

SECTION 16250 WIRING DEVICES

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Section includes requirements for line voltage wiring devices.

1.02 REFERENCE STANDARDS

- A. National Electric Manufacturers Association (NEMA):
 - 1. NEMA WD 1 General Color Requirements for Wiring Devices
 - 2. NEMA WD 6 Wiring Devices – Dimensional Specifications
- B. National Fire Protection Association (NFPA):
 - 1. NFPA 70 National Electrical Code (NEC)
- C. Underwriters Laboratories Inc. (UL):
 - 1. UL 20 General-Use Snap Switches
 - 2. UL 50 Enclosures for Electrical Equipment, Non-Environmental Considerations
 - 3. UL 94 Tests for Flammability of Plastic Materials for Parts in Devices and Appliances
 - 4. UL 486A&B Wire Connectors
 - 5. UL 498 Attachment Plugs and Receptacles
 - 6. UL 514A Metallic Outlet Boxes
 - 7. UL 514B Conduit, Tubing, and Cable Fittings
 - 8. UL 943 Ground-Fault Circuit-Interruptioners

1.03 SUBMITTALS

- A. Refer to Section 16000, Basic Electrical Requirements, for additional submittals and submittal requirements.
- B. Submit shop drawings.
- C. Submit manufacturer product data for all types of wiring devices to be used.

PART 2 – PRODUCTS

2.01 DEVICES

- A. Provide wiring devices conforming to the following UL Standards: 20, 50, 94, 486A-486B, 498, 514A, 514B and 943. Wiring devices shall also conform to NEMA WD 1 and WD 6.
- B. Provide wiring devices indicated. Provide all similar devices of same manufacturer. Provide devices and device plates of the color and finish specified in the Contract Documents.

2.02 SWITCHES, FLUSH TUMBLER TYPE

- A. General Requirements:
 - 1. Unless otherwise specified or shown, use quiet type switches with ivory handles, rated 120/277 Volts ac and conforming to NEMA WD 1. Wiring methods shall be as specified in Section 16100, Wiring Methods.
 - 2. Do not load switches more than 80 percent of their current rating.
 - 3. Equip switches with metal mounting yoke with plaster ears, insulated from mechanism and fastened to switch body using bolts, screws, rivets or other substantial means to meet test requirements.
 - 4. Provide green-colored equipment grounding screw on yoke. Switches shall be back or side wired with terminals of screw or combination screw-clamp type. Terminal screws shall be No. 8 or larger, captive or terminal type with access hole for back wiring. Wiring terminals shall be able to receive and hold proper wire size.
- B. Standard Type Switches:
 - 1. Tumbler type, totally enclosed, heavy duty. Catalog numbers listed below are for 120/277 Volt, 20 Amps, with ivory handles. Provide different color if specified in the Contract Documents. Where required, furnish 2 pole, 3 way and 4 way switches, and lock switches of comparable grade. Provide one key for each lock switch.

	SPST	DPST	3-WAY	SPST-KEY	4-WAY
Arrow-Hart	1991-I	1992-I	1993-I	1991-L	1994-I
Bryant	4901-I	4902-I	4903-I	4901-L	4904-I
Hubbell	1221-I	1222-I	1223-I	1221-L	1224-I
P & S	20AC1-I	20AC2-I	20AC3-I	20AC1-L	20AC4-I

or Engineer approved equal.

- C. Weatherproof Switches:
 - 1. Provide switch in cast metal box: Appleton or Crouse-Hinds Type FS or FD, or Engineer approved equal.
 - 2. Cover and gasket: Appleton #FSK-1V, Crouse-Hinds #DS-181, or Engineer approved equal combination.

2.03 RECEPTACLES

- A. Power receptacles and switches for general purpose circuits shall be manufactured per NEMA Specifications, rated as follows:
 - 1. General purpose receptacles: NEMA 5-15R or 5-20R
 - 2. Dedicated Receptacles: NEMA 5-20R
- B. Receptacle bodies and bases: Fire resistant non-absorptive hot molded phenolic composition material or approved equivalent with metal plaster ears integral with supporting member.
- C. Provide receptacles with light colored terminal facilities for neutral connections, amber or brass colored for phase conductor connections and green colored hexagonal machine screws for equipment grounding conductor and connections.
- D. Receptacle contacts including grounding contact: Double grip bronze type with spring steel backup clips to ensure both sides of each male prong of plug will be in firm contact.
- E. Provide receptacles with self-grounding clip or mounting strap green screws.
- F. Ground fault circuit interrupter duplex receptacles: 120 Volt, 60Hz, 20 ampere with built-in test, reset buttons. Interrupt circuit within 1/30 second on a five milliamperes earth leakage current. Maximum circuit capacity 20 amperes. Straight blade, heavy duty, industrial specification grade.
- G. Ground Fault Circuit Interrupter Duplex Outlet (GFI): 20 amp, 125 Volt ac, 3 wire, grounding type, straight blade. Ivory color: Hubbell # GF5362IA, Pass & Seymour # 2095-SI, Leviton #7899-SGI, or Engineer approved equal.
- H. Weatherproof Metallic Covers for Duplex GFI Receptacles: WPO listed, covers with this listing shall meet NFPA 70, Section 406.8(A) and 406.8(B) as applicable, and UL 514A receptacle requirements for wet location that is rated for wet location for either cover closed and/or cover open with device in use ("open"):
 - 1. Surface Mounted: Appleton or Crouse-Hinds Type FS or FD cast box or equal with rated for wet location metal cover with gasket:
 - a. Appleton cover type FSK, Hubbell HBL5206WO, or Engineer approved equal

2.04 DEVICE COVER PLATES

- A. Interior plates: Vandal resistance, stainless steel 14 gauge.
- B. Exterior plates: Device cover plates shall be cast aluminum with self-closing hinged cover, rated for damp location.
- C. Gang Plates: Use gang type plates for multiple units.
- D. Screws: Vandal resistance stainless steel.

PART 3 – EXECUTION

3.01 GENERAL REQUIREMENTS

- A. Install all wiring devices indicated complete with cover plates. Cover plates shall fit snugly against finished surfaces and line-up true with adjacent building lines, and be symmetrical in location and appearance.
- B. Unless otherwise noted on the Contract Drawings, receptacles shall be installed in the vertical position with the grounding pin down.

END OF SECTION