

ACS100

S E R I E S

Digital Servo Amplifier

World Class intelligent, low voltage, all digital, brushless servo-amplifiers designed especially for embedded OEM applications.

Overview

The ACS100 is the newest addition to ElectroCraft's AC "Smart" series of all digital servo-amplifiers designed to provide today's OEM with maximum brushless servo performance at the lowest possible cost.

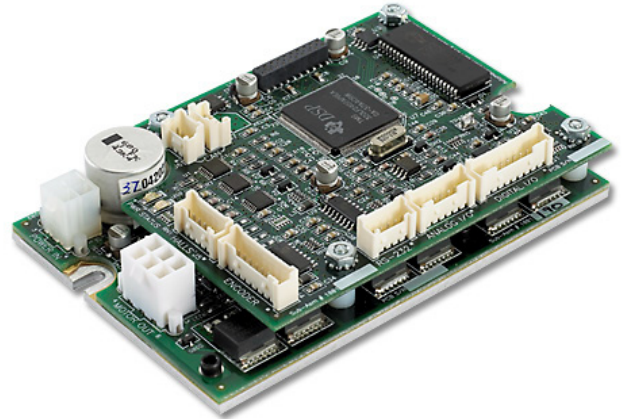
The ACS100 series utilizes the latest in DSP-based digital drive design architecture to provide software selectable torque, velocity, and position mode operation.

Sine wave commutation using encoder feedback provides smooth torque at low speeds for demanding motion control requirements found in robotic, direct drive, and linear motor applications.

Optional software selectable trapezoidal mode allows commutation and velocity loop control from Hall effect feedback only.

Flux Vector Control is Better

The ACS100 AC Servo (flux vector) control algorithm provides higher dynamic response and improved noise immunity. AC flux vector control uses modern space vector modulation in lieu of older sine-weighted PWM or two channel, analog multiplier techniques. This state-of-the-art approach provides a more robust motor controller with lower current harmonics. Which in turn means smoother, more efficient motor control.



More Power in a Smaller Package

The ACS100 was driven by design to be one of the most space efficient low voltage digital brushless servo-amplifiers available.

Up to 600-Watts peak power output in a package measuring just 4.5" (114mm) x 3" (76mm) x 1" (25mm) without heatsink.

Intelligent - Powerful ACS100 Standard Features Include:

- +12 to +48 VDC logic supply input.
- 0 to +48 VDC (60 VDC Peak) motor supply input.
- 5 Amps Cont., 10 Amps Peak (5 seconds).
- RS232 Communications.
- CAN Bus Communications.
- Serial drive status diagnostics.
- Field upgradeable DSP firmware.
- Optional Halls only operation mode.
- *ElectroCraft CompletePower™ PLUS Windows®-based set-up and tuning utility software included.*

Pinouts

J1 - User Digital I/O Control

- 1 +5 VDC, 250 mA, Output
- 2 +5 VDC, 250 mA, Output
- 3 Enable!/Reset, TTL, Input
- 4 Run!/Stop Command, TTL, Input
- 5 Step, TTL, Input
- 6 Direction, TTL, Input
- 7 Enabled, TTL, Output
- 8 Ready, TTL, Output
- 9 Digital GND
- 10 Digital GND

J2 - User Analog I/O Control

- 1 REF+, Diff Input, +/- 10V
- 2 REF-, Diff Input, +/-10V
- 3 Analog GND
- 4 Diff Input, +/-10V, Aux. +
- 5 Diff Input, +/- 10V, Aux. -
- 6 Analog GND
- 7 Analog GND

J3 - RS232 Communications

- 1 TXD
- 2 RXD
- 3 CTS
- 4 RTS
- 5 GND

J4 - Encoder Interface

- 1 +5 VDC, Encoder Output
- 2 Encoder A, Input
- 3 Encoder !A, Input
- 4 Encoder B, Input
- 5 Encoder !B, Input
- 6 Encoder Z, Input
- 7 Encoder !Z, Input
- 8 Digital GND, Encoder
- 9 Digital GND, Encoder

J5 - Hall Interface

- 1 +5 VDC, Commutation, Output
- 2 Commutation S1, Input
- 3 Commutation S2, Input
- 4 Commutation S3, Input
- 5 Digital GND, Commutation
- 6 Digital GND, Commutation

J6, J7 - CAN Communications

- 1 CANH
- 2 CANL
- 3 GND

P1 - DC Input

- 1 Logic, User Supplied, +12 to +48 VDC
- 2 0 to +48 VDC, Motor Power
- 3 GND, Logic
- 4 GND, Motor

ACS100 Model Specifications

DC Input

- Output: VDC
- MIN. Supply Filter
- Output Power, Peak
- Phase Cur. Peak:
- Phase Cur. Cont.
- Bridge PWM:
- Cur. Loop Bandwidth: Hz
- Motor Inductance:
- Motor feedback &:
- Interface power
- Ambient Temp. Range:
- Humidity:

- Motor Supply VDC 0 to +48
- Logic Supply VDC +12 to +48
- VDC 0 to +48
- uF 100 recommended
- Watts 600
- Amps 10
- Amps 5
- kHz 40, 20 center-aligned
- Digitally selectable, 2 kHz typ.
- mH 0.1 to 50 typ.
- VDC +5, 3% reg.
- mA 250 max.
- °C 0 to 50
- 5% to 95% RH, Non-Condensing

Control loops

- Position, Velocity PID filter
- Current loop update rate

- Digitally adjustable up to 5 kHz
- Digitally adjustable up to 10 kHz

Feedback

Loop Operation

- Encoder, 2 MHz
- Velocity, Torque, Position

Current resolution

10 bit

Velocity resolution

32 bit

Position resolution

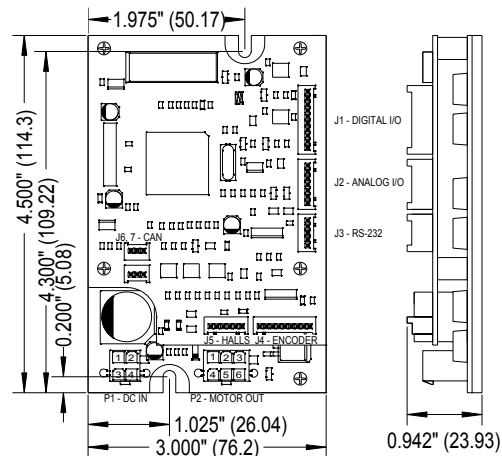
32 bit

Note: Specifications subject to change without notice.

Dimensions

P2 - Motor Output

- 1 Phase U
- 2 Phase V
- 3 Phase W
- 4 Temp+
- 5 Temp-
- 6 Frame GND



Weight

0.40 lb. (182 g)

For more information including custom user options available, please contact:

E-MAIL servodrives@electrocrafter.com • www.automationinc.com

