

R88D-KN□□□-ECT, R88D-KN□□□-ML2, R88D-KT□

# Accurax G5 rotary drive

Accurate motion control in a compact size servo drive family. EtherCAT and safety built-in.

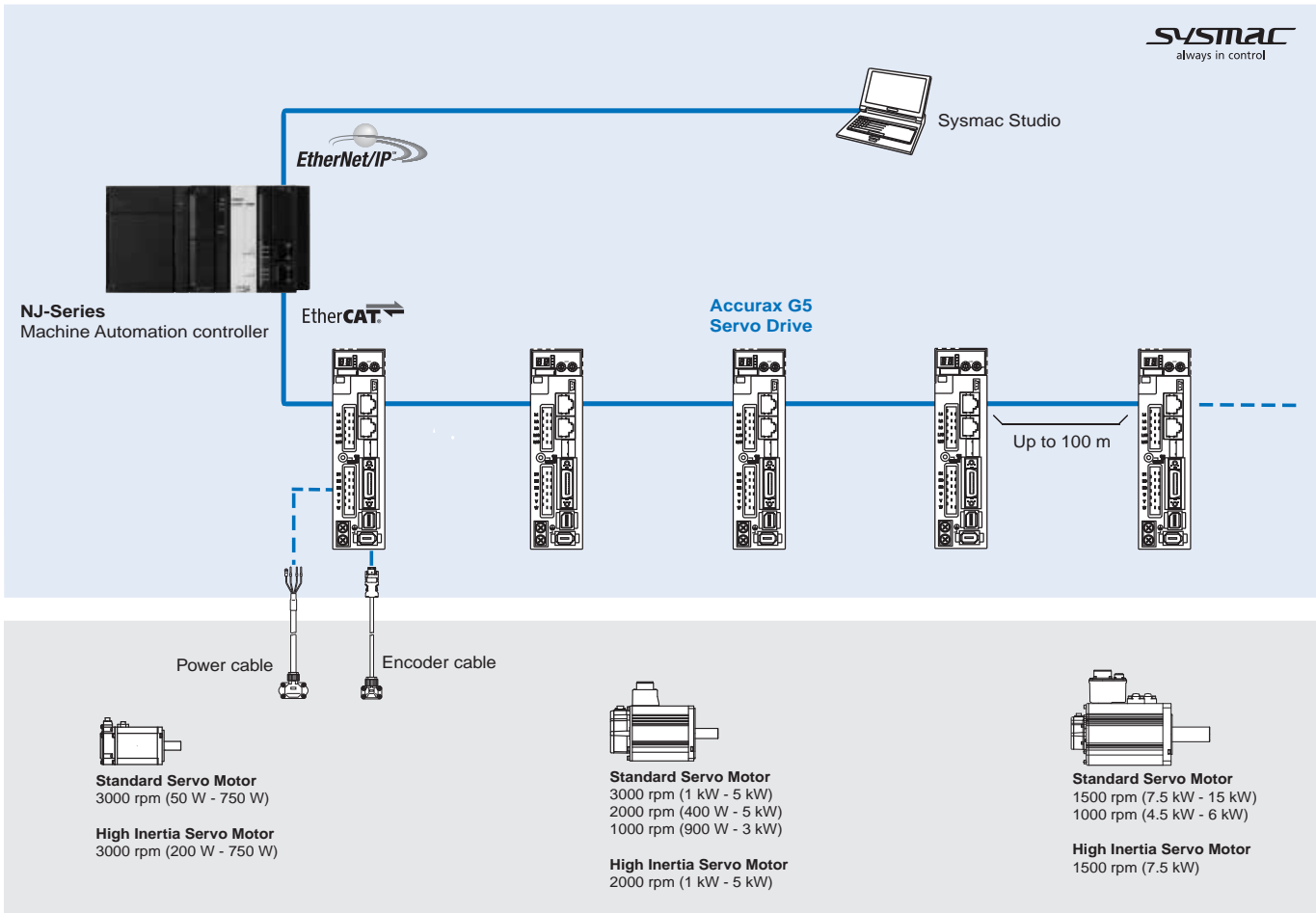
- EtherCAT, ML-II and Analog/pulse servo drive models
- Safety conforming ISO13849-1 PL-d
- High-response frequency of 2 kHz
- High resolution provided by 20 bits encoder
- Drive Programming: embedded indexer functionality in the Analogue/pulse models
- External encoder input for full closed loop
- Real time auto-tuning
- Advanced tuning algorithms (Anti-vibration function, torque feedforward, disturbance observer)



### Ratings





- 230 VAC single-phase 100 W to 1.5 kW (8.59 Nm)
- 400 VAC three-phase 600 W to 15 kW (95.5 Nm)

