


# 42L SERIES

SMALL BUT POWERFUL

**GENERAL SPECIFICATIONS**

Step Angle	7.5°
Step Accuracy	± 0.5°
Operating Temperature	100°C Max
Ambient Temperature Range	-20°C ~ +70°C
Insulation Resistance at 500Vdc	100MΩ
Dielectric Withstanding Voltage	650 ± 50 VRMS, 2 sec

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The specifications in this publication are believed to be accurate and reliable. However, it is the responsibility of the product user to determine the suitability of Portescap products for a specific application. While defective products will be replaced without charge if promptly returned, no liability is assumed beyond such replacement.

Portescap Danaher Motion motors will not be CE marked where the Low Voltage Directive, the Electro-Magnetic Compatibility or other appropriate EU directives are not applicable - this is an EU legal requirement.

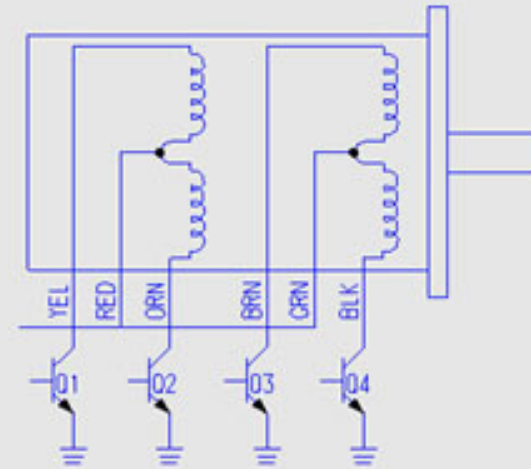
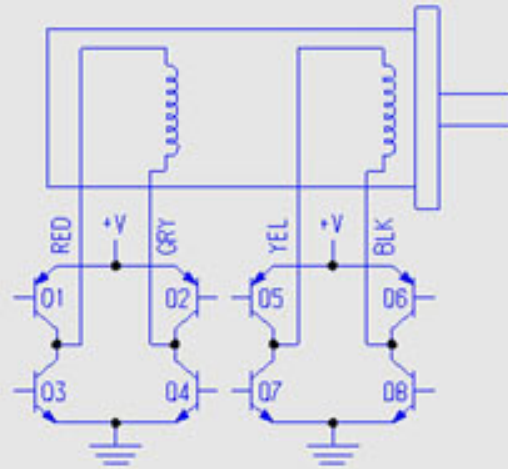
## TECHNICAL SPECIFICATIONS

	UNIPOLAR		BIPOLAR	
Part Number	42L048D1U	42L048D2U	42L048D1B	42L048D2B
DC Operating Voltage	5	12	5	12
Resistance per Winding (ohms)	5.2	30	5.2	30
Inductance per Winding (mH)	2.1	11.3	4.2	22.3
Holding Torque* (mNm/oz-in)	106.6 / 15.1	106.6 / 15.1	130.7 / 18.5	130.7 / 18.5
Rotor Moment of Inertia (g.m <sup>2</sup> )	19.5 x 10 <sup>-4</sup>	19.5 x 10 <sup>-4</sup>	19.5 x 10 <sup>-4</sup>	19.5 x 10 <sup>-4</sup>
Detent Torque (mNm/oz-in)	29.7 / 4.2	29.7 / 4.2	29.7 / 4.2	29.7 / 4.2
Step Angle	7.5°	7.5°	7.5°	7.5°
Step Angle Tolerance*	± 0.5°	± 0.5°	± 0.5°	± 0.5°
Steps per Revolution*	48	48	48	48
Max. Operating Temperature	100°C	100°C	100°C	100°C
Ambient Temperature Range				
Operating	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C
Storage	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Bearing Type	Sintered bronze sleeve	Sintered bronze sleeve	Sintered bronze sleeve	Sintered bronze sleeve
Insulation Resistance at 500Vdc	100 megohms	100 megohms	100 megohms	100 megohms
Dielectric Withstanding Voltage	650 ± 50 VRMS, 2 sec	650 ± 50 VRMS, 2 sec	650 ± 50 VRMS, 2 sec	650 ± 50 VRMS, 2 sec
Weight (g/oz)	116.4 / 4.1	116.4 / 4.1	116.4 / 4.1	116.4 / 4.1
Leadwires	26 AWG, UL Style 1430	26 AWG, UL Style 1430	26 AWG, UL Style 1430	26 AWG, UL Style 1430

