



ELD5

Low-voltage AC Servo

50W-400W



- ▶ Easy Tuning
- ▶ Cost-effective
- ▶ Optional Feedback
- ▶ Better Performance

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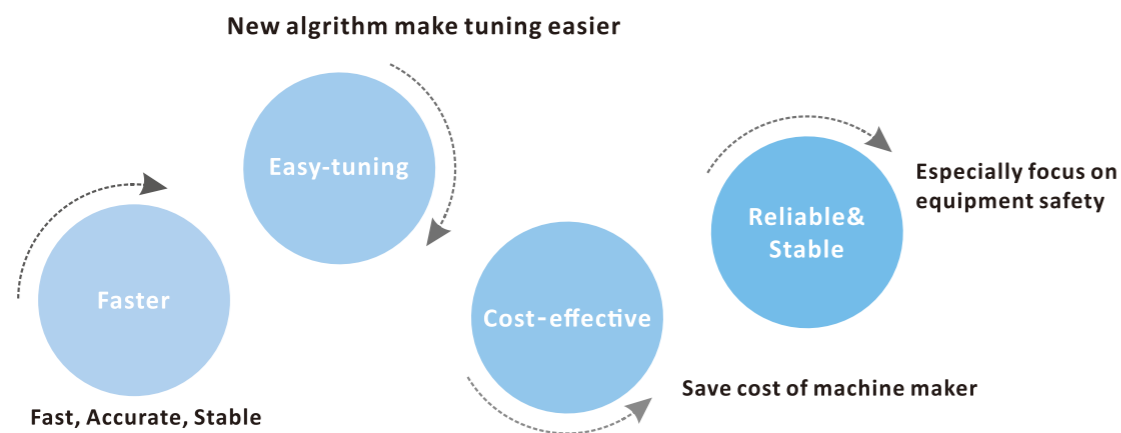
01 ELD5 Series Low-voltage AC Servo Drive

ELD5 low-voltage AC servo is a special motion control product designed for machines and applications that request a best balance between outstanding performance and reasonable cost.

Combined with abundant features like MFC, vibration suppression, multi-mode filter function etc. It provide machines a compact size, low tuning works, but high resolution encoder up to 23 bits, an unique servo system.

Feature:

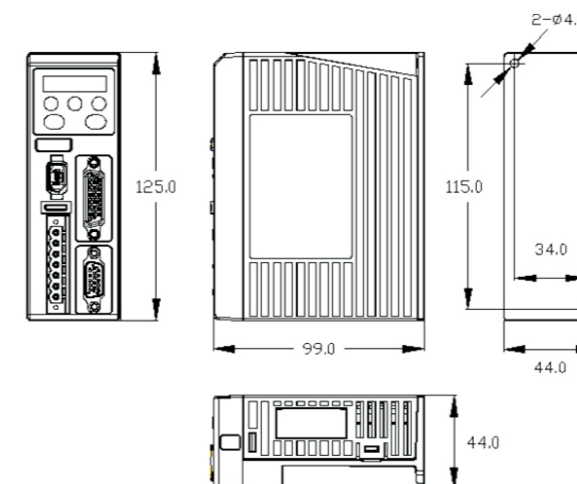
- Easy tuning
- Automatic identification for motor
- Model following control
- Notch filter, damping filter
- RS485/Modbus
- Up to 30 types motor supported



Specifications

Power & Environment		
Driver model	ELD5-400U / ELD5Z-400U	
Size(mm)	125*99*44	
Rated power (kw)	0.4	
Rated output current (A)	10	
Max output current (A)	30	
Main power	Voltage (V)	DC24-60
	Current (A)	10
Control power	Voltage (V)	DC12-24
	Current (A)	≥12mA
Control method	IGBT PWM Sinusoidal Wave Drive	
Overload	300%	
Brake resistor	External connection	
Communication interface	RS-232, RS485, Modbus	
Protection rank	IP20	
Communication & Connection		
USB	Mini USB	
Pulse input	2 fast pulse inputs, 5V-24v all compatible	
Pulse encoder output	5V differential outputs, A/B/Z phase (optional frequency divider)	
Digital input/output	4 programmable OC outputs, 5 programmable common-anode	
Analog input	1 analog output: -10V to +10V	
Feedback Supported	2500line incremental encoder(ELD5-400U)	
	serial encoder(ELD5Z-400U)	
Matched Motors		
Power Range	50W - 400W	
Voltage Range	24V - 60V	
Encoder Type	2500-line, 5000-line, Absolute Encoder(17-bit , 23-bit)	
Motor Size	40mm, 60mm Frame	
Other Requirements	Brake. oil-seal. protection level. shaft & connector can be customized	

