



Transition to UL 60947-4-1 Frequently Asked Questions

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1.) What is the transition from UL 508 to the UL 60947 series and why is it being done?

The standard for Industrial Control Equipment UL 508 has been harmonized with the relevant product standards of the IEC standard for Low-Voltage Switchgear and Controlgear IEC 60947.

This harmonization work was undertaken with the intent of creating standards that, while being based upon and adopting IEC requirements, would incorporate sufficient national differences to ease the transition from UL 508 to UL 60947-4-1. This goal has largely been accomplished in all cases. While the UL 508 and UL 60947 series standards do not look the same, when taking into account the national differences included in the harmonized standards, they are essentially technically identical.

The majority of this work was conducted over the past 10 years within the NEMA subcommittees NEMA SC1/SC2, SC31 and SC22. The NEMA subcommittees, under which the harmonization work was done, are now concentrating on reviewing these harmonized standards with the goal of reducing the number of national differences to the greatest extent possible. Similar efforts are ongoing within the specific IEC subcommittees that have responsibility for the base IEC documents. There is support for this harmonization effort within both the NEMA and IEC communities. UL participates in both the relevant NEMA and IEC subcommittees.

2.) What standards are being harmonized?

These harmonization efforts have resulted in the following new UL standards:

UL 60947-1 – Low Voltage Switchgear and Controlgear – Part 1: General Rules
Issued: January 26, 2007 (Harmonization work done under NEMA SC1/SC2)

UL 60947-4-1 - Low Voltage Switchgear and Controlgear – Part 4-1: Contactors and motor-starters-Electromechanical contractors and motor-starters
Issued: January 26, 2007 (Harmonization work done under NEMA SC1/SC2)

UL 60947-5-1 - Low Voltage Switchgear and Controlgear – Part 5-1: Control Circuit Devices and Switching Elements – Electromechanical Control Circuit Devices Issued: Pending (This document has not yet been published as a standard. Consensus has been reached via UL CSDS. Standard is currently undergoing approval processes through CSA and ANCE.) (Harmonization work done under NEMA SC31)

UL 60947-5-2 - Low Voltage Switchgear and Controlgear – Part 5-2: Control Circuit Devices and Switching Elements – Proximity Switches
Issued: May 31, 2007 (Harmonization work done under NEMA SC31)

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3.) What are Tri-national standards?

In some cases, at the request of the industries involved, UL, CSA and ANCE were asked to work together on the harmonization efforts in order to develop single standards that could be adopted by the US, Canada and Mexico. These efforts to develop tri-national standards were conducted as part of the Technical Harmonization Committee for Industrial Control Equipment, of the Council on the Harmonization of Electrotechnical Standards of the Nations of the Americas (CANENA). The standards UL 60947-1 and UL 60947-4-1 are tri-national CANENA standards. UL 60947-5-1 is also being developed as a tri-national standard but has not yet been published.

UL 60947-5-2 was issued as a US national standard only. Work continues on the tri-national effort and it is anticipated that it will be issued as a tri-national CANENA standard in the near future (1 –3 yrs).

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4.) What industrial control categories are affected?

The following Categories are affected by this harmonization effort.

Standard	Category Control Number (CCN)	Issued as a standard?	Implementation Plan
UL 60947-1	No CCN associated	Yes	Not Applicable
UL 60947-4-1	NLDX- Magnetic Motor Controllers NLRV- Manual Motor Controllers NKJH- Combination Motor Controllers NKCR- Auxiliary Devices (Overload Relays only, thermal and electronic) NRNT- Industrial Control Switches	Yes	Three transition phases*
UL 60947-5-1	NKCR- Auxiliary Devices (Pilot duty rated devices, push buttons, indicator lights and selector switches only)	No	TBD
UL 60947-5-2	NRKH- Proximity Switches	Yes	TBD
UL 61010-2-201	NRAQ- Programmable Controllers	Yes	Refer to NRAQ FAQs on Transition Webpage
IEC 61810-1	Control Relays - All-or-nothing (e.g. print relays, ice cube relays, etc...) NLDX- Magnetic Motor Controllers NRNT- Industrial Control Switches NKCR- Auxiliary Devices (Pilot duty rated devices, push buttons, indicator lights and selector switches only)	No	#
IEC 60947-4-3	NRNT - Contactors and motor-starters – AC semiconductor controllers and contactor for non-motor loads	No	TBD
IEC 60947-4-2	NMFT – Motor Controllers, Mechanically - Operated and Solid-State	No	TBD

