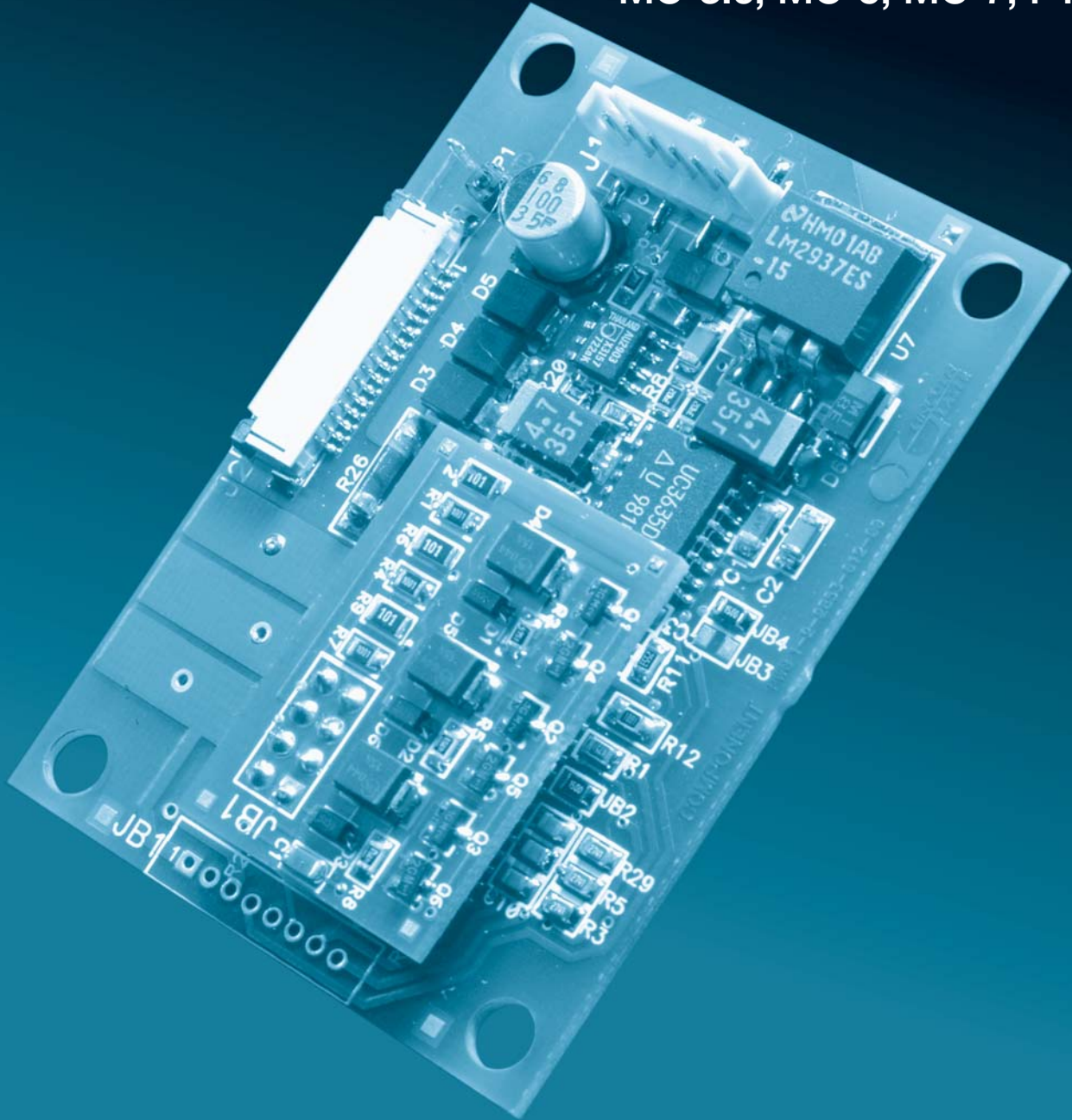


DATA SHEET

MOTOR CONTROLLERS

MC-3.6, MC-5, MC-7, P1



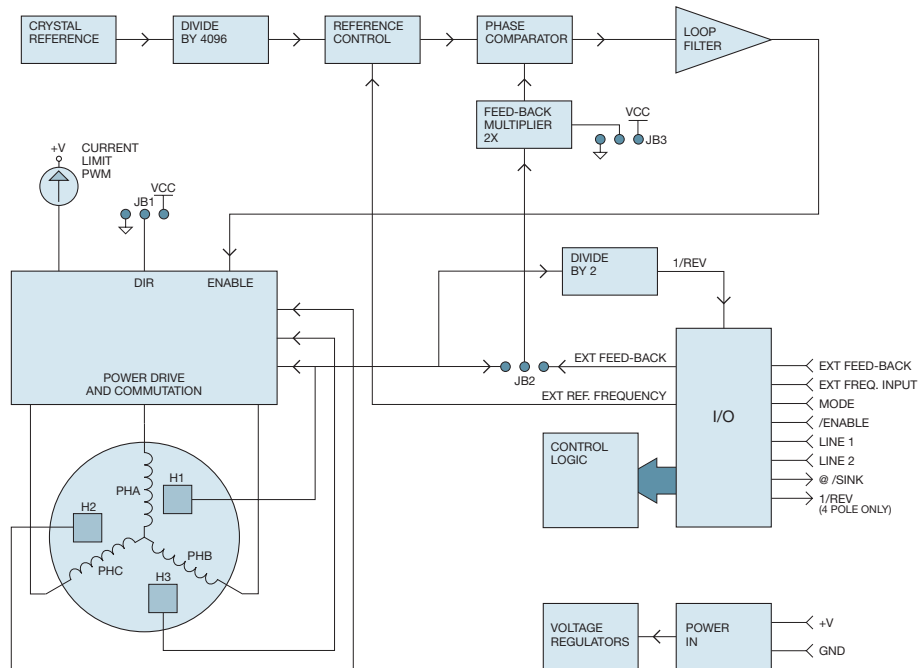
