ZONCN

AC SERVO SYSTEM

SERVO

Stock abbreviation:
ZhongChen Technical
Stock code:603275

US880/US810/T8000 Series AC servo system

Changes for Better Life

About us

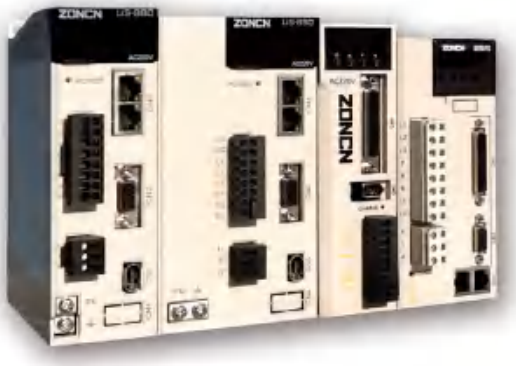
Shanghai Zhongchen Electronic Technology Co., Ltd. was established in 2006 and is located in Maogang Town, Songjiang District, Shanghai. In August 2023, the company was listed on the main board of the Shanghai Stock Exchange (stock code: 603275). We are a high-tech enterprise specializing in the research, development, manufacturing, and sales of servo drives and servo motors. With a factory area of 27,000 square meters, it is one of the largest servo system manufacturers currently. Since the establishment, our company continuously engaged in technological innovation. Now we have a complete range of products, including pulse-type servos, EtherCAT bus servos, M3 bus servos, servo spindles, and other industry-specific machines.

The products are known for comprehensive features, strong functionality, and stable performance,and we are now a leading enterprise both domestically and internationally. Our products are widely used in various fields such as electronic processing equipment, CNC machine tools, embroidery and textile, laser processing, packaging and printing, engraving machines, winding machines, industrial robots, medical equipment, and logistics industry.

CONTENTS

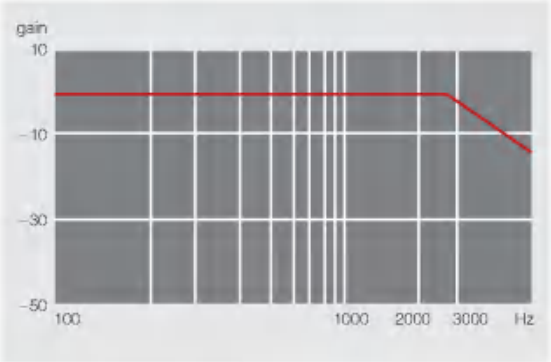
US880/US810 Series efficient and stable servo systems

- Multi-function Control
- Position/Velocity/Torque Control
- Electronic Gear Function
- Speed/Torque Limit Function
- Home Search Function
- Zero-Speed Lock Function
- Smooth Speed Command Ramp Function
- Dynamic Brake and Energy Consumption Brake
- Multiple Fault Protection Functions
- Soft Reset Function
- Support EtherCAT Bus Communication Protocol
- Support Yaskawa M3 Bus Communication Protocol



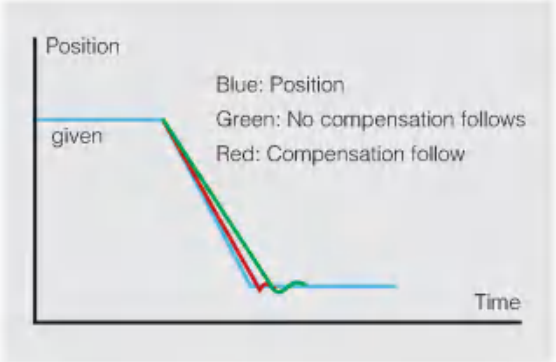
High Responsiveness

Utilizing unique high-frequency adjustment technology, the current loop response frequency of up to 3 kHz and current sampling rate of 64 kHz, the system can quickly track load variations, achieving high dynamic performance.



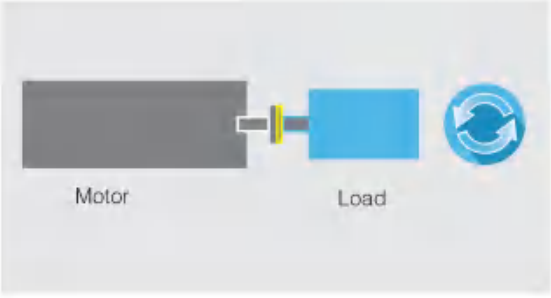
Composite Compensation Function

Using composite compensation, the speed and position loop bandwidth can be effectively improved, enabling fast adjustment of both loops to meet the requirements of rapid mechanical operation.



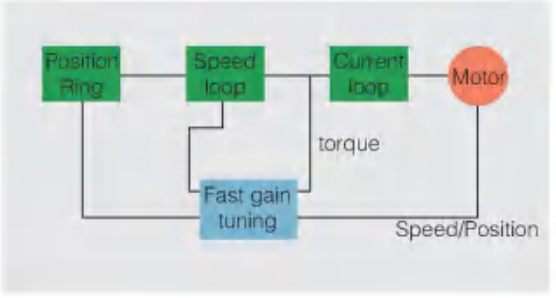
Quick Inertia Identification

Easy operate the driver's keypad or a computer interface, the inertia ratio can be identified within 100 ms.



Fast Gain Tuning

Operate the driver's keypad or a computer interface, the control gain and integral time constant can be tuned within 0.5-2 minutes, meeting the optimization requirements for various rigid and inertia devices.



Multiple Sets of Notch Filters

Setting multiple sets of notch filters,can filter out multiple high-frequency resonance points in the machinery, eliminating resonance.

Mid-Low Frequency Oscillation Suppression

Calculate vibration suppression algorithms for mid and low frequencies, can suppress low-frequency mechanical vibrations, promote stable equipment operation.

Support EtherCAT Bus

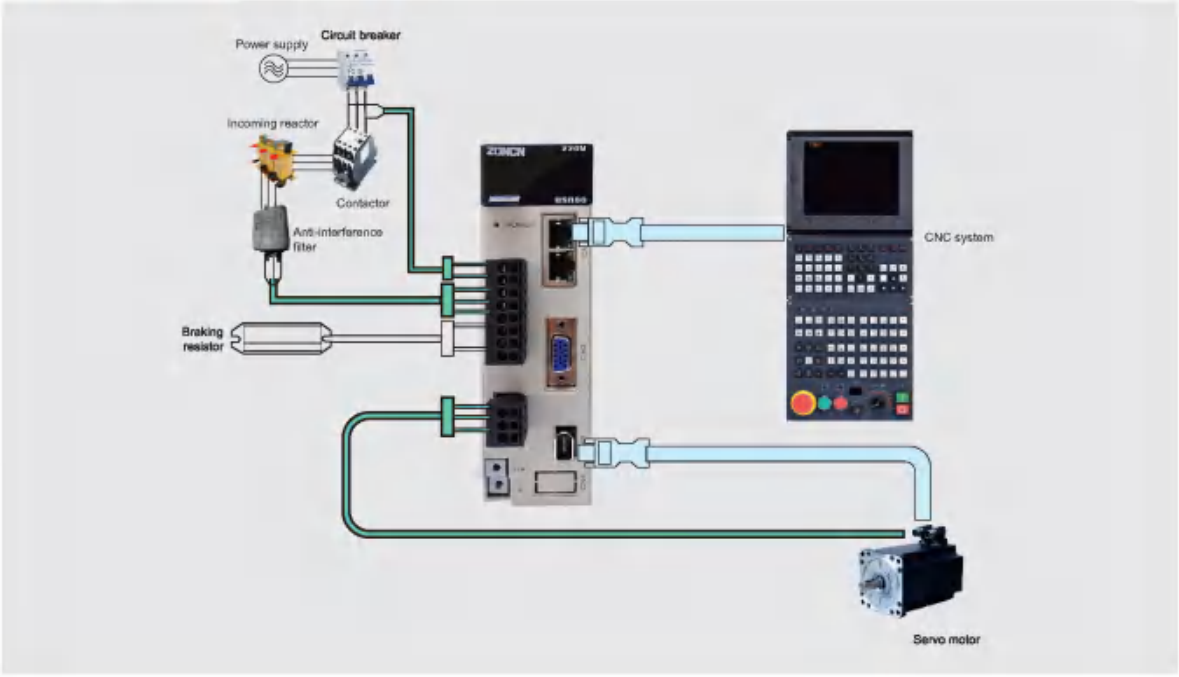
Support EtherCAT Bus、Yaskawa M3 Bus

EtherCAT. Anchuan M3 bus

Typical Applications:

CNC lathes: Excellent product quality, high precision, fast speed, smooth surface, smooth and precise contouring of 3D surfaces, right angles and straight lines, chip cutting functionality.
Precision engraving machines: High resolution, precise positioning, matching of rotational inertia, high overload capacity.
Engraving and milling machines: Good speed stability, high precision, fast response frequency, wide speed range, low-speed high torque.
Engraving machines: Fast speed response, good product smoothness, minimal patterns, smooth curve cutting.
Drilling and tapping machines: High-speed and low-speed machining with high precision, wide adjustment range, adaptable to different product requirements.
Machining centers: Rich parameter settings, combined with debugging frequency division coefficients, inertia friction compensation, gain filter, and other parameters to accomplish various complex machining tasks.

Peripheral device structure



Drive Model Description

US - 880 - 0R4 - C 02
① ② ③ ④ ⑤

①ZONCN Servo AC Servo System	④Product Type: A: Absolute+485 communication; C: Absolute+EtherCAT; D: Absolute+Mechatrolink Ⅲ; G: Incremental(ABZ)
②Product series 880: 880 Series; 810: 810 Series	⑤Voltage: 02: 3PH 220V; 04: 3PH 380V
③Rated power 0R2: 0.2KW; 0R4: 0.4KW; 0R7: 0.75KW; 1R0: 1.0KW; 1R5: 1.5KW; 2R5: 2.5KW; 3R0: 3.0KW; 4R0: 4.0KW; 5R0: 5.0KW; 7R5: 7.5KW; 11: 11KW; 15: 15KW	

Motor Model Description

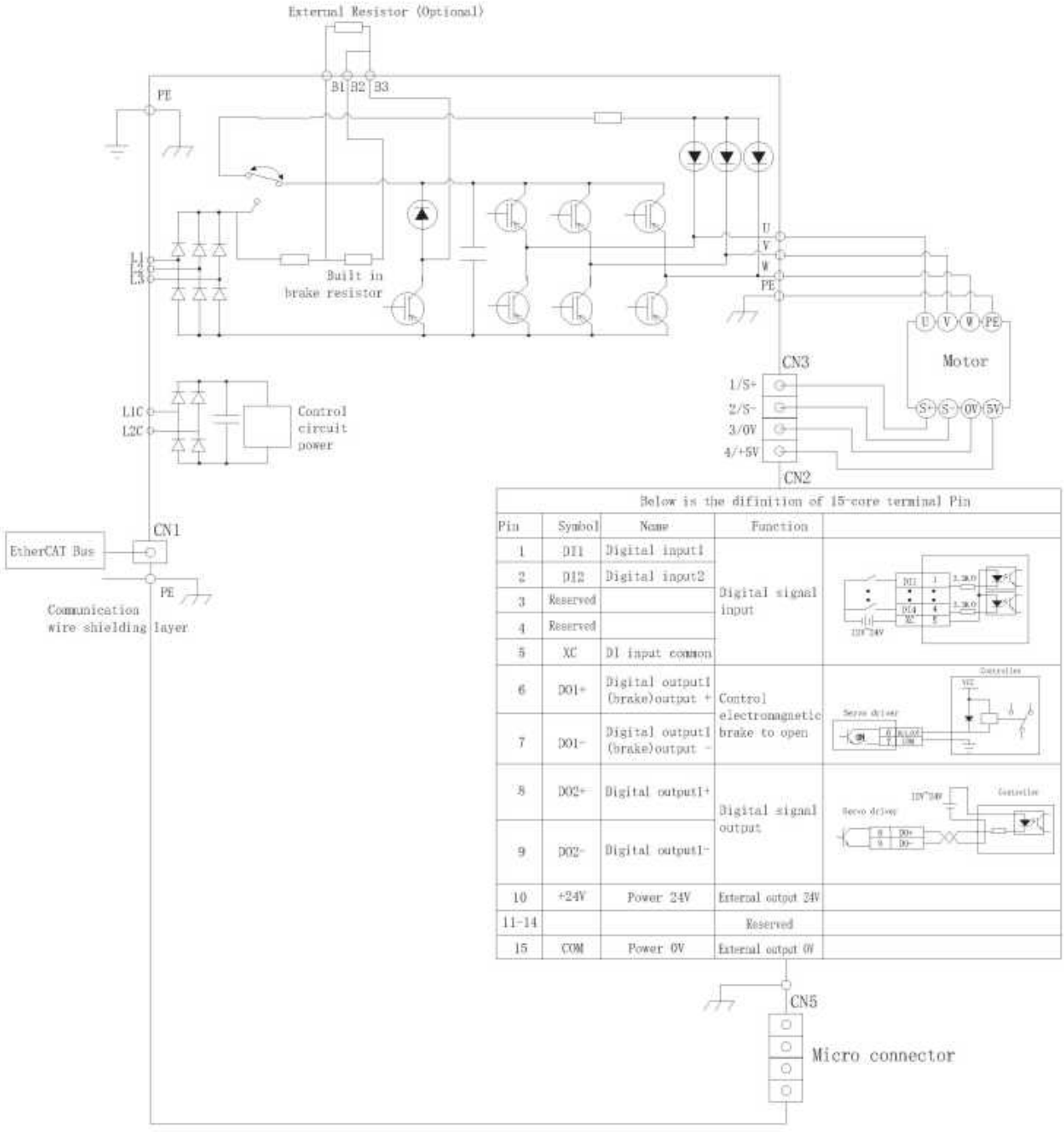
ZCM1 - 060 - K L 013 30 - 5 E P
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①Series ZC:High performance motor; US:Economic motor	⑥Rated torque 003: 0.32N.m; 006: 0.64N.m; 013: 1.27N.m; 024: 2.39N.m; 032: 3.2N.m; 042: 4.2N.m; 054: 5.4N.m; 060: 6N.m; 077: 7.7N.m; 083: 8.3N.m; 115: 11.5N.m; 146: 14.6N.m; 186: 18.6N.m; 284: 28.4N.m 350: 35N.m; 480: 48N.m; 830: 83N.m; 955: 95.5N.m
②Encoder type M1:Photoelectric encoder; M2:Magnetoelectric encoder	⑦Rated speed 15: 1500rpm; 20: 2000rpm; 25: 2500rpm; 30: 3000rpm
③Flange 040: 40; 060: 60; 080: 80; 110: 110; 130: 130; 180: 180; 220: 220	⑧Polar logarithm 4:4 pole; 5:5 pole
④Encoder type N:Absolute 24-bit Multi-turn K:Absolute 23-bit Multi-turn K1:Absolute 23-bit Multi-turn Split Type C:Absolute 17-bit single turn C1:Absolute 17-bit Multi-turn	⑨Brake E:No brake; B:Brake
⑤Phase/Voltage L:3 phase 220V; S: 3 phase 380V	⑩Waterproof/Oil seal Y:With oil seal; W:Without oil seal; P:Waterproof and oil seal

