SIEMENS

Installation Instructions
Document No. 129-703
May 10, 2016

SED2-BT300-C-4 and SED2-BT300-C-5 Migration Kits

Product Description

This kit contains the parts needed to retrofit an existing SED2 Drive (with Bypass option) with a BT300 HVAC Drive.

Contents

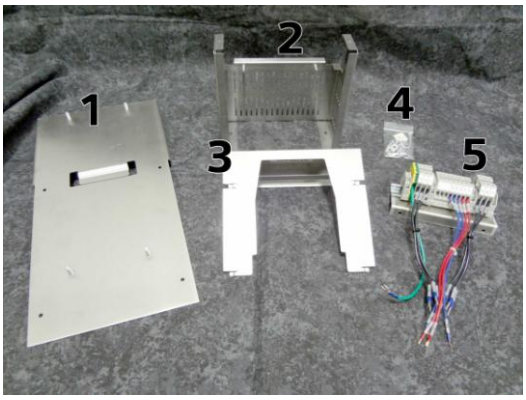

Figure 1. SED2-BT300-C-4 Contents.

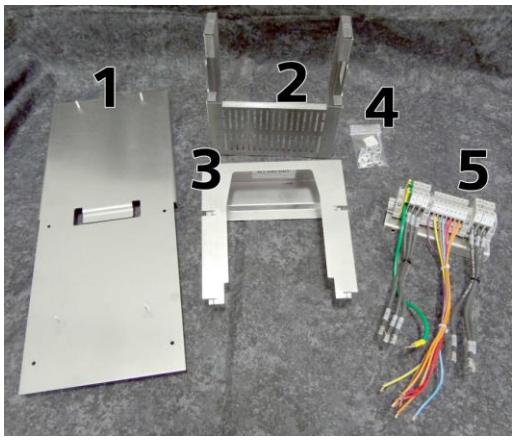

Figure 2. SED2-BT300-C-5 Contents.

1	Drive Adapter Plate	4	Hardware Kit
2	Drive Enclosure Bracket	5	Terminal Block
3	Enclosure Bracket	6	Labels (not pictured)

Product Numbers

SED2-BT300-C-4
Migration Kit, SED2 FSC to BT300 FS4 *
- 480 Vac: 7.5 hp

SED2-BT300-C-5
Migration Kit, SED2 FSC to BT300 FS5 *
- 208 Vac: 4 hp to 10 hp
- 480 Vac: 10 hp to 20 hp
- 600 Vac: Up to 10 hp

** Manufactured September 2009 and later*

Warning Notations

WARNING:	⚠	Personal injury or loss of life may occur if you do not follow the procedures as specified.

Required Tools

- Small, flat-blade screwdriver
- Small and large Phillips screwdriver
- Wire stripper
- Knife
- 3/8" open end socket wrench
- Nut driver

Expected Installation Time

60 minutes

Prerequisites

⚠ **WARNING:**

Disconnect all power before beginning installation.

- Read these Installation Instructions in their entirety prior to beginning installation.
- Read the *SED2 to BT300 Migration Guide* (125-1005) prior to beginning installation.
- All wiring must conform to national and local codes and regulations (NEC, CE, and so on).

Installation

Removing the SED2 Drive

1. Disconnect power.

WARNING:

Always wait five minutes after disconnecting the SED2 from the power source before performing any work.

2. Open Bypass door and remove SED2 terminal strip cover and Drive Protective Cover.

Figure 3. SED2 Terminal Strip Cover and Protective Cover.

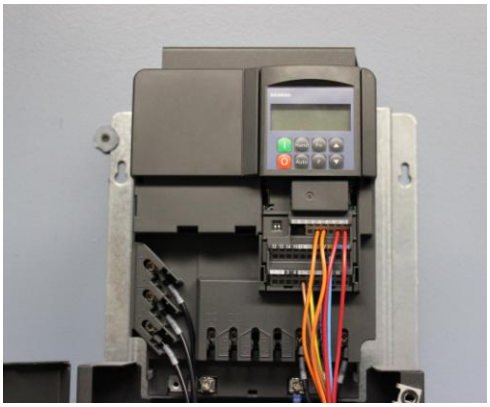

Figure 4. SED2 Drive with Covers Removed.

3. Using a small flat-blade screwdriver and small Phillips screwdriver, disconnect input, output, ground conductor, and control wiring from existing SED2 Drive.

Figure 5. SED2 Drive with Wiring Removed.

4. Using a large Phillips screwdriver, remove the drive mounting screws (save for re-use) and remove the SED2 Drive and protective shield from the backplane.