## System configuration






Servo motor supported

Standard servo motors

Accurax G5 rotary servo motor						Accurax G5 servo drive models			
	Voltage	Speed	Rated torque	Capacity	Model	EtherCAT	Analog/pulse	MECHATROLINK-II	
	230 V	3000 min <sup>-1</sup>	0.16 Nm	50 W	R88M-K05030(H/T)-□	R88D-KN01H-ECT	R88D-KT01H	R88D-KN01H-ML2	
			0.32 Nm	100 W	R88M-K10030(H/T)-□	R88D-KN01H-ECT	R88D-KT01H	R88D-KN01H-ML2	
			0.64 Nm	200 W	R88M-K20030(H/T)-□	R88D-KN02H-ECT	R88D-KT02H	R88D-KN02H-ML2	
			1.3 Nm	400 W	R88M-K40030(H/T)-□	R88D-KN04H-ECT	R88D-KT04H	R88D-KN04H-ML2	
			2.4 Nm	750 W	R88M-K75030(H/T)-□	R88D-KN08H-ECT	R88D-KT08H	R88D-KN08H-ML2	
			3.18 Nm	1000 W	R88M-K1K030(H/T)-□	R88D-KN15H-ECT	R88D-KT15H	R88D-KN15H-ML2	
	 230V (1 kW - 1.5 kW) 400V (400 W - 5 kW)	400 V	3000 min <sup>-1</sup>	4.77 Nm	1500 W	R88M-K1K530(H/T)-□	R88D-KN15H-ECT	R88D-KT15H	R88D-KN15H-ML2
				2.39 Nm	750 W	R88M-K75030(F/C)-□	R88D-KN10F-ECT	R88D-KT10F	R88D-KN10F-ML2
				3.18 Nm	1000 W	R88M-K1K030(F/C)-□	R88D-KN15F-ECT	R88D-KT15F	R88D-KN15F-ML2
				4.77 Nm	1500 W	R88M-K1K530(F/C)-□	R88D-KN15F-ECT	R88D-KT15F	R88D-KN15F-ML2
				6.37 Nm	2000 W	R88M-K2K030(F/C)-□	R88D-KN20F-ECT	R88D-KT20F	R88D-KN20F-ML2
				9.55 Nm	3000 W	R88M-K3K030(F/C)-□	R88D-KN30F-ECT	R88D-KT30F	R88D-KN30F-ML2
 7.5 kW - 15 kW		230 V	2000 min <sup>-1</sup>	12.7 Nm	4000 W	R88M-K4K030(F/C)-□	R88D-KN50F-ECT	R88D-KT50F	R88D-KN50F-ML2
				15.9 Nm	5000 W	R88M-K5K030(F/C)-□	R88D-KN50F-ECT	R88D-KT50F	R88D-KN50F-ML2
				4.77 Nm	1000 W	R88M-K1K020(H/T)-□	R88D-KN10H-ECT	R88D-KT10H	R88D-KN10H-ML2
				7.16 Nm	1500 W	R88M-K1K520(H/T)-□	R88D-KN15H-ECT	R88D-KT15H	R88D-KN15H-ML2
				1.91 Nm	400 W	R88M-K40020(F/C)-□	R88D-KN06F-ECT	R88D-KT06F	R88D-KN06F-ML2
				2.86 Nm	600 W	R88M-K60020(F/C)-□	R88D-KN06F-ECT	R88D-KT06F	R88D-KN06F-ML2
	400 V	2000 min <sup>-1</sup>	4.77 Nm	1000 W	R88M-K1K020(F/C)-□	R88D-KN10F-ECT	R88D-KT10F	R88D-KN10F-ML2	
			7.16 Nm	1500 W	R88M-K1K520(F/C)-□	R88D-KN15F-ECT	R88D-KT15F	R88D-KN15F-ML2	
			9.55 Nm	2000 W	R88M-K2K020(F/C)-□	R88D-KN20F-ECT	R88D-KT20F	R88D-KN20F-ML2	
			14.3 Nm	3000 W	R88M-K3K020(F/C)-□	R88D-KN30F-ECT	R88D-KT30F	R88D-KN30F-ML2	
			19.1 Nm	4000 W	R88M-K4K020(F/C)-□	R88D-KN50F-ECT	R88D-KT50F	R88D-KN50F-ML2	
			23.9 Nm	5000 W	R88M-K5K020(F/C)-□	R88D-KN50F-ECT	R88D-KT50F	R88D-KN50F-ML2	
230 V	1500 min <sup>-1</sup>	2000 min <sup>-1</sup>	47.8 Nm	7500 W	R88M-K7K515C-□	R88D-KN75F-ECT	R88D-KT75F	-	
			70.0 Nm	11000 W	R88M-K11K015C-□	R88D-KN150F-ECT	R88D-KT150F	-	
			95.5 Nm	15000 W	R88M-K15K015C-□	R88D-KN150F-ECT	R88D-KT150F	-	
			8.59 Nm	900 W	R88M-K90010(H/T)-□	R88D-KN15H-ECT	R88D-KT15H	R88D-KN15H-ML2	
			8.59 Nm	900 W	R88M-K90010(F/C)-□	R88D-KN15F-ECT	R88D-KT15F	R88D-KN15F-ML2	
			19.1 Nm	2000 W	R88M-K2K010(F/C)-□	R88D-KN30F-ECT	R88D-KT30F	R88D-KN30F-ML2	
 7.5 kW - 15 kW	400 V	1500 min <sup>-1</sup>	28.7 Nm	3000 W	R88M-K3K010(F/C)-□	R88D-KN50F-ECT	R88D-KT50F	R88D-KN50F-ML2	
			43.0 Nm	4500 W	R88M-K4K510C-□	R88D-KN50F-ECT	R88D-KT50F	R88D-KN50F-ML2	
			57.3 Nm	6000 W	R88M-K6K010C-□	R88D-KN75F-ECT	R88D-KT75F	-	

