

R88D-1SN□□□-ECT

1S servo drive

Sysmac general purpose servo

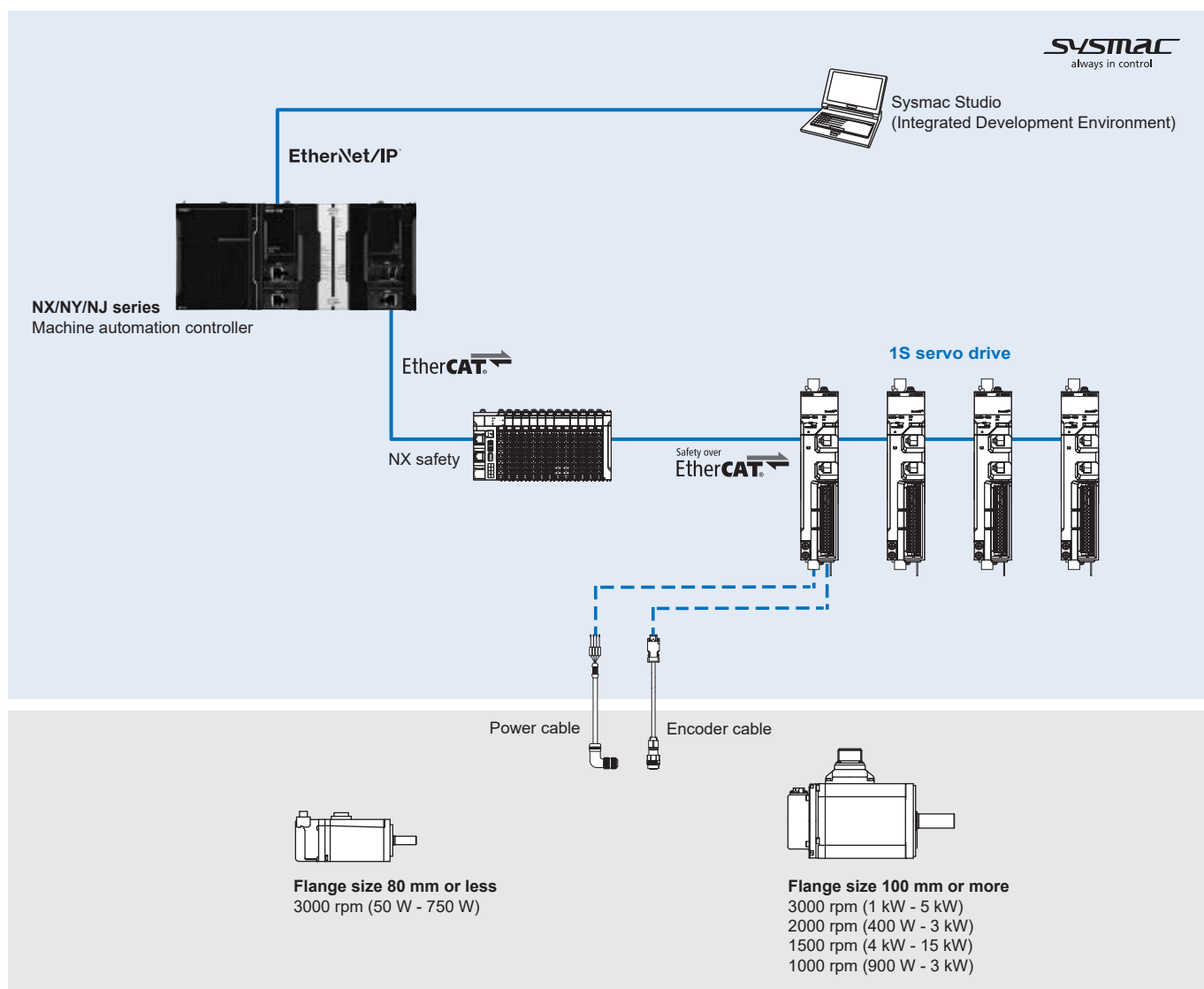
- 23-bit resolution encoder
- Fast and secure screw-less push-in in all connectors
- Pluggable connectors for easy pre-wiring and system maintenance
- Direct wiring of I/O signals
- Embedded relay for direct motor brake control
- Improved loop control for overshoot and quick setting time
- Safety function built-in:
 Network Safe Torque Off: PLd (EN ISO 13849-1), SIL2 (IEC 61508)
 Hardwired Safe Torque Off: PLe (EN ISO 13849-1), SIL3 (IEC 61508)



