

Power Range	
Peak Current	10 A
Continuous Current	5 A
Supply Voltage	10 - 36 VDC



Description

The CABDC10A36 PWM servo drive is designed to drive brushless and brushed DC motors at a high switching frequency. The CABDC10A36 is fully protected against over-voltage, under-voltage, over-current, over-heating, and short-circuits. A single digital output indicates operating status. The drive interfaces with digital controllers that have digital PWM output. The PWM IN duty cycle determines the output current and DIR input determines the direction of rotation.

See Part Numbering Information on last page of datasheet for additional ordering options.

Features

- Four Quadrant Regenerative Operation
- Direct Board-to-Board Integration
- Lightweight
- High Switching Frequency
- Wide Temperature Range
- Differential Input Command
- Digital Fault Output Monitor
- Current Monitor Output
- Single Supply Operation
- Compact Size
- High Power Density
- 12VDC Operation

HARDWARE PROTECTION

- Over-Voltage
- Under-Voltage
- Over-Current
- Over-Temperature
- Short-circuit (phase-phase)
- Short-circuit (phase-ground)

INPUTS/OUTPUTS

- Digital Fault Output
- Digital Inhibit Input
- Analog Current Monitor
- Analog Command Input

FEEDBACK SUPPORTED

- Hall Sensors

MODES OF OPERATION

- Current

COMMUTATION

- Trapezoidal

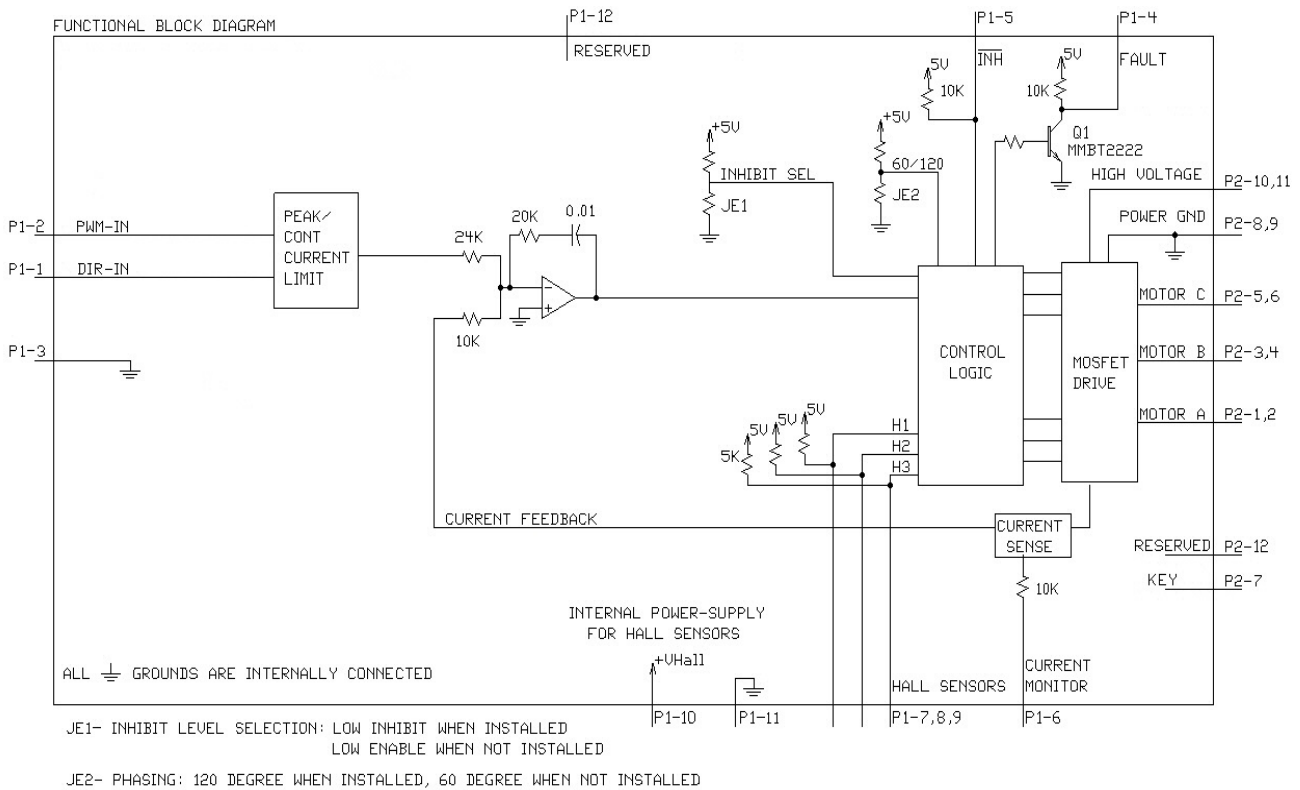
MOTORS SUPPORTED

- Three Phase (Brushless)
- Single Phase (Brushed, Voice Coil, Inductive Load)

COMMAND SOURCE

- PWM

BLOCK DIAGRAM



HARDWARE SETTINGS

Jumper Settings

Jumpers are SMT, 0 ohm resistors located on the underside of the drive PCB. By default, the drive is configured with the jumpers installed. Typical drive operation will not require the jumpers to be removed. Please contact the factory before jumper removal.

