

# NASA KSC Export Control Office (ECO) Export/SBU Determination Record

EDDR# 09 223

## Title of Document:

Electrical Power Receptacles and Plugs, Standard For  
KSC-STD-E-0011H, January 7, 2009

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**KSC-STD-E-0011H**

January 7, 2009

Supersedes  
KSC-STD-E-0011G  
June 7, 2000

**ELECTRICAL POWER RECEPTACLES  
AND PLUGS,  
STANDARD FOR**

**CENTER OPERATIONS DIRECTORATE**

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National Aeronautics and  
Space Administration

**John F. Kennedy Space Center**



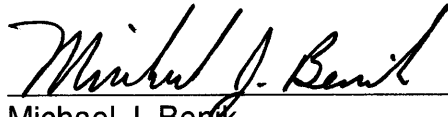
**KSC-STD-E-0011H**

January 7, 2009

Supersedes  
KSC-STD-E-0011G  
June 7, 2000

**ELECTRICAL POWER RECEPTACLES  
AND PLUGS,  
STANDARD FOR**

Approved:

A handwritten signature in black ink, reading "Michael J. Berik", is written over a horizontal line.

Michael J. Berik  
Director, Center Operations

**JOHN F. KENNEDY SPACE CENTER, NASA**

## TABLE OF CONTENTS

| <u>Section</u> | <u>Title</u>                                          | <u>Page</u> |
|----------------|-------------------------------------------------------|-------------|
| 1.             | SCOPE .....                                           | 1           |
| 2.             | APPLICABLE DOCUMENTS.....                             | 1           |
| 2.1            | Governmental.....                                     | 1           |
| 2.1.1          | Standards.....                                        | 1           |
| 2.2            | Nongovernmental.....                                  | 2           |
| 3.             | REQUIREMENTS.....                                     | 2           |
| 3.1            | Grouping .....                                        | 2           |
| 3.2            | Utilization of Tables .....                           | 2           |
| 3.2.1          | Service.....                                          | 2           |
| 3.2.2          | Rating.....                                           | 2           |
| 3.2.3          | Symbol .....                                          | 3           |
| 3.2.4          | Wiring Diagram – Facility .....                       | 3           |
| 3.2.4.1        | Receptacle .....                                      | 3           |
| 3.2.4.2        | Plug .....                                            | 3           |
| 3.2.5          | Wiring Diagram - Ground Support Equipment (GSE) ..... | 3           |
| 3.2.5.1        | Plug .....                                            | 3           |
| 3.2.5.2        | Receptacle .....                                      | 3           |
| 3.2.6          | Catalog Number .....                                  | 3           |
| 3.2.7          | Insert Representation.....                            | 3           |
| 3.2.8          | Reverse Service.....                                  | 4           |
| 3.2.9          | Limitations .....                                     | 4           |
| 3.3            | Abbreviations.....                                    | 4           |
| 3.4            | Request for Waivers.....                              | 4           |
| 3.4.1          | Requests .....                                        | 4           |
| 3.4.2          | Construction Contractor.....                          | 4           |
| 3.5            | Ordering Data.....                                    | 4           |
| 4.             | QUALITY ASSURANCE PROVISIONS.....                     | 5           |
| 4.1            | Supplier .....                                        | 5           |
| 4.2            | Construction Contractor.....                          | 5           |

KSC-STD-E-0011H

## TABLE OF CONTENTS (cont)

| <u>Section</u> | <u>Title</u>                                   | <u>Page</u> |
|----------------|------------------------------------------------|-------------|
| 5.             | PREPARATION FOR DELIVERY .....                 | 6           |
| 6.             | NOTES.....                                     | 6           |
| 6.1            | Special Hazardous Conditions Requirement ..... | 6           |
| 6.2            | Intended Use .....                             | 6           |

## LIST OF TABLES

| <u>Table</u> | <u>Title</u>                                                                         | <u>Page</u> |
|--------------|--------------------------------------------------------------------------------------|-------------|
| 1            | Nonhazardous Area (Indoor/Outdoor) Receptacles .....                                 | 7           |
| 2            | Hazardous Area, Class 1, Division 1, Group B, C, D Explosionproof Receptacles .....  | 20          |
| 3            | Hazardous Area, Class 1, Division 1, Group C, D Explosionproof Receptacles .....     | 25          |
| 4            | Not To Be Used for New Design [Nonhazardous Area (Indoor/Outdoor) Receptacles] ..... | 28          |
| 5            | Receptacle/Plug Cross-Reference Chart .....                                          | 36          |

## ABBREVIATIONS AND ACRONYMS

|      |                                               |
|------|-----------------------------------------------|
| AH   | Arrow Hart                                    |
| AP   | Appleton                                      |
| CH   | Crouse Hinds                                  |
| dc   | Direct Current                                |
| GSE  | Ground Support Equipment                      |
| HU   | Hubbell                                       |
| Hz   | Hertz                                         |
| KSC  | John F. Kennedy Space Center                  |
| ME   | Meltric                                       |
| NCL  | Not Catalog Listed                            |
| NEC  | National Electrical Code                      |
| NEMA | National Electrical Manufacturers Association |
| NFPA | National Fire Protection Association          |
| PN   | Pyle National                                 |
| RS   | Russellstoll                                  |
| VT   | Vantage Technology                            |
| WP   | Waterproof                                    |
| WT   | Watertight                                    |
| NASA | National Aeronautics and Space Administration |

ELECTRICAL POWER RECEPTACLES AND PLUGS,  
STANDARD FOR

1. SCOPE

This standard is to be used by the John F. Kennedy Space Center (KSC) design and maintenance organizations for internal operations and as a technical document to specify requirements in KSC design contracts. This standard (1) identifies those electrical power receptacles that shall be used when designing new or modifying existing facilities and identifies receptacles that shall be used for installation on portable ground support equipment, (2) establishes a standard for symbols to be used in drawings, and (3) provides pertinent data for each receptacle. Receptacles included are for 60-hertz (Hz) applications in hazardous and nonhazardous areas. The term "receptacle" in this sense shall be understood to include plugs, which are also identified by this Standard.

2. APPLICABLE DOCUMENTS

The following documents form a part of this document to the extent specified herein. When this document is used for procurement, including solicitations, or is added to an existing contract, the specific revision levels, amendments, and approval dates of said documents shall be specified in an attachment to the Solicitation/Statement of Work/Contract.

2.1 Governmental

2.1.1 Standards

John F. Kennedy Space Center (KSC), National Aeronautics and Space Administration

KSC-STD-E-0002

Hazardproofing of Electrically Energized  
Equipment, Standard for

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specified procurement functions should be obtained from the procuring activity or as directed by the Contracting Officer.)

KSC-STD-E-0011H

## 2.2 Nongovernmental

### National Fire Protection Association (NFPA)

NFPA 70

National Electrical Code (NEC)

(Application for copies should be addressed to the National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.)

### National Electrical Manufacturers Association (NEMA)

NEMA WD-1

General Purpose Wiring Devices

NEMA WD-6

Wiring Devices – Dimensional Specifications

(Application for copies should be addressed to the National Electrical Manufacturers Association, 155 East 44th Street, New York, NY 10017)

## 3. REQUIREMENTS

3.1 Grouping - The receptacles have been grouped by intended application, as follows:

- a. Nonhazardous areas - Table 1
- b. Hazardous areas Class I, Division 1, Groups B, C, and D - Table 2
- c. Hazardous areas Class I, Division 1, Groups C and D - Table 3

3.2 Utilization of Tables - To properly utilize the above-referenced tables, the following explanatory information is given. Note that the voltage rating shown in the table heading may be lower than the manufacturer's stated voltage.

3.2.1 Service - The application tables have been subdivided to indicate the service for which each group of receptacles was selected. This service is indicated by voltage, frequency, and number of phases, wires, and poles.

3.2.2 Rating - The information shown in the rating column is the maximum allowable amperage of each receptacle, plus other applicable data.



3.2.3 Symbol - The information shown in the symbol column applies only to facility receptacles and shall be shown on the drawing and in the legend with rating. The legend shall also include all requirements of this standard and referenced documents. As an alternate method, the requirements of this standard may be included in the contract specification, in which case the contract shall be referenced in the legend.

#### 3.2.4 Wiring Diagram – Facility

3.2.4.1 Receptacle - The devices shown in the receptacle column will normally be installed in or on the wall of a fixed structure and fed from a load center or substation. Therefore, this receptacle is normally energized and shall have a female insert. The diagrams in this column show socket arrangement and assigned function such as ground, neutral, and phase.

3.2.4.2 Plug - The devices shown in the plug column will mate with the corresponding facility receptacles. The diagrams in this column show pin arrangement and assigned function such as ground, neutral, and phase.

#### 3.2.5 Wiring Diagram - Ground Support Equipment (GSE)

3.2.5.1 Plug - These devices will usually be installed on the same cable as the plug listed under 3.2.4 Wiring Diagram - Facility. This cable and the plug will serve as an interface between the facility power source and the GSE load. If this cable is mated with the facility receptacle, the contacts of the GSE plug will be energized; therefore, this GSE plug must have a reverse service female insert. The diagrams in this column show pin arrangement and assignment.

