

SERIES 50A-DD PWM BRUSH TYPE SERVO AMPLIFIERS

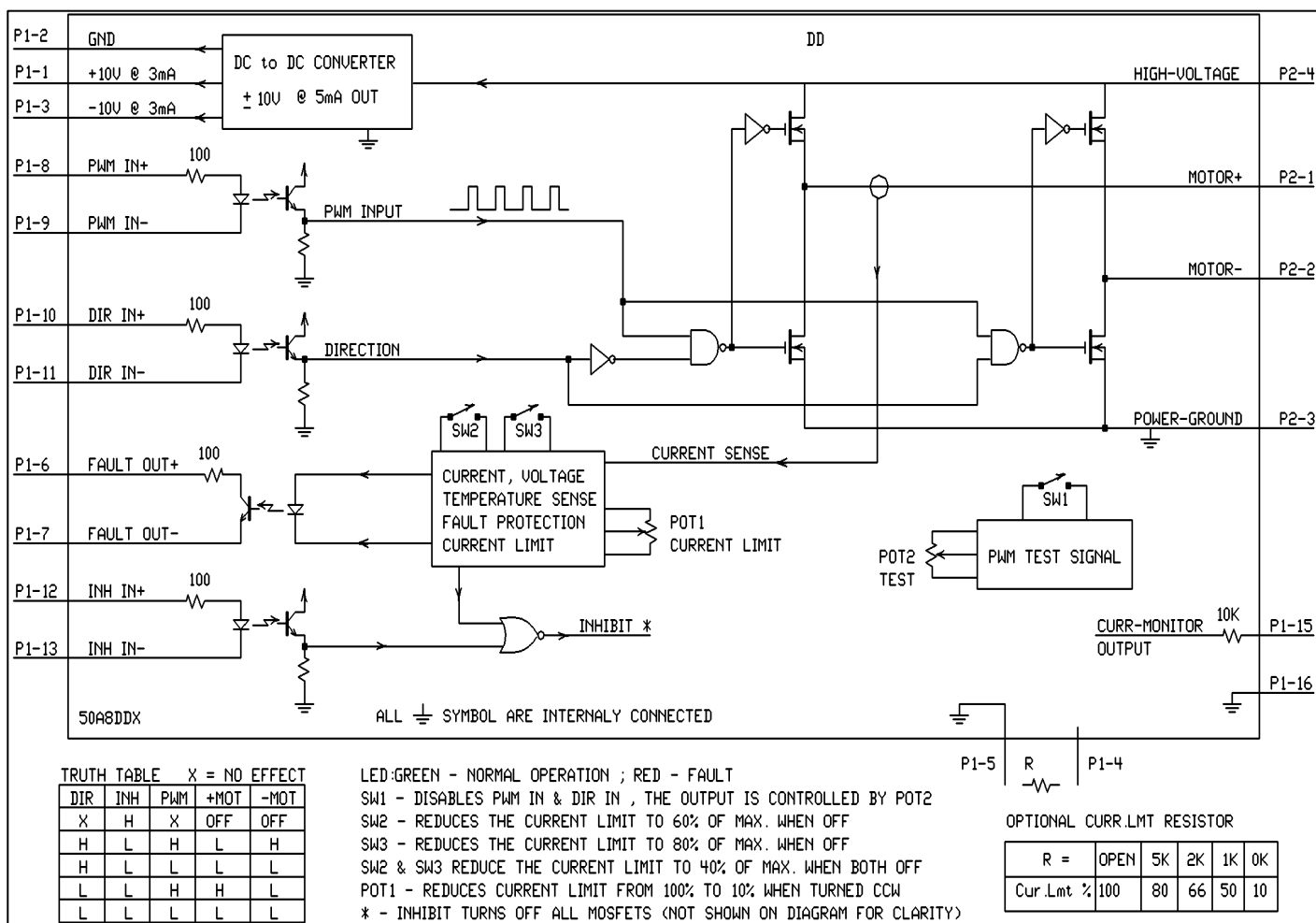
Models: 30A8DD, 25A20DD, 50A8DD, 50A20DD

FEATURES:

- Surface-mount technology
- Small size, low cost, ease of use
- Optically isolated digital inputs
- Adjustable current limit
- Built-in PWM generator for self-test
- Four quadrant regenerative operation
- Agency Approvals:



BLOCK DIAGRAM:



DESCRIPTION: The 50A-DD Series PWM servo amplifiers are designed to drive brush type DC motors. The PWM frequency is determined by the PWM input signal. All models are fully protected against over-voltage, over-current, over-heating and short circuits across motor, ground and power leads. All models interface with digital controllers that have a digital PWM output. They can also be used as a stand-alone system when using Pot 2. The 50A-DD Series amplifiers require only a single unregulated DC power supply as all logic and control voltages are generated internally. PWM input determines the output duty cycle. "Direction In" determines which side of the "H bridge" output is switching. Current limit can be reduced by Pot 1 (14 turn potentiometer), by DIP the switches and/or by an external current limiting resistor. The voltage at the current monitor pin P1-15 is proportional to the actual motor current.

SPECIFICATIONS:

POWER STAGE SPECIFICATIONS	MODELS			
	30A8DD	25A20DD	50A8DD	50A20DD
DC SUPPLY VOLTAGE	20 – 80 V	40 - 190 V	20 - 80 V	40 - 190 V
PEAK CURRENT (2 sec. max., internally limited)	± 30 A	± 25 A	± 50 A	± 50 A
MAXIMUM CONTINUOUS CURRENT (internally limited)	± 15 A	± 12.5 A	± 25 A	± 25 A
MINIMUM LOAD INDUCTANCE*	150 µH	250 µH	150 µH	250 µH
SWITCHING FREQUENCY	5 - 20 kHz ±15%			
HEATSINK (base) TEMPERATURE RANGE	0° to +65°C, disables if > +65°C			
POWER DISSIPATION AT CONTINUOUS CURRENT	60 W	125 W	100 W	250 W
OVER-VOLTAGE SHUT-DOWN (self reset)	85 V	195 V	85 V	195 V

MECHANICAL SPECIFICATIONS	
POWER CONNECTOR	Screw terminals
SIGNAL CONNECTOR	Molex connectors
SIZE	7.35 x 4.40 x 1.00 inches 186.7 x 111.7 x 25.4 mm
WEIGHT	1.5 lb. 0.68 kg

* "Pancake" and "basket-wound" motors require external inductors.

PIN FUNCTIONS:

CONNECTOR	PIN	NAME	DESCRIPTION / NOTES	I/O
P1	1	+10V @ 3 mA OUT	For customer use	O
	2	Gnd	Reference ground	GND
	3	-10V @ 3 mA OUT	For customer use	O
	4	CURRENT LIMIT	Can be used to reduce the factory-preset maximum current limit.	I
	5	GND	Ground for Current Limit Resistor	GND
	6	+FAULT	Opto-isolated. Output transistor turns on and becomes high during output short circuit, over voltage, over temperature, inhibit, and during power-up reset. Fault condition indicated by red LED.	O
	7	-FAULT		
	8	+PWM	Pulse Width Modulated Input, opto-coupled	I
	9	-PWM		
	10	+DIR	Direction Input, opto-coupled	I
	11	-DIR		
	12	+INHIBIT	Inhibit Input, opto-coupled. Pull low to enable.	I
	13	-INHIBIT		
	14	NC		
	15	CURRENT MONITOR	This signal is proportional to the actual current in motor leads. Scaling is 1V = 4A, full scale. SW2=SW3=ON.	O
	16	GND	Current Monitor Ground	GND
P2	1	+MOTOR	Motor plus connection.	O
	2	-MOTOR	Motor minus connection.	O
	3	POWER GROUND	Power Ground.	GND
	4	HIGH VOLTAGE	DC voltage input.	I

CURRENT LIMITING:

Current limit can be reduced by Pot 1 by the DIP switches and/or by an external current limiting resistor. See functional block diagram. Pot 1 is a 14 turn potentiometer with one inactive turn at each end. The voltage at the current monitor pin P1-15 is proportional to the actual motor current.

POWER SUPPLY RECOMMENDATIONS:

An isolated power supply should be used with this series of amplifiers.

ORDERING INFORMATION:

Models: 30A8DDX, 25A20DDX, 50A8DDX, 50A20DDX

X indicates the current revision letter.

MOUNTING DIMENSIONS: See page F-9.