

**Enclosed Safety Switches
General Duty Safety Switches**

Table 9: Fusible Safety Switch Short Circuit Current Rating

Fuse Class	UL Listed Short Circuit Rating
Plug	10 kA
H, K	10 kA
J, R	100 kA
T, Z	100 kA

1 Only applicable to 200-800 A except D325N1, D325NTR, D326N1 and D326NTR.
2 Only applicable to D325N1, D325NTR, D326N1, D326NTR, T327N and T327NR.

Table 10: Non-Fusible Safety Switch Short Circuit Current Rating

Fuse Class or Circuit Breaker Type 1	UL Listed Short Circuit Rating
Any Brand Circuit Breaker	10 kA
H or J PowerPac Circuit Breaker	Up to 65 kA 2
H, K	10 kA
J, R	100 kA 3
T	100 kA 4

1 Ampere rating of fuse or circuit breaker not to exceed switch ampere ratings.
2 Only applicable to DUIS24 and DUIS4NRB. HD, JD = 25 kA maximum.
3 SCRR = 50 kA, applicable to DU222RB, DU322 and DU322RB.
4 Only applicable to DUIS23, DUIS23RB, DUIS25 and DUIS28.

Standards

General duty safety switches are manufactured in accordance with these standards:

- UL 98, Standard for Enclosed and Dead Front Switches, UL Listed File E2875
- NEMA Standards Publication KS1, Enclosed Switches
- Federal Specifications WS-865c for Type NDS (Type 1) and Type LD (Type 3R)

Table 11: Terminal Lug Data 1

Ampere Rating	Conductors Per Phase	Wire Range Wire Bending Space Per NEC Table 312.6 AWG/kcmil	Lug Wire Range AWG/kcmil
30 2	1	12-8 (Al) or 14-6 (Cu)	12-8 (Al) or 14-8 (Cu)
30	1	12-6 (Al) or 14-6 (Cu)	12-8 (Al) or 14-8 (Cu)
60	1	12-3 (Al) or 14-3 (Cu)	12-2 (Al) or 14-2 (Cu)
100	1	12-1 (Al) or 14-1 (Cu)	12-1/8 (Al) or 14-1 (Cu)
200	1	8-250 (Al/Cu)	6-300 (Al/Cu)
400 Type 1	1 or 2	1/0-600 (Al/Cu) or 1/0-300 (Al/Cu)	(1) 1/0-750 (Al/Cu) or (2) 1/0-300 (Al/Cu)
400 Type 3R	2	1/0-250 (Al/Cu)	(1) 1/0-600 (Al/Cu) or (2) 1/0-250 (Al/Cu)
600	2	4-600 (Al/Cu)	4-800 (Al/Cu)
800	3	3/0-800 (Al/Cu)	3/0-800 (Al/Cu)

1 30-100 A switches suitable for 60°C (140°F) or 75°C (167°F) conductors, 200-800 A switches suitable for 75°C (167°F) conductors.
2 Light duty switches only.

**Heavy Duty
Enclosed Safety Switches
General Information**

Table 44: Terminal Lug Data 1

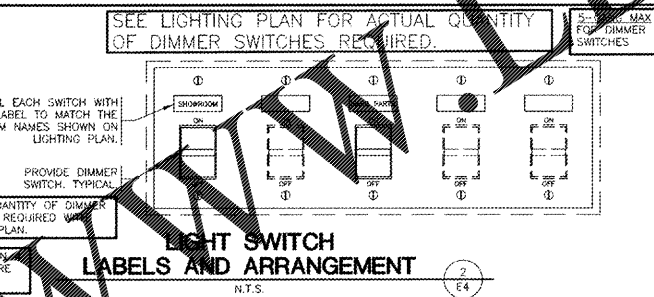
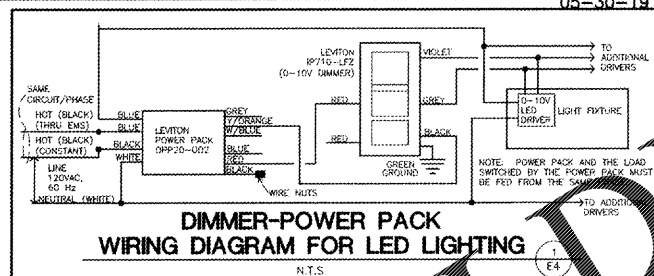
Rating (A)	Wires Per Phase and Neutral	Wire Range Wire Bending Space Per NEC Table 312.6 AWG/kcmil	Lug Wire Range AWG/kcmil	Optional 2 Versa-Comp™ Compression Lug Field-installed	Optional Copper Only Versa-Comp™ Compression Lug Field-installed 2.5
30	1	12-8 (Al) or 14-6 (Cu)	12-2 (Al) or 14-2 (Cu)		
60	1	12-3 (Al) or 14-3 (Cu)	12-2 (Al) or 14-2 (Cu)		
100	1	12-1 (Al) or 14-1 (Cu)	12-1/8 (Al) or 14-1 (Cu)	VCEL021	VCEL021401
200	1	8-250 (Al/Cu)	6-300 (Al/Cu)	VCEL030	VCEL030154H
400	1 or 2	1/0-250 (Al/Cu) or 1/0-300 (Al/Cu)	1/0-750 (Al/Cu) or 1/0-300 (Al/Cu)	VCEL0715H or VCEL030615H 1 and VCEL05012H 1	VCEL07152H or VCEL030615H 15 and VCEL05012H 1
600	2	3/0-800 (Al/Cu)	4-800 (Al/Cu)	VCEL09012H 1	VCEL09012H 1
800	3	3/0-750 (Al/Cu)	3/0-750 (Al/Cu)	HUBVES 11 1	
1200	3	3/0-750 (Al/Cu)	3/0-750 (Al/Cu)	HUBVES 12 1	

