Brushless DC Gear Motor BL2418

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Brushless DC Gear Motor BL2418

Main Applications

AI Robotics: Compact joints, grippers, pan-tilt mechanisms, service-robot modules, inspection mechanisms, and low-power g electronic speed control.

Industrial Automation: Small conveyors, valves, positioning mechanisms, feeders, automatic fixtures, and compact drive modules. Smart Home: Motorized windows, curtains, valves, furniture adjustments, appliance mechanisms, and smart-device actuators. Medical Equipment: Compact adjustment mechanisms, diagnostic equipment, laboratory automation, and controlled low-power actuators, subject to system-level validation. Commercial Equipment: Vending, dispensing, coffee-machine mechanisms, self-service terminals, and office automation. Custom OEM Equipment: Space-limited mechanisms requiring a compact brushless DC gear motor with built-in driver, PWM control, direction control, and FG feedback.

FAQ

Q1. What information is required to select the BL2418 brushless DC gear motor?

Please provide the operating voltage, target output speed, continuous and peak torque, installation space, output shaft requirements, duty cycle, control method, feedback requirements, ambient temperature, target lifetime, and annual quantity. The gear ratio should be selected together with the required speed and load rather than from ratio alone.

Q2. Does this BLDC gear motor include a driver?

Yes. The supplied product data identifies this series as using a built-in driver. The drawing shows VCC, GND, PWM, CW/CCW, a nections. Signal levels and control timing should be

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confirmed before the customer controller is finalized.

Q3. What gear ratios and voltages are available?

The supplied reference table covers 6 VDC, 12 VDC, and 24 VDC configurations with ratios of 1:5, 1:18, 1:22, 1:57, 1:83, 1:100, 1:221, 1:334, 1:854, and 1:1234. Final availability should be confirmed for the exact BL2418 configuration.

Q4. Can the motor speed be controlled by PWM?

Yes. The supplied mechanical drawing identifies a PWM input together with CW/CCW direction control and FG speed feedback. The PWM frequency, duty-range limits, input logic level, and FG pulse definition are not specified in the supplied data and should be confirmed during engineering evaluation.

Q5. Can the shaft, ratio, wiring, or connector be customized?

Customization can be evaluated based on the application. Please provide the required shaft drawing, installation dimensions, target speed and torque, wire length, connector specification, control interface, duty cycle, and annual demand so the engineering team can confirm feasibility.

Q6. How do I place an order with Shunli Motor?

Send us your application requirements or motor specifications. Our engineering team will evaluate the voltage, speed, torque, ratio, control interface, and installation conditions, then confirm the technical solution and sample. After sample approval, mass production can be arranged according to the confirmed specification and delivery requirements.

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BL2418 Series The BL2418 brushless DC gear motor is a compact 24 mm-class BLDC geared drive with a built-in driver, designed for OEM applications requiring el control, direction control, speed feedback, and stable low-speed output. Reference performance data is provided for 6 V, 12 V, and 24 V configurations with gear ratios from 1:5 to 1:1234, covering a broad output-speed range for compact automation and intelligent equipment. The integrated 5-wire interface supports PWM speed control, CW/CCW direction control, FG speed feedback, VCC, and GND. With rated output power up to 5 W and a compact cylindrical package, the series is suitable for smart devices, AI robotics, industrial automation, medical equipment, commercial equipment, and other space-constrained motion systems. Final selection should be verified against voltage, target output speed, torque, duty cycle, control method, installation dimensions, and th

Model Information

Series	BL2418
Motor Type	Brushless DC Motor (BLDC)
Product Type	Brushless DC Gear Motor with Built-in Driver
Reference Performance Table	BL2238SG source table supplied as BL24-family reference data
Rated Output Power	0.1 W–5 W
Weight	60 g
Control Interface	PWM / CW-CCW / FG / VCC / GND

Main Parameters

Technical Data

Parameter	Specification
Rated Voltage Options	6 VDC / 12 VDC / 24 VDC
Motor Reference Speed	10,300 RPM @ 6 V; 6,520 RPM @ 12 V; 12,550 RPM @ 24 V
Gear Ratio Options	1:5 / 1:18 / 1:22 / 1:57 / 1:83 / 1:100 / 1:221 / 1:334 / 1:854 / 1:1234
Output Power	0.1 W–5 W
Weight	60 g
Driver	Built-in
Control Signals	PWM, CW/CCW, FG

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Power Signals	VCC, GND

Technical Data

Ratio	5	18	22	57	83	100	2
No-load speed (RPM)	2060	572	468	180	124	103	4
Loaded speed (RPM)	1560	433	354	136	94	78	1
Reference torque (mN·m)*	9.8	30.8	37.7	83.7	122	147	2

Technical Data

Ratio	5	18	22	57	83	100	2
No-load speed (RPM)	1305	362	296	114	78	65	1
Loaded speed (RPM)	930	258	211	81	56	46	2
Reference torque (mN·m)*	9.8	30.8	37.7	83.7	122	147	2

Technical Data

Ratio	5	18	22	57	83	100	2
No-load speed (RPM)	2510	697	570	220	150	125	5
Loaded speed (RPM)	1840	511	418	161	110	92	4
Reference torque (mN·m)*	23.5	74.2	90.7	201	293	353	6

