



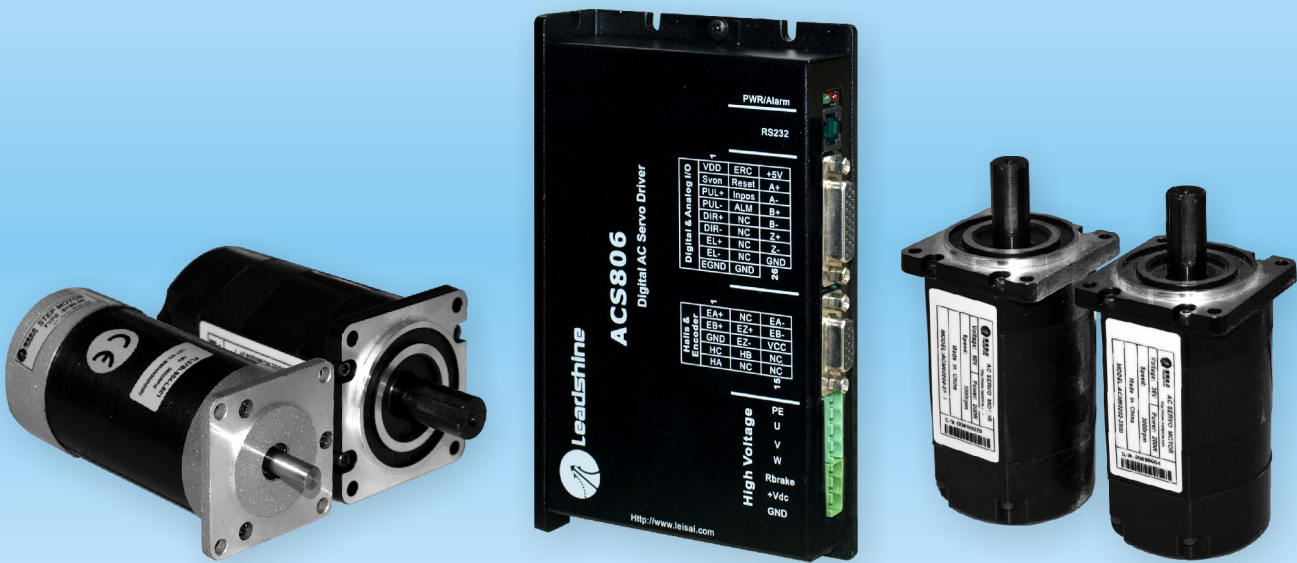
雷赛科技
Leadshine

Leading Technology

Shining Value

Low Cost Digital AC Servo Drive ACS806

— Matching 100/200/400W Servo Motors



Features

- Input Voltage: 18 - 80VDC
- Peak current: 18 A, Continuous current: 6 A(Max)
- FOC-SVPWM control technology
- Opto-isolated, support single-ended and differential inputs
- Support PUL/DIR and CW/CCW control signals
- Self-test function with trapezoidal velocity profile
- Suitable for 50 - 400 W servo motors
- PC based and handheld configuration & tuning tools

Performance Specifications

- Position following error : +/-1count
- Velocity accuracy: +/-2rpm
- Max acceleration : 80rpm/ms
- Input frequency up to 600KHz
- Maximum speed : 4000rpm
- Allowable low speed reaches 1rpm
- Positioning accuracy : +/-1count
- Suitable for 18 - 80 VDC AC servo motors



PC Based Tuning Software ProTuner



Servo Tuning Windows



Handheld Tuning Unit STU-AC



ACS806 DIGITAL AC SERVO DRIVE

Features

- * Low Cost, 32-bit DSP control technology
- * Input: 18 - 80VDC,
- * Peak Current: 18A , Continuous Current: 6 A (Max), 50 - 400 W
- * FOC-SVPWM technologies
- * PC based and handheld configuration tools
- * Electronic gear rate from 1/255 to 255
- * Self-test function with trapezoidal velocity profile
- * Support PUL/DIR and CW/CCW control signals
- * Opto-isolated, support single-ended and differential inputs
- * Encoder output
- * Following error lock range adjustable
- * Over-voltage, over-current, encoder failure protections
- * 10 latest failures self-record function
- * Small size, surface-mount technology



