



# AC SERVO DRIVES

## XtraDrive

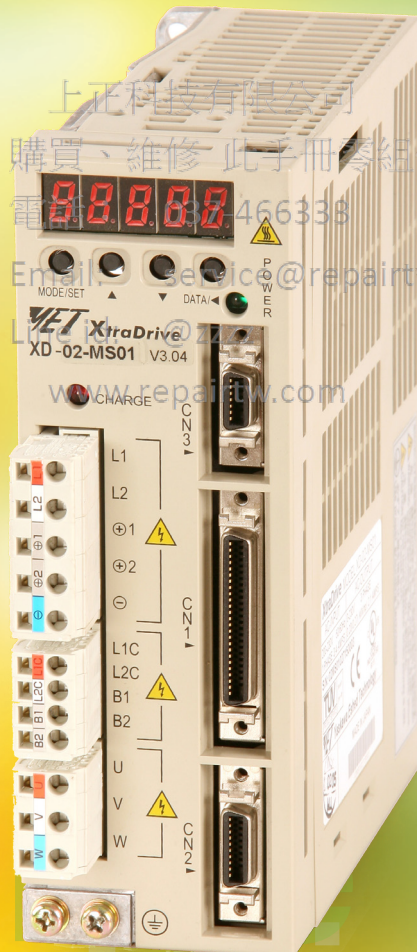
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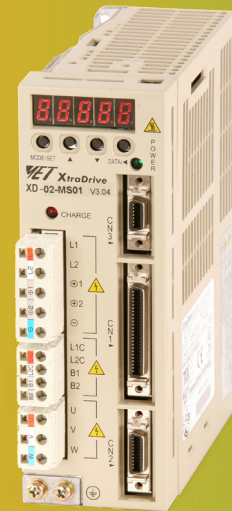
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# AC SERVO DRIVES

# XtraDrive



## Model Designations

上正科技有限公司

購買、維修、此手冊零組件

**XD - 01 - MN - xx - 01 - E**

電話：037-466333

XtraDrive

Output capacity

P3	30 W	08	750 W
P5	50 W	10	1.0 kW
01	100 W	15	1.5 kW
02	200 W	20	2.0 kW
04	400 W	30	3.0 kW
05	500 W	50	5.0 kW

Email: [service@repairtw.com](mailto:service@repairtw.com)

Line id: @zzzz

[www.repairtw.com](http://www.repairtw.com)

Input voltage

M: 230 V

T: 400 V

Extended functionality

N: With CN10 connector for option units

S: No CN10 connector

Electronic CAM enabled

Feedback Option

01 - Yaskawa serial, A&B

0A - A&B + Hall

Factory set option

blank - standard

D0 - Profibus DP

DL - Dual Loop

## Features

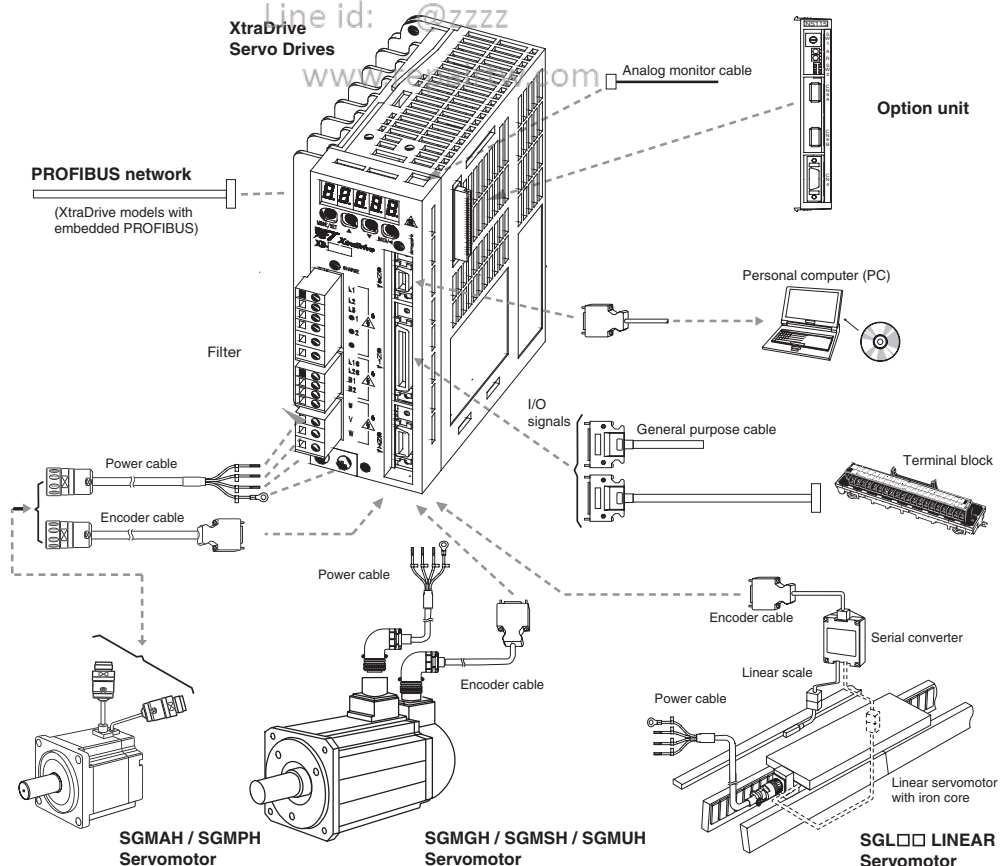
XtraDrive is an intelligent servo drive with integrated controller and network connectivity.

- NCT. Patented non-linear algorithm for tight control:
  - Non-linear control, adaptive feed-forward algorithm and digital processing of encoder pulses, provide both small tracking error and zero settling time
  - Increased throughput and reduced influence of external perturbations
- Very low tracking error with no overshoot and zero settling time
- Supports different servo motor encoder types
- PROFIBUS DP embedded in the drive available
- XtraDrive model available with electronic CAM
- The ideal drive for linear motor control
- Fast hardware registration input
- Intuitive text programming language
- Automatic tuning of servo parameters for optimal settling time
- Integrated Oscilloscope available via XtraWare software tool



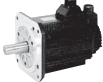





## Ratings

- 230 VAC single-phase 30 W to 1.5 kW (4.77 Nm)
- 400 VAC three-phase 0.5 kW to 5.0 kW (28.4 Nm)

