

The Country's Largest Stock of Rheostats

Jenkins Electric normally stocks the country's largest selection of power rheostats. We have 25 to 1000 watt, wire-wound, ceramic core rheostats. We also have 400 and 1000 watt plate-type rheostats.

By mounting units in tandem and connecting them in series or parallel, we can provide up to two times the current rating, or four times the resistance of any one unit. In this way, we try to make our stock fit your needs. Our stock is listed on the following pages. All items listed are normally stocked in quantities of 10 to 100 per size.

Rheostat Selection

If you have a Ward Leonard, Angstrom, FMC, Ohmite, Joslyn Clark, Cutler Hammer, Westinghouse, Memcor or GE catalog number, we may be able to offer you a replacement by consulting our records. For other rheostats, we need to know:

1. Rheostat resistance in ohms
2. Maximum rheostat current
3. Minimum rheostat current
4. Approximate outside diameter
5. How the rheostat is mounted
6. Knob rotation

These items are discussed below.

1. **Rheostat resistance** can be measured on a good rheostat using an ohmmeter. On a bad rheostat, you may be able to measure the good sections, add up the resistance obtained, and guess at the total resistance. Another possibility is the motor or machine control may specify a rheostat resistance to be used.

If you have no old rheostat and wish to choose a rheostat to control a generator or motor, it is useful to know the cold field resistance of the generator or motor (ohms), the rated field voltage (V) and the maximum rated field current (I). If the minimum field current is given, then rheostat resistance can be calculated, by the following formula:

Where

- V is rated field volts
- I_{\min} is minimum field current
- R_f is cold field resistance
- R_r is rheostat resistance

$$R_r = \frac{V}{I_{\min}} - R_f$$

Rheostats control many different loads; therefore, there are no foolproof rules for selecting a specific resistance. The vernier rheostat is often equal to, or a bit greater than, the cold field resistance being controlled. The dancer roll rheostat is often 1.5 times the cold field ohms, but these values depend on the motor speed range desired. Accurate information for field control must come from the machine manufacturer.

2. **Maximum rheostat current** (Resistance Out) is given by the ratio of the field supply voltage to the field resistance.

$$I_{\max} = \frac{V}{R_f}$$

3. **Minimum rheostat current** (Resistance In) is given by dividing the supply voltage by the sum of the field resistance plus the rheostat resistance.

$$I_{\min} = \frac{V}{R_f + R_r}$$

4. The **diameter** of the rheostat can be observed, or an estimate made of the clear space available for mounting. Standard Joslyn Clark rheostat plate diameters are 6, 8, 13, 15, and 18 inches. We stock 8 and 13 inch plates. An 8 inch plate can be mounted on the same bolt holes as a 6 inch plate if we supply turned-in feet.
5. **Front-of-board mounting** is typical for Ward Leonard Design Rheostats, the enclosed rheostat can be put on the front of a control panel, wall or column.

Back-of-board mounting allows an open rheostat to be used with just the knob extending in front of a control panel or enclosure. Angstrom rheostat are most often mounted inside a control panel. Joslyn Clark rheostats can be mounted this way if a KI kit is purchased.

Floor mounting (or dancer roll) is used to permit remote control of a rheostat with a sprocket and chain. The floor mounting has a two bearing, load bearing shaft, coupled to the rheostat shaft.

6. Standard, right-hand **rotation** for the rheostat means the knob is turned clockwise (CW) to increase resistance. Three-terminal (potentiometer connected) rheostats with maximum current equal to minimum current (linear taper) can be used in either direction. Dancer roll rheostats often require linear resistance, so they can be used on either side of the roll.

