R88D-GN□, R88D-GT□

G-Series servo drive

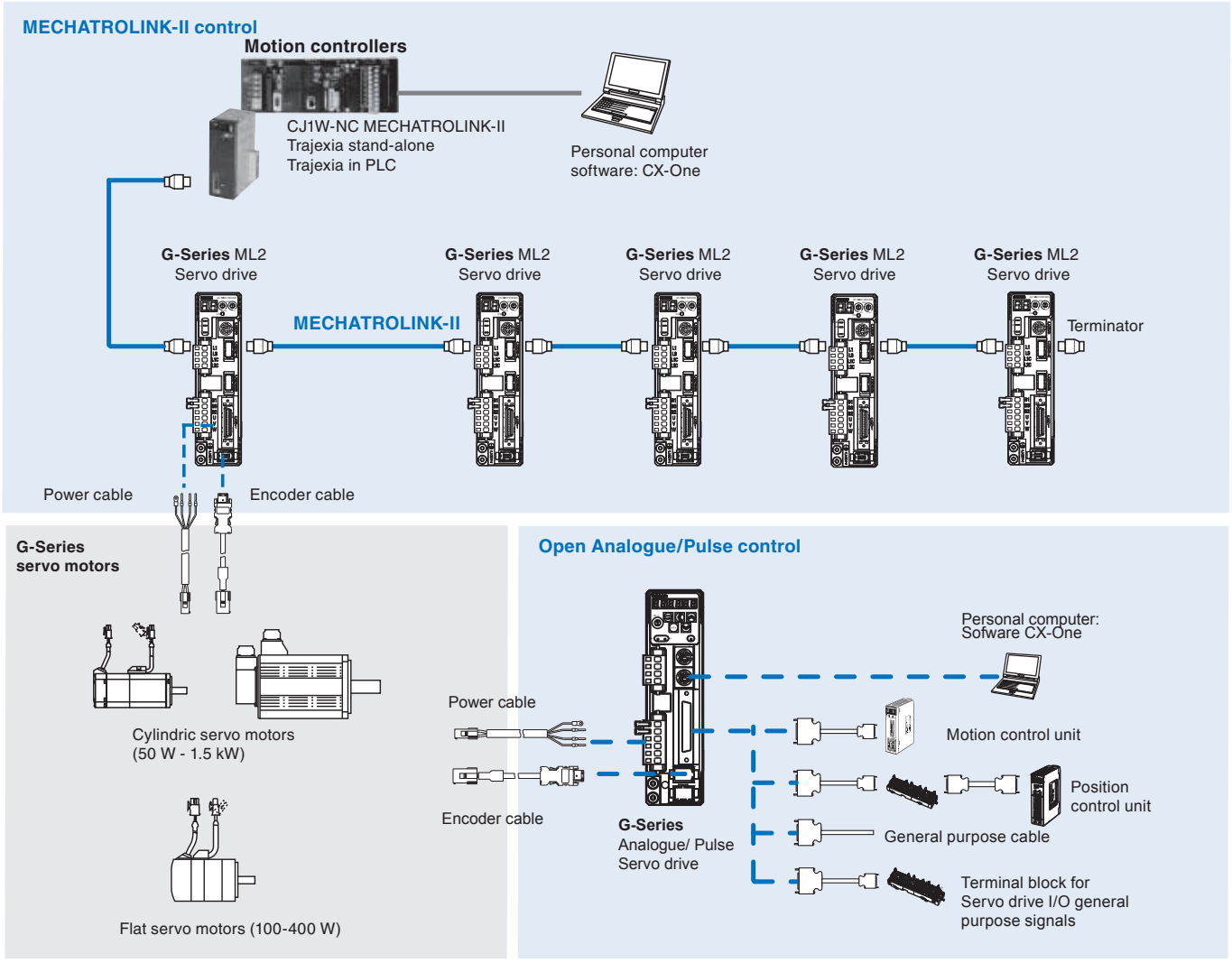
A compact servo drive family for motion control. Compact size and integrated MECHATROLINK-II motion bus.

- ML2 and Analog/ Pulse servo drive models
- High-response frequency of 1 kHZ
- Auto-tuning for easy and quick start-up
- Vibration suppression
- Positioning, speed or torque control
- Separate power and control power supply
- Fast and accurate positioning
- Incremental and absolute encoder

Ratings

- 230 VAC Single-phase 100 W to 1.5 kW (8.62 Nm)

System configuration



Servo motor supported

Servo motor							G-Series servo drive	
Family		**Voltage**	**Speed**	**Rated torque**	**Capacity**	**Model**	**MECHATROLINK-II**	**Analog/ Pulse**
Cylindric	50 - 750 W 	230 V	3000 min^{-1}	0.16 Nm	50 W	R88M-G05030□-□S2	R88D-GN01H-ML2	R88D-GT01H
				0.32 Nm	100 W	R88M-G10030□-□S2	R88D-GN01H-ML2	R88D-GT01H
				0.64 Nm	200 W	R88M-G20030□-□S2	R88D-GN02H-ML2	R88D-GT02H
				1.3 Nm	400 W	R88M-G40030□-□S2	R88D-GN04H-ML2	R88D-GT04H
				2.4 Nm	750 W	R88M-G75030□-□S2	R88D-GN08H-ML2	R88D-GT08H
	900 - 1500 W 			3.18 Nm	1000 W	R88M-G1K030T-□S2	R88D-GN15H-ML2	R88D-GT15H
				4.77 Nm	1500 W	R88M-G1K530T-□S2	R88D-GN15H-ML2	R88D-GT15H
			2000 min^{-1}	4.8 Nm	1000 W	R88M-G1K020T-□S2	R88D-GN10H-ML2	R88D-GT10H
				7.15 Nm	1500 W	R88M-G1K520T-□S2	R88D-GN15H-ML2	R88D-GT15H
			1000 min^{-1}	8.62 Nm	900 W	R88M-G90010T-□S2	R88D-GN15H-ML2	R88D-GT15H
Flat	100-400 W 		3000 min^{-1}	0.32 Nm	100 W	R88M-GP10030□-□S2	R88D-GN01H-ML2	R88D-GT01H
				0.64 Nm	200 W	R88M-GP20030□-□S2	R88D-GN02H-ML2	R88D-GT02H
				1.3 Nm	400 W	R88M-GP40030□-□S2	R88D-GN04H-ML2	R88D-GT04H

Type designation

Servo drive

R88D-GN04H-ML2

- G-Series servo drive
- Drive type
  - T: Analogue/ pulse type
  - N: Network type
- Capacity

01	100 W
02	200 W
04	400 W
08	750 W
10	1.0 kW
15	1.5 kW

- Model
  - Blank: Analogue/ pulse type
  - ML2: MECHATROLINK-II communications
- Source voltage
  - H: 230 V

Servo drive specifications

General specifications

Servo drive type		**R88D-G□**	**01H□**	**02H□**	**04H□**	**08H□**	**10H□**	**15H□**
Applicable servomotor		R88M-G□	05030□/10030□	20030□	40030□	75030□	G1K020T□	90010T□ / 1K030T□ / 1K5□0T□
		R88M-GP□	10030□	20030□	40030□	-	-	-
Basic specifications	Max. applicable motor capacity W		100	200	400	750	1000	1500
	Continuous output current Arms		1.16	1.6	2.7	4.0	5.9	9.8
	Max. output current Arms		3.5	5.3	7.1	14.1	21.2	28.3
	Input power	Main circuit	For single-phase, 200 to 240 VAC +10 to -15% (50/60 Hz)			For single-phase/ three-phase, 200 to 240 VAC +10 to -15% (50/60 Hz)		
	Supply	Control circuit	For single-phase, 200 to 240 VAC + 10 to -15% (50/60 Hz)					
	Control method		IGBT-driven PWM method					
	Feedback		Serial encoder (incremental/absolute)					
	Conditions: Usage/storage temperature		0 to +55 °C / -20 to 65 °C					
	Conditions: Usage/storage humidity		90% RH or less (non-condensing)					
	Conditions: Altitude		1000m or less above sea level					
	Conditions: Vibration/shock resistance		5.88 m/s^2 / 19.6 m/s^2					
	Configuration		Base mounted					
	Approx. weight Kg		0.8		1.1	1.5	1.7	