High inertia servo motors

Accurax G5 rotary servo motor						Accurax G5 servo drive models		
	Voltage	Speed	Rated torque	Capacity	Model	EtherCAT	Analog/pulse	MECHATROLINK-II
 200 W - 750 W	230 V	3000 min <sup>-1</sup>	0.64 Nm	200 W	R88M-KH20030(H/T)-□	R88D-KN02H-ECT	R88D-KT02H	R88D-KN02H-ML2
			1.3 Nm	400 W	R88M-KH40030(H/T)-□	R88D-KN04H-ECT	R88D-KT04H	R88D-KN04H-ML2
			2.4 Nm	750 W	R88M-KH75030(H/T)-□	R88D-KN08H-ECT	R88D-KT08H	R88D-KN08H-ML2
 1 kW - 5 kW	400 V	2000 min <sup>-1</sup>	4.77 Nm	1000 W	R88M-KH1K020(F/C)-□	R88D-KN10F-ECT	R88D-KT10F	R88D-KN10F-ML2
			7.16 Nm	1500 W	R88M-KH1K520(F/C)-□	R88D-KN15F-ECT	R88D-KT15F	R88D-KN15F-ML2
			9.55 Nm	2000 W	R88M-KH2K020(F/C)-□	R88D-KN20F-ECT	R88D-KT20F	R88D-KN20F-ML2
			14.3 Nm	3000 W	R88M-KH3K020(F/C)-□	R88D-KN30F-ECT	R88D-KT30F	R88D-KN30F-ML2
			19.1 Nm	4000 W	R88M-KH4K020(F/C)-□	R88D-KN50F-ECT	R88D-KT50F	R88D-KN50F-ML2
			23.9 Nm	5000 W	R88M-KH5K020(F/C)-□	R88D-KN50F-ECT	R88D-KT50F	R88D-KN50F-ML2
 7.5 kW	400 V	1500 min <sup>-1</sup>	47.8 Nm	7500 W	R88M-KH7K515C-□	R88D-KN75F-ECT	R88D-KT75F	-

Type designation

Servo drive

R88D-KN01H-ECT

Accurax G5 Series servo drive

Drive Type

T: Analog/pulse type  
N: Network type

Model

Blank: Analog/pulse type  
ECT: EtherCAT comms  
ML2: MECHATROLINK-II comms

Capacity and Voltage

Voltage	Code	Output
230 V	01H	100 W
	02H	200 W
	04H	400 W
	08H	750 W
	10H	1 kW
	15H	1.5 kW
400 V	06F	600 W
	10F	1.0 kW
	15F	1.5 kW
	20F	2.0 kW
	30F	3.0 kW
	50F	5.0 kW
	75F	7.5 kW
	150F	15.0 kW

Servo drive specifications

Single-phase, 230 V

Servo drive type		R88D-K□	01H□	02H□	04H□	08H□	10H□	15H□
Applicable servo motor	R88M-K□	05030(H/T)-□	20030(H/T)-□	40030(H/T)-□	75030(H/T)-□	1K020(H/T)-□	1K030(H/T)-□	
		10030(H/T)-□	–	–	–	–	1K530(H/T)-□	
		–	–	–	–	–	1K520(H/T)-□	
		–	–	–	–	–	90010(H/T)-□	
Max. applicable motor capacity W		100	200	400	750	1000	1500	
Continuous output current Arms		1.2	1.6	2.6	4.1	5.9	9.4	
Input power	Main circuit	Single-phase/3-phase, 200 to 240 VAC +10 to –15% (50/60 Hz)						
	Control circuit	Single-phase, 200 to 240 VAC +10 to –15% (50/60 Hz)						
Control method		IGBT-driven PWM method, sinusoidal drive						
Feedback		Serial encoder (incremental/absolute value)						
Conditions	Usage/storage temperature		0 to +55°C/–20 to 65°C					
	Usage/storage humidity		90% RH or less (non-condensing)					
	Altitude		1000m or less above sea level					
	Vibration/shock resistance (max.)		5.88 m/s <sup>2</sup> 10 to 60 Hz (Continuous operation at resonance point is not allowed) / 19.6 m/s <sup>2</sup>					
Configuration		Base mounted						
Approx. weight kg		0.8	1.1	1.6	1.8			

