BLD-50



Speed control modes

- · built-in potentiometer;
- external potentiometer;
- analog signal 0 ... 5 V;
- analog signal 0 ... 10 V;
- analog signal -10 ... +10 V;
- analog signal 4 ... 20 mA;
- PWM signal;
- Discrete signal SECOND_SPEED for switching to the second speed (set by the built-in potentiometer)

Dimensions



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115

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BRUSHLESS DC MOTOR CONTROLLER

The controller BLD-50 is designed to control 3-phase brushless motors with Hall sensors. Maximum current of up to 50 A is suitable for medium and big size motors. The controller provides current limiting function, four-

quadrant phase control, control of motor brake. Also there are second-speed function and possibility to connect an external braking resistor. PID controller coefficients are available for editing via USB.

Technical parameters

- Nominal current 50A
- Maximum current 100A
- Power supply 12...48 VDC
- Communication USB (Type-C)

Discrete input control signals

- START/STOP motor start and stop;
- DIR set motor direction
- SECOND_SPEED switching to the second speed;
- HARD_STOP emergency stop signal;
- BRAKE control of an external electromagnetic brake

The logic of the START/STOP and DIR signals is selected and can be configured by the user in accordance with the system requirements – triggering by the signal level or by the signal edge.



BLD-50

BRUSHLESS DC MOTOR CONTROLLER

DC brushless motor controller BLD-50 provides the following functions

- Analog speed control of a BLDC motor is carried out by a built-in or external potentiometer or analog signal;
- Switching to a second speed when receive an external discrete signal;
- Smooth acceleration and deceleration of the motor, which is regulated using the internal potentiometer;
- Start and stop the motor with the button START/STOP or with a signal to the discrete input;
- Reversing the direction of rotation of the motor with the button DIR or with a signal to the discrete input;
- Emergency stop of the brushless motor in case of breaking the protective electrical circuit HARD_STOP;
- The maximum operating current limit is set by a user within the range from 5 to 50 A;
- Connection of an external braking resistor to dissipate regenerative energy (generated by the motor during coasting, forced rotation);
- Control of an external electromagnetic brake automatically when start and stop the motor, or using an external discrete signal.
- Indication of alarms with a discrete output signal, error code is available to be read through USB.
- PID coefficients adjustment is available by users when connected to a computer;
- Connection to a computer via USB (TYPE-C) for setting and monitoring drive operating parameters.

Four-quadrant control of a DC brushless motor

The controller BLD-50 provides four-quadrant control of a DC brushless motor. This make it possible to stabilize and accurately maintaining the set rotation speed for any combinations of the motor rotation and load directions.

This feature distinguishes the controller BLD-50 from standard models without a four-quadrant control function, speed stabilization is only possible in cases where the load force direction is opposite to the movement direction.



Limiting the maximum motor current

The controller BLD-50 provides for limiting the maximum current (and output power) of the motor. The limit is set by a built-in potentiometer, the set value can be controlled when connected to a computer via USB.

- Current limit setting from 5A to 50A
- Limit response time 5 s

External electromagnetic brake control

The controller BLD-50 provides the function to control an external electromagnetic brake of the motor. Brakes are usually built into motors to prevent shaft displacement under the influence of an external force. BLD-50 provides two options for brake control:

- · Automatic hold and release when start and stop a motor;
- Brake control using an external discrete signal.

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