

MINAS-BL GV series / KV series

Panasonic Corporation, Appliances Company, Motor Business Unit

http://industrial.panasonic.com/ww/e/25000/motor_fa_e/motor_fa_e.html

motor 0 W 30W

M4 Ring terminal

200±20

500±50

65

20.5

7

2

65

90

37

2

30

65

12H7

11

4-6.5

104

O-ring

• Printed colors may be slightly different from the actual products. • Specifications and design of the products are subject to change without notice for the product improvement.

New Brushless Motors

High-efficiency energy saving eco-friendly MINAS series technology is incorporated into smaller and higher output motors.

Motors without commutation brush and with advanced controlling technology feature lowered electrical loss and high efficiency. “Split core structure” developed for and proven in MINAS series AC servo motors is now introduced into this new brushless motors to further reduce their sizes but increase power. These motors promote three “saving activities”, Energy, Cost and Space.

New brushless motors are developed for realizing three savings.

Energy Saving

Brushless structure with optimized control and minimized power loss for high efficiency.

Cost Saving

No commutators, no brushes and least maintenance cost assure longer service life.

Space Saving

“Split core structure” proven in MINAS series is adopted to reduce size but increase power of the new motors.

NEW
Small size and high output brushless motors
(Speed control—Separate type)

MINAS-BL

GV series

50 W — 130 W

(Released in 2012 spring)

MINAS-BL

KV series

50 W — 750 W

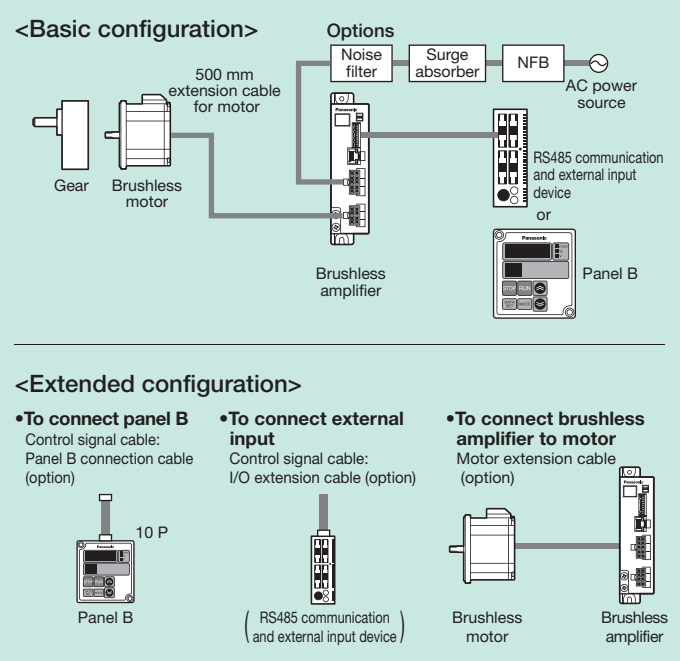
(Released in 2012 autumn)



•Photo: GV series

- Main Features
- Brushless for energy saving
 - Adoption of MINAS series technology for simultaneous pursuit of miniaturization and high power
 - Use of proprietary CS sensor extends variable speed range (1:133). (Controllable rotation speed: 30–4,000 r/min)
 - CS signal is controlled for smooth operation driven by sine wave.(Flat torque from low to high speed with low vibration and low noise)
 - Installation is compatible with compact geared motors. (GV series)
 - Installation is compatible with MINAS series servo motors. (KV series)
 - Compatible with the setup support software PANATERM for BL. By using waveform and graphic display, operation can be monitored and parameters (acceleration/deceleration time etc.) can be set and edited.
 - Compatible with international standards (CE and UL) and wider power sources voltages range (single 100–120 V, single 200–240 V).

■ GV series system diagram



■ GV series model number designation

■ Amplifier **M B E G 1 E 5 B C V * ***

Series name: M B E G 1 E 5 B C V
Special model number: * *

- Output
5A: 50 W
9A: 90 W
1E: 130 W
- Power input
1: Single-phase 100–120 V
5: Single/three phase 200–240 V
- Function
B: With regenerating braking circuit
- Frame
V: Speed control type
- Specification
C: Communication

■ Motor **M B M U 5 A Z A X * * ***

Series name: M B M U 5 A Z A X
Special model number: * * *

- Output
5A: 50 W
9A: 90 W
1E: 130 W
- Input power
1: 100 V
2: 200 V
Z: 100/200 V
- Structure
A: Standard
- Shaft
X: Gear X type (80 mm square)
Z: Gear Z type (90 mm square)
S: Round

