

# CURRENT-LIMITING FUSE UNITS

## TYPES EJ-1 AND EJO-1

### INTRODUCTION

A Type EJ-1 fuse unit--for indoor use-- or a Type EJO-1 fuse unit--for indoor or outdoor use-- consists of a Pyrex glass or melamine fibreglass fuse tube having metal ferrules at each end and containing current-responsive elements surrounded by a quartz filler. When the fuse functions, the arc resulting from the melting of the current-responsive elements is cooled by the adjacent filler and extinguished without any expulsion of gases or material from the tube. The maximum current passing through the fuse before the arc is extinguished is limited to a value considerably lower than the maximum short-circuit current usually available in the circuit.

quency. When rated for 60 cycles only, they may be used on frequencies of either 50 or 60 cycles.

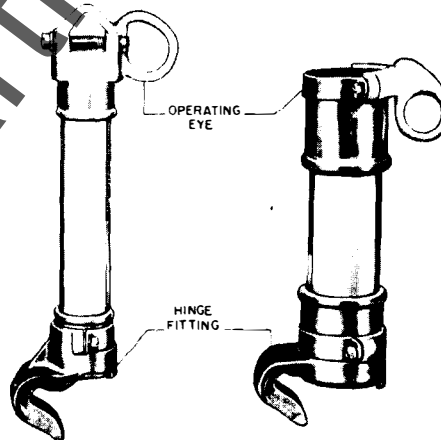
The "E" current rating must be equal to or larger than the maximum load current in the circuit, and at the same time, the current-responsive element must also be of sufficient size so as not to be damaged by magnetizing inrush current of associated transformers. For detailed application data, and also for time-current and current-limiting curves, refer to the nearest General Electric Sales Office.

### APPLICATION

Fuse unit, Types EJ-1 and EJO-1, with suffix "E" on the current rating conform with the 1960 High Voltage Fuse Standards. They will carry current up to their "E" ampere rating continuously; fuse units rated 100E amperes and below will melt at a current between 200% and 240% of the rating in five minutes, and fuse units rated 125E amperes and above will melt at a current between 220% and 264% of their rating in ten minutes.

For a given application the recommended voltage rating of the fuse unit is that nearest to, but greater than, the line-to-line circuit voltage. In no case should the line-to-line voltage be less than 70 per cent of the nominal voltage of the fuse unit nor greater than the maximum design voltage rating.

When the fuse units are rated 25/60 cycles, they may be used on systems from 25 to 60 cycle fre-



Size C 4800 Volts

Size D 2400 Volts

Fig. 1 Type EJ-1 Fuse Units Assembled with Fittings for Type EK-3C and EK-3D Fuse Disconnecting Switches

*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.*

DISTRIBUTION PROTECTIVE EQUIPMENT DEPARTMENT

# GENERAL ELECTRIC

PITTSFIELD, MASS.

**RATINGS**

Fuse units are made in several different diameters of tube and ferrule assemblies. Each ferrule diameter is designated by a "size" letter, with the relation between size and letter being shown in Table 1. The tabulation also shows the voltage ratings for which each size is manufactured.

\* May also be used on 4300 volt solidly-grounded neutral circuits when mounted in porcelain housing on G-E Type JE-2 or JE-32 potential transformers.

TABLE 1

Size	Ferrule Diameter	Maximum Design Rating, Volts
A	13/16"	600, 2750 *
B	1 9/16"	2750, 5500, 8250, 15,500
C	2"	2750, 5500, 8250, 15,500, 25,800
D	3"	2750, 5500, 8250, 15,500, 25,800
DD	2-3" in Parallel	2750, 5500, 8250, 15,500, 25,800 38,000
EE	2-4" in Parallel	15,000 38,000

