



GENERAL

• OPERATION •

MAINTENANCE

INSTRUCTIONS

GROUNDING RESISTORS

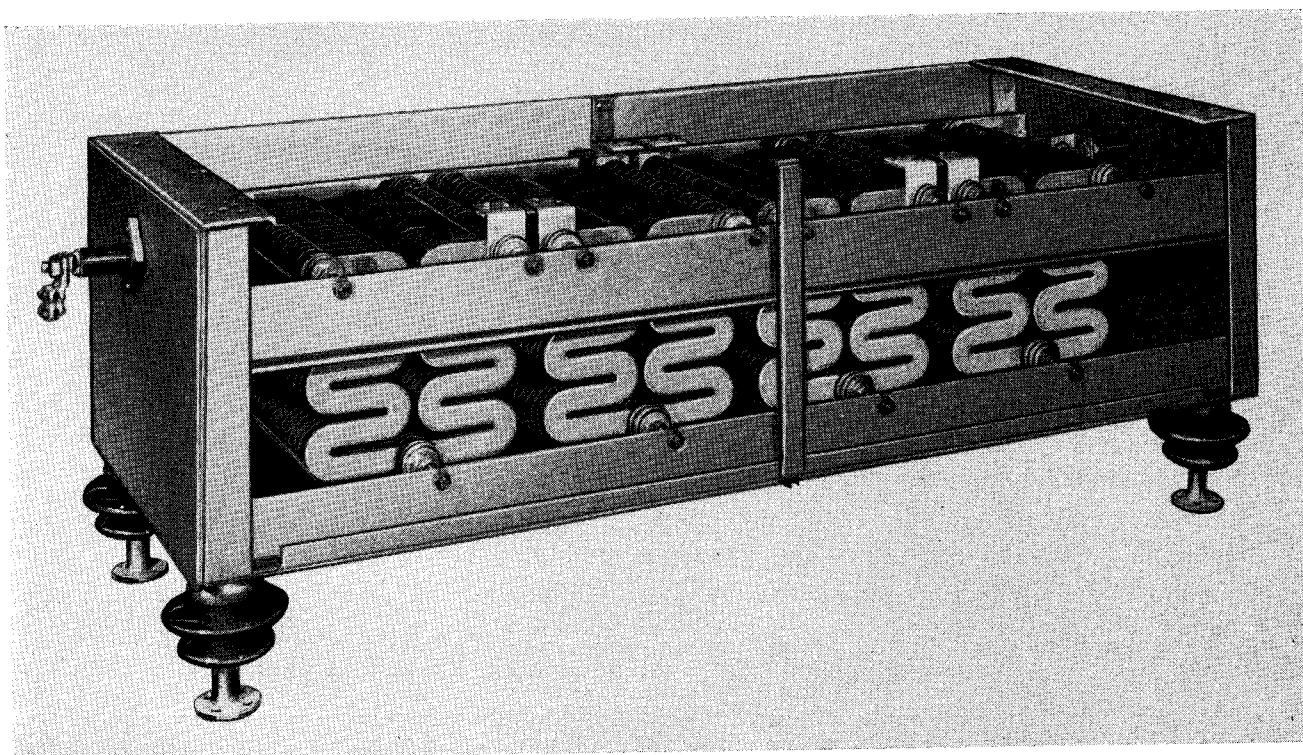


FIG. 1. Outdoor-Indoor Grid Tank Type Resistor

GENERAL

The determination of the resistor size and its insulation is primarily based on several factors such as the limiting of ground fault current to a value for satisfactory performance of the system relaying scheme, time interval, permissible thermal considerations and voltage application.

Grounding Resistors are commonly rated in terms of initial current that will flow through the resistor with rated voltage applied and the duration of the current flow. Pertinent electrical characteristics including current limitation and apparatus identification are indicated on the resistor nameplate.

LOCATION

The location of the resistor should provide protection, accessibility and ventilation.

Protection should consist of locating resistor in a clean dry atmosphere when mounted indoor. For outdoor service, resistor incorporates features suitable for installation in normal environments. Particular care should be exercised during installation to protect resistor against falling objects. The degree of protection should be determined by the applicable resistor service conditions.

Accessibility. Requirements for connecting and servicing resistor vary for each different design. Check the outline drawing to establish space and electrical termination requirements.

Ventilation. During a ground fault, resistor generates a large amount of heat. The affect of the heat with respect to the proximity of the resistor to associated equipment and ventilation of the resistor should be considered when selecting site.

GROUNDING RESISTORS

OPERATION

Resistor is a static device which limits ground fault current in the event of a grounded circuit to insure positive operation of ground detecting devices. Resistor is energized only when any one of the component circuitry is grounded. Resistor is self operating, therefore, no operating instructions are necessary for this device.