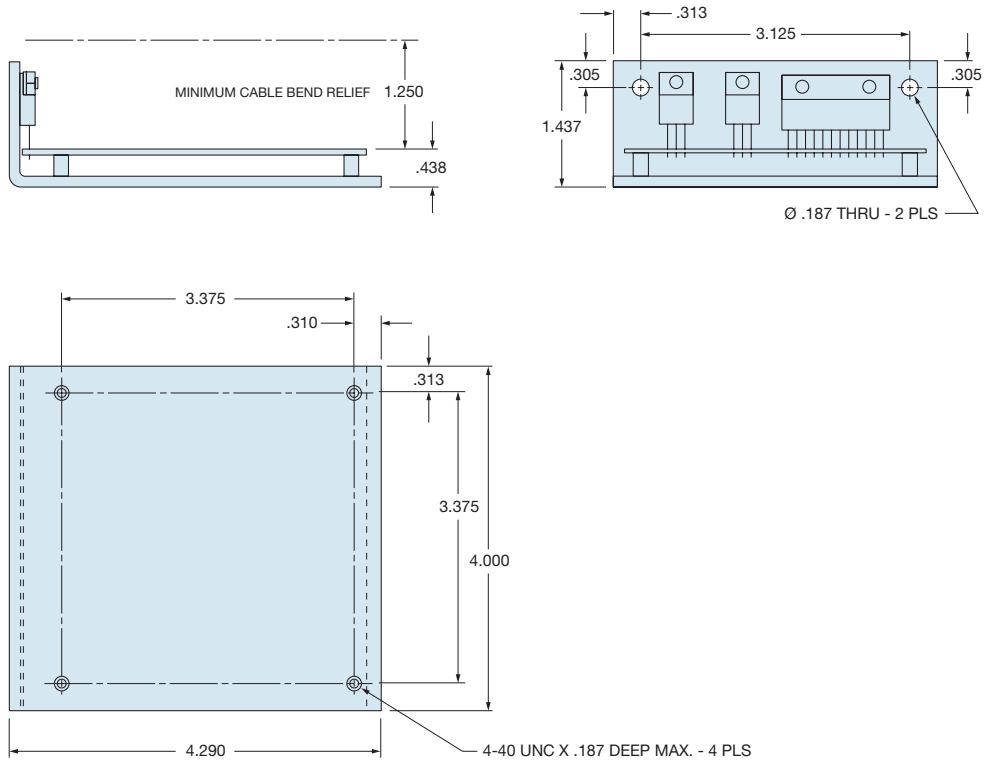
Lincoln Laser offers a complete line of motor controllers.

