

SECTION 26 27 26 – WIRING DEVICES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes receptacles, connectors, switches, dimmers, finish plates and cord reels.

1.2 DEFINITIONS

- A. GFCI: Ground fault circuit interrupter.

1.3 SUBMITTALS

- A. Product Data: For each product specified.
- B. Shop Drawings:
 - 1. Legends for receptacles and switch plates, where indicated on the drawings.
 - 2. Cord Reels.
- C. Samples: For devices and device plates for color selection and evaluation of technical features, when requested by the Architect-Engineer and/or Owner.
- D. Maintenance Data: For materials and products to include in maintenance manuals specified in Division 1.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
- B. Comply with NEMA WD 1.
- C. Comply with NFPA 70.
- D. Compliance with Federal Specifications – identified by the federal specifications mark (capital letters 'F' and 'S' each in a wing on either side of the UL Listing mark):
 - 1. Receptacles and GFCI's: Federal Specification number WC596.
 - 2. Switches: Federal Specification number WS896.

1.5 COORDINATION

- A. Receptacles for Owner Furnished Equipment, or Equipment furnished by other trades: Match plug configurations.
 - 1. Cord and Plug Sets: Match equipment requirements.

1.6 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents. Deliver extra materials to Owner.

1. Extra Keys: Provide minimum ten (10) keys for each type of key.
2. GFCI Receptacles: Ten (10).

PART 2 - PRODUCTS

2.1 WALL SWITCHES

- A. Manufacturers

1. Hubbell HBL1221 Series.
2. Leviton 1221-2 Series.
3. Pass & Seymour PS20AC1 Series.

- B. Description: NEMA WD 1, heavy duty industrial grade, binding screw type for back and side wiring, AC only snap switch with grounded mounting strap, and grounding terminal with green screw.

- C. Toggle Color: As selected by Architect.

- D. Types: Switch shall be single pole, double pole, three-way, or 4-way, as required by the drawings.

- E. Voltage Rating: 120/277 volts, AC.

- F. Current Rating: 20 amperes.

- G. Prewired and plug-in devices shall be acceptable provided device matches specifications and plug-in devices are crimped and welded.

2.2 ANALOG 0-10V WALL DIMMERS

- A. Manufacturers

1. Lutron Diva 0-10V Series Control.
 - a. For loads exceeding 8A, provide PP-DV power pack. Locate power pack above ceiling, directly above dimmer.
2. Hubbell Rocker Slide Dimmer with appropriate power pack when required.
3. Leviton Decora Slide Dimmer with appropriate power pack when required.
4. Pass & Seymour Radiant Paddle Slide Dimmer with appropriate power pack when required.

- B. Description: Decora style rocker/paddle switch with 0-10V LED compatible slide dimmer.

- C. Toggle Color: As selected by Architect.

- D. Types: Single pole, or three-way as required by the drawings.

- E. Voltage Rating: 120/277 volts, AC.

- F. Current Rating: as required for load. If load exceeds dimmer rating, provide compatible power pack.

2.3 RECEPTACLES

A. Duplex Convenience Receptacle

1. Manufacturers
 - a. Hubbell HBL5362 Series.
 - b. Leviton 5362 Series.
 - c. Pass & Seymour PS5362 Series.
2. Description: Heavy-Duty Federal Industrial Spec Grade with nylon face (smooth), brass strap, brass contacts for side and back wiring, and nylon base.
3. Provide with WR (weather resistant) label when installed in exterior applications per code.
4. Where indicated on the drawings, or per current version of NEC, provide the tamper resistant version with internal shutter system.
5. Color of receptacles shall be as selected by the Architect.
6. Prewired and plug-in devices shall be acceptable provided device matches specifications and plug-in devices are crimped and welded. Provide similar to Pass & Seymour "Plug Tail" type receptacles.

