EL7 S

EL7-EC**S / EL7-RS**S / EL7-PN**S
General Purpose AC Servo Drives

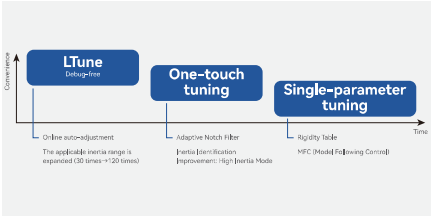
EtherCAT Modbus PROFINET



The EL7S servo represents Leadshine's latest generation EL7 AC servo drive, with a Speed Loop Bandwidth up to 3.5 kHz. Operating within a power range of 400–22000 W, its key features include: safety compliance, with control power circuit and main power circuit separated, New LTune Intelligent Tuning function. The minimum communication data update cycle has been reduced from 250–62.5 μs, enabling faster response times and more precise trajectory control. It meets STO and UL certification requirements. Main applications encompass photovoltaic systems, lithium battery manufacturing, semiconductor production, robotics, electronics, laser technology and so on.

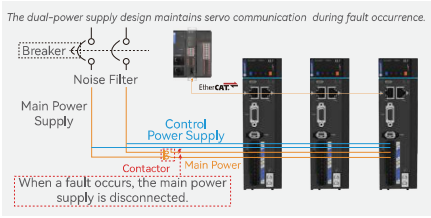
New LTune Intelligent Tuning

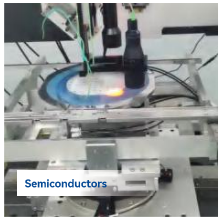
Enables online tuning-free functionality and supports one-click activation via the control panel buttons.



Dual Power Supply Capability

Separating control and main power ensures that data collection and processing remain active even during a fault-induced shutdown.











400 W (220 VAC)



- Dimension L*H*W (mm) **168*156*40 mm**
- Rated Output Power **400 W**
- Rated Output Current **2.5 A**
- Maximum Output Current **9.5 A**

750W / 1000 W (220 VAC)



- Dimension L*H*W (mm) **160*156*50 mm**
- Rated Output Power **750 W / 1000 W**
- Rated Output Current **5.5 A / 7.0 A**
- Maximum Output Current **16.6 A / 21.0 A**

1.5 kW / 2 kW (220 VAC)



- Dimension L*H*W (mm) **168*183*80 mm**
- Rated Output Power **1.5 kW / 2 kW**
- Rated Output Current **9.5 A / 12 A**
- Maximum Output Current **31.1 A / 36.0 A**

ELM2 Series (50–2000 W)

Recommended



- Power Rating **50–2000 W**
- Encoder **23 Bit Encoder**
- Peak Speed **6000 rpm**
- Strong Overload Capacity **3 Times Overload**

220 VAC

1 kW / 1.5 kW (400 VAC)



- Dimension L*H*W (mm)
  168*183*55 mm
- Rated Output Power
  1 kW / 1.5 kW
- Rated Output Current
  3.5 A / 5.4 A
- Maximum Output Current
  10.6 A / 14 A
- Continuous Input Current
  2.8 A / 4.11 A

2 kW / 3 kW (400 VAC)



- Dimension L*H*W (mm)
  168*183*80 mm
- Rated Output Power
  2 kW / 3 kW
- Rated Output Current
  8.4 A / 11.9 A
- Maximum Output Current
  20.0 A / 30.0 A
- Continuous Input Current
  4.7 A / 6.53 A

4.4 kW / 5.5 kW / 7.5 kW (400 VAC)



- Dimension L*H*W (mm)
  250*230*89 mm
- Rated Output Power
  4.4 kW / 5.5 kW / 7.5 kW
- Rated Output Current
  16.5 A / 20.8 A / 25.7 A
- Maximum Output Current
  38.9 A / 51.6 A / 63.6 A
- Continuous Input Current
  9.05 A / 11.71 A / 15.7 A