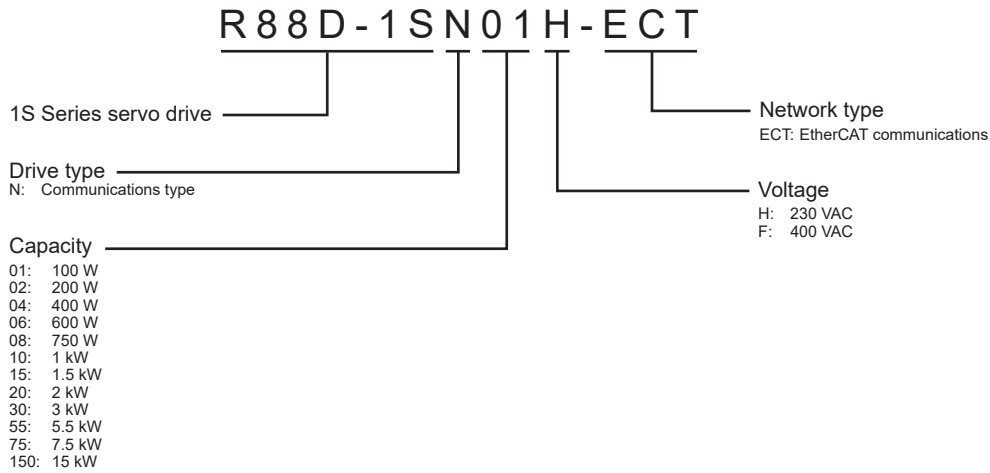
Ratings

- 230 VAC single-phase: 100 W to 1.5 kW
- 400 VAC three-phase: 600 W to 15 kW

System configuration



Type designation



Specifications

Single-phase, 230 V

Servo drive model			R88D-1SN01H-ECT	R88D-1SN02H-ECT	R88D-1SN04H-ECT	R88D-1SN08H-ECT	R88D-1SN15H-ECT	
Applicable servo motor	3000 r/min		R88M-1M05030T R88M-1M10030(H/T)	R88M-1M20030(H/T)	R88M-1M40030(H/T)	R88M-1M75030(H/T)	R88M-1L1K030(H/T) R88M-1L1K530(H/T)	
	2000 r/min		-	-	-	-	R88M-1M1K020(H/T) R88M-1M1K520(H/T)	
	1000 r/min		-	-	-	-	R88M-1M90010T	
Max. applicable motor capacity		W	100	200	400	750	1500	
Input	Control circuit	Power supply voltage	V	24 VDC (21.6 to 26.4 V)				
	Main circuit	Power supply voltage	V	Single-phase 200 to 240 VAC (170 to 252 V)				
		Frequency	Hz	50/60 Hz (47.5 to 63 Hz)				
	Rated input current	Single-phase	Arms	1.8	2.7	4.6	7.3	15.7
Output	Rated output current	Arms	0.8	1.5	2.5	4.6	9.7	
	Max. current	Arms	3.1	5.6	9.1	16.9	28.4	
Basic	Ambient operating/storage temperature		0 to 55°C/-20 to 65°C					
	Ambient operating/storage humidity		90% RH or less (without condensation)					
	Atmosphere		Must be free from corrosive gases					
	Altitude		1000 m or less					
	Vibration resistance (max.)		5.88 m/s ² , 10 to 60 Hz (continuous operation at resonance point is not allowed)					
Degree of protection		IP20 (Built into IP54 panel)						
Weight	kg		1.2	1.2	1.5	2.0	3.4	

