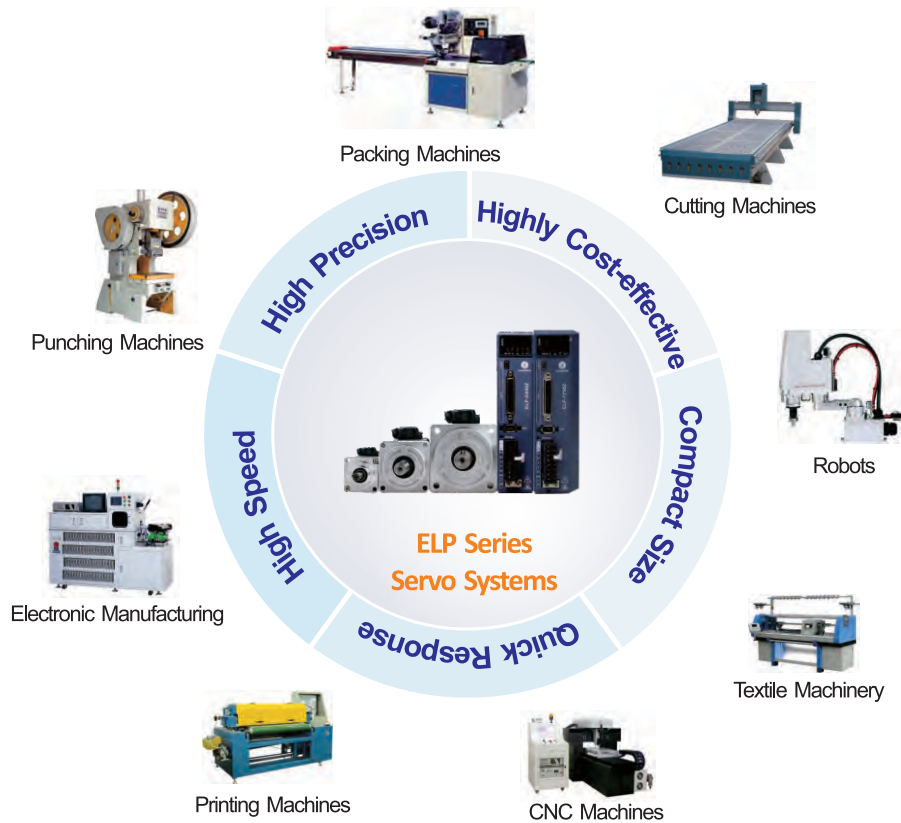


Servo Motors with 23-Bit Encoders													
Servo Motor model	Frame Size [mm]	Voltage [V]	Rated Output [Watts]	Rated Torque [Nm]	Max Torque [Nm]	Rated Current [Amps]	Max Current [Amps]	Rated Speed [rpm]	Max Speed [rpm]	Back EMF Constant [V/KRPM]	Inertia [Kg.m ² 10 ⁻⁴]	Brake	Length [mm]
ELM0850LH130F-HD	130	220	850	5.4	16.2	6.5	19.5	1500	3000	62.23	13.8		145
ELM0850LH130E-HD	130	220	850	5.4	16.2	6.5	19.5	1500	3000	62.23	13.8	●	172
ELM1300LH130F-HD	130	220	1300	8.4	25.2	9.5	28.5	1500	3000	60.1	20.59		165
ELM1300LH130E-HD	130	220	1300	8.4	25.2	9.5	28.5	1500	3000	60.1	20.59	●	192
ELM1800LH130F-HD	130	220	1800	11.5	34.5	9	27	1500	3000	27	30.15		192
ELM1800LH130E-HD	130	220	1800	11.5	34.5	9	27	1500	3000	27	30.15	●	219

Extension cable:
Encoder Cable: Cable-7BM*M*-HD (length: 1.5m,3m,5m,7m,10m optional)
Power Cable: Cable-RZ*M*-HD (V2.0) (length: 1.5m,3m,5m,7m,10m optional)
Brake Cable: Cable-SC*M*-HD (length: 1.5m,3m,5m,7m,10m optional)

Typical Applications



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High Performance AC Servo Systems

ELP Servo Drives + ELM Servo Motors

- Rated power : 100w - 2kw
- Position/Velocity/Torque control
- Easy tuning
- Modbus / EtherCAT
- Built-in Indexer
- Model following control
- Notch filter / Damping filter
- 17bit inc/23bit abs encoder
- Built-in dynamic brake



