

# Section W

## General Technical Data

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## Technical Data

## Industry Standards – Wiring Device Standards

Standards of many types developed by and for our industry form a vital consideration in the design of our products.

The following pages in this section briefly describe the functions of the organizations producing the standards which influence the safety and design of wiring devices.

#### **The American Boat & Yacht Council Inc. (ABYC®)**

The American Boat & Yacht Council (ABYC®) develops safety standards for the design, construction, equipment, maintenance and repair of small craft. The “Standards and Technical Information Reports for Small Craft” (previously known as “Standards and Recommended Practices for Small Craft”) contains over 65 standards and is growing. ABYC® is not a testing or approval agency.

#### **Underwriters Laboratories Inc. (UL)**

A not-for-profit corporation, operating as a testing facility and a developer of safety standards. By its own definition, Underwriters Laboratories Inc. founded in 1894, is chartered as a not-for-profit organization without capital stock, under the laws of the state of Delaware to establish, maintain, and operate laboratories for the examination and testing of devices, systems and materials to determine their relation to hazards to life and property.”

UL tests products for paying “clients” and if the product submitted passes the requirements of the UL standard for which it is submitted, a UL “Listing” is granted which allows the manufacturer to use the UL manifest or “Label” on its products. It is important to remember that UL is not an approval agency. It approves nothing, but merely lists a product as meeting minimum standards for safety. The Underwriters “Listing” mark on a product is generally accepted by the public and government agencies as evidence of a “safe” product, not necessarily a “quality” product.

#### **The Canadian Standards Association (CSA)**

The Canadian Standards Association performs a function for manufacturers similar to that performed in the USA by Underwriters Laboratories Inc. (UL). CSA develops standards for electrical products which parallel UL standards in many aspects but are not always identical. CSA tests products and grants paying clients “Certification” that their products meet CSA standards.

#### **The International Electrotechnical Commission (IEC)**

The International Electrotechnical Commission is a world-wide standards organization having over 60 member countries. The United States is active in many areas of the IEC and the standards it develops. Sponsorship of the U.S. effort on the IEC is by the American National Standards Institute (ANSI), coordinated by the United States National Committee of the IEC (USNC).

The IEC produces many standards covering all aspects of the electrical and electronic industry. IEC standards are accepted in whole or in part by many countries around the world.

#### **The National Electrical Code (NEC®)**

A document which basically describes recommended safe practice for the installation of all types of electrical equipment. The NEC® is not a “legal document” unless it is so designated by a municipality as its own statute for safe electrical installations. It is revised and published every three years.

The NEC is “national” only in the fact that it is the only document of which all or part is accepted by all states as an electrical guide. It is the only document of its kind written with national input supplied by twenty “panels” of advisors containing several hundred experts in the electrical field from all parts of the country. The sponsoring agency of the NEC is the National Fire Protection Association (NFPA).

#### **The National Electrical Manufacturers Association (NEMA®)**

An organization of over 450 manufacturers of electrical equipment, including, but not limited to, wiring devices, wire and cable, conduit, load centers, pressure wire connectors, circuit breakers, fuses, etc.

NEMA is the “voice” of the electrical industry, and through it standards for electrical products are formulated. Generally these standards promote interchangeability between products of one manufacturer with like products made by another manufacturer. In some cases, standards relating to product “performance” are also formulated by NEMA but these are the exception rather than the rule.








NEMA standards are certainly not compulsory, but generally they are accepted by those manufacturers that help to write them as a way of making their products more saleable and acceptable.

NEMA standards are utilized by many consumers in writing specifications for the materials they purchase.

## Technical Data Certification Agencies and Markings

**Understanding Certification Marks:** Certification marks vary significantly with respect to testing required to achieve a particular mark. In some cases, (i.e.: Specification Grade), no outside certification agency is involved. The manufacturer decides which of their products they wish to be so identified. The following table for 15 and 20A Straight Blade receptacles demonstrates these wide differences. The understanding of these marks permits the user/specifier to make more meaningful product selections.

**Understanding Product Certification Marks – 15 & 20 Amp Straight Blade Receptacles**  
Products that carry certification mark must meet the specific testing standards indicated.

Certification Mark	UL 498	CSA, C22.2 No. 42	UL 498 Hospital Grade	CSA, C22.2 No. 42 M Hosp. Grade	DESC W-C 596	Certification Agency
<b>Spec. Grade*</b>	No Testing Required – An Advertisement/Trade Term					Manufacturer Only
 **	X					Underwriters Laboratories Inc. Recognized Component for OEM Use
	X					Underwriters Laboratories Inc.
		X				Canadian Standards Association
 • Hospital Grade	X		X			Underwriters Laboratories Inc.
 • Hospital Grade		X		X		Canadian Standards Association
 Fed.Spec.	X				X	Underwriters Laboratories Inc. & Defense Supply Center-Columbus
 Fed.Spec. • Hospital Grade	X		X		X	Underwriters Laboratories Inc. & Defense Supply Center-Columbus

\*Includes such variations as Premium Spec. Grade, Super Spec. Grade, etc.

\*\* End product test also required.

### Cross Reference Notice:

Recognize that cross reference guides supplied by some manufacturers should be used only to determine compatible devices (rating and configuration). It does not, in any way, deal with performance levels (which will vary widely by manufacturer). Common catalog numbers are often used for convenience of selection. The use of the same catalog number is solely the discretion of the manufacturer. It in no way implies compliance to any standard or testing criteria.

## Technical Data

**Associations, Organizations and Standards**

For convenience, the following listings define common acronyms for a variety of organizations.

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**Standards Development Organizations: Organizations primarily involved in the development and/or promulgation of standards.**

ANSI	American National Standards Institute.
CANENA	Consejo de Armonizacion de los Naciones de America.
IEC	International Electrotechnical Commission.
IEEE	Institute of Electrical & Electronics Engineers, Inc.
ISA	The Instrumentation, Systems and Automation Society.
ISO	International Organization for Standardization.
NFPA	National Fire Protection Association, Inc.
SAE	Society of Automotive Engineers.
SME	Society of Manufacturing Engineers.




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**Installation Codes**

CEC Part I	Canadian Electrical Code.
NEC	National Electrical Code.
NOM-01	Normas Oficiales Mexicanas -01 (Mexican Electrical Code).




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**Industry Associations: Associations of companies or individuals for the purpose of standardization, trade, and professional development, etc.**

ABYC	American Boat and Yacht Council.
ASTM	American Society for Testing and Materials.
BICSI	Building Industry Consulting Services International.
BOMA	Building Owner Management Association.
CANAME	Camara Nacional de Manufacturas Electricas.
CEMRA	Canadian Electrical Manufacturers Representative Association.
ECOC	Electrical Contractors of Canada.
EF-C	Electro-Federation-Canada.
EIA/TIA	Electronics Industry Association/Telecommunications Industry Association.
EPRI	Electric Power Research Institute.
IAEI	International Association of Electrical Inspectors.
IECI	Independent Electrical Contractors Association.
IFMA	International Facilities Management Association.
NAED	National Association of Electrical Distributors.
NAW	National Association of Wholesalers.
NECA	National Electrical Contractors Association.
NEMA	National Electrical Manufacturers Association.
NEMRA	National Electrical Manufacturers Representatives Association.
NMDA	National Marine Distributor Association.
NMRA	National Marine Representative Association.
SEMI	Semi Conductor Equipment and Material International.



## Technical Data

# Codes and Standards Organizations


### Addresses

For convenience, the following listings define common acronyms for a variety of organizations.

**Certification Agencies:** Primarily involved in certification of products or manufacturers to standards developed by the certification agency or by others.

ANCE	National Association of Normalization and Certification of the Electrical Sector.
BSI	British Standards Institute.
CE	Self Certification Marking.
CSA	Canadian Standards Association.
FM	Factory Mutual.
NRTL	Nationally Recognized (by OSHA) Testing Laboratory.
TÜV	TÜV Rheinland of N.A., Inc.
UL	Underwriters Laboratories Inc.
VDE	Verband Deutscher Elektrotechniker (Germany).



Note:  Hubbell products are in the process of being certified in Mexico. Many have already been certified. Consult with the factory for specific data.

### Government Agencies

DSCC	Defense Supply Center – Columbus.
FCC	Federal Communications Commission.
IAPA	Industrial Accident & Prevention Association (Canada).
OSHA	Occupational Safety and Health Administration.

