

HIGH PERFORMANCE SERVO MOTOR & SERVO DRIVE

SYNERGY ASIA SOLUTION CO.,LTD

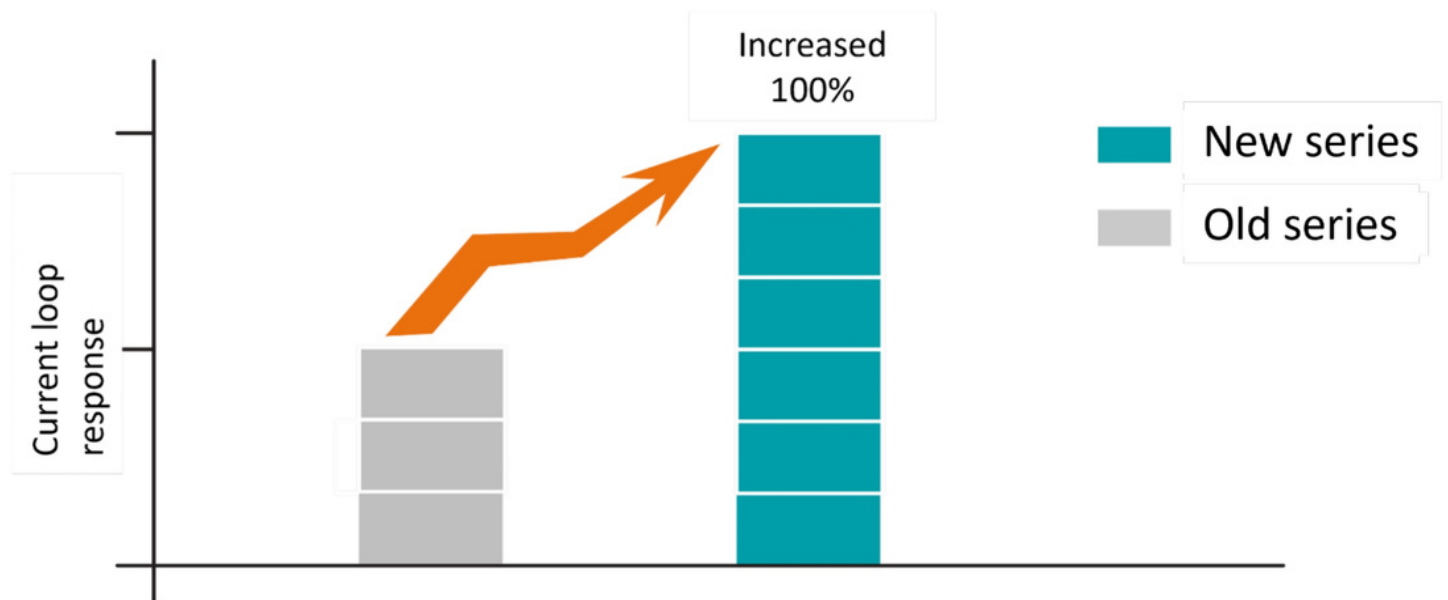
HIGH QUALITY, BETTER VALUE – SAS SERVO MOTOR & SERVO DRIVE

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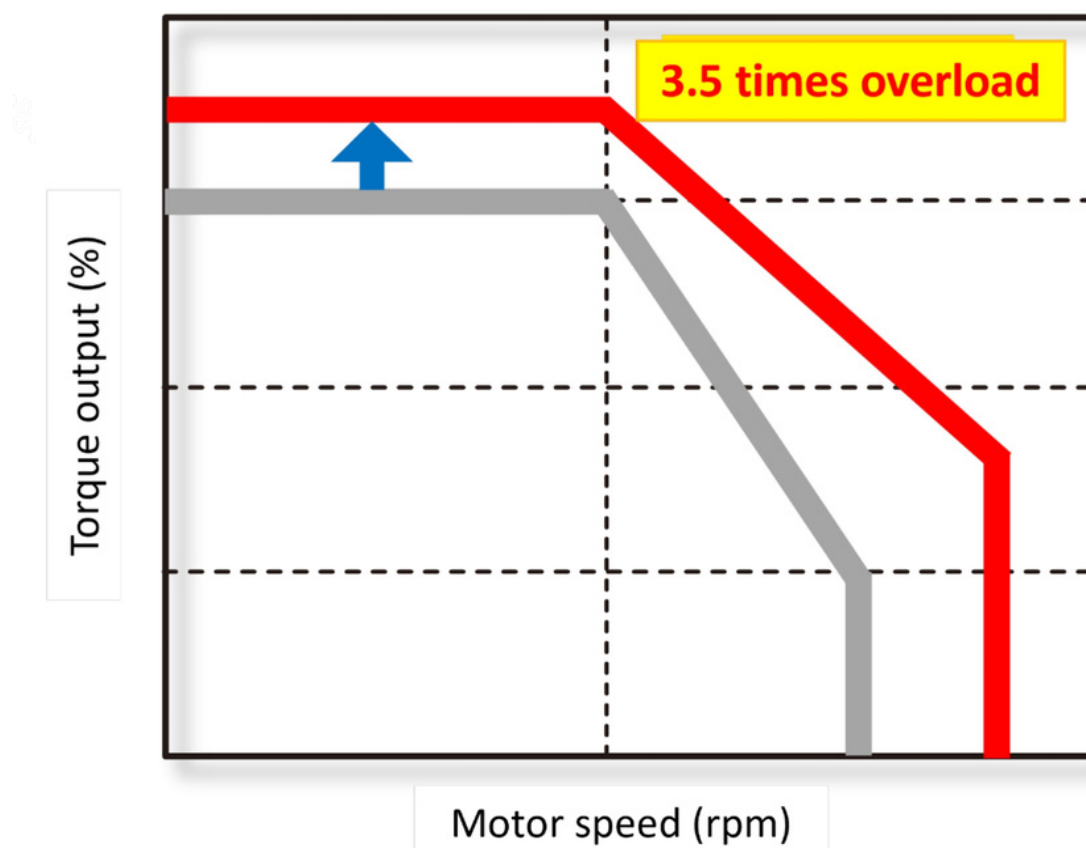