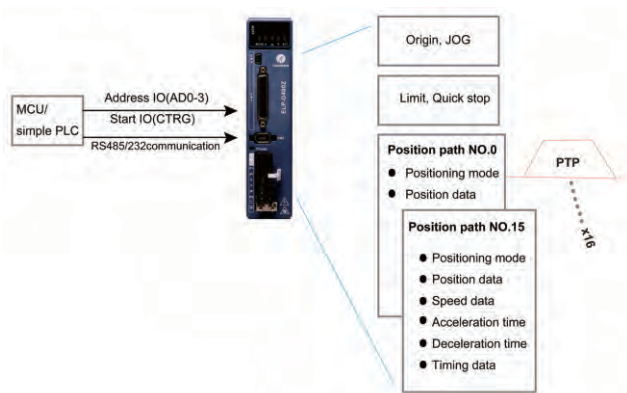
ELP Series AC servo products are high performance AC digital servo which is designed for position/velocity/torque high accurate control, power range up to 2kW and it can provide intelligent performance with easy tuning process. Combined with abundant features like MFC, vibration suppression, Multi-mode 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.

ELP Series AC Servo Drives

- Power range: 100W - 2kW
- 220 Vac input
- Automatic motor identification
- Easy tuning
- Built-in dynamic brake

Control Types

- **Pulse+Direction**
- **Analog input**
- **Modbus**
 - Standard Modbus RTU
 - Up to 31 axes in Network based on RS485
- **EtherCAT**
 - Cia402
 - CoE-Based on DSP-402 Device Profile
- **PR Mode**
Programmable 16-segment position table, support positioning/homing/ limit/ quick stop/ JOG...



Inputs/Outputs

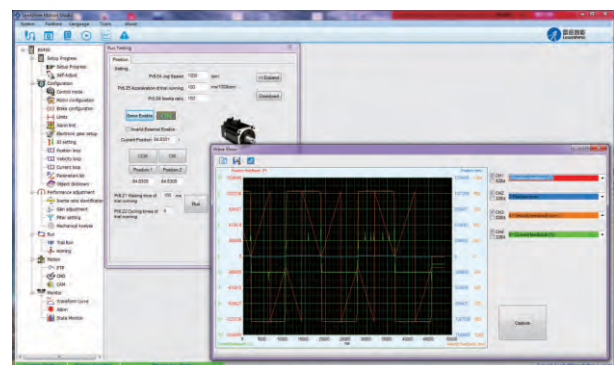
- Pulse: 0-500kHz, 5V differential input/24V Single-ended
- 9 inputs(common+ and common- two wiring modes)
- 6 outputs(4 single-ended, 2 differential)
- Encoder ABZ output(3 single-ended, 3 differential)
- -10Vdc~+10Vdc Analog

ELM Series AC Servo Motors

- Power Range: 100W – 2kW
- Low / medium / high inertia for different applications
- Compact Size (89mm long for 400w motor)
- New design of magnetic circuit to reduce the torque ripple
- High Precision Encoders:
 - 17bit single-rev incremental encoder (131072 cps)
 - 23bit multi-rev absolute encoder (8388608 cps)
- Various connector for different applications
 - Standard plastic connector
 - IP67 aviation connector

Leadshine Motion Studio

- Convenient GUI user interface
- Easy Tuning
- Real-time motion state monitoring
- Error history and resolution guide



ELP Series Servo Drive Part Number

ELP - D 2000 Z

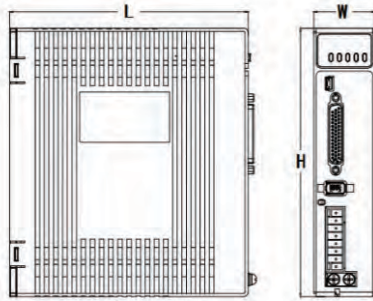
Series Num	
ELP	New series servo driver

Command Source	
D	Stand version (Pulse+direction/Analog Input)
RS	RS 485 (Pulse+direction/Analog Input/Modbus)
EC	EtherCAT