B. Tamper Resistant Duplex Convenience Receptacle

1. Manufacturers
 - a. Hubbell HBL5362TR Series.
 - b. Leviton 5362-SG Series.
 - c. Pass & Seymour TR63 Series.
2. Description: Heavy-Duty Federal Industrial Spec Grade tamper resistant with nylon face (smooth), brass strap, brass contacts for side and back wiring, and nylon base.
3. Provide with WR (weather resistant) label when installed in exterior applications per code.
4. Provide the tamper resistant with internal shutter system.
5. Color of receptacles shall be as selected by the Architect.
6. Prewired and plug-in devices shall be acceptable provided device matches specifications and plug-in devices are crimped and welded. Provide similar to Pass & Seymour "Plug Tail" type receptacles.

C. Tamper Resistant Duplex USB Charger Receptacle

1. Manufacturers
 - a. Hubbell USB8300C5 Series.
 - b. Leviton T5835-HG Series.
 - c. Pass & Seymour TR20HUSBCC6 Series.
2. Description: **Hospital Grade** tamper resistant with high-impact resistant thermo plastic construction.
3. Provide with WR (weather resistant) label when installed in exterior applications.
4. Provide the tamper resistant with internal shutter system.
5. Provide with two USB type C ports or one USB type A and one USB type C.
6. USB charging shall comply with USB BC1.2 battery charging and 3.0 power delivery specifications.
7. USB charging shall supply minimum 5 amp.
8. Color of receptacles shall be as selected by the Architect.

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9. Prewired and plug-in devices shall be acceptable provided device matches specifications and plug-in devices are crimped and welded. Provide similar to Pass & Seymour "Plug Tail" type receptacles.

D. Tamper Resistant Ground Fault Circuit Interrupter (GFCI) Receptacle

1. Manufacturers
 - a. Hubbell GFTR20 Series.
 - b. Leviton X7899 Series.
 - c. Pass & Seymour 2097TR Series.
2. Description: Federal Specification Grade tamper resistant with high-impact-resistant thermoplastic construction, brass contacts for side and back wiring and LED trip indicator light.
3. GFCI receptacles shall not be connected to protect downstream devices, unless noted otherwise on the drawings. Provide unit designed for installation in a 2-3/4" deep outlet box without adapter, grounding type, Class A, Group 1, per UL 943.
4. Device shall comply with Federal Specification WC596. Devices shall have protection so that if critical components are damaged and ground fault protection is lost, power to receptacle shall be disconnected.
5. Provide with WR (weather resistant) label when installed in exterior applications per code.
6. Provide tamper resistant with internal shutter system.
7. Prewired and plug-in devices shall be acceptable provided device matches specifications and plug-in devices are crimped and welded.

E. Weatherproof Receptacle

1. Consisting of a GFCI receptacle as specified above in an outlet enclosure that is UL listed for wet locations, and meet NEC and OSHA requirements while in use.
2. Exterior-mounted receptacles installed in existing walls and on mechanical units shall have a self-closing weatherproof (in use) cover similar to Pass & Seymour WIUCAST series. Exterior-mounted receptacles installed in new walls shall have a self-closing weatherproof (in use) and be mounted over a recessed box similar to Arlington Industries DSBVR1W series. Paint cover to match adjacent surface with appropriate type of paint. Coordinate color with Architect prior to ordering.

2.4 CORD REELS

A. Manufacturers

1. Heavy Duty Plastic: KH industries CRP series with black finish.
 - a. Provide at locations with finished ceilings (science, STEM, kitchen, etc.) and where indicated.
 - b. Provide cord and plug on reel, and receptacle at ceiling.
 - c. Description: Retractable reel with 50' of wire, rated at 13 amps using #14 AWG wire.
 - d. Provide heavy duty thermos plastic reel with strain relief. Provide triple-tap 15 amp receptacle at end of cord.

2.5 SPECIAL PURPOSE RECEPTACLES

A. Manufacturers

1. Hubbell.
2. Leviton.

3. Pass & Seymour.
 - B. Description: Polarized, grounding type
 - C. Device Body: Black nylon
 - D. Configuration: As required by the amperage and voltage of the equipment to be connected on the drawings.
 - E. Provide equipment cord and caps as required for equipment.