## System Configuration



## Servo motor / Servo drive combination

Servo motor				Servo drive					
	Voltage	Rated torque	Capacity	230 V (1-phase)	230 V (1-phase) w PROFIBUS	400 V (3-phase)	400 V (3-phase) w PROFIBUS		
<b>Sigma-II series motors (refer to the Sigma-II rotary motor catalog for details)</b>									
 SGMAH (3000 min <sup>-1</sup> )	230 V	0.0955 Nm	30 W	XD-P3-MN01-□	XD-P3-MSD0-□	-	-		
		0.159 Nm	50 W	XD-P5-MN01-□	XD-P5-MSD0-□	-	-		
		0.318 Nm	100 W	XD-01-MN01-□	XD-01-MSD0-□	-	-		
		0.637 Nm	200 W	XD-02-MN01-□	XD-02-MSD0-□	-	-		
		1.27 Nm	400 W	XD-04-MN01-□	XD-04-MSD0-□	-	-		
		2.39 Nm	750 W	XD-08-MN□	XD-08-MSD0-□	-	-		
	400 V	0.955 Nm	300 W	-	-	XD-05-TN□	XD-05-TSD0-□		
		2.07 Nm	650 W	-	-	XD-10-TN□	XD-10-TSD0-□		
 SGMPH (3000 min <sup>-1</sup> )	230 V	0.318 Nm	100 W	XD-01-MN01-□	XD-01-MSD0-□	-	-		
		0.637 Nm	200 W	XD-02-MN01-□	XD-02-MSD0-□	-	-		
		1.27 Nm	400 W	XD-04-MN01-□	XD-04-MSD0-□	-	-		
		2.39 Nm	750 W	XD-08-MN□□	XD-08-MSD0-□	-	-		
		4.77 Nm	1500 W	XD-15-MN□□	-	-	-		
		400 V	0.637 Nm	200 W	-	-	XD-05-TN□	XD-05-TSD0-□	
	1.27 Nm		400 W	-	-	XD-05-TN□	XD-05-TSD0-□		
	 SGMGH (1500 min <sup>-1</sup> )	400 V	2.84 Nm	0.45 kW	-	-	XD-05-TN□	XD-05-TSD0-□	
5.39 Nm			0.85 kW	-	-	XD-10-TN□	XD-10-TSD0-□		
8.34 Nm			1.3 kW	-	-	XD-15-TN□	XD-15-TSD0-□		
11.5 Nm			1.8 kW	-	-	XD-20-TN□	XD-20-TSD0-□		
18.6 Nm			2.9 kW	-	-	XD-30-TN□	XD-30-TSD0-□		
28.4 Nm			4.4 kW	-	-	XD-50-TN□	-		
 SGMSH (3000 min <sup>-1</sup> )			400 V	3.18 Nm	1.0 kW	-	-	XD-10-TN□	XD-10-TSD0-□
				4.90 Nm	1.5 kW	-	-	XD-15-TN□	XD-15-TSD0-□
	6.36 Nm	2.0 kW		-	-	XD-20-TN□	XD-20-TSD0-□		
	9.80 Nm	3.0 kW		-	-	XD-30-TN□	XD-30-TSD0-□		
 SGMUH (6000 min <sup>-1</sup> )	400 V	12.6 Nm	4.0 kW	-	-	XD-50-TN□	-		
		15.8 Nm	5.0 kW	-	-	XD-50-TN□	-		
		1.59 Nm	1.0 kW	-	-	XD-10-TN□	XD-10-TSD0-□		
		2.45 Nm	1.5 kW	-	-	XD-15-TN□	XD-15-TSD0-□		
		4.9 Nm	3.0 kW	-	-	XD-30-TN□	XD-30-TSD0-□		
6.3 Nm	4.0 kW	-	-	XD-50-TN□	-				
<b>Sigma linear motors (refer to the Sigma linear motors catalog for details)</b>									
 SGLGW Linear motors	230 V	Refer to the linear motors catalog for details							
 SGLFW Linear motors	230 V, 400 V	Refer to the linear motors catalog for details							
 SGLTW Linear motors	400 V	Refer to the linear motors catalog for details							

## Servo drive specifications

## Single-phase, 230 V

Servo drive type		XD-P3-M□	XD-P5-M□	XD-01-M□	XD-02-M□	XD-04-M□	XD-08-M□	XD-15-M□
Applicable servo motor	SGMAH-□	A3A□	A5A□	01A□	02A□	04A□	08A□	15A□
	SGMPH-□	-	-	01A□	02A□	04A□	08A□	-
Max. applicable motor capacity	W	30	50	100	200	400	750	1500
Continuous output current	Arms	0.44	0.64	0.91	2.1	2.8	5.7	11.6
Max. output current	Arms	1.3	2.0	2.8	6.5	8.5	13.9	28
Input power	Main circuit	For single-phase, 200 to 230 VAC + 10 to -15%						
Supply	Control circuit	For single-phase, 200 to 230 VAC + 10 to -15%						
Control method		Single phase full-wave rectification / IGBT / PWM / sine-wave current drive method						
Feedback		Serial encoder (incremental/absolute value)						
Conditions	Usage/storage temperature	0 to +55 °C / -20 to +85 °C						
	Usage/storage humidity	90%RH or less (non-condensing)						
	Altitude	1000 m or less above sea level						
	Vibration/shock resistance	4.9 m/s <sup>2</sup> / 19.6 m/s <sup>2</sup>						
Configuration		Base mounted						
Approx. weight	kg		0.8			1.1	1.7	3.8

## Three-phase, 400 V

Servo drive type		XD-05-T□	XD-10-T□	XD-15-T□	XD-20-T□	XD-30-T□	XD-50-T□
Applicable servo motor	SGMAH-□	03D□	07D□	-	-	-	-
	SGMPH-□	02D□, 04D□	03D□	15D□	-	-	-
	SGMGH-□	05D□	09D□	13D□	20D□	30D□	44D□
	SGMSH-□	-	10D□	15D□	20D□	30D□	40D□/50D□
	SGMUH-□	-	10D□	15D□	-	30D□	40D□
Max. applicable motor capacity	kW	0.45	1.0	1.5	2.0	3.0	5.0
Continuous output current	Arms	1.9	3.5	5.4	8.4	11.9	16.5
Max. output current	Arms	5.5	8.5	14	20	28	40.5
Input power	Main circuit	For three-phase, 380 to 480 VAC + 10 to -15% (50/60 Hz)					
Supply	Control circuit	24 VDC+15%					
Control method		Three phase full-wave rectification / IGBT / PWM / sine-wave current drive method					
Feedback		Serial encoder (incremental/absolute value)					
Conditions	Usage/storage temperature	0 to +55 °C / -20 to +85 °C					
	Usage/storage humidity	90%RH or less (non condensing)					
	Altitude	1000 m or less above sea level					
	Vibration/shock resistance	4.9 m/s <sup>2</sup> / 19.6 m/s <sup>2</sup>					
Configuration		Base mounted					
Approx. weight	kg		2.8			3.8	5.5