Copies of standards referred to on the preceding pages may be purchased from the following:

**American Boat & Yacht Council, Inc. (ABYC)**  
3069 Solomons Island Road  
Edgewater, MD 21037

**The American National Standards Institute (ANSI)**  
1819 L Street NW  
Sixth Floor  
Washington DC, 20036

25 West 43rd Street  
4th Floor  
New York, NY 10036

**The Canadian Standards Association (CSA)**  
Standards Division  
178 Rexdale Boulevard  
Toronto, Ontario  
CANADA, M9W 1R3

**National Electrical Manufacturers Association (NEMA)**  
1300 North 17th St.  
Suite 1847  
Rosslyn, VA 22209

**National Fire Protection Association (NFPA)**  
One Batterymarch Park  
Quincy, MA 02269

**The International Electrotechnical Commission (IEC)**  
3 Rue de Varebe  
PO Box 131  
Ch-1211 Geneve 20  
Switzerland

**American Boat & Yacht Council, Inc. (ABYC)**  
3069 Solomons Island Road  
Edgewater, MD 21037

**Asociacion Nacional de Normalizacion y Certificacion del Sector Electrico A.C. (NOM – ANCE)**  
Insurgentes Sur 664 3ER Piso  
Col. Del Valle  
03100 Mexico D.F.  
Phone: 011 525 227-1110  
Fax: 011 525 227-1177

**Occupational Safety and Health Administration (OSHA)**  
200 Constitution Avenue N.W.  
Rm. 3647  
Washington, D.C. 20210

**Underwriters Laboratories Inc. (UL)**  
1285 Walt Whitman Road  
Melville, NY 11747  
333 Pfingsten Road  
Northbrook, IL 60062  
12 Laboratory Drive  
Research Triangle Park, NC 27709  
1655 Scott Boulevard  
Santa Clara, CA 95050  
2600 North West Lake Road  
Camas, WA 98607  
25175 Regency Drive  
Novi, MI, 48375

Technical Data

## Elements of the IP Code and Their Meanings

In Accordance with Standard IEC 60529

### IP Suitability Rating

IP suitability ratings are a system for classifying the degree of ingress protection provided by enclosures of electrical equipment. Generally, The higher the number, the greater the degree of protection; they apply **ONLY** to properly installed equipment. The numerals stand for the following:

1. First Numeral: degree of protection for persons against access to hazardous parts inside the enclosure and/or against the ingress of solid foreign objects.
2. Second Numeral: degree of protection of equipment inside enclosures against damage from the ingress of water.

## IP67 SUITABILITY

**Example: IP67 = Ingress Protection/Dust-Tight/Temporary Immersion**

Meaning for the Protection of Equipment		
Code Letters	First Number	Second Number
Ingress Protection	Against Ingress of Solid Foreign Objects	Against Ingress of Water with Harmful Effects
IP	0 – Non-protected 1 – ≥ 50 mm diameter 2 – ≥ 12.5 mm diameter 3 – ≥ 2.5 mm diameter 4 – ≥ 1.0 mm diameter 5 – Dust-protected 6 – Dust-tight	0 – Non-protected 1 – Vertically dripping 2 – Dripping (15°Tilted) 3 – Spraying 4 – Splashing 5 – Jetting 6 – Power jetting 7 – Temporary immersion 8 – Continuous immersion

*Note: ≥ denotes greater than or equal to.*



## Technical Data

# Horsepower Ratings

For NEMA Configuration

### Horsepower Ratings for NEMA Configurations – Plugs and Receptacles Only

NEMA Config.	AC HP Rating <sup>1</sup>	NEMA Config.	AC HP Rating <sup>1</sup>
1-15	0.5	L1-15	0.5
2-15	1.5*	L2-20	2*
2-20	2*	L5-15	0.5
2-30	2*	L5-20	1
5-15	0.5	L5-30	2
5-20	1	L6-15	1.5*
5-30	2	L6-20	2*
5-50	2	L6-30	2*
6-15	1.5*	L7-15	2
6-20	2*	L7-20	2
6-30	2*	L7-30	3
6-50	3*	L8-20	3
7-15	2	L8-30	5
7-20	2	L10-20	2 L-L
7-30	3		1 L-N
7-50	5	L10-30	2 L-L
10-20	2 L-L		2 L-N
	1 L-N	L11-15	2
10-30	2 L-L	L11-20	3
	2 L-N	L11-30	3
10-50	3 L-L	L12-20	5
	2 L-N	L12-30	10
11-15	2	L14-20	2 L-L
11-20	3		1 L-N
11-30	3	L14-30	2 L-L
11-50	7.5		2 L-N
14-15	1.5 L-L	L15-20	3
	0.5 L-N	L15-30	3
14-20	2 L-L	L16-20	5
	1 L-N	L16-30	10
14-30	2 L-L	L18-20	2
	2 L-N	L18-30	3
14-50	3 L-L	L19-20	5
	2 L-N	L19-30	10
14-60	3 L-L	L21-20	2
	2 L-N	L21-30	3
15-15	2	L22-20	5
15-20	3	L22-30	10
15-30	3		
15-50	7.5		
15-60	10		
18-15	2		
18-20	2		
18-30	3		
18-50	7.5		
18-60	7.5		

Notes: <sup>1</sup>The phase to phase horsepower ratings are noted "L-L". The phase to neutral ratings are identified "L-N".  
\*Also suitable for 208V.

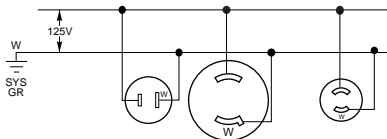
# Technical Data

## Circuit Wiring Diagrams

### Wiring Diagrams for NEMA Configurations

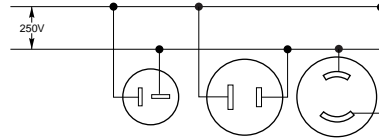
(Configurations shown are for female devices)

#### 125V – 2P, 2W



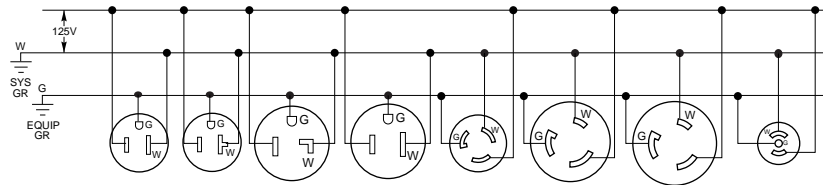
ANSI/NEMA WD-6 1-15R L1-15R ML1-R

#### 250V – 2P, 2W



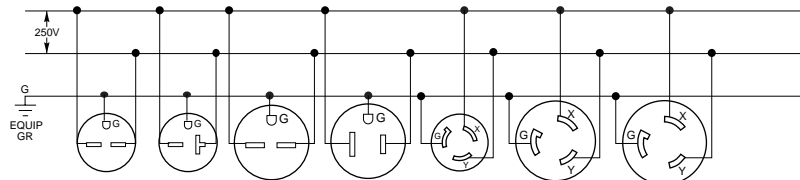
ANSI/NEMA WD-6 2-20R 2-30R L2-20R

#### 125V – 2P, 3W – Grounding



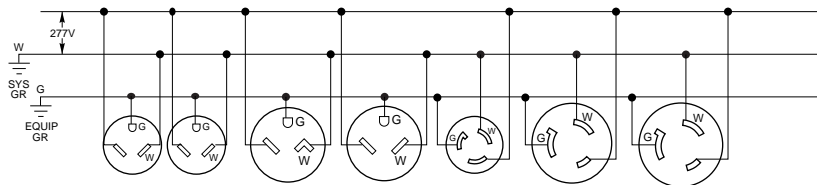
ANSI/NEMA WD-6 5-15R 5-20R 5-30R 5-50R L5-15R L5-20R L5-30R ML2-R

#### 250V – 2P, 3W – Grounding



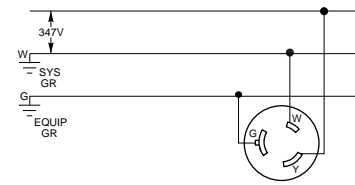
ANSI/NEMA WD-6 6-15R 6-20R 6-30R 6-50R L6-15R L6-20R L6-30R

#### 277V AC – 2P, 3W – Grounding



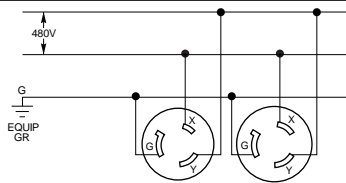
ANSI/NEMA WD-6 7-15R 7-20R 7-30R 7-50R L7-15R L7-20R L7-30R

#### 347V AC – 2P, 3W – Grounding



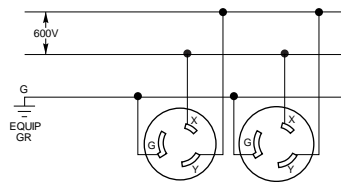
ANSI/NEMA WD-6 L24-20R

#### 480V AC – 2P, 3W – Grounding



ANSI/NEMA WD-6 L8-20R L8-30R

#### 600V AC – 2P, 3W – Grounding



ANSI/NEMA WD-6 L9-20R L9-30R

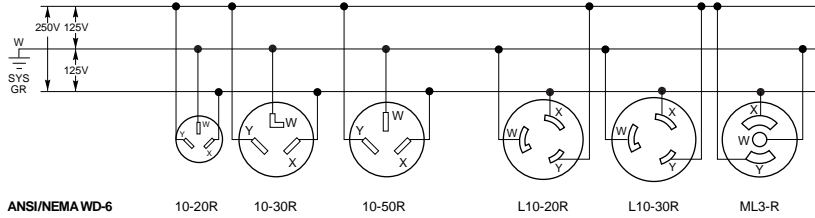
Note: The above diagrams are intended to show device terminal identification only.