Mechanical Specifications

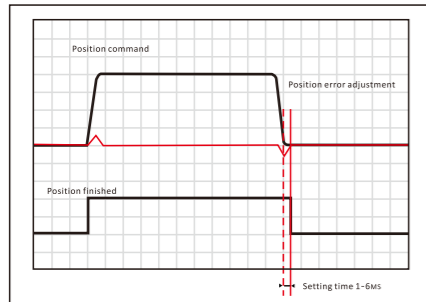


1. Faster

Fast, Accurate, Stable

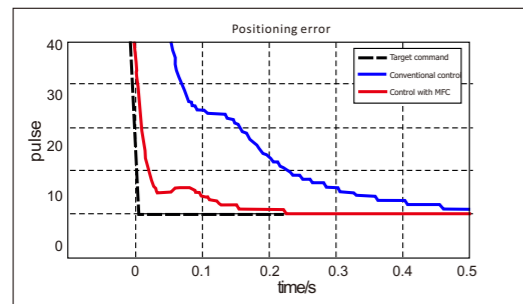
1. Fast response

Frequency of velocity response can up to 1.2KHz
Advanced feed-forward algorithm fasten the response
frequency cut down setting time



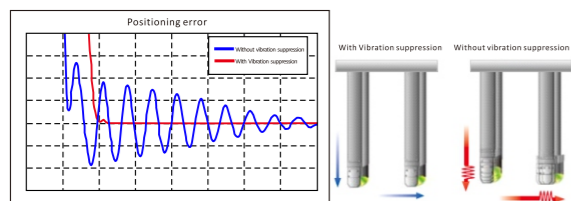
2. Accurate dynamic following

23-bit encoder supported, command following more accurate with shorter setting time
Model following control, based on motion reference model, make dynamic following performance better



3. Stable running

Notch filter and damping filter can enhance the stiffness and suppress the vibration
Motor with new design make torque ripple smaller even in very low speed

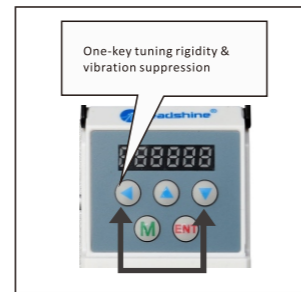


2. Easy-tuning

New algorithm make tuning easier

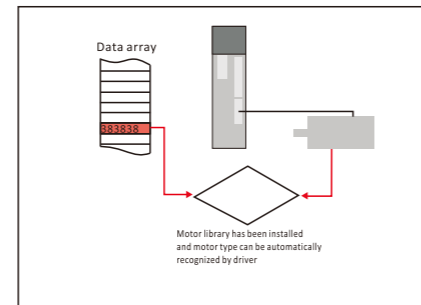
1. One key tuning

Only one parameter needed to finish the tuning of velocity and position loop



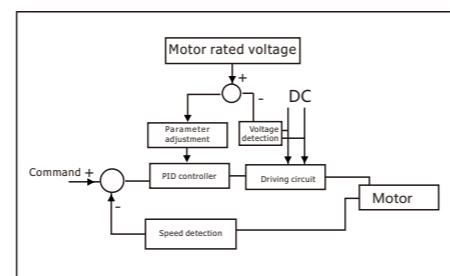
2. Automatic identification for motor

The motor type can be automatically recognized with bus type encoder



3. Self-adaption for voltage input

The performance of current loop can be self-adapted with different voltage input and maintain the best performance