3.2.5.2 Receptacle - The devices shown in the receptacle column will be installed on GSE and will serve as the connection point for power cables. Since the contacts of these receptacles are not exposed while energized, this GSE receptacle has a male insert. The diagrams in this column show pin arrangement and assignment.

3.2.6 Catalog Number - Receptacles and plugs are identified by listing one or more catalog numbers; however, all catalog numbers available for a specific insert and optional mounting configurations are not necessarily listed. The manufacturer's catalog should be consulted for specific technical information on alternative mounting configurations available for the listed receptacles and for the listed plugs. Receptacle and plug configuration other than those listed in this standard may be utilized as determined by specific application. However, no change is permitted in receptacle mating, pin arrangement, and keying for a particular service as listed in this standard by catalog number.

3.2.7 Insert Representation - The pins (male inserts) on receptacles and plugs are represented by shaded areas. The sockets (female inserts) on receptacles and plugs are represented by unshaded areas.

## KSC-STD-E-0011H

3.2.8 Reverse Service - In situations where the exposed pins of a plug selected for facility use would be energized when the receptacle and plug are disconnected, reverse-service connectors shall be used. The normal-usage symbol with a subscript letter "R" indicates reverse-service requirement. The plugs and receptacles for GSE use were selected to prevent the exposure of "energized" pins when the plugs and receptacles are not mated. The letters "S" and "P" appear frequently in part numbers. "S" indicates that the plug or receptacle has a female (socket) insert and the contacts are not exposed when this device is not mated to its counterpart. The "P" indicates that the plug or receptacle has a male (pin) insert and the contacts are exposed when the device is not mated to its counterpart.

3.2.9 Limitations - For reasons of unavailability, obsolescence, or product improvement, certain devices previously listed (which may remain in service) are no longer listed for new designs. These are shown in Table 4.

3.3 Abbreviations – See the Abbreviations and Acronyms List for the abbreviations used in the tables.

3.4 Requests for Waivers - The requirements set forth in this standard are not intended to be totally restrictive. The purpose is to achieve standardization of receptacles and plugs throughout KSC. Receptacles and plugs not listed in this Standard that are electrically and physically interchangeable with those identified in this Standard may be substituted if they are approved in writing by properly executed waivers. Requests for waivers of any requirements of this Standard must be supported by technical justification.

3.4.1 Requests – The KSC organization shall direct requests to:

Center Operations Directorate  
Mechanical/Electrical Branch, Mail-code: TA-B3  
John F. Kennedy Space Center, NASA  
Kennedy Space Center, Florida 32899

3.4.2 Construction Contractors – The KSC construction contractors shall direct requests to the responsible administrative contracting officer:

Procurement Office  
John F. Kennedy Space Center, NASA  
Kennedy Space Center, Florida 32899

3.5 Ordering Data - When this Standard is referenced in a technical document in a KSC contract, the title and number of this standard shall be specified as a part of that document. Where NEMA configurations are shown, these devices shall be specification grade as manufactured by Hubbell, Pass and Seymour; General Electric; Arrow-Hart; Bryant; and others.

#### 4. QUALITY ASSURANCE PROVISIONS

Designers preparing design specifications shall include inspection and test requirements to ensure the provisions of the specifications conform to all applicable requirements of this Standard. Both the supplier and the construction contractor shall establish a quality control system to perform sufficient inspection and tests of all items of work to ensure compliance with this Standard, NEMA standards, and NFPA 70 standard with respect to materials, workmanship, construction, and functional performance. When receptacles are purchased under the provisions of this Standard, the following minimum inspection and test requirements shall apply.

4.1 Supplier - The supplier shall:

- a. Inspect finished work for size, pin arrangement, and quality of workmanship.
- b. Provide protection and controls necessary to prevent damage or deterioration prior to packaging and shipping.
- c. Ensure the quality of the fabricated articles is maintained and damage, deterioration, loss, and substitution are prevented.
- d. Package and mark the finished articles in a manner to ensure safe arrival and ready identification at destination.

4.2 Construction Contractor - The construction contractor shall:

- a. Upon receipt, inspect to detect damage in transit.
- b. Inspect the complete assembly for proper type, size, and pin configuration.
- c. Provide the protection, periodic inspection, and controls necessary to prevent damage or deterioration during handling or storage.
- d. Conduct operating tests after the receptacle installation is complete and at such time as the Contracting Officer may direct and verify power supply voltage and proper connection of all receptacle pins. These tests shall include (but not be limited to) a continuity test between the receptacle grounding pin and earth ground (or objects known to be adequately grounded to the earth) by a path independent of the power neutral.
- e. Verify phase rotation for each three-phase receptacle by testing with a phase-rotation meter. The phase rotation for all three phase receptacles shall be as shown on the wiring diagram using the ground pin or neutral as a reference.

## 5. PREPARATION FOR DELIVERY

KSC-STD-E-0011H

There are no applicable requirements.

## 6. NOTES

6.1 Special Hazardous Conditions Requirement - In addition to the NEC hazardous locations requirements, refer to KSC-STD-E-0002 Hazardproofing of Electrically Energized Equipment for special hazardous location requirements.

6.2 Intended Use - This Standard is intended for use in the selection of plugs and receptacles for new installation by KSC design and maintenance organizations and by designers performing under KSC contracts. It is not intended that existing plugs and receptacles be modified for the sole purpose of conforming to this standard.

NOTICE: The Government drawings, specifications, and/or data are prepared for the official use by, or on the behalf of, the United States Government. The Government neither warrants these Government drawings, specifications, or other data, nor assumes any responsibility or obligation, for their use for purposes other than the Government project for which they were prepared and/or provided by the Government, or an activity directly related thereto. The fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded, by implication or otherwise, as licensing in any manner the holder or any other person or corporation, nor conveying the right or permission, to manufacture, use, or sell any patented invention that may related thereto.

### CUSTODIAN:

NASA – John F. Kennedy Space Center  
Kennedy Space Center, FL 32899

### PREPARING ACTIVITY:

John F. Kennedy Space Center  
Center Operations Directorate  
Mechanical/Electrical Branch


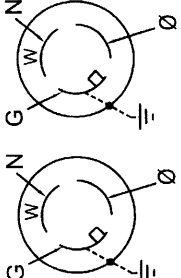
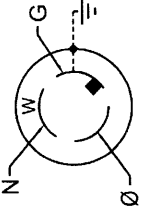

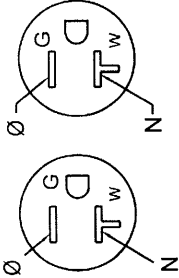
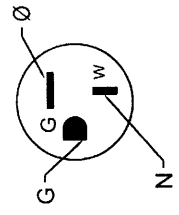

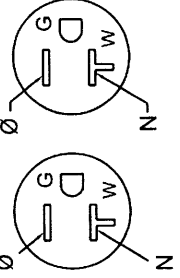
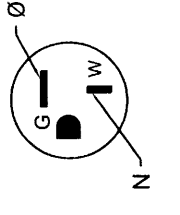
Table 1. Nonhazardous Area (Indoor / Outdoor) Receptacles

|                                             |                 | 120V, 60 Hz, single phase, 3 wire, 2 pole |                                |                      |            |
|---------------------------------------------|-----------------|-------------------------------------------|--------------------------------|----------------------|------------|
| RATING                                      | FACILITY SYMBOL | WIRING DIAGRAM - FACILITY                 |                                | WIRING DIAGRAM - GSE |            |
|                                             |                 | RECEPTACLE                                | PLUG                           | PLUG                 | RECEPTACLE |
| 15A duplex (indoor only)                    |                 |                                           | NEMA 5-15R, duplex             |                      | NEMA 5-15P |
| 15A duplex weatherproof (hinged flap cover) |                 |                                           | NEMA 5-15R, duplex             | N/A                  | N/A        |
| 15A flush floor outlet (indoor only)        |                 |                                           | NEMA 5-15R with mounting strap | N/A                  | N/A        |

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN



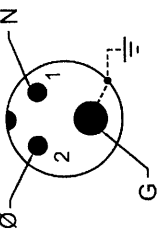

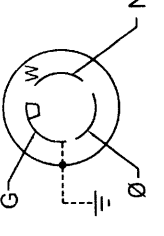
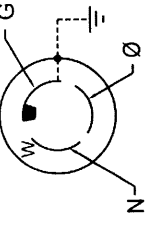

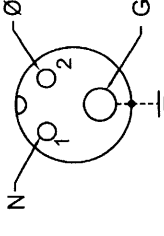
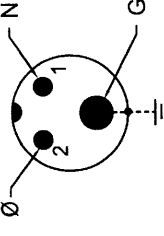
KSC-STD-E-0011H