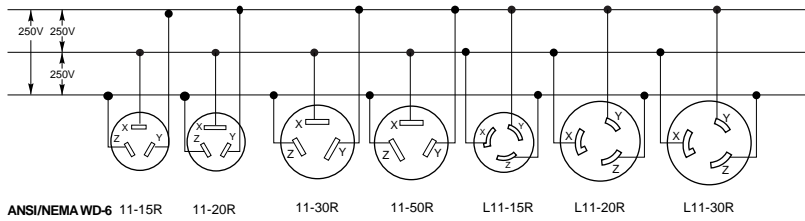
# Technical Data Circuit Wiring Diagrams

## Wiring Diagrams for NEMA Configurations (Configurations shown are for female devices)

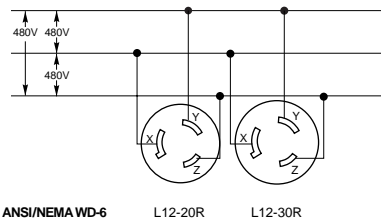
### 125/250V – 3P, 3W



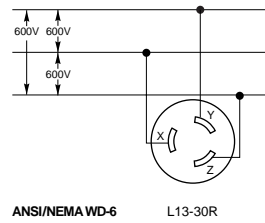
### 3Ø 250V – 3P, 3W



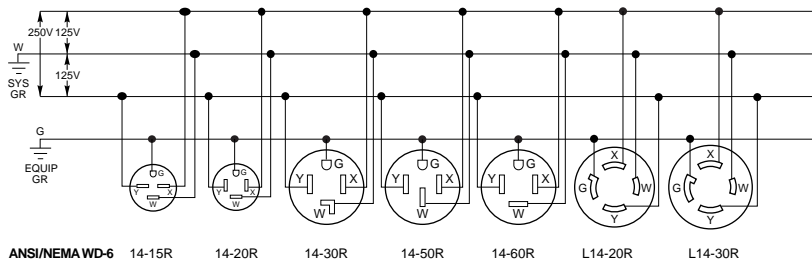
### 3Ø 480V – 3P, 3W



### 3Ø 600V – 3P, 3W



### 125/250V – 3P, 4W – Grounding



Note: The above diagrams are intended to show device terminal identification only.

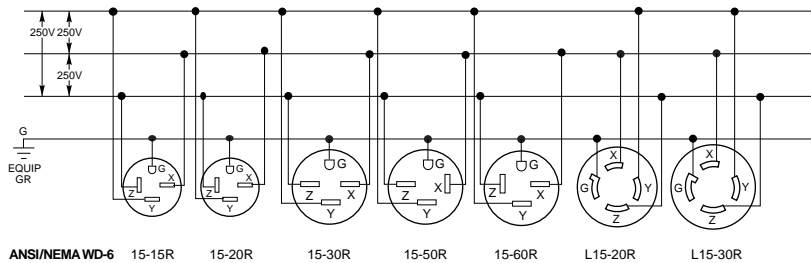
# Technical Data

## Circuit Wiring Diagrams

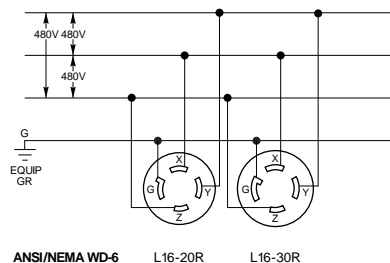
### Wiring Diagrams for NEMA Configurations

(Configurations shown are for female devices)

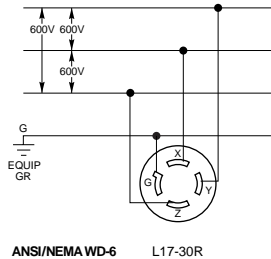
#### 3Ø 250V – 3P, 4W – Grounding



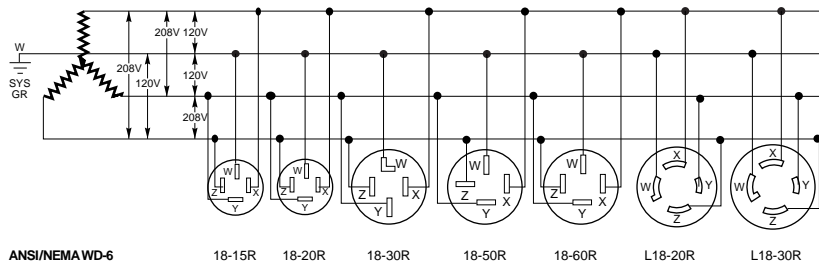
#### 3Ø 480V – 3P, 4W – Grounding



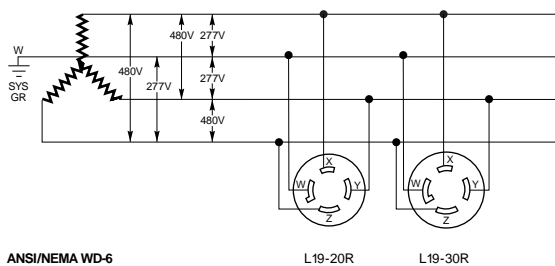
#### 3Ø 600V – 3P, 4W – Grounding



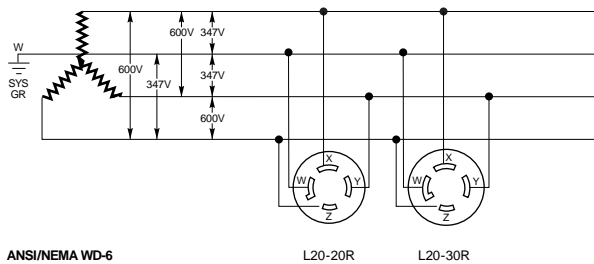
#### 3ØY 120/208V – 4P, 4W



#### 3ØY 277/480V – 4P, 4W



#### 3ØY 347/600V – 4P, 4W

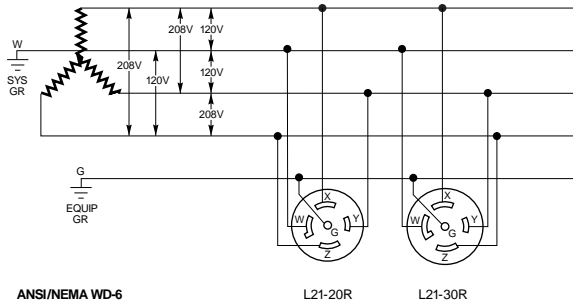


Note: The above diagrams are intended to show device terminal identification only.

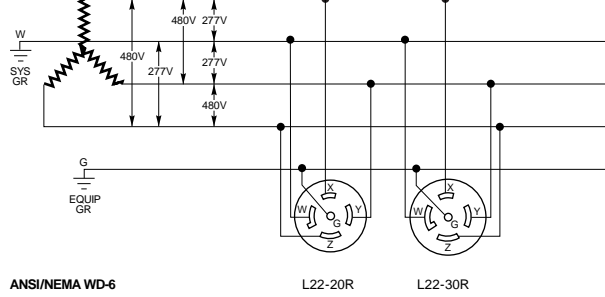
# Technical Data Circuit Wiring Diagrams

## Wiring Diagrams for NEMA Configurations (Configurations shown are for female devices)

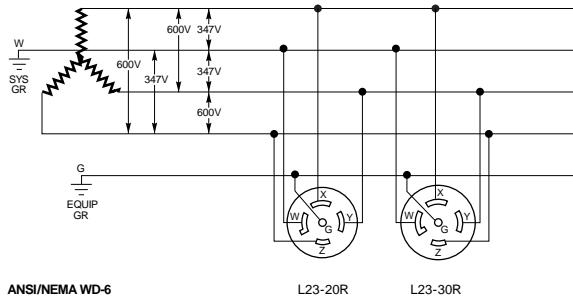
### 3ØY 120/208V – 4P, 5W – Grounding



### 3ØY 277/480V – 4P, 5W – Grounding



### 3ØY 347/600V – 4P, 5W – Grounding



Note: The above diagrams are intended to show device terminal identification only.