Encoder	
Z	Serial encoder
Blank	TTL signal encoder

Power	
400	400W
750	750W
1000	1000W
1500	1500W
2000	2000W

ELP Series Servo Drive Specifications



Drive Model	Rated Power	Rated Voltage	Peak Current	Max current	Dimension
ELP-*400Z	400W	220Vac	3.5A	10.5A	156*175*40mm
ELP-*750Z	750W	220Vac	5.5A	16.5A	156*175*50mm
ELP-*1000Z	1000W	220Vac	7A	21A	156*175*50mm
ELP-*1500Z	1500W	220Vac	9.5A	28.5A	175*175*80mm
ELP-*2000Z	2000W	220Vac	12A	36A	175*175*80mm

ELM Series Servo Motor Part Number

ELM - 0750 B L 80 H -SS

Series Num	
ELM	ELM series motor

Power	
0100	100W
0200	200W
0400	400W
0750	750W
1000	1000W
1500	1500W
2000	2000W

Encoder Type	
D	17-Bit single-turn
E	17-Bit multi-turn
F	17-Bit magnetic
L	23-Bit absolute

Inertia Ratio	
L	Low
M	Medium
H	High

Plug Type	
SS	Plastic plug
HS	Small size
H	Big size aviation plug
HH	Injection plug
HD	Special Connector

NO	Shaft Form		Brake		Oil Seal	
	Circular shaft	Keyhole	Install	None	Install	None
A	•		•		•	
B	•			•	•	
C	•		•			•
D	•			•		•
E		•	•		•	
F		•		•	•	
G		•	•			•
H		•		•		•

Frame Size	
40	40mm
60	60mm
80	80mm
110	110mm
130	130mm



ELM AC Servo Motor Models

Servo Motors with 17-Bit Encoders													
Servo Motor model	Frame Size [mm]	Voltage [V]	Rated Output [Watts]	Rated Torque [Nm]	Max Torque [Nm]	Rated Current [Amps]	Max Current [Amps]	Rated Speed [rpm]	Max Speed [rpm]	Back EMF Constant [V/KRPM]	Inertia [Kg.m ² 10 ⁻⁴]	Brake	Length [mm]
ELM0100FL40H-SS	40	220	100	0.32	0.96	1.1	3.3	3000	5000	20.5	0.046		79
ELM0100FL40G-SS	40	220	100	0.32	0.96	1.1	3.3	3000	5000	20.5	0.046	●	109
ELM0200FL60H-SS	60	220	200	0.64	1.92	1.7	5.1	3000	5000	29.2	0.20		86.5
ELM0200FL60G-SS	60	220	200	0.64	1.92	1.7	5.1	3000	5000	29.2	0.22	●	118.5
ELM0400FL60H-SS	60	220	400	1.28	3.81	2.8	8.4	3000	5000	30.2	0.32		115.5
ELM0400FL60G-SS	60	220	400	1.28	3.81	2.8	8.4	3000	5000	30.2	0.34	●	147.5
ELM0400FM60H-SS	60	220	400	1.27	3.81	2.8	8.4	3000	5000	30.2	0.67		115.5
ELM0400FM60G-SS	60	220	400	1.27	3.81	2.8	8.4	3000	5000	30.2	0.67	●	147.5
ELM0750FM80H-SS	80	220	750	2.4	7.2	4.5	13.5	3000	5000	35.7	1.53		124.5
ELM0750FM80G-SS	80	220	750	2.4	7.2	4.5	13.5	3000	5000	35.7	1.59	●	157.3
ELM1000FM80H-SS	80	220	1000	3.2	9.6	5.7	17.1	3000	5000	36.5	1.77		139.5
ELM1000FM80G-SS	80	220	1000	3.2	9.6	5.7	17.1	3000	5000	36.5	1.79	●	172.3

Extension cable:
Encoder Cable: Cable-7BM*M*-Z (length: 1.5m,3m,5m,7m,10m optional)
Power Cable: Cable-RZ*M*-S (length: 1.5m,3m,5m,7m,10m optional)
Brake Cable: Cable-SC*M*-S (length: 1.5m,3m,5m,7m,10m optional)

