

STANDARD INFORMATION

This SUN establishes the Continuing Certification approach for UL 508

Standard Number: UL 508

Standard Name: Industrial Control Equipment

Standard Edition and Issue Date: 18th Edition Dated March 30, 2018

Date of Revision: March 30, 2018

Date of Previous Revision of Standard: 17th Edition Revision Dated October 16, 2013

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **No action is required for currently certified products to maintain certification.**

This SUN is being presented to assist users of the standard to appreciate the significance of the changes made to the standard that will apply should the product described be modified after March 30, 2020.

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: Effective immediately, this revised standard will be exclusively used for evaluation of new products.

Overview of Changes:

- Revision to enclosure requirements for Class 2 rated products
- Revisions to requirements covering polymeric enclosures that are connected to conduit
- Addition of requirements covering a type of isolated secondary circuit
- Standardization of high available fault values
- Addition of bus bar system marking requirements
- Additional dielectric test for reduced voltage solid state motor controllers
- Revision to the test procedure for reduced voltage solid state motor controllers

Specific details of new/revised requirements are found in table below.

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.



STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
<p><i>Additions to existing requirements are <u>underlined</u> and deletions are shown lined out below.</i></p>		
	Info	DEVICE CONSTRUCTION
26	Info	Supply Connections
26.5	Info	Size of wiring terminals and leads
26.5.1		<p>Except as noted in 26.6.5, industrial control equipment shall be provided with wiring terminals or leads for connection of conductors having an ampacity or wire size not less than <u>14 AWG for power- or lighting-circuit conductors</u> or the largest of the following, <u>whichever is larger, for each field wiring terminal:</u></p> <p>a) The ampere rating of the circuit. b) One-hundred twenty-five percent of the full-load motor current specified in Table 47.2 or 47.3 for the horsepower rating, or, in the case of power conversion equipment, in which the input current is different from motor full-load current, 125 percent of maximum rated input current. c) One-hundred twenty-five percent of the resistive ampere rating of the devices intended to control fixed electric space-heating equipment loads. d) For equipment controlling a direct-current motor intended to be operated from a rectified single-phase power supply; 1) One-hundred ninety percent of full load current when a half wave rectifier is used. 2) One-hundred fifty percent of full load current when a full wave rectifier is used.</p> <p>Exception: Item (d) does not apply when the product is marked in accordance with 72.9.</p> <p>e) 14 AWG (2.1 mm²) for control, signal, or sensor circuits unless the terminals are intended and marked (on product or installation instructions) for the connection of smaller conductor size or sizes. f) <u>Minimum 14 AWG (2.1 mm²) for power circuits.</u></p>
33	Info	Isolated Secondary Circuits
33.8	Info	Limited Power Source circuit requirements
33.8.1		<p><i>New clause added;</i></p> <p>A Limited Power Source shall be supplied by an isolating source that complies with the requirements in the Standard for Information Technology Equipment – Safety – Part 1: General Requirements, UL 60950-1.</p> <p>Exception: A circuit intended to be supplied from a Limited Power Source that complies with 33.8 in the field shall be marked as in 70.38.</p>



