Servo Amplifier

2-Quadrant PWM

For combination with:
Brushless DC-Servomotors: 2444 ... B - K 750

Series BLD 453

	BLD 453			
	Minimum	Typical	Maximum	Units
Stabilized motor supply requirement				
– Motor power supply V_m	12	–	45	V DC
– Continuous output current [1]	–	–	3	A
– Current limit	–	3	–	A
Stabilized driver power supply requirements:				
– Logic supply	10	12	12,5	V DC
– Current (logic circuit) at 12 V	–	50	100	mA
Analog input command [2]	0	5	7	V
Direction of rotation		reversible		
Amplifier type		PWM		
Output stage		MOSFET		
Switching frequency		25		kHz
Temperature range:				
– Operating temperature range	0		+ 70	° C
– Storage temperature	– 20		+ 80	° C
Weight		75		g

[1] a heat sink is required
[2] analog input voltage may be set either by an external potentiometer or external voltage

General description

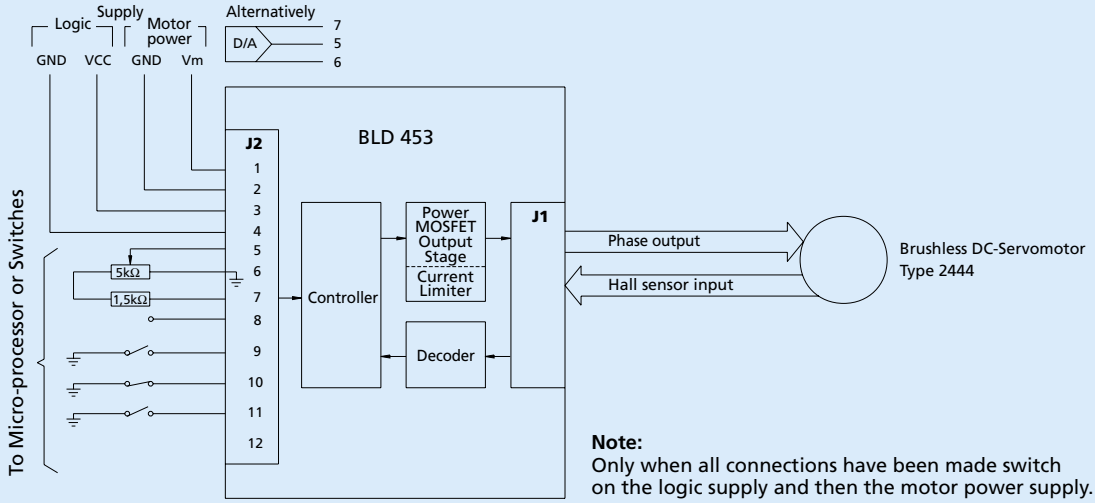
The BLD 453 is a speed control servo-amplifier suitable for the three-phase brushless DC-Servomotor, type 2444.
The switching sequence of the phases of the brushless DC-Servomotors is automatically made by the servo-amplifier BLD 453. A specially designed Frequency-Voltage converter allow precise velocity regulations without the need of a magnetic or optical encoder.

The analog speed command is a unipolar signal 0 ... 5 V DC producing a fixed speed proportional to the input voltage.
The BLD 453 includes protective features consisting of undervoltage lockout and cycle by cycle current limiting.

Features

- **Analog input command**
  The speed of the motor is controlled by the input voltage level. The input level is adjusted either with a 5 kΩ potentiometer or via an independent external voltage source.
- **Enable input** (TTL compatible)
  A logic low level disables the motor.
- **Brake input** (TTL compatible)
  A logic high level brakes the motor (dynamic brake).
- **Direction input** (TTL compatible)
  The direction of rotation is changed using either a high or low input signal. When a high input signal is given, the motor runs in a CW direction. When a low input command is given, the motor runs in a CCW direction.
- **Fault output**
  This output goes active (i.e. low GND) when one or more of the following conditions occur: invalid sensor input code, enable input logic 0, overcurrent limit exceeded, undervoltage lockout. A red LED is included near the collector J2 as a visual fault indication. An external relay can be used for remote indication (sink current max. 8 mA).

Installation Diagram



Note:
Only when all connections have been made switch on the logic supply and then the motor power supply.

J 1 **Brushless DC-motor connector**
compatible with the connector of BLM type 2444 ... B - K 750
(connector type AMP 826 631)

– 1 Hall sensor B
– 2 + 5 V (output)
– 3 GND (ground)
– 4 –
– 5 Phase winding B
– 6 Hall sensor A
– 7 Hall sensor C
– 8 Phase winding C
– 9 Phase winding A

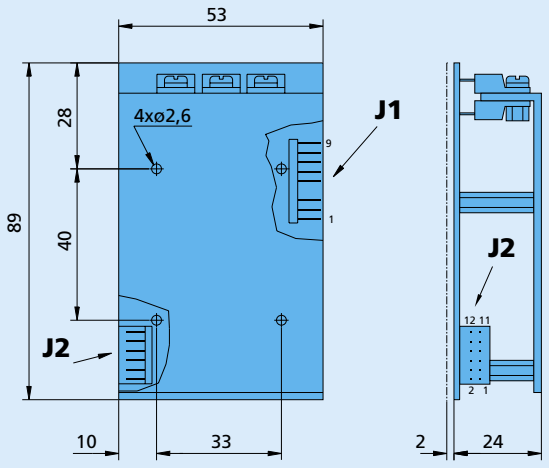
J 2 **Connection for power supply and input/output command**

(connector type BERG ELECTRONICS 76383-306)

– 1 Vm (motor power supply)
– 2 GND (motor power ground)
– 3 VCC (logical supply)
– 4 GND (logical ground)
– 5 Analog input command (speed reference)
– 6 GND (logical ground)
– 7 + 5 V (from board)
– 8 Fault output
– 9 Enable input
– 10 Brake input
– 11 Direction input
– 12 –

Dimensional drawing

Scale reduced



Specifications subject to change without notice