Table 1. Nonhazardous Area (Indoor / Outdoor) Receptacles (cont)

|                                             |                                                                                       | 120V, 60 Hz, single phase, 3 wire, 2 pole (cont)                                      |                                                                                      |                      |            |
|---------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------|------------|
| RATING                                      | FACILITY SYMBOL                                                                       | WIRING DIAGRAM - FACILITY                                                             |                                                                                      | WIRING DIAGRAM - GSE |            |
|                                             |                                                                                       | RECEPTACLE                                                                            | PLUG                                                                                 | PLUG                 | RECEPTACLE |
| 15A duplex (indoor only), locking           |    |    |    | N/A                  | N/A        |
| 20A duplex (indoor only)                    |    |    |    | N/A                  | N/A        |
| 20A duplex weatherproof (hinged flap cover) |  |  |  | N/A                  | N/A        |


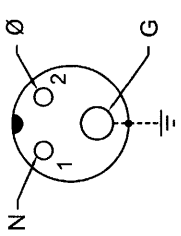
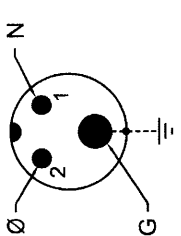
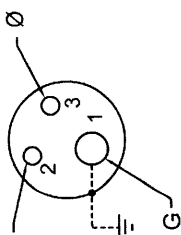


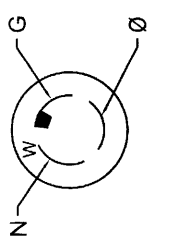


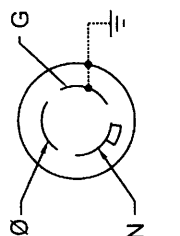
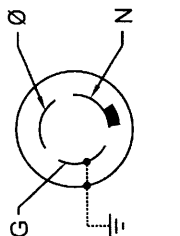
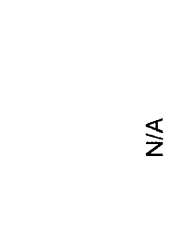
FACE VIEW OF RECEPTABLES AND PLUGS SHOWN

Table 1. Nonhazardous Area (Indoor / Outdoor) Receptacles (cont)

| 120V, 60 Hz, single phase, 3 wire, 2 pole (cont) |                                                                                             |                                                                                                                       |                                                                                                     |                      |            |
|--------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------|------------|
| RATING                                           | FACILITY SYMBOL                                                                             | WIRING DIAGRAM - FACILITY                                                                                             |                                                                                                     | WIRING DIAGRAM - GSE |            |
|                                                  |                                                                                             | RECEPTACLE                                                                                                            | PLUG                                                                                                | PLUG                 | RECEPTACLE |
| 20A<br>waterproof                                |          | <br>RS No. 3743                    | <br>RS No. 3720   | N/A                  | N/A        |
| 20A<br>locking<br>(indoor only)                  | <br>20   | <br>NEMA L5-20R,<br>grounding type | <br>NEMA L5-20P   | N/A                  | N/A        |
| 30A<br>weathertight                              | <br>WT | <br>RS No. 3756                  | <br>RS No. 3829 | N/A                  | N/A        |

FACE VIEW OF RECEPTABLES AND PLUGS SHOWN


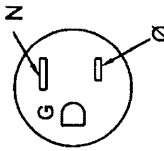
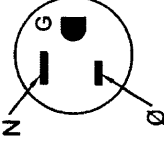

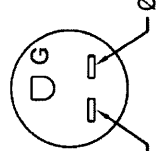
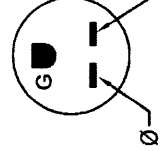

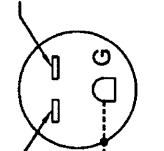
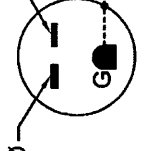
Table 1. Nonhazardous Area (Indoor / Outdoor) Receptacles (cont)

| RATING                                                                                       | FACILITY SYMBOL                                                                       | WIRING DIAGRAM - FACILITY                                                             |                                                                                      | WIRING DIAGRAM - GSE                                                                |                                         |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------|
|                                                                                              |                                                                                       | RECEPTACLE                                                                            | PLUG                                                                                 | PLUG                                                                                | RECEPTACLE                              |
| 30A<br>waterproof                                                                            |    |    |    |    | CH RPC221-127-P04AR                     |
| 30A locking<br>general<br>purpose<br>(indoor only),<br>use F symbol<br>for floor<br>mounting |    |    |    |    | CH RPC121-150-S04AR<br>RPC121-151-S04AR |
| 50A<br>TWIST-LOK,<br>CORROSION<br>RESISTANT                                                  |  |  |  |  | N/A                                     |

FACE VIEW OF RECEPTABLES AND PLUGS SHOWN


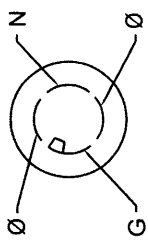
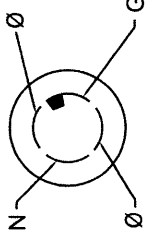

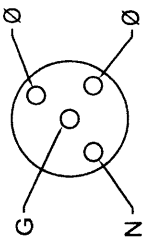


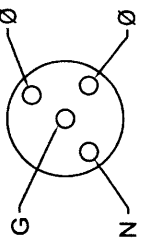
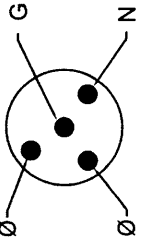


Table 1. Nonhazardous Area (Indoor / Outdoor) Receptacles (cont)

| RATING                              | FACILITY SYMBOL                                                                       | 120V, 60Hz, single phase, 3 wire, 2 pole                                              |                                                                                      | 208V 60 Hz, single phase, 3 wire, 2 pole |      |
|-------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------|------|
|                                     |                                                                                       | RECEPTACLE                                                                            | PLUG                                                                                 | RECEPTACLE                               | PLUG |
| 15A<br>combination<br>(indoor only) |    |    |    | N/A                                      | N/A  |
|                                     |                                                                                       | NEMA 5-15R                                                                            | NEMA 5-15P                                                                           |                                          |      |
| 15A<br>(indoor only)                |    |    |    | N/A                                      | N/A  |
|                                     |                                                                                       | NEMA 6-15R                                                                            | NEMA 6-15P                                                                           |                                          |      |
| 30A<br>(indoor only)                |  |  |  | N/A                                      | N/A  |
|                                     |                                                                                       | NEMA 6-30R,<br>grounding                                                              | NEMA 6-30P,<br>grounding                                                             |                                          |      |

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN

Table 1. Nonhazardous Area (Indoor / Outdoor) Receptacles (cont)

| RATING              | FACILITY SYMBOL                                                                                       | WIRING DIAGRAM - FACILITY                                                                                         |                                                                                                                  | WIRING DIAGRAM - GSE |            |
|---------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|----------------------|------------|
|                     |                                                                                                       | RECEPTACLE                                                                                                        | PLUG                                                                                                             | PLUG                 | RECEPTACLE |
| 30A,<br>locking     | 208V  30<br>1-PH   | <br>NEMA L14-30R,<br>grounding | <br>NEMA L14-30P,<br>grounding | N/A                  | N/A        |
| 30A<br>weathertight | 208V  30<br>1-PH   | <br>RS No. DF3316FRAB0         | <br>RS No. DS3316MP000         | N/A                  | N/A        |
| 60A<br>weathertight | 208V  60<br>1-PH | <br>RS No. DF6316FRAB0       | <br>RS No. DS6316MP000       | N/A                  | N/A        |

FACE VIEW OF RECEPTABLES AND PLUGS SHOWN


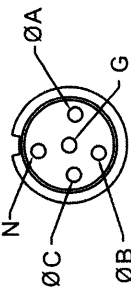

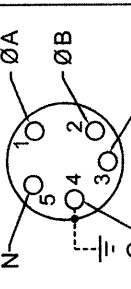
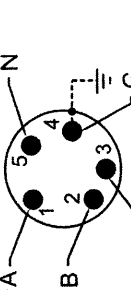

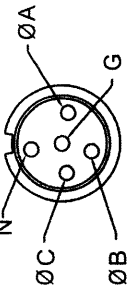


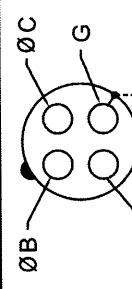
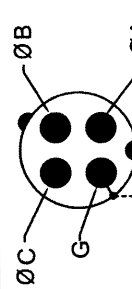
Table 1. Nonhazardous Area (Indoor / Outdoor) Receptacles (cont)

|                      |                 | 120/208V, 60 Hz, 3 phase, 5 wire, 4 pole |                              | WIRING DIAGRAM - GSE   |                                               |
|----------------------|-----------------|------------------------------------------|------------------------------|------------------------|-----------------------------------------------|
| RATING               | FACILITY SYMBOL | WIRING DIAGRAM - FACILITY                |                              | PLUG                   | RECEPTACLE                                    |
|                      |                 | RECEPTACLE                               | PLUG                         |                        |                                               |
| 30A<br>(indoor only) |                 | <p>NEMA L21-30R</p>                      | <p>NEMA L21-30P</p>          | N/A                    | N/A                                           |
| 30A<br>weathertight  |                 | <p>▲▲ RS No. DF3516FRAB0</p>             | <p>▲▲ RS No. DS3516MP000</p> | N/A                    | N/A                                           |
| 60A<br>weathertight  |                 | <p>▲▲ RS No. DF6516FRAB0</p>             | <p>▲▲ RS No. DS6516MP000</p> | <p>PN ZRLP-20-38PR</p> | <p>PN ZPLML-2220-38SR<br/>ZPLML-2420-38SR</p> |

▲▲ KEYING TO BE SET AT FACTORY BASED ON VOLTAGE ASSIGNMENT NUMBERS. RECEPTACLES AND PLUGS HAVE METALLIC SHELLS.

