

AC Motor and Servo Driver

● Configuration List of AC Motor and Servo Driver



SM Series Motor		Main Parameter			BONMET Servo Driver Mode	
Motor Series	Motor Model	Nominal Torque	Nominal Speed	Nominal Power	SFC Configuration	SFC+ Configuration
80 Series	SM 80-013-30 LFB	1.3Nm	3000rpm	0.4Kw	SA3L04C	SA3L04C
	SM 80-024-30 LFB	2.4Nm	3000rpm	0.75Kw	SA3L04C	SA3L06B
	SM 80-033-30 LFB	3.3Nm	3000rpm	1.0Kw	SA3L04C	SA3L06B
110 Series	SM 110-020-30 LFB	2 Nm	3000 rpm	0.6 Kw	SA3L04C	SA3L06B
	SM 110-040-30 LFB	4 Nm	3000 rpm	1.2 Kw	SA3L04C	SA3L10B
	SM 110-050-30 LFB	5 Nm	3000 rpm	1.5 Kw	SA3L06B	SA3L10B
	SM 110-060-20 LFB	6 Nm	2000 rpm	1.2 Kw	SA3L06B	SA3L10B
	SM 110-060-30 LFB	6 Nm	3000 rpm	1.6 Kw	SA3L10B	SA3L10C
130 Series	SM 130-040-25 LFB	4 Nm	2500 rpm	1.0 Kw	SA3L04C	SA3L06B
	SM 130-050-25 LFB	5 Nm	2500 rpm	1.3 Kw	SA3L04C	SA3L10B
	SM 130-060-25 LFB	6 Nm	2500 rpm	1.5 Kw	SA3L06B	SA3L10B
	SM 130-077-20 LFB	7.7 Nm	2000 rpm	1.6 Kw	SA3L10B	SA3L10C
	SM 130-077-30 LFB	7.7 Nm	3000 rpm	2.4 Kw	SA3L10B	SA3L10C
	SM 130-100-15 LFB	10 Nm	1500 rpm	1.5 Kw	SA3L06B	SA3L10B
	SM 130-100-25 LFB	10 Nm	2500 rpm	2.6 Kw	SA3L10B	SA3L15C
	SM 130-150-15 LFB	15 Nm	1500 rpm	2.3 Kw	SA3L10B	SA3L15C
	SM 130-150-25 LFB	15 Nm	2500 rpm	3.8 Kw	SA3L15C	SA3L25C
150 Series	SM 150-150-25 LFB	15 Nm	2500 rpm	3.8 Kw	SA3L15C	SA3L25C
	SM 150-180-20 LFB	18 Nm	2000 rpm	3.6 Kw	SA3L15C	SA3L25C
	SM 150-230-20 LFB	23 Nm	2000 rpm	4.7 Kw	SA3L15C	SA3L25C
	SM 150-270-20 LFB	27 Nm	2000 rpm	5.5 Kw	SA3L15C	SA3L25C

Configuration Explanation: SFC suits for low overload、low on-off frequency of motor in unit time、high speed and low load; SFC+ suits for high overload, high on-off frequency of motor in unit time, high speed and high load.

AC Motor and Servo Driver

Number explanation of SM series servo motor :

SM	110	050	30	L	F	B	Z
1	2	3	4	5	6	7	8

- 1: The motor is the sine wave actuation permanent magnetism synchronization AC servo motor.
- 2: Outer diameter of motor, unit: mm.
- 3: Zero speed torque of motor, the value is three-digit $\times 0.1$, unit: Nm.
- 4: Nominal speed of motor, the value is double-digit $\times 100$, unit: rpm.
- 5: Drive voltage, L—AC220V, H—AC380V.
- 6: Feedback element's specification, F—compound expression incremental encoder (2500 C/T); F1—less line incremental encoder ; R—1-pair pole rotating transformers.
- 7: Motor model, B—basic.
- 8: Motor installed with power -off breaker.

Number explanation of BONMET servo driver :

SA	3L	10	B	xx
1	2	3	4	5

- 1: Servo driver model: SA—General servo driver.
- 2: Driver power: 1L—single-phase AC220V (1 Φ 220V); 3L—three-phase AC220V (3 Φ 220V); 3H—three -phase AC380V(3 Φ 380V).
- 3: Specification symbol of servo driver.
- 4: Specifications symbol of driver Power
- 5: Driver software symbol.

The following functions could be achieved by a special PC software:

◆ Parameter management

Operations to all parameters such as editing, transmission, comparison and initialization can be done conveniently and efficiently.

◆ Monitoring

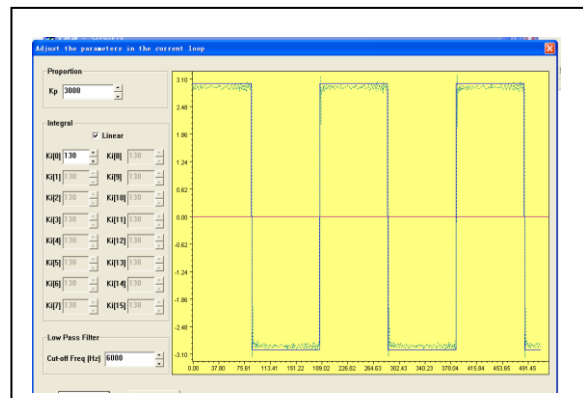
Real time monitoring of all input / output signals, current alarm and history records, and system status, and so on.

◆ Real time sampling

Real time sampling waveform of speed and torque , for adjusting and analysis.

◆ Adjusting

It could adjust the gain of servo drivers quickly, and simple testing are possible when there is position or speed indication.

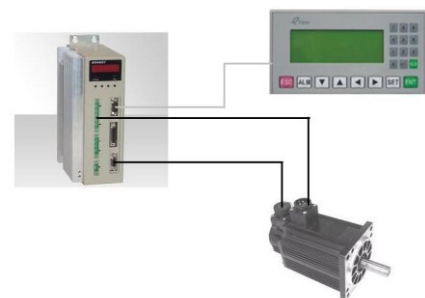


Single axis positioning function:

Single axis positioning function of 16-node is installed inside BONMET servo driver, users can connect the servo drives to a touch screen via the RS-232 port on the driver, therefore the PLC unit cost is saved.

Users can edit the position, speed, acceleration and deceleration time, waiting time, start and stop point, and then transfer the edition to servo driver via RS-232 port. In addition, the user can choose absolute or incremental value of programming, and can select the function searching reference point to set the going and return

speed of reference point searching, moreover, user may use an external signal to change steps. Users may also develop their own applications programs to meet different demands and to apply in different occasions.



AC Motor and Servo Driver

● Parameter List of 80 Series Motor

Motor model	SM80-013-30LFB				SM 80-024-30 LFB				SM 80-033-30 LFB			
Power (Kw)	0.4				0.75				1.0			
Nominal torque (Nm)	1.3				2.4				3.3			
Nominal speed (Rpm)	3000				3000				3000			
Nominal current (A)	2.6				4.2				4.2			
Rotor inertia (Kgm ²)	0.61×10 ⁻⁴				1.06×10 ⁻⁴				1.37×10 ⁻⁴			
Mechanical time-constant (Ms)	1.38				0.95				0.85			
Encoder line number (C/T)	2500C/T (less line)											
Motor winding plug	winding lead wire	U			V			W			⊕	
	Plug number	2			3			4			1	
Encoder plug	signal	5V	0V	A+	A-	B+	B-	Z+	Z-	⊕		
	plug number	2	3	4	7	5	8	6	9	1		
Motor insulation grade	B											
Environment	Ambient temperature: 0～55℃ Humidity: less than 90% (with no condensation)											
Protection rank	IP65											
Motor weight (Kg)	2.1				2.7				3.2			

● BONMET Series Driver

Drive model	SA3L04C	SA3L04C (SA3L06B)	SA3L04C (SA3L06B)
Work voltage (AC)	3 Φ AC220V -15% \sim +10% 50/60Hz		
Environment	Operating temperature: $0 \sim 40^\circ\text{C}$ storage temperature: $-40 \sim 50^\circ\text{C}$ humidity: less than 80% (with no condensation) vibration: bellow 0.5G (4.9m/s^2), 10 \sim 60Hz (uncontinuous operation)		
Torque-rotational speed chart(T—M)	Chart 1	chart 2-A(chart 2-B)	chart 3-A(chart3-B)

Torque - rotational speed chart (M—n):

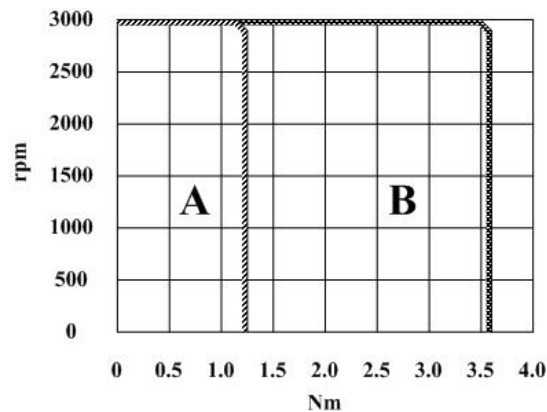


chart 1

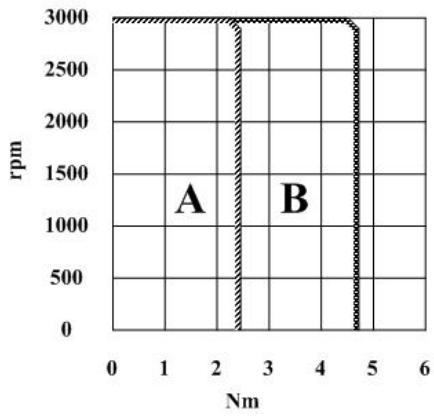


chart 2-A

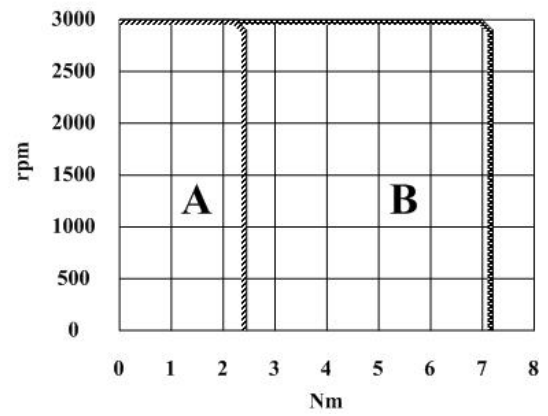


chart 2-B

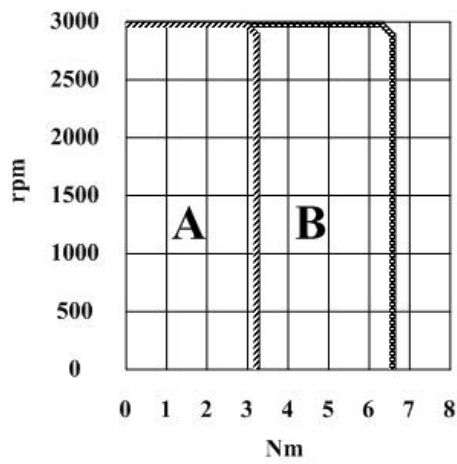


chart 3-A

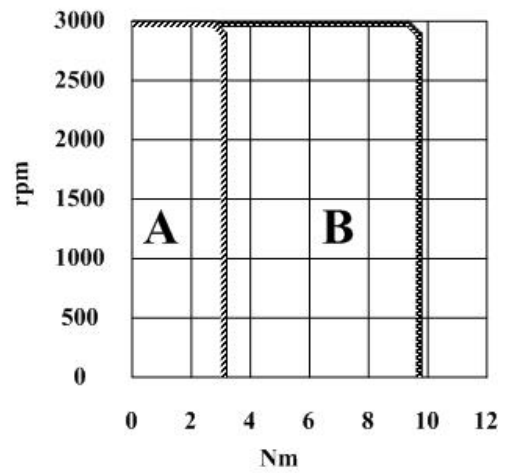


chart 3-B

Note: A: Continual work area;
X-A: SFC Configuration

B: Short-time work area;
X-B: SFC+ Configuration

AC Motor and Servo Driver

● Parameter List of 110 Series Motor

Motor model	SM110-020-30	SM 110-040-30	SM 110-050-30	SM 110-060-20	SM 110-060-30											
	LFB	LFB	LFB	LFB	LFB											
Power (Kw)	0.6	1.2	1.5	1.2	1.6											
Nominal torque (Nm)	2	4	5	6	6											
Nominal speed (Rpm)	3000	3000	3000	2000	3000											
Nominal current (A)	4.0	5.0	6.0	6.0	8.0											
Rotor inertia (Kg ²)	0.33×10 ⁻³	0.65×10 ⁻³	0.82×10 ⁻³	1.0×10 ⁻³	1.0×10 ⁻³											
Mechanical time-constant (Ms)	3.64	2.32	2.03	1.82	1.82											
Encoder line number (C/T)	2500C/T (A,B,Z,U,V,W)															
Motor winding plug	winding lead wire	U				V				W				⊕		
	Plug number	2				3				4				1		
Encoder plug	signal	5V	0V	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	⊕
	plug number	2	3	4	7	5	8	6	9	10	13	11	14	12	15	1
Power off breaker	plug number	1					2					3				
	power	24VDC (-15%~+10%)														
	basic parameter	work current: ≤0.6A break torque: ≥8Nm rotate inertia: 0.64×10 ⁻⁴ Kgm ²														
Motor insulation grade	B															
Environment	Ambient temperature: 0~55℃ Humidity: less than 90% (with no condensation)															
Protection rank	IP65															
Motor weight (Kg)	4.2	5.2			5.8			6.4			6.4					

