powerswitch®

Non-Fused Safety Disconnect Switch in Watertight/Submersible Enclosure

Cat. Nos. LDS30-AX, LDS30-AC Rated: 30/32A-600VAC Max., LDS60-AX, LDS60-AC Rated: 60A-600VAC Max.
LDS10-AX, LDS10-AC Rated: 100A-600VAC Max., Aux Contact Rated: 10A, 600V

INSTALLATION INSTRUCTIONS

LEVITON®

PK-A3223-10-00-0D

WARNINGS

- **TO AVOID FIRE, SHOCK, OR DEATH; TURN OFF POWER** AT CIRCUIT BREAKER OR FUSE AND TEST THAT POWER IS OFF BEFORE WIRING!
- **TO AVOID FIRE, SHOCK OR DEATH, DISCONNECT ALL POWER** SUPPLIES TO ENCLOSURE BEFORE EXPOSING INTERIOR. MORE THAN ONE SUPPLY DISCONNECT MAY BE REQUIRED TO DE-ENERGIZE THIS EQUIPMENT BEFORE SERVICING.
- Separate over current protection must be provided in accordance with the NEC® Article 220 or CEC, Section B as appropriate.
- This enclosure includes a lockout provision (in the OFF position) for a suitable padlock. Use up to three (3x) padlocks with a shackle diameter of 1/4 in. (6 mm) only to isolate power from the connected equipment in compliance with OSHA Lockout/Tagout Regulation 29 CFR Part 1910.147.
  NOTE: Lockout feature does NOT interrupt the power supplied to the switch within the enclosure.

CAUTIONS

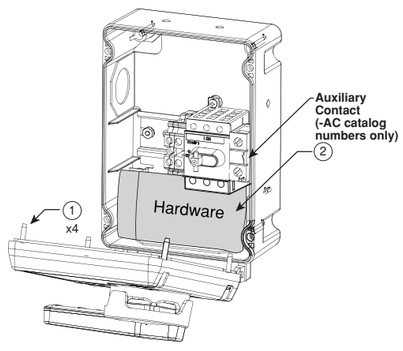
- Check to see that the rating marked on the device is correct for the intended installation. Connected equipment electrical rating must not exceed the ampere rating of this device.
- Device is suitable for use on a circuit capable of delivering not more than 600 VAC maximum. For fused items, use Class J fuses.
- This device must be mounted vertically with the line side at the top.
- Suitable as Motor Disconnect (non-fused models only) on a circuit capable of delivering not more than:
  - LDS30-AX, LDS30-AC – 10kA rms symmetrical amperes, 600V max., when protected by a 60A Class J fuse.
  - LDS60-AX, LDS60-AC – 100kA rms symmetrical amperes, 600V max., when protected by a 100A Class J or T fuse.
  - LDS10-AX, LDS10-AC – 65kA rms symmetrical amperes, 600V max., when protected by a 100A Class J fuse.
- Use this device with **copper or copper clad wire only**.
- **For installation only by an electrician** in accordance with the National Electrical Code® (NEC®) or the Canadian Electrical Code® (CEC®), local codes, and the installation instructions.
- Use of a UL Listed Watertight conduit fitting *(Not provided)* is required to maintain the desired environmental ratings. Rating of the fitting/hub must be equal to or better than the desired installation ingression protection rating.

NOTES: Feed-thru configurations are possible.

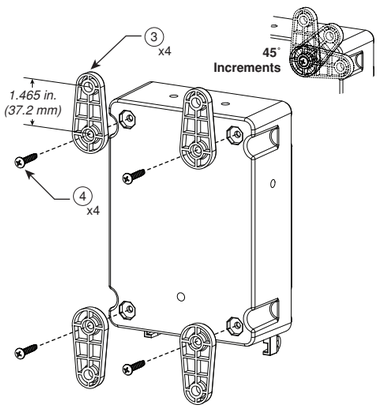
Step 1A: Mounting - Wall Mount with Mounting Feet *(Feet and hardware provided)*

NOTE: Leviton® Safety Disconnect Switches may be mounted for top or bottom feed of supply wires.
NOTE: When mounting with provided feet drilling through enclosure is not required.
NOTE: Provided mounting hardware ships inside the enclosure.