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN

Table 1. Nonhazardous Area (Indoor / Outdoor) Receptacles (cont)


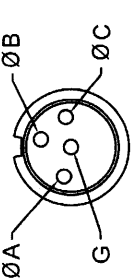

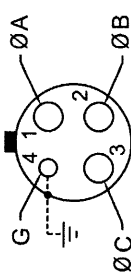
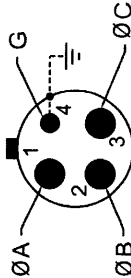



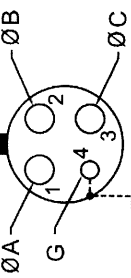
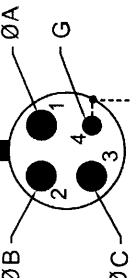



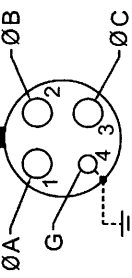
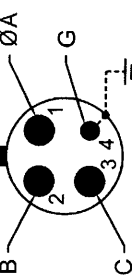
| RATING               | FACILITY SYMBOL                                                                          | WIRING DIAGRAM - FACILITY                                                             |                                                                                      | WIRING DIAGRAM - GSE                                                              |                                                                                   |
|----------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|                      |                                                                                          | RECEPTACLE                                                                            | PLUG                                                                                 | PLUG                                                                              | RECEPTACLE                                                                        |
| 100A<br>weathertight |  WT   |    |    |  |  |
|                      |                                                                                          | ▲▲ RS No. DF1516FRAB0                                                                 | ▲▲ RS No. DS1516MP000                                                                | PN ZPLML-32C24-49SR<br>ZPLML-34C24-49SR                                           | PN ZRLP-C24-49PR                                                                  |
| 200A<br>weathertight |  WT   |    |    | N/A                                                                               | N/A                                                                               |
|                      |                                                                                          | ▲▲ RS No. DF2516FRAB0                                                                 | ▲▲ RS No. DS2516MP000                                                                |                                                                                   |                                                                                   |
| 20A<br>weathertight  |  WT |  |  | N/A                                                                               | N/A                                                                               |
|                      |                                                                                          | 1 RS No. 8031                                                                         | 1 RS No. 8014                                                                        |                                                                                   |                                                                                   |

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN

Note: 1 Rated at 600V AC

▲▲ KEYING TO BE SET AT FACTORY BASED ON VOLTAGE ASSIGNMENT NUMBERS. RECEPTACLES AND PLUGS HAVE METALLIC SHELLS.


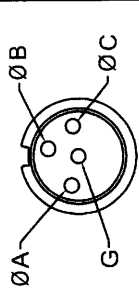

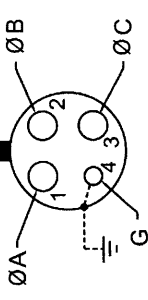
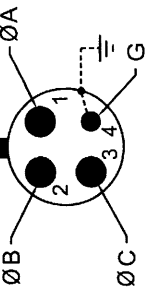


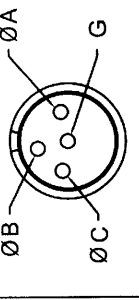

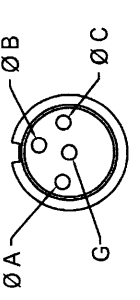
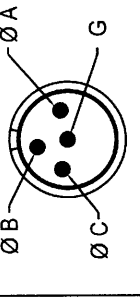
Table 1. Nonhazardous Area (Indoor / Outdoor) Receptacles (cont)

|                                                 |                                                                                          | 480V, 60 Hz, 3 phase, 4 wire, 3 pole (cont)                                                                    |                                                                                                               |                                                                                                                                |                                                                                                         |
|-------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| RATING                                          | FACILITY SYMBOL                                                                          | WIRING DIAGRAM - FACILITY                                                                                      |                                                                                                               | WIRING DIAGRAM - GSE                                                                                                           |                                                                                                         |
|                                                 |                                                                                          | RECEPTACLE                                                                                                     | PLUG                                                                                                          | PLUG                                                                                                                           | RECEPTACLE                                                                                              |
| 30A<br>weathertight<br>45° angle<br>flap cover  |  WT   | <br>▲▲ RS No. DF3404FRAB0   | <br>▲▲ RS No. DS3404MP000   | <br>PN ZPLML-1412-22SR<br>ZPLML-1512-22SR     | <br>PN ZRLP-12-22PR    |
| 60A<br>weathertight<br>45° angle<br>flap cover  |  WT   | <br>▲▲ RS No. DF6404FRAB0   | <br>▲▲ RS No. DS6404MP000   | <br>PN ZPLML-2016-38SR<br>ZPLML-2216-38SR     | <br>PN ZRLP-16-38PR    |
| 100A<br>weathertight<br>30° angle<br>flap cover |  WT | <br>▲▲ RS No. DF1404FRAB0 | <br>▲▲ RS No. DS1404MP000 | <br>PN ZPLML-28C20-40SR<br>ZPLML-30C20-40SR | <br>PN ZRLP-C20-40PR |

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN

▲▲ KEYING TO BE SET AT FACTORY BASED ON VOLTAGE ASSIGNMENT NUMBERS. RECEPTACLES AND PLUGS HAVE METALLIC SHELLS.



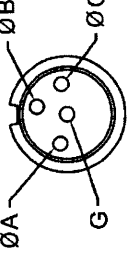
Table 1. Nonhazardous Area (Indoor / Outdoor) Receptacles (cont)

|                                                          |                                                                                          | 480V, 60 Hz, 3 phase, 4 wire, 3 pole (cont)                                                                            |                                                                                                               |                                                                                                                              |                                                                                                       |
|----------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| RATING                                                   | FACILITY SYMBOL                                                                          | WIRING DIAGRAM - FACILITY                                                                                              |                                                                                                               | WIRING DIAGRAM - GSE                                                                                                         |                                                                                                       |
|                                                          |                                                                                          | RECEPTACLE                                                                                                             | PLUG                                                                                                          | PLUG                                                                                                                         | RECEPTACLE                                                                                            |
| 200A<br>weathertight<br>30° angle<br>flap cover          |  WT   | <br>▲▲ RS No. DF2404FRAB0           | <br>▲▲ RS No. DS2404MP000   | <br>PN ZPLML-36C24-26SR<br>ZPLML-38C24-26SR | <br>PN ZRLP-C24-26PR |
| 200A<br>watertight<br>30° angle<br>with cup<br>cap cover |  WTR  | <br>▲▲ RS No. DS2404MRAB0/<br>DS2CC | <br>▲▲ RS No. DS2404FP000   | N/A                                                                                                                          | N/A                                                                                                   |
| 400A<br>weathertight<br>30° angle<br>flap cover          |  WT | <br>▲▲ RS No. DF4404FRAB0         | <br>▲▲ RS No. DS4404MP000 | N/A                                                                                                                          | N/A                                                                                                   |

▲▲ KEYING TO BE SET AT FACTORY BASED ON VOLTAGE ASSIGNMENT NUMBERS. RECEPTACLES AND PLUGS HAVE METALLIC SHELLS.

