

SEMI E7-91 (Withdrawn 0312)

SPECIFICATION FOR ELECTRICAL INTERFACES FOR THE U.S. ONLY

This Standard was technically approved by the global Physical Interfaces & Carriers Technical Committee. This edition was approved for publication by the global Audits and Reviews Subcommittee on December 24, 2011. Available at www.semiviews.org and www.semi.org in March 2012; originally published in 1984; previously published November 2004.

NOTICE: This Document was balloted and approved for withdrawal in 2011.

NOTE 1: For Japan electrical interface requirements, see SEMI E31.

1 Purpose

1.1 The purpose of this Standard is to simplify the design and implementation of future semiconductor facilities where both equipment suppliers and users can be assured of the exact electrical interfaces required.

2 Scope

2.1 This Standard presents recommendations for the selection of specific electrical power interfaces:

- Service categories by voltage, current and phase for systems, motors, and other electrical loads
- Electrical connectors
- Cordage

NOTICE: SEMI Standards and Safety Guidelines do not purport to address all safety issues associated with their use. It is the responsibility of the users of the Documents to establish appropriate safety and health practices, and determine the applicability of regulatory or other limitations prior to use.

3 Referenced Standards and Documents

3.1 Other Standards

NEMA — National Electrical Manufacturer's Association¹

NFPA 70-1981 — National Electrical Code, (NEC) National Fire Protection Association²

NOTICE: Unless otherwise indicated, all documents cited shall be the latest published versions.

4 Terminology

4.1 None.

5 Service Categories

5.1 Voltage, current, and phase for motors and other electrical/electronic loads:

¹ National Electrical Manufacturer's Association, 1300 N 17th Street, Suite 1847, Rosslyn, VA 22209, USA; Telephone: 703.841.3200; Fax: 703.841.5900; <http://www.nema.org/>

² National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269, USA; Telephone: 617.770.3000, Fax: 617.770.0700, <http://www.nfpa.org>

5.2 Motors — (From Article 430-148, 150 of National Electrical Code)

<i>Power</i>	<i>Recommended Phase and Voltage</i>	<i>Recommended Current Range</i>
Motors 1/6 to 3/4 HP	120V 1Ø	4.4 to 13.8 AMPs
	208V 1Ø	2.4 to 7.6 AMPs
	230V 1Ø	2.2 to 6.9 AMPs
Motors 3/4 to 5 HP	208V 3Ø	3.1 to 16.7 AMPs
	230V 3Ø	2.8 to 15.2 AMPs
Motors 5 HP and Larger	480V 3Ø	7.6 AMPs and up

5.3 Other Loads — (By Calculation)

	<i>Ampere Range for Recommended Volts & Phases</i>			
<i>Power</i>	<i>120V 1Ø</i>	<i>208V 1Ø</i>	<i>208V 3Ø</i>	<i>480V 3Ø</i>
0–3000 Watts	0 to 25 A.	0 to 14 A.	0 to 8 A.	
3000–5000 Watts		14 to 24 A.	8 to 14 A.	
5000–30,000 Watts			13 to 83 A.	
30,000 and Above				36 A. and up

6 Electrical Connectors

6.1 The NEMA types listed below are available in many forms from many manufacturers. For example, the ‘receptacle’ configurations shown also apply to connectors and flanged outlets.

6.1.1 125 Volt, 1Ø, 20 AMPs max., straight blade.

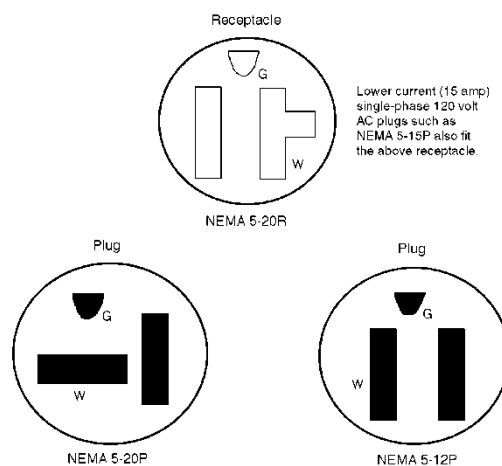


Figure 1

Dead front plugs are preferred.

6.1.2 120 Volt, Ø, 30 AMPs max., locking type.