1 30-100 A switches suitable for 60°C (140°F) or 75°C (167°F) conductors, 200-1200 A switches suitable for 75°C (167°F) conductors.
2 HubVest Versa-Comp™ unless otherwise noted.
3 For Type 1, 123R, 126, and 44X25 stainless steel switches only.
4 Color: D16-14, D8-14 and E5-14 from Thomas and Betts.
5 HUBVES and HUBVES 11/12 — use 75°C (167°F) copper wire only. 44X25 copper wire required for 50 A rating.
6 HUBVES 12 and HUBVES 11/12 — use 75°C (167°F) copper wire only. 44X25 copper wire required for 50 A rating.
7 HUBVES and HUBVES 11/12 — use 75°C (167°F) copper wire only. Lug wire range is 46 AWG - 350 kcmil. Note: UL listed due to inadequate wire bending space (1/2" x 1/2" min) on the ON end, 6 in. (152 mm) on the OFF end.
8 Maximum wire bending space allows for (1) 600 kcmil or (2) 350 kcmil Al/Cu on Type 44X25 stainless steel and Type 12 switches.
9 For Type 1 and 3R only. For Type 44X25 stainless steel and Type 123R, 126, use VCEL030615H (Al/Cu) or VCEL030615H 1 (Cu only). Order two VCEL030615H mounting brackets with each VCEL030615H lug. One set is included on two-pole switches. VCEL030615H consists of four 5/16 x 1/2 (mm) Kaps Nuts.
10 For Type 44X25 stainless steel and Type 123R, 126, use VCEL030615H 1 (Al/Cu) or VCEL030615H 1 (Cu only). Order two VCEL030615H mounting brackets when installing VCEL030615H or VCEL030615H 1 lugs. One set is included on two-pole switches. VCEL030615H consists of four 5/16 x 1/2 (mm) Kaps Nuts.
11 For 600 and 1200 A compression lug kits, see Table 31 on page 34 for additional information.

