

POSITION LIGHT FLASHERS: SINGLE-CIRCUIT
(Personal Aircraft Types)

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1. PURPOSE: To specify minimum requirements for aircraft position light flashers operating in a single circuit.

2. SCOPE: This specification covers three types of position light flashers:

Type I - For nominal 24 volt d.c. systems.

Type II - For nominal 12 volt d.c. systems.

Type III - For nominal 6 volt d.c. systems.

3. GENERAL REQUIREMENTS:

3.1 Materials and Workmanship:

3.1.1 Materials: Materials shall be of a quality which experience and/or tests have demonstrated to be suitable and dependable for the purpose intended.

3.1.2 Workmanship: Workmanship shall be consistent with high-grade aircraft electrical equipment practice.

3.2 Identification:

3.2.1 Nameplate: The following information shall be legibly and permanently marked on the unit or attached thereto:

- (a) Name of unit (Position Light Flasher)
- (b) SAE Specification AS 273
- (c) Nominal operating voltage - volts.
- (d) Maximum lamp load contact rating - amps.
- (e) Load resistance range - ohms (where applicable, see sub-section 4.3).
- (f) Manufacturer's part number.
- (g) Manufacturer's serial number or date of manufacture.
- (h) Manufacturer's name and/or trademark.

3.2.2 Wiring Diagram: An internal schematic wiring of the flasher shall be legibly marked on the unit or attached thereto.

3.3 Environmental Conditions:

3.3.1 Temperature: The unit shall function and not be adversely affected by operation in an ambient temperature of -20°F. to $+140^{\circ}\text{F.}$

3.3.2 Humidity: The unit shall operate and not be adversely affected when exposed to a relative humidity up to and including 95% at a temperature of approximately 90°F.

3.3.3 Altitude: The unit shall operate and not be adversely affected when subjected to a pressure range equivalent to -1000 feet to +15000 feet standard altitude.

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3.3.4 Vibration: The unit shall function and not be adversely affected by vibration of the aircraft engine or of the structure where the unit is mounted.

4. DETAIL REQUIREMENTS:

4.1 Input Voltage: The flasher shall perform within the accuracy limits specified in sub-section 4.2, over the following input voltage ranges:

Type I - 22 to 28.5 volts d.c.

Type II - 11 to 14.5 volts d.c.

Type III - 5.5 to 7.25 volts d.c.

4.2 Flashing Cycle and Accuracy Limits: Under all conditions outlined herein, the flashing cycle shall be repeated at a rate of not less than 60 cycles per minute, and not greater than 120 cycles per minute. The time ratio of the "on" interval to the "off" interval shall be between 2:1 and 1:1, within each flashing cycle.

4.3 Load Resistance: If the external load resistance must be confined within a specified range in order that the flasher conform to the requirements of sub-sections 4.1 and 4.2, the load resistance range (at nominal operating voltage) shall be stated on the manufacturers nameplate.

4.4 Load-current Contact Rating: The flasher load-current contacts shall be capable of operating lamp loads having total values as follows:

Type I flasher - 3 amps.

Type II flasher - 6 amps.

Type III flasher - 12 amps.

The contacts shall satisfactorily handle the inrush currents of the position lights they are intended to flash.

4.5 Bulb Failure: The design of the flasher shall be such that should one lamp burn out the remaining lights will not be rendered inoperative.

4.6 Life: The flasher shall operate 250 hours with no adjustment or replacement of parts and shall operate 500 hours with no repair other than the replacement of the load circuit contacts.

4.7 Dielectric: The unit shall not be affected by the application of 500 volts r.m.s. at 60 cycles for a period of 1 minute between any current carrying parts and ground.

Prepared by Subcommittee A-2L, Lights & Lighting



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