## Technical Data

**Diameter Ranges of Jacketed Cord***In Accordance with Standard UL62***Diameter Ranges of Jacketed Cord**

Acceptable range in inches (mm) of the average overall diameter of round, jacketed heater cords and non-retractile vacuum cleaner and service cords.

Type of Cord	AWG Size	2 Conductor	3 Conductor	4 Conductor	5 Conductor
SV, SVE, SVEO, SVOO SVO, SVT, SVTOO, SVTO	18	.22"-.26" (5.6-6.6)	.23"-.27" (5.8-6.9)	—	—
	16	.25"-.28" (6.2-7.1)	.26"-.30" (6.6-7.5)	—	—
SJ, SJE, SJOO, SJO, SJEO, SJEOO SJT, SJTO, SJTOO, SJEW, SJOOV SJOW, SJEOW, SJEOWW, SJTW SJTOW, SJTOOW	18	.28"-.32" (7.1-8.1)	.30"-.34" (7.6-8.6)	.33"-.37" (8.4-9.4)	—
	16	.31"-.34" (7.9-8.6)	.33"-.36" (8.4-9.1)	.35"-.40" (8.9-10.2)	—
	14	.34"-.38" (8.6-9.7)	.36"-.40" (9.1-10.2)	.39"-.44" (9.9-11.2)	—
	12	.41"-.46" (10.4-11.7)	.43"-.48" (10.9-12.2)	.47"-.52" (11.9-13.2)	—
	10	.54"-.61" (13.7-15.5)	.57"-.64" (14.5-16.3)	.63"-.70" (16.0-17.8)	—
S, SE, SOO, SEO, SEOO, ST STOO, STO, SEW, SOOW, SOW SEOW, SEOWW, STW, STOOV STOW	18	.34"-.39" (8.6-9.9)	.36"-.40" (9.1-10.2)	.39"-.43" (9.9-10.9)	.46"-.51" (11.7-13.0)
	16	.37"-.41" (9.4-10.4)	.39"-.43" (9.9-10.9)	.41"-.46" (10.4-11.7)	.49"-.55" (12.4-14.0)
	14	.50"-.55" (12.7-14.0)	.52"-.58" (13.2-14.7)	.56"-.62" (14.2-15.7)	.63"-.71" (16.0-18.0)
	12	.57"-.63" (14.5-16.0)	.59"-.66" (15.0-16.8)	.64"-.71" (16.3-18.0)	.70"-.77" (17.8-19.6)
	10	.62"-.69" (15.7-17.5)	.65"-.72" (16.5-18.3)	.70"-.78" (17.8-19.8)	.76"-.84" (19.3-21.3)
	8	.78"-.88" (19.8-22.4)	.83"-.93" (21.1-23.6)	.93"-.1.05" (23.6-26.7)	1.00"-.1.15" (25.4-29.2)
	6	.92"-.1.05" (23.4-26.7)	.97"-.1.10" (24.6-27.9)	1.05"-.1.20" (26.7-30.5)	1.18"-.1.33" (30.0-33.8)
	4	1.06"-.1.21" (26.9-30.7)	1.13"-.1.28" (28.7-32.5)	1.25"-.1.45" (31.8-36.8)	—
2	1.21"-.1.40" (30.7-35.6)	1.30"-.1.50" (33.0-38.1)	1.45"-.1.65" (36.8-41.9)	—	

# Technical Data

## Electrical Symbols and Abbreviations

In Accordance with American National Standards Institute

### General Outlets

#### Ceiling Wall

○	-○	Lighting Outlet
Ⓟ	-Ⓟ	Blanked outlet
Ⓧ		Deep cord
ⓔ	-ⓔ	Electrical outlet: for use only when circle used alone might be confused with columns, plumbing symbols, etc.
ⓕ	-ⓕ	Fan outlet
ⓙ	-ⓙ	Junction box
Ⓛ	-Ⓛ	Lamp holder
Ⓛ <sub>ps</sub>	-Ⓛ <sub>ps</sub>	Lamp holder with pull switch
Ⓢ	-Ⓢ	Pull switch
Ⓥ	-Ⓥ	Outlet for vapor discharge lamp
ⓧ	-ⓧ	Exit light outlet
Ⓢ	-Ⓢ	Clock outlet (specify voltage)

#### Convenience Outlets

Ⓢ		Duplex convenience outlet
Ⓢ <sub>1</sub>		Convenience outlet other than duplex 1-single, 3-triplex, etc.
Ⓢ <sub>wp</sub>		Weatherproof convenience outlet
Ⓢ <sub>r</sub>		Range outlet
Ⓢ <sub>s</sub>		Switch and convenience outlet
Ⓢ <sub>r</sub>		Radio and convenience outlet
Ⓢ		Special purpose outlet (Des. in Spec.)
Ⓢ		Floor outlet

#### Switch Outlets

S	Single pole switch
S <sub>2</sub>	Double pole switch
S <sub>3</sub>	Three way switch
S <sub>4</sub>	Four way switch
S <sub>D</sub>	Automatic door switch
S <sub>E</sub>	Electrolier switch
S <sub>K</sub>	Key operated switch
S <sub>P</sub>	Switch and pilot lamp
S <sub>CB</sub>	Circuit breaker switch
S <sub>WCB</sub>	Weatherproof circuit breaker
S <sub>MC</sub>	Momentary contact switch
S <sub>RC</sub>	Remote control switch
S <sub>WP</sub>	Weatherproof switch
S <sub>F</sub>	Fused switch
S <sub>WF</sub>	Weatherproof fused switch

#### Special Outlets

Any standard symbol as given above with the addition of a lower case subscript letter may be used to designate some special variation of standard equipment of particular interest in a specific set of architectural plans.

○<sub>a.b.c.etc.</sub> When used they must be listed in the Key of Symbols on each drawing and if necessary further described in the specifications.

### Panels, Circuits and Miscellaneous

■	Lighting panel
▨	Power panel
—	Branch circuit; concealed in ceiling or wall
---	Branch circuit; concealed in floor
.....	Branch circuit; exposed
→→	Home run to panel board. Indicated number of circuits by number of arrows. <i>Note: Any circuit without further designation indicates a two-wire circuit. For a greater number of wires indicate as follows: ## (3 wires)### (4 wires), etc.</i>
—	Feeders <i>Note: Use heavy lines and designate by number of corresponding to listing in feeder schedule.</i>
Ⓛ	Underfloor duct and junction box. Triple system <i>Note: For double or single systems eliminate one or two lines. This symbol is equally adaptable to auxiliary system layouts</i>
Ⓢ	Generator
Ⓜ	Motor
Ⓢ	Instrument
Ⓢ	Power transformer (or draw to scale)
Ⓢ	Controller
Ⓢ	Isolating switch

#### Auxiliary Systems

Ⓢ	Push Button	Ⓢ	Buzzer
Ⓢ	Bell	Ⓢ	Annunciator
Ⓢ	Outside telephone		
Ⓢ	Interconnecting telephone		
Ⓢ	Telephone switchboard		
Ⓢ	Bell ringing transformer		
Ⓢ	Electric door opener		
Ⓢ	Fire alarm bell	Ⓢ	Fire alarm station
Ⓢ	City fire alarm station		
Ⓢ	Fire alarm central station		
Ⓢ	Automatic fire alarm device		
Ⓢ	Watchman's station		
Ⓢ	Watchman's central station		
Ⓢ	Horn		
Ⓢ	Nurse's signal plug	Ⓢ	Maid's signal plug
Ⓢ	Radio outlet		
Ⓢ	Signal central section		
Ⓢ	Interconnection box	Ⓢ	Battery
---	Auxiliary system circuits.		

*Note: Any line without further designation indicates a 2-wire system. For a greater number of wires designate with numerals in manner similar to --- 12-No. 18 W-3'4"C, or designate by number corresponding to listing in schedule.*

Ⓢ<sub>a.b.c.</sub> Special auxiliary outlets  
Subscript letters refer to notes on plans or detailed description in specifications.

## Technical Data

**Electrical Wiring Device Terms***Glossary*

**Abrasion Resistance** - Ability of wire, cable or material to resist surface wear.

**Adapter** - An accessory used for interconnecting non-mating devices or converting an existing device to a new or modified use.

**A.C. (Alternating Current)** - An electric current that reverses direction in a circuit at regular intervals, such as normal household current.