Jumpe	Description	Configurati	
SMT Jumper (0Ω Resistor)			
			Installed
JE1	Inhibit logic. Sets the logic level of inhibit pins. Labeled JE1 on the PCB of the drive.	Low Enable	Low Inhibit
JE2	Hall sensor phasing. Selects 120 or 60 degree commutation phasing. Labeled JE2 on the PCB of the drive.	60 degree	120 degree

SPECIFICATIONS

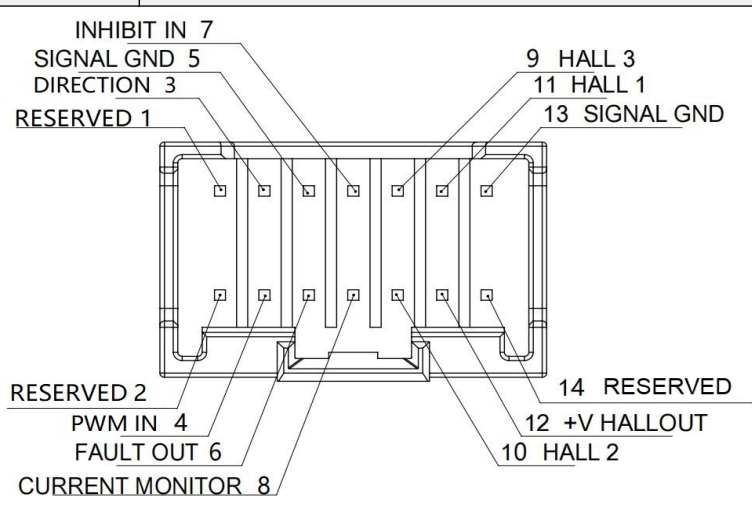
Power Specifications		
Description	Units	Value
DC Supply Voltage Range	VDC	10 - 36
DC Bus Under Voltage Limit	VDC	8
DC Bus Over Voltage Limit	VDC	40
Maximum Peak Output Current ¹	A	10
Maximum Continuous Output Current	A	5
Maximum Continuous Output Power	W	171
Maximum Power Dissipation at Continuous Current	W	9
Minimum Load Inductance (Line-To-Line) ²	μH	100
Internal Bus Capacitance	μF	67.5
Low Voltage Supply Outputs	-	+5 VDC (30 mA)
Switching Frequency	kHz	40
Control Specifications		
Description	Units	Value
Command Sources	-	PWM
PWM Input Frequency Range	kHz	10-25
Feedback Supported	-	Halls
Commutation Methods	-	Trapezoidal
Modes of Operation	-	Current
Motors Supported	-	Three Phase (Brushless), Single Phase (Brushed, Voice Coil, Inductive Load)
Hardware Protection	-	Invalid Commutation Feedback, Over Current, Over Temperature, Over Voltage, Short Circuit (Phase-Phase & Phase-Ground)
Mechanical Specifications		
Description	Units	Value
Size (H x W x D)	mm	71 x 56 x 33.33
Operating Temperature Range	°C (°F)	0 - 85 (32 - 185)
Storage Temperature	°C (°F)	-40 - 85 (-40 - 185)
Relative Humidity	-	0 - 90% Non-Condensing
P1 Connector		14 Pin dual row, pitch 2 mm connector, vertical installation
P2 Connector		KF250NH-3.81-5P Spring Clamp System Terminal Block

Notes

1. Maximum duration of peak current is ~2 seconds. Peak RMS value must not exceed continuous current rating of the drive.
2. Lower inductance is acceptable for bus voltages well below maximum. If the motor inductance is lower than the minimum inductance, please contact the factory for customized modification.

PIN FUNCTIONS

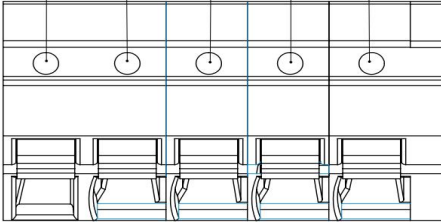
P1 Signal Interface Definitions		
Connector information		14 Pin dual row, pitch 2 mm connector, vertical installation
Matching Connector	Part No.	MoleX: 051353-1400 (Housings); 056134-910(Socket)
	Remark	Connectors need to be ordered separately
Pin	Signal	Description
1	RESERVED	RESERVED
2	RESERVED	
3	DIRECTION	Direction Input (+5V)
4	PWM IN	10 – 25 kHz pulse width modulated digital input command (+5V). Input duty cycle commands the output current.
5	SIGNAL GND	Signal Ground (Common With Power Ground).
6	FAULT OUT	TTL level (+5 V) output becomes high when power devices are disabled due to at least one of the following conditions: invalid Hall state, output short circuit, over voltage, over temperature, power-up reset.
7	INHIBIT IN	TTL level (+5 V) inhibit/enable input. Leave open to enable drive. Pull to ground to inhibit drive. Inhibit turns off all power devices.
8	CURRENT MONITOR	Current Monitor. Analog output signal proportional to the actual current output. Polarity is reversed from command voltage. Scaling is 2 A/V. Measure relative to signal ground.
9	HALL 3	Single-ended Hall/Commutation Sensor Inputs (+5 V logic level)
10	HALL 2 ¹	
11	HALL 1	
12	+V HALL OUT	Hall Sensors Power(+5 V@30mA). Referenced to signal ground. Short circuit protected.
13	SIGNAL GND	Signal Ground (Common With Power Ground).
14	RESERVED	RESERVED



