

Laifual

03952.HK



Rotary Actuator

Catalogue

About Us



Zhejiang Laifual Drive Co., Ltd. (stock code:03952.HK) is a global provider of precision transmission solutions, with fully integrated R&D and manufacturing capabilities. We focus on three core business segments: strain wave gears, joint modules, and precision components.

Laifual offers a complete range of strain wave gears (sizes 3–58) and rotary actuators (sizes 40–190), backed by a fully integrated supply chain that spans raw materials to finished products. Our 48,000 m² state-ofthe-art facility is equipped with imported production and testing equipment, and we enforce rigorous quality control at every stage.

Supported by multiple R&D centers and joint university laboratories, we continuously enhance technological independence and production efficiency, driving down costs and shortening lead times. Today, our products are widely applied in high-precision sectors, including humanoid and industrial robotics, aerospace, CNC machine tools, semiconductor equipment, and precision automation systems.

Open-Architecture Joint Module Customization

Core Transmission Self-Developed · System Solutions Flexibly Adapted

Laifual Drive offers a full suite of customized joint module solutions tailored to diverse industry requirements. Our experienced solution team works closely with customers to precisely match a wide range of application scenarios. From power rating, reduction ratio, and torque output to mounting dimensions and lightweight design — every parameter is configurable on demand.

Strain Wave Gear

Self-developed core component · standard across all models

Full-series coverage from size 3 to 58

Available in multiple reduction ratios

Adapts to diverse load requirements

Motor

Open motor architecture · customizable to match

Power, torque, and speed configurable on demand

Adapts to various diameters and installation spaces

Flexible integration for diverse system designs

Full-Cycle Customization

Brake

Flexible brake configuration · available on demand

Brake type and response time customizable

Adapts to different operating conditions

No dimensional changes required for customization

Integrated Drive & Encoder Board

Base option · supports customer-supplied solutions

Customer-supplied encoder and driver supported

Flexible integration lowers replacement costs

Avoids vendor lock-in for control components

Core Transmission	Flexible Integration	Software Customization	Mechanical Customization
· Self-developed core · High precision · High torque · High reliability	· Open interfaces · Customer-supplied encoder · Multi-brand driver compatible · Control system adaptable	· Multi-protocol support · Algorithm optimization · Custom feature development · System integration support	· Tailored dimensions · Custom mounting design · Structural optimization · Special applications

Customization scope includes but is not limited to:

- Customer-supplied encoder, compatible with mainstream protocols
- Customer-supplied driver, supporting multiple interface standards
- Mounting dimensions and interface
- Reduction ratio and torque

- Transmission Accuracy and Backlash
- Power and lightweight design
- Hollow bore diameter and cable routing
- Communication protocol
- Protection rating (IP class)
- Cable exit method

- Operating temperature range
- Encoder resolution and accuracy
- Brake type and configuration
- Output shaft form and interface
- Overall dimensions and mounting hole pattern

We offer more than just standard modules — we deliver joint solutions tailored to your application.

Laifual Drive AC High Voltage

The AC High Voltage Series joint module features a compact design, high precision, and a large hollow bore — simplifying customer selection, design, and manufacturing processes. **The product supports BISS-C and TAMAGAWA communication protocols.**



M80
OD:80 mm
Length:91 mm
Weight:1.53 kg
Max.Torque:91-112 N·m



M90
OD:90 mm
Length:95 mm
Weight:1.9 kg
Max.Torque:127-191 N·m



M110
OD:110 mm
Length:100 mm
Weight:2.91 kg
Max.Torque:242-395 N·m



M142
OD:142 mm
Length:125 mm
Weight:5.64 kg
Max.Torque:497-892 N·m



M170
OD:170 mm
Length:149 mm
Weight:9.76 kg
Max.Torque:892-1530 N·m

Encoder Interface Compatibility



Supports BISS-C and TAMAGAWA communication protocols, compatible with mainstream encoder interface standards. Suited for industrial robots, CNC machine tools, and other applications requiring high real-time performance and reliability.

AC High Voltage Series Ordering Guide

Joint Series	Joint Model	Communication Protocol	Reduction Ratio	With or Without Brake	Wiring Method	Client Code and Serial Number
M	80	B	080	B	F	XXXX
AC High Voltage	70	B BISS-C D TAMAGAWA	050	B With Brake	F Rear Outlet	Customised Products Only
	80		080	F Without Brake	S Side Outlet	
	90		100			
	110		120			
	142					
	170					

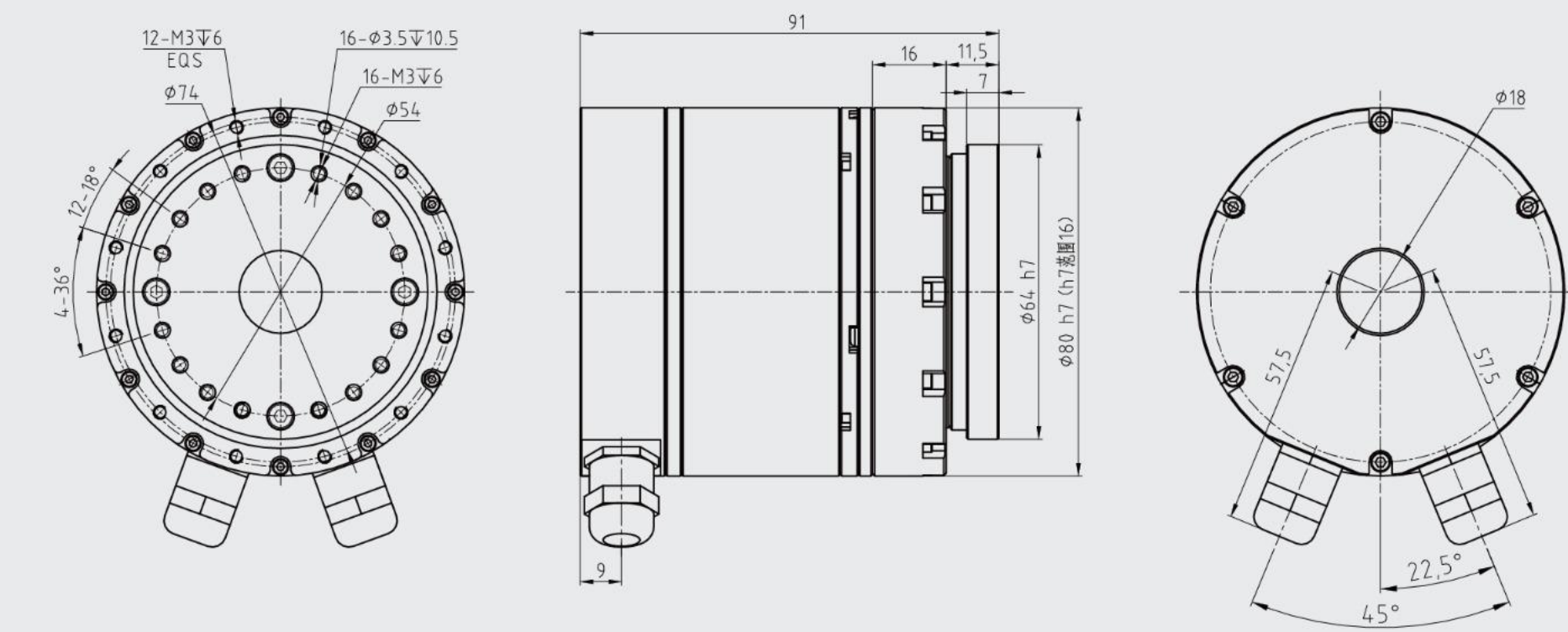
AC High Voltage Series Specifications

Model	Reduction Ratio	OD(mm)	Length(mm)	Weight(kg)	Rated Torque(N·m)	Max.Torque(N·m)
M80	51/81/101/121	80	91	1.53	34/35/51/51	91/113/143/112
M90	51/81/101/121	90	95	1.9	44/61/64/64	127/165/191/191
M110	51/81/101/121	110	100	2.91	72/113/140/140	242/332/369/395
M142	51/81/101/121	142	125	5.64	140/217/281/281	497/738/841/892
M170	51/81/101/121	170	149	9.76	255/369/484/586	892/1270/1400/1530