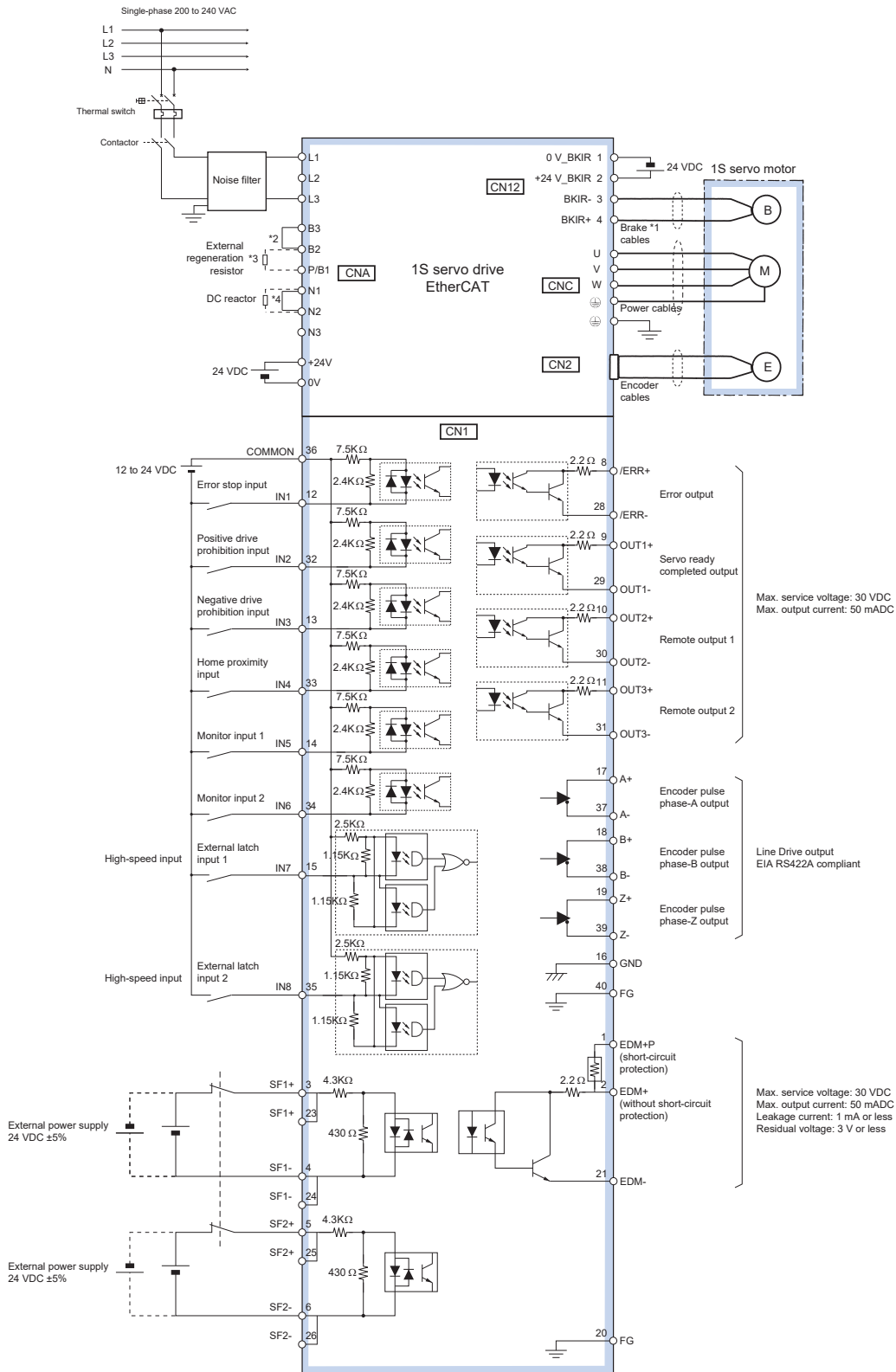
Three-phase, 400 V

Servo drive model			R88D-1SN06F-ECT	R88D-1SN10F-ECT	R88D-1SN15F-ECT	R88D-1SN20F-ECT	
Applicable servo motor	3000 r/min		-	R88M-1L75030C R88M-1L1K030C	R88M-1L1K530C	R88M-1L2K030C	
	2000 r/min		R88M-1M40020C R88M-1M60020C	R88M-1M1K020C	R88M-1M1K520C	R88M-1M2K020C	
	1000 r/min		-	R88M-1M90010C	-	R88M-1M2K010C	
Max. applicable motor capacity			W	600	1000	1500	2000
Input	Control circuit	Power supply voltage	V	24 VDC (21.6 to 26.4 V)			
	Main circuit	Power supply voltage	V	Three-phase 380 to 480 VAC (323 to 504 V)			
		Frequency	Hz	50/60 Hz (47.5 to 63 Hz)			
	Rated input current	Three-phase	Arms	2.4	3.1	4.3	6.5
Output	Rated output current		Arms	1.8	4.1	4.7	7.8
	Max. current		Arms	5.5	9.6	14.1	19.8
Basic	Ambient operating/storage temperature		0 to 55°C/-20 to 65°C				
	Ambient operating/storage humidity		90% RH or less (without condensation)				
	Atmosphere		Must be free from corrosive gases				
	Altitude		1000 m or less				
	Vibration resistance (max.)		5.88 m/s ² , 10 to 60 Hz (continuous operation at resonance point is not allowed)				
Degree of protection			IP20 (Built into IP54 panel)				
Weight			kg	3.4	3.4	3.4	3.4

