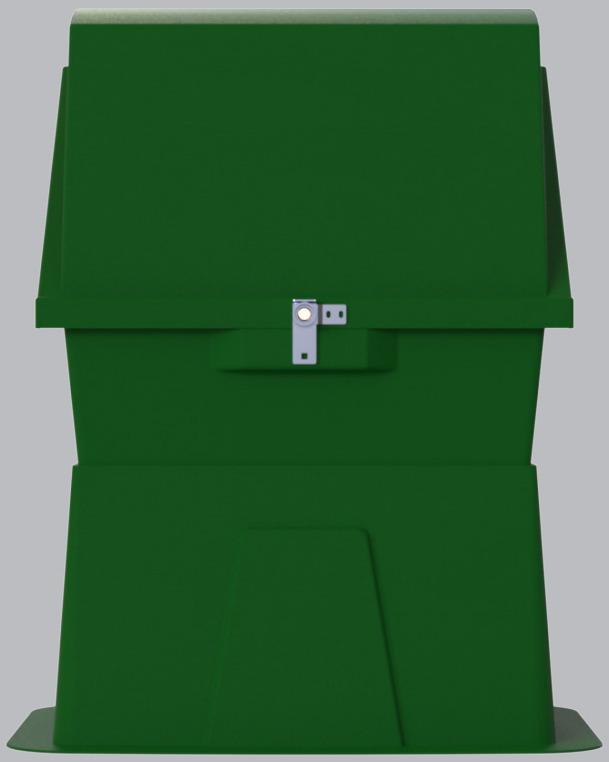


INSTRUCTIONS

SWX-100 KIT FOR MTP-48

DAIRYLAND
ELECTRICAL INDUSTRIES

INTRODUCTION

The Dairyland SWX-100 Switch Kit for the MTP-48 consists of the SWX-100 pull-style isolation switch, a 2/0 AWG lead assembly and all mounting hardware needed to install the switch in an MTP-48 pedestal for use with any Dairyland decoupler. The MTP-48 and decoupler are sold separately. Dairyland also provides a wide range of conductor lead kits (Model MTL) for connections to the pipeline and the grounding system.

The switch mounts to the MTP-48 using pre-drilled holes in the back-panel. The length of the lead assembly is designed for the decoupler to be mounted next to the switch using the pre-drilled holes in the back-panel.

The kit comes with two sizes of bolted terminals for connection to the pipeline lead – one for #8-1/0 AWG leads and one for 2/0-4/0 AWG leads.

These instructions outline how to install the switch kit in the MTP-48 and to connect the switch and decoupler to the pipeline and ground conductor leads.



Dairyland model SWX-100 Kit for MTP-48

⚠ WARNING

Measure the AC voltage at the decoupler, as outlined in step 1, before contacting any terminals or connections, and follow the described safety procedures.

⚠ WARNING

Isolation Switches are not to be installed in a defined hazardous location, but rather in an “ordinary” location.

⚠ WARNING

When isolation switches are used in AC voltage mitigation applications, if multiple or all decouplers are disconnected, the pipeline voltage may rise to an unsafe level (i.e., above the 15Vac that NACE standards consider safe). Therefore, safety precautions should be taken by the user when decouplers used for AC voltage mitigation are isolated from the pipeline, particularly at any pipeline contact point. Dairyland provides suggested procedures for installing and operating the Isolation Switch, but the user must be responsible for and approve the procedures to be used by its workers when initially installing the Isolation Switch in a field retrofit installation because Dairyland cannot be familiar with each user’s safety guidelines.

NOTICE

When a decoupler is being used to provide AC grounding for electrical equipment, via installation in a code-covered grounding conductor or bond, an Isolation Switch should not be installed, because per electric codes, such equipment must always be solidly AC grounded under all conditions.

WORKER SAFETY

For worker safety during installation, it is recommended that the user obtain certain equipment; namely a pair of electrically insulated gloves, a shorting cable approximately 3 foot (0.91m) long with insulated clamps on each end, and a multi-meter to measure AC voltage. (Of these items, Dairyland offers a suitable 3 foot long 1/0AWG shorting cable with insulated clamps, Model# BCL-1/0 for all decoupler ratings.) The following installation procedure assumes that these items are available. It is suggested that a grounding jumper be used as a safety precaution in the event the voltage drop across the isolation joint rises to an unsafe potential during installation. Be sure to remove the grounding jumper after installation is complete. If the structure voltage is not at a safe touch potential (i.e.,>15VAC to ground), then insulating gloves should be used.