CLAUSE	VERDICT	COMMENT																		
	Info	DEVICE PERFORMANCE																		
45	Info	Temperature Test																		
45.22		temperature rise is considered to be constant when three successive readings that are taken at intervals of 10 percent of the previously elapsed duration of the test but not less than 10 minute intervals <u>15 minutes</u> indicate no change <u>between any two of three consecutive readings of more than ± 1 °C</u> in the temperature rise.																		
54	Info	High-Available Fault Current Circuits (Optional)																		
		<i>New table added;</i>																		
		Required number of test operations																		
Table 54.3		<table border="1"> <thead> <tr> <th>Disconnecting means provided</th> <th>Type of test</th> <th>Number of test operations</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>Disconnecting means closed on the circuit ("CO" shot)</td> <td>1 ^{a,b}</td> </tr> <tr> <td>Yes</td> <td>Motor control device closed on the circuit ("CO" shot)</td> <td>1 ^a</td> </tr> <tr> <td>Yes</td> <td>Circuit closed on equipment ("O" shot)</td> <td>1</td> </tr> <tr> <td>No</td> <td>Motor control device closed on the circuit ("CO" shot)</td> <td>1</td> </tr> <tr> <td>No</td> <td>Circuit closed on equipment ("O" shot)</td> <td>1^c</td> </tr> </tbody> </table>	Disconnecting means provided	Type of test	Number of test operations	Yes	Disconnecting means closed on the circuit ("CO" shot)	1 ^{a,b}	Yes	Motor control device closed on the circuit ("CO" shot)	1 ^a	Yes	Circuit closed on equipment ("O" shot)	1	No	Motor control device closed on the circuit ("CO" shot)	1	No	Circuit closed on equipment ("O" shot)	1 ^c
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		^a If complete physical closure of the switching contact is established during closing tests ("CO" shots), the withstand test ("O" shot) is not required.																		
		^b When a motor control device and its control circuit are supplied from the same source (common control), the closing test on the disconnect switch is not required.																		
		^c When a stand-alone overload relay is subjected to this test, the overload relay shall be subjected to two "O" shots closing the circuit on the equipment under test.																		
	Info	MARKING																		
70	Info	General																		
		<i>New clause added;</i>																		
70.39		Bus bar systems intended for use only in Branch Circuit Applications shall be marked "Branch Circuit Bus Bar System" or equivalent.																		
	Info	PART VI – SOLID-STATE AC MOTOR CONTROLLERS																		
124	Info	Operation Tests																		
124.1	Info	General																		
124.1.2		During and upon completion of the operation tests, the solid state motor controller with reduced voltage starting features shall be electrically and mechanically operable and there shall be no evidence of a risk of fire or electric shock. The fuse specified in 124.1.3 shall not open and the surgical cotton specified in 124.1.3 shall not glow or flame. <u>The Dielectric Voltage-Withstand Test specified in Section 118 shall not result in dielectric breakdown.</u>																		



CLAUSE	VERDICT	COMMENT
	Info	PART VII – FLOAT- AND PRESSURE-OPERATED SWITCHES
	Info	CONSTRUCTION
128	Info	General
128.3		A polymeric material that is used as the enclosure for a float switch <u>or encloses or acts as a complete or partial enclosure of electrical components in a float operated switch</u> shall comply with 7.5.1 and the Water Exposure and Immersion Tests in the Standard for Polymeric Materials – Use in Electrical Equipment Evaluations, UL746C.
128.4		The enclosures of <u>pressure operated and float-operated switches incorporating complete or partial enclosures of electrical components, such as those constructions meant to be mounted to the wall of a vessel, and pressure operated switches incorporating complete or partial enclosures of electrical components, such as those constructions meant to be mounted to the wall of a vessel</u> shall comply with the construction, performance, and marking requirements for enclosures in Sections 7 – 12 of UL 508.
	Info	PART XI – MECHANICAL OVERLOAD RELAYS
	Info	PERFORMANCE
165	Info	Overload Test
		<i>New clause added;</i>
165.10		During the test, the enclosure is to be connected through a 30-ampere non time delay cartridge fuse to the electrical test circuit pole considered least likely to strike to ground. The fuse shall not open.
166	Info	Endurance Test
166.1		If the control-circuit contacts of an overload relay may be automatically reset, the contacts shall perform acceptably when subjected to a 6000-cycle endurance test at rated voltage following the overload test methods described in 165.1 <u>and Section 159 and the fuse specified in 165.10 shall not open.</u>
<p>CUSTOMERS PLEASE NOTE: This Table and column “Verdict” can be used in determining how your current or future production is or will be in compliance with new/revised requirements.</p>		