30 Invention Patents Authorized

Jiangsu Kaiserdrive
Intelligent Technology Co., Ltd.

Robot Joint Module

Version Number：KGU202509

Company Profile

As a subsidiary of Leader Harmonious Drive Systems Co., Ltd. and high-tech enterprise specialized in the R&D, production and sales of intelligent drive products, the Company mainly produces rotary actuator, CNC rotary table (the 4th and 5th axis), integrated gear motor, EtherCAT servo drive, frameless torque motor, all of which are used for precision machine tool, laser processing device, electronics and semiconductor equipment, factory automation systems, medical apparatus and instruments, robot, logistics automation system, solar photovoltaic system, LED equipment, detection device, printing machinery, precision measuring instrument and other fields.

With a strong focus on independent innovation, the Company has established a core R&D team consisting of more than 50 doctors, masters and experts in intelligent control field and it has also established closed cooperation relationship with many institutions, and colleges and universities such as Chinese Academy of Sciences, Tsinghua University, Southeast University and Nanjing University of Aeronautics and Astronautics. It has obtained several invention and patent authorizations for its core technique and passed CE and ETL certifications. With more than 100,000 set/year intelligent automatic production line, the Company has established a strict quality management system and passed ISO9001 system certification. The Company has exported its products to more than 20 countries and regions, such as Germany, UK, Italy, France, US, Japan, Korea and the products are well received by customers.

KGU Series Robot Joint Module

KGU Series Robot Joint Module

Product Features

Integration: Integrates harmonic reducer, torque motor, servo drive, dual encoders, brake, and other components into one unit.

High Reliability: The serialized joint modules have undergone in different application fields, featuring reliable performance and excellent consistency.

Lightweight: The minimum weight of the joint module is less than 350g.

Multi-functionality: Supports multiple control modes including speed control, position control, and torque control.

Built-in Servo Drive: The joint module integrates EtherCAT or CANopen bus communication servo drive internally.

High Precision: Boasts high positioning accuracy that remains stable even after long-term operation;

High Dynamics: Features excellent dynamic response performance;

Low Vibration: Offers low vibration and low noise performance, ensuring stable motion;

Versatility: The product series includes multiple models, supporting customized design.

Application Fields

Humanoid robots, mobile robots, medical robots, industrial robots, embodied intelligent hardware carriers, etc.; electronics and semiconductors, factory automation, logistics automation, and other fields.

