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OMRON

R88M-1□

# 1S servo motor

## Simplified machine design and maintenance

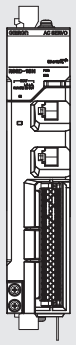
- 23-bit resolution encoder
- Compact and small motor size
- Multi-turn encoder design without mechanics: 16-bit, 65536 turns
- Battery-free absolute multi-turn encoder or incremental encoder
- Pre-assembled motor cables
- Designed for easy EMC compliance

## Ratings

- 230 VAC from 50 W to 1.5 kW (rated torque from 0.159 to 8.59 Nm)
- 400 VAC from 400 W to 15 kW (rated torque from 1.91 to 95.5 Nm)

## System configuration

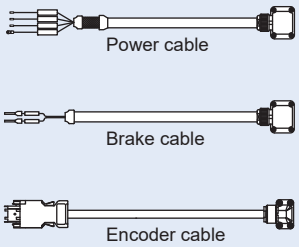
(Refer to servo drive chapter)

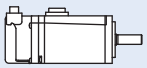


**1S servo drive**

### 1S servo motor (Flange size 80 mm or less)

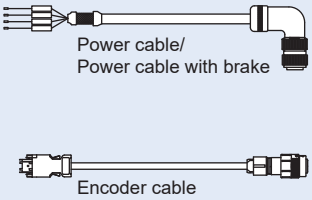
SYSMAC always in control

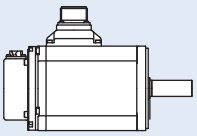


3000 rpm (50 W - 750 W)

### 1S servo motor (Flange size 100 mm or more)



3000 rpm (1 kW - 5 kW)
2000 rpm (400 W - 3 kW)
1500 rpm (4 kW - 15 kW)
1000 rpm (900 W - 3 kW)



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## Servo motor / Servo drive combination

| 1S servo motor | | | | | | 1S servo drive |
|---|---|---|---|---|---|---|
| Appearance | Speed | Voltage | Rated torque | Capacity | Model | |
| | 3000 min$^{-1}$ | 230 V | 0.159 Nm | 50 W | R88M-1M05030T-□ | R88D-1SN01H-ECT |
| | | | 0.318 Nm | 100 W | R88M-1M10030(H/T)-□ | R88D-1SN01H-ECT |
| | | | 0.637 Nm | 200 W | R88M-1M20030(H/T)-□ | R88D-1SN02H-ECT |
| | | | 1.27 Nm | 400 W | R88M-1M40030(H/T)-□ | R88D-1SN04H-ECT |
| | | | 2.39 Nm | 750 W | R88M-1M75030(H/T)-□ | R88D-1SN08H-ECT |
| | | | 3.18 Nm | 1 kW | R88M-1L1K030(H/T)-□ | R88D-1SN15H-ECT |
| | | | 4.77 Nm | 1.5 kW | R88M-1L1K530(H/T)-□ | R88D-1SN15H-ECT |
| | | 400 V | 2.39 Nm | 750 W | R88M-1L75030C-□ | R88D-1SN10F-ECT |
| | | | 3.18 Nm | 1 kW | R88M-1L1K030C-□ | R88D-1SN10F-ECT |
| | | | 4.77 Nm | 1.5 kW | R88M-1L1K530C-□ | R88D-1SN15F-ECT |
| | | | 6.37 Nm | 2 kW | R88M-1L2K030C-□ | R88D-1SN20F-ECT |
| | | | 9.55 Nm | 3 kW | R88M-1L3K030C-□ | R88D-1SN30F-ECT |
| | | | 12.7 Nm | 4 kW | R88M-1L4K030C-□ | R88D-1SN55F-ECT |
| | | | 15.9 Nm | 5 kW | R88M-1L5K030C-□ | R88D-1SN55F-ECT |
| | 2000 min$^{-1}$ | 230 V | 4.77 Nm | 1 kW | R88M-1M1K020(H/T)-□ | R88D-1SN15H-ECT |
| | | | 7.16 Nm | 1.5 kW | R88M-1M1K520(H/T)-□ | R88D-1SN15H-ECT |
| | | 400 V | 1.91 Nm | 400 W | R88M-1M40020C-□ | R88D-1SN06F-ECT |
| | | | 2.86 Nm | 600 W | R88M-1M60020C-□ | R88D-1SN06F-ECT |
| | | | 4.77 Nm | 1 kW | R88M-1M1K020C-□ | R88D-1SN10F-ECT |
| | | | 7.16 Nm | 1.5 kW | R88M-1M1K520C-□ | R88D-1SN15F-ECT |
| | | | 9.55 Nm | 2 kW | R88M-1M2K020C-□ | R88D-1SN20F-ECT |
| | | | 14.3 Nm | 3 kW | R88M-1M3K020C-□ | R88D-1SN30F-ECT |
| | 1500 min$^{-1}$ | 400 V | 25.5 Nm | 4 kW | R88M-1M4K015C-□ | R88D-1SN55F-ECT |
| | | | 35 Nm | 5.5 kW | R88M-1M5K515C-□ | R88D-1SN55F-ECT |
| | | | 47.8 Nm | 7.5 kW | R88M-1M7K515C-□ | R88D-1SN75F-ECT |
| | | | 70 Nm | 11 kW | R88M-1M11K015C-□ | R88D-1SN150F-ECT |
| | | | 95.5 Nm | 15 kW | R88M-1M15K015C-□ | R88D-1SN150F-ECT |
| | 1000 min$^{-1}$ | 230 V | 8.59 Nm | 900 W | R88M-1M90010T-□ | R88D-1SN15H-ECT |
| | | 400 V | 8.59 Nm | 900 W | R88M-1M90010C-□ | R88D-1SN10F-ECT |
| | | | 19.1 Nm | 2 kW | R88M-1M2K010C-□ | R88D-1SN20F-ECT |
| | | | 28.7 Nm | 3 kW | R88M-1M3K010C-□ | R88D-1SN30F-ECT |

**Note:** For servo motor and cable part numbers, refer to ordering information at the end of this chapter.
**Note:** Refer to the servo drive chapter for drive options selection and detailed specifications.