REQUIRED TOOLS

Required installation tools include:

a) Multimeter

b) Reference cell or long shank screwdriver

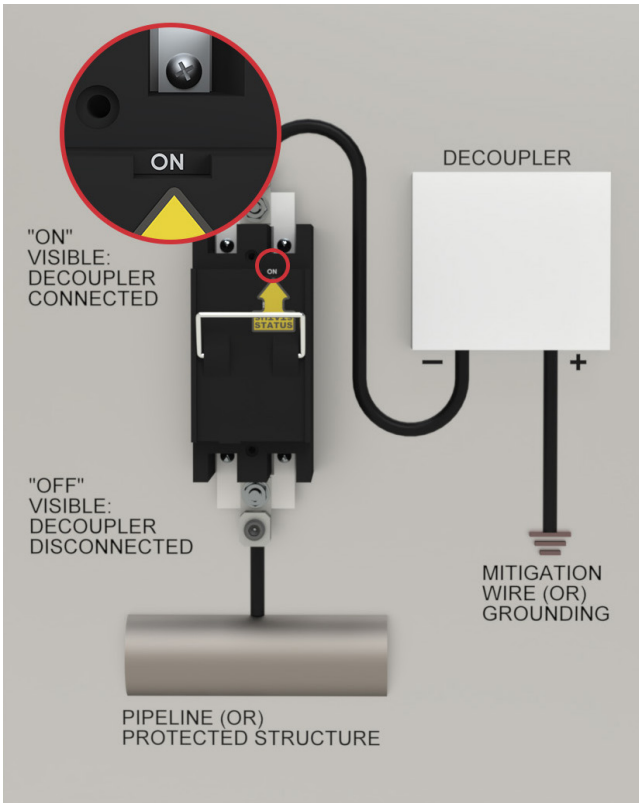
c) Ratchet wrench with 1/2" socket. A ¾" socket will also be needed if a PCR is used.

d) 1/2" box end wrench. A ¾" wrench will also be needed if a PCR is used.

e) Suitable grounding jumper cable and electrically insulated gloves as described under "WORKER SAFETY".

f) ¼" hex key

g) Phillips screwdriver



INSTALLATION PROCEDURE

(Refer to Dairyland document 100108, attached)

1. Before beginning the installation, it is important to know the voltage associated with the pipeline leads that will be handled during the installation process. Do not contact the pipe or pipeline leads before determining if such action is safe as determined by your company's safety guidelines. It is recommended that the installer measure the AC voltage between the pipeline and an earth reference (e.g., a long shank screwdriver or a reference cell) contacting the earth where the worker will be standing to install the equipment, as this will represent the worker touch potential. If the voltage measured is not considered safe then use electrically insulated gloves when handling components connected to the pipeline.

2. Regardless of the voltage measured in Step 1, as a precaution, temporarily ground the pipeline by connecting one end of the jumper cable to the ground lead and the other end to the pipeline lead. The reason for this step is that the voltage on the pipeline conductor may shift higher when it is not grounded. In addition, transient electrical effects on the pipeline must be addressed. Leave the grounding jumper connected throughout the installation process.

3. Attach the proper size bolted terminal to one of the switch bus plates (item 2). The smaller bolted terminal (item 14) will accept #8-1/0 leads. The larger bolted terminal (item 15) will accept 2/0-4/0 AWG leads. Before assembly, apply a thin layer of Tef-Gel corrosion inhibitor to all mating surfaces. Use a 5/16"-18x1" hex screw, (2) 5/16" flat washers (one on each side of the plate), (1) 5/16" lock washer and (1) 5/16"-18 hex nut (items 6, 5, 7, 8). Tighten firmly (11 ft-lbs/15 N-m).



Step 3

4. Attach the lead assembly (item 12) to the second switch bus plate (item 2) with a 5/16”-18x1” hex screw, (2) 5/16” flat washers (one on each side of the plate), (1) 5/16” lock washer and (1) 5/16”-18 hex nut (items 6, 5, 7, 8). Before assembly, apply a thin layer of Tef-Gel to all mating surfaces. Tighten firmly (11 ft-lbs/15 N-m).

