



ELECTRICAL CONNECTIONS

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Listed Signs — Markings and Installation Instructions

The National Electrical Code (NEC) and UL 48, the Standard for Safety for Electric Signs, require specific markings and installation instructions for electric signs.



NEC Requirements for Listed Signs

NEC Section 600.1 identifies that Article 600 covers the installation of conductors, equipment, and field wiring for electric signs regardless of voltage. NEC Section 600.3 states that signs are to be listed and installed in conformance with that listing. The main UL product category for Signs (UYXT) covers electric signs employing incandescent lamps, LEDs, electro-luminescent panels, neon tubing, fluorescent lamps, high-intensity-discharge lamps or combinations thereof for installation in accordance with Article 600 of the NEC.

In addition to the requirements for listing and labeling, signs are required to comply with NEC Section 600.4 which has specific marking requirements and some permissive labeling applications.

The marking labels are to be permanent, durable and, when in wet locations, need to be weatherproof as required by NEC Section 600.4(D). Marking labels attached to UL Listed signs have been evaluated for adhesion, permanence, legibility and exposure to the applicable environmental conditions. These marking labels are intended to be used by manufacturers for application to their products at their place of manufacture.

If the sign has either a transformer or electronic power supply that is equipped with secondary-circuit ground-fault protection that too is required to be marked as such per NEC Section 600.23(F). Transformers or electronic power supplies that comply with this marking requirement are covered by UL product category Neon transformers and power supplies (PWIK).

Markings and Installation Instructions

Signs that have been evaluated to UL 48 have requirements for marking and installation instructions. All sign markings are to be visible during installation and available after installation. Signs intended for indoor use are marked “Dry Locations Only,” where intended for damp locations are marked “Suitable for Damp Locations” and where intended for wet locations they are marked “Suitable for Wet Locations.” Both UL 48 and NEC Section 600.4(A) require that signs are to be marked with the manufacturer’s name, trade name, trademark, or identifier, and electrical ratings in volts and amps.

All permanently connected signs are to include installation instructions, including mounting details and wiring methods.

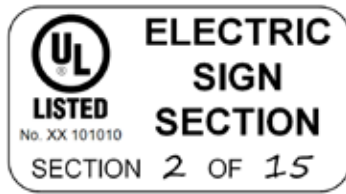
continued on page 2

Listed Signs (continued)

Installation instructions may be in the form of drawings and or diagrams. Installation instructions are to be marked on, attached to, or shipped with the sign so that they are available during installation and setup.

Electric signs, of such size that shipment in one carton or fully assembled is impractical, are permitted to be divided into sections. Each major subassembly bears an “Electric Sign Section” Listing Mark. Section sign subassemblies are to be marked where readily visible during installation to identify the following: the splice enclosure, the conductors to be spliced, the voltage rating of the splice insulation, the section number. For all section signs the following marking is required to be provided in accordance with NEC Section 600.4 (E): “Installation and assembly required, see installation instructions.”

Section sign installation instructions are to be either attached to each subassembly of the section sign or shipped with the section sign. These installation instructions have to contain the following information; a drawing depicting the arrangement of the subassemblies, instructions for the physical installation of the subassemblies and the mechanical connections between subassemblies, a drawing depicting the wiring arrangement of the subassemblies and components necessary to complete the electrical connection between subassemblies, any conditions of use required for the subassemblies, any conditions of use for any components required to complete the wiring, instructions for the field wiring between the subassemblies and any components, the connection to the source of supply and the requirements for grounding and bonding the sign.



Example of a listed label that is required per NEC Section 600.3.

LED signs, if installed in a wet location and where Class 2 cables do not have a moisture-impervious metal sheath, need to be identified for use in wet locations as required by NEC Section 600.33(A)(1). Class 2 cables that are suitable for use in wet locations are marked “wet” or “wet location.” NEC Section 600.33 requires that LED signs are to be installed in accordance with the sign manufacturer’s installation instructions and that the cable installed on the load side of the Class 2 power source is required to be a listed Class 2 cable

that meets the requirements for Class 2 circuits contained in Part III of Article 725. UL product category Power-limited circuit cable (QPTZ) covers power-limited circuit cable intended for use in Class 2 circuits as described in Article 725 of the NEC.

Additional information

Both the NEC Article 600 and UL 48 identify specific marking requirements as well as the requirement for installation instructions. Code authorities should verify that all required markings are present and review each sign’s installation instructions as part of the inspection process. Additional information on signs can be found in the UL White Book or by using the [UL Online Certification Directory](#).

For additional information on signs, please contact Jeff Fecteau at Jeffrey.Fecteau@ul.com or at +1.952.838.5452.

Meet Your UL Regulatory Services Representatives at the 2012 IAEI Section Meetings

Section	Dates	Location	UL Representatives	Meeting Information
Southwestern	August 26 – 30	San Diego, CA	Rich Berman Al Ramirez John Taecker	Click here
Northwestern	September 9 – 12	Missoula, MT	Jeff Fitzloff Al Ramirez	Click here
Western	September 16 – 19	Ft. Smith, AR	Tom Lichtenstein Jeff Fecteau	Click here
Canadian	September 21 – 23	Toronto, ON	Pierre McDonald Rich Berman	Click here
Eastern	September 27 – 30	Providence, RI	John Cangemi Donnie Shields	Click here
Southern	October 7 – 10	New Orleans, LA	Jeff Fecteau Al Ramirez	Click here