



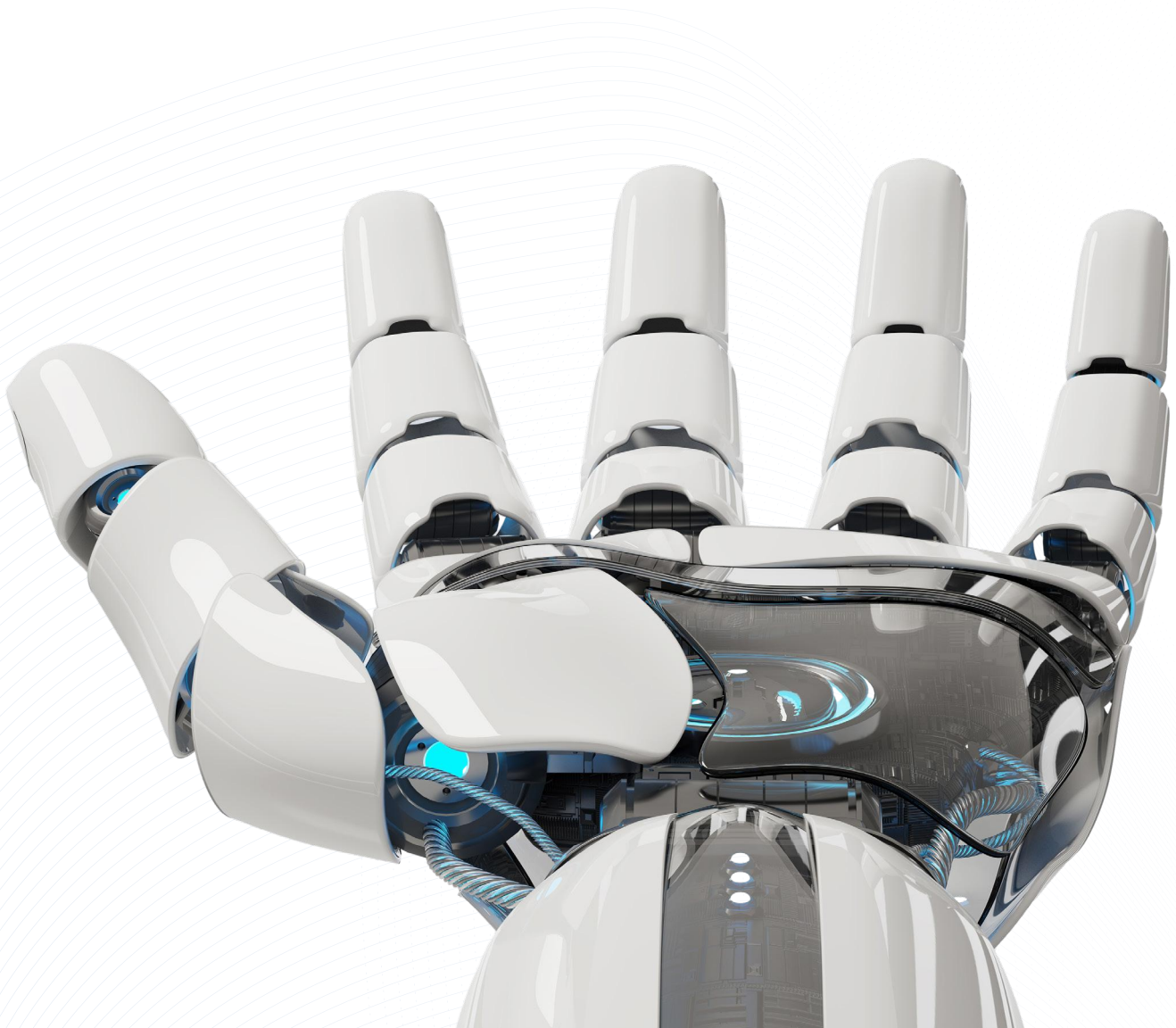
Leadshine

Stock Code: 002979

Mini Series DC Servo

Slotless Motor

Frameless Motor



Reliable Motion Control Partner



● Headquarters in Shenzhen



● Shanghai Intelligent Industry Park



● Production base in Shenzhen

- **Founded in 1997**
- **Public Listed Company in China (002979.SZ)**
- **Dedication in Motion Control**
Stepper/Servo systems, Motion Controllers, PLC
Control systems, I/O Modules, Encoders
- **A leading supplier of motion control products and solutions in the world**
- **Customer Oriented, Technology Oriented, Forever Improving, Sharing of Success**

 **25+** Experience
 **400+** R&D Engineers
 **5** Subsidiaries
 **60+** Countries Clients
 **10000+** Global Partners
 **30million+** Installed Axes

Leadshine Mini Series DC Servo

Control Layer



SC2 series

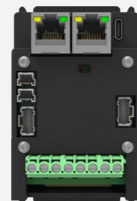


SC5 series



MC500 series

Execution Layer



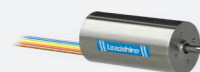
ELD3 series



CD series



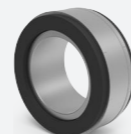
ELVM series Servo Motor



EC series Slotless Motor

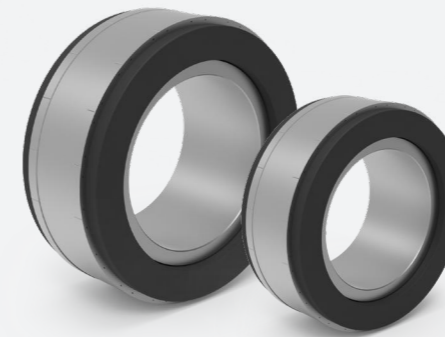


GX series Planetary Gear



FM series Frameless Motor

FM series Frameless Motor



- Frame Size: 025mm,038mm,050mm,060mm,070mm,085mm,115mm
- Power:34W-1086W
- Rated Voltage: 24V,48V
- Rated Current: 3.8A-15.1A
- Rated Torque: 0.03Nm-9.32Nm
- Rated Speed: 650rpm-10500rpm
- Optional Feedback (Encoder Type), Overheat Protection Device
- Customizable Lamination Thickness, Wiring, Winding Configurations, etc.