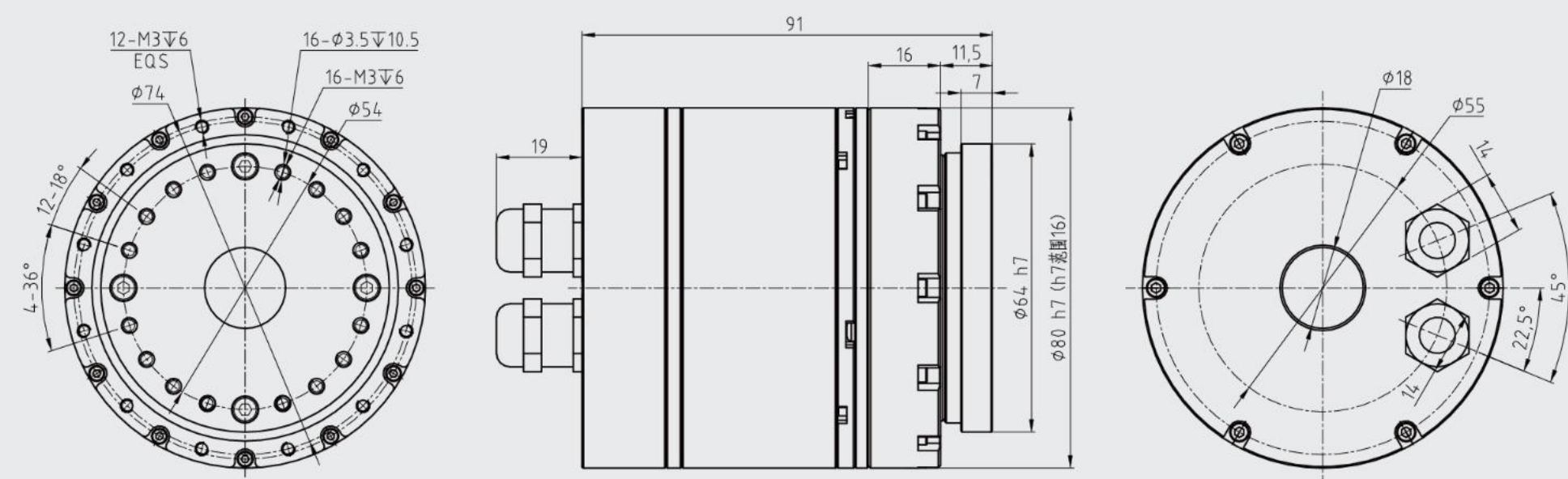
AC High Voltage Series

Product Structural Diagram

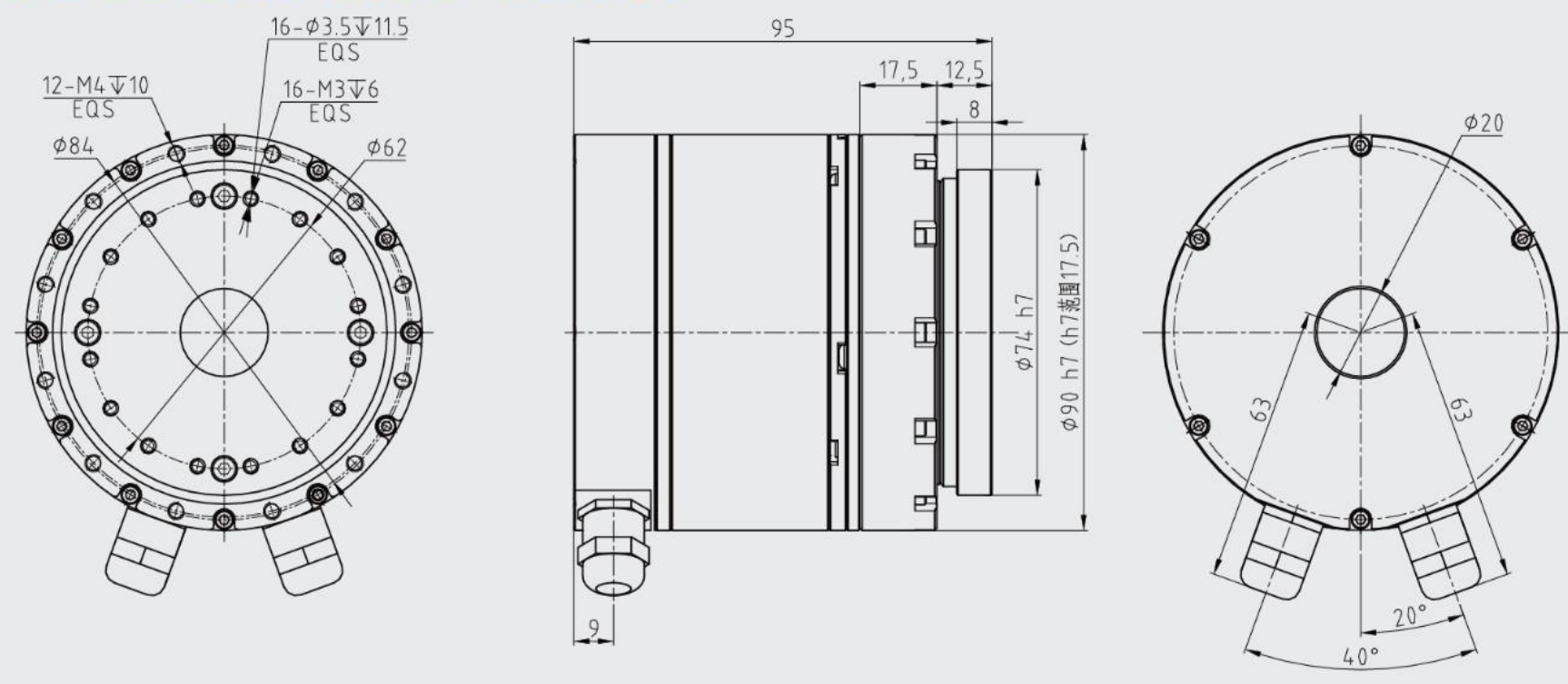
M80D / M80B Structure-Side Outlet



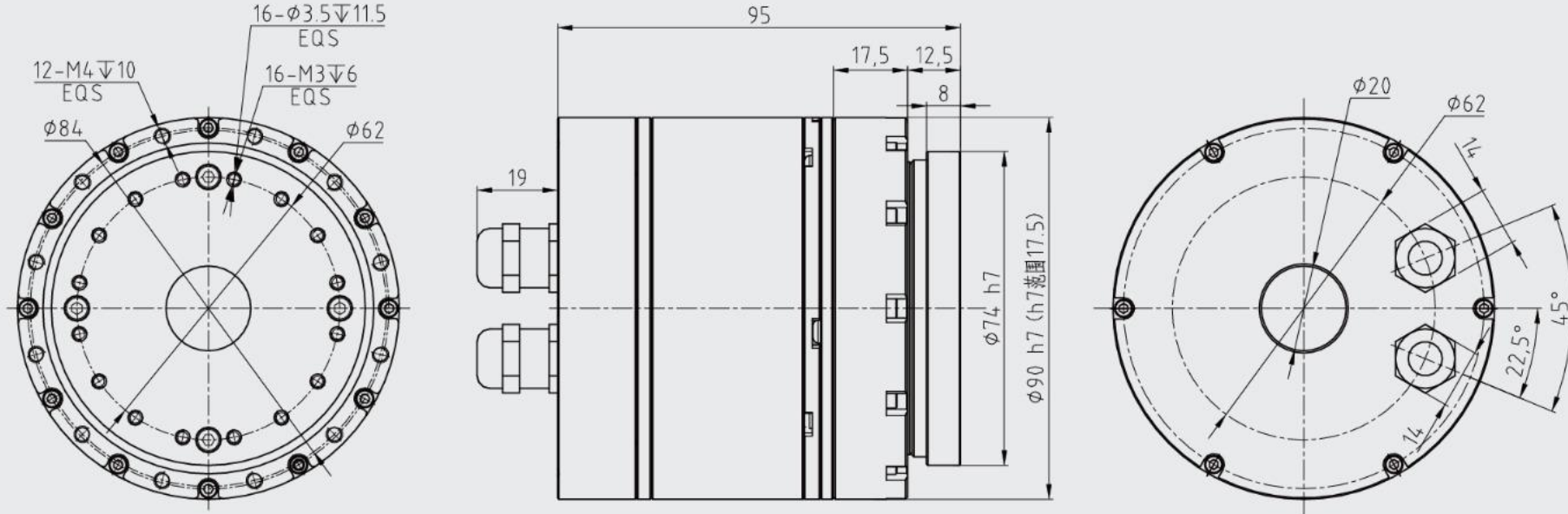
M80D / M80B Structure-End Outlet



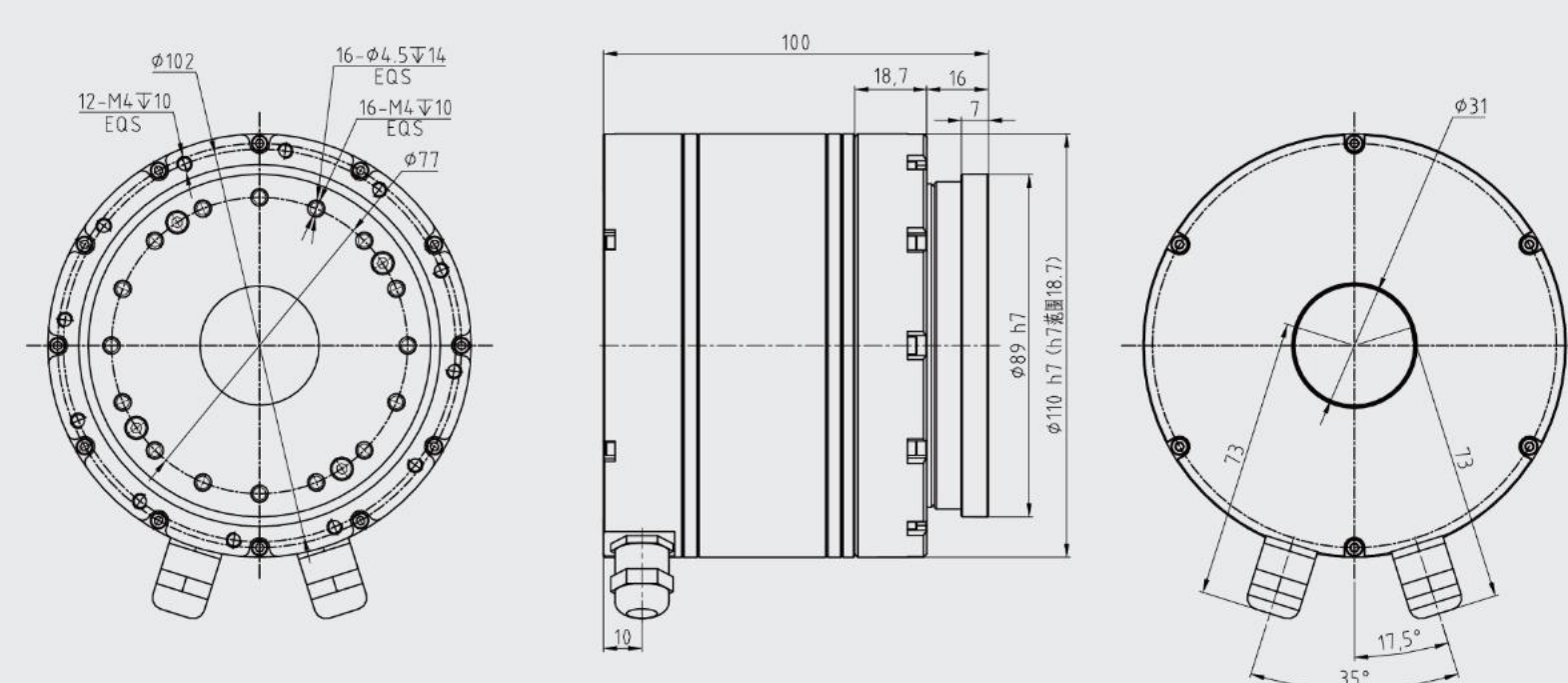
M90D / M90B Structure-Side Outlet



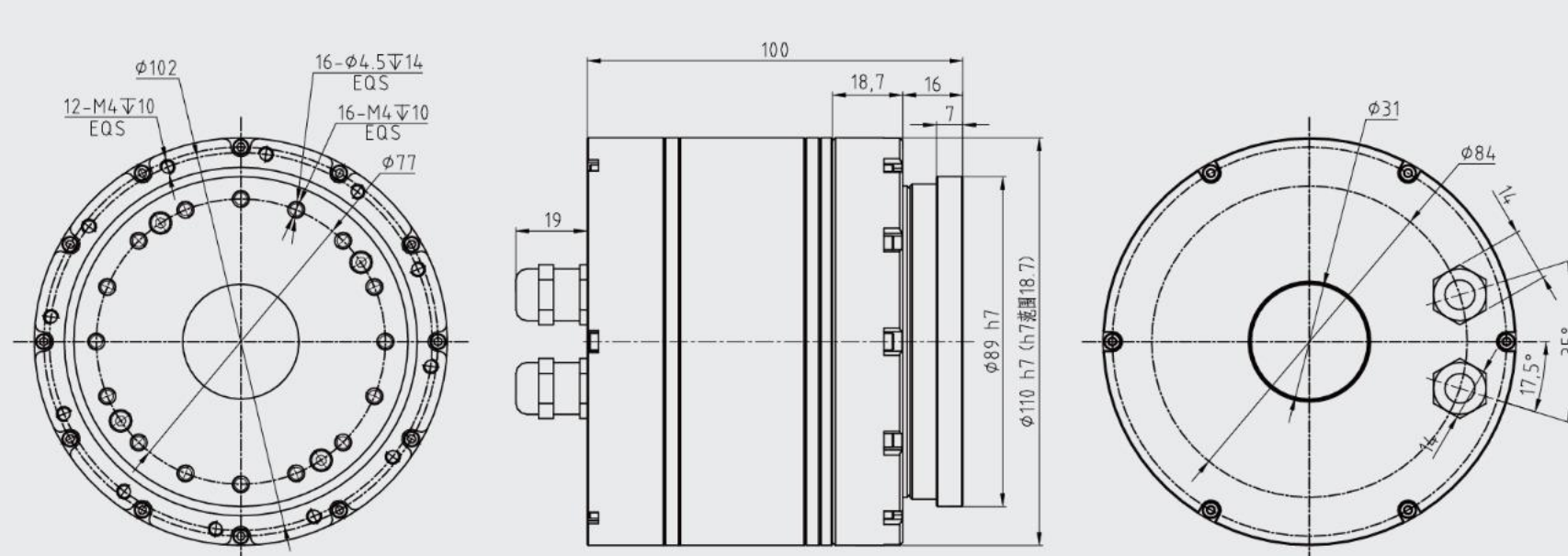
M90D / M90B Structure-End Outlet



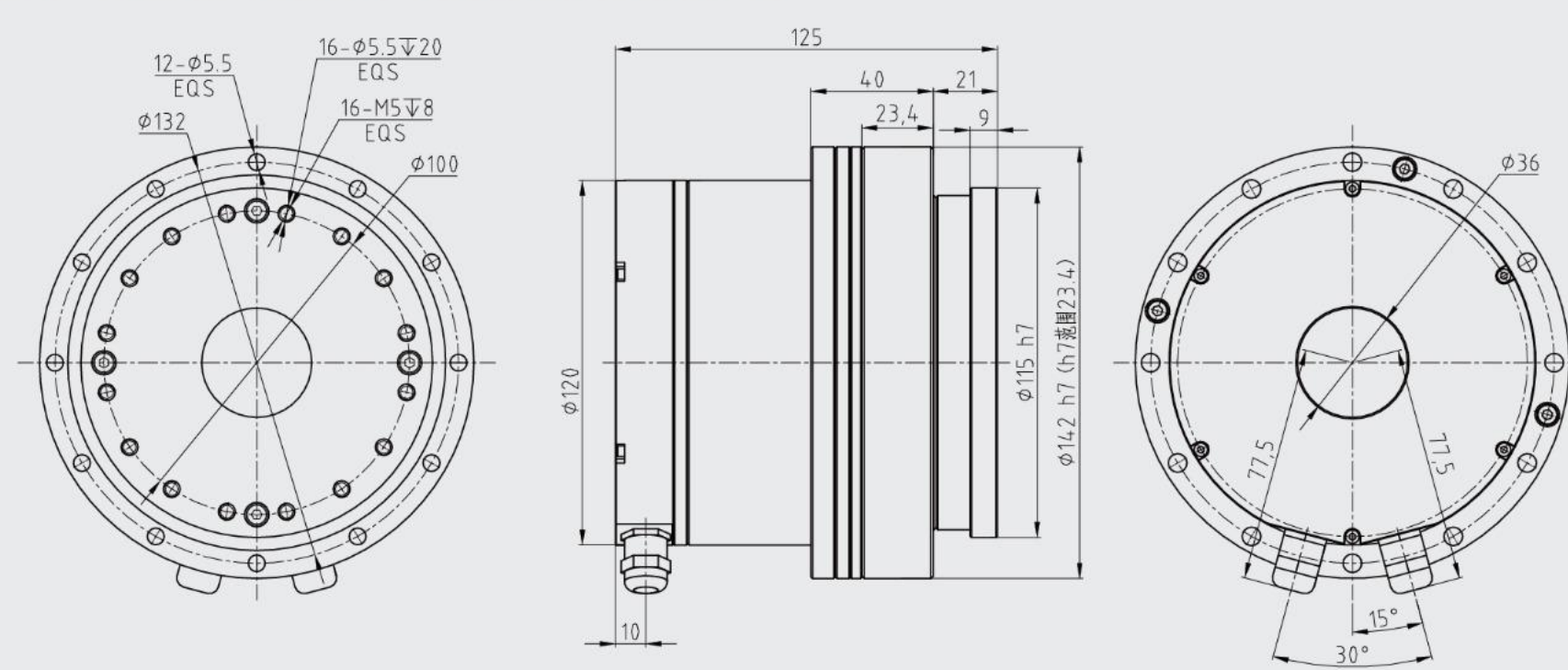
M110D / M110B Structure-Side Outlet



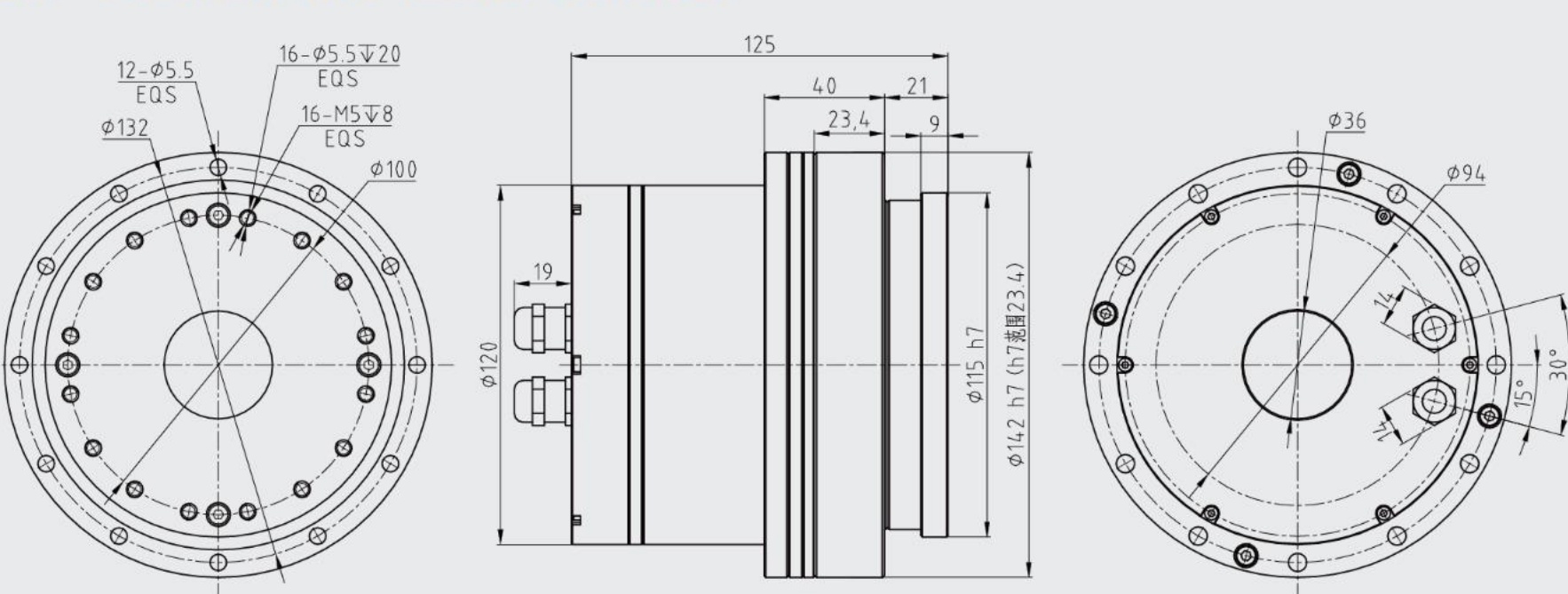
M110D / M110B Structure-End Outlet



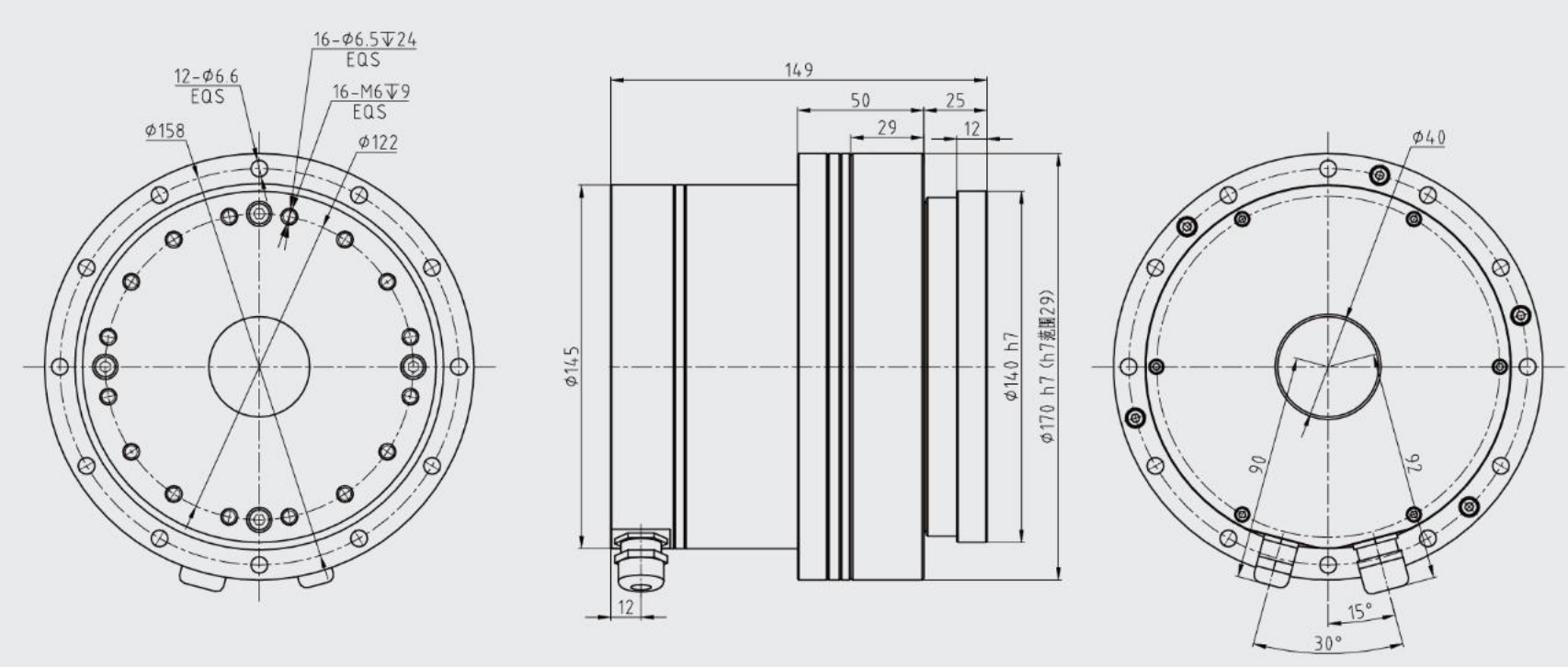
M142D / M142B Structure-Side Outlet



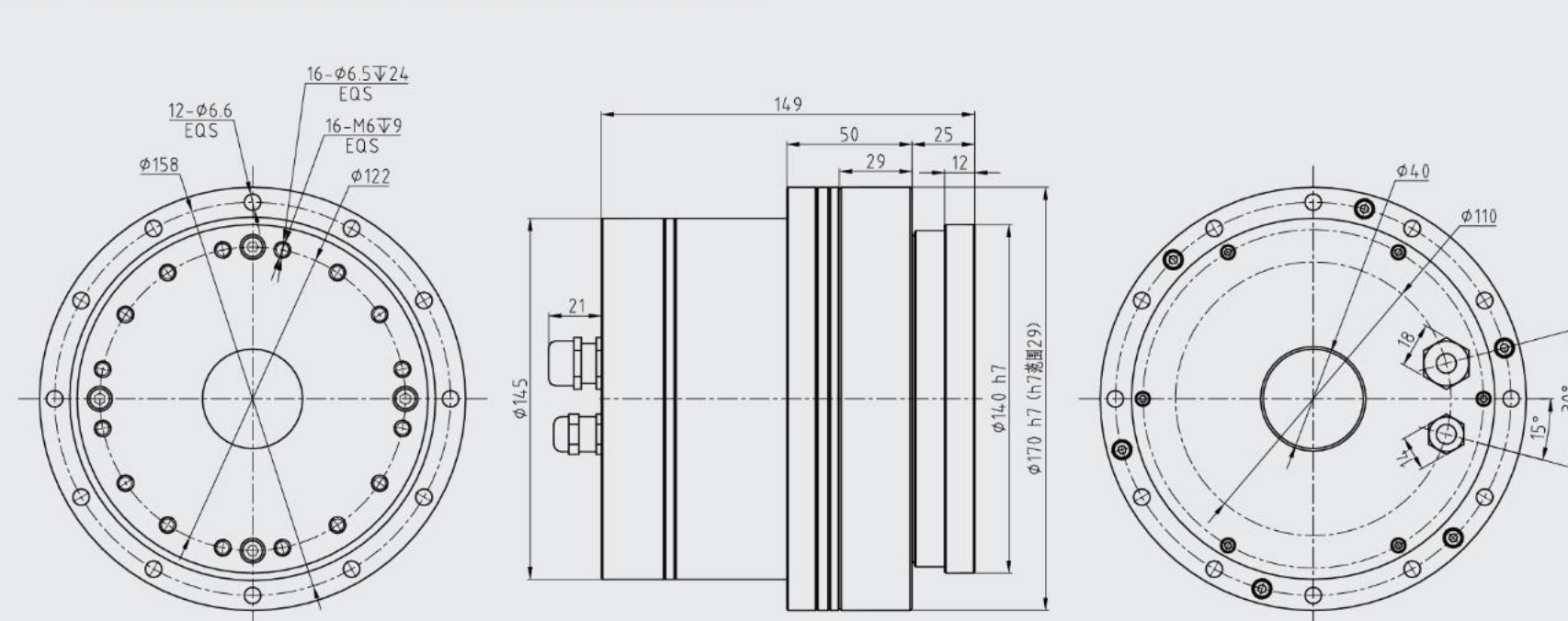
M142D / M142B Structure-End Outlet



M170D / M170B Structure-Side Outlet



