

# Servo Amplifier

## 2-Quadrant PWM

For combination with:  
Brushless DC-Servomotors

### Series BLD 5604/08

	BLD 5604-SH2P	BLD 5608-SH2P	
Power supply	10 ÷ 56	10 ÷ 56	V DC
Switching frequency	25	25	kHz
Continuous output current @ TA = 22°C	3	5	A
Current limit (pulse-by-pulse current limiting)	4	8	A
Analog speed command <sup>1)</sup>			
– Voltage range	0 ÷ 5	0 ÷ 5	V DC
Logic input			
	TTL	TTL	
Output voltage for external use (max. load 100 mA)			
Total standby current (Hall sensors supply included)	120	120	mA
Maximum controllable speed <sup>2)</sup>			
Minimum controllable speed <sup>3)</sup>	60 000	30 000	rpm
	800	800	rpm
Temperature range:			
– Operating temperature	0 ... + 70		°C
– Storage temperature	–20 ... + 80		°C
Dimension and Weight:			
– Dimensions (L x W x H)	114,3 x 100 x 28,7		mm
– Weight	200		g

<sup>1)</sup> Analog speed command may be set by an external potentiometer or an external voltage

<sup>2)</sup> The maximum controllable speed depends on the power supply, the motor type and the load.

<sup>3)</sup> The minimum controllable speed depends on the motor type and the load

Note: The Servo Amplifier is supplied with an operating instruction manual for installation and start-up.

#### General information

The BLD 5604-SH2P and the BLD 5608-SH2P are 2-Quadrant PWM (Pulse-Width Modulation) Servo Amplifiers suitable for speed control of our three-phase brushless DC-Servomotors:

- BLD 5604 for motors type 1628, 2036 and 2444
- BLD 5608 for motors type 2057, 3056 and 3564.

The phase commutation sequence of the brushless DC-Servomotor is automatically made by the Servo Amplifier.

A specially designed frequency-to-voltage converter allows precise speed regulation via the Hall sensors without the need of an encoder (regulator type PI, proportional plus integral).

The combination of MOSFET power stage and PWM technologies enables both compact design and high power efficiency.

The analog speed command is a unipolar signal from 0 to 5 V producing a fixed speed proportional to the input voltage.

One logical input dynamically brakes the motor, another selects the motor's rotational direction. If these inputs are not connected, the motor will run free in CW direction by default (high logic level).

Both amplifiers are provided with thermal and motor stall protection and pulse-by-pulse current limitation.

If the servo amplifier is disabled due to a protection intervention, two error messages are given: one via a red LED on the PCB and the other via a fault output (open-collector).

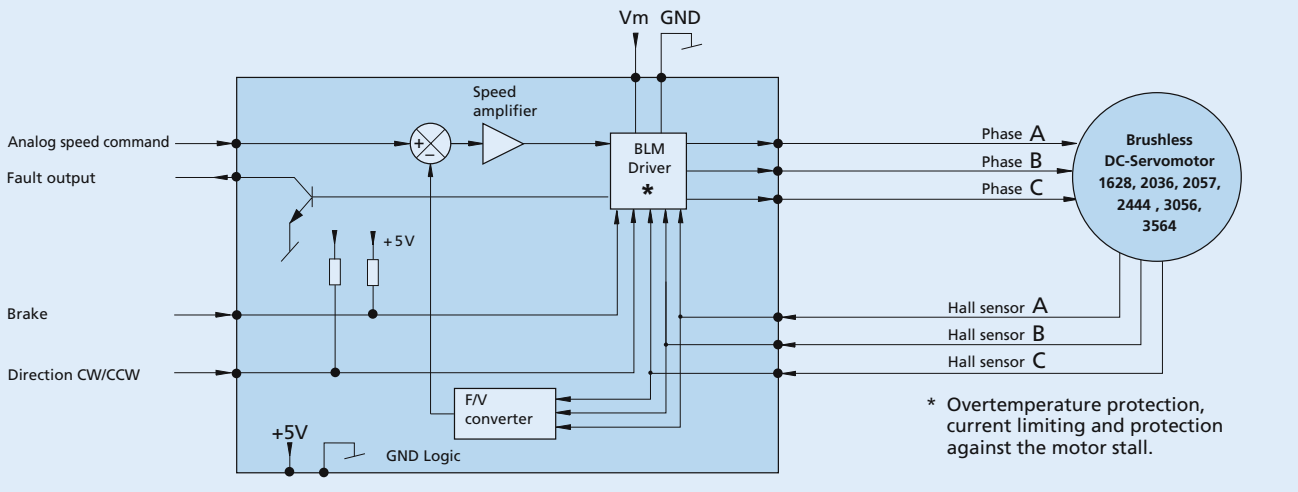
#### Features:

- Operation from a single supply source
- 2-Quadrant PWM
- Excellent linearity
- Efficiency 95%
- Speed regulator, type PI
- Protection against the motor stall
- Thermal shutdown
- Pulse-by-pulse current limiting

#### Full product description:

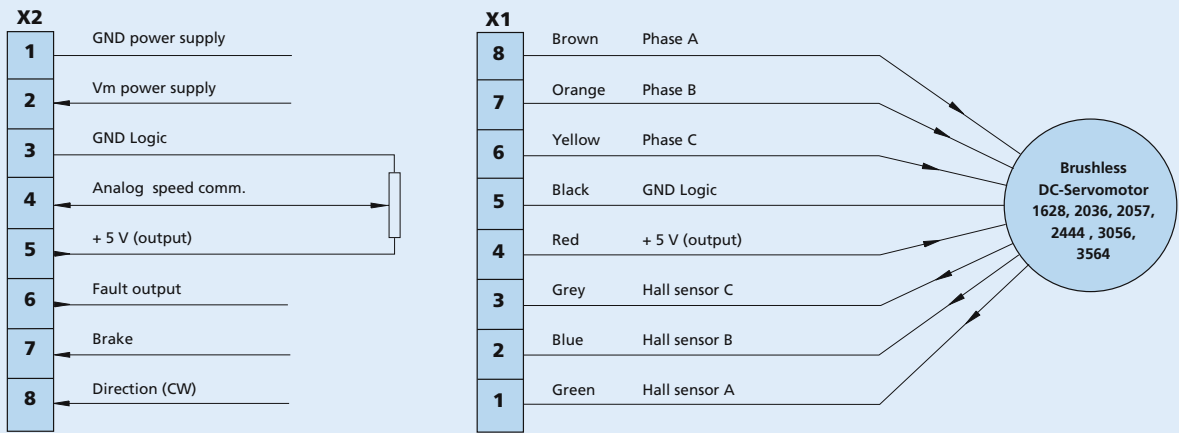
Servo Amplifiers	Brushless DC-Servomotors
BLD 5604-SH2P (Speed control)	1628 T ... B
	2036 U ... B
	2444 S ... B
BLD 5608-SH2P (Speed control)	2057 S ... B
	3056 K ... B
	3564 K ... B

**Block diagram of the Servo Amplifier BLD 5604-SH2P and BLD 5608-SH2P for speed control**



**Connection diagram**

The analog speed command is determined by an external voltage from 0 to 5 V DC or through a potentiometer that is directly connected to the Servo Amplifier. The total resistance should be between 10 kΩ and 47 kΩ.



**Dimensional drawing**

Scale reduced