● BONMET Series Driver

Drive mode	SA3L04C (SA3L06B)	SA3L04C (SA3L10B)	SA3L06B (SA3L10B)	SA3L06B (SA3L10B)	SA3L10B (SA3L10C)
Work voltage (AC)	3ΦAC220V -15%~+10% 50/60Hz				
Environment	Operating temperature: 0~40℃ storage temperature: -40~50℃ humidity: less than 80% (with no condensation) vibration: bellow 0.5G (4.9m/S ²), 10~60Hz (uncontinuous operation)				
Torque - rotational speed chart (T—M)	Chart4-A (Chart4-B)	Chart5-A (Chart5-B)	Chart6-A (Chart6-B)	Chart7-A (Chart7-B)	Chart8-A (Chart8-B)

Torque - rotational speed chart (M—n):

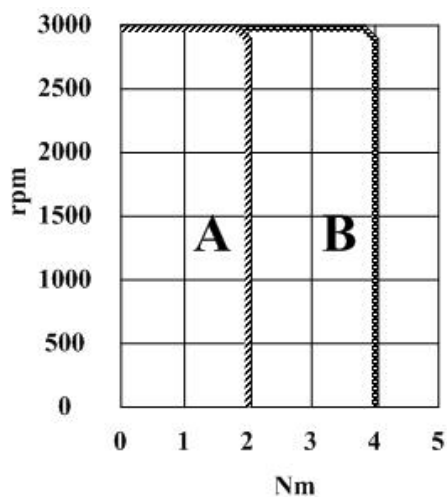


Chart 4-A

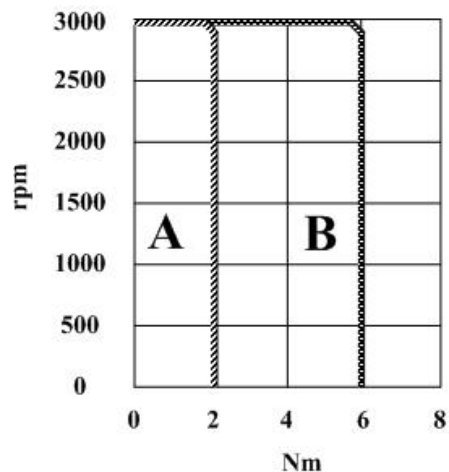


Chart 4-B

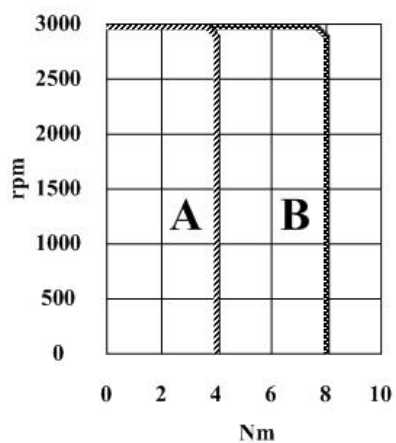


Chart 5-A

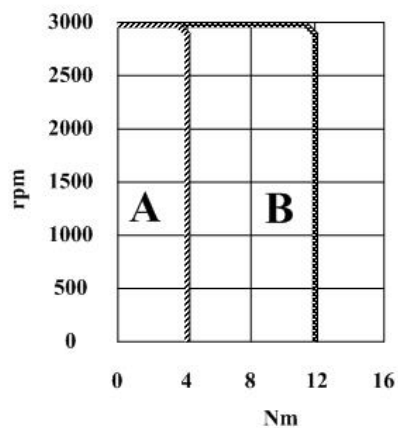


Chart 5-B

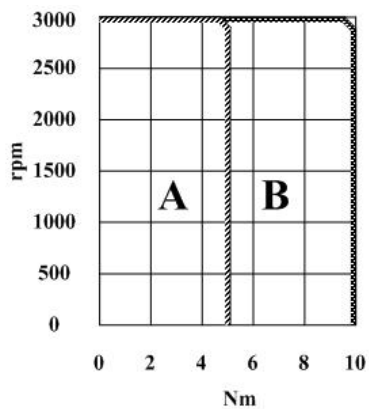


Chart 6-A

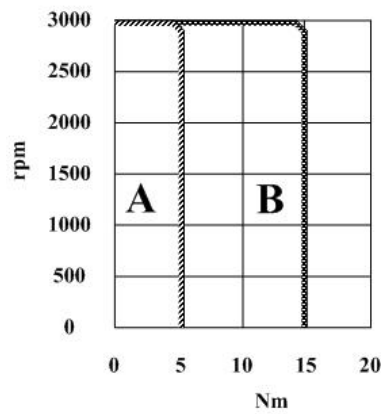


Chart 6-B

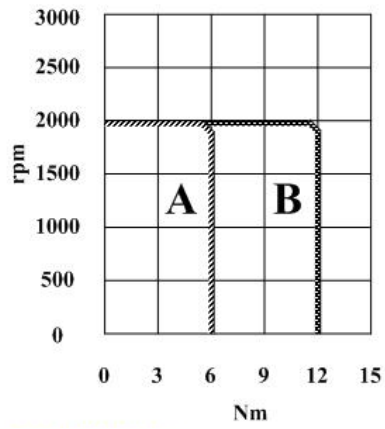


Chart 7 –A

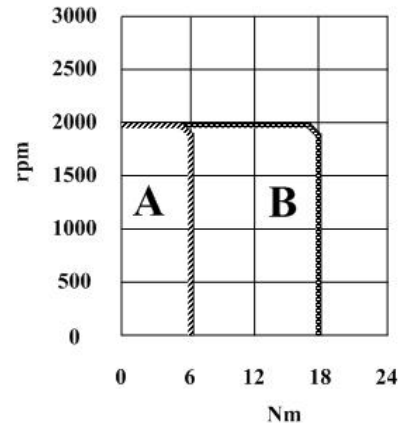


Chart 7-B

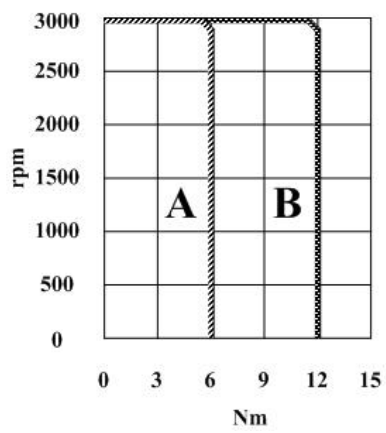


Chart 8-A

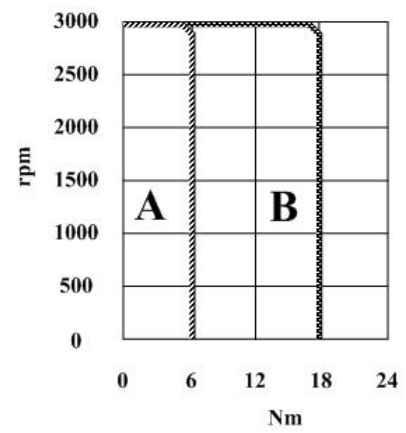


Chart 8-B

Note: A: Continual work area;
X-A: SFC Configuration

B: Short-time work area;
X-B: SFC+ Configuration

AC Motor and Servo Driver

● Parameter list of 130 Series Motor

Motor model	SM130-040-25	SM 130-050-25					SM 130-060-25					SM 130-077-20				SM 130-077-30				
	LFB	LFB					LFB					LFB				LFB				
Power (Kw)	1.0	1.3					1.5					1.6				2.4				
Nominal torque (Nm)	4	5					6					7.7				7.7				
Nominal speed (Rpm)	2500	2500					2500					2000				3000				
Nominal current (A)	4.0	5.0					6.0					6.0				9.0				
Rotor inertia (Kg ^m ²)	0.85×10 ⁻³	1.06×10 ⁻³					1.26×10 ⁻³					1.58×10 ⁻³				1.58×10 ⁻³				
Mechanical time-constant (Ms)	3.75	3.07					2.83					2.44				2.44				
Encoder line number (C/T)	2500 C/T (A, B, Z, U, V, W)																			
Motor winding plug	winding lead wire	U					V					W				⊕				
	Plug number	2					3					4				1				
Encoder plug	signal	5V	0V	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	⊕				
	plug number	2	3	4	7	5	8	6	9	10	13	11	14	12	15	1				
Power off breaker	Plug number	1					2					3								
	power	24VDC (-15%~+10%)																		
	basic parameter	work current: ≤0.6A break torque: ≥12Nm rotate inertia: 1.67×10 ⁻⁴ Kg ^m ²																		
Motor insulation grade	B																			
Environment	Ambient temperature: 0~55℃ Humidity: less than 90% (with no condensation)																			
Protection rank	IP65																			
Motor weight (Kg)	7.4	7.9					8.6					9.5				9.5				

● BONMET Series Driver

Drive model	SA3L04C (SA3L06B)	SA3L04C (SA3L10B)	SA3L06B (SA3L10B)	SA3L10B (SA3L10C)	SA3L10B (SA3L10C)
Work voltage (AC)	3ΦAC220V -15%~+10% 50/60Hz				
Environment	Operating temperature: 0~40℃ storage temperature: -40~50℃ humidity: less than 80% (with no condensation) vibration: bellow 0.5G (4.9m/S ²), 10~60Hz (uncontinuous operation)				
Torque - rotational speed chart (T—M)	Chart9-A (Chart9-B)	Chart10-A (Chart10-B)	Chart11-A (Chart11-B)	Chart12-A (Chart12-B)	Chart13-A (Chart13-B)

Torque - nominal speed chart (M—n):

