

ELP Series AC Servo Drive

ELP Series AC servo products are high performance AC digital servo which is designed for position/velocity/torque high accurate control , power range up to 2kw ,which can provide intelligent performance with easy tuning process .

Combined with abundant features like MFC, vibration suppression, Multi-mode filter function etc. It provides machines a compact size, low tuning works, but high resolution encoder up to 23 bits ,which can be used for high accuracy applications

Feature:

- ◆ Easy tuning, flexible to control
- ◆ Automatic identification for motor type
- ◆ RS485/Modbus/EtherCAT
- ◆ Notch filter, Damping filter
- ◆ Dynamic brake
- ◆ 17bit /23bit absolute encoder
- ◆ Internal resistor



Technical Specification

Type	ELP-*400Z	ELP-*750Z	ELP-*1000Z	ELP-*1500Z	ELP-*2000Z
Cont current	3.5	5.5	7	10	12
Peak Current	10.5	16.5	21	30	36
Power Supply	100W~2KW	Main Power	Single phase or three phase 220V -15%~+10% 50/60HZ		
		Control Power	Single phase 220V -15%~+10% 50/60HZ		
Control Method	IGBT SVPWM sinusoidal wave drive				
Encoder Feedback	<ul style="list-style-type: none"> ◆ 17bit incremental encoder/absolute encoder ◆ 23bit multi-turn absolute encoder 				
IO	Digital IO	Input	9 inputs (Support common+ and common- two wiring modes) , functions can be configured, 12~24Vdc,30mA		
		Output	6 outputs (4 single-ended, 2 differential) , functions can be configured, 12~24Vdc,30mA		
	Analog	Input	2 analog input(<i>optional</i>), -10~+10Vdc, input resistance 20KΩ, no isolation		
	Pulse	Input Pulse	0-500kHz, 5V differential input/24V Single-ended		
Output Pulse		Encoder ABZ output (3 single-ended, 3 differential)			
Communication Port	USB		PC debug		
	RS-485		Modbus/RTU(<i>optional</i>), 1:N communication up to 31axes to a host		
	EtherCAT		EtherCAT (<i>optional</i>), 1:N communication up to 128 axes to a host		
Control Mode	<ul style="list-style-type: none"> ◆ Position mode: pulse+direction、internal register position setup、RS232/485 ◆ Velocity mode: analog、internal register velocity setup. RS232/485 ◆ Torque mode: analog 				
Operation Interface	Five LED tubes and five keys				
Electronic gear ratio	1~8388608				
Input Function Configuration	Servo-ON. Alarm clear. Positive/Negative Limit. Control mode switching. Gain switching. Deviation counter clear. Command pulse inhibition. Electronic gear switching. Torque limit switching. Speed zero clamp. Speed command sign input. Torque command sign input.				

	E-STOP. Inertia ratio switching. Internal speed selection	
Output Function Configuration	Alarm output. Servo-Ready. Positioning complete. At-speed. Zero-speed. Velocity coincidence. Positional command ON/OFF. Servo-ON. Home-OK	
Safety Protection	Over-Current. Over-Voltage. Under-Voltage. Over-Heat. Over-Load. Encoder error. Over-Speed. Running-away. Positive/Negative Limit. Communication error. Position deviation error. Power-line out of phase etc.	
Dynamic braking	Built-in	
Environment	Temperature	Storage: -20-80°C; Installation: 0-55°C
	Humidity	Under 90%RH (free from condensation)
	Altitude	Lower than 1000m
	Vibration	Less than 0.5G (4.9m/s ²) 10-60Hz (non-continuous working)

Features

Inertia ratio identification
Off-line inertia ratio identification, better performance, easy tuning
Position mode/Velocity mode/Torque mode
Supported Position mode/Velocity mode/Torque mode <ul style="list-style-type: none"> ● Position mode: pulse+direction. internal register position setup. RS232/485 ● Velocity mode: analog. internal register velocity setup. RS232/485 ● Torque mode: analog
Control mode switching
IO signal for mode switching, select Position mode/Velocity mode/Torque mode
Gain switching
Automatically switch gain under special conditions/ IO signal for gain switching
Internal 16 path velocity mode
No analog control required. 16 path speed and IO trigger
Command pulse inhibition
Invalid the pulse input, stop with deceleration
Position limit
Protective equipment operation
Input and output signal allocation function
<ul style="list-style-type: none"> ● Set SI input function allocation ● Set SO output function allocation
Encoder signal output
Output encoder signal: Single-ended /Differential
Analog Input
2 analog input for velocity / torque mode control
Speed zero clamp
If the actual analog input is less than the setting value, the motor will stop rotating in servo-on condition
Vibration Suppression
Specific resonance frequency can be obtained from PC upper computer software according to waveform monitoring, and filter frequency can be set to effectively suppress the oscillation ripple of a certain frequency in the current instruction.
Command filter
To make the positional command divided or multiplied by the electronic gear smooth, set the command filter
Friction torque compensation
Apply feed forward torque superposition directly to torque command