MECHATROLINK-II servo drive specifications

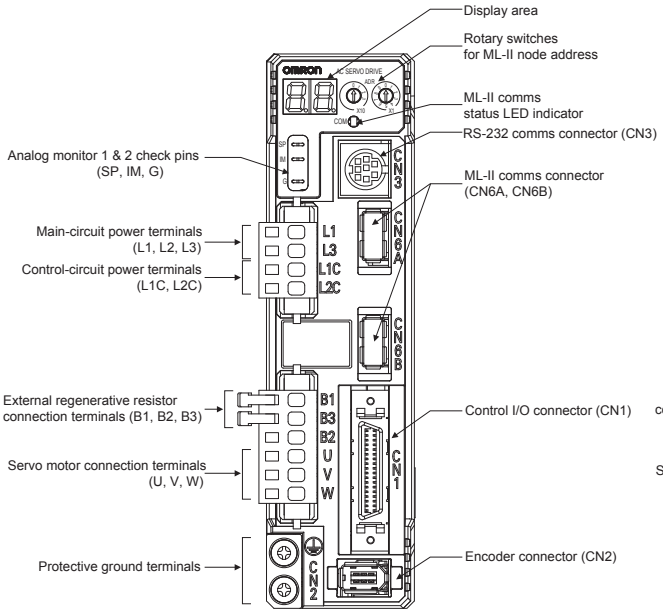
Position/Speed/torque control mode	Performance	Speed variance	Load variance	During 0 to 100% load ±0.01 max. (at rated speed)
			Voltage variance	0% at ±10% of rated voltage (at rated speed)
			Temperature variance	0 to 50ºC ±0.1% max. (at rated speed)
		Frequency characteristics		1 kHz
		Torque control accuracy (reproducibility)		±3% (at 20% to 100% of rated torque)
		Soft start time setting		0 to 10 s (acceleration time and deceleration time can be set)
	Command Input	MECHATROLINK Communication		MECHATROLINK-II commands (for sequence, motion, data setting/reference, monitor, adjustament and other commands)
I/O signal		Sequence input signal		Emergency stop, 3 external latch signals, forward/reverse torque limit, forward/reverse run prohibit, origin proximity, 3 general-purpose inputs
		Sequence output signal		It is possible to output three types of signals: positioning completed, speed coincidence, rotation speed detection, servo ready, current limit, speed limit, brake release and warning signal
Integrated functions	Communications	RS-232 communications	Interface	Personal computer
			Transmission rate	From 2400 to 57600 bps
			Functions	Parameter setting, status display, alarm display (monitor, clear, history), servo drive data tracing function, test run/autotuning operations, real time trace, absolute encoder setting, default values function
		MECHATROLINK communications	Communications protocol	MECHATROLINK-II
			Transmission rate	10 Mbps
			Data length	32 bytes
			Functions	Parameter setting, status display, alarm display (monitor, clear, history), default values function
		Tuning		Horizontal and vertical axis mode. One parameter rigidity setting. Load inertia detection.
		Dynamic brake (DB)		Operates when main power OFF, servo alarm, overtravel or servo OFF
		Regenerative processing		Built-in regeneration resistor in models from 750 W to 1.5 kW. External regeneration resistor optionally.
		Overtravel (OT) prevention function		Dynamic brake, disables torque or emergency stop torque during POT and NOT operation
		Emergency stop (STOP)		Emergency stop input
		Encoder divider function		Optional division pulses possible
		Electronic gearing		0,01<Numerator/Denominator<100
		Internal speed setting function		8 internal speeds
		Protective functions		Overvoltage, undervoltage, overcurrent, overload, regeneration overload, servo drive overheat
		Analog monitor Ouput		The actual servomotor speed, command speed, torque and number of accumulated pulses can be measured using an oscilloscope or other device.
		Panel operator	Display functions	A 2-digit 7-segment LED display shows the servo drive status, alarm codes, parameters, etc.
				MECHATROLINK-II communications status LED indicator (COM)
			Switches	Rotary switch for setting the MECHATROLINK-II node address

Analog/pulse servo drive specifications

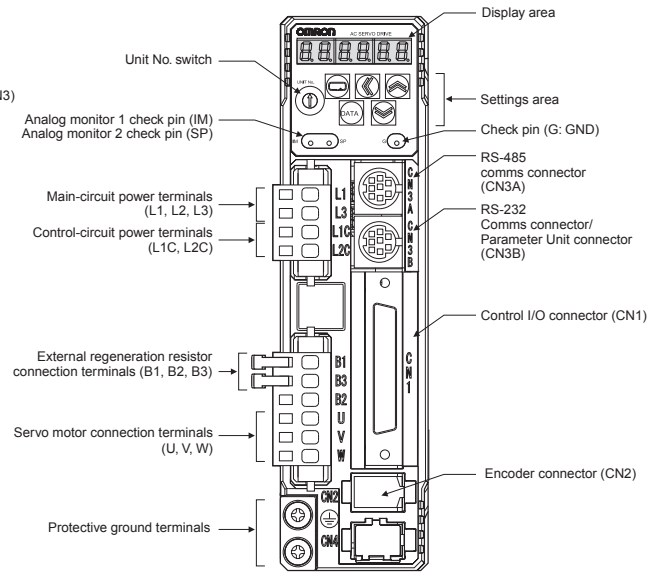
Control mode				Position, speed and torque control mode
Performance		Speed variance	Load variance	During 0 to 100% load ±0.01 max. (at rated speed)
			Voltage variance	0% at ±10% of rated voltage (at rated speed)
			Temperature dependence	0 to 50ºC ±0.1% max. (at rated speed)
		Frequency characteristics		1 kHz
		Torque control accuracy (reproducibility)		±3% (at 20% to 100% of rated torque)
		Soft start time setting		0 to 10 s (acceleration time and deceleration time can be set)
Position control	Input signal	Command pulse	Input pulse type	Signal + pulse, 90º phase displacement 2-phase pulse (phase A/B) or reverse and forward pulses (CW/CCW)
			Input pulse frequency	500 kpps max. line-driver input, 200 kpps max. open-collector input
			Electronic gearing	0,01<Numerator/Denominator<100
Speed/torque control	Input signal	Speed control	Speed reference voltage	10 VDC at 3000 r/min: set at delivery (the scale can be set by parameters)
			Torque limit	3 VDC at rated torque (torque can be limited separately in positive/negative direction)
			Preset speed control	Preset speed is selectable from 8 internal settings by digital inputs.
		Torque control	Torque reference voltage	3 VDC at rated torque: set at delivery (the scale and polarity can be set by parameters).
			Speed limit	Speed limit can be set by parameter.
I/O signal		Sequence input signal		Forward/reverse run prohibit, deviation counter reset, alarm reset, control mode switch, pulse prohibited, speed selection, gain switch, zero speed designation, origin proximity
		Sequence output signal		Brake release, servo ready and alarm output. It is possible also to output two types of configurable signals: current limit, rotation speed detection, warning signal, speed coincidence, positioning completed