Specification

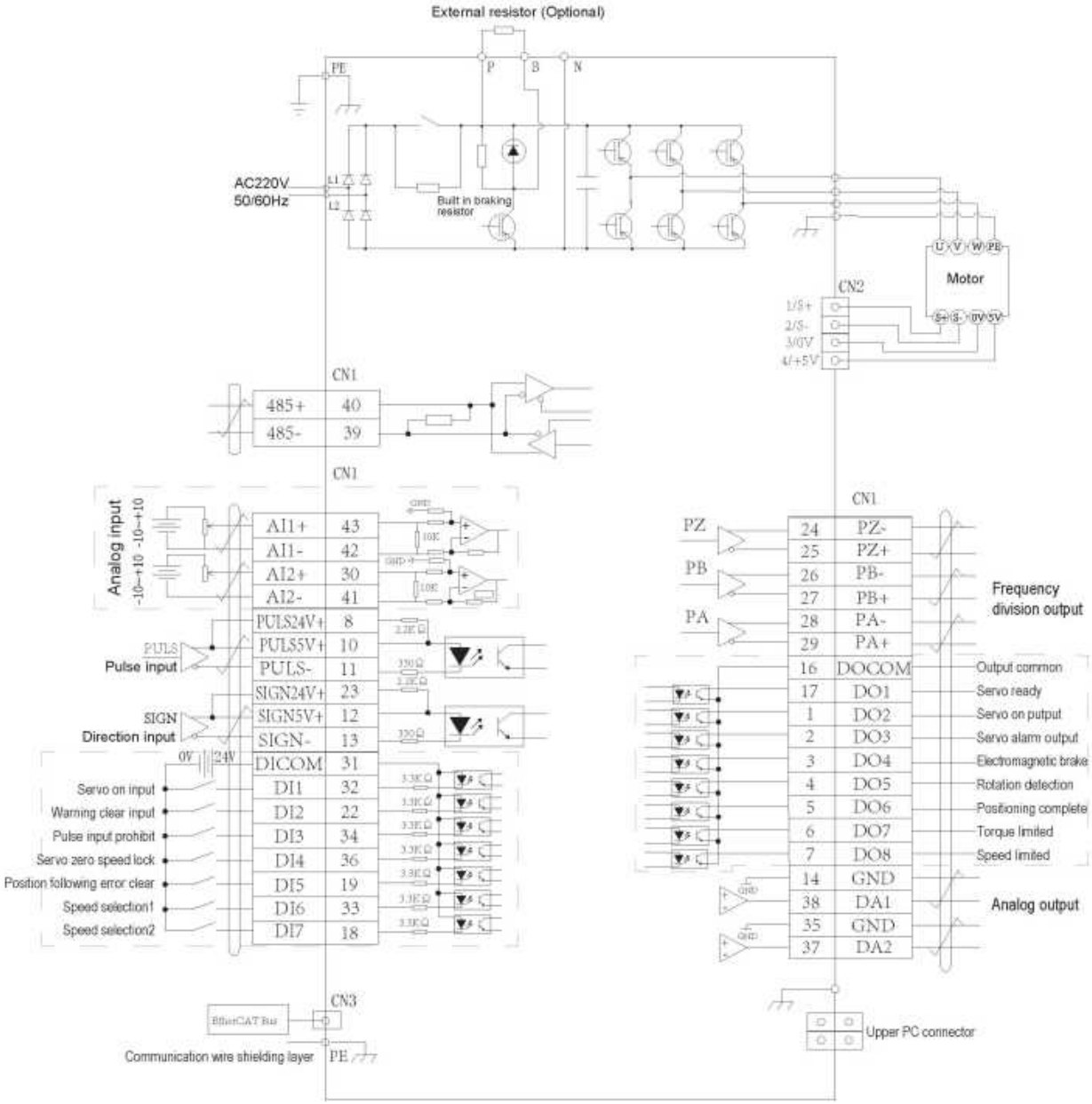
Basic specification	Input power	Control Circuit Power	1PHAC200V ~ AC240V 50/60Hz	
		Main Circuit Power	US880	US810
			3PH220V：0.2KW ~ 5.5KW 3PH380V：1.5KW ~ 11KW	1PH220V：0.2KW ~ 1.0KW 3PH220V：1.5KW ~ 2.0KW 3PH380V：2.0KW ~ 15KW
	Environment Condition	Temperature	Environment temperature 0℃ ~ 55℃ (without condensing) Storage temperature –20℃ ~ 65℃ (Maximum temperature 87℃ 72 hours)	
		Humidity	Both using and storage need to keep below 90%RH(without condensing)	
		Altitude	Lower than 1000m	
		Vibration	Less than 5.88m/S^2， 10–60Hz(Can not continuous use under resonance frequency)	
	Control mode		IGBT PWM type sine wave drive	
	Encoder feedback		24Bit(16777216)Absolute encoder 23Bit(8388608)Absolute encoder 17Bit(131072)Absolute encoder	
	Communication	EtherCAT、M3	Industrial Ethernet bus (COE)	
	Operation panel		1.4 keys 2.LED light 5 bits 3.CPU workable light 4.Vector signal monitor output	
	Brake resistor		Built–in regenerative resistor (Can be external)	
	Dynamic brake		Built in	
Function	Position control	Signal input	US880 series support EtherCAT.M3 US810 series support EtherCAT. Pulse signal input	
		Resistance to vibration	Can be used	
	Speed control	Signal input	US880 series support EtherCAT.M3 US810 series support EtherCAT. External speed input	
		Zero speed dead zone	According to zero speed dead zone input	
		Instantaneous velocity observer	Can be used	
		Speed command filter	Can be used	
	Torque control	Signal input	US880 series support EtherCAT.M3 US810 series support EtherCAT. External torque input	
	Common use	Protection — Hardware error	Over voltage, under voltage, over speed, overload, over heat, over current,encoder fault	
		Protection — Software error	Position deviation too large, command pulse frequency division, EEROM fault	
		Alarm data track	Refer to alarm data list	

US880 Control Circuit Wiring



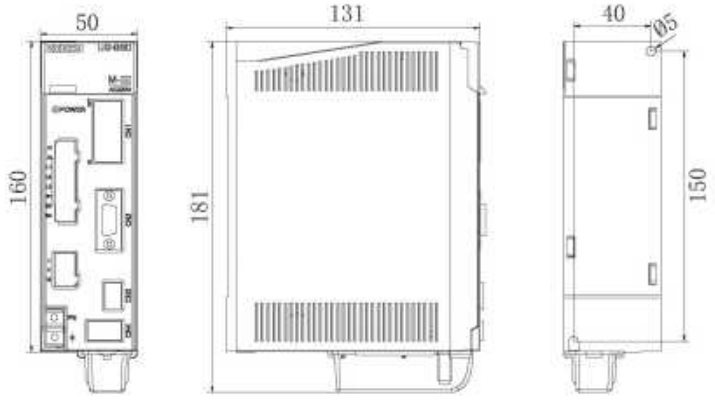
Below is the difinition of 15-core terminal Pin				
Pin	Symbol	Name	Function	
1	DI1	Digital input1	Digital signal input	
2	DI2	Digital input2		
3	Reserved			
4	Reserved			
5	XC	DI input common		
6	DO1+	Digital output1 (brake)output +	Control electromagnetic brake to open	
7	DO1-	Digital output1 (brake)output -		
8	DO2+	Digital output1+	Digital signal output	
9	DO2-	Digital output1-		
10	+24V	Power 24V	External output 24V	
11-14			Reserved	
15	COM	Power 0V	External output 0V	

US810 Control Circuit Wiring

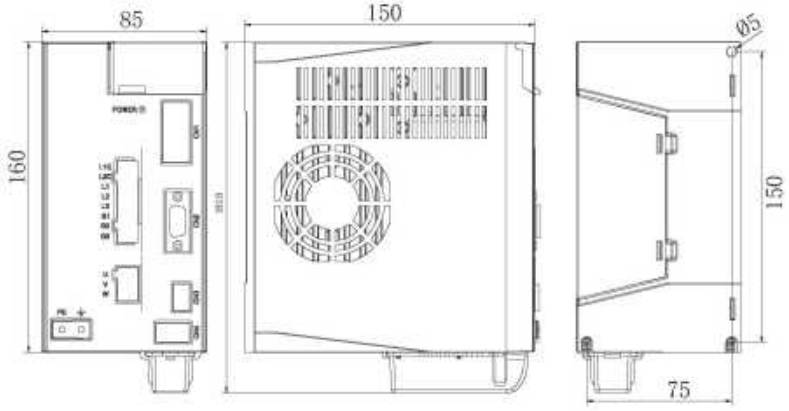


US880 drive installation dimension

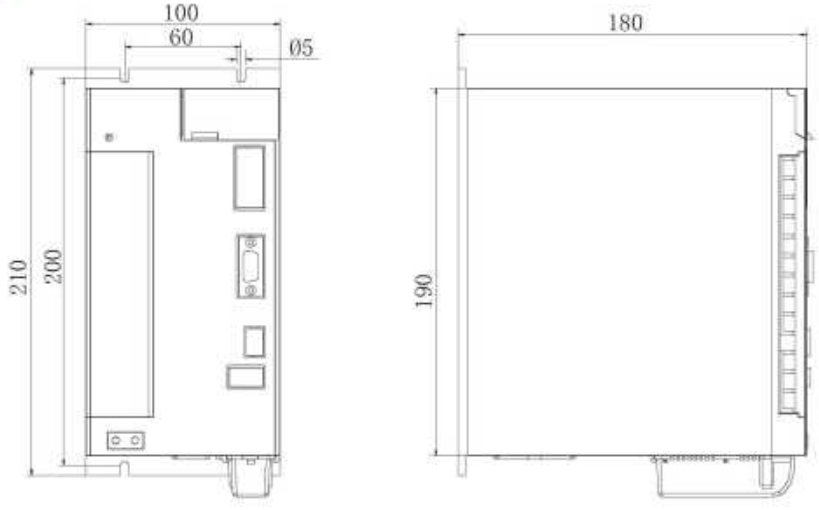
0.2KW ~ 1.0KW



1.5KW ~ 3.0KW

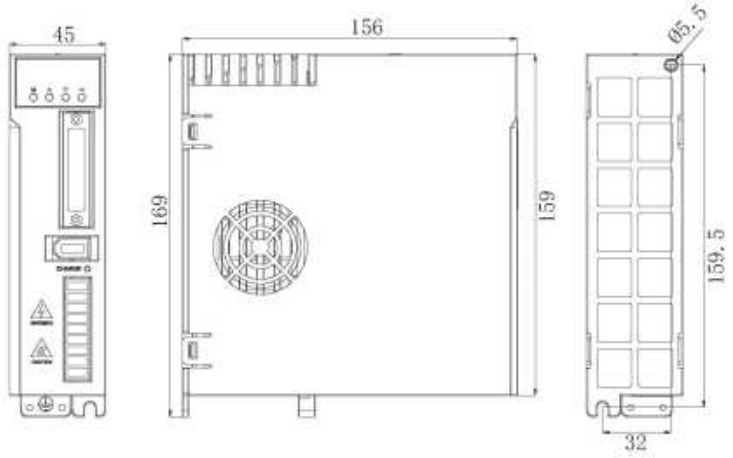


4.0KW ~ 11KW

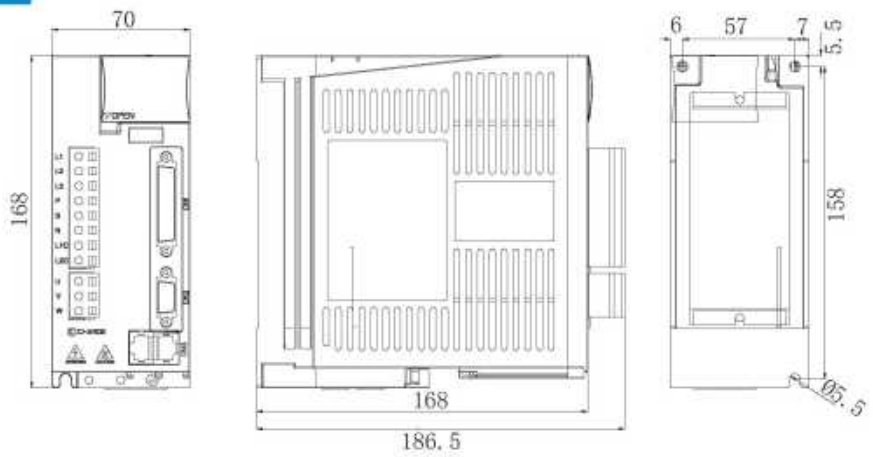


US810 drive installation dimension

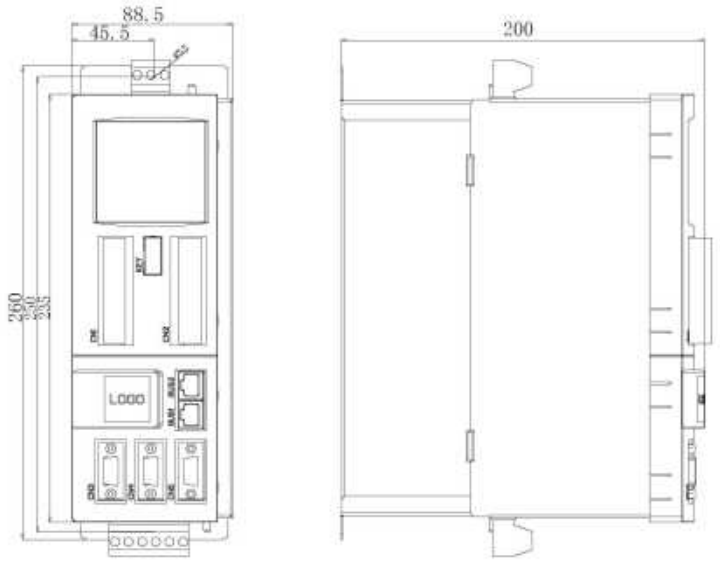
0.2KW – 1.0KW



1.5KW – 3.0KW



4.5KW – 15KW

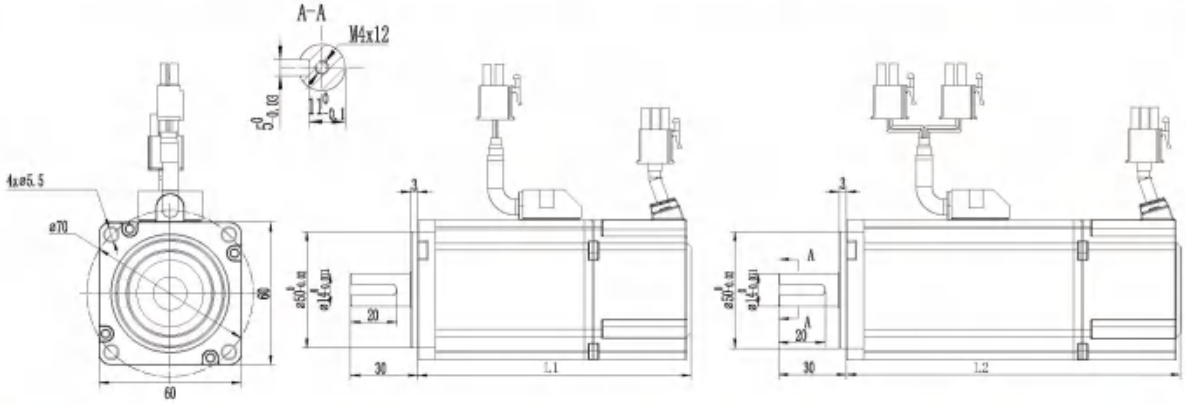


ZCM1 high performance series motor installation dimension

Outline dimension

Unit：mm

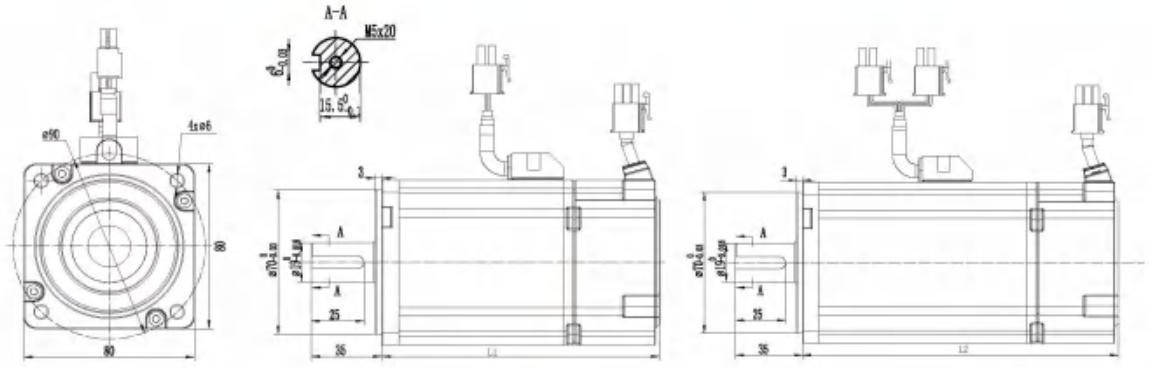
Flange 60（ZCM1）			
Rated voltage(V)	220V		
Rated power(KW)	0.2	0.4	0.6
Rated torque(Nm)	0.64	1.27	1.9
Shaft size(mm)	Φ14	Φ14	Φ14
Without brake length L1(mm)	93	109	128
With brake length L2(mm)	125.5	141.5	160.5



Outline dimension

Unit：mm

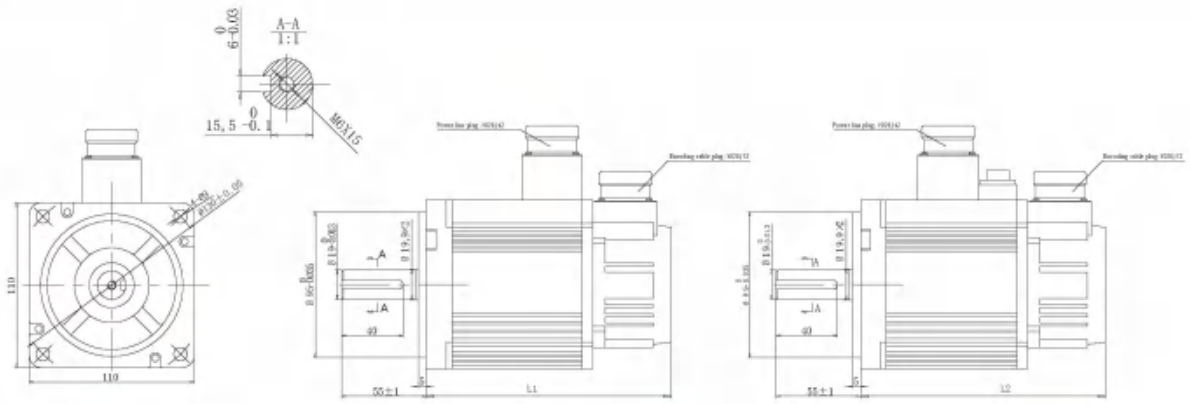
Flange 80（ZCM1）		
Rated voltage(V)	220V	
Rated power(KW)	0.75	1
Rated torque(Nm)	2.39	3.18
Shaft size(mm)	Φ19	Φ19
Without brake length L1(mm)	120	134
With brake length L2(mm)	155	169