Servo drive model			R88D-1SN30F-ECT	R88D-1SN55F-ECT	R88D-1SN75F-ECT	R88D-1SN150F-ECT	
Applicable servo motor	3000 r/min		R88M-1L3K030C	R88M-1L4K030C-□ R88M-1L5K030C-□	-	-	
	2000 r/min		R88M-1M3K020C	-	-	-	
	1500 r/min		-	R88M-1M4K015C-□ R88M-1M5K515C-□	R88M-1M7K515C-□	R88M-1M11K015C-□ R88M-1M15K015C-□	
	1000 r/min		R88M-1M3K010C	-	-	-	
Max. applicable motor capacity			W	3000	5500	7500	15000
Input	Control circuit	Power supply voltage	V	24 VDC (21.6 to 26.4 V)			
	Main circuit	Power supply voltage	V	Three-phase 380 to 480 VAC (323 to 504 V)			
		Frequency	Hz	50/60 Hz (47.5 to 63 Hz)			
	Rated input current	Three-phase	Arms	8.4	16	23	40
Output	Rated output current		Arms	11.3	14.5	22.6	33.9
	Max. current		Arms	28.3	42.4	56.5	84.8
Basic	Ambient operating/storage temperature		0 to 55°C/-20 to 65°C				
	Ambient operating/storage humidity		90% RH or less (without condensation)				
	Atmosphere		Must be free from corrosive gases				
	Altitude		1000 m or less				
	Vibration resistance (max.)		5.88 m/s ² , 10 to 60 Hz (continuous operation at resonance point is not allowed)				
Degree of protection			IP20 (Built into IP54 panel)				
Weight			kg	3.4	9.4	9.4	21

