



MOP – E2 Indicator Board Replacement

Scope

This Method of Procedures (MOP) outlines the removal and replacement of the E2 Indicator Board Assembly. It applies to product numbers 0917001-xxx and specifically exchanges 7050321-001 with 7050363-001.

Warning:

High-energy sources are accessible inside the E2 and this procedure must only be undertaken by a trained technician familiar with power systems and trained to service the equipment. Personal safety equipment, insulated tools, insulating barriers, and other precautions must be used to ensure worker safety during this procedure. All metal jewelry including rings and watches must also be removed.

Tools/Reference Documents Required

- Personal safety equipment
- Adequate lighting source
- #2 Philips screwdriver; insulated if working on live equipment.
- Cable tie cutter or Side cutters (for trimming cable tie); insulated if working on live equipment.
- Small container to hold loose parts during procedure.
- Static wrist strap with in-line impedance for personal safety.
- Indicator board replacement kit (0370324-001) including:
 - 7400718-001 2 x Assy,PCB,Indicator Board with Lens installed (one left and one right)
 - 0370324-F0 1 x Dwg,Kit,FRU,CXDM-E2 48V Alarm Indicator (these instructions)
 - 651-001-19 2 x Cable Tie,Nyl,4" Long

Background

The Indicator Boards in the E2 connect to the alarms strips and provide a visual (LED) indication and dry contact output for the breaker alarms, as well as acting as an interface to the LADIO when present. The Indicator Board come in pairs, which are essentially mirror image assemblies for the left (A) and right (B) sides. Replacement of the boards comprises first disconnecting both boards from the bus power and signals, swapping the boards, and finally reconnecting the boards to the bus power and signals. This procedure can be done with the system live without affecting function (except alarm signals).



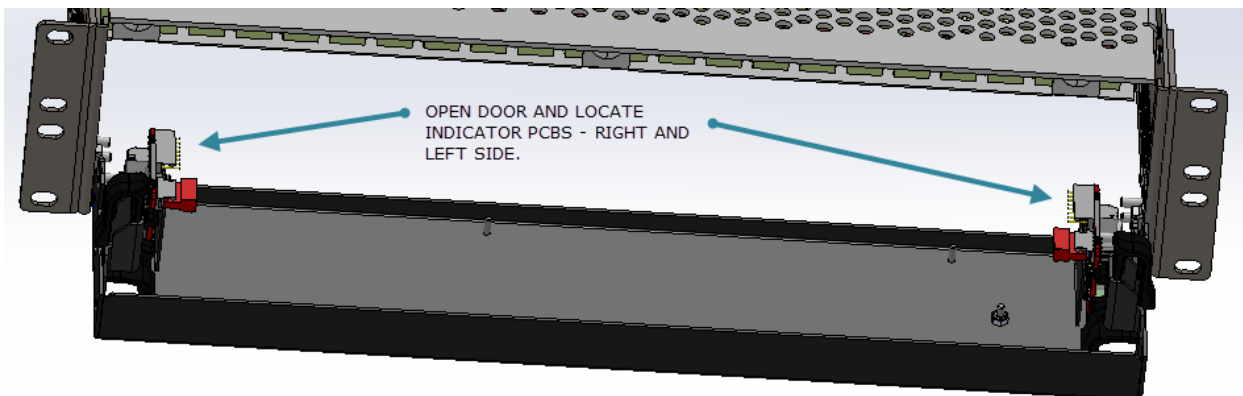
Procedure

Note: Proper static protection (eg. wrist strap) must be used when handling the circuit boards to prevent damage. Technician should put on wrist strap and properly ground prior to initiating procedure.

Note: Replacement of the indicator boards should be done with the system depowered if possible. It is possible, however to perform the procedure live, in which case the technician should follow industry standard practices for working on live equipment, including, but not limited to, using insulating blankets to prevent accidental contact with live parts and the use of insulated tools.

Access/Orientation:

Open the front door of the E2 and located the indicator PCBs as shown in the image below. Note that the left and right indicator boards can be identified by the position of the lens when the connector is near the top of the door.



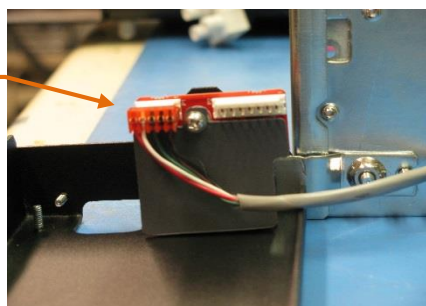


Remove Existing Indicator Board (Step by Step):

Follow these steps to remove the left indicator board. Repeat the same procedure for the right indicator board using the same steps, but keeping in mind that the left board is a mirror image of the right board.