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN


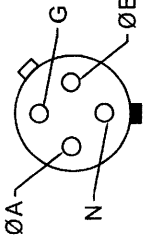
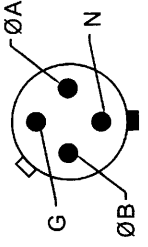
Table 1. Nonhazardous Area (Indoor / Outdoor) Receptacles (cont)

| 480V, 60 Hz, 3 phase, 4 wire, 3 pole (cont)              |                                                                                            |                                                                                     |                                                                                    |                      |            |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------|------------|
| RATING                                                   | FACILITY SYMBOL                                                                            | WIRING DIAGRAM - FACILITY                                                           |                                                                                    | WIRING DIAGRAM - GSE |            |
|                                                          |                                                                                            | RECEPTACLE                                                                          | PLUG                                                                               | PLUG                 | RECEPTACLE |
| 400A<br>watertight<br>30° angle<br>with cup<br>cap cover | <br>WTR |  |  | N/A                  | N/A        |
|                                                          |                                                                                            | ▲▲ RS No. DS4404MRAB0/<br>DS4CC                                                     | ▲ RS No. DS4404FP000                                                               |                      |            |

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN

KSC-STD-E-0011H


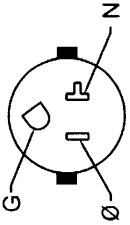
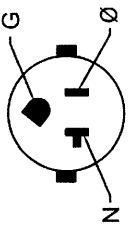

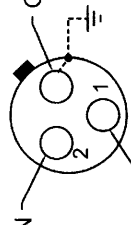
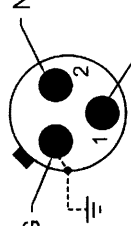



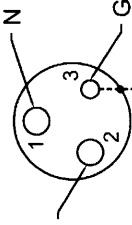

Table 1. Nonhazardous Area (Indoor / Outdoor) Receptacles (cont)

| 250V, dc; 600V, 60 Hz; single phase, 4 wire, 3 pole |                                                                                           |                                                                                                       |                                                                                                      |                      |            |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------|------------|
| RATING                                              | FACILITY SYMBOL                                                                           | WIRING DIAGRAM - FACILITY                                                                             |                                                                                                      | WIRING DIAGRAM - GSE |            |
|                                                     |                                                                                           | RECEPTACLE                                                                                            | PLUG                                                                                                 | PLUG                 | RECEPTACLE |
| 60A<br>waterproof<br>with screw<br>cap              | <br>WP | <br>RS No. 7324-78 | <br>RS No. 7328-78 | N/A                  | N/A        |

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN




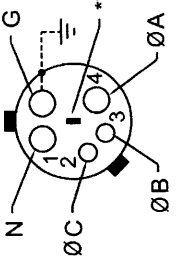
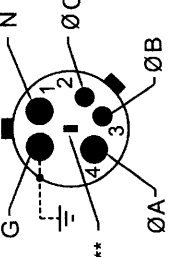
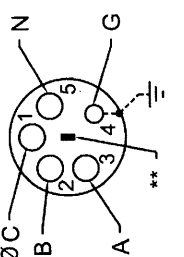
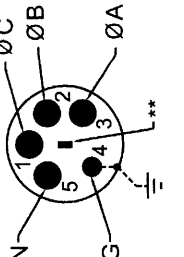

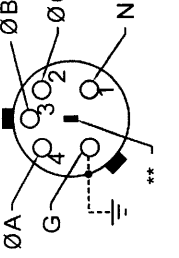
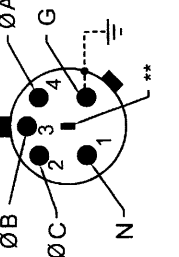
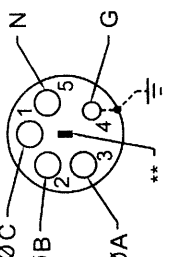
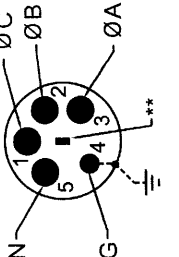

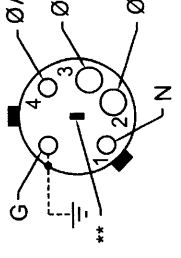
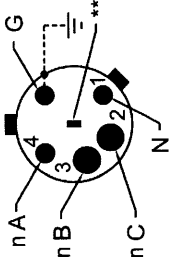
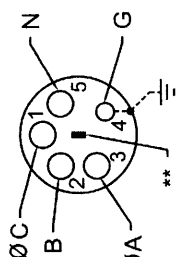
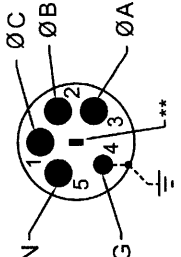
Table 2. Hazardous Area, Class I, Division 1, B, C, D Explosionproof Receptacles

| RATING                                                                      | FACILITY SYMBOL                                                                                  | WIRING DIAGRAM - FACILITY                                                                                                       |                                                                                                                                                | WIRING DIAGRAM - GSE                                                                                                    |                                                                                                                                           |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                             |                                                                                                  | RECEPTACLE                                                                                                                      | PLUG                                                                                                                                           | PLUG                                                                                                                    | RECEPTACLE                                                                                                                                |
| 20A<br>switch<br>interlocked                                                | <br>E (BCD)   | <br>AP No. EFSCB175-2023<br>CH No. ENRC21201 | <br>AP No. ECP-2023<br>ECP-1523<br>CH No. ENP5201<br>ENP5151 | N/A                                                                                                                     | N/A                                                                                                                                       |
| 20A use<br>switch<br>interlocked<br>(30A actual<br>rating of<br>receptacle) | <br>E (BCD)   | <br>CH No. FSQC2320<br>FSQC3320              | <br>CH No. APJ3385                                           | N/A                                                                                                                     | N/A                                                                                                                                       |
| 30A<br>switch<br>interlocked                                                | <br>E (BCD) | <br>CH No. FSQC2320-S4<br>FSQC3320-S4      | <br>CH No. APJ3385-S4                                      | <br>VT GB-1016-51SL<br>GB-D1016-51SL | <br>VT GB-B1716-51PL<br>GB-B1916-51PL<br>GB-B1516-51PL |

FACE VIEW OF RECEPTABLES AND PLUGS SHOWN

KSC-STD-E-0011H


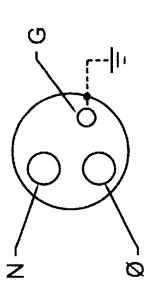


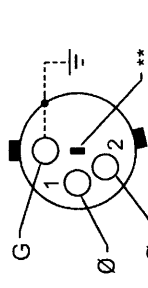
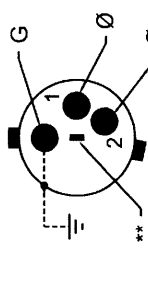

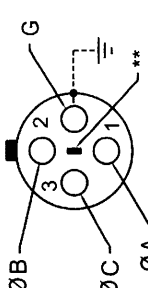
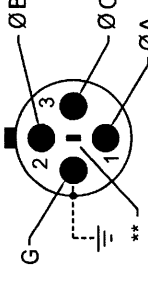
Table 2. Hazardous Area, Class I, Division 1, Group B, C, D Explosionproof Receptacles (cont)

| RATING                        | FACILITY SYMBOL                                                                                  | WIRING DIAGRAM - FACILITY                                                             |                                                                                      | WIRING DIAGRAM - GSE                                                                |                                                                                     |
|-------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                               |                                                                                                  | RECEPTACLE                                                                            | PLUG                                                                                 | PLUG                                                                                | RECEPTACLE                                                                          |
| 30A<br>switch<br>interlocked  | <br>E (BCD)   |    |    |    |    |
|                               |                                                                                                  | CH No. BHR3583BW<br>BHR3584BW                                                         | CH No. BHP3583BW<br>BHP3585BW                                                        | VT GB-1020-36SL<br>GB-D1020-36SL                                                    | VT GB-B1720-36PL<br>GB-B1920-36PL<br>GB-B1520-36PL                                  |
|                               |                                                                                                  |                                                                                       |                                                                                      |                                                                                     |                                                                                     |
| 60A<br>switch<br>interlocked  | <br>E (BCD)   |    |    |    |    |
|                               |                                                                                                  | CH No. BHR6584DW<br>BHR6585DW                                                         | CH No. BHP6585DW<br>BHP6587DW                                                        | VT GB-1024-29SL<br>GB-D1024-29SL                                                    | VT GB-B1724-29PL<br>GB-B1924-29PL<br>GB-B1524-29PL                                  |
|                               |                                                                                                  |                                                                                       |                                                                                      |                                                                                     |                                                                                     |
| 100A<br>switch<br>interlocked | <br>E (BCD) |  |  |  |  |
|                               |                                                                                                  | CH No. BHR10585CW<br>BHR10586CW                                                       | CH No. BHP10585CW<br>BHP10587CW                                                      | VT GB-1028-23SL<br>GB-D1028-23SL                                                    | VT GB-B1728-23PL<br>GB-B1928-23PL<br>GB-B1528-23PL                                  |
|                               |                                                                                                  |                                                                                       |                                                                                      |                                                                                     |                                                                                     |

\*\* - OPERATING LEVER FOR SWITCH INTERLOCK

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN

Table 2. Hazardous Area, Class I, Division 1, Group B, C, D Explosionproof Receptacles (cont)

| RATING                                                                        | FACILITY SYMBOL                                                                                                | 120V, 60 Hz, single phase, 3 wire, 2 pole                                                                                                 |                                                                                                                        | 208V, 60 Hz, single phase, 3 wire, 2 pole |      | 480V, 60 Hz, 3 phase, 4 wire, 3 pole |      |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|------|--------------------------------------|------|
|                                                                               |                                                                                                                | RECEPTACLE                                                                                                                                | PLUG                                                                                                                   | RECEPTACLE                                | PLUG | RECEPTACLE                           | PLUG |
| 30A                                                                           | <br>E (BCD)                 | <br>VT GB-B1716-51SL<br>GB-B1916-51SL<br>GB-B1516-51SL | <br>VT GB-1016-51PL<br>GB-D1016-51PL | N/A                                       | N/A  | N/A                                  | N/A  |
| 30A<br>switch<br>interlocked                                                  | 208V<br><br>E (BCD)<br>1-PH | <br>CH No. BHR3382N<br>BHR3383N                        | <br>CH No. BHP3383N<br>BHP3385N      | N/A                                       | N/A  | N/A                                  | N/A  |
| 20A use,<br>switch<br>interlocked<br>(30A actual<br>manufacturer's<br>rating) | <br>E (BCD)               | <br>CH No. FSQC2430<br>FSQC3430                      | <br>CH No. APJ3485                 | N/A                                       | N/A  | N/A                                  | N/A  |