## General Specifications

Speed/torque control mode	Performance	Speed control range	1:5000	
		Speed variance	Load variance	During 0 to 100% load $\pm 0.01\%$ max. (at rated speed)
			Voltage variance	Rated voltage $\pm 10\%$ : 0% (at rated speed)
			Temperature variance	25 $\pm$ 25 °C: $\pm 0.1\%$ max (at rated speed)
		Frequency characteristics	400Hz (at $J_L = J_M$ )	
	Torque control accuracy (reproducibility)	$\pm 2\%$		
	Soft start time setting	0 to 10s (acceleration, deceleration can each be set.)		
	Input signal	Speed reference input	Reference voltage	$\pm 6$ VDC (forward motor rotation if positive reference) at rated speed: Set at delivery Variable setting range: $\pm 2$ to $\pm 10$ VDC at rated speed/ max. input voltage: $\pm 12$ V
			Input impedance	Approx. 14 k $\Omega$
			Circuit time constant	-
Torque reference input		Reference voltage	$\pm 3$ VDC (forward rotation if positive reference) at rated speed: Set at delivery Variable setting range $\pm 1$ to $\pm 10$ VDC at rated torque reference	
		Input impedance	Approx. 14 k $\Omega$	
		Circuit time constant	Approx. 47 $\mu$ s	
Contact speed reference	Rotation direction selection	With P control signal		
	Speed selection	With forward/reverse current limit signal (speed 1 to 3 selection), servo motor stops or another control method is used when both are OFF.		
Position control mode	Performance	Bias Setting	0 to 450 min <sup>-1</sup> (setting resolution: 1 min <sup>-1</sup> )	
		Feed forward compensation	0 to 100 % (setting resolution: 1%)	
		Position completed width setting	0 to 250 command units (setting resolution: 1 command unit)	
	Input signal	Command pulse	Input pulse type	Sign + pulse train, 90° phase displacement 2-phase pulse (A-phase+ B-phase) or CCW/CW pulse train
			Input pulse form	Line driver (+5 V level), open collector (+5 V or +12 level)
Input pulse frequency	0 to 500 Kpps (200 Kpps max. at open collector)			
Control signal	Clear signal (input pulse is same as reference pulse)			
I/O signal	Position signal output	A-phase, B-phase, C-phase, (S-phase): line driver output S-phase is for absolute encoder only.		
	Sequence input signal	Servo ON, P control (or control mode switching, zero clamp, command pulse inhibit), forward/reverse run prohibit, alarm reset, forward/reverse current limit (or internal speed switching)		
	Sequence output signal	Servo alarm, alarm codes (3-bit output): CN1 output terminal is fixed It is possible to output three types of signals from among: positioning complete (speed agree), motor rotation, servo ready, current limit, speed limit, brake release, warning, NEAR, and zero point pulse signal		
Integrated functions	Communications	Interface	Digital operator (hand-held type), RS-422 port for PCs, etc. (RS-232C ports under some conditions)	
		1:N communications	N may equal up to 14 when an RS-422A port is used.	
		Axis address setting	Set by user setting	
		Functions	Status display, user constant setting monitor display, alarm traceback display, JOG run /autotuning operations, and graphing functions for speed/torque command signal, etc	
	PROFIBUS	(Only models with PROFIBUS) PROFIBUS DP slave, node address 0-125 set by rotary switches, baud rate from 9.6 kbps to 12 Mbps. LED Indicators: Bus failure and system failure		
	Auto tuning function	Position speed loop gain and integral time constant can be automatically set.		
	Dynamic brake (DB)	Operates during main power OFF, servo alarm, servo OFF or overtravel		
	Regenerative processing	Regenerative resistor externally mounted (option)		
	Overtravel (OT) prevention function	DB stop, deceleration stop or coast to stop during P-OT, N-OT operation		
	Encoder divider function	Optional division possible		
	Electronic gearing	0,01 < A/B < 100		
	Internal speed setting function	3 speeds may be set internally		
	Protective functions	Overcurrent, overvoltage, insufficient voltage, overload, main circuit sensor error, heatsink overheat, power phase loss, overflow, overspeed, encoder error, runaway, CPU error, parameter error, etc.		
	Analog monitor functions for supervision	Integrates analog monitor connectors for supervision of the speed and torque reference signals, etc.		
	Display functions	CHARGE, POWER, 7-segments LEDx5 (Integrated digital operator function, not available in models with PROFIBUS)		
Others	Reverse connection, zero search, automatic motor discrimination function, and DC reactor connection terminal for high frequency power suppression function (except: 6 to 15 kW)			

### Terminal specifications

Symbol	Name	Function
L1, L2 or L1, L2, L3	Main circuit AC input terminal	AC power input terminals for the main circuit
U	Servo motor connection terminal	Red
V		White
W		Blue
L1C, L2C	Control power input terminal	AC power input terminals for the control circuit.
⊕	Frame ground	Ground terminal. Ground to a maximum of 100 $\Omega$ . (class 3)
B1, B2 or B1, B2, B3	Main circuit DC output terminal	5 kW or less: Connect an external regenerative resistor if regenerative energy is high. 5.5 kW: There is no internal regenerative resistor. Be sure to connect an external regenerative resistor unit
⊕1, ⊕2	DC reactor connection terminal for suppressing power supply harmonic waves	Normally, short ⊕1 and ⊕2. If a countermeasure against power supply harmonic waves is needed, connect a DC reactor between ⊕1 and ⊕2.
⊕	Main circuit DC output terminal (+)	Normally, not connected. This terminal exists on the servo drives with a capacity of 6.0 kW or higher only.
⊖	Main circuit DC output terminal (n-)	Normally, not connected.

## I/O specifications

### Encoder connector (CN2)

Pin	Symbol	Function
1, 2, 3	PPG0V	Encoder power supply GND
4, 5, 6	PPG5V	Encoder power supply +5 V
7	-	-
8	PS+	Encoder serial signal input
9	PS-	Encoder serial signal input
10	SePG5V	Serial encoder power supply +5 V (Sigma-II)
11	SePG0V	Serial encoder power supply GND (Sigma-II)
12	BAT+	Battery + (used only with absolute encoder)
13	BAT-	Battery - (used only with absolute encoder)
14	PC+	Encoder + C-phase input
15	PC-	Encoder - C-phase input
16	A+	Encoder + A-phase input
17	A-	Encoder - A-phase input
18	B+	Encoder + B-phase input
19	B-	Encoder - B-phase input
20	-	-
Shell	FG	Cable shield ground

### I/O signals (CN1) - input signals

Pin No.	Signal Name	Function	
40	Common	/S-ON	Servo ON: Turns ON the servo motor when the gate block in the inverter is released.
41		/P-CON	Function selected by parameter.
		Proportional reference	Switches the speed control loop from PI (proportional/ integral) to P (proportional) control when ON.
		Direction reference	With the internal set speed selected: switch the rotation direction.
		Control mode switching	Position ↔ speed Position ↔ torque Torque ↔ speed } Enables control mode switching.
	Zero-clamp reference	Speed control with zero-clamp function: reference speed is zero when ON.	
	Reference pulse block	Position control with reference pulse stop: stops reference pulse input when ON.	
42	P-OT	Forward run prohibited	Overtravel prohibited: stops servo motor when movable part travels beyond the allowable range of motion.
43	N-OT	Reverse run prohibited	
45	/P-CL /N-CL	Function selected by parameter.	Current limit function enabled when ON.
46		Forward external torque limit ON	
		Reverse external torque limit ON	
	Internal speed switching	With the internal set speed selected: switches the internal speed settings.	
44	/ALM-RST	Alarm reset: releases the servo alarm state.	
47	+24VIN	Control power supply input for sequence signals: users must provide the +24 V power supply. Allowable voltage fluctuation range: 11 to 25 V	
4 (2)	SEN	Initial data request signal when using an absolute encoder.	
21	BAT (+)	Connecting pin for the absolute encoder backup battery.	
22	BAT (-)	Do not connect when a battery is connected to the host controller.	
5 (6)	Speed	V-REF	Speed reference speed input: ±2 to ±10 V/rated motor speed (input gain can be modified using a parameter.)
9 (10)	Torque	T-REF	Torque reference input: ±1 to ±10 V/rated motor torque (input gain can be modified using a parameter.)
7	Position	PULS	Reference pulse input
8		/PULS	for line driver only
11		SIGN	Input mode is set from the following pulses. Sign + pulse string CCW/CW pulse
12		/SIGN	Two-phase pulse (90° phase differential)
15	CLR	Positional error pulse clear input: clears the positional error pulse during position control	
14	/CLR		
3	PL1	+12 V pull-up power is supplied when PULS, SIGN, and CLR reference signals are open-collector outputs (+12 V power supply is built into the SERVOPACK).	
13	PL2		
18	PL3		

**Note:** 1. Pin numbers in parentheses () indicate signal grounds.

2. The functions allocated to /S-ON, /P-CON, P-OT, N-OT, /ALM-RST, /P-CL, and /N-CL input signals can be changed by using the parameters.