* - See transition phases under question- **How will the harmonized standards be implemented?**

- Implementation Plan is under consideration.



5.) Is UL 508 going to be withdrawn?

No, only specific Parts (e.g. Magnetic Motor Controllers – Part II, Manual Motor Controllers – Part III, Combination Motor Controllers – Part IV, Overload Relays – Part XI, etc...) will be removed. Parts for “non-transitioned” categories (e.g. Float and Pressure Operated Switches – Part VII, etc...) will remain. Part I - All Equipment, will also remain.

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6.) How will the harmonized standards be implemented?

The implementation plan for UL 60947-4-1 is as follows. The following verbiage can be found on page 6 of the standard. The three transition phases are:

Date	Transaction phase
Before January 26, 2012	Product submittals will be evaluated to UL 60947-4-1 unless customers specifically request in writing that they be evaluated using UL 508.
January 26, 2012 – January 26, 2017	<u>New</u> product submittals will be evaluated to UL 60947-4-1 only; however revisions to <u>existing</u> products may still be evaluated using UL 508 if customers specifically request this in writing.
Effective January 27, 2017	All UL certified products must meet <u>UL 60947-4-1 only.</u> <u>Existing UL certification to UL 508 will be withdrawn</u>

The requirements in UL 508 and UL 60947-4-1 are at this time technically identical. Products complying with UL 508 also comply with UL 60947-4-1. Because the documents are technically identical at the present time it is not anticipated there will be a need for a technical review or Industry File Review of products evaluated to the affected UL 508 CCNs for compliance with UL 60947-4-1.

All other standards will have a transition plan that will be determined in 2013.

7.) How will products evaluated to UL 508 be identified from products evaluated to the UL 60947 product standards?

In order to evaluate products to the new harmonized standards and in an attempt to differentiate between those products evaluated to UL 508 and those to the new harmonized standards, the guide card associated with these specific CCNs have been revised to include the new harmonized documents. Products evaluated using the harmonized standards will be separated in the individual listing cards from those that were evaluated using UL 508.

Under the existing CCN structure, overload relays (mechanical and electronic) fall under NKCR. The guide cards for NKCR will reference both UL 60947-4-1 which will cover overload relays and UL 60947-5-1 which will cover auxiliary devices such as push buttons, pilot lights and selector switches.

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8.) How will this transition affect end product standards that currently reference UL 508?

Product standards that currently reference UL 508 will be revised to include the harmonized standards. It is not anticipated that this transition will have a significant impact on product standards resulting in the need for an Industry File Review.

9.) Will products evaluated to the harmonized standards be accepted in the field?

Products evaluated to the harmonized standards are intended for installation in accordance with NFPA 70 (NEC) just as are products evaluated to UL 508. The CCNs are not changing and the product identity markings are the same. It is not anticipated that this transition will result in field issues regarding acceptance of products evaluated to the harmonized standards.

10.) How will manufacturers of products evaluated to UL 508 be made aware of this transition?

Over the course of the next years leading up to January 1, 2012, UL will periodically issue bulletins to industry reminding them of the on going transition and suggesting that they consider moving any products currently certified to UL 508 over to the appropriate UL 60947 parts.

11.) Does UL provide any IEC related services as a result of this harmonization with the IEC 60947 Series of Standards?

