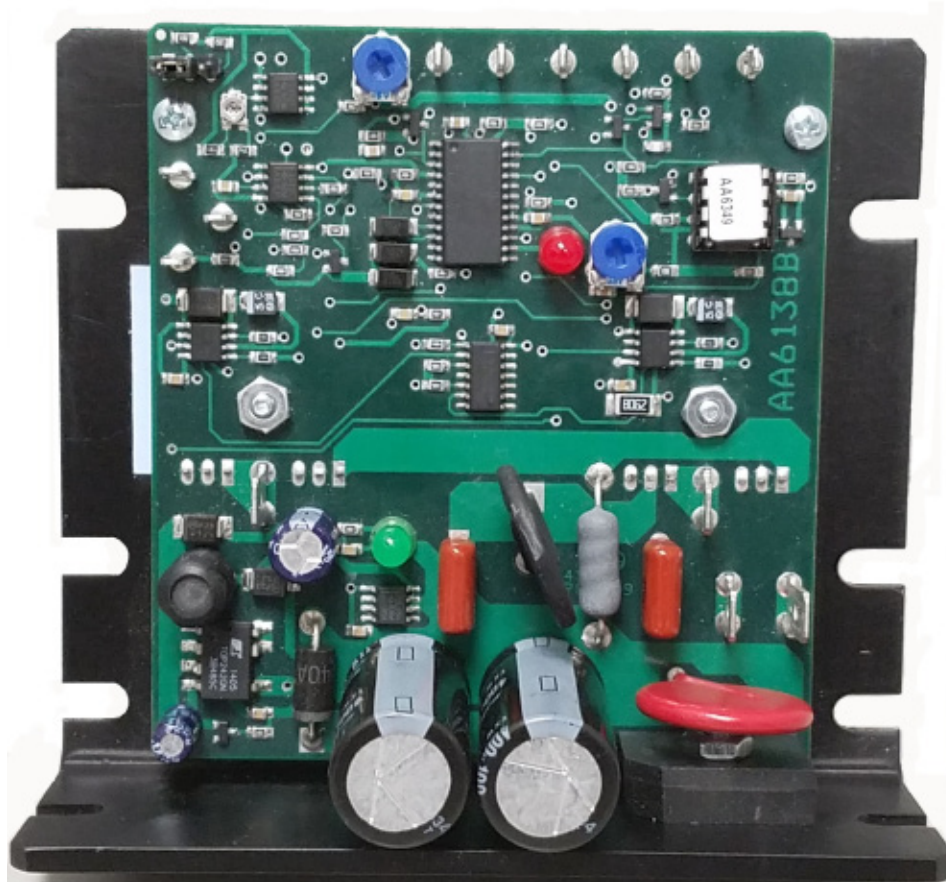


MBDCKB1-120081 120VAC, 8A Brush Controller

User's Guide



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MBDCKB1-120081 Driver Features

- Maximum Current Limit from 1.0-8.0 Amps (peak)
- External 10K Potentiometer Speed Control
- 2-Quadrant Operation
- Short Circuit Protection
- Requires 85-135 VAC
- Brake, Disable and Direction Inputs
- Jumper selectable setting for 90 -170VDC motors
- Compact Size (4.3"x3.84"x1.77")
- Dual Mounting Option

General Description

The MBDCKB1-120081 driver is designed to drive DC Brush motor at currents of up to 8A (peak) and 90 -180V. The driver is protected against over current (cycle-by-cycle) and under voltage. When an error occurs, a fault light is turned on to notify the user. Included on the driver are internal potentiometers to control the maximum phase current allowed into the motor and ramping up timing. An external potentiometer (10K) is used to control the speed as well. The direction of the motor can be preset by the direction control input. Other inputs to the drive include a run/stop and a motor enable input. When using the run/stop input, it overrides all other inputs into the driver.

Fault Protection

This driver is equipped with a FAULT LED to alert the user of the following conditions.

1. Over Current. The driver is equipped with cycle-by-cycle current limiting
2. Undervoltage Lockout activation at 30VAC for the input voltage.

Caution: The MBDCKB1-120081 driver does not have an internal fuse. To protect the driver from major motor failures, an external fuse greater than the application maximum load current is needed. The MBDCKB1-120081 driver is not line isolated. Use only mechanical switches for the control inputs. The terminals of motor connector contains high voltage. Do not probe any part of the driver with power on, this could damage the drive or result in body injury.

Ordering Information

Part #	Description
MBDCKB-120081	120VAC DC Brushless Driver at 8A
PWR-10EMC1	Dual Stage RF Power Line Filter.

Specifications

Control Inputs: (QD6 - QD11)

External Switch Compatible

Note: The MBDCKB1-120081 driver is not line isolated. Use only mechanical switches for the control inputs. The terminals of motor connector contains high voltage. Do not probe any part of the driver with power on, this could damage the drive or result in body injury.

