

## BLH/BLHX Series Brushless Servo System

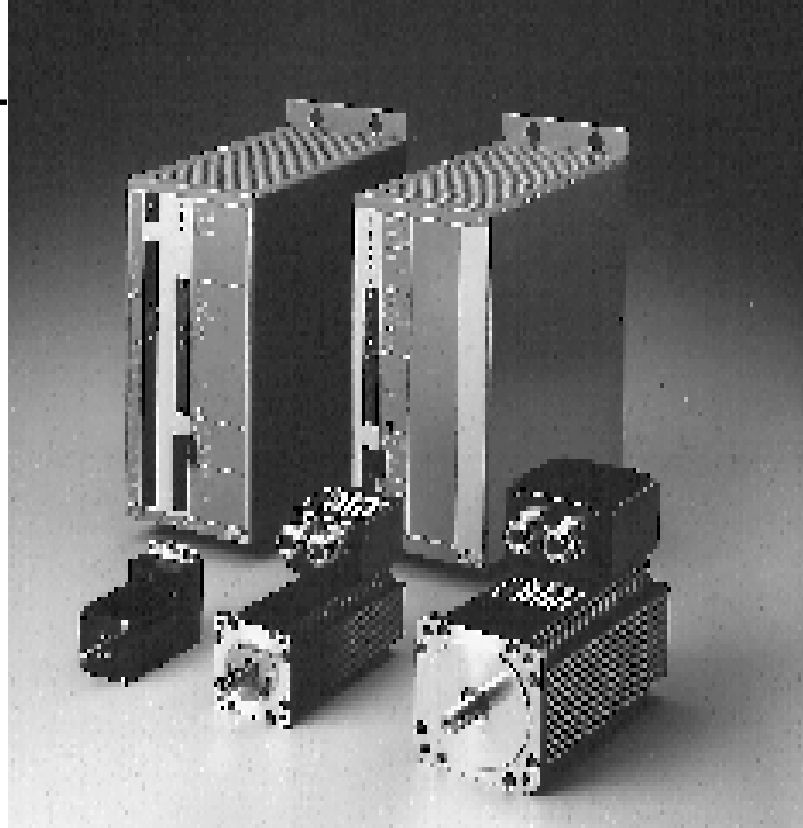
BLH/BLHX Series motor/drive packages offer a low cost solution in a wide range of brushless servo applications. The package includes a pre-cabled motor and drive with integral power supply for direct operation from an isolating transformer. The present range includes a choice of four motors, analog command servos and digital positioning servos. With peak torques between 56 oz-in (0.4 Nm) and 1840 oz-in (13 Nm) and speeds of up to 11,000 rpm these packages offer incredibly high performance in a small package size.

All motors are two-phase brushless designs using rare earth magnets. Commutation is derived from an absolute encoder while position feedback is derived from an incremental encoder. Both encoders are robust metal disk encoders mounted directly to the motor shaft. The commutation encoder provides 16 states per electrical cycle and superior torque ripple to trapezoidal DC brushless systems and does not incur the cost penalty of conventional sine wave drives. The incremental encoder has a resolution of 500 lines/rev or 1,000 lines/rev depending on motor size. A tachometer is not required because velocity feedback can be derived from the incremental encoder.

The drive circuit is based on a proven recirculating PWM design. Recirculating technology reduces chopping losses in the drive and motor hence increasing system efficiency. Surface mount components and power plate technology increase reliability through better thermal management and consistent manufacture. The built-in power supply operates from a single AC input voltage and employs a switching regulator to generate integral power supplies. Protection circuits guard against short circuit of the motor phases, overheating of the drive and supply faults. An integral braking resistor dissipates regenerated energy.



For complete specifications by return fax, please call us at this number and request Document 1020.



Isolating AC power is the generally accepted practice when responding to emergency stop conditions, this removes power from the motor and renders the system safe. An auxiliary 24VDC input is provided to maintain the internal logic supplies while the AC power has been removed. This provides the benefit of maintaining power to the motor encoder so that the controller knows where the motor is, making system recovery easier, and the additional benefit that communication can be maintained with the controller to determine status. The auxiliary 24VDC input is available if this capability is required, but is not necessary for general operation.

BLH Series drives accept an analog command signal for torque or velocity control applications or for use with a multi-axis servo controller. The BLHX Series drives combine a BLH drive with a positioning card in one package for single-axis positioning applications.

### BLH and BLHX Common Features

- Two versions  
BLH – Analog command servo  
BLHX – Digital positioning servo
- Supplied as complete, ready wired motor/drive packages
- Drive operates in torque or velocity amplifier modes
- Simplified drive set-up and adjustment
- LED diagnostics
- Drive outputs for motor are short-circuit protected
- Direct operation from isolating transformer
- Maintenance free brushless motors
- Torques up to 1,840 oz-in (13 Nm)
- Speeds up to 11,000 rpm
- Motor has built-in incremental encoder for position feedback

Please contact Compumotor's factory for more information on BLH and BLHX.