Features

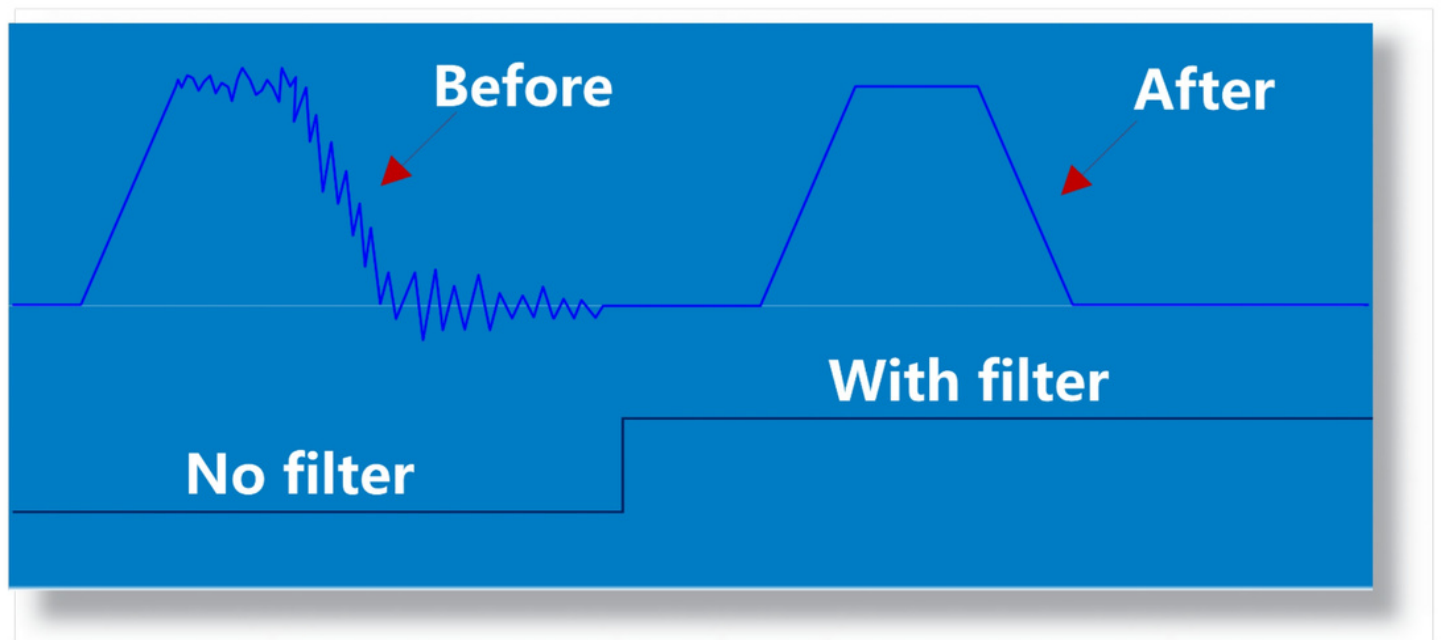
Faster response



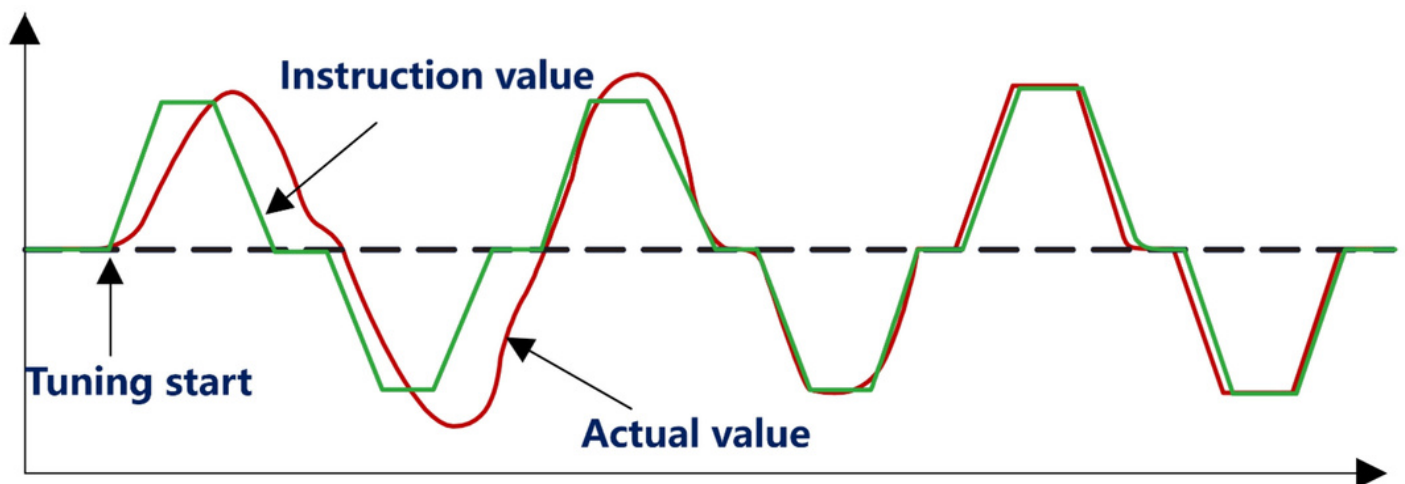
Higher torque output



Better vibration control



Smarter tuning



Model descriptions

• Servo Drive

XD	Q1	-	08	P	A	-	XXXX
Product Code	Product Series	Delimiter	Power	Interface	Voltage level	Delimiter	Factory code
XD: Servo drive	Q1 Series		04: 400W 08: 750W 10: 1KW 15: 1.5KW 20: 2KW 30: 3KW	P: Pulse E: EtherCAT	A: AC220V B: AC380V		Blank: standard 0003: with closed pores 0100: with DB 0300: with analog input 02A0: with CANOPEN 0400: with high speed pulse input

• Servo Motor

XM	Q1	-	H	80	A	08	B30	S	1	6	-	※※
①	②		③	④	⑤	⑥	⑦	⑧	⑨	⑩		⑪
No.	Name	Remarks										
①	Product code	XM: servo motor										
②	Product series	Q1 series										
③	Inertia	A: Low inertia H: High inertia G: Medium inertia										
②	Flange	60: 60mm flange 80: 80mm flange 100: 100mm flange 110: 110mm flange 130: 130mm flange 180: 180mm flange										
⑤	Rated voltage	A: AC220V B: AC380V										
⑥	Rated power	04: 400W 08: 750W 09: 850W 10: 1KW 13: 1.3KW 15: 1.5KW 18: 1.8KW 20: 2KW 30: 3.0KW										
⑦	Rated speed	B10: 1000rpm B15: 1500rpm B20: 2000rpm B30: 3000rpm										
⑧	Options	N None										

		C With brake S With oil seal E With brake and oil seal
⑨	Encoder	1 17-bit incremental, magnetic 2 17-bit absolute, magnetic 3 23-bit, optical encoder 4 23-bit multi-turn optical encoder
⑩	Shaft	0 Flange output 2 Straight shaft, keyway, no thread 6 Straight shaft, keyway, threaded
⑪	Customizations	Blank: standard type ※※ Consult the manufacturer

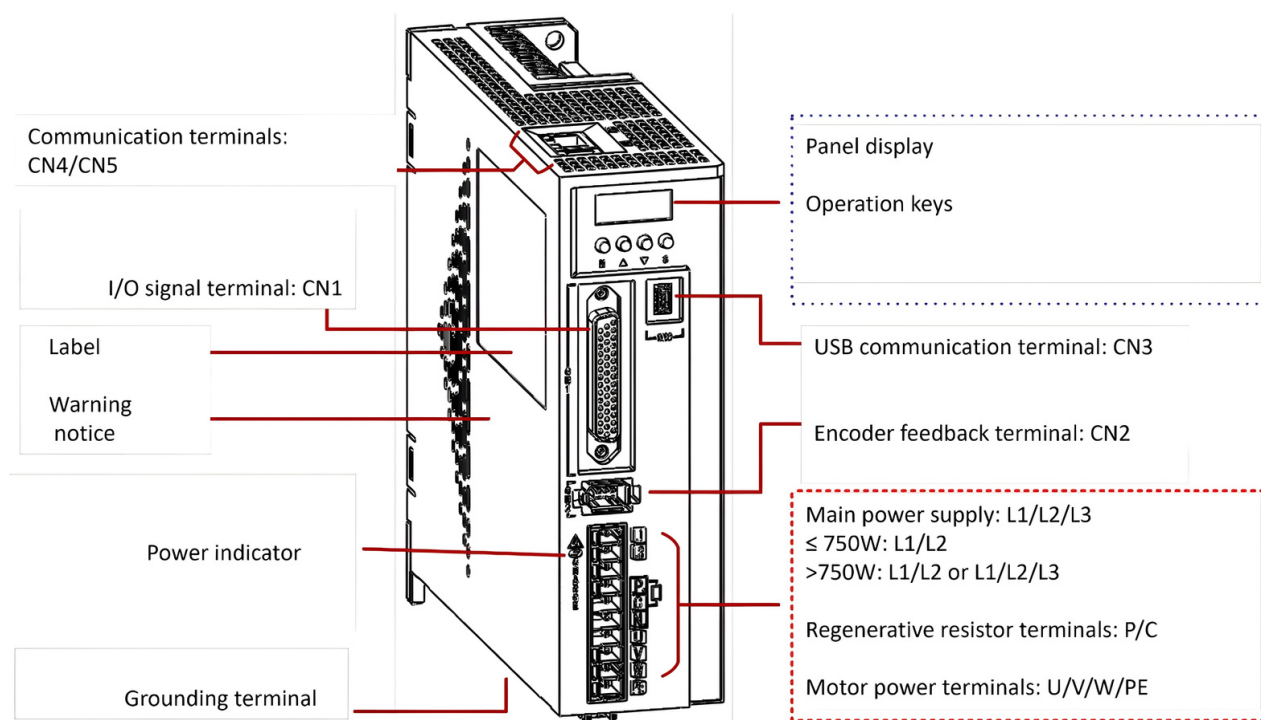
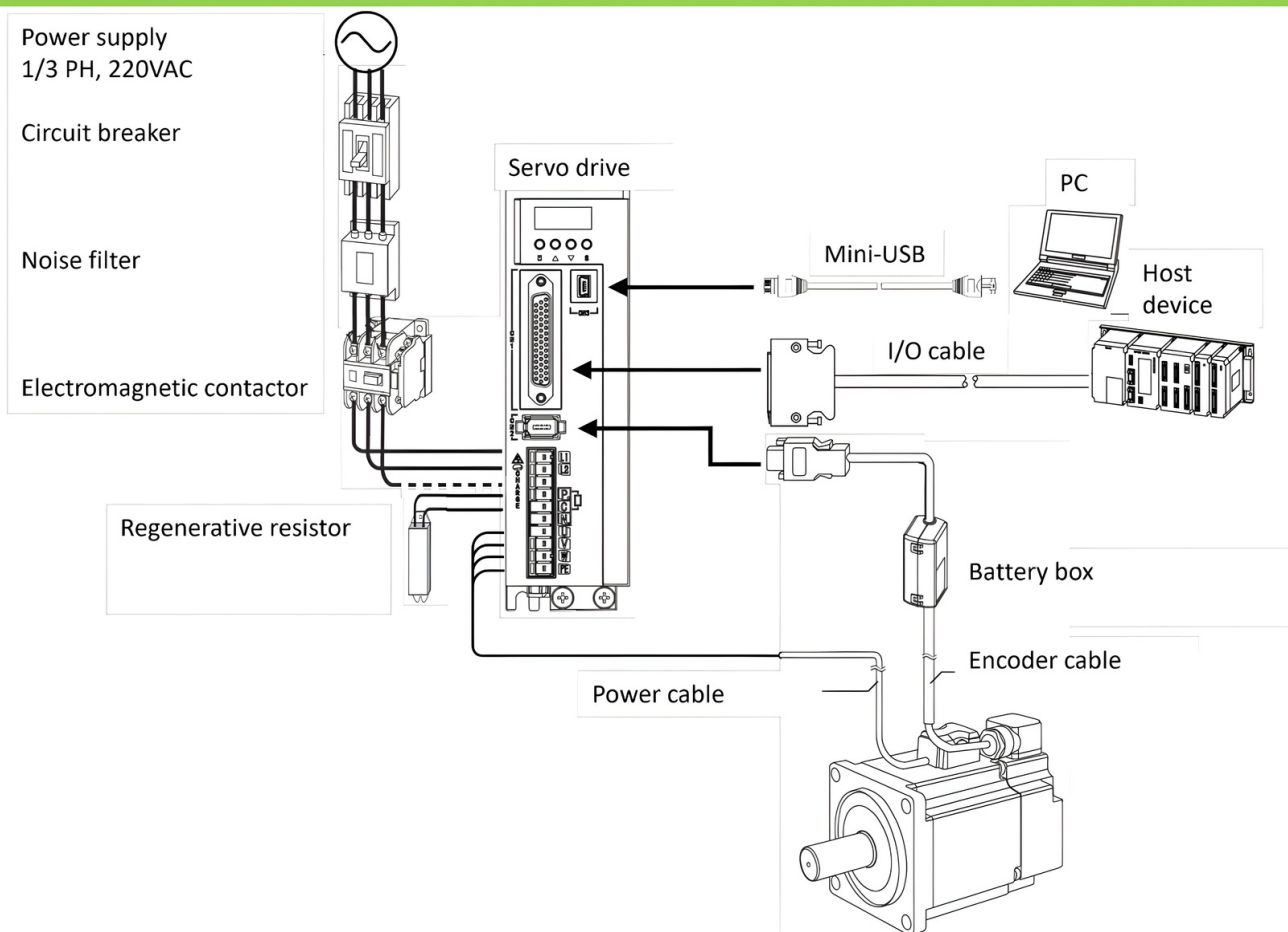
• Matching table