Integrated functions	Communications	RS-232 communications	Interface	Personal computer
			Transmission rate	From 2400 to 57600 bps
			Functions	Parameter setting, status display, alarm display (monitor, clear, history), servo drive data tracing function, test run/autotuning operations, real time trace, absolute encoder setting, default values function
		RS-485 communications data	Interface	Communication data interface between servo drives.and personal computer.
			Transmission rate	From 2400 to 57600 bps
			Functions	Parameter setting, status display, alarm display (monitor, clear, history), servo drive data tracing function, test run/autotuning operations, real time trace, absolute encoder setting, default values function
	Tuning			Horizontal and vertical axis mode. One parameter rigidity setting. Load inertia detection.
	Dynamic brake (DB)			Operates when main power OFF, servo alarm, overtravel or servo OFF
	Regenerative processing			Built-in regeneration resistor in models from 750 W to 1.5 kW. External regeneration resistor optionally.
	Overtravel (OT) prevention function			Dynamic brake, disables torque or emergency stop torque during POT and NOT operation
	Emergency stop (STOP)			Emergency stop input
	Encoder divider function			Optional division pulses possible
	Protective functions			Overvoltage, undervoltage, overcurrent, overload, regeneration overload, servo drive overheat
	Analog monitor Ouput			The actual servomotor speed, command speed, torque and number of accumulated pulses can be measured using an oscilloscope or other device.
	Panel operator	Display functions		A 6-digit 7-segment LED display shows the servo drive status, alarm codes, parameters, etc.
		Switches		Unit No. switch for serial communications. Value from 0 to F. To identify which servo drive the computer is accesing in RS232 communications when multiple servo drives.

Servo drive part names



MECHATROLINK-II servo drive



Analogue/ pulse servo drive

I/O specifications

Main circuit connector (CNA) specifications

Symbol	Name	Function
L1	Main circuits power supply input	AC power input terminals for the main circuit **Note:** for single-phase connect the power supply input to L1 and L3
L2		
L3		
L1C	Control circuit power supply input	AC power input terminals for the control circuit
L2C		

Servomotor connector (CNB) specifications

Symbol	Name	Function	
B1	External regeneration resistor connection terminals	Up to 400 W:	If regenerative energy is high, connect an external regeneration resistor between B1 and B2.
B2			
B3		From 750 W to 1.5kW:	Normally B2 and B3 are connected. If regenerative energy is high, remove the short-circuit bar between B2 and B3 and connect an external regeneration resistor between B1 and B2.
U	Servo motor connection terminals	Terminals for outputs to the servomotor.	
V			
W			
⏚			
⏚	Frame ground	Ground terminal. Ground to 100Ω or less.	

I/O signals (CN1) - Input signals (for MECHATROLINK-II servo drives)

Pin No.	Signal name	Function	
1	+24VIN	Control power supply input for sequence signals: users must provide the +24 V power supply. Allowable voltage range: 12 to 24 VDC	
2	STOP	Emergency Stop Input	Input for emergency stop. Emergency stop function factory default: enable.
3	EXT3 EXT2 EXT1	External Latch Signals	This external signal input latches the current value feedback pulse counter. Minimal signal width must be 1 ms.
4			
5			
22	IN1	External general-purpose Input 0	This input is used as external general-purpose input.
6	IN0	External general-purpose Input 1	
23	IN2	External general-purpose Input 2	
7	PCL NCL	Forward Torque Limit Input	This signal input selects the torque limit.
8		Reverse Torque Limit Input	
19	POT NOT	Forward Run Prohibit Input	Forward/ reverse drive rotation overtravel input. Stops servomotor when movable part travels beyond the allowable range of motion.
20		Reverse Run Prohibit Input	
21	DEC	Origin Proximity Input	Connect the origin proximity input signal in the origin search operation.
34	BAT	Battery backup input for absolute encoder	Connecting pin for the absolute backup battery. Do not connect when a battery is connected to the servomotor encoder cable.
33	BATCOM		

I/O signals (CN1) - output signals (for MECHATROLINK-II servo drives)

Pin No.	Signal name	Function
15	/ALM	The output turns OFF when an alarm is generated in the Servo drive.
16	ALMCOM	
29	OUTM2	General-purpose output. The fucntion for this output is selected by changing the parameter: INP1 (Positioning completed), VCMP (Speed conformity signal), TGON (Servomotor rotation speed detection), READY (Servo ready), CLIM (Current limit detection), VLIM (Speed limit detection), BKIR (Brake interlock), WARN (Warning signal)
30	OUTM2COM	
31	OUTM3	
32	OUTM3COM	
36	OUTM1	
35	OUTM1COM	

I/O signals (CN1) - Input signals (for analog/pulse servo drives)

Pin No.	Control mode	Signal name	Function
1	Position	+24 VCW	Reference pulse input for line driver and open collector according to parameter setting. Input mode: Sign + pulse string Reverse/forward pulse (CCW/CW pulse) Two-phase pulse (90° phase differential)
3		+CW	
4		-CW	
2		+24 VCW	
5		+CCW	
6		-CCW	
44		+CWLD	Reference pulse input for line driver only. Input mode: Reverse/forward pulse (CW/CCW pulse)
45		-CWLD	
46		+CCWLD	
47		-CCWLD	
14	Speed	REF	Speed reference input: ±10 V/rated motor speed (input gain can be modified using a parameter).
	Torque	TREF1	Torque reference input: ±10 V/rated motor torque (input gain can be modified using a parameter).
		VLIM	Speed limit input: ±10 V/rated motor speed (input gain can be modified using a parameter).
15	-	AGND1	Analog signal ground
16	Torque	TREF2	Torque reference input: ±10 V/rated motor torque (input gain can be modified using a parameter).
	Position/Speed	PCL	Forward torque limit input: ±10 V/rated motor torque (input gain can be modified using a parameter).
18		NCL	Reverse torque limit input: ±10 V/rated motor torque (input gain can be modified using a parameter).
17	-	AGND	Analog signal ground

Pin No.	Control mode	Signal name	Function	
7	Common	+24 VIN	Control power supply input for sequence signals: users must provide the +24 V power supply (12 to 24 V).	
29		RUN	Servo ON: this turn ON the servo.	
26	Position	DFSEL	Vibration filter switching	Enables vibration filter according parameter setting.
	Speed	PNSEL	Speed command rotation direction switch	
	Speed/Torque	VZERO	Zero speed designation	Speed command is regarder as 0. This function is enable/disabled by parameter.
27	Common	GSEL	Gain switching	Enables gain value according parameter setting.
		TLSEL	Torque limit switch.	
28	Position	GESEL	Electronic gear switching	Switches the numerator fro electronic gear ratio.
	Speed	VSEL3	Internal speed selection 3	Input to select the desired speed setting during internally speed operation. The speed selecton is combining this input with VSEL1 and VSEL2 inputs.
30	Position	ECRST	Error counter reset input.	Resets the position error counter.
	Speed	VSEL2	Internal speed selection 2	Input to select the desired speed setting during internally speed operation. The speed selecton is combining this input with VSEL1 and VSEL3 inputs.
31	Common	RESET	Alarm reset input.	Release the alarm status. The error counter is reset when the alarm is reset.
32	Position/ Speed/Torque	TVSEL	Control mode switching	Position ↔ speed Position ↔ torque Torque ↔ speed } Enables control mode switching
33	Position	IPG	Pulse prohibition input. Digital input to inhibit the position reference pulse.	
	Speed	VSEL1	Internal speed selection 1	Input to select the desired speed setting during internally speed operation. The speed selecton is combining this input with VSEL2 and VSEL3 inputs.
8	Common	NOT	Reverse run prohibited	Overtravel prohibited: stops servomotor when movable part travels beyond the allowable range of motion.
9		POT	Forward run prohibited	
20	Common	SEN	Sensor ON input. Initial data request signal when using an absolute encoder.	
13		SENGND	Sensor ON signal ground.	
42	Common	BAT (+)	Backup battery connection terminals when the absolute encoder power is interrupted. Do not connect when an absolute encoder battery cable for backup is used.	
43		BATGND (-)		
50		FG	Frame ground	