Part number

KGU–11	C	L	0	E	C	-	A065
①	②	③	④	⑤	⑥		⑦

① Main model

KGU-08 KGU-11 KGU-14 KGU-17
KGU-20 KGU-25 KGU-32 KGU-40

② Reduction ratio

B: 1/81

C: 1/101

D: 1/121

③ Power supply voltage

L: 48VDC

T: 24VDC

④ Encoder

0: Dual encoders, BiSS-C protocol

⑤ Servo driver

E:EtherCAT bus servo driver

C: CANopen bus servo driver

⑥ Wire outlet method

E: Rear outlet, with brake

C: Rear outlet, without brake

⑦structure version

A065: Default structure

Remarks: Structural customization is supported

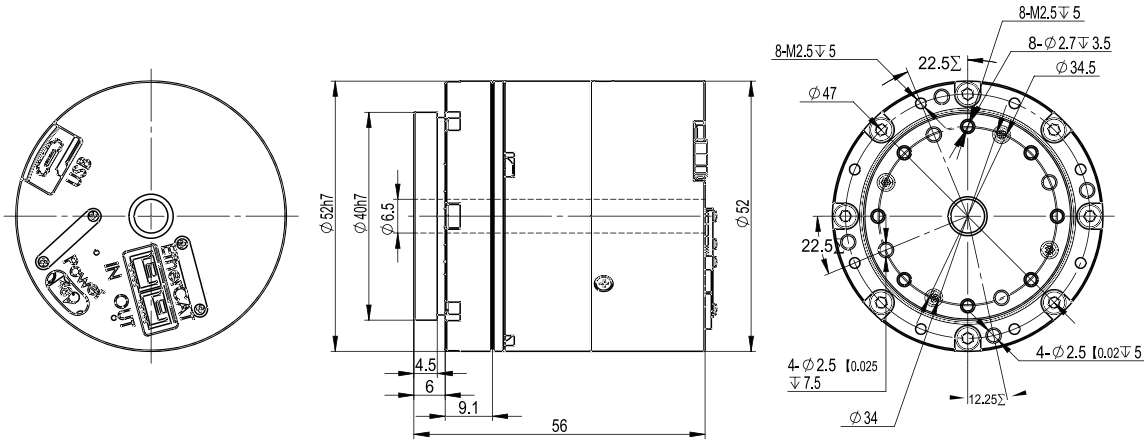
KGU-08 and KGU-11 Joint Modules

Model		KGU-08BL0EC-A065	KGU-08CL0EC-A065	KGU-11BL0EC-A065	KGU-11CL0EC-A065
Gear Ratio		1/81	1/101	1/81	1/101
Supply Voltage	VDC	48	48	48	48
Rated Torque	N·m	5	7	12	15
Maximum Torque	N·m	12	16	23	30
Rated Speed	RPM	43	35	40	32
Maximum Speed	RPM	68	55	62	50
Rated Current	Arms	2.0	1.9	4	3.9
Maximum Current	Arms	4.6	4.5	8.1	8.0
Rated Power	W	30	30	60	60
Torque Coefficient	N·m/Arms	2.7	3.6	3	3.9
Positioning Accuracy	Arc sec	69	69	69	69
Repeatability Accuracy	Arc sec	15	15	15	15
Torsional Rigidity	×104N·m/rad	1.5	1.5	1.7	1.7
Moment of Inertia	kg·m2	0.18	0.18	0.32	0.49
Overturning Moment	N.m	30	30	60	60
Length	mm	56	56	68	68
Outer Diameter	mm	52	52	62	62
Inner Hole Diameter	mm	6.5	6.5	6.5	6.5
Weight	kg	0.35	0.35	0.62	0.62
Power-off Holding Brake	/	No	No	Option	Option
Motor Phase Resistance	Ohms	1.106	1.106	0.275	0.275
Motor Phase Inductance	mH	1.235	1.235	0.193	0.193
Motor Back EMF Constant	Vrms/Krpm	5.01	5.01	5.56	5.56
Motor Pole Pairs	/	14	14	16	16
Motor-side encoder	/	20-bit single-turn absolute encoder, Biss-C communication protocol			
Output-side encoder	/	20-bit single-turn absolute encoder, Biss-C communication protocol			
Servo driver	/	Built-in integration	Built-in integration	Built-in integration	Built-in integration
Servo driver communication modes		Default EtherCAT bus (CANopen bus optional)			
servo driver operation modes		Velocity control,position control,torque control,etc.			
servo driver protection features		Over-current,over-voltage,under-voltage,over-heat,over-load,excess velocity deviation, excess position deviation, serial communication error,emergency stop,etc.			
Motor insulation		Heat-resistant class: F (155 °C)			
		Insulation resistance: more than 200MΩ (DC500V)			
		Dielectric strength: AC1500V (1 minute)			
protective structure		Totally enclosed self-cooled type (Ip54)			