GENERAL ELECTRICAL NOTES

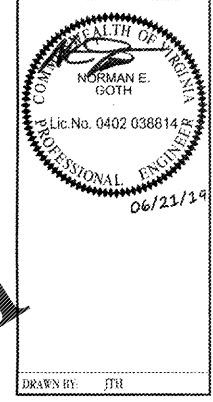
- DRAWINGS ARE DIAGRAMMATIC & ARE NOT TO BE SCALED. SEE THE ARCHITECTURAL PLANS & FIELD VERIFY CONDITIONS FOR DIMENSIONS.
- ALL ELECTRICAL WORK SHALL COMPLY WITH THE EDITION OF NFPA 70-NATIONAL ELECTRIC CODE (NEC) AS NOTED ON THE CODE SUMMARY SHEET.
- ALL WIRING SHALL BE IN CONDUIT, EXCEPT THAT MC-CABLE MAY BE SUBSTITUTED ONLY AS FOLLOWS:
 - MC-CABLE (MAXIMUM CABLE LENGTH OF 10'-0") MAY BE INSTALLED ONLY FOR BRANCH CIRCUIT WIRING TO LIGHT FIXTURES.
 - MC-CABLE (MAXIMUM CABLE LENGTH SHOWN ON DETAIL 2/E2) MAY BE INSTALLED ONLY ABOVE SLABS AND ONLY AT LOCATIONS INDICATED ON SHEET.
- FEEDER CONDUIT SHALL BE IMC OR RGS ABOVE GRADE & PVC BELOW GRADE WITH IMC OR RGS ELLS & RISERS. INTERIOR BRANCH CIRCUIT CONDUIT SHALL BE ELECTRICAL METALLIC TUBING. EXTERIOR BRANCH CIRCUIT CONDUIT SHALL BE PVC BELOW GRADE WITH IMC OR RIGID GALVANIZED STEEL CONDUIT CONTINUING ABOVE GRADE (SPEC 26 05 33).
- COORDINATE ALL WORK WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATION DOES NOT MEAN "I WAS HERE FIRST."
- ALL WIRING IN FINISHED SPACES SHALL BE CONCEALED, UNLESS NOTED OTHERWISE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A COMPLETE & FUNCTIONAL SYSTEM IN ACCORDANCE WITH THE INTENT OF THE PLANS, WHETHER OR NOT EVERY ELEMENT THEREOF IS SPECIFICALLY CALLED OUT.
- COORDINATE ALL EQUIPMENT PULL-IN CONNECTION REQUIREMENTS.
- ALL OUTLET BOXES SHALL BE METALLIC. (SPEC 26 05 34)
- ALL CAULKING ON BUILDING PENETRATIONS SHALL BE ELASTOMERIC POLYURETHANE (NO EXCEPTIONS), EQUAL TO "JULKEM" 116. ANY CONTRACTOR WHO USES SILICONE OR ANY OTHER CAULKING WILL BE REQUIRED TO REMOVE & REPLACE WITH ELASTOMERIC POLYURETHANE.
- RECEPTACLES INSTALLED IN RESTROOMS SHALL BE GFCI TYPE OR SHALL BE PROTECTED BY A GFI DEVICE.
- ALL DEVICES SHALL BE IVORY & SHALL BE EQUAL TO THE FOLLOWING:
 - SINGLE POLE SWITCHES ---
 - THREE-WAY SWITCHES ---
 - DUPLEX RECEPTACLE --- (SPEC 26 27 26)
 - GFCI DUPLEX RECEPTACLE ---
 - ISO. GRD. RECEPTACLES ---
- USE DEVICE PLATES MANUFACTURED BY THE DEVICE MANUFACTURER. (SPEC 26 27 26)
- FEEDER & BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER, STRANDED, 800V THRU/THRN INSULATION. EXCEPTION: WIRE SIZES #10 AWG & SMALLER SHALL BE SOLID. (SPEC 26 05 19)
- CONTRACTOR SHALL PROVIDE A TYPED CIRCUIT DIRECTORY FOR ALL PANELS. (SPEC 26 05 53)
- CONTRACTOR SHALL PROVIDE A ONE(1) YEAR WARRANTY ON ALL WORK PERFORMED.
- CONTRACTOR SHALL PROVIDE NEW WORKING LAMPS IN ALL LIGHT FIXTURES AT JOB COMPLETION.
- CONTRACTOR SHALL COORDINATE WITH & SHALL INCLUDE ALL FEES FOR THE SERVING "ELECTRIC UTILITY CO." TO PROVIDE ELECTRIC SERVICE AS SHOWN. CONTRACTOR SHALL ALSO INCLUDE ALL FEES FOR THE "SERVING PHONE COMPANY" TO INSTALL NO LESS THAN 10 PAIR CABLE TO BUILDING.
- CONTRACTOR SHALL ARRANGE FOR & INCLUDE ALL PERMITS & FEES FOR HIS SCOPE OF WORK.
- CONTROL WIRING BY HVAC CONTRACTOR. FINAL CONNECTIONS BY HVAC CONTRACTOR. SEE SHEET M1.
- APPROVED MANUFACTURERS:

A. PANELBOARDS & SAFETY SWITCHES (DISCONNECTS):	B. DEVICES:	C. FLOOR BOXES:
--- SQUARE D	--- 'HUBBELL'	--- 'STEEL CITY'
--- 'EATON'	--- 'LEVITON'	--- 'APPLETON'
--- 'SEIMENS'	--- 'PASS & SEYMOUR'	--- 'HUBBELL'
--- 'OUTLER-HAMMER'	---	---
- 22 MULTIPLE BRANCH CIRCUITS WITH A SHARED NEUTRAL ARE NOT ALLOWED FOR SINGLE PHASE CIRCUITS.
- 23 ALL GROUND CIRCUITS SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR ROUTED WITH THE CIRCUIT CONDUCTORS. THIS MEANS THAT ALL CONDUITS MUST HAVE A "GREEN" WIRE INSTALLED IN THEM AND SIZED IN ACCORDANCE WITH TABLE 250.122 OF THE NEC.