EC series Slotless Motor



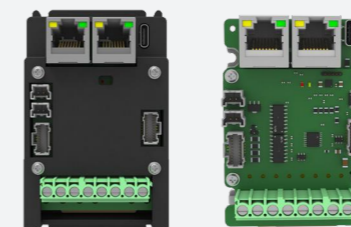
- Frame Size: 6mm,8mm,10mm,12mm,13mm,16mm,22mm,30mm,40mm
- Power:3.5W-155W
- Rated Voltage: 6V-48V
- Rated Speed: 6300rpm-65000rpm
- Rated Torque: 1.2mNm-200mNm
- Optional Hall sensor, Encoder, matching Planetary Gears

GX series Planetary Gear



- Flange Size: 8mm,10mm,12mm,16mm,22mm,26mm,32mm,42mm
- Rated Speed: 8000rpm-50000rpm
- Max Speed: 10000rpm-65000rpm
- Rated Torque: 0.01Nm-12Nm

ELD3 mini series DC Servo Drive



- EtherCAT / CANopen / Modbus RTU / Pulse / Analogue
- Power:50W-750W
- Rated Voltage: 24V-70V
- Rated Current:1A-20A
- Optional Housing and customizable drive forms

FM Series Overview

● Product Advantages

Higher Power & Torque

- Torque and Power is 15% higher with load up to 25kg compared to other brands.

Mini Size

- **50g**
The minimum motor weight is only 50g.
- **25mm**
25mm smallest size.

Reliable

- Using advanced resin encapsulation, motor ensures optimal performance with great cooling.

Multiple Matches

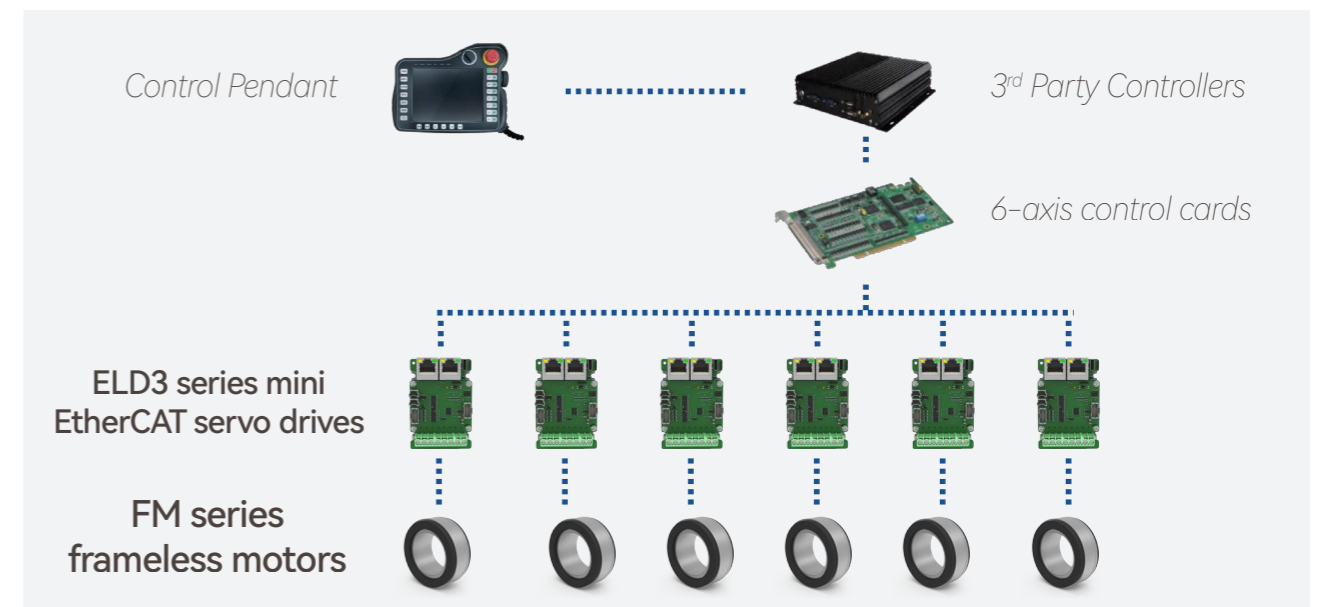
- **Customizations**
Can undertake more customized needs.
- **Optional**
Optional Hall, temperature sensor, and wires.
- **Coverable**
Suitable for all applications up to 25kg load.