Capacity	Configurations	Drive Model	Motor Model	Power cable	Encoder cable
0.4KW	Standard	XDQ1-04PA	XMQ1-H60A04B30S16	LQ1-P0M0A-□□	LQ1-E0A0-□□
0.75KW	Standard	XDQ1-08PA	XMQ1-H80A08B30S16	LQ1-P0M0B-□□	LQ1-E0A0-□□
1KW	Standard	XDQ1-10PAL	XMQ1-H80A10B30S16	LQ1-P0M0B-□□	LQ1-E0A0-□□
1KW	Standard	XDQ1-10PA	XMQ1-A130A10B20S16	LQ1-P0M2C-□□	LQ1-E0A2-□□
1.5KW	Standard	XDQ1-15PA	XMQ1-A130A15B20S16	LQ1-P0M2C-□□	LQ1-E0A2-□□
2KW	Standard	XDQ1-20PAL	XMQ1-A130A20B20S16	LQ1-P0M2C-□□	LQ1-E0A2-□□
2KW	Standard	XDQ1-20PA	XMQ1-A130A20B20S16	LQ1-P0M2D-□□	LQ1-E0A2-□□
3KW	Standard	XDQ1-30PA	XMQ1-A130A30B20S16	LQ1-P0M2D-□□	LQ1-E0A2-□□
0.85KW	Standard	XDQ1-10PA	XMQ1-G130A09B15S16	LQ1-P0M2C-□□	LQ1-E0A2-□□
1.3KW	Standard	XDQ1-15PA	XMQ1-G130A13B15S16	LQ1-P0M2C-□□	LQ1-E0A2-□□
1.8KW	Standard	XDQ1-20PA	XMQ1-G130A18B15S16	LQ1-P0M2C-□□	LQ1-E0A2-□□
0.4KW	With brake	XDQ1-04PA	XMQ1-H60A04B30E16	LQ1-P0B0A-□□	LQ1-E0A0-□□
0.75KW	With brake	XDQ1-08PA	XMQ1-H80A08B30E16	LQ1-P0B0B-□□	LQ1-E0A0-□□
1KW	With brake	XDQ1-10PAL	XMQ1-H80A10B30E16	LQ1-P0B0B-□□	LQ1-E0A0-□□
1KW	With brake	XDQ1-10PA	XMQ1-A130A10B20E16	LQ1-P0B2C-□□	LQ1-E0A2-□□
1.5KW	With brake	XDQ1-15PA	XMQ1-A130A15B20E16	LQ1-P0B2C-□□	LQ1-E0A2-□□
2KW	With brake	XDQ1-20PAL	XMQ1-A130A20B20E16	LQ1-P0B2C-□□	LQ1-E0A2-□□
2KW	With brake	XDQ1-20PA	XMQ1-A130A20B20E16	LQ1-P0B2D-□□	LQ1-E0A2-□□
3KW	With brake	XDQ1-30PA	XMQ1-A130A30B20E16	LQ1-P0B2D-□□	LQ1-E0A2-□□
0.85KW	With brake	XDQ1-10PA	XMQ1-G130A09B15E16	LQ1-P0B2C-□□	LQ1-E0A2-□□
1.3KW	With brake	XDQ1-15PA	XMQ1-G130A13B15E16	LQ1-P0B2C-□□	LQ1-E0A2-□□
1.8KW	With brake	XDQ1-20PA	XMQ1-G130A18B15E16	LQ1-P0B2C-□□	LQ1-E0A2-□□
0.4KW	Absolute encoder	XDQ1-04PA	XMQ1-H60A04B30S26	LQ1-P0M0A-□□	LQ1-E0B0-□□
0.75KW	Absolute encoder	XDQ1-08PA	XMQ1-H80A08B30S26	LQ1-P0M0B-□□	LQ1-E0B0-□□
1KW	Absolute encoder	XDQ1-10PAL	XMQ1-H80A10B30S26	LQ1-P0M0B-□□	LQ1-E0B0-□□
1KW	Absolute encoder	XDQ1-10PA	XMQ1-A130A10B20S26	LQ1-P0M2C-□□	LQ1-E0B2-□□
1.5KW	Absolute encoder	XDQ1-15PA	XMQ1-A130A15B20S26	LQ1-P0M2C-□□	LQ1-E0B2-□□
2KW	Absolute encoder	XDQ1-20PAL	XMQ1-A130A20B20S26	LQ1-P0M2C-□□	LQ1-E0B2-□□
2KW	Absolute encoder	XDQ1-20PA	XMQ1-A130A20B20S26	LQ1-P0M2D-□□	LQ1-E0B2-□□
3KW	Absolute encoder	XDQ1-30PA	XMQ1-A130A30B20S26	LQ1-P0M2D-□□	LQ1-E0B2-□□
0.85KW	Absolute encoder	XDQ1-10PA	XMQ1-G130A09B15S26	LQ1-P0M2C-□□	LQ1-E0B2-□□
1.3KW	Absolute encoder	XDQ1-15PA	XMQ1-G130A13B15S26	LQ1-P0M2C-□□	LQ1-E0B2-□□