Figure 6. SED2 Drive Mounting Screws Location.

Figure 7. Backplane with SED2 Drive and Protective Shield Removed.

NOTE: Dispose of electronic materials properly.

Mounting and Wiring the Terminal Block Assembly

1. Mount the Drive Adapter Plate re-using two of the four drive mounting screws from previous step (mounted at the top of the plate only). See Figure 8 and Figure 9.

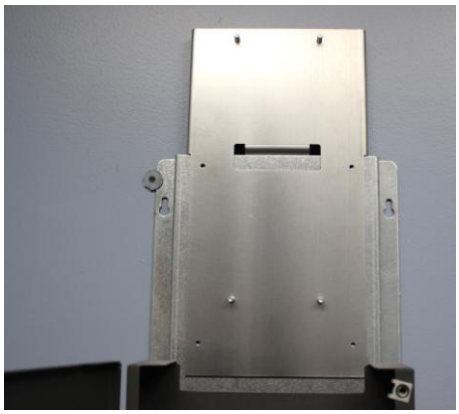

Figure 8. Drive Adapter Plate with Proper Alignment.

Figure 9. Drive Adapter Plate, Secured.

2. Slide in the Drive Enclosure Bracket. Use a large Phillips screwdriver and the remaining two drive mounting screws to secure in place. See Figure 10 and Figure 11.

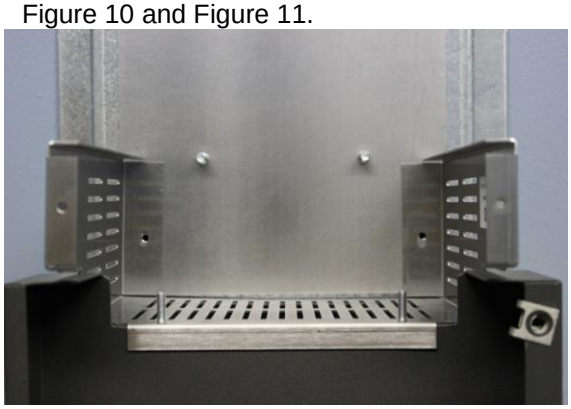

Figure 10. Drive Enclosure Bracket.

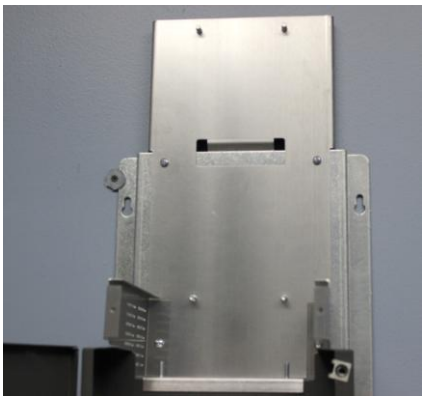

Figure 11. Finished Assembly.

NOTE: The front face of the Drive Enclosure Bracket must align with the bottom edge of the Drive Adapter Plate.

3. Install the pre-wired terminal block assembly onto the Drive Enclosure Bracket studs, with wires facing up.

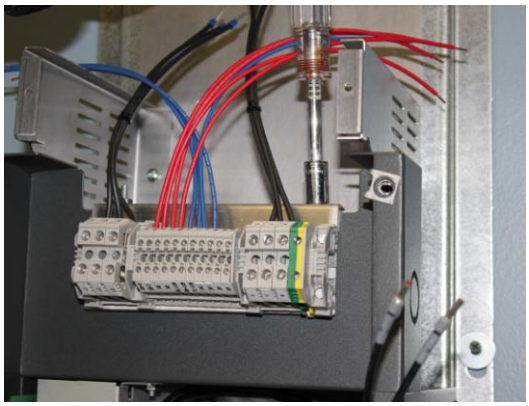

Figure 12. Terminal Block Assembly.

4. Secure with 10-32 nuts (included in hardware kit).
5. Separate the ground wire from its harness, if required.

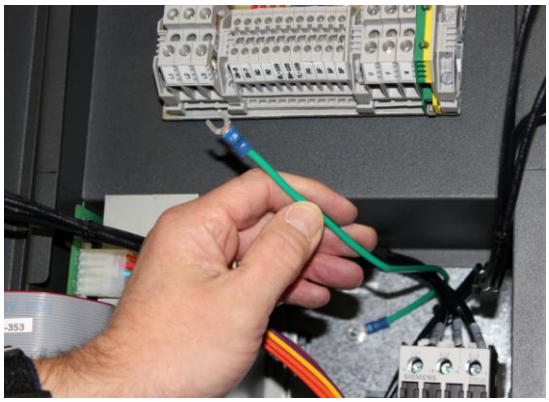

Figure 13. Ground Wire.