## Type designation

R88M-1M10030T-BOS2

1S Series servo motor

Servo motor type
L: Low-inertia type
M: Middle-inertia type

Capacity
050: 50 W
100: 100 W
200: 200 W
400: 400 W
600: 600 W
750: 750 W
900: 900 W
1K0: 1 kW
1K5: 1.5 kW
2K0: 2 kW
3K0: 3 kW
4K0: 4 kW
5K0: 5 kW
5K5: 5.5 kW
7K5: 7.5 kW
11K0: 11 kW
15K0: 15 kW

Rated speed
10: 1000 rpm
15: 1500 rpm
20: 2000 rpm
30: 3000 rpm

Shaft end specifications
Blank: Straight shaft, no key
S2: Straight, key, tapped (standard)

Oil seal specifications
Blank: No oil seal
O: Oil seal

Brake specifications
Blank: No brake
B: Brake

Voltage and encoder specifications
H: 230 V, 23-bit incremental encoder
T: 230 V, 23-bit absolute battery-less encoder
C: 400 V, 23-bit absolute battery-less encoder



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# Specifications

## 3000 r/min servo motors, 230 V

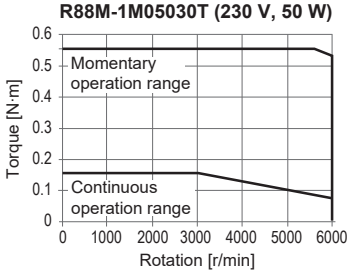
### Ratings and specifications

| Voltage | | | 230 V | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Servo motor model: R88M-1□ | | 23-bit incremental encoder | – | M10030H-□ | M20030H-□ | M40030H-□ | M75030H-□ | L1K030H-□ | L1K530H-□ |
| | | 23-bit absolute encoder | M05030T-□ | M10030T-□ | M20030T-□ | M40030T-□ | M75030T-□ | L1K030T-□ | L1K530T-□ |
| Rated output | | W | 50 | 100 | 200 | 400 | 750 | 1000 | 1500 |
| Rated torque | | Nm | 0.159 | 0.318 | 0.637 | 1.27 | 2.39 | 3.18 | 4.77 |
| Instantaneous peak torque | | Nm | 0.56 | 1.11 | 2.2 | 4.5 | 8.4 | 9.55 | 14.3 |
| Rated current | | A (rms) | 0.67 | 0.84 | 1.5 | 2.5 | 4.6 | 5.2 | 8.8 |
| Instantaneous max. current | | A (rms) | 2.6 | 3.1 | 5.6 | 9.1 | 16.9 | 16.9 | 28.4 |
| Rated speed | | $min^{-1}$ | 3000 | | | | | | |
| Max. speed | | $min^{-1}$ | 6000 | | | | | 5000 | |
| Torque constant | | N·m/A | 0.25 | 0.42 | 0.48 | 0.56 | 0.59 | 0.67 | 0.58 |
| Rotor moment of inertia | | $kg·m^2x10^{-4}$ (without brake) | 0.0418 | 0.089 | 0.2232 | 0.4452 | 1.8242 | 2.1042 | |
| | | $kg·m^2x10^{-4}$ (with brake) | 0.0496 | 0.0968 | 0.2832 | 0.5052 | 2.0742 | 2.5542 | |
| Electrical time constant | | ms | 0.67 | 0.83 | 2.4 | 2.6 | 3.3 | 5.9 | 6.1 |
| Allowable radial load | | N | 68 | | 245 | | 490 | | |
| Allowable thrust load | | N | 58 | | 88 | | 196 | | |
| Weight | | kg (without brake) | 0.35 | 0.52 | 1.0 | 1.4 | 2.9 | 5.7 | |
| | | kg (with brake) | 0.59 | 0.77 | 1.3 | 1.9 | 3.9 | 7.4 | |
| Brake specifications | Excitation voltage[*1] | | 24 VDC ±10% | | | | | | |
| | Holding brake moment of inertia J | $kg·m^2x10^{-4}$ | 0.0078 | | 0.06 | | 0.25 | 0.45 | |
| | Current consumption (at 20°C) | A | 0.27 | | 0.32 | | 0.37 | 0.70 | |
| | Static friction torque | Nm (minimum) | 0.32 | | 1.37 | | 2.55 | 9.3 | |
| Basic specifications | Insulation class | | Type F | | | | | | |
| | Ambient operating/storage temperature | | 0 to 40°C/-20 to 65°C | | | | | | |
| | Ambient operating/storage humidity | | 20 to 90% (non-condensing) | | | | | | |
| | Atmosphere | | No corrosive gases | | | | | | |
| | Insulation resistance | | 10 MΩ min. at 500 VDC between the power terminals and FG terminal | | | | | | |
| | Vibration resistance | | Vibration acceleration of 49 $m/s^2$ | | | | | | |
| | Impact resistance | | Acceleration of 98 $m/s^2$ max. 3 times each in X, Y and Z directions | | | | | | |
| | Enclosure | | IP67 (except for through-shaft parts when connectors are inserted) | | | | | | |

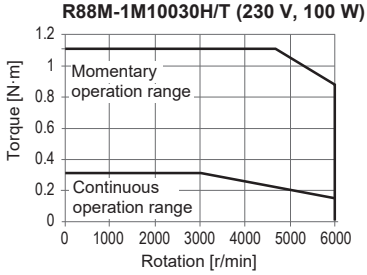
[*1] This is a non-excitable brake (it is released when excitation voltage is applied).

### Torque-speed characteristics

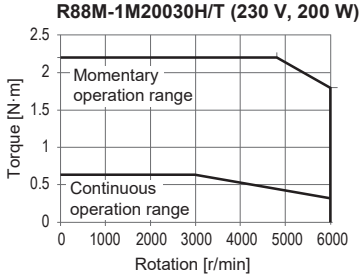
**R88M-1M05030T (230 V, 50 W)**



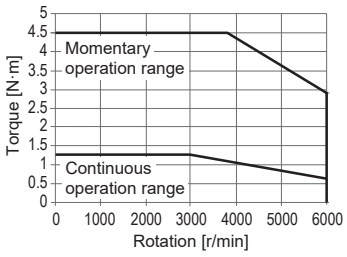

**R88M-1M10030H/T (230 V, 100 W)**



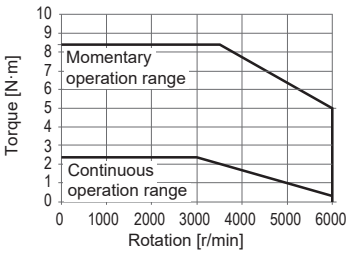

**R88M-1M20030H/T (230 V, 200 W)**



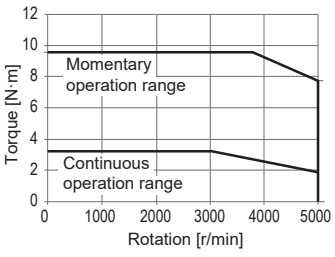

**R88M-1M40030H/T (230 V, 400 W)**



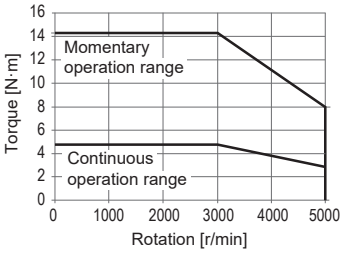

**R88M-1M75030H/T (230 V, 750 W)**




**R88M-1L1K030H/T (230 V, 1 kW)**




**R88M-1L1K530H/T (230 V, 1.5 kW)**



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## 3000 r/min servo motors, 400 V

