ESTUN

ProNet

All Digital AC Servo Systems

ISO9001

Corporate Information

As a national support prior AC servo system research, development and production base, Estun Automation is devoted to R&D, manufacturing and sales of high-end products in the realm of motion control. We are holding completely with self-owned IPR technology of our AC servo systems which can be applied in CNC machine, textile machine, packing machine, printing machine,electronics manufacturing equipment, industrial robot, manipulator, wood-working machine, robotization production line, electro-hydraulic hybrid-driven and fully electrical injection moulding machine, etc. Now, Estun has established long-term strategy cooperation with many prestigious machine manufacturers and become their first cooperation option for motion control products home and abroad.

Service Network

Hotline

400-025-3336

First-class service guarantee

- Headquarter in Nanjing, rich experience in product design and strict manufacturing process control, possessing a first-class modern production base
- Offices in Guangdong, Fujian, Zhejiang, Jiangsu, Shandong, Hubei, Chongqing, Anhui, Shanxi, Tianjin and Liaoning
- 20 nationwide warranty stations
- More than 80 authorized domestic and international agencies and system integrators

Professional sales and service teams offer a quick response to customers' needs.

Family of brands

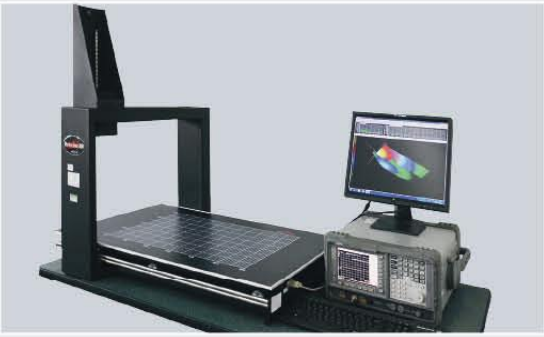
- Estun Automation Co., Ltd. (Control system)
- Estun Automation Technology Co., Ltd. (Motion control)
- Estun Robotics Co., Ltd. (Industrial robots)
- Alpha Electro-hydraulic Technology Co., Ltd. (Electro-hydraulic servo drive and control)

Platform Strength

Estun Automation Technology Co., Ltd. owns advanced R&D platform and testing equipment as a manufacturer of AC servo systems and motion control systems. The equipment has laid firm foundation for further technological research and development in AC servo products and motion control systems and it created a good environment to build a higher level R&D team. As one of the few domestic manufactures with above R&D capabilities and testing equipments, the establishment of the platform will help us to be the most competitive company in the field of domestic AC servo system and motion control total solutions.

Technological R&D

Rotating machine analytical design software RMxprt Finite element analysis software Maxwell 2D/3D, (ANSYS company, USA)



Whole set EMI scanner (Detectus AB company, Sweden) & Anti-interference developing system (Agilent company, USA)

The world's most advanced servo drive and motor testing system and analysis software (MAGTROL company, Switzerland)

The latest multi function and high precision electric power analyser for AC servo system (Newtons4th Ltd,UK; YOKOGAWA, Japan)

Production Equipment

SMT Chip Mounter Machine Production Line

Servo Drive Assembling Line

Servo Motor Production Line

Servo Motor Testing System

Automatic Laser Welding

Automatic Wiring

General Introduction

ProNet Series AC Servo System

Features

- Various models, wide range : 50W~22kW
- Multiple feedback options : 17bits / 20bits serials encoder, 2500P/R wire-saving incremental encoder, resolver
- Power supply: single phase/three phase 100VAC, single phase/three phase 200VAC, three phase 400VAC
- Various communication options: Modbus, CANopen, EtherCAT, POWERLINK, PROFIBUS
- Frequency response 1.6kHz
- Current forward feedback control、acceleration forward-feed
- Online real time load inertia inspecting, auto tuning function
- Connecting DC Bus
- Low frequency vibration suppression function
- Low rigid, high gain function
- Dynamic electronic gear ratio switching function
- Homing function available under position control mode
- UL certified and CE certified

Typical Application

- Machine tools (Metal forming, CNC router, Laser cutting, Water jet, Wood processing)
- Textile machine (Warping machine, Warp knitting machine, Rapier loom, Air jet, Water jet machine, Quilter machine, Dyeing machine)
- Packing machine (Vertical packing machine, Pillow packing machine, Sealing packing machine, Liquid packing machine)
- Printing machine (Photogravure press, Lithographic press, Relief printing machine)
- Electronics manufacturing equipment (Sorting machine, Chip mounter, Winding machine, Die-cutting machine, Lithium battery production line)
- Industrial robot, manipulator
- Hybrid, Die-casting machine, Injection molding machine, Plastic extruding machine








ProNet Series

- Various voltage input: 100V, 200V, 400V
- Power supply: 50W~22kW
- Serial encoder / Resolver
- Standard: CANopen
  Option: EtherCAT(build-in) / POWERLINK / PROFIBUS
- Used in high precision automation, high speed bus communication

ProNet-E Series

- Various voltage input: 100V, 200V, 400V
- Power supply: 50W~5kW
- The same dimension with ProNet series
- Standard: CANopen
- 2500P/R Wire-saving incremental encoder
- High reliability and cost-effective

Model Comparison Table

Servo Motor					Servo Drive (ProNet)				Servo Drive (ProNet-E)			
Series		Power (kW)	Voltage (VAC)	型号Model	Single-phase 100VAC	Single-phase 200VAC	Three-phase 200VAC	Three-phase 400VAC	Single-phase 100VAC	Single-phase 200VAC	Three-phase 200VAC	Three-phase 400VAC
Medium Inertia	EMJ 3000r/min	0.05	200	EMJ-A5A		ProNet-A5A				ProNet-E-A5A		
		0.1	200	EMJ-01A		ProNet-01A				ProNet-E-01A		
		0.2	100	EMJ-02B	ProNet-02B				ProNet-E-02B			
			200	EMJ-02A		ProNet-02A				ProNet-E-02A		
		0.4	100	EMJ-04B	ProNet-04B				ProNet-E-04B			
			200	EMJ-04A		ProNet-04A				ProNet-E-04A		
		0.75	100	EMJ-08B	ProNet-08B				ProNet-E-08B			
			200	EMJ-08A			ProNet-08A				ProNet-E-08A	
		1.0	200	EMJ-10A			ProNet-10A				ProNet-E-10A	
	EMG 2000r/min	1.0	200	EMG-10A			ProNet-10A				ProNet-E-10A	
			400	EMG-10D				ProNet-10D				ProNet-E-10D
		1.5	200	EMG-15A			ProNet-15A				ProNet-E-15A	
			400	EMG-15D				ProNet-15D				ProNet-E-15D
		2.0	200	EMG-20A			ProNet-20A				ProNet-E-20A	
			400	EMG-20D				ProNet-20D				ProNet-E-20D
		3.0	200	EMG-30A			ProNet-30A				ProNet-E-30A	
			400	EMG-30D				ProNet-30D				ProNet-E-30D
		5.0	200	EMG-50A			ProNet-50A				ProNet-E-50A	
			400	EMG-50D				ProNet-50D				ProNet-E-50D
	EML 1000r/min	1.0	200	EML-10A			ProNet-10A				ProNet-E-10A	
			400	EML-10D				ProNet-10D				ProNet-E-10D
		2.0	200	EML-20A			ProNet-20A				ProNet-E-20A	
			400	EML-20D				ProNet-20D				ProNet-E-20D
		3.0	200	EML-30A			ProNet-30A				ProNet-E-30A	
			400	EML-30D				ProNet-30D				ProNet-E-30D
		4.0	200	EML-40A			ProNet-50A				ProNet-E-50A	
			400	EML-40D				ProNet-50D				ProNet-E-50D
	EMB 1500r/min	7.5	400	EMB-75D				ProNet-70D				
								ProNet-75D				
		11	400	EMB-1AD				ProNet-1AD				
		15	400	EMB-1ED				ProNet-1ED				
		22	400	EMB-2BD				ProNet-2BD				
Low Inertia	EMB for low inertia 1800r/min	10.8	400	EMB-1ZD				ProNet-1AD				
		13.2	400	EMB-1CD				ProNet-1ED				
		16.7	400	EMB-1FD				ProNet-1ED				
		21.4	400	EMB-2AD				ProNet-2BD				
		26.9	400	EMB-2FD								
		33	400	EMB-3CD								

Servo DriveSpecification

Specification Description

ProNet – 10 A M A – D

ProNet Servo Drive | Rated Power | Power Voltage | Control Style | Encoder Interface | Extended Module

Sign	Spec.
A5	0.05kW
01	0.1kW
02	0.2kW
04	0.4kW
08	0.75kW
10	1.0kW
15	1.5kW
20	2.0kW
30	3.0kW
50	5.0kW
70	7.0kW
75	7.5kW
1A	11kW
1E	15kW
2B	22kW

Sign	Spec.
A	200VAC
D	400VAC
B	100VAC

Sign	Spec.
M	Speed Control, Torque Control, Position Control
E	Speed Control, Torque Control, Position Control (Support Extended Module)

Sign	Spec.
A	17 Bits Serial Encoder
F	20 Bits Serial Encoder
B	Resolver

Sign	Spec.
-D	DP100
-P	PL100
-EC	integrated EC100

Notes: ①ProNet-□□□E□Support AE100 module
②**ProNet-04/10/20AEA-EUL have completed UL508C. File NO. is E365853**

ProNet-E – 10 A

ProNet-E Servo Drive | Rated Power | Power Voltage

Sign	Spec.
A5	0.05kW
01	0.1kW
02	0.2kW
04	0.4kW
08	0.75kW
10	1.0kW
15	1.5kW
20	2.0kW
30	3.0kW
50	5.0kW

Sign	Spec.
A	200VAC
D	400VAC
B	100VAC

Notes:
① ProNet-E is only equipped with wire-saving incremental encoder (2500P/R).
② ProNet-E does not support extended module.
③ **ProNet-E-04/10/20AUL have completed UL508C. File NO. is E365853.**

Ratings

Servo Drive Model	ProNet-	A5A	01A	02A	02B	04A	04B	08A	08B	10A	10D	15A	15D	20D	30D	50D	20A	30A	50A	70D	75D	1AD	1ED	2BD
	ProNet-E-	A5A	01A	02A	02B	04A	04B	08A	08B	10A	10D	15A	15D	20D	30D	50D	20A	30A	50A					
Applicable Servo Motors Model	EMJ-	A5	01	02	02B	04A	04B	08A	08B	10A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	EMG-	-	-	-	-	-	-	-	-	10A	10D	15A	15D	20D	30D	50D	20A	30A	50A	-	-	-	-	-
	EML-	-	-	-	-	-	-	-	-	10A	10D	-	-	20D	30D	50D	20A	30A	50A	-	-	-	-	-
	EMB-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75D	75D	1AD	1ED	2BD
Continuous Output Current(Arms)		1.0	1.1	1.4	2.7	2.8	5.8	4.0	8.2	6.0	3.2	9.0	5.0	6.4	9.0	15.0	12.0	18.0	28.0	18.0	18.0	28.0	38.0	55.0
Max. Output Current(Arms)		3.0	3.3	4.2	8.1	8.4	15.1	12.0	24.6	18.0	9.6	28.0	15.0	19.2	27.0	45.0	42.0	56.0	84.0	48.0	48.0	65.0	100.0	128.0
Main Input Power Supply Capacity(kVA)		0.2	0.3	0.5	0.5	0.9	0.9	1.3	1.3	1.8	1.8	2.5	2.8	3.5	5.0	8.2	3.5	4.5	7.5	12.0	12.0	18.0	22.0	32.0
DC24V Power Supply Capacity(W)		-	-	-	-	-	-	-	-	-	30.0	-	30.0	30.0	45.0	45.0	-	-	-	45.0	-	-	-	-

Specification

Items			Specifications
Input Power Supply	Main Circuit	100V	Single-phase 100 to 120VAC 50/60Hz (0.2kW-0.75kW)
		200V	Single-phase 200 to 230VAC 50/60Hz (0.05kW-0.4kW)
			Three-phase 200 to 230VAC 50/60Hz (0.75kW-5.0kW)
		400V	Three-phase 380 to 480VAC 50/60Hz (1.0kW-7.0kW)
			Three-phase 380 to 440VAC 50/60Hz (7.5kW-22kW)
	Control Circuit	100V	Single-phase 100 to 120VAC 50/60Hz (0.2kW-0.75kW)
		200V	Single-phase 200 to 230VAC 50/60Hz (0.05kW-5.0kW)
		400V	24VDC (1.0kW-7.0kW)
			Single-phase 380 to 440VAC 50/60Hz (7.5kW-22kW)
Control Method			SVPWM Control
Feedback			Serial Encoder: 131072P/R /1048576P/R Resolver Wire-saving Incremental Encoder: 2500P/R
Operating Conditions	Ambient / Storage Temperature		Ambient Temperature: 0 to +55°C, Storage Temperature: -25 to+85°C
	Ambient / Storage Humidity		5%~95% (no condensation)
	Elevation		1000m or less
	Vibration / Impact Resistance		Vibration Resistance: 4.9m/s^2, Impact Resistance: 19.6m/s^2
Configration			Base-mounted
Perfor-mance	Speed Control Range		1:5000
	Speed Regulation	Load Regulation	0 to 100% load: ±0.01% max. (at rated speed)
		Voltage Regulation	Rated voltage, ±10%: 0% (at rated speed)
		Temperature Regulation	25±25°C: ±0.1% max. (at rated speed)
Torque Control	Analog Input	Reference Voltage	±10VDC at rated torque (variable setting range: ±0 to 10VDC) Max. input voltage: ±12V
		Input Impedance	About 10MΩ min.
		Circuit Time Constant	10μs

Items			Specifications
Speed Control	Analog Input	Reference Voltage	±10VDC at rated torque (variable setting range: ±0 to 10VDC) Max. input voltage: ±12V
		Input Impedance	About 10MΩ min.
		Circuit Time Constant	10μs
	Set Speed Reference	Speed Selection	Speed 1 to 7 selection
	Function	Soft Start Setting	0 to 10s (can be set individually for acceleration and deceleration)
Position Control	Reference Pulse	Type	Sign+pulse train, CCW+CW pulse train, or 90° phase difference 2-phase pulse (phase A + phase B)
		Form	Non-insulated line driver (+5V level), open collector
		Frequency	x1 multiplier: 4Mpps x2 multiplier: 2Mpps x4 multiplier: 1Mpps Open collector: 200kpps Frequencies drop when the dutues have errors
	Set Position Reference	Position Setting	Can set 16 position reference
I/O Signals	Encoder Output Pulses		Phase A, phaseB, phase C: line driver output The number of dividing pulse: Any setting ratio is available
	Sequence Input	Number of Channels	8 channels
		Function	Signal allocations and positive/negative logics can be modified: Servo ON (/S-ON), P control (/P-CON), alarm reset (/ALM-RST), clear error pulse (/CLR), forward run prohibited (P-OT), reverse run prohibited (N-OT), forward torque limit (/P-CL), reverse torque limit (/N-CL)
	Sequence Output	Number of Channels	4 channels
		Function	Servo alarm (ALM) Signal allocations and positive/negative logics can be modified: Positioning completion (/COIN), speed agree detection (/V-CMP), motor rotation detection (/TGON), servo ready (/S-RDY), torque limit detection (/CLT), brake interlock (/BK), encoder C pulse (/PGC), over travel signal (/OT)
	Regenerative Processing Functions		0.75kW to 7.5kW: built-in regenerative resistor; 11kW to 22kW: External regenerative resistor
	Protective Functions		Overcurrent, overvoltage, low voltage, overload, regeneration error, overspeed, etc.
	Utility Functions		Alarm trace back, JOG operation, Inertia detections, etc.
	Display Functions		CHARGE (red), POWER (green), 7-segment LEDx5 (Bulit-in digital operator function)
	Communications		RS-485 communication port, MODBUS protocol ; CAN communication port, CANopen protocol; EtherCAT communication module, CiA402 protocol; POWERLINK communication module, CiA402 protocol; PROFIBUS communication module, PROFIdrive protocol.

Communication

EtherCAT

- Integrated EtherCAT Module
- High communication speed
- Precise multiple axis synchronous control
- Revolution of traditional field bus control

Items	Specifications
Communication standard	IEC 61158 Type12, IEC 61800-7 CiA402 Drive Profile
Physical layer	100BASE-TX (IEEE802.3)
Bus connection	CN4 (RJ45): EtherCAT Signal IN CN5 (RJ45): EtherCAT Signal OUT
Cable	Class-5 twisted pair cable
Communication distance	Nod space: within 100 meters
SyncManager	SM0: output mailbox, SM1: input mailbox SM2: output proces data, SM3: input process data
FMMU	FMMU0: mapping to process data (RxPDO) Receiving area FMMU1: mapping to process data (TxPDO) Transmiting area FMMU2: mapping to mailbox status
EtherCAT Commands (Data Link Layer)	APRD, FPRD, BRD, LRD, APWR, FPWR, BWR, LWR, ARMW, FRMW Note: APRW, FPRW, BRW, LRW Commands are not supported
PDO data	Dynamic PDO mapping
Mailbox (CoE)	Emergency event, SDO request, response, SDO information Note: do not support TxPDO/RxPDO and remote TxPDO/RxPDO
Differential clock (DC)	Free-run , DC mode (set active in confi gur ation) Supported DC period : 250us - 8ms
SII	256 bytes (read - only)
LED Indicator	EtherCAT System indicator (SYS) x1 EtherCAT Run indicator (RUN) x1 EhterCAT Error indicator (ERR) x1
CiA402 Drive Profile	Homing mode, Profile position mode, Interpolated position mode Profile velocity mode, Cyclic synchronous position mode

PROFIBUS

Profibus Module

There are many applications based on profibus communication in industrial automation market. DP100 module is a PROFIBUS DP module, which can connect the other PROFIBUS products with ESTUN ProNet servo drive, and the project cost of providing profibus connection is low.