Product Solutions

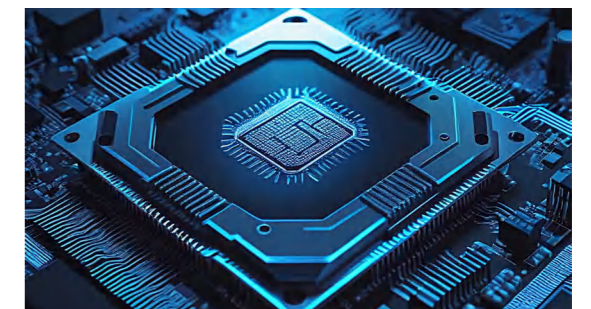
6-Axis Robotic Arms

- ELD3 series mini EtherCAT servo drives support full closed loop control with 2 absolute multi-turn encoders (ABZ, Tamagawa, Biss-C).
- High torque and rotational speed FM series frameless motors with 7 different flange sizes.
- Built-in safety features such as Safe Torque Off STO and Logic Power Circuit.
- Customizable servo drives form CD series .



Semiconductor

- ELD3 series can be matched with voice coil, linear, direct drive motors.
- Palm sized servo drive to save installation space
- High responsiveness and precision with great vibration suppression across all frequency ranges.



Model Number

FM1 □ - 050 08 A - T H L - □□

Series No.		
FM	1	High Density Series
	2	High Stability Series

Version	
Blank	Standard Version
□

Frame Size			
025	25mm	038	38mm
050	50mm	060	60mm
070	70mm	085	85mm
115	115mm		

Lamination Thickness			
08	8mm	10	10mm
13	13mm	14	14mm
18	18mm	23	23mm
25	25mm	26	26mm
50	50mm		

Customized Version	
Blank	Standard
□□	Customized

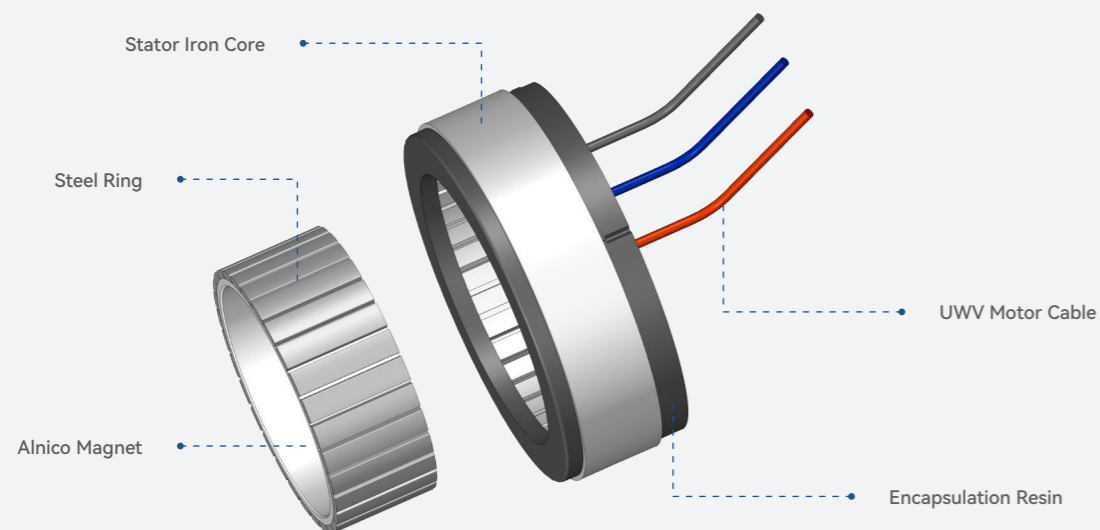
Wiring	
L	0.5 With Wiring
N	Without Wiring
S	Specialized

Feedback Unit	
H	Hall
N	Without Feedback
S	Specialized

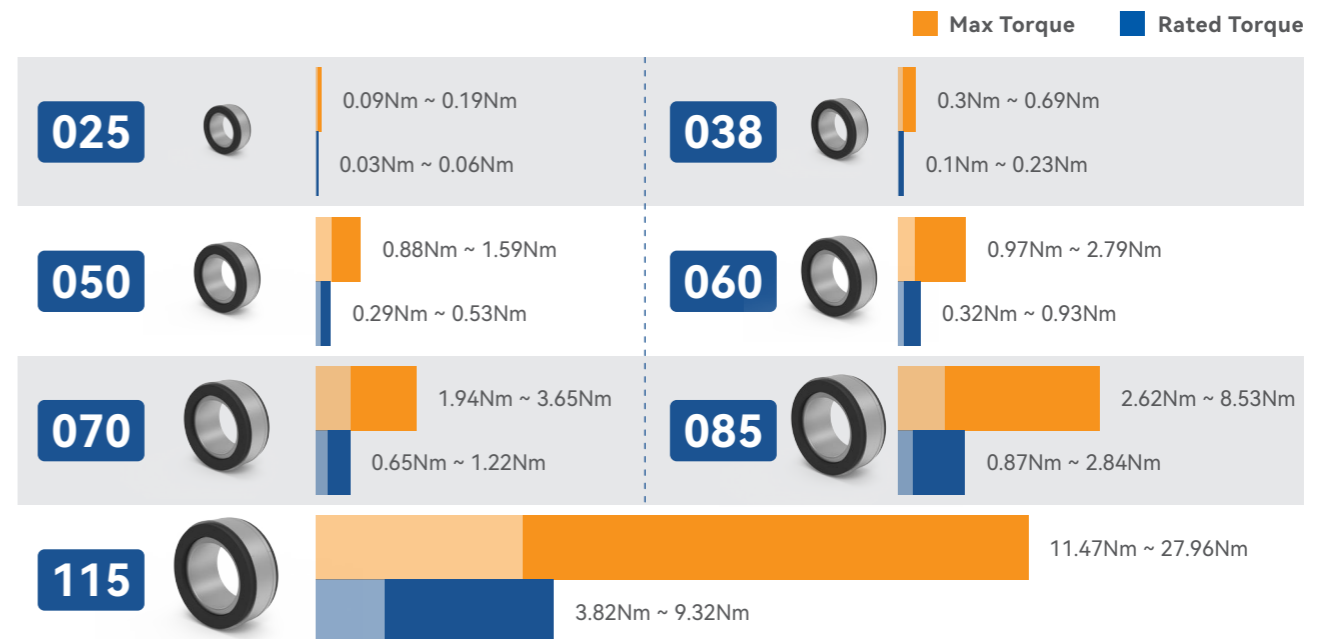
Overheat Protection Device	
T	Temperature Sensor
N	Without Overheat protection
S	Specialized