Servo Motors with 23-Bit Encoders													
Servo Motor model	Frame Size [mm]	Voltage [V]	Rated Output [Watts]	Rated Torque [Nm]	Max Torque [Nm]	Rated Current [Amps]	Max Current [Amps]	Rated Speed [rpm]	Max Speed [rpm]	Back EMF Constant [V/KRPM]	Inertia [Kg.m ² 10 ⁻⁴]	Brake	Length [mm]
ELM0100LL40F-SS	40	220	100	0.32	0.96	1.1	3.3	3000	6500	14.8	0.048		80.7
ELM0100LL40E-SS	40	220	100	0.32	0.96	1.1	3.3	3000	6500	14.8	0.051	●	114.7
ELM0200LH60F-SS	60	220	200	0.64	1.92	1.9	5.7	3000	6500	21.8	0.29		73.1
ELM0200LH60E-SS	60	220	200	0.64	1.92	1.9	5.7	3000	6500	21.8	0.31	●	103.6
ELM0400LH60F-SS	60	220	400	1.27	3.81	3.2	9.6	3000	6500	22.6	0.56		89.5
ELM0400LH60E-SS	60	220	400	1.27	3.81	3.2	9.6	3000	6500	22.6	0.58	●	120.2
ELM0750LH80F-SS	80	220	750	2.4	7.2	5.1	15.3	3000	6500	28.8	1.56		95.7
ELM0750LH80E-SS	80	220	750	2.4	7.2	5.1	15.3	3000	6500	28.8	1.66	●	130.7

Extension cable:
Encoder Cable: Cable-7BM*M*-Z (length: 1.5m,3m,5m,7m,10m optional)
Power Cable: Cable-RZ*M*-S (length: 1.5m,3m,5m,7m,10m optional)
Brake Cable: Cable-SC*M*-S (length: 1.5m,3m,5m,7m,10m optional)

Servo Motors with 23-Bit Encoders													
Servo Motor model	Frame Size [mm]	Voltage [V]	Rated Output [Watts]	Rated Torque [Nm]	Max Torque [Nm]	Rated Current [Amps]	Max Current [Amps]	Rated Speed [rpm]	Max Speed [rpm]	Back EMF Constant [V/KRPM]	Inertia [Kg.m ² 10 ⁻⁴]	Brake	Length [mm]
ELM1000LM130F-H	130	220	1000	4	12	4	12	2500	3000	72	8.5		166
ELM1000LM130E-H	130	220	1000	4	12	4	12	2500	3000	72	8.5	●	223
ELM1500LM130F-H	130	220	1500	6	18	6	18	2500	3000	65	12.6		179
ELM1500LM130E-H	130	220	1500	6	18	6	18	2500	3000	65	12.6	●	236
ELM2000LM130F-H	130	220	2000	7.7	22	7.5	21	2500	3000	68	15.3		241
ELM2000LM130E-H	130	220	2000	7.7	22	7.5	21	2500	3000	68	15.3	●	249

Extension cable:
Encoder Cable: Cable-7BM*M*-HZ (length: 1.5m,3m,5m,7m,10m optional)
Power Cable: Cable-RZ*M*-H(V1.1), Cable-RZ*M*-H(V2.0)(Flexible) (length: 1.5m,3m,5m,7m,10m optional)
Brake Cable: Cable-SC*M*-H (length: 1.5m,3m,5m,7m,10m optional)



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 31 axes 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.				



Datasheet of EP Series

Output Function Configuration	E-STOP. Inertia ratio switching. Internal speed selection 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	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
	B	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	C	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
	D	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
	E		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
	F		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
G		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
H		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
7	Plug Type	SS:Plastic plug H:Big size aviation plug		HS:Small size HH:Injection plug			

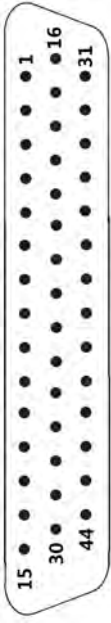
Connectors and Pin Assignment

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



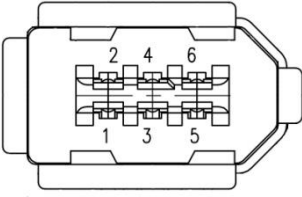
Datasheet of ELP Series

	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	
	21	SO6+	output		
	23	A+	output	Differential output terminal of motor encoder A phase	Differential output, High \geq 2.5vdc, low \leq 0.5vdc, maximum current \pm 20mA
	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 20K Ω		
40	AI1-	input			
41	AGND	input			
43	AI3+	input	Analog input 3, voltage input range : 10VDC~10VDC , input resistor 20K Ω		
44	AI3-	input			
15/22/38/40/42	NC	/	Not connection		
Shell	FG		Shield ground		

