

# Federal Aviation Agency



<b>AC NO :</b> AC 150/5345-35
AIRPORTS
<b>EFFECTIVE :</b>
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**SUBJECT :** SPECIFICATION FOR L-816 CIRCUIT SELECTOR CABINET ASSEMBLY FOR  
600 VOLT SERIES CIRCUITS

1. PURPOSE. This circular describes the subject specification requirements and is published by the Federal Aviation Agency for the guidance of the public, and its use is required for project activity under the Federal-aid Airport Program.
2. CANCELLATION. This advisory circular replaces Federal Aviation Agency Specification L-816, Circuit Selector Cabinet Assembly for 600 Volt Series Circuits, dated September 3, 1962, without substantive change.
3. SCOPE OF SPECIFICATION. The specification requirements are for a circuit selector assembly cabinet for use with a remotely controlled constant current regulator up to 4 KW having a 6.6 ampere secondary. The circuit selector shall be designed for remote control and shall operate to select a single runway circuit. The assembly shall consist of one or three air-break relays, one or three series disconnects and wiring terminals mounted in a metal cabinet.
4. MATERIAL AND WORKMANSHIP. All components and materials shall be of industrial quality or better. Workmanship shall be in accordance with high grade commercial practice.
5. SIZES AND TYPES. The circuit selector assembly shall be built in two sizes:
  - a. Type I - for control of a single series runway lighting circuit.
  - b. Type II - for control of three series runway lighting circuits.
6. PERFORMANCE REQUIREMENTS. The circuit selector assembly shall be designed for continuous indoor service under the following operating conditions:
  - a. At any ambient temperature from a minimum of -45°F to a maximum of +120°F at sea level.

- b. All current carrying parts shall be insulated for at least 600 volts, unless otherwise specified, and shall have a current carrying capacity of at least 10 amperes.

7. DETAIL REQUIREMENTS.

- a. Relays. Normally closed relays shall be provided to short circuit and isolate the load circuits not in use. These relays shall be a normally closed, double-throw type with 120 volt control coils and 600 volt, 6.6 ampere load contacts. The load contacts shall be designed to open and close with the series circuit de-energized. Relays shall operate to close the loop circuit contacts before opening the short circuiting contacts when the relay coil is energized and shall operate to close the short circuiting contacts before opening the loop contacts when the relay coil is de-energized. One relay shall be supplied for Type I and three relays for Type II.
- b. Series Disconnects. Plug type series disconnects shall be rigidly mounted inside the cabinet and shall, when the plug is withdrawn, isolate the load circuit from the power supply. Removal of the plugs shall short circuit the supply leads. Insulating discs shall be inserted between the prongs on each plug. One disconnect shall be supplied for Type I and three disconnects for Type II.
- c. Terminals and Wiring. The assembly shall be completely wired. A control terminal block with terminals suitable for the 120 volt control circuit shall be supplied. The two control terminals for Type I shall not be labeled and the four control terminals for Type II shall be labeled "N", "A", "B" and "C". Two input terminals, on both Type I and Type II, shall be supplied and shall be labeled L<sub>1</sub> and L<sub>2</sub>. Two load circuit terminals shall be supplied on Type I and these<sup>2</sup> shall not be marked. Six load circuit terminals shall be supplied on Type II and these shall be marked "RA", "RA", "RB", "RB", "RC", "RC". A separate lug shall be provided for grounding the case and this lug shall accommodate #8 to #14 AWG wire.
- d. Cabinet. The entire unit shall be mounted in a self-supporting sheet metal enclosure, the exact shape of which is optional within the maximum dimensions listed below. The bottom shall have porcelain bushings for entrance of the runway supply cables and adequate knock-outs for 3/4-inch or 1-inch conduit shall be supplied. The relays, disconnects, and terminal block shall be suitably mounted inside the cabinet and shall be readily accessible through a hinged door or doors. The door(s) shall be provided with a latch. The cabinet shall be designed for wall mounting. Over-all dimensions shall not exceed the following:

	<u>Height</u>	<u>Width</u>	<u>Depth</u>
Type I	20"	12"	10"
Type II	20"	24"	10"

- e. Wiring Diagram. A wiring diagram shall be permanently mounted inside the cabinet. It shall be legible and readily accessible.
- f. Painting and Finish. The inside and outside of the cabinet shall be bonderized, given one prime coat and one finish coat of paint. If required, the outside of the cabinet shall be given a touch-up after final assembly.
- g. Nameplate. A nameplate, permanently and legibly filled in with at least the following information, shall be securely attached to the front of the cabinet:

Circuit Selector Cabinet Assembly, 60 cycles

Type\_\_\_\_\_ (I or II)

Manufacturer's Name and Part Number\_\_\_\_\_

- h. Parts List and Installation Instructions. A component parts list and installation and maintenance instructions shall be furnished with each assembly. Sufficient drawings or illustrations shall be provided to indicate clearly the methods of installation and maintenance.

## 8. TESTING.

### a. Qualification Testing.

- (1) Each assembly shall be connected to an electrical power source and shall be operated to show that the internal wiring is correct and the relays are functioning properly.
- (2) Each completed cabinet shall withstand the following test for one minute without breakdown of insulation:
  - (a) 1,500 volts from control circuit to ground and all other parts.
  - (b) 3,000 volts from load circuit to ground and all other parts.

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- b. Production Testing. The following test shall be made on each completed circuit selector cabinet assembly:
- (1) Examination. Each assembly shall be inspected to assure compliance with the requirements specified herein with respect to materials, workmanship, and marking. Each assembly shall be examined to determine that the dimensions are within the limits specified.
  - (2) Dielectric. Each assembly shall withstand the rms 60 cycle voltage specified in paragraph 8a(2) for one minute without failure.
9. QUALIFICATION. The manufacturer shall furnish a circuit selector assembly to an independent testing laboratory acceptable to the Federal Aviation Agency, Airports Service, Washington, D. C. 20553, to be tested as described in paragraph 8a to obtain certification regarding the ability to manufacture the circuit selector assembly meeting the requirements of this specification. The manufacturer shall furnish two copies of the test report to the Federal Aviation Agency, Airports Service, Washington, D. C. 20553, for review and approval consideration. The cost of testing shall be borne by the manufacturer offering the equipment for approval.
- a. In addition to the test performed by the independent testing laboratory, the manufacturer shall:
- (1) Furnish a production model with circuit diagram to the Airports Service for physical inspection. Cost of submitting the production model shall be borne by the manufacturer.
  - (2) Furnish parts lists, installation instructions and drawings to the Federal Aviation Agency, Airports Service, Washington, D. C. 20553, for review and approval.
- b. Upon approval of the independent laboratory's test reports and the additional data required in paragraph 9a, which have shown satisfactory conformance to the specification requirements, the Airports Service will list the name of the qualified manufacturer and a description of their circuit selector assembly in Advisory Circular No. 150/5345-1, "Approved Airport Lighting Equipment."

- c. At any time after approval has been granted under the above conditions, a certified copy of factory test reports on the latest production run of circuit selector assemblies produced under this specification shall be made available by the manufacturer upon written request from the Federal Aviation Agency, Airports Service, Washington, D. C. 20553.

10. HOW TO GET THIS CIRCULAR. Obtain additional copies of this circular, AC 150/5345-35, "Specification for L-816 Circuit Selector Cabinet Assembly for 600 Volt Series Circuits", from the Federal Aviation Agency, Distribution Section, HQ-438, Washington, D. C. 20553.

  
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