Outline dimension

Unit：mm

Flange 110（ZCM1）		
Rated voltage(V)	220V	
Rated power(KW)	1.3	1.7
Rated torque(Nm)	4.2	5.4
Shaft size(mm)	Φ19	Φ19
Without brake length L1(mm)	160	170
With brake length L2(mm)	191	201

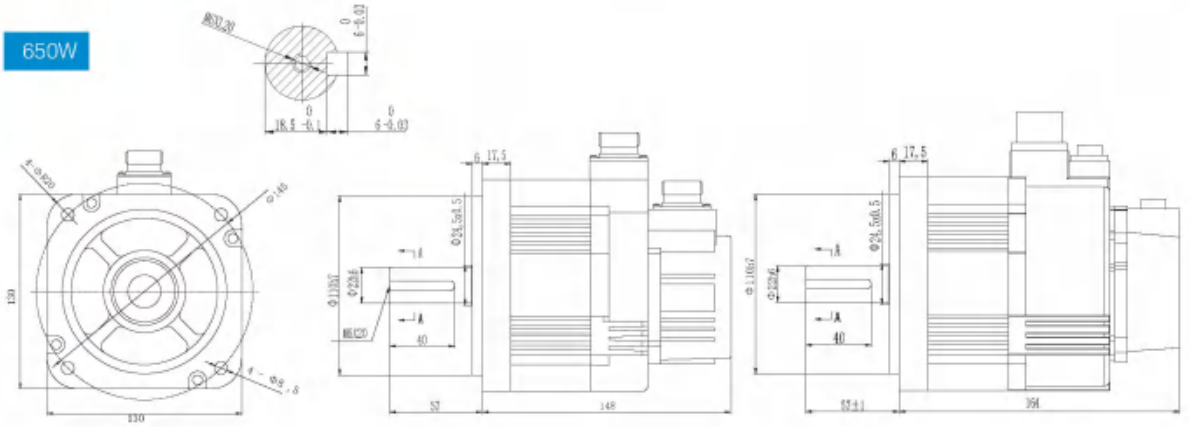


Outline dimension

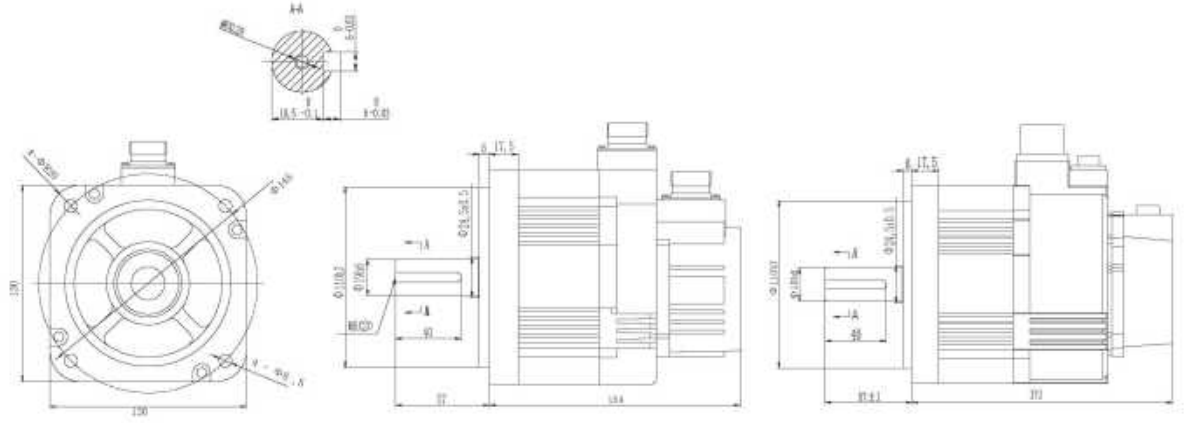
Unit：mm

Flange 130（ZCM1）								
Rated voltage(V)	220V							
Rated power(KW)	0.65	0.85	1.0	1.2	1.3	1.5	1.8	2.3
Rated torque(Nm)	4.2	5.4	6.4	7.5	8.3	9.6	11.5	14.6
Shaft size(mm)	Φ22	Φ19	Φ22	Φ22	Φ22	Φ22	Φ24	Φ22
Without brake length L1(mm)	148	154	161	168	174	182	201	233
With brake length L2(mm)	164	171	178	185	191	199	218	250

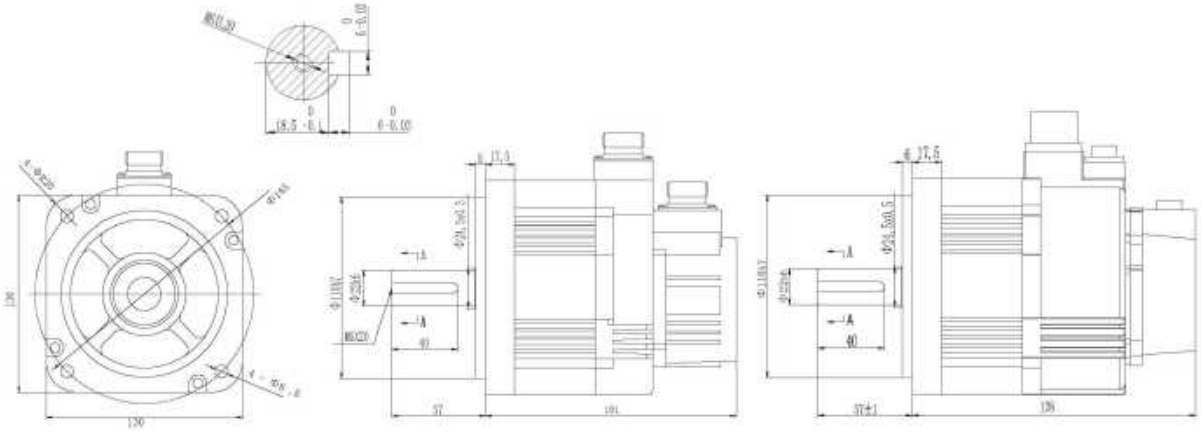
650W



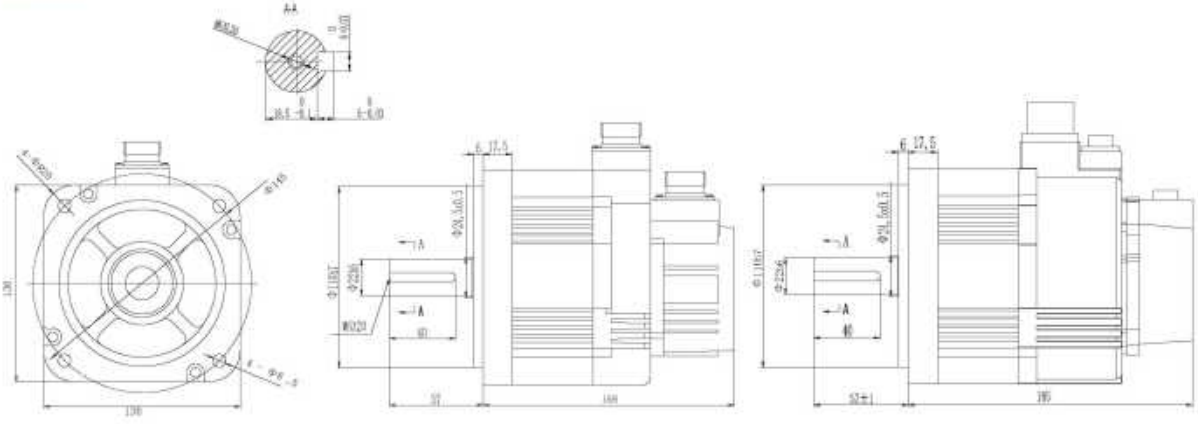
850W



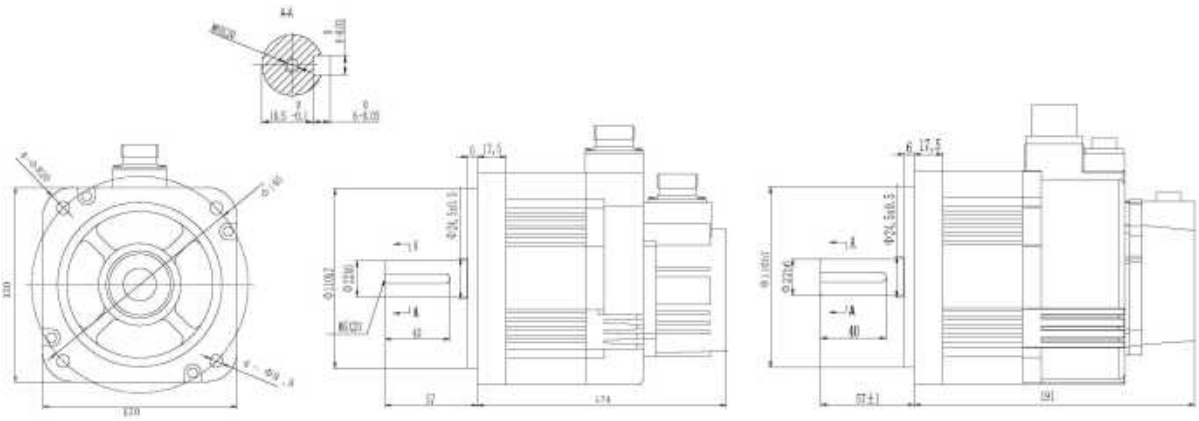
1KW



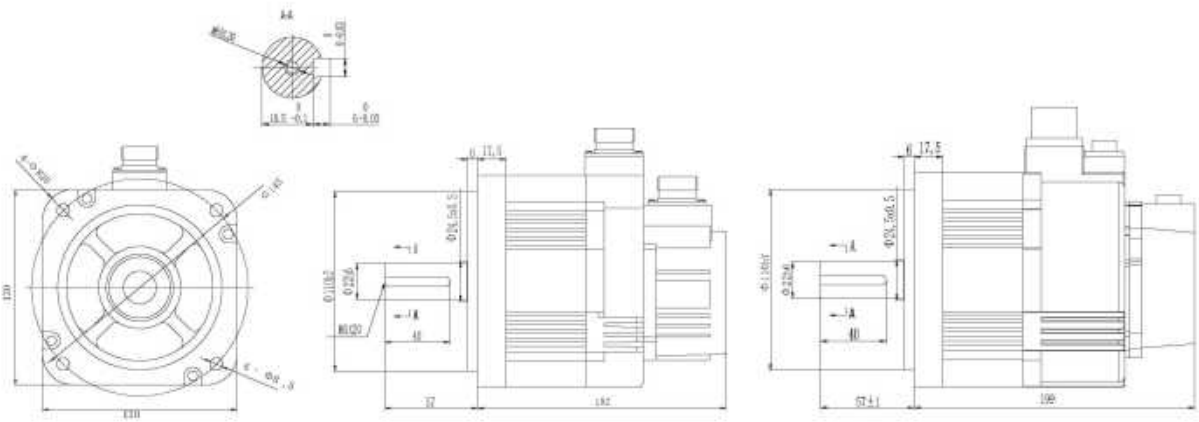
1.2KW



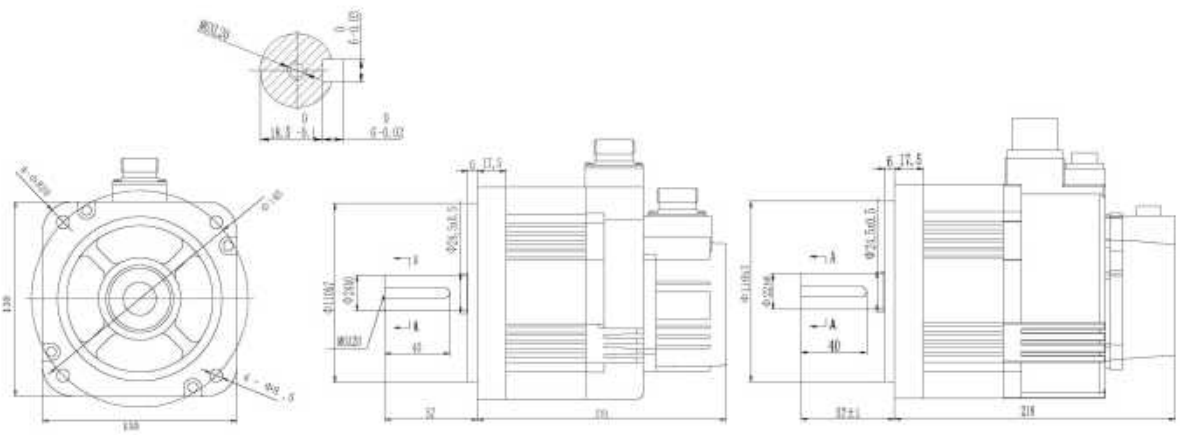
1.3KW



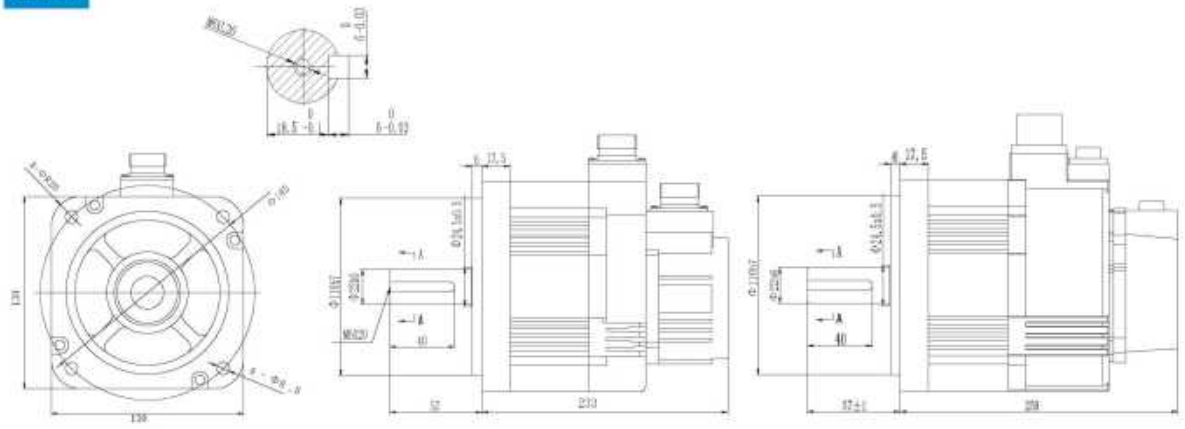
1.5KW



1.8KW



2.3KW

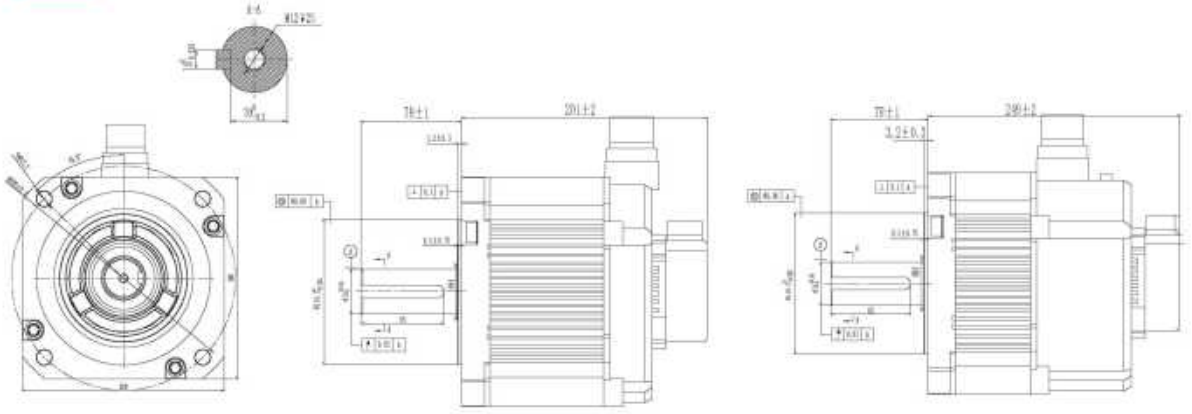


Outline dimension

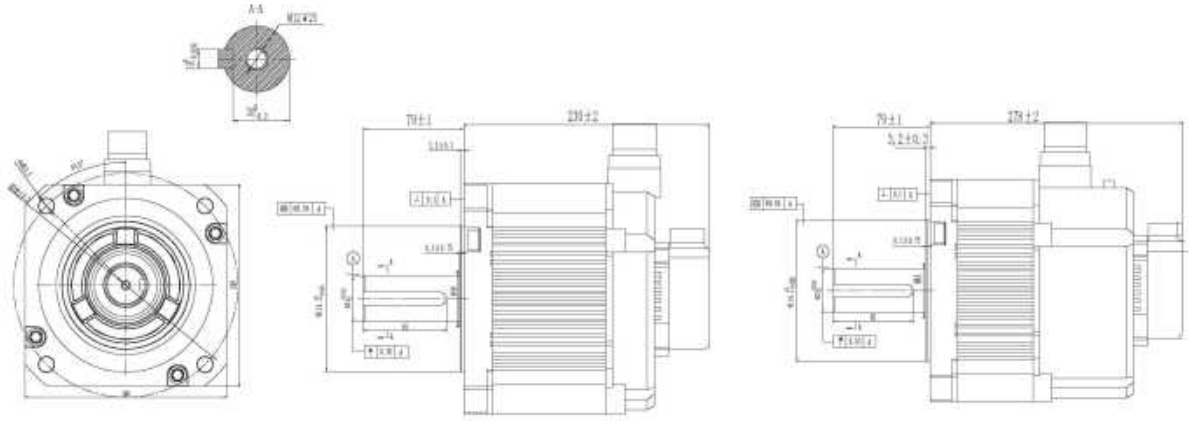
Unit：mm

Flange 180（ZCM1）						
Rated voltage(V)		220V			380V	
Rated power(KW)	2.9	4.4	5.5	7.5	13	15
Rated torque(Nm)	18.6	28.4	35	48	83	95.5
Shaft size(mm)	Φ35	Φ35	Φ42	Φ42	Φ42	Φ55
Without brake length L1(mm)	201	230	257	300	450	363
With brake length L2(mm)	249	278	305	348		