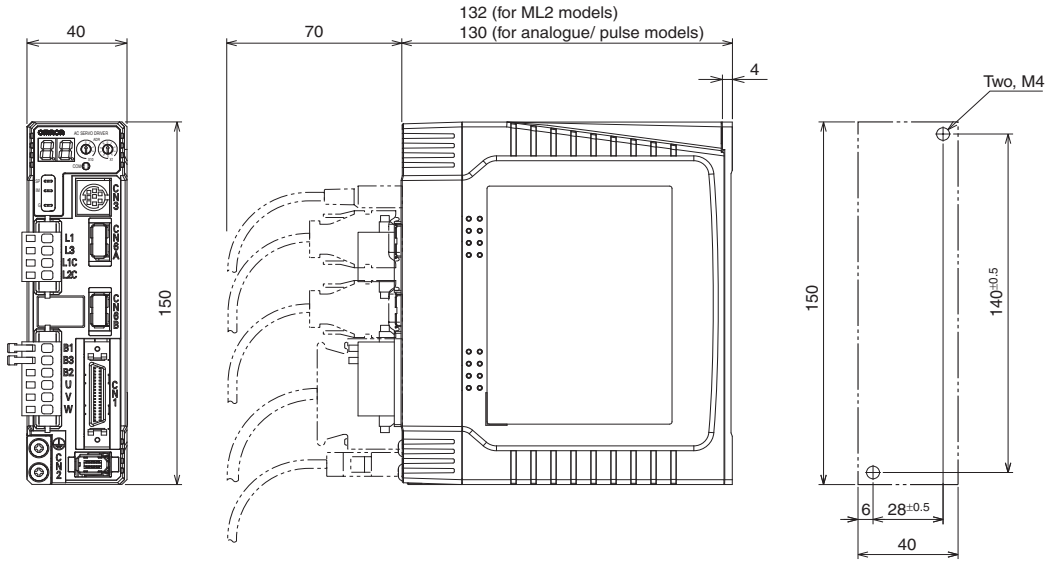
I/O signals (CN1) - Output signals (for analog/pulse servo drives)

Pin No.	Control mode	Signal name	Function	
21	Common	+A	Encoder phase A+	Encoder signals are output according Encoder Dividing Numerator parameter. This is the line-driver output (equivalent to R422).
22		-A	Encoder phase A-	
49		+B	Encoder phase B+	
48		-B	Encoder phase B-	
23		+Z	Encoder phase Z+	
24		-Z	Encoder phase Z-	
19		Z	Encoder phase-Z output	Phase Z is output for encoder signals. Open-collector output.
25		ZCOM	Encoder phase-Z common	
11		BKIR	Brake release signal output	Timing signal for operating the electromagnetic brake on a motor.
10		BKIRCOM		
35		READY	Servo ready: ON if there is not servo alarm when the control/main circuit power supply is turned ON.	
34		READYCOM		
37		/ALM	Servo alarm: turns OFF when an error is detected.	
36		ALMCOM		
39	Speed/torque	TGON	Motor rotation speed detection. This output turns ON when the motor rotation speed reaches the speed set in a parameter.	
38		TGONCOM		
39	Position	INP	Positioning complete output: turns ON when position error is equal to setting parameter.	
38		INPCOM		
-	-	INP2	Position complete output 2	The function of output signals allocated to pins 11,10, 34 to 39 can be changed with these options by parameters settings.
		P-CMD	Position command status	
		ZSP	Zero speed	
		WARN1	Warning 1	
		WARN2	Warning 2	
		ALM-ATB	Alarm output	
		VCMP	Speed conformity output	
		V-CMD	speed command status	
		V-LIMIT	Speed limit detection	
		T-LIMIT	Torque limit detection	
12	Common	OUTM1	General-purpose Output 1	Use the parameter settings to assign the desired function
40		OUTM2	General-purpose Output2	
41		COM	General-purpose common	Output ground common

