



Adjustable Speed Brushless Motors and Controls

- Precise speed/constant torque over wide range
- Adjustable speed packages from 1/4 to 3HP
- Easy to setup, install and operate
- Control accepts industry standard +/- 10 Vdc or potentiometer input for speed command
- Durable brushless motor with Hall sensors
- UL, cUL, CE

- Adjustable Speed
- Mixers
- Conveyors
- Blowers
- Pumps
- Indexers
- Feeders
- Packaging Equipment
- Door/gate Openers
- Material Handling

Baldor's new brushless motor and control now enables adjustable speed applications to make use of the benefits of brushless technology - less maintenance, quieter operation, faster acceleration, higher torque and power output.

The adjustable speed Brushless Motor Control (BMC-series) is simple to use and easy to set up without programming - user trimpots and jumpers are factory set and will work for most applications. Input command signal may be +/- 10 Vdc, a 5K speed pot, or a form "C" contact or relay for forward-stop-reverse operation.

The brushless motor (BSM-series) coupled with the BMC control, provide better than 0.5% speed regulation. This package provides long maintenance-free, trouble-free operation.



These packages are designed to operate directly from 115 or 230 Vac input voltage, providing accurate speed controllability for applications requiring to 3 HP (0.18-2.2 Kw).

Baldor has a variety of standard brushless motors for applications. Or you may wish to have a custom motor designed for your exact needs. Contact Baldor with your requirements.

› Baldor's BMC-series Adjustable Speed Brushless Control



cULus
CE

- Simple to operate - no programming necessary
- Tight speed regulation - provides stable performance
- Industry standard input speed command
- Wide speed range - performance when needed
- Fully protected unit - application reliability
- 200% overload - power available to move a load
- Potentiometer or reference speed input

Design Specs

- Speed regulation better than 0.5%
- Peak current two times continuous
- Jumper selections: line voltage, motor poles, automatic/manual start, braking.
- Diagnostic LED's

Environmental & Operating Conditions

- 115/208/230 +/- 10% 50/60 Hz
- 200% overload for 3 sec
- Max temperature 45 deg C
- Humidity - 95% max RH non-condensing
- Altitude - 3300 feet max without derate

Standard Specs

- Industry standard speed command of +/- 10 Vdc or pot input
- Speed range to 7000 RPM (4 pole)
- Diagnostic LEDs
- Trimpot adjustments
- Accel/decel time 0.1 - 30 sec

Protection Features

- Motor overload, I²t & short circuit
- RMS current & electronic inrush
- Hall sensor input
- Undervoltage & overvoltage
- MOV transient
- Finger safe IP20

BMC easy setup instructions.

1. Motor pole selection: set jumpers for number of motor poles (4,6,8 pole).
2. Hall sensor phasing: factory set.
3. Set max allowable rpm (factory set for 4000 RPM).
4. Set: time to speed (factory set for 1.5 sec).
5. Set: min speed (factory set for 0 RPM).
6. Automatic calibration (only for applications needing controlled braking).

› Control Technical Specifications

Control Catalog	Input Vac	Phase	Output		Output	
	50/60Hz		HP	Kw	VDC	Amps
BMC6A01	115	1	1/4	0.18	320	1.5
	208/230	1				
BMC6A02	115	1	1/2	0.37	320	2.4
	208/230	1				
BMC6A04	115	1	1	0.75	320	4.0
	208/230	1				
BMC6A05	115	1	1 1/2	1.13	320	5.5
	208/230	1				
BMC2A06	208/230	1,3	2	1.5	320	6.7
BMC2A09	208/230	3	3	2.25	320	9.0

› Baldor's BSM-series Brushless Motors With Hall Feedback

- High-energy magnets - high torque density
- High voltage insulation - protection against current/voltage surges
- Rugged industrial construction - quality package design
- Heavy-duty continuous operating design
- Hall sensor feedback - long life & durable
- Environmentally designed - operate over wide range

cULus
CE



Design Specs

- NEMA 42/56 foot/base mount
- Hall sensor feedback
- Face/Foot mount
- High energy Neodymium magnets

Environmental & Operating Conditions

- Wide operating range 0 to 40°C
- Reliable sealed TENV housing
- Sealed to NEMA4 (IP54)
- 95% max RH non-condensing
- Altitude - 3300 feet max without derate

Standard Specs

- Premium 200°C moisture resistant wire
- ABEC Quality Class 3 bearings
- High 155°C winding temperature design
- UL/CE/cUL

Contact Baldor for other HP, speeds, brakes, sealing and mounting options.