M170D / M170B Structure-End Outlet



Laifual Drive DC Low Voltage

The DC Low Voltage Series joint module features a sleek profile and compact construction, integrating a servo drive, motor-side absolute encoder, output-side absolute encoder, frameless torque motor, brake, and precision harmonic reducer into a single unit. **The product supports CANopen, CAN FD, and EtherCAT communication protocols.**



L52I
OD:52 mm
Length:64.5 mm
Weight:0.55 kg
Max.Torque:11.5-17.5 N·m



L62I
OD:62 mm
Length:58.5 mm
Weight:0.63 kg
Max.Torque:17-25 N·m



L70I
OD:70 mm
Length:75.2 mm
Weight:1 kg
Max.Torque:46-70 N·m



L80I
OD:80 mm
Length:81 mm
Weight:1.36 kg
Max.Torque:91-112 N·m



L90I
OD:90 mm
Length:88.9 mm
Weight:1.86 kg
Max.Torque:127-191 N·m



L110I
OD:110 mm
Length:80 mm
Weight:2.7 kg
Max.Torque:242-395 N·m



L142I
OD:142 mm
Length:97.5 mm
Weight:5.15 kg
Max.Torque:497-892 N·m



L170I
OD:170 mm
Length:134 mm
Weight:9.48 kg
Max.Torque:892-1530 N·m

Multi-Protocol Industrial Bus Support



Supports CANopen, CAN FD, and EtherCAT communication protocols. Suited for humanoid robots, collaborative robots, and other applications requiring high dynamic response and flexible control.

DC Low Voltage Series Ordering Guide

Joint Series	Joint Model	Joint Structure	Communication Protocol	Reduction Ratio	With or Without Brake	Wiring Method	Client Code and Serial Number
L	80	I	E	080	B	F	XXXX
DC Low Voltage	40 52 62 70 80 90 110 142 170 190	I T	C F E	030 050 080 100 120 160	B F	F	Customised products only
