



Allen-Bradley

TL-Series NEMA Motors

Compact, low inertia motors with 2000 line incremental feedback capability and Kinetix Integrated Motion compatibility

Product Overview

The Allen-Bradley TL-Series NEMA Motors represent a significant new solution for designers needing a low inertia, high performance servo motor featuring NEMA frame sizes. TL-Series NEMA Motors combine a compact size with a high torque density afforded by their superior stator design. The result is a package that provides substantial power in a small footprint. In addition to a space-saving design, the TL-Series NEMA Motors offer a full range of features for ease of use and application flexibility. Those features include a 2000 line incremental encoder that provides improved stability and smoother operation compared with stepper motors.

The TL-Series NEMA Motors are available in three NEMA style frame sizes: 17, 23 and 34. The smallest motor is just 64.5 mm long x 42 mm wide x 42 mm high (2.5 x 1.6 x 1.6 inches).

These 230 volt motors can be used with a variety of Allen-Bradley servo drives. Team the TL-Series NEMA motors with the Ultra3000 or Kinetix 6000 servo drives as part of the Kinetix Integrated Motion solution. Or, use them with the Ultra1500 or Ultra5000 drives for a truly compact, easy-to-use drive/motor combination.

They provide continuous stall torque from 0.18 to 2.94 Nm (1.59 - 26.02 lb-in) and peak torque from 0.36 to 7.10 Nm (3.20 - 63 lb-in).



These compact, low inertia motors provide a cost-effective, high performance solution that is compatible with Kinetix Integrated Motion drives, including the Kinetix 6000 and Ultra3000 servo drives.

TL-Series NEMA Motor Features

- ◆ 2000 Line Incremental Encoder Capability
 - Low-cost/high-performance
 - Compatible with a variety of Allen-Bradley servo drives including the Kinetix 6000, Ultra3000, Ultra15000 and Ultra5000. When used with the Kinetix 6000 and Ultra3000 drives, the TL-Series NEMA motors offer the benefits of Kinetix Integrated Motion
- ◆ Superior Torque to Size Ratio
 - More power in a smaller package
 - NEMA 17, 23, and 34 mounting frame sizes
- ◆ Integral 24 Volt Brake Option
- ◆ IP43 seal standard. Shaft seal kits available to provide motor surface-only IP65 rating

Product Profile

**Rockwell
Automation**

Specifications

Catalog Number	Rated Speed rpm	Rated Output kW	Rotor Inertia* kg-m ² (lb-in.-s ²)	Continuous Stall Torque Nm (lb-in.)	Peak Stall Torque Nm (lb-in.)	Continuous Stall Current Amperes (0-peak)	Peak Stall Current Amperes (0-peak)	Motor Weight kg (lb)
TL-A120P	5000	0.086	0.000002 (0.000018)	0.181 (1.60)	0.36 (3.20)	1.03	2.50	0.35 (0.78)
TL-A130P	5000	0.14	0.000003 (0.000027)	0.325 (2.88)	0.76 (6.70)	1.85	4.90	0.5 (1.10)
TL-A220P	5000	0.35	0.000018 (0.00016)	0.836 (7.40)	1.48 (13.1)	2.40	7.20	1.1 (2.4)
TL-A230P	5000	0.44	0.000034 (0.0003)	1.300 (11.50)	3.05 (27.0)	4.70	11.3	1.5 (3.3)
TL-A2530P	5000	0.69	0.000098 (0.00087)	2.600 (23.00)	5.20 (46.0)	10.00	21.0	2.3 (5.1)
TL-A2540P	5000	0.86	0.00011 (0.00096)	2.940 (26.00)	7.10 (63.0)	10.00	24.8	2.6 (5.8)

* Rotor inertia may vary slightly depending upon feedback and brake option.

Typical Applications

Applications that need compact, low inertia motors would benefit from the use of TL-Series NEMA Motors. Typical applications include:

- Linear Actuation
- Electronic Assembly
- Assembly Machines
- Material Handling



UL and CE Information

The TL-Series Motors are:

- CE marked for all applicable directives
- UL[®] recognition scheduled for mid-year 2005

Environmental

Operating temperature: 0 - 40° C (32 - 104° F)

Humidity: 20 - 85% relative humidity, non-condensing

The TL-Series NEMA Motors, teamed with the Allen-Bradley[®] Kinetix 6000 and Ultra3000 servo drives, provide the benefits of Kinetix[®] Integrated Motion, including seamless integration into Logix platforms.



For additional product information, refer to the Motion Control Selection Guide, pub GMC-SG001x or our web site: www.ab.com/motion

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