6. Remove the crimped end from the ground cable and use a wire stripper to strip 3/8" from the end, if required.
7. Terminate existing bypass wiring (control, power, and ground) to the bottom edge of the terminal block assembly. See Figure 14 and Table 1.

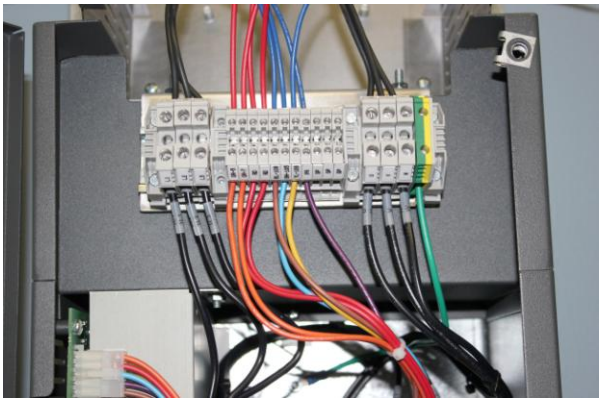

Figure 14. Terminated Bypass Wiring.

Table 1.

Conventional (A)					
SED2 Terminal No.	**Description**	**Bypass Wire Color (Number)**	**BT300 Terminal No.**	**Description**	**Function**
8	Digital Input 4	108	9	Digital Input 2	Run Interlock 2 (M2 Status Coast to Stop)
5	Digital Input 1	105	8	Digital Input 1	Start Stop
9	24 Vdc +	109	6	24 Vdc +	Power 24 Vdc
22	RO1 NO	7	24	RO2 NC	Fault Status
21	RO1 Common	5	25	RO2 Common	Fault Status

Electronic (E)					
SED2 Terminal No.	**Description**	**Bypass Wire Color (Number)**	**BT300 Terminal No.**	**Description**	**Function**
8	Digital Input 4	Purple	14	Digital Input 4	Run Interlock 1
6	Digital Input 2	Yellow	9	Digital Input 2	Run Interlock 2 (M2 Status Coast to Stop)
5	Digital Input 1	Brown	8	Digital Input 1	Start Stop
28	24 Vdc -	Blue	7	Ground	Power 24 Vdc
25	RO 2 NO	Red	23	RO1 NO	Run Status
24	RO 2 Common	Red	22	RO1 Common	Run Status
22	RO1 NO	Orange	24	RO2 NC	Fault Status
21	RO1 Common	Orange	25	RO2 Common	Fault Status

Mounting the BT300 HVAC Drive

NOTE: See *Installation Instructions* (DPD01148) (Included with unit) for more complete instructions.

1. Using a large Phillips screwdriver, loosen the cover screws and remove cover from the BT300 HVAC Drive.

Figure 15. BT300 HVAC Drive with Cover Removed.

2. Using the M5 grounding screw from the Drive Accessory Kit, install the ground cable onto the ground connection of the drive.

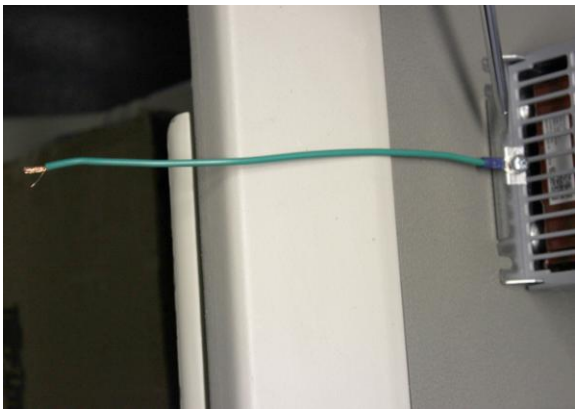

Figure 16. Ground Cable, Installed.

3. Mount the BT300 to the Drive Mounting Plate using four 1/4-20 hex nuts with flat washers (included in the Hardware Kit).

Figure 17. BT300 Mounted to the Drive Mounting Plate.

4. Remove the Cable Protection Plate from the BT300 HVAC Drive.

Figure 18. Cable Protection Plate.

5. Using a knife, slice two grommets to allow for wiring to pass through. Install three grommets to the BT300 Drive, positioning the sliced grommets into the side openings.