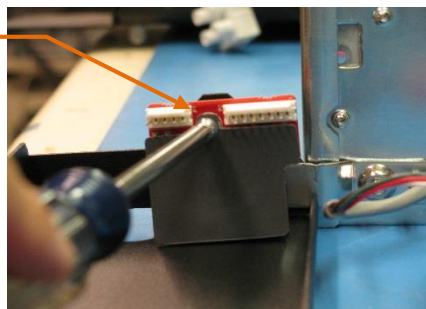
1.

Remove Bus
Connection
Cable (5 pin
connector)



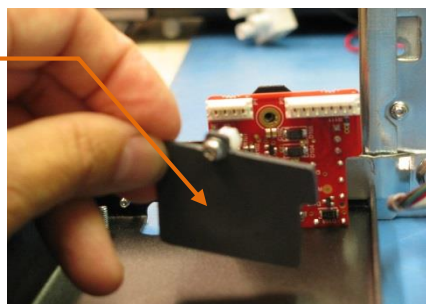
2.

Remove
Board
Retaining
Screw



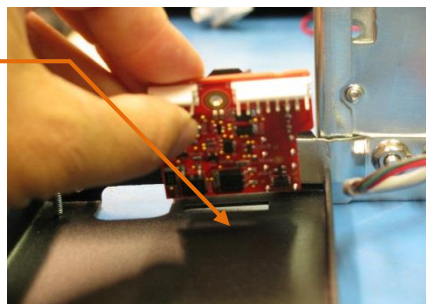
3.

Remove Cover
with screw and
spacer
Store all parts for
reinstallation with
new board.



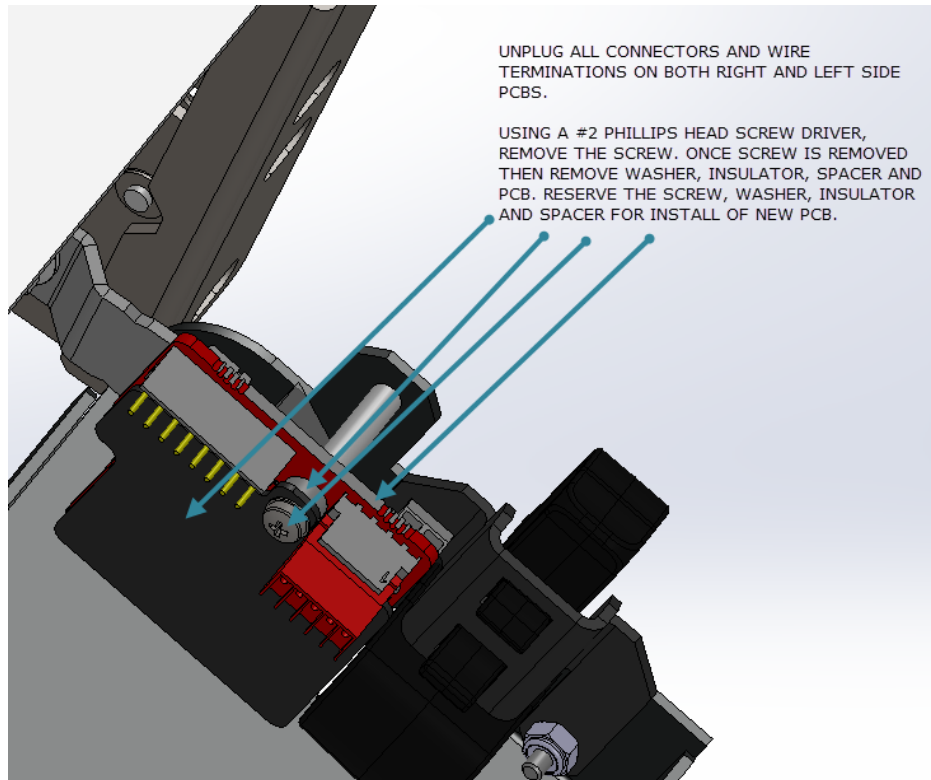
4.

Remove
Board. Tilt it
slightly
towards top
of door for
clearance
past standoff.





