



- Warning:** Disconnect all power sources before installing or servicing.
- Warning:** Do not install power factor correction capacitors between the product and the motor.
- Warning:** This product is designed for Class A environments. Use of this product in domestic environments may cause radio interference.

Description

The intent of this manual is to provide an overview of the installation, set-up, operation and maintenance of a Power Efficiency Motor Efficiency Controller. This manual does not replace the Motor Efficiency Controller User Manual, document MEC-AC-UM001-E. Please refer to document MEC-AC-UM001-E for more information.

The Power Efficiency Motor Efficiency Controller is a solid state motor controller that, when used with an AC induction motor that is lightly loaded for much of its duty cycle, significantly reduces its energy use.

When AC motors are lightly loaded the magnetizing field is kept far higher than is needed by the load, resulting in excessive magnetizing and resistive losses. The Motor Efficiency Controller is a continuously rated device. It constantly monitors the motor's power factor and adjusts the voltage supplied to it to keep power consumption at a minimum, while maintaining the speed and torque at the level required by the load at that time. The resulting decrease in volts, amps, and watts reduces the overall cost of operating the system significantly.

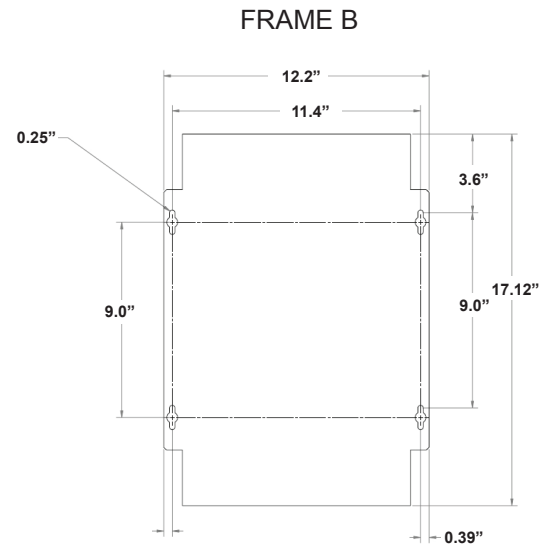
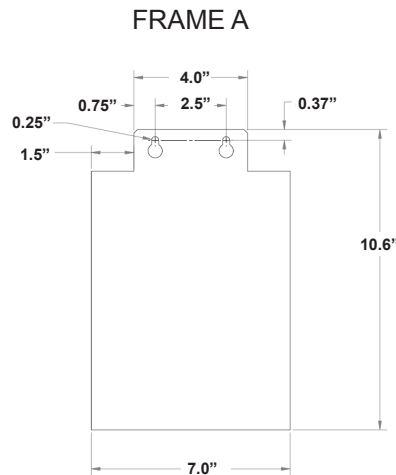
In addition, the Motor Efficiency Controller provides power quality and motor status alerts. The Motor Efficiency Controller is powered directly from the line voltage, so it requires no external transformers or power connections.

CERTIFICATIONS:

CSA C22.2 / B44.1
IEC / EN 60947-4-2

Frame	Catalog Number	FLA Range	Main Supply	Control Supply	Fuse
A	MEC-AC022	1 - 22 A	200 - 600 VAC	20 - 50 VDC 120 - 250 VAC	150A Class K-5
	MEC-AC034	5 - 34 A			
B	MEC-AC052	20 - 52 A	200 - 600 VAC	20 - 50 VDC 120 - 250 VAC	300A Class K-5
	MEC-AC080	20 - 80 A			

Mounting Templates



Dimensions

Frame	Width	Height	Depth	Weight
A	7.0" / 178mm	10.6" / 269mm	5.6" / 142mm	8 lbs / 3.6kg
B	12.2" / 310mm	17.1" / 434mm	7.25" / 184mm	25 lbs / 11.3kg

Wire Size

Terminal	Frame	Size	Torque
L1, L2, L3, T1, T2, T3	A	14 to 4 (awg) / 2.5mm ² to 25mm ²	20 lb-in / 2.26 N-m
	B	14 to 1/0 (awg) / 2.5mm ² to 50mm ²	100 lb-in / 11.3 N-m
IN1, IN2, OUT1, OUT2	A and B	22 to 12 (awg) / 0.34mm ² to 4mm ²	8.0 lb-in / 0.90 N-m