During the initial operation, foreign matter such as dust and oil which may have adhered to the element during storage and handling can create some smoke. Generally this is of no consequence as the resistor element will be cleaned off after a few operations.

MAINTENANCE

Inspection. Resistors should be inspected at regular intervals to insure that all bolts and nuts are tight within the pressure limits of the device.

Insulation. Insulating parts and surfaces in particular should be kept clean. Compressed air or other suitable method should be used periodically to remove accumulation of dust and dirt which may collect on the insulators.

Electrical Continuity. Type 26M. (See Fig. 3.) Electrical continuity between the neutral and ground terminal is provided through a combination of stainless steel connectors welded to the helix assuring a positive resistance path. This construction eliminates any source of contact trouble, it is therefore only necessary to make sure that the outer connections are tight.

Grids. (See Figs. 1 and 2.) Grid resistors require careful inspection of terminals to assure tight connections. The major source of operating difficulties due to build up of contact resistance is at the terminal to grid contact and grid to grid contact points. To maintain a minimum contact resistance it is necessary to tighten the jam nuts located at the extreme ends of the tie rods that provides pressure to the mica and grid assembly.

If the terminals and grid contact points show any evidence of over heating, loosen the jam nuts sufficiently to free the terminal. Clean the terminal contact surface with fine sand paper. (Including grid contact surface.) Replace the terminal and tighten securely.

Emergency repairs. If a replacement resistor element is not available, emergency repairs can usually be made, if element is not severely damaged,

by welding or brazing the burned ends of the element together. Jumpers or straps can also be welded between the helix turns or grid to grid contact points to bridge or shunt out the damaged section. While this method of repair may make it possible to operate resistor, replacement of the repaired section should be made as soon as possible.

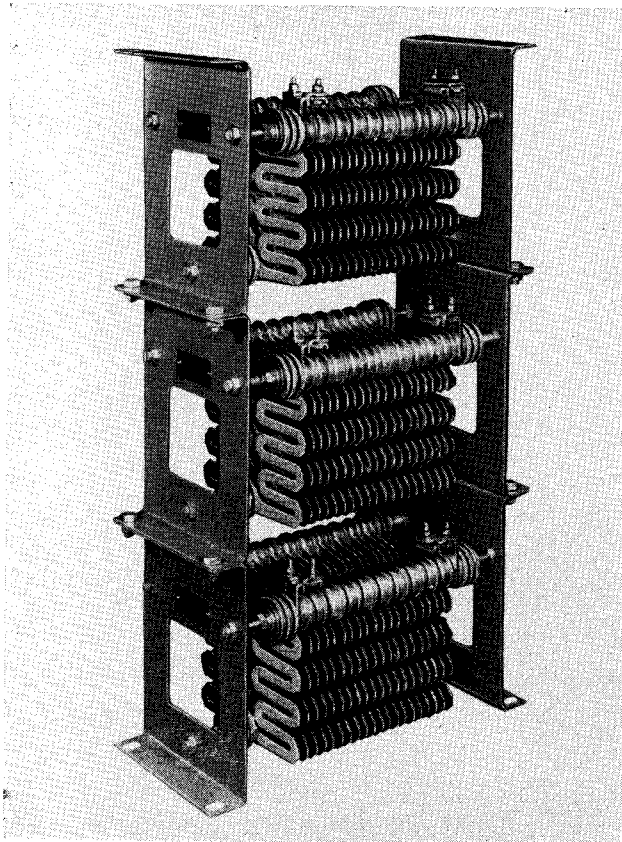


FIG. 2. Indoor Grid Type Resistor

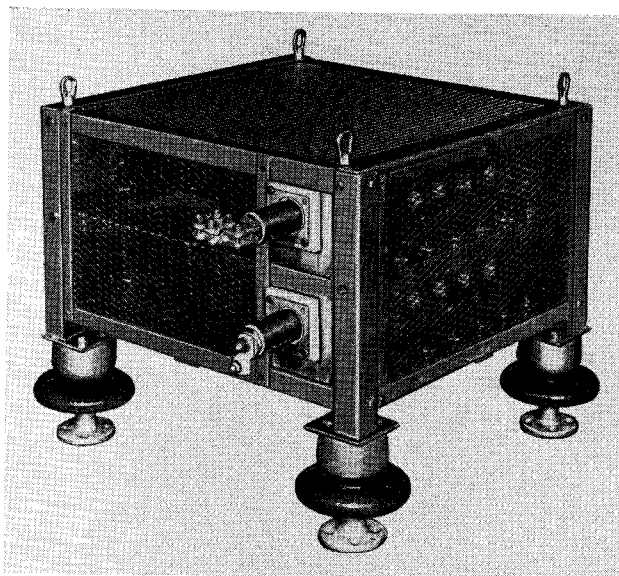


FIG. 3. Indoor-Outdoor Type 26M Resistor



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