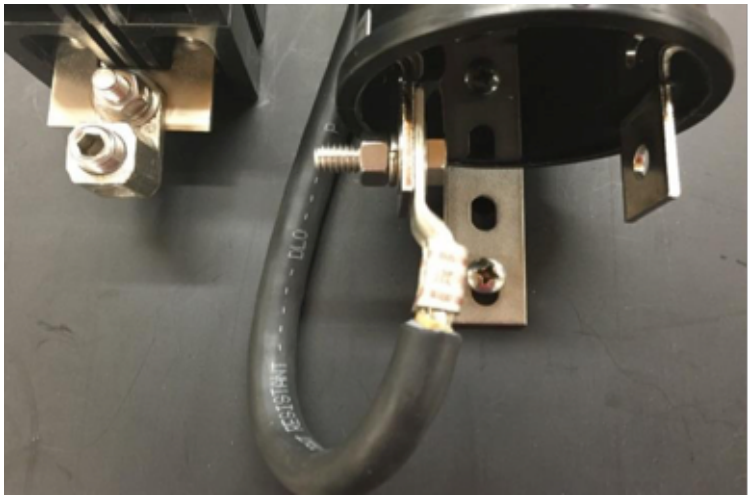


Step 4

5. Place the switch bus plate with the lead attached from step 4 over the switch terminals at the top of the switch (i.e., on the end showing “ON”). Insert (2) 10-32x1.5” screws (item 3) through the holes in the bus plate and the switch terminals. Place spacers (item 11) over the screws on the back side of the switch terminals. Place the switch over the pre-drilled holes on the MTP-48 back-plate with the lead at the top, insert the 10-32x1.5” screws into the holes on the back-plate and install (2) 10-32 keps nuts (item 4) onto the screws on the back side of the MTP-48 back-plate. Before assembly, apply a thin layer of Tef-Gel to all mating surfaces. Tighten firmly with a Phillips screwdriver. Repeat this process for the switch bus plate with the bolted terminal on the bottom switch terminals.

6. Mount the decoupler that is to be used onto the MTP-48 back-plate using the pre-drilled holes and the hardware provided with the MTP-48.

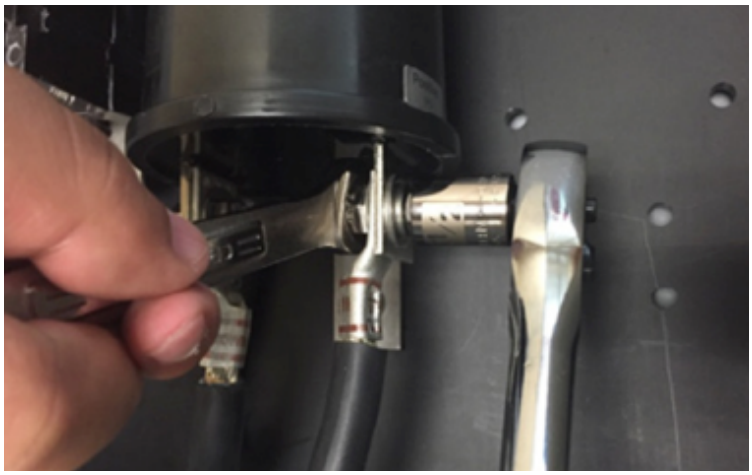
7. Attach the compression terminal of the lead assembly (item 12) to the negative terminal of the decoupler and secure it firmly with the hardware that was provided with the decoupler. Before assembly, apply a thin layer of Tef-Gel to all mating surfaces.



Step 7

8. Attach the operating instructions sticker (item 13) for the switch to the MTP-48 back-plate at a location where it can be read easily.

9. Determine the length of the leads required for connections to the switch and decoupler and cut to length. Apply Tef-Gel corrosion inhibitor to all flat mating surfaces of the lead terminals and to bolt threads. Attach the ground conductor lead to the positive terminal of the decoupler using the hardware provided with the decoupler and firmly tighten using a ratchet with a ½’’ socket and ½’’ box wrench for an SSD or a ¾’’ socket and ¾’’ box wrench for a PCR.



Step 9

10. Remove about 5/8'' of the insulation from the end of the pipeline conductor and apply Tef-Gel corrosion inhibitor to the bare lead end. Insert the lead into the bolted terminal of the switch and firmly tighten with ¼'' hex key.