3. The voltage input range for speed and torque references is a maximum of ±12 V.

## I/O signals

### I/O signals (CN1) - output signals

Pin No.	Signal name	Function
31	Common	ALM+
32		ALM-
27		/TGON+
28		/TGON-
29		/S-RDY+
30	/S-RDY-	Servo ready: ON if there is no servo alarm when the control/main circuit power supply is turned ON.
33 (1)	PAO	Phase-A signal
34		/PAO
35		PBO
36		/PBO
19	PCO	Phase-B signal
20		/PCO
48	PSO	Phase-C signal
49		/PSO
37	ALO1	Phase-S signal
38		ALO2
39 (1)		ALO3
16	TMON	Alarm code output: Outputs 3-bit alarm codes. Open-collector: 30 V and 20 mA rating maximum
17	VTG	Analog monitor signal
Shell	FG	Connected to frame ground if the shield wire of the I/O signal cable is connected to the connector shell.
25	Speed	/V-CMP+
26		/V-CMP-
25	Position	/COIN+
26		/COIN-
-	Reserved	/CLT
		/VLT
		/BK
		/WARN
23	-	/NEAR
24		-
50		-

**Note:** 1. Pin numbers in parentheses ( ) indicate signal grounds.

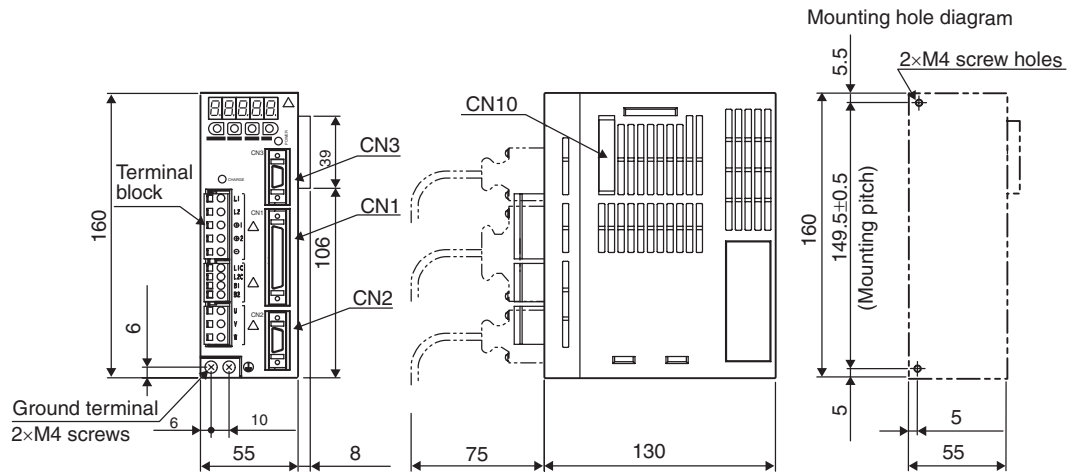
2. The functions allocated to /TGON, /S-RDY, and /V-CMP (/COIN) can be changed by using the parameters. /CLT, /VLT, /BK, /WARN, and /NEAR signals can also be changed.



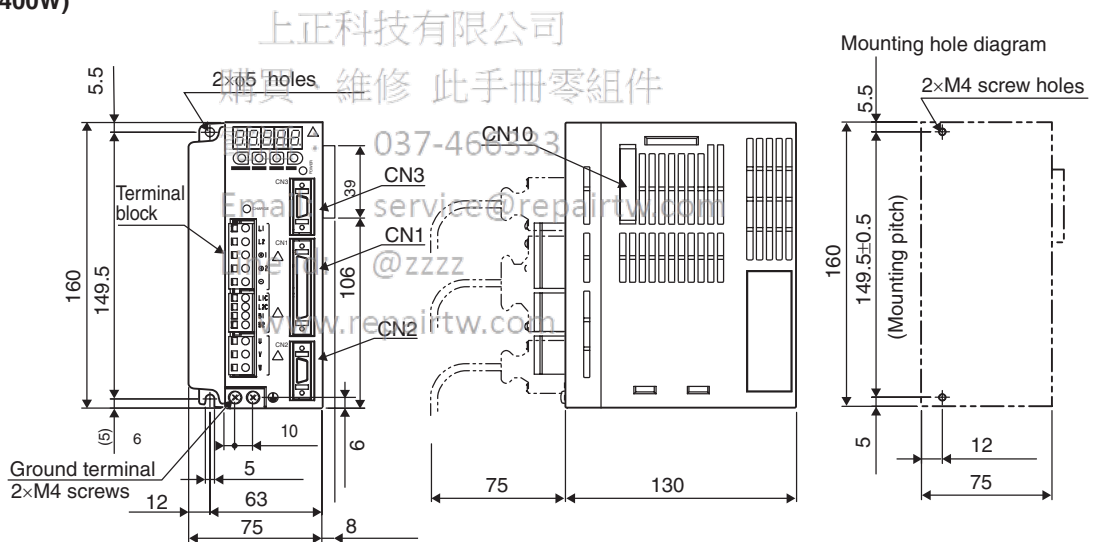
**External dimensions**

**Servo drives**

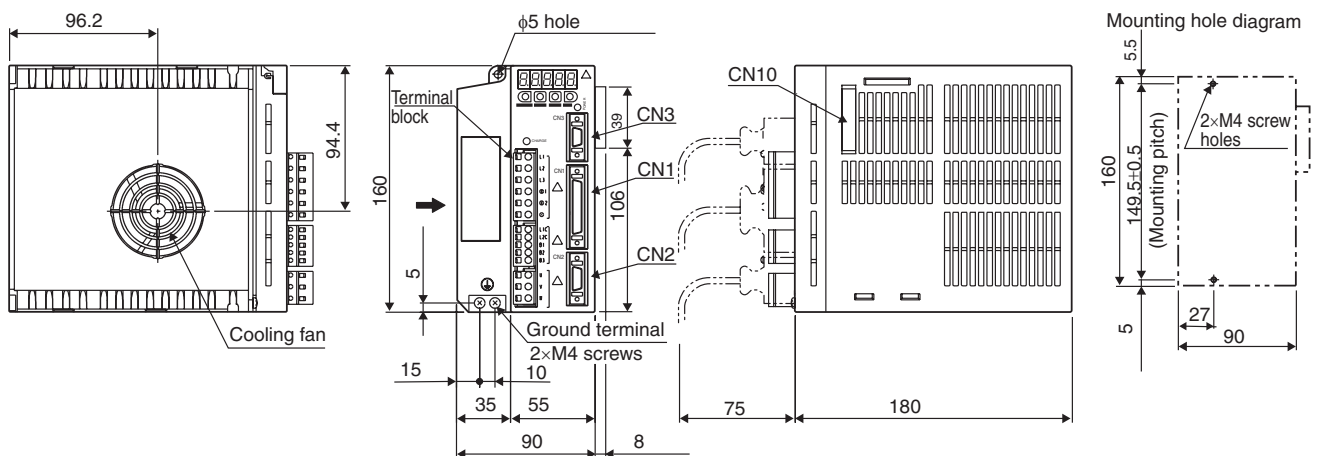
**XD-P3-M□ to XD-02-M□ (230V, 30 to 200W)**



