MiTek®

SERVICE BULLETIN

Document ID:

SB241

Title:

Replacing VFD

Affected machinery: Powered Skewed Conveyor

Distribution: Customers upon order

Applies to: *AB PowerFlex*® 40 VFD being replaced with the new *ABB*™ ACS380 VFD

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Part # and Rev.	SB241
Print Date	11 August 2020
Effectivity	All machines
Revision Date	
Revised By	
Orig. Release Date	11 August 2020
Created By	A. McIntire
Approved By	

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Purpose and Scope

This service bulletin instructs how to replace the *AB PowerFlex* 40 VFD with the new *ABB* ACS380 VFD for use in the *BLADE* Powered Skewed Conveyor.

Overview

The parts included in this kit are shown in Table 1. Please make sure all parts and supplies are present before starting the procedure.

Table 1: Parts in SB241KIT

Quantity	Description	Part #
1	ABB ACS380 VFD	92250-501
4 ft	18 AWG blue wire (for jumpers)	508003
4	10-32-1/2" screws	341104
4	#10 lock washers	364026
4	#10 flat washers	365109
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Supplies

- Flathead screwdriver
- Wire cutters
- #21 drill bit and #10-32 tap drill
- Lockout/tagout mechanism

If you have any questions, call MiTek Machinery Division Customer Service at 1-800-523-3380.

Procedure

Electrical Lockout/Tagout Procedure

	**⚠ WARNING** **ELECTROCUTION HAZARD.** **All electrical work must be performed by a qualified electrician.** **Verify that all power to the machine has been turned off and follow approved lockout/tagout safety procedures before performing any maintenance.** **If it is absolutely necessary to troubleshoot an energized machine, follow NFPA 70E for proper procedures and person protective equipment.**

Before opening the main electrical enclosure or attempting to repair or replace an electrical transmission line, lockout/tagout the machine properly. Follow your company's approved lockout/tagout procedures, which should include, but are not limited to, the steps here.

1. Engage an E-stop on the machine.
2. Turn the machine's disconnect switch to the Off position. This is usually required to open the main electrical enclosure's door.
3. Shut the power to the machine off at the machine's power source, which is usually an electrical service entry panel on the facility wall. One example of a locked-out power source panel is shown in Figure 1.
4. Attach a lock and tag that meet OSHA requirements for lockout/tagout to the electrical service entry panel.
5. Open the door to the enclosure to which you need access. Using a multimeter, verify that the power is off.

Figure 1: Lockout/Tagout on the Power Source Panel

Remove and Replace The VFD

	⚠ WARNING
	**MOVING PARTS CAN CRUSH AND CUT.** **Always verify that power to the machine has been turned off and follow approved lockout/tagout procedures.**