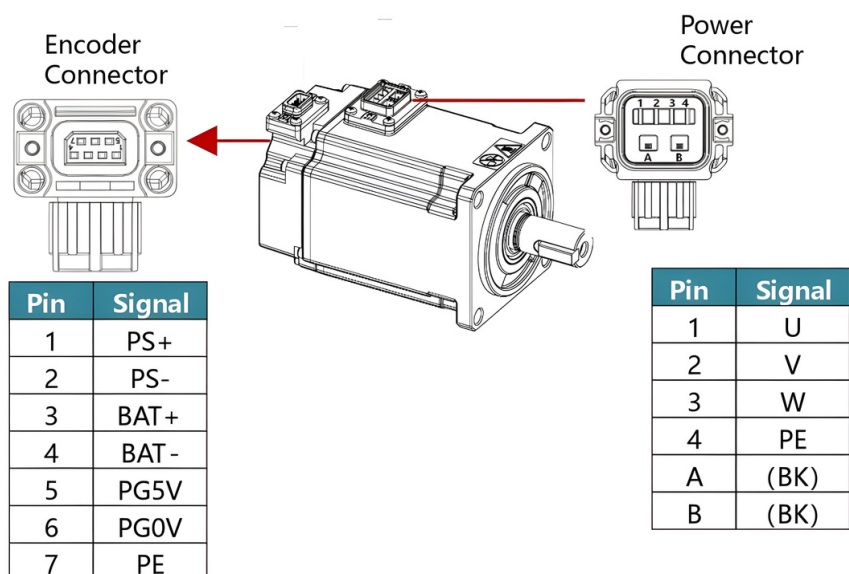
1.8KW	Absolute encoder	XDQ1-20PA	XMQ1-G130A18B15S26	LQ1-P0M2C-□□	LQ1-E0B2-□□
0.4KW	Brake, absolute	XDQ1-04PA	XMQ1-H60A04B30E26	LQ1-P0B0A-□□	LQ1-E0B0-□□
0.75KW	Brake, absolute	XDQ1-08PA	XMQ1-H80A08B30E26	LQ1-P0B0B-□□	LQ1-E0B0-□□
1KW	Brake, absolute	XDQ1-10PAL	XMQ1-H80A10B30E26	LQ1-P0B0B-□□	LQ1-E0B0-□□
1KW	Brake, absolute	XDQ1-10PA	XMQ1-A130A10B20E26	LQ1-P0B2C-□□	LQ1-E0B2-□□
1.5KW	Brake, absolute	XDQ1-15PA	XMQ1-A130A15B20E26	LQ1-P0B2C-□□	LQ1-E0B2-□□
2KW	Brake, absolute	XDQ1-20PAL	XMQ1-A130A20B20E26	LQ1-P0B2C-□□	LQ1-E0B2-□□
2KW	Brake, absolute	XDQ1-20PA	XMQ1-A130A20B20E26	LQ1-P0B2D-□□	LQ1-E0B2-□□
3KW	Brake, absolute	XDQ1-30PA	XMQ1-A130A30B20E26	LQ1-P0B2D-□□	LQ1-E0B2-□□
0.85KW	Brake, absolute	XDQ1-10PA	XMQ1-G130A09B15E26	LQ1-P0B2C-□□	LQ1-E0B2-□□
1.3KW	Brake, absolute	XDQ1-15PA	XMQ1-G130A13B15E26	LQ1-P0B2C-□□	LQ1-E0B2-□□
1.8KW	Brake, absolute	XDQ1-20PA	XMQ1-G130A18B15E26	LQ1-P0B2C-□□	LQ1-E0B2-□□