Introduction

Leadshine's fully digital AC servo drive ACS806 is developed with 32-bit DSP based on advanced control algorithm. Since their input commands are PUL/DIR signals, the users can upgrade stepping drives to the ACS860 without changing control systems. The ACS860 can offer high precision, high speed and high reliability performance, and widely used in inkjet printers, engraving machines, and etc. A built-in controller can be used for testing and tuning. PC based and handheld configuration & tuning tools can meet different tuning environments or requirements.

Applications

Suitable for large and medium automation machines and equipments, such as inkjet printers, engraving machines, electronics manufacturing equipments ,special NC machines, pick and place devices, packing devices, and so on. Particularly adapt to the applications require high speed, high precision, and low motor noise.

Performance Specifications (with ACM Series Servo Motors)

- *Position following error : +/-1count;
- *Maximum acceleration speed(No Load) : 80rpm/ms;
- *Maximum speed : 4000rpm;
- *Positioning accuracy : +/-1count;
- *Velocity accuracy: +/-2rpm;
- *Input frequency up to 600KHz;
- *Allowable low speed reaches 1rpm;
- *Suitable for 18 - 80 VDC AC servo motors;

Electronical Specifications

Parameters	ACS806		
	Min	Typical	Max
Continuous output current (A)	0	-	6
Input voltage (VDC)	+18	-	+80
Logical signal current (mA)	7	10	16
Pulse input frequency (KHz)	0	-	600
Isolation resistance (MΩ)	500	-	-
Current provided for encoder (mA)	-	-	200

Pin Function

Power Connector X1

Motor Connector X2

Pin.	Name	Description	I/O	Pin.	Name	Description	I/O
1	GND	Power ground	GND	1	PE	Motor case ground	PE
2	VDC	DC power Input (18-80VDC)	I	2	U	Motor phase U	O
3	Rbrake	Brake resistor connection (VDC-RBrake)	I	3	V	Motor phase V	O
				4	W	Motor phase W	O

Pin Function

Motor Feedback Connector

Pin.	Name	Description	I/O
1	EA+	Encoder Channel A+ Input	I
2	EB+	Encoder Channel B+ Input	I
3	EGND	Signal ground	GND
4	HallW+	Hall sensor W+ input	I
5	HallU+	Hall sensor U+ input	I
6	FG	Ground terminal for shielded	GND
7	EZ+	Encoder Channel Z+ Input	I
8	EZ-	Encoder Channel Z- Input	I
9	HallV+	Hall sensor V+ input	I
10	HallV-	Hall sensor V- input	I
11	EA-	Encoder Channel A- Input	I
12	EB-	Encoder Channel B- Input	I
13	VCC	+5V @ 200 mA max.	O
14	HallW-	Hall sensor W- input	I
15	HallU-	Hall sensor U- input	I

