



TBM2G Frameless Motors

High Performance. Compact Form. Ready to Do More.

KOLLMORGEN

Simply Better Design

TBM2G motors deliver next-generation torque in a more compact electromagnetics package. Designed for direct embedding in your machine, these 48 VDC motors help you engineer each axis to be smaller, lighter, stronger, faster, smoother.

Ready to Do More.

Ready to Perform. TBM2G motors deliver significantly higher torque density in a more compact form factor. And they incorporate advanced materials and windings for more consistent performance across all speeds and torque demands. Achieve faster, smoother movements in a lighter, more compact motor with higher load capacity, greater energy efficiency and lower thermal rise.

Ready to Design. With an exceptionally short total height and a large thru-bore, TBM2G motors are ideal for applications that require high torque in a compact axial design. Seven frame sizes, each with three winding stack options, provide 21 options to achieve an ideal fit. These motors are optimized to pair with off-the-shelf harmonic gearing designs without modification.

Ready to Scale. There's no need to risk supply and quality issues. Kollmorgen has highly automated manufacturing processes in place to manufacture TBM2G motors in quantity, including standard modifications to meet your specifications. When you are ready to scale up to full production, we can supply the motors you need with assurance of quality and consistency.

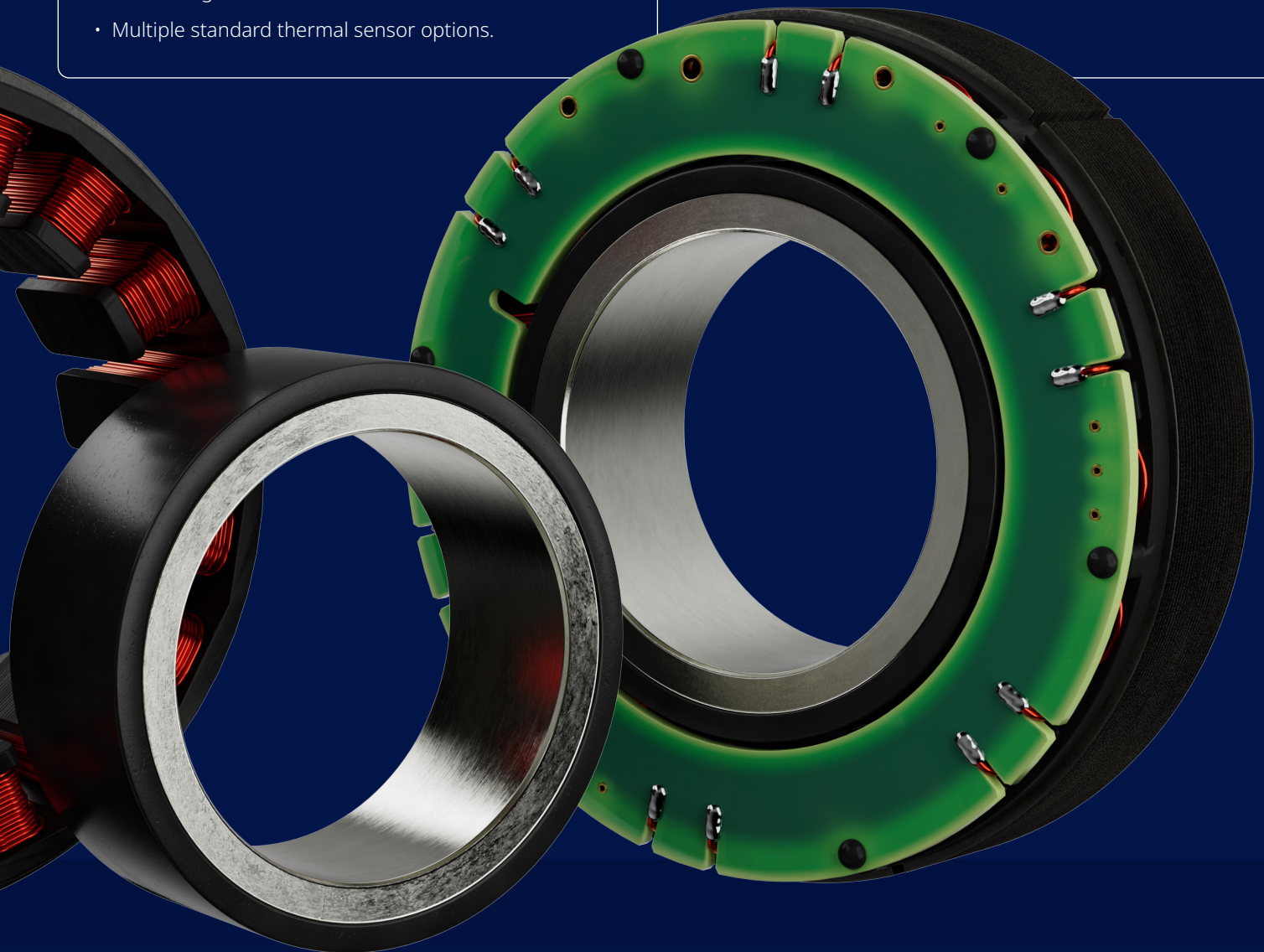


TBM2G: Ready to Deliver More

- Seven most popular frame sizes used in embedded applications such as collaborative and surgical robots.
- Standard sizing optimized to pair with off-the-shelf harmonic gearing.
- Three winding options per frame size to meet precise speed and torque requirements.
- Optimized for operation at 48 VDC and below, ideal for battery-operated and mobile applications such as autonomous mobile robots (AMR).