ELP series servo driver

ELP-D 2000 Z

① ② ③ ④

NO	Details					
①	Series Num	ELP: New series servo driver				
②	Command source	D: Stand version (Pulse+direction) RS: RS485 (Pulse+direction/Analog Input/Modbus) EC: EtherCAT				
③	Power	0100:100W	0200: 200W	0400: 400W	0750: 750W	0850 : 850W
		1000: 1000W	1300:1300W	1500: 1500W	2000: 2000W	
④	Encoder	Z: Serial encoder				

ELM series servo motor

ELM 0400 D L 80 H-SS

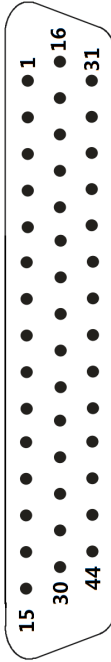
① ② ③ ④ ⑤ ⑥ ⑦

NO	Details						
①	Series Num	ELM: ELM series motor					
②	Power	0100:100W	0200: 200W	0400: 400W	0600:600w	0750: 750W	
		0850 : 850W	1000: 1000W	1300:1300W	1500: 1500W	2000: 2000W	
③	Encoder Type	D:17bit single-turn		E: 17bit multi-turn			
		F:17bit magnetic		L:23bit absolute			
④	Inertia Ratio	L: Low	M:Medium	H:High			
⑤	Frame Size	40:40mm	60:60mm	80:80mm	110:110mm	130:130mm	
⑥	Motor Form						
	NO	Shaft Form		Brake		Oil Seal	
		Circular shaft	Keyhole	Install	None	Install	None
	A	●		●		●	
	B	●			●	●	
	C	●		●			●
	D	●			●		●
	E		●	●		●	
	F		●		●	●	
G		●	●			●	
H		●		●		●	
⑦	Plug Type	SS:Plastic plug H:Big size aviation plug		HS:Small size HH:Injection plug			

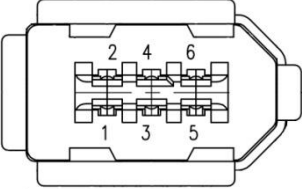
Connectors and Pin Assignment

Signal Explanation of Control Signal Port-CN1

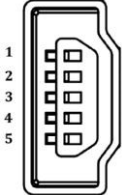
Port	Pin	Signal	I/O	Name	Explanation
CN1	1	COM_SI	input	Digital input common terminal, Com+/Com-, 12VDC~24VDC	Two-way digital input with common terminal, function

	2	SI1	input	Digital input 1	can be configured. 12VDC ~ 24VDC
	7	SI2	input	Digital input 2	
	8	SI3	input	Digital input 3	
	9	SI4	input	Digital input 4	
	10	SI5	input	Digital input 5	
	11	SI6	input	Digital input 6	
	12	SI7	input	Digital input 7	
	13	SI8	input	Digital input 8	
	14	SI9	input	Digital input 9	
	31	COM_SO	output	Digital output common-	Low resistor output in default . OC, the maximum voltage/current is no more than 30V, 50mA . Recommended voltage : 12 V-24V. Current :10mA
	33	SO1 +	output	Digital output 1	
	32	SO2 +	output	Digital output 2	
	34	SO3 +	output	Digital output 3	
	35	SO4 +	output	Digital output 4	Differential Digital output , the maximum voltage/current is no more than 30V, 50mA . Recommended voltage : 12 V-24V. Current :10mA
	18	SO5 +	output	Differential Digital output 5	
	19	SO5-	output		
	20	SO6-	output	Differential Digital output 6	Differential output, High >= 2.5vdc, low <= 0.5vdc, maximum current ±20mA
	21	SO6 +	output		
	23	A +	output	Differential output terminal of motor encoder A phase	
	24	A -	output		
	25	B +	output	Differential output terminal of motor encoder B phase	
	26	B -	output		
	27	Z +	output	Differential output terminal of motor encoder Z phase	
	28	Z -	output		
	36	OCA	output	OC output terminal of motor encoder A phase	
	37	OCB	output	OC output terminal of motor encoder B phase	
	29	OCZ	output	OC output terminal of motor encoder Z phase	
	30	GND	output	OC output GND terminal of motor encoder	
	3	PUL +	input	Pulse input, PUL+ and PUL-: 5V differential input PUL+_24 and PUL-: 24V differential input	
	4	PUL -	input		
	16	PUL + _24	input		
5	DIR +	input	Direction input , DIR+ and DIR- : 5V differential input DIR+_24 and DIR- : 24V differential input		
6	DIR -	input			
17	DIR + _24	input			
39	AI1+	input	Analog input 1, voltage input range : 10VDC~10VDC , input resistor 20KΩ		
40	AI1-	input			
41	AGND	input			
43	AI3 +	input	Analog input 3, voltage input range : 10VDC~10VDC , input resistor 20KΩ		
44	AI3 -	input			
15/22/38/40/42	NC	/	Not connection		
Shell	FG		Shield ground		