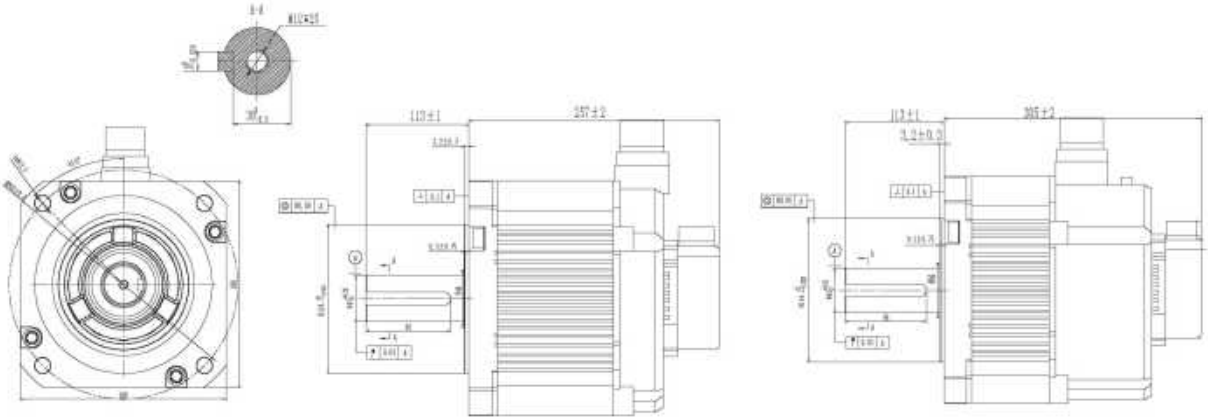
2.9KW



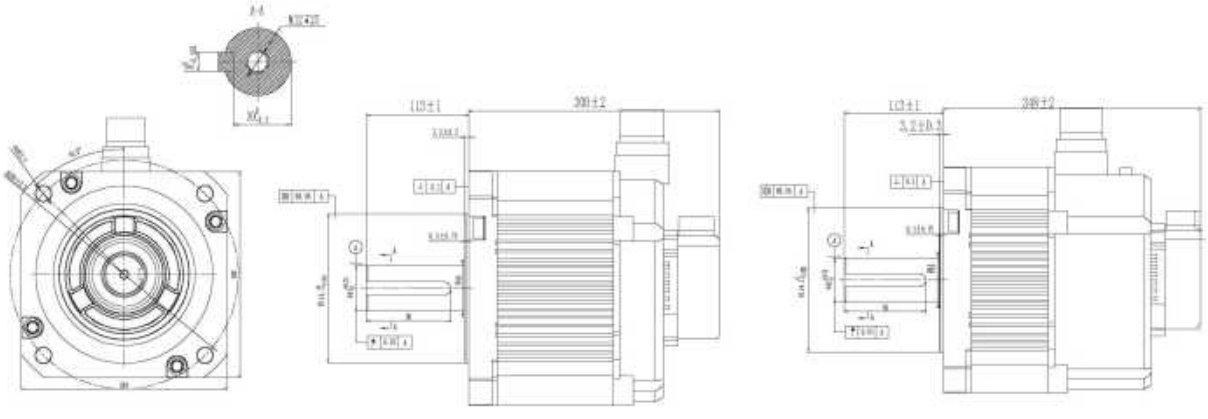
4.4KW



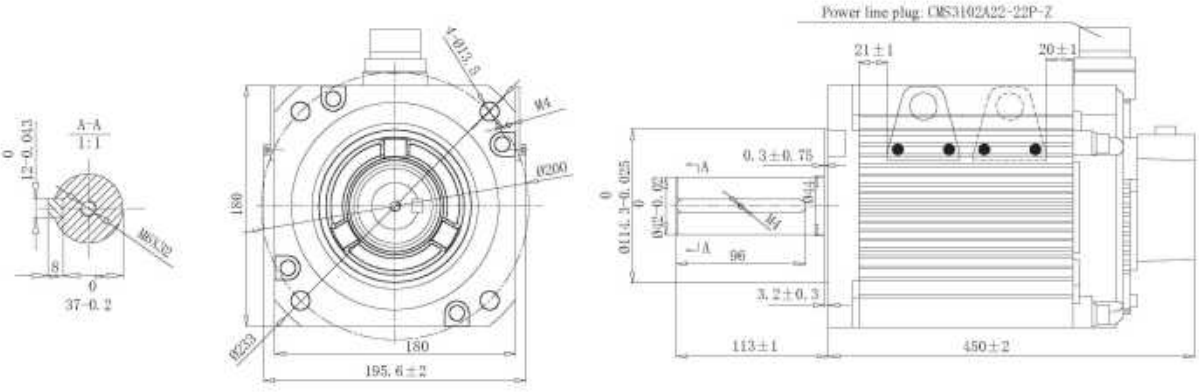
5.5KW



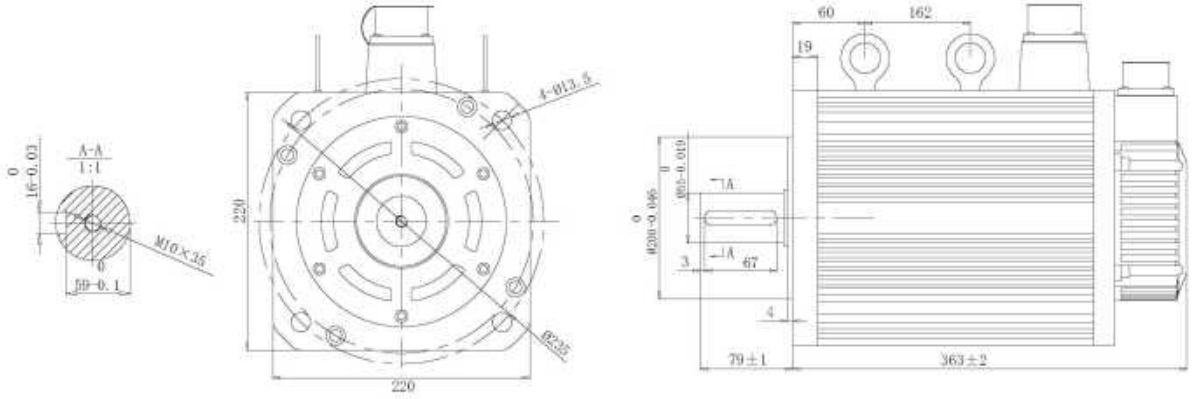
7.5KW



13KW


Power line plug: CMS3102A22-22P-Z
A-A
1:1
M6X32
37-0.2
4-Ø13.5
M4
Ø200
180
Ø250
195.6±2
21±1
20±1
0.3±0.75
M4
96
3.2±0.3
113±1
450±2

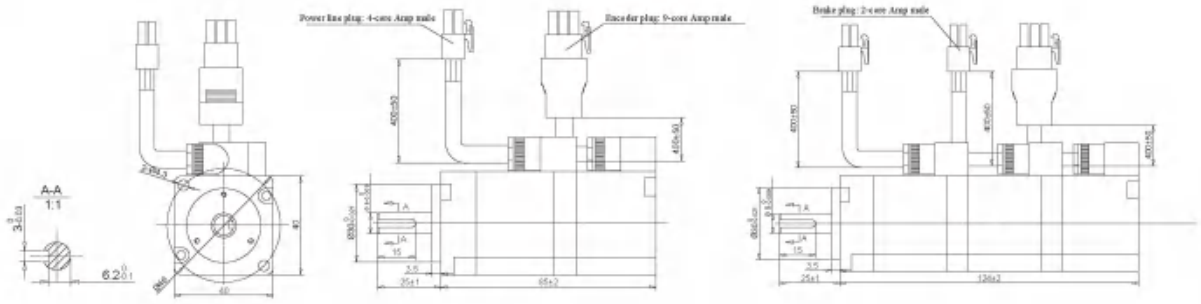
15KW


A-A
1:1
M10×35
59-0.1
4-Ø13.5
220
Ø250
60
162
19
67
4
79±1
363±2

USM1/USM2 Economical motor installation dimension

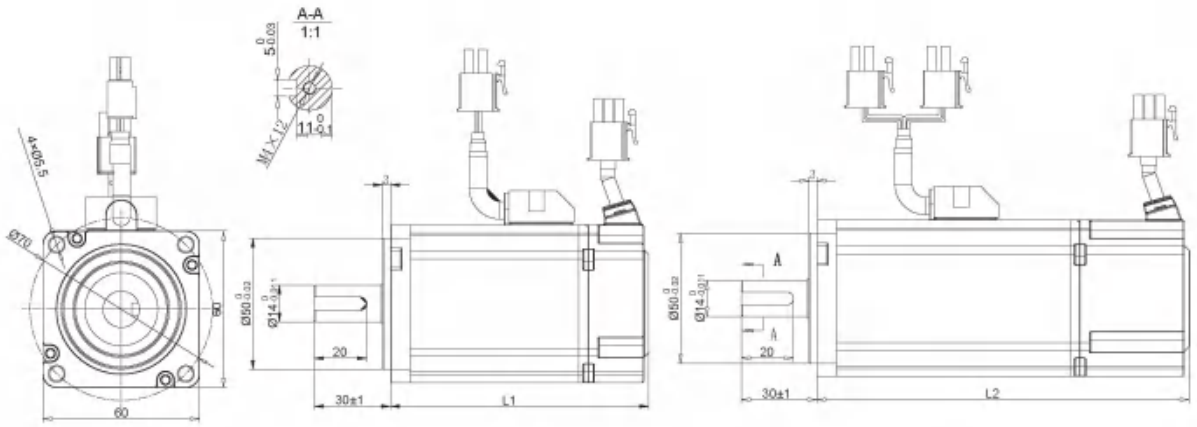
Outline dimension Unit：mm

Flange 40（USM1/USM2）	
Rated voltage(V)	220V
Rated power(KW)	0.1
Rated torque(Nm)	0.32
Shaft size(mm)	Φ8
Without brake length L1(mm)	85
With brake length L2(mm)	124



Outline dimension Unit：mm

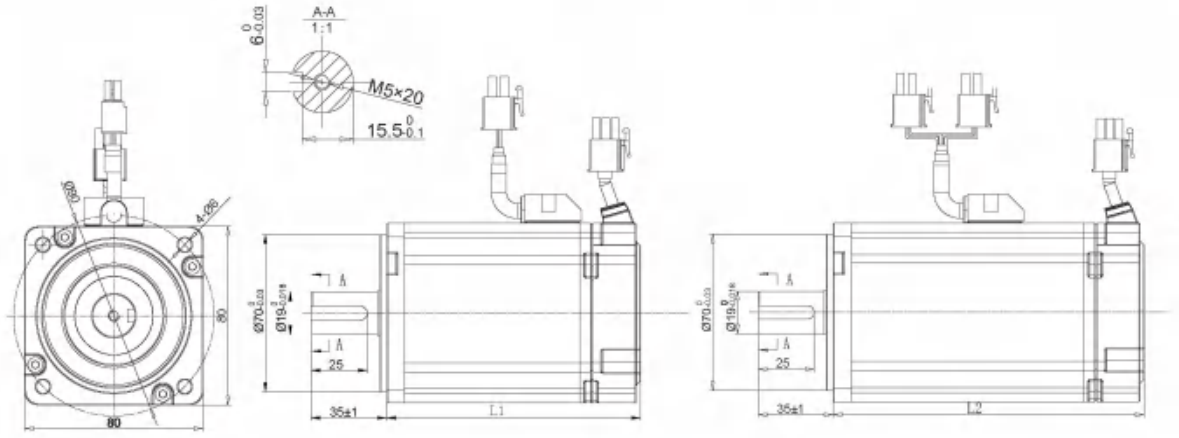
Flange 60（USM1/USM2）		
Rated voltage(V)	220V	
Rated power(KW)	0.2	0.4
Rated torque(Nm)	0.64	1.27
Shaft size(mm)	Φ14	Φ14
Without brake length L1(mm)	74	92
With brake length L2(mm)	106	125



Outline dimension

Unit：mm

Flange 80（USM1/USM2）		
Rated voltage(V)	220V	
Rated power(KW)	0.75	1.0
Rated torque(Nm)	2.39	3.2
Shaft size(mm)	Φ19	Φ19
Without brake length L1(mm)	101	115
With brake length L2(mm)	135	149

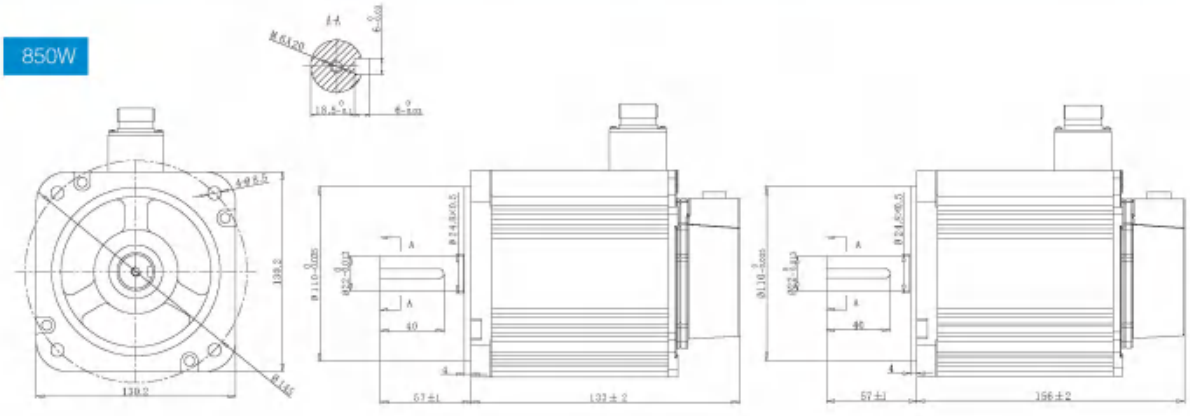


Outline dimension

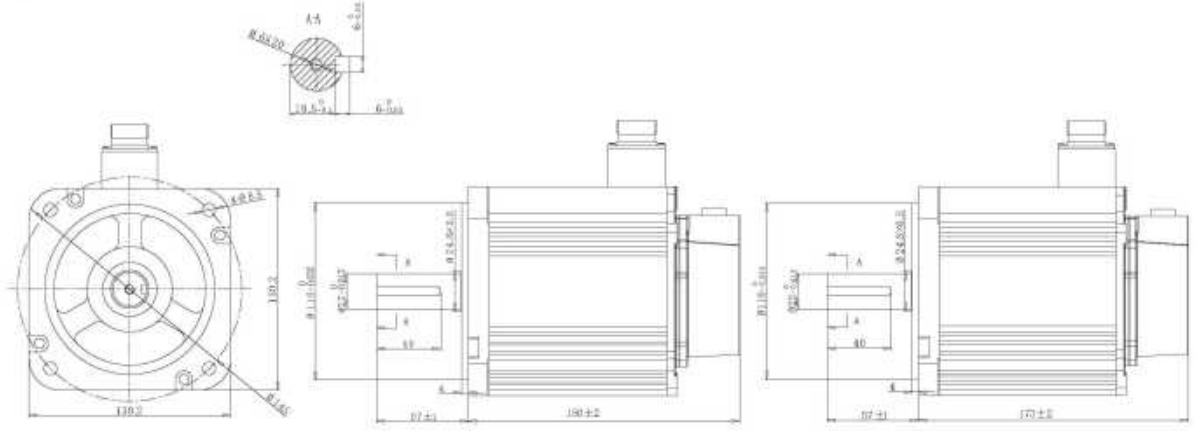
Unit：mm

Flange 130（USM1/USM2）				
Rated voltage(V)		220V	380V	
Rated power(KW)	0.85	1.3	1.8	2.3
Rated torque(Nm)	5.4	8.34	11.5	14.6
Shaft size(mm)	Φ22	Φ22	Φ22	Φ22
Without brake length L1(mm)	133	150	169	188
With brake length L2(mm)	156	173	192	211