**XD-04-M□ (230V, 400W)**

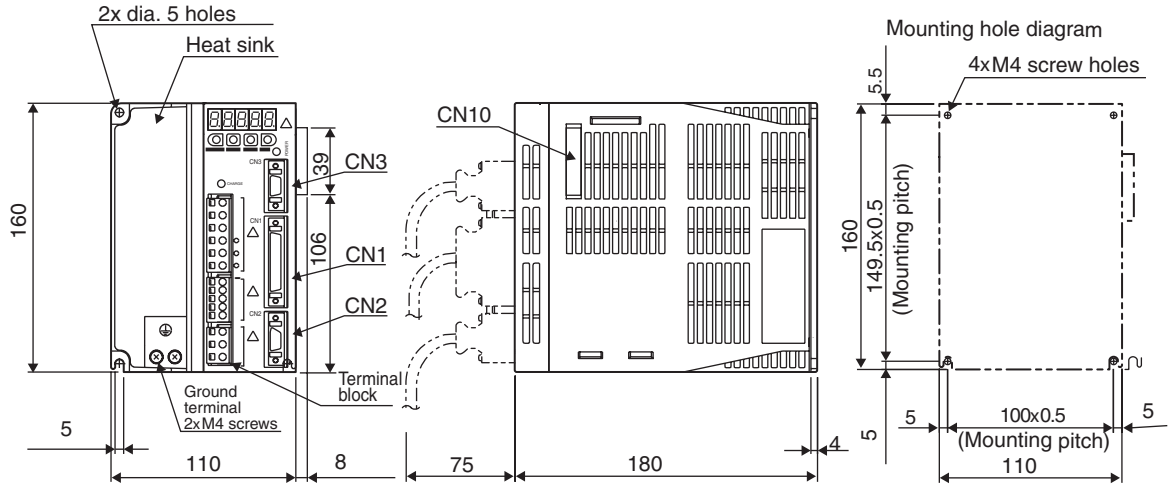


**XD-08-M□ (230V, 750W)**

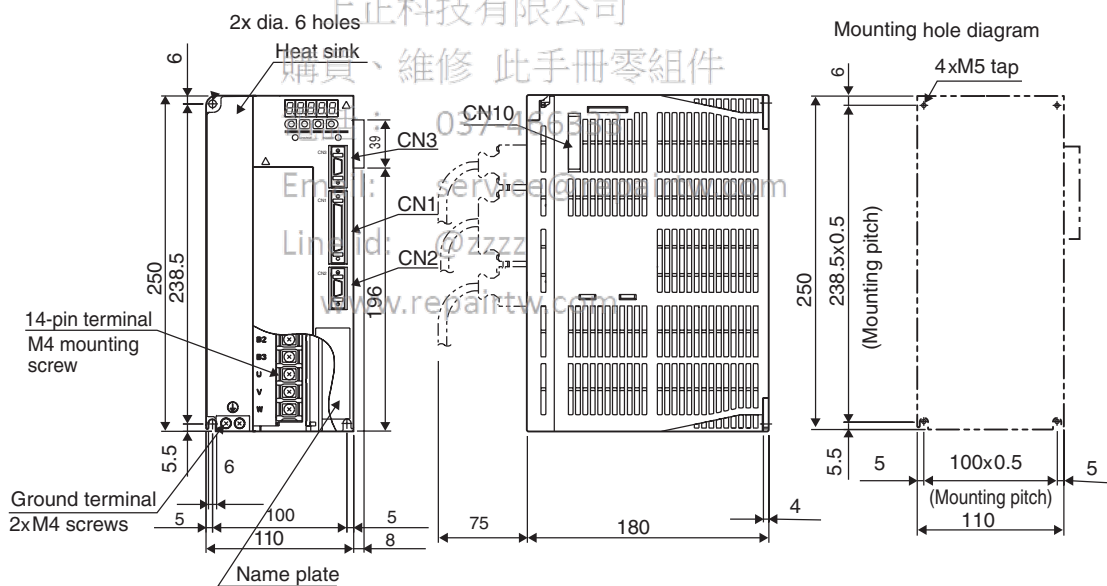


## External Dimensions

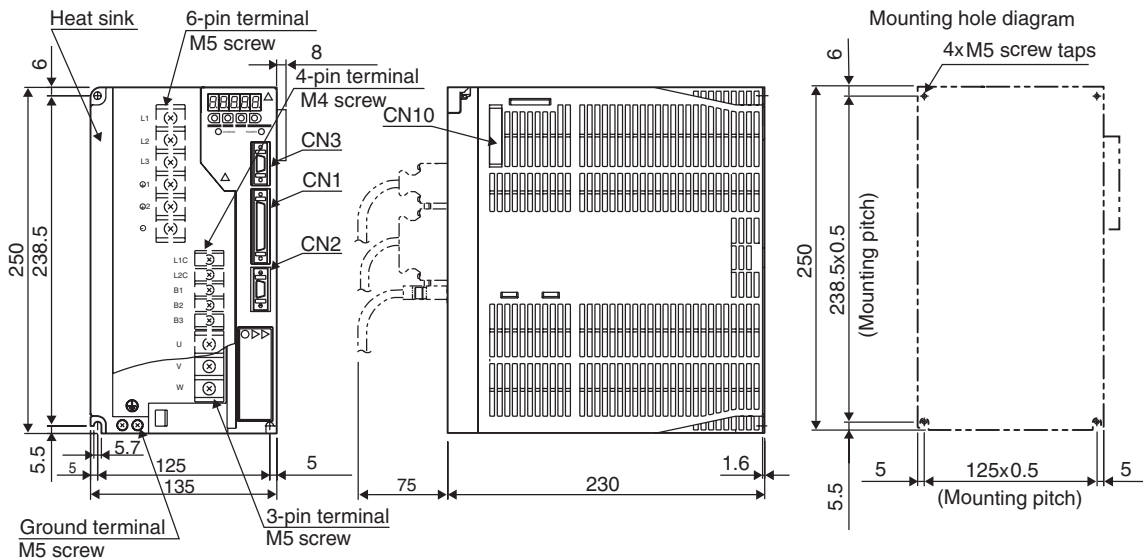
**XD-05-T□ to -15-T□ (400V, 0.5 to 1.5kW)**