Run/Stop: I1 and I2 (QD6 and QD9)

Switch Open - Motor will not run and if running will decelerate rapidly

Switch Closed - Motor will run

Direction Control: D1 and D2 (QD7 and QD10)

Switch Open - Clockwise

Switch Closed - Counterclockwise

Enable Control: E1 and E2 (QD8 and QD11)

Switch Open - Motor is Enabled

Switch Closed - Motor is de-energized and will coast

Speed Adjustment Control: P1-P3 (QD3 - QD5)

The external speed control potentiometer must be 10K Ohms.

P3 (QD3) - Pot (+)

P2 (QD4) - Pot Wiper

P1 (QD5) - Pot (-)

Output Current Rating:

Adjustable 2.0 - 8.0 amperes per phase maximum operating peak current

(1.0 - 4.0 amperes per phase maximum operating continuous current)

Power Requirements: L1 and L2 (QD14 and QD15)

85VAC (min) - 135VAC (max)

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Operating Temperature:

Heat Sink: 0° - 70°C

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Speed Adjust Setting

An external 10Kohm potentiometer is used to adjust the motor speed.

Motor Run/Stop

The motor run/stop feature allows the stopping of a motor by shorting out the bottom drives of the three phases. Shorting QD6 and QD9 together allows the motor to run, while an open input does not allow motor operation and if operating causes rapid deceleration.

Motor Direction

The motor direction feature allows the changing of the rotation of the motor. This input should not be changed while motion is in progress. Shorting QD7 and Q10 together causes the motor to turn in the CW direction, while an open between QD7 and QD10 causes the motor to turn in the CCW direction.

Note: Avoid changing the direction of rotation when the motor is already running in any one direction.

The following instructions must be followed to prevent permanent drive failure due to over-current conditions that exist is dynamic direction reversals of the motor:

1. Stop the motor by releasing the short on the Run/Stop input
2. Wait for at least 500mS
3. Change the direction with the DIRECTION input
4. Run the motor by shorting the Run/Stop input

Motor Enable

The motor enable feature allows the de-energizing of the motor phases. This input can be changed while motion is in progress. Shorting QD8 and QD11 together causes the motor to de-energize, while an open between QD8 and QD11 causes the motor to run at the given speed. To run motor again.

Heating Considerations

The temperature of the heat sink should never be allowed to rise above 70 degrees Celsius. This may occur with motor currents higher than 6A. If necessary, mount the unit to an additional heat sink or air should be blown across the heat sink to maintain suitable temperatures.

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Terminal Descriptions

QD#	Description
1	Motor Phase Out 1
2	Motor Phase Out 2
12	Line HOT
13	Line NEUTRAL

QD#	Description
6	Run/Stop 1
9	Run/Stop 2
7	Direction 1
10	Direction 2
8	Enable 1
11	Enable 2

QD#	Description
3	Potentiometer Top
4	Potentiometer Wiper
5	Potentiometer Bottom

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Quick Disconnect Mating Connectors

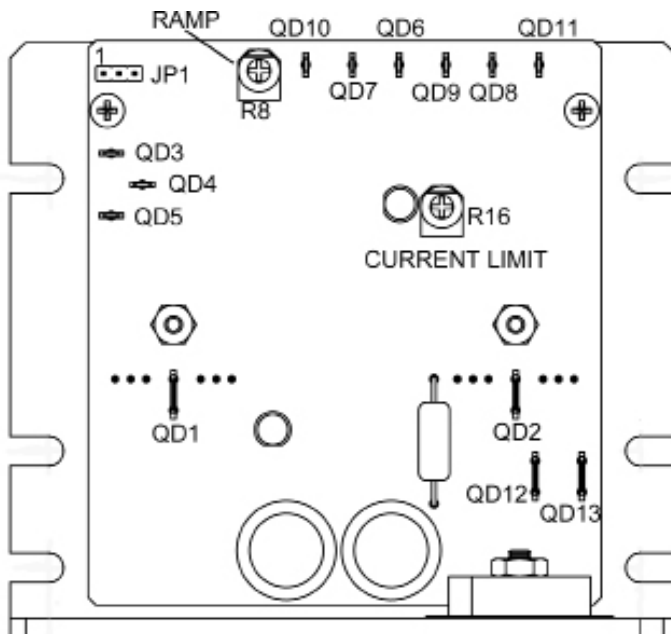
For QD3-QD11

Panduit # DNF18-110-M. Female Disconnect, nylon barrel insulated, funnel entry, 22 - 18 AWG, .110 x .032 tab size.