2.6 WIRING DEVICE ACCESSORIES

- A. Wall Plates: Provide wall plates for single and combination wiring devices, of types, sizes, and with ganging and cutouts as indicated. Provide plates which mate and match with wiring devices to which attached. Provide metal screws for securing plates to devices with screw heads colored to match finish of plates.
- B. Wall Plates: Provide 302 satin finished stainless steel wall plates throughout the building.
- C. Provide galvanized steel wall plates in unfinished spaces.
- D. Floor Service Outlets: Provide duplex receptacles as required and specified under receptacles.

2.7 CORD AND PLUG SETS

- A. Description: Match voltage and current ratings and number of conductors to requirements of equipment being connected.
 1. Cord: Rubber insulated, stranded copper conductors, with type SOW A jacket. Green insulated grounding conductor, and equipment rating ampacity plus a minimum of 30 percent.
 2. Plug: Nylon body and integral cable clamping jaws. Match cord and receptacle type for connection.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Coordinate with other work, including painting, electrical boxes and wiring work, as necessary to interface installation of wiring devices with other work.
- B. Verify all receptacle mounting heights before roughing in unless noted. If an outlet is installed in such a location as to be out of proper relation to beams, walls, or finish details of the building, its location shall be corrected by and at the expense of the Contractor under direction of the Architect/Engineer.
- C. Install devices and assemblies plumb and secure only in electrical boxes which have been cleaned of excess building materials, dirt, and debris. Device to be secure tight against wall box and flush with wall plate.
- D. Install switches on latch side of doorways.
- E. Install wall plates when painting is complete.
- F. Install wall dimmers to achieve indicated rating after derating for ganging as instructed by manufacturer.

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- G. Do not share neutral conductor on load side of dimmers.
- H. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical, and grounding terminal of receptacles on top. Group adjacent switches under single, multi-gang wall plates.
- I. Protect devices and assemblies during painting.
- J. Adjust locations at which floor service outlets and telephone/power service poles are installed to suit arrangement of partitions and furnishings.
- K. Analog Dimmers: Provide the required low and/or line voltage wiring shall be provided to control the fixture. Any and all additional accessories required, including power packs, shall be provided in their entirety.
- L. Coord reels shall be installed at structure or in ceiling (where architectural drawings indicate a ceiling). Provide all miscellaneous steel as required to support cord reel, both vertically and laterally. When installed in ceiling:
 - 1. Support cord reel so that ceiling is not impacted from pulling cable.
 - 2. Provide power connection to cord reel at ceiling plane to meet NEC.

3.2 INSTALLATION TO MEET ACOUSTICAL PERFORMANCE

- A. In order to reduce sound transmission through walls, when devices boxes are installed to serve both sides of the wall, they shall be installed in different stud cavities. Where boxes are found to be installed in the same stud cavity, feeding two different sides of the wall, they will be required to be removed and reinstalled at the contractor's expense.

3.3 IDENTIFICATION

- A. The requirements listed below are in addition to the requirements listed in Division 26 "Electrical Identification".
- B. Switches: Where three or more switches are ganged, and elsewhere as indicated, identify each switch with approved legend engraved on wall plate.
- C. Receptacles: Identify panelboard and circuit number from which served. Use machine printed, pressure sensitive, abrasion resistant label tape on backside of the wall faceplate and durable wire markers or tags within outlet boxes.

3.4 CONNECTIONS

- A. Connect wiring device grounding terminal to outlet box with bonding jumper.
- B. Connect wiring device grounding terminal to branch circuit equipment grounding conductor.
- C. Tighten electrical connectors and terminals according to manufacturers published torque tightening values. If manufacturers torque values are not indicated, use those specified in UL 486A and UL 486B.

3.5 FIELD QUALITY CONTROL

- A. Test wiring devices for proper polarity and ground continuity. Operate each device at least six times.

- B. Test GFCI operation with both local and remote fault simulations according to manufacturer's written instructions.
- C. Replace damaged or defective components.

3.6 CLEANING

- A. Internally clean devices, device outlet boxes, and enclosures. Replace stained or improperly painted wall plates or devices.

END OF SECTION 26 27 26