Winding Configurations	
A	Star
B	Delta
C	Parallel Star
D	Parallel Delta

Structure



Motor Torque Range



Motor Specifications

Motor Model	FM1-025XX		FM1-038XX		FM1-050XX		FM1-060XX			FM1-070XX		FM1-085XX				FM1-115XX	
	04	08	06	12	08	14	08	13	26	10	18	08	13	23	26	25	50
Rated Power (W)	34	68	88	126	161	202	142	215	409	257	464	283	458	959	1086	600	634
Rated Voltage (V)	24						48										
Rated Current (A)	3.8	4.3	5.5	6.1	5.1	5.3	3.5	5.3	10.0	6.1	6.7	7.4	10.8	11.3	11.5	14.1	15.1
Rated Torque (Nm)	0.03	0.06	0.10	0.23	0.29	0.53	0.32	0.49	0.93	0.65	1.22	0.87	1.41	2.51	2.84	3.82	9.32
Max Torque (Nm)	0.09	0.19	0.30	0.69	0.88	1.59	0.97	1.47	2.79	1.94	3.65	2.62	4.23	7.53	853	11.47	27.96
Rated Speed (rpm)	10500	10500	8400	5250	5250	3650	4200	4200	4200	3800	3650	3100	3100	3650	3650	1500	650



EC Series Slotless Motor GX Series Planetary Gear

Overview

High efficiency and responsiveness

High motor efficiency with low energy consumption.
High responsiveness with low inertia.

Low vibration & noise

Slotless motor with more stable motion and lower operation noise.

Application ready

Can matched with hall sensors, ABZ/Biss-C encoder, planetary gear.

Reliable

Brushless motors with long life span even under harsh conditions.

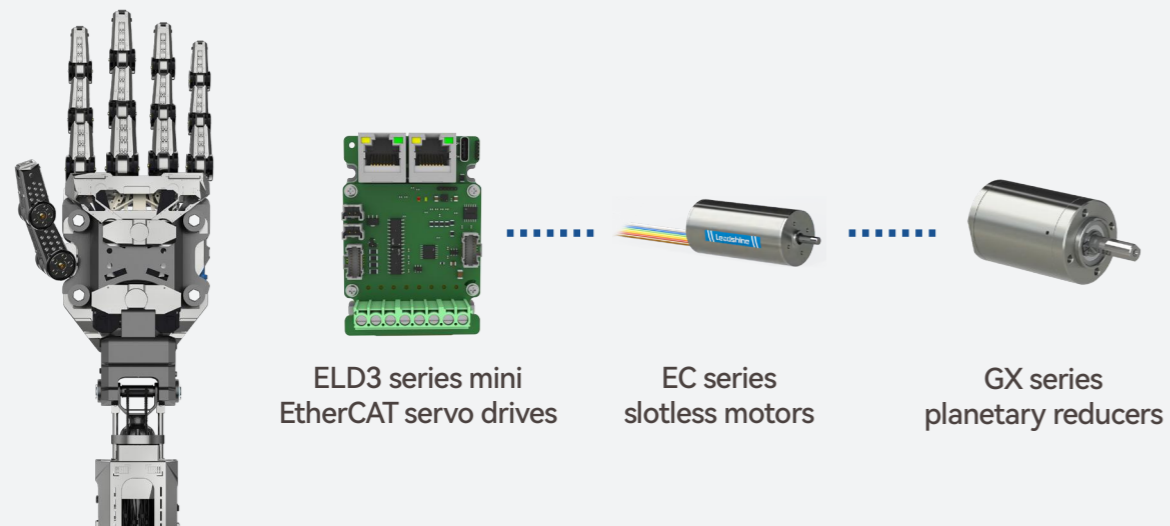
Great motor performance

Optimized for higher torque and cooling to ensure optimal performance under any conditions.

Product Solutions

Robotic Fingers

- Slotless motors of high torque and rotational speed at small sizes down to $\phi 12\text{mm}$.
- High responsive motors with low noise and vibration.
- ELD3 series mini EtherCAT servo drives up to max. 50 arms.
- Matching planetary reducers with reduction ratio for 1:4 up to 1:1024.



Medical Industry

- Built-in safety functions such as Safe Torque Off, Brake Output, Logic Power Circuit, etc.
- High responsiveness with low fluctuations during speed or direction change.
- High speed and low inertia ECH series slotless motor for better precision during motion.



Electrical Tools

- ECT series slotless motor for high torque applications and ECH series for tools requiring high rotational speed.
- Low positional fluctuation during acceleration and deceleration.



