# BLDC
# Motors & Drives

Applied Motion Products

CE RoHS 2002/95/EC

- High performance, low cost, brushless speed control systems
- 30 to 105 watts continuous shaft output
- Operates from 12 to 48V DC power supply
- Driver can supply up to 6.25A continuous, 12.5A peak
- Excellent speed stability
- Eight digital inputs for commanding a variety of functions
- Two digital outputs for interfacing to other equipment
- Two on board potentiometers plus 12 bit analog input for setting speed, acceleration, deceleration

For more information visit: www.applied-motion.com/BLDC

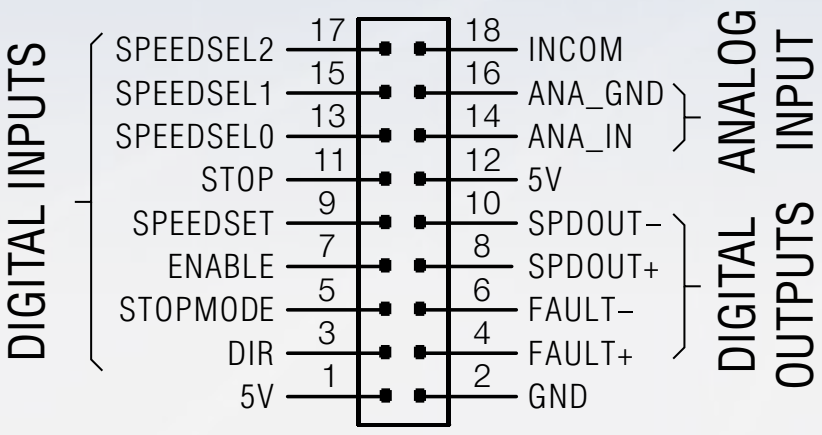
# BD5 Drive

- **High performance, low cost speed control drive**
- **Operates from 12 to 48V DC power supply**
- **Output current: up to 6.25Arms continuous, 12.5A peak**
- **Eight digital inputs for commanding a variety of functions**
- **Two digital outputs for interfacing to other equipment**
- **Two on board potentiometers plus 12 bit analog input for setting speed, acceleration, deceleration**