Command and I/O Signal Connector

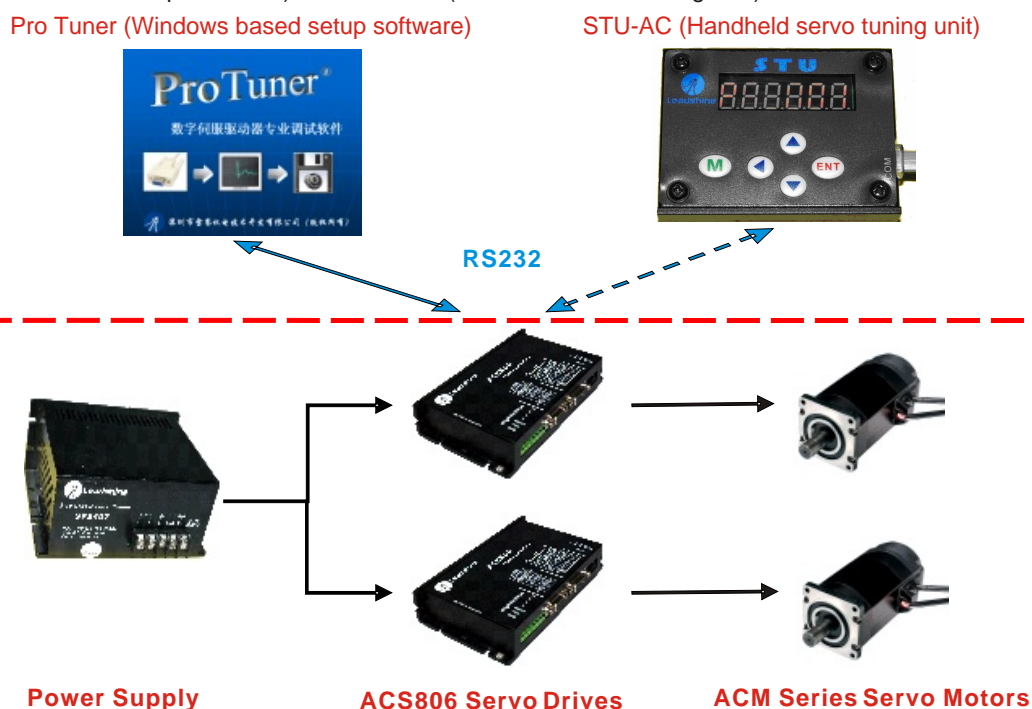
Pin.	Name	Description	I/O
1	EN+	Enable signal input+	I
2	EN-	Enable signal input-	I
3	PUL+	Pulse signal input +	I
4	PUL-	Pulse signal input -	I
5	DIR+	Direction control signal input +	I
6	DIR-	Direction control signal input -	I
7	FL	Positive limit signal input	I
8	RL	Negative limit signal input	I
9	SGND	Signal ground	GND
10	Pend+	In position signal output +	I
11	Pend-	In position signal output -	I
12	ALM+	Alarm signal output +	O
13	ALM-	Alarm signal output -	O
14	+REF	Reference signal input+	I
15	-REF	Reference signal input -	I
16	NC	Not connected	-
17	FG	Ground terminal for shield	GND
18	SGND	Signal ground	GND
19	+5V	+5V Power supply	O
20	A+	Encoder Channel A+ Output	O
21	A-	Encoder Channel A- Output	O
22	B+	Encoder Channel B+ Output	O
23	B-	Encoder Channel B- Output	O
24	Z+	Encoder Channel Z+ Output	O
25	Z-	Encoder Channel Z- Output	O
26	SGND	Signal ground	GND

RS232 Communication Interface

Pin.	Name	Description	I/O
1	NC	Not connected	-
2	+5V	Power for STU-AC	O
3	TxD	Rs223: Transmit	O
4	GND	Signal ground	GND
5	RxD	RS232: Receive	I
6	NC	Not connected	-