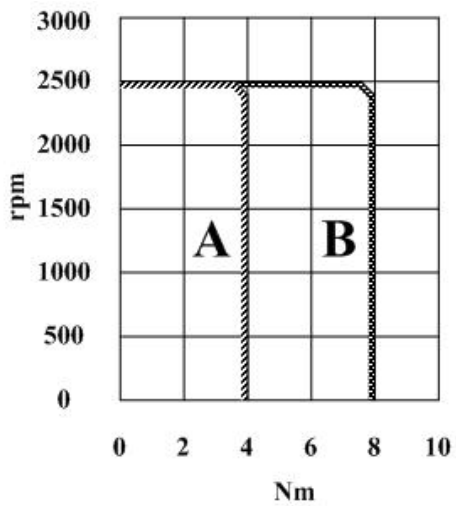


Chart 9-A

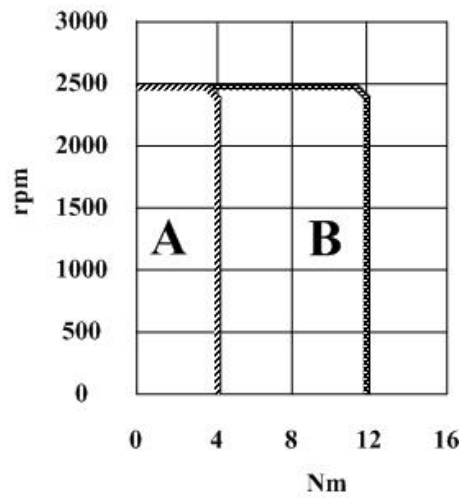


Chart9-B

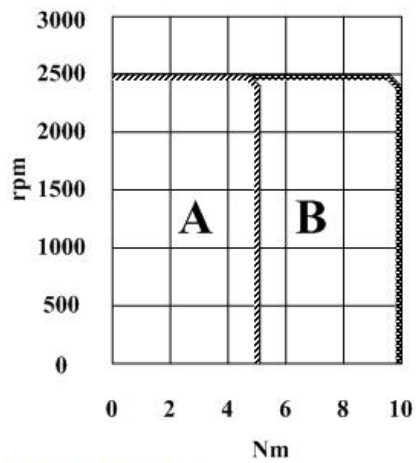


Chart 10-A

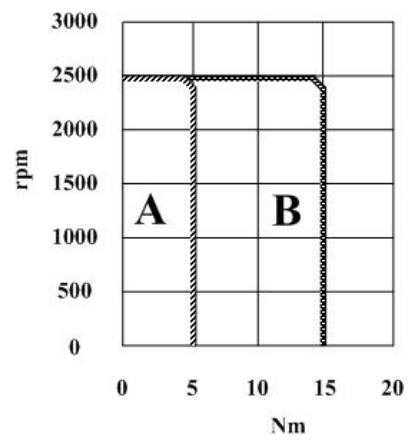


Chart 10-B

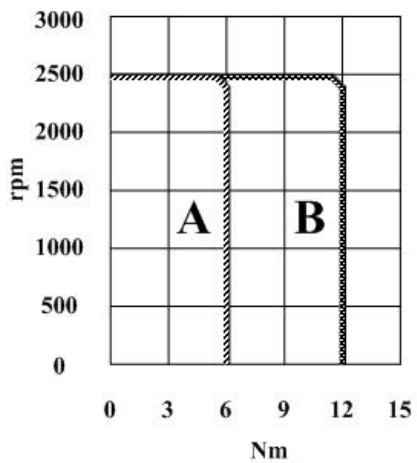


Chart11-A

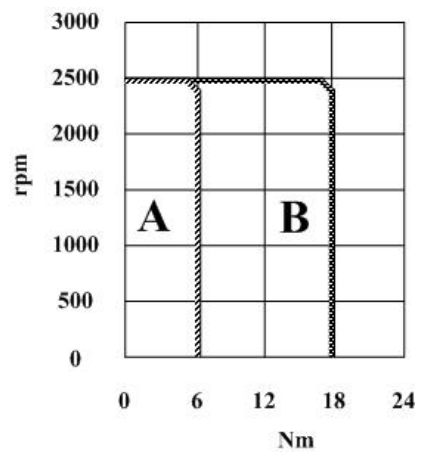


Chart11-B

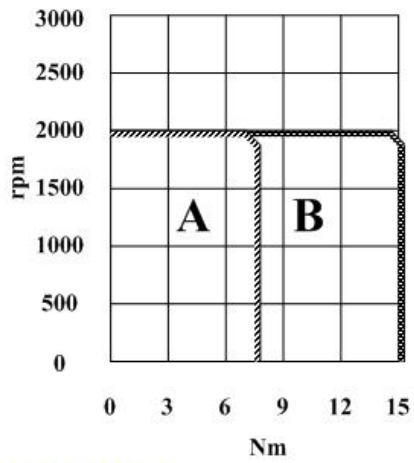


Chart12 –A

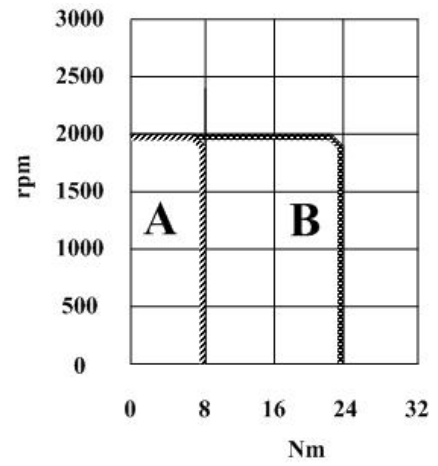


Chart12-B

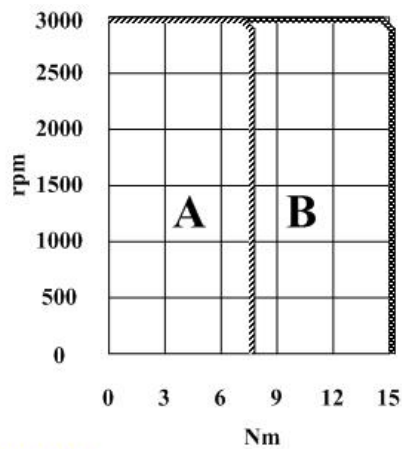


Chart13 –A

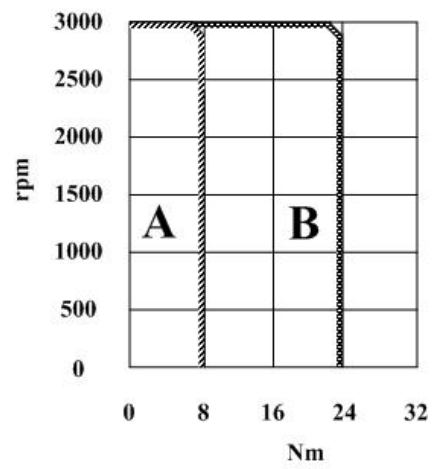


Chart13 –B

Note: A: Continual work area; B: Short-time work area。
 x-A: SFC configuration; x-B: SFC+ configuration。

● Parameter List of 130 Series Motor

Motor model	SM130-100-15LFB				SM130-100-25 LFB				SM130-150-15 LFB				SM130-150-25 LFB				
Power (Kw)	1.5				2.6				2.3				3.8				
Nominal torque (Nm)	10				10				15				15				
Nominal speed (Rpm)	1500				2500				1500				2500				
Nominal current (A)	6.0				10.0				9.5				17.0				
Rotor inertia (Kgm ²)	2.14×10 ⁻³				2.14×10 ⁻³				3.24×10 ⁻³				3.24×10 ⁻³				
Mechanical time-constant (Ms)	2.11				2.11				1.88				1.88				
Encoder line number (C/T)	2500 C/T (A, B, Z, U, V, W)																
Motor winding plug	winding lead wire	U				V				W				⊕			
	Plug number	2				3				4				1			
Encoder plug	signal	5V	0V	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	⊕	
	plug number	2	3	4	7	5	8	6	9	10	13	11	14	12	15	1	
Power off breaker	plug number	1				2				3							
	power	24VDC (-15%~+10%)										⊕					
	basic parameter	work current: ≤0.6A break torque: ≥12Nm rotate inertia: 1.67×10 ⁻⁴ Kgm ²															
Motor insulation grade	B																
Environment	Ambient temperature: 0~55℃ Humidity: less than 90% (with no condensation)																
Protection rank	IP65																
Motor weight (Kg)	11.1				11.1				14.3				14.3				

● BONMET Series Driver

Drive model	SA3L06 (SA3L10B)	SA3L10B (SA3L15C)	SA3L10B (SA3L15C)	SA3L15C (SA3L25C)
Work voltage (AC)	3ΦAC220V -15%~+10% 50/60Hz			
Environment	operating temperature: 0~40℃ storage temperature: -40~50℃ humidity: less than 80% (with no condensation) vibration: bellow 0.5G (4.9m/S ²), 10~60Hz (uncontinuous operation)			
Torque - rotational speed chart (T—M)	Chart14-A (Chart14-B)	Chart15-A (Chart15-B)	Chart16-A (Chart16-B)	Chart17-A (Chart17-B)

Torque - rotational speed chart (M—n):