■ Gear head **M X 8 G 3 0 B**

- Size
MX8: 80 mm square
MZ9: 90 mm square
- Ratio
Example: 30 ... 1/30
3, 3.6, 5, 6, 7.5, 9, 10, 12.5, 15, 18, 20, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180,(200)
Note: 1/200 is available only for 90 mm square.
- Bearing B: Ball bearing

■ GV series rating

Size (mm)	Model number		Rated output (W)	Power input			Rated torque (N•m)	Start torque (N•m)	Rated speed (r/min)
	Brushless amplifier	Motor		Voltage AC (V)	Tolerance (%)	Frequency (Hz)			
□80	MBEG5A1BCV	MBMU5AZA□	50 W	Single phase 100~120	±10	50 / 60	0.16	0.24	3000
	MBEG5A5BCV			Single/three-phase 200~240					
□90	MBEG9A1BCV	MBMU9A1A□	90 W	Single phase 100~120	±10	50 / 60	0.29	0.43	
	MBEG9A5BCV	MBMU9A2A□		Single/three-phase 200~240					
	MBEG1E1BCV	MBMU1E1A□	130 W	Single phase 100~120	±10	50 / 60	0.41	0.62	
	MBEG1E5BCV	MBMU1E2A□		Single/three-phase 200~240					

■ GV series common specifications

Model number	MBEG5A1BCV	MBEG5A5BCV	MBEG9A1BCV	MBEG9A5BCV	MBEG1E1BCV	MBEG1E5BCV
Output	50 W		90 W		130 W	
Compatible motor	MBMU5AZA□		MBMU9A1A□	MBMU9A2A□	MBMU1E1A□	MBMU1E2A□
Power supply (V)	Single phase 100–120	Single/three phase 200–240	Single phase 100–120	Single/three phase 200–240	Single phase 100–120	Single/three phase 200–240
Rated time	Continuous					
Power source	Frequency					
	50/60 Hz					
Control scheme	Allowable voltage fluctuation					
	±10 %					
	Control method					
	Speed control through CS signal by PWM sine wave driving					
	Speed control range					
	30 — 4000 [r/min]					
	Set speed accuracy (@20°C)					
	Analog: ±3% of upper limit speed (±90 r/min when upper limit speed is 3,000 r/min) [Digital: 1% or less of upper limit speed]*1					
Speed setting resolution						
Digital: 1 r/min*1; Analog: Approx. 1/200 of upper limit speed						
Overload rating						
150% for 1 minute						
Regenerating brake						
External regenerating resistor can be used*2. Instantaneous braking torque 150%						
Stop method						
Selection between deceleration to stop or free run and stop*1						
Accel/Decel time						
0.01 to 300 seconds (time necessary for changing from 0 to 1,000 r/min)*1						
Speed change setting						
8 speeds						
Protective	Warning: under-voltage warning*3/error protection: under-voltage protection*3, overload, overcurrent, regeneration overvoltage, CPU error, overspeed, sensor error, overheat, setting change alert, external forced trip, RS485 communication error, user parameter error, system parameter error					
Ambient conditions	Ambient temperature					
	0°C to +50°C (no freezing)*4					
	Ambient humidity					
	Relative humidity 20 to 85% (no condensation)					
	Ambient atmosphere					
Indoor (free from corrosive gas, dust, dirt)						
Altitude						
1,000 m or less						
Vibration						
5.9 m/s ² or less (10—60 Hz)						
Storage temperature						
Normal temperature*5						
Storage humidity						
Normal humidity						
Protection degree						
IP20 or equivalent						
Cooling method						
Self-cooling						
Mass						
0.37 kg						

*1 Can be set when using the panel B (DV0P3510, optional). *2 Use regenerating resistor (DV0P2890/DV0PM20068 (100 V/200 V), optional). *3 By using the panel B (DV0P3510, optional), condition of under-voltage warning (operation can be restarted as the voltage recovers, without causing trip) can be changed to under-voltage protection (state is retained after tripping). *4 Ambient temperature is measured at a position 5 cm away from the brushless amplifier. Note: Motor should be started/stopped by inputting the signal (I1, I2, etc.). When started/stopped by turning ON/OFF of the power supply, the life of internal circuit will be shortened. *5 Short-period permissible storage temperature range, e.g. during transportation, is defined as - 20°C to 60°C, without freezing