Lincoln Laser has designed a series of motor controllers for its line of brushless DC motor products. These controls are available in **multispeed and single speed board level designs** providing easy system integration for the OEM user. **Custom controller designs**

can be configured to meet special application requirements. All Lincoln Laser controllers are designed to drive brushless DC motors in a **phase lock loop** configuration. All have a self-contained logic system requiring only one external power supply for normal operation.

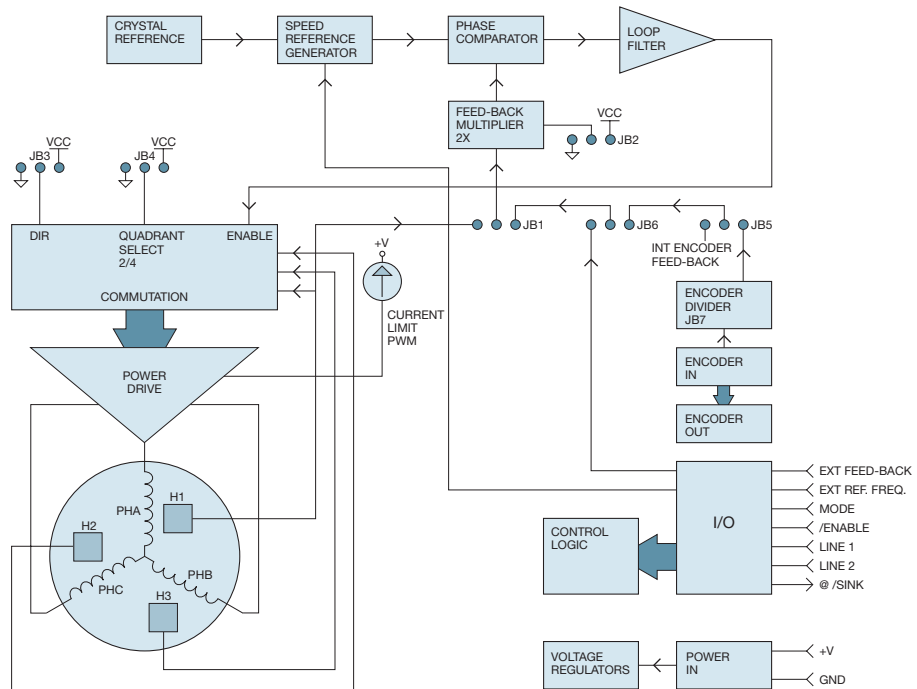
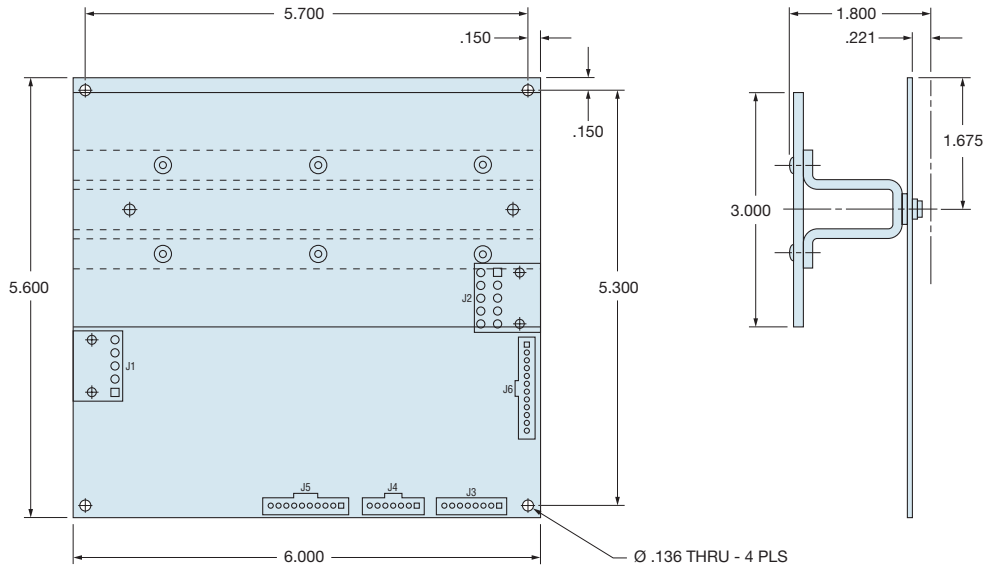
MC-3.6 MOTOR CONTROLLER