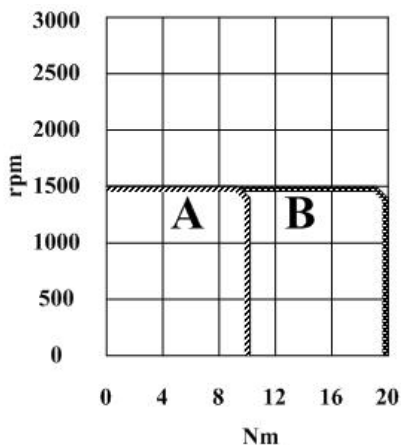


Chart 14-A

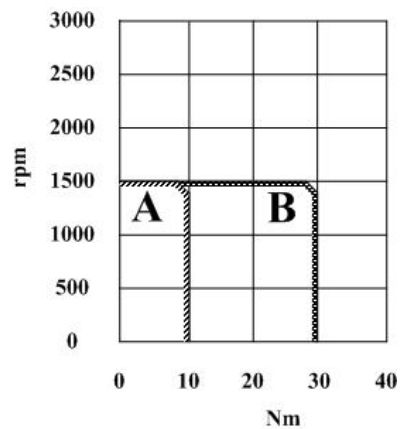


Chart14-B

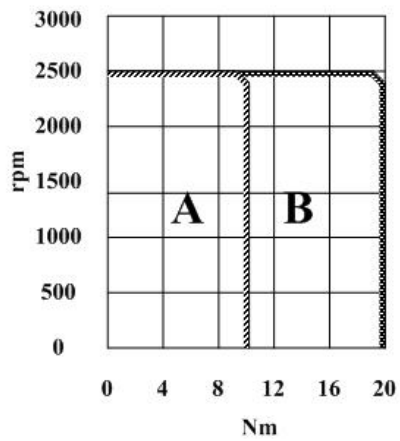


Chart15-A

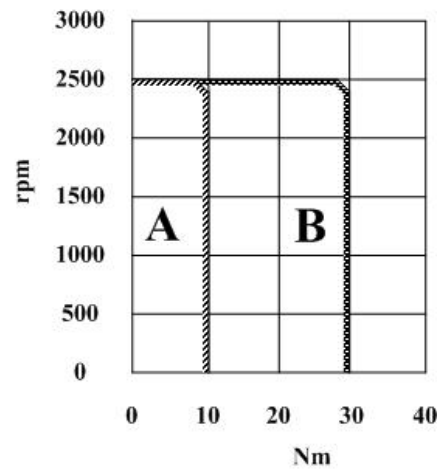


Chart15-B

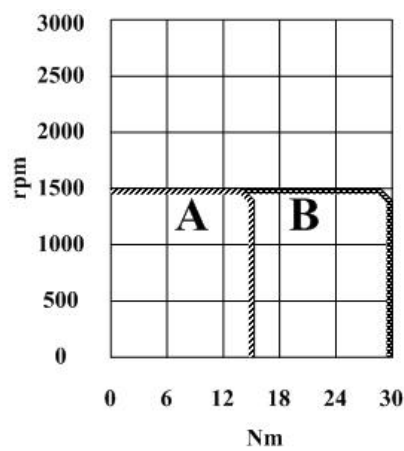


Chart16-A

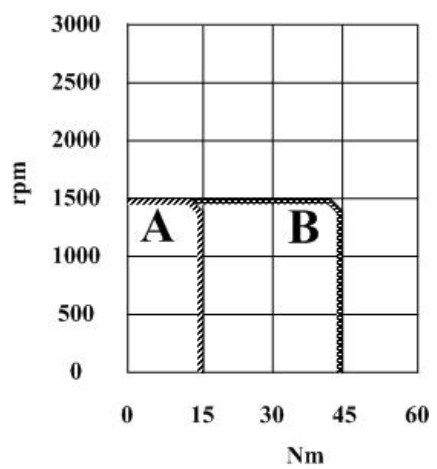


Chart16-B

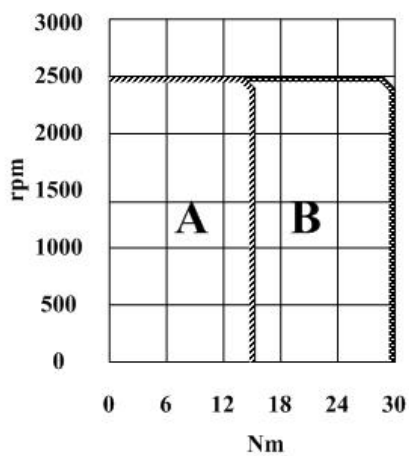


Chart17-A

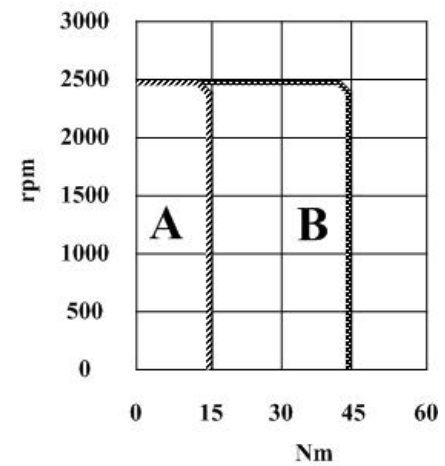


Chart17-B

Note: A: Continual work area;
x-A: SFC configuration,

B: Short-time work area。
x-B: SFC+ configuration。

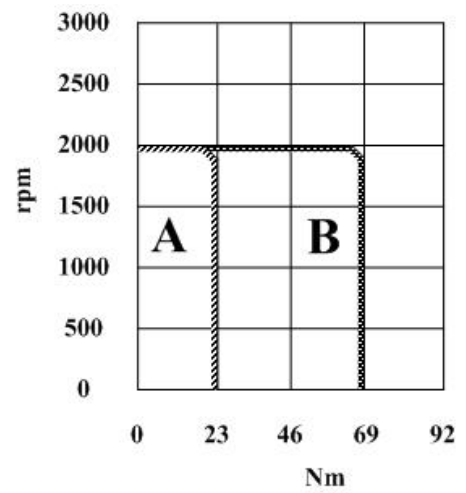
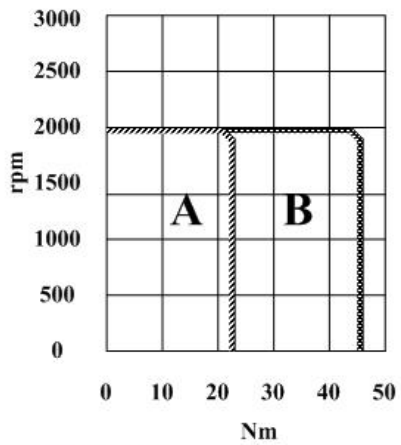
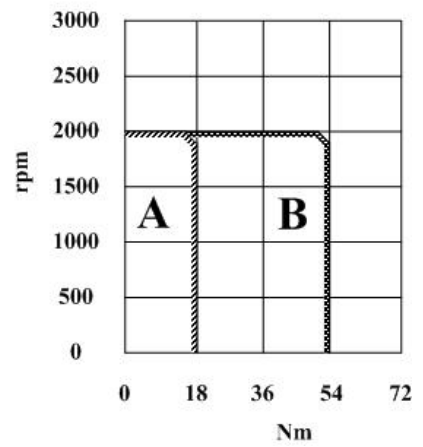
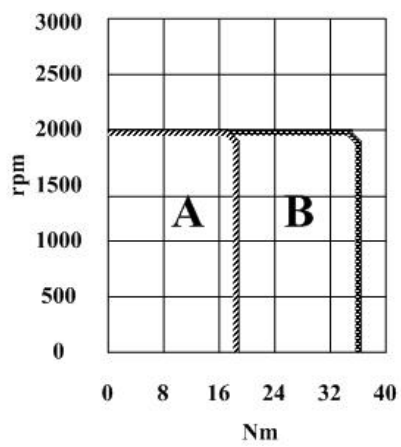
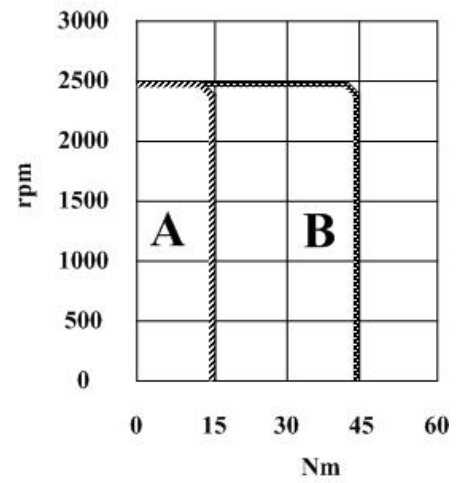
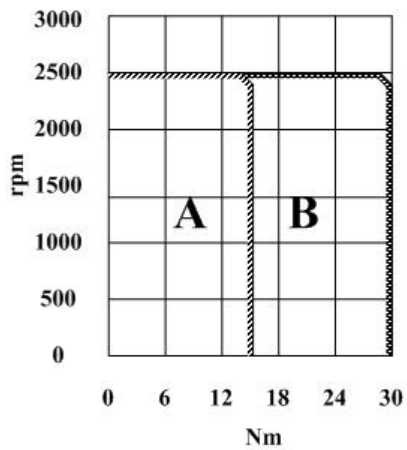
● Parameter List of 150 Series Motor

Motor model	SM 150-150-25LFB				SM 150-180-20 LFB				SM 150-230-20 LFB				SM 150-270-20 LFB				
Power (Kw)	3.8				3.6				4.7				5.5				
Nominal torque (Nm)	15				18				23				27				
Nominal speed (Rpm)	2500				2000				2000				2000				
Nominal current (A)	16.5				16.5				20.5				20.5				
Rotor inertia (Kg ^m ²)	5.2×10 ⁻³				6.3×10 ⁻³				8.0×10 ⁻³				9.4×10 ⁻³				
Mechanical time-constant (Ms)	2.43				2.27				2.04				1.95				
Encoder line number (C/T)	2500 C/T (A, B, Z, U, V, W)																
Motor winding plug	winding lead wire	U				V				W				⊕			
	Plug number	2				3				4				1			
Encoder plug	signal	5V	0V	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	⊕	
	plug number	2	3	4	7	5	8	6	9	10	13	11	14	12	15	1	
Power off breaker	plug number	1				2				3							
	power	100VDC (-15%~+10%)										⊕					
	basic parameter	work current: ≤0.4A break torque: ≥30Nm rotate inertia: 6×10 ⁻⁴ Kgm ²															
Motor insulation grade	B																
Environment	Ambient temperature: 0~55℃ Humidity: less than 90% (with no condensation)																
Protection rank	IP65																
Motor weight (Kg)	15.2				17.3				21.0				23.7				

● BONMET Series Driver

Drive model	SA3L15C (SA3L25C)	SA3L15C (SA3L25C)	SA3L15C (SA3L25C)	SA3L15C (SA3L25C)
Work voltage (AC)	3ΦAC220V -15%~+10% 50/60Hz			
Environment	operating temperature: 0~40℃ storage temperature: -40~50℃ humidity: less than 80% (with no condensation) vibration: bellow 0.5G (4.9m/S ²), 10~60Hz (uncontinuous operation)			
Torque -rotational speed chart (T—M)	Chart18-A (Chart18-B)	Chart19-A (Chart19-B)	Chart20-A (Chart20-B)	Chart21-A (Chart21-B)

Torque - rotational speed chart (M—n):



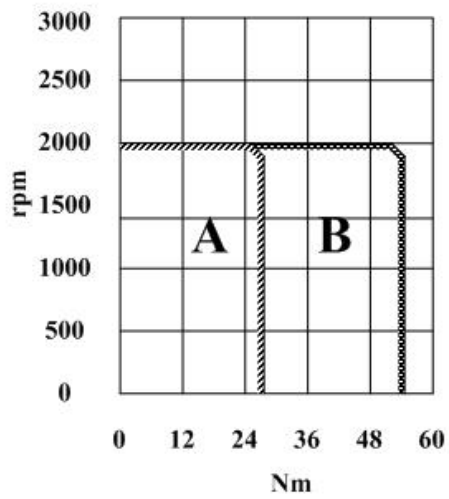


Chart21-A

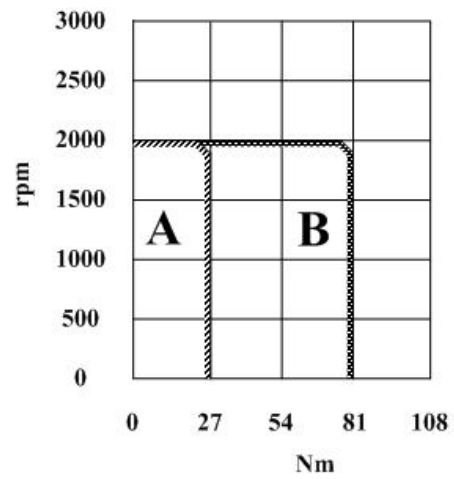


chart21-B

Note: A: Continual work area;
X-A : SFC configuration;

B: Short-time work area。
X-B: SFC+ configuration。

AC Motor and Servo Driver

● Specification Table of 220V AC Servo Driver (SA3L04C、SA3L06B、SA3L10B、SA3L10C、SA3L15C、SA3L25C)

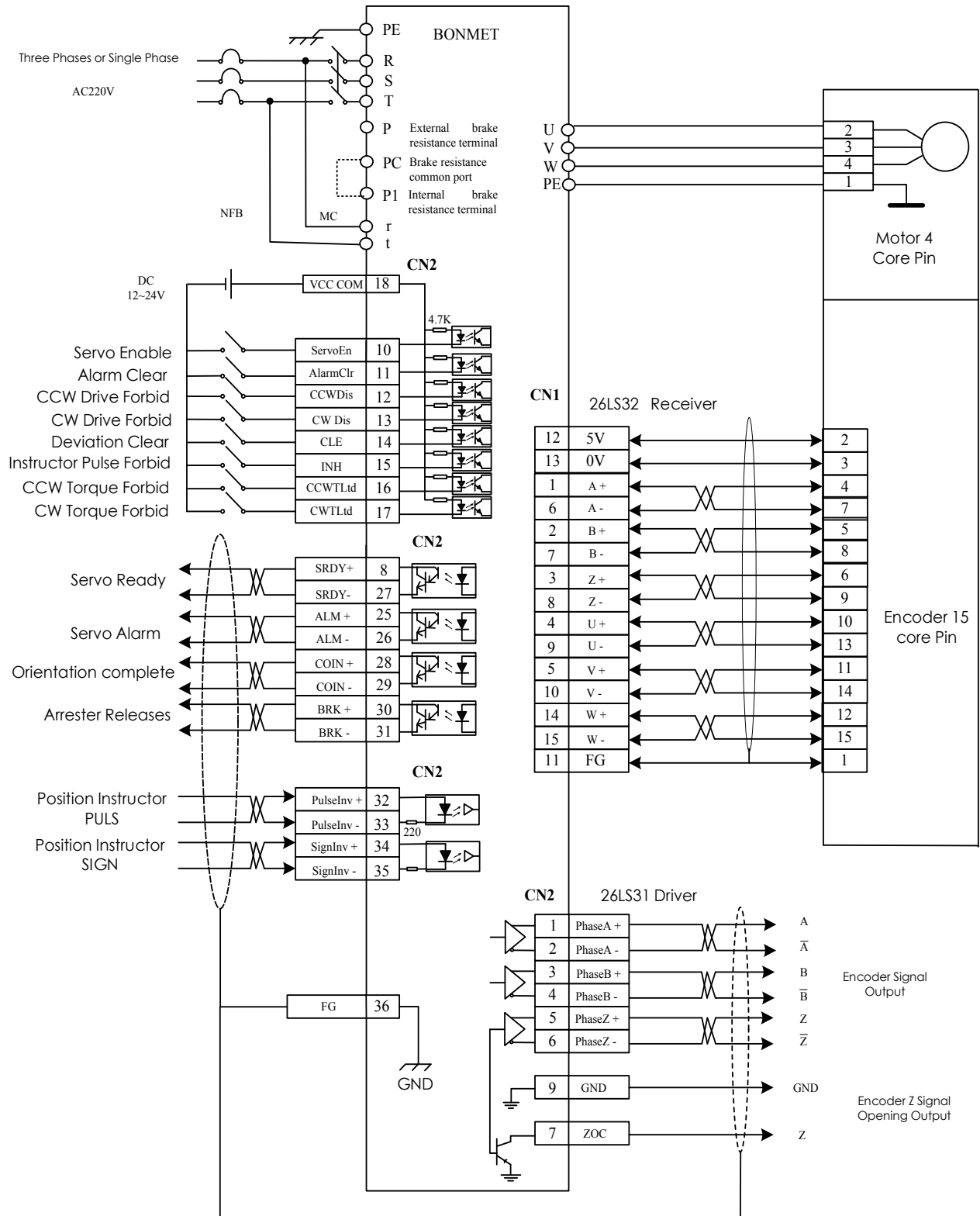
Input power supply		Single-phase or three-phase AC220V -15~+10% 50/60Hz
Environment	Temperature	Operating : 0~40°C Storage : -40°C~50°
	Humidity	40%~80% (with no condensation)
	Atmospheric pressure	86~106kPa
Control method		① Position control ② Speed control ③ Torque control ④ JOG operation
Regenerative braking		Internal connection External connection
Characteristic	Speed frequency response	200Hz or higher
	Perturbation of speed rate	<±0.03 (Load 0~100%); <±0.02 (Power -15 ~ +10%) (Value corresponds to nominal speed)
	Speed modulation ratio	1:5000
	Pulse frequency	≤500kHz
Control input		① Servo enable ② Alarm Clear ③ CCW driver forbid ④ CW driver forbid ⑤ Deviation counter reset/ / speed select 1 / zero-speed clamp ⑥ command pulse forbid/ speed select 2 ⑦ CCW torque limit ⑧ CW torque limit
Control output		① Servo ready output ② Servo alarm output ③ Positioning complete output / speed reach output
Position control	Input mode	① Pulse + symbol ② CCW pulse / CW pulse ③ Two-phases A / B orthogonal pulse
	Electronic gear	1~32767/1~32767
	Feedback pulse	2500 C/T
Speed control		Four kinds of internal speed
Acceleration and deceleration function		Parameter establishment 1~10000ms / 1000r/min
Monitoring function		Nominal speed, current position, command pulse accumulation, position deviation, motor torque, motor current, linear speed, rotor absolute location, command pulse frequency, running status, input / output terminal signal and so on
Protection function		Overspeed, the main power supply over-voltage and under-voltage, over current, overload, brake exceptionally, encoder exceptionally, control power supply exceptionally, position ultra and inferior and so on
Applicable load inertia		Less than five times of motor inertia

