Smart Lock Motor GM2222FD

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PRODUCT CATEGORIES

- Brushed Gear Motor
- Brushless Gear Motor
- Coreless Gea
- AC Shaded Pole Gear Motor
- Smart Lock Motor

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Smart Lock Motor GM2222FD

Main Applications

Smart Door Locks

Drive for latch / bolt transmission mechanisms requiring compact packaging, low-voltage operation and repeatable opening/closing motion.

Electronic Cabinet & Locker Locks

Suitable for compact electromechanical locking mechanisms where installation space and controlled actuation are important.

Hotel / Access-Control Lock Mechanisms

Can be evaluated for lock-body actuation requiring repeated cycles and consistent low-voltage drive performance.

Customized Locking Mechanisms

For non-standard lock bodies, the motor, ratio, pinion/interface, lead wire and terminal can be evaluated against the customer's mechanism and test standard.

FAQ

Q1. How can noise be reduced in a smart lock gear motor?

Low-noise performance depends on motor speed, gear material and accuracy, gear ratio, backlash, lubrication, assembly consistency, lock-body resonance, and the control profile. For reliable evaluation, noise should be tested in the actual smart lock mechanism, including startup, running, reversing, and end-position impact, rather than relying only on no-load motor noise.

Q2. Can a smart lock motor still provide enough torque when the battery is low?

Yes, but the motor and gearbox must be selected based on the minimum operating voltage of the battery, not only the rated voltage. Low-voltage testing should simulate real conditions such as increased latch friction, door pressure, low tempera repeated unlock

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to verify starting current, unlocking time, torque margin, and temperature rise.

Q3. How should stall or jam protection be handled in a smart lock motor system?

Stall protection should be handled by the motor, lock mechanism, and control system together. Common methods include current detection, operation timeout, end-position detection, reverse recovery, mechanical limits, and fault alarms. Peak current and stall duration should also be controlled to reduce the risk of motor overheating or mechanical damage.

Q4. How do I place an order with Shunli Motor?

Please send us your application requirements or motor specifications. Our engineering team will develop a suitable solution, confirm the technical details, and provide samples for evaluation. Once the samples are approved, we will arrange mass production. Shipping methods can be selected based on your delivery requirements.

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Product Overview

Compact 4.5 VDC Smart Lock Gearmotor with Right-Angle Output The GM2222FD Smart Lock Motor is a compact 4.5 VDC DC gearmotor developed for smart door locks, electronic locks, cabinet locks, and access-control mechanisms requiring a right-angle output arrangement and repeatable low-speed actuation. The supplied 1:241 reference data covers rated speeds of 42–56 RPM and rated torque of 25–30 mN·m (250–300 gf·cm), with gearbox efficiency of 45%–60%. Its compact 16 mm-wide housing, right-angle output gear, integrated wiring, and mounting features support space-constrained lock-body integration.

Model Information

Model	Motor Type	Product Category
GM2222FD-0001	DC Brushed Gearmotor	Smart Lock / Electronic Lock Moto

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Main Parameters

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Technical Data

Rated Voltage	4.5 VDC
Gear Ratio	1:241
Gearbox Efficiency	45%–60%
Max. Rated Gearbox Torque	2.5–3.5 kgf·cm
Max. Gearbox Break Torque	5–6 kgf·cm
Overall Height Shown	42.4 mm
Housing Width Shown	16 mm
Body Depth Shown	21.8 mm

Technical Data

Gearmotor Model	Ratio	Voltage	No-Load Speed	No-Load Current	Rated Speed	C
GM2215FMN20-08205 (source reference)	1:241	4.5 VDC	58 RPM	≤ 80 mA	42 RPM	≤ 180 mA
GM2215EMN20-09170 (source reference)	1:241	4.5 VDC	70 RPM	≤ 80 mA	56 RPM	≤ 250 mA