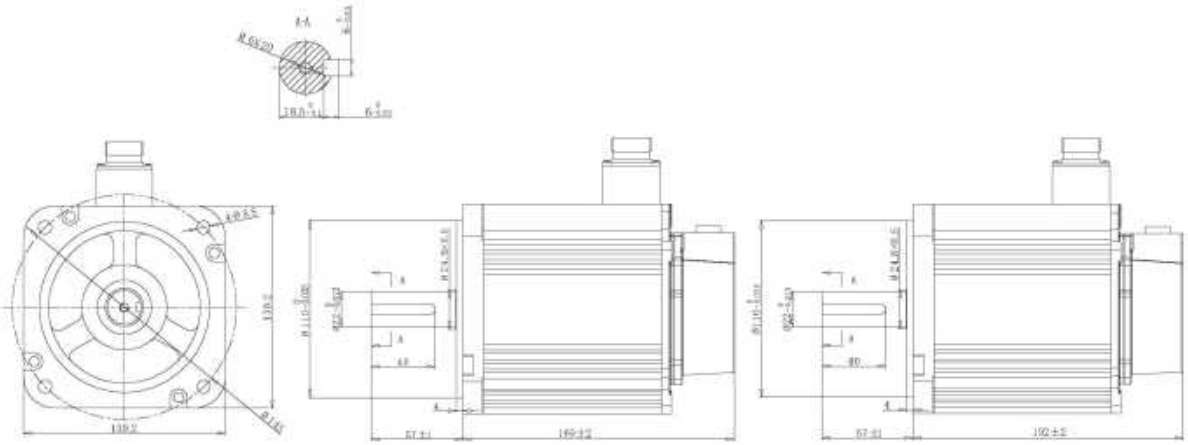
850W



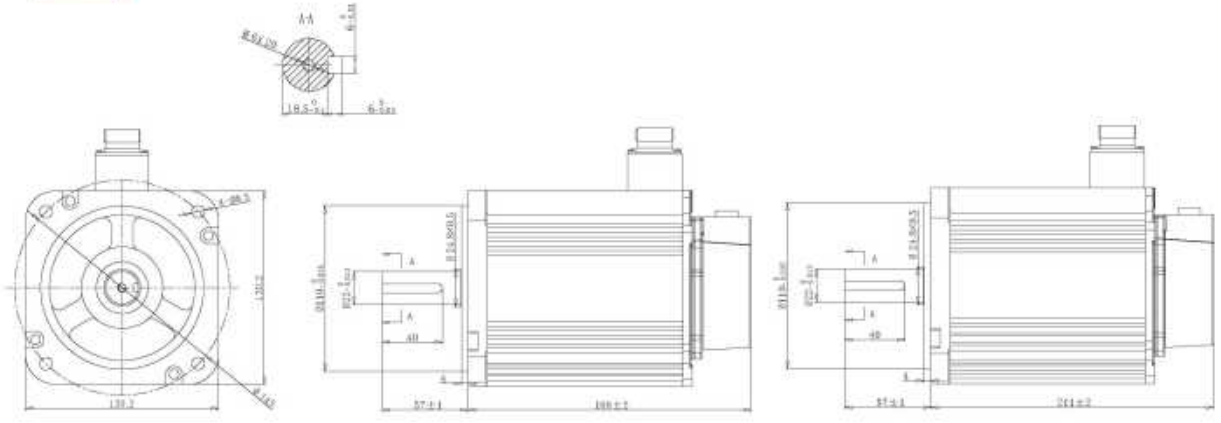
1.3KW



1.8KW



2.3KW



● For more models, please contact the manufacturer

ZCM1 Series motor specification

Standard specification 5 pole

Motor Model	ZCM1-060□L 00630-5□P	ZCM1-060□L 01330-5□P	ZCM1-080□L 02430-5□P	ZCM1-080□L 03230-5□P	ZCM1-110□L 04230-5□P
Match drive model	US880-0R2□0□	US880-0R4□0□	US880-0R7□0□	US880-1R0□0□	US880-1R5□0□
Rated power (KW)	0.2	0.4	0.75	1	1.3
Rated voltage (V)	220	220	220	220	220
Rated current (A)	1.9	2.3	4.2	6.5	4.5
Flange (mm)	60	60	80	80	110
Rated torque (N.m)	0.64	1.27	2.39	3.18	4.2
Maximum torque (N.m)	2.23	4.46	8.36	11.1	12.6
Rated speed (rpm)	3000	3000	3000	3000	3000
Maximum speed (rpm)	6000	6000	6000	4500	3000
Rotational inertia ($kg.m^2$)	0.26	0.55	1.71	2.17	7.78
Ventilation protection	Fully enclosed, self-cooling				
Overheat protection	Detected by servo driver				
Installation	Flange install				
Encoder	Absolute encoder(K:23bits(8388608)Encoder; N:24bits(16777216)Encoder)				
Installation location	Indoor(Avoid directly sunlight)				
Altitude	Lower than 1000m				
Installation Environment	Avoid corrosive gas,combustible gas,oil smoke, dust				
Temperature	-20℃~+50℃				
Humidity	Less than 90%RH(without condensing)				

Motor Model	ZCM1-110□L 06430-5□P	ZCM1-130□L 04215-5□P	ZCM1-130□L 05415-5□P	ZCM1-130□L 06415-5□P	ZCM1-130□L 07515-5□P
Match drive model	US880-1R5□0□	US880-1R5□0□	US880-1R5□0□	US880-1R5□0□	US880-1R5□0□
Rated power (KW)	1.7	0.65	0.85	1.0	1.2
Rated voltage (V)	220	220	220	220	220
Rated current (A)	6.5	5.0	6.5	8	9
Flange (mm)	110	130	130	130	130
Rated torque (N.m)	6.4	4.2	5.4	6.4	7.5
Maximum torque (N.m)	18	12.6	16.2	19.2	22.5
Rated speed (rpm)	3000	1500	1500	1500	1500
Maximum speed (rpm)	3000	3000	3000	3000	3000
Rotational inertia ($kg.m^2$)	10.6	11.63	13.88	16.04	18.57

Motor Model	ZCM1-110□L 06430-5□P	ZCM1-130□L 04215-5□P	ZCM1-130□L 05415-5□P	ZCM1-130□L 06415-5□P	ZCM1-130□L 07515-5□P
Match drive model	US880-1R5□0□	US880-1R5□0□	US880-1R5□0□	US880-1R5□0□	US880-1R5□0□
Ventilation protection	Fully enclosed, self-cooling				
Overheat protection	Detected by servo driver				
Installation	Flange install				
Encoder	Absolute Encoder(K:23 bits(8388608)Encoder; N:24 bits(16777216)Encoder)				
Installation location	Indoor(Avoid directly sunlight)				
Altitude	Lower than 1000m				
Installation Environment	Avoid corrosive gas,combustible gas,oil smoke, dust				
Temperature	-20℃~+50℃				
Humidity	Less than 90%RH(without condensing)				

Motor Model	ZCM1-130□L 08315-5□P	ZCM1-130□L 09615-5□P	ZCM1-130□L 11515-5□P	ZCM1-130□L 14615-5□P	ZCM1-180□□ 18615-5□P	
Match drive model	US880-1R5□0□	US880-3R0□0□	US880-3R0□0□	US880-3R0□0□	US880-4R0□0□	
Rated power (KW)	1.3	1.5	1.8	2.3	2.9	
Rated voltage (V)	220	220	220	220	220	380
Rated current (A)	9.5	10	14	16	18	11.8
Flange (mm)	130	130	130	130	180	
Rated torque (N.m)	8.4	9.6	11.5	14.6	18.6	
Maximum torque (N.m)	25.2	28.8	34.5	43.8	55.8	
Rated speed (rpm)	1500	1500	1500	1500	1500	
Maximum speed (rpm)	3000	3000	3000	3000	3000	
Rotational inertia ($kg.m^2$)	20.59	23.69	30.15	40.7	56.8	
Ventilation protection	Fully enclosed, self-cooling					
Overheat protection	Detected by servo driver					
Installation	Flange install					
Encoder	Absolute Encoder(K:23 bits(8388608)Encoder; N:24 bits(16777216)Encoder)					
Installation location	Indoor(Avoid directly sunlight)					
Altitude	Lower than 1000m					
Installation Environment	Avoid corrosive gas,combustible gas,oil smoke, dust					
Temperature	-20℃~+50℃					
Humidity	Less than 90%RH(without condensing)					

Motor Model	ZCM1-180□□ 28415-5□P		ZCM1-180□□ 35015-5□P		ZCM1-180□□ 48015-5□P		ZCM1-180□□ 83015-5□P	ZCM1-220□□ 95015-5□P
Match drive model	US880-5R0□0□		US880-5R5□0□		US880-11□0□		US880-11□0□	US810-15□0□
Rated power (KW)	4.4		5.5		7.5		13	15
Rated voltage (V)	220	380	220	380	220	380	380	380
Rated current (A)	29	15.7	34.5	20.6	48.5	25.7	26.5	40
Flange (mm)	180		180		180		180	220
Rated torque (N.m)	28.4		35		48		83	95.5
Maximum torque (N.m)	85		87.5		115		208	240
Rated speed (rpm)	1500		1500		1500		1500	1500
Maximum speed (rpm)	3000		3000		3000		2000	2000
Rotational inertia ($kg.m^2$)	78.2		109		130		272	248
Ventilation protection	Fully enclosed, self-cooling							
Overheat protection	Detected by servo driver							
Installation	Flange install							
Encoder	Absolute Encoder(K:23 bits(8388608)Encoder; N:24 bits(16777216)Encoder)							
Installation location	Indoor(Avoid directly sunlight)							
Altitude	Lower than 1000m							
Installation Environment	Avoid corrosive gas,combustible gas,oil smoke, dust							
Temperature	-20℃~+50℃							
Humidity	Less than 90%RH(without condensing)							

USM1/USM2 Series motor specification

Standard specification 5 pole

Motor Model	USM□-040□L 00330-4□P	USM□-060□L 00630-5□P	USM□-060□L 01330-5□P	USM□-080□L 02430-5□P	USM□-080□L 03230-5□P
Match drive model	US810-0R2□0□	US810-0R2□0□	US810-0R4□0□	US810-0R7□0□	US810-1R0□0□
Rated power (KW)	0.1	0.2	0.4	0.75	1.0
Rated voltage (V)	220	220	220	220	220
Rated current (A)	1.8	1.5	2.5	4.8	6.8
Flange (mm)	40	60	60	80	80
Rated torque (N.m)	0.3	0.64	1.27	2.39	3.2
Maximum torque (N.m)	1.1	1.91	3.81	8.36	9.6
Rated speed (rpm)	3000	3000	3000	3000	3000
Maximum speed (rpm)	5000	6000	6000	6000	6000
Rotational inertia ($kg.m^2$)	0.66	0.26	0.49	1.51	2.01
Ventilation protection	Fully enclosed, self-cooling				
Overheat protection	Detected by servo driver				
Installation	Flange install				
Encoder	Incremental Encoder F:2500 line; Absolute Encoder C:17 bits(131072); Absolute Encoder K:23 bits(8388608)				
Installation location	Indoor(Avoid directly sunlight)				
Altitude	Lower than 1000m				
Installation Environment	Avoid corrosive gas,combustible gas,oil smoke, dust				
Temperature	-20℃~+50℃				
Humidity	Less than 90%RH(without condensing)				

Motor Model	USM□-130□L 05415-5□P	USM□-130□□ 08315-5□P		USM□-130□□ 11515-5□P		USM□-130□□ 14615-5□P	
Match drive model	US810-1R5□0□	US810-2R0□0□		US810-3R0□0□		US810-3R0□0□	
Rated power (KW)	0.85	1.3		1.8		2.3	
Rated voltage (V)	220	220	380	220	380	220	380
Rated current (A)	5.6	9.5	5.2	14	6.8	16	9
Flange (mm)	130	130		130		130	
Rated torque (N.m)	5.4	8.4		11.5		14.5	
Maximum torque (N.m)	16.2	25.2		34.5		43.8	
Rated speed (rpm)	1500	1500		1500		1500	
Maximum speed (rpm)	3000	3000		3000		3000	
Rotational inertia ($kg.m^2$)	11.6	20.59		30.15		40.7	
Ventilation protection	Fully enclosed, self-cooling						
Overheat protection	Detected by servo driver						
Installation	Flange install						
Encoder	Incremental Encoder F:2500 line; Absolute Encoder C:17 bits(131072); Absolute Encoder K:23 bits(8388608)						
Installation location	Indoor(Avoid directly sunlight)						
Altitude	Lower than 1000m						
Installation Environment	Avoid corrosive gas,combustible gas,oil smoke, dust						
Temperature	-20℃~+50℃						
Humidity	Less than 90%RH(without condensing)						

Servo motor wiring definition

ZCM1-60/80 flange motor Sanzhu 9-core waterproof encoder connector (green) (absolute value communication type)				USM1/USM2-60/80 flange motor Anpu Plastic encoder connector (absolute value communication type)				130/180 flange motor aviation 10-core connector (absolute value communication type)			
Wire mark: ZCM880-X-BM-□M				Wire mark: US810-X-BM-□M				Wire mark: ZCM880-Z/D-BM-□M US810-Z/D-BM-□M			
Motor side		Servo side		Motor side		Servo side		Motor side		Servo side	
Pin	Mark	Pin	Color	Pin	Mark	Pin	Color	Pin	Mark	Pin	Color
1	SD+	1	Red	1	PE	Shield layer	Shield wire	10	PE	Shield layer	Shield wire
2	SD-	2	Red White	2	Vcc	4	Blue Black	2	Vcc	4	Blue Black
3	VB+	Battery+	Black White	3	GND	3	Blue	3	GND	3	Blue
4	-	-		4	VB+	Battery+	Black White	4	VB+	Battery+	Black White
5	-	-		5	VB-	Battery-	Black	5	VB-	Battery-	Black
6	Vcc	4	Blue Black	6	SD+	1	Red	6	SD+	1	Red
7	GND	3	Blue	7	SD-	2	Red White	7	SD-	2	Red White
8	VB-	Battery-	Black	8				8			
9	PE	Shield layer	Shield wire	9				9			

ZCM1-60/80 flange motor Sanzhu 6-core waterproof power wire connector (orange)			USM1/USM2-60/80 flange motor Anpu Plastic power wire connector			130/180 flange motor aviation 4-core connector		
Wire mark: ZCM880-X-DL-□M(No brake wire) ZCM880-X-DL-SC-□M(with brake wire)			Wire mark: US810-X-DL-□M(No brake wire) US810-X-DL-SC-□M(With brake wire)			Wire mark: ZCM880-Z-DL-□M(ZC motor) ZCM880-D-DL- □M(ZC motor) US810-Z-DL-□M(US motor) US810-D-DL-□M(US motor) Brake wire ZCM880-Z/D-SC-□M(ZC motor) Brake wireUS810-Z/D-SC-□M(US motor)		
Pin	Signal	Color	Pin	Signal	Color	Pin	Signal	Color
1	U		1	U		A	U	
2	V		2	V		B	V	
3	W		3	W		C	W	
4	PE		4	PE		D	PE	
Electromagnetic brake			Electromagnetic brake			Electromagnetic brake		
5	24V		1	24V		1	24V	
6	0V		2	0V		2	0V	

Note: The gray wire of the Tamagawa Encoder must be connected in parallel with the shield wire!

T8000 Series Spindle AC servo system

T8000 series spindle servo is a high-performance vector servo product with a rich bus interface, capable of controlling IM servo motors, SPM servo motors, and IPM servo motors.

Product feature and application

- Variety of control interfaces: EtherCAT、Mechatrolink
- Accurate positioning, fast response, easy installation, and convenient wiring
- Speed frequency response of 1kHz
- Compatible with various encoder feedback signals.
- Multiple fault protection functions
- Widely used in various industries (lathe, milling machine, drilling machine, machining center, spinning machine, hydraulic press, injection molding machine, press machine, feeder, etc.)