PC Based and Handheld Configuration & Tuning Tools

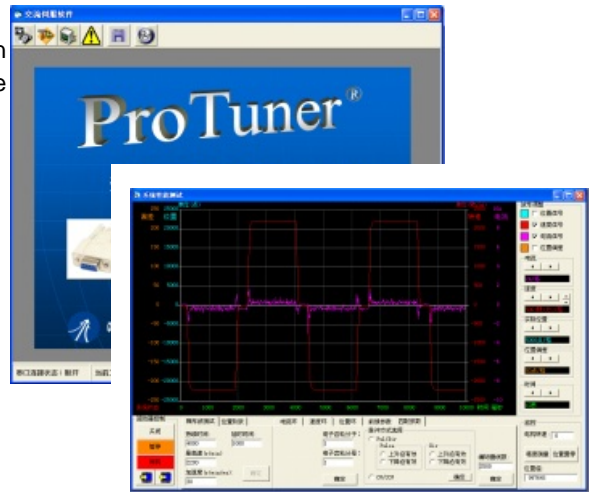
Leadshine offers PC based and handheld configuration & tuning tools to meet different requirements and configuration & tuning environments . The user can tune the ACS806 with two different tuning tools, including Pro Tuner (Windows based setup software) and STU-AC (Handheld servo tuning unit).





ProTuner (Windows Based Setup Software)

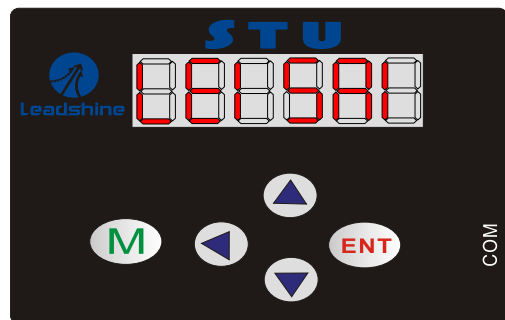
- Upload & Download parameter settings
- Digital oscilloscope for real-time current, velocity, position following error display. Can read any point's value with the mouse when the curves are locked.
- PID parameter settings for position loop
- PI parameter settings for current loop
- Motor parameter configuration
- Electronic gear rate setting from 1/255 to 255
- Position following error range setting
- Encoder resolution setting
- Parameter settings for self motion test (with trapezoidal velocity profile)
- Read the latest 10 failure events and clear the events



* 1 PC RS232 interface is necessary
 ** Leadshine offers special cable for communication between ProTuner and the drive.

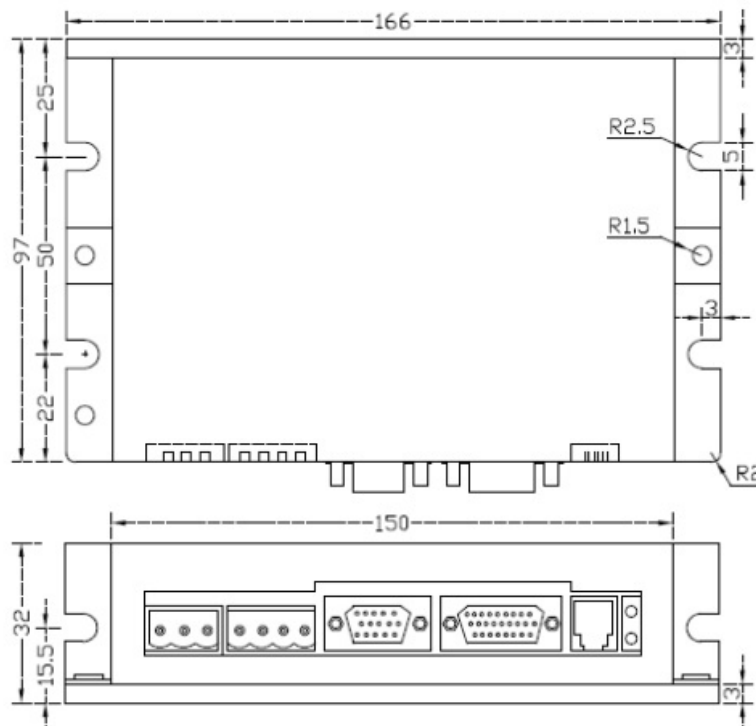
STU-AC (small Servo Tuning Unit)

- Similar to most HMI of servo drives from other manufacturers
- PID parameter settings for position loop
- Electronic gear rate setting from 1/255 to 255
- Position following error range setting
- Real-time current, velocity, position following error display.
- Parameter settings for self motion test (with trapezoidal velocity profile)
- Read the latest 10 failure events and clear the events