UL-Demko is a NCB (Notified Certification Body) and participates in the IECE CB Scheme. Through our UL-Demko office we can provide a CB (Certified Body) certificate to several of the IEC 60947 product standards. In addition, authorization to apply the Demko D mark can also be obtained. Testing to the IEC product standards is not the same as testing to the UL harmonized version of the standards. Often a separate investigation is required to address any CB related work.

12.) Can a product be certified to both UL 508 and UL 60947-4-1 at the same time?

No, a product cannot be certified to both UL 508 and UL 60947-4-1. Either UL 508 or UL 60947-4-1 must be chosen for certification.

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13.) Can customers download UL 60947 free of charge from the UL Standards website?

UL certification clients can download UL 508 free of charge on the UL Standards website. However, customers are unable to see or download UL 60947 free of charge due to the ANSI copyright agreement for IEC Standards. Only the US national differences are available for download. Due to the copyright, customers must pay to see or download a complete copy of UL 60947.

Customers are able to purchase the UL IEC-Based Standard for a reduced cost from the Standards Certification Customer Library (SCCL) and have immediate access to view and/or download this document.

14.) What is a Control Relay?

A control relay, often referred to as "print relays or ice cube relays", are relays that are intended to be used in control circuit applications rather than in power circuit applications. A power circuit directly supplies loads such as lighting and heating circuits or motor circuits installed in accordance with Articles 420, 424 and 430 respectively of the National Electrical Code. A relay or contactor intended for use in a power circuit would be expected to have short circuit current ratings in addition to load ratings. Control relays will typically have load rating such as General Use, Pilot Duty, Resistive and possibly fractional HP ratings and are intended for control applications as defined in sub-clause 409.2 in the National Electrical Code.

15.) How does the UL 60947-4-1 transition affect "control relays and other control type products" that are typically Listed/Recognized to NRNT(2), NKCR(2) and NLDX(2)?

Manufacturers of control relays and other related control circuit products have expressed concern that these types of products do not fall under the scope of UL 60947-4-1. As a result we are not going to require manufacturers to transition their control circuit related products to UL 60947-4-1. We will retain these products under UL 508 for the foreseeable future. With respect to new submittals, clients will be asked if their control circuit products to be certified using UL 508 or UL 60947-4-1.

A Technical Harmonization Committee is being formed to explore the possibility of harmonizing with IEC 61810-1, Electromechanical Elementary Relays - Part 1: General requirements, and covering all control type relays under this new standard.

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16.) Can UL issue a Listed or Recognition mark for relays to IEC 61810-1 instead of UL 60947-4-1?

No. The UL Mark can only be applied using North American standards. At this time, UL has not harmonized with IEC 61810-1 and therefore cannot certify control circuit type products to this standard under our UL mark program (eg. Listing and Recognition). A Technical Harmonization Committee is being formed to explore the possibility of harmonizing (creating a North American standard based on) IEC 61810-1, the Standard for Electromechanical Elementary Relays - Part 1: General requirements. This new standard, if created, would be intended to cover all control circuit type relays.

IEC 60947-5-1, Low-voltage Switchgear and Control Gear - Part 5-1: Control Circuit devices and Switching Elements - Electromechanical Control Circuit Devices, is another IEC standard that covers relays. UL-Demko can issue a CB certificate for a relay based on IEC 60947-5-1. However, this is not a Certification path towards a UL Mark and/or NA acceptance.

UL intends to retain control type relays and other control circuit type product under UL 508 until either a harmonized standard for control relays has been published or it is decided to retain UL 508 for the purpose of certifying control type relays.

17.) How will this transition affect UL's Data Acceptance Program (DAP) participants that currently have UL 508 and CSA C22.2 No. 14 in their test scope?

All active Client Test Data (CTDP) and Third Party Test Data (TPTDP) participants who currently have these Standards (UL 508 and CSA C22.2. No. 14) in their scope will not be affected. Their test scope has been expanded to incorporate the corresponding UL 60947-1 and UL 60947-4-1 test(s). Note, the corresponding CSA tests are also included with this scope expansion.

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