KGU-08&KGU-11 Outline Drawing Sheet

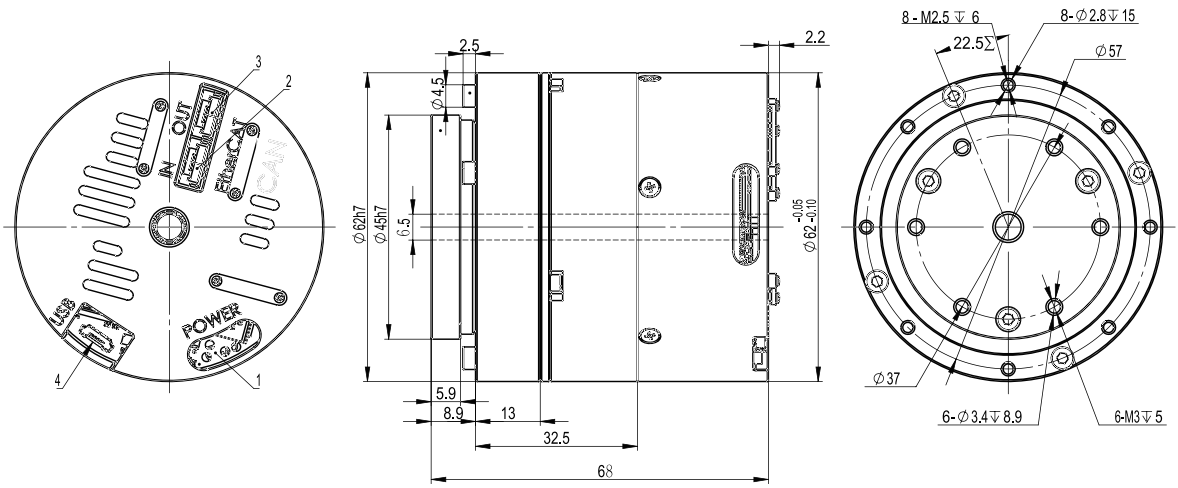
KGU-08CL0EC-A065

Unit:mm



KGU-11CL0EC-A065

Unit:mm



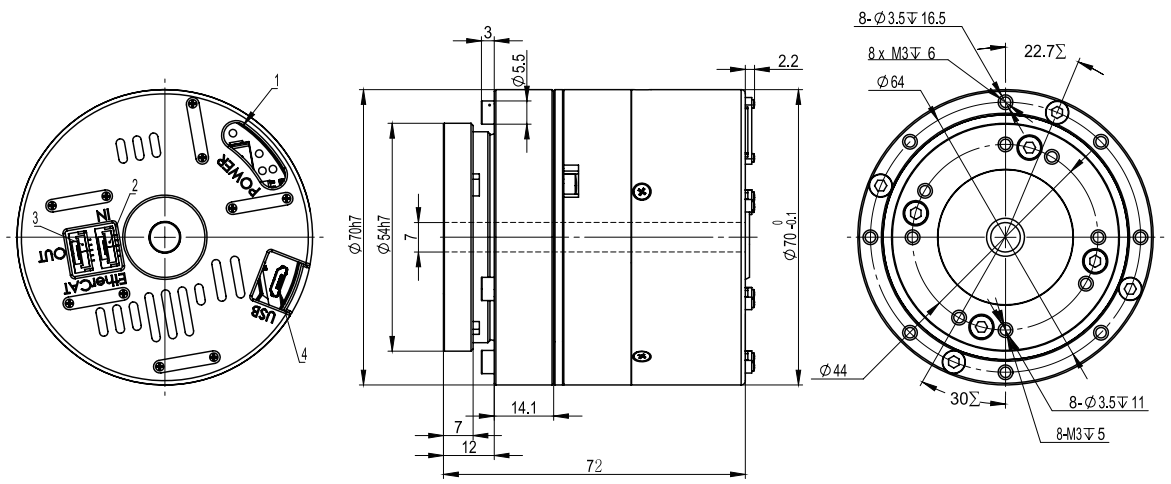
KGU-14 and KGU-17 Joint Modules

Model		KGU-14BL0EC-A065	KGU-14CL0EC-A065	KGU-17BL0EC-A065	KGU-17CL0EC-A065
Gear Ratio		1/81	1/101	1/81	1/101
Supply Voltage	VDC	48	48	48	48
Rated Torque	N·m	20	25	33	40
Maximum Torque	N·m	40	50	61	78
Rated Speed	RPM	40	32	38	30
Maximum Speed	RPM	62	50	62	50
Rated Current	Arms	5.3	5.2	5.7	5.5
Maximum Current	Arms	10.5	10.3	10.7	10.5
Rated Power	W	90	90	130	130
Torque Coefficient	N·m/Arms	3.8	4.8	5.8	7.4
Positioning Accuracy	Arc sec	60	60	50	50
Repeatability Accuracy	Arc sec	10	10	10	10
Torsional Rigidity	×104N·m/rad	2.3	2.3	4.6	4.6
Moment of Inertia	kg·m2	0.19	0.19	0.39	0.39
Overturning Moment	N.m	80	80	140	140
Length	mm	72	72	81	81
Outer Diameter	mm	70	70	80	80
Inner Hole Diameter	mm	7	7	10	10
Weight	kg	0.83	0.83	1.12	1.12
Power-off Holding Brake	/	Option	Option	Option	Option
Motor Phase Resistance	Ohms	0.252	0.252	0.557	0.557
Motor Phase Inductance	mH	0.427	0.427	0.653	0.653
Motor Back EMF Constant	Vrms/Krpm	5.98	5.98	6.32	6.32
Motor Pole Pairs	/	16	16	16	16
Motor-side encoder	/	20-bit single-turn absolute encoder, Biss-C communication protocol			
Output-side encoder	/	20-bit single-turn absolute encoder, Biss-C communication protocol			
Servo driver	/	Built-in integration	Built-in integ ration	Built-in integration	Built-in integration
Servo driver communication modes		Default EtherCAT bus (CANopen bus optional)			
servo driver operation modes		Velocity control,position control,torque control,etc.			
servo driver protection features		Over-current,over-voltage,under-voltage,over-heat,over-load,excess velocity deviation, excess position deviation, serial communication error,emergency stop,etc.			
Motor insulation		Heat-resistant class: F (155 °C)			
		Insulation resistance: more than 200MΩ (DC500V)			
		Dielectric strength: AC1500V (1 minute)			
protective structure		Totally enclosed self-cooled type (Ip54)			