Remove Existing Indicator Board (Recap):



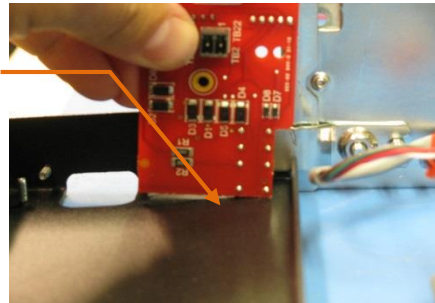


Install New Indicator Board (Step By Step):

Follow these steps to install the new left indicator board. Repeat the same procedure for the right indicator board using the same steps, but keeping in mind that the left board is a mirror image of the right board.

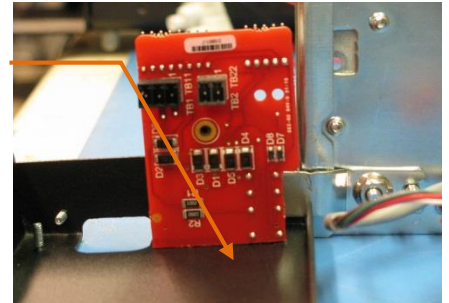
1.

Install board. Tilt it slightly towards the top of panel and align lens into opening.



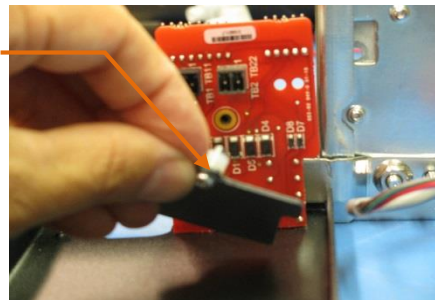
2.

Board must be flush with front panel and not move laterally.



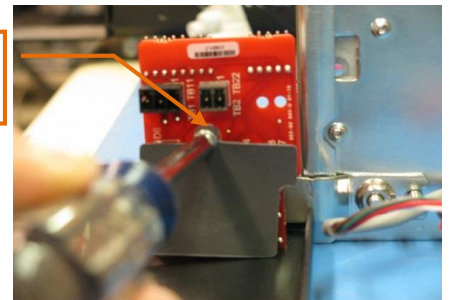
3.

Assemble screw, cover, and spacer and install screw into standoff.



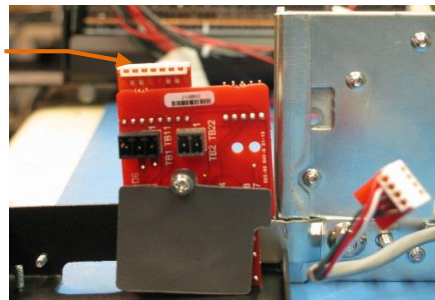
4.

Tighten screw.



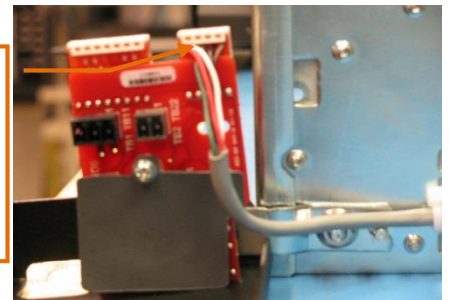
5.

Install 8-pin connector onto header. This protects unused pins from being touched accidentally.



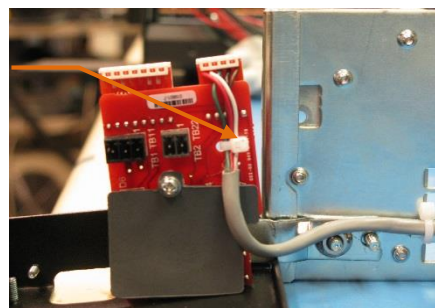
6.

Reconnect board to bus alarm and signals. (5-pin connector)



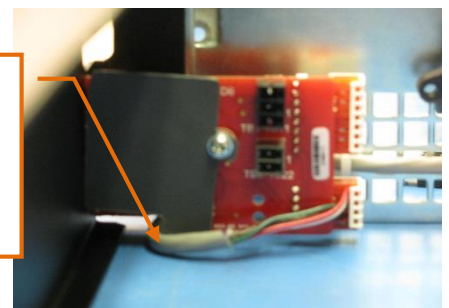
7.

Install Tie-wrap to retain cable



8.