Installation

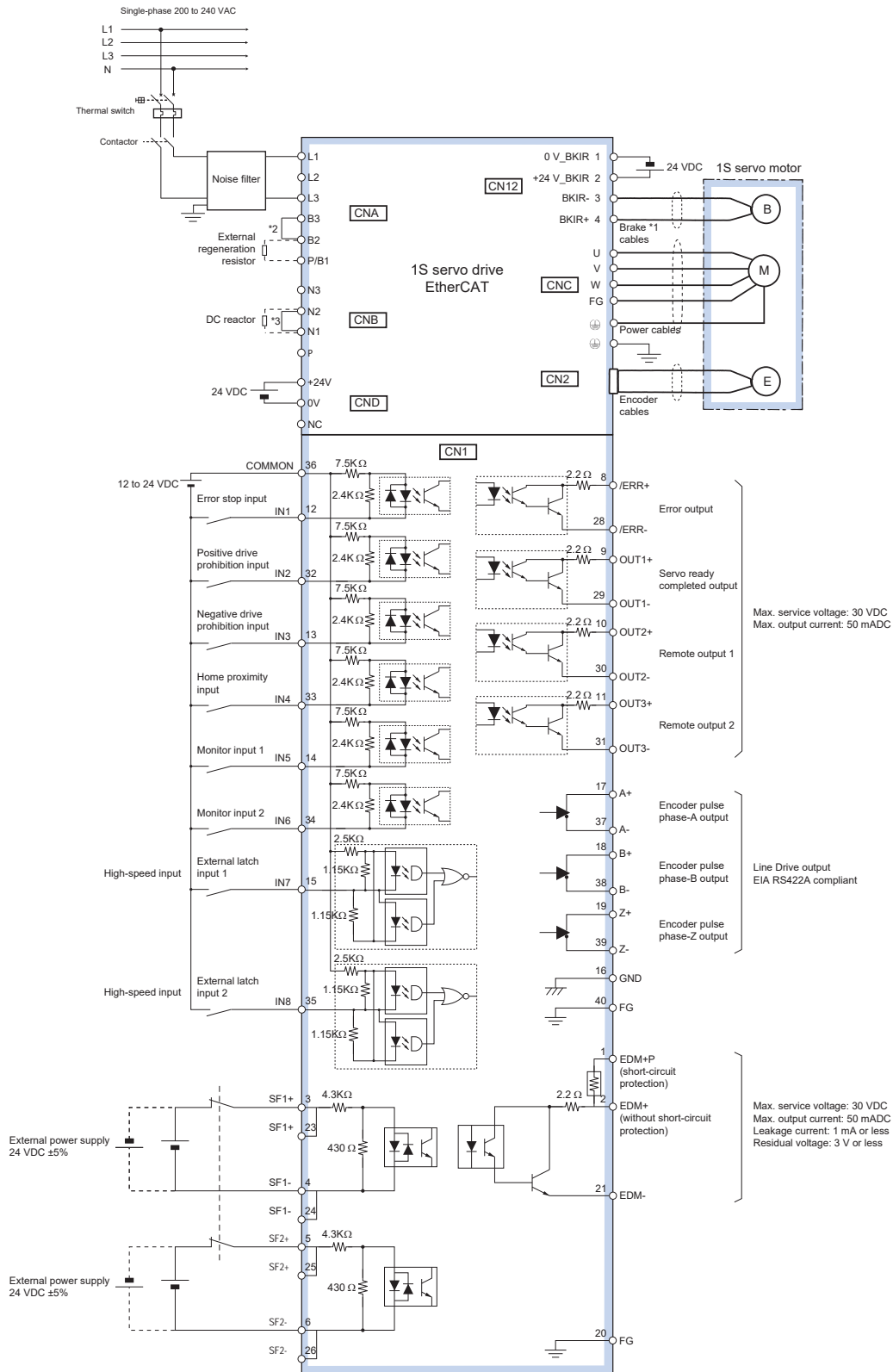
Single-phase, 230 VAC (100 W to 750 W models)



- *1. There is no polarity on the brake.
- *2. For 750 W servo drive, B2 and B3 are short-circuited. If the internal regenerative resistor is insufficient, remove the wire between B2 and B3 and connect an external regenerative resistor between B1 and B2.
- *3. There is no internal regeneration resistor for 100 to 400 W models. When the amount of regeneration is large, connect the necessary regeneration resistor between B1 and B2.
- *4. To use a DC reactor, remove the short-circuit wire and connect the DC reactor between N1 and N2.

Note: The input functions of pins 12 to 15 and 32 to 35, and output functions of pins 9 to 11 and 29 to 31, can be changed via parameter settings.