KGU-14&KGU-17 Outline Drawing Sheet

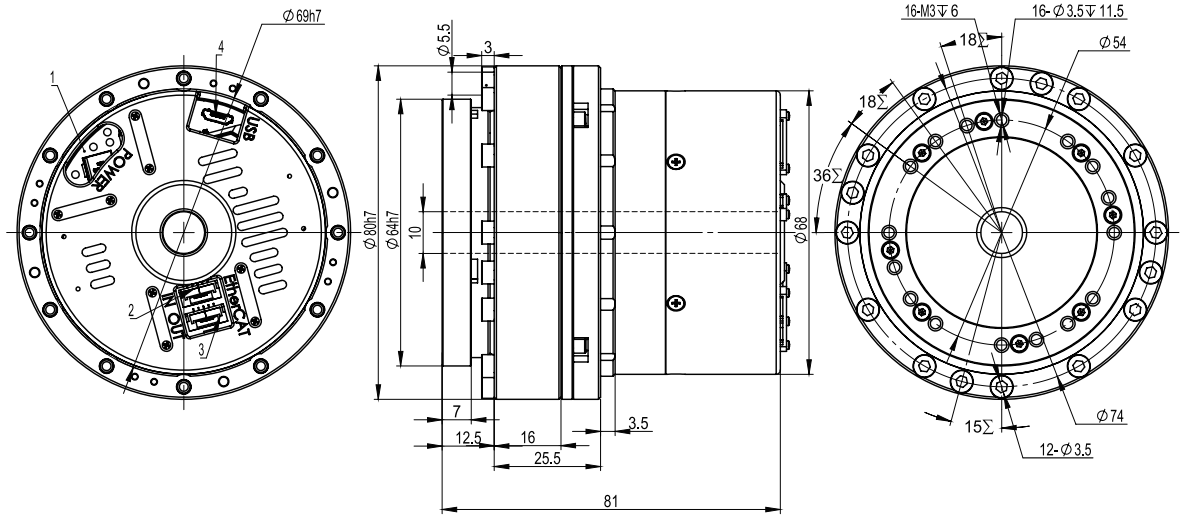
KGU-14CL0EC-A065

Unit:mm



KGU-17CL0EC-A065

Unit:mm



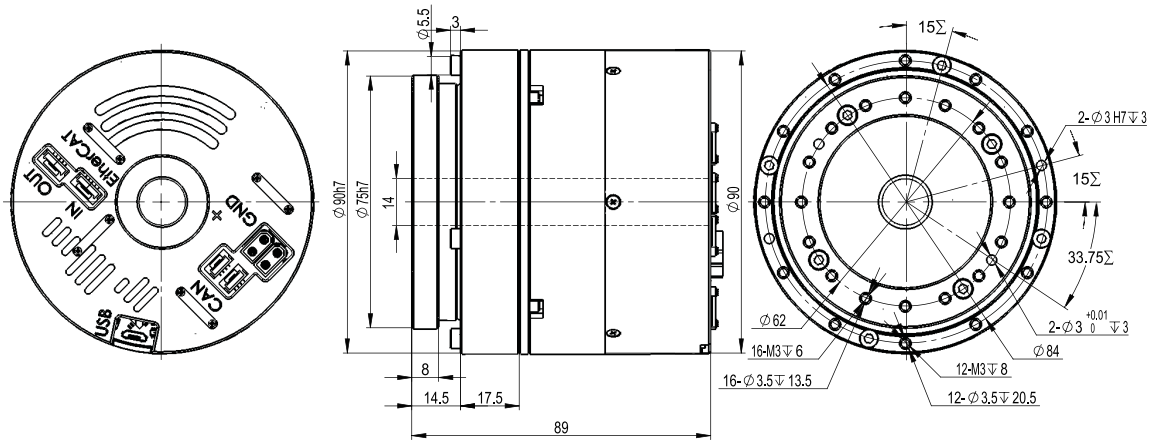
KGU-20 and KGU-25 Joint Modules

Model		KGU-20BL0EE-A065	KGU-20CL0EE-A065	KGU-25BL0EE-A065	KGU-25CL0EE-A065
Gear Ratio		1/81	1/101	1/81	1/101
Supply Voltage	VDC	48	48	48	48
Rated Torque	N·m	56	68	96	119
Maximum Torque	N·m	105	126	160	198
Rated Speed	RPM	37	30	32	26
Maximum Speed	RPM	50	40	50	40
Rated Current	Arms	7.2	7	11.9	11.5
Maximum Current	Arms	13.3	13.1	19.7	19.3
Rated Power	W	210	210	350	350
Torque Coefficient	N·m/Arms	7.8	9.7	8.1	10.3
Positioning Accuracy	Arc sec	50	50	50	50
Repeatability Accuracy	Arc sec	10	10	10	10
Torsional Rigidity	×104N·m/rad	2.3	2.3	4.6	4.6
Moment of Inertia	kg·m2	0.64	0.98	1.33	2.03
Overturning Moment	N.m	260	260	480	480
Length	mm	89	89	98	98
Outer Diameter	mm	90	90	110	110
Inner Hole Diameter	mm	14	14	16	16
Weight	kg	1.67	1.67	2.45	2.45
Power-off Holding Brake	/	Option	Option	Option	Option
Motor Phase Resistance	Ohms	0.356	0.356	0.241	0.241
Motor Phase Inductance	mH	0.562	0.562	0.392	0.392
Motor Back EMF Constant	Vrms/Krpm	7.98	7.98	9.61	9.61
Motor Pole Pairs	/	16	16	16	16
Motor-side encoder	/	20-bit single-turn absolute encoder, Biss-C communication protocol			
Output-side encoder	/	20-bit single-turn absolute encoder, Biss-C communication protocol			
Servo driver	/	Built-in integration	Built-in integ ration	Built-in integration	Built-in integration
Servo driver communication modes		Default EtherCAT bus (CANopen bus optional)			
servo driver operation modes		Velocity control,position control,torque control,etc.			
servo driver protection features		Over-current,over-voltage,under-voltage,over-heat,over-load,excess velocity deviation, excess position deviation, serial communication error,emergency stop,etc.			
Motor insulation		Heat-resistant class: F (155 °C)			
		Insulation resistance: more than 200MΩ (DC500V)			
		Dielectric strength: AC1500V (1 minute)			
protective structure		Totally enclosed self-cooled type (Ip54)			