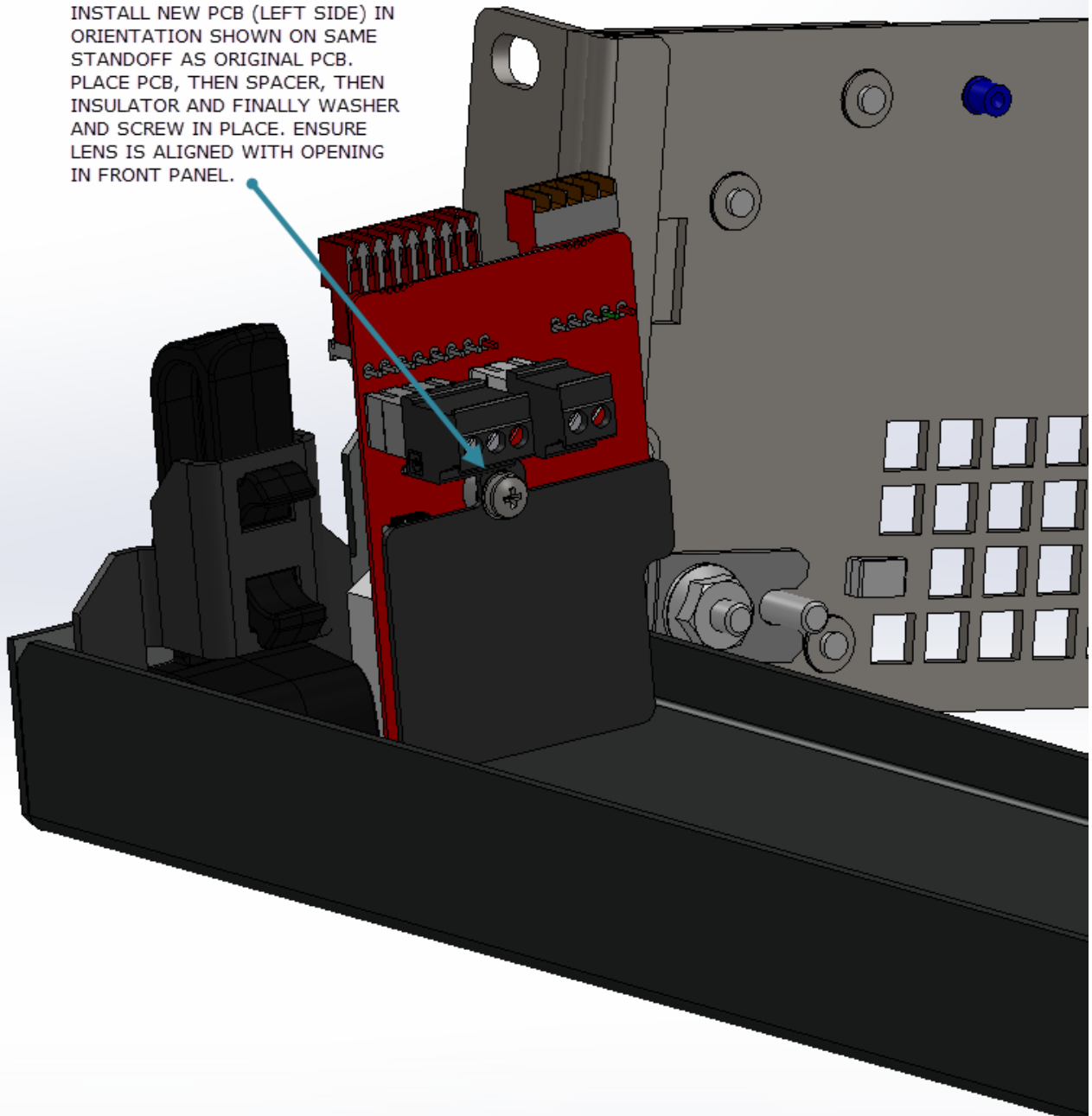
Route cable so that it is not pinched when the door is closed.





Install New Indicator Board (Recap):

INSTALL NEW PCB (LEFT SIDE) IN ORIENTATION SHOWN ON SAME STANDOFF AS ORIGINAL PCB. PLACE PCB, THEN SPACER, THEN INSULATOR AND FINALLY WASHER AND SCREW IN PLACE. ENSURE LENS IS ALIGNED WITH OPENING IN FRONT PANEL.



**Confirm operation:**

When the boards have been replaced, perform the following steps to confirm proper operation:

1. Power up the left bus and confirm that indicator on front panel LED lights up green.
2. Use DMM in resistance mode to check that the alarm output is correct: NO is not connected to C, NC is connected to C.
3. Install a tripped breaker onto the left bus and confirm that the front panel LED changes to red.
4. Use DMM in resistance mode to check that the alarm output is correct: NO is connected to C, NC is not connected to C.
5. Repeat steps 1-4 for right bus.



Customer Wiring Connections:

The diagrams below show the location of the alarm connections on the new indicator boards. Refer to the manual for guidance on connecting to these outputs.