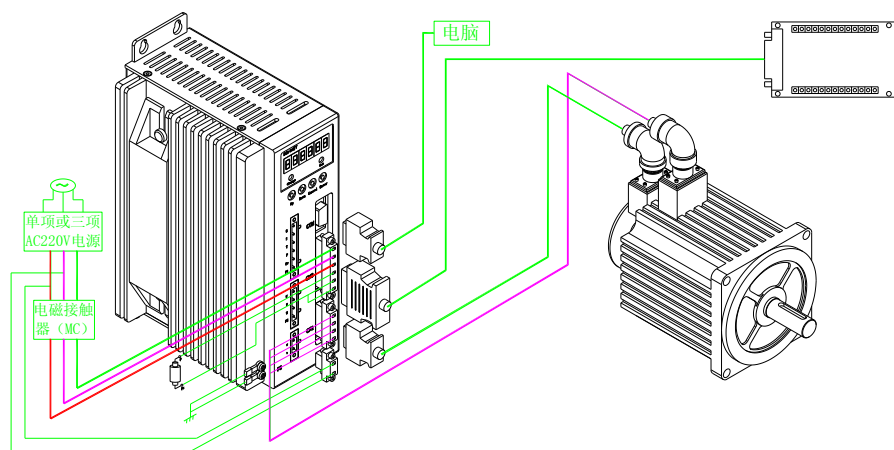
● Specification Table of 380V AC Servo Driver (SA3H10C)

Input power supply		three-phase AC380V/AC220V, -15~+10%, 50/60Hz
Output current		Nominal value: 10A Peak value: 30A
Environment	Temperature	Work operating: 0~40° C Storage: -40° C~50° C
	Humidity	40%~80% (with no condensation)
	Atmospheric pressure	86~106kPa
Control method		①Position control ②Speed control ③Torque control ④JOG operation
Regenerative braking		Internal connection External connection
Characteristic	Speed frequency response	200Hz or higher
	Perturbation of speed rate	<±0.03 (Load 0~100%); <±0.02 (Power -15 ~ +10%) (Value corresponds to nominal speed)
	Speed modulation ratio	1:5000
	Pulse frequency	≤500kHz
Control input		①Servo enable ②Alarm Clear ③CCW driver forbid ④CW driver forbid ⑤Deviation counter reset/speed select 1 / zero-speed clamp ⑥command pulse forbid/ speed select 2 ⑦CCW torque limit ⑧CW torque limit
Control output		① Servo ready output ②Servo alarm output ③Positioning complete output / speed reach output
Position control	Input mode	① Pulse + symbol ② CCW pulse / CW pulse ③ Two-phases A / B orthogonal pulse
	Electronic gear	1~32767/1~32767
	Feedback pulse	2500 C/T
Speed control		Four kinds of internal speed
Acceleration and deceleration		Parameter establishment 1~10000mS / 1000r/min
Monitoring function		Nominal speed, current position, command pulse accumulation, position deviation, motor torque, motor current, linear speed, rotor absolute location, command pulse frequency, running status, input / output terminal signal and so on
Protection function		Overspeed, the main power supply over-voltage and under-voltage, over current, overload, brake exceptionally, encoder exceptionally, control
Applicable load inertia		Less than five times of motor inertia power supply exceptionally, position ultra and inferior and so on

AC Motor and Servo Driver

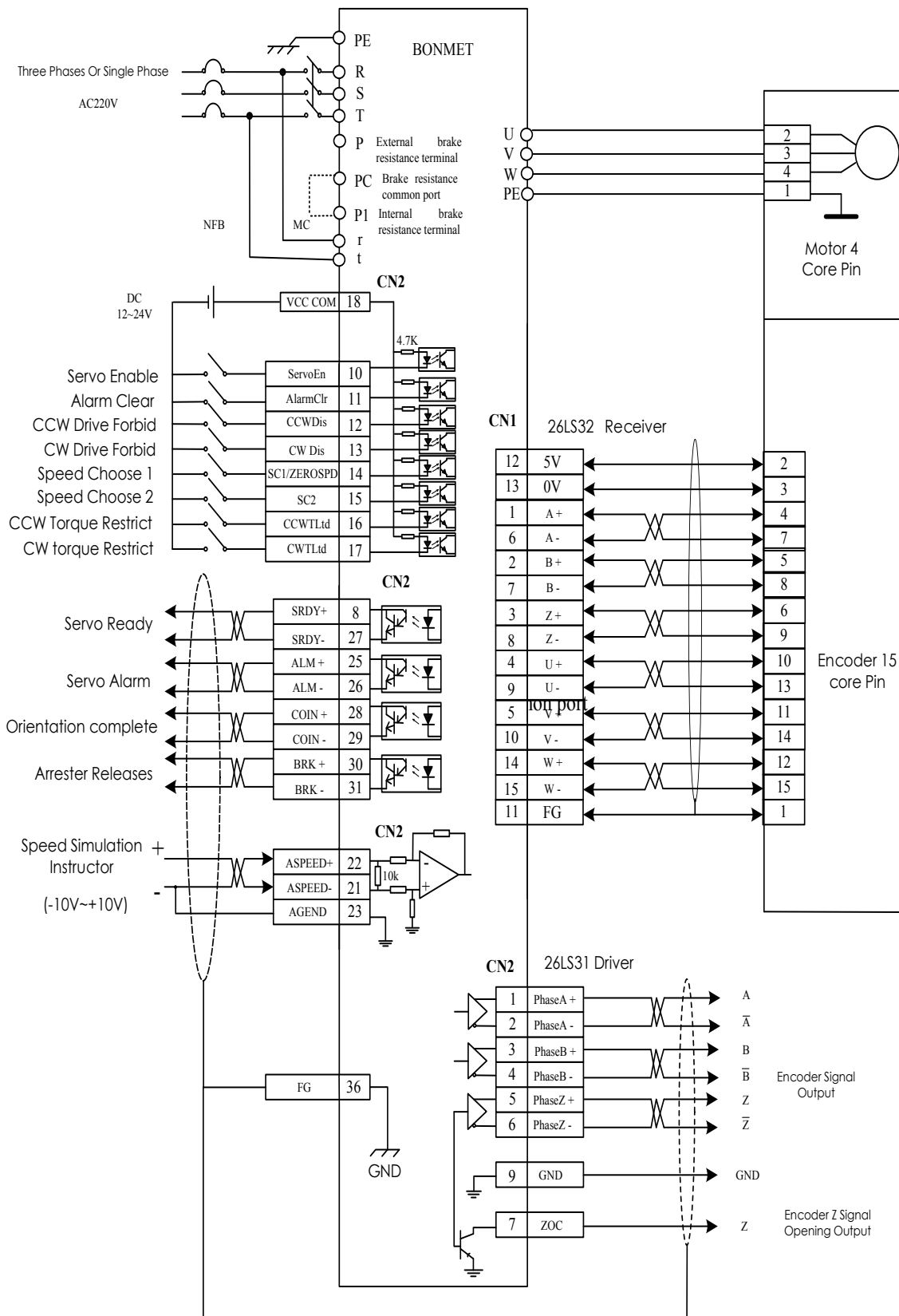
The Standard Connection Figure of Position Control Mode

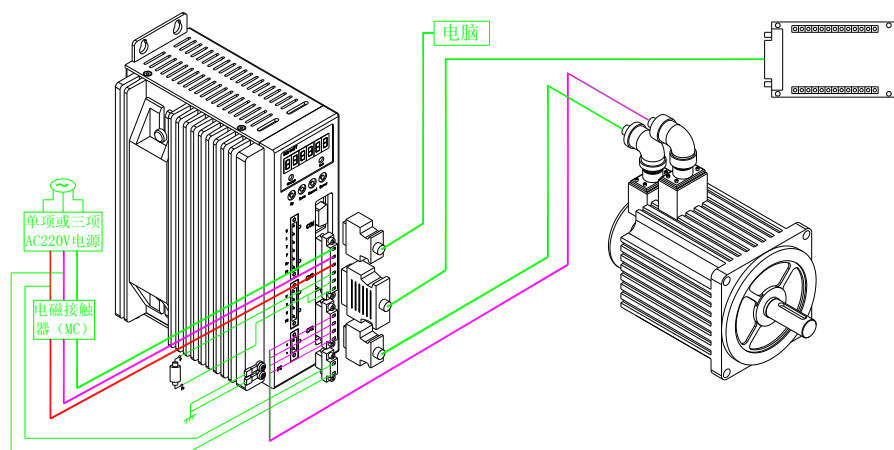




AC Motor and Servo Driver

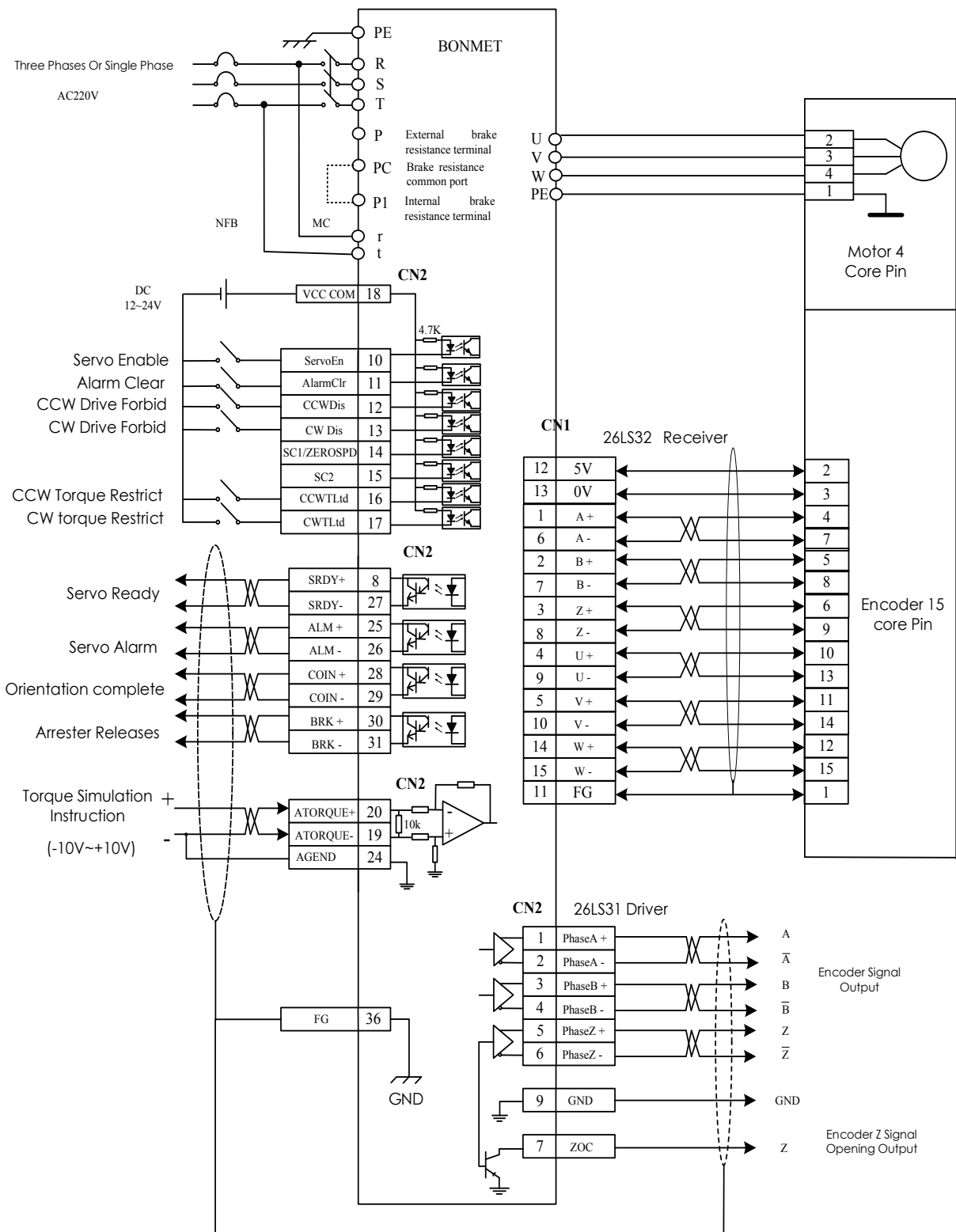
- The Standard Connection Figure of Speed Control Mode