\* Measured with 2 phases energized



# WIRING DIAGRAM



BIPOLAR

STEP	01-04	02-03	05-08	06-07
1	ON	OFF	ON	OFF
2	ON	OFF	OFF	ON
3	OFF	ON	OFF	ON
4	OFF	ON	ON	OFF
1	ON	OFF	ON	OFF

CW ROTATION ↓

↑ CCW ROTATION

UNIPOLAR

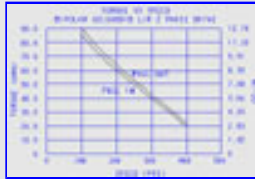
STEP	01	02	03	04
1	ON	OFF	ON	OFF
2	ON	OFF	OFF	ON
3	OFF	ON	OFF	ON
4	OFF	ON	ON	OFF
1	ON	OFF	ON	OFF

CW ROTATION ↓

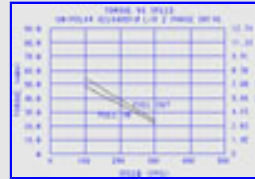
↑ CCW ROTATION

MOTOR DYNAMICS

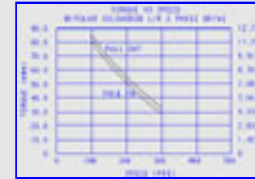
CLICK ON A THUMBNAIL TO MAGNIFY



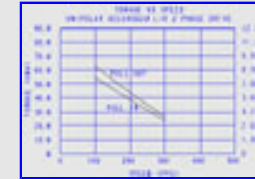
42L048D1B, Bipolar, L/R Drive



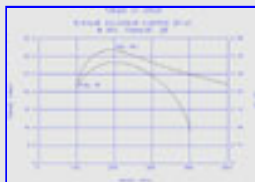
42L048D1U, Unipolar, L/R Drive



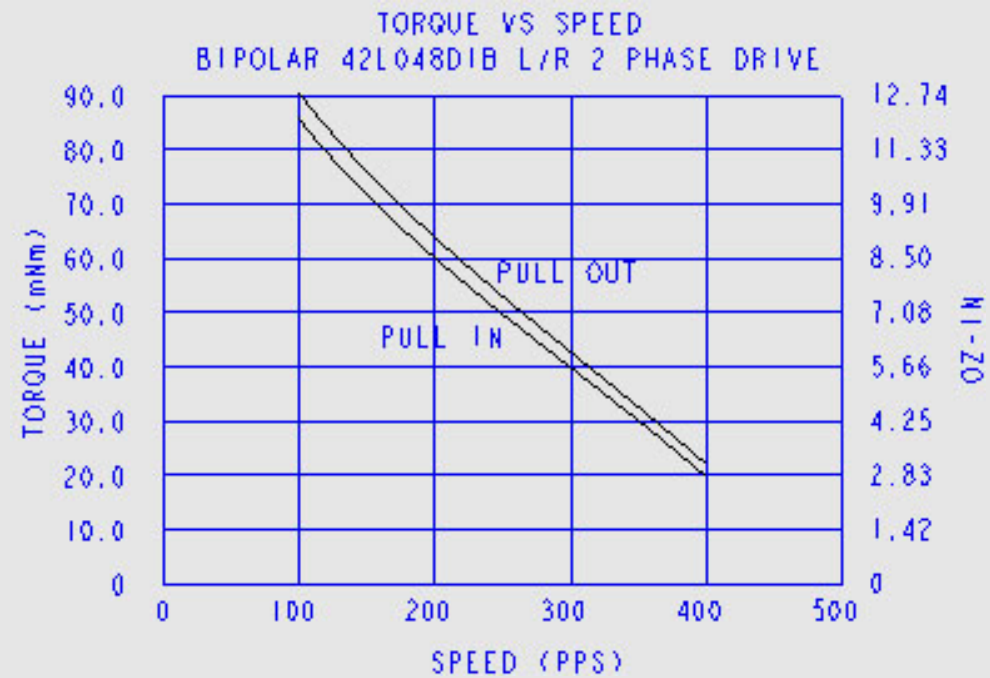