- Designed to perform well without exceeding 85°C, but also capable of sustaining full performance at up to 155°C winding temperature on a continuous basis.
- Large inner diameter thru-bore to accommodate encoders, cables, hoses, shafts, tools, etc.
- Optional integrated Hall sensors that don't increase motor length.
- Multiple standard thermal sensor options.

Kollmorgen: Ready to Partner for Your Success

- Automated processes to rapidly scale from prototype to mass production.
- Highly precise manufacturing for consistent performance.
- Global manufacturing and distribution.
- Local application support and service.
- Co-engineering expertise to help you achieve ideal specifications and fit.
- The resources and commitment to ensure consistent supply for years to come.
- More than a century of motion leadership and innovation.



TBM2G Frameless Motors

Performance Data

| | | | Frame | | | | | | | | | | | |
|----------------------------|-----------|-------------------|-------------|-------|-------|-------------|-------|-------|-------------|-------|-------|-------------|-------|-------|
| | | | TBM2G-050xx | | | TBM2G-060xx | | | TBM2G-068xx | | | TBM2G-076xx | | |
| Parameters | Sym | Units | 08 | 13 | 26 | 08 | 13 | 26 | 08 | 13 | 26 | 08 | 13 | 26 |
| Continuous Torque at Stall | T_c | Nm | 0.27 | 0.38 | 0.64 | 0.45 | 0.6 | 0.96 | 0.63 | 0.86 | 1.54 | 0.89 | 1.13 | 2.06 |
| | | lb-in | 2.39 | 3.36 | 5.66 | 3.98 | 5.31 | 8.5 | 5.58 | 7.61 | 13.6 | 7.88 | 10 | 18.2 |
| Rated Speed | N_{rtd} | rpm | 8000 | 8000 | 6700 | 8000 | 8000 | 4200 | 8000 | 6600 | 3300 | 8000 | 6600 | 2900 |
| Motor Constant | K_m | Nm/ \sqrt{W} | 0.061 | 0.083 | 0.128 | 0.087 | 0.114 | 0.176 | 0.119 | 0.157 | 0.251 | 0.157 | 0.193 | 0.324 |
| | | lb-in/ \sqrt{W} | 0.54 | 0.74 | 1.13 | 0.77 | 1.01 | 1.56 | 1.05 | 1.39 | 2.22 | 1.39 | 1.71 | 2.87 |
| Rated Power | P_{rtd} | kW | 0.204 | 0.271 | 0.368 | 0.329 | 0.415 | 0.366 | 0.467 | 0.538 | 0.506 | 0.588 | 0.605 | 0.56 |
| | | Hp | 0.274 | 0.364 | 0.493 | 0.442 | 0.556 | 0.491 | 0.627 | 0.721 | 0.678 | 0.789 | 0.812 | 0.751 |

