



### Now, Better Than Ever

Just when you thought Automotion's servo-amplifiers couldn't get any better, the new ALC-CM "E" Series of torque mode servo-amplifiers is released with improved safety, better noise immunity and lower EMI than any previous generation of Automotion servo-amplifiers.

Created to couple with today's high bandwidth, high-speed microprocessor or DSP-based motion controllers, the "E" Series servo-amplifiers allow the user to specify all motion control variables including velocity and position loop parameters exclusively in software. The digital approach to motion control eliminates troublesome analog drift and gives users "on the fly" adjustment capability, as well as completely dispensing with cumbersome and costly manual servo drive field setups or adjustments.

### Tough and Reliable

Designed and manufactured with the latest generation of tough IGBT output stage transistors, the new ALC-CM "E" Series is conservatively rated to deliver superior reliability and durability with high MTBF. Outstanding linear transconductance is provided by a standard 1.8 KHz current loop bandwidth with up to 4 KHz optional. A wide AC operating input voltage range accommodates all domestic and

### Excellence: The "E" in "E" Series

A "World Class" BLDC torque mode servo-amplifier with excellence in safety, performance and reliability, and still cost-effective — that's Automotion's new "E" Series for OEM embedded servo applications.

Meets United States and Canadian component recognition requirements under UL 508C, File No. E114915.

CE-marked to EC low voltage directive.



most foreign OEM application service environments.

The ALC-CM "E" Series is designed to run directly from 208/230 VAC input. No isolation transformers are required. Using a unique split bus input, the user can choose between a fixed or variable AC input (+5 to 264 VAC) or a variable DC input (+8 to +360 VDC) for the main power bus. A nominal 230 VAC is required for the servo's logic supplies.

### The Added Benefits Are Enormous

- Full short circuit protection
- Complete optical SELV isolation
- Under/over voltage protection
- Over Temp. Trip (both motor and drive)
- 3000 VAC 1 min. Hi Pot on every unit per UL 508C, CE requirements
- 18 KHz to 40 KHz (optional) switching frequency
- Built-in heavy duty Regen circuit
- Direct 208/230 VAC capability
- Optional AC power factor correction
- Optional resolver with encoder emulation
- Optional embedded uP for dedicated OEM motion control
- Two-year "No hassle" guarantee

# ALC-CM "E" SERIES

P.O. Box 7746

Ann Arbor  
MI 48107

PHONE  
734/662-7771

FAX  
734/662-3707

## Pinouts

### Connector J1—AC or DC Power In

Pin	Description
1	Logic Power Hot (AC)
2	Logic Power Neutral (AC)
3	Motor Power Hot (AC or DC)
4	Motor Power Neutral (AC or DC)
5	Chassis Ground

### Connector J2— Control I/O Signals (Isolated)

1	+5 Volt DC Input (User Supplied)
2	+5 Volt DC Input (User Supplied)
3	Enable/Disable
4	Factory/User Option Input
5	Forward/Reverse Direction Input
6	Dynamic Brake Input
7	Enable/Fault-Disable Output
8	Tach Signal Output
9	I/O Common
10	I/O Common
11	Digital Current Command Input
12	+ Differential Analog Current Command Input
13	- Differential Analog Current Command Input
14	Current Signal Feedback

### Connector J3—Hall Power (Isolated)

1	+9 to +28 Volt DC Input
2	S1 Commutation Input
3	S2 Commutation Input
4	S3 Commutation Input
5	Hall Common Return
6	Motor Overtemp Switch
7	Motor Overtemp Switch
8	Aux. +5 VDC Power Source
9	Common
10	Common

### Connector J4—Motor Power Out

1	Chassis Ground
2	Motor Phase #1 Output
3	Motor Phase #2 Output
4	Motor Phase #3 Output

### Connector J9—Shunt

1	External Shunt Resistor
2	External Shunt Resistor

## Model Specifications

208/230 VAC Models	ALC06DE	ALC12DE	ALC20DE
Bus Voltage	+8 to +360 VDC, 3 phase		
Peak Output Current	6A	12A	20A
Cont. Output Current	3A	6A	12A
Input Voltage - Drive	5 to +264 VAC RMS, 1 Phase, 50/60 Hz or +8 to +360 VDC		
Input Voltage - Logic	180 to 264 VAC RMS, 1 Phase, 50/60 Hz		

## General Specifications

### Switching Frequency

18 kHz (standard) to 40 kHz (optional)

### Current Bandwidth

1.8 kHz (standard) to 4 kHz (optional)

### Current Command Input

+/- 10 VDC or 5 to 10 kHz PWM

### Bridge Modulation

6 step, full wave, 4 quad, 3 phase

### Min. Motor Inductance

250 uH (115 VAC), 500 uH (230 AC)

### Operating (Storage) Temp.

0 to +50 C (-20 to +85 C)

### Interface Power

4.5 to 5.5 VDC, 200 mA Max. Load

### Weight

4.7 lb. (2.11 Kg) typical

### Diagnostic LED's

Total of six. See User Manual for description and use.

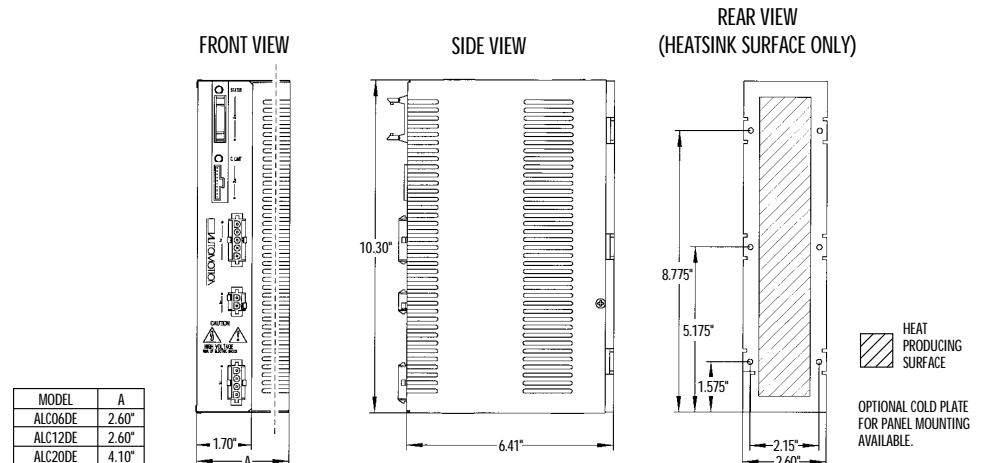
### Functional & Wiring Diagrams

See User Manual.

### Ordering Information

See Automotion's "How To Order" form or contact Automotion for assistance.

## Dimensions



If you need more information, including custom user options available, please contact:  
 AUTOMOTION • P.O. Box 7746 • Ann Arbor, MI 48107 • 734/662-7771 • Fax 734/662-3707  
 E-Mail: sales@automotioninc.com • Website: <http://www.automotioninc.com>

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