● Slotless Motor Part Numbers

ECH - 13 37 18 - H

Series Num	
Blank	Standard series
EC	H High speed series
	T High torque series

Frame Size			
06	6mm	08	8mm
10	10mm	12	12mm
13	13mm	16	16mm
22	22mm	30	30mm
40	40mm		

Feedback	
H	Hall
Blank	Without Feedback

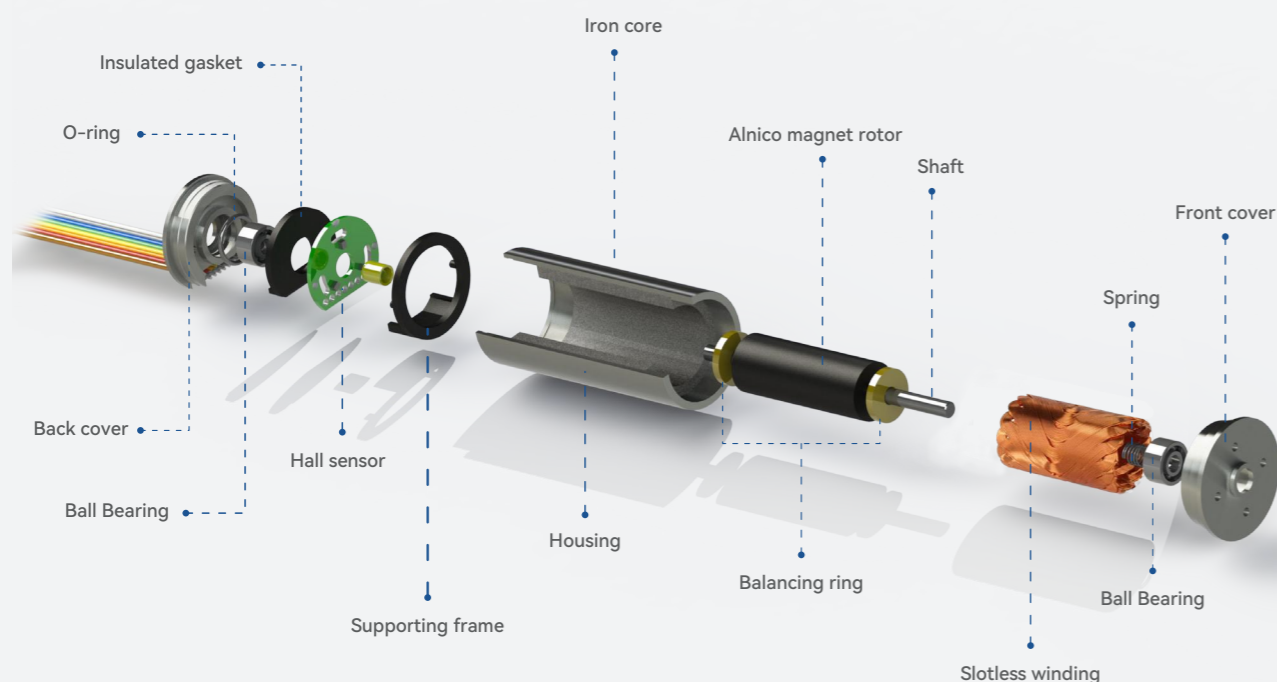
Rated Voltage			
06	6V	09	9V
12	12V	18	18V
24	24V	36	36V
48	48V		

Motor Length			
20	20mm	23	23mm
28	28mm	
88	88mm	

● Slotless Motor Specifications

Series	Motor Model	Rated Power (W)	Rated Torque (mNm)	No-load Speed (rpm)	Rated Current (A)	Rated Voltage Range (V)
Standard EC	EC-1220	4.0	1.5	37000	0.75	6~9
	EC-1230	6.5	3.0	25000	1.47	6~12
	EC-1325	6.0	2.9	25000	1.3	6~24
	EC-1337	12.0	5.7	25000	2.37	6~36
	EC-1624	2.0	3.2	13000	0.88	6~12
	EC-1636	7.5	6.0	15000	1.62	6~24
	EC-2232	8.5	10.7	12000	2.53	6~36
	EC-2248	25.0	22.5	12000	2.63	6~36
	EC-3042	25.0	33.9	9000	2.79	6~48
	EC-3064	50.0	62.2	9000	4.58	12~48
	EC-4058	65.0	85.0	8000	6.44	12~48
	EC-4088	155.0	200.0	8000	7.39	24~48
High Speed ECH	ECH-0823	3.5	1.2	35000	0.9	6~12
	ECH-1028	4.0	1.6	32000	1.15	6~24
	ECH-1337	25.0	4.2	65000	1.93	19~48
	ECH-1348	45.0	6.9	65000	2.9	18~48
	ECH-1640	40.0	8.1	50000	2.65	18~48
	ECH-1656	100.0	15.5	63000	6.1	18~48
	ECH-2245	110.0	19.7	55000	6.2	18~48
ECH-2260	110.0	19.7	55000	6.2	18~48	
High Torque ECT	ECT-2248	65.0	43.8	16000	4.19	18~48
	ECT-2266	85.0	53.0	17000	5.38	18~48
	ECT-3047	120.0	72.1	17000	7.51	18~48
	ECT-3064	150.0	92.7	16000	7.38	24~48