**XD-15-M□ (230V, 1.5kW) XD-20-T□, XD-30-T□ (400V, 2/3kW)**



**XD-50-T□ (400V, 5kW)**

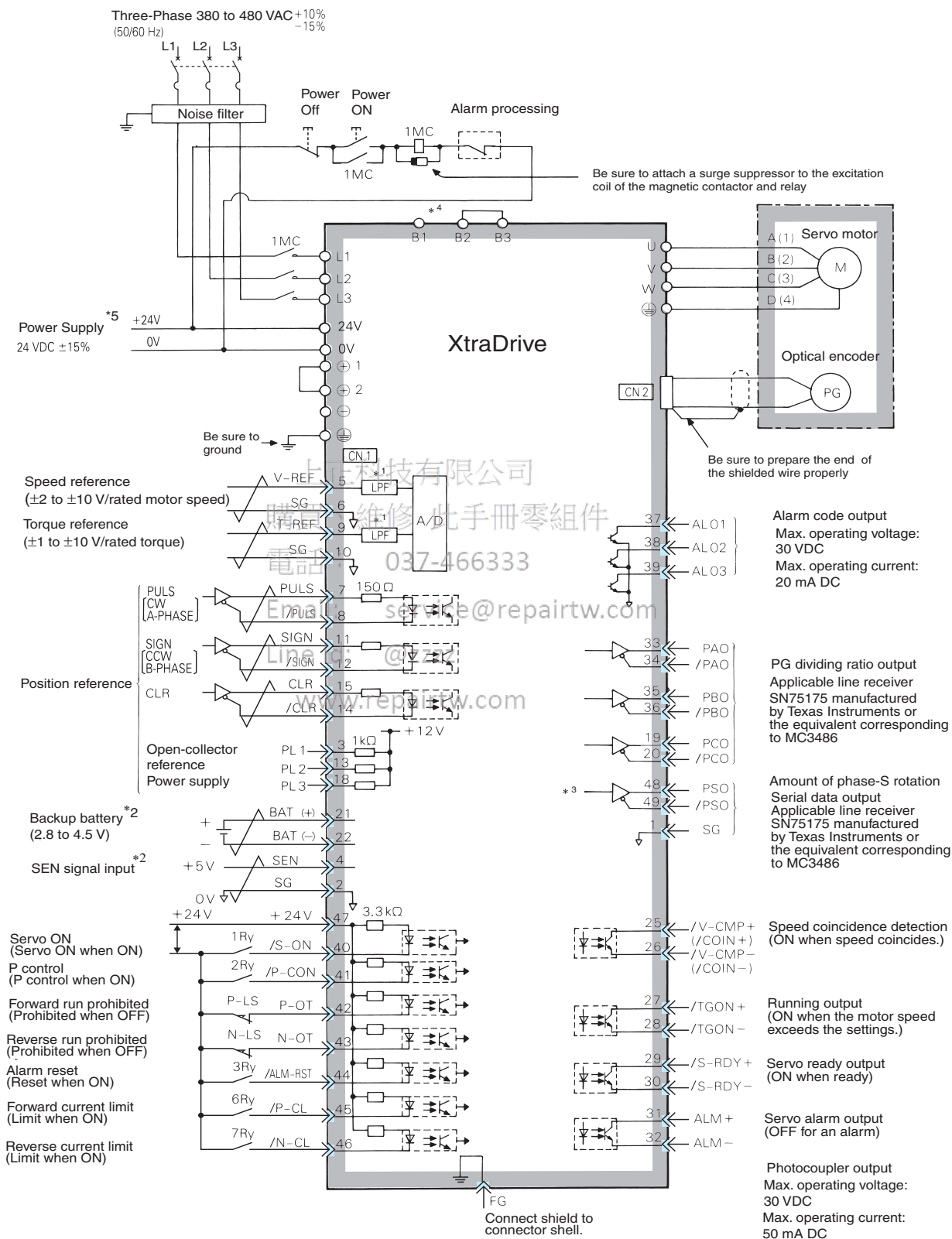






Installation

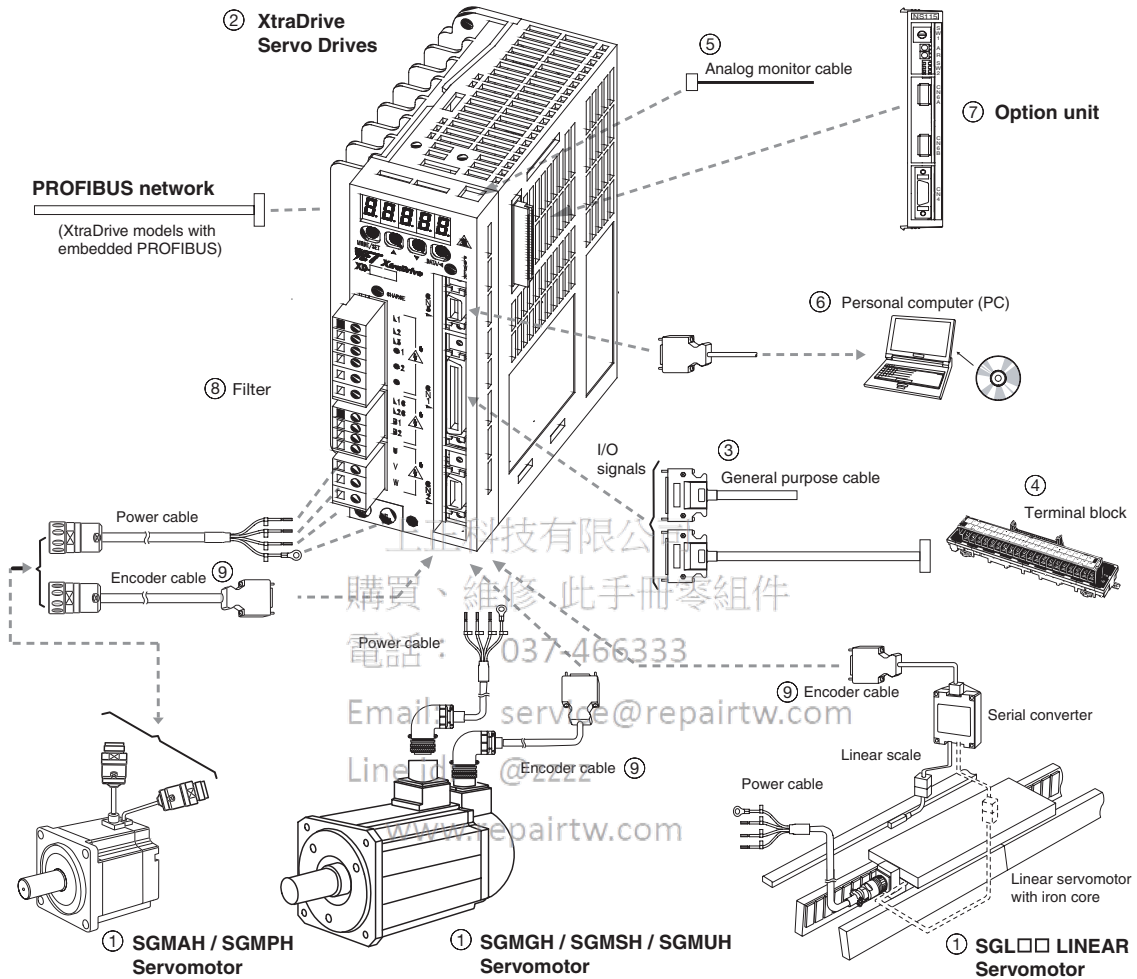
Three-phase, 400 VAC



\*1 The time constant for the primary filter is 47 μs.  
 \*2 Connect when using an absolute encoder.  
 \*3 Used only with an absolute encoder.  
 \*4 For using an external regenerative resistor, connect it between B1 and B2.  
 \*5 The 24VDC power is supplied by the user.  
 \*6 TI stands for Texas Instruments Inc.