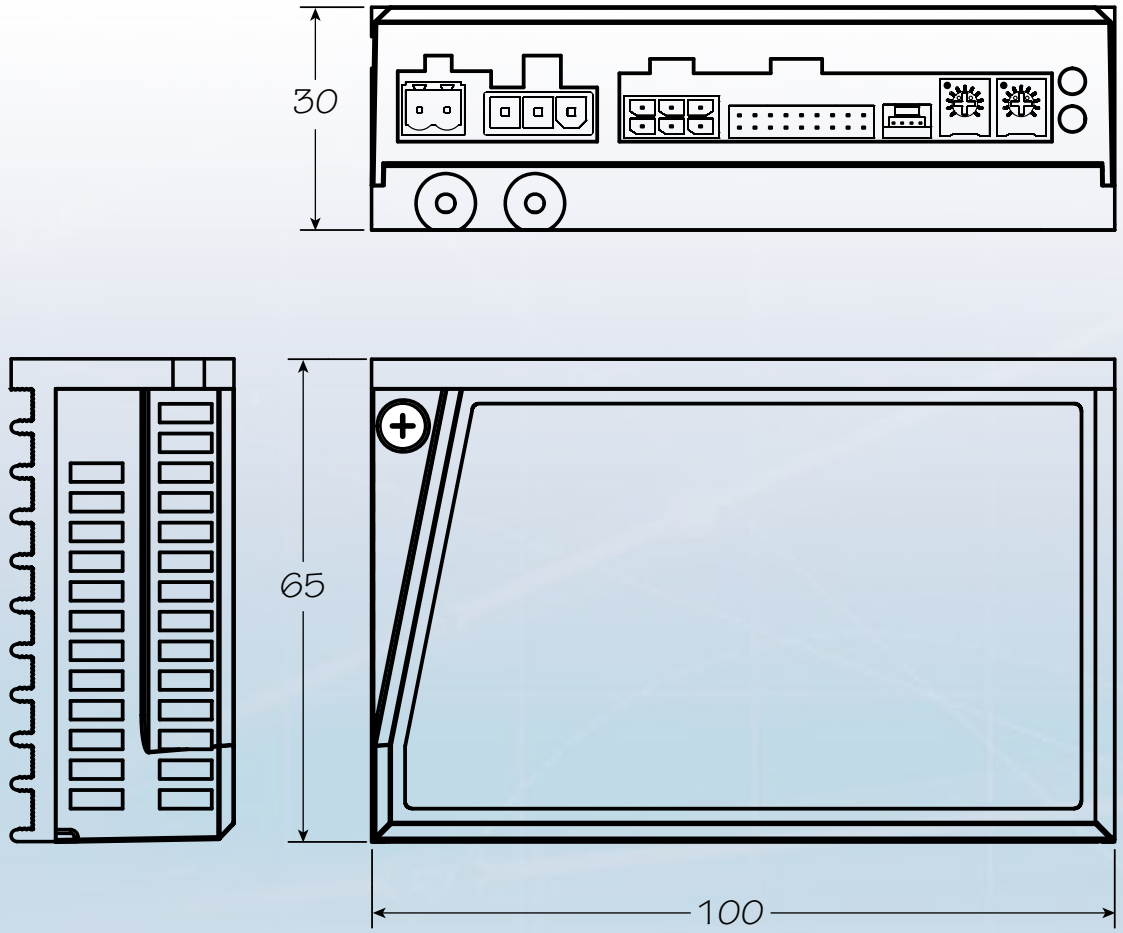
CE RoHS 2002/95/EC

For more information go to
www.applied-motion.com/BLDC

## IO Connections



## BD5 Dimensions



# Brushless Drive Technical Specifications

## POWER AMPLIFIER:

| | |
|---|---|
| AMPLIFIER TYPE | Triple half bridge, 4 quadrant |
| CURRENT CONTROL | 4 state PWM at 10 kHz |
| OUTPUT CURRENT | BD5-G1-AH: 1.75Arms cont, 3.5Arms peak (5 seconds max)<br>BD5-G2-AH: 3.6Arms cont, 7.2Arms peak (5 seconds max)<br>BD5-G3-AH: 6.25Arms cont, 12.5Arms peak (5 seconds max) |
| POWER SUPPLY | External 12 - 48 VDC power supply required<br>Under-voltage alarm: 8.5 VDC<br>Over-voltage shutdown: 62 VDC |

## CONTROLLER:

| | |
|---|---|
| MODE OF OPERATION | Velocity control. Speed can be selected by digital input from on-board potentiometer, external analog signal, or 7 preset speeds. Accel/decel rate set by on-board potentiometer |
| DIGITAL INPUTS | Eight inputs, 5-24 VDC, bidirectional (can be driven by sinking or sourcing signals) 2 kHz max freq response. Common terminal (INCOM) can be connected to an external power supply (5 to 24 VDC), or internally connected to 5V or GND (selected by internal DIP switches)<br>CW/CCW: selects direction of motor shaft rotation<br>STP: commands motor to stop quickly using electromagnetic braking<br>EN/RE: removes power from motor windings<br>M0,M1,M2: selects one of seven preset speeds<br>STMD: selects which mode of stopping is used<br>SPST: selects whether speed is set by on-board pot or external analog signal |
| DIGITAL OUTPUTS | 30 VDC max, 80 mA max, open collector, open emitter.<br>FLT is a dedicated fault output.<br>SPO is a dedicated tachometer output (30 pulses per revolution).<br>Both outputs can be reconfigred at the factory for qualified OEM applications. |
| ANALOG INPUT | AIN referenced to GND, Range = 0 to 5 VDC, Resolution = 12 bits, 5v = 4500 rpm. |
| COMMUNICATION INTERFACE | RS-232 (for factory configuration only) |

