



## Design Features and Performance Benefits

The MBL and MBLX Series Brushless Servo Amplifiers are MOSFET pulse-width-modulated (PWM) switching amplifiers. The amplifiers provide four quadrant current control. The MBLX features complete isolation of the user interface from the power stage, allowing transformer-less operation with 120 VAC. Choose the lower cost MBL drive when using isolated DC power supplies with bus voltages of 20 to 180 VDC.

The MBL and MBLX series of servo amplifiers are protected against over current, over temperature, and shorted outputs. Easy to read LED indicators show fault conditions. The MBL and

MBLX Series Servo Amplifiers use convenient pluggable screw connectors for power supply input, motor output and auxiliary inputs, and a DB9 or pluggable screw connector on the command input.

Loop gain and balance are adjusted with potentiometers. Peak and continuous currents are selected by pluggable resistors.

Both the MBL and MBLX Series Servo Amplifiers are available in board level and housed versions. The MBLX is also available with an integral power supply, in-rush limiter, and shunt regulator.

## BRUSHLESS SERVO AMPLIFIERS

## MBL - MBLX SERIES

**MBL-MBLX Series  
Brushless Servo  
Amplifiers offer  
cost-effective, high  
performance motion  
control in a compact  
package**

- 20 to 180 VDC Supply Voltage
- 24 A Peak/12 A Continuous
- Small Size/ Low Cost
- Fully Isolated Design (MBLX model)
- Four Quadrant, Regenerative Operation
- 20 kHz Switching Frequency
- +5 VDC Supply for Halls and Encoder
- Convenient 120 VAC Single Supply Operation
- Fully Protected (Voltage, Current, Temperature)
- Easy to Read LED Fault Indicators
- OEM and End-User Packaging

# BRUSHLESS SERVO AMPLIFIERS MBL - MBLX SERIES

# Motion Science™

## Specifications

Supply Voltage  
Supply Voltage (HP, AC Input Models)  
Continuous Current  
Peak Current  
Switching (PWM) Frequency  
Current Loop Bandwidth  
Max. Command Voltage  
Max. Motor Voltage  
  
Min. Motor Inductance  
Min. Electrical Time Constant (L/R)  
Weight (Board Level)