Connectors and interface

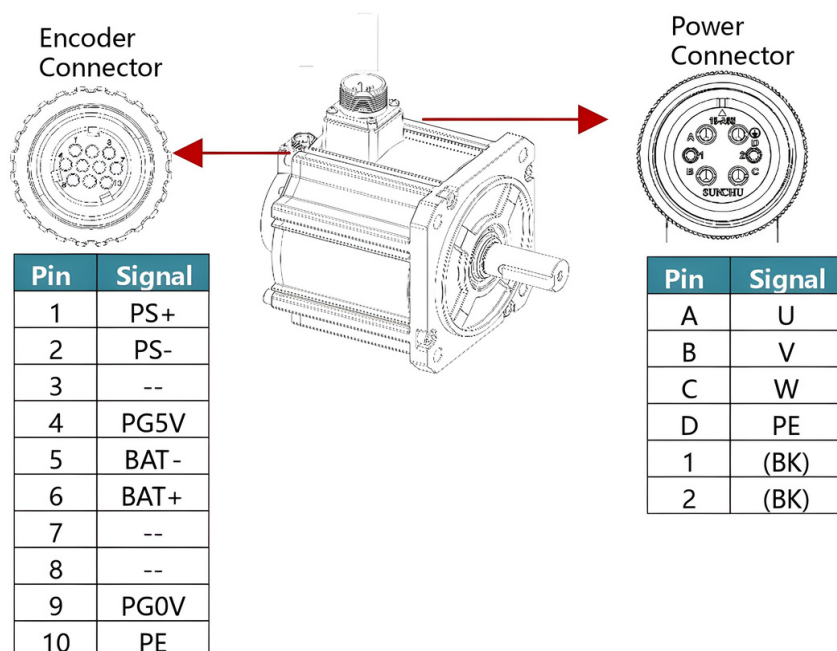
System configurations



- 60/80 mm flange motor connectors

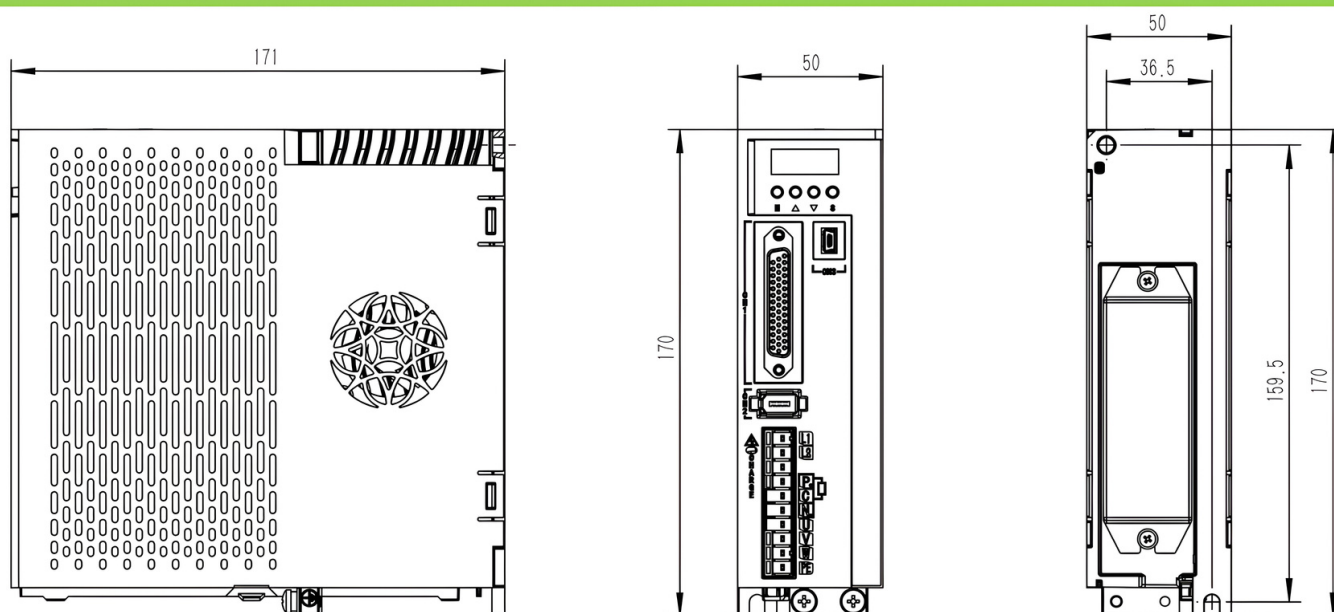


- 130 mm flange motor connectors

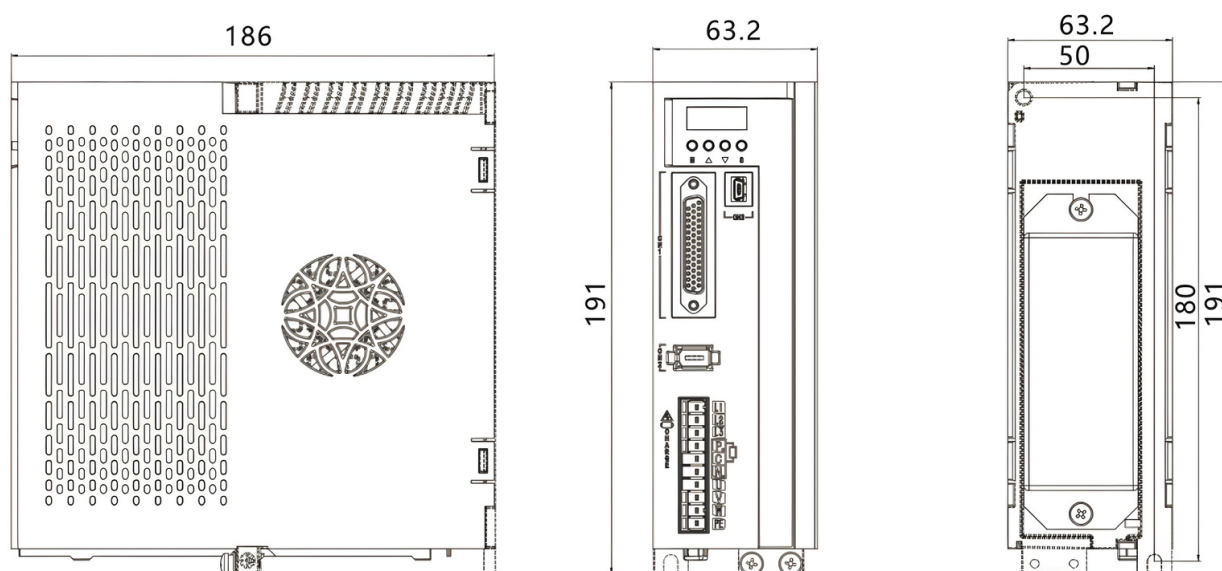


Product Drawings

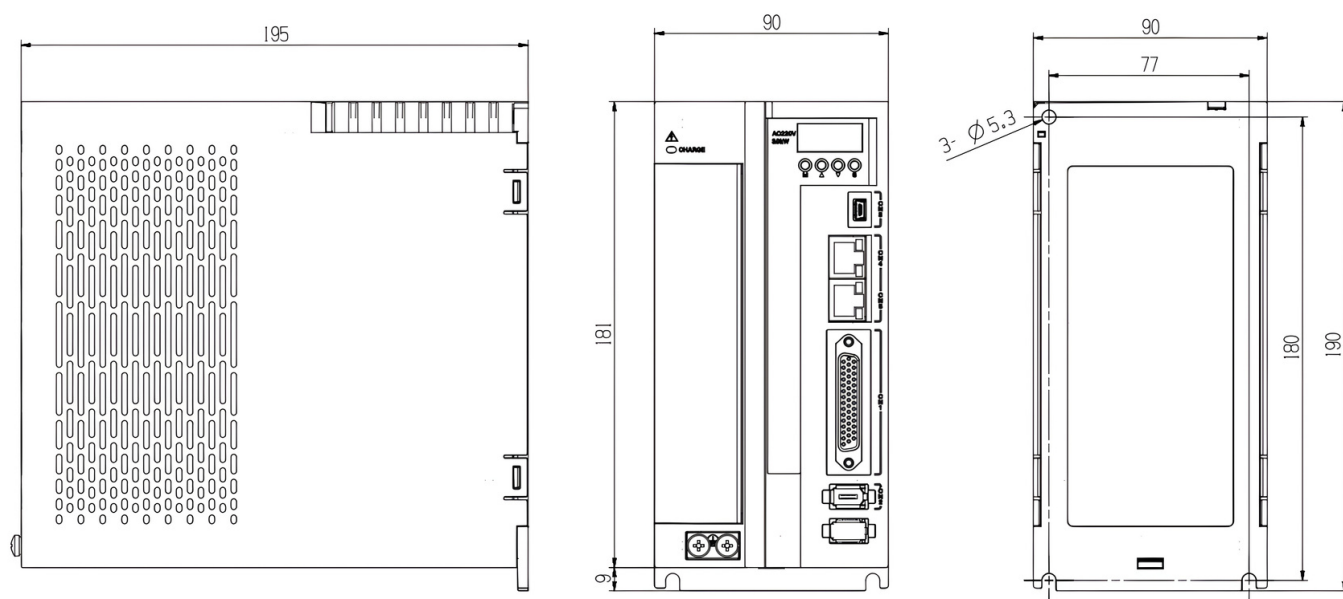
Drive Type A chassis: 400W/750W/1.0KW



Drive Type B chassis: 1.0KW/1.5KW/2.0KW



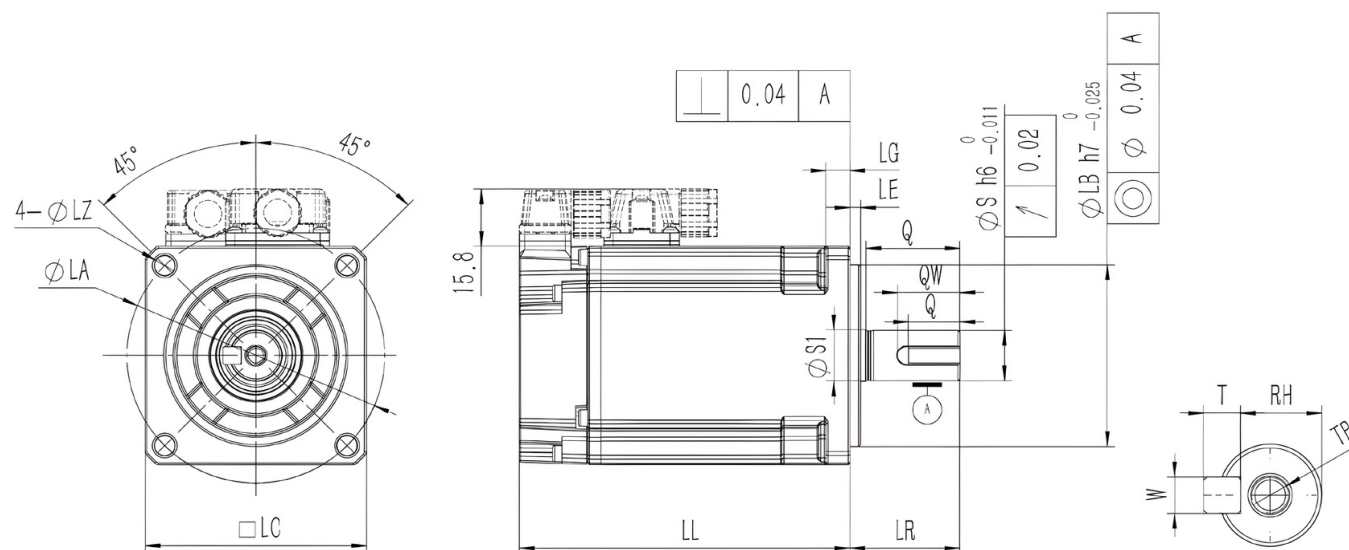
Drive Type C chassis: 2.0/3.0KW



Notes:

- 2 versions of 1KW drives are available: XDQ1-10PAL (A type) & XDQ1-10PA (B type)
- 2 versions of 2KW drives are available: XDQ1-20PAL (B type) & XDQ1-20PA (C type)

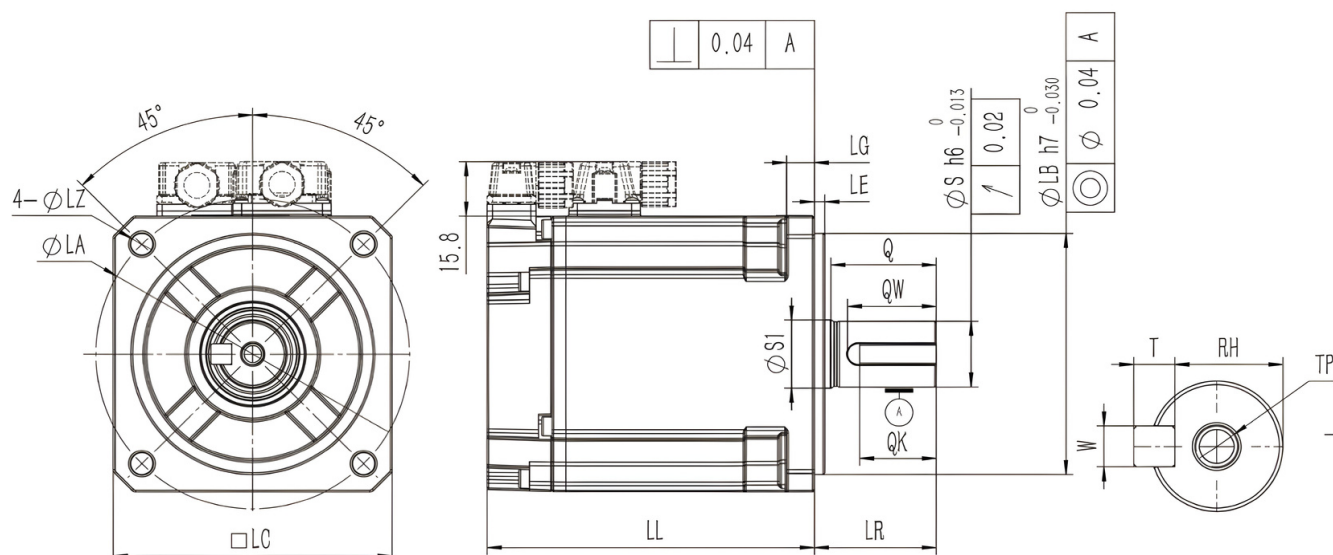
Motor 60mm flange



Model	Motor body		Flange						Shaft								
	LL	LR	LA	LB	LC	LE	LG	LZ	S	SI	Q	QK	QW	W	Y	TH	TP
H60A04	89.8(122.4)	30	70	50	60	3	6.5	5.5	14	14.2	25.5	14	17	5	5	11	M5D12