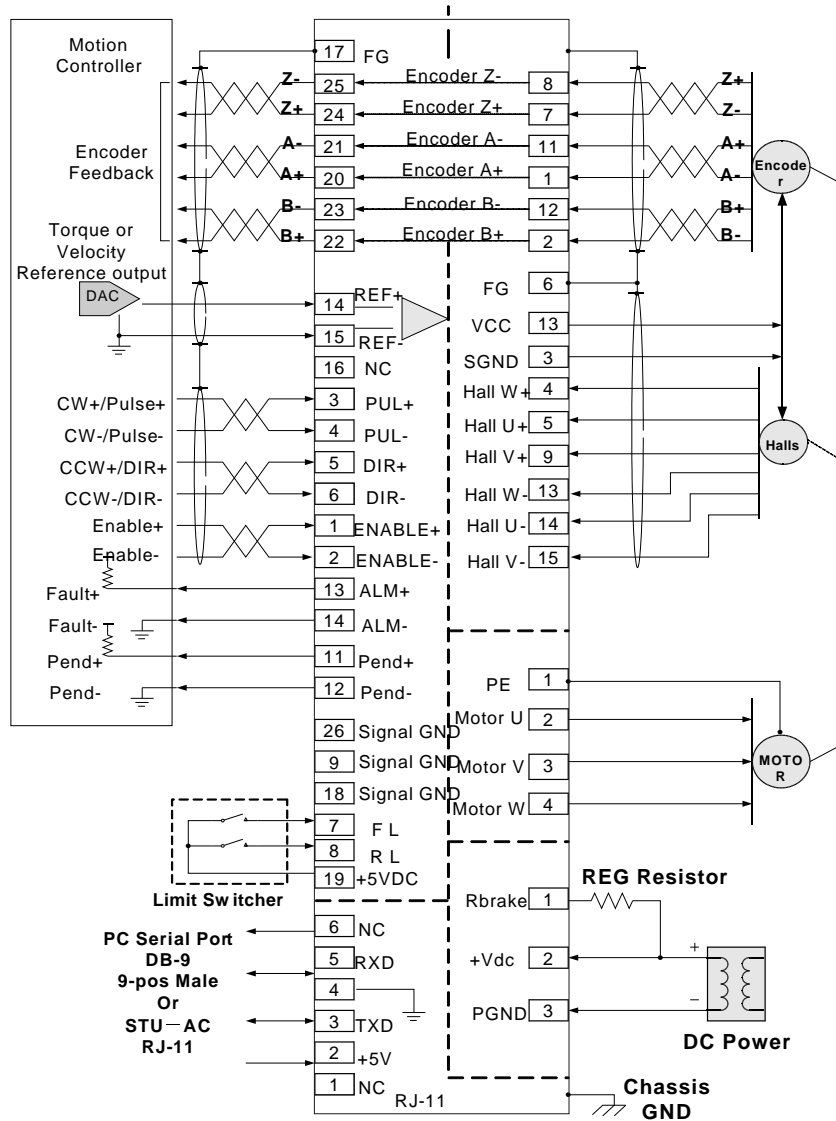
* Leadshine offers special cable for communication between the STU-AC and the drive.

Mechanical Specifications (Unit: mm 1 inch=25.4mm)





Typical Connections



ACM Series AC Servo Motors

The ACM series AC servo motors offer high performance with wide output range from 100W to 1.5 kW*. This series motors are designed to operate over a broad range of speeds and have the advantage of reduced maintenance since there are no brushes or commutators. Owing to their high performance-price ratios, these motors are ideal for cost sensitive applications.

*Motors whose rated powers are higher than 400W are coming soon.