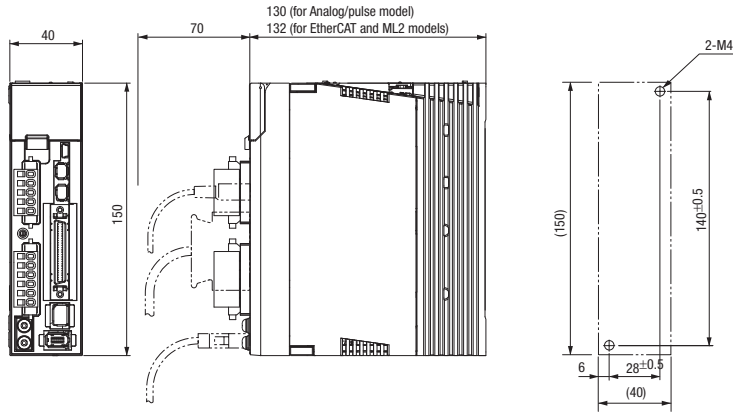
Three-phase, 400 V

Servo drive type		R88D-K□	06F□	10F□	15F□	20F□	30F□	50F□	75F□	150F□	
Applicable servo motor	R88M-K□	40020(F/C)-□	75030(F/C)-□	1K030(F/C)-□	2K030(F/C)-□	3K030(F/C)-□	4K030(F/C)-□	6K010C-□	11K015C-□		
		60020(F/C)-□	1K020(F/C)-□	1K530(F/C)-□	2K020(F/C)-□	3K020(F/C)-□	5K030(F/C)-□	7K515C-□	15K015C-□		
		–	–	1K520(F/C)-□	–	2K010(F/C)-□	4K020(F/C)-□	–	–		
		–	–	90010(F/C)-□	–	–	5K020(F/C)-□	–	–		
		–	–	–	–	–	4K510C-□	–	–		
		–	–	–	–	–	3K010(F/C)-□	–	–		
Max. applicable motor capacity kW		0.6	1.0	1.5	2.0	3.0	5.0	7.5	15.0		
Continuous output current Arms		1.5	2.9	4.7	6.7	9.4	16.5	22.0	33.4		
Input power	Main circuit	3-phase, 380 to 480 VAC +10 to –15% (50/60Hz)									
	Control circuit	24 VDC ±15%									
Control method		IGBT-driven PWM method, sinusoidal drive									
Feedback		Serial encoder							Incremental or absolute encoder		Absolute encoder
Conditions	Usage/storage temperature		0 to 55°C/–20 to 65°C								
	Usage/storage humidity		90% RH or less (non-condensing)								
	Altitude		1000 m or less above sea level								
	Vibration/shock resistance		5.88 m/s <sup>2</sup> 10 to 60 Hz (Continuous operation at resonance point is not allowed)/19.6 m/s <sup>2</sup>								
Configuration		Base mounted									
Approx. weight kg		1.9	2.7	4.7	13.5	21.0					