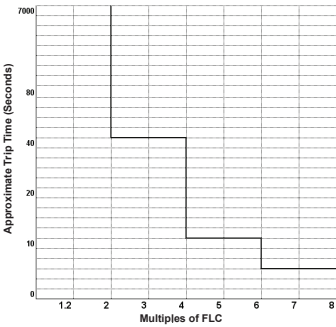
Features

Motor Control

- Timed soft start

Motor Protection

- IEC / EN 60947-4-2



- Over voltage / under voltage detection
- Phase loss detection

Environmental

Operating Temperature: 0 to 40 C
Altitude: 2000m (6560 feet)
Humidity: 5 to 95% non-condensing
Pollution Degree: 2

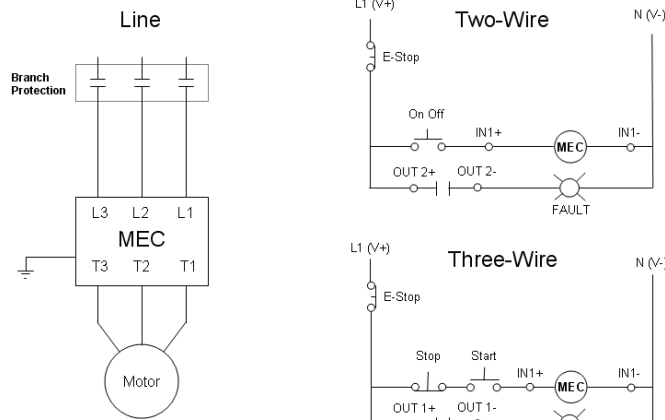
I/O

- Two discrete inputs
- Two normally open outputs

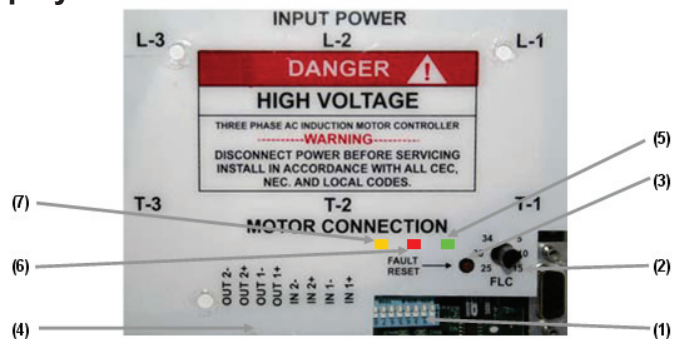
Start-up

1. Confirm that all power sources have been disconnected.
2. Connect 3-phase input power to L1, L2, L3.
3. Connect motor lead to T1, T2, T3.
4. Connect ground wire to unit.
5. Connect appropriate control wiring, (see wiring diagram for 2 or 3 wire start).
6. Set dip switches to give desired operation. (See Settings and Display)
7. Set overload pot to motor FLA.
8. Apply power to the unit and confirm correct operation.

Wiring Diagrams



Settings and Display



- (1) DIP Switches**
 SW 1 & 2: Soft Start Time - (0,0) = 2sec; (1,0) = 5sec; (0,1)= 10sec; (1,1) = 15sec
 SW 3 & 4: Reserved
 SW 5: Start Mode - (0) = Start from Input; (1) = Auto Start
 SW 6: Output 1 - (0) = Run; (1) = Soft Start Done
 SW 7: Output 2 - (0) = Close on Fault; (1) = Open on Fault
 SW 8: Soft Start - (0) = Enabled; (1) = Disabled

- (2) Overload Pot**
 Clockwise from min to max FLA range

- (3) Fault Reset**
 Press for 1 sec to result a fault

- (4) I/O Connections**
 Input 1: Start (20-50 VDC or 24-250 VAC)
 Input 2: Disable Energy Savings (20-50 VDC or 24-250 VAC)
 Output 1: Run / Soft Start Done (20-50 VDC or 120-250 VAC)
 Output 2: Fault (20-50 VDC or 120-250 VAC)

- (5) Power LED**
 Off – No Power to the unit
 Green – Power to the unit

- (6) Fault LED**
Blink Pattern - 1 Blink: Overload; 2 Blinks: Phase Loss; 3 Blinks: Under Current;
 4 Blinks: Under Voltage; 5 Blinks: Over Voltage; 7 Blinks: SCR Failure

- (7) Energy Savings LED**
 Off - Full Power
 Orange - Energy Savings Mode