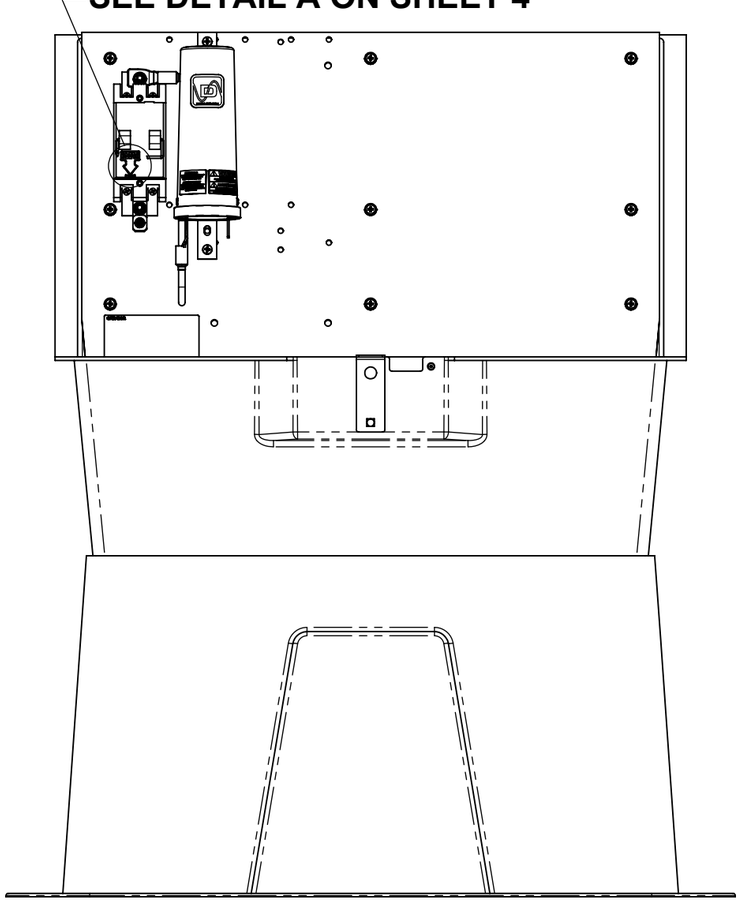
Step 10

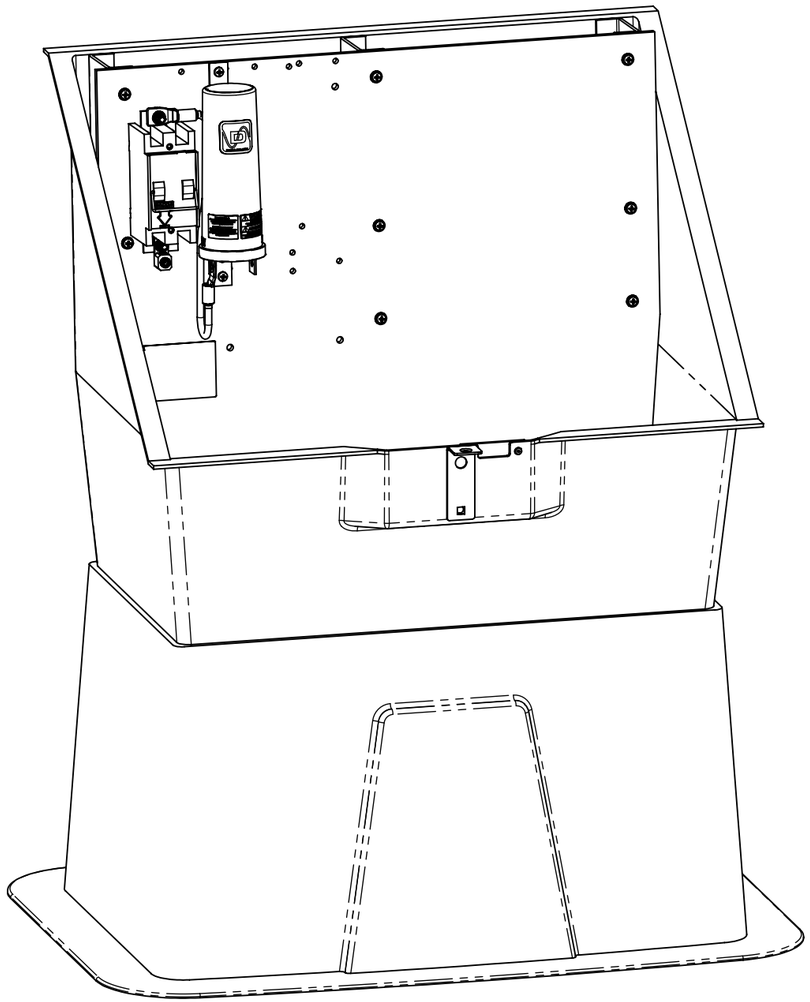
11. Remove the grounding jumper that was used in Step 2.