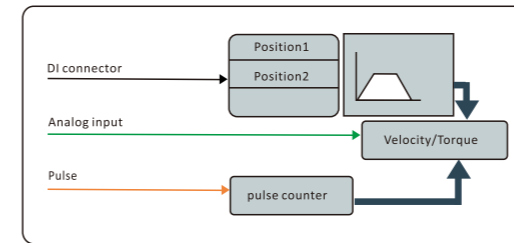


3. Cost-effective

Save cost of machine maker with intelligent design

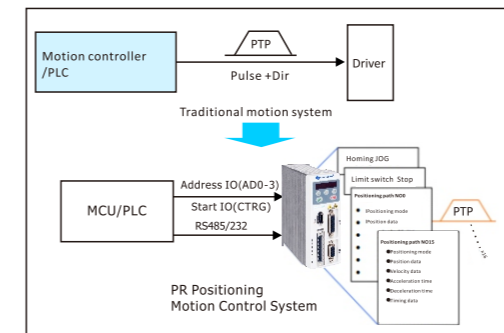
1. Different communication

Pulse + Direction/ Analog Input/ PR mode/ Modbus/ Different type of encoder & motor supported



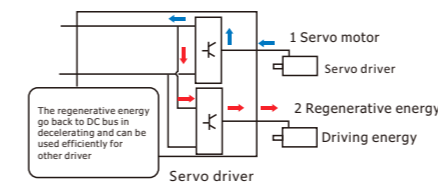
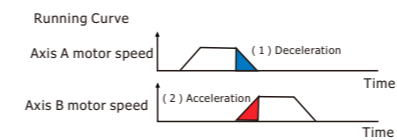
2. More intelligent saving controller

Position programmable mode with IO trigger/ RS485 trigger
Position/velocity/torque mode, and can be switched in different mode
16 programmable paths for choosing with IO trigger, 35 kinds of homing mode (for single-axis robot, electric-cylinder)



3. More energy-saving

Energy regeneration for recycling
Enhancement for motor design (AGV. Sorting machine. RGV)

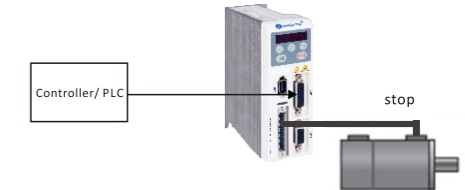


4. Reliable&Stable

Especially focus on equipment safety

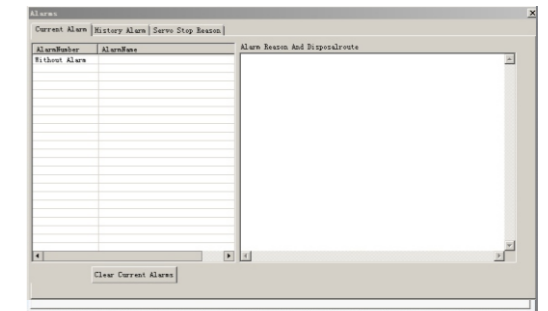
1. Abundant I/O function

With new design for safety protection and direct input from monitoring information make scram more faster and timely



2. Timely feedback

The controller can monitor all motor information timely, and get any time alarm to improve whole motion system



3. Production&Quality Management System

IQC: 100% qualified;
Components Test: Parameter consistency is above 99.5%;
Product Aging test: Continuous and stable testing time is above 300 hours;
OQC: 100% qualified;
Product Certificates: CE and RoHS.





02 ACM Series Low-voltage Servo Motors

ACM series low-voltage motor, with compact size and reliable quality, offer high performance with power range from 50w to 400w. With optional feedback and color, ACM series servo motor is widely used in different applications both in point-to-point moving and multi-axes interpolation moving.

