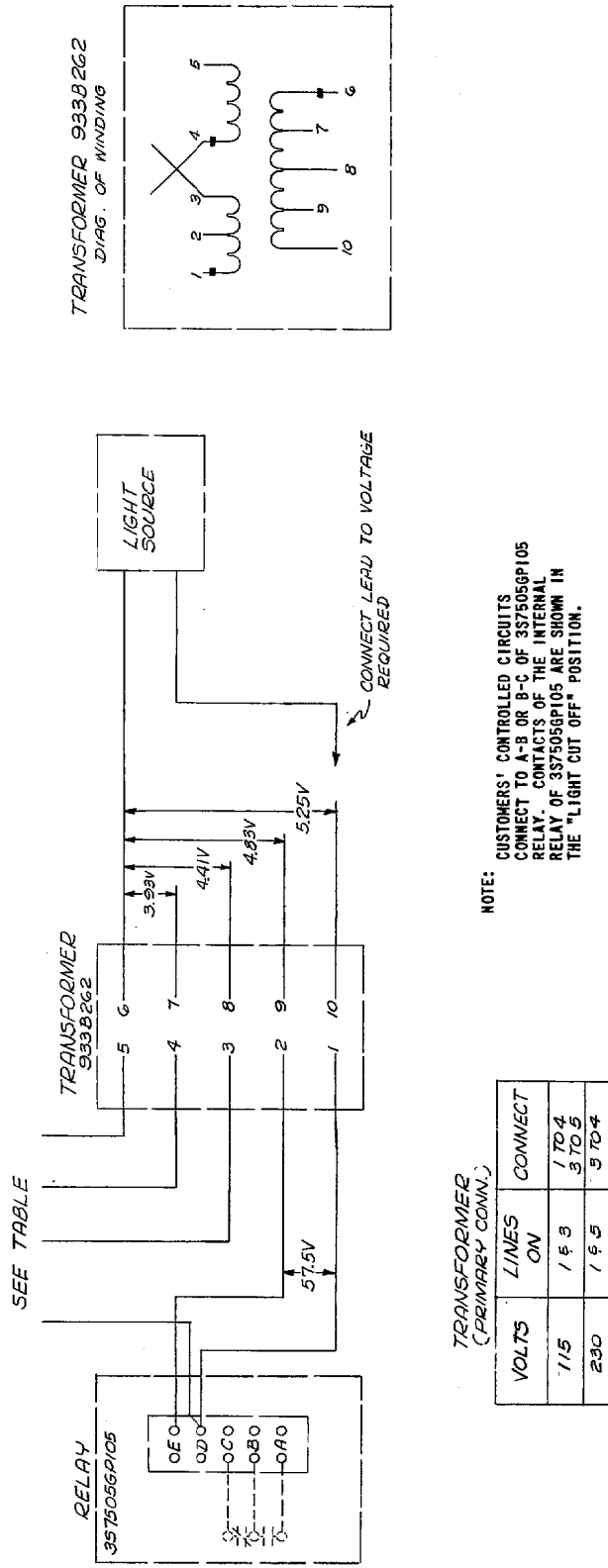
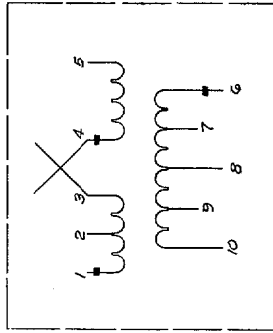


Figure 1 Connection Diagram for 3S7505GP105 Photoelectric Relay (sheet 1) 102B3766



TRANSFORMER 933B2G2
DIAG. OF WINDING



TRANSFORMER (PRIMARY CONN.)

VOLTS	LINES ON	CONNECT
115	1 5 3	1 TO 4 3 TO 5
230	1 5 5	3 TO 4

Figure 2 Connection Diagram for 3S7505GP105 Photoelectric Relay (sheet 2) 102B3766

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