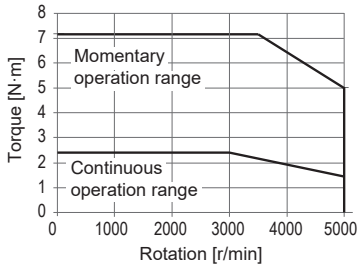
### Ratings and specifications

| Voltage | | | 400 V | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Servo motor model: R88M-1□ | | 23-bit absolute encoder | L75030C-□ | L1K030C-□ | L1K530C-□ | L2K030C-□ | L3K030C-□ | L4K030C-□ | L5K030C-□ |
| Rated output | | W | 750 | 1000 | 1500 | 2000 | 3000 | 4000 | 5000 |
| Rated torque | | Nm | 2.39 | 3.18 | 4.77 | 6.37 | 9.55 | 12.7 | 15.9 |
| Instantaneous peak torque | | Nm | 7.16 | 9.55 | 14.3 | 19.1 | 28.7 | 38.2 | 47.7 |
| Rated current | | A (rms) | 3.0 | 3.0 | 4.5 | 6.3 | 8.7 | 12.8 | 13.6 |
| Instantaneous max. current | | A (rms) | 9.6 | 9.6 | 14.1 | 19.8 | 27.7 | 42.4 | |
| Rated speed | | $min^{-1}$ | 3000 | | | | | | |
| Max. speed | | $min^{-1}$ | 5000 | | | | | | |
| Torque constant | | N·m/A | 0.91 | 1.17 | 1.17 | 1.15 | 1.23 | 1.11 | 1.32 |
| Rotor moment of inertia | | $kg·m^2x10^{-4}$ (without brake) | 1.3042 | 2.1042 | | 2.4042 | 6.8122 | 8.8122 | 10.6122 |
| | | $kg·m^2x10^{-4}$ (with brake) | 1.7542 | 2.5542 | | 2.8542 | 7.3122 | 11.3122 | 13.1122 |
| Electrical time constant | | ms | 4.3 | 5.9 | | 6.3 | 11.0 | 12.0 | 13.0 |
| Allowable radial load | | N | 490 | | | | | 880 | |
| Allowable thrust load | | N | 196 | | | | | 343 | |
| Weight | | kg (without brake) | 4.1 | 5.7 | | 6.4 | 11.5 | 13.5 | 16.0 |
| | | kg (with brake) | 5.8 | 7.4 | | 8.1 | 12.5 | 16.0 | 18.5 |
| Brake specifications | Excitation voltage[*1] | | 24 VDC ±10% | | | | | | |
| | Holding brake moment of inertia J | $kg·m^2x10^{-4}$ | 0.45 | | | | 0.50 | 2.5 | |
| | Current consumption (at 20°C) | A | 0.70 | | | | 0.66 | 0.6 | |
| | Static friction torque | Nm (minimum) | 9.3 | | | | 12.0 | 16.0 | |
| Basic specifications | Insulation class | | Type F | | | | | | |
| | Ambient operating/storage temperature | | 0 to 40°C/-20 to 65°C | | | | | | |
| | Ambient operating/storage humidity | | 20 to 90% (non-condensing) | | | | | | |
| | Atmosphere | | No corrosive gases | | | | | | |
| | Insulation resistance | | 10 MΩ min. at 500 VDC between the power terminals and FG terminal | | | | | | |
| | Vibration resistance | | Vibration acceleration of 49 $m/s^2$ | | | | | | |
| | Impact resistance | | Acceleration of 98 $m/s^2$ max. 3 times each in X, Y and Z directions | | | | | | |
| | Enclosure | | IP67 (except for through-shaft parts when connectors are inserted) | | | | | | |

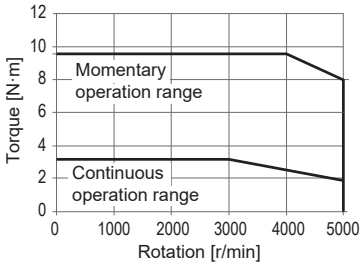
[*1] This is a non-excitable brake (it is released when excitation voltage is applied).

### Torque-speed characteristics

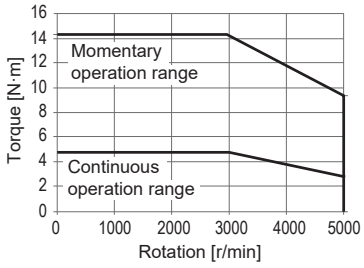
R88M-1L75030C (400 V, 750 W)



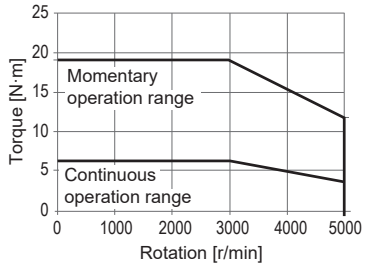

R88M-1L1K030C (400 V, 1 kW)



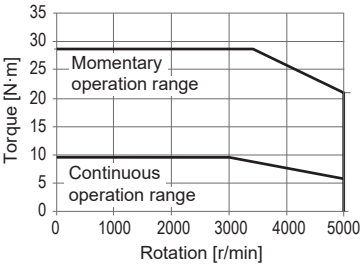

R88M-1L1K530C (400 V, 1.5 kW)



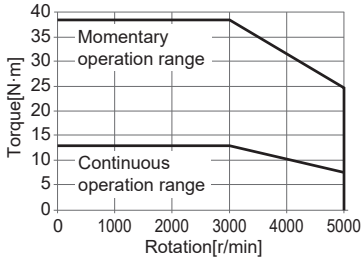

R88M-1L2K030C (400 V, 2 kW)



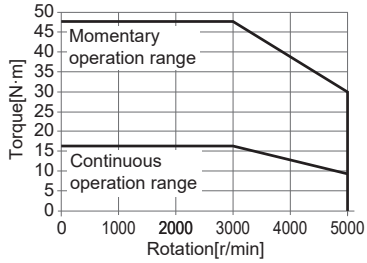

R88M-1L3K030C (400 V, 3 kW)




R88M-1L4K030C (400 V, 4 kW)




R88M-1L5K030C (400 V, 5 kW)



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## 2000 r/min servo motors, 230 V/400 V