Items	Specifications
Communication standard	PROFIBUS-DP, PROFIDRIVE
Physical layer	RS-485 transmission
Bus connection	CN5 (DB9)
Cable	RS-485 cable with D type
Baud rate	Automatic identification of bus transmission baud rate Communication distance: 9.6Kbps~12Mbps Transmission distance: 100m~1200m
Data exchange	Cyclic data exchange and Acyclic data exchange
LED indicator	ALM, COMM
Address setting	ADDH, ADDL

POWERLINK

POWERLINK technology applied in ProNet series drives leads to improved performances and expanded application fields. POWERLINK is open source technology and has no platform limit. It is CANopen over Ethernet, which has inherited all former applications based on CANopen. Customer programs are protected and performance level is increased. POWERLINK drive provides fast and realtime response ability of 250μs, which definitely gives better support for applications like high speed synchronization, high speed positioning control and electronic gear, etc.

Items	Specifications
Communication standard	IEC 61784-2, IEC 61800-7 CiA402 Drive Profile
Physical layer	100BASE-TX (IEEE802.3)
Bus connection	CN5 (RJ45): POWERLINK Signal IN/OUT CN6 (RJ45): POWERLINK Signal IN/OUT
Cable	Class-5 twisted pair cables
PDO data	Dynamic PDO mapping
LED indicator	POWERLINK System indicator (SYS) ×1 POWERLINK Run indicator (RUN) ×1 POWERLINK Error indicator (ERR) ×1
Communication Mode	Homing mode, Profile position mode, Profile velocity mode, Position interpolation mode

CANopen

Standard CAN bus interfaces are available in ProNet series servo drives, which makes it easy to get integrated into a distributed control system.

Items	Specifications
Communication standard	CiA-DS301 CiA402 Drive Profile
Physical layer	ISO 11898-2 CiA 303-1
Bus connection	CN3 (RJ45): Signal IN CN4 (RJ45): Signal OUT
Cable	Twisted pair cable
Baud rate	50Kbps, 100Kbps, 125Kbps, 250Kbps, 500Kbps, 1Mbps
COB	SDO, PDO, SYNC, EMCY, NMT, Heartbeat
Communication mode	Homing mode, speed control mode, position control mode, position interpolation mode
PDO data	Dynamic PDO mapping, 2 sending PDO, 2 receving PDO

Modbus

ProNet series servo drives provide the Modbus communication function with RS-485 interface, which can be used to easily set parameters or to perform monitoring operations and so on.

Items	Specifications
Communication standard	Modbus
Physical layer	RS-485 transmission
Bus connection	CN3 (RJ45): Signal IN CN4(RJ45): Signal OUT
Cable	Twisted pair cable
Baud rate	4800bps, 9600bps, 19200bps
Communication Mode	ASCII, RTU

Servo Motor Specification

EMJ Model

Features

- Medium inertia
- Peak torque up to 300% of rated torque
- Various models (0.05kW~1.0kW, with brake, etc.)
- Run at speed of up to 4500r/min
- Mounted 17/20bits incremental / absolute encoder, Optional mounted wire-saving incremental encoder (2500P/R)

Application

- SMM (surface mounting machine)
- Pcb puncher machine
- Robot arm
- Handing machinery
- Textile machinery

Specification Description

EMJ - 08 A P B 1 1 -WR

EMJ Model Servo Motor	Rated Output Power	Power Voltage	Encoder	Designing Sequence	Shaft End	Option Parts	Connector

Sign	Spec.
A5	0.05kW
01	0.1kW
02	0.2kW
04	0.4kW
08	0.75kW
10	1.0kW

Sign	Spec.
A	200VAC
B	100VAC

Sign	Spec.
D	Incremental Encoder: 131072P/R
F	Incremental : Encoder 1048576P/R
S	Absolute Encoder: 131072P/R
P	Incremental Wire-saving Type: 2500P/R

Sign	Spec.
A,B, H	Designing Sequence

Sign	Spec.
1	Flat, Without Keys (Standard)
2	Flat, With Keys, With Screw Thread

Sign	Spec.
1	None
2	With Oil Seal
3	With Brake (DC24V)
4	With Oil Seal, With Brake (DC24V)

Sign	Spec.
	Standard Connector
WR	Water proof Connector Incremental (Wire-saving) Type: 2500P/R

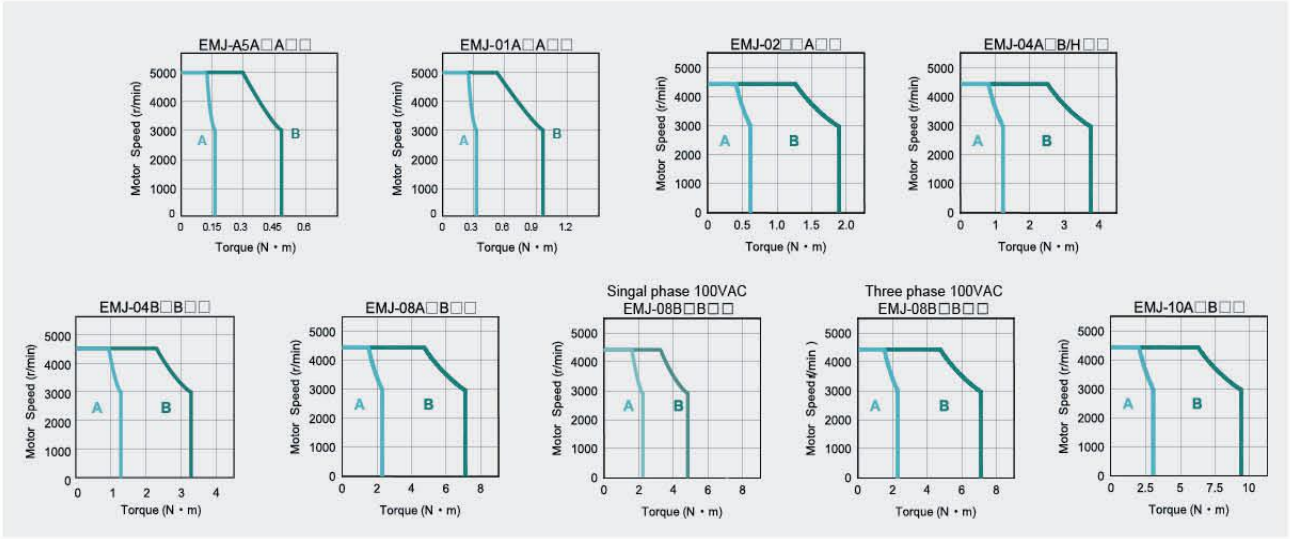
Notes: ①EMJ-A5/01□□□□□ and EMJ-□□□D/F/S□□support water proof connector default.
②**EMJ-04/08/10A□□□□-UL have completed UL1004-6. File NO. is E365853.**

Rated Value and Specification

Voltage		100VAC/200VAC									
Servo Motor Model	EMJ-	A5A□□□□	01A□□□□	02A□A□□	02B□A□□	04A□B□□	04A□H□□	04B□B□□	08A□B□□	08B□B□□	10A□B□□
Rated Output Power	kW	0.05	0.1	0.2		0.4			0.75		1.0
Rated Torque	N·m	0.16	0.32	0.64		1.27			2.39		3.18
Instantaneous Peak Torque	N·m	0.48	0.96	1.91		3.82	3.82	3.26	7.16	7.16	9.55
Rated Current	Arms	0.95	1.05	1.4	2.7	2.8	2.8	5.8	4.0	8.2	5.3
Instantaneous Max Current	Arms	3.0	3.2	4.2	8.1	8.4	8.4	15.1	12.0	24.6	15.9
Rated Speed	r/min	3000									
Max. Speed	r/min	5000		4500							
Rotor Moment of Inertia	$\times 10^{-4}$kg·m^2	0.051 (0.052)	0.073 (0.074)	0.19 (0.23)		0.31 (0.35)	0.7 (0.74)	0.31 (0.35)	1.35 (1.47)		1.74 (1.87)
Brake Rated Voltage		DC24V±10%									
Brake Rated Power	W	6.096		7.2					11.5		
Brake Holding Torque	N·m	0.3		1.3					3.2		
Encoder	Standard	Incremental Encoder: 131072P/R 1048576P/R									
	Options	Absolute Encoder: 131072P/R Wire-saving Incremental Encoder (2500P/R)									
Insulation Class		F									
Ambient Temperature		0 to +40℃ (no freezing)									
Ambient Humidity		20% to 80% RH (non-condensing)									
Vibration		49m/s^2									
Enclosure		Totally Enclosed, Self-cooled, IP65 (Except for shaft opening, when not equipped with oil seal; Except for connectors, when not equipped with waterproof connectors.)									

Note：① The values in parentheses are for servo motors with holding brakes.
② when power supply is singal-phase, the instantaneous peak torque of EMJ-08B□B□□ is 4.78.

Torque-Speed Feature



A: Continuous Working Area B: Repeatedly Working Area

EMG Model

Features

- Be used to drive the feed shaft of various machinery
- Various products (1.0kW~5.0kW, with brake, etc.)
- Mounted 17/20bits incremental / absolute encoder, Optional mounted resolver or wire-saving incremental encoder (2500P/R)
- Standard configuration is IP65

Application

- Machine tools
- Handling machinery
- Foodstuff processing machinery
- Textile machinery

Specification Description

EMG - 10 A D A 1 1

EMG	10	A	D	A	1	1
EMG Model Servo Motor	Rated Output Power	Power Voltage	Encoder	Designing Sequence	Shaft End	Option Parts

Sign	Spec.
10	1.0kW
15	1.5kW
20	2.0kW
30	3.0kW
50	5.0kW

Sign	Spec.
A	200VAC
D	400VAC

Sign	Spec.
D	Incremental Encoder: 131072P/R
F	Incremental : Encoder 1048576P/R
S	Absolute Encoder: 131072P/R
P	Incremental Wire-saving Type:2500P/R

Sign	Spec.
A,B	Designing Sequence

Sign	Spec.
1	Flat, Without Keys (Standard)
2	Flat, With Keys With Screw Thread

Sign	Spec.
1	None
2	With Oil Seal
3	With Brake (DC24V)
4	With Oil Seal, With Brake (DC24V)

Notes: ①The EMG-30□□A□□, EMG-50□□A□□ servo motors don't provide the incremental encoder 131072P/R.
②There is no brake in EMG-□□□D□□□ servo motor.
③EMG-10/15/20A□□□□-UL have completed UL1004-6. File NO. is E365853.

Rated Value and Specification

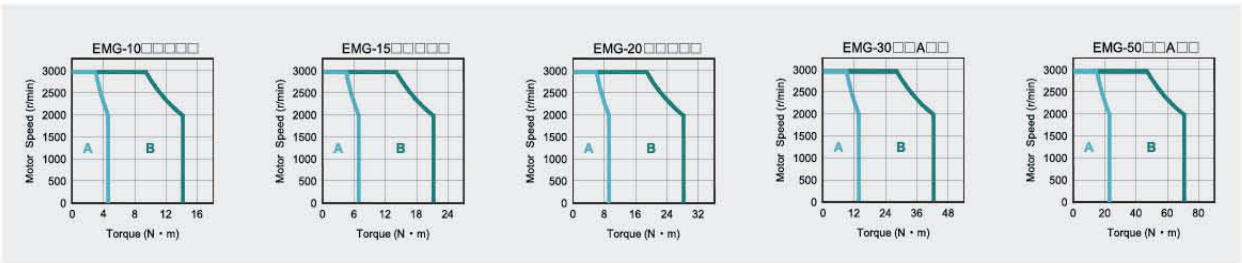
Voltage		200VAC / 400VAC									
Servo Motor Model	EMG-	10A□A□□	10D□A□□	15A□A□□	15D□A□□	20A□A□□	20D□A□□	30A□A□□	30D□A□□	50A□A□□	50D□A□□
Rated Output Power	kW	1.0	1.0	1.5	1.5	2.0	2.0	3.0	3.0	5.0	5.0
Rated Torque	N·m	4.78	4.78	7.16	7.16	9.55	9.55	14.3	14.3	23.9	23.9
Instantaneous Peak Torque	N·m	14.3	14.3	21.5	21.5	28.7	28.7	43.0	43.0	71.6	71.6
Rated Current	Arms	6.0	3.2	9.0	5.0	12.0	6.4	18.0	8.8	28.0	15.0
Instantaneous Max. Current	Arms	18.0	9.6	27.0	15.0	36.0	19.2	54.0	26.4	84.0	45.0
Rated Speed	r/min	2000									
Max. Speed	r/min	3000									
Rotor Moment of Inertia	$\times 10^{-4}$kg·m^2	10.0 (10.6)		14.5 (15.1)		19.0 (19.6)		41.3 (44.5)		65.7 (68.9)	
Brake Rated Voltage		DC24V±10%									
Brake Rated Power	W	19						35			
Brake Holding Torque	N·m	10						40			
Encoder	Standard	Incremental Encoder: 131072P/R 1048576P/R						Absolute Encoder: 131072P/R			
	Options	Absolute Encoder: 131072P/R Wire-saving Incremental Encoder (2500P/R)						Wire-saving Incremental Encoder (2500P/R)			
Insulation Class		F									
Ambient Temperature		0 to +40℃ (No freezing)									
Ambient Humidity		20% to 80% RH (Non-condensing)									
Vibration		24.5m/s^2									
Enclosure		Totally Enclosed, Self-cooled, IP65 (Except for shaft opening, when not equipped with oil seal.)									

Note: The values in parentheses are for servo motors with holding brakes.

Voltage		200VAC / 400VAC					
Servo Motor Model	EMG-	10A□B□□	10D□B□□	15A□B□□	15D□B□□	20A□B□□	20D□B□□
Rated Output Power	kW	1.0		1.5		2.0	
Rated Torque	N·m	4.78		7.16		9.55	
Instantaneous Peak Torque	N·m	14.3		21.5		28.7	
Rated Current	Arms	5.8	3.0	8.2	4.3	11.3	5.7
Instantaneous Max. Current	Arms	17.4	9.0	24.6	12.9	33.9	17.1
Rated Speed	r/min	2000					
Max. Speed	r/min	3000					
Rotor Moment of Inertia	$\times10^{-4}$kg.m^2	13.2(14.3)		18.4(19.5)		23.5(24.6)	
Brake Rated Voltage		DC24V±10%					
Brake Rated Power	W	19.5					
Brake Holding Torque	N·m	12					
Encoder	Standard	Incremental Encoder: 131072P/R 1048576P/R					
	Options	Absolute Encoder: 131072P/R Wire-saving Incremental Encoder (2500P/R)					
Insulation Class		F					
Ambient Temperature		0 to +40℃ (No freezing)					
Ambient Humidity		20% to 80% RH (Non-condensing)					
Vibration		24.5m/s^2					
Enclosure		Totally Enclosed, Self-cooled, IP65 (Except for shaft opening, when not equipped with oil seal.)					

Note: The values in parentheses are for servo motors with holding brakes.

Torque-Speed Feature



A: Continuous Working Area B: Repeatedly Working Area

EML Model Servo Motor

Features

- Be used to drive the feed shaft of various machinery
- Various products (1.0kW~4.0kW, with brake, etc.)
- Mounted 17/20bits incremental / absolute encoder, Optional mounted wire-saving incremental encoder (2500P/R)
- Standard configuration is IP65

Application

- Machine tools
- Handling machinery
- Foodstuff processing machinery
- Textile machinery

Specification Description

EML- 10 A D A 1 1

EML Model Servo Motor	Rated Output Power	Power Voltage	Encoder	Designing Sequence	Shaft End	Option Parts

Sign	Spec.
10	1.0kW
20	2.0kW
30	3.0kW
40	4.0kW

Sign	Spec.
A	200VAC
D	400VAC

Sign	Spec.
D	Incremental Encoder: 131072P/R
F	Incremental : Encoder 1048576P/R
S	Absolute Encoder: 131072P/R
P	Incremental Wire-saving Type: 2500P/R

Sign	Spec.
A,B	Designing Sequence

Sign	Spec.
1	Flat, Without Keys (Standard)
2	Flat, With Keys With Screw Thread

Sign	Spec.
1	None
2	With Oil Seal
3	With Brake (DC24V)
4	With Oil Seal, With Brake (DC24V)

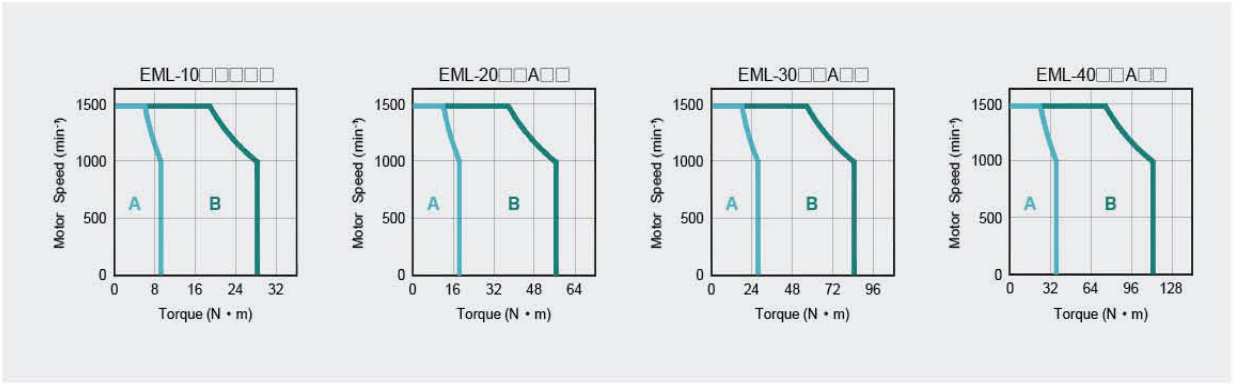
Notes: ① The EML-20□□A□□, EML-30□□A□□, EML-40□□A□□ servo motors are not mounted the incremental encoder 131072P/R.
② There is no brake in the EML-10□D□□□ servo motor.

