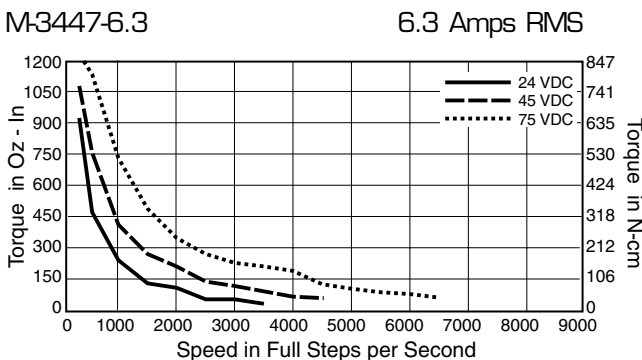
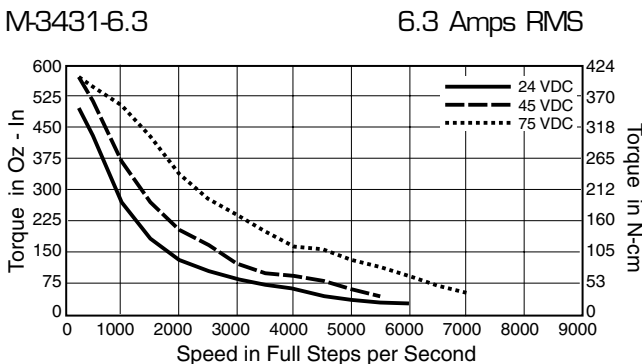
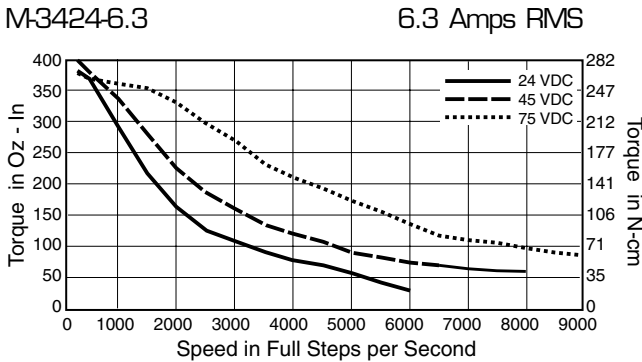


# STEPPING MOTORS

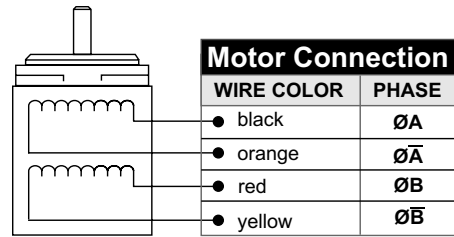
## ENHANCED SIZE 34 1.8° HYBRID STEPPING MOTORS

Specifications S=Single Shaft (D=Double Shaft)	Holding Torque oz-in (N-cm)	Phase Current Amps	Number of Leads	Phase Resistance Ohms	Phase Inductance mH	Detent Torque oz-in (N-cm)	Rotor Inertia oz-in-sec <sup>2</sup> (kg-cm <sup>2</sup> )	L <sub>MAX</sub> Length inches (cm)	Weight oz (gm)
M-3424-6.3S (D)	419 (296)	6.3	4	0.25	1.6	10.9 (7.7)	0.01416 (1.0)	2.36 (6.0)	60.0 (1700)
M-3431-6.3S (D)	637 (450)	6.3	4	0.35	3.3	14.2 (10.0)	0.02266 (1.6)	3.15 (8.0)	84.7 (2400)
M-3447-6.3S (D)	1303 (920)	6.3	4	0.50	6.6	19.8 (14.0)	0.04815 (3.4)	4.72 (12.0)	141.1 (4000)

