

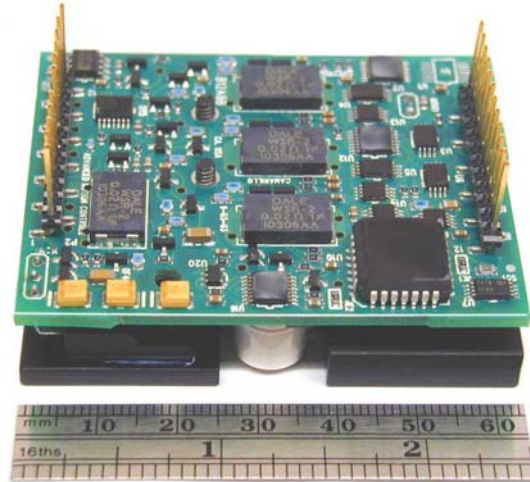
SERIES Z12A PWM SERVO AMPLIFIERS

Models: Z6A6, Z12A8

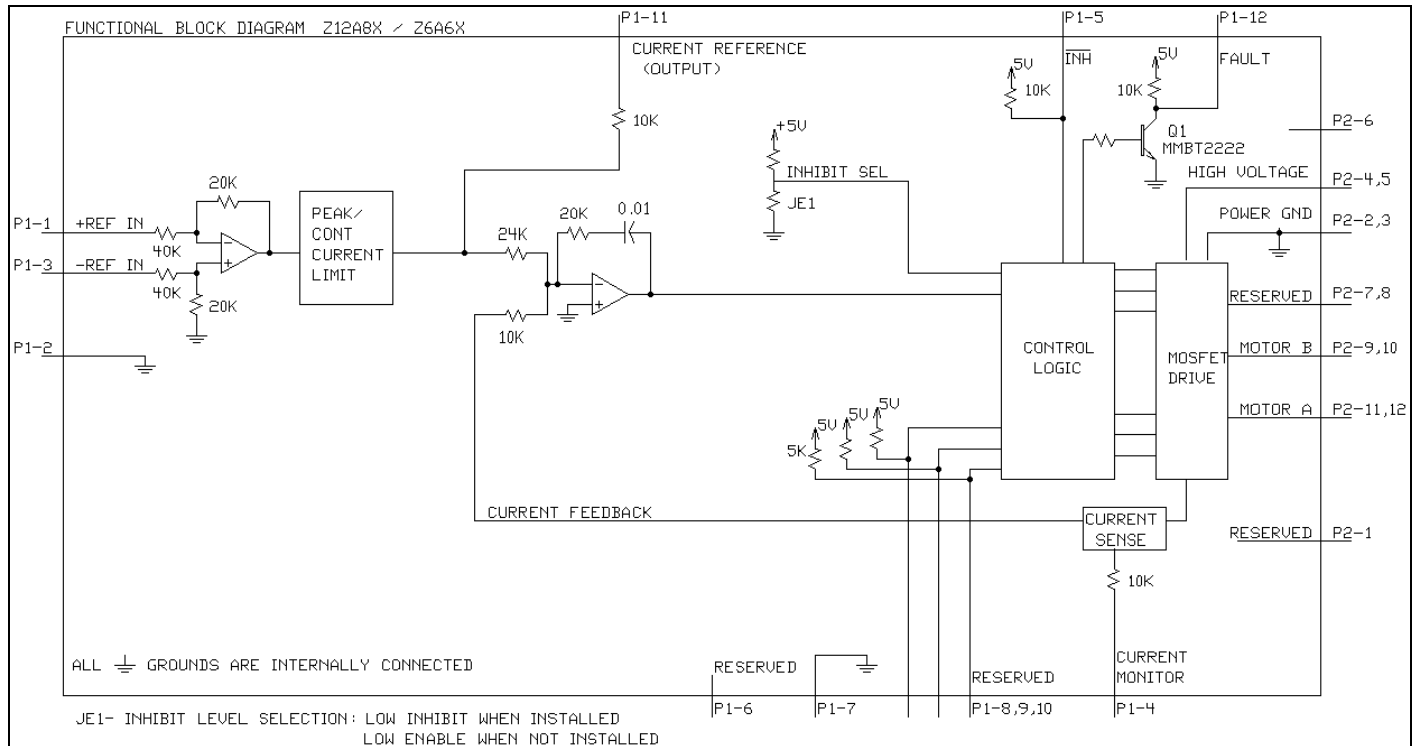
Micro Series

FEATURES:

- Micro size, low cost, ease of use
- Analog +/-10V input commands
- For brushed motors
- Torque Mode
- Closed current loop
- No pots or switches
- Surface-mount technology
- Four quadrant regenerative operation
- Agency approvals: Pending



BLOCK DIAGRAM:



DESCRIPTION: The Z12A Series PWM servo amplifiers are designed to drive brush-type DC motors at a high switching frequency. They are fully protected against over-voltage, over-current, over-heating and short-circuit. A single digital output indicates operating status. All models interface with digital controllers that have analog +/-10V output. These servo amplifiers require only a single unregulated isolated DC power supply.