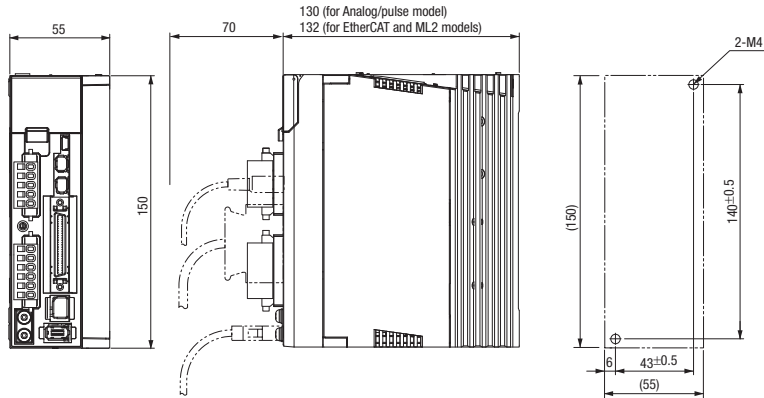
Dimensions

Servo drives

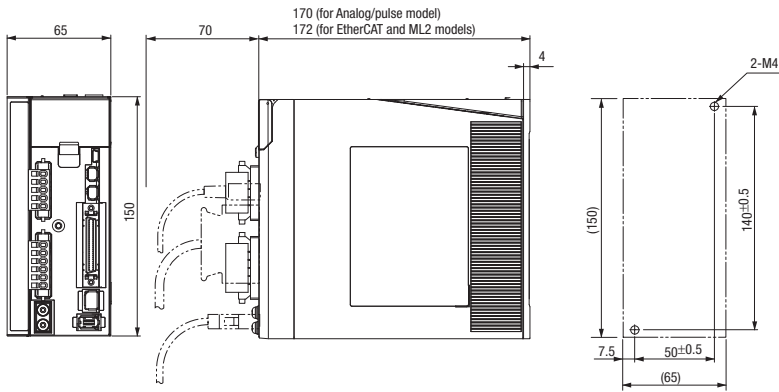
R88D-KT01/02H, R88D-KN01/02H-□ (230 V, 100 to 200 W)



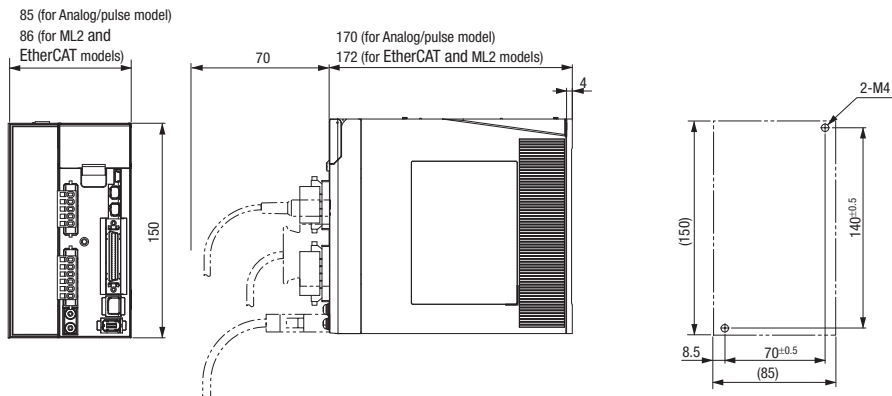
R88D-KT04H, R88D-KN04H-□ (230 V, 400 W)



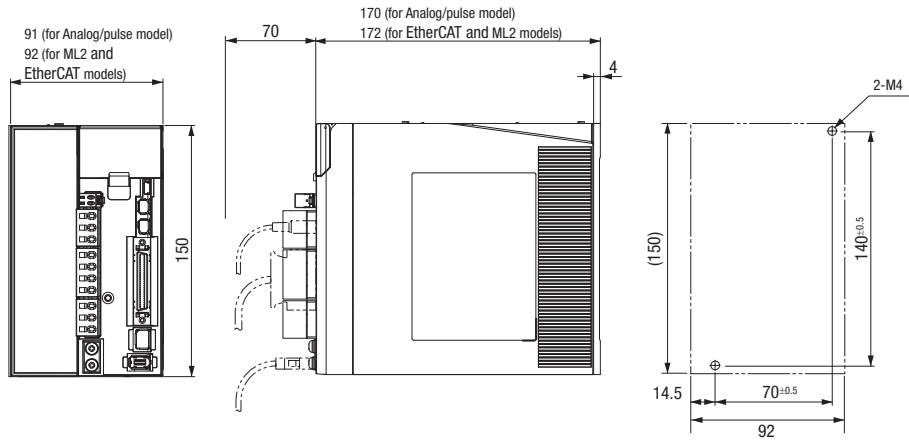
R88D-KT08H, R88D-KN08H-□ (230 V, 750 W)