Rated Value and Specification

Voltage		200VAC / 400VAC									
Servo Motor Model	EML-	10A□A□□	10A□B□□	10D□A□□	10D□B□□	20A□A□□	20D□A□□	30A□A□□	30D□A□□	40A□A□□	40D□A□□
Rated Output Power	kW	1.0	1.0	1.0	1.0	2.0		3.0		4.0	
Rated Torque	N.m	9.55	9.55	9.55	9.55	19.1		28.7		38.2	
Instantaneous Peak Torque	N.m	28.7	28.7	28.7	28.7	57.3		86.0		114.6	
Rated Current	Arms	6.0	5.5	3.2	2.8	12.0	6.2	18.0	9.0	24.0	12.2
Instantaneous Max. Current	Arms	18.0	16.5	9.6	8.4	36.0	18.6	54.0	27.0	72.0	36.6
Rated Speed	r/min	1000									
Max. Speed	r/min	1500									
Rotor Moment of Inertia	$\times 10^{-4}$kg·m^2	19.0 (19.6)	23.5(24.6)	19.0 (19.6)	23.5(24.6)	53.5 (56.7)		77.8 (81.0)		102.2 (105.4)	
Brake Rated Voltage		DC24V±10%									
Brake Rated Power	W	19	19.5	19	19.5	35					
Brake Holding Torque	N.m	10	12	10	12	40					
Encoder	Standard	Incremental Encoder: 131072P/R 1048576P/R				Absolute Encoder: 131072P/R					
	Options	Absolute Encoder: 131072P/R Wire-saving Incremental Encoder (2500P/R)									
Insulation Class		F									
Ambient Temperature		0 to + 40℃ (No freezing)									
Ambient Humidity		20 to 80% RH (Non-condensing)									
Vibration		24.5m/s^2									
Enclosure		Totally Enclosed, Self-cooled, IP65 (Except for shaft opening, when not equipped with oil seal.)									

Notes: The values in parentheses are for servo motors with holding brakes.

Torque-Speed Feature



A: Continuous Working Area B: Repeatedly Working Area

EMB Model

Features

- Power supply voltage: 400V
- Driving of feed shafts for various machinery
- Various products (7.5kW~22kW, with brake, etc.)
- Mounted 17 bits absolute encoder, Optional mounted resolver
- Temperature sensor

Application

- Machine tools
- Handling machinery
- Foodstuff processing machinery
- Textile machinery

Specification Description

EMB - 1E D S A 1 1

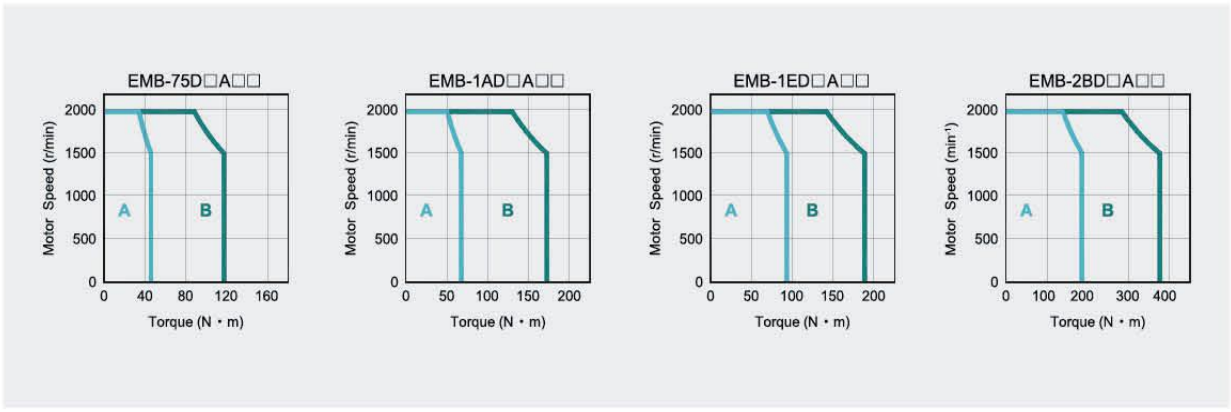
EMB Model Servo Motor	Rated Output Power	Power Voltage	Encoder	Designing Sequence	Shaft End	Option Parts
	Sign Spec.	Sign Spec.	Sign Spec.	Sign Spec.	Sign Spec.	Sign Spec.
	75 7.5kW	D 400VAC	S Absolute Encoder: 131072P/R	A Designing Sequence	1 Flat, Without Keys (Standard)	1 None
	1A 11.0kW					2 With Oil Seal
	1E 15.0kW		R Resolver		2 Flat, With Keys With Screw Thread	3 With Brake (DC24V)
	2B 22.0kW					4 With Oil Seal, With Brake (DC24V)

Rated Value and Specification

Voltage		400VAC			
Servo Motor Model	EMB-	75D□A□□	1AD□A□□	1ED□A□□	2BD□A□□
Rated Output Power	kW	7.5	11.0	15.0	22.0
Rated Torque	N·m	47.8	70.0	95.5	140.0
Instantaneous Peak Torque	N·m	143.4	175	191	350
Rated Current	Arms	18.0	28.0	38.0	52.0
Instantaneous Max. Current	Arms	56.0	70.0	84.0	130
Rated Speed	r/min	1500			
Max. Speed	r/min	2000			
Rotor Moment of Inertia	$\times10^{-4}$kg·m^2	186.2 (193.6)	271.6 (278.9)	338.8 (346.1)	576.62
Brake Rated Voltage		DC24V±10%			
Brake Rated Power	W	90			
Brake Holding Torque	N·m	100			
Encoder	Standard	Absolute Encoder: 131072P/R			
	Options	Resolver			
Insulation Class		F			
Ambient Temperature		0 to +40℃ (No freezing)			
Ambient Humidity		20% to 80% RH (Non-condensing			
Vibration		24.5m/s^2			
Enclosure		Totally Enclosed, Forced-air Cooling, IP44 (Except for shaft opening, when not equipped with oil seal.) IP20 for cooling fan			

Note: The values in parentheses are for servo motors with holding brakes.

Torque-Speed Feature



A: Continuous Working Area B: Repeatedly Working Area

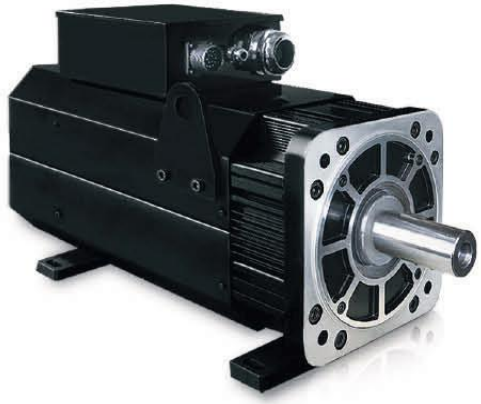
EMB for Low Inertia Model

Features

- Wider weak field speed governing range,better overload capability
- Made from high class permanent material, higher motor efficiency
- High performance of imported resolver
- Built-in high precision temperature sensor
- Provide custom-built service

Application

- Injection molding machine



Specification Description

EMB – 1Z D R A 2 1 _____

EMB for Low Inertia Model Servo Motor	Rated Output Power	Voltage	Encoder	Designing Sequence	Shaft End	Option Parts	Custom-built

Sign	Spec.
1Z	10.8kW
1C	13.2kW
1F	16.7kW
2A	21.4kW
2F	26.9kW
3C	33kW

Sign	Spec.
D	400VAC

Sign	Spec.
R	Resolver

Sign	Spec.
A	Designing Sequence

Sign	Spec.
1	Flat, Without Keys (Standard)
2	Flat,With Keys,With Screw Thread

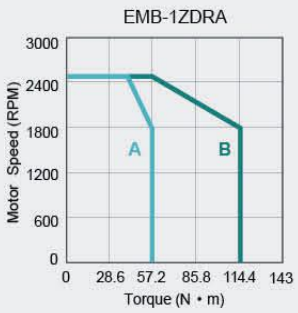
Sign	Spec.
1	None
2	With Oil Seal
3	With Brake(DC 24V)
4	With oil seal, with brake (DC24V)

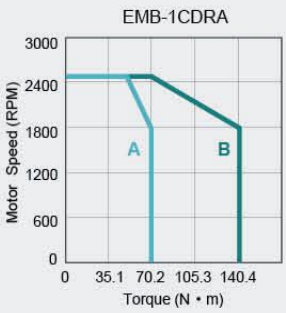
Sign	Spec.
00 (Omissible)	With Baseplate
X X	Custom-built (Internal Code)

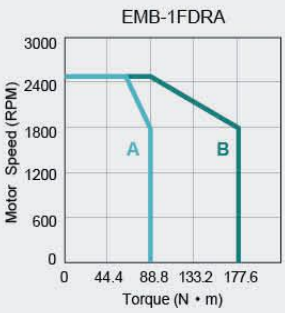
Rated Value and Specification

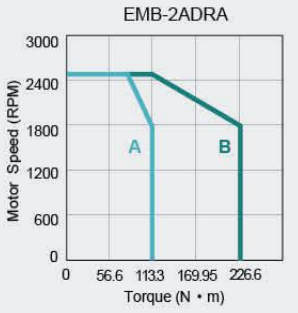
Voltage		400VAC					
Servo Motor		EMB-1ZDRA	EMB-1CDRA	EMB-1FDRA	EMB-2ADRA	EMB-2FDRA	EMB-3CDRA
Motor Rated Power	kW	10.8	13.2	16.7	21.4	26.9	33
Rated Torque	N·m	57.2	70.2	88.8	113.3	142.5	175
Instantaneous Peak Tarque	N·m	114.5	140.4	177.5	226.5	285	350
Rated Current	Arms	22.5	27	34.5	47	60	72
Instantaneous Max. Current	Arms	45	54	69	94	120	144
Kt Value	N·m/A	2w.54	2.6	2.57	2.41	2.38	2.43
Rated Speed	r/min	1800					
Max. Speed	r/min	2500					
Pole Number		8					
Rotor Moment of Inertia	$\times 10^{-4}$kg·m^2	116	132	156	195	234	283
Encoder		Resolver					
Insulation Class		F					
Ambient Temperature		0 ~ +40°C (No freezing)					
Ambient Humidity		20% ~ 80% RH(Non-condensing)					
Vibration		24.5m/s^2					
Enclosure		Totally enclosed, forced-air cooling, IP44(Except for shaft opening, when not equipped with oil seal), IP20 for cooling fan					