1. For use with Single Phase (Brushed) motors, ground Hall 2 and only connect motor leads to Motor A and Motor B.

P2 Power Interface Definitions		
Connector information		KF250NH-3.81-5P Spring Clamp System Terminal Block
Matching Connector	Part No.	N/A
	Remark	
Pin	Signal	Description
1	GND	Power Ground (Common With Signal Ground).
2	HV	DC+ Power Input
3	MC	Motor Phase W
4	MB	Motor Phase V
5	MA	Motor Phase U

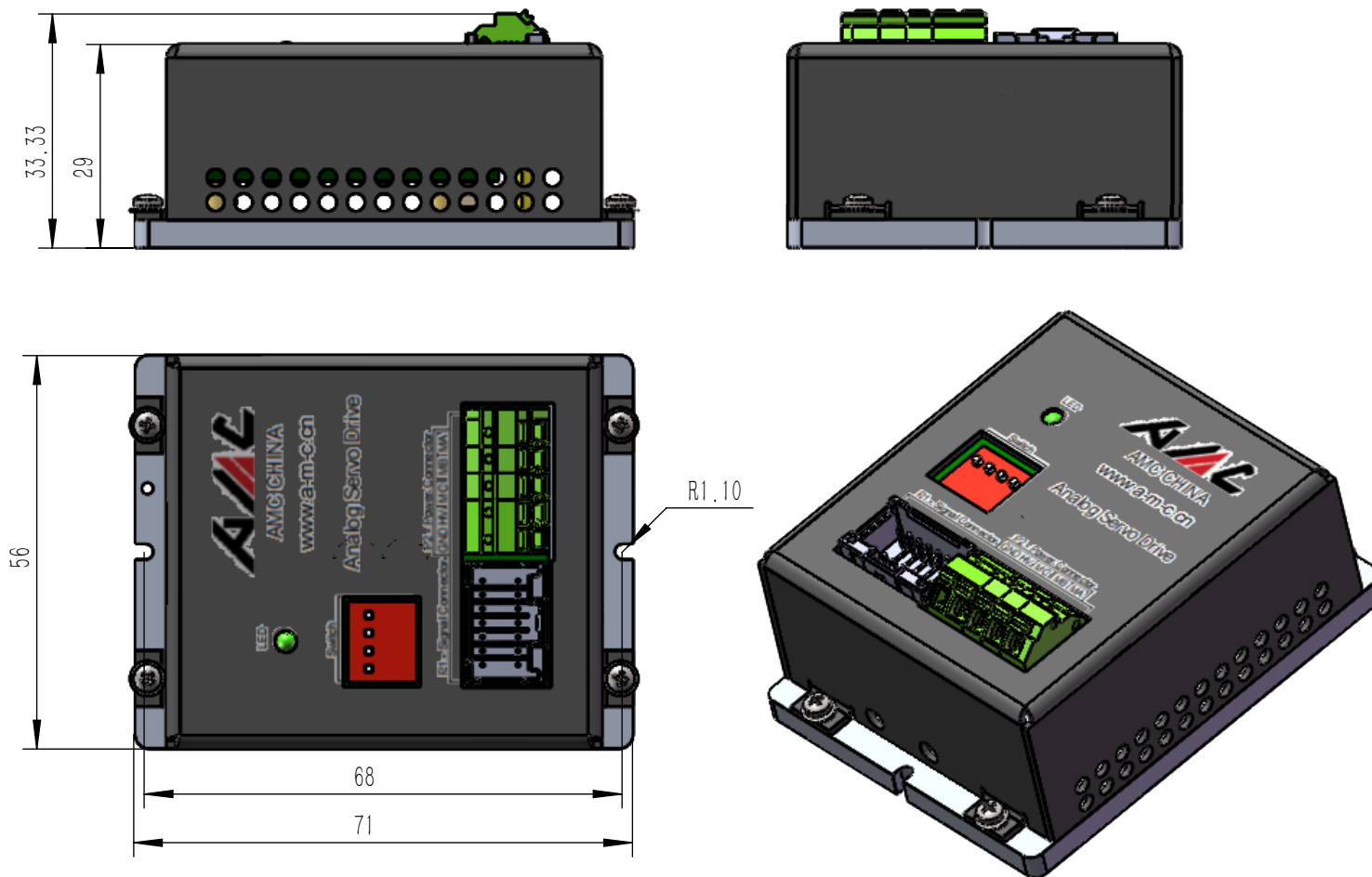
1GND 2HV 3MC 4MB 5MA



Golden Ding Series Analog Servo Drives



DIMENSIONS (mm)



PART NUMBERING INFORMATION