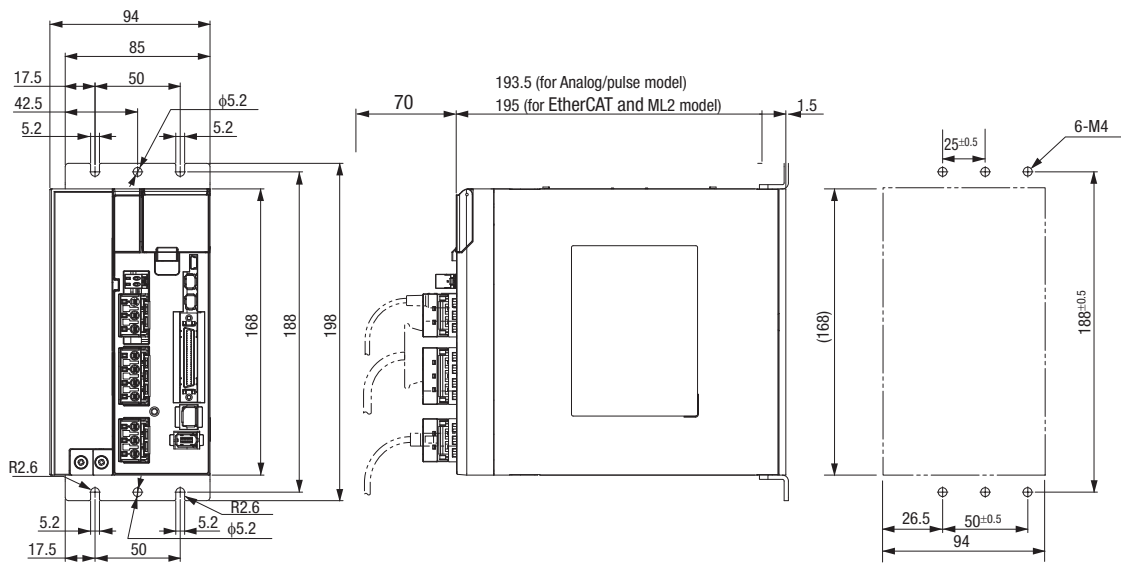
R88D-KT10/15H, R88D-KN10/15H-□ (230 V, 1 to 1.5 kW)



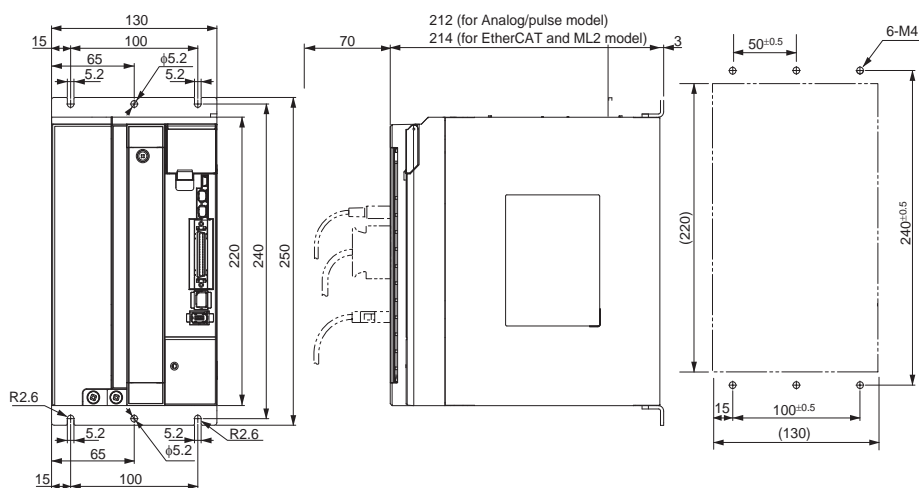
R88D-KT06/10/15F, R88D-KN06/10/15F-□ (400 V, 600 W to 1.5 kW)



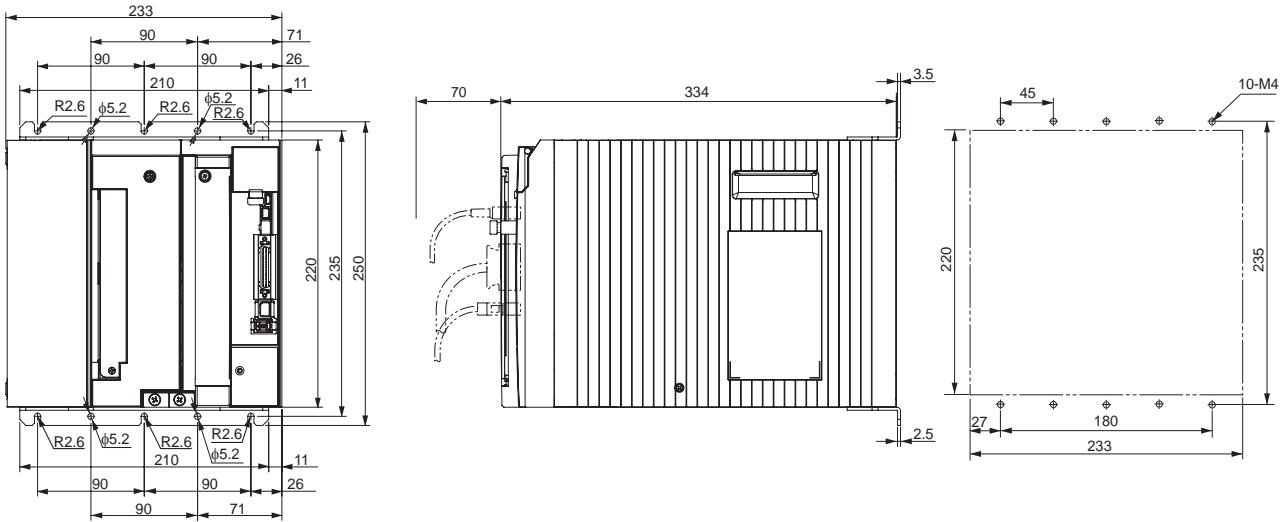
R88D-KT20F, R88D-KN20F-□ (400 V, 2 kW)