Single-phase, 230 VAC (1.5 kW model)



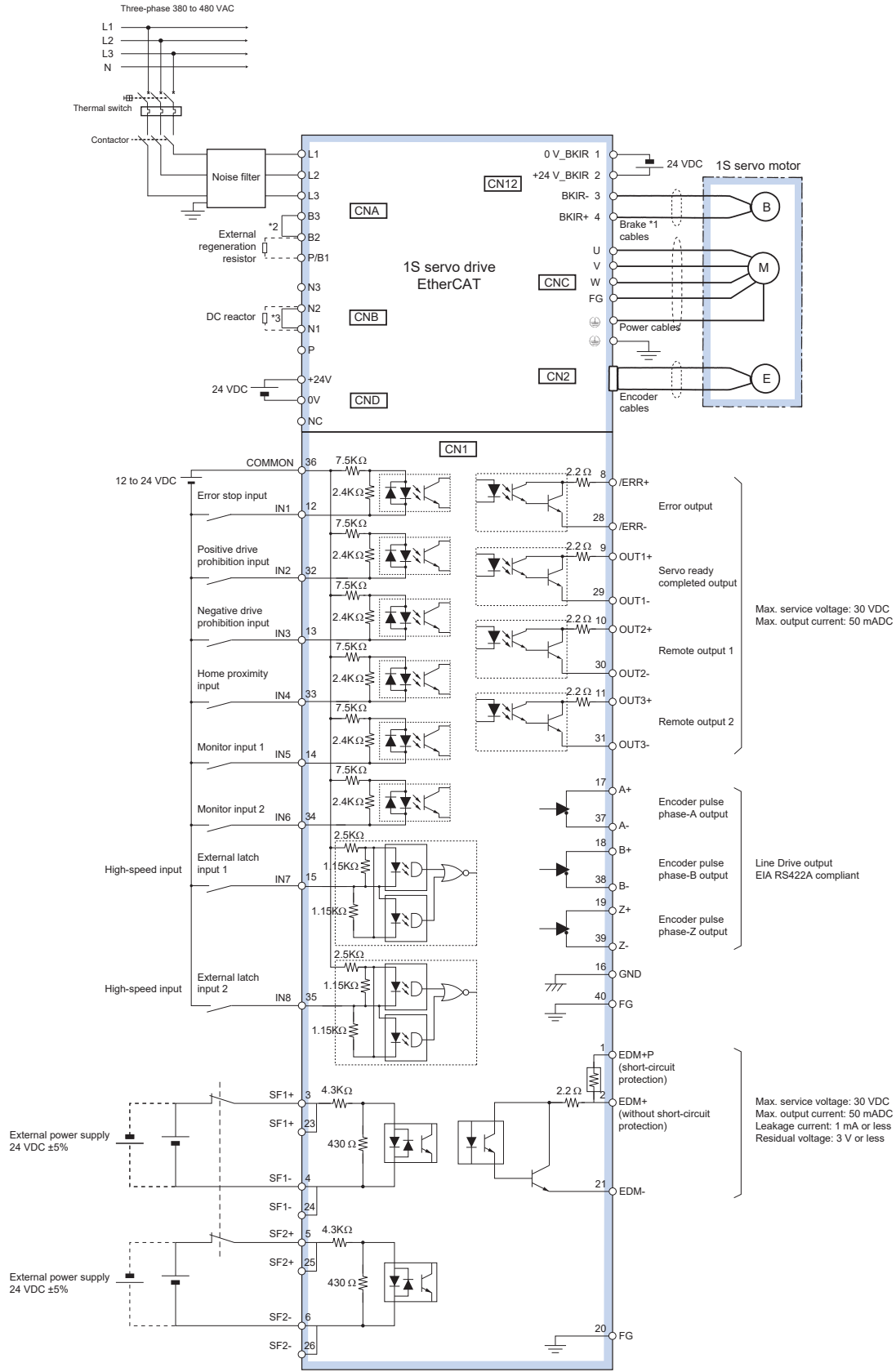
*1. There is no polarity on the brake.

*2. B2 and B3 are short-circuited. If the internal regenerative resistor is insufficient, remove the wire between B2 and B3 and connect an external regenerative resistor between B1 and B2.

*3. To use a DC reactor, remove the short-circuit wire and connect the DC reactor between N1 and N2.

Note: The input functions of pins 12 to 15 and 32 to 35, and output functions of pins 9 to 11 and 29 to 31, can be changed via parameter settings.