### MBL50

21-80 VDC  
  
12 Amps  
24 Amps  
20 kHz  
2.0 kHz  
+/- 10 Volts  
92 % of DC Supply  
Voltage  
0.5 mH  
0.25 ms  
1.5 lbs.

### MBL160

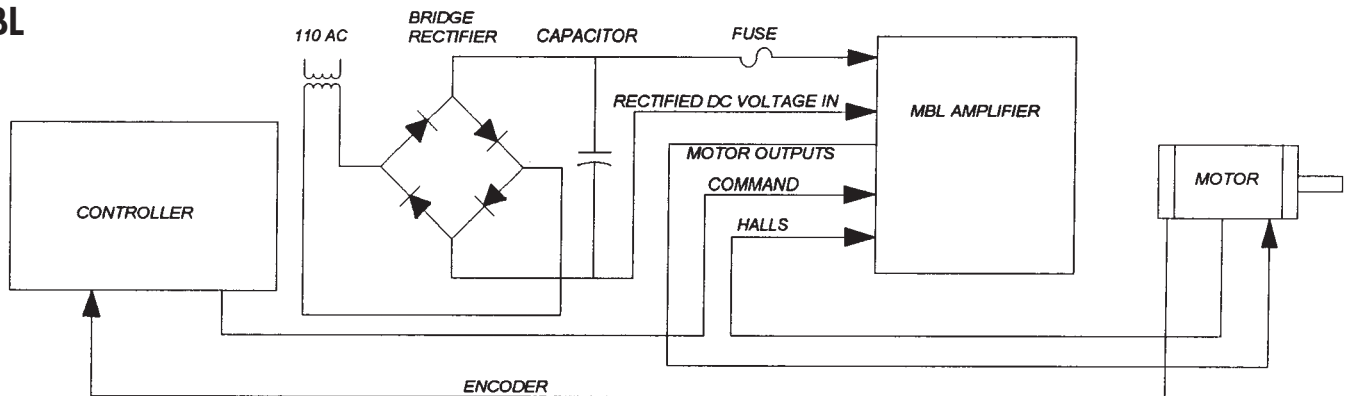
40-180 VDC  
  
12 Amps  
24 Amps  
20 kHz  
2.0 kHz  
+/- 10 Volts  
92 % of DC Supply  
Voltage  
1 mH  
0.25 ms  
1.5 lbs.

### MBLX

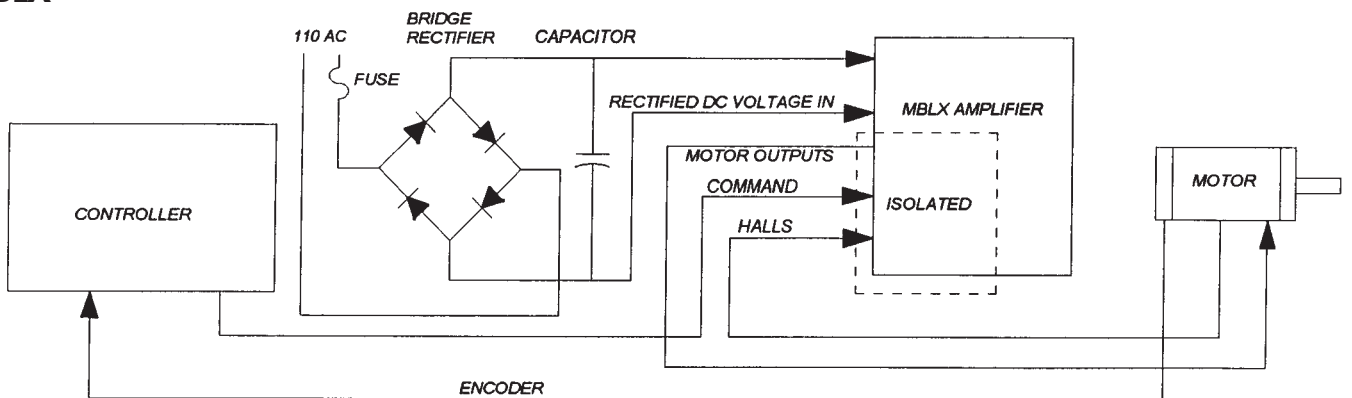
100-180 VDC  
70-130 VAC  
12 Amps  
24 Amps  
20 kHz\*  
2.0 kHz  
+/- 10 Volts  
92 % of DC Supply  
Voltage  
1 mH  
0.25 ms  
1.5 lbs.

\* For higher frequency operation call factory

## MBL



## MBLX



## SERVO CONTROLS & SYSTEMS

River Park Commons, Suite 560  
2403 Sidney Street  
Pittsburgh, PA 15203  
Tel: (800) 401-1133  
Fax: (412) 390-6102

**ETC** Cleveland  
Motion Controls  
An RPMC Company

#### Ordering Info

Amplifier Model No.	Output for Each Axis		
	Output Voltage Range	Contin. Current (Max.)	Peak Current
MBL5012**	21- 80 VDC	4 Amps (6)	12 Amps Max.
MBL5020**	21- 80 VDC	6.7 Amps (10)	20 Amps Max.
MBL5024**	21- 80 VDC	8 Amps (12)	24 Amps Max.
MBL16012**	40 - 180 VDC	4 Amps (6)	12 Amps Max.
MBL16020**	40 - 160 VDC	6.7 Amps (10)	20 Amps Max.
MBL16024**	40 - 180 VDC	8 Amps (12)	24 Amps Max.
MBLX16012**	100 - 180 VDC	4 Amps (6)	12 Amps Max.
MBLX16024**	100 - 180 VDC	8 Amps (12)	24 Amps Max.

**Note:** Continuous and peak currents are adjustable. For specific customer requirements please contact the factory.

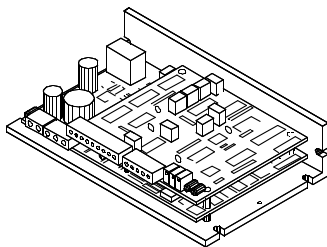
#### \*\*Specify

.....Leave blank for board level. (No sheet metal enclosure).  
**H**.....After model # for amplifier with sheet metal enclosure.  
**HP**.....(MBLX only) After model # for housed version with power supply & shunt regulator.  
**-01**.....Add to model #/suffix for command input terminal block option.

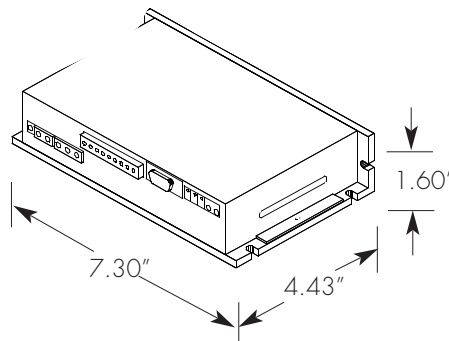
#### Order Example:

**MBL16024**.....(Amplifier only. No sheet metal enclosure or power supply).  
**MBL16024H-01**.....(Amplifier housed with a sheet metal enclosure and terminal block option).  
**MBLX16024**.....(Amplifier only. No sheet metal enclosure or power supply).  
**MBLX16024H-01**.....(Amplifier housed with a sheet metal enclosure and terminal block option).  
**MBLX16024H**.....(Amplifier housed with a sheet metal enclosure).  
**MBLX16024HP**.....(Amplifier housed with power supply and shunt regulation).  
**MBLX16024HP-01**.....(Amplifier housed with power supply shunt regulation, and terminal block option).