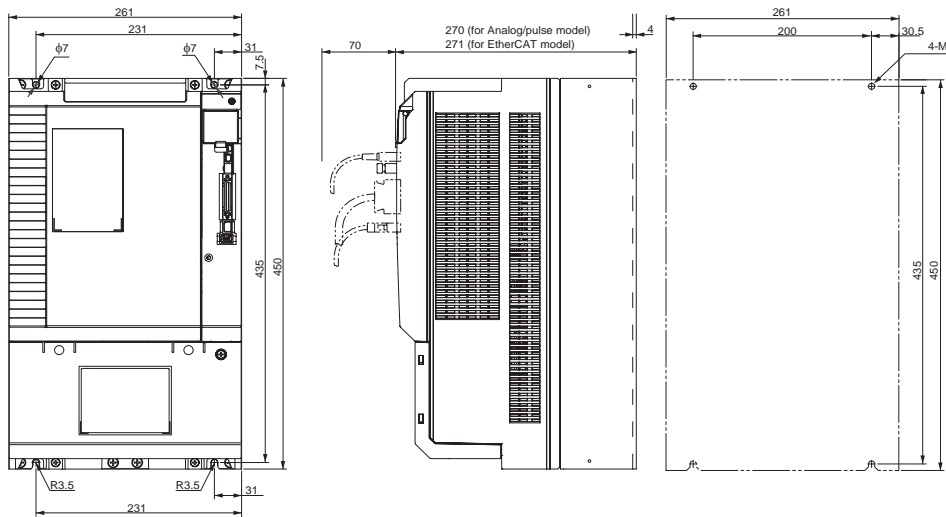
R88D-KT30/50F, R88D-KN30/50F-□ (400 V, 3 to 5 kW)



R88D-KT75F, R88D-KN75H-ECT (400 V, 7.5 kW)

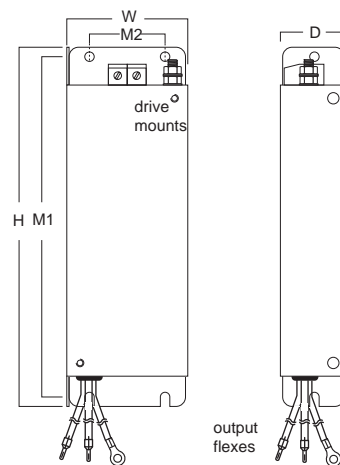


R88D-KT150F, R88D-KN150H-ECT (400 V, 15 kW)