ELECTRICAL SYMBOL LEGEND & ABBREVIATIONS

- Single Pole Switch
- Two Pole Switch
- Three-Way Switch
- Motor Starting Switch with Pilot Light
- Class 1, Division 1 Hazardous Location Rated Switch Assembly
- Wall Mounted Occupancy Sensor Equal to "Sensor Switch W/ 2P Fan-It"
- Wall Mounted Occupancy Sensor Equal to "Sensor Switch W/ 2P Fan-It" (Contractor Shall Install Manual Switches Per Manufacturer's Instructions. Switch Shall Be Fully Automatic)
- Fan Speed Switch (Supplied by HVAC Contractor / Installed by Electrical Contractor)
- 0-10V LED Dimmer Switch, Equal to "Leviton, RP710-LE2". See Details This (5-GANG MAY)
- Leviton Power Pack GPP20-002
- Single Receptacle
- Duplex Receptacle
- Isolated Ground Duplex Receptacle. Devices and Coverplate Shall Be Orange. See Detail 1/E3
- Duplex Receptacle. Devices and Coverplate Shall Be Red
- Isolated Ground Duplex Receptacle. Devices and Coverplate Shall Be Red
- Quadruplex Receptacle. Four Receptacles in One 2-Gang Box Under a Single Coverplate
- Existing Unpowered Duplex Receptacle
- Isolated Ground Quadruplex Receptacle (Two ISO GRD). Duplex Receptacles in One 2-Gang Box Under a Single Coverplate. Devices and Coverplate Shall Be Red
- Quadruplex Receptacle (Circuit to Be Wired Thru Occupancy Sensor). Install a Permanent Label on Each Outlet Stating "Sensor Controlled Outlet". See Detail 1/E3
- Weather-Resistant GFCI (Ground Fault Circuit Interrupting) Duplex Receptacle
- Weather Proof GFCI (Ground Fault Circuit Interrupting) Duplex Receptacle. Cover to Provide Weather Proof Protection with Cord and Plug in Use
- Tele-Power Pole
- Junction Box
- Remote Photo Control
- Computer Data Outlet Box
- Telephone Outlet Box
- Telephone Outlet Floor Box. See Detail 4/E2
- 4" Square Steel Box Mounted Flush on Floor w/Quadruplex Receptacle (See Above Receptacle Description). See Detail 4/E2 for Installation of Box.
- 4" Square Steel Box Mounted Flush on Floor w/Quadruplex Isolated Ground Receptacle (See Above Isolated Ground Receptacle Description). See Detail 4/E2 for Installation of Box.
- 4" Square Steel Box Mounted Flush on Floor w/Quadruplex Isolated Ground Receptacle (See Above Isolated Ground Receptacle Description). See Detail 4/E2 for Installation of Box.
- 2" x 4" Rectangular Steel Box Mounted Flush on Floor w/Duplex Receptacle (See Above Receptacle Description). See Detail 4/E2 for Installation of Box
- NEMA 15-30R - Special Receptacle
- Motor
- Fused Disconnect (Safety) Switch w/ Switch Ampacity / Fuse Ampacity as Indicated
- Non-Fused Disconnect (Safety) Switch
- Power or Lighting Panel w/Panel Designation Shown on Plan (Sizes & Mounting Indicated on Plans)
- 24 Hour Egress & Security Light. Wire Direct to Electric Panel Ahead of Any Local Switches and Lighting Control Panel.
- Wall/Ceiling Mounted Combination "Exit/Emergency" Sign w/Shading Indicating Direction
- Emergency Lighting Fixture with Battery
- Feeding Panel and Circuit Number(s)
- Note: Equipment Ground Conductor Not Shown
- Circuit Conductors
- Grounded Circuit Conductor (or Neutral)
- Motion Detector - See EM Sheets for More Information
- Occupancy Sensor Equal to "Leviton, USC20-MAW" with Power Pack



CRAIG A. SCHNEIDER, AIA
ARCHITECT
1736 East Sunshine, Suite 417
Springfield, Missouri 65804
417.862.8558
417.862.3265
Fax: 417.862.3265
e-mail: architect@cssttypublisher.com

PROJECT:
NEW O'REILLY AUTO PARTS STORE
290 DEACON ROAD
FREDERICKSBURG, VA #4
ELECTRICAL NOTES

O'Reilly AUTO PARTS
CORPORATE OFFICES
233 SOUTH PATTERSON
SPRINGFIELD, MISSOURI 65802
(417) 862-2674 TELEPHONE

COMM # 4251
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