MC-3.6 motor controllers are designed exclusively for Lincoln Laser standard brushless DC motors.



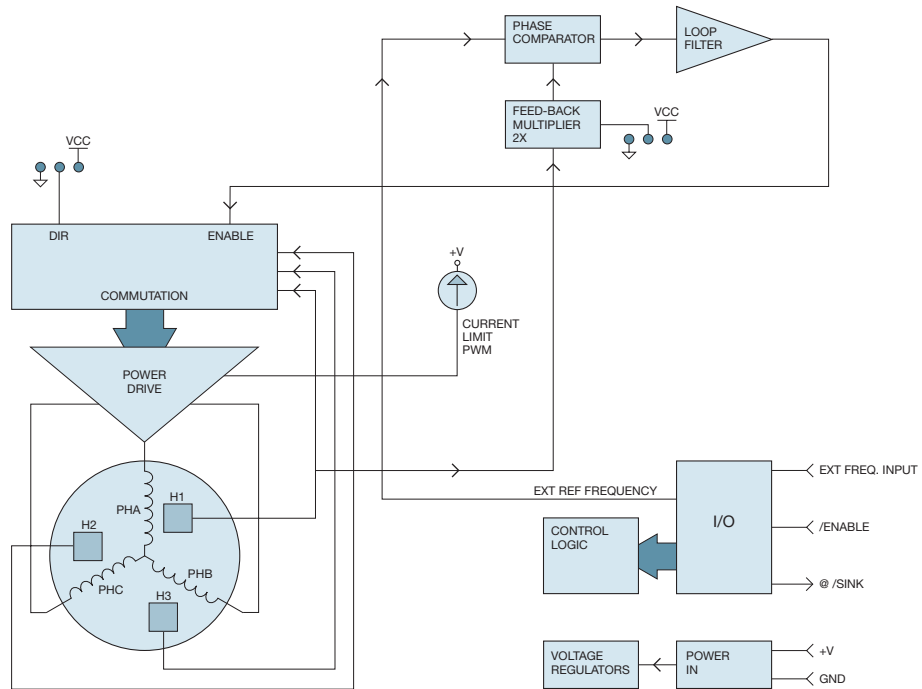
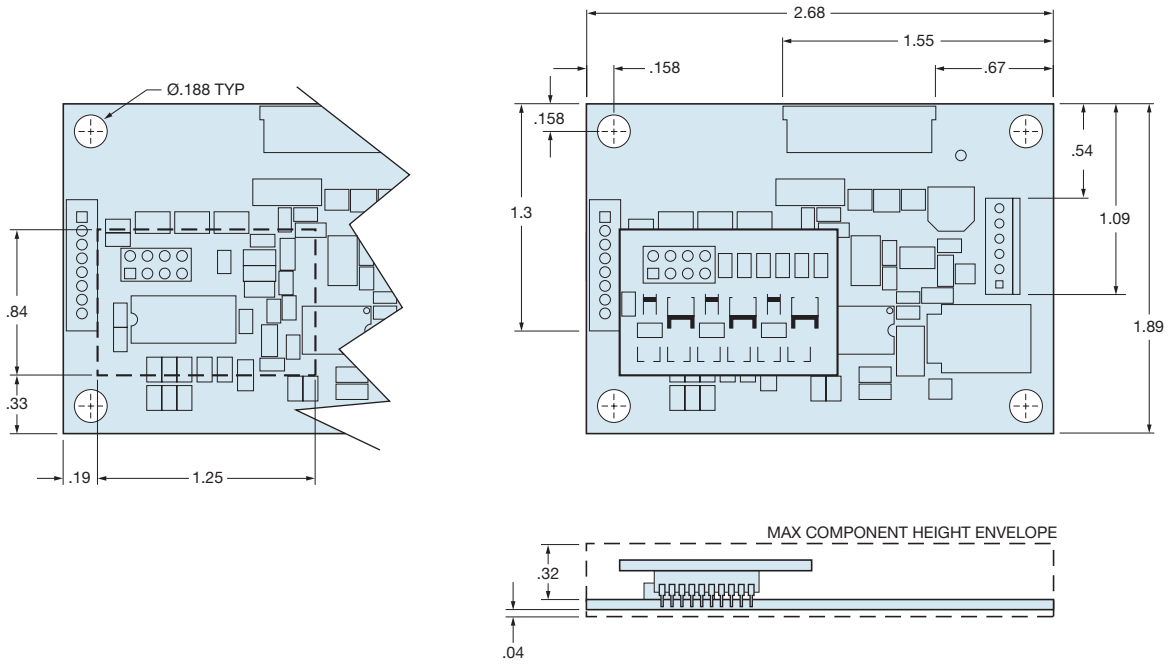
MC-7 MOTOR CONTROLLER

