www.basler.com +1 618.654.2341 (USA) info@basler.com

Fan Replacement Instructions for DECS-250E Digital Excitation Control System

INTRODUCTION

This procedure describes the replacement of DECS-250E cooling fans.

TOOLS REQUIRED

The following tools are required for replacing the fans.

- Driver, Torx[®], T-10
- Screwdriver, Phillips[®], #2
- Driver, hex. 9/64"
- Driver, hex, 7/64"
- Wrench, open end, 11/32"
- Torque driver set to 16–20 in-lb (1.8–2.3 N•m)
- Torque driver set to 8–11 in-lb (0.9–1.2 N•m)
- Torque driver set to 6–8 in-lb (0.7–0.9 N•m)

PROCEDURE

Warning!

These instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any servicing other than that specified in the operating instructions unless you are qualified to do so.

Before performing any procedures, remove the DECS-250E from service. Refer to the appropriate site schematics to ensure that all steps have been taken to properly and completely de-energize the DECS-250E.

- Remove the DECS-250E from service.
- Remove all user connections from the left side and bottom panels.
- 3. Using a Torx driver, remove the four screws on the front panel of the DECS-250E. Using a Phillips screwdriver, remove the screw from the bottom panel of the DECS-250E. Retain all hardware for later use. See Figure 1.



Figure 1. Case Hardware Locations

4. To remove the case, carefully lift the bottom of the case away from the chassis. Then, slide the top of the case over the pins at the top of the chassis. See Figure 2. Take care to avoid damaging any components while removing the case.



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Figure 2. Pin Locations

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 Locate the failed cooling fan and unplug the fan's red and blue wires from the DECS-250E's fan wires. See Figure 3.

Note the location of the DECS-250E's fan wires for reconnection in a later step. Also note that the red wire is terminated with a plug and the blue wire is terminated with a jack to avoid misconnections with the DECS-250E's fan wires.



Figure 3. Fan Wire Plug Location

 Using a 9/64" hex driver and an 11/32" open end wrench, remove the four bolts and nuts securing the fan guard. Retain the hardware and fan guard for later use. See Figure 4.

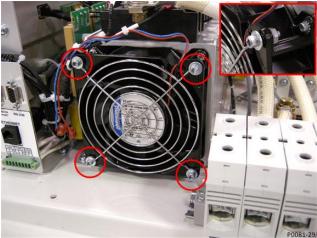


Figure 4. Fan Guard Hardware Locations

 Using a 7/64" hex driver, remove the four screws securing the fan to the heat sink and retain for later use. See Figure 5.

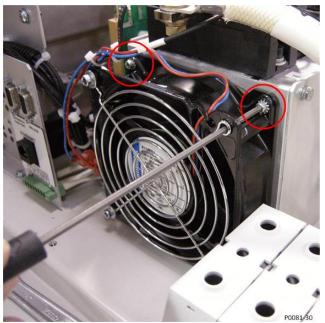


Figure 5. Fan Hardware Locations (2 of 4)

- 8. Remove the failed cooling fan and replace with the new cooling fan.
- Orient the new cooling fan so that the air flow arrows on the side match the direction of the air flow arrows on the fan at the opposite end of the heat sink. Air flow arrows are shown in Figure 6.

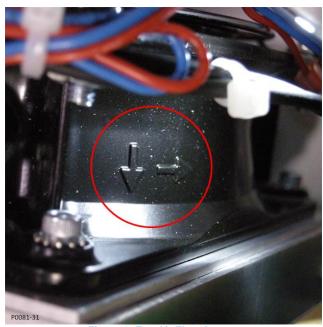


Figure 6. Fan Air Flow Arrows

- Fasten the new cooling fan to the heat sink using the hardware removed in step 7. Torque all four screws to 6–8 in-lb (0.7–0.9 N•m).
- 11. Fasten the fan guard to the new cooling fan using the hardware removed in step 6. Torque all four bolts to 8–11 in-lb (0.9–1.2 N•m).
- Connect the new cooling fan's wires to the DECS-250E's fan wires as noted in step 5.
- Install the DECS-250E case. Line up the holes on the top of the case with the pins on the top of the DECS-250E chassis and slide it into place. See Figure 2.

- 14. Fasten the bottom of the case to the DECS-250E chassis using the hardware removed in step 3. Torque the screw to 16–20 in-lb (1.8–2.3 N•m)
- 15. Fasten the front of the case to the DECS-250E using the hardware removed in step 3. Torque all four screws to 8–11 in-lb (0.9–1.2 N•m).
- **16.** Install user connections on left side and bottom panels of DECS-250E.
- 17. Return DECS-250E to service.



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