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN  
\*\* - OPERATING LEVER FOR SWITCH INTERLOCK

KSC-STD-E-0011H

Table 2. Hazardous Area, Class I, Division 1, Group B, C, D Explosionproof Receptacles (cont)

| RATING                        | FACILITY SYMBOL | 480V, 60 Hz, 3 phase, 4 wire, 3 pole (cont) |                                          |                                                             |
|-------------------------------|-----------------|---------------------------------------------|------------------------------------------|-------------------------------------------------------------|
|                               |                 | WIRING DIAGRAM - FACILITY                   | WIRING DIAGRAM - GSE                     | RECEPTACLE                                                  |
| 30A<br>switch<br>interlocked  |                 | <p>CH No. BHRC3482D<br/>BHRC3483D</p>       | <p>VT GB-1016-23SL<br/>GB-D1016-23SL</p> | <p>VT GB-B1716-23PL<br/>GB-B1916-23PL<br/>GB-B1516-23PL</p> |
|                               |                 | <p>CH No. BHP3483D<br/>BHP3485D</p>         | <p>VT GB-1020-40SL<br/>GB-D1020-40SL</p> | <p>VT GB-B1720-40PL<br/>GB-B1920-40PL<br/>GB-B1520-40PL</p> |
|                               |                 | <p>CH No. BHP10485D<br/>BHP10487D</p>       | <p>VT GB-1024-39SL<br/>GB-D1024-39SL</p> | <p>VT GB-B1724-39PL<br/>GB-B1924-39PL<br/>GB-B1524-39PL</p> |
| 60A<br>switch<br>interlocked  |                 | <p>CH No. BHRC6484D<br/>BHRC6485D</p>       |                                          |                                                             |
|                               |                 | <p>CH No. BHP6483D<br/>BHP6485D</p>         |                                          |                                                             |
|                               |                 | <p>CH No. BHP10485D<br/>BHP10486D</p>       |                                          |                                                             |
| 100A<br>switch<br>interlocked |                 | <p>CH No. BHP10485D<br/>BHP10486D</p>       |                                          |                                                             |
|                               |                 | <p>CH No. BHP10485D<br/>BHP10486D</p>       |                                          |                                                             |
|                               |                 | <p>CH No. BHP10485D<br/>BHP10486D</p>       |                                          |                                                             |

\*\* - OPERATING LEVER FOR SWITCH INTERLOCK

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN

Table 2. Hazardous Area, Class I, Division 1, Group B, C, D Explosionproof Receptacles (cont)


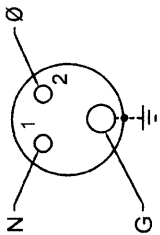
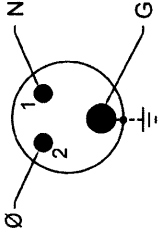

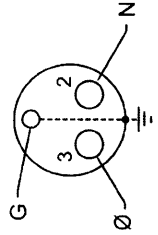
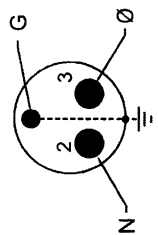

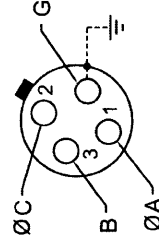
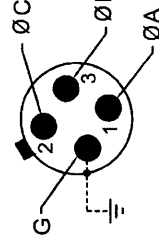
| RATING                       | FACILITY SYMBOL | 480V, 60 Hz, 3 phase, 4 wire, 3 pole (cont)            |                                      | 120/208V, 400 Hz, 3 phase, 5 wire, 4 pole              |                                      |
|------------------------------|-----------------|--------------------------------------------------------|--------------------------------------|--------------------------------------------------------|--------------------------------------|
|                              |                 | WIRING DIAGRAM - FACILITY RECEPTACLE                   | WIRING DIAGRAM - FACILITY PLUG       | WIRING DIAGRAM - GSE RECEPTACLE                        | WIRING DIAGRAM - GSE PLUG            |
| 200A                         | E (BCD)         | <br>VT GB-B1728-31SL<br>GB-B1928-31SL<br>GB-B1528-31SL | <br>VT GB-1028-31SL<br>GB-D1028-31SL | <br>VT GB-B1728-31PL<br>GB-B1928-31PL<br>GB-B1528-31PL | <br>VT GB-1028-31SL<br>GB-D1028-31SL |
| 30A<br>switch<br>interlocked | E (BCD)<br>30   | <br>CH No. BHRC3583DW<br>BHRC3584DW                    | <br>CH No. BHP3583DW<br>BHP3585DW    | N/A                                                    | N/A                                  |

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN

\*\* - OPERATING LEVER FOR SWITCH INTERLOCK

KSC-STD-E-0011H

Table 3. Hazardous Area, Class I, Division 1, Group C, D Explosionproof Receptacles


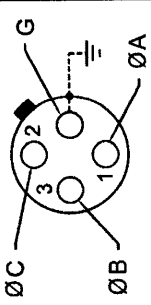
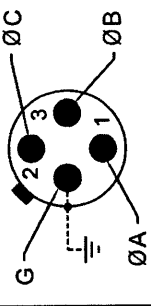

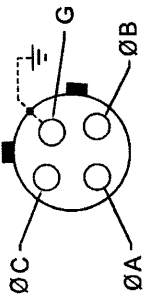
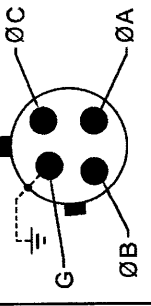
| RATING                                              | FACILITY SYMBOL                                                                                 | 120V, 60 Hz, single phase, 3 wire, 2 pole                                                                                                       |                                                                                                                  | 480V, 60 Hz, 3 phase, 4 wire, 3 pole |                           |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------|
|                                                     |                                                                                                 | WIRING DIAGRAM - FACILITY RECEPTACLE                                                                                                            | WIRING DIAGRAM - FACILITY PLUG                                                                                   | WIRING DIAGRAM - GSE RECEPTACLE      | WIRING DIAGRAM - GSE PLUG |
| 20A                                                 | <br>E (CD)   | <br><sup>1</sup> RS No. 4464FC<br><sup>1</sup> RS No. 4464SC | <br><sup>1</sup> RS No. 4466   | N/A                                  | N/A                       |
| 30A                                                 | <br>E (CD)   | <br><sup>2</sup> RS No. 4233BC                               | <br><sup>2</sup> RS No. 4237BC | N/A                                  | N/A                       |
| 30A use<br>(60A actual<br>manufacturer's<br>rating) | <br>E (CD) | <br>CH No. FSQC5640-S4                                     | <br>CH No. APJ6485-S4        | N/A                                  | N/A                       |

FC - FLAP COVER  
SC - SCREW COVER

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN


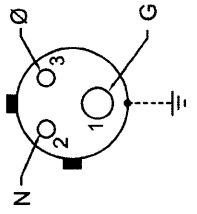
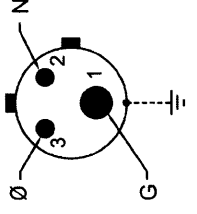

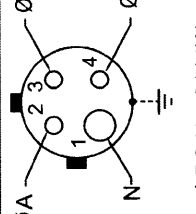
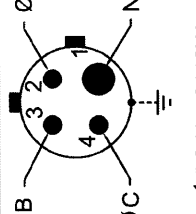

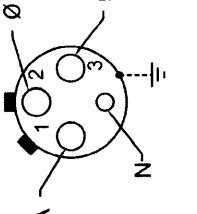
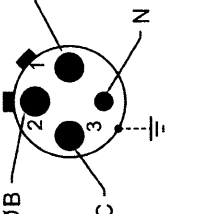
Note: <sup>1</sup> Rated at 240V AC  
<sup>2</sup> Rated at 480V AC

Table 3. Hazardous Area, Class I, Division 1, Group C, D Explosionproof Receptacles (cont)

| RATING                                                                     | FACILITY SYMBOL                                                                               | WIRING DIAGRAM - FACILITY                                                                                                                                          |                                                                                                          | WIRING DIAGRAM - GSE |            |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------|------------|
|                                                                            |                                                                                               | RECEPTACLE                                                                                                                                                         | PLUG                                                                                                     | PLUG                 | RECEPTACLE |
| 60A                                                                        | <br>E (CD) |  <p>CH No. FSQC5640</p>                                                         |  <p>CH No. APJ6485</p> | N/A                  | N/A        |
| 200A<br>interlocked<br>circuit<br>breaker<br>combination<br>(Group D only) | <br>E (D)  |  <p>CH No. EPC 604-2042-<br/>WT 200-3<br/>CH No. EPC 605-2042-<br/>TT 200-3</p> |  <p>CH No. DP20468</p> | N/A                  | N/A        |