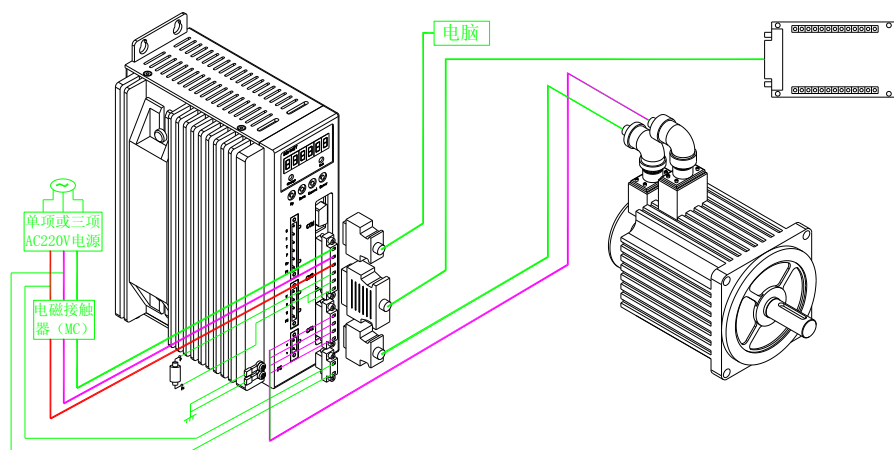




AC Motor and Servo Driver

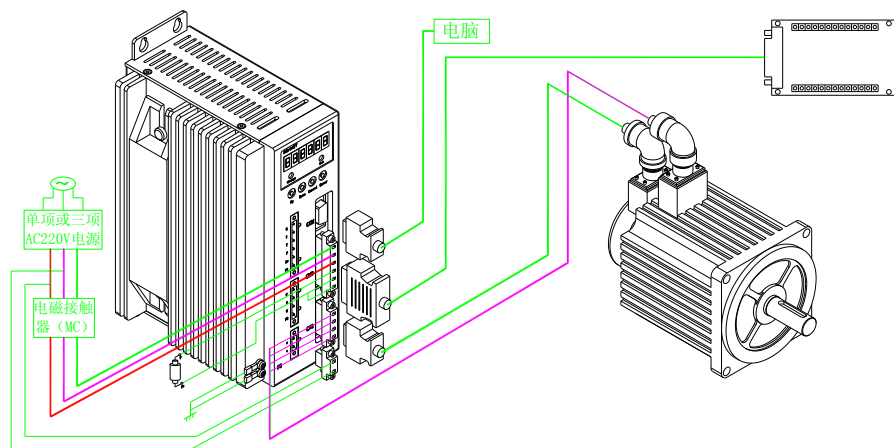
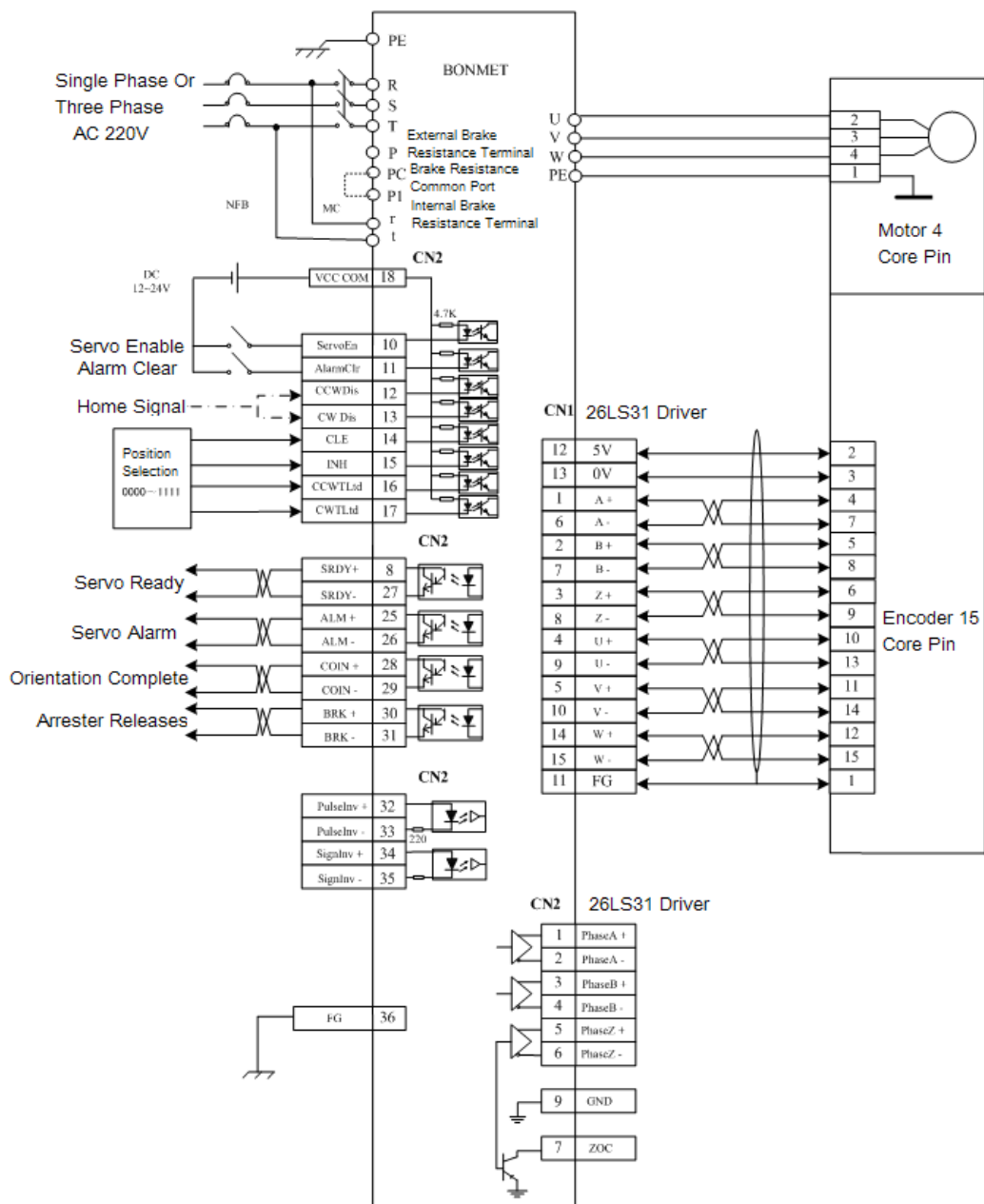
● The Standard Connection Figure of Torque Control Mode





AC Motor and Servo Driver

- The Standard Connection Figure of Point to Point Control Mode



AC Motor and Servo Driver

● The Explanation of Connection Terminals

Power terminals TB1, TB2, TB3 of servo driver

TB1

Terminal symbols	Name of signal	Function
R	Main power supply one phase or three phases	Main power input terminals, SAxLxxx series: AC220V 50Hz SAxHxxx series: AC380V 50Hz Note: Never connect R, S, T to U, V, W terminals of servo motor.
S		
T		
P	External brake resistance terminal	1. When that does not use the external brake resistance, please connect P1 to PC, and leave the P port free. 2. When use the external brake resistance, please connect the external brake resistance between P and PC, and leave the P1 port free.
PC	Brake resistance common port	
P1	Internal brake resistance terminal	

TB2

Terminals symbol	Name of signal	Function
U	Servo driver output	Servo driver output terminals must match with U, V, W terminals of the servo motor.
V		
W		
PE	System ground	Grounding terminal, connect with ground of servo motor.

TB3

Terminals symbol	Name of signal	Function
r	Control input of power supply	Control loop circuit power supply input terminal AC220V, 50Hz
t		

Control signal input/output terminals (CN2)

Number of Terminals	Name of signals	Terminal symbols	Function
18	The power supply anode of input terminal	VCCCOM	The power supply anode of input terminal is used to driver the electro-optical coupler of input terminal DC12-24V, current \geq 100mA.
10	Servo enable	ServoEn	Input terminal of servo enable. ServoEn ON: permit servo diver to run; ServoEn OFF: driver off, stop working, motor is in a free mode; Remark 1: make sure that servo motor is quiescent before turn "ServoEn OFF" to "ServoEn ON" Remark 2: input any command after 50 ms turning to "ServoEn ON".
11	Alarm clear	AlarmClr	Alarm clear terminal input AlarmClr ON: clear system's alarm; AlarmClr OFF: keep system's alarm; Remark 1: if the warning is that the failure code is smaller than 12, it can not use this method to eliminate, needs to cut off the power supply and overhaul, and then electrifies once more.
12	CCW drive forbid	CCWDis	CCW (counter-clockwise) servo driver forbid input terminal. CCWDis ON: CCW driver permit CCWDis OFF:CCW driver forbid Notel: Remark 1: used in mechanical out of limit, CCW direction is zero torque when switch is off. Remark 2: setting "PN8=001000" could achieve the same result.
13	CW drive forbid	CW Dis	CW (clockwise) servo drive forbids input terminal. CWDis ON:CW servo driver permit CWDis OFF:CW servo driver forbid Remark 1: used in mechanical out of limit, CW direction is zero torque when switch is off. Remark 2: setting "PN8=001000" could achieve the same result.
14	Deviation counter clear	CLE/ SC1/ ZEROSPD	In the position control mode, input terminal of position deviation counter clear (parameter PN4=2) CLE ON: clear deviation counter in position control mode.
	Speed choose1		In the speed control mode (parameter PN4=1), while choosing inner speed (parameter PN40=0), speed choose 1 input terminal.

			<p>In the speed control mode, use the combination of SC1 and SC2 to choose different inner speed.</p> <p>SC1 OFF, SC2 OFF: inner speed choose1</p> <p>SC1 ON, SC2 OFF: inner speed choose2</p> <p>SC1 OFF, SC2 ON: inner speed choose3</p> <p>SC1 ON, SC2 ON: inner speed choose4</p> <p>Remark: inner speed 1~4 can modify by parameter</p>
	Zero speed clamp		<p>In the speed control mode (parameter PN4=1), while choosing outer stimulant speed (parameter PN9=1000);</p> <p>ZEROSPD ON: no matter what the simulative value is, force speed to zero</p> <p>ZEROSPD OFF: the value of speed dictate is simulative value.</p>
15	Command pulse forbid	INH/ SC2	<p>In the position control mode, input terminal of command pulse(parameter PN4=2),</p> <p>INH ON: command pulse input forbid</p> <p>INH OFF: command pulse input efficient</p>
	Speed choose 2		<p>In the speed control mode (parameter PN4=1),while choosing inner speed (parameter PN40=0), speed choose 2 input terminal.</p> <p>In the speed control mode, use the combination of SC1 and SC2 to choose different inner speed.</p> <p>SC1 OFF, SC2 OFF: inner speed choose1</p> <p>SC1 ON, SC2 OFF: inner speed choose2</p> <p>SC1 OFF, SC2 ON: inner speed choose3</p> <p>SC1 ON, SC2 ON: inner speed choose4.</p>
16	CCW torque limit	CCWTLtd	<p>CCW (counter-clockwise)torque limit input terminal</p> <p>CCWTLtd ON: CCW torque limit in Scope parameter PN26.</p> <p>CCWTLtd OFF: CCW torque is not limited by parameter PN26</p> <p>Remark1: wether CCWTLtd is valid or not, CCW torque is limited by parameter PN42, generally speaking, parameter PN42> parameter PN26.</p>
17	CW torque limit	CWTLtd	<p>CW (clockwise) torque limit input terminal.</p> <p>CWTLtd ON:CW torque limit in Scope parameter PN25;</p> <p>CWTLtd OFF:CW torque is not limited by parameter PN25;</p> <p>Remark1: wether CWTLtd is valid or not, CW torque is limited by parameter PN42, generally speaking, parameter PN42> parameter PN25.</p>
8	Servo ready output	SRDY+	Output terminal of servo ready.
27		SRDY-	SRDY ON: control power supply and main power supply is in the course of nature, there is no alarm

			from servo driver, servo ready output is ON; SRDY OFF: main power supply is detached or there is generate alarm from driver, servo ready output is off.
25	Servo alarm output	ALM +	Output terminal of servo alarm. ALM ON: there is no alarm from servo driver, servo alarm output is ON ALM OFF: there is alarm from servo driver, servo alarm output is OFF.
26		ALM-	
28	Positioning complete	COIN +	Output terminal of positioning complete COIN ON: positioning complete output is ON while the value of position deviation counter is in hypothesis orientation positioning range, otherwise, output is OFF (output close). COIN ON: when the speed is equal or over hypothesis speed, speed reach output is ON, otherwise, output is OFF (output close).
29	output (position control mode); speed reach output (speed control mode)	COIN-	
30	Mechanical brake release	BRK +	When the motor has mechanical brake, the port can use to control the brake. BRK ON: brake electrify, brake is not valid, the motor can openominal; BRK OFF: break close, break is valid, the motor can not openominal. Reamrk: the function of BRK is controlled by driver.
31		BRK-	
32	Command pulse PLUS input	PulseInv +	Input terminal of external command pulse. Remark : enactment mode of the pulse input by parameter PN52;
33		PulseInv -	
34	Command pulse SIGN input	SignInv +	① PN52=0, command pulse+ signal mode(default state); ② PN52=1, CCW/CW command pulse mode; ③ PN52=2, 2 phases command pulse mode.
35		SignInv -	
22	Analog speed command input	ASPEED+	Input terminal of external simulative speed command, difference way, input Impedance is 10kΩ, input scope is -10V~+10V.
21		ASPEED-	
23	Analog grounding	AGND	The grounding line of analog input.
20	Analog torque command input	ATORQUE+	Input terminal of external analog torque command, difference way, input impedance is 10kΩ, input scope is -10V~+10V.
19		ATORQUE-	
24	Analog grounding	AGND	The grounding line of analog input.
1	Encoder phase A signal	Phase A +	1. Encoder A B Z signal difference servo output(26LS31 output, correspond to RS422) 2. Non-isolative output (non-insulative).
2		Phase A -	

3	Encoder phase B signal	Phase B +	
4		Phase B -	
5	Encoder phase Z signal	Phase Z +	
6		Phase Z -	
9	Encoder public grounding line	GND	Encoder public grounding line
7	Encoder phase Z collector opening output	ZOC	1. Encoder phase Z signal output from collector opening, when encoder phase Z signal appears, output is ON, otherwise, output is OFF; 2. Non-isolative output (non-insulative). 3. In the superior machine, the phase Z signal pulse is very narrow, so please use the high speed electro-optical coupler to receive
36	Shield grounding line	FG	The terminal of shield grounding line.