**Adapter, Molded On Adapter** - An adapter that is factory molded to a length of flexible cord.

**Adapter, "W" Type** - Same as "Y" type, except having three cord connectors arranged in the form of the letter "W."

**Adapter, "Y" Type** - An adapter in the form of a letter "Y," having two cord connectors on one end and a male plug on the other end.

**Adapter, Cube Tap** - An adapter that converts one receptacle opening to multiple openings.

**Adapter, Current Tap** - An adapter consisting of a medium base lampholder extension, with or without integral switch, having one or two receptacle openings.

**Adapter, Duplex** - An adapter that provides two female receptacle openings when plugged into a single receptacle opening.

**Adapter, Grounding** - An adapter that converts a two-wire receptacle opening to a two-pole, three-wire.

**Adapter, Lampholder** - A threaded adapter that converts the thread size of the lampholder in which it is inserted, permitting the lampholder to accept an incandescent lamp bulb of a different size.

**Adapter, Multiple** - An adapter that is attached to the power cord for equipment that provides an additional receptacle opening at the top of the adapter.

**Adapter, Series** - An adapter wired in series to a flexible cord containing an in-line switch which is used to control electrical equipment plugged into the adapter.

**Adaptive Technology** - Motion Sensing Technology where the on-board microprocessor will adapt (learn) the occupancy patterns of an individual or area.

**AL/CU** - A marking designation used on certain devices to indicate their suitability for connection to either aluminum or copper conductors.

**Ambient Temperature** - The temperature of a medium (gas or liquid) surrounding an object.

**American Wire Gauge (AWG)** - The standard system used for designating wire diameter. The lower the AWG number, the larger the diameter. Also called the Brown and Sharpe (B&S) wire gauge.

**Ampacity** - The current in amperes that a conductor can carry continuously under the conditions of use without exceeding its temperature rating.

**Angle** - A device that allows the attached flexible cord to exit at right angles to the device's face.

**ASTM** - Abbreviation for the American Society for Testing and Materials, a non-profit industry-wide organization which publishes standards, methods of tests, recommended practices, definitions and other related material.

**Auto Reset** - An in-line GFCI device that resets automatically after loss of neutral and when power is restored.

**AWG** - See American Wire Gauge.

**Bar Choke** - A ferrite bar that is wrapped with copper wire. This device is used to reduce RFI generated by a dimmer or other electronic switching devices.

**Bonding** - The permanent joining of metallic parts to form an electrically conductive path that will assure electrical continuity and the capacity to conduct safely any current likely to be imposed.

**Braid** - A fibrous or metallic group of filaments interwoven in cylindrical form to form a covering over one or more wires.

**Branch Circuit** - The circuit conductors between the final overcurrent device protecting the circuit and the outlet(s).

**Branch Circuit, General Purpose** - A branch circuit that supplies a number of outlets for lighting and appliances.

**Cable** - A stranded conductor with or without insulation and other coverings (single-conductor cable), or a combination of conductors (multiple-conductor cable).

**Cable Filler** - The material used in multiple-conductor cables to occupy the interstices formed by the assembly of the insulated conductors, thus forming a cable core.

## Technical Data

# Electrical Wiring Device Terms

Glossary

- Cable Sheath** - The protective covering applied to cables.
- Cabling** - Twisting together two or more insulated conductors by matching to form a cable. In fiber optics, a method by which a group or bundle of fibers is mechanically assembled.
- Capacitance (C)** - The ability of dielectric material between conductors to store electricity when a difference of potential exists between the conductors. The unit of measure is the farad, which is the capacitance value that will store a charge of one coulomb when a one-volt potential difference exists between the conductors. In ac, one farad is the capacitance value which will permit one ampere of current when the voltage across the capacitor charges at a rate of one volt per second.
- Clamping** - The process of restricting voltage to a maximum level above the typical line voltage line. Used in TVSS specifications.
- Class A** - Rating of GFCI trip level 4-6mA range. Personal protection.
- Class B** - Rating of GFCI trip level 20mA range. Used in equipment protection.
- CO/ALR** - A marking designation used on certain receptacles and switches to indicate their suitability for connection to either aluminum or copper conductors.
- Connector (Electrical Device)** - A female device which is attached to, or provided with, means for attachment to a flexible cord and which is not intended for fixed mounting. Used in making a detachable connection to an attachment plug or a flanged equipment power inlet.
- Contact** - The part of a connector which actually carries the electrical current, and are touched together or separated to control the flow.
- Continuous Load** - A load where the maximum current is expected to continue for three hours or more.
- Control Cable** - A multiconductor cable made for operation in control of signal circuits
- Cord Connector (Mechanical Device)** - See Strain Relief, means by which the flexible cord entering a device is gripped in order to relieve stress on the terminals from tension applied to the cord.
- Cordset** - Portable cord fitted with a wiring device at one or both ends.
- Cord** - A flexible insulated cable.
- Corrosion Resistant** - A device constructed of special materials and/ or suitable plated to withstand corrosive environments.
- Current** - The flow of electrons through an electrical conductor, measured in amperes.
- Current Tap** - Device for providing two or more contact devices from a single contact device.
- D.C. (Direct Current)** - An electric current that flows only in one direction through a circuit, such as battery power.
- Dedicated Circuit** - A circuit established to provide control voltage and current to one load or one type of load, such as an electric range or a computer.
- Device** - Unit of an electrical system that is intended to carry, but not utilize, electrical energy.
- Device Cover Plate** - Plate intended to close a device box when used in conjunction with a wiring device, and which may be secured to the device or to the device box. Note: A family of such plates may include a blank plate that may be secured to the device box.
- Dielectric Strength** - The voltage which an insulation can withstand before breakdown occurs. Usually expressed as a voltage gradient (such as volts per mil).
- Dimmer** - A switch with electronic components that permit control of lighting intensity.
- Door Switch** - A momentary contact switch normally installed in a doorjamb. The switch is activated when the door is opened or closed.
- Drain Wire** - In a cable, the uninsulated wire laid over the component or components and used as a ground connection.
- Dual Technology Sensors** - Occupancy sensors that utilize ultrasonic and infrared technology to detect a person's presence in a room for lighting applications.
- Dust-tight** - A device or enclosure so constructed that dust will not enter under specified test conditions.
- Duty, Continuous** - Operation at a substantially constant load for an indefinitely long time.



## Technical Data

**Electrical Wiring Device Terms***Glossary*

**Duty, Periodic** - Intermittent operation in which the load conditions are regularly recurrent.

**Duty, Varying** - Operation at loads, and for intervals of time, both of which may be subject to wide variation

**DV/DT** - The rate of change from voltage over an increment of time. Used to rate some semiconductors.

**Elastomer** - Macromolecular material that at room temperature returns rapidly to approximately its initial dimensions and shape after substantial deformation by a weak stress and release of that stress.

**EMI** - Electromagnetic interference or unwanted signal pick-up. One of two types of electrical "noise" caused by varying magnetic fields conducted into branch wiring from inductive load switching.

**EMP** - Electromagnetic pulse caused by lightning or conductors.

**Explosion Proof** - A device so constructed as to meet the requirements of hazardous (classified) locations as defined by the National Electrical Code, NFPA-70.

**Federal Specification Listed** - A device which is 3rd party certified to meet federal government specifications and for use on government procurement quotations.

**Feed Through** - The practice of wiring a single branch circuit through a device and feeding power to other devices wired downstream. Feeding through a GFCI would provide ground fault protection to downstream receptacles.

**Fillers** - Non-conducting components cabled with the insulated conductors or optical fibers to impart roundness, flexibility, tensile strength, or a combination of all three, to the cable.

**Fire Rated Poke Thrus (FRPT)** - A electrical device that is installed in a drilled hole of a concrete floor to distribute power and or communication wiring while maintaining fire integrity of the floor not to exceed the FRPT's rating.

**Flanged Inlet (Male Base)** - A male device which is intended for flush mounting on an appliance or equipment and which serves to connect utilization equipment to a cord connector body.

**Flanged Receptacle (Equipment Receptacle)** - A receptacle which is intended for flush mounting on an appliance or on equipment which is

intended to establish electrical connection with an inserted plug.

**Flexible** - That quality of cable or cable component which allows for bending under the influence of outside force, as opposed to limpness which is bending due to the cable's own weight.

**Fluorescent Lamp** - A glass housing that contains phosphorus in a sealed vacuum. When the phosphorus is excited from a voltage charge, it becomes ionized and gives off light.

**Fluorescent Starter** - A device rated in watts having a voltage-sensitive switch and a capacitor whose function is to provide a high-voltage pulse to start a fluorescent lamp.

**Fluorescent Starter, Automatic Reset** - A fluorescent starter that automatically restarts a new replacement lamp after the circuit is energized.