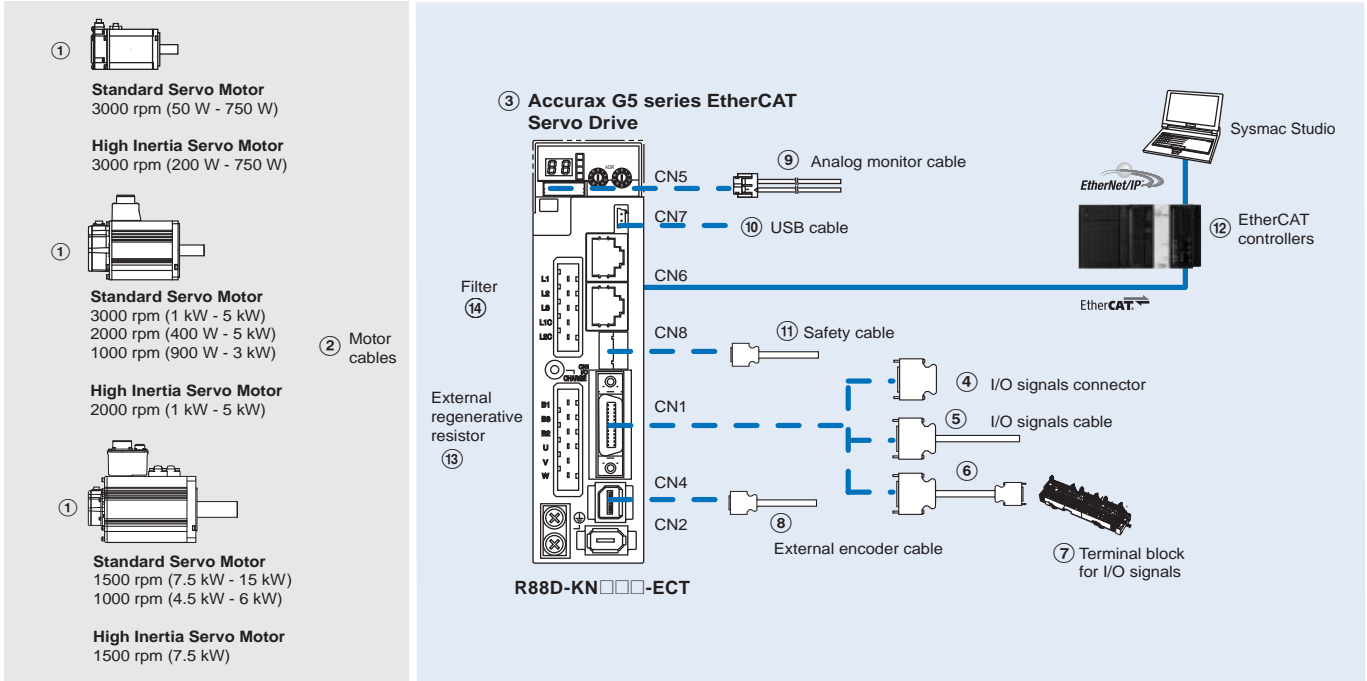
Filters

Filter model	External dimensions			Mount dimensions	
	H	W	D	M1	M2
R88A-FIK102-RE	190	42	44	180	20
R88A-FIK104-RE	190	57	30	180	30
R88A-FIK107-RE	190	64	35	180	40
R88A-FIK114-RE	190	86	35	180	60
R88A-FIK304-RE	196	92	40	186	70
R88A-FIK306-RE	238	94	40	228	70
R88A-FIK312-RE	291	130	40	278	100
R88A-FIK330-RE	310	233	50	293	180
R88A-FIK350-RE	506	261	52	491	200



Ordering information

Accurax G5 series EtherCAT reference configuration



Note: The symbols ①②③④⑤... show the recommended sequence to select the components in Accurax G5 servo system

Servo motors, power & encoder cables

Note: ①② Refer to the Accurax G5 servo motor chapter for servomotor, motor cables or connectors selection

Servo drives

Symbol	Specifications		Servo drive models	① Compatible G5 series rotary servo motors	
				Standard models	High Inertia models
③	1 phase 230 VAC	100 W	R88D-KN01H-ECT	R88M-K05030(H/T)-□	-
		200 W	R88D-KN02H-ECT	R88M-K10030(H/T)-□	-
		400 W	R88D-KN04H-ECT	R88M-K20030(H/T)-□	R88M-KH20030(H/T)-□
		750 W	R88D-KN08H-ECT	R88M-K40030(H/T)-□	R88M-KH40030(H/T)-□
		1.0 kW	R88D-KN10H-ECT	R88M-K75030(H/T)-□	R88M-KH75030(H/T)-□
		1.5 kW	R88D-KN15H-ECT	R88M-K1K020(H/T)-□	-
	3 phase 400 VAC	600 W	R88D-KN06F-ECT	R88M-K1K030(H/T)-□	-
		1.0 kW	R88D-KN10F-ECT	R88M-K1K530(H/T)-□	-
		1.5 kW	R88D-KN15F-ECT	R88M-K1K520(H/T)-□	-
				R88M-K90010(H/T)-□	-
		2.0 kW	R88D-KN20F-ECT	R88M-K40020(F/C)-□	-
				R88M-K60020(F/C)-□	-
		3.0 kW	R88D-KN30F-ECT	R88M-K75030(F/C)-□	-
				R88M-K1K020(F/C)-□	R88M-KH1K020(F/C)-□
		5.0 kW	R88D-KN50F-ECT	R88M-K1K030(F/C)-□	-
				R88M-K1K530(F/C)-□	-
		7.5 kW	R88D-KN75F-ECT	R88M-K1K520(F/C)-□	R88M-KH1K520(F/C)-□
				R88M-K90010(F/C)-□	-
		15 kW	R88D-KN150F-ECT	R88M-K2K030(F/C)-□	-
				R88M-K2K020(F/C)-□	R88M-KH2K020(F/C)-□
			R88M-K3K030(F/C)-□	-	
			R88M-K3K020(F/C)-□	R88M-KH3K020(F/C)-□	
			R88M-K2K010(F/C)-□	-	
			R88M-K4K030(F/C)-□	-	
			R88M-K5K030(F/C)-□	-	
			R88M-K4K020(F/C)-□	R88M-KH4K020(F/C)-□	
			R88M-K5K020(F/C)-□	R88M-KH5K020(F/C)-□	
			R88M-K4K510C-□	-	
			R88M-K3K010(F/C)-□	-	
			R88M-K6K010C-□	-	
			R88M-K7K515C-□	R88M-KH7K515C-□	
			R88M-K11K015C-□	-	
			R88M-K15K015C-□	-	