For QD1-QD2, QD12-QD13:

Panduit # DNF14-250FIB-3K. Female disconnect, (standard receptacle housings), nylon fully insulated, funnel entry with insulation support and internal wire stop. 16 - 14 AWG wire range, .250 x .032 in. (6.3 x 0.8mm) tab size.

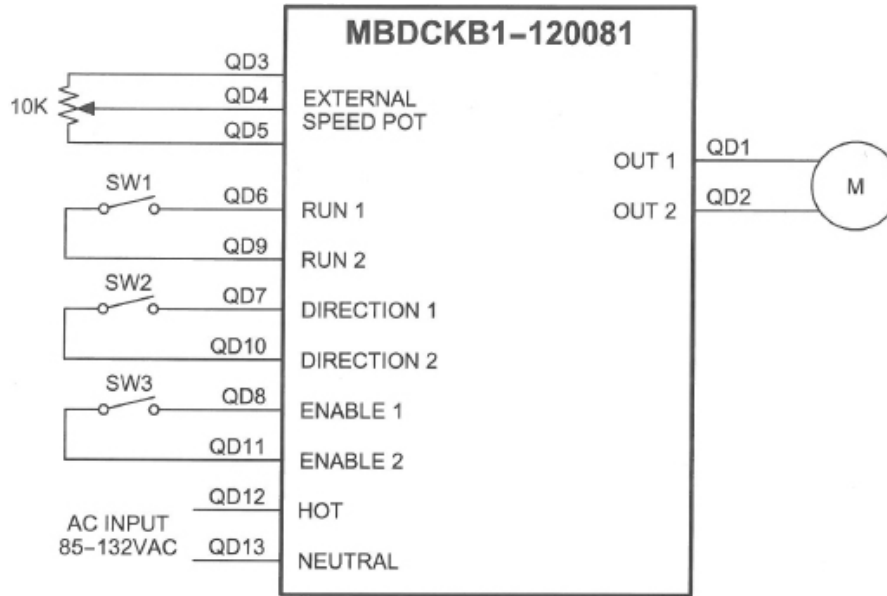
Quick Disconnect/Jumper/Potentiometer Location



POT#	Description
R8	RAMP
R16	CURRENT LIMIT

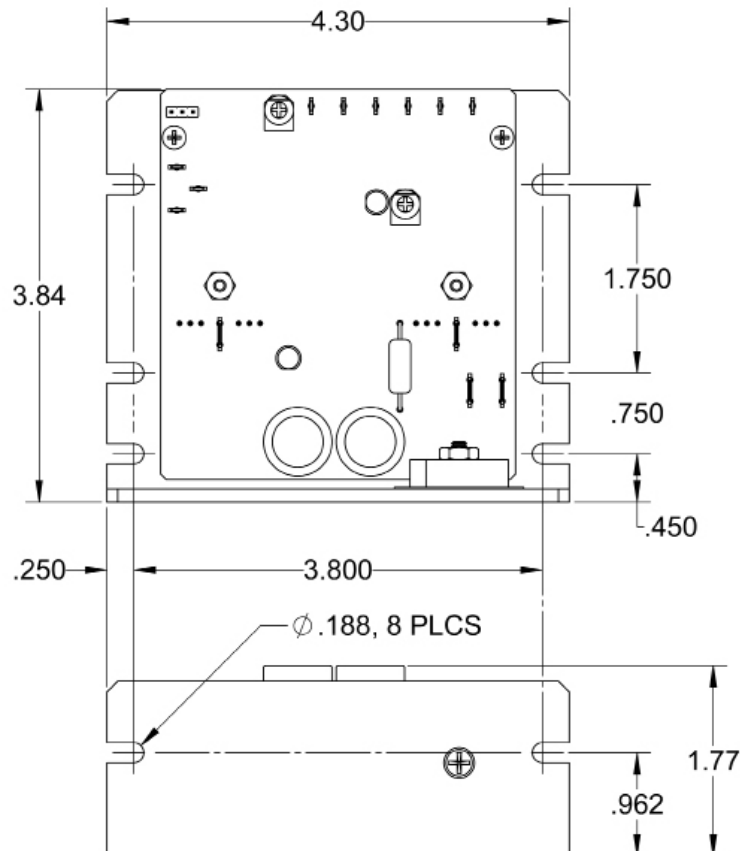
JP1	Description
2-3	170V motor setting
1-2	90V motor setting

Wiring Diagram



Note: The MBDCKB1-120081 driver is not line isolated. Use only mechanical switches for the control inputs. The terminals of motor connector contains high voltage. Do not probe any part of the driver with power on, this could damage the drive or result in body injury.

Dimensions



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TECHNICAL SUPPORT

If you should require technical support or if you have problems using any of the equipment covered by this manual, please read the manual completely to see if it will answer the questions you have. If you need assistance beyond what this manual can provide, contact your Local Distributor where you purchased the unit, or contact the factory direct.

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