	ø 40 ø 52 ø 62 ø 70 ø 80 ø 90 ø 110 ø 142 ø 170 ø 190	I Joint T Joint	CANopen CAN FD EtherCAT	31:1 51:1 81:1 101:1 121:1 161:1	With Brake Without Brake	End Outlet	

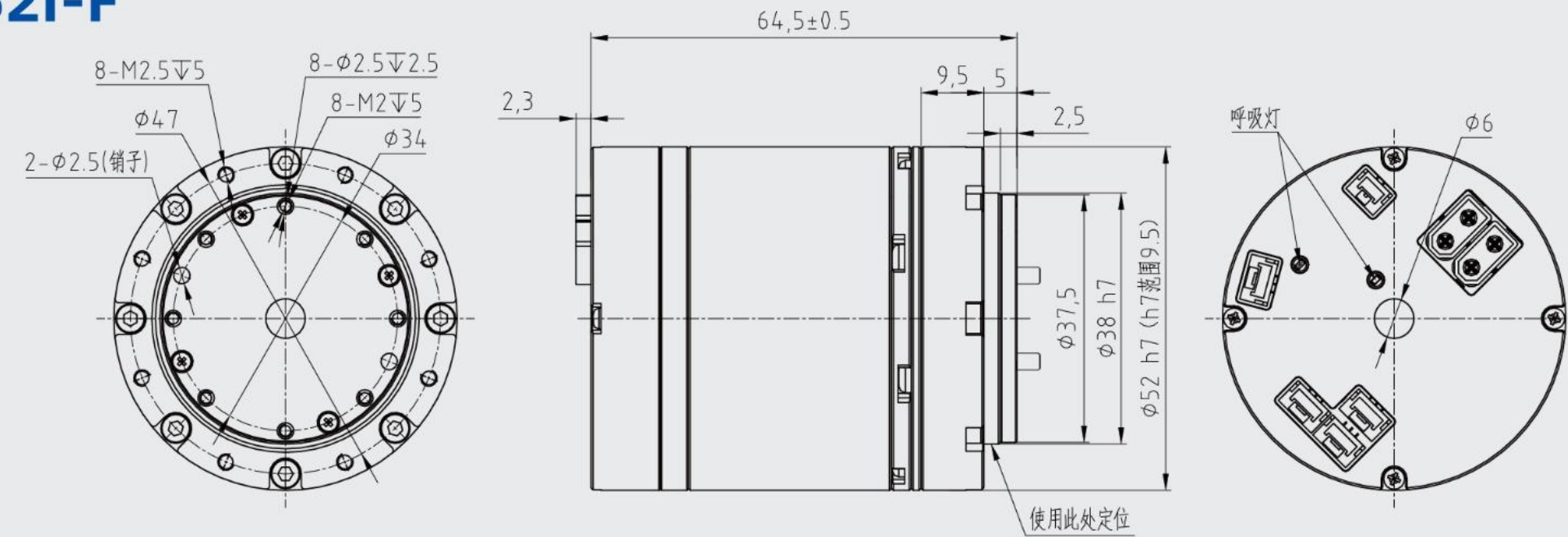
DC Low Voltage Series Specifications

Model	Reduction Ratio	OD(mm)	Length(mm)	Weight(kg)	Rated Torque(N·m)	Max.Torque(N·m)
L52I	51/101	52	64.5	0.55	3.5/6.2	11.5/17.5
L62I	51/101	62	58.5	0.63	5.5/8.9	17/25
L70I	51/81/101	70	75.2	1.0	9/14/14	46/61/70
L80I	51/81/101/121	80	81	1.36	34/35/51/51	91/113/143/112
L90I	51/81/101/121	90	88.9	1.86	44/61/64/64	127/165/191/191
L110I	51/81/101/121	110	80	2.7	72/113/140/140	242/332/369/395
L142I	51/81/101/121	142	97.5	5.15	140/217/281/281	497/738/841/892
L170I	51/81/101/121	170	134	9.48	255/369/484/586	892/1270/1400/1530