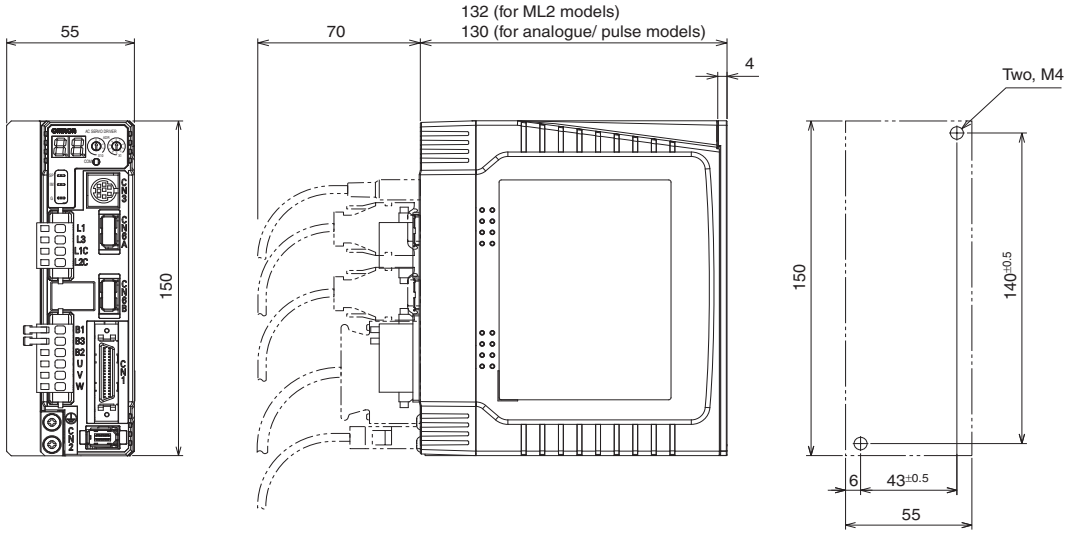
Dimensions

Servo drives

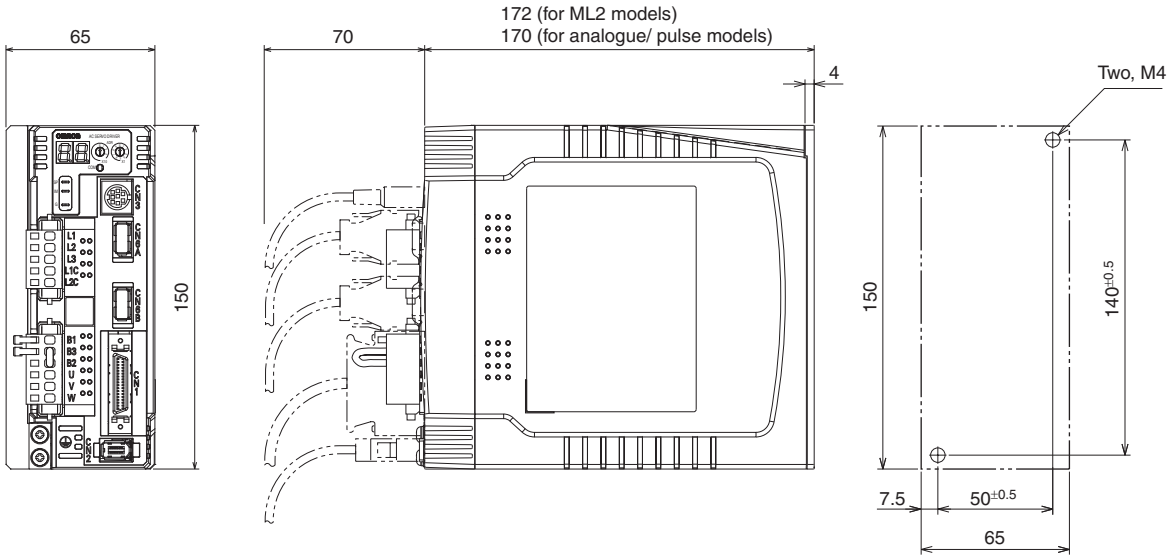
R88D-GN01/02H-ML2, R88D-GT01/02H (200 V, 100 to 200 W)



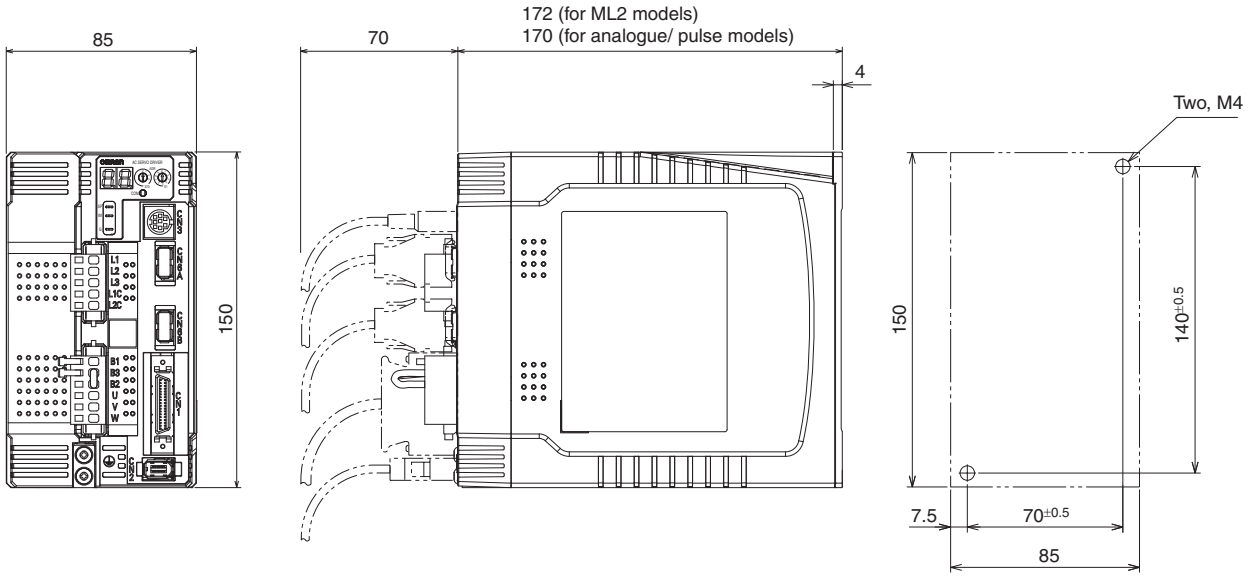
R88D-GN04H-ML2, R88D-GT04H (200 V, 400 W)



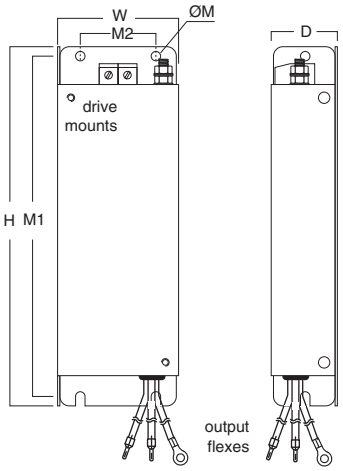
R88D-GN08H-ML2, R88D-GT08H (200 V, 750 W)



R88D-GN10/15H-ML2, R88D-GT10/15H (200 V, 1 kW to 1,5 kW)



