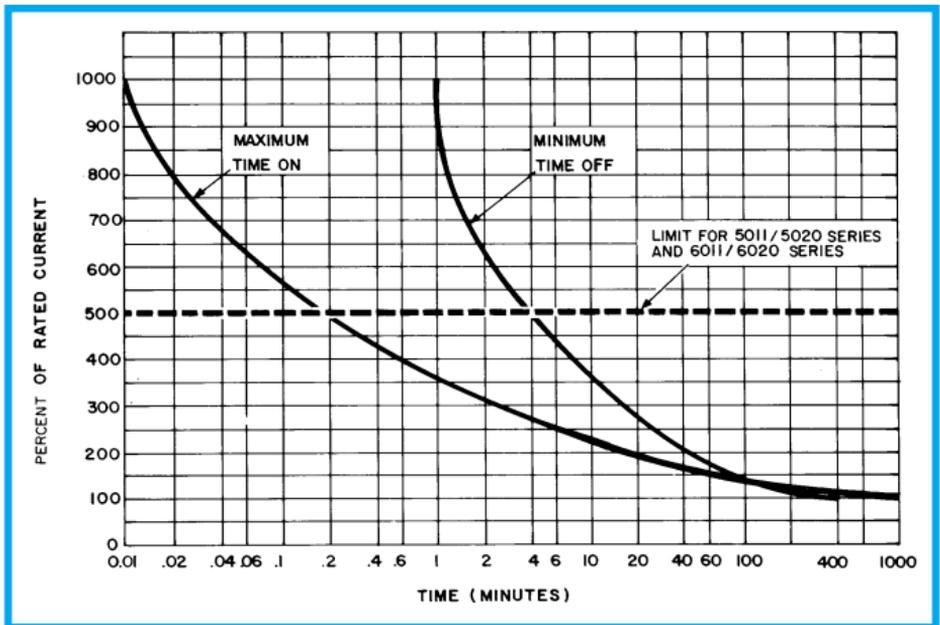


## SHORT-TIME CURRENT OVERLOAD

Although STACO Variable Transformers are small and light weight for the large power ratings which they handle, brush currents up to 10 times normal may be drawn for a brief time. The maximum on time curve of Fig. C shows the duration of surge on transient currents which may be absorbed by a cold unit on motor starting or similar service. Protection for this level of service may be approximated by hydraulic-magnetic circuit breakers with trip coil in the brush output lead. If the unit is hot from previous loading, such as repetitive overloads, it must also be allowed sufficient off time as indicated on the minimum off time curve of Fig. C to prevent excessive temperatures. If the time on is less than allowed by the "on" curve, the minimum time off may be reduced in accordance with the following equation:

$$\frac{\text{OFF TIME}}{\text{ON TIME}} = \left( \frac{\text{OVERLOAD CURRENT}}{\text{RATED CURRENT}} \right)^2 - 1$$

Protection for this level of service may be approximated by a dual-element lag fuse in the brush output lead.



**Figure C. Max On Time and Min Off Time for Various Overload Current Conditions**