**Fluorescent Starter, Direct Current** - A thermal type of fluorescent starter for use on a direct current (D.C.) circuit.

**Fluorescent Starter, Glow Discharge** - A fluorescent starter that starts a lamp very rapidly and will continue to try to start a failed lamp, resulting in the lamp flickering until the lamp is replaced.

**Fluorescent Starter, Manual Reset** - A fluorescent starter that automatically deactivates a failed lamp to eliminate flickering. A reset button is provided on the starter to activate the circuit after lamp replacement.

**Flush-Mounted** - An device intended to be installed flush with the surface of a panel or on equipment.

**Gas Diode** - A primary component in high rated TVSS in conjunction with M.O.V.

**Gauge** - A term used to denote the physical size of a wire.

**General-Use Snap Switch** - A form of general-use switch so constructed that it can be installed in flush device boxes or on outlet box covers, or otherwise used in conjunction with wiring systems recognized by the NEC.

## Technical Data

**Electrical Wiring Device Terms***Glossary*

**Grounding-Conductor Path** - A path between the grounding pin, blade, or contact and the grounding terminal or, if the device has no grounding terminal, the point at which the path makes contact with a part of the metal raceway system, such as a box, box cover, or the raceway itself.

**HI-POT** - (High-Potential) A test designed to determine the highest voltage that can be applied to a conductor without breaking through the insulation.

**Horsepower Rated** - A device rating intended for control of motor loads.

**Hospital Grade** - A device designed to meet additional performance requirements of high abuse areas often found in hospital locations. Such devices are tested to "Hospital Grade" requirements of Underwriters Laboratories Inc. Standard UL 498.

**Hospital Only** - A device which is listed by Underwriters Laboratories Inc. for use in health care facilities.

**Hygroscopic** - Capable of absorbing moisture from the air.

**Impedance (Z)** - The total opposition that a circuit offers to the flow of alternating current of any other varying current at a particular frequency. It is a combination of resistance R and reactance X, measured in ohms.

**Incandescent** - Lampholders of the threaded screw shell types for use with standard sizes of incandescent bulbs.

**Inductance (L)** - A property of a conductor or circuit which resists a change in current. It causes current changes to lag voltage changes and is measured in henrys.

**Inductive Proximity Sensor** - A sensing device that is actuated by a metal object.

**Infrared (I.R.)** - The invisible light emitted by all people, animals, and objects. Infrared is measured in terms of micrometers on the wavelength spectrum.

**Infrared Sensors** - A passive infrared occupancy sensor is a detector that functions as receiver of infrared emitted from a transmitter that senses a person presence by detecting human body heat and movement.

**In-Line GFCI** - A device used for ground fault protection, indoor or outdoor, with extension cords.

**Input** - A signal (or power) which is applied to a piece of electrical apparatus or the terminals on the apparatus to which a signal or power is applied.

**Insulation** - A material having good dielectric properties which is used to separate close electrical components, such as cable conductors and circuit components.

**Jacket** - Pertaining to wire and cable, the outer protective covering, may also provide additional insulation.

**Joule Rating** - The short duration peak energy rating of a surge suppression device. The higher the joule rating the longer the expected life of the device.

**Lampholder** - A device with contacts that establishes mechanical and electrical connection to an inserted lamp.

**Lampholder, Bayonet** - A lampholder for low-voltage incandescent lamps having an unthreaded metal shell with two diametrically opposite keyways that cooperate with similarly located projections on a mating lamp bulb. Pushing down on the bulb and turning it clockwise in the socket locks the bulb in place.

**Lampholder, Bi-Pin Medium** - A fluorescent lampholder having two contacts, used in pairs, with type T-8 tubular fluorescent lamps that are approximately 1" in diameter, having two contacts at each end.

**Lampholder, Candelabra** - A small screw-base threaded lampholder accepting a bulb approximately 1/2" in diameter commonly used in night lights, indicator lights and Christmas tree bulbs.

**Lampholder, Circline** - A four-contact, double-ended lampholder for use with tubular, circular, fluorescent lamps.

**Lampholder, Dimmer** - A lampholder of the standard Edison base type containing a light-dimming mechanism actuated by a projecting turn knob, which also serves to turn the light on or off.

**Lampholder, Double Contact Recessed** - A lampholder having two "PAD" type recessed contacts and used with high-output fluorescent lamps.

## Technical Data

**Electrical Wiring Device Terms***Glossary*

- Lampholder, Edison Base** - A lampholder having a threaded internal shell approximately 1" in diameter which accepts lamp bulbs of the size commonly used for domestic illuminating.
- Lampholder, Electrolier** - A lampholder of the Edison base type, having a smaller outside diameter than those in general use.
- Lampholder, Incandescent** - Lampholders of the threaded screw shell types for use with standard sizes of incandescent bulbs, having threaded bases.
- Lampholder, Intermediate** - A lampholder with a threaded screw shell accepting intermediate size incandescent lamps with threaded bases that are approximately 13/32" in diameter. Most often used in decorative lighting such as candle sconces, etc.
- Lampholder, Key** - A lampholder with a flat or round "key" projecting from its side, which when turned operates an internal switching mechanism.
- Lampholder, Lampholder, Bi-Pin Miniature** - Similar to medium Bi-Pin lampholder except for use with Type T-5 tubular fluorescent lamps that are 5/8" in diameter.
- Lampholder, Lumiline** - A special type of "disc" contact lampholder that only fits tubular incandescent lamps of the "lumiline" type. Commonly used in bathroom fixtures, store display case fixtures, etc.
- Lampholder, Medium Base (Edison)** - The most common type of screw-in lampholder found in everyday lighting fixtures, table lamps, and accepting incandescent bulbs with screw bases approximately 1" in diameter.
- Lampholder, Miniature** - The smallest screw-in type lampholder accepting incandescent lamp bulbs of approximately 3/8" diameter commonly used in games, flashlights and the smallest Christmas tree bulbs.
- Lampholder, Mogul** - The largest screw-in type of lampholder accepting incandescent lamp bulbs having screw bases approximately 1 1/2" in diameter. Used in street lighting fixtures and industrial high bay fixtures.
- Lampholder, Pull Chain** - An incandescent lampholder containing a switching mechanism that is actuated by pulling downward on a beaded chain.
- Lampholder, Push Through** - A lampholder having an insulated projection through its sides, which when pushed from either side, turns the lamp on or off.
- Lampholder, Slimline - Single Pin** - A fluorescent lampholder having a single pin contact and accepting fluorescent lamps of the T-8 or T-12 types, 1" or 1 1/2" in diameter, and in a smaller version, the T-6 type, 3/4" in diameter.
- Lampholder, Snap-In** - A special type of incandescent lampholder supplied with assembled side spring clips which snap into a hole cut in a flat panel, securing the lampholder in place without additional fastening means.
- Lampholder, Surface** - A lampholder of any type intended for mounting on a flat or plane surface.
- LED** - Light Emitting Diode used to indicate device status.
- Line Voltage** - The value of the potential existing on a supply or power line.
- Load** - A device that consumes power from a source and uses that power to perform a function.
- Locking** - A device designed to lock in place when it is rotated in a clockwise direction. The device can only then be removed when turned in a counterclockwise direction.
- Lock-out** - A safety device for preventing accidental turn-on of power to load.
- Leakage** - The undesirable passage of current over the surface of or through an insulator.
- M. O. V.** - Metal Oxide Varistor, primary component of TVSS products.
- Manual Controller** - A horsepower rated switch without overload protection used for the operation of small A.C. or D.C. motors.
- Midget** - A device with a body diameter smaller than that device of similar rating.
- Molded On** - A device that is factory molded to a length of flexible cord.
- Moisture Resistance** - The ability of a material to resist absorbing moisture from the air or when in contact with water.
- Mylar** - DuPont trademark for polyester film.
- NRTL Listing** - A Nationally recognized Testing Laboratory to perform safety test to list products.

## Technical Data

# Electrical Wiring Device Terms

Glossary

**NPN Output** - Transistor output that switches the common or negative voltage to the load (current sinking). Load connected between output and positive supply.

**Occupancy Sensors** - Sensors that detect a person's presence utilizing Infrared and or Ultrasonic technology to turn lights on and off.

**Outdoor Rating** - Describes a listed product usable outdoors or in wet locations.

**Outlet** - A point in the wiring installation at which current is taken to supply utilization equipment.

**Outlet Device** - Any device having one or more receptacles to supply power to cord-connected equipment.

**Panelboard** - A single panel or group of panel units designed for assembly in the form of a single panel; including buses, automatic overcurrent devices, and equipped with or without switches for the control of light, heat, or power circuits; designed to be placed in a cabinet or cutout box placed in or against a wall or partition and accessible only from the front.

