



June 16, 2017

**To:** Subscribers to Certification Services under the Standard for Adjustable Speed Electric Power Drive Systems, UL 61800-5-1 and UL 508C

**Subject:** New or Revised Requirements for Adjustable Speed Electric Power Drive Systems, UL 61800-5-1 1<sup>st</sup> Edition, Revisions Published February 24, 2017, and UL 508C 4<sup>th</sup> Edition, published May 16, 2016

## BACKGROUND

This Bulletin is to inform you that UL has published revisions to both UL 508C (4<sup>th</sup> Edition, published May 16, 2016) and UL 61800-5-1 (revisions published February 24, 2017). The Standards Technical Panel (STP) for Adjustable Speed Power Drive Systems of UL 508C and UL 61800-5-1 has voted on the implementation of the changes in requirements under UL's Continuing Certification Program. The result of this vote is that the change in requirements does not warrant equipment certified to the present requirements to be immediately recertified to the recently published requirements (refer to UL CSDS work areas opened 2015-12-10 and 2014-02-05 under UL 508C Ed. 3 and opened 2015-07-17 and 2015-05-15 under UL 61800-5-1 Ed. 1). UL will not conduct an Industry File Review on equipment currently certified to UL 61800-5-1. Please visit the following link for additional information regarding the Continuing Certification approach

[https://ifs.ul.com/ifr/IFR.nsf/\\$\\$Template%20for%20CCPage?OpenForm](https://ifs.ul.com/ifr/IFR.nsf/$$Template%20for%20CCPage?OpenForm)

## CONTINUING CERTIFICATION APPROACH

Please refer to the following for specific details of this new approach.

- May 16, 2019 has been established as the Effective Date for the change in certification requirements from UL 508C 3<sup>rd</sup> Ed. to UL 508C 4<sup>th</sup> Ed.
- February 1, 2020 has been established as the Effective Date for the change in certification requirements according to the revisions published in UL 61800-5-1 on February 24, 2017 (refer to addendum for subject of topics and clause references), in order to align with the current effective date of UL 61800-5-1 1<sup>st</sup> Ed.
- Requirements according to topics 1, 4, 6, 7, 9, and 11 of the UL 61800-5-1 are currently effective in accordance with Certification Requirement Decisions published for UL 61800-5-1 (refer to addendum for subject of topics and clause references).
- Existing certifications of equipment to prior versions of UL 508C will be allowed to maintain certification and not be withdrawn on or after the Effective Date of May 16, 2019 for UL 508C 4<sup>th</sup> Ed., provided there are no changes to the equipment design that require a certification decision in accordance with the latest published Standard Revision. Changes requiring a certification decision after May 16, 2019 and until February 1<sup>st</sup>, 2020, will require the equipment (in its entirety) to be evaluated to the latest Standard Revision, UL 508C, 4<sup>th</sup> Edition. See Appendix A for the summary of changes for UL 508C 4<sup>th</sup> Ed. Changes to the equipment design after the UL 61800-5-1 Effective Date of February 1<sup>st</sup>, 2020, will require the equipment to be evaluated to UL 61800-5-1, 1<sup>st</sup> Ed., revised February 24<sup>th</sup>, 2017. See Appendix B for summary of changes for UL

61800-5-1 1<sup>st</sup> Ed., February 24<sup>th</sup>, 2017 revisions. Additionally, new/revised requirements may require other future action depending on the proposed revisions.

- Existing certifications of equipment to prior editions of UL 61800-5-1 are not affected by the new edition of UL 508C.
- Existing certifications of equipment to prior editions of UL 61800-5-1 will be allowed to maintain certification and not be withdrawn on or after the Effective Date of February 1<sup>st</sup>, 2020 of the revisions to UL 61800-5-1, provided there are no changes to the equipment design that require a certification decision in accordance with the latest published Standard Revision. Changes requiring a certification decision after February 1<sup>st</sup>, 2020, will require the equipment (in its entirety) to be evaluated to UL 61800-5-1 revised February 24<sup>th</sup>, 2017. See Appendix B for summary of changes for UL 61800-5-1 1<sup>st</sup> Ed., February 24<sup>th</sup>, 2017 revisions. Additionally, new/revised requirements may require action to be taken in the future.
- Until May 16, 2019, equipment may be investigated to UL 61800-5-1 (with revisions dated February 24, 2017), UL 508C 3<sup>rd</sup> Edition, or UL 508C 4<sup>th</sup> Edition. Investigation to either edition of UL 508C can only be conducted in accordance with the UL 61800-5-1 transition plan.
- After May 16, 2019 and until February 1<sup>st</sup>, 2020, equipment may be investigated to UL 61800-5-1 (with revisions dated February 24, 2017), or UL 508C 4<sup>th</sup> Edition. Investigation to UL 508C can only be conducted in accordance with the UL 61800-5-1 transition plan.
- After February 1<sup>st</sup> of 2020, only UL 61800-5-1 (including February 24, 2017 revisions) will be used for equipment investigations in accordance with the UL 61800-5-1 transition plan.

#### **INFORMATION ON IMPLEMENTATION PLAN**

The plan to transition certified equipment allows manufacturers two options:

- A. Maintain certification to existing UL 508C 3<sup>rd</sup> Ed. under the Continuing Certification approach; or
- B. Conduct certification investigations to UL 508C 4<sup>th</sup> Ed. or UL 61800-5-1 in accordance with the UL 61800-5-1 transition plan.

This Continuing Certification approach enables manufacturers to transition to new requirements based on their own schedule and their market demands. It will also allow manufacturers to continue producing products presently certified provided there are no changes made to the products or there are no modifications where compliance must be confirmed.