Structure



● Planetary Gear Part Numbers

GX - 13 H - 0004

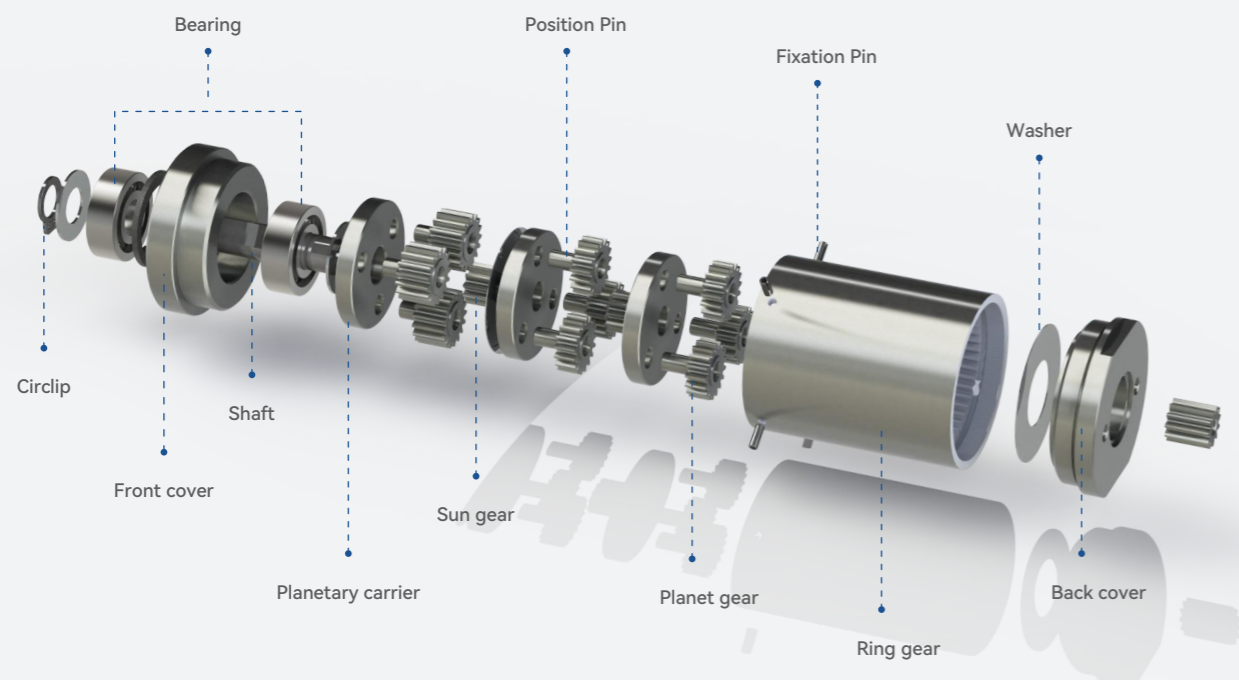
Planetary Gear type	
GX	Planetary Gear

Reduction Ratio		
.....	0004	4:1
.....	0016	16:1
.....	0064	64:1
.....	0256	256:1
.....	1024	1024:1

Frame Size			
.....	08	8mm	
10	10mm	12	12mm
16	16mm	22	22mm
32	32mm	42	42mm
.....			

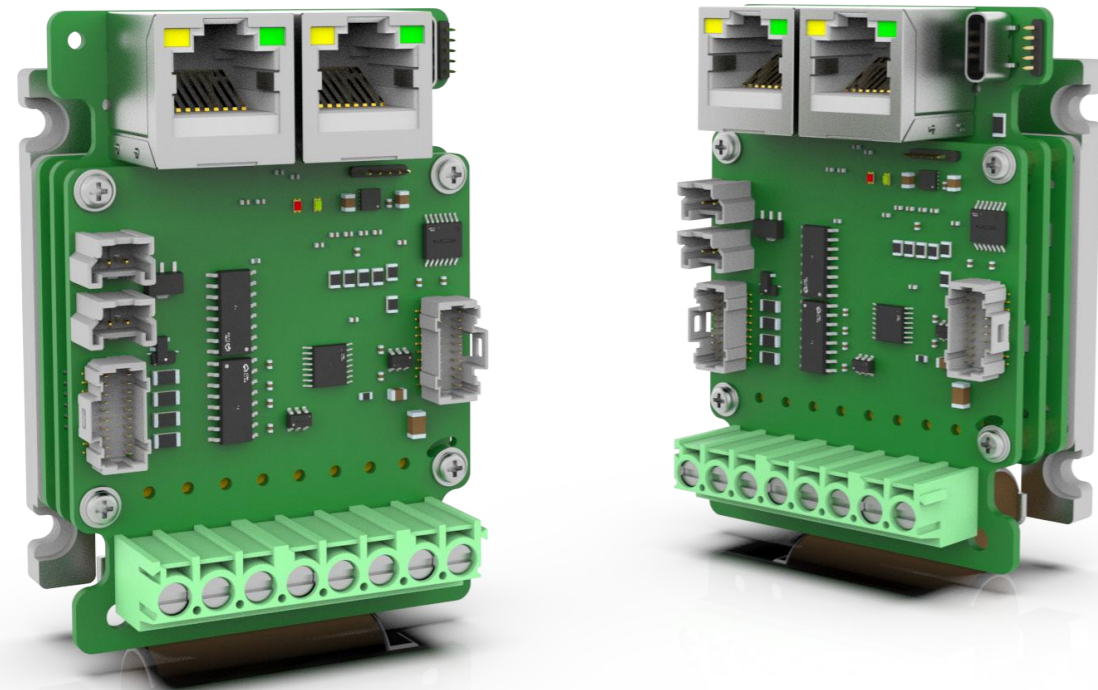
Series No.	
Blank	Standard series
H	High speed series
C	Economic series