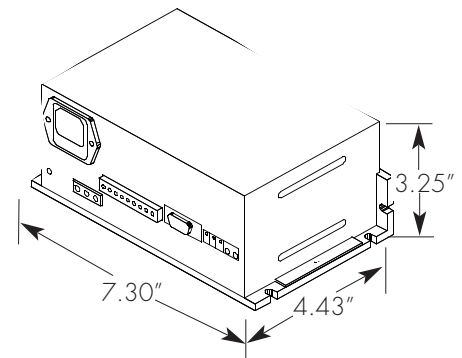
Board Level



H version



HP version

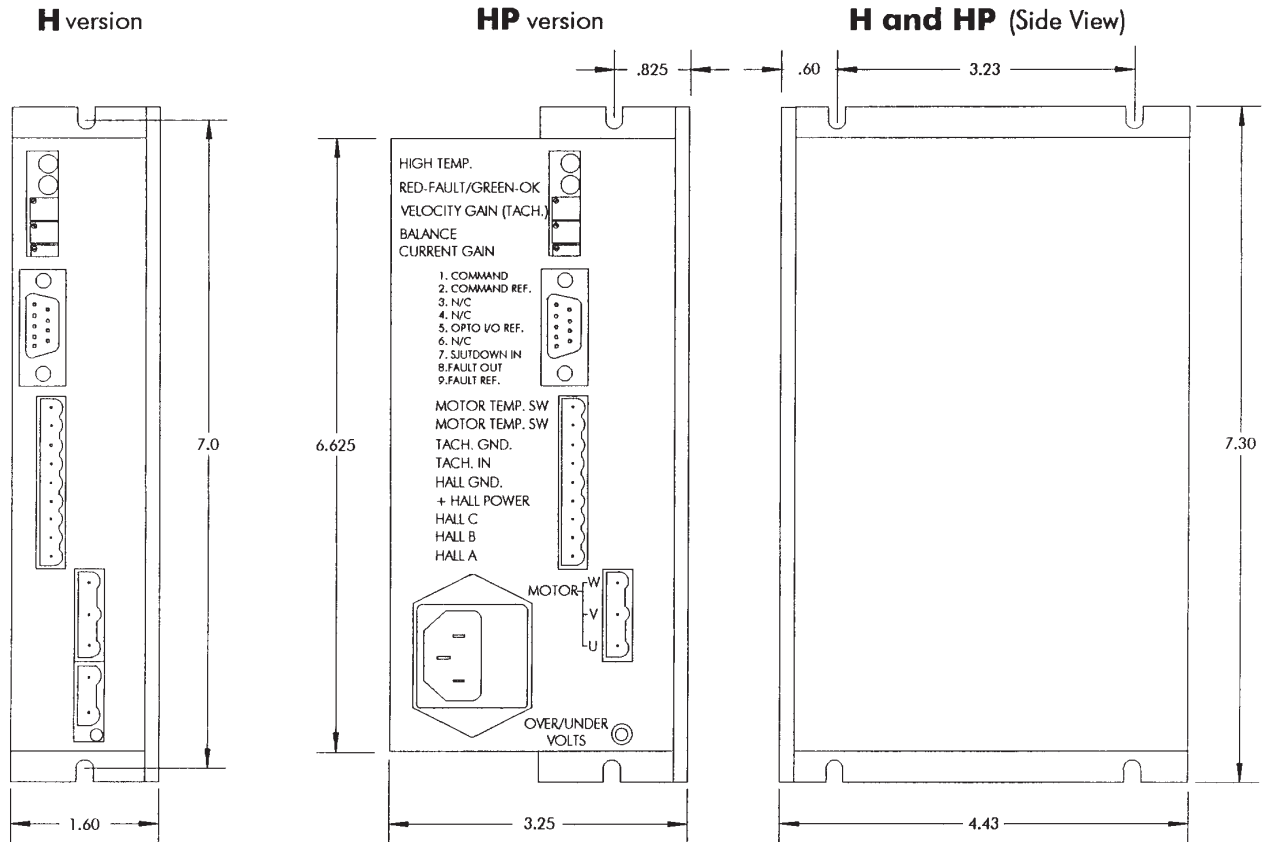


### SERVO CONTROLS & SYSTEMS

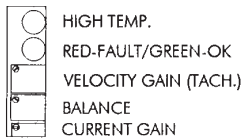
River Park Commons, Suite 560  
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# Motion Science™

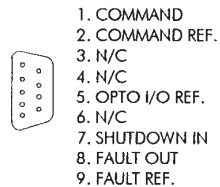


### Adjustments

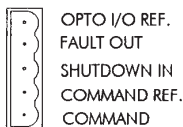


### Command Inputs

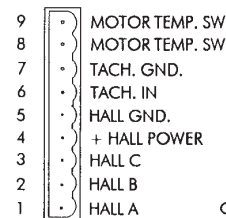
#### DB9 Connector (standard)



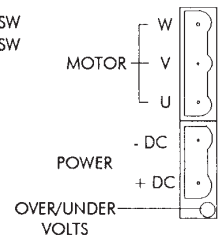
#### Terminal Block (option -01)



### Motor Feedback



### Motor Power



Each MBL and MBLX Amplifier is supplied with mating Phoenix™ screw terminal connectors

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