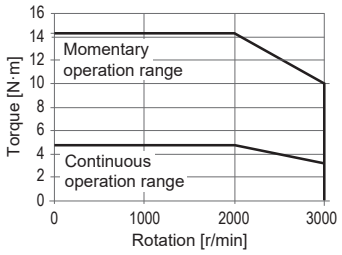
### Ratings and specifications

| Voltage | | | 230 V | | 400 V | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Servo motor model: R88M-1□ | | 23-bit incremental encoder | M1K020H-□ | M1K520H-□ | | | | | | |
| | | 23-bit absolute encoder | M1K020T-□ | M1K520T-□ | M40020C-□ | M60020C-□ | M1K020C-□ | M1K520C-□ | M2K020C-□ | M3K020C-□ |
| Rated output | | W | 1000 | 1500 | 400 | 600 | 1000 | 1500 | 2000 | 3000 |
| Rated torque | | Nm | 4.77 | 7.16 | 1.91 | 2.86 | 4.77 | 7.16 | 9.55 | 14.3 |
| Instantaneous peak torque | | Nm | 14.3 | 21.5 | 5.73 | 8.59 | 14.3 | 21.5 | 28.7 | 43.0 |
| Rated current | | A (rms) | 5.2 | 8.6 | 1.1 | 1.6 | 2.9 | 4.1 | 5.7 | 8.6 |
| Instantaneous max. current | | A (rms) | 16.9 | 28.4 | 3.9 | 5.5 | 9.4 | 13.5 | 19.8 | 28.3 |
| Rated speed | | $min^{-1}$ | 2000 | | | | | | | |
| Max. speed | | $min^{-1}$ | 3000 | | | | | | | |
| Torque constant | | N·m/A | 0.93 | 0.83 | 1.75 | 1.84 | 1.69 | 1.75 | | 1.74 |
| Rotor moment of inertia | | $kg·m^2x10^{-4}$ (without brake) | 6.0042 | 9.0042 | 2.5042 | 3.9042 | 6.0042 | 9.0042 | 12.2042 | 15.3122 |
| | | $kg·m^2x10^{-4}$ (with brake) | 6.5042 | 9.5042 | 2.8472 | 4.2472 | 6.5042 | 9.5042 | 12.7042 | 17.4122 |
| Electrical time constant | | ms | 13.0 | 15.0 | 6.8 | 7.8 | 13.0 | 13.0 | 14.0 | 20.0 |
| Allowable radial load | | N | 490 | | | | | | | 784 |
| Allowable thrust load | | N | 196 | | | | | | | 343 |
| Weight | | kg (without brake) | 6.6 | 8.5 | 3.9 | 4.7 | 6.6 | 8.5 | 10.0 | 12.0 |
| | | kg (with brake) | 8.6 | 10.5 | 4.8 | 5.8 | 8.6 | 10.5 | 12.0 | 15.0 |
| Brake specifications | Excitation voltage*1 | | 24 VDC ±10% | | | | | | | |
| | Holding brake moment of inertia J | $kg·m^2x10^{-4}$ | 0.5 | | 0.343 | | 0.5 | | | 2.1 |
| | Current consumption (at 20°C) | A | 0.51 | | 0.3 | | 0.51 | | 0.66 | 0.6 |
| | Static friction torque | Nm (minimum) | 9.0 | | 3.92 | | 9.0 | | 12.0 | 16.0 |
| Basic specifications | Insulation class | | Type F | | | | | | | |
| | Ambient operating/storage temperature | | 0 to 40°C/-20 to 65°C | | | | | | | |
| | Ambient operating/storage humidity | | 20 to 90% (non-condensing) | | | | | | | |
| | Atmosphere | | No corrosive gases | | | | | | | |
| | Insulation resistance | | 10 MΩ min. at 500 VDC between the power terminals and FG terminal | | | | | | | |
| | Vibration resistance | | Vibration acceleration of 49 $m/s^2$ | | | | | | | |
| | Impact resistance | | Acceleration of 98 $m/s^2$ max. 3 times each in X, Y and Z directions | | | | | | | |
| | Enclosure | | IP67 (except for through-shaft parts when connectors are inserted) | | | | | | | |

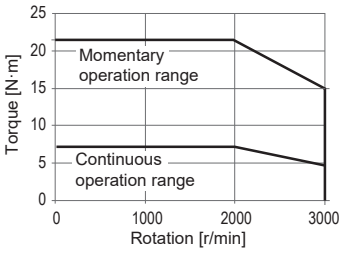
*1 This is a non-excitable brake (it is released when excitation voltage is applied).

### Torque-speed characteristics

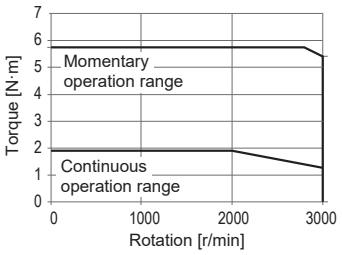
R88M-1M1K020H/T (230 V, 1 kW)



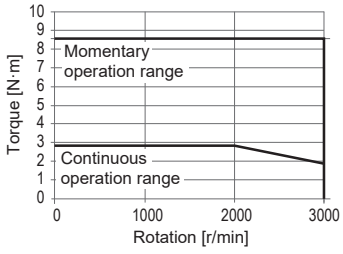

R88M-1M1K520H/T (230 V, 1.5 kW)



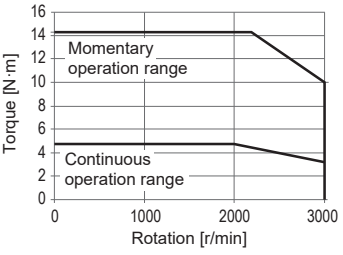

R88M-1M40020C (400 V, 400 W)



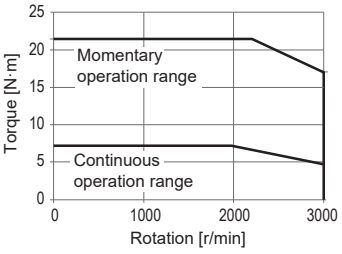

R88M-1M60020C (400 V, 600 W)



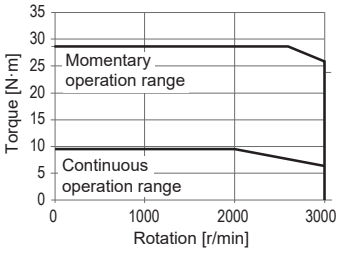

R88M-1M1K020C (400 V, 1 kW)



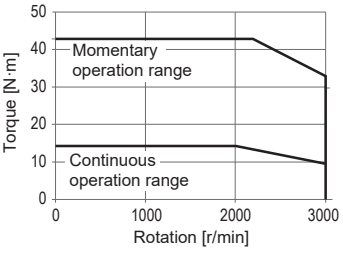

R88M-1M1K520C (400 V, 1.5 kW)