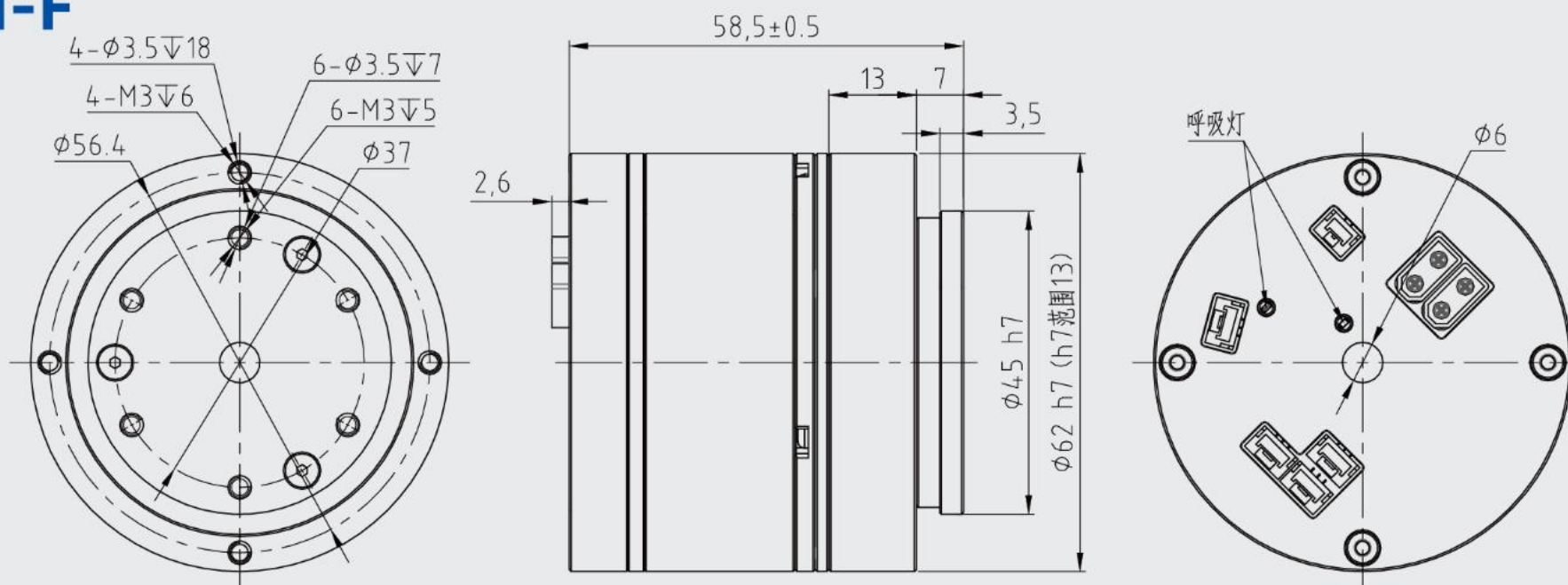
DC Low Voltage Series

Product Structural Diagram

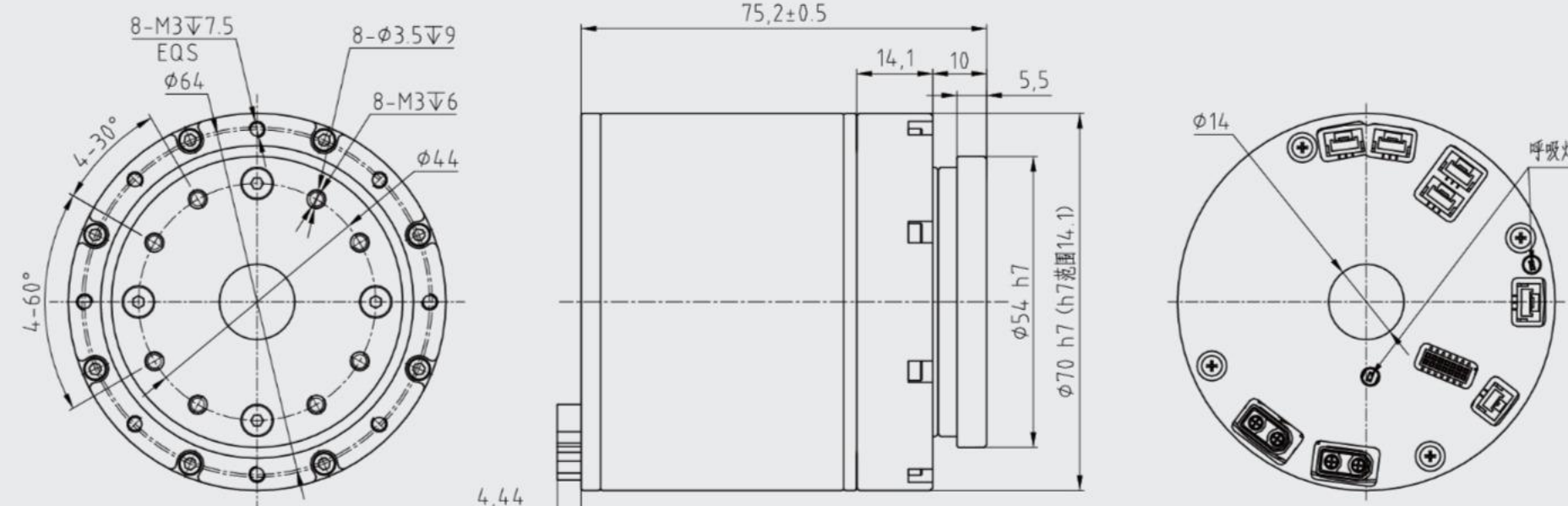
L52I-C/L52I-F



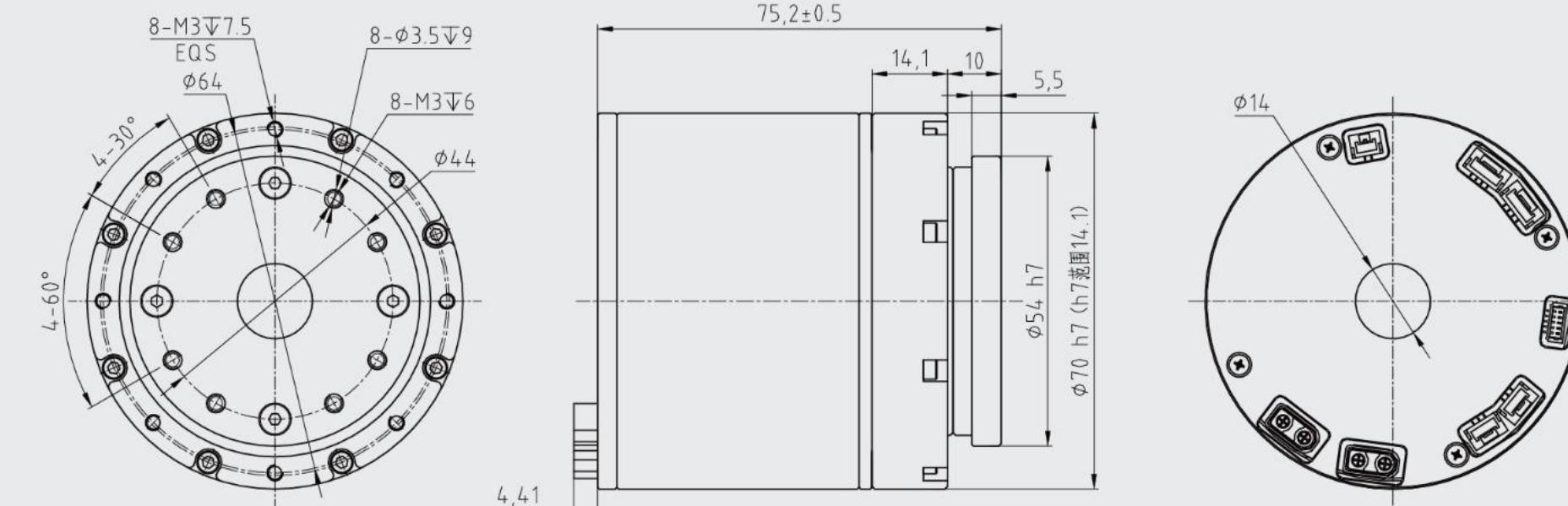
L62I-C / L62I-F