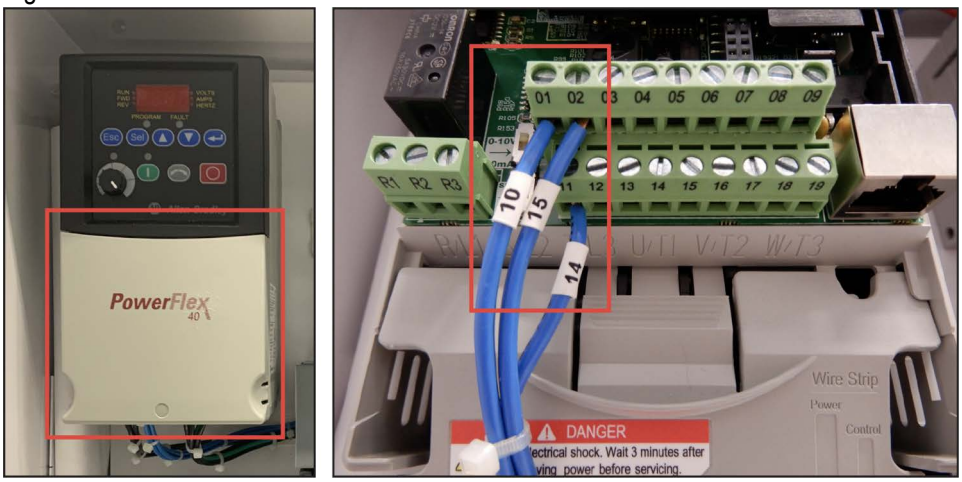
Removing the *PowerFlex* 40

1. With power locked out as previously described, locate and open the Powered Skewed Conveyor enclosure.

Figure 2: Powered Skewed Conveyor Enclosure

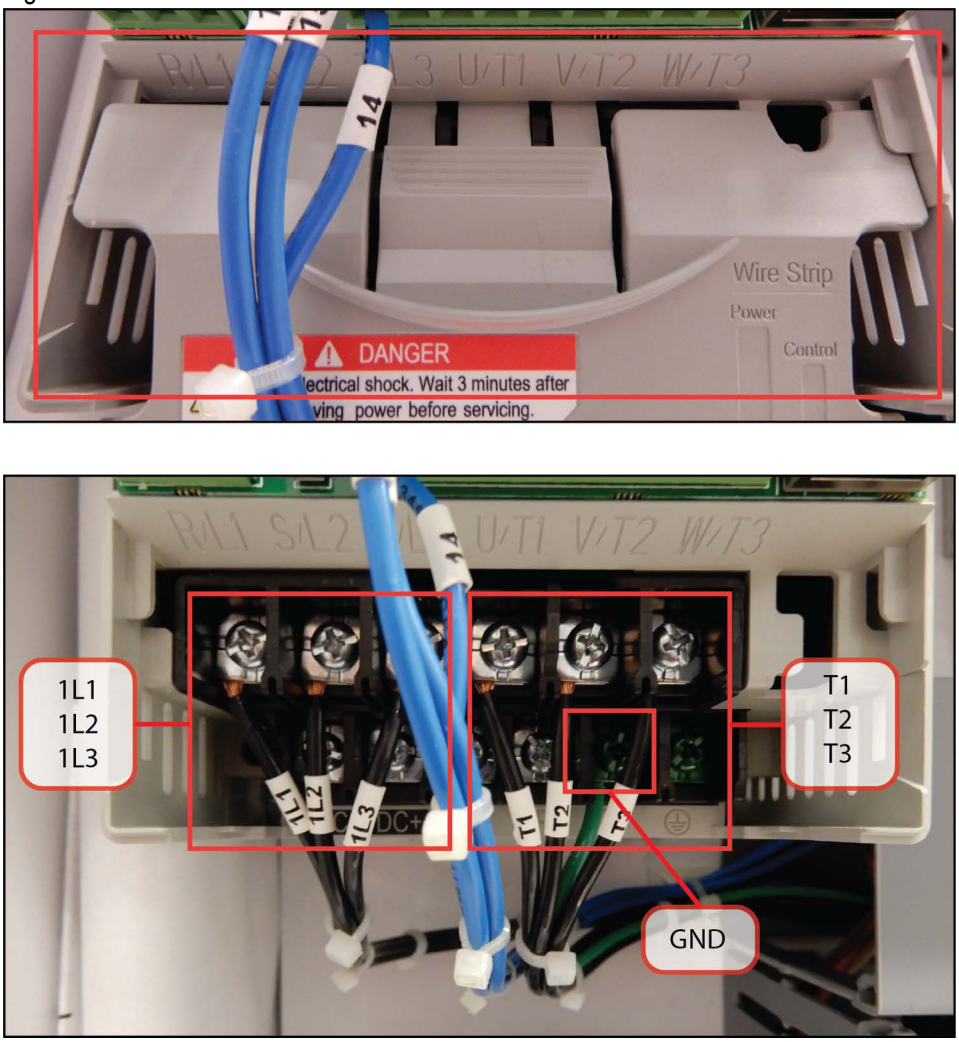
2. Remove the VFD's front cover and disconnect wires 10, 15, and 14.

