

### TYPICAL APPLICATIONS

Control of Brushless Motors for:

- Medical pumps and blowers
- Air-handling equipment
- Packaging and printing products
- Semiconductor handling and insertion machines
- Industrial automation equipment
- Office automation and equipment

### FEATURES

- Electronic commutation speed controller for electronically commutating three-phase brushless motors with Hall sensors, which are arranged offset at 120 electrical degrees
- Speed of the motor is preset by means of either an internal or an external potentiometer
- Maximum constant current can be adjusted via an on-board potentiometer
- Direction of rotation of the motor can be preset by means of the direction control input. The controller output stage can be activated and deactivated by means of the disable control input
- Controller is safeguarded against heat overload by means of an internal thermal cutoff
- Controller output stage has been constructed using POWER-MOS-FET technology, resulting in very high efficiency

### BENEFITS

- Compact packaging minimizes space demands
- Matched drives and motors from a single supplier
- Complete system testing provides high reliability
- Terminal block connections for ease of wiring
- Multiple methods of speed control
  - Input voltage
  - Internal potentiometer
  - External potentiometer
  - External voltage reference

## ***BDP-QC-35-05 and BDP-QC-40-05*** *Electronic commutation speed controller for brushless motors*



Silencer™ brushless controllers are available in a variety of voltage and current ratings. Their compact packaging minimizes space demands. All controllers have generous terminal blocks to facilitate ease of wiring.

Silencer drives are compatible with Silencer Series Brushless DC Motors. Silencer motors are available in sizes 12, 17, 23, 28, 34 and 42 in standard frames with 1.2" to 4.15" diameters. They offer speeds up to 20,000 rpm and continuous torques ranging from 1.2 to 519 oz-in. Standard options include gearheads, resolvers and encoders.

If you have questions about Silencer drives or would like to speak to an applications engineer, please call us or visit our web site.

## BDP-QC-40-05 SPECIFICATIONS

### Electrical Data

|                                       |             |
|---------------------------------------|-------------|
| Operating voltage -+input and Gnd     | 20-40 VDC   |
| Residual voltage                      | < 5%        |
| Maximum constant current (adjustable) | 5A*         |
| Supply voltage for Hall Switches      | 6 V / 20 mA |

\* Additional heatshrinking required for maximum current

### Inputs

- Direction of rotation – (REV) open collector / TTL / CMOS / switch
- Disable output stage – (DIS) open collector / TTL / CMOS / switch

### Temperature Range

- Storage -104 to 185°F (-40 to +85°C)
- Operation -50 to 113°F (-10 to +45°C)

### Moisture Range

20 to 80% non-condensed

### Mechanical Data

|                        |   |
|------------------------|---|
| Weight                 | 4.3 oz (120.0 grams)  |
| Dimensions (L x W x H) | 2.17 x 3.70 x 1.30 in (55 x 94 x 33 mm)                             |
| Mounting               | 4 x M3 with a distance between holes of 1.54 x 3.43 in (39 x 87 mm) |
| Drill Diameter         | 4.0 mm - (4) places   |

### Termination Table

| Terminal # | Nomenclature   | Description               |
|------------|----------------|---------------------------|
| 1          | GND            | Gnd for Supply Voltage    |
| 2          | Positive Input | Positive Supply Voltage   |
| 3          | Phase A        | Motor Phase A             |
| 4          | Phase C        | Motor Phase C             |
| 5          | Phase B        | Motor Phase B             |
| 6          | S3             | Hall Switch #3            |
| 7          | S2             | Hall Switch #2            |
| 8          | S1             | Hall Switch #1            |
| 9          | VCC            | Supply for Hall Switches  |
| 10         | GND            | Gnd for Hall Switches     |
| 11         | DIS            | Control Input - Disable   |
| 12         | REV            | Control Input - Reverse   |
| 13         | GND            | Gnd for Dis and Rev       |
| 14         | SPD            | Set value input for speed |

### Outline Drawing - Three Views