SPECIFICATIONS:

POWER STAGE SPECIFICATIONS	MODELS	
	Z6A6	Z12A8
DC SUPPLY VOLTAGE	16 – 60 VDC	16 – 80 VDC
PEAK CURRENT (2 sec. max., internally limited)	± 6 A	± 12 A
MAX. CONTINUOUS CURRENT (internally limited)	± 3 A	± 6 A
MINIMUM LOAD INDUCTANCE *	100 µH	100 µH
SWITCHING FREQUENCY	50 kHz ± 15%	33 kHz ± 15%
HEATSINK (BASE) TEMPERATURE RANGE **	0° to +75° C, disables if > 75° C	
POWER DISSIPATION AT CONTINUOUS CURRENT	10 W	24 W
OVER-VOLTAGE SHUT-DOWN (self reset)	67 V	88 V
BANDWIDTH (load dependent)	5 kHz	

MECHANICAL SPECIFICATIONS	
MOTOR POWER CONNECTOR	12-pin, 0.1 inch spacing, vertical Molex connector
SIGNAL CONNECTORS	12-pin, 0.1 inch spacing, vertical Molex connector
SIZE (thickness does not include length of pins)	2.5 x 2.0 x .71 inches 63.5 x 50.8 x 18.0 mm
WEIGHT	3.1 oz 87.9 g

* Low inductance motors require external inductors.

** Additional cooling may be necessary when bus voltage exceeds 55VDC. Example: Temperature rise can be limited to less than 15°C at continuous current with 110 CFM airflow across the baseplate under the condition 25°C ambient and 80VDC bus. Much lower temperature rise can be achieved at lower bus voltages.

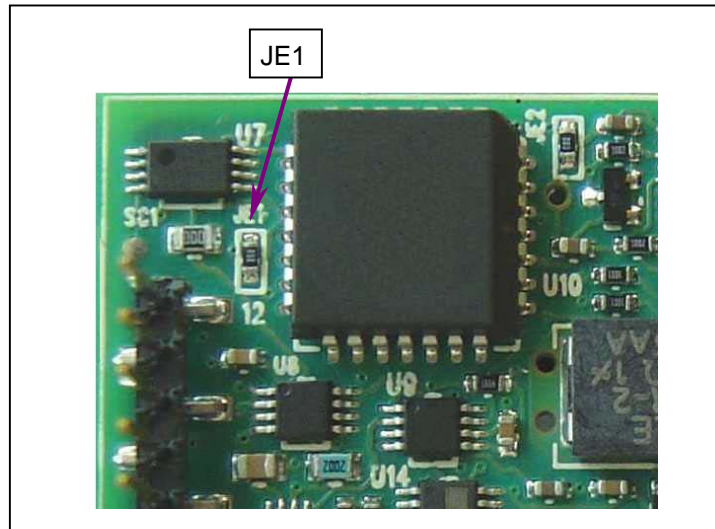
PIN FUNCTIONS:

CONNECTOR	PIN	NAME	DESCRIPTION / NOTES	I/O
P1	1	+REF IN	Differential analog input, maximum +/-15VDC, 40K input resistance	I
	2	SIGNAL GROUND	Reference ground	GND
	3	-REF IN	Differential analog input, maximum +/-15VDC, 40K input resistance	I
	4	CURRENT MONITOR OUT	Output voltage proportional to motor output current: Z6A6: 1V = 2A; Z12A8: 1V = 4A	O
	5	INHIBIT IN	This TTL level input signal turns off all power devices of the "H" bridge when pulled to ground (when JE1 is installed), which is a fault condition. If the JE1 jumper is removed, pulling this pin to ground will enable the outputs.	I
	6	RESERVED	Reserved	
	7	SIGNAL GROUND	Reference ground	GND
	8	Reserved	Reserved	
	9	Reserved		
	10	Reserved		
	11	CURRENT REF OUT	Monitors the input signal connected directly to the internal current amplifier. 7.25V = max. peak current.	O
	12	FAULT OUT	TTL level output. Becomes high during output short circuit, over-voltage, over temperature and power-up reset.	O
P2	1	RESERVED	Reserved	
	2	POWER GROUND	Power ground (current rating per pin = 3A)	GND
	3			
	4	HIGH VOLTAGE	DC Power Input (current rating per pin = 3A)	I
	5			
	6	NC	(no connection; pin removed)	
	7	NC	(no connection)	
	8			
	9	MOTOR B	Motor phase B connection (current rating per pin = 3A)	O
	10			
	11	MOTOR A	Motor phase A connection (current rating per pin = 3A)	O
	12			

JUMPER SETTINGS:

Pin P1-5 can be used to enable or disable the power output to the motor. The default logic level to disable this amplifier is a LOW signal at P1-5. With the jumper JE1 removed, the amplifier will be disabled until a LOW signal is applied to P1-5.