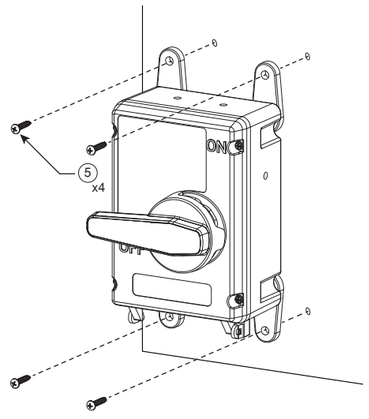
a. Loosen cover screws ① *(See Table 1 for tool selection)*, open cover and remove the provided bag of mounting hardware ②.



b. Attach mounting feet ③ with provided Plastite® #8-16 x 7/8 in. thread cutting screws ④. Torque to 15 in-lbs. (1.7 N-m).



c. Mount unit to the wall using the 0.28" (7.1 mm) diameter clearance holes in the mounting feet. Mounting screws ⑤ not provided.



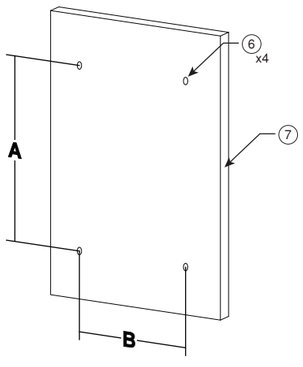
NOTE: LDS30-AX and LDS30-AC shown.

Step 1B: Mounting - Thru-Panel without Mounting Feet *(Hardware not provided)*

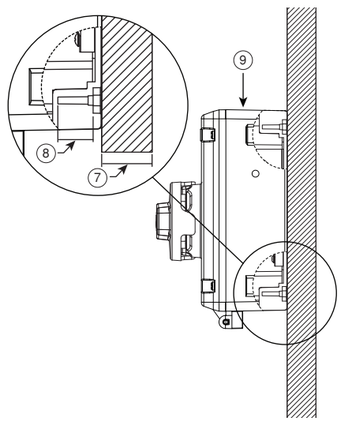
NOTE: Leviton® Safety Disconnect Switches may be mounted for top or bottom feed of supply wires.

a. Drill holes ⑥ in the board/wall ⑦.

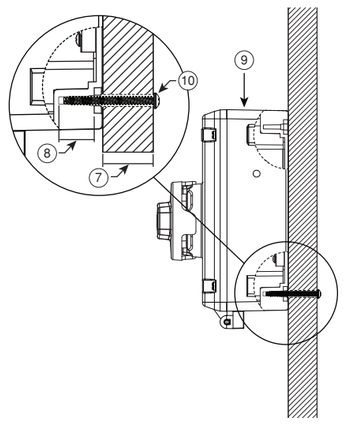
LDS30-AX - [A] 5.799 in. *(147.29 mm)*, **[B]** 3.645 in. *(92.58 mm)*
LDS30-AC - [A] 5.799 in. *(147.29 mm)*, **[B]** 3.645 in. *(92.58 mm)*
LDS60-AX - [A] 8.421 in. *(213.89 mm)*, **[B]** 5.121 in. *(130.07 mm)*
LDS60-AC - [A] 8.421 in. *(213.89 mm)*, **[B]** 5.121 in. *(130.07 mm)*
LDS10-AX - [A] 8.421 in. *(213.89 mm)*, **[B]** 5.121 in. *(130.07 mm)*
LDS10-AC - [A] 8.421 in. *(213.89 mm)*, **[B]** 5.121 in. *(130.07 mm)*



b. To calculate mounting screw length, add the board/wall ⑦ thickness to the thread engagement ⑧. Thread engagement into enclosure ⑨ must be between 0.5 in. and 1.0 in.



c. Mount unit to the board/wall ⑦ with four #8-16 Plastite® thread forming screws ⑩ *(not provided)*. Torque to max. of 15 in-lbs. (1.7 N-m).