## Installation

### XtraDrive (Analog/Pulse reference)

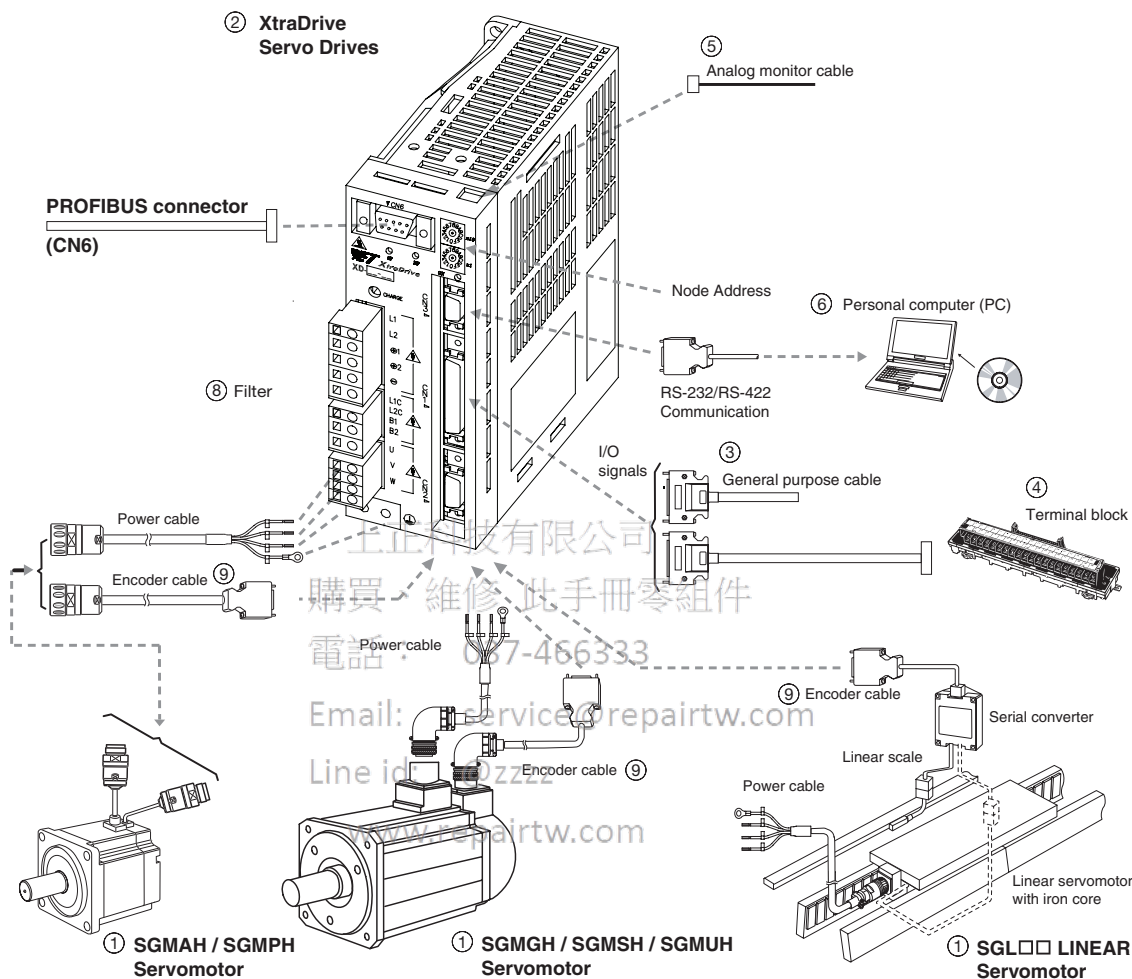


**Note:** The symbols ①②③④⑤ ... show the recommended sequence to select the components for a servo system.



**Installation**

**XtraDrive-DP (PROFIBUS embedded)**



**Servo motors, power & encoder cables**

**Note:** ① Refer to the Sigma-II-catalog KAE S800-32D.

**Servo drives**

Symbol	Specifications	XtraDrive	XtraDrive-E with electronic CAM	XtraDrive-DP with PROFIBUS	XtraDrive-DP-E with PROFIBUS and electronic CAM	Compatible servo motors ①		
						Sigma-II rotary	Sigma linear motors	
②	1 phase 200 VAC	30 W	XD-P3-MN01	XD-P3-MN01-E	XD-P3-MSD0	XD-P3-MSD0-E	SGMAH-A3A□	-
		50 W	XD-P5-MN01	XD-P5-MN01-E	XD-P5-MSD0	XD-P5-MSD0-E	SGMAH-A5D□	SGLGW-30A050□
		100 W	XD-01-MN01	XD-01-MN01-E	XD-01-MSD0	XD-01-MSD0-E	SGMAH-01A□, SGMPH-01A□	SGLGW-30A080□, SGLGW-40A140□
		200 W	XD-02-MN01	XD-02-MN01-E	XD-02-MSD0	XD-02-MSD0-E	SGMAH-02A□, SGMPH-02A□	SGLFW-20A□, SGLFW-35A120□, SGLGW-40A253A□, SGLGW-60A140□
		400 W	XD-04-MN01	XD-04-MN01-E	XD-04-MSD0	XD-04-MSD0-E	SGMAH-04A□, SGMPH-04A□	SGLGW-40A365A□, SGLGW-60A253A□
		750 W	XD-08-MN	XD-08-MN00-E	XD-08-MSD0	XD-08-MSD0-E	SGMAH-08A□, SGMPH-08A□	SGLFW-35A230□, SGLFW-50A200□, SGLGW-60A365A□
		1.5 kW	XD-15-MN	XD-15-MN00-E	-	-	SGMPH-15A□	SGLFW-50A380□, SGLFW-1ZA200□, SGLGW-90A200A□

## Ordering information

### Servo drives

Symbol	Specifications		XtraDrive	XtraDrive-E with electronic CAM		XtraDrive-DP-E with PROFIBUS and electronic CAM	Compatible servo motors ①	
				XtraDrive-E with electronic CAM	XtraDrive-DP with PROFIBUS	XtraDrive-DP-E with PROFIBUS and electronic CAM	Sigma-II rotary	Sigma linear motors
②	3 phase 400 VAC	0.5 kW	XD-05-TN	XD-05-TN00-E	XD-05-TSD0	XD-05-TSD0-E	SGMGH-05D□, SGMAH-03D□, SGMPH-02D□/04D□	SGLFW-35D□
		1.0 kW	XD-10-TN	XD-10-TN00-E	XD-10-TSD0	XD-10-TSD0-E	SGMGH-09D□, SGMSh/UH-10D□, SGMAH-07D□, SGMPH-08D□	SGLFW-50D200□, SGLTW-35D170□, SGLTW-50D170□
		1.5 kW	XD-15-TN	XD-15-TN00-E	XD-15-TSD0	XD-15-TSD0-E	SGMGH-13D□, SGMSh/UH-15D□, SGMPH-15D□	SGLFW-50D380□, SGLFW-1ZD200□
		2.0 kW	XD-20-TN	XD-20-TN00-E	XD-20-TSD0	XD-20-TSD0-E	SGMGH-20D□, SGMSh-20D□	SGLFW-1ED380□, SGLTW-35D320□, SGLTW-50D320□
		3.0 kW	XD-30-TN	XD-30-TN00-E	XD-30-TSD0	XD-30-TSD0-E	SGMGH-30D□, SGMSh/UH-30D□	SGLFW-1ZD380□, SGLFW-1ED560□, SGLTW-40D400□
		5.0 kW	XD-50-TN	XD-50-TN00-E	-	-	-	SGMGH-44D□, SGMSh/UH-40D□, SGMSh-50D□

**Note:** SGLGW-□ linear motor combination is made considering the use of standard magnets. Refer to the linear motor catalog for details.