## APPROVALS:

| | |
|---|---|
| AGENCY APPROVALS | RoHS<br>CE PENDING |

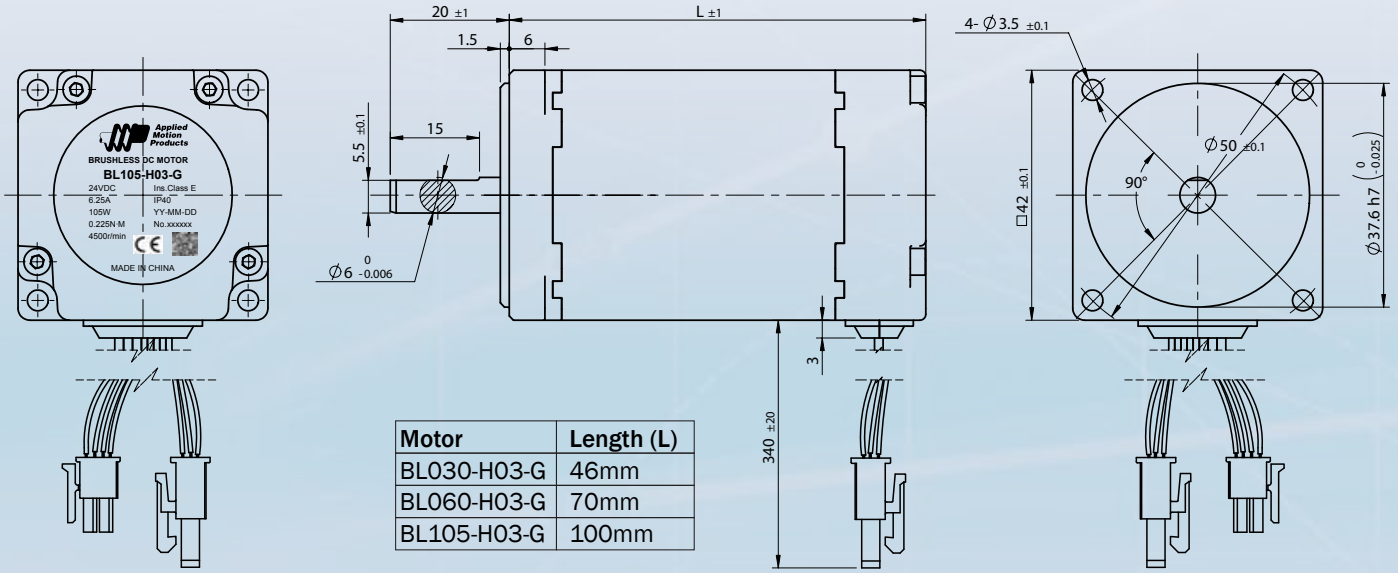
## PHYSICAL:

| | |
|---|---|
| OPERATING TEMPERATURE | 0 to 100°C (32 to 212°F) Internal temperature of the electronics section |
| AMBIENT TEMPERATURE | 0 to 40°C (32 to 104°F) When mounted to a suitable heatsink |
| HUMIDITY | 90% max, non-condensing |
| MASS | 6.0 oz (170 g) |

# Motor Specifications

| PART # | POWER | RELATED VOLTAGE | RATED CURRENT | | RATED TORQUE | | KE | ROTOR INERTIA | MASS |
|---|---|---|---|---|---|---|---|---|---|
| | W cont. | VDC | A cont. | A peak | N-M cont. | N-M peak | V/krpm | g-cm$^2$ | g |
| BL030-H03-G | 30 | 24 | 1.75 | 3.5 | 0.065 | 0.13 | 3.65 | 38.8 | 320 |
| BL060-H03-G | 60 | 24 | 3.6 | 7.2 | 0.13 | 0.26 | 2.7 | 72 | 550 |
| BL105-H03-G | 105 | 24 | 6.25 | 12.5 | 0.225 | 0.45 | 2.65 | 114 | 830 |

# Motor Dimensions




| Motor | Length (L) |
|---|---|
| BL030-H03-G | 46mm |
| BL060-H03-G | 70mm |
| BL105-H03-G | 100mm |