Technical Data

Driver Configuration	Built-in driver
PWM Input	Blue wire – PWM speed control
Ground	Black wire – GND
Direction Control	Yellow wire – CW/CCW

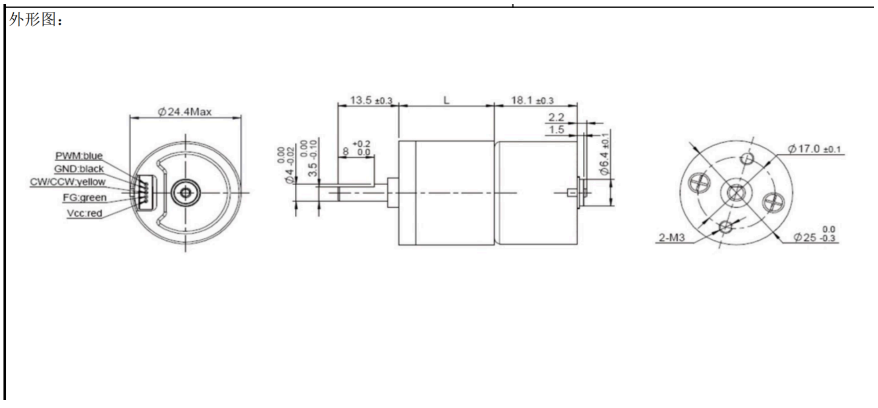
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Speed Feedback	Green wire – FG
Power Input	Red wire – VCC

Technical Data

Motor / Gearmotor Outside Diameter	Ø24.4 mm max (drawing reference)
Front Face Diameter	Ø25.0 mm, 0 / -0.3
Mounting Pattern	2 × M3; reference circle Ø17.0 ±0.1 mm
Output Shaft Diameter	Ø4.00 mm, 0 / -0.0
Output Shaft Flat	3.5 mm, 0 / -0.1
Output Shaft Extension	8 mm, +0.2 / 0
Gearbox Front Section	13.5 ±0.3 mm
Gearbox Length	L – varies by reduction configuration
Motor Section Length	18.1 ±0.3 mm
Rear Boss / Interface	Ø6.4 ±0.1 mm
Weight	60 g

Dimension Drawing



Main Applications

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Industrial Automation

Industrial valves, dampers, gates, low-speed rotary platforms, adjustment mechanisms, and compact actuators requiring right-angle transmission.

Customization Range

- Electrical Configuration
- Rated voltage and winding configuration
- Motor speed and output speed
- Lead wire and connector interface
- Direction-control and speed-control interface, subject to driver design
- Gearbox & Performance
- Gear ratio selection
- Output speed
- Torque target within gearbox capability
- Gearbox length based on ratio configuration
- Mechanical Interface
- Output shaft geometry and length
- Mounting interface
- Connector orientation and harness requirements
- Application-specific mechanical matching
- Control & Feedback
- PWM speed control
- CW/CCW direction control
- FG speed feedback
- Driver-function matching based on customer controller requirements
- Reliability Validation
- Duty cycle and temperature rise

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- Frequent start / stop and reversing
- Load variation and overload conditions
- Noise, vibration, target lifetime, and batch consistency
- Information Required for Custom Evaluation
- End product and motion task
- Rated and minimum operating voltage
- Target output speed
- Continuous / starting / peak torque
- Installation envelope and shaft/interface drawing
- Single-cycle running time and daily cycle count
- PWM / direction / FG interface requirements
- Ambient temperature and heat-dissipation conditions
- Noise and lifetime targets
- Expected annual quantity and certification requirements

FAQ

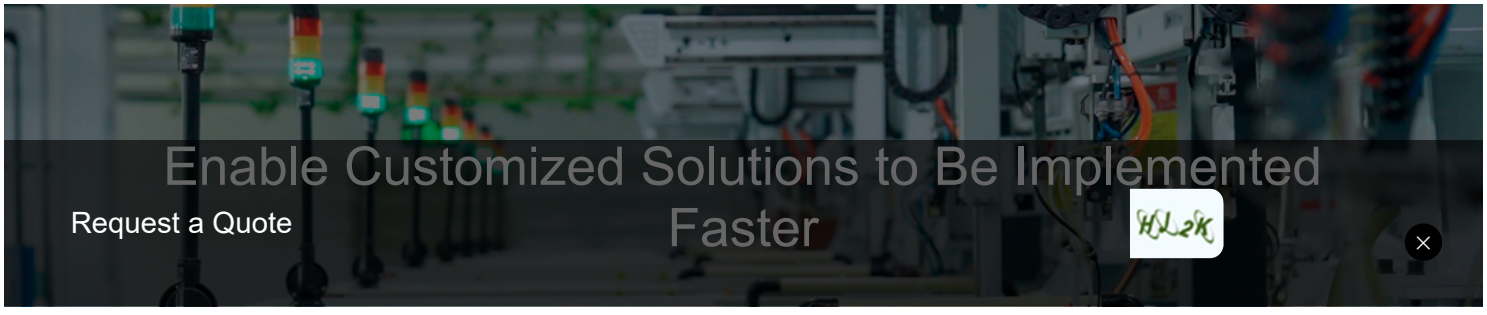
Q1: What types of projects are best suited to the GM58EM DC Worm Gear Motor?

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?



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