Communication interface (COM)

2	RS232 serial communication interface	RXD	Non-isolation input /output.
3		TXD	
5		GND	

Encoder signal input terminals (CN1)

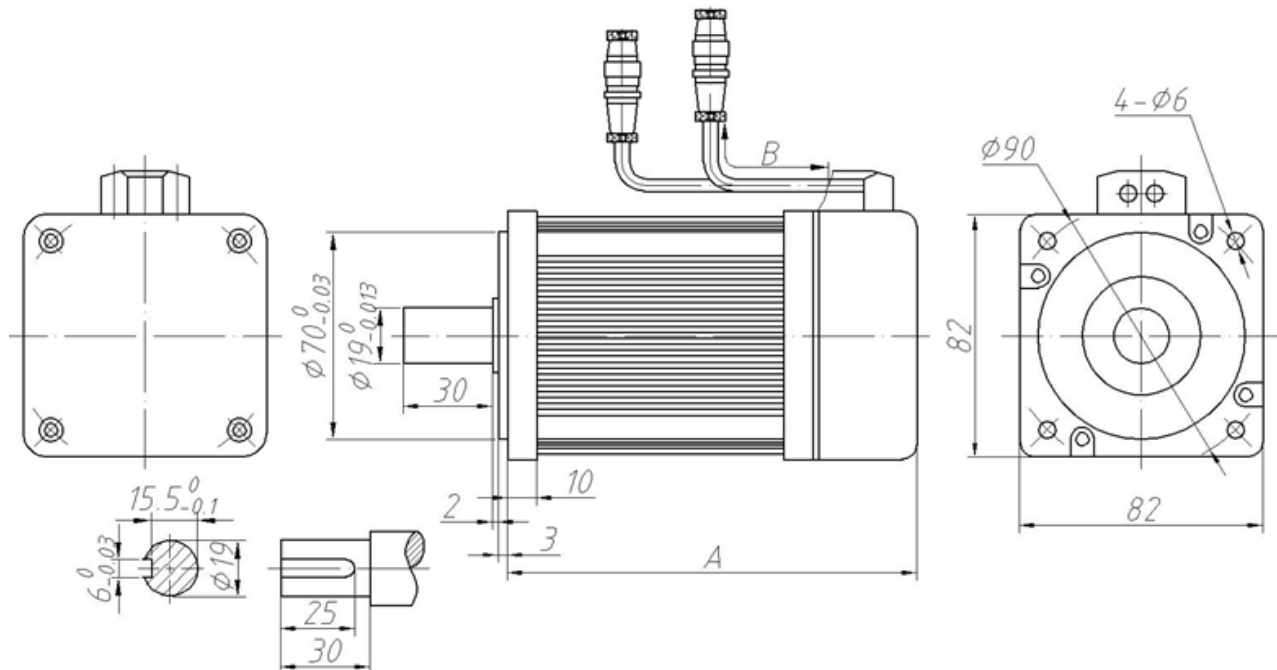
Terminal Number	Signal Name	Terminal symbols	Function
1	Encoder input A+	A +	Connect to electro-optic encoder A+
6	Encoder input A-	A -	Connect to electro-optic encoder A-
2	Encoder input B+	B +	Connect to electro-optic encoder B+
7	Encoder input B-	B -	Connect to electro-optic encoder B-
3	Encoder input Z+	Z +	Connect to electro-optic encoder Z+
8	Encoder input Z-	Z -	Connect to electro-optic encoder Z-
4	Encoder input U+	U +	Connect to electro-optic encoder U+
9	Encoder input U-	U -	Connect to electro-optic encoder U-

5	Encoder V+ input	V+	Connect to electro-optic encoder V+
10	Encoder V- input	V-	Connect to electro-optic encoder V-
14	Encoder W+ input	W+	Connect to electro-optic encoder W+
15	Encoder W- input	W-	Connect to electro-optic encoder W-
13	Public grounding	0V	The servo motor electro-optic encoder uses the +5V power supply and public grounding; If the cable length is long, it should use multiple wires to be parallel, and reduce the line drop.
12	Power supply 5V	+5V	
11	Shield grounding line	FG	Shield grounding line terminals

AC Motor and Servo Driver

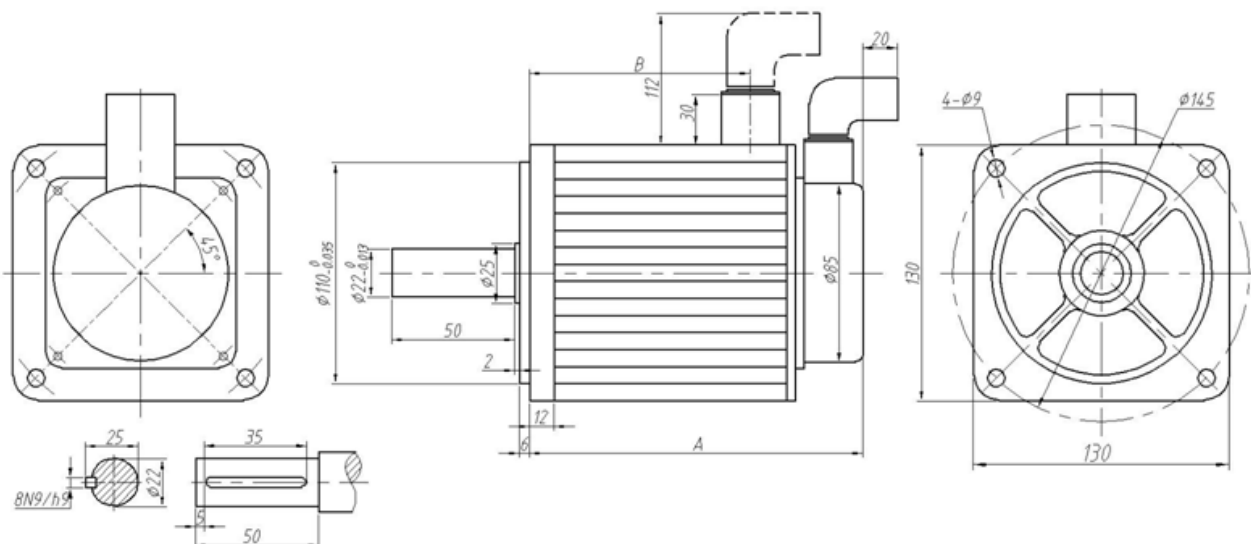
● The Installation Dimension of AC Motor and Servo Driver

80 series motors



Nominal torque (Nm)	1.3	2.4	3.3
A(mm)	128	150	165
B(mm)	500	500	500

110 series motors



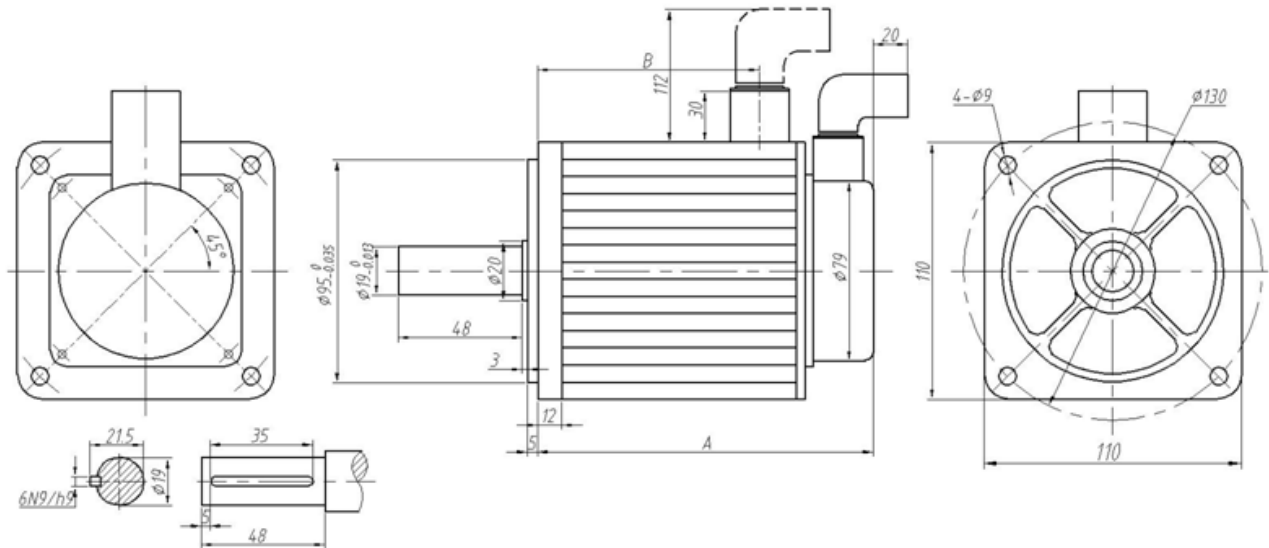
Nominal torque (Nm)	2	4	5	6
A(mm)	158 (200)	185 (271)	200 (242)	217 (259)
B(mm)	76	102	118	134

Remark: the value in parenthesis is the length of brake with power off breaker.

AC Motor and Servo Driver

● The installation dimension of AC Motor and Servo driver

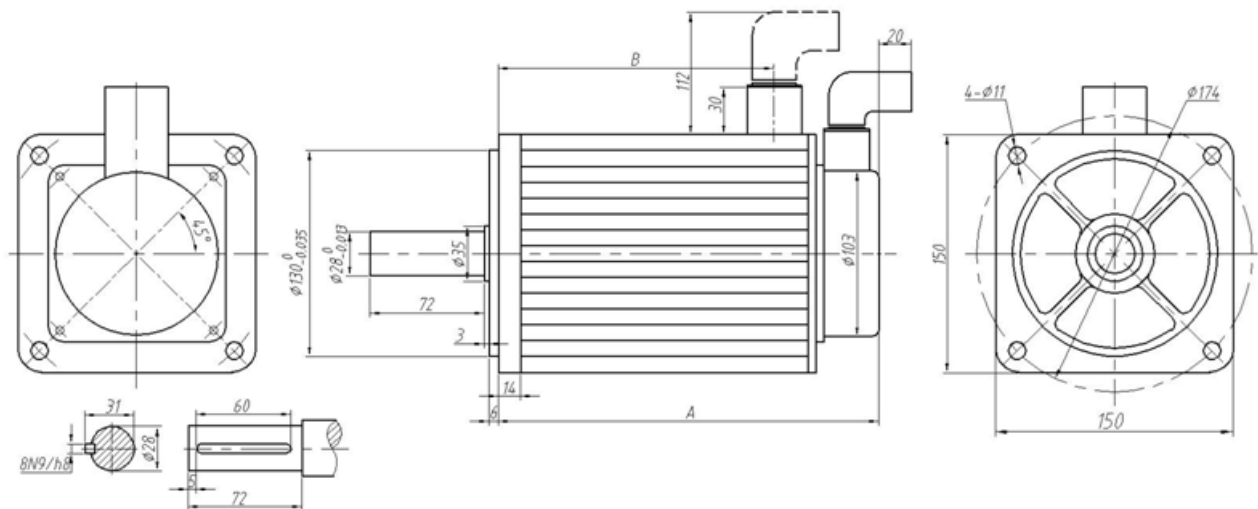
130 series motors



Nominal torque (Nm)	4	5	6	7.7	10	15
A(mm)	163 (209)	171 (213)	181 (223)	195 (237)	219 (261)	267 (319)
B(mm)	80	89	98	112	136	184

Remark: the value in parenthesis is the length of brake with power off breaker.