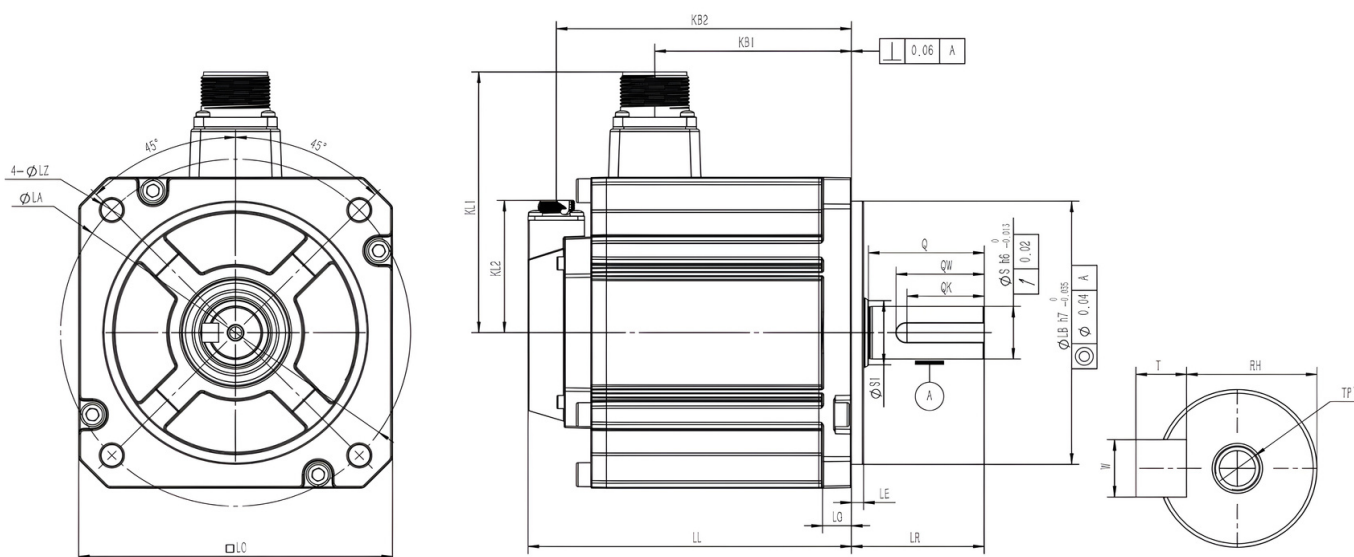
**LL in brackets: with brake.

Motor 80mm flange



Model XMQ1-	Motor body		Flange						Shaft								
	LL	LR	LA	LB	LC	LE	LG	LZ	S	SI	Q	QK	QW	W	Y	TH	TP
H80A08	93.9(131)	35	90	70	80	3	8	6.4	19	19.7	30.2	22	25.5	6	6	15.5	M6D12
H80A10	102.3(139.4)	35	90	70	80	3	8	6.4	19	19.7	30.2	22	25.5	6	6	15.5	M6D12

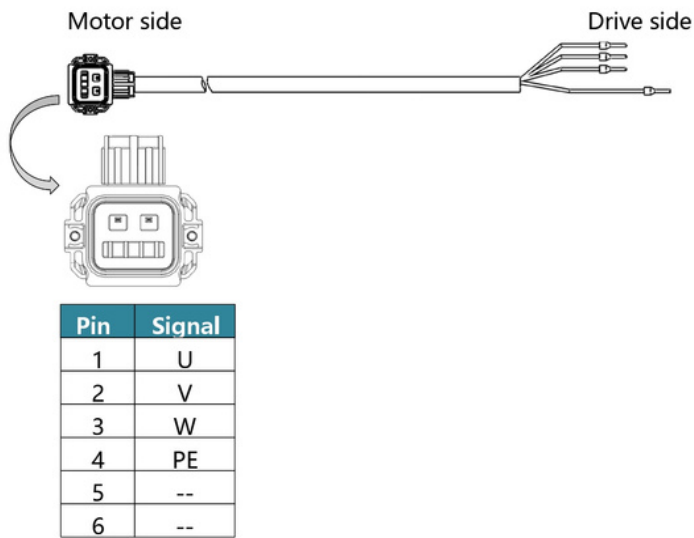
Motor 130mm flange



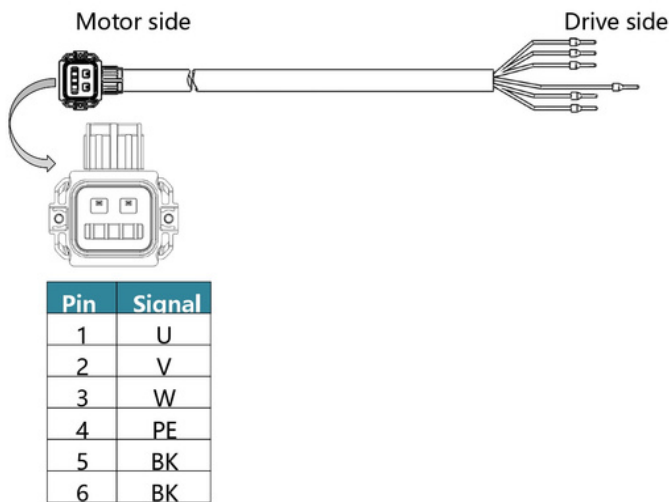
Model XMQ1-	Motor body						Flange						Shaft								
	LL	LR	KB1	KB2	KL1	KL2	LA	LB	LC	LE	LG	LZ	S	SI	Q	QK	QW	W	T	RH	TP
A130A10	119(148)	55	66.5	107.3	109	55.3(99.3)	145	110	130	5	12	9	22	26.8	48	32	36.5	8	7	18	M6D12
G130A09	119(148)	55	66.5	107.3	109	55.3(99.3)	145	110	130	5	12	9	22	26.8	48	32	36.5	8	7	18	M6D12
A130A15	134(163)	55	81.5	122.3	109	55.3(99.3)	145	110	130	5	12	9	22	26.8	48	32	36.5	8	7	18	M6D12
G130A13	134(163)	55	81.5	122.3	109	55.3(99.3)	145	110	130	5	12	9	22	26.8	48	32	36.5	8	7	18	M6D12
A130A20	149(178)	55	95.6	137.3	109	55.3(99.3)	145	110	130	5	12	9	22	26.8	48	32	36.5	8	7	18	M6D12
G130A18	149(178)	55	95.6	137.3	109	55.3(99.3)	145	110	130	5	12	9	22	26.8	48	32	36.5	8	7	18	M6D12

Plug-in power cable (60/80 flange motor)

►LQ1-P0M0A-□□ / LQ1-P0M0B-□□ (without brake power cable)

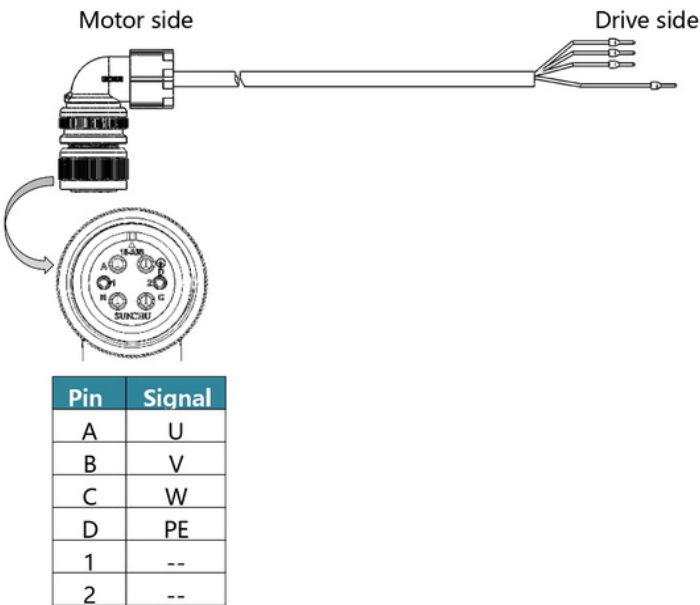


►LQ1-P0B0A-□□ / LQ1-P0B0B-□□ (**with** brake power cable)