Technical Data

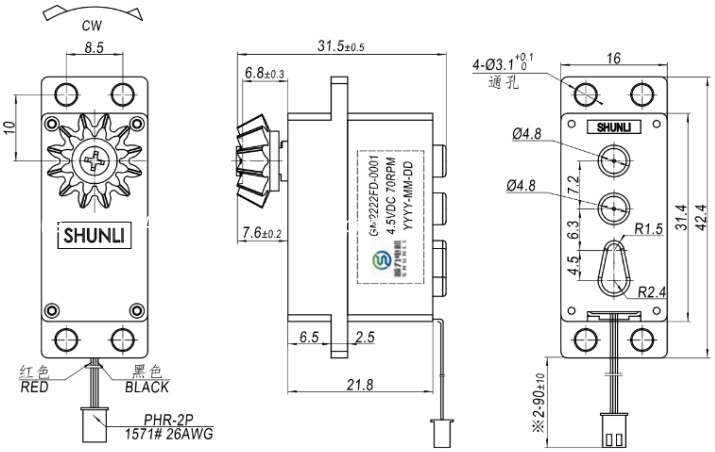
Overall height shown	42.4 mm
Housing width shown	16 mm
Body depth shown	21.8 mm
Overall depth reference	31.5 ± 0.5 mm
Mounting / through holes	4 × Ø3.1 mm (+0.1 / 0)
Center interface holes shown	2 × Ø4.8 mm
Lead / connector shown	PHR-2P; 1571# 26AWG
Rotation reference	CW

Dimension Drawing

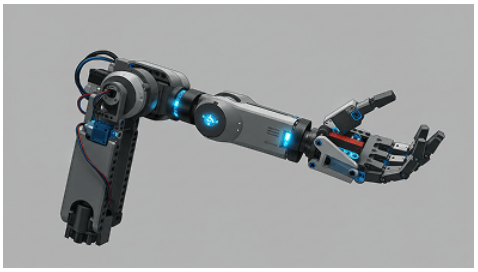
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Main Applications



Industrial Automation

Industrial valves, dampers, gates, low-speed rotary platforms, adjustment mechanisms, and



Industrial Automation

Industrial valves, dampers, gates, low-sp
rotary platforms, adjustment mechanisms

Customization Range

- Electrical Configuration
- Working voltage / winding configuration, rotation direction, lead wire length and terminal options.
- Performance Matching
- Gear ratio, target output speed, rated load point, current limit and torque margin based on the real lock mechanism.
- Mechanical Interface
- Output pinion / shaft interface, mounting features and connection to the customer's lock-body transmission.
- Noise & Reliability
- Gear meshing, backlash, lubrication, motor operating point, assembly consistency and complete-lock resonance optimization.
- Control / Feedback Integration
- Hall sensor, encoder or other feedback functions can be evaluated when required by the project; availability depends on the final structure and specification.

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FAQ

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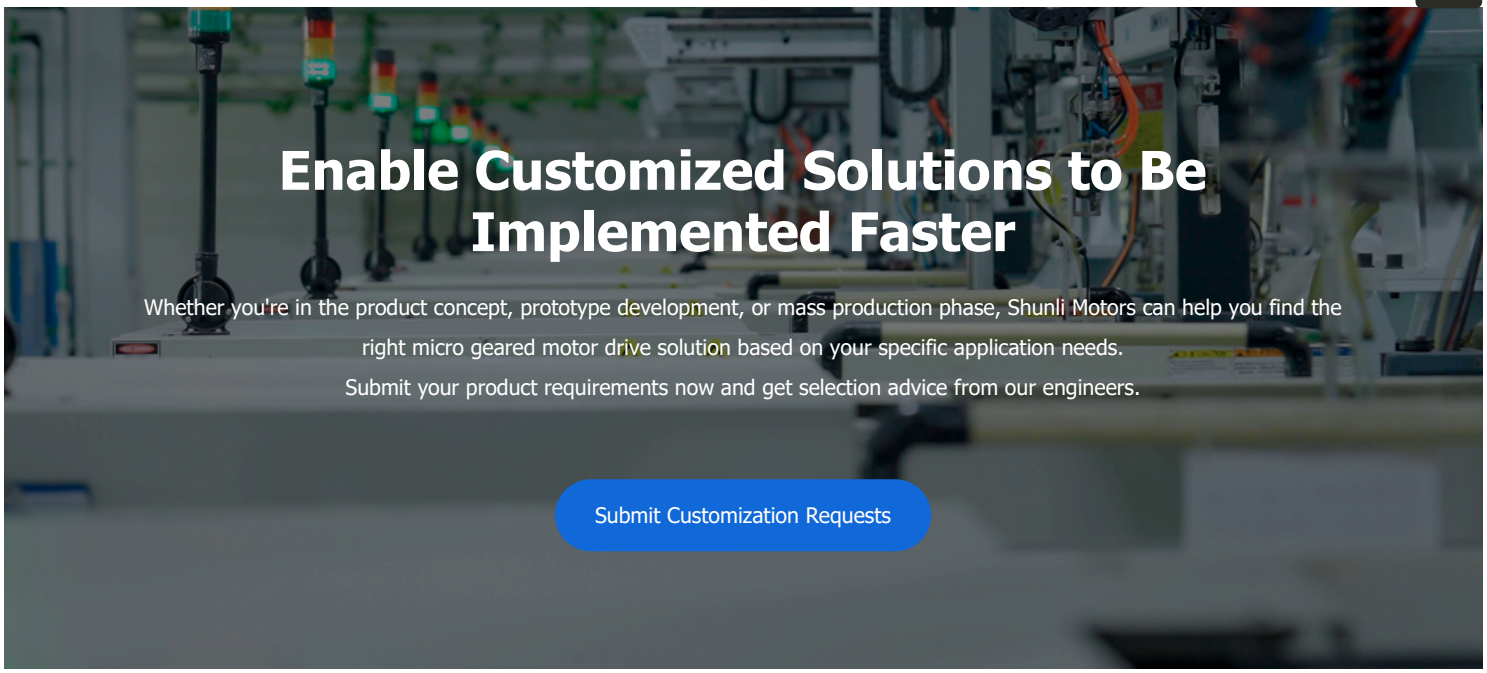
Q1: What types of projects are best suited to the GM58EM DC Worm Gear Motor?