Drive model description

T 8 400D - 3R7 - C

① ② ③ ④ ⑤

①Servo series Spindle AC servo system	④Rated power 3R7：3.7KW；　5R5：5.5KW； 7R5：7.5KW；　11：11KW
②Product series 8:8000 Series high performance vector control	⑤Product type A：Pulse/Analog； C：EtherCAT； D：Mechatrolink Ⅱ
③Voltage 400D：3PH AC380V；　200D：1PH AC220	

Motor model description

ZZDJ-380-180-15-80-5R5-E1-B3-28G- F3-C

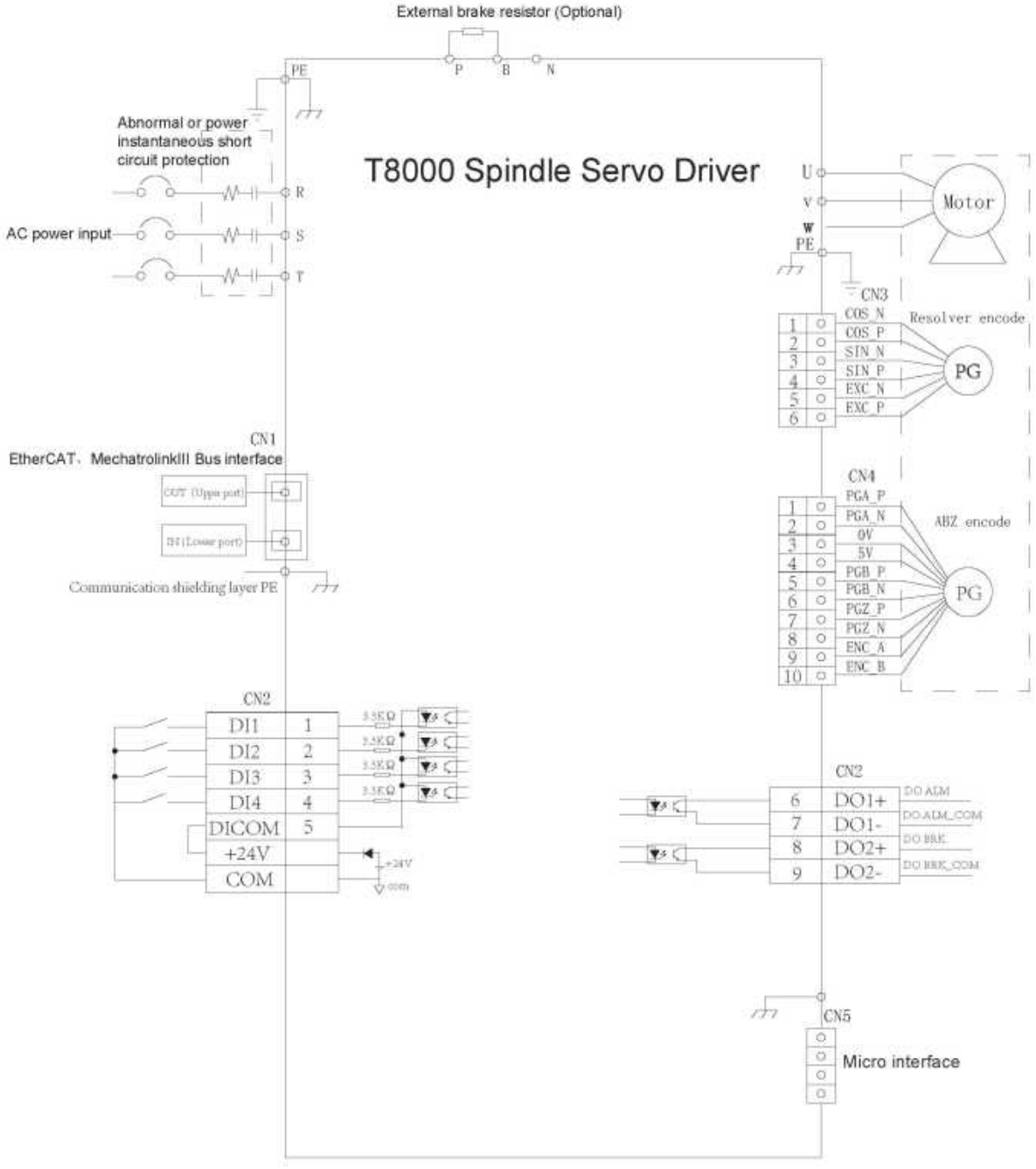
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

①Series code Zoncn AC induction servo spindle motor	⑦Encoder type E1: Incremental 1024 line； E2:Incremental 2500line； R1:　Resolver 1024 line； R2:Resolver 2500line； Z1:Sine cosine 1024 line
②Basic voltage 380：3phase 380V；　220：3phase 220V； 280：3phase 280V	⑧Installation B3:Horizontal type ；B5:Vertical type； B35:Horizontal and vertical type； G:National standard flange installation （≤30KW）
③Motor base number 145：145base；　165：165base； 180：180base；　198：198base； 200：200base；　265：265base； 290：290base	⑨Shaft extension type Number represents: shaft extension diameter J:With key G:Optical shaft
④Basic rotate speed 10：1000r/min；　15：1500r/min； 30：3000r/min；　60：6000r/min	⑩Fan voltage F2:1phase 220V Fan F3:3phase 380V Fan
⑤Maximum Speed 60：6000r/min；　80：8000r/min； 120：12000r/min；　180：18000r/min； 240：24000r/min	⑪Special specification None：Without brake；　B: With brake； C: lathe motor；　X: Milling machine motor Note: With brake lathe motor, 10th mark "BC"; Without brake lathe motor, mark "C". With brake milling machine motor, 10th mark "BX"; Without brake milling machine motor, mark "X"."
⑥Power R=Decimal 2R2：2.2KW；　3R7：3.7KW； 4R0：4KW；　5R5：5.5KW； 7R5：7.5KW；　11：11KW； 15：15KW；　18.5：18.5KW； 22：22KW；　30：30KW	

T8000 Series servo driver technical specification

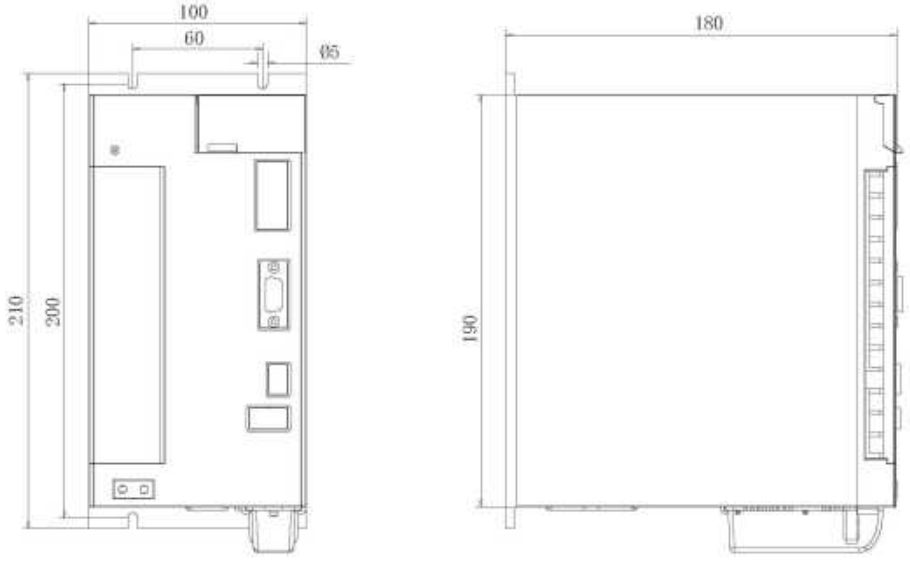
Item	T8000
Maximum frequency	Vector control：0~1KHz ;V/F control：0~1.5KHz
Carrier frequency	0.8KHz~16KHz
Input frequency resolution	Digital setting：0.001Hz Analog setting：Maximum frequency X0.025%
Control mode	Open loop vector control (SVC)Close loop vector control(FVC)V/F control
Startup torque	0.5Hz/150%(SVC)0Hz/180%(FVC)
Speed range	1:100(SVC)1:1000(FVC)
Speed stability accuracy	±0.5%(SVC) ±0.02%(FVC)
Torque control accuracy	±5%(FVC)
Overload capacity	150%Rated current60s 180%Rated current3s
Torque boost	Customized boost 0.1%~30.0%
V/F curve	Three types：Straight-line, Multi-points,N-power
Ramp mode	Straight-line ramp;Four groups of acceleration/deceleration time with the range of 0.0~6500.0s
DC braking	DC braking frequency: 0.00 Hz to maximum frequency;Braking time: 0.0-36.0s;Braking action current value: 0.0%~100.0%
Auto voltage regulation (AVR)	It can keep constant output voltage automatically when the mains voltage changes.
Rapid current limit	It helps to avoid frequent over-current faults of the AC drive.
Multi-Encoder support	Supports Encoder such as differential, open collector, resolver, etc.
Instantaneous stop doesn’t stop	The load feedback energy compensates the voltage reduction so that the AC drive can continue to run for a short time.
Over voltage and over current stall control	Automatically limit current and voltage during operation to prevent frequent over current and over voltage tripping.
Torque limit and torque control	It can limit the torque automatically and prevent frequent over-current tripping during the running process. Torque control can be used under close loop vector control.
Simple PLC,Multiple preset speeds	It implements up to 16 speeds via the simple PLC function or control terminals
Communication	EtherCAT、Mechatrolink Ⅲ

T8000 Series control circuit wiring

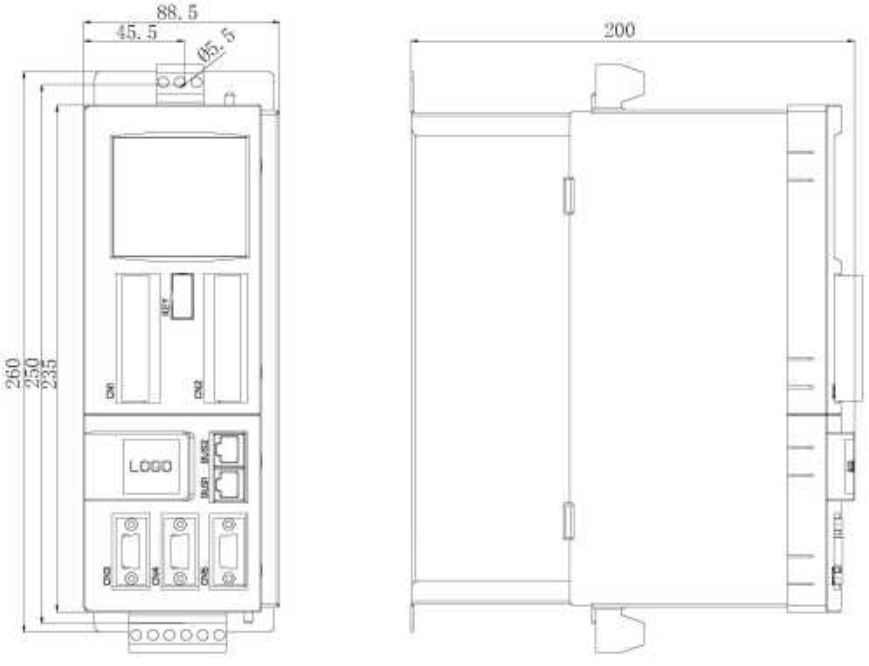


T8000 Driver installation dimension

Bus type 3.7KW ~ 11KW



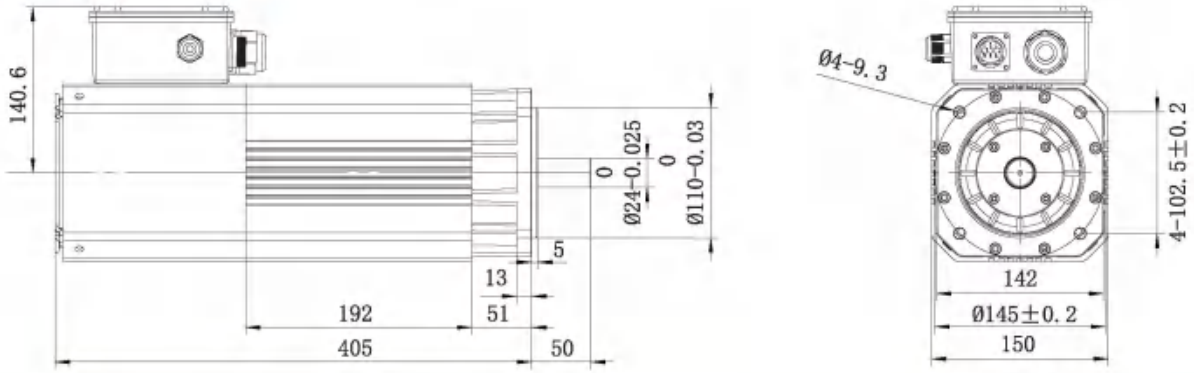
Pulse/Analog type



Spindle servo motor (milling machine)

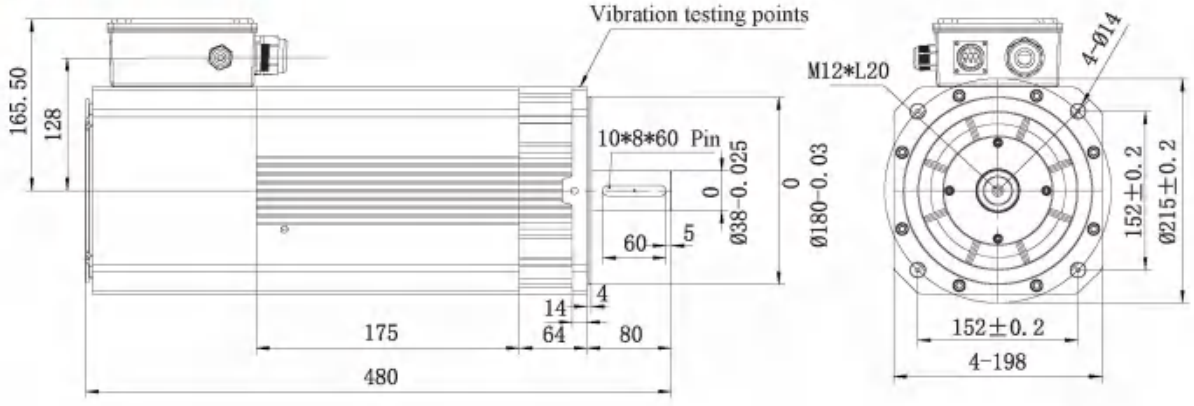
Model: ZZDJ-280-145-60-240-3R7-R1-B5-24G-F2-X			
Rated power(KW)	3.7	Rated frequency(Hz)	200
Rated current(A)	12	Rotational inertia (Kg*CM^2)	41.5
Rated torque(Nm)	5.8	Encoder type	1024
Rated voltage(V)	280	Fan power(W)	30
Rated speed(rpm)	6000	Fan voltage(V)	220
Maximum speed(rpm)	24000	Installation	Vertical

Outline Dimension Unit: mm



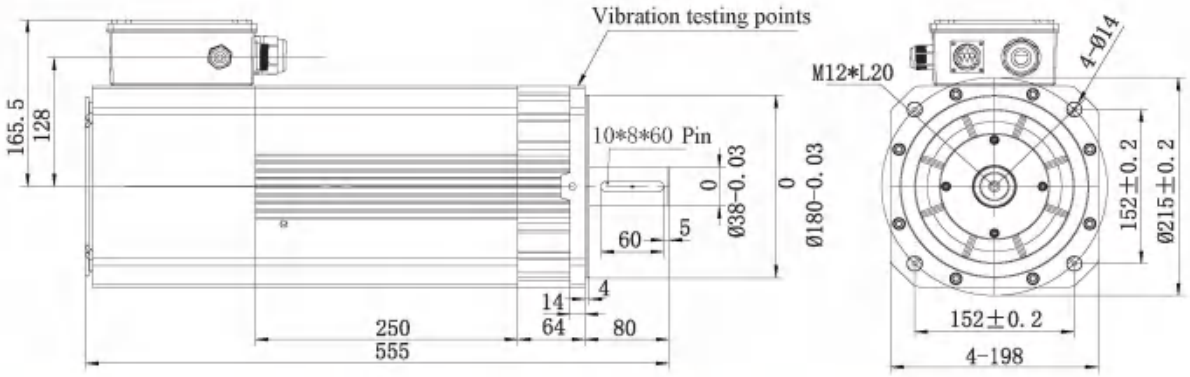
Model: ZZDJ-380-198-15-120-5R5-R1-B5-38G-F3-X			
Rated power(KW)	5.5	Rated frequency(Hz)	50
Rated current(A)	11.7	Rotational inertia (Kg*CM^2)	231
Rated torque(Nm)	34.7	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	50
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	12000	Installation	Vertical

Outline Dimension Unit: mm



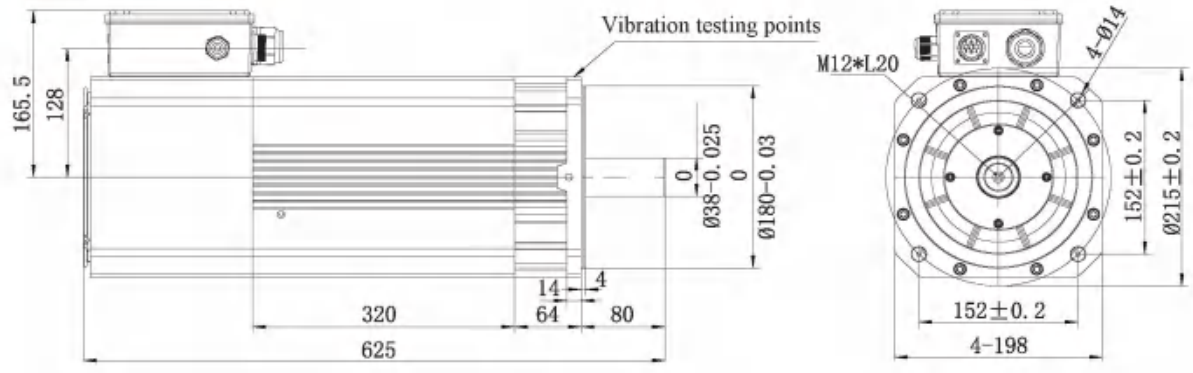
Model: ZZDJ-380-180-15-120-7R5-R1-B5-38G-F3-X			
Rated power(KW)	7.5	Rated frequency(Hz)	50
Rated current(A)	16.5	Rotational inertia (Kg*CM²)	343
Rated torque(Nm)	47.7	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	50
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	12000	Installation	Vertical