150 series motors

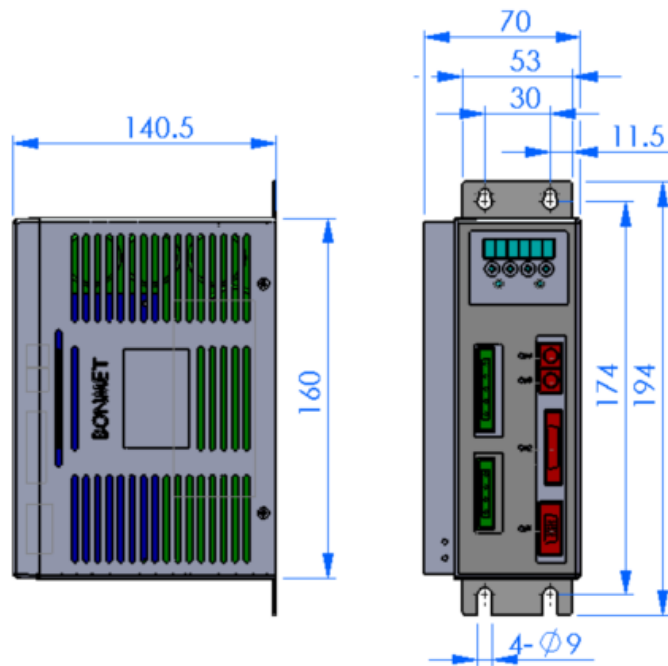


Nominal torque (Nm)	15	18	23	27
A(mm)	231 (292)	250 (312)	280 (342)	306 (368)
B(mm)	146	166	196	222

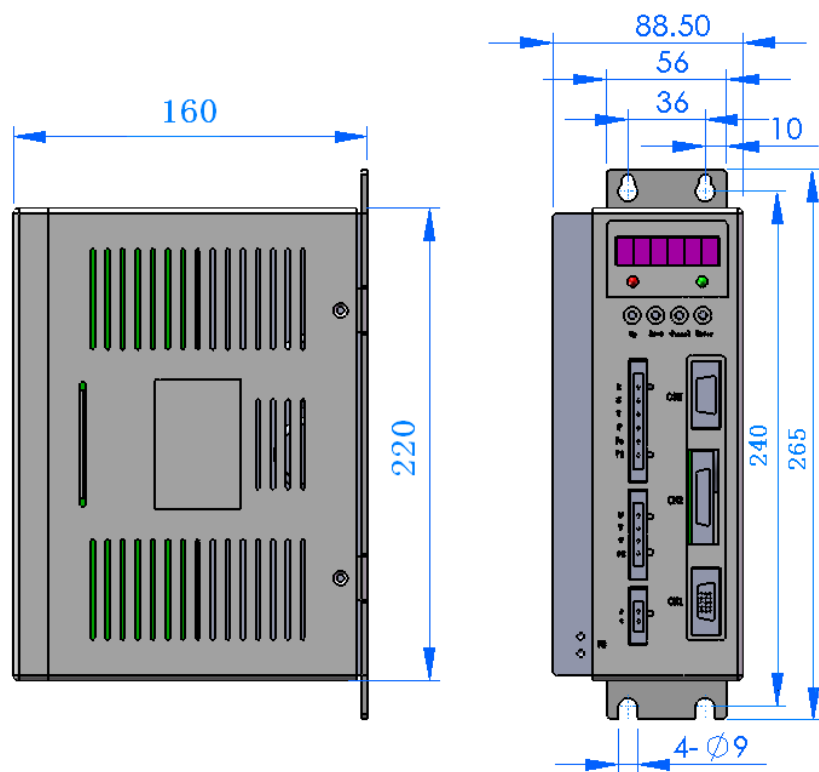
Remark: the value in parenthesis is the length of brake with power off breaker.

AC Motor and Servo Driver

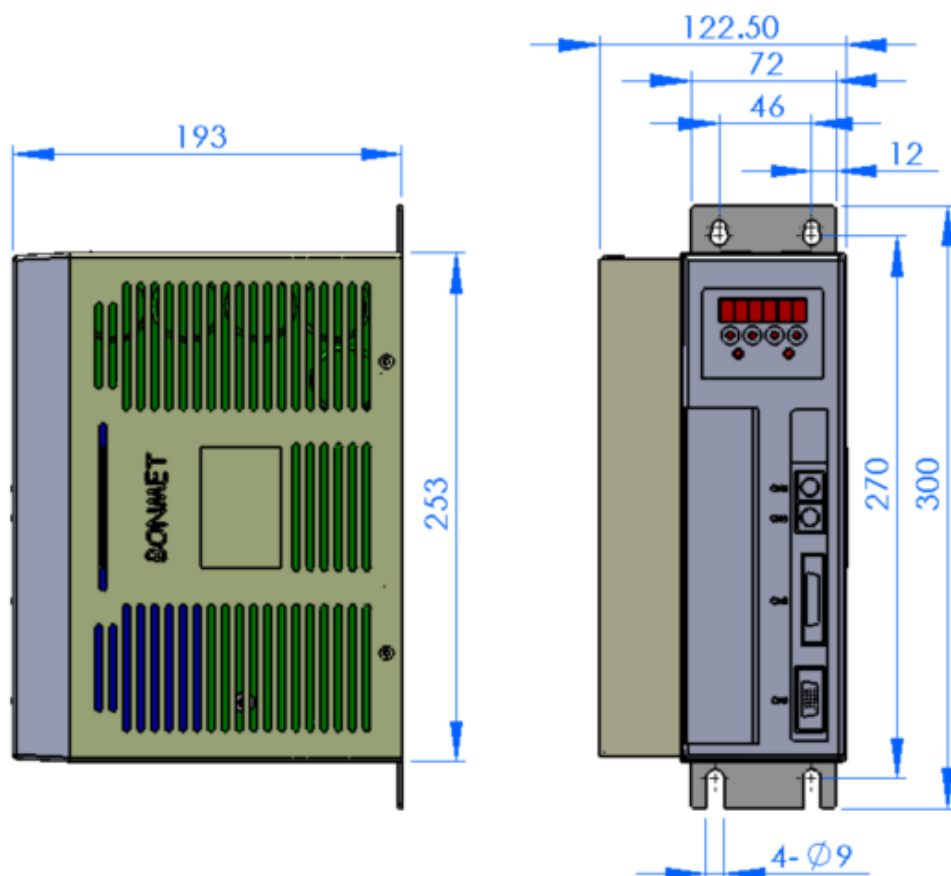
● The Installation Dimension of Servo Driver



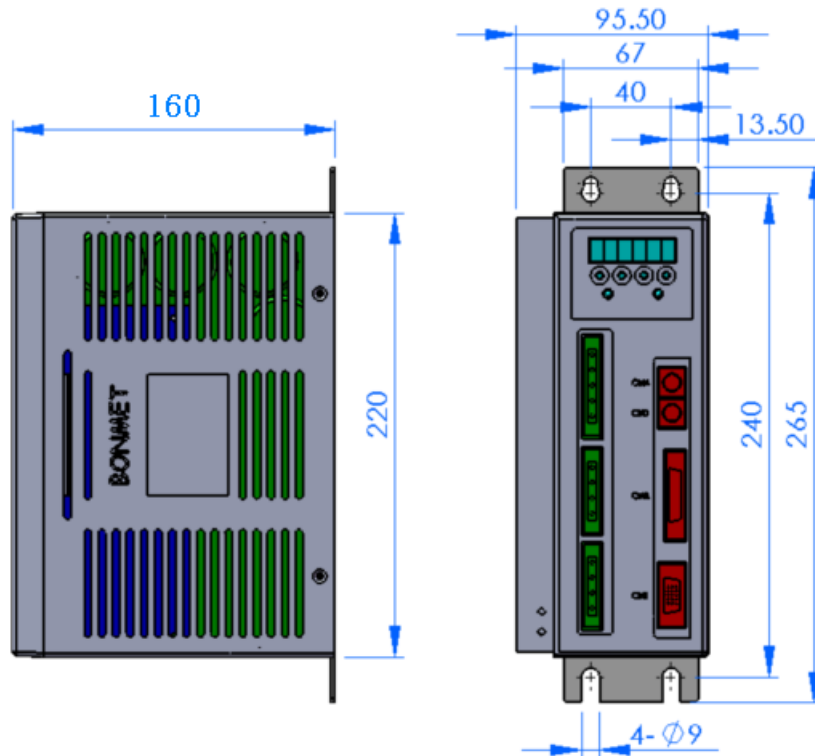
The installation dimension figure of driver SA3L04C



The installation dimension figure of driver SA3L06B / SA3L10B




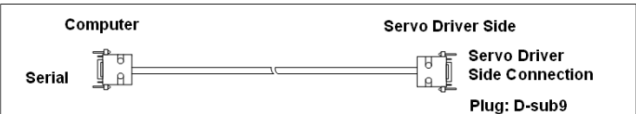
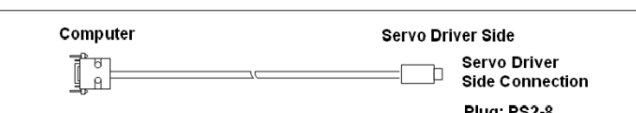

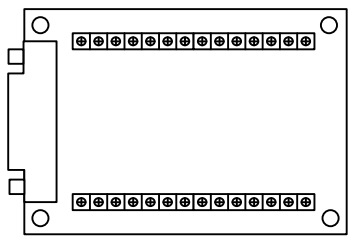
The installation dimension figure of driver SA3L15C / SA3L25C



The installation dimension figure of driver SA3L10C / SA3H10C

● Product Option of BONMET AC Servo System

Cable Category	Cable Model	Model of configuration	Cables and Connectors
Encoder Cable	BON-SA24	110series motor 130series motor 150series motor	<p>Motor Side Servo Driver Side</p> <p>Aviation Plug Servo Driver Side Connection Plug:D-sub15</p>
	BON-SB24	80 series motor	<p>Motor Side Servo Driver Side</p> <p>Aviation Plug Servo Driver Side Connection Plug:D-sub15</p>
Power Cable	BON-HA	110 series motor 130 series motor 150 series motor	<p>Motor Side Servo Driver Side</p> <p>Aviation Plug Servo Driver Side Connection</p>

	BON-HB	80 series motor	
Serial RS232 Cable	BON-COM9	SA3L06B SA3L10B	
	BON-PS2-8	SA3L04C SA3L10C SA3L15C SA3L25C SA3H10C	
Upper Monitor Interface Cable	BON-CN2A	SA3L06B SA3L10B SA3L04C SA3L10C SA3L15C SA3L25C SA3H10C	
Upper Monitor Interface Expansion board	EXD-CN2A	SA3L06B SA3L10B SA3L04C SA3L10C SA3L15C SA3L25C SA3H10C	

Bonmet Motion GmbH is a leading company in the global market for power drive and motion control solutions. We possess many years in manufacture, develop and sales experience in high precision planetary gearbox; gear motor ;AC servo motors; BLDC motors and driver innovations.

A global presence, extensive product range and board spectrum of service make Bonmet to your functional partner for global motion control and power transmission systems.

The gearboxes produced by our company have been awarded 2 patents and many medals honored by the Chinese Government, We have granted by ISO 9001:2000 Quality Management System authentication. Also the CE Certification is a granted standard of our products.

Supported by excellent quality and honest service, our products are very popular in tens of countries and regions, such as India, Pakistan, Israel, Turkey, German, Switzerland, Austria, Sweden, France, Italy, Spain, Portugal, England, Canada, USA, Brazil, Australia, South Korea, Singapore and many more. Our products have been widely used in: aviation, space industry, vessel, communication, CNC machine tool, cutting and welding equipment, printing and dyeing textile machine, packing machine, printing machine, plastic machine, electronic equipment, engineering machine, metallurgy machine, petroleum machine, shipping machine, construction machine, mechanical arm, robot, medical equipment and other fields.

We take customer's requirement as our center philosophy, We continuously improve our supply reliability to produce the most functional and economical power transmission solution for our customers.

To translating science and technology into productivity, and create profit for the society and enterprise, are the main objectives of Bonmet Motion GmbH.

If you need an excellent power drive solution for your system, Bonmet should be your leadoff choice.

For further information please visit our website: <http://www.bonmet.de>

If you can not find your design idea in this catalogue and for any questions please do not hesitate to contact our sales team or engineer department.

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