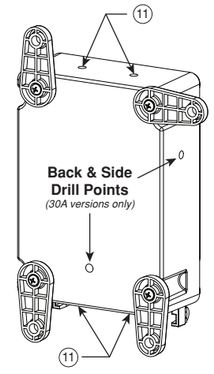


NOTE: LDS30-AX and LDS30-AC shown.

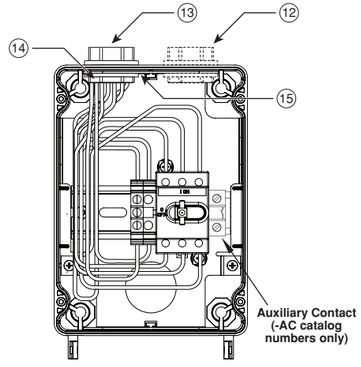
Step 2: Conduit Connection *(Top or Bottom feed)*

NOTE: All conduit hubs must be grounded (bonded) to an unused grounding terminal inside the enclosure. This is not required for 30A versions which has an internal grounding bracket.
NOTE: For installations subject to condensation and/or non-conforming with above, use of a sealing filling per NEC 300.7 and/or use of a *Leviton* accessory drain plug *(No. DNPLG)* or equivalent required.
NOTE: Back and side feed available on the 30A versions only.

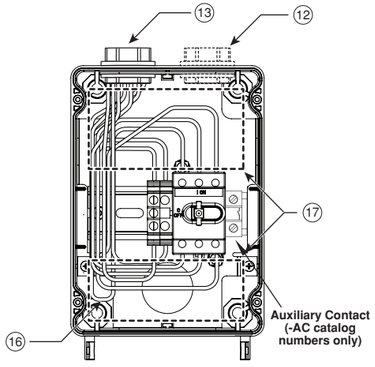
a. Select drill point(s) ⑪ and drill hole(s) for conduit entry. Consult hub manufactures specifications or Table 2 for hole dimensions. Feed-thru ⑫ configurations are possible/optional.



b. Install the hub ⑬ and conduit per manufacturer's instructions. Ensure the hub locking ring ⑭ is seated tightly against the inner grounding bracket ⑮ for proper grounding *(*30A versions only*)*.



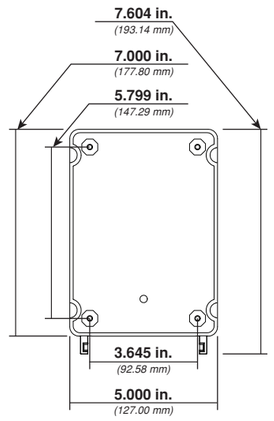
c. In top feed installations, use of condensation drip loops ⑯ is recommended. Loops are to be made in the top or bottom bending space ⑰ while maintaining minimum bending radius per NEC.



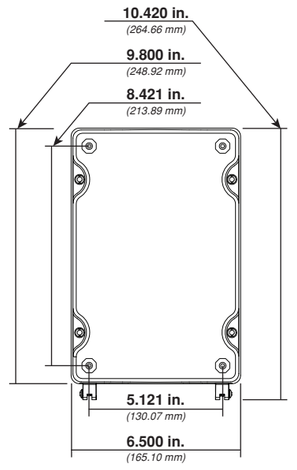
NOTE: LDS30-AX and LDS30-AC shown.