Structure



● Planetary Gear Specifications

Series	Gear level	Reduction Ratio	Max allowable continuous input speed (rpm)
GX08	1	4.636:1	12000
	2	21.492:1	15000
	3	99.639:1	18000
	4	461.927:1	20000
	5	2141.495:1	25000
GX10	1	4:1	12000
	2	16:1	18000
	3	64:1	22000
	4	256:1	25000
	5	1024:1	30000
GX12	1	4:1	12000
	2	16:1	18000
	3	64:1	22000
	4	256:1	25000
	5	1024:1	30000
GX16	1	3.789:1 / 4.313:1 / 5.077:1 / 6.3:1	8000
	2		10000
	3		12000
	4		12000
	5		12000
GX22 GX26	1	3.789:1 / 4.313:1 / 5.077:1 / 6.3:1	8000
	2		10000
	3		15000
	4		15000
GX32	1	3.789:1 / 4.313:1 / 5.077:1 / 6.3:1	10000
	2		12000
	3		18000
	4		18000
GX42	1	3.789:1 / 4.313:1 / 5.077:1 / 6.3:1	12000
	2		14000
	3		20000
	4		20000
GX12H	1	5:1	50000
	2	25:1	50000
	3	125:1	50000
	4	625:1	50000

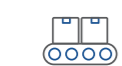


Mini DC Servo Drive

ELD3 Series

ELD3 Series Mini DC Servo Drive is the latest DC servo drive launched to an ever progressively improving Leadshine DC servo drive product lines. A whole new line of servo products featuring compact full functional smaller drive than the size of the palm with power ratings ranging from 50W up to 750W.

Our ELD3 Series supports EtherCAT communication protocol with many others to be released soon. The series come with Safe Torque Off, Logic Power Circuit, Brake Output, Full Closed Loop Control among many other servo functions that are not available on previous generation drives.



AGV & Logistics



Medical



Semiconductor



Electronics

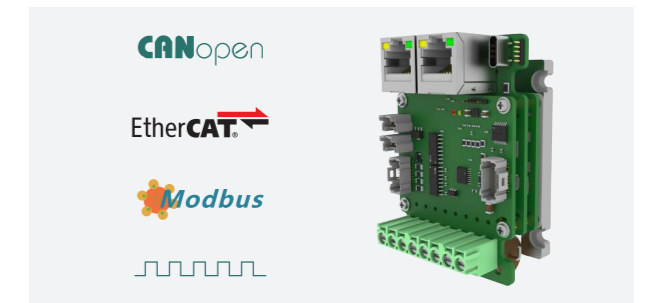


Robots

Overview

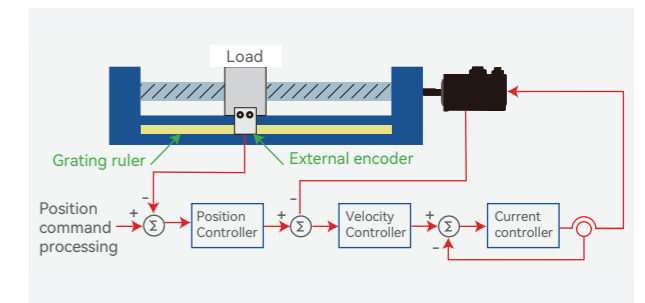
Supports various protocols

ELD3 series servo drives can be controlled using **EtherCAT, CANopen and Modbus RTU** communication protocol. Besides that, pulse and analogue control are available as well. Our ELD3 can also be applied in controlling of **linear motors**.



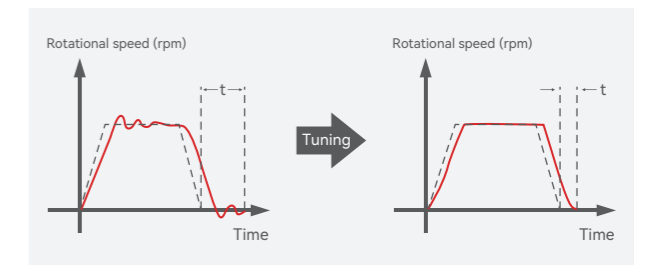
Full closed loop control

ELD3 series servo drives support full closed loop control which can eliminate the position deviation due to mechanical gap, and precision will have an obvious improvement.



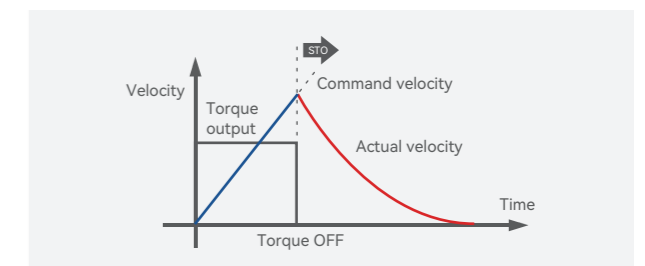
Easy tuning

Follow a few simple steps to get servo tuning done. Tested and proven to be easy to use and effective.



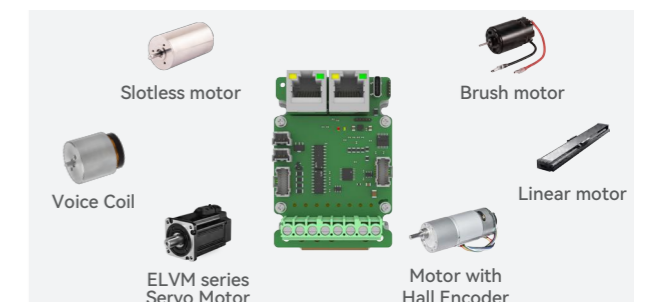
Safe Torque Off

When Safe Torque Off is activated, internal circuit will cut off motor power supply immediately, guaranteeing operator and machine safety.



Can be matched to many types of motors

Slotless Motor, ELVM Series DC Servo Motor, Brush Motor, Motor with Hall Encoder, Voice Coil.