Should you have any questions regarding this letter or the Continuing Certification approach, please contact Seth Carlton at +1 847 664 3843 or Seth.J.Carlton@ul.com

Respectfully,

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Director, CPO  
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## Appendix A

### SUMMARY OF REQUIREMENTS, UL 508C 4<sup>th</sup> Ed.

The following is a brief summary of the new and revised paragraphs in the Standard for Power Conversion Equipment, UL 508C, 4<sup>th</sup> Ed., published May 16, 2016.

Section Paragraph Clause	Summary of requirements
20.1.1, 39.1, 45.1.1, 45.1.3, 45.1.5, 57.1	Modification of short-circuit testing requirements. Clarification of requirements for short circuit testing, specifically what is a drive series and a representative model, as well as editorial revisions for ease of understanding when the test is or is not required.
20.3.2	Clarification of Control Circuit Transformer Protection Requirements.
21.2	Revision of Ratings for Capacitors in AC Circuits
21.3, 61.1.1 – 61.1.7, 61.2, 61.4, 61.6, 61.7, Table 63.1	Revision of Marking and Instruction Requirements to Use Appropriate Signal Words. Requires “Warning” instead of “Caution” for capacitor discharge time, multiple disconnects, live heatsink that could be mistaken as earth dead metal, and field assembled bonding means for polymeric enclosures.
44.1.1, 44.1.4	Revision of Frequency Requirements for Dielectric Voltage Withstand Testing. Allows for testing to be at 50 or 60 Hz instead of just 60 Hz.
50.1	Revision of Breakdown of Components Testing in Secondary Circuits. Clarifies that components in the secondary of Class 2 or LV/LC supplies do not require breakdown of components.
Table 63.1	Revision of Table 63.1 to Include Marking Requirements in 56.6 and 56.7. Adds the required location for marking requirements in 56.6 and 56.7 according to what is being done in practice.
2.8.3 – 2.8.7, 36.9.4, 41.1.1.1, 41.1.2,	Slash and Straight Voltage Ratings for Drives with a 3-Phase Input. Allows for reduced spacings and less onerous test requirements if a drive is marked with a slash rating, i.e. 480/277, instead of a straight rating, i.e. 480.

Section Paragraph Clause	Summary of requirements
45.2.3, 45.2.5, 45.4, 45A.4, 47.4, 50.4.1, 50.5, 50A.1, 50B.2, 54.6,	
Table 40.1	Revision to the conductor temperature limit during the Temperature Test, Section 40. Allows for conductor temperatures to not exceed the conductor rated temperature instead of 75 deg C
56.7	Revision of 56.7 to align with requirements in NFPA 70. Allows for drives that do not incorporate overtemperature protection to be marked “No overtemperature protection provided” instead of “Overtemperature protection must be provided in the end use”.
55.4, 68.2, 68.3, 68.4	Revisions to Section 68, Plenum Rated Drives. Changes test for plenum rated drives to be according to UL 2043. Removes allowance to not conduct test if drive polymeric surface area is less than 10 square feet and removes allowance if polymeric material is 5VA.

## Appendix B

### SUMMARY OF REQUIREMENTS, UL 61800-5-1

The following is a brief summary of the new and revised paragraphs in the Standard for Adjustable Speed Electric Power Drive Systems, UL 61800-5-1, 1<sup>st</sup> Ed., revisions published February 24, 2017.

Topic	Section Paragraph Clause (PDE)	Summary of requirements
1	4.3.3.3DV.2, 4.3.4.1DV, Table DVC	Clarifies that any circuit that falls into Class 2, LVLC, and limited impedance is not required to be protected against direct contact (including some DVC B circuits that currently are required to be protected against direct contact).
2	Table 15DV	Clarifies that the requirement in item 1 of the table is for conductors and not field wiring by removing the reference to 6.3.6.4DV.2.
3	4.7DV.1.2	Requires that any drive with polymeric surfaces other than small parts (not exceeding 25 square inches) must be tested to UL 2043.
4	Table 17DV	Adds marking location requirements to Table 17DV for thermal memory retention and speed sensitivity requirements.
5	5.2.2.2DV.1, 5.2.3.6.2DV.2.1.1 – 5.2.3.6.2DV.2.1.3, 5.2.3.6.2.1DV.5.5, 5.2.3.6.6DV.1	Revises the requirement for the earth connection to be sized according to the NEC and to not have a 30 A fuse in the conductor.
6	5.2.3.6.2DV.5 – 5.2.3.6.2DV.5.1.6	Moves the requirement for input/output conductors size/length from the short circuit test to the general section for short circuit and breakdown of components test, effective making the requirements formally effective for the breakdown of components test.
7	5.2.3.6.2.1DV.2.4, 5.2.3.6.2.1DV.5	Clarifies requirements necessary for conducting breakdown of components tests on drives given high fault short circuit ratings.
8	5.2.8DV.4	Editorial correction to an error in the title of the speed sensitivity test

Topic	Section Paragraph Clause (PDE)	Summary of requirements
9	Table 28DV	Corrects error that required certain markings to be on the drive and in the manual. The marking either has to be on the drive or in the manual, but include a marking on a drive with a reference to the manual.
10	6.3.7DV.1	Corrects error from transition that left of requirement that the marking for semiconductor fuses must include information regarding the fuse being used in the same overall enclosure.
11	4.3.8.6DV.1.3, 4.15DV.1.1, 4.15DV.1.3, 4.15DV.1.4, 4.15DV.1.6, 4.4.4DV.3, 4.6DV, Table 17, 5.2.2.3DV, 5.2.3.2.3DV.1, 5.2.3.6DV.1.1.3, DVD.2.4.4.2, DVD.2.4.4.6, DVF.5	Miscellaneous editorial corrections.