

# Silencer<sup>®</sup> Series Brushless Controllers

## 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

- 2-quadrant speed controllers for brushless motors
- Feedback using Hall effect sensors
- Motor speed is set by either an internal or external potentiometer
- Motor rotation direction can be present by the direction control input; the controller output stage can be activated and deactivated by the disable control input and brake input
- Maximum constant current can be adjusted via an on-board potentiometer
- Internal thermal cutoff prevents heat overload
- Very high efficiency is achieved by using POWER-MOS-FET technology in the controller output stage
- Efficient PWM speed control
- Operating temperatures from -10 to 45°C and storage temperatures from -40 to 85°C

## 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

## **BDO-Q2-40-05-01** *2-quadrant speed controller for brushless motors*



Silencer<sup>®</sup> 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 inch 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.

## BDO-Q2-40-05-01 SPECIFICATIONS

| Electrical Data  | BDO-Q2-40-05-01            |
|--|----------------------------|
| Operating voltage -+input and Gnd<br>Residual voltage < 5 %  | 12 - 40 VDC                |
| Maximum constant current (adjustable)<br>• Without additional cooling surfaces (free convection)<br>• With additional convection (< 1,8 K / W) | 0.5 - 3.5 A<br>0.5 - 5.0 A |
| Peak current limitation (cycle by cycle)   | 10.0 A                     |
| Supply voltage for Hall sensors  | 6 V / 20 mA                |

### Inputs

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

### Temperature Range

- Storage -40 to +85°C
- Operation -10 to +45°C

### Moisture Range

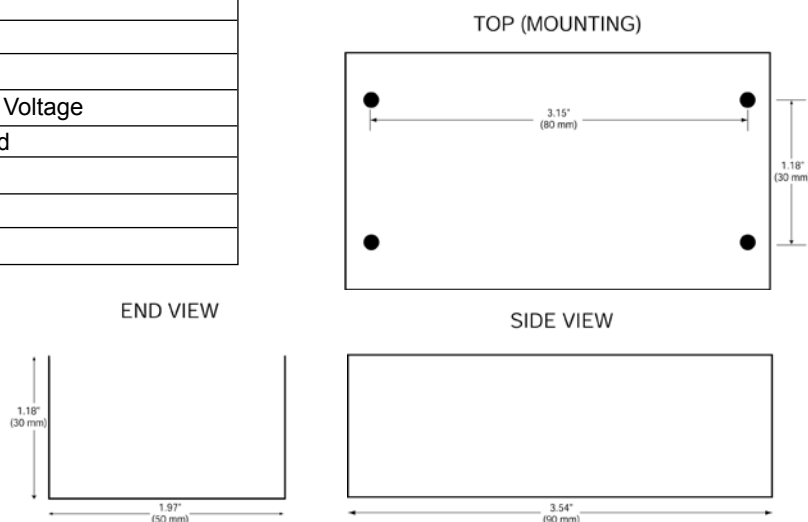
20 to 80% non-condensed

| Mechanical Data  | BDO-Q2-40-05-01   |
|--|-------------------|
| Weight   | 4.37 oz<br>124 gm |
| Dimensions - (L x W x H) - 3.54 x 1.97 x 1.18 in (90 x 50 x 30 mm)             |                   |
| Mounting - 4 x M4 with a distance between holes of 3.15 x 1.18 in (80 x 30 mm) |                   |

### Termination Table

| Terminal # | Nomenclature | Description                          |
|------------|--------------|--------------------------------------|
| 1          | REV          | Reverse Motor Direction              |
| 2          | GND          | Signal Ground                        |
| 3          | SV           | External Speed Input                 |
| 4          | +6V          | Reference Voltage for Control Inputs |
| 5          | GND          | Supply Voltage - Ground              |
| 6          | +INPUT       | Supply Voltage - Positive            |
| 7          | DIS          | Controller Disable Input             |
| 8          | BRAKE        | Controller Brake Input               |
| 9          | S1           | Hall Switch #1                       |
| 10         | S2           | Hall Switch #2                       |
| 11         | S3           | Hall Switch #3                       |
| 12         | VCC          | Hall Switch Supply Voltage           |
| 13         | GND          | Hall Switch Ground                   |
| 14         | ØB           | Motor Phase B                        |
| 15         | ØC           | Motor Phase C                        |
| 16         | ØA           | Motor Phase A                        |

### Outline Drawing - Three views



Dimensions are in inches