| | | | Frame | | | | | | | | |
|----------------------------|-----------|-------------------|-------------|-------|-------|-------------|-------|-------|-------------|-------|-------|
| | | | TBM2G-085xx | | | TBM2G-094xx | | | TBM2G-115xx | | |
| Parameters | Sym | Units | 08 | 13 | 25 | 08 | 13 | 26 | 08 | 13 | 26 |
| Continuous Torque at Stall | T_c | Nm | 1.21 | 1.65 | 2.69 | 1.58 | 2.05 | 3.67 | 1.9 | 3.04 | 6.03 |
| | | lb-in | 10.7 | 14.6 | 23.8 | 14 | 18.1 | 32.5 | 16.8 | 26.9 | 53.4 |
| Rated Speed | N_{rtd} | rpm | 8000 | 5200 | 2700 | 8000 | 5800 | 2900 | 5800 | 4900 | 3300 |
| Motor Constant | K_m | Nm/ \sqrt{W} | 0.203 | 0.271 | 0.419 | 0.263 | 0.331 | 0.528 | 0.31 | 0.464 | 0.802 |
| | | lb-in/ \sqrt{W} | 1.79 | 2.4 | 3.7 | 2.33 | 2.93 | 4.67 | 2.74 | 4.1 | 7.09 |
| Rated Power | P_{rtd} | kW | 0.741 | 0.725 | 0.67 | 0.86 | 0.87 | 0.945 | 0.711 | 0.969 | 1.463 |
| | | Hp | 0.994 | 0.972 | 0.899 | 1.153 | 1.167 | 1.267 | 0.954 | 1.3 | 1.962 |



TBM2G Nomenclature **TBM2G** - 060 13 A - A N A A - 00

1
2
3
4
5
6
7
8
9

| | | Available Motor | | | | | | |
|----------------------------------|------------------------------|-----------------|-----|-----|-----|-----|-----|-----|
| Motor Series | | TBM2G | | | | | | |
| 1 | Frame | 050 | 060 | 068 | 076 | 085 | 094 | 115 |
| 2 | Size in mm | 50 | 60 | 60 | 76 | 85 | 94 | 115 |
| 3 Lamination Stack Length | | | | | | | | |
| | 08 = 8.2 mm stack | • | • | • | • | • | • | • |
| | 13 = 12.7 mm stack | • | • | • | • | • | • | • |
| | 26 = 26.3 mm stack | • | • | • | • | • | • | • |
| 4 Motor Winding | | | | | | | | |
| | A = Wye Connected | • | • | • | • | • | • | • |
| | C = Parallel Wye Connected | • | • | • | • | • | • | • |
| | D = Parallel Delta Connected | • | • | • | • | • | • | • |

| | | Available Options | | | | | | |
|-------------------------|---------------------------------------|-------------------|-----|-----|-----|-----|-----|-----|
| Motor Series | | TBM2G | | | | | | |
| Frame | | 050 | 060 | 068 | 076 | 085 | 094 | 115 |
| 5 Thermal Device | | | | | | | | |
| | N = None | • | • | • | • | • | • | • |
| | A = PT1000 | • | • | • | • | • | • | • |
| | B = 3 PTC's | • | • | • | • | • | • | • |
| 6 Sensor Option | | | | | | | | |
| | N = None | • | • | • | • | • | • | • |
| | H = Hall Sensors | • | • | • | • | • | • | • |
| | A = Hall Sensors (Alternate Location) | • | • | • | • | • | • | • |
| 7 Lead Options | | | | | | | | |
| | N = None | • | • | • | • | • | • | • |
| | A = 0.5 m Flying Leads | • | • | • | • | • | • | • |
| 8 Field Options | | | | | | | | |
| | A = Standard | • | • | • | • | • | • | • |
| 9 Custom Options | | | | | | | | |
| | 00 = Standard | • | • | • | • | • | • | • |

