

Use of TCI reactors on UL 508A panels

Under prior UL 508A requirements, TCI recognized reactors had to be listed within a customer's UL 508A Procedure in order to be used on a UL 508A panel. This is no longer the case, now to determine what components can be used on a UL 508A panel, engineers review the online document stored at <https://www.ul.com/resources/ul-508a-supplement-sa-specific-component-requirements> for an up-to-date listing. The following information was summarized from the document UL 508A Supplement SA 10_21_19 dated October 21, 2019 titled **SPECIFIC REQUIREMENTS FOR COMPONENTS USED IN INDUSTRIAL CONTROL PANELS (Formerly Supplement SA of UL 508A)**.

The use of recognized components is discussed in section 2.

- **2 Recognized Components**
 - 2.1 Recognized components that comply with specific requirements in the UL 508A standard are specified in Table 1. Recognized components described in Table 1 as requiring procedure description shall be described in the manufacturer's Procedure in order to be used.
 - 2.2 Recognized components other than those described in Table 1 shall be investigated and described in the manufacturer's Procedure.

Table 1 was condensed to headings, section 36 heading, and specific reference to reactors in 36.3.

Table 1
Components that comply with specific requirements

UL508A Paragraph Reference	Component Description	UL Standard	Category control number(s)	Notes
UL 508A Section/Paragraph Reference				
Section 36 - Miscellaneous power devices meeting component selection requirements				
36.3	Listed or Recognized Reactors	UL 508	NMTR, NMTR2	Any that complies with the requirements in 36.3.1 and 36.3.2

Text from UL Standard for Safety for Industrial Control Panels, UL 508A, Third Edition, Dated April 24, 2018.

- 36.3 Reactors
 - 36.3.1 A reactor shall comply with the Standard for Low Voltage Transformers – Part 1: General Requirements, UL 5085-1, and the Standard for Low Voltage Transformers – Part 2: General Purpose Transformers, UL 5085-2, or the Standard for Dry-Type General Purpose and Power Transformers, UL 1561.
 - 36.3.2 A reactor shall be used within its voltage, frequency, and current or horsepower ratings.
 - *Exception: A reactor that is part of a product covered by this standard is not required to comply with 36.3.*

From this section, any listed or recognized UL 508 reactor [categories NMTR (listed) NMTR2 (recognized)] can be used in a UL 508A panel without being listed in the manufacturer's Procedure. TCI UL 508 listed reactors are category NMTR. TCI UL 508 recognized reactors are category NMTR2. This means TCI Reactors comply with the requirements of UL 508A Section 36.3.

UL SCCR Review of TCI Reactors

UL 508A panels require review of component Short Circuit Current Ratings. Recent changes to the UL 508A standard affected the SCCR section.

Excerpts from UL 508A Third Edition dated April 16, 2020 are listed below, the effective date was noted by UL as July 1, 2020. Although reactors are applied for purposes of harmonic mitigation, the KDR, KLR, and KTR reactors TCI manufactures are reactors, not harmonic filters. Per the clauses below, these are exempt from consideration for SCCR per Exception No. 1 below.

- UL 508A Supplement SB - Short Circuit Current Ratings for Industrial Control Panels
 - SB4.2 Short circuit current ratings of individual power circuit components
 - SB4.2.1 All power circuit components, including disconnect switches, branch circuit protective devices, branch circuit fuseholders, load controllers, motor overload relays, terminal blocks, and bus bars, and line filters, such as electromagnetic interference (EMI), or radio frequency interference (RFI) filters, or active or passive harmonic filters shall have a short circuit current rating expressed in amperes or kiloamperes and voltage.
 - Exception No. 1: Power transformers, reactors, current transformers, dry-type capacitors, resistors, one-port SPDs, and voltmeters are not required to have a short circuit current rating.
 - Exception No. 5: Components installed on the load-side of a variable-speed drive where the variable-speed drive has built-in electronics short circuit protection, are not required to have a short circuit current rating.