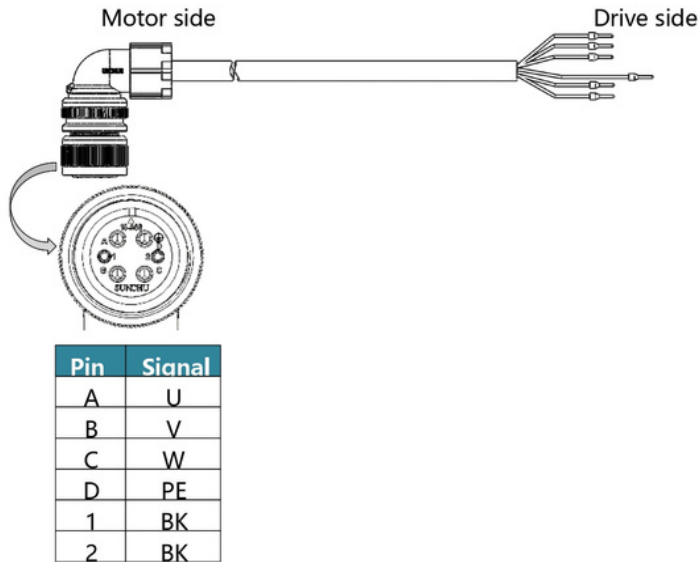


Aviation plug power cable

►LQ1-P0M2C-□□ / LQ1-P0M2D-□□ (without brake power cable)

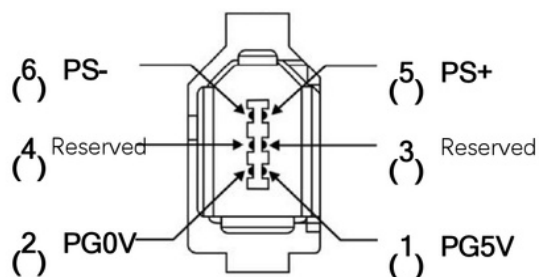


►LQ1-P0B2C-□□ / LQ1-P0B2D-□□ (with brake power cable)



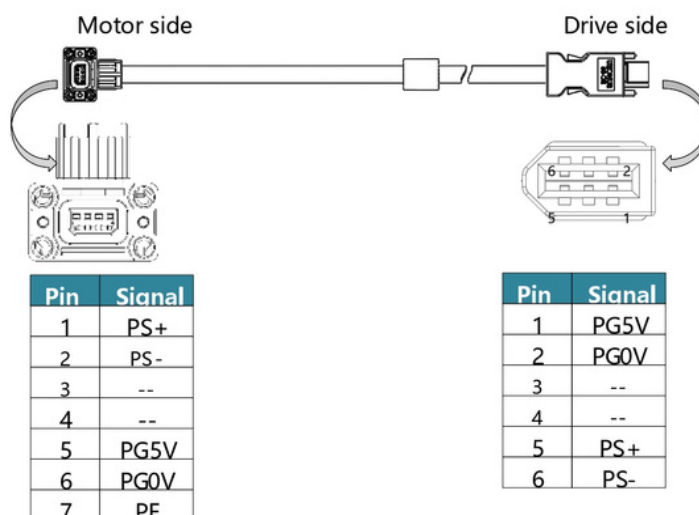
Drive side encoder interface CN2

► Socket appearance and signal

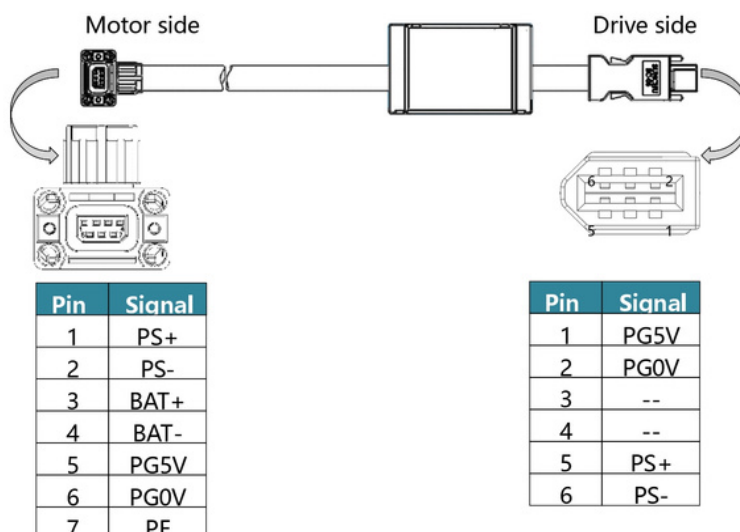


Plug-in encoder cable (60/80 motor)

►LQ1-E0A0-□□ (Encoder cable without battery)

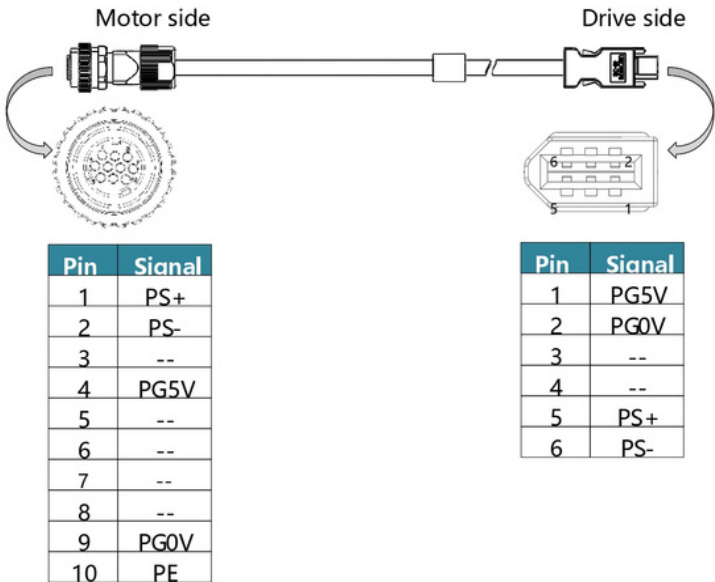


►LQ1-E0B0-□□ (Encoder cable with battery)

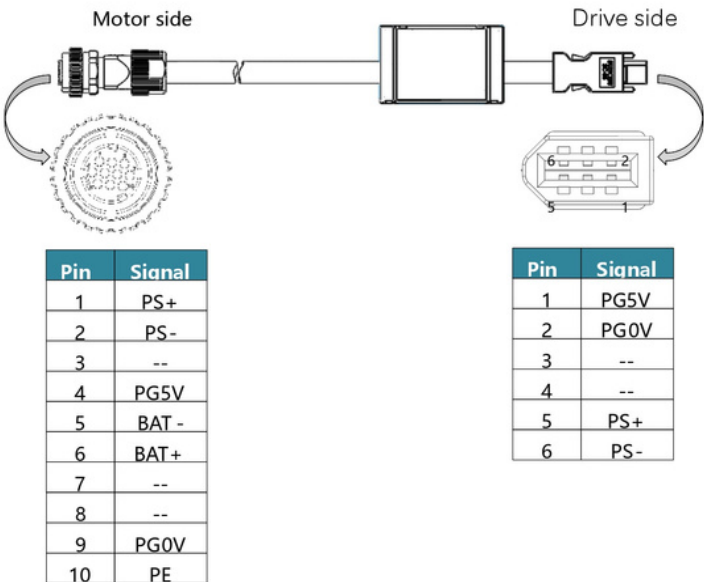


Aviation plug encoder cable

►LQ1-E0A2-□□ (Encoder cable without battery)



►LQ1-E0B2-□□ (Encoder cable with battery)