## BLDC Drive Part Numbering System

# BD5-G1-AH

**Series**
BLDC Series

**Output Current**
5 = 5 A rms cont
10 = 10 A rms cont

**Motor Frame Size**
G = 42 mm

**Motor Winding**
1 = 30 W, 24 V
2 = 60 W, 24 V
3 = 105 W, 24 V

**Communication**
A = RS-232 (for factory configuration only)

**Feedback**
H = Hall devices

**Order this BD5 model...**
1. BD5-G1-AH
2. BD5-G2-AH
3. BD5-G3-AH

**For use with this BL motor...**
1. BL030-H03-G
2. BL060-H03-G
3. BL105-H03-G

## BLDC Motor Part Numbering System

# BL000-000-0

**Series**
BL = Brushless DC Motor

**Wattage Rating**
030 = 30 watts
060 = 60 watts
105 = 105 watts

**Feedback**
H = Hall devices only

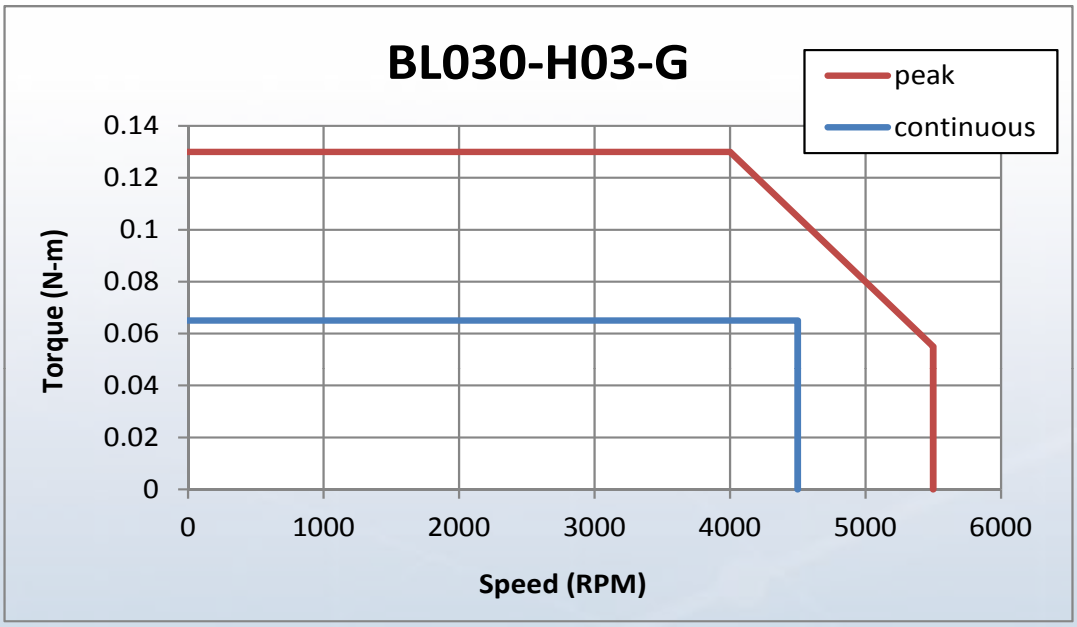
**RESERVED**

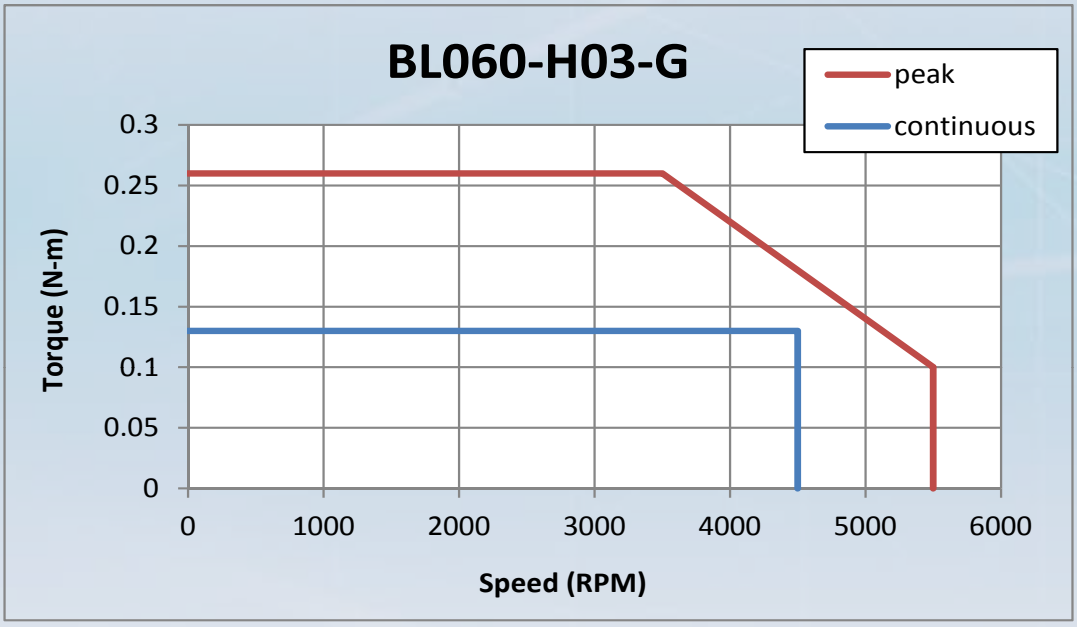
**Voltage**
3 = 24 VDC

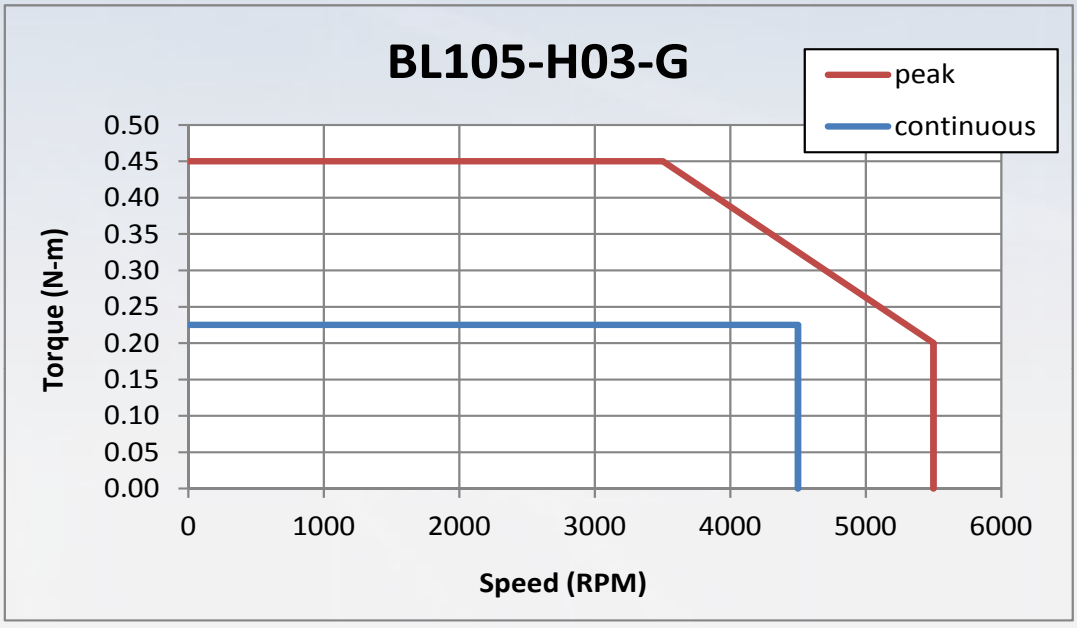
**Frame Size**
G = 42mm

**Standard Part Numbers:**
BL030-H03-G
BL060-H03-G
BL105-H03-G

# Speed Torque Curves



# Accessories

## Power Supplies

Applied Motion offers the following DC power supplies for use with the brushless DC drives and motors.