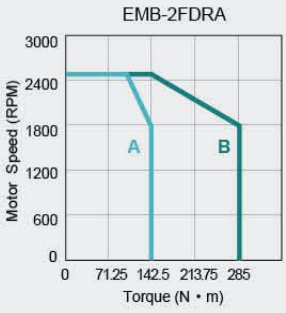
Torque-Speed Feature







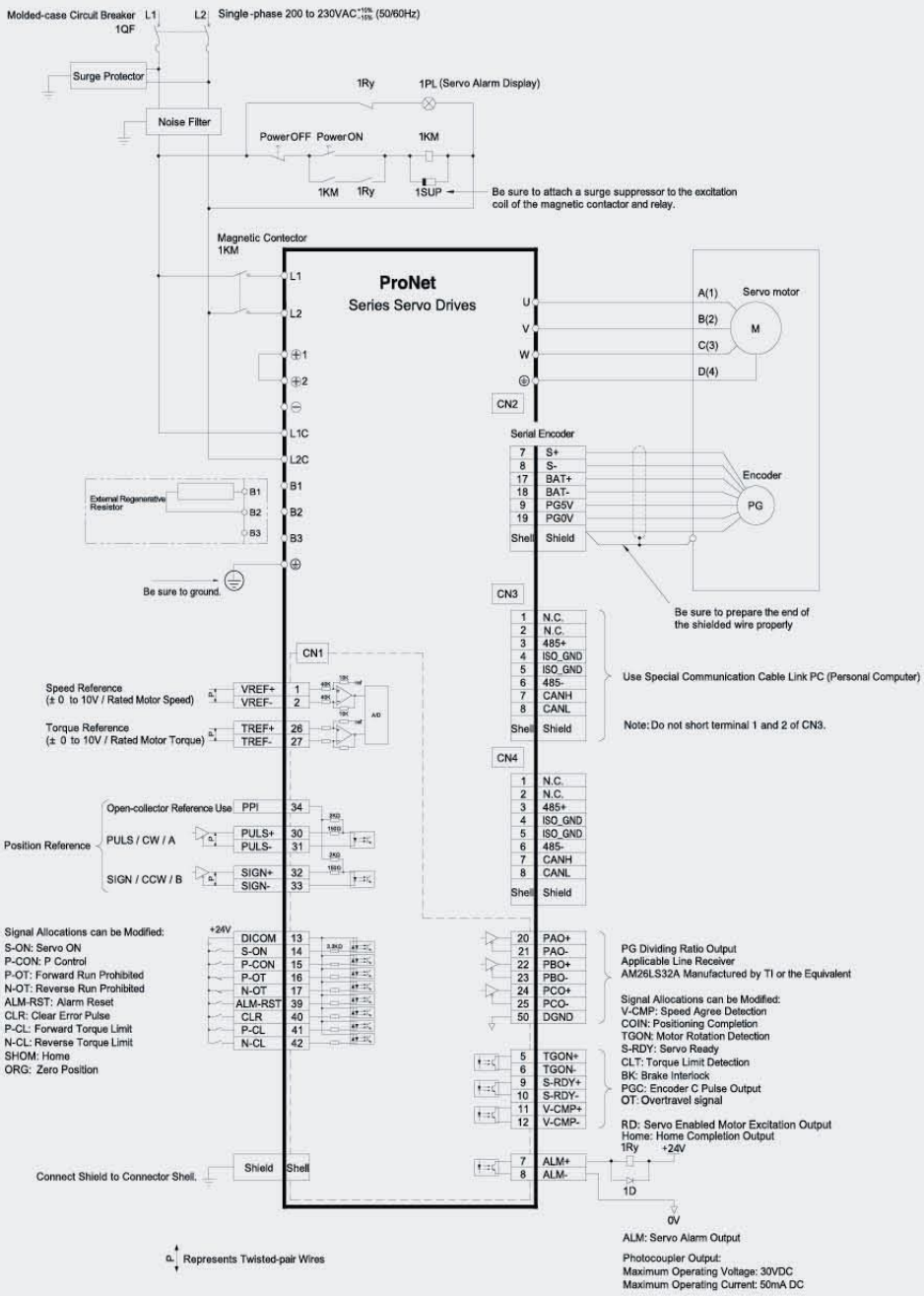




A: Continuous Working Area B: Repeatedly Working Area

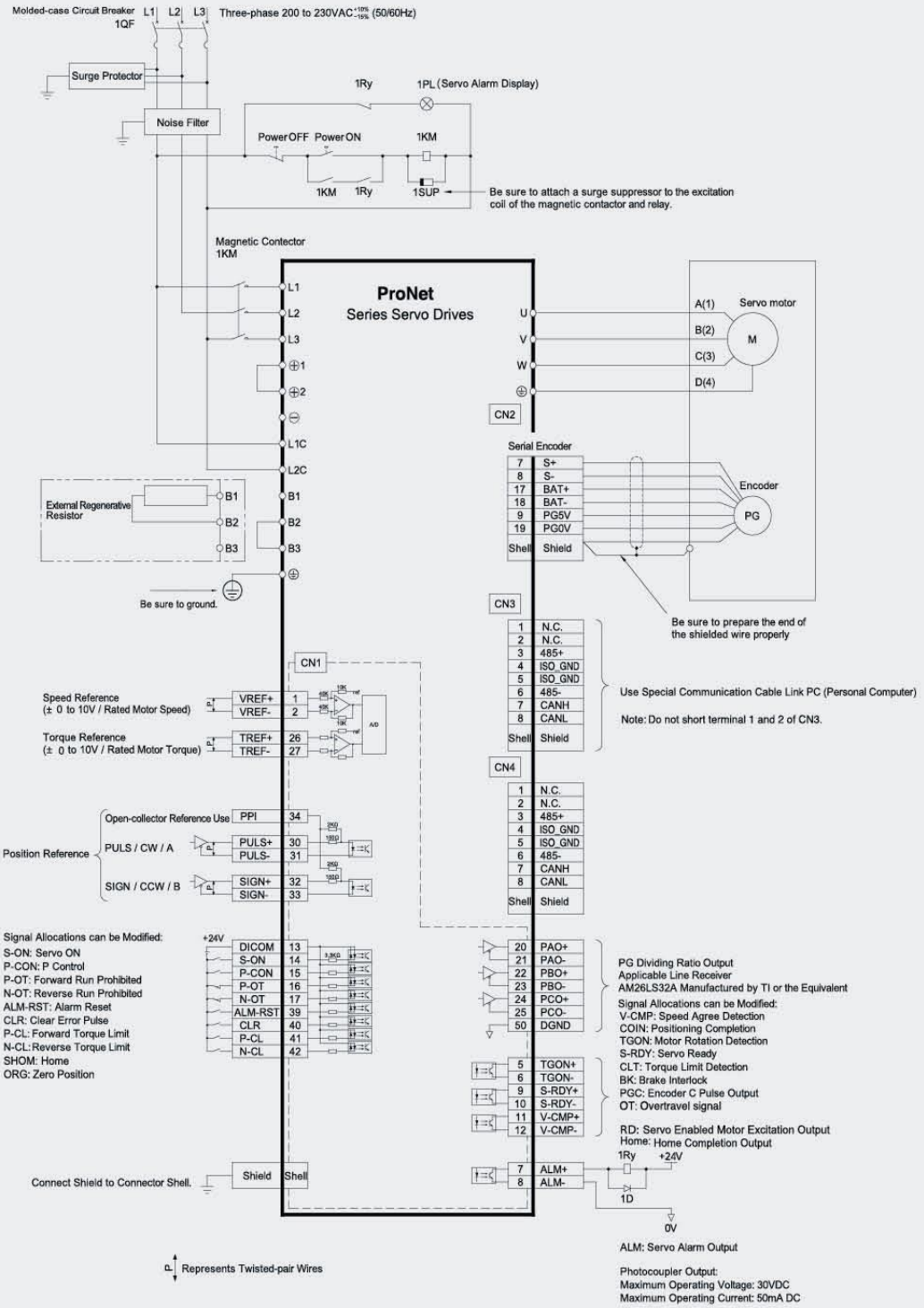
Connection

Single-phase 200VAC (ProNet-A5A to 04A)①



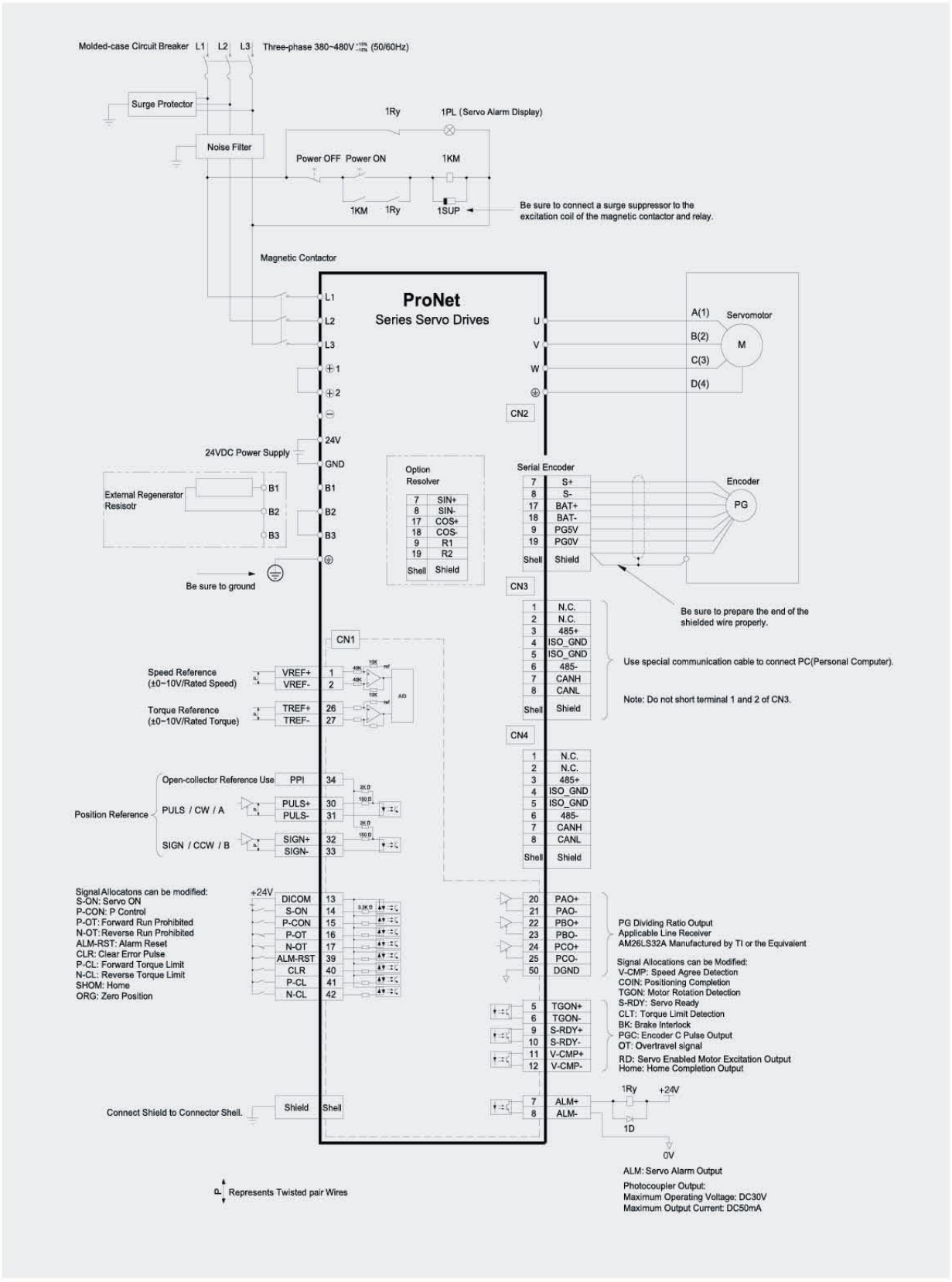
Notes: ① Not including ProNet-02AEA-EC and ProNet-04AEA-EC.
② The L1, L2 and L1C, L2C terminals wiring method of ProNet-A5A~04A servo drives is different from other ProNet series servo drives. Please note the specific terminal definition while wiring.
③ External regenerative resistor for ProNet-A5A~04A is provided by customer, the model of ASQ60W50ΩKGO resistor is recommended.
④ Change Pn521 from "1" to "0" when using the external regenerative resistor in ProNet-A5A~04A servo drives.

Three-phase 200VAC (ProNet-08A to 50A)①



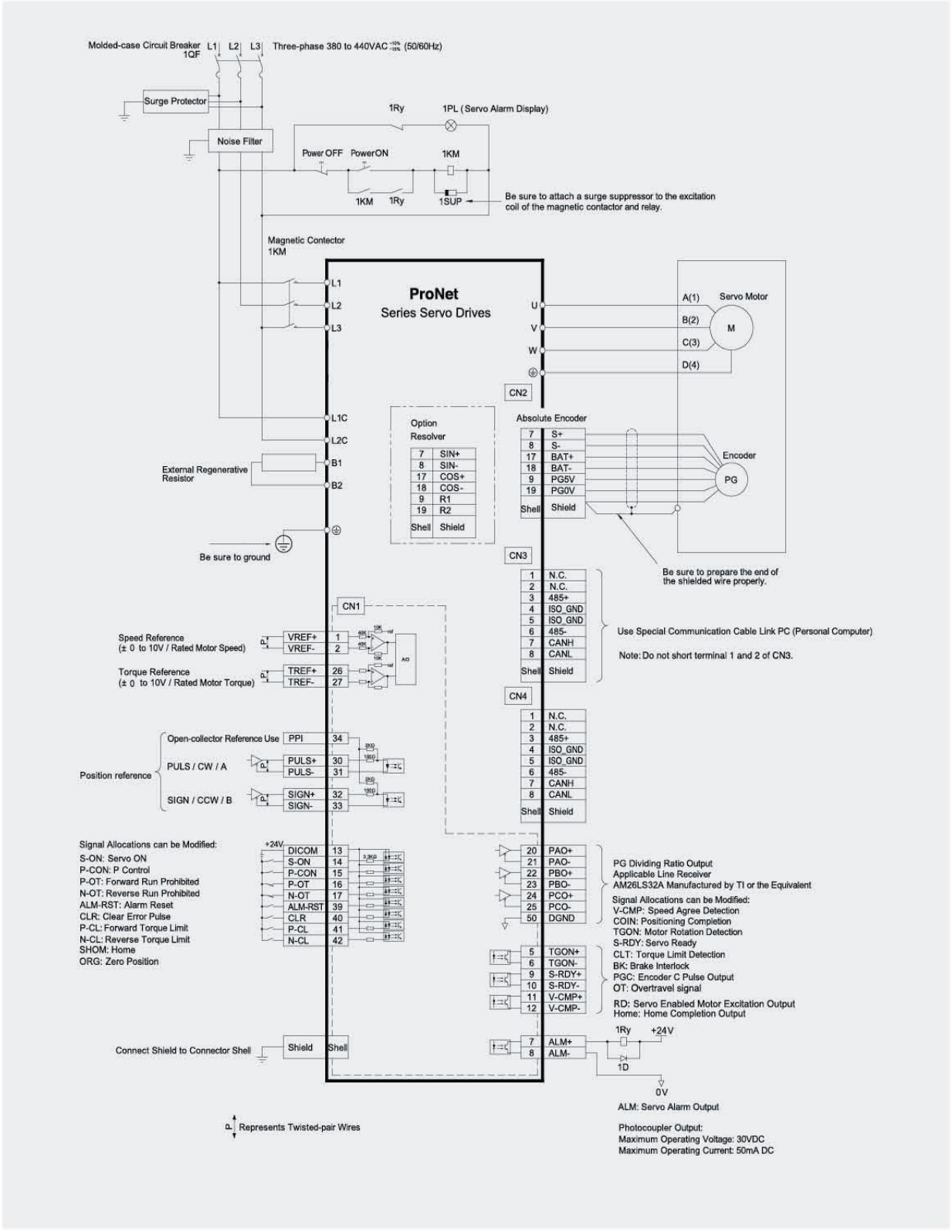
Note: ① Not including ProNet-08AEA-EC to ProNet-50AEA-EC.

Three-phase 400VAC (ProNet-10D~70D)①



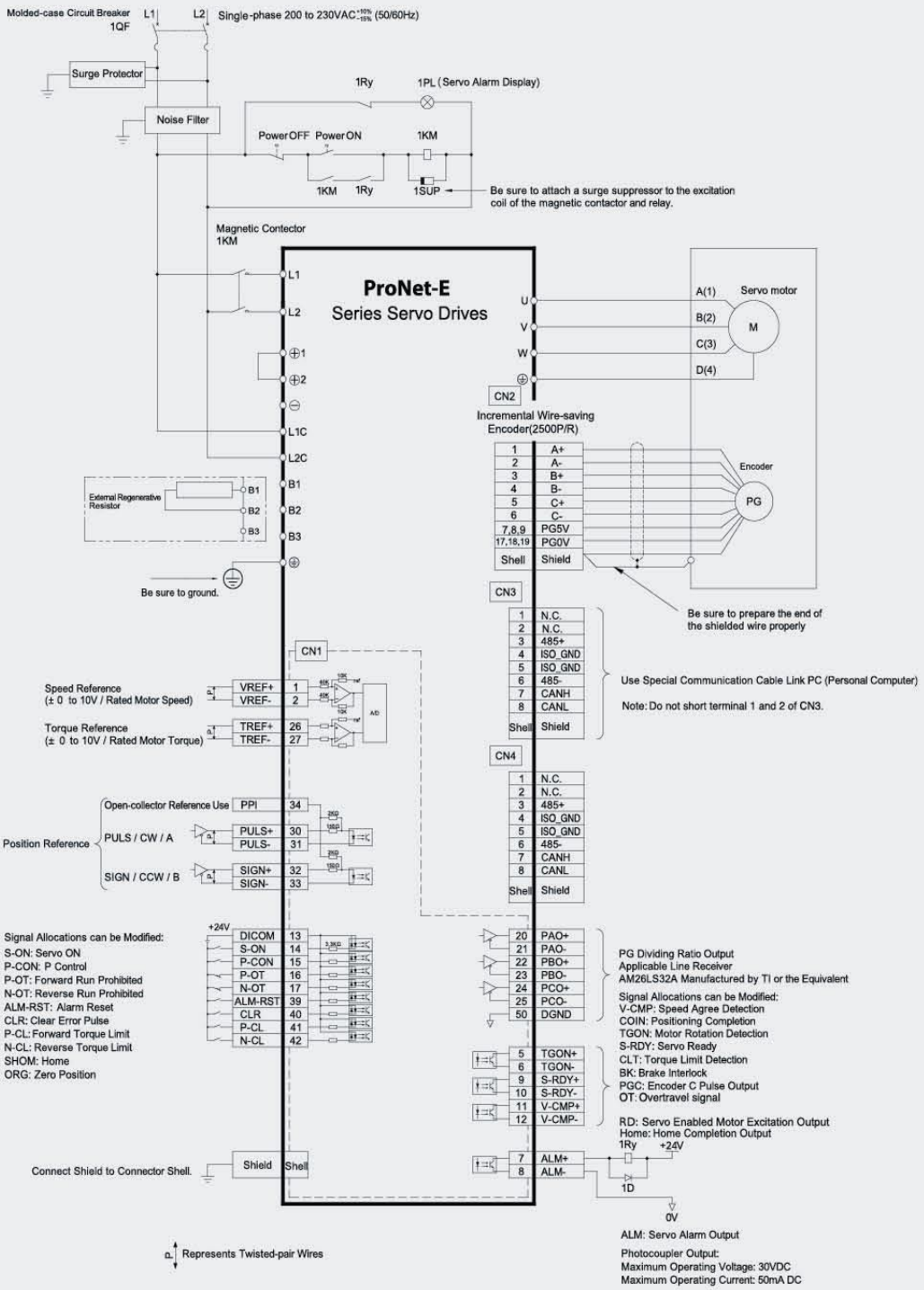
Note: ① Not including ProNet-10DEA-EC to ProNet-70DEA-EC.

Three-phase 400VAC (ProNet-75D to 2BD)①



Notes: ① Not including ProNet-1ADEA-EC and ProNet-1EDEA-EC.
② External regenerative resistor for ProNet-1AD is provided by customer. The model of 2000W/18R resistor is recommended.
③ External regenerative resistor for ProNet-1ED is provided by customer. The model of 3000W/11R resistor is recommended.
④ External regenerative resistor for ProNet-2BD is provided by customer. The model of 4000W/9R resistor is recommended.

Single-phase 200VAC (ProNet-E-A5A to 04A)

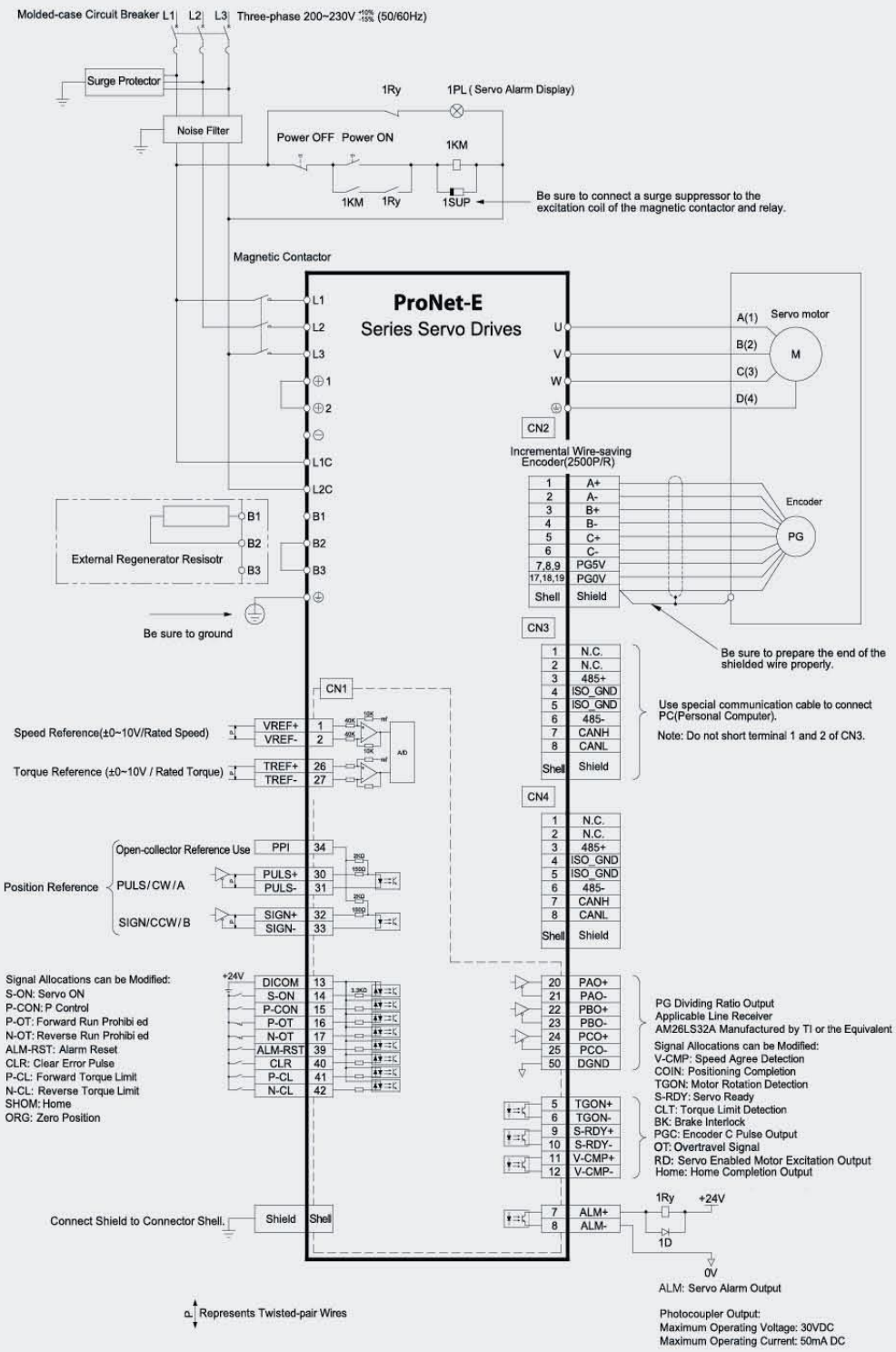


Notes: ① The L1, L2 and L1C, L2C terminals wiring method of ProNet-E-A5A~04A servo drives is different from other ProNet series servo drives. Please note the specific terminal definition while wiring.