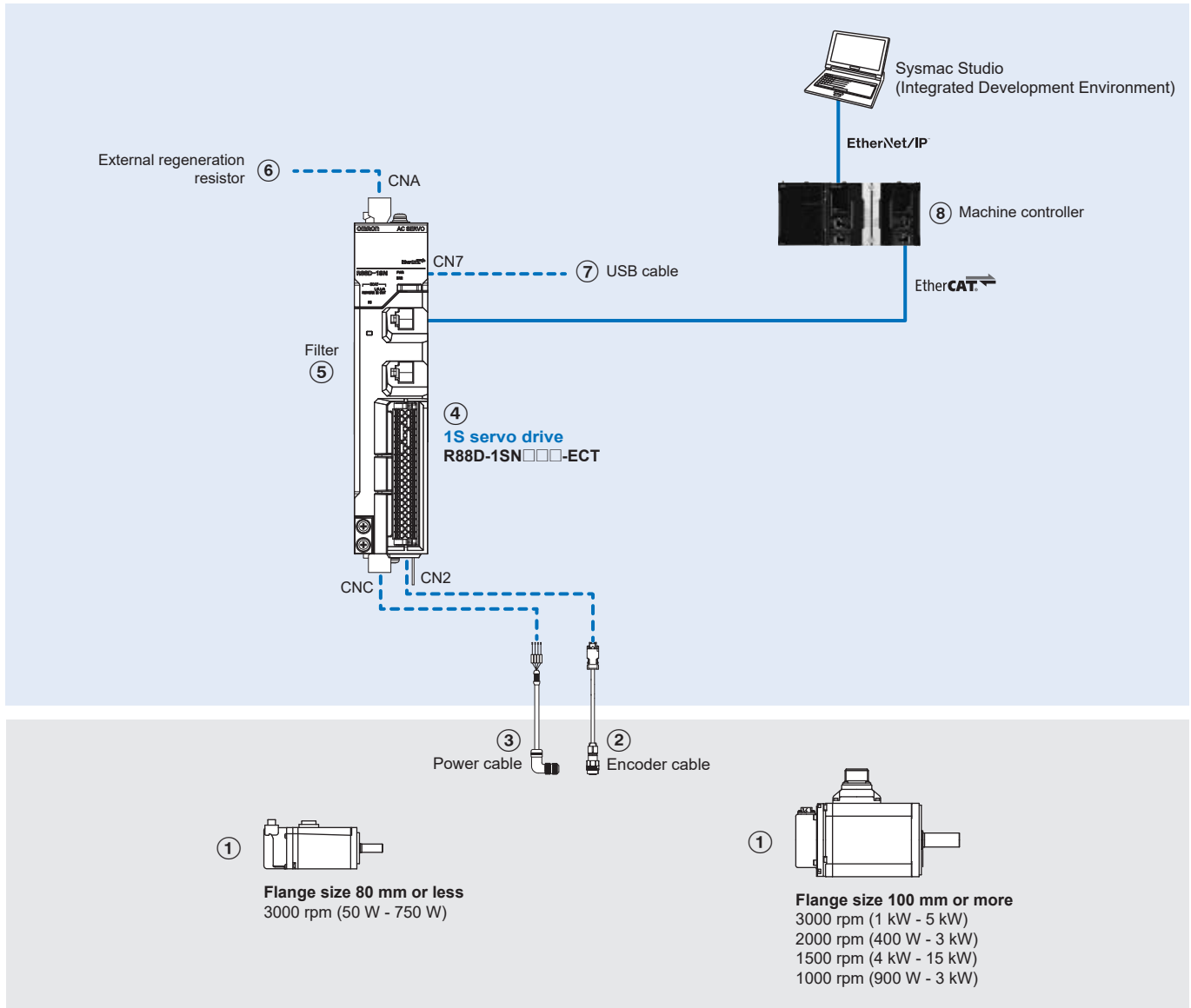
Three-phase, 400 VAC (600 W to 3 kW models)



*1. There is no polarity on the brake.
 *2. B2 and B3 are short-circuited. If the internal regenerative resistor is insufficient, remove the wire between B2 and B3 and connect an external regenerative resistor between B1 and B2.
 *3. To use a DC reactor, remove the short-circuit wire and connect the DC reactor between N1 and N2.

Note: The input functions of pins 12 to 15 and 32 to 35, and output functions of pins 9 to 11 and 29 to 31, can be changed via parameter settings.

