1 Replacing a Single Phase Smart Drive

If you are replacing a Single Phase Smart Drive with a Three Phase Smart Drive, there may be both wiring as well as software changes required. This Instruction Sheet outlines these requirements.

For further information on the Smart Drive family, refer to the MMC Smart Drive and Digital MMC Control Hardware Manual as found at www.glcontrols.com.

1.1 Affected Part Numbers

Refer to Table 1-1 when replacing a Single Phase Drive with a Three Phase Drive.

Table 1-1: Part Number Cross Reference

Model Number	Description	Single Phase Drive	Three Phase Drive
MMC-SD-0.5-230	.5Kw, Analog	M.1302.5090	M.3000.0929
MMC-SD-0.5-230-D	.5Kw, Digital Wide	M.1302.8130 M.3000.0461	M.3000.0911
MMC-SD-0.5-230-DN	.5Kw, Digital Narrow	M.1302.8908 M.3000.0458	M.3000.0915
MMC-SD-1.0-230	1Kw, Analog	M.1302.5091	M.3000.0930
MMC-SD-1.0-230-D	1Kw, Digital Wide	M.1302.8131 M.3000.0462	M.3000.0912
MMC-SD-1.0-230-DN	1Kw, Digital Narrow	M.1302.8910 M.3000.0459	M.3000.0916
MMC-SD-2.0-230	2Kw, Analog	M.1302.5092	M.3000.0931
MMC-SD-2.0-230-D	2Kw, Digital Wide	M.1302.8132 M.3000.0463	M.3000.0913
MMC-SD-2.0-230-DN	2Kw, Digital Narrow	M.1302.8911 M.3000.0460	M.3000.0917

1.2 Drive Firmware Considerations

The firmware in the replacement Three Phase Drive will need to be updated, depending on the version of PiCPro that is being used. Each situation is discussed below.

1.2.1 PiCPro Version 15.0 or Lower

If you are using PiCPro 15.0 or lower, and attempt to update the Drive firmware with the firmware that came with your version of PiCPro, you will get the following error message:

Hex File Too Old For Hardware

You must update the Drive with special firmware that is located in the "PiCPro and PowerX Hardware Support" section on Kollmorgen's support website located at:

http://www.glcontrols.com/Support/Downloads/dnld_errors_fixes.htm

- If you are using an Analog Drive, refer to the section labeled "Analog Drive PowerX Support".
- If you are using a Digital Drive, refer to the sections labeled "Digital Drive PowerX Support". Note that there are two sets of instructions, depending on the version of PiCPro being used.

1.2.2 PiCPro Version 15.1, 15.1 SP1, & 15.1 SP2

If you are using PiCPro 15.1, 15.1 SP1, or 15.1 SP2, upgrade your Drive Firmware to PiCPro 15.1 SP3

1.2.3 PiCPro Version 15.1 SP3 or Higher

If you are using PiCPro 15.1 SP3 or higher, update the Drive with the firmware that came with your version of PiCPro.

1.3 Electrical Considerations

The right side of both the single and Three Phase Drives, containing the "D1" and "P" LED indicators, as well as the PiCPro, Digital Link, F1/F2 Feedback, and Drive I/O Connectors, are identical. Refer to Figure 1-1 on page 4

The left side of the Single Phase and the Three Phase Drive, as shown in Figure 1-1 on page 4, differ as follows:

- Single Phase drive connectors
  - 5-pin DC Power and Brake connector
  - 9-pin AC Power, Motor, and DC Bus connector
- Three Phase drive connectors
  - 6-pin DC Power, Brake, and Safe-off connector
  - 9-pin AC Power and Motor connector
  - 4-pin DC Bus and Regen Resistor connector (located on the bottom of the drive)

1.3.1 DC Power Connector Considerations

The Three Phase Drive has an extra terminal labeled "EN" on the DC Power Connector located on the front of the Drive. This terminal must be powered by a nominal 24VDC in order for the drive to operate. The Three Phase Drive comes with a jumper installed between "EN" and the "+24V" DC Power input. Leave this jumper installed, and connect the remaining five terminals (labeled +24V, COM, Br+, Br- ,Chassis Ground) from the Single Phase Drive being replaced to the indentically-marked five terminals on the Three Phase drive.

1.3.2 AC Power Connector Considerations

The Three Phase Drive has two terminals, labeled "L3" and "NC", on the AC Power Connector located on the front of the Drive. Nothing will be connected to these terminals. The Single Phase Drive has two terminals labeled "B+" and "B-" on the AC Power Connector located on the front of the Drive. The wires going to these terminals will be connected to the Three Phase Drive's BUS/REGEN terminal as described Section 1.3.3 below.

Connect the remaining seven terminals (labeled L1, L2, U, V, W, and two Chassis Grounds) from the Single Phase Drive being replaced to the indentically-marked seven terminals on the Three Phase Drive.

1.3.3 Bus/Regen Connector Considerations

The Three Phase Drive contains a 4-pin Bus/Regen connector located on the bottom of the drive. Nothing will be connected to the terminals labeled "R+" and "R-". If there are wires on the Single Phase Drive's AC Power Connector B+ or B- terminals, move these wires to the identically-marked Three Phase Drive's Bus/Regen connector's B+ and B- terminals.

Figure 1-1: Front Panel, 230V Drives