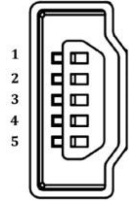


Datasheet of ELP Series

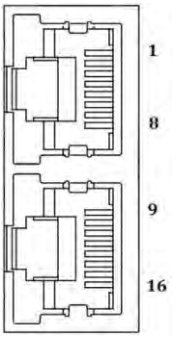
Encoder Input Port-CN2 for ELP Series

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

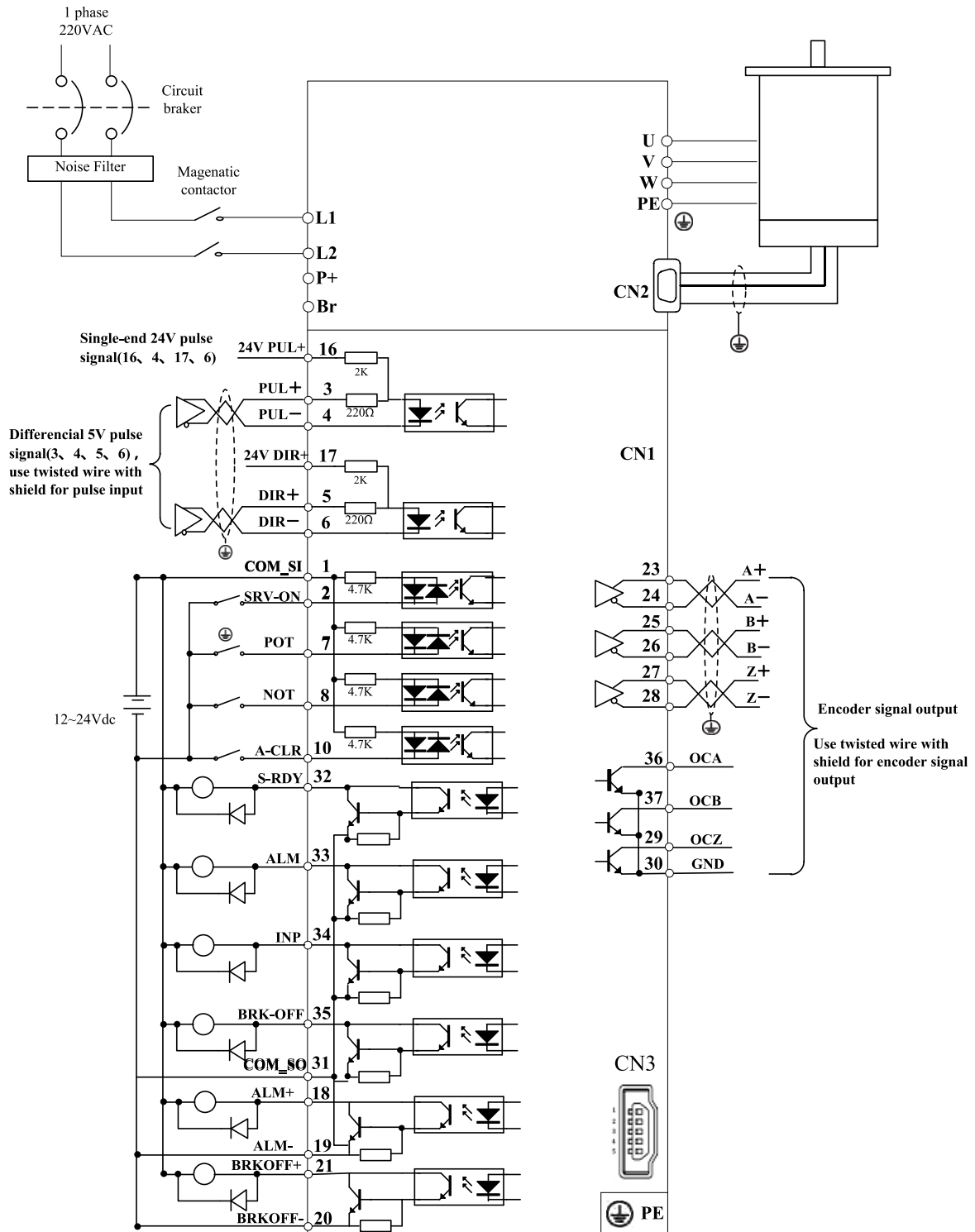
Port		Pin	Signal
CN4 CN5		1, 9	RDO+
		2, 10	RDO-
		3, 11	/
		4, 12	TXD
		5, 13	RXD
		6, 14	VCC5V
		7, 15	GND
		8, 16	/
			PE