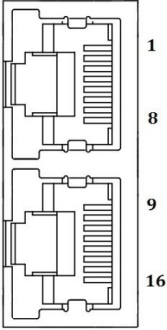
Encoder Input Port-CN2 for ELP Series

Port		Pin	Signal
CN2		1	VCC5V
		2	GND
		3	BAT+
		4	BAT-
		5	SD+
		6	SD-
			PE

Communication Port-CN6 for ELP Series

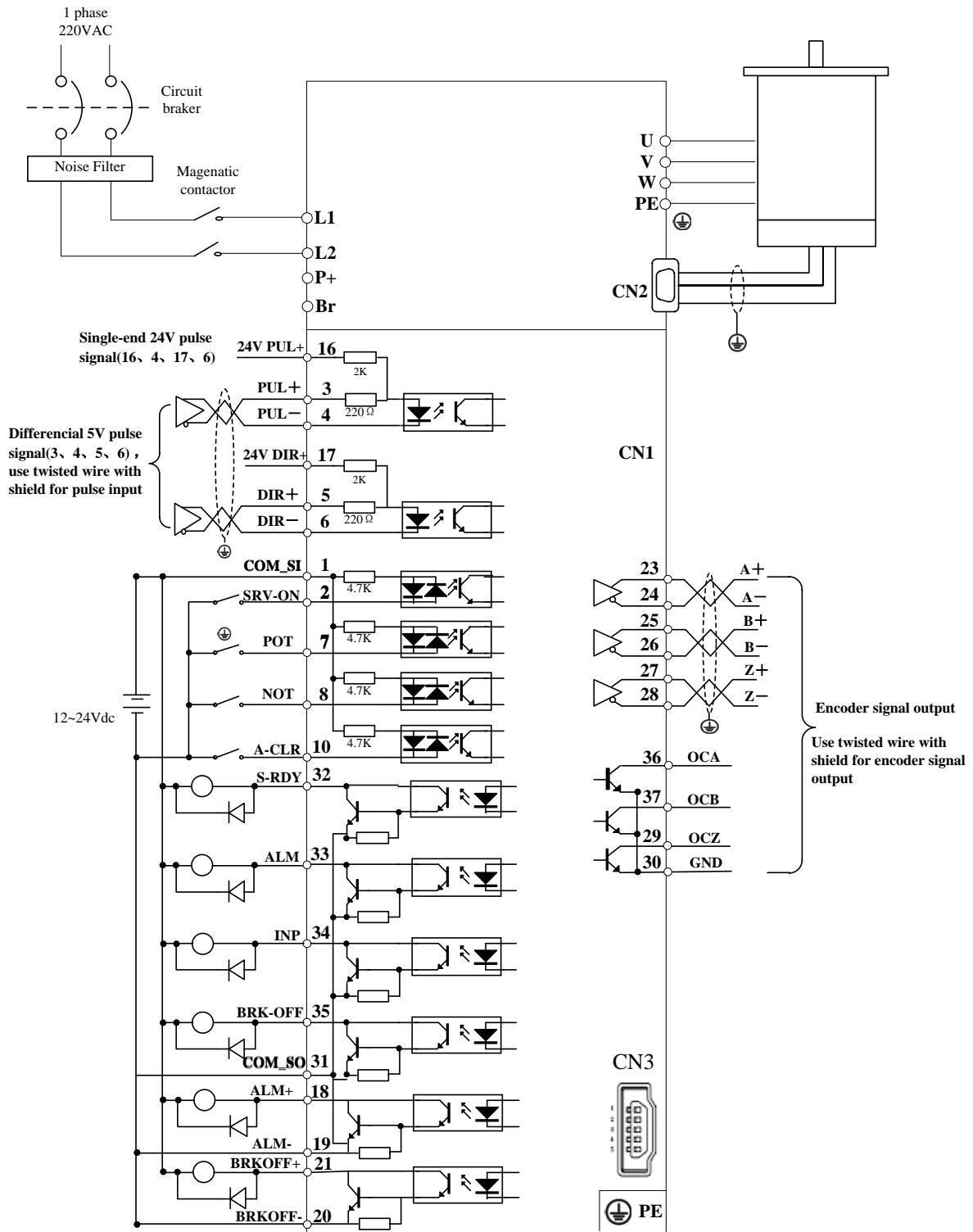
Port		Pin	Signal
CN3		1	VCC5V
		2	D+
		3	D-
		4	
		5	GND
		FG	USB_GND