### TORQUE SPEED CURVES

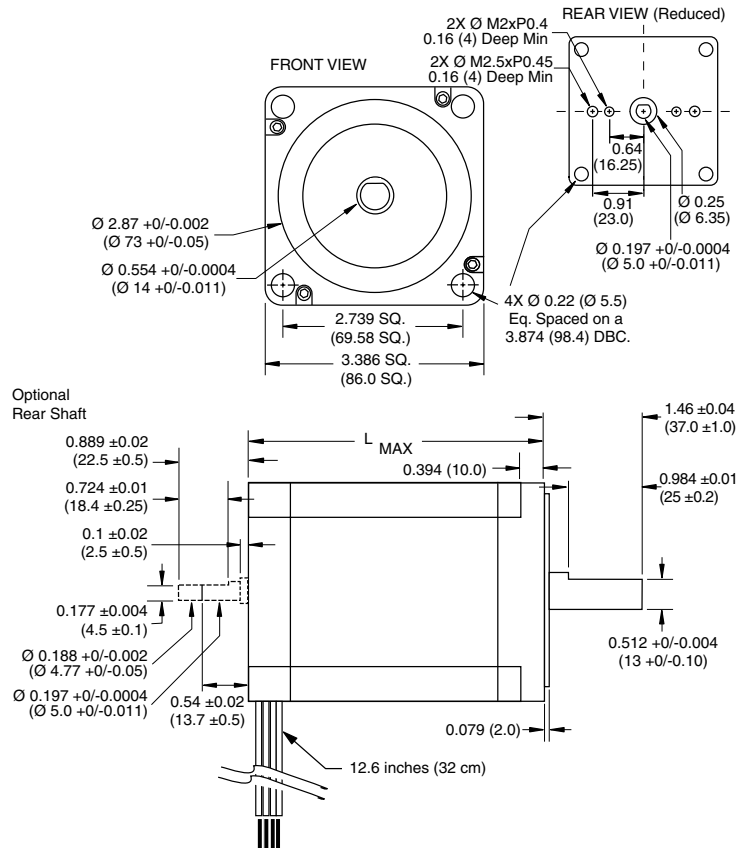


### CONNECTION



### MECHANICAL

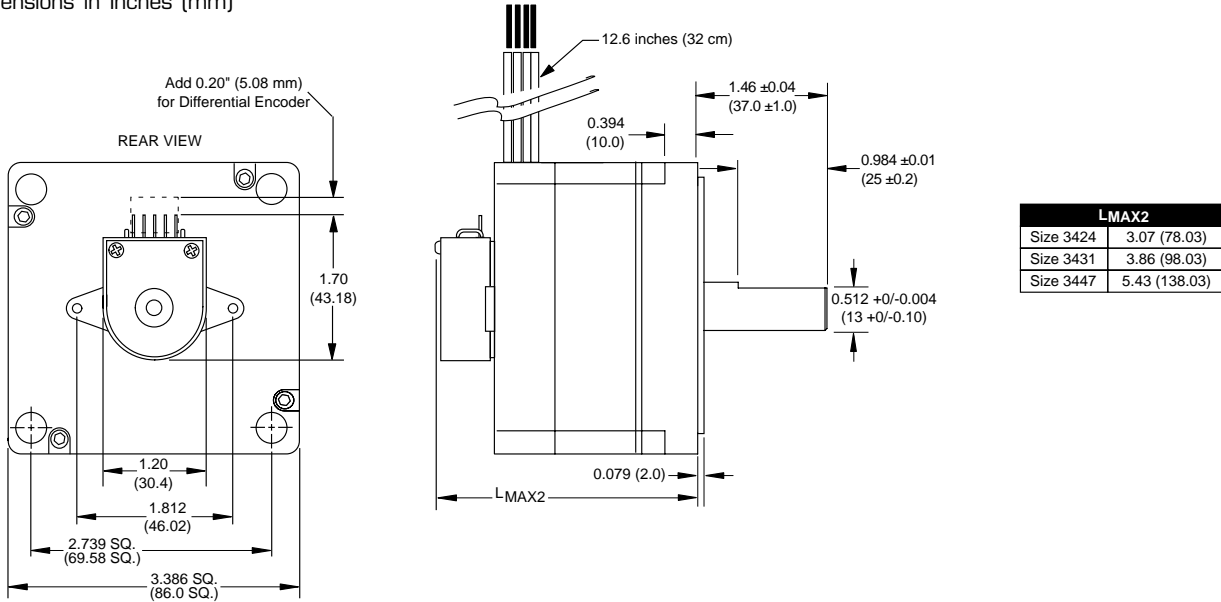
Dimensions in Inches (mm)