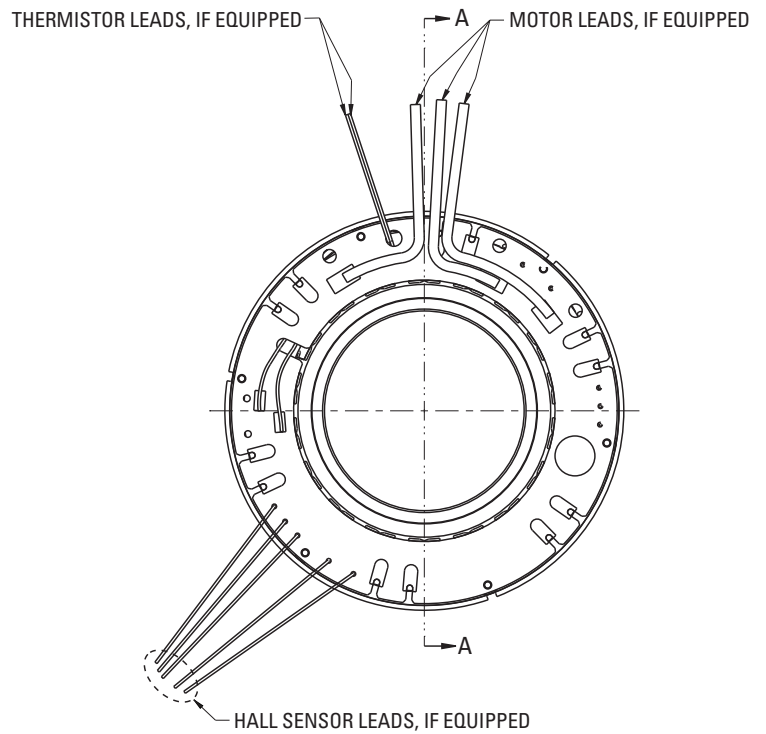
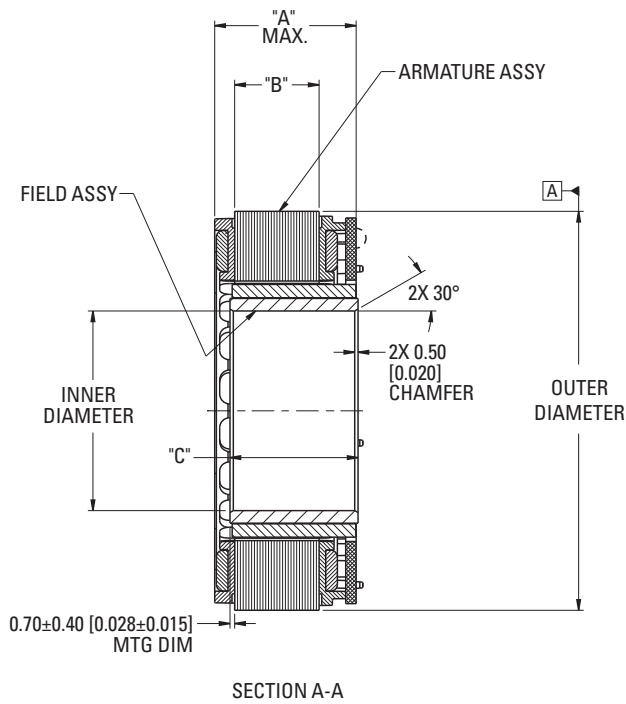
Sold & Serviced By:



Toll Free Phone (877) SERV098
www.electromate.com
sales@electromate.com

TBM2G Frameless Motors

Dimensional Overview



| TBM2G Series | Frame | Outer Diameter | Inner Diameter | "A" Max | | | "B" REF +/- 0.35 | | | "C" +/- 0.075 | | |
|--------------|-------|----------------|----------------|---------|-------|-------|------------------|------|------|---------------|-------|-------|
| | | | | 08 | 13 | 26 | 08 | 013 | 26 | 08 | 13 | 26 |
| | 050 | 50 | 24.75 | 20.64 | 25.14 | 38.74 | 8.2 | 12.7 | 26.3 | 14.76 | 19.26 | 32.86 |
| | 060 | 60 | 30 | 17.58 | 22.08 | 35.68 | 8.2 | 12.7 | 26.3 | 14.76 | 19.26 | 32.86 |
| | 068 | 68 | 34 | 18.58 | 23.08 | 36.68 | 8.2 | 12.7 | 26.3 | 14.76 | 19.26 | 32.86 |
| | 076 | 76 | 38 | 18.51 | 23.01 | 36.61 | 8.2 | 12.7 | 26.3 | 14.76 | 19.26 | 32.86 |
| | 085 | 85 | 42.5 | 19.58 | 24.08 | 37.68 | 8.2 | 12.7 | 26.3 | 14.76 | 19.26 | 32.86 |
| | 094 | 94 | 47 | 19.93 | 24.43 | 38.03 | 8.2 | 12.7 | 26.3 | 14.76 | 19.26 | 32.86 |
| | 115 | 115 | 57.5 | 26.2 | 30.7 | 44.3 | 8.2 | 12.7 | 26.3 | 14.76 | 19.26 | 32.86 |