**INSTALLATION**

A suitable fuse support is required to use the fuse unit. With Type EK-3 and EKO-3 fuse disconnecting switches, fittings for the fuse unit are furnished to make it suitable for use as a disconnecting blade. To attach these fittings to a Size C or Size D fuse unit, slide them on the ferrules of the fuse unit and clamp in place in the position shown in Fig. 1. With a Size DD fuse unit, attach the hinge fitting to the bottom ferrule of one tube and the operating eye to the top ferrule of the other tube, as shown in Fig. 2. In all cases, the hinge fitting should be located at the end of the fuse containing the indicating

target, for ease of viewing from below. The target end of Size D, DD and some C fuse units has a concave appearance (see left side of Fig. 3 as distinguished from the flat cap closing the other end, or ends in the case of Size DD) of the fuse tube. The remaining C size fuses and the B size fuses have button indicators.

Unless special means are provided for disconnecting the entire fuse support or switch from all sources of power, the fuse unit should be removed and inserted only with insulated fuse tongs.

**OPERATION**

When a fuse unit functions, it should be replaced by a complete new unit. Always use a fuse tongs for handling unless special means are provided for disconnecting the fuse support from all sources of power. If used in a fuse disconnecting switch, the fittings should be removed from the blown unit and transferred to a replacing unit. The time required to replace a blown fuse unit in a disconnecting switch may be considerably shortened if a spare fuse unit with fittings in place is kept on hand at each installation.

The indicating target provided at one end of the larger sizes of fuse units, operates when the fuse unit functions. Its operation is provided by a separate mechanism within the fuse tube, and is not due to any pressure developed by the main fuse elements in functioning. The appearance of the target for some size C and larger fuse units is shown, before and after operation, in Fig. 3. Size B and the remainder of the size C fuse units have an indicator consisting of a small plunger which projects from the end of the fuse unit after the fuse unit functions.

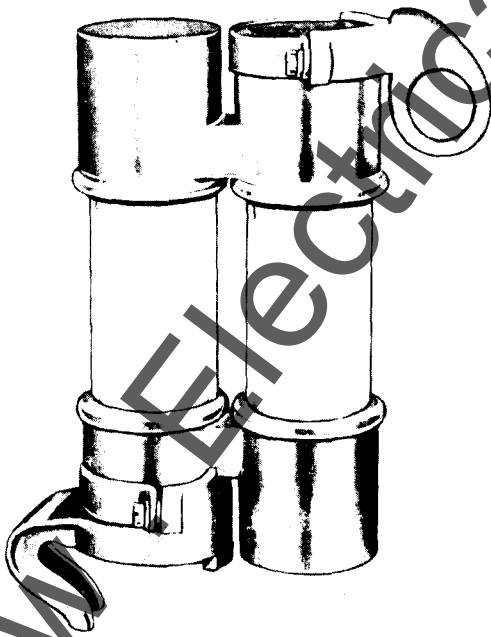


Fig. 2 Size DD Fuse Unit Assembled with Fittings for Type EX-3DD Fuse Disconnecting Switch

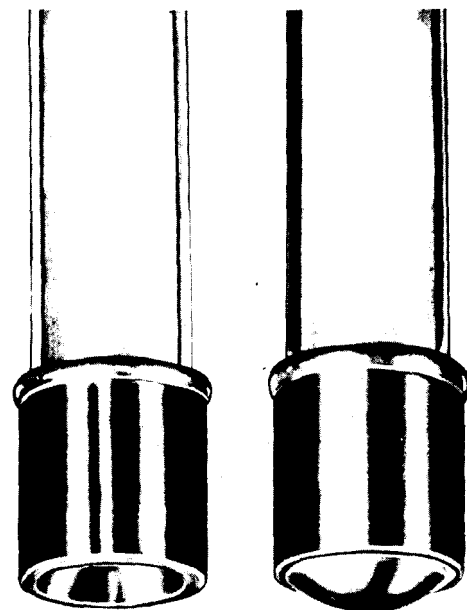


Fig. 3 Indicating Targets of Size C Fuse Units