

**INSTALLATION INSTRUCTIONS FOR VARIABLE FREQUENCY DRIVE (VFD)
 REPLACEMENT KITS FOR ROOFTOP UNITS**

 **WARNING**

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a qualified installer, service agency or the gas supplier

 **CAUTION**

Danger of sharp metallic edges. Can cause injury. Take care when servicing unit to avoid accidental contact with sharp edges.

Shipping and Packing List

Package 1 of 1 contains:

- 1- Pre-programmed VFD (A96)

Application

Kits are used to replace the variable frequency drive (VFD) on the following units:

- SCA/SCB
- SGA/SGB
- LCA/LCB/LCC/LCE
- LGA/LGB/LGC/LGE

See table 1 for usage.

 **WARNING**

ELECTRICAL SHOCK HAZARD.

Failure to follow instructions exactly could result in serious injury or death.

VFD HOLDS A POTENTIALLY LETHAL CHARGE UP TO 10 MINUTES AFTER POWER HAS BEEN DISCONNECTED. Do not open VFD cover until 10 minutes AFTER power source has been disconnected and power lamp has turned off.

Read manual provided by VFD manufacturer. Carefully review and follow all safety warnings in that manual also.

TABLE 1

Model*	HP Rating	Voltage	Kit Number	Catalog Number
SC / SG 120	3HP	230V	LB-115321N	49W67
		460V	LB-115321P	49W68
		575V	LB-115321C	32W76
SC / SG 240 & LC / LG 248, 300H, 360	5HP	230V	LB-115321R	49W69
		460V	LB-115321S	49W70
		575V	LB-115321F	33W02
SC / SG 240, 288 & LC / LG 248, 300H, 360	7.5HP	230V	LB-115321T	49W71
		460V	LB-115321W	49W72
		575V	LB-115321J	42W51
SC / SG 240, 288 & LC / LG 248, 300H, 360	10HP	230V	LB-115321X	49W73
		460V	LB-115321Y	49W74
		575V	LB-115321M	42W54

*Refer to Application section for appropriate model number series.



Installation

- 1- Disconnect all power to unit and **WAIT AT LEAST 10 MINUTES** before opening the VFD cover.

⚠ WARNING

ELECTRICAL SHOCK HAZARD.

STOP! Before you continue, make sure that power to the VFD has been off for at least 10 minutes. The capacitor in the VFD holds high voltage power for up to 10 minutes after power has been disconnected.

- 2- Open the lower cover on the VFD to access wire connections. Disconnect the wires from the terminals, making special note of the wire color and stamping that was connected to each terminal.
- 3- Remove the top two screws which secure the existing VFD to the mounting bracket. Loosen the lower two securing screws and remove the existing VFD from the controls compartment.

NOTE - It is not necessary to completely remove the two lower screws to remove the VFD.

NOTE - If the existing VFD is model E520 or E540 it may be necessary to drill new mounting holes in the VFD mounting plate. The model number is located on the VFD nameplate.

- 4- Slide keyholes on replacement VFD over lower securing screws. Reinsert and tighten two upper screws, then tighten lower screws. When replacing a Toshiba inverter, see the Toshiba VFD Replacement section.

⚠ WARNING

Power wiring must be connected properly. Improperly connected power wiring may result in damage to the VFD.

- 5- Carefully connect existing wires to the replacement VFD as illustrated in figure 1. On units without harnesses, take care to properly connect the power wiring going into and out of the VFD. When replacing a Toshiba inverter, see the Toshiba VFD Replacement section.
- 6- Close access panel and restore power to the unit.

WIRING CONNECTIONS

WARNING!

DO NOT OPEN VFD COVER UNTIL POWER TO VFD HAS BEEN OFF FOR AT LEAST 10 MINUTES. VFD CAPACITOR HOLDS DANGEROUS HIGH VOLTAGE CHARGE. FAILURE TO FOLLOW WARNINGS COULD RESULT IN SERIOUS INJURY OR DEATH.