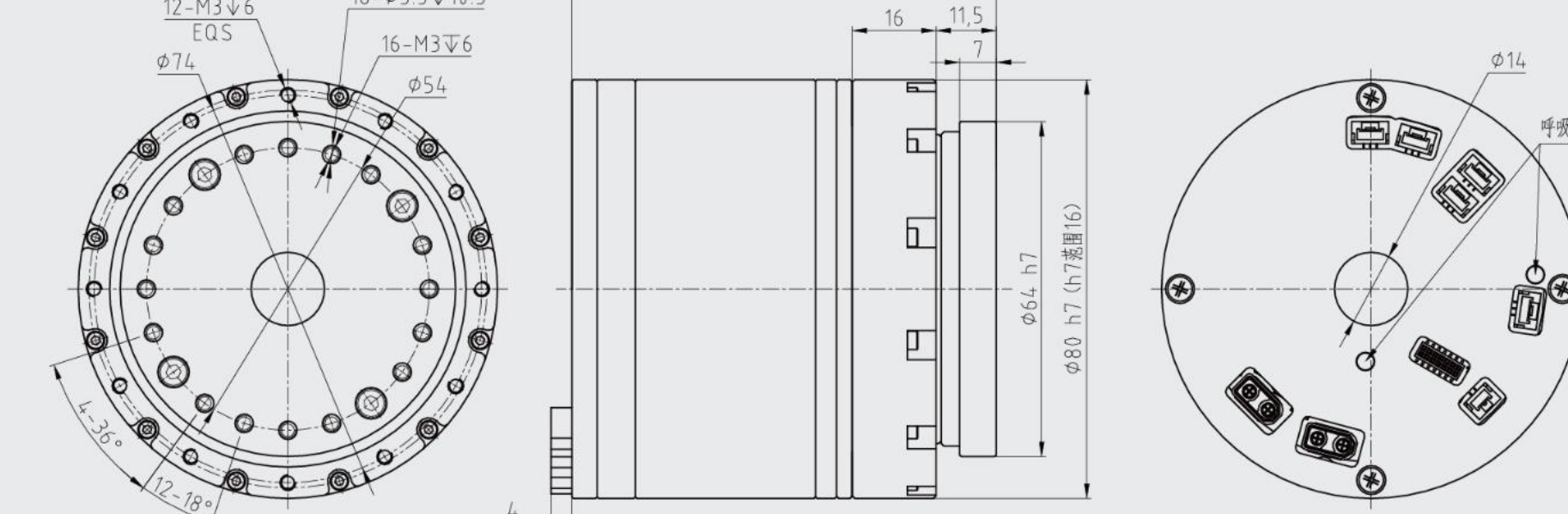
L70I-C / L70I-F



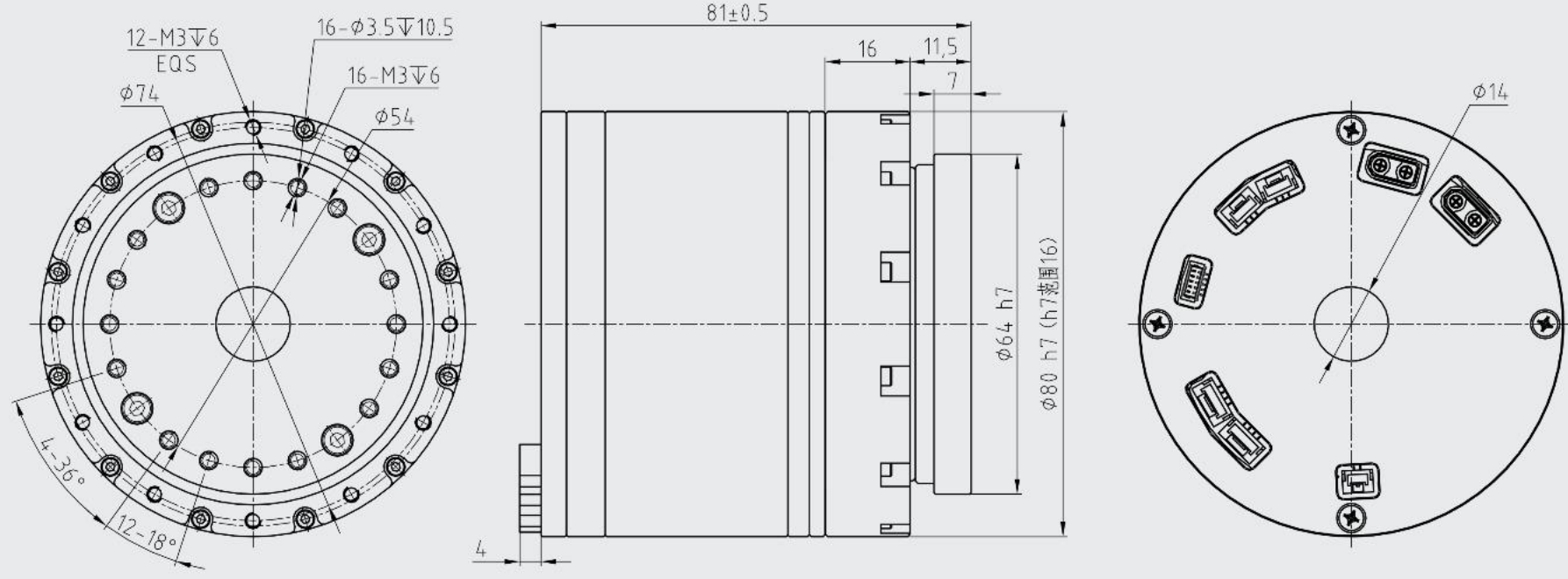
L70I-E



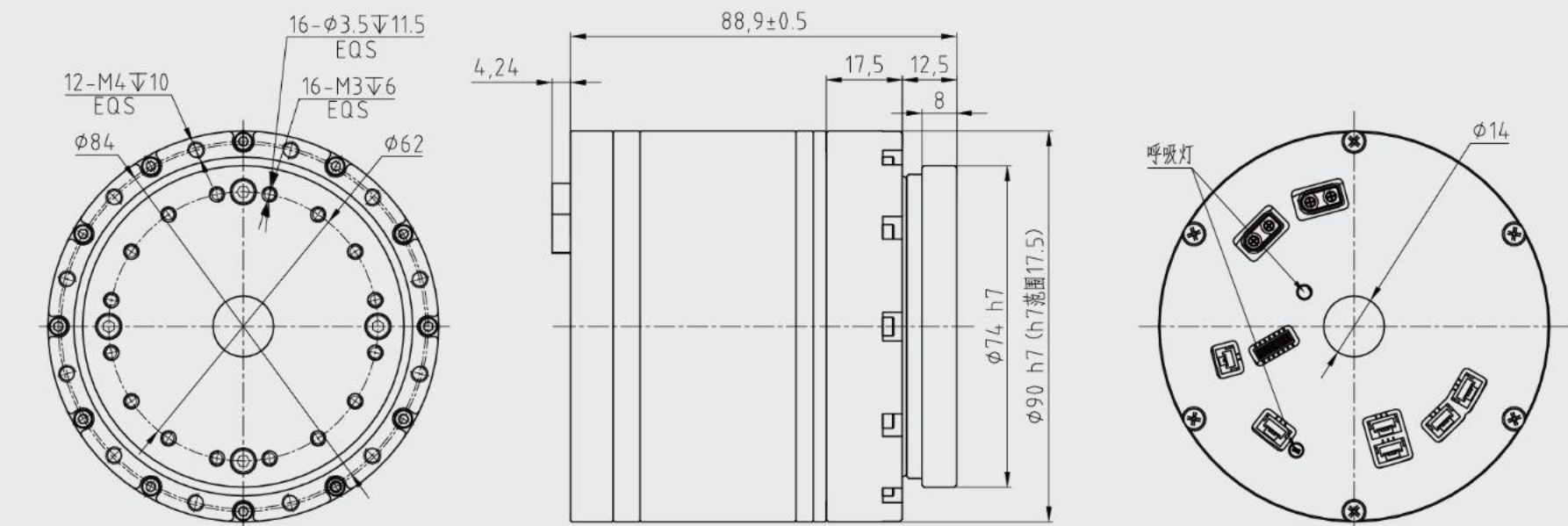
L80I-C / L80I-F



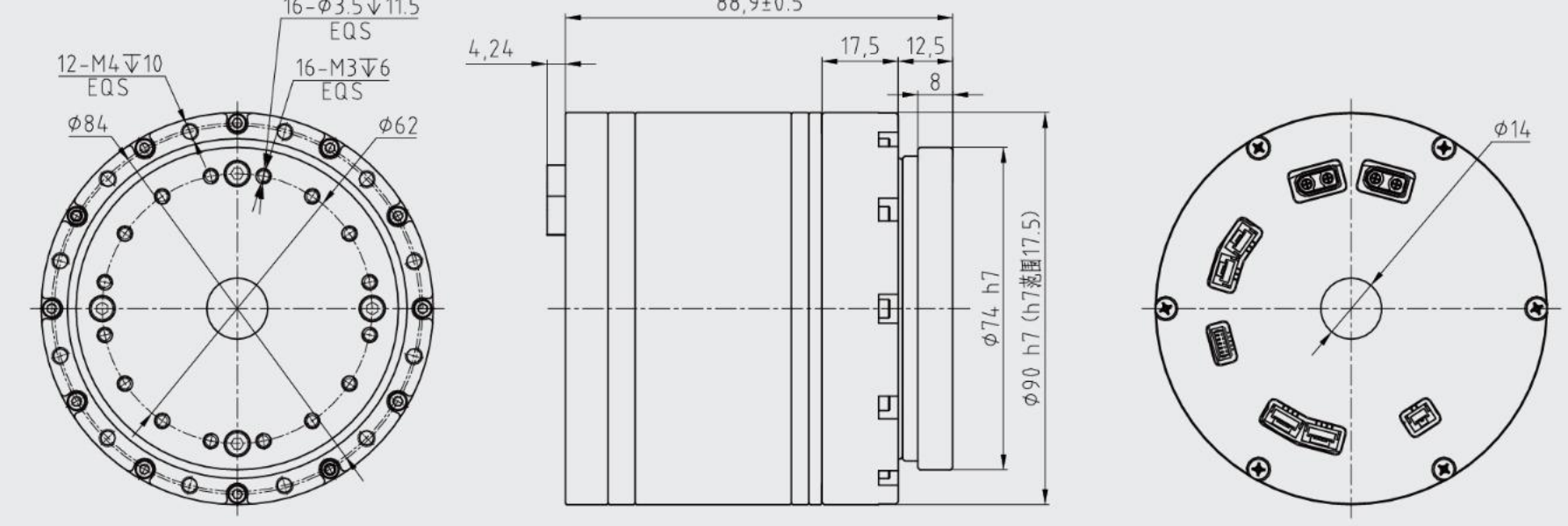