### Control cables (for CN1)

Symbol	Description	Connect to	Length	Model
③	Control cable	General purpose controller	1 m	JZSP-CKI01-1
			2 m	JZSP-CKI01-2
④	Relay terminal block cable	-	1 m	JUSP-TA50PG-1-E
			2 m	JUSP-TA50PG-2-E
-	Control I/O connector (for CN1)	-	-	JZSP-CKI9

Symbol	Applicable servo drive	Filter model	Rated current	Max. Rated voltage
⑧	XD-P3-M□, XD-P5-M□, XD-01-M□, XD-02-M□	RS 1004-SG	4 A	250 VAC single-phase
	XD-04-M□	RS 1007-SG	7 A	
	XD-08-M□	RS 1015-SG	15 A	
	XD-15-M□	RS 1025-SG	25 A	
	XD-05-T□, XD-10-T□, XD-15-T□	RS 3006-SG	6 A	
	XD-20-T□, XD-30-T□	RS 3010-SG	10 A	
	XD-50-T□	RS 3018-SG	18 A	

### Cable (for CN5)

Symbol	Name	Model
⑤	Analog monitor cable	DE9404559

### Option (for CN3)

Symbol	Name	Model
⑥	Computer connecting cable	JZSP-CMS02

### Option units (for CN10)

Symbol	Name	Model
⑦	I/O card, 8 inputs / 8 outputs	XDIO-08
	CANopen card	XDA-CAN

### Battery backup for absolute encoder

Name	Model
Battery (required for servo motors with absolute encoder)	JZSP-BA01 ER 6VC3 (3.6V)

### Computer software

Specifications	Model
XtraWare	ENGINEERING TOOL

### Encoder cables (for CN2)

Symbol	Specifications	Model	Appearance	
⑨	Encoder cable for SGMAH/PH servo motors SGMAH-□□□□□□□□ SGMPH-□□□□□□□□	3 m	DP93252XD-03-E-G2	
		5 m	DP93252XD-05-E-G2	
		10 m	DP93252XD-10-E-G2	
		15 m	DP93252XD-15-E-G2	
		20 m	DP93252XD-20-E-G2	
	Encoder cable for SGMGH/SH/UH servo motors SGMGH-□ SGMSh-□ SGMUH-□	3 m	JZSP-CMPXD-03-E-G2	
		5 m	JZSP-CMPXD-05-E-G2	
		10 m	JZSP-CMPXD-10-E-G2	
		15 m	JZSP-CMPXD-15-E-G2	
		20 m	JZSP-CMPXD-20-E-G2	
Cable for connecting serial converter units (required for linear servo motors)	3 m	JZSP-CLPXD-03-E-G2		
	5 m	JZSP-CLPXD-05-E-G2		
	10 m	JZSP-CLPXD-10-E-G2		
	15 m	JZSP-CLPXD-15-E-G2		
	20 m	JZSP-CLPXD-20-E-G2		

Ordering information

Power cables

Symbol	Specifications		Model	Appearance
①	For 230 V servo motors without brake SGMAH- □□A □□□ 1D SGMPH-(01/02/04/08)A □□ 41D	3 m	DP9325252-03G	
		5 m	DP9325252-05G	
		10 m	DP9325252-10G	
		15 m	DP9325252-15G	
		20 m	DP9325252-20G	
	For 230 V servo motors with brake SGMAH- □□A □□□ CD SGMPH-(01/02/04/08)A □□ 4CD	3 m	DP9325253-03G	
		5 m	DP9325253-05G	
		10 m	DP9325253-10G	
		15 m	DP9325253-15G	
		20 m	DP9325253-20G	
	For 230 V servo motors without brake SGMPH-15A □□□ 1D	3 m	DP9325254-03G	
		5 m	DP9325254-05G	
		10 m	DP9325254-10G	
		15 m	DP9325254-15G	
		20 m	DP9325254-20G	
	For 230 V servo motors with brake SGMPH-15A □□□ CD	3 m	DP9325255-03G	
		5 m	DP9325255-05G	
		10 m	DP9325255-10G	
		15 m	DP9325255-15G	
		20 m	DP9325255-20G	
	For 400 V servo motors without brake SGMAH- □□D □□□ 1D SGMPH- □□D □□□ 1D	3 m	JZSP-CMM20D15-03G	
		5 m	JZSP-CMM20D15-05G	
		10 m	JZSP-CMM20D15-10G	
		15 m	JZSP-CMM20D15-15G	
		20 m	JZSP-CMM20D15-20G	
	For 400 V servo motors with brake SGMAH- □□D □□□ CD SGMPH- □□D □□□ CD	3 m	JZSP-CMM30D15-03G	
		5 m	JZSP-CMM30D15-05G	
		10 m	JZSP-CMM30D15-10G	
		15 m	JZSP-CMM30D15-15G	
		20 m	JZSP-CMM30D15-20G	
	For 400 V servo motors SGMGH-(05/09/13)D □ SGMSH-(10/15/20)D □ SGMUH-(10/15)D □ for servo motors with brake a separate cable (JZSP-CMM02BR □□ G) is needed	3 m	JZSP-CMM02D15-03G	
		5 m	JZSP-CMM02D15-05G	
		10 m	JZSP-CMM02D15-10G	
		15 m	JZSP-CMM02D15-15G	
		20 m	JZSP-CMM02D15-20G	
	For 400 V servo motors SGMGH-(20/30)D □ SGMSH-(30/40/50)D □ SGMUH-(30/40)D □ for servo motors with brake a separate cable (JZSP-CMM02BR □□ G) is needed	3 m	JZSP-CMM02D30-03G	
		5 m	JZSP-CMM02D30-05G	
		10 m	JZSP-CMM02D30-10G	
		15 m	JZSP-CMM02D30-15G	
		20 m	JZSP-CMM02D30-20G	
For 400 V servo motors SGMGH-44D □ for servo motors with brake a separate cable (JZSP-CMM02BR □□ G) is needed	3 m	JZSP-CMM02D44-03G		
	5 m	JZSP-CMM02D44-05G		
	10 m	JZSP-CMM02D44-10G		
	15 m	JZSP-CMM02D44-15G		
	20 m	JZSP-CMM02D44-20G		
For 400 V servo motors SGMGH-55D □ for servo motors with brake a separate cable (JZSP-CMM02BR □□ G) is needed	3 m	JZSP-CMM02D55-03G		
	5 m	JZSP-CMM02D55-05G		
	10 m	JZSP-CMM02D55-10G		
	15 m	JZSP-CMM02D55-15G		
	20 m	JZSP-CMM02D55-20G		
Brake cable only. For 400 V servo motors with brake SGMGH- □□D □ SGMSH- □□D □ SGMUH- □□D □	3 m	JZSP-CMM02BR- □ 03G		
	5 m	JZSP-CMM02BR- □ 05G		
	10 m	JZSP-CMM02BR- □ 10G		
	15 m	JZSP-CMM02BR- □ 15G		
	20 m	JZSP-CMM02BR- □ 20G		



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