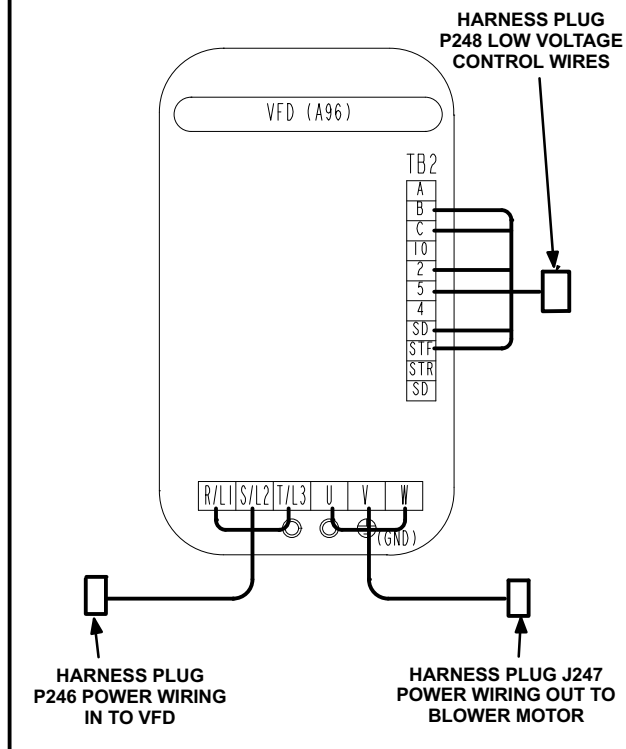


FIGURE 1

Verify Proper Operation

If the blower is not rotating in the proper direction:

- 1- Disconnect all power to the unit and open the compressor / controls compartment access panel.
- 2- Reverse any two power wires going from the VFD to the blower motor.
- 3- Check all field wiring to the VFD. No wires should be connected to TB2-STR.
- 4- Check to ensure that wiring connections are secure.
- 5- Close access panel and restore power to unit.

Verify proper operation of VFD:

Refer to MSAV unit start-up instructions in unit installation instructions.

Note - Operate unit in the heating mode or mode which operates at the highest blower speed. Measure amp draw to blower motor between the VFD and blower motor. Verify that the amperage does not exceed the FLA value listed on the motor nameplate.

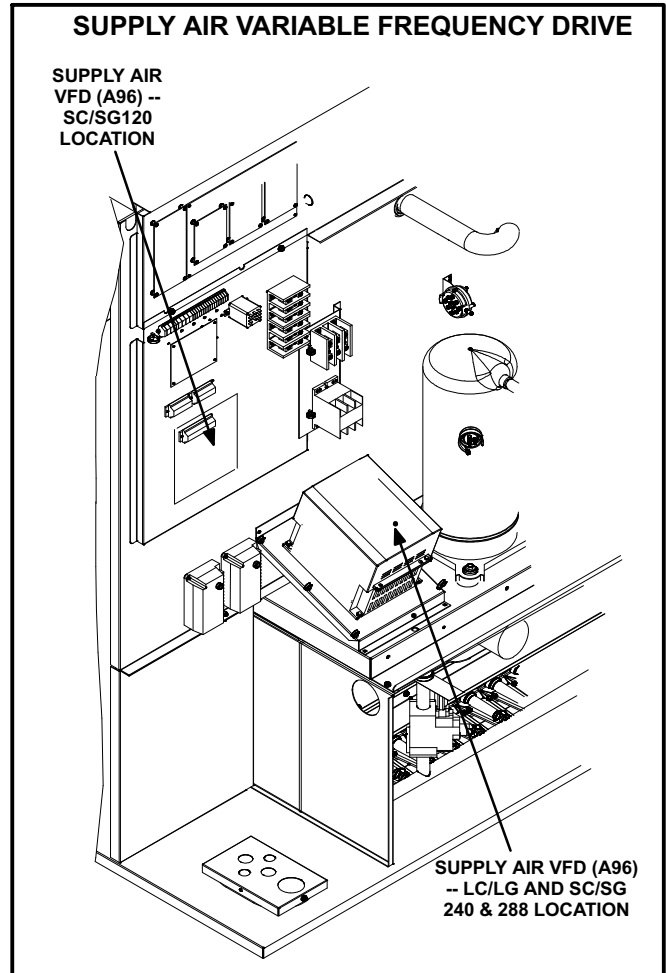


FIGURE 2

Toshiba VFD Replacement

LG / LC 248, 300H, 360 Units Only

A Mitsubishi VFD is provided in this kit. Use the following additional steps when a Toshiba VFD is being replaced

INSTALLATION

New holes must be drilled in the mounting plate when replacing a Toshiba VFD.