Yes. Provide the product structure, space, load, and motion requirements, and our engineering team can assist with parameter conversion and solution evaluation.

Q2: What types of projects are best suited to the GM58EM DC Worm Gear Motor?

Q3: What types of projects are best suited to the GM58EM DC Worm Gear Motor?

Q4: What types of projects are best suited to the GM58EM DC Worm Gear Motor?



Enable Customized Solutions to Be Implemented Faster

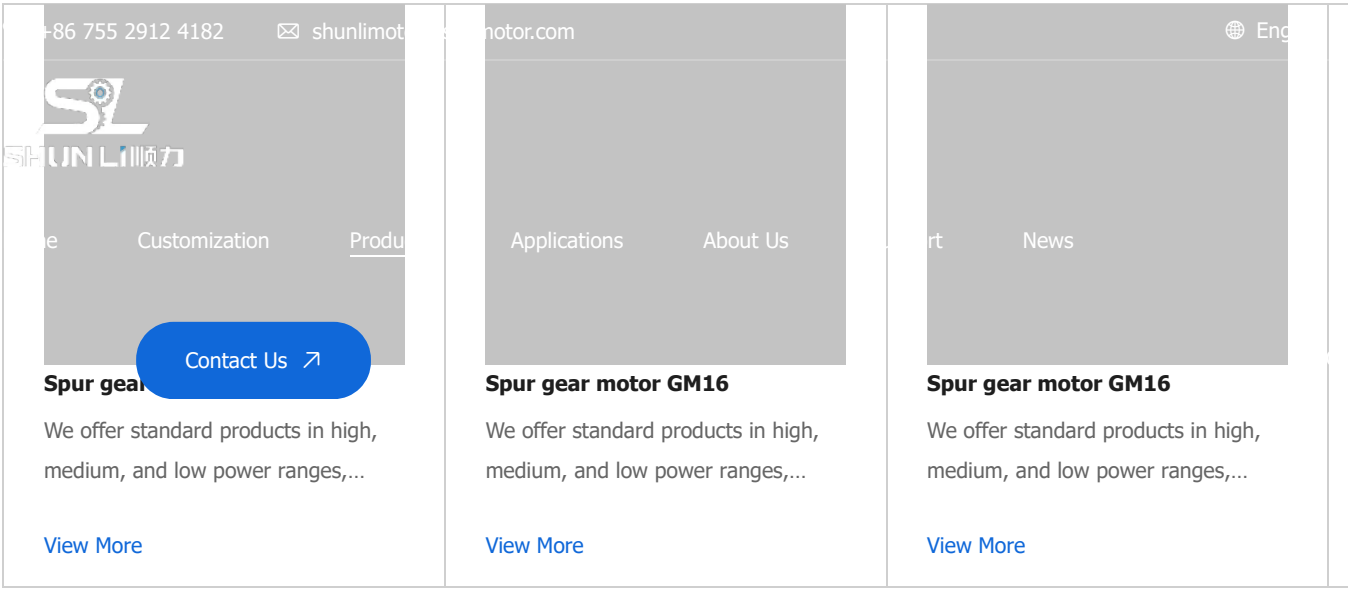
Whether you're in the product concept, prototype development, or mass production phase, Shunli Motors can help you find the right micro geared motor drive solution based on your specific application needs.
Submit your product requirements now and get selection advice from our engineers.

Submit Customization Requests

Related Products

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