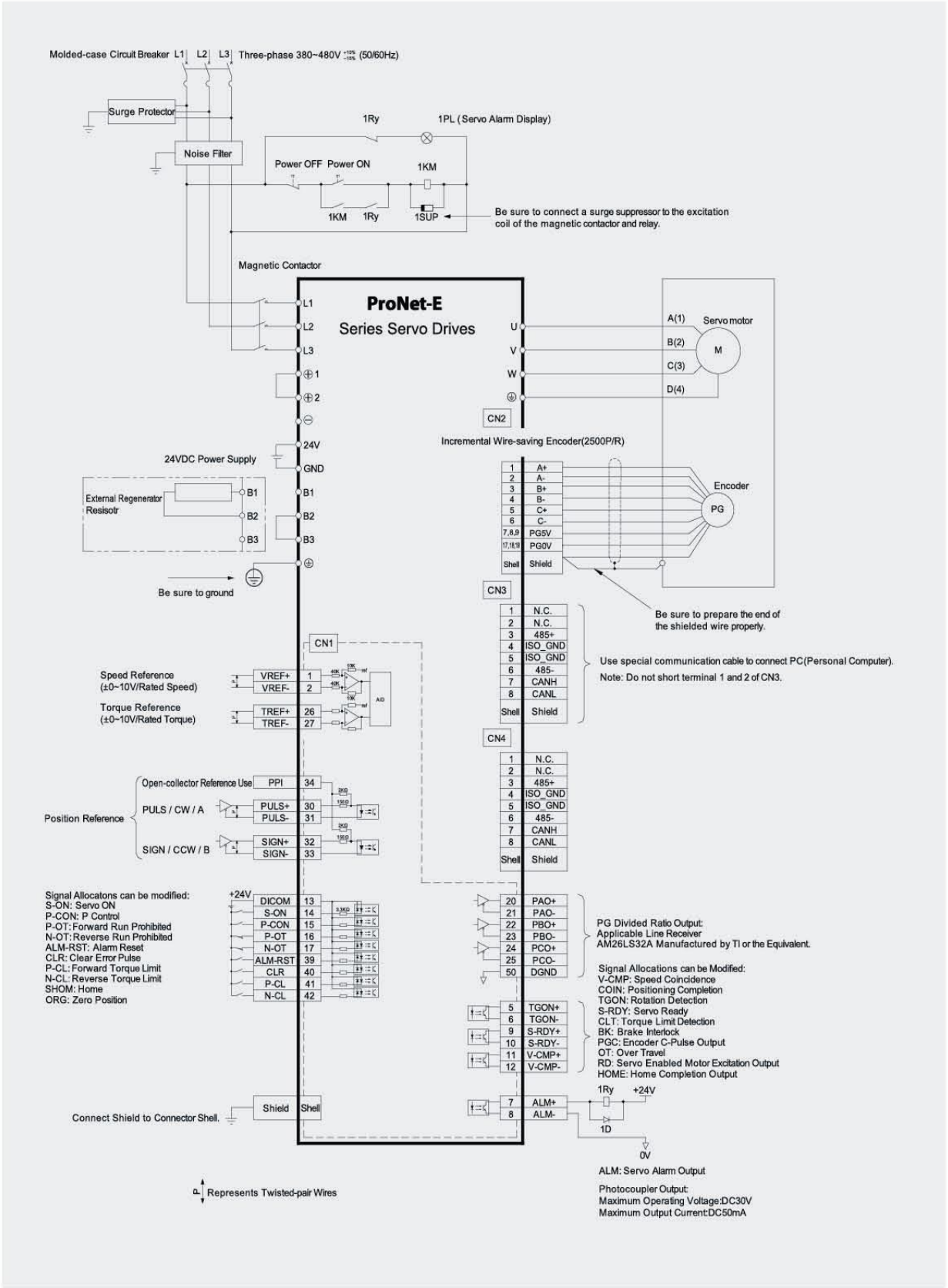
② External regenerative resistor for ProNet-E-A5A~04A is provided by customer, the model of ASQ60W50ΩKGO resistor is recommended.

③ Change Pn521 from "1" to "0" when using the external regenerative resistor in ProNet-E-A5A~04A servo drives.

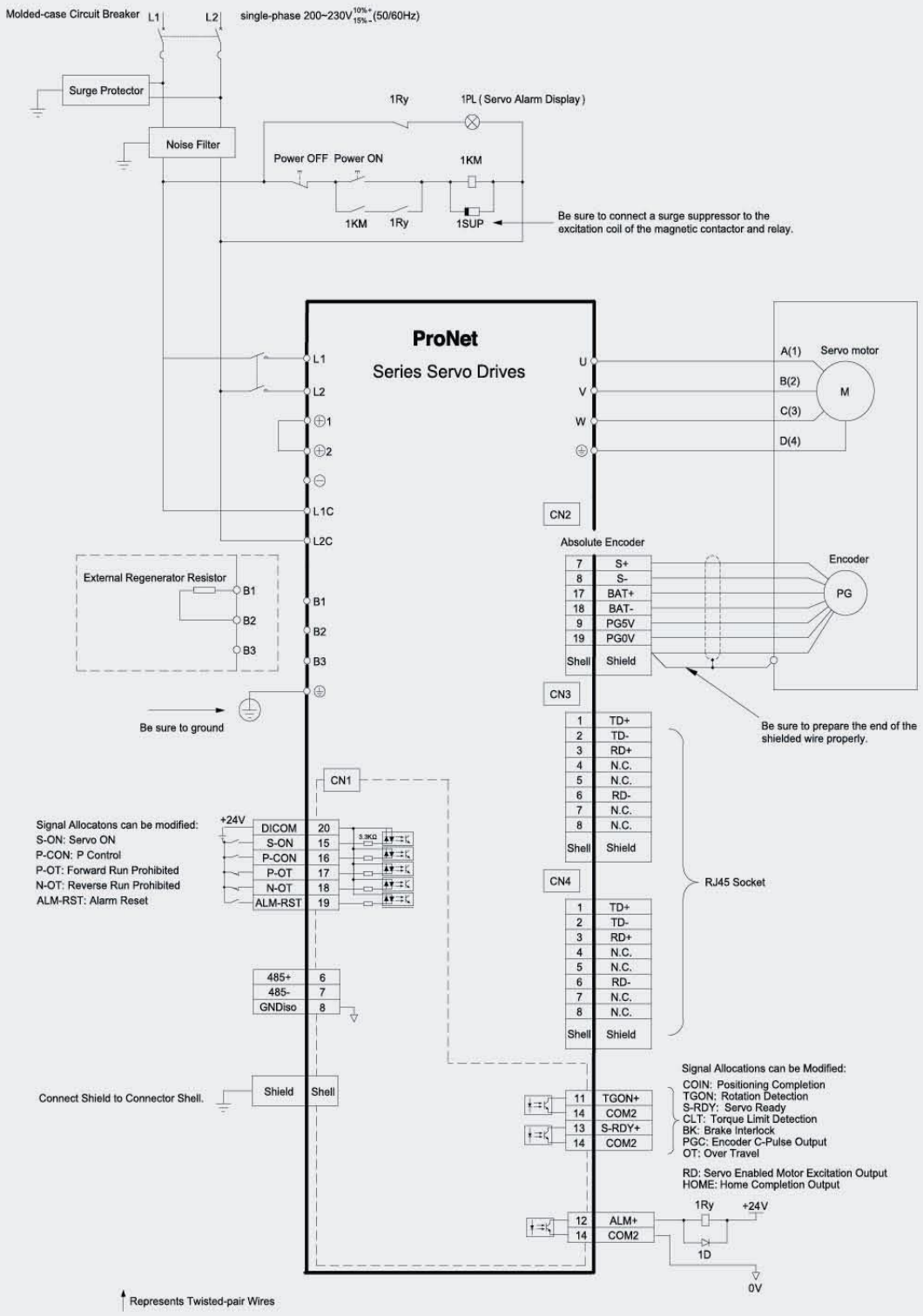
Three-phase 200VAC (ProNet-E-08A to 50A)



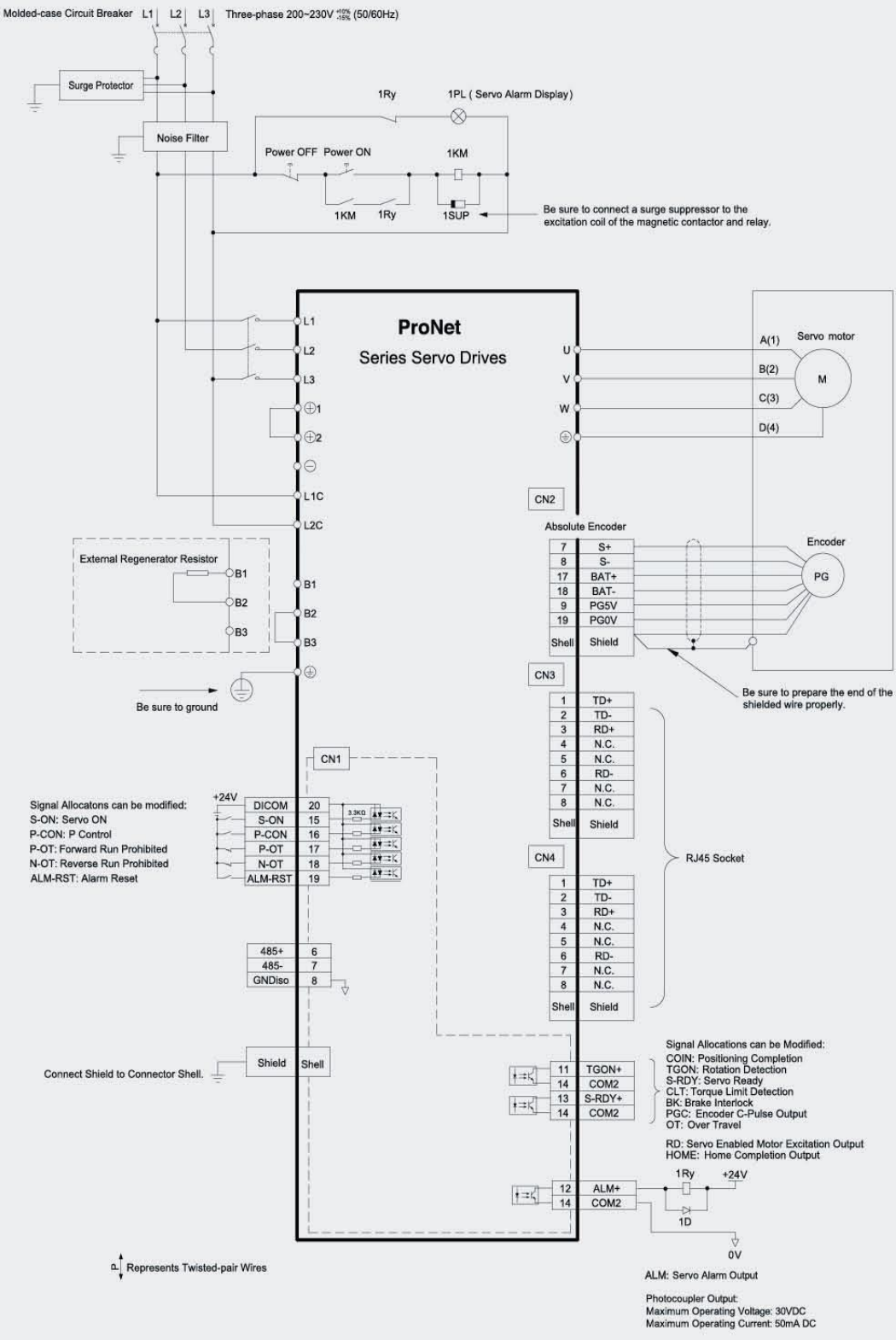
Three-phase 400VAC (ProNet-E-10D ~50D)



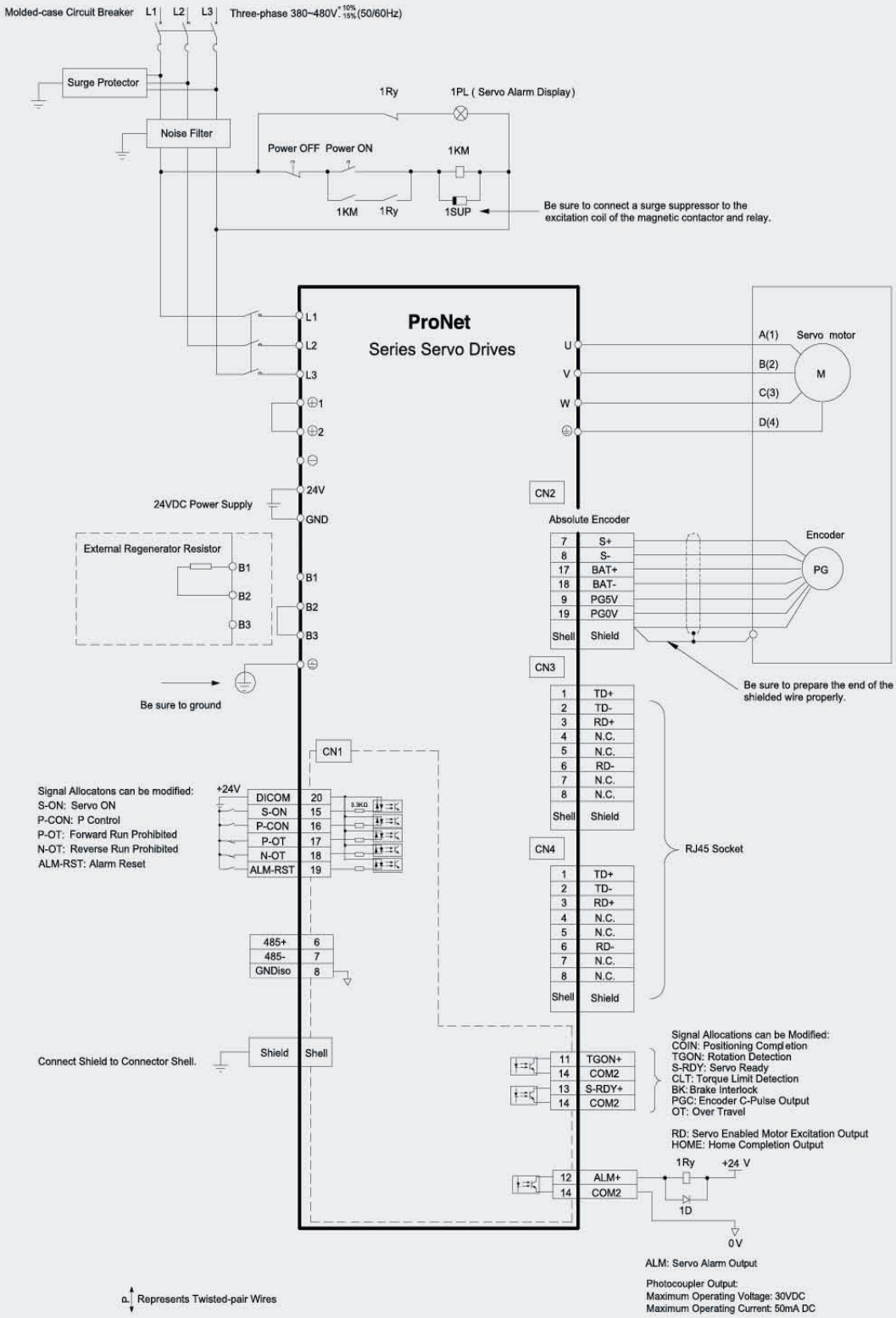
Single-phase 200VAC (ProNet-02AE□-EC to ProNet-04AE□-EC)