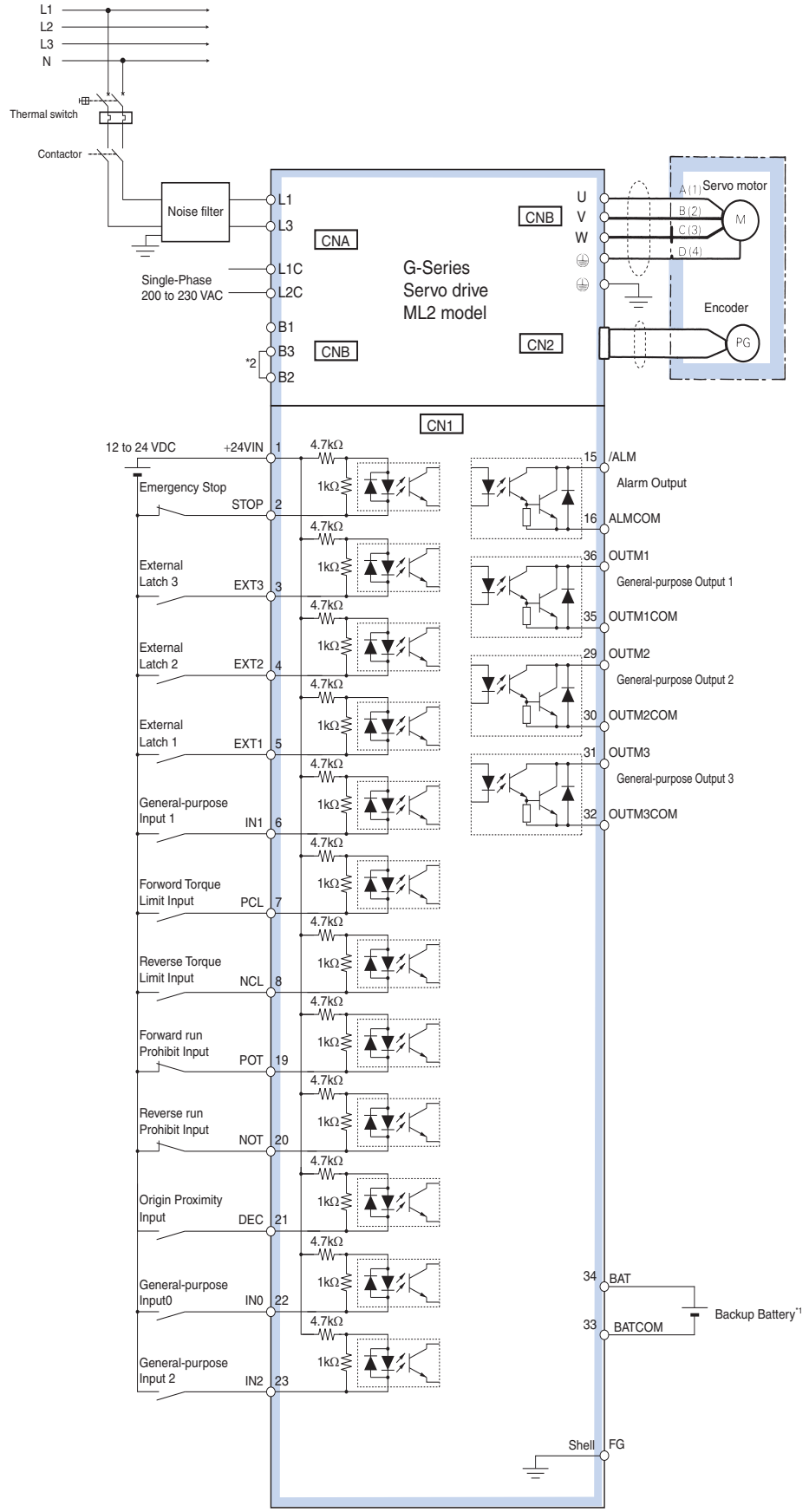
Filters



Filter model	Rated current	Leakage current	External dimensions			Mount dimensions		FIlter Fixing	Rated voltage
			H	W	D	M1	M2		
R88A-FIK102-RE	2.4 A	3.5 mA	190	42	44	180	20	M4	250 VAC single-phase
R88A-FIK104-RE	4.1 A	3.5 mA	190	57	30	180	30	M4	
R88A-FIK107-RE	6.6 A	3.5 mA	190	64	35	180	40	M4	
R88A-FIK114-RE	14.2 A	3.5 mA	190	86	35	180	60	M4	

Installation

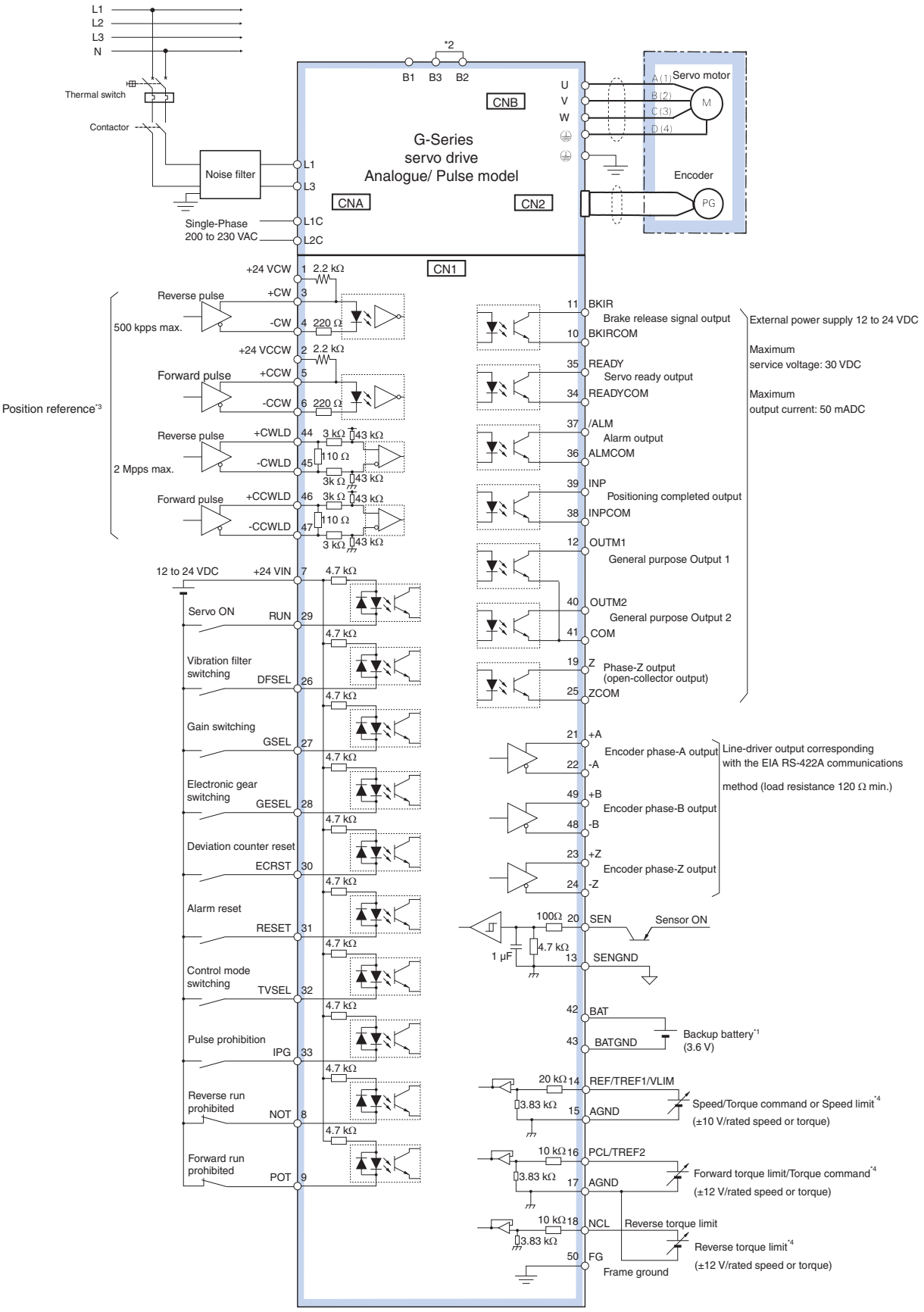
Single-phase, 230 VAC



*1 For use only with an absolute encoder. If a backup battery is connected to CN1 I/O connector, an encoder cable with a battery is not required.

*2 For servo drives from 750 W, B2 and B3 are short-circuited. If the internal regenerative resistor is insufficient, remove the wire between B2 and B3 and connect an external resistor between B1 and B2.

Single-phase, 230 VAC



*1 For use only with an absolute encoder. If a backup battery is connected to CN1 I/O connector, an encoder cable with a battery is not required.

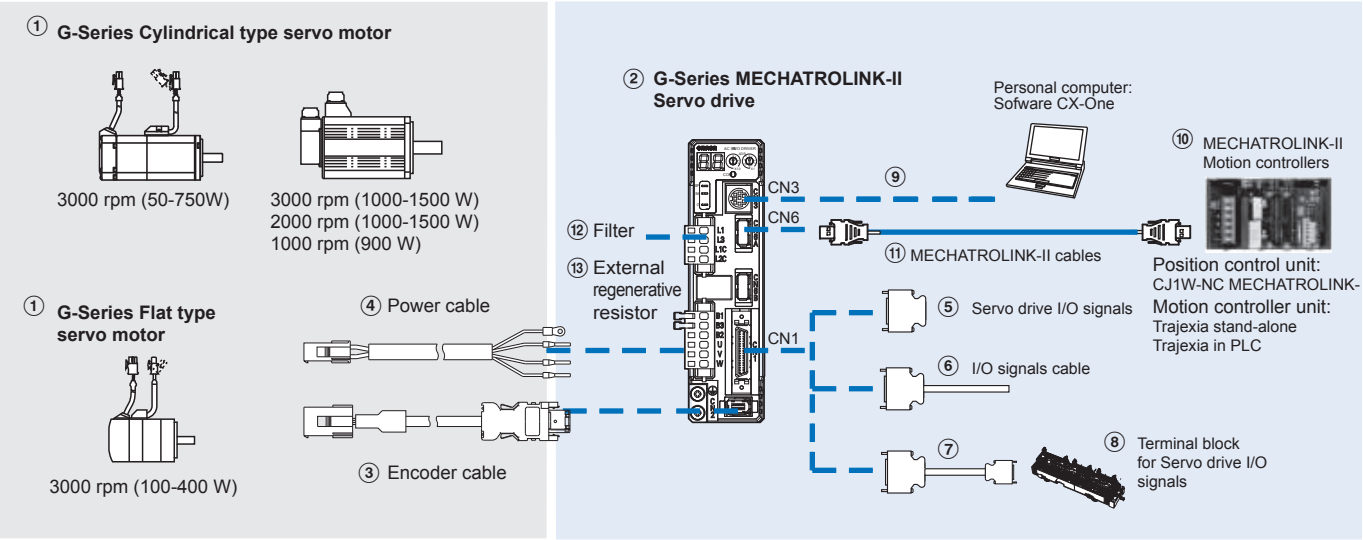
*2 For servo drives from 750 W, B2 and B3 are short-circuited. If the internal regenerative resistor is insufficient, remove the wire between B2 and B3 and connect an external resistor between B1 and B2.