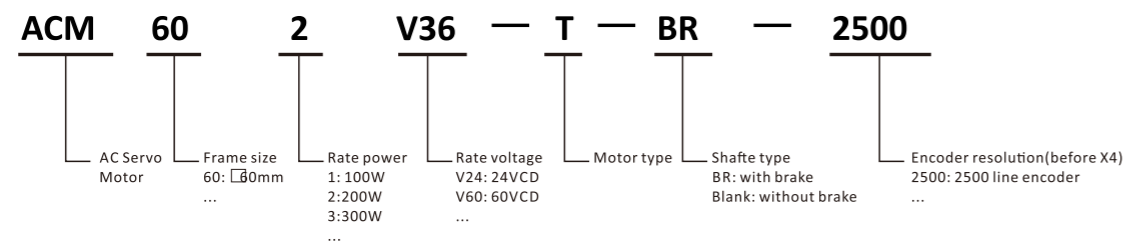
2500-line Servo Motor

ACM-T motors provide power range from 50w to 400w high performance servo system together with ELD5 drives. 2500-line encoder with index slits (A, B, Z), and Hall Sensors(U, V, W) make it most popular servo motor. Compatible with many brands on the market. It meets most requirements from 1rpm to 4500rpm.



	Frame Size	40mm (NEMA16)	60mm (NEMA24)
	Rated Power	50W 100W	100W 200W 400W

Part Number

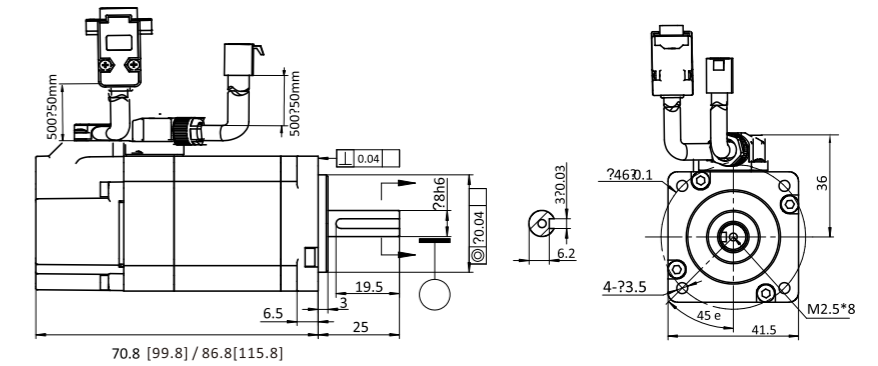


Specifications

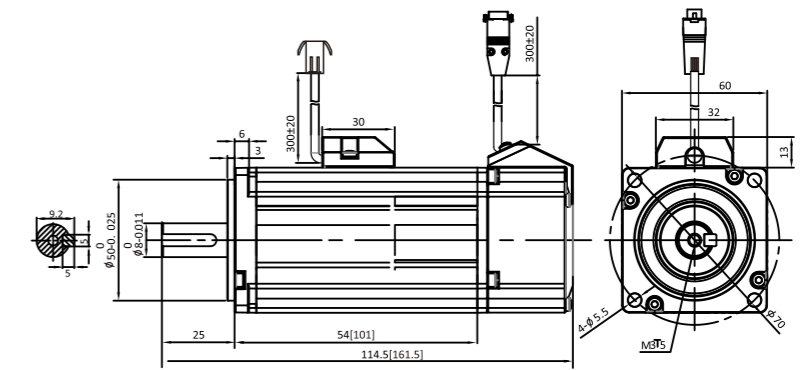
Parameters	ACM4005V24-T	ACM4010V24-T	ACM601V36-T	ACM602V24-T	ACM602V36-T	ACM604V48-T	ACM604V60-T
Rated Voltage(VDC)	24	24	36	24	36	48	60
Rated Power(W)	50	100	100	200	200	400	400
Rated Torque(Nm)	0.16	0.32	0.318	0.637	0.637	1.27	1.27
Rated Current(A)	3.6	6	4.6	13	7.5	10.25	8.5
Rated Speed(RPM)	3000	3000	3000	3000	3000	3000	3000
Peak Speed(RPM)	4000	4000	4500	4500	4500	4500	4500
Peak Torque(Nm)	0.48	0.96	0.954	1.91	1.91	3.82	3.82
Peak Current(A)	10.8	18	13.8	29.1	31.5	31.8	26.4
Torque Constant(Nm/A)	0.048	0.05	0.0918	0.0545	0.085	0.124	0.149
Back EMF Constant(V/krpm)	2.9	3.1	5.535	3.4	5.4	7	9.2
Inertia(kg*m ² *10 ⁴)	0.036	0.06	0.0588	0.189	0.189	0.342	0.342
Poles(-)	10	10	8	8	8	8	8