ELM1 / ELM2 Series (750-7500 W)

Recommended



400 VAC

- Power Rating
  750-7500 W
- Encoder
  23 Bit Encoder
- Peak Speed
  6500 rpm
- Strong Overload Capacity
  3 Times Overload

Part Numbers

EL7 - EC 400 S

Series Num	
EL7	EL7 Series

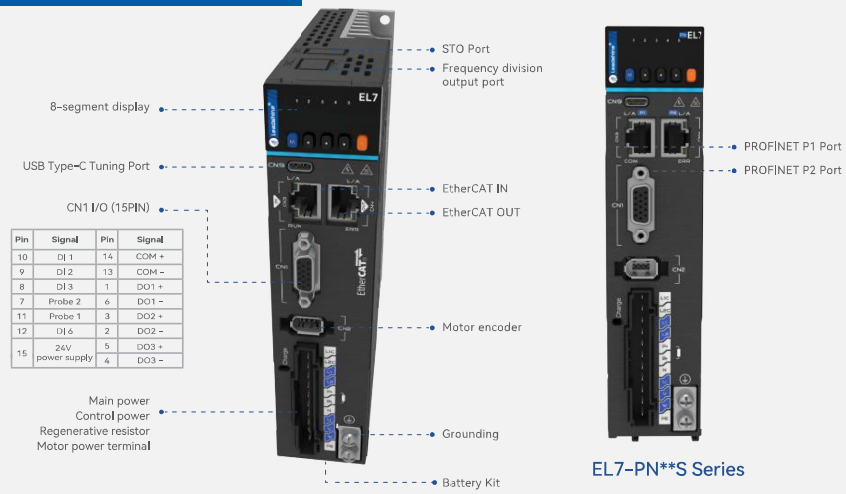
Command Source	
EC	EtherCAT
RS	Modbus RTU / Analog Input / Pulse+Direction
PN	Profinet

Version	
S	supreme version with sto and UL certification

Rated Power					
400	400 W	750	750 W	1000	1000 W
1500	1500 W	2000	2000 W	3000	3000 W
4400	4400 W	5500	5500 W	7500	7500 W

Ports & Connectors

EL7-EC**S / EL7-PN**S Series

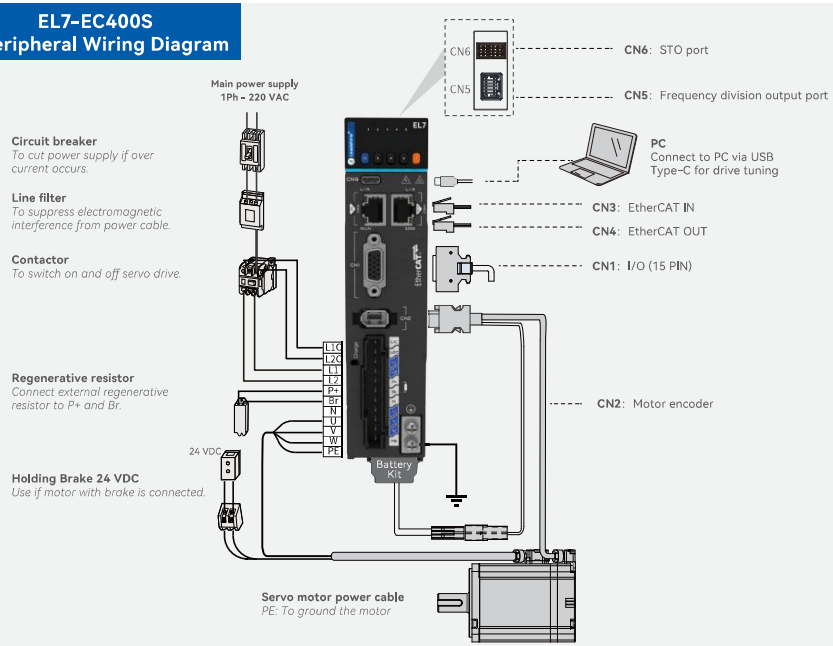


Pin	Signal	Pin	Signal
10	DI 1	14	COM +
9	DI 2	13	COM -
8	DI 3	1	DO1 +
7	Probe 2	6	DO1 -
11	Probe 1	3	DO2 +
12	DI 6	2	DO2 -
15	24V power supply	5	DO3 +
		4	DO3 -