R88M-1M2K020C (400 V, 2 kW)




R88M-1M3K020C (400 V, 3 kW)



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## 1500 r/min servo motors, 400 V

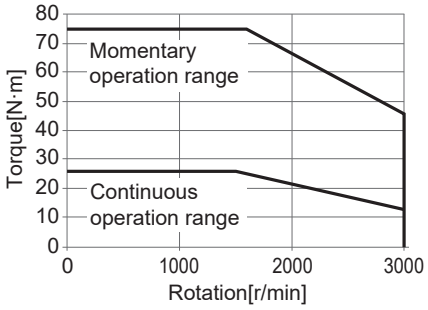
### Ratings and specifications

| Voltage | | | 400 V | | | | |
|---|---|---|---|---|---|---|---|
| Servo motor model: R88M-1□ | | 23-bit absolute encoder | M4K015C-□ | M5K515C-□ | M7K515C-□ | M11K015C-□ | M15K015C-□ |
| Rated output | | W | 4,000 | 5,500 | 7,500 | 11,000 | 15,000 |
| Rated torque | | Nm | 25.5 | 35.0 | 47.8 | 70 | 95.5 |
| Instantaneous peak torque | | Nm | 75 | 95 | 119 | 175 | 224 |
| Rated current | | A (rms) | 12.8 | 14.0 | 22.0 | 31.4 | 33.3 |
| Instantaneous max. current | | A (rms) | 42.4 | | 56.5 | 80.7 | 81.2 |
| Rated speed | | $min^{-1}$ | 1,500 | | | | |
| Max. speed | | $min^{-1}$ | 3,000 | | | 2,000 | |
| Torque constant | | N·m/A (rms) | 2.07 | 2.68 | 2.49 | 2.6 | 3.27 |
| Rotor moment of inertia | | $kg·m^2x10^{-4}$ (without brake) | 54.0122 | 77.0122 | 113.0122 | 229.0122 | 340.0122 |
| | | $kg·m^2x10^{-4}$ (with brake) | 60.0122 | 83.0122 | 118.0122 | 253.0122 | 365.0122 |
| Electrical time constant | | ms | 18 | 19 | 23 | 29 | |
| Allowable radial load | | N | 1,200 | 1,470 | | 2,500 | |
| Allowable thrust load | | N | 343 | 490 | | 686 | |
| Weight | | kg (without brake) | 21 | 29 | 39 | 63 | 85 |
| | | kg (with brake) | 26 | 34 | 45 | 73 | 99 |
| Brake specifications | Excitation voltage*1 | | 24 VDC ±10% | | | | |
| | Holding brake moment of inertia J | $kg·m^2x10^{-4}$ | 6.0 | | 5.0 | 24.0 | 25.0 |
| | Current consumption (at 20°C) | A | 1.0 | | 1.4 | 1.7 | 0.92 |
| | Static friction torque | Nm (minimum) | 32 min. | 42 min. | 54.9 min. | 90 min. | 100 min. |
| Basic specifications | Insulation class | | Class F | | | | |
| | Ambient operating/storage temperature | | 0 to 40°C/-20 to 65°C | | | | |
| | Ambient operating/storage humidity | | 20 to 90% (non-condensing) | | | | |
| | Atmosphere | | No corrosive gases | | | | |
| | Insulation resistance | | 10 MΩ min. at 500 VDC between the power terminals and FG terminal | | | | |
| | Vibration resistance | | Vibration acceleration of 49 $m/s^2$ | | | | |
| | Impact resistance | | Acceleration of 98 $m/s^2$ max. 3 times each in X, Y and Z directions | | | | |
| | Enclosure | | IP67 (except for through-shaft parts when connectors are inserted) | | | | |

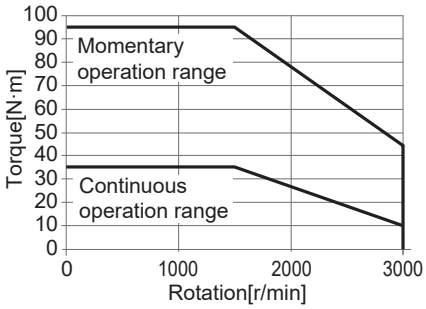
*1 This is a non-excitable brake (it is released when excitation voltage is applied).

### Torque-speed characteristics

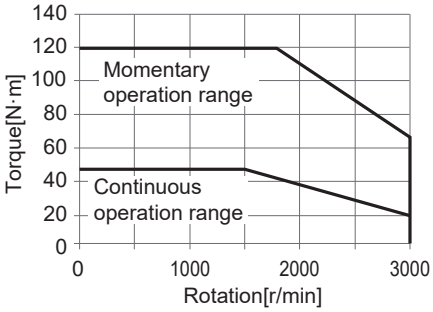
**R88M-1M4K015C (400 V, 4 kW)**



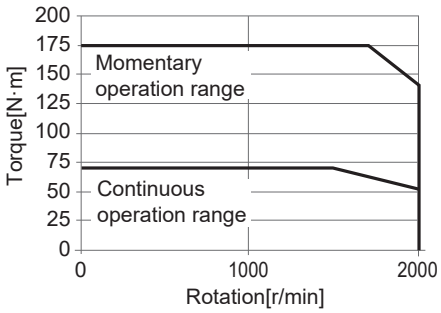

**R88M-1M5K515C (400 V, 5.5 kW)**



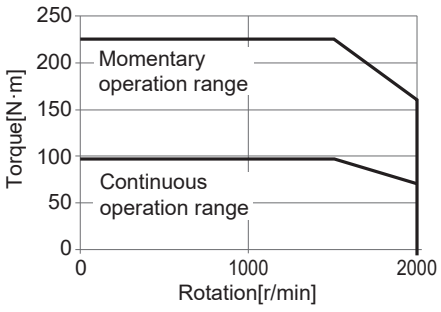

**R88M-1M7K515C (400 V, 7.5 kW)**




**R88M-1M11K015C (400 V, 11 kW)**




**R88M-1M15K015C (400 V, 15 kW)**



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## 1000 r/min servo motors, 230 V/400 V