MC-7 motor controllers are specifically designed for controlling Lincoln Laser's line of brushless DC motors in low speed applications.



P-1 MOTOR CONTROLLER W/ DAUGHTER BOARD

P-1 motor controllers are designed exclusively for Lincoln Laser standard line of brushless DC motors.



MOTOR CONTROLLERS – SPECIFICATIONS

Control Inputs	MC-3.6	MC-5	MC-7	P-1
Scanner Enable	Yes	Yes	Yes	Yes
External Frequency Reference	Yes	Yes	Yes	Yes
Speed Select	Yes	Yes	Yes	No
Ext./Int. Reference Select	Yes	Yes	Yes	No
Supply Voltage	15-28v	20-48v	15-28v	15-24v
Supply Current	< 3amps	< 7amps	< 5amps	< 3amps
Hall Type	Digital	Digital	Digital	Digital
External Feedback	Yes	Yes	Yes	No

Control Outputs	MC-3.6	MC-5	MC-7	P-1
Motor @ sync	Yes	Yes	Yes	Yes
Motor @ sync LED	Yes	Yes	Yes	No
Single pulse per rev.	Yes (4 Pole motor only)	No	No	No

Performance	MC-3.6	MC-5	MC-7	P-1
Speed Range	60-500 RPS	100-920 RPS	5-50 RPS	100-500 RPS
Speed Stability (jitter)	< 0.01% @ > 200 RPS	< 0.02% @ > 100 RPS	< 0.05% @ > 5 RPS	< 0.02% @ > 200 RPS
MTBF	12,000 hrs @ 55°C	12,000 hrs @ 55°C	12,000 hrs @ 55°C	12,000 hrs @ 55°C
Max. Motor Current @ sync	< 1.5 amps	< 4.0 amps	< 3.0 amps	< 1.5 amps
Encoder Compatible	No	No	Yes	No

Power Supply Characteristics	MC-3.6	MC-5	MC-7	P-1
Type	Current Drive	Voltage Drive	Current Drive	Voltage Drive
Acceptable Power Supply	Unregulated	Unregulated	Unregulated	Unregulated
Best Power Supply	Unregulated	Regulated	Unregulated	Regulated
Notes*	1, 2, 3	1, 4, 6	1, 3, 5	1, 2, 6

***Notes:**

1. Do not use overvoltage protection or severe controller damage can occur.
2. Power supply range, 24 volts @ > 3 amps accelerate, @ > 1.8 amps running. (Load dependent)
3. Power supply ripple and noise < 5%.
4. Power supply range, 24 to 48 volts @ > 6 amps accelerate, > 4 amps running. (Load dependent)
5. Power supply range, 24 volts @ > 6 amps accelerate, > 4 amps running. (Load dependent)
6. Power supply ripple and noise, unregulated < 5%, regulated < 1% for best speed stability.