Mechanical Specifications

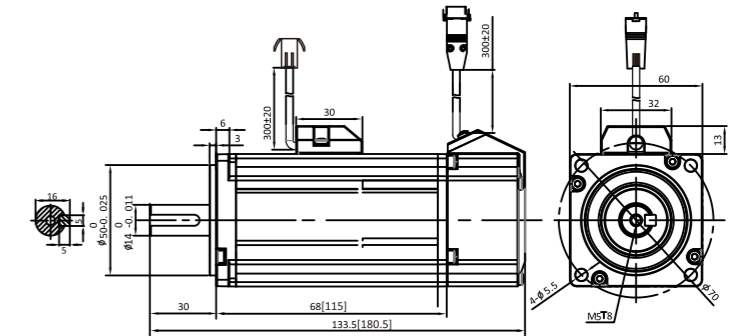
ACM4005V24-T-2500/ACM4010V24-T-2500:



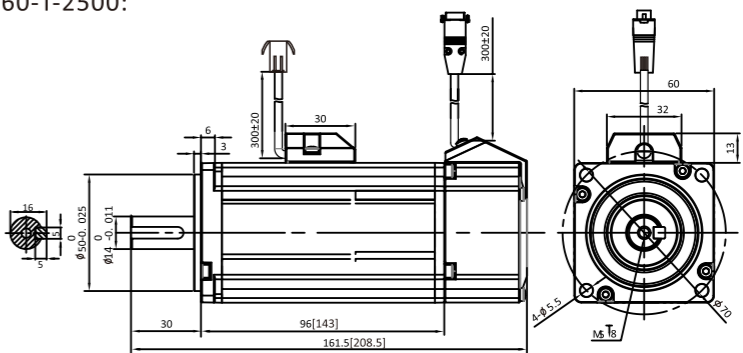
ACM601V36-T-2500 :



ACM602V24-T-2500/ACM602V36-T-2500:



ACM604V48-T-2500/ACM604V60-T-2500:



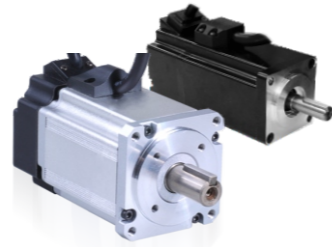
Figures in [] represent the dimensions with brake.



Notes:

- (1) Please contact Leadshine Technical Support or local distributor on condition of customization.
- (2) Read the instruction Manual and understand all precautions and remarks before using the products.

High Resolution Servo Motor

ACM high resolution servo motors offer high performance with modes ranging from 50w to 400w. Mounting is compatible with most AC servo motors on the market. Standard models come with a serial 5000line/17bit/23bit encoder, When driven by ELD5Z series servo drives, ACM series motors meet high accuracy application requirement .



	Frame Size	40mm (NEMA16)	60mm (NEMA24)
	Rated Power	50W 100W	200W 400W

Part Number

ACM 60 20 V36H – 01 – C 5

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Motor Series

ACM: ACM Series Motor

② Motor Frame Size

40: 40mm
60: 60mm

③ Power

05: 50W 20: 200W
10: 100W 40: 400W

④ Rated Voltage

V24: 24V V36: 36V
V48: 48V V60: 60V

⑤ Brake and oil-seal specification:

E: 24Vdc brake, with oil-seal
F: No brake, with oil-seal

H: No brake, no oil-seal
G: 24Vdc brake, no oil-seal

⑥ Version

⑦ Encoder Resolution

C: 5000-line Incremental D: 17-bit Incremental
E: 17-bit Absolute L: 23-bit Absolute