ACM604



ACM604 V60



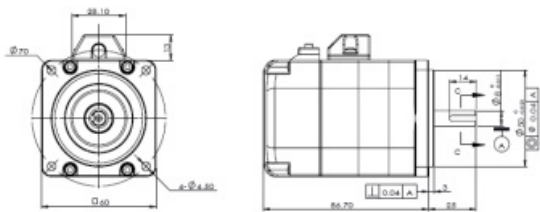
ACM602 V60



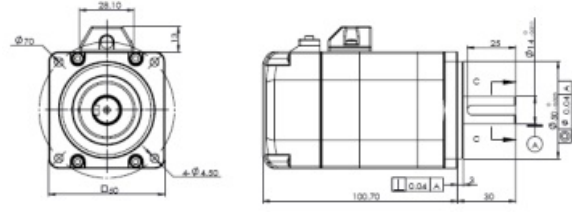
ACM602 V36

Electrical Specifications (Visit www.leadshine.com for information about NEMA 23 servo motors.)

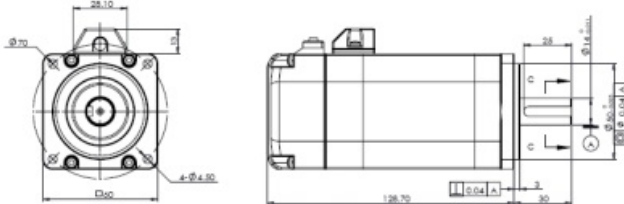
Model	ACM602V36	ACM602V60	ACM604V60	ACM604
Rated Voltage (V)	36	60	60	220
Rated Power (W)	200	200	400	400
Rated Torque (N.M)	0.64	0.64	1.27	1.27
Peak Torque (N.M)	1.91	1.91	3.82	3.82
Rated Speed (RPM)	3000	3000	3000	3000
Peak Speed (RPM)	5000	5000	5000	5000
Rated Armature Current (A)	12	7	14	2.8
Instantaneous Armature Current (A)	34	22	44	85
Torque Constant (N.M/A)	0.058	0.097	0.097	0.49
Back EMF Constant (V/RPM)	2.03×10^{-3}	3.4×10^{-3}	3.4×10^{-3}	17×10^{-3}
Resistance (ohm)	71.5	181	80.5	1425
Inductance (mH)	0.174	0.49	0.28	6
Inertia ($\text{kgm}^2 \times 10^{-4}$)	0.296	0.296	0.3549	0.3549
Allowable radial load (N)	245(Max)	245(Max)	245(Max)	245(Max)
Allowable axial load (N)	68(Max)	68(Max)	74(Max)	74(Max)
Flange Size (mm)	60	60	60	60
Motor Length (mm)	100.7	100.7	127.8	127.8
Pole Pairs (-)	4	4	4	4
Mass (Kg)	-	-	-	-
Encoder Resolution (counts/rev.)	2500(optional)	2500 (optional)	2500 (optional)	2500 (optional)
Ambient Temperature (°C)	0~40	0~40	0~40	0~40

Mechanical Specifications


(a) Mechanical specification of the ACM601V36 (100W)



(b) Mechanical specification of the ACM602V36 and ACM602V60 (200W)



(c) Mechanical specification of the ACM604V60 and ACM604 (400W)

Order Information

Model	Description
ACS806	ACS806 servo drive. Input voltage: 24~80VDC, Continuous output current up to 6A, Peak current: 18A, Suitable for 100W~400W servo motors
ProTunner	PC based configuration & tuning software (free).
STU-AC	Handheld configuration & tuning unit. Each customer can get one STU-AC for free.
ACM601V36	Rated Voltage: 36VDC, Rated Power: 100W
ACM602V36	Rated Voltage: 36VDC, Rated Power: 200W
ACM602V60	Rated Voltage: 60VDC, Rated Power: 200W
ACM604V60	Rated Voltage: 60VDC, Rated Power: 400W
ACM604	Rated Voltage: 220VAC, Rated Power: 400W

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