INSTALLATION WITH SSD

ORDERING INSTRUCTIONS
- MTP-48
- SWX-100 SWITCH KIT FOR MTP-48
- ANY SSD MODEL
- BCL-2 SHORTING CABLE (OPTIONAL, NOT SHOWN)

SEE DETAIL A ON SHEET 4



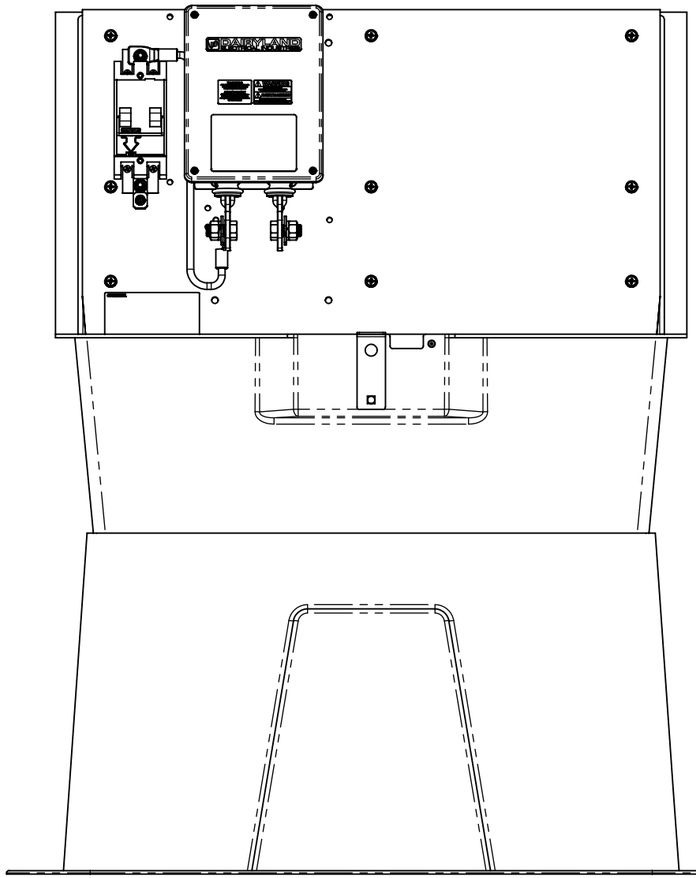


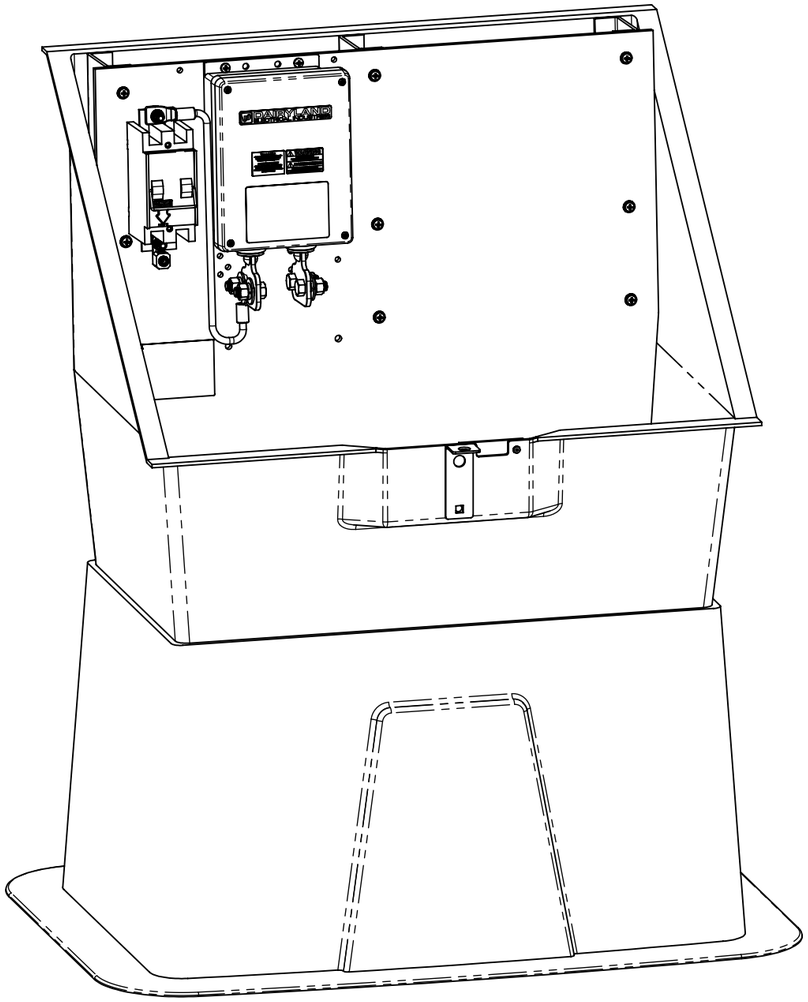
ASME Y14.5M 2018 APPLIES	MATERIAL: NA	DRAWN: JPW	DATE DRAWN: 2017-11-08	DAIRYLAND ELECTRICAL INDUSTRIES, INC. P.O. BOX 187 STOUGHTON, WI 53589 608-877-9900 DAIRYLAND.COM
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.XXX = ±.005" .XX = ±.01" .X = ±.03" ANGLES = ±1° 63	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF DIARYLAND ELECTRICAL INDUSTRIES, INC. ANY REPRODUCTION IN PART OR WHOLE, WITHOUT THE WRITTEN PERMISSION OF DIARYLAND ELECTRICAL INDUSTRIES, INC. IS PROHIBITED.	SHEET: 1 OF 4	DWG SIZE: B	SCALE: 1:8 / REV: C / PART #: 100108

