

## MBL3416E2 BRUSHLESS SERVO MOTOR

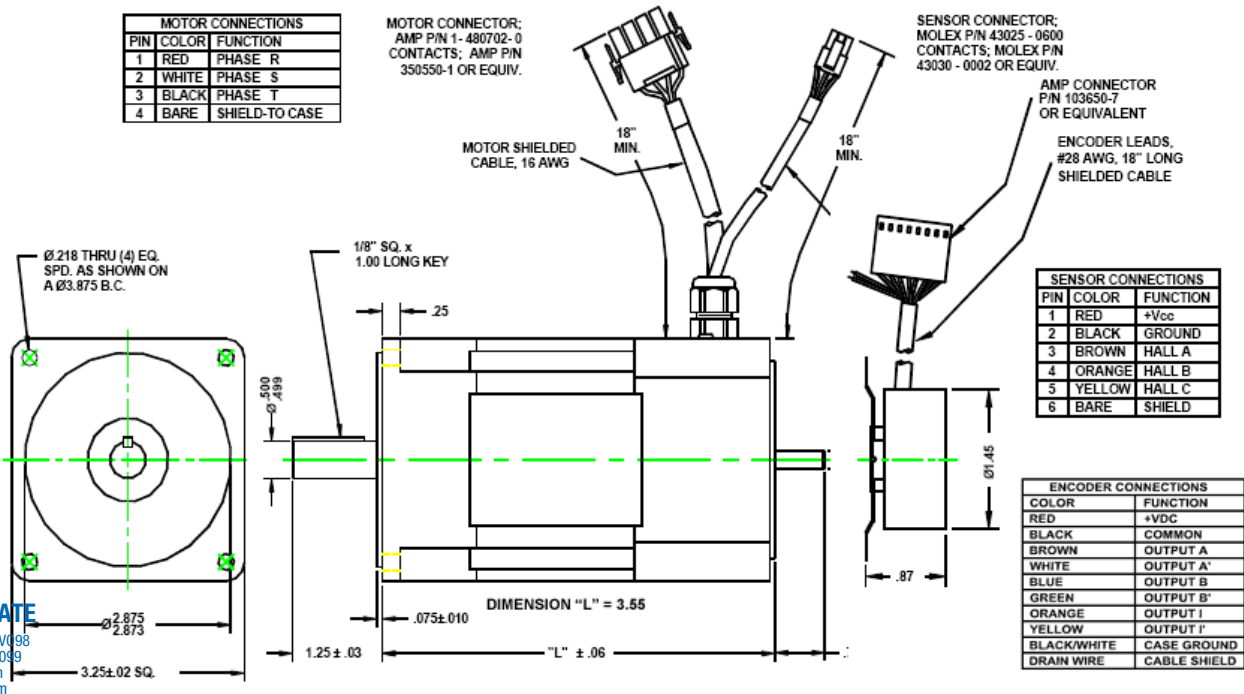
### FEATURES:

- 3.25 Inch NEMA 34 w/ Heavy Duty Shaft
- Continuous Torques up to 15.63 lb-in
- Speeds up to 4500 rpm
- Voltage Rating up to 170 Vdc
- Integrated Hall Effect Commutation
- 30 Lb Radial Load Capacity, 1/2" from Front Face
- High Precision Optical Encoders – 10000 count



### SPECIFICATIONS:

SPECIFICATIONS	UNITS	VALUE
CONTINUOUS TORQUE	Nm (lb-in)	1.77 (15.63)
PEAK TORQUE	Nm (lb-in)	5.3 (46.9)
SPEED @ RATED VOLTAGE	RPM	4500
RATED VOLTAGE	V dc	170
CONTINUOUS CURRENT	A	12.1
PEAK CURRENT	A	36.3
TORQUE CONSTANT	Nm / A (lb-in / A)	0.159 (1.40)
VOLTAGE CONSTANT	V / KRPM	16.6
RESISTANCE	ohms	0.224
INDUCTNACE	mH	1.08
INERTIA	kg-cm <sup>2</sup> (lb-in-s <sup>2</sup> )	2.034 (0.0018)
WEIGHT	Kg (lb)	3.54 (7.8)



**ENCODER:**

ELECTRICAL SPECIFICATIONS	VALUE
INPUT VOLTAGE	5 VDC +/- 5%
INPUT CURRENT REQUIREMENTS	125 mA Typical @ 5 VDC Plus Interface Loads
INPUT RIPPLE	2% Peak to Peak @ 5 VDC
OUTPUT CIRCUITS	AM26LS31 RS 422A Line Driver
FREQUENCY RESPONSE	500 kHz
INCREMENTAL OUTPUT FORMAT	Quadrature with A leading B for CW rotation. Index Pulse centered over A.
SYMMETRY	180 Degrees +/- 10% Typical
MINIMUM EDGE SEPARATION	54 electrical degrees
COMMUTATION FORMAT	N/A
COMMUTATION ACCURACY	N/A

ENVIRONMENTAL SPECIFICATIONS	VALUE
STORAGE TEMPERATURE	-40 to 125° C
OPERATING TEMPERATURE	-20 to 100° C Typical
HUMIDITY	98% Non-Condensing
VIBRATION	20 G's @ 50 to 500 CPS
SHOCK	50 G's @ 11 ms duration

MECHANICAL SPECIFICATIONS	VALUE
LINE COUNT	2500 lines/revolution
MAXIMUM SHAFT SPEED	8000 RPM
THROUGH SHAFT DIAMETER	0.250" (-0.0000", +0.0005")
RADIAL SHAFT MOVEMENT	0.007" TIR
AXIAL SHAFT MOVEMENT	+/- 0.030" MAX
HOUSING	Carbon Fiber Composite (case ground via cable)
TERMINATION	15 conductor cable, 28 AWG, 18" long
MOUNTING	1.812" Bolt Circle
MOMENT OF INERTIAL	$1.5 \times 10^{-4}$ oz-in-s <sup>2</sup>
ACCELERATION	$1 \times 10^5$ Radians/s <sup>2</sup>
ACCURACY	+/- 1.0 Arc Minutes