Ordering information



Servo motors, power & encoder cables

①②③ Refer to the 1S servo motor chapter for servo motor, motor cables or connectors selection.

Servo drives

Symbol	Specifications		Compatible 1S servo motor	Model
④	Single-phase 230 VAC	50 W	R88M-1M05030T-□	R88D-1SN01H-ECT
		100 W	R88M-1M10030(H/T)-□	
		200 W	R88M-1M20030(H/T)-□	R88D-1SN02H-ECT
		400 W	R88M-1M40030(H/T)-□	R88D-1SN04H-ECT
		750 W	R88M-1M75030(H/T)-□	R88D-1SN08H-ECT
		1.5 kW	R88M-1L1K030(H/T)-□	R88D-1SN15H-ECT
			R88M-1L1K530(H/T)-□	
			R88M-1M1K020(H/T)-□	
			R88M-1M1K520(H/T)-□	
			R88M-1M90010T-□	
	Three-phase 400 VAC	600 W	R88M-1M40020C-□ R88M-1M60020C-□	R88D-1SN06F-ECT
		1 kW	R88M-1L75030C-□	R88D-1SN10F-ECT
			R88M-1L1K030C-□	
			R88M-1M1K020C-□	
			R88M-1M90010C-□	
		1.5 kW	R88M-1L1K530C-□	R88D-1SN15F-ECT
			R88M-1M1K520C-□	
		2 kW	R88M-1L2K030C-□	R88D-1SN20F-ECT
			R88M-1M2K020C-□	
			R88M-1M2K010C-□	
3 kW	R88M-1L3K030C-□	R88D-1SN30F-ECT		
	R88M-1M3K020C-□			
	R88M-1M3K010C-□			
5.5 kW	R88M-1L4K030C-□	R88D-1SN55F-ECT		
	R88M-1M4K015C-□			
	R88M-1L5K030C-□			
	R88M-1M5K515C-□			
7.5 kW	R88M-1M7K515C-□	R88D-1SN75F-ECT		
15 kW	R88M-1M11K015C-□	R88D-1SN150F-ECT		
	R88M-1M15K015C-□			

Filters

Symbol	Applicable 1S servo drive	Manufacturer	Rated current	Leakage current	Rated voltage	Model
⑤	R88D-1SN01H-ECT, R88D-1SN02H-ECT	Schaffner EMC Co. Ltd.	3 A	7.83 mA	250 VAC	R88A-FI1S103-SE
	R88D-1SN04H-ECT		5 A			R88A-FI1S105-SE
	R88D-1SN08H-ECT		8 A			R88A-FI1S108-SE
	R88D-1SN15H-ECT		16 A			R88A-FI1S116-SE
	R88D-1SN06F-ECT, R88D-1SN10F-ECT, R88D-1SN15F-ECT, R88D-1SN20F-ECT, R88D-1SN30F-ECT		9 A	1.2 mA	400 VAC	R88A-FI1S309-SE
	R88D-1SN55F-ECT, R88D-1SN75F-ECT		30 A	0.6 mA		R88A-FI1S330-SE
	R88D-1SN150F-ECT		50 A	2.4 mA		R88A-FI1S350-SE

External regeneration resistor

Symbol	Resistance value	Regeneration absorption for 120°C temperature rise	Nominal capacity	Model
⑥	25 Ω	24 W	120 W	R88A-RR12025
	20 Ω	60 W	300 W	R88A-RR30020
	25 Ω			R88A-RR30025
	33 Ω			R88A-RR30033
	16 Ω			R88A-RR30016
	10 Ω			R88A-RR30010

⑦ USB cable

Use a commercially available USB cable that is double-shielded, gold-plated and supports USB 2.0. The Micro B type USB cable can be used.

Machine controller

Symbol	Name	Model	
⑧	Industrial PC	Box PC type	NY512-□
		Panel PC type (Box PC + Monitor integrated)	NY532-□
	Modular controller	NX7 series	NX701-□
		NJ series	NJ□01-□
		NX1 series	NX102-□
	Compact controller	NX1P series	NX1P2-□