Figure 3: Front Cover and Wires



3. Remove the secondary cover located near the bottom of the VFD (see first image in Figure 4) and disconnect the following wires:
   a) 1L1, 1L2, 1L3
   b) T1, T2, T3
   c) GND (green wire)

Figure 4: Lower Enclosure Cover and Wires

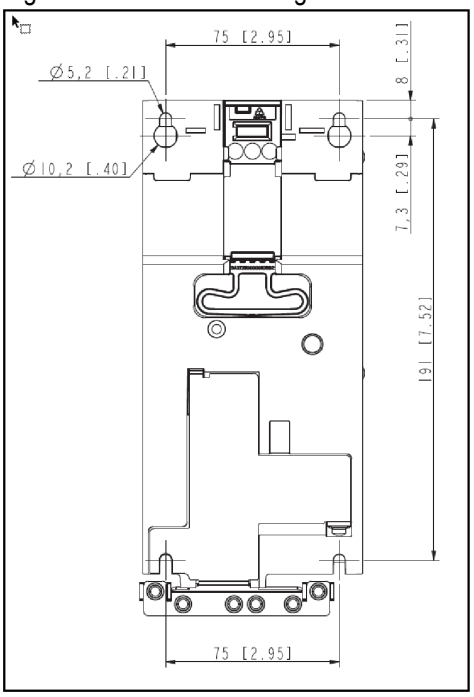


4. Loosen mounting screws and remove the *PowerFlex* VFD from the enclosure.

Installing the ACS 380

1. The ACS 380 should be installed in approximately the same location in the enclosure as the previous VFD. Before you start drilling, ensure that the ACS 380 will at least have 75mm of clearance at the top and bottom of the drive for adequate ventilation.
2. Using this supplies listed on page 2, drill and tap the mounting holes according to the measurements shown in Figure 5. All measurements are in millimeters [inches].

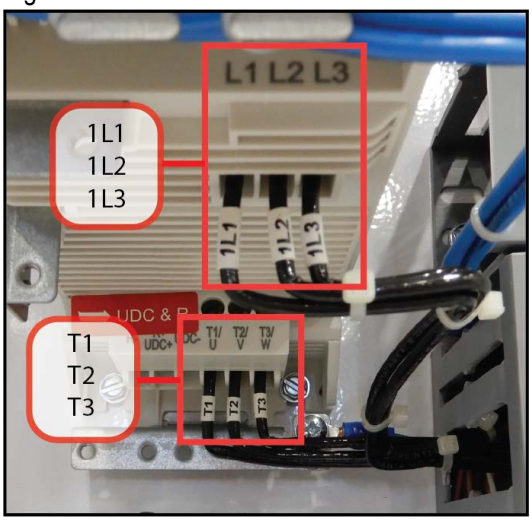
Figure 5: ACS 380 Mounting Dimensions



3. Once drilling is complete, use the included 10-32 screws, lock washers, and flat washers (in that order) to secure the VFD inside the enclosure.

4. Connect the following wires to the their matching terminals on the bottom of the VFD:
   a) Wires 1L1, 1L2, 1L3 to matching terminals L1, L2, L3
   b) Wires T1, T2, T3 to matching terminals T1/U, T2/V, T3/W

