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## Continuous Current Carrying Capability of Low Voltage Circuit Breakers

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Various types of low voltage circuit breakers have differing continuous duty capabilities. Some are rated to carry 100 percent of their trip rating continuously, while others are rated to carry only 80 percent of their trip rating continuously. It is important that we understand the difference and apply these breakers properly.

The general run of molded case circuit breakers in frame sizes of 400 A and below are rated to carry only 80 percent of their rated trip current on a continuous basis. Particularly when these breakers are mounted close to each other in a panelboard, the extra heat generated by carrying 100 percent of the trip rating will both lead to false tripping and cause long-term degradation of the insulating material of which these breakers are made.

On the other hand, all low voltage power circuit breakers and the general run of insulated case circuit breakers are capable of carrying 100 percent of their trip rating on a continuous basis.

Some confusion can arise when using large molded case circuit breakers, in frame sizes of 600 A and above. These breakers may be rated either 80 percent or 100 percent, depending on the model and the manufacturer. As you would expect, the 100% breaker costs considerably more than the 80% breaker. Some models have both 80% and 100% ratings available. The 100% rated breaker may require a larger enclosure and/or more ventilation than the 80% rated breaker of the same model.

Please observe the following application rules:

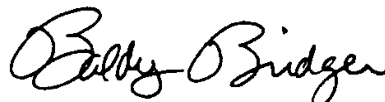
- 1) Apply MCCB's in 400 A frame size and smaller based on continuous loads of not more than 80% of the circuit breaker's trip rating. If trip ratings are selected by our customer, assume that they are based on the 80% load requirement.
- 2) Apply insulated case breakers and low voltage power circuit breakers based on continuous loads of not more than 100% of the breaker's trip rating. If trip ratings are selected by our customer, assume that they are based on the 100% load requirement., Be sure that the insulated case breakers selected are 100% rated.

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3) Apply large molded case circuit breakers based on either the 80% or the 100% rating, making sure that the breaker selected fits the application, and that adequate space and ventilation is provided for the breaker chosen. If trip ratings are selected by our customer, be sure that you understand which basis was used for selection.



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