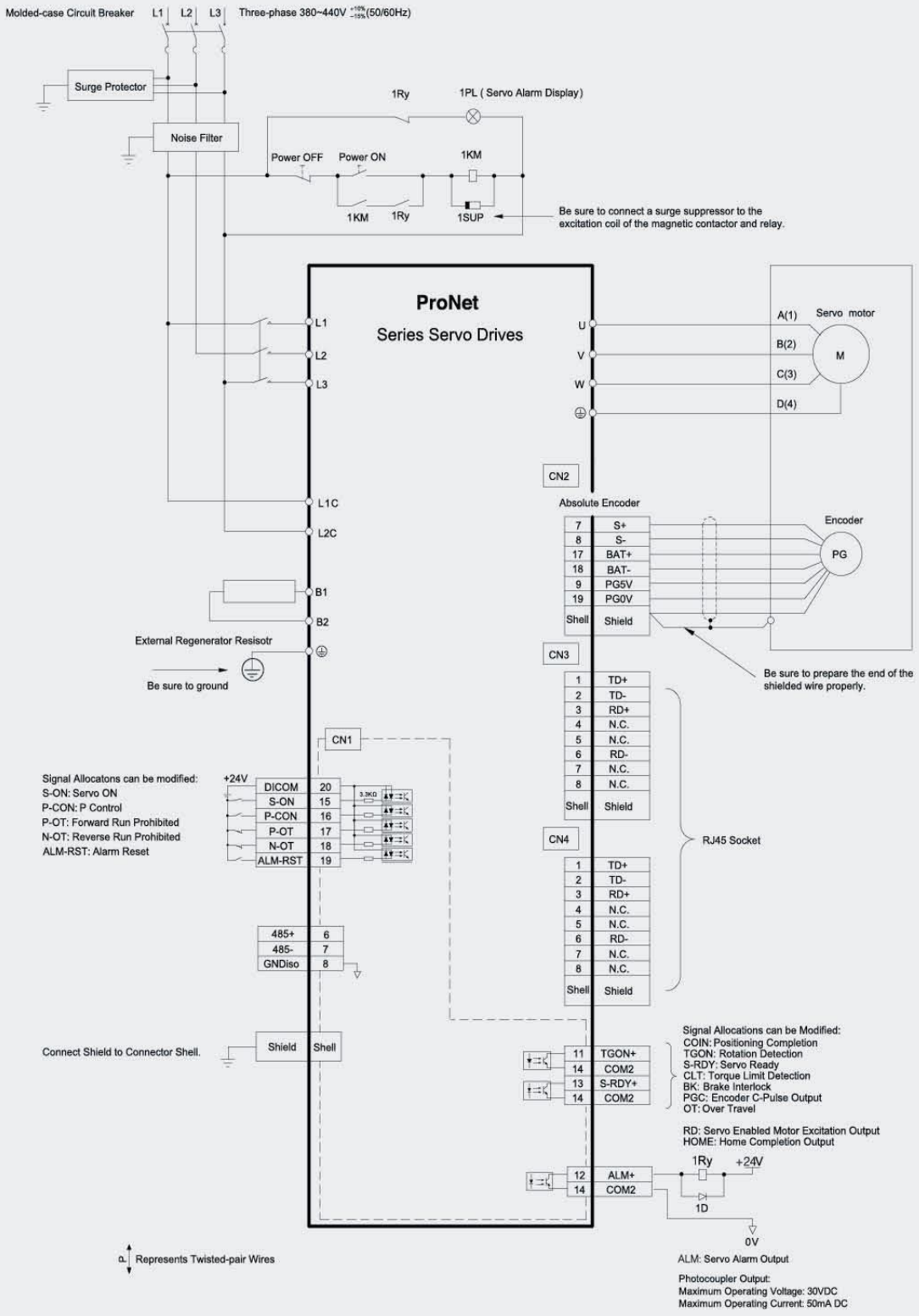
Three-phase 200VAC (ProNet-08AE□-EC to ProNet-50AE□-EC)



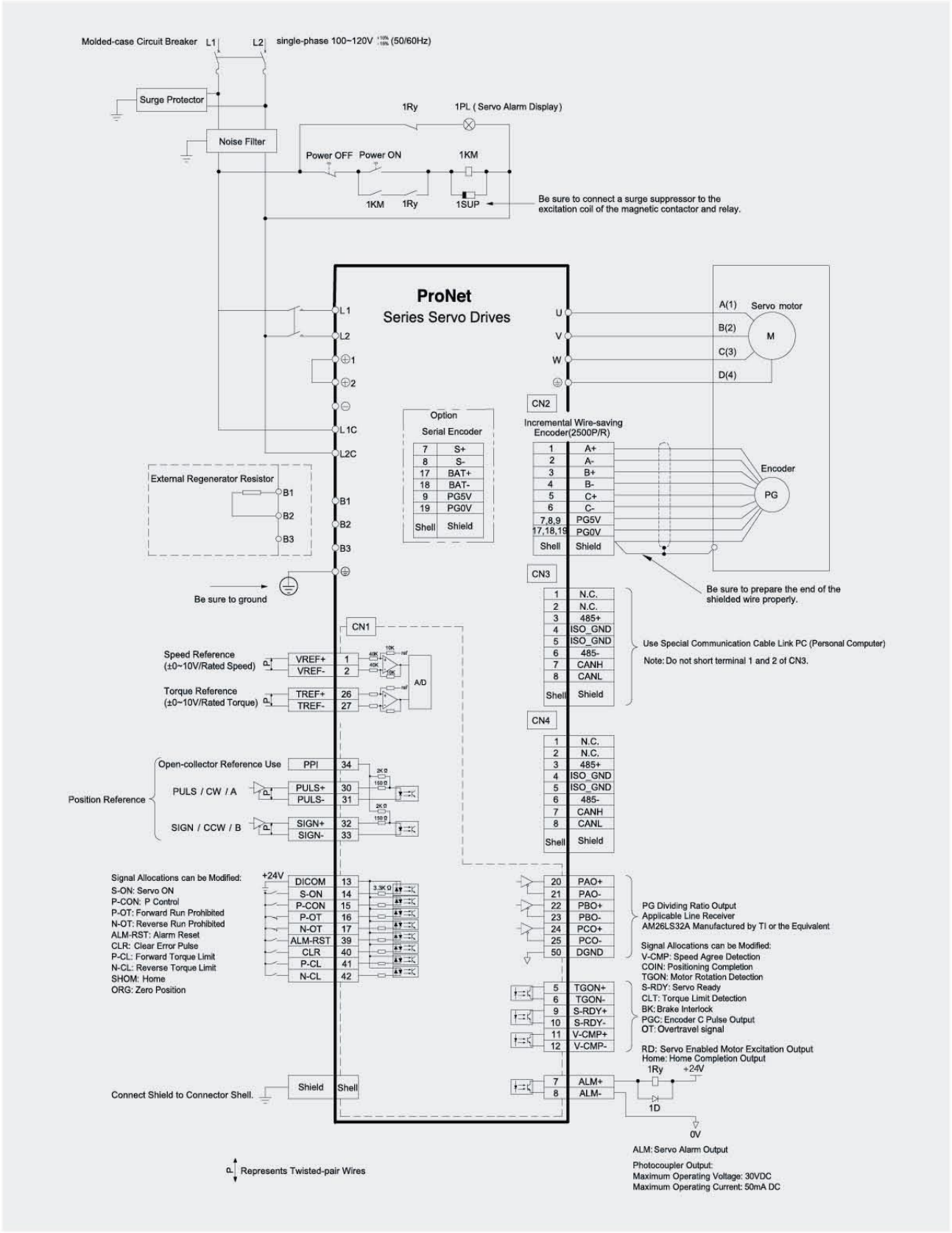
Three-phase 400VAC (ProNet-10DE□-EC to ProNet-50DE□-EC/ ProNet-70DEA-EC)



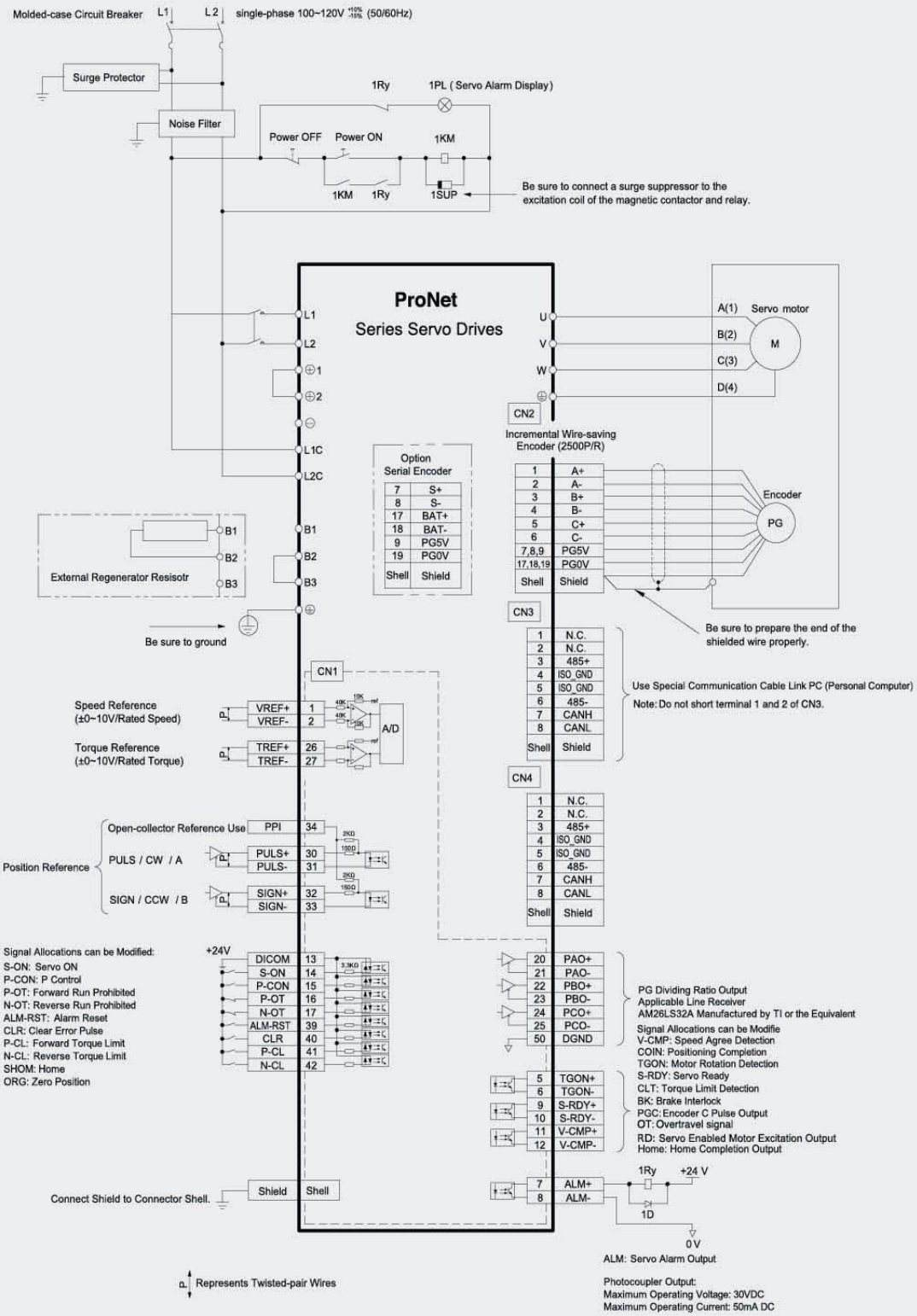
Three-phase 400VAC (ProNet-75DEA-EC to ProNet-2BDEA-EC)



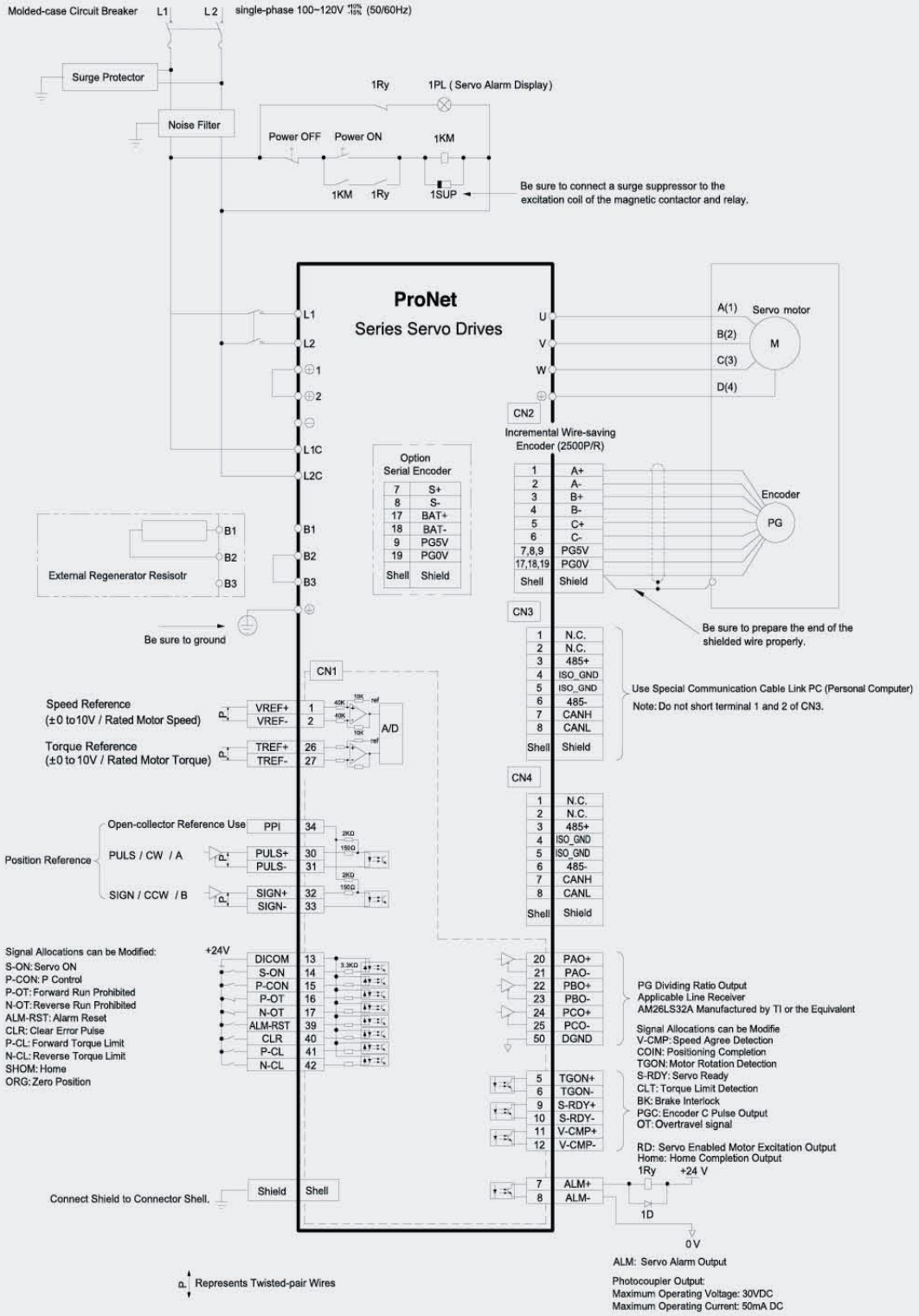
Single-phase 100VAC (ProNet-02B/ProNet-E-02B)



Single-phase 100VAC (ProNet-04B /ProNet-E-04B)



Single-phase 100VAC (ProNet-08B/ ProNet-E-08B)



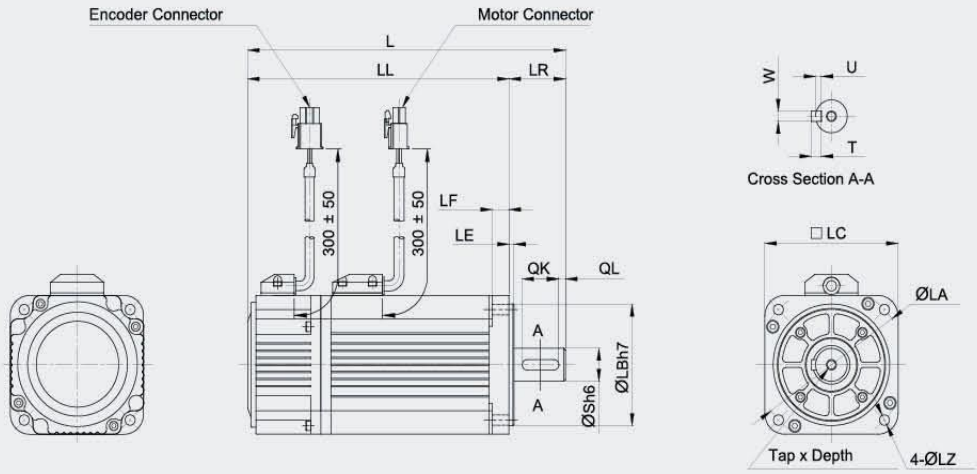
Notes: ①When single-phase 100VAC is provided for main circuit on rated speed, instantaneous peak torque≤4.78N.m.
②When three-phase 100VAC is provided for main circuit on rated speed, instantaneous peak torque≤7.16N.m.