**Passive Infrared (P.I.R.)** - Typically this term is used in reference to detecting infrared. A P.I.R. detector functions as a receiver of infrared emitted from a transmitter, such as the human body.

**Peak Current** - The short duration peak current rating of a surge suppression device.

**Pin and Sleeve** - A device with round pin or sleeve type contacts.

**Plug** - A device with male contacts which, when inserted into a receptacle, establishes connection between the conductors of the attached flexible cord and the conductors connected to the receptacle.

**Plug Out** - A device preventing the plug from being inserted into an outlet during maintenance on equipment.

**Plug, Fused** - A plug designed to accept fuses in the line contact(s) for protection of attached equipment.

**PNP Output** - Transistor output that switches the positive voltage to the load (current sourcing). Load connected between output and common.

**Polarized Device** - A device constructed for connection to a mating device only in the position that connects related poles of an

electrical circuit.

**Polyurethane (PUR)** - Broad class of polymers noted for good abrasion and solvent resistance. Can be in solid or cellular form.

**Polyvinyl Chloride (PVC)** - A general purpose thermoplastic widely used for wire and cable insulations and jackets.

**Potting** - The process of adding an insulating material for sealing or insulating cable terminations or other components.

**Power Supply Cord** - Portable cord fitted with a wiring device at one end to be fitted to equipment or an appliance.

**Premise Wiring (System)** - Interior and exterior wiring, including power, lighting, control, and signal circuit wiring together with all of their associated hardware, fittings, and wiring devices, both permanently and temporarily installed, that extends from the service point of utility conductors or source of a separately derived system to the outlet(s). Such wiring does not include wiring internal to appliances, fixtures, motors, controllers, motor control centers and similar equipment.

**Pressure Connector (Solderless)** - A device that establishes a connection between two or more conductors or between one or more conductors and a terminal by means of mechanical pressure and without the use of solder.

**Proximity Switch** - A sensing device that detects the presence of an object without physical contact

**Rainproof** - A device so constructed, protected, or treated as to prevent rain from interfering with the successful operation of the apparatus under specified test conditions.

**Raintight** - A device so constructed or protected that exposure to a beating rain will not result in the entrance of water under specified test conditions.

**Receptacle** - A device with female contacts which is primarily installed at a structure or in a piece of equipment and which is intended to establish electrical connection with an inserted plug.

**Receptacle** - One or more female contact devices on the same yoke installed at an outlet for the connection of one or more attachment plugs.



## Technical Data

**Electrical Wiring Device Terms**

Glossary

**Receptacle, Clock Hanger** - A single receptacle generally recessed behind a special cover plate having a hook or other means for supporting a wall-hung clock.

**Receptacle, Display** - A receptacle with its cover plate intended for mounting flush with the surface of a raised floor or wall.

**Receptacle, Duplex** - Two receptacles on the same yoke installed at an outlet for the connection of one or more attachment plugs.

**Receptacle, Fan Hanger** - A single receptacle furnished with a cover plate and having a stud or other means for supporting a wall hung fan.

**Receptacle, GFCI (Ground Fault Circuit Interrupter)** - A receptacle integral with a circuit-interrupting device that detects leakage current to ground on the load side, activating a circuit-interrupting device.

**Receptacle, Interchangeable** - A receptacle or combination of receptacles, each individually housed and having common mounting dimensions and intended for field installation on a single or multiple opening mounting strap.

**Receptacle, Isolated Ground** - A grounding type receptacle in which the equipment ground contact and terminal is electrically isolated from the receptacle mounting means.

**Receptacle, Lighted (Illuminated)** - A receptacle that, when connected to an electrical circuit, is illuminated in the area of the receptacle face.

**Receptacle, Safety ("Tamper-proof")** - A receptacle which by its construction limits improper access to its energized contacts (NEC).

**Receptacle, Self-Contained** - Receptacle which includes an enclosure and mounting means such that it can be mounted flush to a supporting surface without the use of a flush device, outlet box, raceway, or other enclosure.

**Receptacle, Single** - One female contact device with no other contact device on the same yoke installed at an outlet for the connection of one attachment plug.

**Receptacle, Snap-In** - A type of receptacle equipped with external side springs which permit it to be snapped into a hole in a flat panel and secure it in place without added screws or other fasteners.

**Receptacle, Split Circuit** - A duplex receptacle that can be wired for switch control or two separate circuits.

**Receptacle, Triplex** - Three receptacles on the same yoke installed at an outlet which can accept one, two or three attachment plugs.

**Response Time** - Time required to clamp voltage in TVSS or shut off power line GFCI faults.

**Retractable Cord** - A cord having specially treated insulation or jacket so that it will retract like a spring. Retractability may be added to all or part of a cord's length.

**RFI** - Radio Frequency Interference (electrical noise).

**RMS (Root Means Square)** - Used as an A.C. value of voltage or current. Expressed, for example, as 120 volts AC RMS.

**Rocker Switch** - A switch that is operated by a paddle type actuator, such as a fashion switch.

**Rotary Dimming** - Achieved through the rotation of a knob of any style to control the lighting level components.

**Rotary Switch** - A switch having an actuating member that when turned in a clockwise direction completes the switch circuit and breaks the switch circuit when turned in the same or opposite direction.

**S Type Cable** - Extra hard service, rubber-insulated portable cord. Stranded copper conductors with separator and individual rubber insulation. Two or more color coded conductors cabled with filler, wrapped with separator and rubber jacketed overall. Typically maximum rated at 600V.

**Separator** - A layer of insulating material which is placed between a conductor and its dielectric, between a cable jacket and the components it covers, or between various components of a multiple-conductor cable.

**Service** - The conductors and equipment for delivering energy from the electricity supply system to the wiring system.

**Service Equipment** - The necessary equipment, usually consisting of a circuit breaker or switch and fuses, and their accessories, located near the point of entrance of supply conductors to a building or other structure, or an otherwise defined area, and intended to constitute the main control and means of cutoff of the supply.

## Technical Data

# Electrical Wiring Device Terms

### Glossary

- Service Poles** - Poles installed from above a drop type ceiling to work stations or the floor providing line and low voltage electrical service.
- Sheath** - The outer covering or jacket of a multiconductor cable.
- Shield** - In cables, a metallic layer placed around a conductor or group of conductors to prevent electrostatic or electromagnetic interference between the enclosed wires and external fields.
- Show Window** - Any window used or designed to be used for the display of goods or advertising material, whether it is fully or partly enclosed or entirely open at the rear and whether or not it has a platform raised higher than the street floor level.
- Signal** - Any visible or audible indication which can convey information. Also, the information conveyed through a communication system.
- SJ Type Cord** - Hard service, rubber insulated pendant or portable cord. Typically maximum rated at 300V.
- SJO Type Cord** - Same as SJ, but Neoprene, oil-resistant compound outer jacket. Can also be made "water-resistant". 300V, 60°C.
- SJT Type Cord** - Hard service thermoplastic or rubber insulate conductors with overall plastic jacket. 300V, 60°C.
- SJTO Type Cord** - Same as SJT but oil-resistant plastic outer jacket. 60°C.
- Slide Dimming** - Achieved through the linear movement up and down or horizontally of a slide mechanism to control the lighting level.
- Slide Switch** - A switch having a sliding actuating member which makes or breaks the switch contact mechanism.
- SO Type Cord** - Extra hard service cord, same construction as type S except oil resistant rubber jacket. 600V, 60 to 90°C.
- Solid Conductor** - A conductor consisting of a single wire.
- Solid State** - Pertains to circuits and components using semiconductors without moving parts. Example: transistors, diodes, SCR, etc.
- SOW Type Cord** - Same as SOW but with oil-resistant rubber conductor insulation and suitable for outdoor use.
- SOW Type Cord** - Rubber-jacketed portable cord with oil and water-resistant outer jacket.
- ST Type Cord** - Hard service cord, jacketed, same as Type S except all plastic construction 600V, 60 to 105°C.
- STO Type Cord** - Same as ST but with oil and thermo plastic outer jacket, 600V, 105°C.
- STOW Type Cord** - Same as STO but with oil and water resistant thermo plastic outer jacket, 600V, 105°C.
- Stranded Conductor** - A conductor composed of groups of wires twisted together.
- Straight Blade (Non-locking)** - A device into which a mating device are inserted at a right angle to the plane of the device's face.
- Suppressed Voltage** - The amount of voltage allowed to pass through a surge suppression device to the equipment connected to the device.
- SV Type Cord** - Vacuum cleaner cord, two or three conductor, rubber insulated. Overall rubber jacket. For light duty. 300V, 60°C.
- SVO Type Cord** - Same as SV except Neoprene jacket 300V, 60°C.
- Suppressed Voltage Rating** - Determined by UL when specific current and voltage is applied to a surge suppression device. For permanent devices UL tests at 3000A, 6000V while portable devices are tested at 500A, 6000V.
- Surface-Mounted** - A device intended to be installed on the surface of a panel or on equipment.
- Surge Suppression** - A device containing electronic components which limit peak receptacle voltage to a predetermined value.
- SVT Type Cord** - Same as SV except all thermo plastic construction. With or without third conductor for grounding purposes only. 300V, 60 to 90°C.
- SVTO Type Cord** - Same as SVT except with oil-resistant jacket. 60°C.
- Switch** - A device for making, breaking, or changing the connections in an electric circuit.
- Switch, "L" Rated** - A "special use" switch for the control of Tungsten Filament lamps on AC circuits only, identified with the letter "L."
- Switch, AC Only** - A switch marked for use on alternating current (AC) circuits only.

