

SECTION 16140
DEVICES AND LOW VOLTAGE SWITCHING

A. Wiring Devices

1. Wall switches shall be, 20 ampere, 120/277 volt, ivory color. Where wall coverings are dark or wood use brown color devices.
2. Wall dimmers for incandescent lighting shall be semi-conductor type with full range linear slide with on-off control. NEMA WD-1 rated 120 volts. Use ivory colored, thin profile units where same style can be used throughout building, like Lutron Ariadini series.
3. Receptacles shall be 20 ampere, 125 volt NEMA 5-20R, ivory color with a one piece brass backstrap and single point ground. Receptacles shall be side-wired. Where wall coverings are dark or wood use brown color devices. Surge suppressor type receptacles shall also be NEMA 5-20R and side wired, incorporating protection from line to ground, line to neutral, neutral to ground. Receptacles shall meet IEEE 587 installation category A, B, and listed to UL Standards 1449, 2nd Edition and 498.
4. GFCI receptacles shall be installed in restrooms and within 6' of any sink, including janitor mop sinks. Exterior receptacles shall be GFCI. Downstream protection feature of GFCI receptacles shall not be utilized except where approved by Engineering Services or CFS.
5. In general, device plates in interior spaces shall be brushed stainless steel (302/304), satin smooth finish. Where specifically required by Architects and approved by Engineering Services or CFS, heavy duty thermoplastic plates may be used in some office areas. It is anticipated that the reason for using plastic device plates will be to obtain a unique color.
6. Weatherproof coverplates shall be high impact polycarbonate "while-in-use" style, like Raco "Rayntite II" series.
7. Floor box service fittings shall be coordinated with Architect and Owner for specific application.
8. Preferred manufacturers for wiring devices are Bryant, General Electric, Hubbell, Pass & Seymour, and Leviton.

B. Remote Control Low Voltage Switching

1. Low voltage switching shall be provided for control of lights, receptacles and other devices where required, as in Interactive Classroom Studios (ICS) and Advanced Technology Auditoriums (ATA). The low voltage panel shall consist of a power supply transformer, a heavy duty voltage rectifier, relays and mounting board in a metal enclosure.
2. Provide sufficient relays for all lighting, receptacle and device circuits to be remotely switched. Relays shall be mechanical latching type units requiring only momentary 24 volt rectified AC switch circuit pulses to open or close line voltage circuits. Contacts shall be as follows:
 - a. Lamp Load: 20 amp tungsten filament 125 VAC
 20 amp ballast 277 VAC
 - b. Resistive Load: 20 amp 277 VAC
 - c. Motor Load: 1/2 HP @ 110-125 VAC
 1-1/2 HP @ 220-277 VAC
3. Switches shall be single-pole, double throw, normally-open, center OFF. In new installation switches may be similar to Hubbell HBL 1556 group mounted. For replacing existing toggle switches, use low voltage toggle type like GE 5935-2G.
4. Preferred manufacturers are General Electric, and ILC Enercon Corporation.
5. Occupancy Sensors
 - a. In general, occupancy sensors shall be installed in classrooms, offices, storage rooms and restrooms. Closely coordinate application and sensor technology with Engineering Services or CFS. Devices shall employ dual technology with both ultra-sonic and infrared sensing. Occupancy sensors shall not be used in mechanical and electrical equipment rooms. Timer switches may be installed in mechanical and electrical equipment rooms with approval of Engineering Services or CFS.
 - b. Preferred manufacturers are Mytech, Watt-Stopper, Leviton and Lutron.