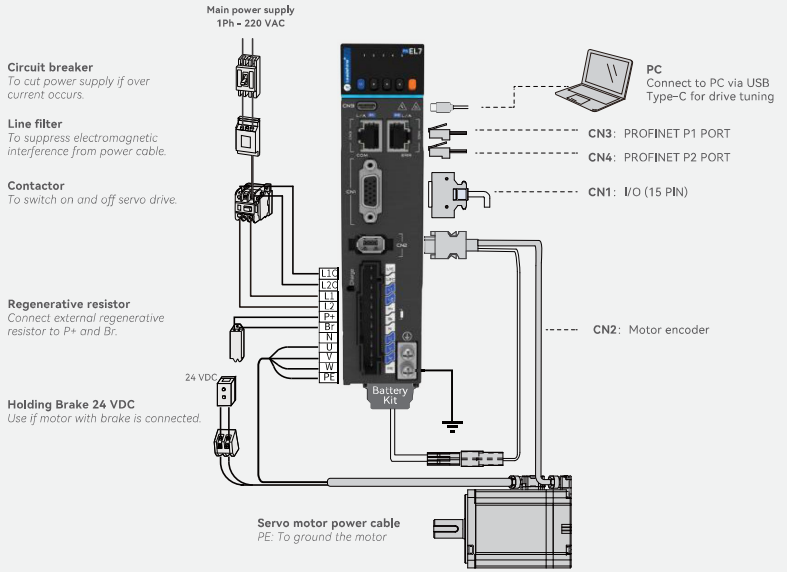
EL7-RS**S Series



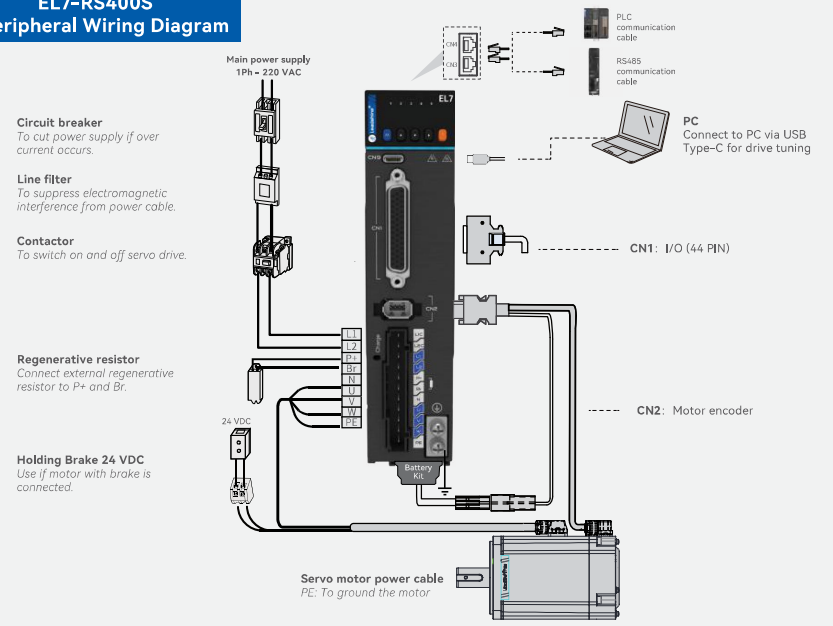
EL7-EC400S & Peripheral Wiring Diagram



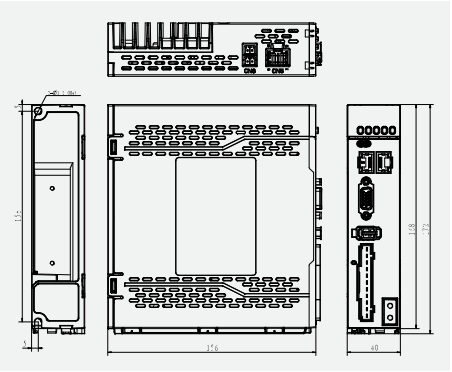
EL7-PN400S & Peripheral Wiring Diagram



EL7-RS400S & Peripheral Wiring Diagram

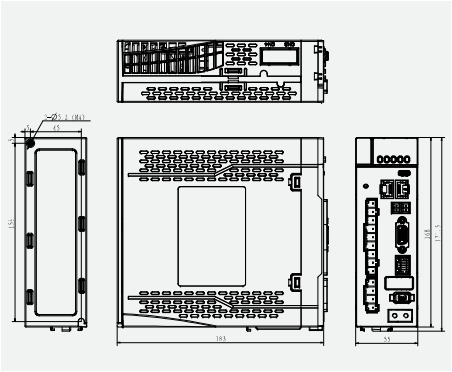