42L048D2B, Bipolar, L/R Drive

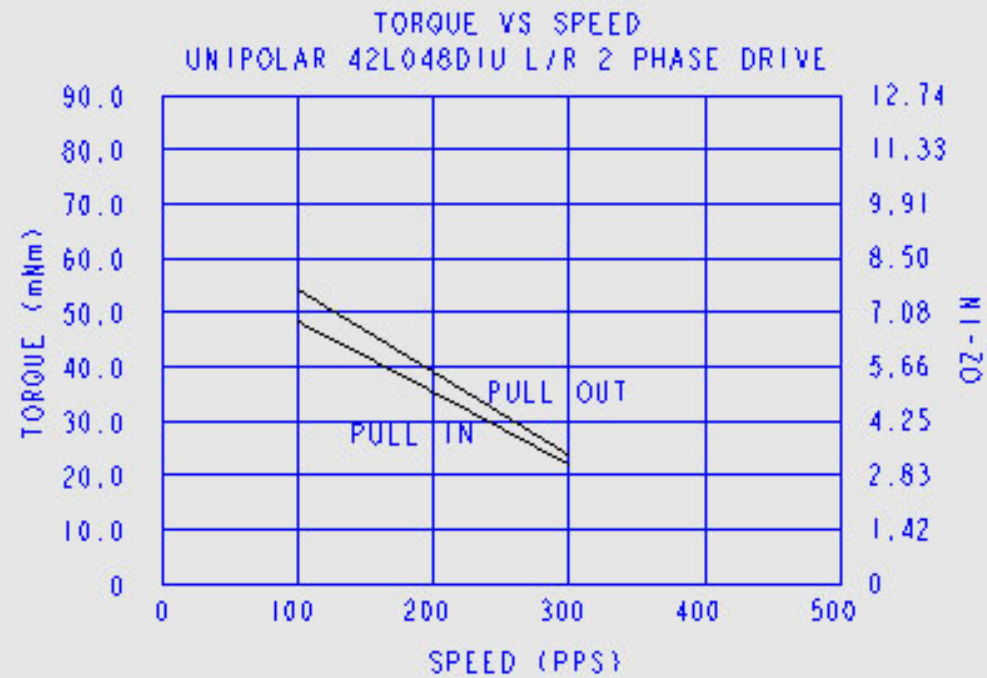


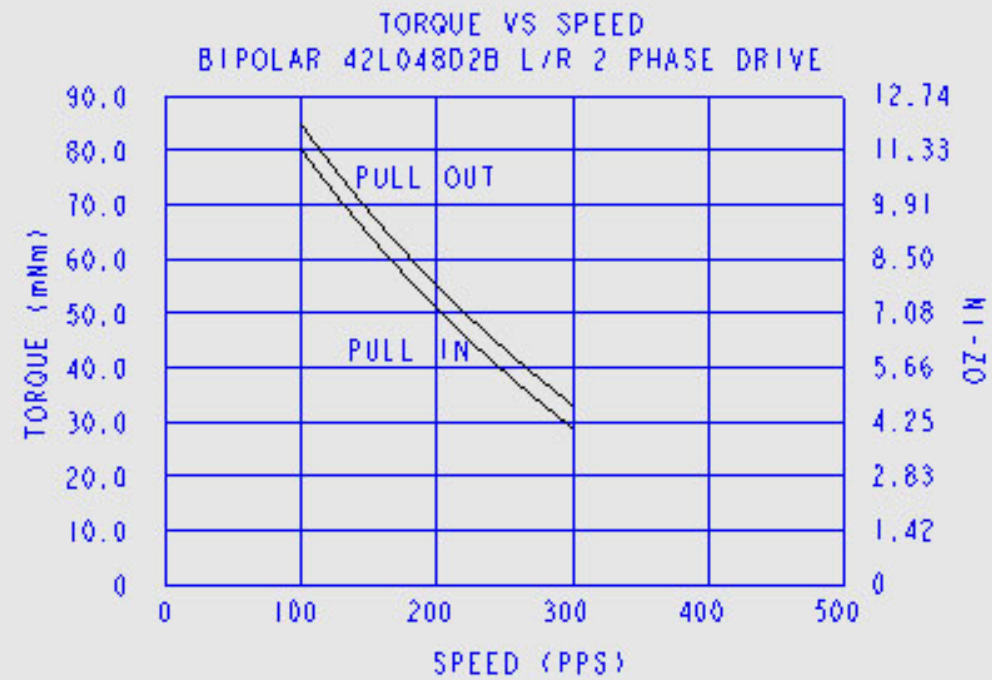
42L048D2U, Unipolar, L/R Drive



42L048D1B, Bipolar, Chopper Drive





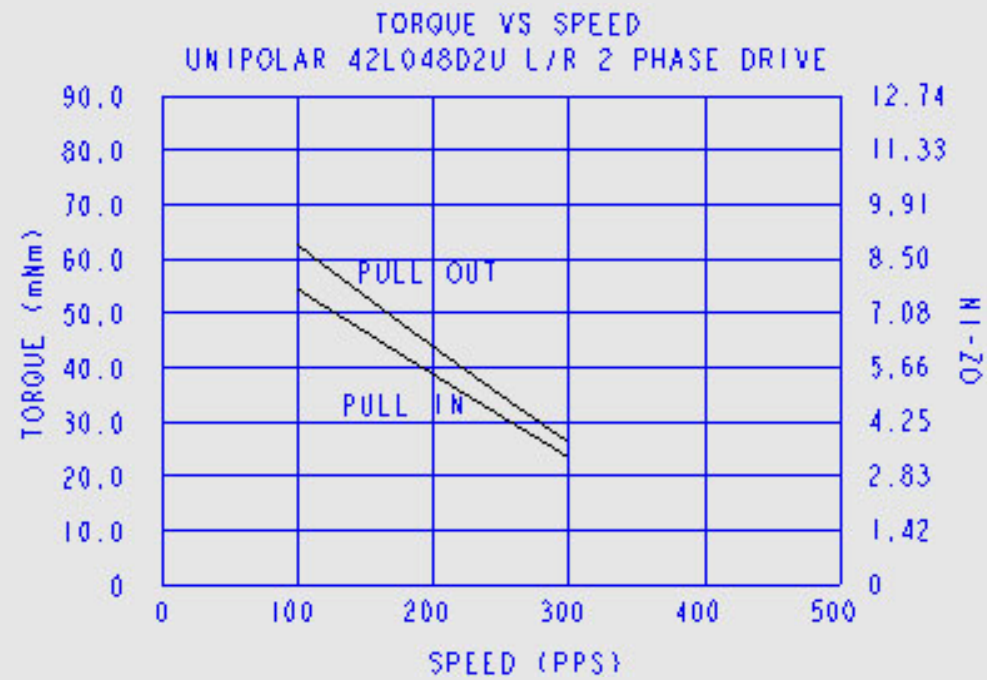




## MOTOR DYNAMICS



CHART INDEX





## TORQUE VS SPEED

BIPOLAR 42L048DIB CHOPPER DRIVE  
@ 36V, 350mA/φ, 2φ