Dimensions

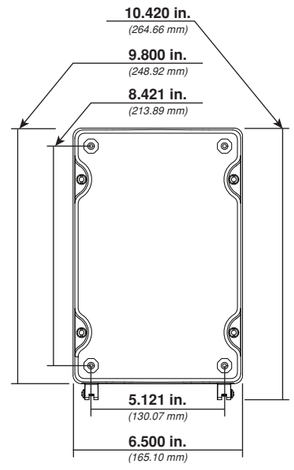
LDS30-AX
LDS30-AC



LDS60-AX
LDS60-AC



LDS10-AX
LDS10-AC



Step 3: Wiring

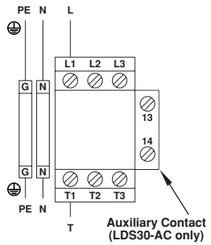
WARNING: TO AVOID FIRE, SHOCK, OR DEATH; TURN OFF POWER AT CIRCUIT BREAKER OR FUSE AND TEST THAT POWER IS OFF BEFORE WIRING!
NOTE: All *Leviton* Disconnects are rated "Break all Lines" configurations and are suitable for motor circuits.
NOTE: Select conductor in accordance with ampacity of Table 310-15 of the National Electrical Code or Table 2 of the Canadian Electrical Code.
NOTE: For bending radius refer to specific UL standard and NEC® article.
NOTE: Handle must be in the "OFF" position to install cover.
NOTE: **DO NOT** tin conductors.

a. Select wire gauge per Table 3. To ensure compliance with UL/NEC wire bending space requirements, use wire sizes and strip lengths per Table 4.

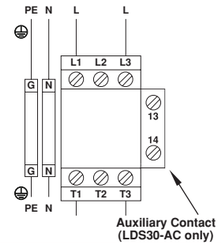
b. Tighten terminal screws per Table 5.

c. Close cover and tighten cover screws per Table 6.

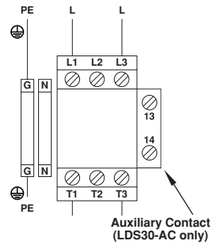
30 Amp Non-Fused Disconnect 110-277 VAC 1ø



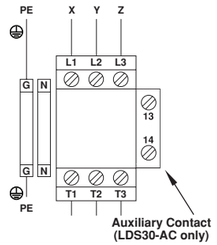
30 Amp Non-Fused Disconnect Split Phase 120-240 VAC 1ø



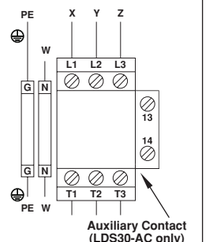
30 Amp Non-Fused Disconnect 208-600 VAC 1ø



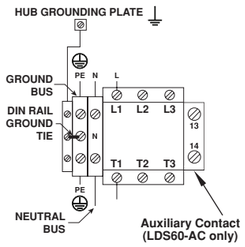
30 Amp Non-Fused Disconnect 208-600 VAC 3ø



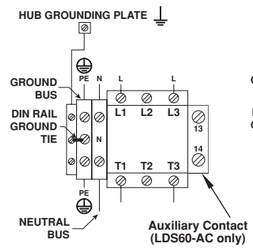
30 Amp Non-Fused Disconnect 208-600 VAC 3øY



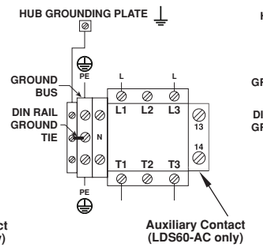
60 Amp Non-Fused Disconnect 110-277 VAC 1ø



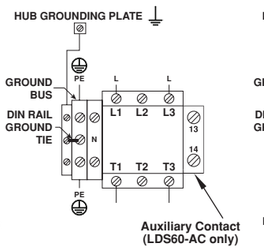
60 Amp Non-Fused Disconnect Split Phase 120-240 VAC 1ø



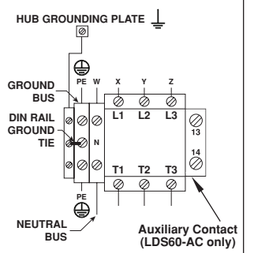
60 Amp Non-Fused Disconnect 208-600 VAC 1ø



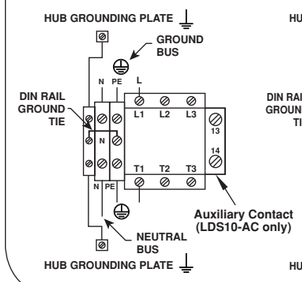
60 Amp Non-Fused Disconnect 208-600 VAC 3ø