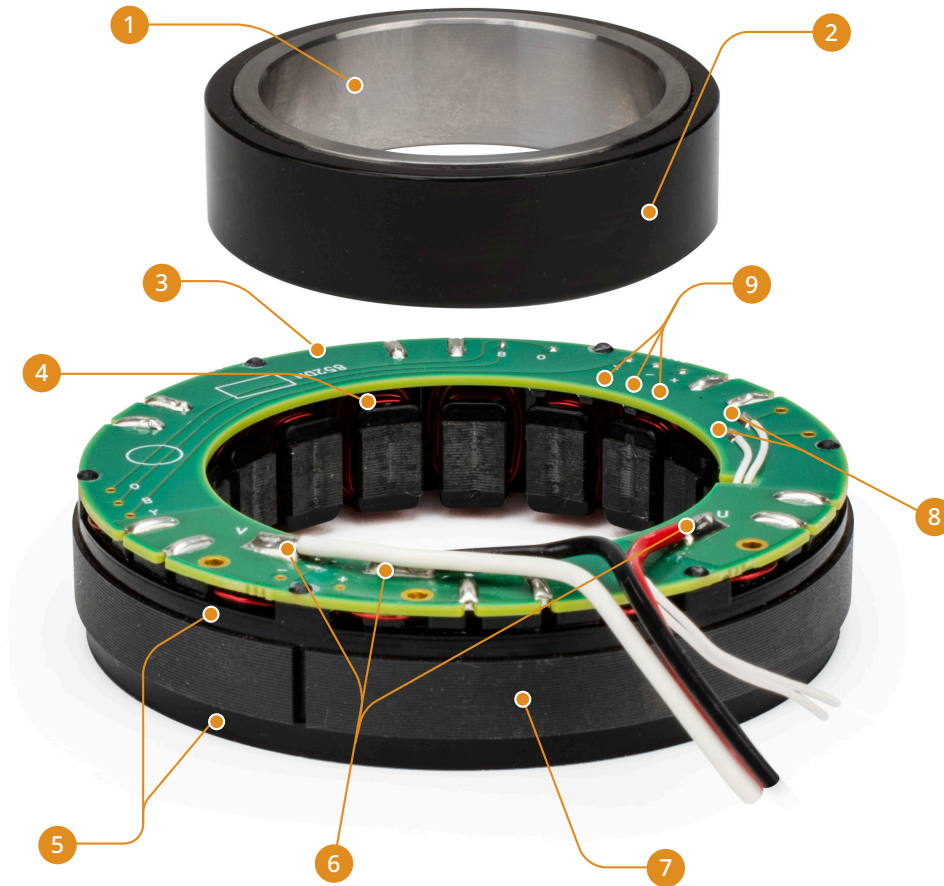
Sold & Serviced By:



Toll Free Phone (877) SERV098

www.electromate.com

sales@electromate.com



- | | | |
|---|--|--|
| <p>1 Yoke</p> <ul style="list-style-type: none"> • Material: SS400 Series <p>2 Ring Magnet</p> <ul style="list-style-type: none"> • Material: NdFeB (Neodymium) • Coating: Epoxy <p>3 Printed Circuit Board (PCB)</p> | <p>4 Coil</p> <ul style="list-style-type: none"> • Material: Copper • Coating: Varnish <p>5 End Insulators</p> <ul style="list-style-type: none"> • Material: Polymer Resin <p>6 Power Leads</p> | <p>7 Lamination Stack</p> <ul style="list-style-type: none"> • Material: Electric Steel <p>8 Optional Thermal Devices (mounted underneath PCB)</p> <ul style="list-style-type: none"> • PT1000 • PTC Avalanche (3 in series) <p>9 Optional Hall Sensors (mounted underneath PCB)</p> <ul style="list-style-type: none"> • Allegro A1260 |
|---|--|--|

TBM2G Product Features

- 7 frame sizes with 3 stack lengths each
- Integrated Hall sensor option
- PT1000 and PTC thermal sensor options
- Available with or without flying leads
- Low cogging design
- Optimized for high efficiency across a wide speed range
- Three standard winding options per frame/stack
- Stainless steel yoke rings for corrosion protection

About Kollmorgen

Kollmorgen has more than 100 years of motion experience, proven in the industry's highest-performing, most reliable motors, drives, linear actuators, gearheads, AGV control solutions and automation platforms. We deliver breakthrough solutions that are unmatched in performance, reliability and ease of use, giving machine builders an irrefutable marketplace advantage.

Kollmorgen is a brand of Altra Industrial Motion Corp. (NASDAQ: AIMC), a premier global designer and producer of a wide range of motion control and power transmission solutions. With engineered components and systems that provide the essential control of equipment speed, torque, positioning and other functions, Altra products can be used in nearly any machine, process or application involving motion.

KOLLMORGEN

www.kollmorgen.com

Specifications are subject to change without notice. It is the responsibility of the product user to determine the suitability of this product for a specific application. All trademarks are the property of their respective owners.

© 2022 Kollmorgen Corporation. All rights reserved.