

# Silencer™ 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

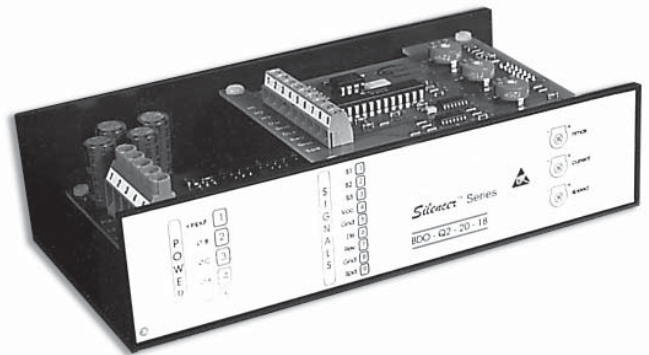
## FEATURES

- 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
- 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-Q2-20-18, BDO-Q2-20-40 BDO-Q2-50-18, BDO-Q2-50-40*** 2-quadrant speed controllers 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.

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## BDO-Q2-20-18, BDO-Q2-20-40, BDO-Q2-50-18 and BDO-Q2-50-40 SPECIFICATIONS

Electrical Data	BDO-Q2-20-18	BDO-Q2-50-18	BDO-Q2-20-40	BDO-Q2-50-40
Operating voltage +-input and Gnd Residual voltage < 5 %	12-28 VDC	20-60 VDC	12-28 VDC	20-60 VDC
Maximum constant current (adjustable)	18 A	18 A	40 A	40 A

### 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	BDO-Q2-20-18	BDO-Q2-50-18	BDO-Q2-20-40	BDO-Q2-50-40
Weight	12.91 oz 366 gm	12.91 oz 366 gm	13.76 oz 390 gm	13.76 oz 390 gm
Dimensions - (L x W x H) - 6.69 x 3.54 x 1.73 in (170 x 90 x 44 mm)				
Mounting - 4 x M4 with a distance between holes of 6.30 x 2.52 in (160 x 64 mm)				
Diameter - 4.5 mm - (4) places - M4 screw				

### Termination Table

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

### Outline Drawing - Three Views