⑧ Motor Pairs

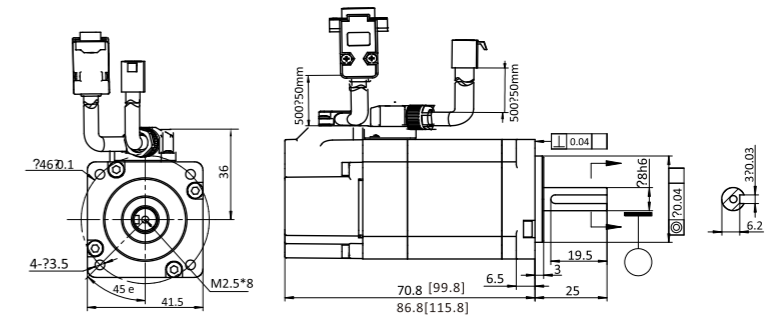
4: 4Pairs
5: 5Pairs

Specifications

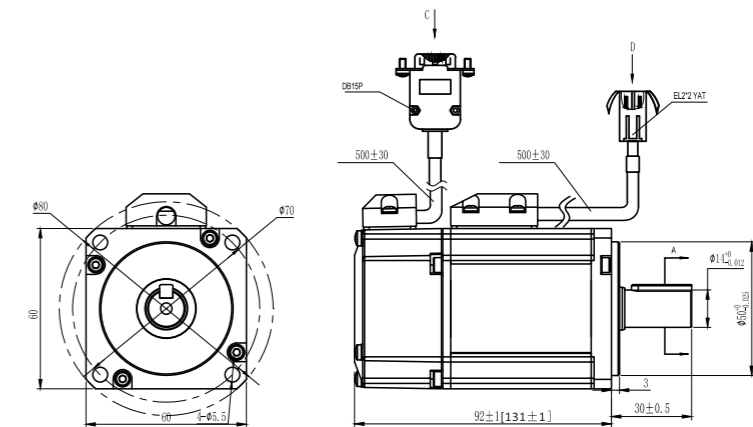
Parameters	ACM4005V24	ACM4010V24	ACM6020V36	ACM6020V48	ACM6040V48	ACM6040V60
Rated Voltage(vdc)	24	24	36	48	48	60
Rated Power(w)	50	100	200	200	400	400
Rated Torque(Nm)	0.16	0.32	0.64	0.64	1.27	1.27
Rated Current(A)	3.6	6	7	6.4	10	9
Rated Speed(RPM)	3000	3000	3000	3000	3000	3000
Peak Speed(RPM)	4000	4000	4000	5000	4000	4000
Peak Torque(Nm)	0.48	0.96	1.91	1.92	3.8	3.84
Peak Current(A)	10.8	18	21	20	30	27
Torque Constant(Nm/A)	0.048	0.05	0.092	0.1	0.127	0.14
Back EMF Constant(V/krpm)	2.9	3.1	6.19	6.6	7.8	9.73
Inertia(Kg*m ² *10 ⁴)	0.036	0.06	0.21	0.21	0.42	0.42
Poles(-)	10	10	10	10	10	10

Mechanical Specifications

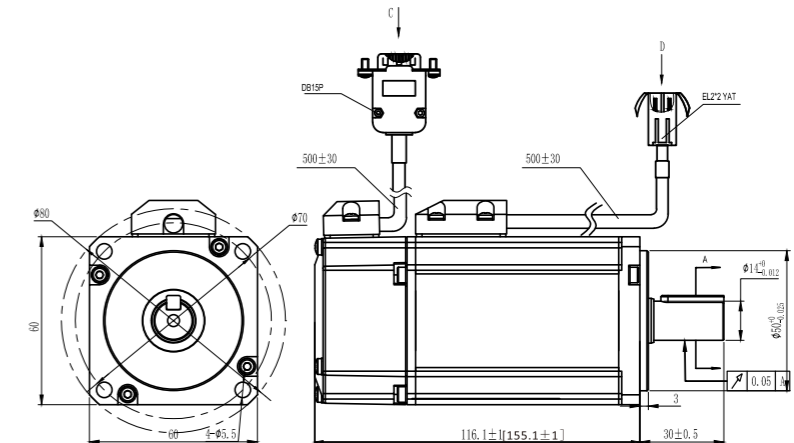
ACM4005V24/ACM4010V24-E5:



ACM6020V36/V48:



ACM6040V48/V60:



Figures in [] represent the dimensions with brake.