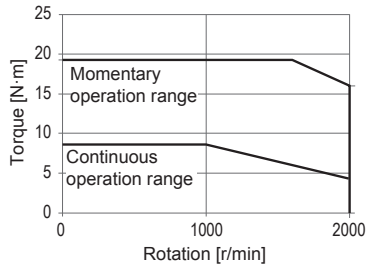
### Ratings and specifications

| Voltage | | | 230 V | 400 V | | |
|---|---|---|---|---|---|---|
| Servo motor model: R88M-1□ | | 23-bit absolute encoder | M90010T-□ | M90010C-□ | M2K010C-□ | M3K010C-□ |
| Rated output | | W | 900 | | 2000 | 3000 |
| Rated torque | | Nm | 8.59 | | 19.1 | 28.7 |
| Instantaneous peak torque | | Nm | 19.3 | | 47.7 | 71.7 |
| Rated current | | A (rms) | 6.7 | 3.6 | 7.1 | 10.6 |
| Instantaneous max. current | | A (rms) | 16.9 | 9.0 | 19.5 | 27.7 |
| Rated speed | | $min^{-1}$ | 1000 | | | |
| Max. speed | | $min^{-1}$ | 2000 | | | |
| Torque constant | | N·m/A | 1.28 | 2.41 | 3.00 | 2.97 |
| Rotor moment of inertia | | $kg·m^2x10^{-4}$ (without brake) | 9.0042 | | 40.0122 | 68.0122 |
| | | $kg·m^2x10^{-4}$ (with brake) | 9.5042 | | 45.1122 | 73.1122 |
| Electrical time constant | | ms | 15.0 | 13.0 | 16.0 | 19.0 |
| Allowable radial load | | N | 686 | | 1176 | 1470 |
| Allowable thrust load | | N | 196 | | 490 | |
| Weight | | kg (without brake) | 8.5 | | 18.0 | 28.0 |
| | | kg (with brake) | 10.5 | | 22.0 | 33.0 |
| Brake specifications | Excitation voltage[*1] | | 24 VDC ±10% | | | |
| | Holding brake moment of inertia J | $kg·m^2x10^{-4}$ | 0.5 | | 5.1 | |
| | Current consumption (at 20°C) | A | 0.51 | | 1.2 | 1.0 |
| | Static friction torque | Nm (minimum) | 9.0 | | 22.0 | 42.0 |
| Basic specifications | Insulation class | | Type F | | | |
| | Ambient operating/storage temperature | | 0 to 40°C/-20 to 65°C | | | |
| | Ambient operating/storage humidity | | 20 to 90% (non-condensing) | | | |
| | Atmosphere | | No corrosive gases | | | |
| | Insulation resistance | | 10 MΩ min. at 500 VDC between the power terminals and FG terminal | | | |
| | Vibration resistance | | Vibration acceleration of 49 $m/s^2$ | | | |
| | Impact resistance | | Acceleration of 98 $m/s^2$ max. 3 times each in X, Y and Z directions | | | |
| | Enclosure | | IP67 (except for through-shaft parts when connectors are inserted) | | | |

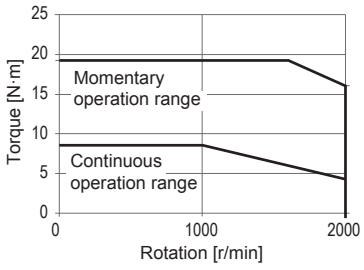
[*1] This is a non-excitable brake (it is released when excitation voltage is applied).

### Torque-speed characteristics

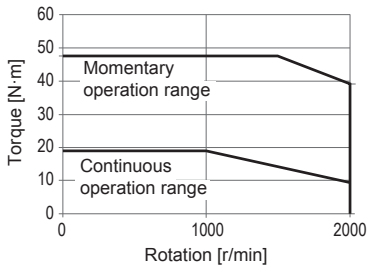
R88M-1M90010T (230 V, 900 W)



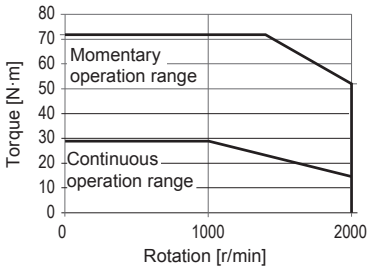

R88M-1M90010C (400 V, 900 W)




R88M-1M2K010C (400 V, 2 kW)




R88M-1M3K010C (400 V, 3 kW)



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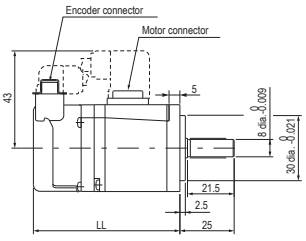
# Dimensions

## Servo motors

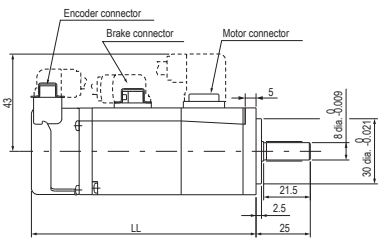
### Type 3000 r/min motors (230 V, 50 W)

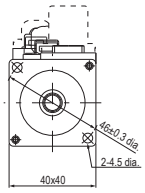
| Dimensions (mm) | Without brake | With brake | Approx. mass (kg) | |
|---|---|---|---|---|
| Model: R88M-1□ | LL | LL | Without brake | With brake |
| M05030T-□S2 | 67.5 | 103.5 | 0.35 | 0.59 |

**Models without brake**

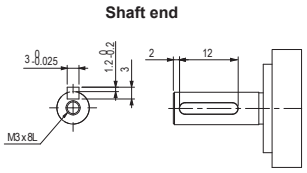



**Models with brake**



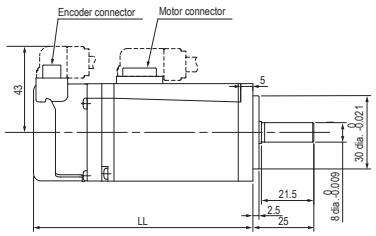

**Shaft end**



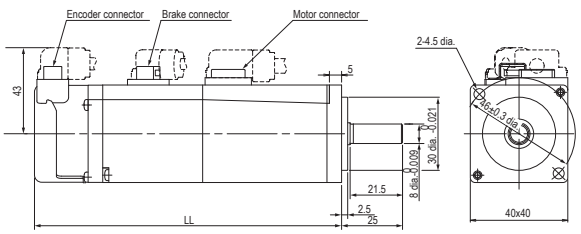

### Type 3000 r/min motors (230 V, 100 W)

| Dimensions (mm) | Without brake | With brake | Approx. mass (kg) | |
|---|---|---|---|---|
| Model: R88M-1□ | LL | LL | Without brake | With brake |
| M10030(H/T)-□S2 | 90 | 126 | 0.52 | 0.77 |