Brushless technology

Baldor's BSM-series of motors have permanent magnets on the rotor and windings on the stator. With windings on the outside, the motor can handle higher continuous loads without exceeding temperature. Switching winding phases is accomplished efficiently thru electronics. There are no brushes, no sliding contacts, thus brushless motors require less maintenance, have longer life, and operate quieter. In applications, BSM motors are tolerant of harsh environments. They may be operated at higher speeds if the application needs the performance. Inherent in the design is smaller diameter rotor inertias, which lead to faster time to speed. The higher torque density allows for smaller packages in a very efficient design. Pound for pound BSM's provide more output power.

› Motor Technical Specifications

Motor Catalog	Output		Bus Volts	Base Speed	Torque lb-in/nm	NEMA Frame
	HP	Kw				
BSM25C-1177MHC	1/4	0.18	320	1800	8.75/.98	42
BSM25C-2177MHC	1/2	0.37	320	1800	17.5/1.97	42
BSM33C-2177MHQ	1/2	0.37	320	1800	17.5/1.97	56
BSM33C-3177MHQ	1	0.75	320	1800	35/3.95	56
BSM33C-4177MHQ	1 1/2	1.13	320	1800	52.5/6.49	56
BSM33C-5177MHQ	2	1.5	320	1800	70/7.91	56
BSM33C-6177MHQ	3	2.25	320	1800	105/11.86	56

Motor ID:

Model

25
33

Motor Size

1 = 1/4 HP
2 = 1/2 HP
3 = 1 HP
4 = 1.5 HP
5 = 2 HP
6 = 3 HP

Winding Code

BSM xx C - XXXX H Q

Motor Terminations

M = flying leads (no shaft seal)
O = flying leads & shaft oil seal

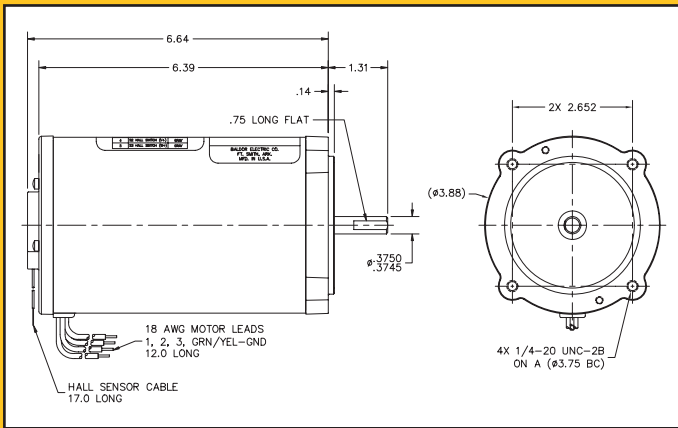
Mounting Configurations

C = Face inch (round)
F = Foot mount
Q = Foot mount & face inch (round)