Part Numbers

ELD3 - EC 70 05 B M

Drive Series	
ELD3	ELD3 Series Mini Servo Drive

Communication Protocol	
CAN	CANopen
EC	EtherCAT
RS	Modbus RTU/Analogue/Pulse

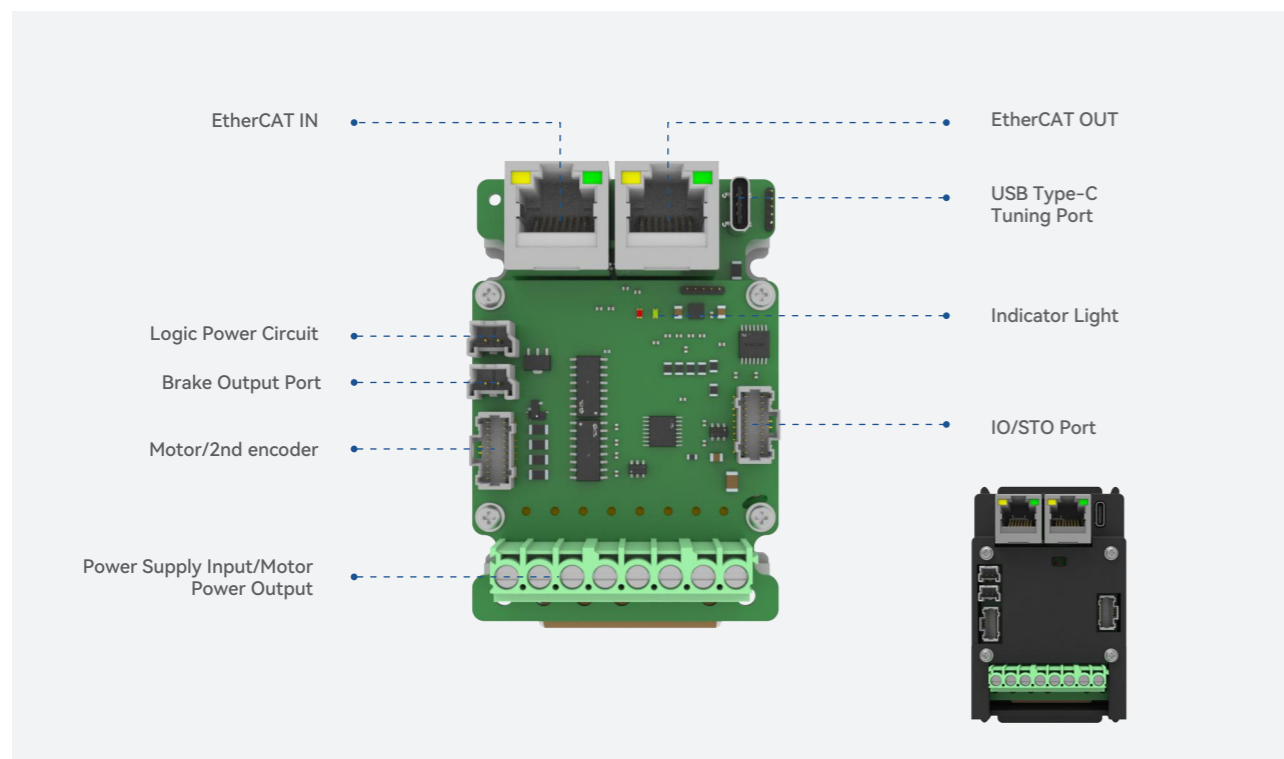
Rated Voltage	
70	24-70VDC

Housing	
M	Without Housing
H	With Housing

Brake	
B	With Brake Output

Rated Current			
01	01Arms	10	10Arms
05	05Arms	20	20Arms

Ports & Connectors



Specifications

ELD3 Series	ELD3-CAN7001BM ELD3-EC7001BM ELD3-RS7001BM	ELD3-CAN7005BM ELD3-EC7005BM ELD3-RS7005BM	ELD3-CAN7010BM ELD3-EC7010BM ELD3-RS7010BM	ELD3-CAN7020BM ELD3-EC7020BM ELD3-RS7020BM
Rated Power(W)	50W	200W	400W	750W
Rated Current (Arms)	1	5	10	20
Peak Current (Arms)	2.5	12.5	25	50
Control Circuit Power Supply	24VDC , -25%~+25%			
Main Power Supply	24-70Vdc			
Cooling	Cooling through metal mount plate			
Dimension H*L*W(mm)	76*50*33.5			
Communication protocol	EtherCAT / CANopen / Modbus RTU / Pulse / Analogue			
Tuning Port	USB Type-C Tuning Port. Can be tuned without connecting to main power supply			
Analogue Input	2 Analogue Input, Input Voltage -10V~+10V, Max. Voltage: ±12V			
Digital Input	6 Digital Inputs (Supports NPN and PNP)			
Digital Output	3 Digital Outputs (3 double-ended)			
2nd Encoder	Hall signal UVW + ABZ or RS485 encoder (Tamagawa protocol) BISS-C			
Communication Port	RJ45 For EtherCAT, CANopen, Modbus RTU port			
Safety Function	Safe Torque Off Logic Power Circuit Brake Output			
Environment	Temperature	Storage: -20-80°C (Condensation free); Installation: 0-55°C (Not frozen)		
	Humidity	Under 90%RH (Condensation free)		
	Altitude	Up to 1000m above sea level		
	Vibration	Less than 0.5G (4.9m/s ²) 10-60Hz (non-continuous working)		
	IP ratings	IP20		



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