KGU-20&KGU-25 Outline Drawing Sheet

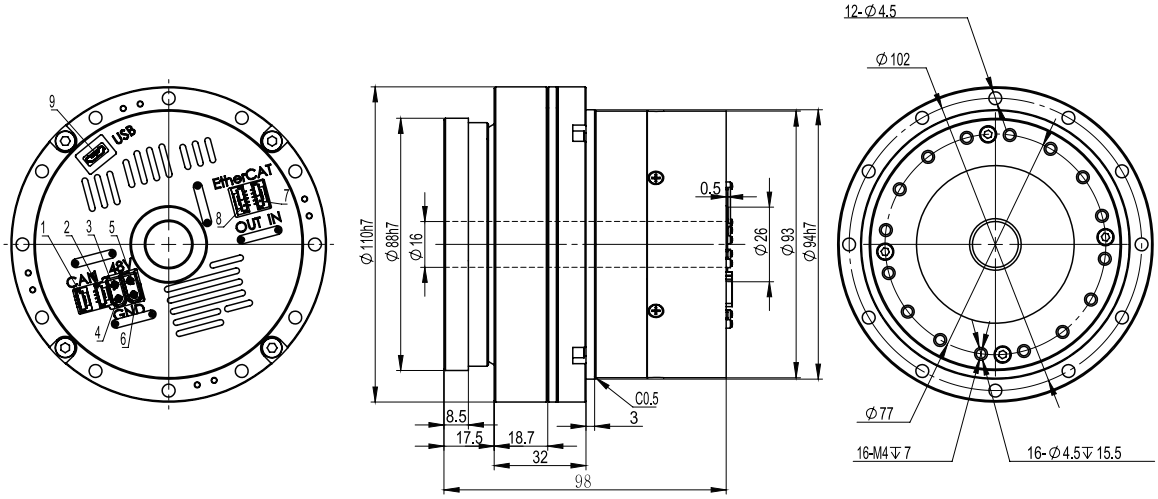
KGU-20CL0EE-A065

Unit:mm



KGU-25CL0EE-A065

Unit:mm



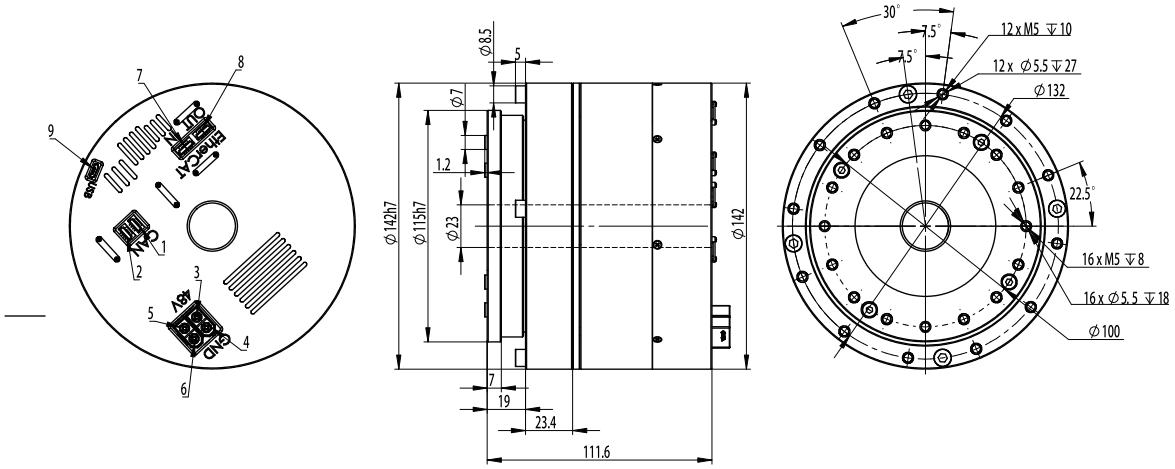
KGU-32 and KGU-40 Joint Modules

Model		KGU-32CL0EE-A065	KGU-32DL0EE-A065	KGU-40CL0EE-A065	KGU-40DL0EE-A065
Gear Ratio		1/101	1/121	1/101	1/121
Supply Voltage	VDC	48	48	48	48
Rated Torque	N·m	209	253	465	557
Maximum Torque	N·m	411	498	639	762
Rated Speed	RPM	25	21	22	18
Maximum Speed	RPM	35	30	32	26
Rated Current	Arms	15.8	15.6	33.5	33.1
Maximum Current	Arms	32.5	31.3	45.8	45.3
Rated Power	W	600	600	1100	1100
Torque Coefficient	N·m/Arms	13.2	16.1	13.9	16.8
Positioning Accuracy	Arc sec	50	50	50	50
Repeatability Accuracy	Arc sec	10	10	10	10
Torsional Rigidity	×104N·m/rad	9.9	9.9	18.6	18.6
Moment of Inertia	kg·m2	2.03	2.97	13.6	18.5
Overturning Moment	N.m	900	900	1200	1200
Length	mm	112	112	139	139
Outer Diameter	mm	142	142	170	170
Inner Hole Diameter	mm	23	23	23	23
Weight	kg	5.6	5.6	7.9	7.9
Power-off Holding Brake	/	Option	Option	Option	Option
Motor Phase Resistance	Ohms	0.129	0.129	0.107	0.107
Motor Phase Inductance	mH	0.253	0.253	0.228	0.228
Motor Back EMF Constant	Vrms/Krpm	11.74	11.74	11.48	11.48
Motor Pole Pairs	/	16	16	16	16
Motor-side encoder	/	20-bit single-turn absolute encoder, Biss-C communication protocol			
Output-side encoder	/	20-bit single-turn absolute encoder, Biss-C communication protocol			