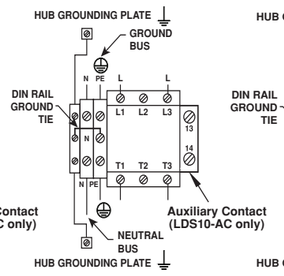
60 Amp Non-Fused Disconnect 208-600 VAC 3øY



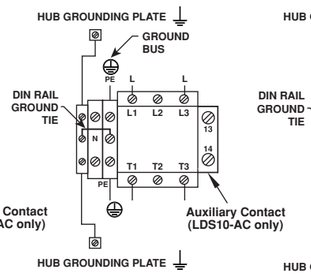
100 Amp Non-Fused Disconnect 110-277 VAC 1ø



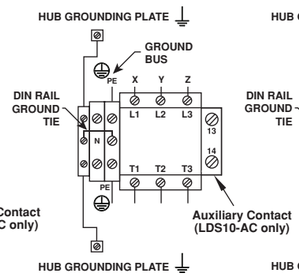
100 Amp Non-Fused Disconnect Split Phase 120-240 VAC 1ø



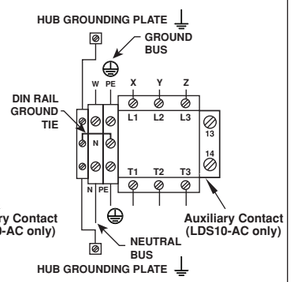
100 Amp Non-Fused Disconnect 208-600 VAC 1ø



100 Amp Non-Fused Disconnect 208-600 VAC 3ø



100 Amp Non-Fused Disconnect 208-600 VAC 3øY



Tables

Table 1 - Tools for opening cover

Cover Screws	Tools *(Only one tool shown below required)*
LDS30-AX, LDS30-AC	Flat head screwdriver, Phillips #2, Robertson #0
LDS60-AX, LDS60-AC	Flat head screwdriver wider than 1/4", Phillips #3,
LDS10-AX, LDS10-AC	Robertson #3

Table 2 - Recommended conduit hub size & hole diameter

Model	Fitting/Hub *(Trade size)*	Hole Diameter	Max Hub Size
LDS30-AX, LDS30-AC	3/4 in.	1 in. (25.4 mm)	N/A
LDS60-AX*, LDS60-AC	1-1/4 in.**	1.625 in. (41.3 mm)	2" Trade Size
LDS10-AX*, LDS10-AC	1-1/4 in.**	1.625 in. (41.3 mm)	2" Trade Size

* **NOTE**: Refer to NEC Annex C for additional information.
** **NOTE**: Leviton provides hub grounding brackets for these sizes. All others use grounding hub.

Table 3 - Wiring Size

Model	Rated Current	UL Rating	Min. Wire (AWG) copper conductors to meet NEC table 310-15 (Phase and Neutral Wires)		Min. Wire (AWG) copper conductors to meet protective earth requirements***
			(60°C) Wire (AWG)*	(>75°C) Wire (AWG)**	
LDS30-AX, LDS30-AC	30A/32A	UL 60947-4-1	#10	#10	#10
LDS60-AX, LDS60-AC	60A	UL 60947-4-1	#4	#6	#10
LDS10-AX, LDS10-AC	100A	UL 60947-4-1	N/A	#3	#8/#6

* - Wire types TW, UF
**- Wire types RHW,THHW,THW,THWN,XHHW,USE,ZW, TBS, SA,SIS, FEP,FEPB, MI,RHH, RHW-2,THHN, THHW,THW-2, THWN-2,USE-2, XHH, XHHW, XHHW-2, ZW-2
***- NEC table 250.122 for unit rated ampacities. For other types/styles refer to NEC.