*3 Only available in Position control mode.

*4 The input function depends on control mode used (Position, speed or torque control).

Ordering information

G-Series MECHATROLINK-II model reference configuration



Note: The symbols ①②③④⑤... show the recommended sequence to select the components in a G-Series servo system

Servo motors, power & encoder cables

Note: ①③④ Refer to the G-Series servo motor chapter for servomotor, motor cables or connectors selection

Servo drives

	Specifications		Servo drive model	① Compatible rotary servo motors	
				Cylindric type	Flat type
②	1 phase 200 VAC	100 W	R88D-GN01H-ML2	R88M-G05030□	R88M-GP10030□
				R88M-G10030□	
		200 W	R88D-GN02H-ML2	R88M-G20030□	R88M-GP20030□
		400 W	R88D-GN04H-ML2	R88M-G40030□	R88M-GP40030□
		750 W	R88D-GN08H-ML2	R88M-G75030□	-
		1.0 kW	R88D-GN10H-ML2	R88M-G1K020T□	-
		1.5 kW	R88D-GN15H-ML2	R88M-G90010T□	-
				R88M-G1K030T□	-
				R88M-G1K520T□	-
				R88M-G1K530T□	-

Control cables (for CN1)

Symbol	Name	Connect to		Model
⑤	I/O connector kit	Servo drive I/O signals	-	R88A-CNU01C
⑥	General purpose cable		1 m	R88A-CPGB001S-E
			2 m	R88A-CPGB002S-E
⑦	Terminal block cable		1 m	XW2Z-100J-B33
			2 m	XW2Z-200J-B33
⑧	Terminal block		-	XW2B-20G4
				XW2B-20G5
				XW2D-20G6

Computer cable (for CN3)

Symbol	Name		Model
⑨	Computer cable RS232	2 m	R88A-CCG002P2

MECHATROLINK-II Motion controllers

Symbol	Name	Model
⑩	Trajexia stand-alone motion controller	TJ2-MC64 (64 axes)
		TJ1-MC16 (16 axes)
		TJ1-MC04 (4 axes)
	Trajexia-PLC motion controller	CJ1W-MCH72 (30 axes)
		CJ1W-MC472 (4 axes)
	Position Controller Unit for CJ1 PLC	CJ1W-NCF71 (16 axes)
		CJ1W-NC471 (4 axes)
		CJ1W-NC271 (2 axes)
	Position Controller Unit for CS1 PLC	CS1W-NCF71 (16 axes)
		CS1W-NC471 (4 axes)
		CS1W-NC271 (2 axes)

MECHATROLINK-II cables (for CN6)

Symbol	Specifications	Length	Model
⑪	MECHATROLINK-II Terminator resistor	-	JEPMC-W6022-E
	MECHATROLINK-II cables	0.5 m	JEPMC-W6003-A5-E
		1 m	JEPMC-W6003-01-E
		3 m	JEPMC-W6003-03-E
		5 m	JEPMC-W6003-05-E
		10 m	JEPMC-W6003-10-E
		20 m	JEPMC-W6003-20-E
		30 m	JEPMC-W6003-30-E

Filters

Symbol	Applicable servodrive	Filter model	Rated current	Leakage current	Rated voltage
⑫	R88D-GN01H□ R88D-GN02H□	R88A-FIK102-RE	2.4 A	3.5 mA	250 VAC single-phase
	R88D-GN04H□	R88A-FIK104-RE	4.1 A	3.5 mA	
	R88D-GN08H□	R88A-FIK107-RE	6.6 A	3.5 mA	
	R88D-GN10H□ R88D-GN15H□	R88A-FIK114-RE	14.2 A	3.5 mA	

External regenerative resistor

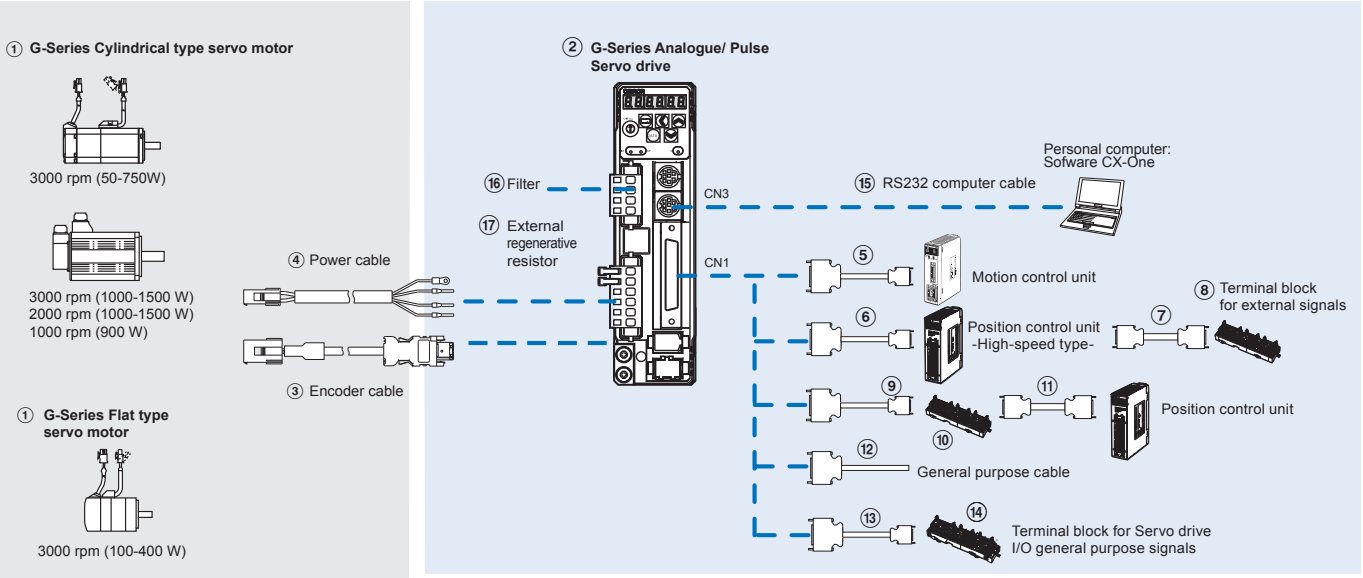
Symbol	Regenerative resistor unit model	Specifications
⑬	R88A-RR08050S	50 Ω, 80 W
	R88A-RR080100S	100 Ω, 80 W
	R88A-RR22047S	47 Ω, 220 W
	R88A-RR50020S	20 Ω, 500 W

Computer software

Specifications	Model
Configuration and monitoring software tool for servo drives and inverters. (CX-drive version 1.70 or higher)	CX-drive
Complete OMRON software package including CX-drive. (CX-One version 3.10 or higher)	CX-One