Dimension

Servo Drive

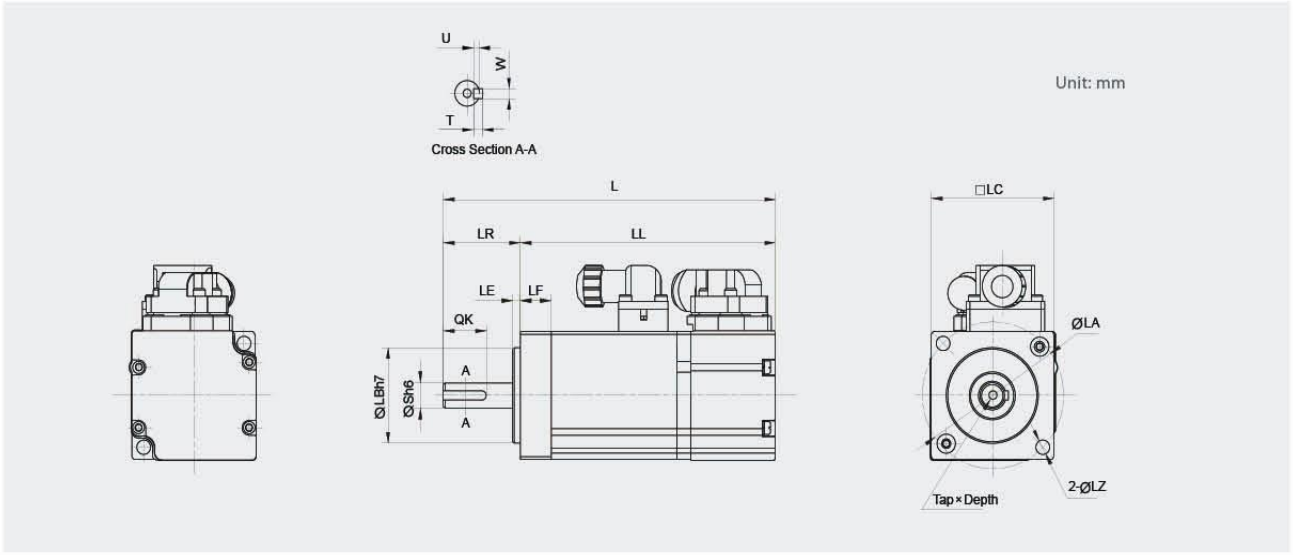
EMJ Dimension

Unit: mm



Model EMJ-	L	LL	Dimension							S	Tap×Depth	Key				
			LR	LE	LF	LC	LA	LB	LZ			QK	QL	W	T	U
02□P	141(181)	111(151)	30	3	6	60	70	50	5.5	14	M5×10L	16	4	5	5	3
02□D	141	111														
02□S	154(194)	124(164)														
04□P/FA/B	161(201)	131(171)														
04□D	161	131														
04□S	174(214)	144(184)														
08□P/F	173(216)	138(181)	35		9	80	90	70	7	19	M6×15L	22		6	6	3.5
08□D	173	138														
08□S	186(229)	151(194)														
10□P/F	191(234)	156(199)														
10□D	191	156														
10□S	204(247)	169(212)														
04□P/FH	172(212)	142(182)	30		6	60	70	50	5.5	14	M5×10L	16		5	5	3
04□SH	182(222)	152(192)														

Note: The dimension in parentheses are for servo motors with holding brakes.



Model EMJ-	L	LL	Dimension							S	Tap×Depth	Key				
			LR	LE	LF	LC	LA	LB	LZ			QK	QL	W	T	U
01□D/P	125(159.5)	100(134.5)	25	2.5	10	40	46	30	4.5	8	CM3x6L	14	-	3	3	1.8
A5□D/P	108(142.5)	83(117.5)	25	2.5	10	40	46	30	4.5	8	CM3x6L	14	-	3	3	1.8

Note: The dimension in parentheses are for servo motors with holding brakes.

Motor Connector Specification for EMJ-A5/01□P/D

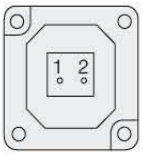
- Plug: SC-MC4S-A1(SUNCHU)
- Receptacle: SC-MC4P-A1(SUNCHU)

Pin No.	Signal
1	V
2	W
3	U
4	PE

Brake Connector Specification for EMJ-A5/01□P/D

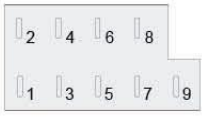
- Plug: SC-MC2S-A1(SUNCHU)
- Receptacle: SC-MC2P-A1(SUNCHU)

Pin No.	Signal
1	B1
2	B2



Encoder Connector Specification for EMJ-A5/01□P

- Plug: SC-MC9S-A1(SUNCHU)
- Receptacle: SC-MC9P-A1(SUNCHU)

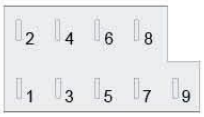


Pin No.	Signal
1	A+
2	A-
3	B+
4	B-
5	C+
6	C-
7	PG5V
8	PG0V
9	FG

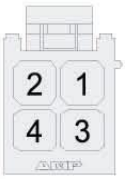
Encoder Connector Specification for EMJ-A5/01□D

- Plug: SC-MC9S-A1(SUNCHU)
- Receptacle: SC-MC9P-A1(SUNCHU)

Pin No.	Signal
1	-
2	-
3	S+
4	S-
5	-
6	-
7	PG5V
8	PG0V
9	FG



Motor Connector Specification for EMJ-02/04/08/10□P



- Plug: 172167-1(AMP)
- Pin: 170360-1(AMP)

Pin No.	Signal
1	U
2	V
3	W
4	FG

Brake Connector Specification for EMJ-02/04/08/10□P

- Plug: 172165-1(AMP)
- Pin: 170360-1(AMP)

Pin No.	Signal
1	B1
2	B2

Encoder Connector Specification for EMJ-02/04/08/10□P

- Plug: 172169-1(AMP)
- Pin: 170359-3(AMP)

Pin No.	Signal
1	A+
2	B+
3	C+
4	A-
5	B-
6	C-
7	PG5V
8	PG0V
9	FG

Encoder Connector Specification for EMJ-02/04/08/10□D/S

- Plug: CGRSD-7BFMA-SL8001

Incremental / Absolute Encoder

Pin No.	Signal
1	S+
2	S-
3	BAT+
4	BAT-
5	PG5V
6	PG0V
7	FG

★ Note : There are no BAT+,BAT- signal in incremental encoder.

Motor Connector Specification for EMJ-02/04/08/10□P-Waterproof (option)

Motor Connector Specification for EMJ-02/04/08/10□D/S

- Plug: CGRSB-4BFMA-SL8001

Pin No.	Signal
1	U
2	V
3	W
4	FG

Encoder Connector Specification for EMJ-02/04/08/10□P-Waterproof(option)

Incremental Encoder(Wire-saving)

- Plug: CGRSD-9BFMA-SL8001

Pin No.	Signal
1	A+
2	A-
3	B+
4	B-
5	C+
6	C-
7	PG5V
8	PG0V
9	FG

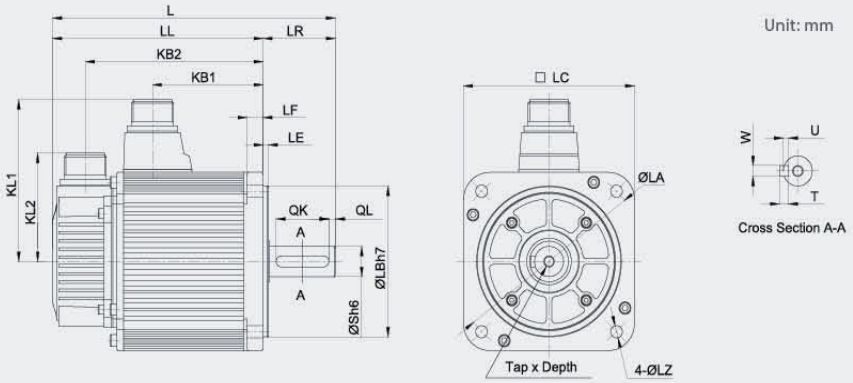
Brake Connector Specification for EMJ-02/04/08/10□P-Waterproof(option)

Brake Connector Specification for EMJ-02/04/08/10□D/S

- Plug: CGRSB-2BFMA-SL8001

Pin No.	Signal
1	B1
2	B2

EMG Dimension



Model EMG-	L	LL	KB1	KB2	KL1	KL2	Dimension							S	Tap×Depth	Key				
							LR	LE	LF	LC	LA	LB	LZ			QK	QL	W	T	U
10□P/S/A	215(269.5)	160(214.5)	84	135(189.5)	118	79	55	4	12	130	145	110	9	22	M6×20L	40	5	8	7	4
10□DA	215	160	84	135(192)	118	79	55	4	12	130	145	110	9	22	M6×20L	40	5	8	7	4
15□P/S/A	240(294.5)	185(239.5)	109	160(214.5)	118	79	55	4	12	130	145	110	9	22	M6×20L	40	5	8	7	4
15□DA	240	185	109	160(217)	118	79	55	4	12	130	145	110	9	22	M6×20L	40	5	8	7	4
20□P/S/A	265(319.5)	210(264.5)	134	185(239.5)	118	79	55	4	12	130	145	110	9	22	M6×20L	40	5	8	7	4
20□DA	265	210	134	185(242)	118	79	55	4	12	130	145	110	9	22	M6×20L	40	5	8	7	4
30□□	307(378)	228(299)	143	203(274)	140	79	79	3.2	18	180	200	114.3	13.5	35	M8×16L	55	6	10	8	5
50□□	357(428)	278(349)	183	253(324)	140	79	79	3.2	18	180	200	114.3	13.5	35	M8×16L	55	6	10	8	5

Note: The dimension in parentheses are for servo motors with holding brakes.

Motor Connector Specification

- Receptacle:
  MS3102A20-4P (LC=130)
  MS3102A22-22P (LC=180)
- Plug:
  MS3108B20-4S (LC=130)
  MS3108B22-22S (LC=180)
- Cable Clamp:
  MS3057-12A

Pin No.	Signal
A	U
B	V
C	W
D	FG

Brake Connector Specification

- Receptacle:
  MS3102A10SL-3P
- Plug:
  MS3106A10SL-3S
- Cable Clamp:
  MS3057-4A

Pin No.	Signal
A	B1
B	B2
C	–

Encoder Connector Specification

- Receptacle: MS3102A20-29P
- Plug: MS3108B20-29S
- Cable Clamp: MS3057-12A

Incremental / Absolute Encoder

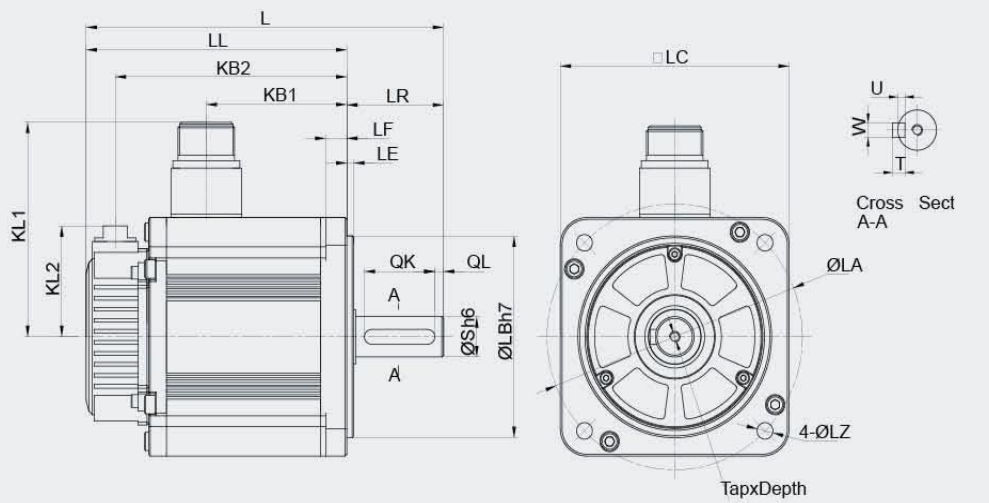
Pin No.	Signal
K	S+
L	S–
★T	BAT+
★S	BAT–
H	PG5V
G	PG0V
J	FG

Wire-saving Incremental Encoder

Pin No.	Signal
A	A+
B	A–
C	B+
D	B–
E	C+
F	C–
G	PG0V
H	FG5V
J	FG

★ Note : There are no BAT+,BAT- signal in incremental encoder.

Unit: mm

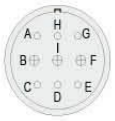


Model EMG-	L	LL	KB1	KB2	KL1	KL2	Dimension							S	Tap×Depth	Key				
							LR	LE	LF	LC	LA	LB	LZ			QK	QL	W	T	U
10□□B	203(245.5)	148(190.5)	80(103.2)	131.5(174)	117	60.5	55	4	12	130	145	110	9	22	M6×20L	40	5	8	7	4
15□□B	225(267.5)	170(212.5)	102(125.2)	153.5(196)	117	60.5	55	4	12	130	145	110	9	22	M6×20L	40	5	8	7	4
20□□B	247(289.5)	192(234.5)	124(147.2)	175.5(218)	117	60.5	55	4	12	130	145	110	9	22	M6×20L	40	5	8	7	4

Note: The dimension in parentheses are for servo motors with holding brakes.

Motor Connector Specification

- Receptacle: HMS3102E20-18P
- Plug: HMS3106AE20-18S



Pin No.	Signal
A	–
B	U
C	FG
D	FG
E	–
F	W
★G	B1
★H	B2
I	V

Incremental / Absolute Encoder

Pin No.	Signal
1	S+
2	S–
3	BAT+
4	BAT–
7	PG0V
8	PG5V
10	FG

★ Note : There are no B1,B2 signals in motor without brake.

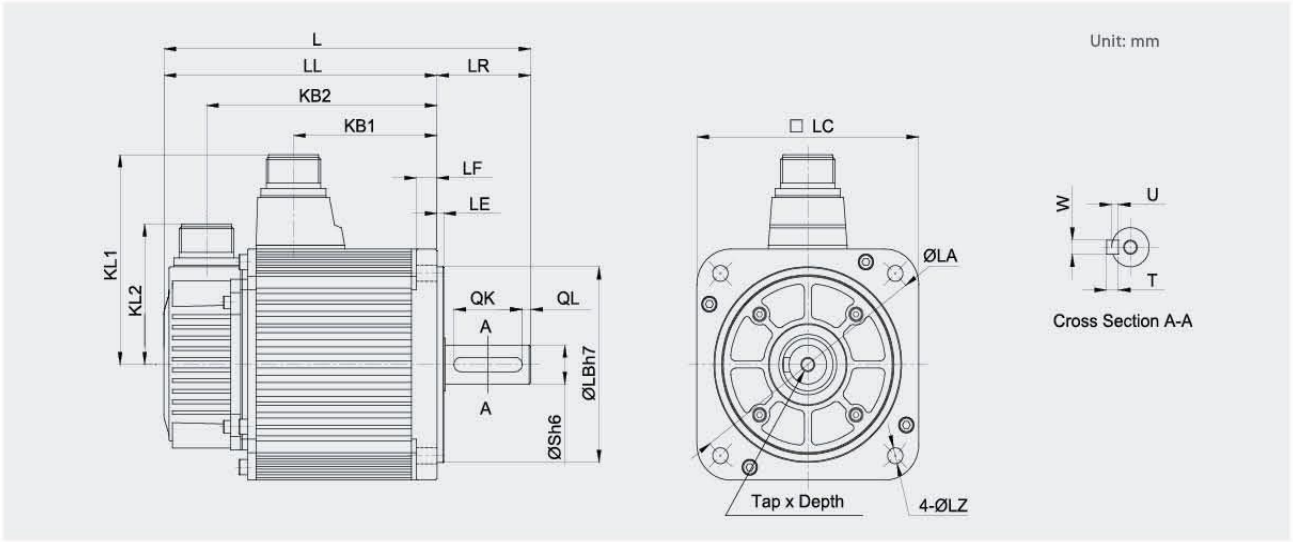
Encoder Connector Specification

- Receptacle: M-CAN-CM1002-10P
- Plug: M-CAN-CM1008-10S

Wire-saving Incremental Encoder

Pin No.	Signal
1	A+
2	A–
3	B+
4	B–
5	C+
6	C–
7	PG0V
8	PG5V
10	FG

EML Dimension



Model EML-	L	LL	KB1	KB2	KL1	KL2	Flange side							S	Tap×Depth	Key				
							LR	LE	LF	LC	LA	LB	LZ			QK	QL	W	T	U
10□□□□□	265(319.5)	210(264.5)	134	185(187.5)	118	79	55	4	12	130	145	110	9	22	M6×20L	40	5	8	7	4
20□□A□□	332(401)	253(322)	168	228(245)	140	79	79	3.2	18	180	200	114.3	13.5	35	M8×16L	55	6	10	8	5
30□□A□□	372(443)	293(364)	208	268(287)	140	79	79	3.2	18	180	200	114.3	13.5	35	M8×16L	55	6	10	8	5
40□□A□□	412(478)	333(399)	243	308(322)	140	79	79	3.2	18	180	200	114.3	13.5	35	M8×16L	55	6	10	8	5

Note: The dimension in parentheses are for servo motors with holding brakes.