Table 4 - Terminal Wiring Size & Strip Length

Model	Switch Terminal		Neutral Terminal		Protective Earth Terminal		Shield Ground Terminal		Aux Contact Terminal	
	AWG	Strip length	AWG	Strip length	AWG	Strip length	AWG	Strip length	AWG	Strip Length
LDS30-AX, LDS30-AC	#14-8	0.5"(12mm)	#24-8	0.4"(10mm)	#26-8	0.4"(10mm)	N/A		#18-14	0.5" (12mm)
LDS60-AX LDS60-AC	#10-2	0.5"(12mm)	#16-1/0	0.7"(18mm)	#16-2	0.7"(18mm)	#24-8	0.4"(10mm)		
LDS10-AX LDS10-AC	#8-0(1/0)	0.7"(18mm)	#16-2/0	0.7"(18mm)	#16-2	0.7"(18mm)	#20-6	0.4"(10mm)		

Table 5 - Terminal Screw Torque Ratings

Model	Switch	Neutral	Earth	Shield Ground	Aux Contact
LDS30-AX, LDS30-AC	7 in-lbs (0.8 N-m)	15 in-lbs (1.7 N-m)	15 in-lbs (1.7 N-m)	N/U	7 in-lbs (0.8 N-m)
LDS60-AX, LDS60-AC	18 in-lbs (2 N-m)	30 in-lbs (3.4 N-m)	30 in-lbs (3.4 N-m)	15 in-lbs (1.7 N-m)	
LDS10-AX, LDS10-AC	35 in-lbs (4 N-m)	30 in-lbs (3.4 N-m)	30 in-lbs (3.4 N-m)	15 in-lbs (1.7 N-m)	

Table 6 - Cover Screw Torque Ratings

LDS30-AX, LDS30-AC	LDS60-AX, LDS60-AC	LDS10-AX, LDS10-AC
10 in-lbs. (1.2 N-m)	18 in-lbs. (2 N-m)	18 in-lbs. (2 N-m)

Table 7 - Horsepower Ratings

LDS30-AX, LDS30-AC		LDS60-AX, LDS60-AC		LDS10-AX, LDS10-AC	
600 VAC	30/32 A	600 VAC	60 A	600 VAC	100 A
110 VAC 1ø	2 Hp	110 VAC 1ø	2 Hp	110-120 VAC 1ø	7.5 Hp
208-240 VAC 1ø	5 Hp	208-240 VAC 1ø	10 Hp	220-240 VAC 1ø	20 Hp
480 VAC 1ø	5 Hp	480 VAC 1ø	10 Hp	277 VAC 1ø	25 Hp
600 VAC 1ø	5 Hp	600 VAC 1ø	10 Hp	440-480 VAC 1ø	30 Hp
208-240 VAC 3ø	10 Hp	208-240 VAC 3ø	20 Hp	550-600 VAC 1ø	30 Hp
480 VAC 3ø	20 Hp	480 VAC 3ø	40 Hp	110-120 VAC 3ø	15 Hp
600 VAC 3ø	25 Hp	600 VAC 3ø	40 Hp	220-240 VAC 3ø	40 Hp
N/A	N/A	N/A	N/A	440-480 VAC 3ø	60 Hp
N/A	N/A	N/A	N/A	550-600 VAC 3ø	50 Hp

Cleaning Procedures

WARNING: RISK OF ELECTRIC SHOCK. TURN OFF POWER AT CIRCUIT BREAKER OR FUSE. DO NOT clean this product while undergoing electrical maintenance or service.

CAUTION: Use only chemicals and cleaning solutions that are safe for use with plastics and rubber gaskets.

CAUTION: DO NOT direct or concentrate high pressure water or cleaning solution on the enclosure gasket seams, switch handle area or exterior labels.

NOTE: Follow general cleaning procedures established by your facility

NOTE: This product is certified by NSF® International to NSF/ANSI/3-A 14159-1

a. Use hose directed water or cleaning solution to remove any collected contaminants from behind the enclosure.
b. Use hose directed water or cleaning solution to remove soil and contaminants from the exterior surfaces of the enclosure.
c. Use a dry clean cloth to wipe away any excess water.

Statements

FOR CANADA ONLY

For warranty information and/or product returns, residents of Canada should contact Leviton in writing at **Leviton Manufacturing of Canada ULC** to the attention of the **Quality Assurance Department, 165 Hymus Blvd, Pointe-Claire (Quebec), Canada H9R 1E9 or by telephone at 1 800 405-5320.**

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