INSTALLATION WITH PCR

ORDERING INSTRUCTIONS

- MTP-48
- SWX-100 SWITCH KIT FOR MTP-48
- ANY PCR MODEL
- BCL-2 SHORTING CABLE FOR DECOUPLERS RATED LESS THAN 10KA.
  BCL-1/0 SHORTENING CABLE FOR DECOUPLERS RATED 10KA OR HIGHER (OPTIONAL, NOT SHOWN)



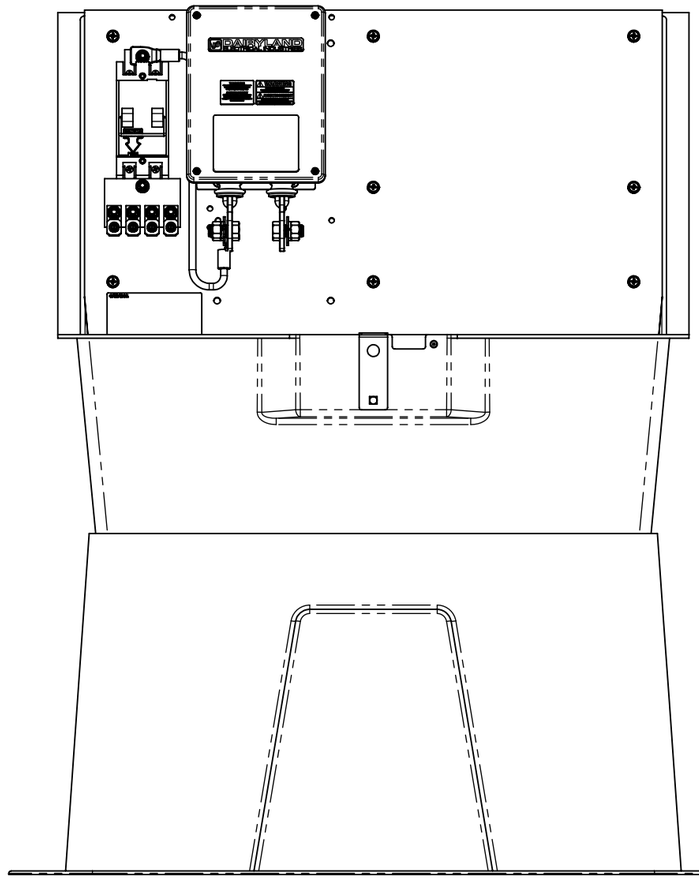


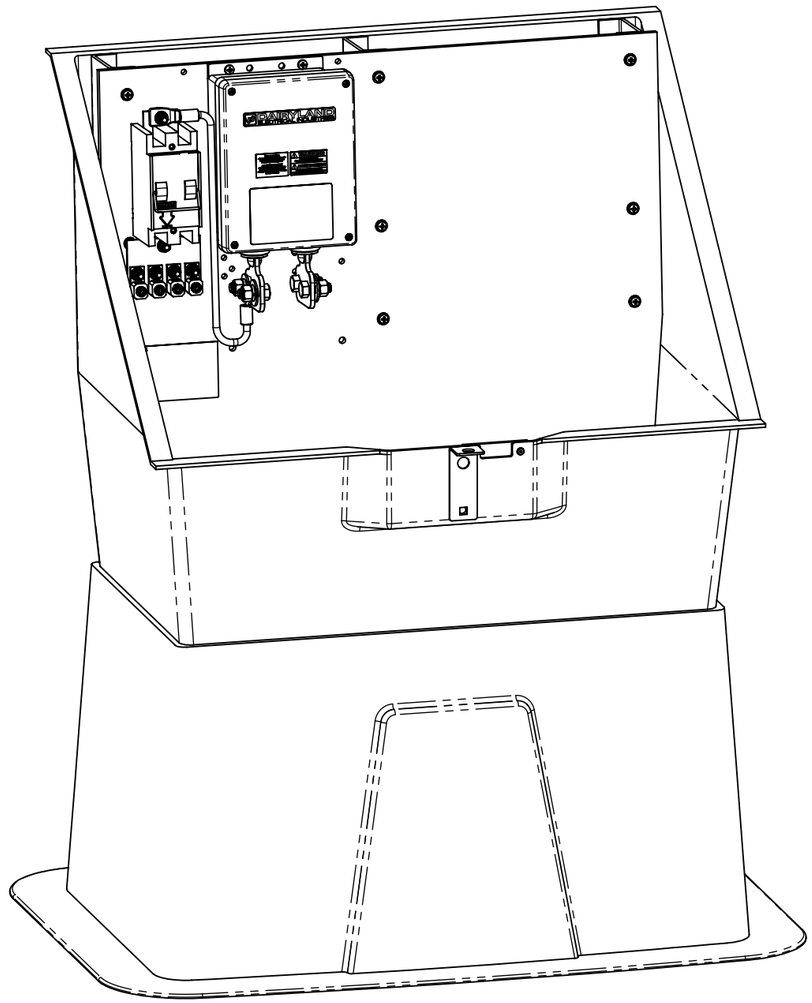
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INSTALLED VIEW WITH OPTIONAL TERMINAL EXTENSION KIT

ORDERING INSTRUCTIONS

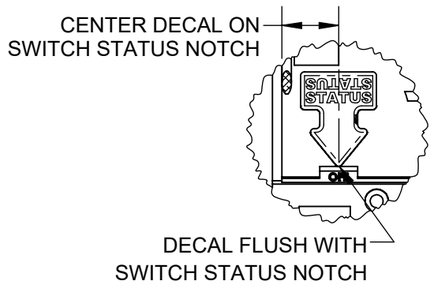
- MTP-48
- SWX-100 SWITCH KIT FOR MTP-48
- ANY SSD OR PCR MODEL (PCR SHOWN)
- MTR-4 FOR UP TO 4 PIPELINE CONNECTIONS
- BCL-2 SHORTING CABLE FOR DECOUPLERS RATED LESS THAN 10KA.
  BCL-1/0 SHORTING CABLE FOR DECOUPLERS RATED 10KA OR HIGHER
  (OPTIONAL, NOT SHOWN).