Bus connector- CN3 for ELP Series

Port		Pin	Signal
CN4 CN5		1 , 9	RDO+
		2 , 10	RDO-
		3 , 11	/
		4 , 12	TXD
		5 , 13	RXD
		6 , 14	VCC5V
		7 , 15	GND
		8 , 16	/
	PE		

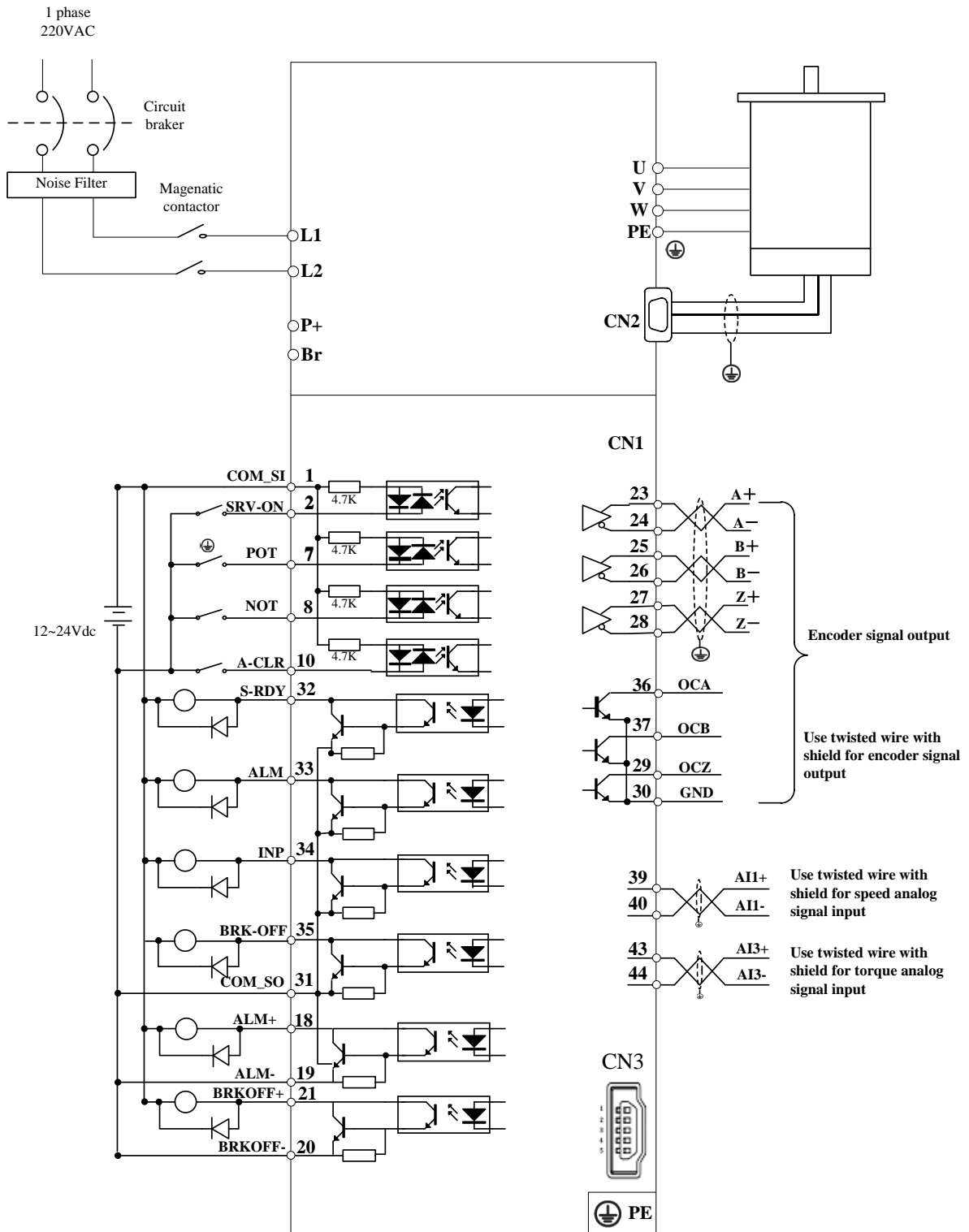
Wiring

Position Control Mode



Positional Control Mode Wiring

Torque /Velocity Control Mode



Torque/Velocity Control Mode Wiring