Servo driver	/	Built-in integration	Built-in integ ration	Built-in integration	Built-in integration
Servo driver communication modes		Default EtherCAT bus (CANopen bus optional)			
servo driver operation modes		Velocity control,position control,torque control,etc.			
servo driver protection features		Over-current,over-voltage,under-voltage,over-heat,over-load,excess velocity deviation, excess position deviation, serial communication error,emergency stop,etc.			
Motor insulation		Heat-resistant class: F (155 °C)			
		Insulation resistance: more than 200MΩ (DC500V)			
		Dielectric strength: AC1500V (1 minute)			
protective structure		Totally enclosed self-cooled type (Ip54)			

KGU-32&KGU-40 Outline Drawing Sheet

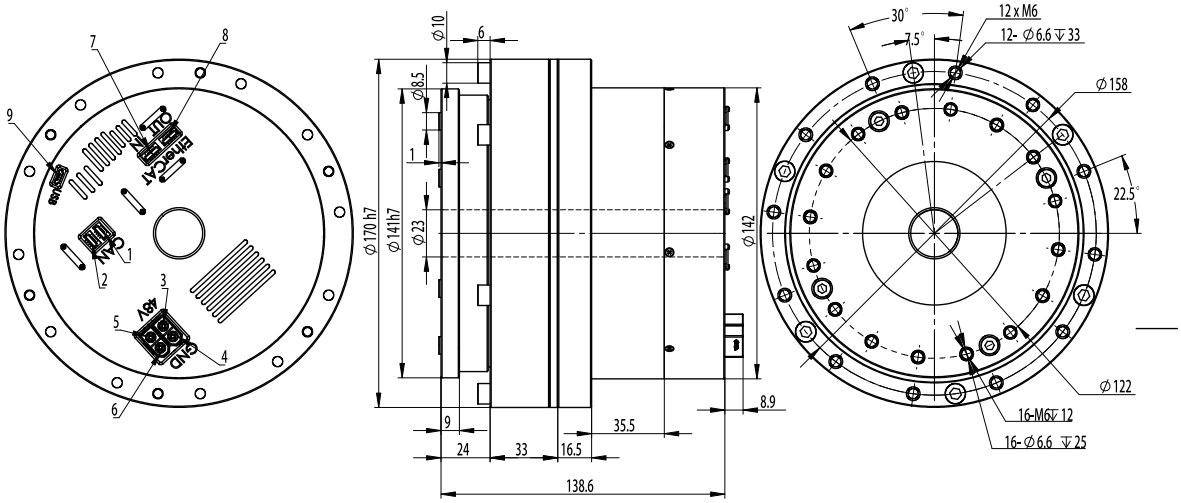
KGU-32CL0EE-A065

Unit:mm



KGU-40CL0EE-A065

Unit:mm



Empower the Future of Embodied Intelligent Robots

Jiangsu Kaiserdrive Intelligent Technology Co., Ltd.
E-mail : sales @ kaiserdrive.com
Add : NO.68 YaoFeng West Road,Wuzhong District , Suzhou , China
Zip code : 215101
Tel : 0512-65563897
Fax : 0512-65563897
http://www.kaiserdrive.com

记录页

Kaiserdrive

Jiangsu Kaiserdrive Intelligent Technology Co., Ltd.
E-mail : sales @ kaiserdrive.com
Add : NO.68 YaoFeng West Road,Wuzhong
District , Suzhou , China
Zip code : 215101
Tel : 0512-65563897
Fax : 0512-65563897
http://www.kaiserdrive.com