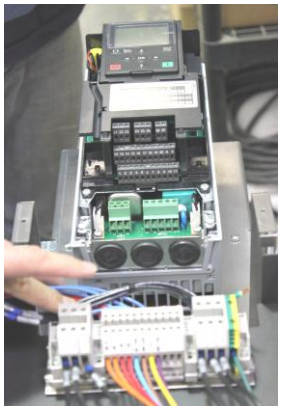

Figure 19. Grommets, Installed.

Wiring the BT300 HVAC Drive

1. Terminate the input and output power wiring.
2. Route wires through grommets and terminate the input (L1, L2, L3)/output (U, V, W) power wires and ground at the BT300.

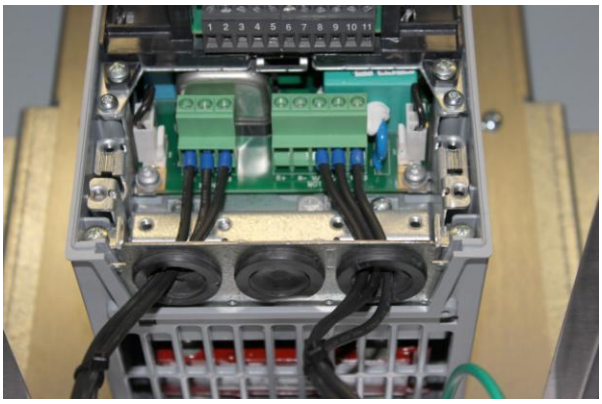

Figure 20. Terminated Wires and Ground.

3. Re-install the Cable Protection Plate.

Figure 21. Cable Protection Plate Re-installed.

4. Connect the control wiring and use cable ties to secure to the Cable Protection Plate. See Table 1 and Figure 22.

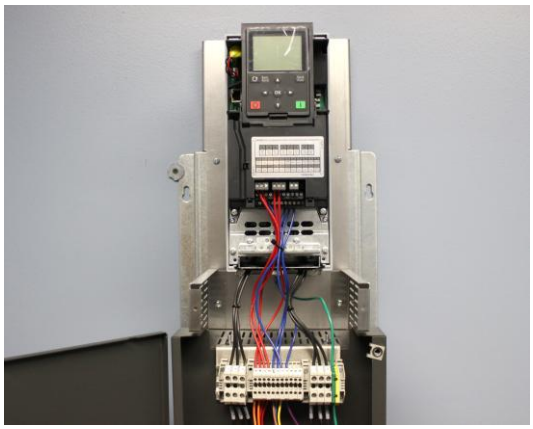

Figure 22. Control Wiring.

Completing the Installation

1. Using a knife or pliers, cut free the opening on the drive cover for the control wiring.

Figure 23. Drive Cover with Opening Cleared.

2. Mount the BT300 HVAC Drive cover and resecure with four screws.

Figure 24. BT300 Cover Mounted and Secured.

3. Install the Enclosure Bracket ensuring alignment of the retaining clamps with the Drive Enclosure Bracket and the top of the bypass cabinet.

Figure 25. Retaining Clamps, Aligned.

Figure 26. Retaining Clamp Fully Engaged.

4. Attach the Enclosure Bracket to the Drive Enclosure Bracket using the two self-tapping screws.

Figure 27. Enclosure Bracket Alignment.

5. Remove bypass labels on the inside of the bypass cabinet door, and replace with new labels provided in the Migration Kit.

Figure 28. New Labels, Installed.

6. Close bypass enclosure and secure door with two door latch screws.

Figure 29. Completed Installation.

7. Reconnect power.

Bypass Parameter Setting

1. Change **Ctrl Signal 2 A** (3.5.1.2) to a value of **DigIN Slot0.1** (virtual off). This removes the reverse command from DI2.
2. Change **Run Interlock 2** (3.5.1.13) to a value of **DigIN SlotA.2** (use Digital Input 2). This is used to monitor the M2 Contactor.
3. Change **RO2 Function** (3.5.3.2.4) to a value of **FaultInvert**. This is for fail-safe operation of fault relay (wired to normally closed contact). If the inverter loses power but the bypass does not, then the contact closes to indicate to the bypass that there is a problem.

For SED2 Electronic Bypass only when the interlock feature is enabled, continue to Steps 4 and 5.

4. Change **Preset Freq Sel0** (3.5.1.15) to a value of **DigIN Slot0.1** (virtual off) to remove DI4 from that definition.
5. Change **Run Interlock 1** (3.5.1.12) to a value of **DigIN SlotA.4** (use Digital Input 4). This is used to monitor the terminals 7 and 8 of the SED2 E-Bypass Board.

The installation is now complete. See the *SED2 to BT300 Migration Guide* (125-1005) for further information.

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