

MM23071A-0862

Connection Guide

This Guide assumes that the user has installed the MM23071A-0862 drive per user's manual 250-0091. This installation must be completed before connecting and operating the drive. Refer to User's Manual 250-0091, *MM20000 Series Drives*, for detailed installation, operation and troubleshooting information.

Connections



Warning

Do not connect this equipment with power applied. Failure to heed this directive may result in fire or serious injury.

Minarik strongly recommends the installation of a master power switch in the voltage input line, as shown in Figure 1 (page 3). The switch contacts should be rated at a minimum of 200% of motor nameplate current and 250 volts.

Power and line fusing connections

- Use 18-24 AWG wire for speed adjust potentiometer wiring. Use 14–16 AWG wire for AC line (L1 and L2) and motor (A1 and A2) wiring. Use 18 AWG wire for field (F1 and F2) wire.

Line fusing

Each MM23071A-0862 is shipped from the factory with two 10A fast blow fuses preinstalled. External line fuses are not required. Replacement fuses, p/n 050-0013, are available from Minarik.

Power connections

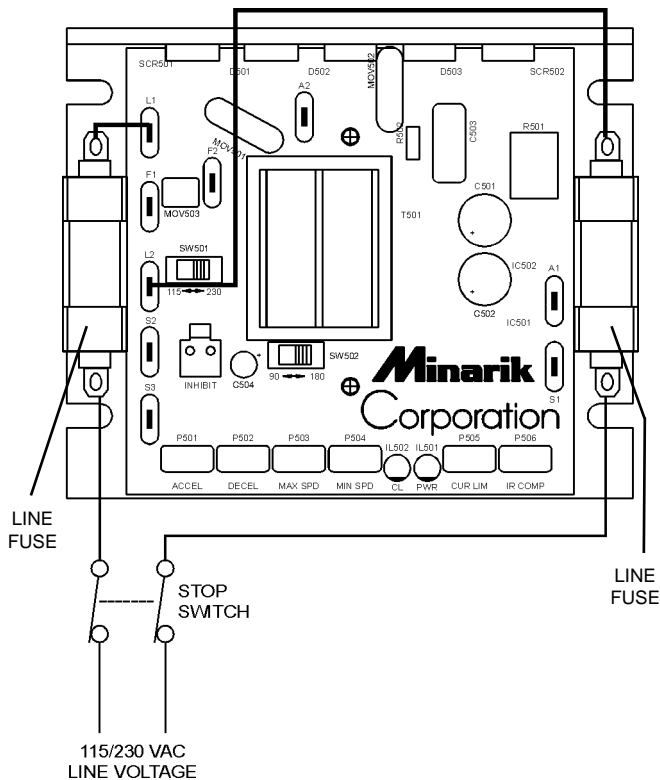


Warning

Dynamic braking, inhibit operation and decelerating to a stop (shorting S1 to S2) may not stop a drive that is malfunctioning. Removing line voltage (both L1 and L2) is the only recommended method for emergency stopping.

For this reason, Minarik strongly recommends the installation of a master power switch in the voltage input line, as shown in Figure 1. The switch contacts should be rated at a minimum of 200% of motor nameplate current and 250 volts.

Connect AC power leads to the drive's line fuses, or to a stop switch as shown in Figure 1 (recommended).

**Figure 1. Power and Line Fusing Connections**

Motor, speed adjust potentiometer and field output connections

Connect the the speed adjust potentiometer, field output and a DC motor to the drive's printed circuit board (PCB) as shown in Figure 2 (page 6).

Refer to User's Manual 250-0091 for alternative speed adjust potentiometer and signal input (e.g., voltage follower) connections.

Speed adjust potentiometer connections

Connect the provided speed adjust potentiometer to S1, S2 and S3 as shown in Figure 2 (page 6).

Twist the speed adjust potentiometer leads to avoid picking up unwanted electrical noise. If speed adjust potentiometer wires are longer than 18 in. (0.5 m), use shielded cable. Keep speed adjust potentiometer leads separate from power leads (L1, L2, F1, F2, A1, A2).

Motor connections

Minarik drives supply motor voltage from A1 and A2 terminals. It is assumed throughout this manual that, when A1 is positive with respect to A2, the motor will rotate clockwise (CW) while looking at the output shaft protruding from the front of the motor. If this is opposite of the desired rotation, simply reverse the wiring of A1 and A2 with each other.

Connect a DC motor to PCB terminals A1 and A2 as shown in Figure 2 (page 6). Ensure that the motor voltage rating is consistent with the drive's output voltage.

Field output connections



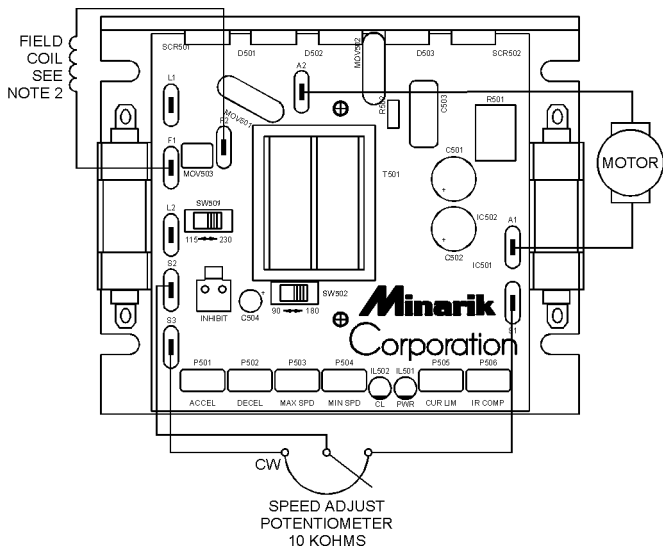
Warning

The field output is for shunt wound motors only. Do not make any connections to F1 and F2 when using a permanent magnet motor.

See Table 1 for field output connections. Use 18 AWG wire to connect field output terminals F1 and F2 to a shunt wound motor.

Table 1. Field Output Connections

Line Voltage (VAC)	Approximate Field Voltage (VDC)	Connect Motor Field To
115	50	F1 and L1
115	100	F1 and F2
230	100	F1 and L1
230	200	F1 and F2

**NOTES:**

1. POWER CONNECTIONS OMITTED FOR CLARITY. REFER TO FIGURE 1 ON PAGE 3 FOR POWER CONNECTIONS.
2. REFER TO TABLE 1 ON PAGE 5 FOR ALTERNATE FIELD CONNECTIONS. DO NOT CONNECT FIELD OUTPUT IF USING PERMANENT MAGNET MOTOR.

Figure 2. Motor, Field and Speed Adjust Potentiometer Connections

Operation

Refer to User's Manual 250-0091 for detailed operating information.

Before applying power

- Verify that no conductive material is present on the printed circuit board.
- Ensure that voltage select switch SW501 and armature voltage select switch SW502 are set to the proper positions.

Startup and shutdown

1. Turn the speed adjust potentiometer full counterclockwise (CCW).
2. Apply AC line voltage.
3. Slowly advance the speed adjust potentiometer clockwise (CW). The motor slowly accelerates as the potentiometer is turned CW. Continue until the desired speed is reached.
4. Set the speed adjust potentiometer to zero. The motor will decelerate to a stop.

Warranty information

This product is covered by Minarik's unconditional warranty. Refer to User's Manual 250-0091 or contact your Minarik representative for more information.



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