Outline Dimension Unit: mm



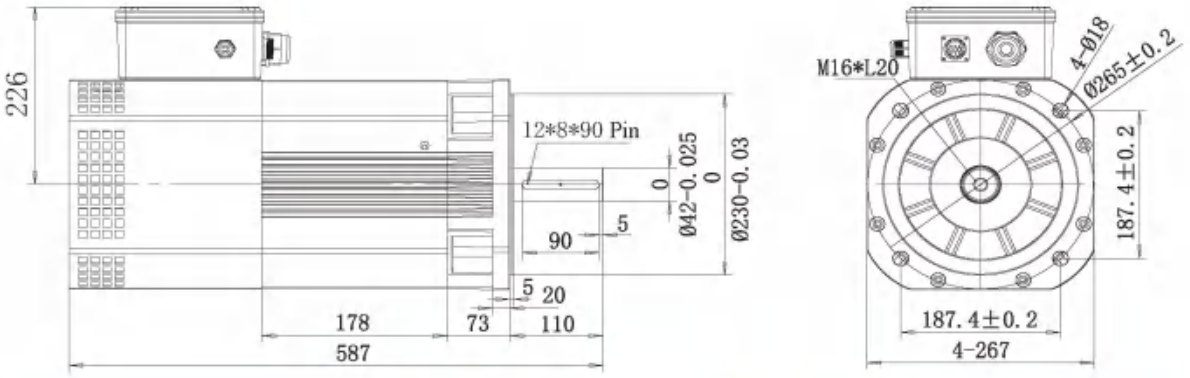
Model: ZZDJ-380-180-15-120-11-R1-B5-38G-F3-X			
Rated power(KW)	11	Rated frequency(Hz)	50
Rated current(A)	22.3	Rotational inertia (Kg*CM²)	392
Rated torque(Nm)	70	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	50
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	12000	Installation	Vertical

Outline Dimension Unit: mm



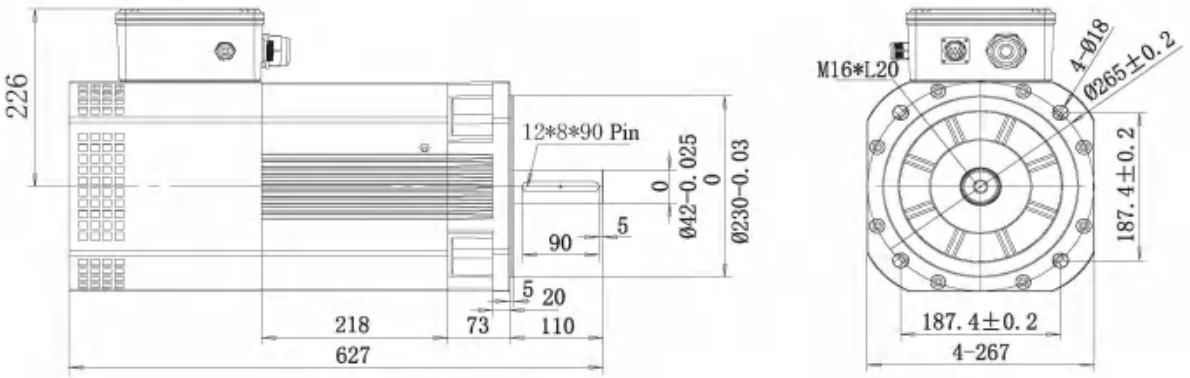
Model: ZZDJ-380-265-15-80-11-R1-B5-42G-F2-X			
Rated power(KW)	11	Rated frequency(Hz)	50
Rated current(A)	21.5	Rotational inertia (Kg*CM²)	549
Rated torque(Nm)	69.5	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	86
Rated speed(rpm)	1500	Fan voltage(V)	220~230
Maximum speed(rpm)	8000	Installation	Vertical

Outline Dimension Unit: mm



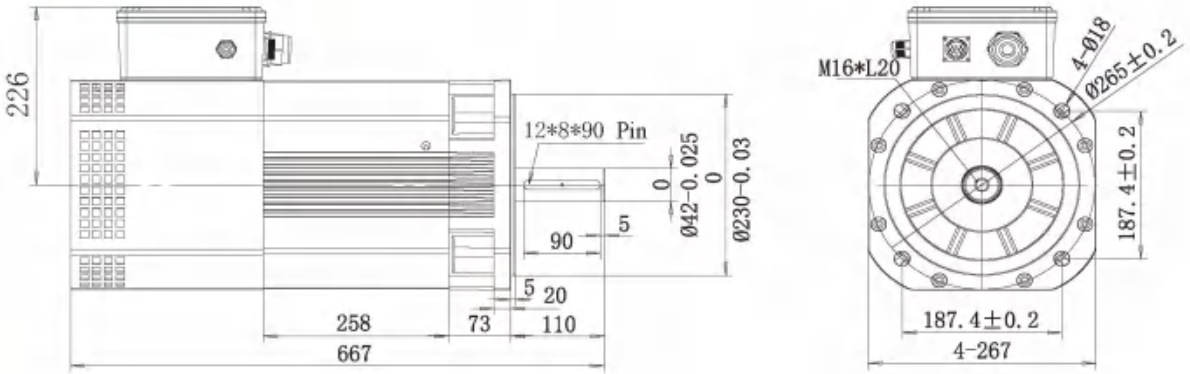
Model: ZZDJ-380-265-15-80-15-R1-B5-42G-F2-X			
Rated power(KW)	15	Rated frequency(Hz)	50
Rated current(A)	29.5	Rotational inertia (Kg*CM²)	646
Rated torque(Nm)	94.7	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	86
Rated speed(rpm)	1500	Fan voltage(V)	220~230
Maximum speed(rpm)	8000	Installation	Vertical

Outline Dimension Unit: mm



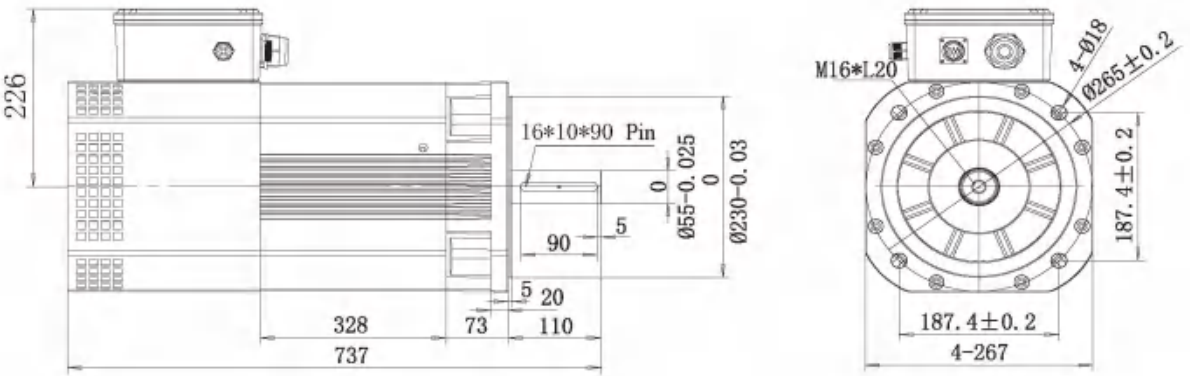
Model: ZZDJ-380-265-15-80-18.5-R1-B5-42G-F2-X			
Rated power(KW)	18.5	Rated frequency(Hz)	50
Rated current(A)	35.9	Rotational inertia (Kg*CM²)	760
Rated torque(Nm)	116.7	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	86
Rated speed(rpm)	1500	Fan voltage(V)	220~230
Maximum speed(rpm)	8000	Installation	Vertical

Outline Dimension Unit: mm



Model: ZZDJ-380-265-15-80-22-R1-B5-55G-F2-X			
Rated power(KW)	22	Rated frequency(Hz)	50
Rated current(A)	29.5	Rotational inertia (Kg*CM²)	646
Rated torque(Nm)	94.7	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	86
Rated speed(rpm)	1500	Fan voltage(V)	220~230
Maximum speed(rpm)	8000	Installation	Vertical

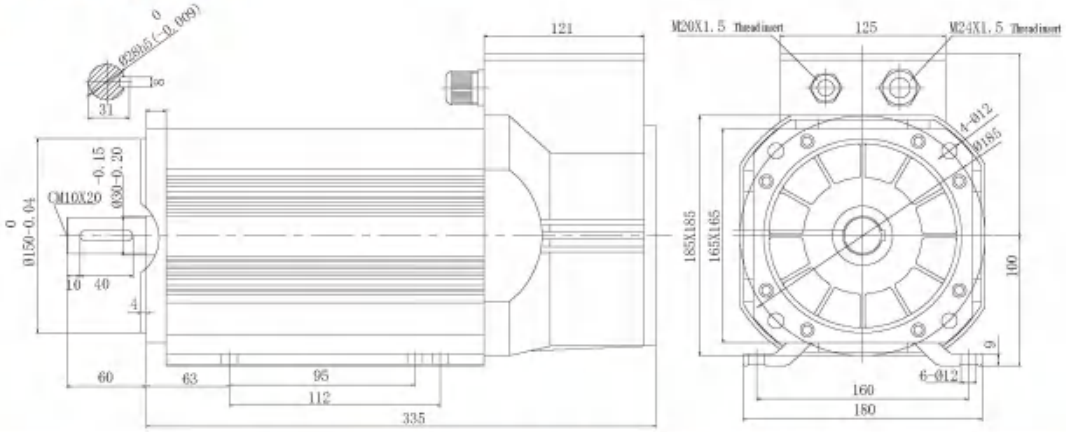
Outline Dimension Unit: mm



Spindle servo motor(lathe)

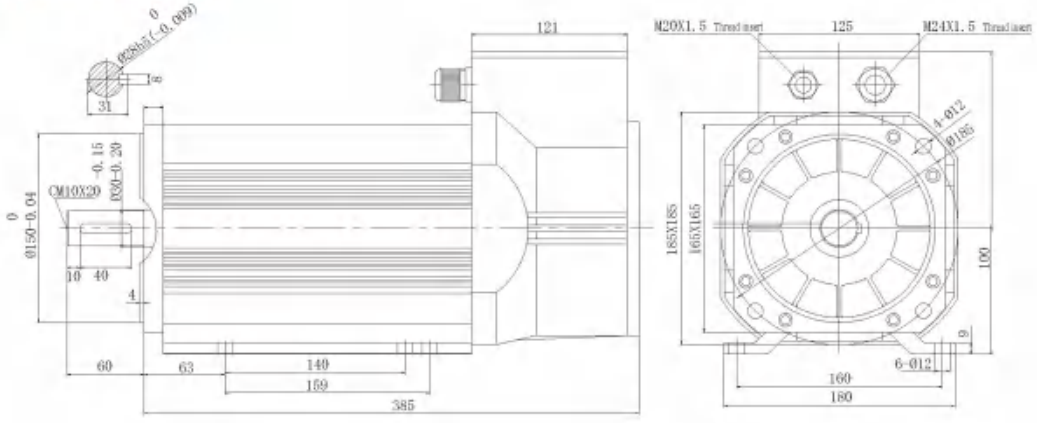
Model: ZZDJ-380-165M-15-80-2R2-E1-B35-28J-F3-C			
Rated power(KW)	2.2	Rated frequency(Hz)	52.4
Rated current(A)	5.1	Rotational inertia (Kg*CM^2)	77
Rated torque(Nm)	14	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	50
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	8000	Installation	horizontal and vertical

Outline Dimension Unit: mm



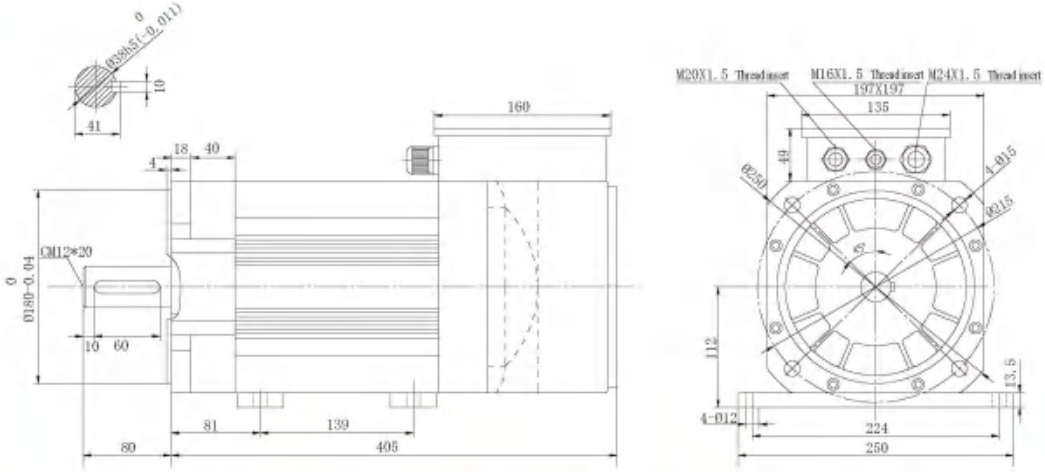
Model: ZZDJ-380-165L-15-80-4R0-E1-B35-28J-F3-C			
Rated power(KW)	4	Rated frequency(Hz)	52.6
Rated current(A)	8.8	Rotational inertia (Kg*CM^2)	116
Rated torque(Nm)	25.5	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	50
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	8000	Installation	horizontal and vertical

Outline Dimension Unit: mm



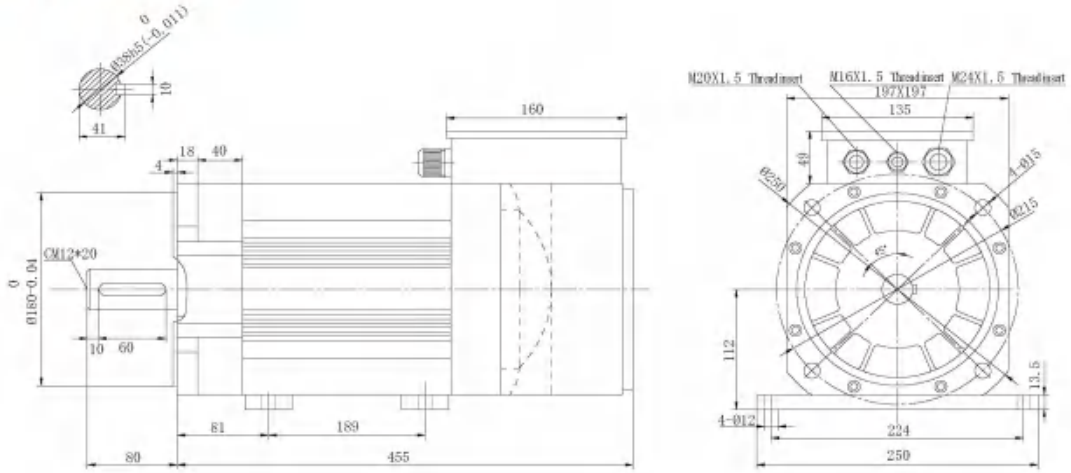
Model: ZZDJ-380-200M-15-60-5R5-E1-B35-38J-F3-C			
Rated power(KW)	5.5	Rated frequency(Hz)	52.2
Rated current(A)	11.7	Rotational inertia (Kg*CM²)	169
Rated torque(Nm)	35	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	50
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	6000	Installation	horizontal and vertical

Outline Dimension Unit: mm



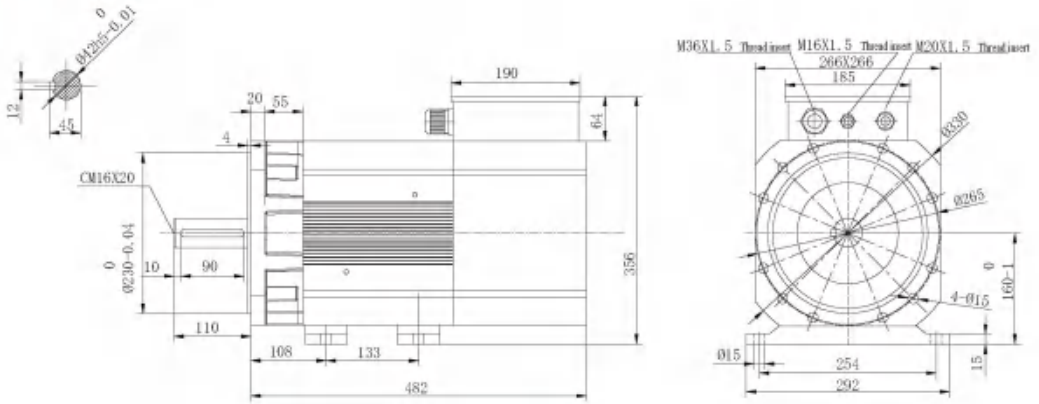
Model: ZZDJ-380-200L-15-60-7R5-E1-B35-38J-F3-C			
Rated power(KW)	7.5	Rated frequency(Hz)	52.2
Rated current(A)	15.4	Rotational inertia (Kg*CM²)	236
Rated torque(Nm)	48	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	86
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	6000	Installation	horizontal and vertical