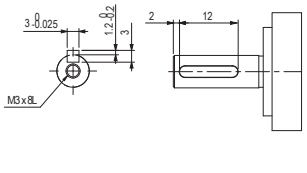
**Models without brake**




**Models with brake**



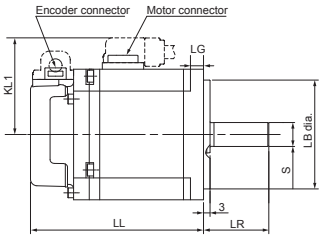

**Shaft end**



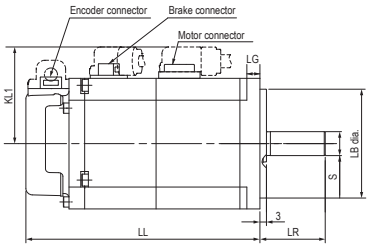

### Type 3000 r/min motors (230 V, 200 W to 750 W)

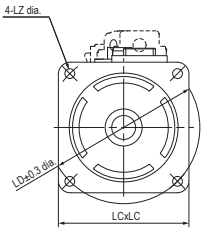
| Dimensions (mm) | Without brake | | With brake | | LR | Flange surface | | | | | Shaft end | | | | | | | Approx. mass (kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model: R88M-1□ | LL | KL1 | LL | KL1 | | LB | LC | LD | LG | LZ | S | QA | QK | W | U | T | Tap x depth | Without brake | With brake |
| M20030(H/T)-□S2 | 79.5 | 52.6 | 107.5 | 52.6 | 30 | 50 dia. 0 -0.025 | 60 | 70 | 6 | 4.5 | 11 dia. 0 -0.011 | 2 | 20 | 4 0 -0.03 | 1.5 0 -0.2 | 4 | M4 x 10L | 1.0 | 1.3 |
| M40030(H/T)-□S2 | 105.5 | | 133.5 | | | | | | | | 14 dia. 0 -0.011 | | | 5 0 -0.03 | 2 0 -0.2 | 5 | M5 x 12L | 1.4 | 1.9 |
| M75030(H/T)-□S2 | 117.3 | 63.2 | 153 | 63.2 | 35 | 70 dia. 0 -0.03 | 80 | 90 | 8 | 6 | 19 dia. 0 -0.013 | 3 | 24 | 6 0 -0.03 | 2.5 0 -0.2 | 6 | | 2.9 | 3.9 |

**Models without brake**

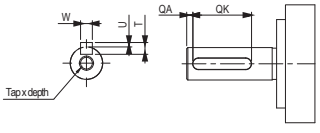



**Models with brake**




**Shaft end**



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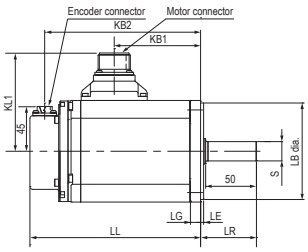
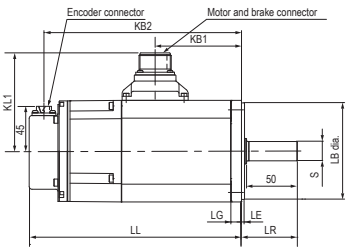
## Type 3000 r/min motors (230 V, 1 kW to 1.5 kW / 400 V, 750 W to 3 kW)

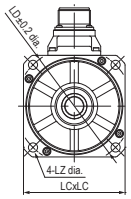
| Dimensions (mm) | Without brake | | | | With brake | | | | LR | Flange surface | | | | | | Shaft end | | | | | | Approx. mass (kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model: R88M-1□ | LL | KB1 | KB2 | KL1 | LL | KB1 | KB2 | KL1 | | LB | LC | LD | LE | LG | LZ | S | QA | QK | W | U | T | Tap x depth | Without brake | With brake |
| L1K030(H/T)-□S2 | 168 | 85 | 153 | 97 | 209 | 85 | 194 | 97 | 55 | 95 dia. $^{0}_{-0.035}$ | 100 | 115 | 3 | 10 | 9 | 19 dia. $^{0}_{-0.013}$ | 3 | 42 | 6 $^{0}_{-0.03}$ | 2.5 $^{0}_{-0.2}$ | 6 | M5 x 12L | 5.7 | 7.4 |
| L1K530(H/T)-□S2 | | | | | | | | | | | | | | | | | | | | | | | | |
| L75030C-□S2 | 139 | 56 | 124 | | 180 | 56 | 165 | 104 | | | | | | | | | | | | | | | 4.1 | 5.8 |
| L1K030C-□S2 | 168 | 85 | 153 | | 209 | 85 | 194 | | | | | | | | | | | | | | | | 5.7 | 7.4 |
| L1K530C-□S2 | | | | | | | | | | | | | | | | | | | | | | | | |
| L2K030C-□S2 | 179 | 96 | 164 | | 220 | 96 | 205 | | | | | | | | | | | | | | | | 6.4 | 8.1 |
| L3K030C-□S2 | 184 | 112 | 169 | 116 | 230 | 112 | 215 | 119 | | 110 dia. $^{0}_{-0.035}$ | 130 | 145 | 4 | 12 | 9 | 22 dia. $^{0}_{-0.013}$ | | | 8 $^{0}_{-0.036}$ | 3 $^{0}_{-0.4}$ | 7 | | 11.5 | 12.5 |

**Models without brake**

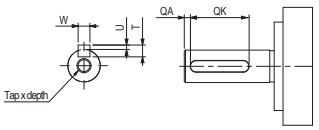



**Models with brake**



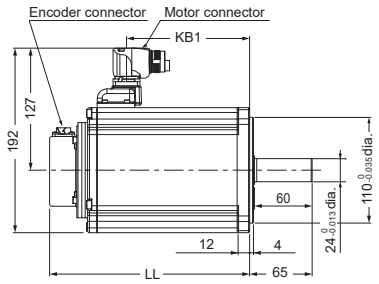

**Shaft end**



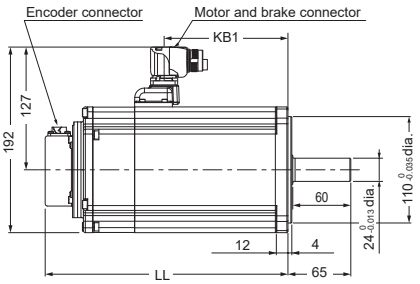

## Type 3000 r/min motors (400 V, 4 kW to 5 kW)

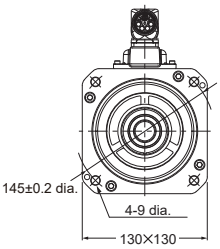
| Dimensions (mm) | Without brake | | With brake | | Approx. mass (kg) | |
|---|---|---|---|---|---|---|
| Model: R88M-1□ | LL | KB1 | LL | KB1 | Without brake | With brake |
| L4K030C-□S2 | 208 | 128 | 251 | 128 | 13.5 | 16.0 |
| L5K030C-□S2 | 232 | 152 | 275 | 152 | 16.0 | 18.5 |