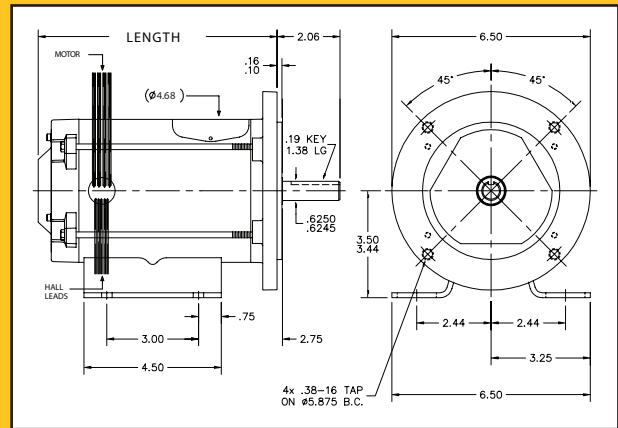
Hall sensor feedback

Baldor's adjustable speed products - motors and controls - have been hard at work in many applications for a long time. And they have greatly enhanced the performance of many machines, while improving the operation/part efficiency, consistency and quality. This newest addition to Baldor's adjustable speed products represents an excellent long-term investment to maximize plant operation, machine operation and productivity.

BSM25C Motor (1/4 - 1/2 HP)



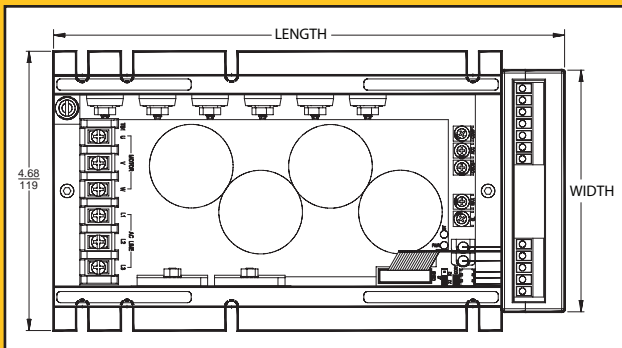
BSM33C Motor (1/2 - 3 HP)



Motor Dimension Table

Model	BSM 25C-1	BSM 25C-2	BSM 33C-2	BSM 33C-3	BSM 33C-4	BSM 33C-5	BSM 33C-6
HP	1/4	1/2	1/2	1	1.5	2	3
Length (inches/mm)	6.64/169	7.1/180	6.7/170	7.8/198	10.1/257	13.1/333	14.6/370

BMC Control



Control Dimension Table

Control Catalog	Height		Width		Length	
	inch	mm	inch	mm	inch	mm
BMC6A01	2.75	69.9	4.05	103	5.35	136
BMC6A02	2.75	69.9	4.05	103	5.35	136
BMC6A04	5	127	4.05	103	6.75	172
BMC6A05	4.5	114	4.05	103	6.75	172
BMC2A06	4.45	113	4.05	103	8.55	217
BMC2A09	4.45	113	4.05	103	8.55	217

For additional office locations visit
www.baldor.com

Local Distributor:

World Headquarters (U.S.A.)
Baldor Electric Company
Tel: +1 479 646-4711
Fax: +1 479 648-5792
E-mail: sales.us@baldor.com

Australia
Tel: +61 2 9674 5455
Fax: +61 2 9674 2495
E-mail: sales.au@baldor.com

China
Phone: +86-21-64473060
Fax: +86-21-64078620
E-mail: sales.cn@baldor.com

Germany
Tel: +49 89 905 08-0
Fax: +49 89 905 08-490
E-mail: sales.de@baldor.com

India
Tel: +91 20 25 45 95 31/32
Fax: +91 20 25 45 95 30
E-mail: sales.in@baldor.com

Italy
Tel: +41 91 640 9950
Fax: +41 91 630 2633
E-mail: sales.it@baldor.com

Japan
Tel: +81 45-412-4506
Fax: +81 45-412-4507
E-mail: sales.jp@baldor.com

Korea
Tel: +(82-32) 508 3252
Fax: +(82-32) 508 3253
E-mail: sales.kr@baldor.com

Mexico
Tel: +52 477 761 2030
Fax: +52 477 761 2010
E-mail: sales.mx@baldor.com

Singapore
Tel: +65 744 2572
Fax: +65 747 1708
E-mail: sales.sg@baldor.com

Switzerland
Tel: +41 52 647 4700
Fax: +41 52 659 2394
E-mail: sales.ch@baldor.com

United Kingdom
Tel: +44 1454 850000
Fax: +44 1454 859001
E-mail: sales.uk@baldor.com