Outline Dimension Unit: mm



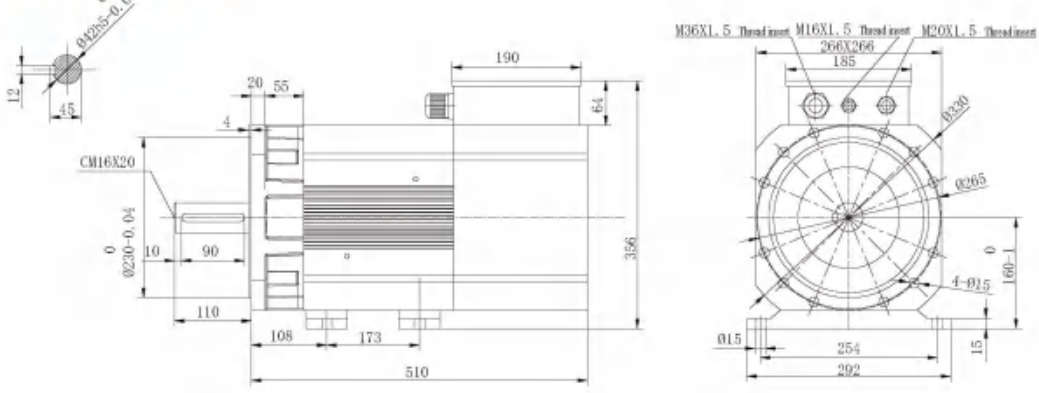
Model: ZZDJ-380-265S-15-60-11-E1-B35-42J-F3-C			
Rated power(KW)	11	Rated frequency(Hz)	51.5
Rated current(A)	21.6	Rotational inertia (Kg*CM²)	605
Rated torque(Nm)	70	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	86
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	6000	Installation	horizontal and vertical

Outline Dimension Unit: mm



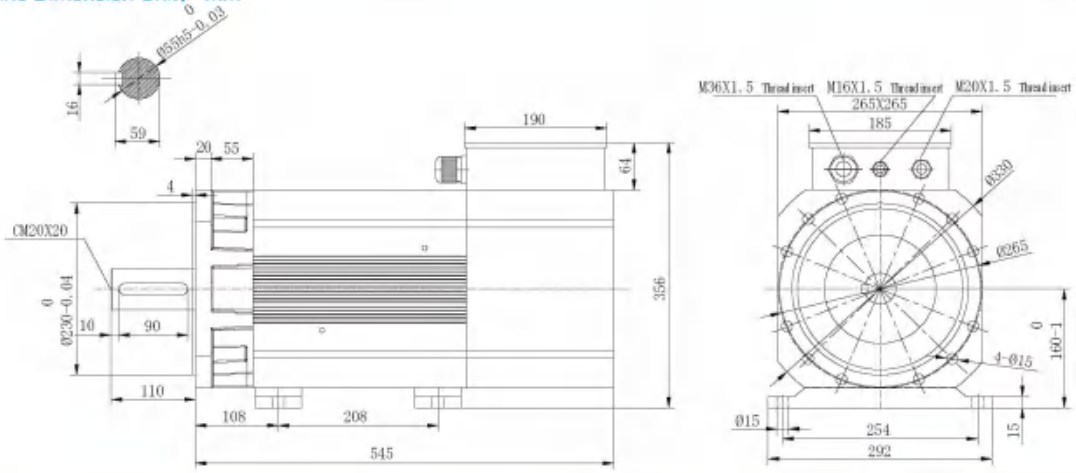
Model: ZZDJ-380-265M-15-60-15-E1-B35-42J-F3-C			
Rated power(KW)	15	Rated frequency(Hz)	51.5
Rated current(A)	29.1	Rotational inertia (Kg*CM²)	791
Rated torque(Nm)	96	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	86
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	6000	Installation	horizontal and vertical

Outline Dimension Unit: mm



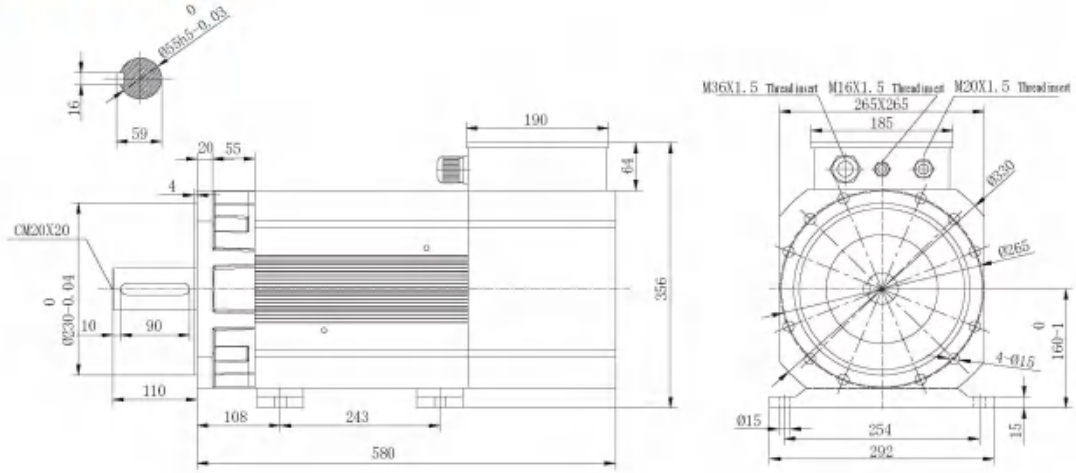
Model: ZZDJ-380-265L-15-60-18.5-E1-B35-55J-F3-C			
Rated power(KW)	18.5	Rated frequency(Hz)	51.5
Rated current(A)	35.7	Rotational inertia (Kg*CM²)	954
Rated torque(Nm)	189	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	86
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	6000	Installation	horizontal and vertical

Outline Dimension Unit: mm



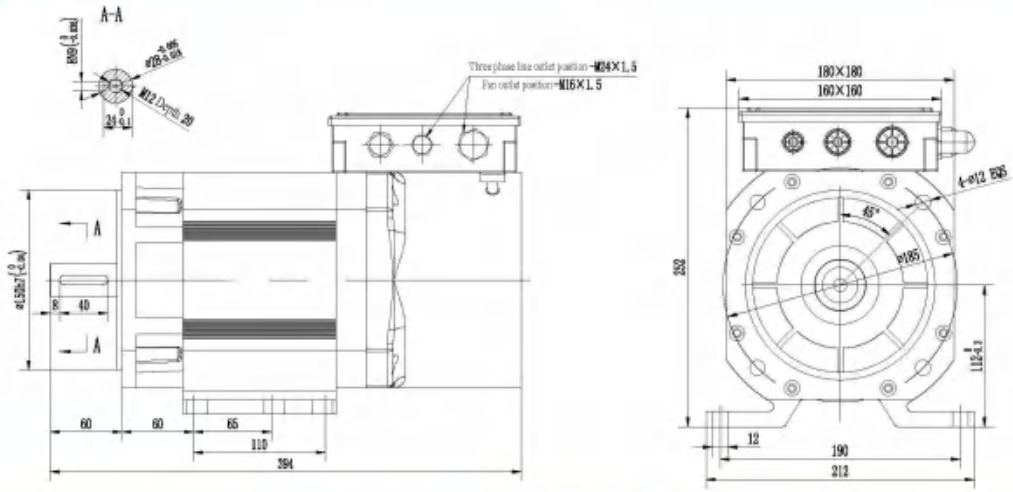
Model: ZZDJ-380-265H-15-60-22-E1-B5-55J-F3-C			
Rated power(KW)	22	Rated frequency(Hz)	51.6
Rated current(A)	42	Rotational inertia (Kg*CM²)	1117
Rated torque(Nm)	140	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	86
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	6000	Installation	horizontal and vertical

Outline Dimension Unit: mm



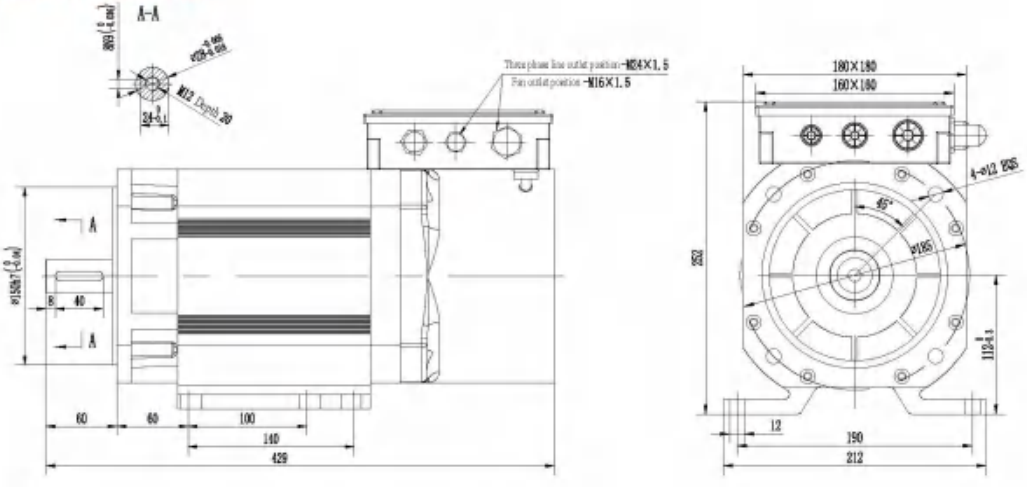
Model: ZZDJ-380-180L-15-60-2R2-E1-B5-28J-F3-C			
Rated power(KW)	2.2	Rated frequency(Hz)	52
Rated current(A)	4.9	Rotational inertia (Kg*CM²)	77
Rated torque(Nm)	14	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	50
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	6000	Installation	horizontal

Outline Dimension Unit: mm



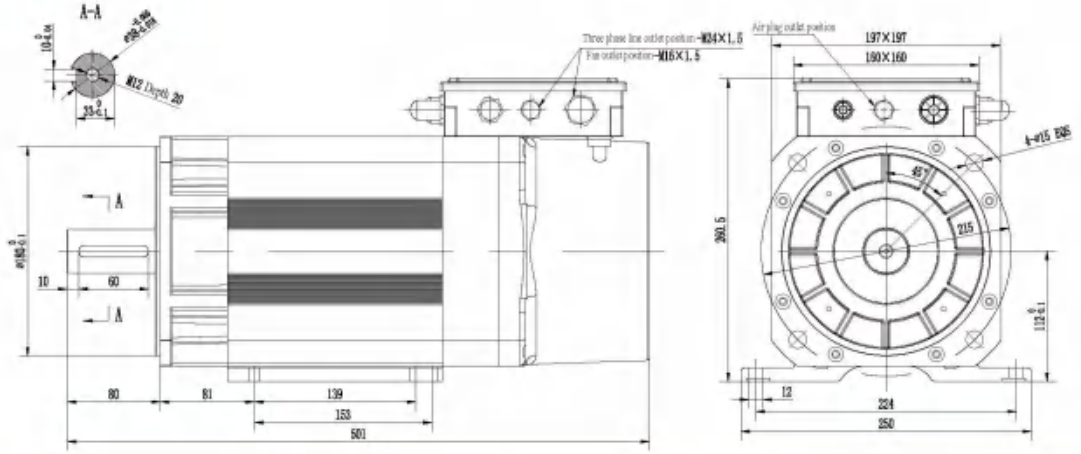
Model: ZZDJ-380-180L-15-60-4R0-E1-B5-28J-F3-C			
Rated power(KW)	4	Rated frequency(Hz)	52
Rated current(A)	8.6	Rotational inertia (Kg*CM²)	116
Rated torque(Nm)	140	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	50
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	6000	Installation	horizontal

Outline Dimension Unit: mm



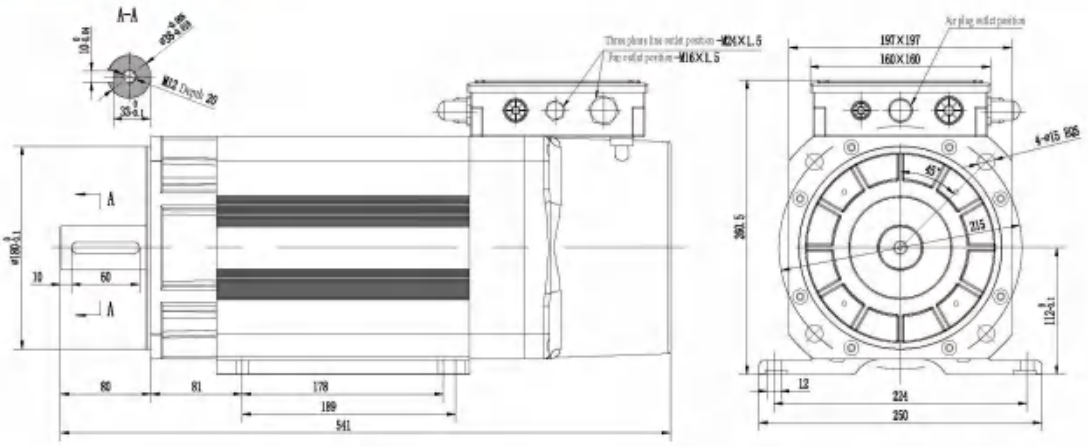
Model: ZZDJ-380-200L-15-60-5R5-E1-B5-38J-F3-C			
Rated power(KW)	5.5	Rated frequency(Hz)	52
Rated current(A)	11.6	Rotational inertia (Kg*CM^2)	169
Rated torque(Nm)	35	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	86
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	6000	Installation	horizontal

Outline Dimension Unit: mm



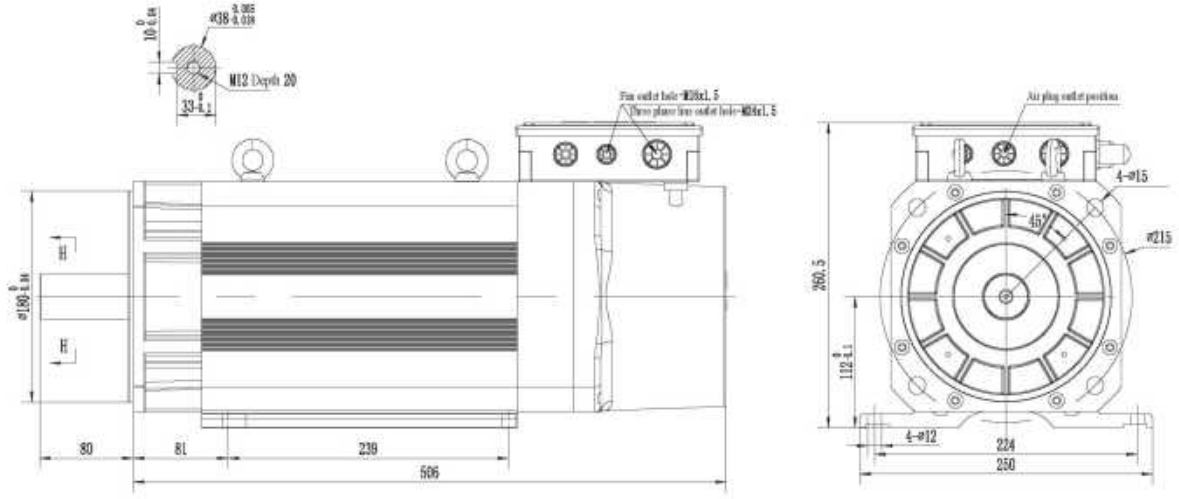
Model: ZZDJ-380-200L-15-60-15-E1-B5-38J-F3-C			
Rated power(KW)	7.5	Rated frequency(Hz)	52
Rated current(A)	15.6	Rotational inertia (Kg*CM^2)	236
Rated torque(Nm)	48	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	86
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	6000	Installation	horizontal

Outline Dimension Unit: mm



Model: ZZDJ-380-200L-15-60-11-E1-B5-38J-F3-C			
Rated power(KW)	11	Rated frequency(Hz)	52
Rated current(A)	26.4	Rotational inertia (Kg*CM^2)	605
Rated torque(Nm)	70	Encoder type	1024
Rated voltage(V)	380	Fan power(W)	86
Rated speed(rpm)	1500	Fan voltage(V)	380
Maximum speed(rpm)	6000	Installation	horizontal

Outline Dimension Unit: mm



● For more models, please contact the manufacturer

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