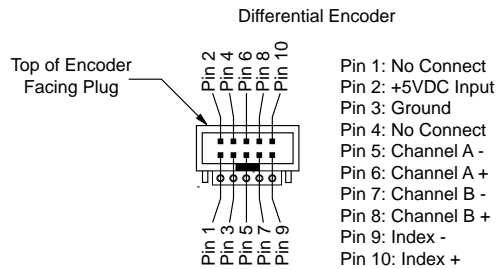
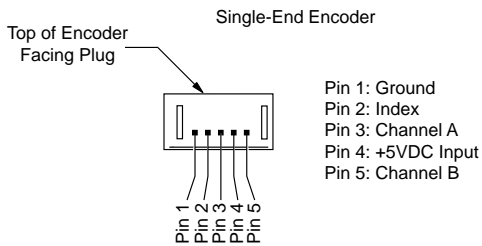
# ENHANCED SIZE 34 1.8° HYBRID STEPPING MOTORS WITH ENCODER

## M-34 STEPPING MOTOR WITH 100 TO 1000 LINE ENCODER OPTION

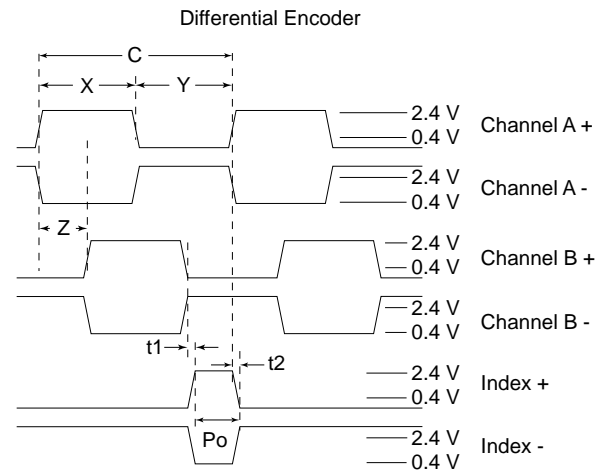
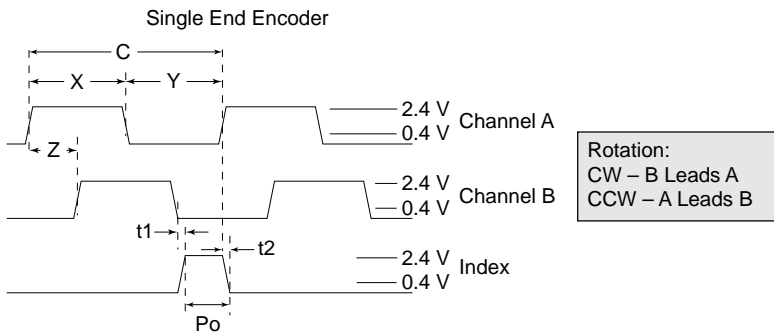
Dimensions in Inches (mm)



### ENCODER PIN ASSIGNMENTS



### ENCODER TIMING DIAGRAMS



#### Characteristics

Parameter	Symbol	Min	Typ	Max	Units
Cycle Error			3	5.5	°e
Symmetry		130	180	230	°e
Quadrature		40	90	140	°e
Index Pulse Width	Po	60	90	120	°e
Index Rise After CH B or CH A fall	t1	-300	100	250	ns
Index Fall After CH A or CH B rise	t2	70	150	1000	ns

*Over recommended operating range. Values are for worst error over a full rotation.*

- (C)** One Cycle: 360 electrical degrees (°e)
- (X/Y)** Symmetry: A measure of the relationship between X and Y, nominally 180°e.
- (Z)** Quadrature: The phase lag or lead between channels A and B, nominally 90°e.
- (Po)** Index Pulse Width: Nominally 90°e.

**Note:** Rotation is as viewed from the cover side.