Motor Connector Specification

- Receptacle:
  MS3102A20–4P (LC=130)
  MS3102A22–22P (LC=180)
- Plug:
  MS3108B20–4S (LC=130)
  MS3108B22–22S (LC=180)
- Cable Clamp:
  MS3057–12A

Pin No.	Signal
A	U
B	V
C	W
D	FG

Brake Connector Specification

- Receptacle:
  MS3102A10SL–3P
- Plug:
  MS3106A10SL–3S
- Cable Clamp:
  MS3057–4A

Pin No.	Signal
A	B1
B	B2
C	–

Encoder Connector Specification

- Receptacle: MS3102A20–29P
- Plug: MS3108B20–29S
- Cable Clamp: MS3057–12A

Incremental / Absolute Encoder

Pin No.	Signal
K	S+
L	S–
★T	BAT+
★S	BAT–
H	PG5V
G	PG0V
J	FG

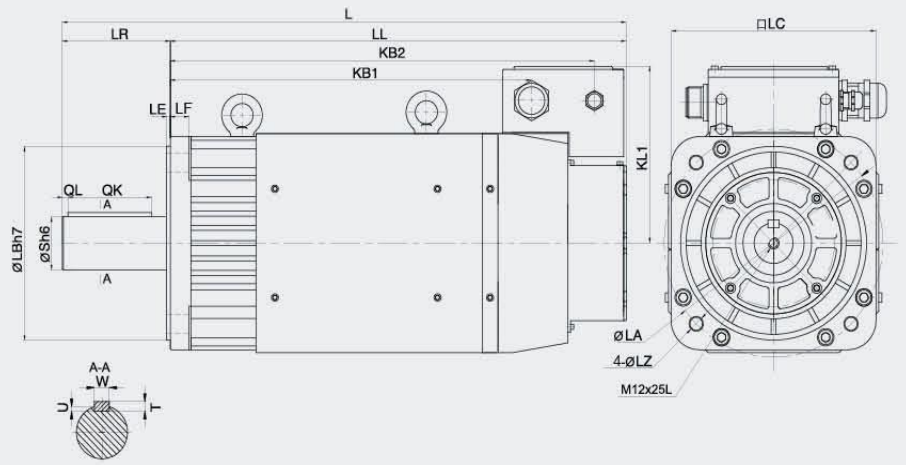
★ Notes: There are no BAT+, BAT- signal in incremental encoder.

Wire-saving Incremental Encoder

Pin No.	Signal
A	A+
B	A–
C	B+
D	B–
E	C+
F	C–
G	PG0V
H	PG5V
J	FG

EMB Dimension

Unit: mm



Model EMB-	L	LL	KB2	KB1	KL1	Dimension							S	Tap×Depth	Key				
						LR	LE	LF	LC	LA	LB	LZ			QK	QL	W	T	U
75D□□	530 (625)	414 (509)	366 (461)	302 (397)	184	116	4	20	220	235	200	13.5	42	M16×32L	90	6	12	8	5
1AD□□	580 (675)	464 (559)	416 (511)	352 (447)	184	116	4	20	220	235	200	13.5	42	M16×32L	90	6	12	8	5
1ED□□	615 (710)	499 (594)	451 (546)	387 (482)	184	116	4	20	220	235	200	13.5	55	M20×40L	90	6	16	10	6
2BD□□	720	572	523	432	250	145	5	30	280	300	250	19	60	M12x25L	128	6	18	11	7

Note: The dimension in parentheses are for servo motors with holding brakes.

Encoder Connector Specification

- Receptacle: MS3102A20-29P
- Plug: MS3108B20-29S
- Cable Clamp: MS3057-12A

Absolute Encoder

Pin No.	Signal
K	S+
L	S−
T	BAT+
S	BAT−
H	PG5V
G	PG0V
J	FG

Resolver

Pin No.	Signal
K	SIN+
L	SIN-
T	COS+
S	COS-
H	R1
G	R2
J	FG
N	Sensor1
R	Sensor2

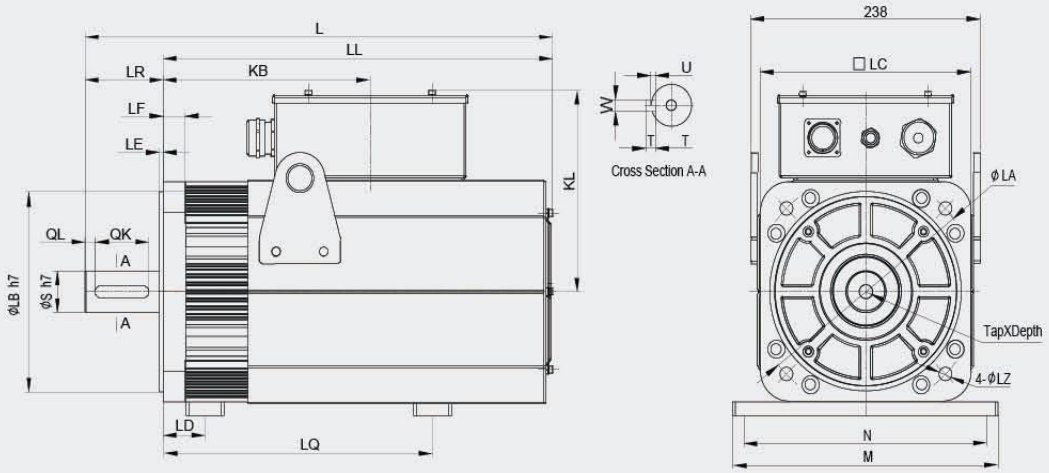
Brake Connector Specification

- Receptacle: MS3102A10SL-3P
- Plug: MS3106A10SL-3S
- Cable Clamp: MS3057-4A

Pin No.	Signal
A	B1
B	B2
C	-

EMB for Low Inertia Dimension

Unit: mm



Model	L	LL	KB	KL	LR	LE	LF	LC	LA	LB	LZ	S	TapxDepth	Key							LD	LQ
														QK	QL	W	T	U	M	N		
EMB-3CDRA	679	597	406	202	82	4	23	220	235	200	13.5	42	M16×42	56	11	12	8	5	278	254	44	471
EMB-2FDRA	627	545	354	202	82	4	23	220	235	200	13.5	42	M16×42	56	11	12	8	5	278	254	44	419
EMB-2ADRA	574	492	301	202	82	4	23	220	235	200	13.5	42	M16×42	56	11	12	8	5	278	254	44	366
EMB-1FDRA	522	440	249	202	82	4	23	220	235	200	13.5	42	M16×42	56	11	12	8	5	278	254	44	314
EMB-1CDRA	489	407	216	202	82	4	23	220	235	200	13.5	42	M16×42	56	11	12	8	5	278	254	44	281
EMB-1ZDRA	469	387	196	202	82	4	23	220	235	200	13.5	42	M16×42	56	11	12	8	5	278	254	44	261

Encoder Connector Specification

- Receptacle: MS3102A20-29P
- Plug: MS3108B20-29S
- Cable Clamp: MS3057-12A

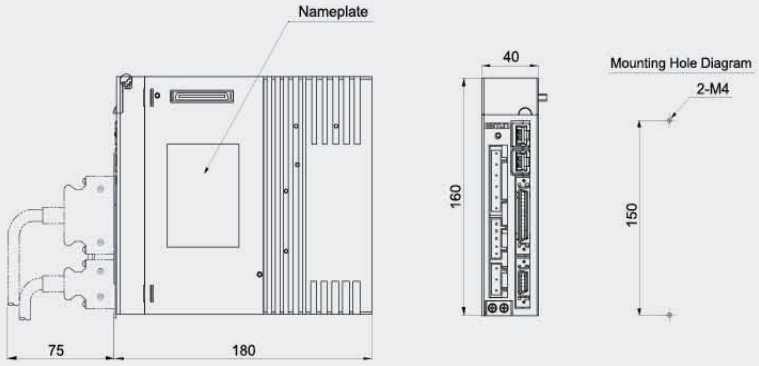
Resolver

Pin No.	Signal
K	SIN+
L	SIN-
T	COS+
S	COS-
H	R1
G	R2
J	FG
N	Sensor1
R	Sensor2

Servo Drive

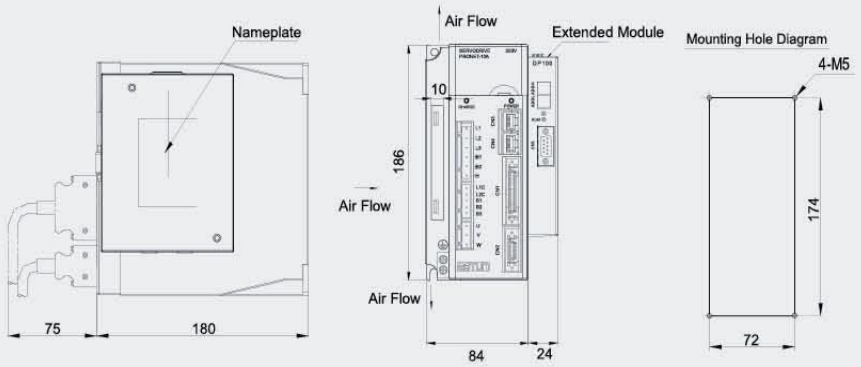
ProNet-A5A/01A/02A/02B/04A ProNet-E-A5A/01A/02A/02B/04A

Unit: mm



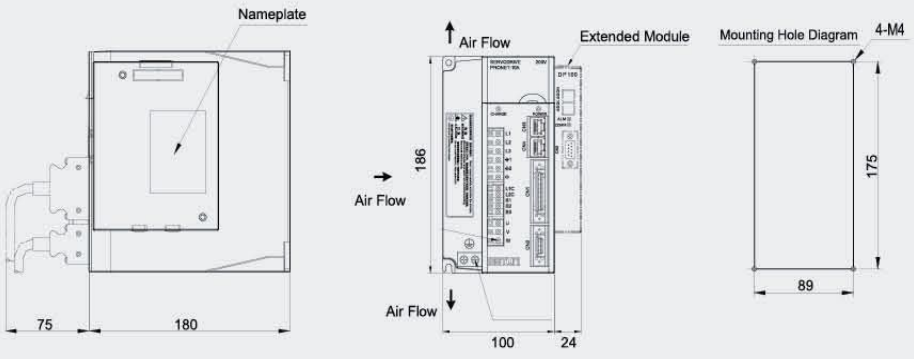
ProNet-04B/08A/10A ProNet-E-04B/08A/10A

Unit: mm



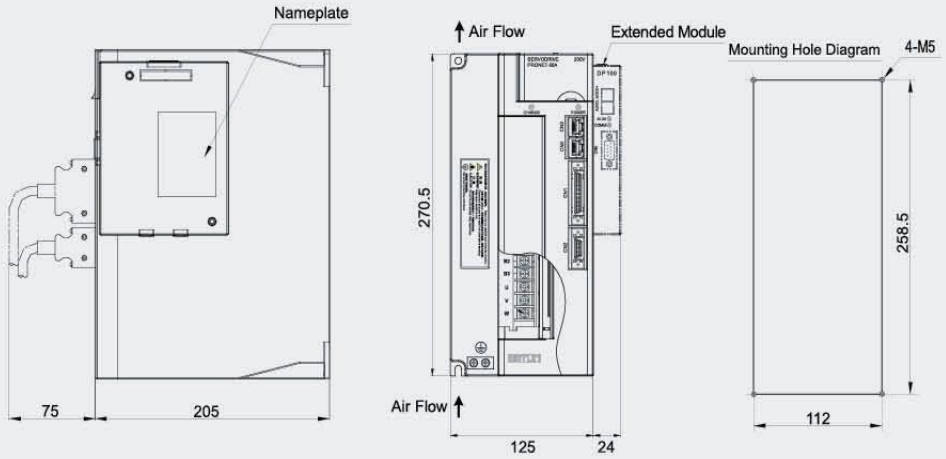
ProNet-08B/10D/15A/15D/20A/20D ProNet-E-08B/10D/15A/15D/20A/20D

Unit: mm



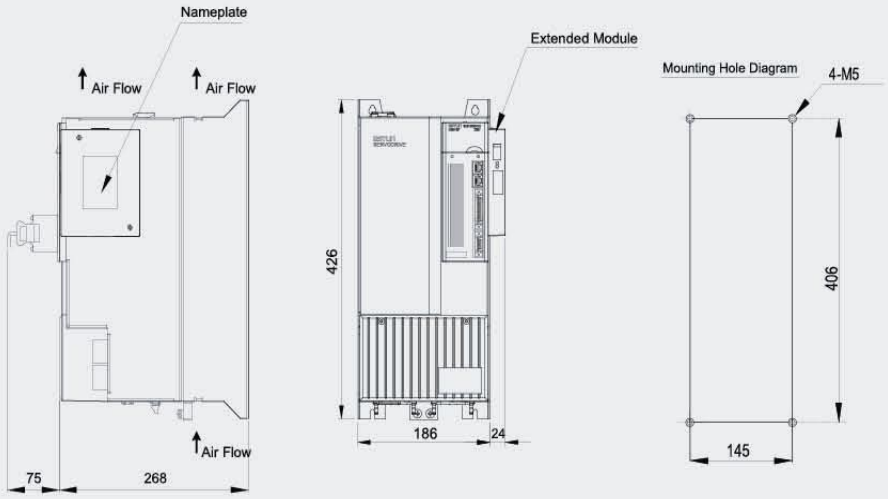
ProNet-30A/30D/50A/50D/70D ProNet-E-30A/30D/50A/50D

Unit: mm



ProNet-75D/1AD/1ED/2BD

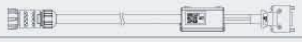
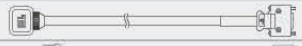
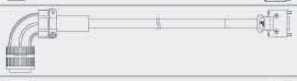
Unit: mm



Note: ProNet-E does not support extended module.

Accessories

Selecting Cables

Name		Model	Specifications
Connector Kit	CN1	EC-CN1-50	
	CN2	EC-CN2-20	
Communication Cables	CN3	PSC-CC24-XX	
Serial Encoder Cables	EMJ	PSP-JE24-XX	
		PAP-JE24-XX	
		PSP-JO24-XX	
	EMG-□□□□A□□ EMB EML	PSP-GA24-XX	
		PAP-GA24-XX	
	EMG-□□□□B□□	PSP-GA24-XX-II	
		PAP-GA24-XX-II	
Wire-saving Incremental Encoder Cables	EMJ	BMP-JE24-XX	
		BMP-JB24-XX	
		PMP-JO24-XX	
	EMG-□□□□A□□ EML	BMP-GA24-XX	
	EMG-□□□□B□□	PMP-GA24-XX-II	
Resolver Cables	EMG EMB EML	PRP-BA24-XX	
	EMB for low inertia	PRP-BO24-XX	
Power Cables	EMJ-A5A EMJ-01A EMJ-02A EMJ-02B EMJ-04A EMJ-04B EMJ-08A EMJ-10A	PDM-JO20-XX	
		PDM-JE18-XX	
		PDM-JB18-XX	
	EMJ-08B	PDM-JB16-XX	
	EMG-10A□A□□ EMG-15A□A□□ EMG-10D EMG-15D EMG-20D	PDM-GA16-XX	
	EMG-20A□A□□	PDM-GA14-XX(V100)	
	EML-20A	PDM-GD14-XX(V100)	
	EMG-30A EMG-50A EMG-30D EMG-50D	PDM-GD12-XX	
	EMG-10A□B□□ EMG-15A□B□□ EMG-20A□B□□	PDMB-GA14-XX-II	
	EMG-10A□B□□ EMG-15A□B□□	PDM-GA16-XX-II	
	EMG-20A□B□□	PDM-GA14-XX-II	

Notes: Please select cable PSP-JE24-XX for EMJ-□□□F.

Selecting Peripheral Devices

Servo Drive (ProNet)	Servo Drive (ProNet-E)	Main Circuit Voltage	Specifications for Internal Regenerative Resistor	Min.Allowable Resistance	Min. Rated Input Current for Three-phase Filters	Min. Rated Current for Circuit Breaker
ProNet–A5A	ProNet–E–A5A	200–230VAC	50Ω/60W External connection	25Ω	—	5A
ProNet–01A	ProNet–E–01A	200–230VAC	50Ω/60W External connection	25Ω	—	5A
ProNet–02A	ProNet–E–02A	200–230VAC	50Ω/60W External connection	25Ω	—	10A
ProNet–02B	ProNet–E–02B	100–120VAC	50Ω/60W External connection	25Ω	—	10A
ProNet–04A	ProNet–E–04A	200–230VAC	50Ω/60W External connection	25Ω	—	10A
ProNet–04B	ProNet–E–04B	100–120VAC	50Ω/60W	25Ω	—	25A
ProNet–08A	ProNet–E–08A	200–230VAC	50Ω/60W	25Ω	—	25A
ProNet–08B	ProNet–E–08B	100–120VAC	40Ω/80W	25Ω	—	35A
ProNet–10A	ProNet–E–10A	200–230VAC	50Ω/60W	25Ω	—	25A
ProNet–15A	ProNet–E–15A	200–230VAC	40Ω/80W	25Ω	—	35A
ProNet–20A	ProNet–E–20A	200–230VAC	40Ω/80W	25Ω	—	55A
ProNet–30A	ProNet–E–30A	200–230VAC	10Ω/300W	10Ω	27A	70A
ProNet–50A	ProNet–E–50A	200–230VAC	10Ω/300W	10Ω	42A	100A
ProNet–10D	ProNet–E–10D	380–480VAC	200Ω/80W	50Ω	—	12A
ProNet–15D	ProNet–E–15D	380–480VAC	200Ω/80W	50Ω	—	20A
ProNet–20D	ProNet–E–20D	380–480VAC	200Ω/80W	40Ω	—	24A
ProNet–30D	ProNet–E–30D	380–480VAC	40Ω/300W	35Ω	14A	33A
ProNet–50D	ProNet–E–50D	380–480VAC	40Ω/300W	20Ω	23A	55A
ProNet–70D		380–480VAC	40Ω/300W	20Ω	27A	60A
ProNet–75D		380–480VAC	40Ω/300W	20Ω	27A	60A
ProNet–1AD		380–440VAC	20Ω/1.5KW External connection	17Ω	42A	80A
ProNet–1ED		380–440VAC	15Ω/1.5KW External connection	12Ω	57A	120A
ProNet–2BD		380–440VAC	10Ω/3KW =2×20Ω/1.5KW External parallel connection	8Ω	82A	160A

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