400 W (220 VAC)

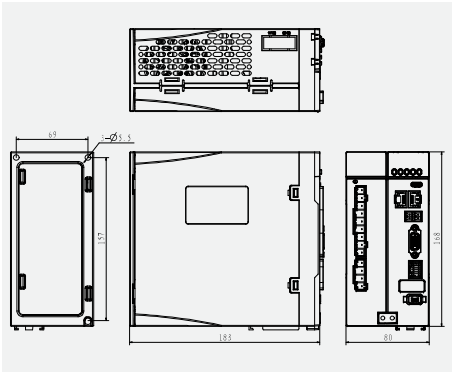


750 W / 1000 W (220 VAC)

Unit: mm

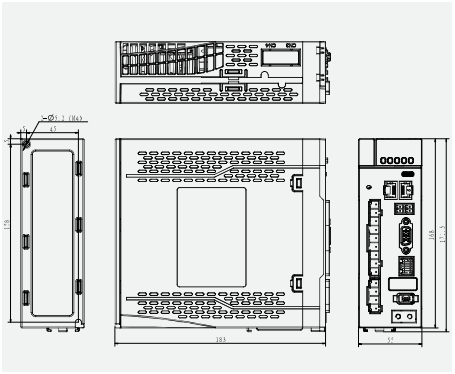


1500 W / 2000 W (220 VAC)

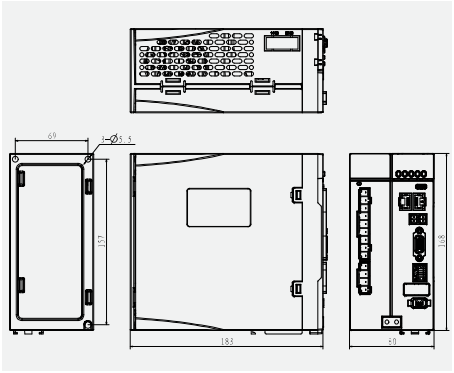


1000 W / 1.5 kW (400 VAC)

Unit: mm

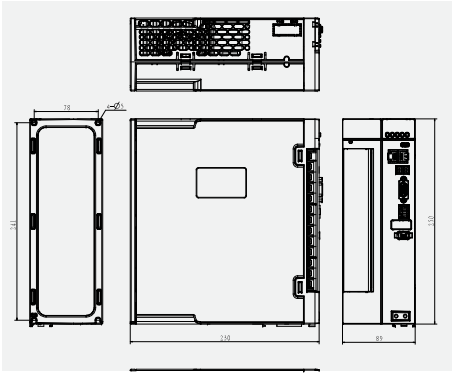


2 kW / 3 kW (400 VAC)