- 1- Use the replacement VFD as a template to mark the location of two upper holes and two lower slots.
- 2- Drill holes where marked and secure VFD to mounting plate with field-provided screws.

WIRING

The Toshiba VFD has different low voltage terminal designations compared to a Mitsubishi VFD.

- 1- Make low voltage wiring connections using table 2 as a cross reference. See figure 3 through 6.
- 2- Connect a field-provided wire between VFD terminal 5 and the unit chassis (any convenient point that is at ground potential).
- 3- Make power wiring connections as shown in figures 3 through 6.

TABLE 2

Toshiba Wire Stamp	Mitsubishi Terminal Designation
F	STF
V1/V1A	2
CC	SD
FLA	B or B1
FLC	C or C1
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MAIN TERMINAL CONNECTIONS
5 HP Y VOLT

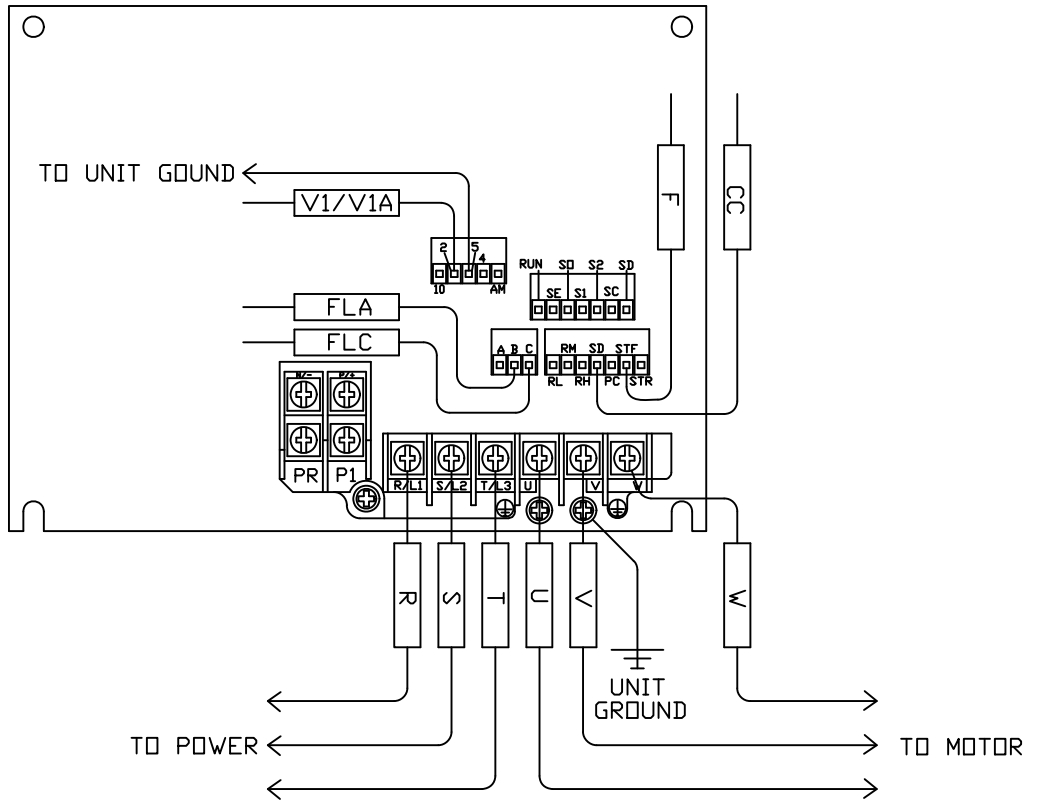


FIGURE 3

MAIN TERMINAL CONNECTIONS
 3 HP Y VOLT, 3 & 5 HP G VOLT

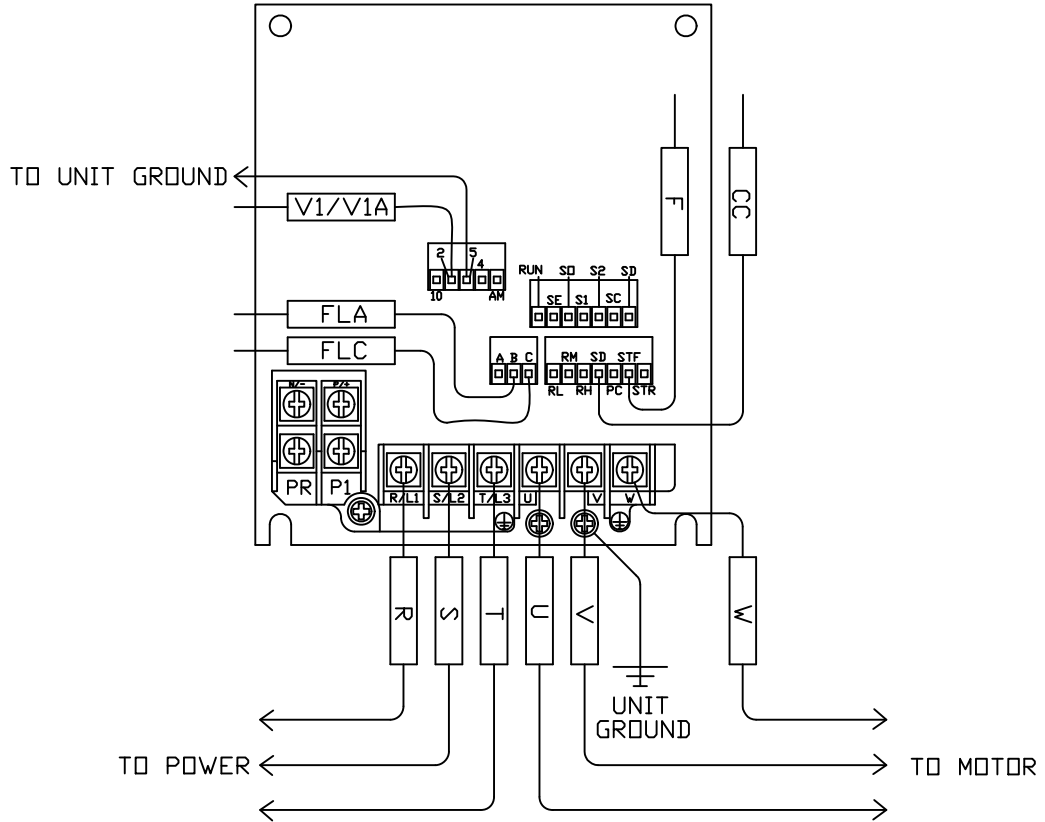


FIGURE 4

MAIN TERMINAL CONNECTIONS
7.5 & 10 HP Y & G VOLT

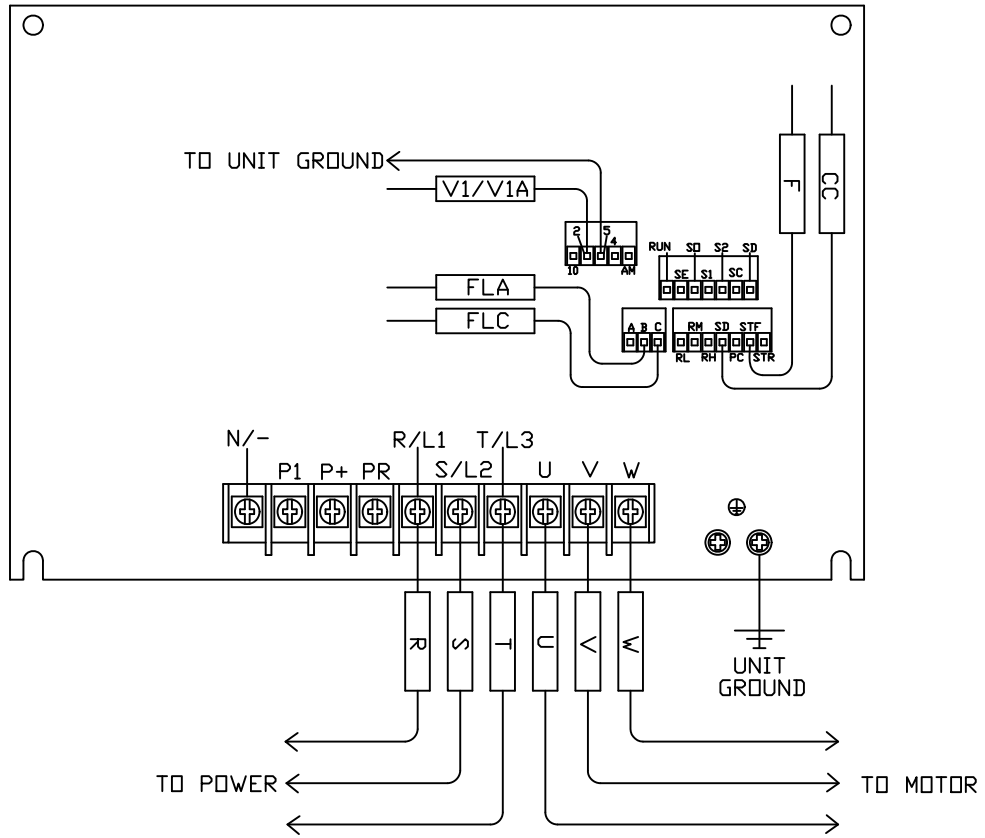


FIGURE 5

MAIN TERMINAL CONNECTIONS
3, 5, 7.5, & 10 HP J VOLT

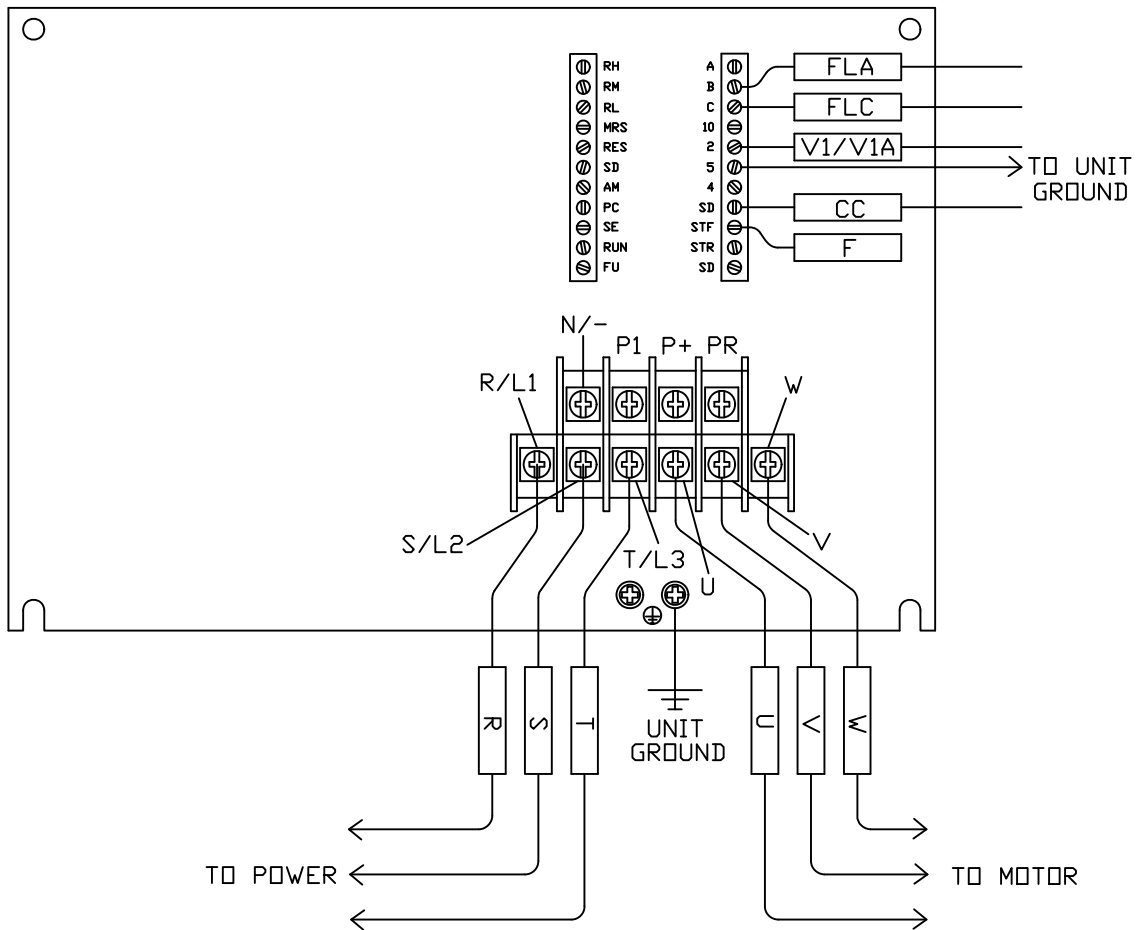


FIGURE 6