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN

Table 4. Not to Be Utilized for New Design  
 [Nonhazardous Area (Indoor / Outdoor) Receptacles]


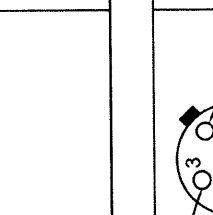
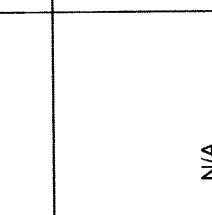

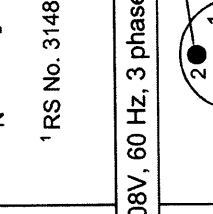
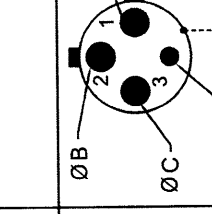

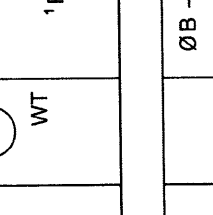
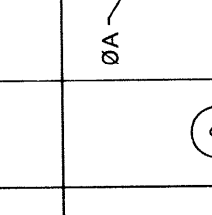
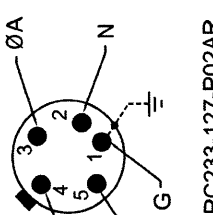
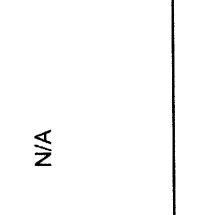
| RATING               | FACILITY SYMBOL                                                                             | WIRING DIAGRAM - FACILITY                                                                                  |                                                                                                           | WIRING DIAGRAM - GSE |            |     |
|----------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------|------------|-----|
|                      |                                                                                             | RECEPTACLE                                                                                                 | PLUG                                                                                                      | PLUG                 | RECEPTACLE |     |
| 30A,<br>weathertight |          | 120V, 60 Hz, single phase, 3 wire, 2 pole                                                                  |                                                                                                           |                      |            | N/A |
|                      |                                                                                             | <br>1 RS No. 3113W      | <br>1 RS No. 3117W      | N/A                  | N/A        |     |
| 30A<br>weathertight  | <br>WT   | 120/208V, 60 Hz, 3 phase, 4 wire, 4 pole                                                                   |                                                                                                           |                      |            | N/A |
|                      |                                                                                             | <br>1 RS No. 3114W      | <br>1 RS No. 3118W      | N/A                  | N/A        |     |
| 60A<br>weathertight  | <br>WT | 120/208V, 60 Hz, 3 phase, 4 wire, 4 pole                                                                   |                                                                                                           |                      |            | N/A |
|                      |                                                                                             | <br>1 RS No. 3124W-78 | <br>1 RS No. 3128W-78 | N/A                  | N/A        |     |

FACE VIEW OF RECEPTABLES AND PLUGS SHOWN

Note: 1 Rated at 480V AC




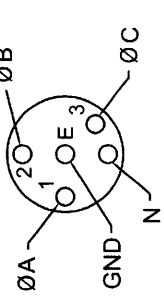
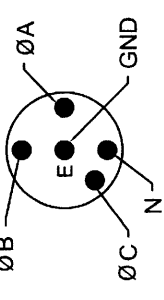

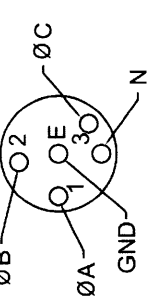
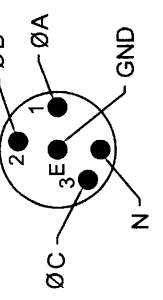

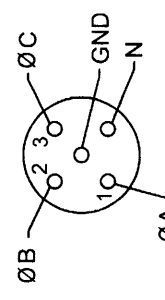

Table 4. Not to Be Utilized for New Design (cont)  
 [Nonhazardous Area (Indoor / Outdoor) Receptacles]

| RATING               | FACILITY SYMBOL                                                                          | WIRING DIAGRAM - FACILITY                                                            |                                                                                     | WIRING DIAGRAM - GSE                                                                |                                                                                    |
|----------------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                      |                                                                                          | RECEPTACLE                                                                           | PLUG                                                                                | PLUG                                                                                | RECEPTACLE                                                                         |
| 100A<br>weathertight |  WT     |    |    | N/A                                                                                 | N/A                                                                                |
|                      |                                                                                          | 1 RS No. 3134W-72                                                                    | 1 RS No. 3138W-72                                                                   |                                                                                     |                                                                                    |
| 200A<br>weathertight |  WT |   |   | N/A                                                                                 | N/A                                                                                |
|                      |                                                                                          | 1 RS No. 3144W                                                                       | 1 RS No. 3148W                                                                      |                                                                                     |                                                                                    |
| 30A<br>weathertight  |  WT |  |  |  |  |
|                      |                                                                                          | ▲ RS No. 3F0516AB                                                                    | ▲ RS No. 3MP516                                                                     | CH RPC133-153-S02AR<br>RPC133-388-S02AR<br>RPC133-389-S02AR                         | CH RPC233-127-P02AR                                                                |

120/208V, 60 Hz, 3 phase, 5 wire, 4 pole

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN ▲ KEYING TO BE SET AT FACTORY BASED ON VOLTAGE ASSIGNMENT NUMBERS.  
 RECEPTACLES AND PLUGS HAVE NON-METALLIC SHELLS  
 Note: 1 Rated at 480V AC


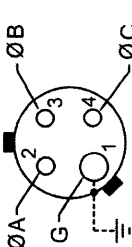
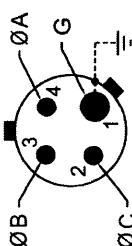

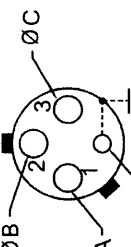
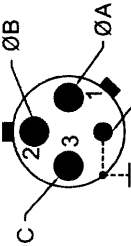

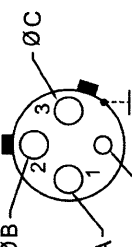
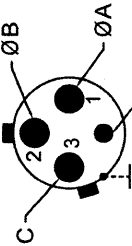
Table 4. Not to Be Utilized for New Design (cont)  
 [Nonhazardous Area (Indoor / Outdoor) Receptacles]

| RATING              | FACILITY SYMBOL                                                                       | WIRING DIAGRAM - FACILITY                                                                                         |                                                                                                                  | WIRING DIAGRAM - GSE |            |
|---------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|----------------------|------------|
|                     |                                                                                       | RECEPTACLE                                                                                                        | PLUG                                                                                                             | PLUG                 | RECEPTACLE |
| 60A<br>weathertight |    |  <p>▲ RS No. 6F0516AB</p>      |  <p>▲ RS No. 6MP516</p>        | N/A                  | N/A        |
| 100A                |    |  <p>▲ RS No. 10F0516AB</p>     |  <p>▲ RS No. 10MP516</p>       | N/A                  | N/A        |
| 200A                |  |  <p>▲ RS No. DS2516FRAB0</p> |  <p>▲ RS No. DS2516MP000</p> | N/A                  | N/A        |

▲ KEYING TO BE SET AT FACTORY BASED ON VOLTAGE ASSIGNMENT NUMBERS. RECEPTACLES AND PLUGS HAVE NON-METALLIC SHELLS

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN

Table 4. Not to Be Utilized for New Design (cont)  
[Nonhazardous Area (Indoor / Outdoor) Receptacles]

|                                                 |                                                                                       | 120/208V, 60 Hz, 3 phase, 4 wire, 3 pole                                                                                                    |                                                                                                                      | WIRING DIAGRAM - GSE |            |
|-------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| RATING                                          | FACILITY SYMBOL                                                                       | WIRING DIAGRAM - FACILITY                                                                                                                   |                                                                                                                      | PLUG                 | RECEPTACLE |
|                                                 |                                                                                       | RECEPTACLE                                                                                                                                  | PLUG                                                                                                                 |                      |            |
| 30A<br>weathertight<br>45° angle<br>flap cover  |    | <br><sup>1</sup> RS No. 7114<br>(keys @ 0° & 225°)       | <br><sup>1</sup> RS No. 7318       | N/A                  | N/A        |
| 60A<br>weathertight<br>45° angle<br>flap cover  |    | <br><sup>1</sup> RS No. 7124-78<br>(keys @ 0° & 227°)    | <br><sup>1</sup> RS No. 7328-78    | N/A                  | N/A        |
| 100A<br>weathertight<br>45° angle<br>flap cover |  | <br><sup>1</sup> RS No. 7134W-72<br>(keys @ 0° & 108°) | <br><sup>1</sup> RS No. 7138W-72 | N/A                  | N/A        |