Datasheet of ELP Series

Wiring

Position Control Mode

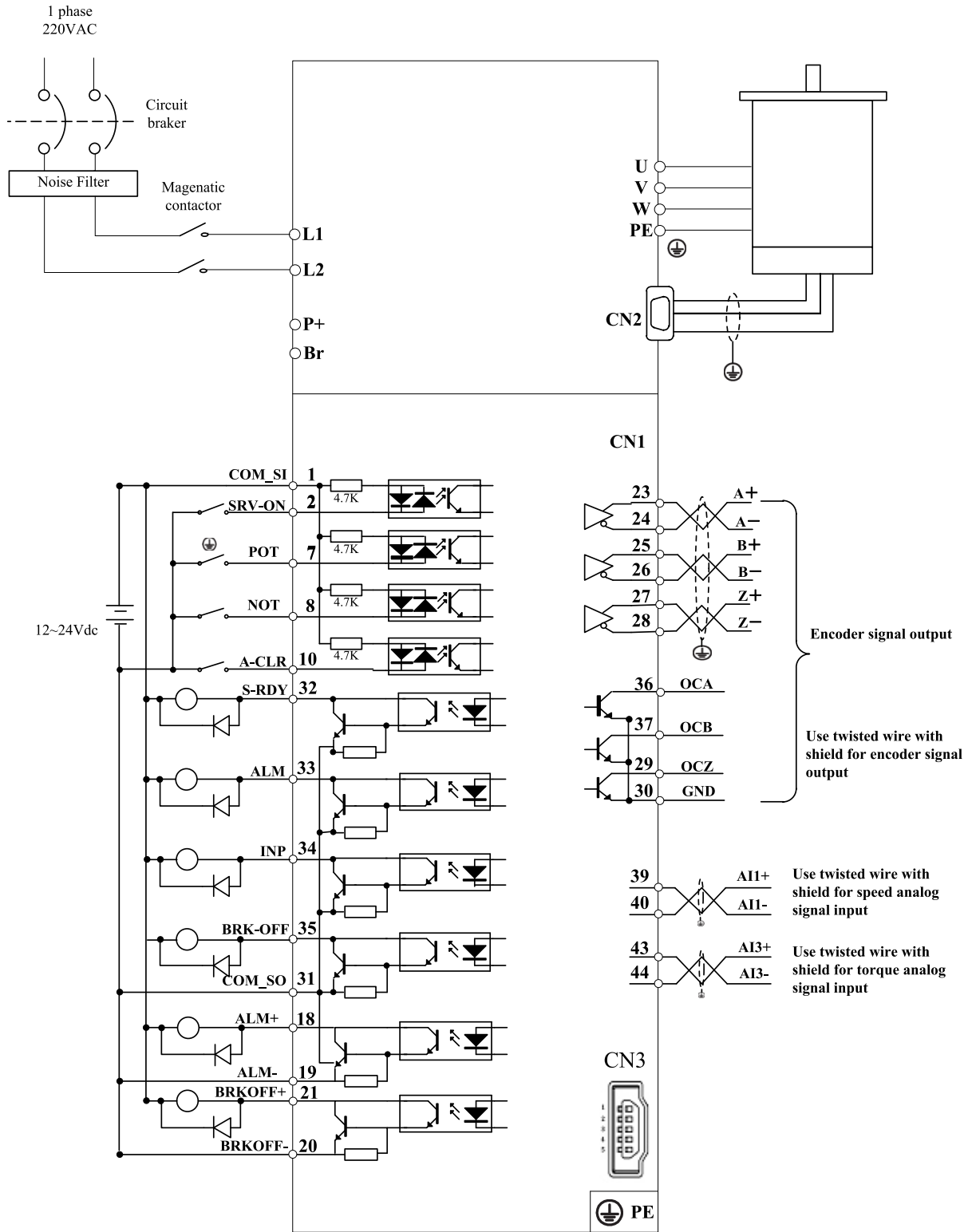


Positional Control Mode Wiring



Datasheet of ELP Series

Torque /Velocity Control Mode



Torque/Velocity Control Mode Wiring