Ordering information

G-Series Analog/pulse model reference configuration



Note: The symbols ①②③④⑤... show the recommended sequence to select the components in a G-Series servo system

Servo motors, power & encoder cables

Note: ①③④ Refer to the G-Series servo motor chapter for servomotor, motor cables or connectors selection

Servo drives

	Specifications		Servo drive model	① Compatible rotary servo motors	
				Cylindric type	Flat type
②	1 phase 200 VAC	100 W	R88D-GT01H	R88M-G05030□	R88M-GP10030□
				R88M-G10030□	
		200 W	R88D-GT02H	R88M-G20030□	R88M-GP20030□
		400 W	R88D-GT04H	R88M-G40030□	R88M-GP40030□
		750 W	R88D-GT08H	R88M-G75030□	-
		1.0 kW	R88D-GT10H	R88M-G1K020T□	-
		1.5 kW	R88D-GT15H	R88M-G90010T□	-
				R88M-G1K030T□	-
				R88M-G1K520T□	-
				R88M-G1K530T□	-

Control cables (for CN1)

Symbol	Description	Connect to		Model
⑤	Control cable (1 axis)	Motion control units CS1W-MC221 CS1W-MC421	1 m	R88A-CPG001M1
			2 m	R88A-CPG002M1
			3 m	R88A-CPG003M1
			5 m	R88A-CPG005M1
	Control cable (2 axis)	Motion control units CS1W-MC221 CS1W-MC421	1 m	R88A-CPG001M2
			2 m	R88A-CPG002M2
			3 m	R88A-CPG003M2
			5 m	R88A-CPG005M2
⑥	Control cable (line-driver output for 1 axis)	Position control units (high-speed type) CJ1W-NC234 CJ1W-NC434	1 m	XW2Z-100J-G9
			5 m	XW2Z-500J-G9
			10 m	XW2Z-10MJ-G9
	Control cable (open-collector output for 1 axis)	Position control units (high-speed type) CJ1W-NC214 CJ1W-NC414	1 m	XW2Z-100J-G13
			3 m	XW2Z-300J-G13
	Control cable (line-driver output for 2 axis)	Position control units (high-speed type) CJ1W-NC234 CJ1W-NC434	1 m	XW2Z-100J-G1
			5 m	XW2Z-500J-G1
			10 m	XW2Z-10MJ-G1
	Control cable (open-collector output for 2 axis)	Position control units (high-speed type) CJ1W-NC214 CJ1W-NC414	1 m	XW2Z-100J-G5
			3 m	XW2Z-300J-G5

Symbol	Description	Connect to		Model
⑦	Terminal block cable for external signals (for input common, forward/reverse run prohibited inputs, emergency stop input, origin proximity input and interrupt input)	Position control units (high-speed type) CJ1W-NC234 CJ1W-NC434 CJ1W-NC214 CJ1W-NC414	0.5 m	XW2Z-C50X
			1 m	XW2Z-100X
			2 m	XW2Z-200X
			3 m	XW2Z-300X
			5 m	XW2Z-500X
			10 m	XW2Z-010X
⑧	Terminal block for external signals (M3 screw, pin terminals)		-	XW2B-20G4
	Terminal block for ext. signals (M3.5 screw, fork/round terminals)		-	XW2B-20G5
	Terminal block for ext. signals (M3 screw, fork/round terminals)		-	XW2D-20G6
⑨	Cable from servo relay unit to servo drive	CS1W-NC1□3, CJ1W-NC1□3, C200HW-NC113, CS1W-NC2□3/4□3, CJ1W-NC2□3/4□3, C200HW-NC213/413, CQM1H-PLB21 or CQM1-CPU43	1 m	XW2Z-100J-B25
			2 m	XW2Z-200J-B25
		CJ1M-CPU21/22/23	1 m	XW2Z-100J-B31
			2 m	XW2Z-200J-B31
⑩	Servo relay unit	Position control units CS1W-NC1□3, CJ1W-NC1□3 or C200HW-NC113	-	XW2B-20J6-1B (1 axis)
		Position control units CS1W-NC2□3/4□3, CJ1W-NC2□3/4□3 or C200HW-NC213/413	-	XW2B-40J6-2B (2 axes)
		CQM1H-PLB21 or CQM1-CPU43	-	XW2B-20J6-3B (1 axis)
		CJ1M-CPU21/22/23	-	XW2B-20J6-8A (1 axis) XW2B-40J6-9A (2 axes)
⑪	Position control unit connecting cable	CQM1H-PLB21 or CQM1-CPU43	0.5 m	XW2Z-050J-A3
			1 m	XW2Z-100J-A3
		CS1W-NC113 or C200HW-NC113	0.5 m	XW2Z-050J-A6
			1 m	XW2Z-100J-A6
		CS1W-NC213/413 or C200HW-NC213/413	0.5 m	XW2Z-050J-A7
			1 m	XW2Z-100J-A7
		CS1W-NC133	0.5 m	XW2Z-050J-A10
			1 m	XW2Z-100J-A10
		CS1W-NC233/433	0.5 m	XW2Z-050J-A11
			1 m	XW2Z-100J-A11
		CJ1W-NC113	0.5 m	XW2Z-050J-A14
			1 m	XW2Z-100J-A14
		CJ1W-NC213/413	0.5 m	XW2Z-050J-A15
			1 m	XW2Z-100J-A15
		CJ1W-NC133	0.5 m	XW2Z-050J-A18
			1 m	XW2Z-100J-A18
		CJ1W-NC233/433	0.5 m	XW2Z-050J-A19
			1 m	XW2Z-100J-A19
		CJ1M-CPU21/22/23	0.5 m	XW2Z-050J-A33
			1 m	XW2Z-100J-A33
⑫	General purpose cable	For general purpose controllers	1 m	R88A-CPG001S
			2 m	R88A-CPG002S
⑬	Terminal block cable	For general purpose controllers	1 m	XW2Z-100J-B24
			2 m	XW2Z-200J-B24
⑭	Terminal block (M3 screw and for pin terminals)		-	XW2B-50G4
	Terminal block (M3.5 screw and for fork/round terminals)		-	XW2B-50G5
	Terminal block (M3 screw and for fork/round terminals)		-	XW2D-50G6

Computer cable (for CN3)

Symbol	Name		Model
⑮	Computer cable RS232	2 m	R88A-CCG002P2

Connectors

Specifications	Model
I/O connector kit, 50 pins (for CN1)	R88A-CNU11C

Filters

Symbol	Applicable servodrive	Filter model	Rated current	Leakage current	Rated voltage
⑯	R88D-GT01H R88D-GT02H	R88A-FIK102-RE	2.4 A	3.5 mA	250 VAC single-phase
	R88D-GT04H	R88A-FIK104-RE	4.1 A	3.5 mA	
	R88D-GT08H	R88A-FIK107-RE	6.6 A	3.5 mA	
	R88D-GT10H R88D-GT15H	R88A-FIK114-RE	14.2 A	3.5 mA	

Computer software

Specifications	Model
Configuration and monitoring software tool for servo drives and inverters. (CX-drive version 1.70 or higher)	CX-drive
Complete OMRON software package including CX-drive. (CX-One version 3.10 or higher)	CX-One

External regenerative resistor

Symbol	Regenerative resistor unit model	Specifications
⑰	R88A-RR08050S	50 Ω, 80 W
	R88A-RR080100S	100 Ω, 80 W
	R88A-RR22047S	47 Ω, 220 W
	R88A-RR50020S	20 Ω, 500 W

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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