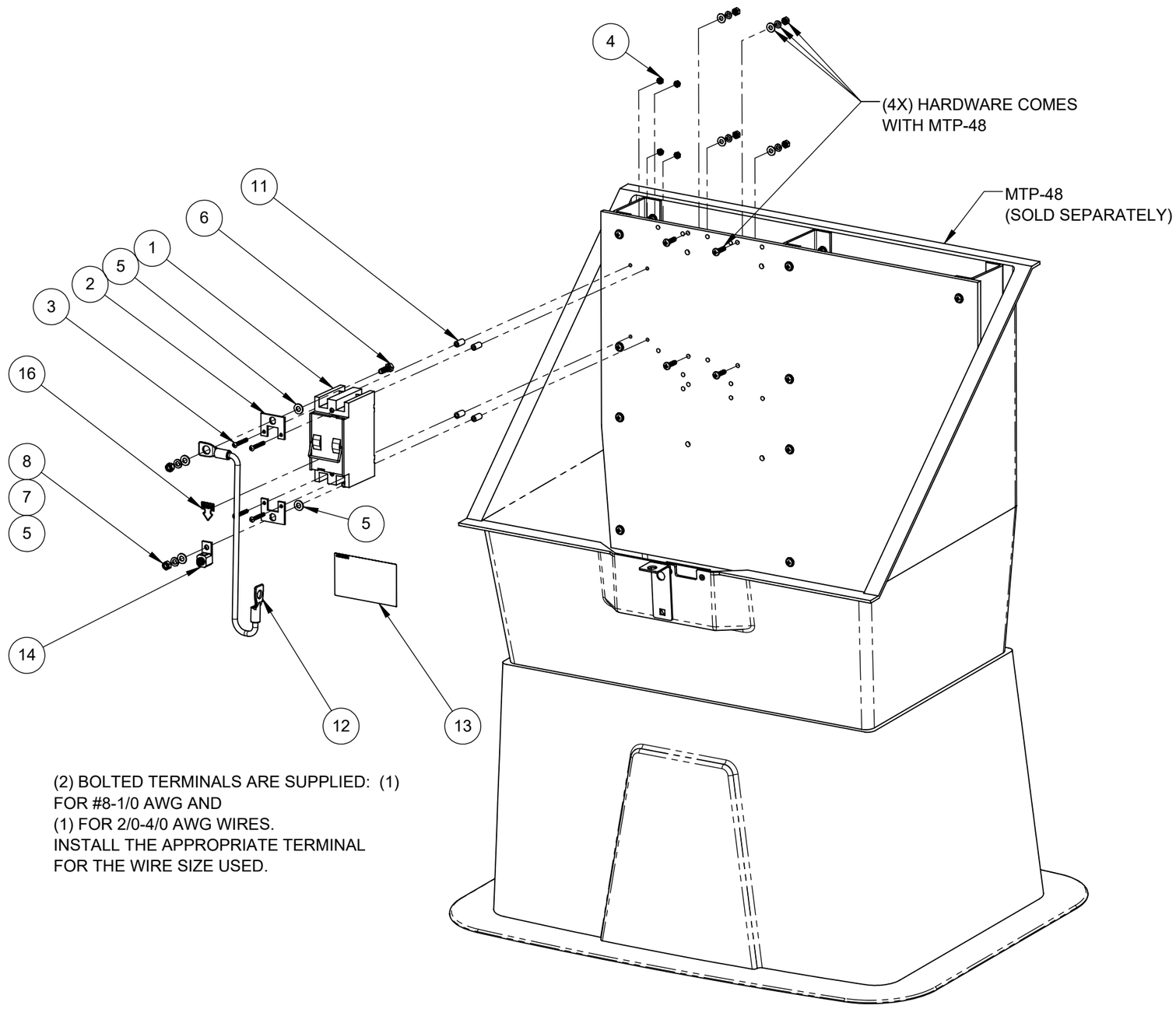


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LINE NO.	DESCRIPTION	QTY.
1	SWITCH PULL 2 POLE 100A	1
2	BUS EXTERNAL ISOLATION SWITCH PLATED	2
3	SCREW RH PH 10-32 X 1.5"	4
4	NUT KEPS 10-32	4
5	WASHER FLAT 5/16"	4
6	SCREW HEX 5/16-18X1"	2
7	WASHER SPLIT LOCK 5/16"	2
8	NUT HEX 5/16-18	2
9	TEF-GEL	2
10	BRUSH TEFGEL	1
11	SPACER 3/4"LX3/8"ODX 3/16"ID	4
12	LEAD ASM 23"L-2/0-1/2" COMPRESSION TERMINALS	1
13	OPERATING INSTRUCTIONS FOR SWX-100	1
14	TERMINAL BOLTED HEX SOCKET HD #8-1-0 PLATED	1
15	TERMINAL BOLTED 2/0-4/0	1
16	DECAL SWX STATUS ARROW .625X1.125"	1



DETAIL SEE DETAIL A ON SHEET 4
SCALE 1 : 2



(2) BOLTED TERMINALS ARE SUPPLIED: (1)
FOR #8-1/0 AWG AND
(1) FOR 2/0-4/0 AWG WIRES.
INSTALL THE APPROPRIATE TERMINAL
FOR THE WIRE SIZE USED.

NOTE:

1. ITEM 9, 10 AND 15 NOT SHOWN.
2. APPLY A THIN LAYER OF TEF-GEL TO ALL METAL-TO-METAL CONNECTIONS.
3. DURING INSTALLATION, USE A GROUNDING JUMPER CABLE TO GROUND THE PIPELINE BY CONNECTING ONE END OF THE JUMPER CABLE TO THE GROUND LEAD AND CONNECT THE OTHER END OF THE JUMPER CABLE TO THE PIPELINE LEAD. LEAVE THE GROUNDING JUMPER CONNECTED THROUGHOUT THE INSTALLATION PROCESS.

ASME Y14.5M 2018 APPLIES

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ANGLES = ±1°

63

MATERIAL: **NA**

FINISH: **NA**

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DAIRYLAND ELECTRICAL INDUSTRIES, INC.
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DAIRYLAND.COM

TITLE: **SWX-100 SWITCH KIT FOR MTP-48 INSTALLATION INSTRUCTIONS**

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SHEET: 4 OF 4 | DWG SIZE: B | SCALE: 1:8 | REV: C | PART #: 100108