Please note that JE1 is a very small SMT jumper. Only qualified technicians are recommended to perform this modification. The product warranty will be affected by poor quality modifications.



	INSTALLED	NOT INSTALLED
JE1: INHIBIT LEVEL (P1-5)	LOW to Inhibit	LOW to Enable

MOUNTING CARDS:

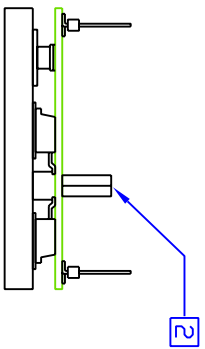
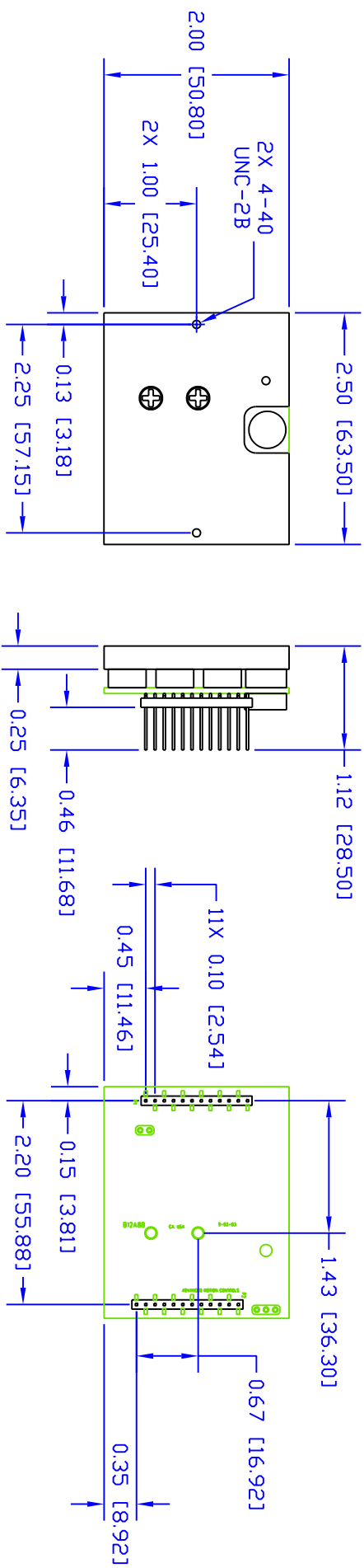
With its vertical pin connections, the Z12A can be mounted directly to a PC board. However, we also supply the following optional mounting cards for easy interface between components without having to design your own PCB. Please refer to the datasheets for more information.

1. MC2XZQD – Z series amplifiers interface board for up to 2 axes. All connectors are quick-disconnect for easy prototyping. PCB width is 72mm for compatible standard DIN mounting trays.
2. MC4XZGAL – mounts to Galil's DMC-21x3 controller card for up to 4 axes of Z series amplifiers, with D-sub feedback and I/O connectors.
3. MC4XZGALQD – mounts to Galil's DMC-21x3 controller card for up to 4 axes of Z series amplifiers, with quick-disconnect screw terminals for easy prototyping. The mating connector kit is sold separately (KIT4XZGALQD).

ORDERING INFORMATION:

Models: Z6A6X, Z12A8X

The X indicates current revision letter.



2. OPT. NYLON STANDOFF FOR RETENTION.
 (p/n Amatom 8105-N-0440 or equiv.)

1. DIMENSIONS IN [] ARE IN MM.

NOTES: UNLESS OTHERWISE SPECIFIED.

REV	B	REMOVED DIM 0.16 [3.96]	DATE	02/04/04	BY	PM	ECD
DESCRIPTION	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES .XX ± .010 XXX ± .005 DO NOT SCALE DRAWING						
DRAWN BY:		DATE:		TITLE			
P. MEAD		10/15/03		MOUNTING DIMENSIONS, Z SERIES			
CHECK BY:		DATE:		 • PWM SERVO AMPLIFIERS • 3805 Calle Tecate, Camarillo, CA 93012			
DESIGN APPROVED:		DATE:		SIZE	DWG. NO.	REV	
USED ON				B	MDZ	B	
				SCALE:	FULL	SHT.	1 OF