

## **New frameless servo motors increase performance and reduce size for robot control**

**24 November 2022**

**Kollmorgen has released a new range of frameless servo motors that increase speed and torque within a compact and lightweight footprint. The new TBM2G motors, distributed in the UK by INMOCO, are designed for cobot and similar robot joint control applications. The flexible range is available in a variety of frame sizes and winding types, and enables simple design integration thanks to their through-bore mounting design.**

Optimised for operation at 48 VDC and below, the TBM2G series provides high-performance torque in a compact footprint. The new design is aimed at helping OEMs develop robots with lower joint weight and higher load-carrying capacity, along with improved energy efficiency and lower thermal rise. The motors also ensure smooth movement thanks to their low cogging design. Additional precision in control can also be increased with an optional integrated Hall sensor.

Frameless torque motors typically deliver their best performance at low speeds, with diminished torque at higher frequency. TBM2G motors remove this limitation through advanced windings and materials that deliver power, torque and efficiency consistently across a wide speed range.

The series is available in seven frame sizes, ranging from 50 mm up to 115 mm. Each frame size is available in three stack lengths/winding options to meet precise speed and torque requirements.

The most compact motor in the TBM2G series delivers 0.27 Nm continuous torque at stall at a rated speed of 8,000 rpm, generating 0.205 kW. The motor constant (torque divided by the square-root of resistive power losses), which shows relative

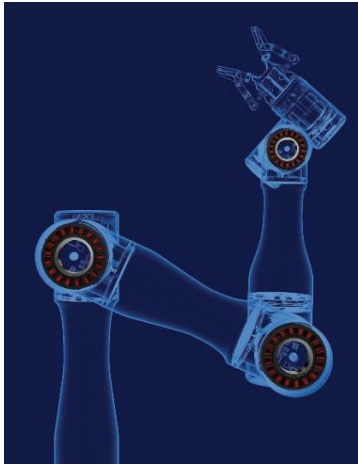
output and efficiency to size, is 0.061 Nm/ $\sqrt{W}$ . The largest 115 mm frame delivers 6.03 Nm at 3,100 rpm, generating 1.43 kW with a motor constant of 0.802 Nm/ $\sqrt{W}$ .

The frameless design features a large inner diameter centre bore to accommodate encoders, cables, hoses, shafts, and tools. This enables easy integration of the motors directly into robotic joints, with typical applications including collaborative robots in the 3–15 kg range. For safety with cobot integration, the TBM2G motors are designed to perform at high speeds without exceeding the 80°C limit typically needed to safeguard humans working in proximity to cobots.

The new TBM2G motors complement Kollmorgen's existing series of frameless motors, extending the speed and torque performance of the TBM range to enable a smaller footprint. The new TBM2G also offers a lower voltage alternative to the KBM that operates at 240 V or 400 V.

INMOCO distributes Kollmorgen motors in the UK and offers design engineers assistance with application sizing and development. INMOCO also provides a range of complimentary products to Kollmorgen's frameless motors, including encoders and low voltage servo drives.

**Image Captions:**



**Image 1:** TBM2G series of frameless motors is now ready to help you build more compact, precise and powerful robots.



**Image 2:** Frameless servo motors are purpose-built to address the unique design challenges.



**Image 3:** TBM2G motors are designed to fit off-the-shelf harmonic gearing.

## **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. Kollmorgen delivers breakthrough solutions that are unmatched in performance, reliability and ease of use, giving machine builders an irrefutable marketplace advantage.

Read more INMOCO articles on the [DMA News Portal](#)

Please upload the brochure [TBM2G Kollmorgen Frameless Motors](#)

## **About INMOCO**

Established in 1987, INMOCO now offers an extensive range of motion control equipment including: compact servo amplifiers, position controllers, stepper motors, PLC controllers, linear motors, sensors, electric actuators and gearheads. INMOCO's product portfolio is supported by extensive applications and technical expertise, in addition to customer-specified electro-mechanical development and sub-assembly services; including calibrating and testing in a class 10,000 clean room facility.

### **Press contact:**

#### **INMOCO**

Gerard Bush

Tel.:+44 (0)1327 307600

[GerardB@inmoco.co.uk](mailto:GerardB@inmoco.co.uk)

### **PR agency:**

#### **DMA Europa**

Elizabeth Patrick

Progress House, Great Western Avenue, Worcester, WR5 1AQ, UK

Tel.:+44 (0) 1905 917477

[liz@dmaeuropa.com](mailto:liz@dmaeuropa.com)

[news.dmaeuropa.com](http://news.dmaeuropa.com)