Figure 6: Bottom Wires

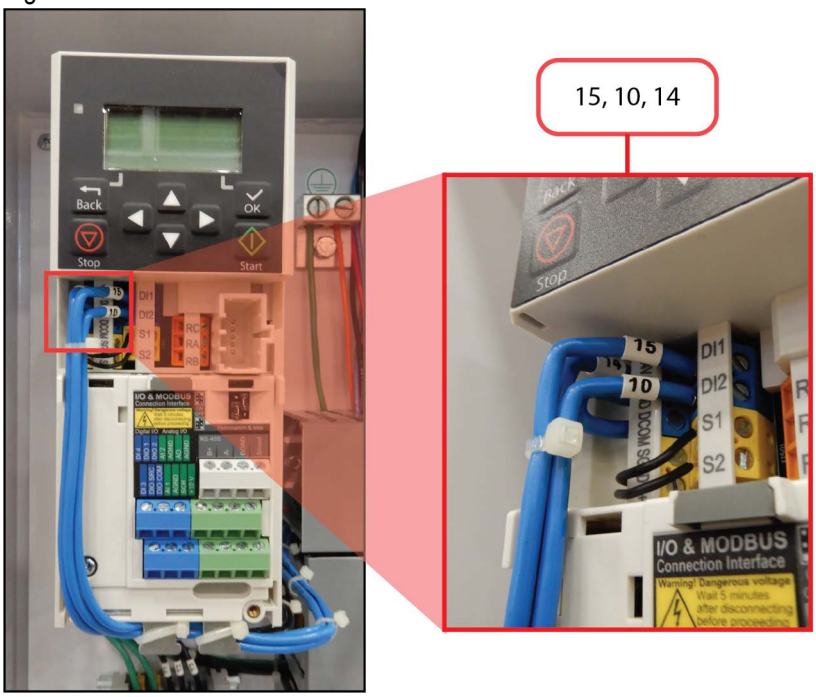


5. Use the supplied jumper wire to connect DGND and DCOM.

Figure 7: Jumper Wire

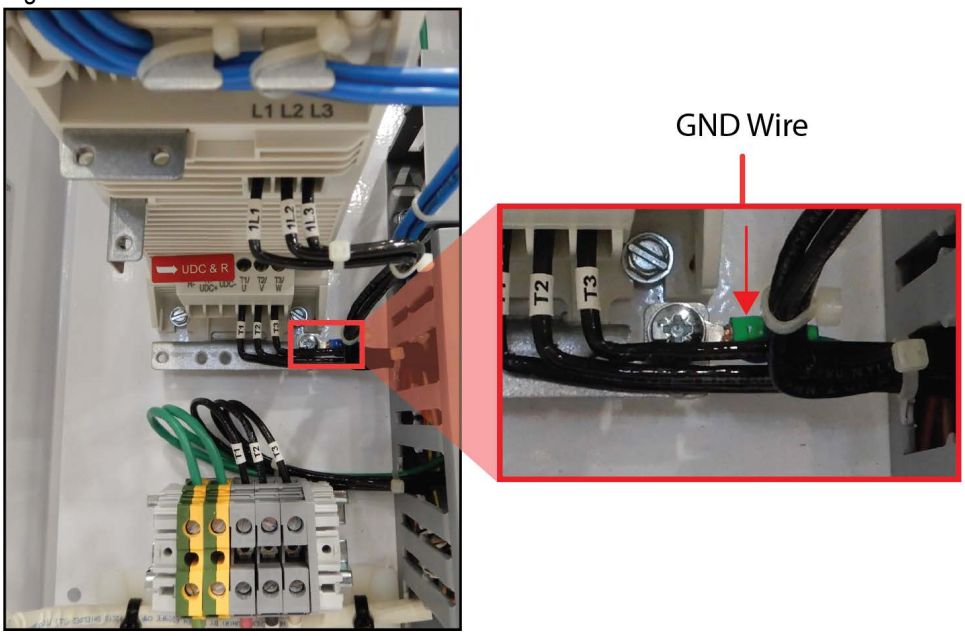
6. Connect the following wires to their matching terminals on the front of the VFD
   a) Wire 15 to DI1.
   b) Wire 10 to DI2.
   c) Wire 14 to +24VDC.

Figure 8: Front Wires



7. Connect the loose end of the GND (green) wire to the ground terminal.

Figure 9: Ground Wire Terminal



Machinery Division Customer Service is available at **800-523-3380** Monday through Friday.

8. Remove lockout/tagout devices.
9. Restore power to the Powered Skewed Conveyor.
10. Press the blue **Reset** button on the *BLADE* operator interface panel.
    - If the VFD displays an error message, contact MiTek Machinery Division Customer Service. Once the error message is resolved, close the electrical enclosure door and cycle power.
11. Perform the safety tests detailed in the machine's manual to make sure that the machine functions properly.
    - If the machine passes the safety tests, resume normal operation.
    - If the machine does not pass any part of the safety tests, lockout/tagout the machine and call MiTek Machinery Division Customer Service. Once the problem is resolved and the machine passes its safety tests, resume normal operation.

END OF SERVICE BULLETIN