Notes:

- (1) Please contact Leadshine Technical Support or local distributor on condition of customization.
- (2) Read the instruction Manual and understand all precautions and remarks before using the products.

03 SPS Switching Power Supply

Leadshine specially designed power supplies with broad input voltage range and strong over-load capacity, can fully meet the requirement of servo motor driving.

Part Number

SPS 24 10(V2.0)

① ② ③ ④

① Series Number

SPS : Leadshine DC Power Supply Series

② Output Voltage

24 : 24V voltage 36 : 36V voltage
48 : 48V voltage 60 : 60V voltage

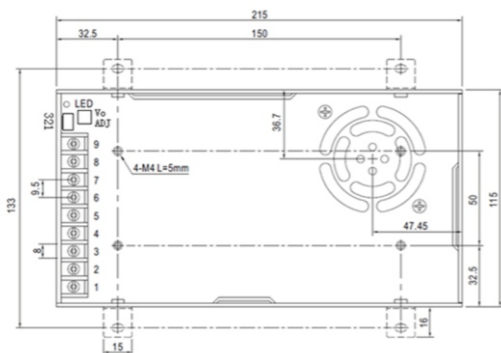
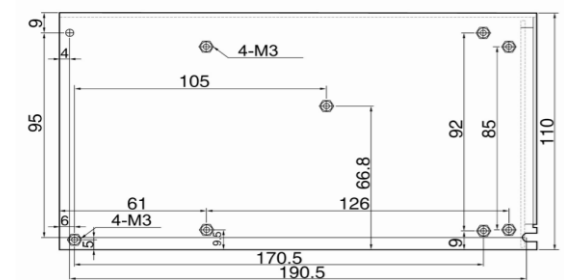
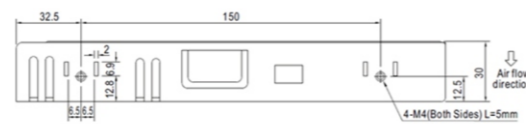
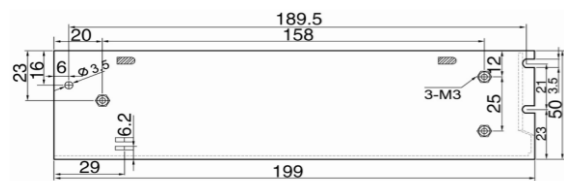
③ Rated Current

11 : 11A current 10 : 10A current
8 : 8A current 6 : 6A current

④ Updated Version Number

Specifications

Mounting Dimensions



SPS2410(V2.0)

SPS3611(V2.0)/SPS488(V2.0)/SPS607(V2.0)

SPS2410(V2.0) Parameters



Features:

- High efficiency, low temperature rise;
- Short circuit, overload, over voltage protection;
- Bigger capacitors, apply to motor driving application;

Parameters	Model	SPS2410(V2.0)
Outputs	Output Voltage	24V
	Rated Current	10A
	Rated Power	240W
	Ripple&Noise	240mVp-p
	Adjustable Range	±10%
	Accuracy	±1%
	Line Regulation	±0.5%
	Load Regulation	±0.5%
Inputs	Building,Rising,Holding Time	2s, 50ms, 20ms
	Input Range	176~264VAC
	Input Current	5A/220VAC
	Frequency Range	47~63Hz
	Efficiency	>88%
	Surge Current	30A@230V
Protection	leakage Current	0.75mA/240Vac
	Overload	120~300%, Shut Off Output After 0.3s Delay, Automatic Recovery >300%, Quickly Turn Off Output, Automatic Recovery
	Short Circuit	Intermittent short circuit protection
	Over Voltage	-----
Function	Over Temperature	-----
	Temperature-Controlled Fan	>50°C, Fan Open; <45°C, Fan Close
Environmental Parameter	Operating Temperature,Humidity	-20~60°C, 10~90% Rh, No Condensation
	Storage Temperature,Humidity	-40~85°C, 10~95% RH
	Temperature Shift	±0.03%/°C(0~50°C)
Safety and EMC standards	Vibration	10~500Hz, 2G 10min./1cycle, PERIOD FOR 60min. EACH AXES
	Safety Standard	GB4943.1-2011, EN60950-1
	Withstand Voltage	I/P-O/P: 1.5KV, I/P-FG: 1.5KV; O/P-FG: 0.5KV AC 1min.
	Insulation Resistance	I/P-O/P, I/P-FG, O/P-FG:500VDC / 100M Ohms
Others	EMC Standard	GB9254-2008 CLASS A
	Dimension	199*110*50mm
Note	Weight	0.6kg
	<p>1. All parameters are tested on condition of 220VAC input, rated load, 25°C environmental temperature, and 70% humidity;</p> <p>2. Accuracy: Including setting error, Line regulation, load regulation, and so on;</p> <p>3. Ripple&Noise testing: do this test on condition of connection between power and load with 30cm twisted-pair cable .</p>	