FACE VIEW OF RECEPTACLES AND PLUGS SHOWN  
Note: <sup>1</sup> Rated at 600V AC

Table 4. Not to Be Utilized for New Design (cont)  
 [Nonhazardous Area (Indoor / Outdoor) Receptacles]

| 480V, 60 Hz, 3 phase, 4 wire, 3 pole (cont)     |                 |                                                    |                         |                      |            |
|-------------------------------------------------|-----------------|----------------------------------------------------|-------------------------|----------------------|------------|
| RATING                                          | FACILITY SYMBOL | WIRING DIAGRAM - FACILITY                          |                         | WIRING DIAGRAM - GSE |            |
|                                                 |                 | RECEPTACLE                                         | PLUG                    | PLUG                 | RECEPTACLE |
| 100A<br>weathertight<br>45° angle<br>flap cover |                 | <p>1 RS No. 7134-72<br/>(keys @ 0° &amp; 280°)</p> | <p>1 RS No. 7138-72</p> | N/A                  | N/A        |
| 200A<br>weathertight<br>45° angle<br>flap cover |                 | <p>1 RS No. 7144W<br/>(keys @ 0° &amp; 75°)</p>    | <p>1 RS No. 7148W</p>   | N/A                  | N/A        |
| 200A<br>weathertight<br>45° angle<br>flap cover |                 | <p>1 RS No. 7144W<br/>(keys @ 0° &amp; 75°)</p>    | <p>1 RS No. 7148W</p>   | N/A                  | N/A        |

FACE VIEW OF RECEPTABLES AND PLUGS SHOWN

Note: <sup>1</sup> Rated at 600V AC



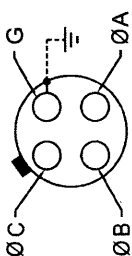

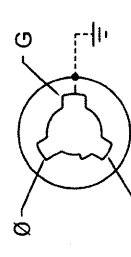


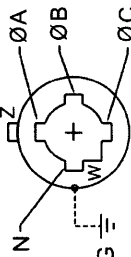
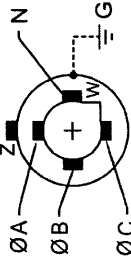
Table 4. Not to Be Utilized for New Design (cont)  
[Nonhazardous Area (Indoor / Outdoor) Receptacles]

| RATING                                         | FACILITY SYMBOL | WIRING DIAGRAM - FACILITY |      | WIRING DIAGRAM - GSE |            |
|------------------------------------------------|-----------------|---------------------------|------|----------------------|------------|
|                                                |                 | RECEPTACLE                | PLUG | PLUG                 | RECEPTACLE |
| 200A<br>weatheright<br>20° angle<br>flap cover |                 |                           |      | N/A                  | N/A        |
| 200A<br>weatheright<br>45° angle<br>flap cover |                 |                           |      | N/A                  | N/A        |
| 400A<br>weatheright                            |                 |                           |      | N/A                  | N/A        |

FACE VIEW OF RECEPTABLES AND PLUGS SHOWN  
Note: 1 Rated at 600V AC

KSC-STD-E-0011H

Table 4. Not to Be Utilized for New Design (cont)  
 [Nonhazardous Area (Indoor / Outdoor) Receptacles]

| RATING               | FACILITY SYMBOL                                                                       | WIRING DIAGRAM - FACILITY                                                                                                                                  |                                                                                                                                                     | WIRING DIAGRAM - GSE |            |
|----------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
|                      |                                                                                       | RECEPTACLE                                                                                                                                                 | PLUG                                                                                                                                                | PLUG                 | RECEPTACLE |
| 400A<br>weathertight |    |  <p>CH No. AREX4042210<br/>AREX4042212<br/>STYLE 2<br/>(SUFFIX S22)</p> |  <p>CH No. AP404610<br/>AP404612<br/>STYLE 2<br/>(SUFFIX S22)</p> | N/A                  | N/A        |
| 20A                  |    |  <p><sup>1</sup> HU No. HBL23000G<br/>AH23000G</p>                      |  <p><sup>1</sup> HU No. HBL23005GB<br/>AH23005N</p>               | N/A                  | N/A        |
| 30A                  |  |  <p><sup>2</sup> HU No. HBL25403<br/>AH25403</p>                      |  <p><sup>2</sup> HU No. HBL25415B<br/>AH25415N</p>              | N/A                  | N/A        |

FACE VIEW OF RECEPTABLES AND PLUGS SHOWN

Note: <sup>1</sup> Rated at 480V AC

<sup>2</sup> Rated at 600V AC

Table 4. Not to Be Utilized for New Design (cont)  
[Nonhazardous Area (Indoor / Outdoor) Receptacles]

|                                                                                 |                 | 208V, 60 Hz, single phase, 3 wire, 2 pole          |                                                                 |                         |                                                                 |
|---------------------------------------------------------------------------------|-----------------|----------------------------------------------------|-----------------------------------------------------------------|-------------------------|-----------------------------------------------------------------|
| RATING                                                                          | FACILITY SYMBOL | WIRING DIAGRAM - FACILITY                          |                                                                 | WIRING DIAGRAM - GSE    |                                                                 |
|                                                                                 |                 | RECEPTACLE                                         | PLUG                                                            | PLUG                    | RECEPTACLE                                                      |
| 30A                                                                             |                 |                                                    |                                                                 |                         |                                                                 |
|                                                                                 |                 | CH No. RPC233-127-S02BR                            | CH No. RPC133-153-P02BR<br>RPC133-388-P02BR<br>RPC133-389-P02BR | CH No. RPC233-127-P02BR | CH No. RPC133-153-S02BR<br>RPC133-388-S02BR<br>RPC133-389-S02BR |
| [Hazardous Area, Class I, Division 1, Group B, C, D Explosionproof Receptacles] |                 |                                                    |                                                                 |                         |                                                                 |
|                                                                                 |                 | 208V, 60 Hz, single phase, 3 wire, 2 pole          |                                                                 |                         |                                                                 |
| RATING                                                                          | FACILITY SYMBOL | WIRING DIAGRAM - FACILITY                          |                                                                 | WIRING DIAGRAM - GSE    |                                                                 |
|                                                                                 |                 | RECEPTACLE                                         | PLUG                                                            | PLUG                    | RECEPTACLE                                                      |
| 30A                                                                             | 208V  E (BCD)   |                                                    |                                                                 |                         |                                                                 |
|                                                                                 |                 | VT GB-B1716-51SL<br>GB-B1916-51SL<br>GB-B1516-51SL | VT GB-1016-51PL<br>GB-D1016-51PL                                | N/A                     | N/A                                                             |

FACE VIEW OF RECEPTABLES AND PLUGS SHOWN

KSC-STD-E-0011H

Table 5. Receptacle/Plug Cross-Reference Chart  
 (Meltric replacements for the Russellstoll R&S Series listed which has been discontinued)

| R&S       | MELTRIC       |
|-----------|---------------|
| 3F0516AB  | 33-30167-MA3  |
| 3MP516    | 33-31167      |
| 6F0516AB  | 33-60167-MA6  |
| 6MP516    | 33-61167      |
| 10F0516AB | 33-90167-MA10 |
| 10MP516   | 33-91167      |

NOTE

The Meltric plugs and receptacles listed above shall only be used to mate existing Russellstoll plugs/receptacles listed which are no longer available as the R&S series.



KSC-STD-E-0011H

January 7, 2009

## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

### INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

**NOTE:** This form may not be used to request copies of documents, nor to request waivers or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document or to amend contractual requirements.

|                                                                                                                                             |                                                           |                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------------|
| <b>I RECOMMEND A CHANGE:</b>                                                                                                                | 1. DOCUMENT NUMBER<br>KSC-STD-E-0011                      | 2. DOCUMENT DATE<br>December 2, 2008 |
| 3. DOCUMENT TITLE<br>Electrical Power Receptacles and Plugs, Standard for                                                                   |                                                           |                                      |
| 4. NATURE OF CHANGE <i>(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)</i>            |                                                           |                                      |
| 5. REASON FOR RECOMMENDATION                                                                                                                |                                                           |                                      |
| <b>6. SUBMITTER</b>                                                                                                                         |                                                           |                                      |
| a. NAME <i>(Last, First, Middle Initial)</i>                                                                                                | b. ORGANIZATION                                           |                                      |
| c. ADDRESS <i>(Include Zip Code)</i>                                                                                                        | d. TELEPHONE <i>(Include Area Code)</i>                   | 7. DATE SUBMITTED                    |
| <b>8. PREPARING ACTIVITY</b>                                                                                                                |                                                           |                                      |
| a. NAME<br>Chief, Mechanical/Electrical Branch                                                                                              | d. TELEPHONE <i>(Include Area Code)</i><br>(321) 867-4002 |                                      |
| c. ADDRESS <i>(Include Zip Code)</i><br>National Aeronautics and Space Administration<br>Mail Code: TA-B3<br>Kennedy Space Center, FL 32899 |                                                           |                                      |

KSC-STD-E-0011H