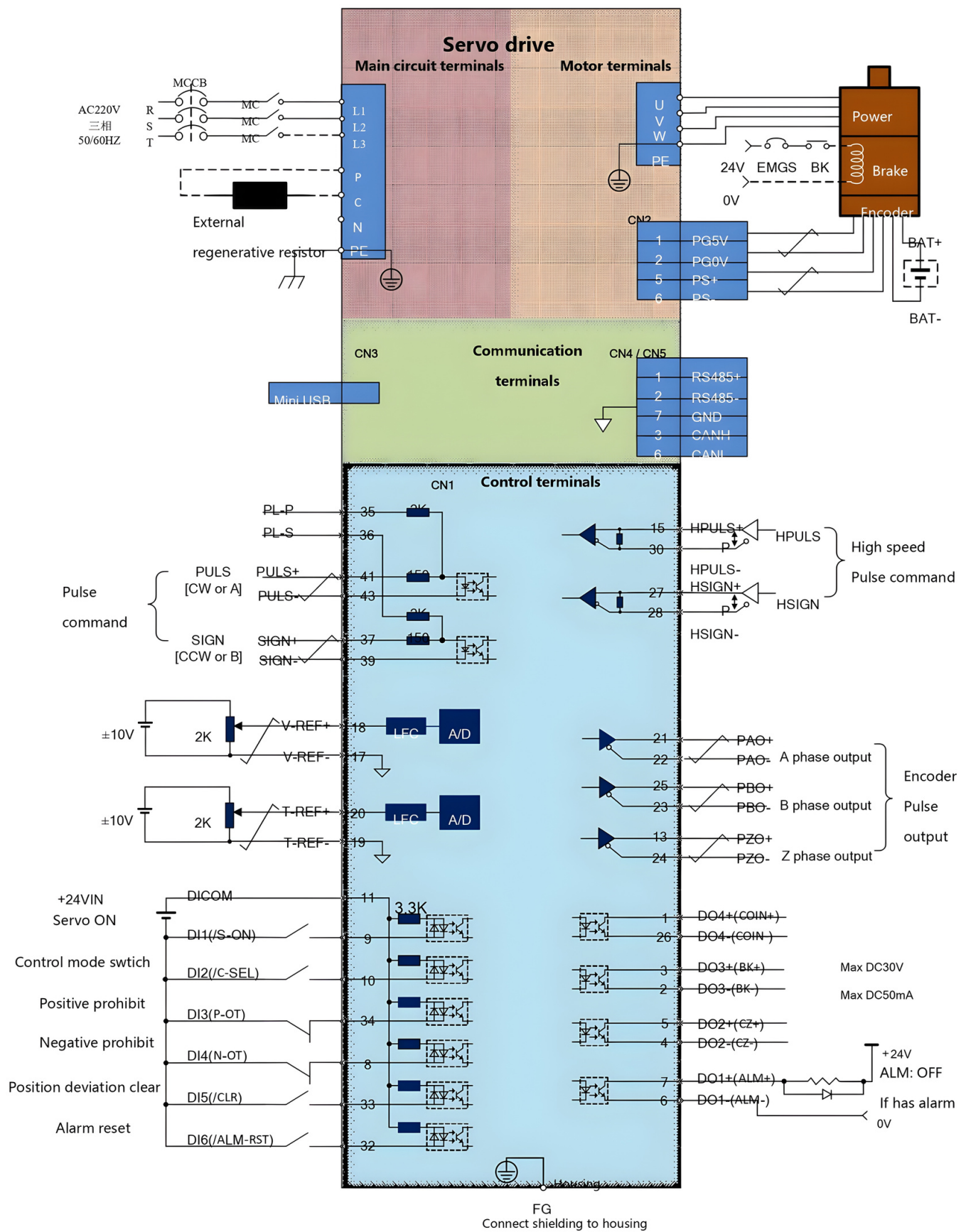


Ratings and specifications

Drive model: XDQ1-			04□□	08□□	10□□	15□□	20□□	30□□
Continuous current [Arms]			2.8	4.8	6.6	8.5	12.0	16.0
Chassis			A type		B type		C type	
Input power			1PH AC200V ~ 230V, 50Hz/60Hz (A type) 1/3PH AC200V ~ 230V, 50Hz/60Hz (B/C type)					
Control method			SVPWM control					
Feedback			Serial communication type encoder ▶ 17-bit magnetic encoder ▶ 23-bit optical encoder					
Use conditions	Work	Temperature	-5°C ~ 40°C					
		Humidity	5%~95%RH (No condensation, no freezing)					
	Storage	Temperature	-20°C ~ 85°C					
		Humidity	5%~95%RH (No condensation, no freezing)					
	Protection class		IP20					
	Altitude		Below 1000m					
	Vibration resistant		4.9m/s ²					
	Shock proof		19.7m/s ²					
	Power Systems		TN system					
Installation structure			Base mount					
Performance	Speed control range		1: 5000					
	Speed volatility	±0.01% or less of rated speed (load fluctuation: 0% to 100%)						
		0.1% or less of rated speed (voltage fluctuation: ±10%)						
		±0.1% or less of rated speed (temperature fluctuation: 25°C±25°C)						
Soft start setting		0 ~ 10s (Acceleration and deceleration can be set separately)						
Input/output signals	Input signals		Operating voltage range: 24 VDC±20%					
			Number of input channels: 6					
			The input signals are: /S-ON (servo enable), /C-SEL (control mode switching), P-OT (forward side drive prohibited), N-OT (reverse side drive prohibited), /CLR (position deviation clear), /ALM-RST, etc.					
	Output signals		Operating voltage range: 5 VDC ~ 30 VDC					
			Number of output channels: 4					
			The output signals are: ALM (servo alarm), BK (holding brake signal), CZ (Z pulse signal), COIN (positioning completion), etc.					
Communication	RS485		RS485 Communication Based on MODBUS					
	USB		Connect to PC for communication with PC software software					
	CAN (optional)		CANopen communication					
Display			5-digit digital tube					
Indicator light			CHARGE					
Panel operator			4 buttons					
Regenerative braking			External braking resistor					
Protective function			Overcurrent, overvoltage, undervoltage, overload, abnormal regeneration, overspeed, etc.					
Accessibility			JOG operation, factory reset, alarm record, load inertia identification, automatic tuning, etc.					

Servo motor model: XMQ1-	H60A04B 30	H80A 08B30	H80A 10B30	A130A 10B20	A130A 15B20	A130A 20B20	G130A 09B15	G130A 13B15	G130A 18B15
Rated output power [kW]	0.4	0.75	1.0	1.0	1.5	2.0	0.85	1.3	1.8
Rated input voltage [V]	220								
Rated torque [Nm]	1.27	2.39	3.18	4.77	7.16	9.55	5.39	8.34	11.5
Maximum torque [Nm]	4.45	8.37	11.13	14.3	21.5	28.6	16.17	25.02	34.5
Rated current [Arms]	2.6	4.8	6.1	4.77	7.01	9.25	5.43	7.69	11.2
Maximum current [Arms]	9.1	16.8	21.35	14.31	21.03	27.75	16.29	21	28
Rated speed [rpm]	3000			2000			1500		
Maximum speed [rpm]	6000			3000			3000		
Rotary inertia [10 ⁻⁴ kg·m2]	0.594	1.58	1.89	10.2	14.3	18.4	14.4	19.6	24.8
Brake rated voltage	DC 24V±10%								
Brake rated power [W]	7.3	8.5	8.5	23	23	23	23	23	23
Brake holding torque [Nm]	1.27	2.39	3.18	4.77	7.16	9.55	5.39	8.34	11.5
Brake inertia [10 ⁻⁴ kg·m2]	0.013	0.05	0.05	1.22	1.22	1.22	1.22	1.22	1.22
Heat resistance	Class F								
Insulation resistance	DC500V,1S ≥100MΩ								
Insulation voltage	AC1800V, 1S, leakage current≤8mA								
Excitation method	Permanent magnet								
Installation method	Flange								
Connection method	Direct connection								
Vibration level	V15								
Use ambient temperature	0 ~ 40℃ (no freezing)								
Use ambient humidity	20% ~ 80%RH (no condensation)								
Installation environment	▶Indoor places without corrosive or explosive gas, dust, garbage or moisture ▶Easy place for inspection and cleaning, with good ventilation ▶Altitude below 1000m								
Storage environment	Storage temperature: -20℃ to +60℃ (no freezing) Storage humidity: 20%RH ~ 80%RH (no condensation)								
Vibration resistance level	49m/s²			49m/s² (front/back direction 24.5m/s²)					
Impact resistance (flange)	490m/s², 2 times								
IP rating	IP67 with oil seal								

Standard Wiring Diagram



● OTHER ACCESSORIES

NAME	MODEL	APPEARANCE
Encoder cable connector (Q1 motor side , terminal type)	XPAC-M01	
Power line connector (Q1 motor side , terminal type)	XPAC-M02	
Encoder cable connector (Q1 motor side , aviation connector type)	XPAC-M03	
Power line connector (Q1 motor side , aviation connector type)	XPAC-M04	
Coding front plug (Q2 motor side , mounting type - 9P)	XPAC-M05	
Power cable connector (Q2 motor side , AMP type - 4P)	XPAC-M06	
Power cable connector (Q2 motor side , AMP type - 6P)	XPAC-M07	
Encoder cable connector (Q2 motor side , aviation connector type)	XPAC-M08	
Power line connector (Q2 motor side , aviation connector type)	XPAC-M09	
Encoder cable connector (driver side)	XPAC-E0B0	
USB communication cable	XPAC-L01	
RS485 communication cable	XPAC-L02	
Servo drive multi-machine parallel communication cable	XPAC-L03-□□	
Servo drive CAN and 485 communication terminal matching resistor	XPAC-F10	