PS50A24: 50 Watts at 24 VDC, recommended for BL030-H03-G motor.
PS150A24: 150 Watts at 24 VDC, recommended for BL060-H03-G motor.
PS320A48: 320 Watts at 48 VDC, recommended for BL105-H03-G motor.

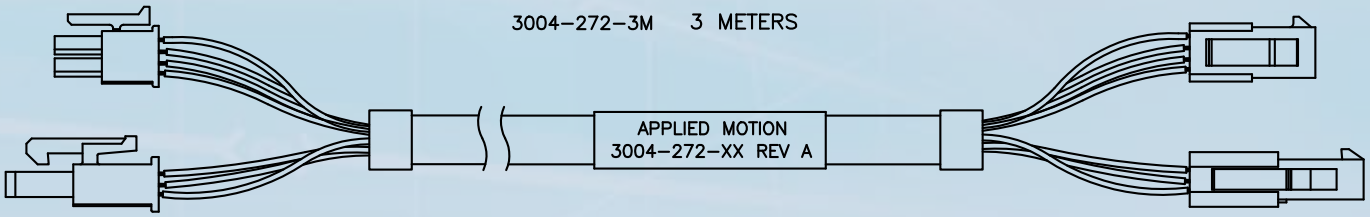
## RC-050 Regeneration Clamp

The RC-050 regeneration clamp is for use where regeneration from the motor may be excessive for the power supply. In these cases the RC-050 is connected between the drive and power supply and absorbs regenerated energy.

## Extension Cable

For applications where motors and drives are separated by more than 30cm (1 foot)

3004–272–1M 1 METER
3004–272–3M 3 METERS



Applied Motion Products
404 Westridge Dr.
Watsonville, CA 95076
Tel: 800-525-1609
Fax: 831-761-6544
www.applied-motion.com

DISTRIBUTED BY:

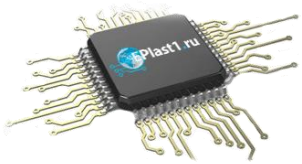
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

**Телефон:** 8 (812) 309 58 32 (многоканальный)
**Факс:** 8 (812) 320-02-42
**Электронная почта:** org@eplast1.ru
**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.