L80I-E



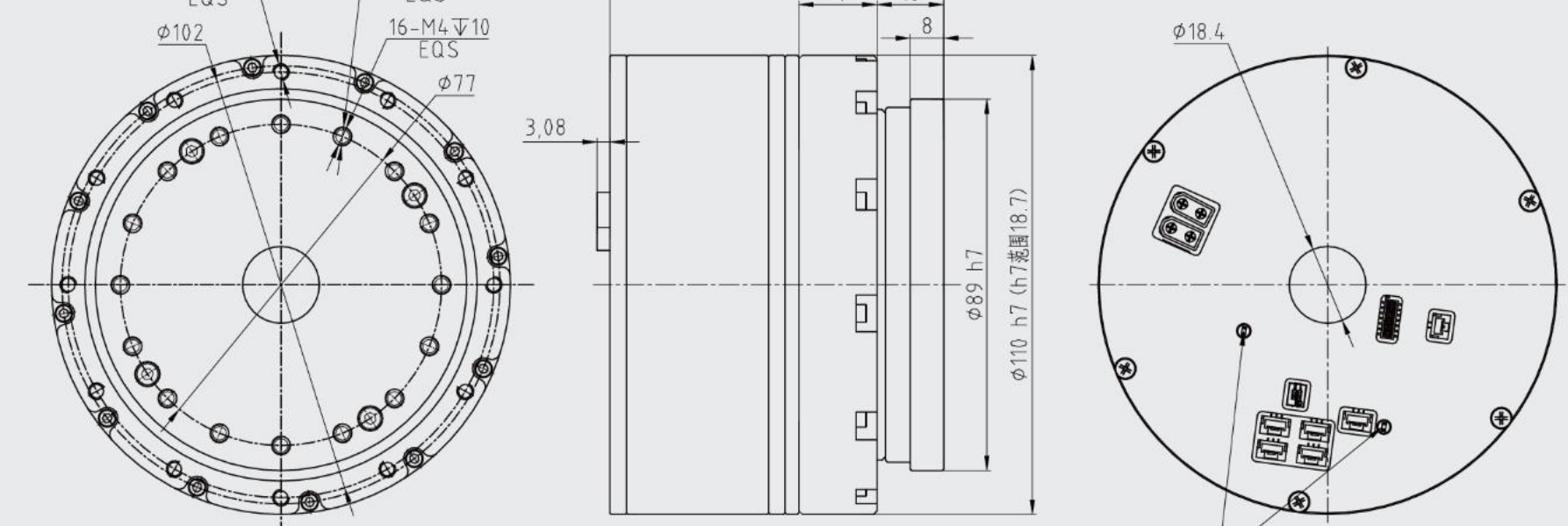
L90I-C / L90I-F



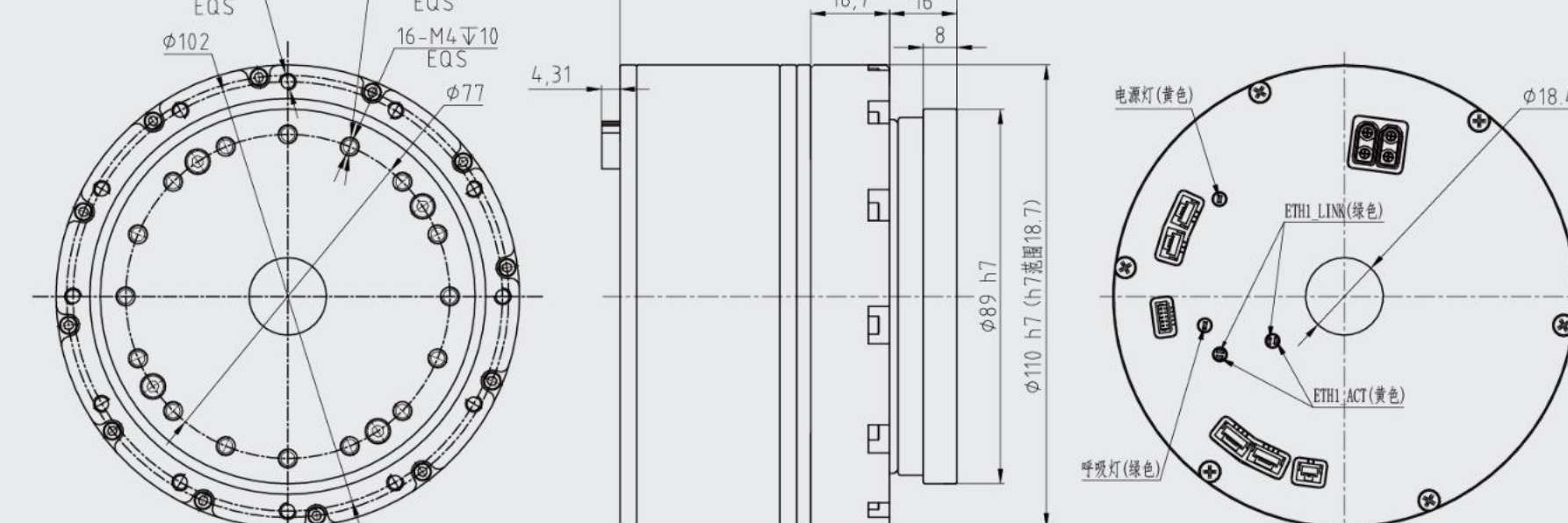
L90I-E



L110I-C / L110I-F



L110I-E



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