## Technical Data

**Electrical Wiring Device Terms***Glossary*

- Switch, "T" Rated** - An AC/DC switch suitable for the control of tungsten filament lamps on direct or alternating current, identified with the letter "T."
- Switch, AC/DC** - A switch marked for use on either alternating current (AC) circuits or Direct Current (DC) circuits.
- Switch, Double Pole, Double Throw** - A switch that makes or breaks the connection of two conductors to two separate circuits.
- Switch, Double Pole, Single Throw** - A switch that makes or breaks the connection of two circuit conductors in a single branch circuit.
- Switch, Feed Through** - An "inline" switch that can be attached in any location in a length of flexible cord or cable to control utilization equipment.
- Switch, Flush Mounted** - A switch intended to be installed flush with the surface of a panel or on equipment.
- Switch, Four-way** - A switch installed between pairs of three-way switches to control one electrical load from three or more locations.
- Switch, Horsepower Rated** - A special use switch having a marked horsepower rating for control of motor loads.
- Switch, Interchangeable** - A switch or combination of switches, each individually housed and having common mounting dimensions, and intended for field installation on a single or multiple opening mounting strap.
- Switch, Lighted Handle** - A switch with an integral lamp in the actuator which lights when the switch is in the "OFF" position.
- Switch, Locking** - A switch equipped with a mechanism requiring a key to operate the switching function.
- Switch, Low Voltage** - A switch intended for use on circuits of 50 volts or less.
- Switch, Maintained Contact** - A switch which, when the actuator is moved to the "ON" position, makes and retains circuit contact until the actuator is manually moved to the "OFF" position.
- Switch, Manual Motor Controller** - A switch without overload protection used for the operation of small AC or DC motors.
- Switch, Mercury** - A type of switch construction employing liquid mercury as the contact means for making and breaking an electrical circuit.
- Switch, Momentary Contact** - A switch which establishes circuit contact only as long as the switch is held in the "ON" position, after which it returns itself to the "OFF" position, breaking the circuit. (Such a switch may also be furnished to break circuit contact upon actuation.)
- Switch, Pendant** - A type of switch intended for installation at the end of a length of portable cord or cable.
- Switch, Pilot Light** - A switch with an integral lamp in the actuator which lights when the switch is in the "ON" position.
- Switch, Pull** - A switch with an actuator mechanism operated by a downward or outward pull.
- Switch, Push Button** - A switch with a mechanism that is operated by depressing a button.
- Switch, Rotary** - A switch having an actuating member that when turned in a clockwise direction completes the switch circuit and breaks the switch circuit when turned in the same or opposite direction.
- Switch, Single Pole, Double Throw** - A switch that makes or breaks the connection of a single conductor with either two other single conductors.
- Switch, Single Pole, Single Throw** - A switch that makes or breaks the connection of a single conductor in a single branch circuit.
- Switch, Slide** - A switch having a sliding actuating member which when operated, makes or breaks the switch contact mechanism.
- Switch, Surface-Mounted** - A switch having its own completed exterior enclosure intended for mounting on a flat or plane surface.
- Switch, Three Position Center "OFF"** - A two circuit switch of either the maintained or momentary type, in which the "OFF" position is indicated by the centered position of the actuator.
- Switch, Three Way** - A switch used in pairs to control one electrical load from two locations.
- Switch, Time Delay** - A switch containing a mechanism which automatically turns the switch "OFF" at a predetermined time interval.



## Technical Data

# Electrical Wiring Device Terms

### Glossary

**Switch, Timer** - A switch controlling an auxiliary timing device that can be set or adjusted to turn off an electrical load at a preset time.

**Switch, Toggle** - A switch having a lever type actuating member which makes or breaks the switch contact mechanism when its position is changed.

**Temperature Rating** - The maximum temperature at which an insulating material may be used in continuous operation without loss of its basic properties.

**THHN Type Wire** - 90°C 600V nylon jacketed building wire.

**THW Type Wire** - Thermoplastic vinyl insulated building wire. Flame retardant, moisture and heat resistant. 75°C. Dry and wet locations.

**THWN Type Wire** - Same as THW but with nylon jacket over. 75°C.

**Terminal** - Accessible conductive element provided on a device for making a connection to a supply, load, or grounding conductor.

**Terminal, Clamp-Type or Pressure Wire** - Terminal in which the conductor is clamped under a pressure plate or saddle by one or more screws or nuts.

**Terminal, Pin Type** - Terminal having a contact pin that penetrates the conductor insulation in order to make contact with the current-carrying conductor.

**Terminal, Push-in** - Terminal where the stripped end of a conductor is pushed into the terminal and connection is maintained by spring pressure without the use of screws.

**Terminal, Set Screw** - Terminal where the pressure is applied by the end of the screw bearing directly on the conductor.

**Terminal, Wire Binding Screw** - Terminal in which the conductor is clamped under the head of the screw and the clamping pressure is applied directly by the head of the screw.

**Thermoplastic** - A plastic that repeatedly can be softened by heating and hardened by cooling through a temperature range characteristic of the plastic.

**Thermoset** - A material that, after having been cured by heat or other means, is substantially infusible and insoluble.

**Touch Dimming** - The ability of a dimmer to control lighting levels by sensing the touch of a hand to its sensor plate.

**TPE** - Thermoplastic elastomer. A compound with elastomeric properties that can be processed like a thermoplastic.

**Trip Free** - When mechanism disconnects power and cannot be stopped by externally holding handle of switch.

**UL Listed** - Indicates an item has been tested and approved to the safety standards established by Underwriters' Laboratories.

**UL Recognized** - Refers to products that have been tested and approved for use as component parts of equipment or products that are to be UL Listed.

**UL Standards** - Documents used to test product for listing. Available for purchase by contacting Underwriters' Laboratories.

**Ultrasonic Sensors** - Motion sensors that emit high frequency sound waves (32,000 or 40,000 cycles per second) to sense persons presence in a room for lighting control applications.

**Wall Plate** - A plate designed to enclose a device box, with or without a device installed in the box.

**Wall Plate, Combination** - A multiple-gang wall plate with openings in each gang for different devices.

**Wall Plate, Deep** - A wall plate that provides greater clearance for device mounting straps than standard wall plates.

**Wall Plate, Flush** - A wall plate designed to mount flush with the wall surface or the plane surface of electrical equipment.

**Wall Plate, Modular** - Individual section wall plates with different openings that can be field assembled into a combination multi-gang plate.

**Wall Plate, Multi-Gang** - A wall plate that has two or more gangs.

**Wall Plate, Narrow** - A cover plate designed for flush mounting on narrow partitions having a width dimension of two inches or less.

**Wall Plate, Oversize (Intermediate)** - A wall plate

**Wall Plate, Oversize (Intermediate)** - A wall plate with length and width dimensions greater than standard wall plates.

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**Electrical Wiring Device Terms***Glossary*

**Wall Plate, Tandem** - A cover, UL listed, in accordance with specific test standards for use in wet and damp locations with the cover closed.

**Wall Plate, Weatherproof (Cover Closed)** - A cover, UL listed, in accordance with specific test standards for use in wet and damp locations with the cover closed.

**Wall Plate, Weatherproof (Cover Open)** - A cover, UL listed, in accordance with specific test standards for use in wet and damp locations with the cover open or closed.

**Wall Switch Sensors** - Wall mounted occupancy sensors that detect a person's presence utilizing Infrared and or Ultrasonic technology to turn lights on and off.

**Watertight** - So constructed that moisture will not enter the enclosure under specified test conditions.

**Weatherproof** - A device or enclosure so constructed or protected that exposure to the weather will not interfere with safe operation.

**Wire Mesh Grip** - Woven wire mesh holding devices used to support, pull, or relieve strain exerted upon cables and various other items.