4.5 kW / 5.5 kW / 7.5 kW (400 VAC)

Unit: mm



EL7-EC**S	
Ports	**Descriptions**
Digital I/O	4 DI (Supports common anode or cathode connection) DI1 / DI2 / DI3 / DI6 2 sets of DI4 / DI5 probe input
	3 DO (double-ended DO1-DO3)
Communication Port	EtherCAT (RJ45 interface)
Control Mode	
PP, CSP / PV, CSV / PT, CST / HM	
Control Features	
Feedback Method	Encoder: RS485 Protocol
Easy-to-use	LTUNE , One-click self-tuning, Single-parameter tuning,
Dynamic Braking	Supports phase A / B / Z differential frequency division output Supports phase Z open collector frequency division output
Position Comparison	42 position comparison outputs

EL7-RS**S	
Ports	**Descriptions**
USB Type-C Tuning	Modify or read drive parameters without connecting to main power supply
Low-speed Pulse Input	5V differential signal, 0-500 kHz 24V single ended signal, 0-200 kHz
High-speed Pulse Input	5V differential signal, 0-4 MHz
Frequency Division Output	Supports phase A / B / Z differential frequency division output Supports phase Z open collector frequency division output
Analog I/O	2 Analog inputs (AI1 / AI3) , ±10 V, Max. voltage: ±12 V
	1 Analog output (AO1) , ±10 V
Digital I/O	8 Digital Inputs (Supports common anode or cathode connection) DI1-DI8
	5 Digital outputs (double-ended) DO1-DO5
Communication Port	RS485 communication, Modbus RTU protocol (RJ45 port)
Control Mode	
Control	1. External pulse train position control, 2. JOG control, 3. Velocity control, 4. Torque control, 5. Hybrid control: Position-Torque / Position-Velocity / Velocity-Torque,

EL7-PN**S	
Ports	**Descriptions**
USB mini Tuning	Modify or read drive parameters with connecting to main power supply
Frequency Division Output	Supports phase A / B / Z differential frequency division output Supports phase Z open collector frequency division output
Digital I/O	4 DI (Supports common anode or cathode connection) DI1 / DI2 / DI3 / DI6 2 sets of DI4 / DI5 probe input
	3 DO (double-ended DO1-DO3)
Communication Port	PROFINET protocol (RJ45 port)
Control Mode	
Supported Telegram	Telegram 1 / 3 / 111 / 102 / 105 / 750 + DSC

Control Features (All Series)	
Drive Mode	IGBT SPWM sinusoidal wave drive
Encoder Feedback	Encoder: RS485 Protocol
Easy-to-use	One-click tuning, Single parameter tuning, Black box, Zero tracking control
Notch Filter	Mechanical resonance suppression. Supports up to 3 filters, 50-4000 Hz
Vibration Suppression	End vibration suppression
Alarm	Overcurrent. Overvoltage. Undervoltage. Overheat. Overload. Overtravel. Main power input phase loss. Regenerative resistor error. Position deviation error. Encoder Feedback error. Excessive braking rate. EEPROM error
Safe Torque Off (STO) function	Available for all EL7S series products
Front Panel	5 push buttons, 8-segment display
Software	Drive tuning through **Motion Studio** Ver. 3.0.
Dynamic Brake	Internal dynamic brake
Black Box	Set triggering conditions and analyze the data from black box. Used for error solving
Environmental Requirements (All Series)	
Temperature	Storage: -20-80℃ (Condensation free) Do not store above 65℃ for more than 72 hours if stored in over 65℃ Installation: 0-55℃ (Not frozen) ; Lower performance at over 45℃
Humidity	Under 90% RH (Condensation free)
Altitude	Max. altitude of 2000 m; 100% performance at 1000 m or below. Performance decreases by 1% with every increase of 100 m from 1000 m.
Vibration	Less than 0.5G (4.9m/s²) 10-60 Hz (non-continuous working)
IP Ratings	IP20