



Tech Tip # 114

Short-Circuit Current Ratings (SCCR)

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Introduction

In compliance to the updated electrical rating requirements for electrical equipment including dehumidifiers, Desert Aire has added a short circuit current rating (SCCR) for all of its units. SCCR's on dehumidifier represent the maximum level of short-circuit current that the unit can withstand and is used for determining compliance with NEC®110.10. The new rating values represent the maximum amount of fault current that the assembly can withstand under fault conditions. Dehumidifier ratings take into account all components contained within the unit rather than just the main overcurrent protective device.

- Interrupting Rating - The highest current at rated voltage that a device is intended to interrupt under standard test conditions.
- Short-Circuit Current Rating— The prospective symmetrical fault current at a nominal voltage to which an apparatus or system is able to be connected without sustaining damage exceeding the defined acceptance criteria.

Short-circuit current ratings (SCCRs) are different than interrupting ratings marked on overcurrent protective devices.

A common mistake is to assume that the interrupting rating of the overcurrent protective device protecting the circuit represents the SCCR for the entire circuit. Interrupting ratings, used for compliance with NEC®110.9, apply solely to the overcurrent protective device. It is the characteristics of the overcurrent protective device (e.g. opening time, let-through energy) that need to be used in determining compliance with NEC®110.10, not the interrupting rating.

Inspectors and installers need this information in order to ensure compliance with NEC®110.10. Equipment installed where fault current levels can exceed their short-circuit current limit can be hazardous. SCCR values marked on the equipment make it easier to verify proper protection for components and equipment for specific applications.

Desert Aire rating uses the “weakest link” approach: the assembly should be limited to installation where fault levels do not exceed the withstand rating of devices with

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the lowest SCCR. The marking determined should represent the limits of the assembly for a safe installation.

- Consulting Engineers
Need to specify end use equipment with ratings adequate for available short-circuit current. Need adequate ratings so equipment has flexibility to be moved around
- HVAC Contractors
Need assurance that the equipment they install is adequate for the available short-circuit current at the point of installation, to avoid red tags, and lost time and labor
- Electrical Inspectors
Need to assure that the available short-circuit current where equipment is being installed does not exceed the rating marked on the equipment.

Most Desert Aire equipment is rated 65kA rms symmetrical, at nameplate voltage maximum, when protected by Class J, Class T or Class RK1 fusing. The use of other overcurrent protection devices is allowable, but may decrease the rating. Consult the factory for further details should SCCR rating be required for specific alternate overcurrent protection devices. Some equipment, including 575V nominal power supplies, is rated lower. See schedule on submittal documentation and unit labeling for exact unit configuration ratings.