■ SPS3611(V2.0)/SPS488(V2.0)/SPS607(V2.0) Parameters



Features:

- High efficiency, low temperature rise;
- Ultra-thin size;
- Short circuit, overload, over voltage protection function;
- Bigger output capacitors, apply to motor driving application;

Parameters	Model	SPS3611(V2.0)	SPS488(V2.0)	SPS607(V2.0)
Outputs	Output Voltage	36V	48V	60V
	Rated Current	11A	8.3A	6.7A
	Current Range	0-11A	0-8.3A	0-6.7A
	Rated Power	396W	398.4W	402W
	Ripple&Noise	360mVp-p	480mVp-p	600mVp-p
	Adjustable Range	±10%		
	Accuracy	±1%		
	Line Regulation	±0.5%		
	Load Regulation	±0.5%		
Inputs	Building,Rising,Holding Time	2s, 50ms, 20ms		
	Input Range	176~264VAC; 200~360VDC.		
	Input Current	5A/220VAC		
	Frequency Range	47~63Hz		
	Efficiency	>88%		
	Surge Current	30A@230V		
Protection	leakage Current	0.75mA /240Vac		
	Overload	120~300%, Shut Off Output After 0.3s Delay, Automatic Recovery >300%, Quickly Turn Off Output, Automatic Recovery		
	Short Circuit	Intermittent short circuit protection		
	Over Voltage	-----		
Function	Over Temperature	-----		
	Temperature-Controlled Fan	>50°C, Fan Open; <45°C, Fan Close		
Environmental Parameter	Operating Temperature,Humidity	-20~60°C, 10~90% Rh, No Condensation		
	Storage Temperature,Humidity	-40~85°C, 10~95% RH		
	Temperature Shift	±0.03%/°C(0~50°C)		
	Vibration	10~500Hz, 2G 10min./1cycle, PERIOD FOR 60min. EACH AXES		
Safety and EMC standards	Safety Standard	GB4943.1-2011, EN60950-1		
	Withstand Voltage	I/P-O/P: 1.5KV, /P-FG: 1.5KV; O/P-FG: 0.5KV AC 1min.		
	Insulation Resistance	I/P-O/P, I/P-FG, O/P-FG:500VDC / 100M Ohms		
	EMC Standard	GB9254-2008 CLASS A		
Others	Dimension	215*110*30mm		
	Weight	0.6kg		
Note	1. All parameters are tested on condition of 220VAC input, rated load, 25°C environmental temperature, and 70% humidity; 2. Accuracy: Including setting error, Line regulation, load regulation, and so on; 3. Ripple&Noise testing: do this test on condition of connection between power and load with 30cm twisted-pair cable .			

04 Accessories & Applications

Accessories

Number	Picture	Name	Descriptions
1		CABLE-ACM WINDING	Power cable ,length 1.2m,2.2m, 3m,5m option
2		CABLE-ENCODER	Encoder cable, length 1.2m,2.2m, 3m,5m option
3		CABLE-ACH1000	Protuner cable, length 1.2m

Typical Applications