**Models without brake**

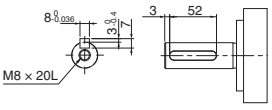



**Models with brake**



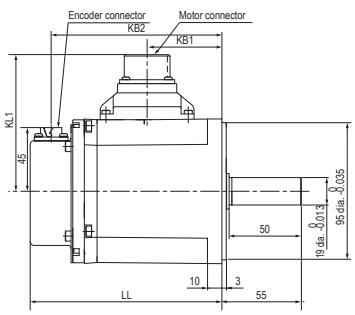

**Shaft end**



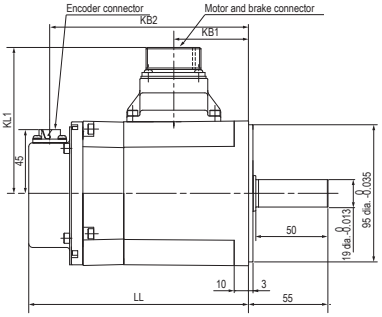

## Type 2000 r/min motors (400 V, 400 W to 600 W)

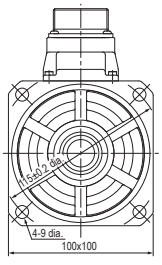
| Dimensions (mm) | Without brake | | | | With brake | | | | Approx. mass (kg) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Model: R88M-1□ | LL | KB1 | KB2 | KL1 | LL | KB1 | KB2 | KL1 | Without brake | With brake |
| M40020C-□S2 | 134.8 | 52 | 120.5 | 97 | 152.3 | 52 | 138 | 104 | 3.9 | 4.8 |
| M60020C-□S2 | 151.8 | 69 | 137.5 | | 169.3 | 69 | 155 | | 4.7 | 5.8 |

**Models without brake**

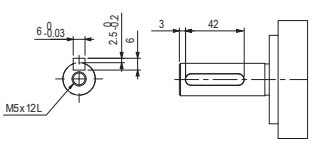



**Models with brake**




**Shaft end**



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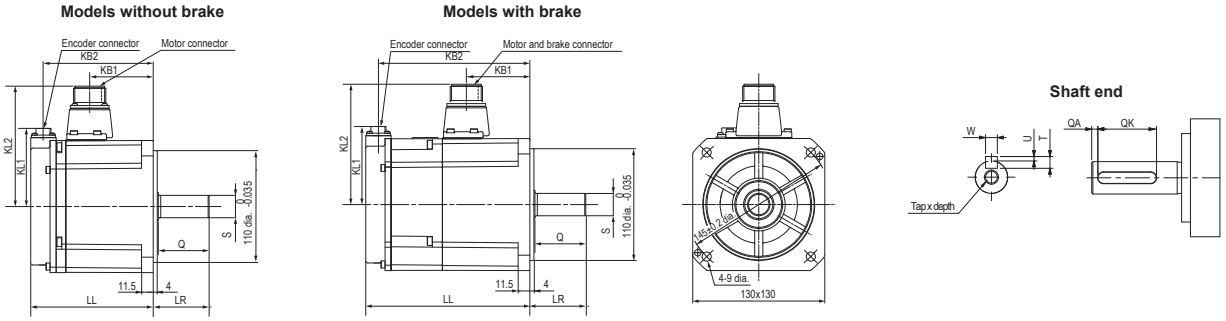
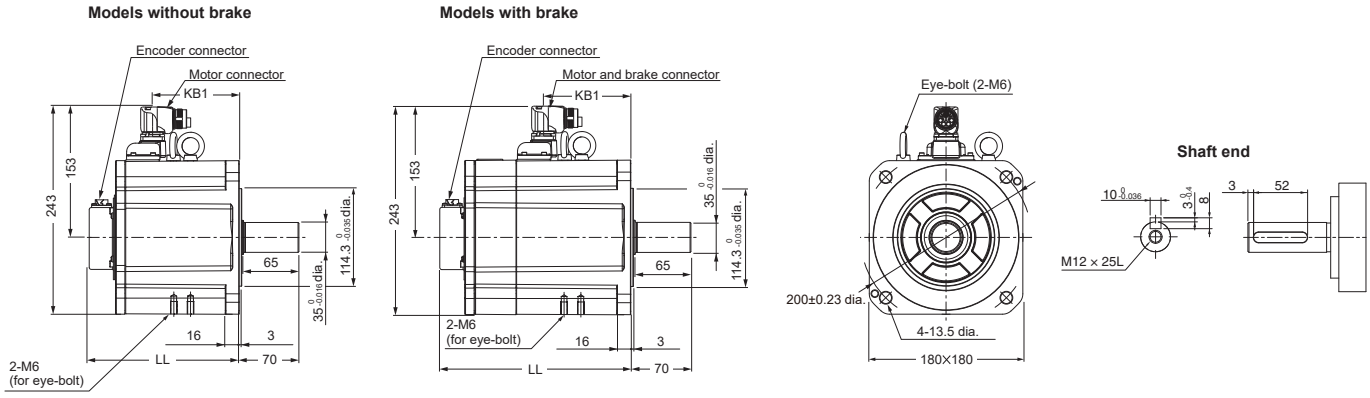
## Type 2000 r/min motors (230 V, 1 kW to 1.5 kW / 400 V, 1 kW to 3 kW)

| Dimensions (mm) | Without brake | | | | | With brake | | | | | LR | Shaft end | | | | | | | Approx. mass (kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model: R88M-1□ | LL | KB1 | KB2 | KL1 | KL2 | LL | KB1 | KB2 | KL1 | KL2 | | S | Q | QA | QK | W | U | T | Tap x depth | Without brake | With brake |
| M1K020(H/T)-□S2 | 120.5 | 63 | 109 | 76 | 118 | 162 | 63 | 149 | 76 | 118 | 55 | 22 dia. $^{0}_{-0.013}$ | 50 | 3 | 42 | 8 $^{0}_{-0.036}$ | 3 $^{0}_{-0.4}$ | 7 | M5 x 12L | 6.6 | 8.6 |
| M1K520(H/T)-□S2 | 138 | 79 | 125 | | | 179 | 79 | 166 | | | | | | | | | | | | 8.5 | 10.5 |
| M1K020C-□S2 | 120.5 | 63 | 109 | | | 162 | 64 | 150 | | 119 | | | | | | | | | | 6.6 | 8.6 |
| M1K520C-□S2 | 138 | 79 | 125 | | | 179 | 81 | 167 | | | | | | | | | | | | 8.5 | 10.5 |
| M2K020C-□S2 | 160 | 98 | 148 | | | 201 | 99 | 189 | | | | | | | | | | | | 10.0 | 12.0 |
| M3K020C-□S2 | 191 | 119 | 176 | 45 | 116 | 234 | 118 | 219 | 45 | 119 | 65 | 24 dia. $^{0}_{-0.013}$ | 60 | | 52 | | | | M8 x 20L | 12.0 | 15.0 |



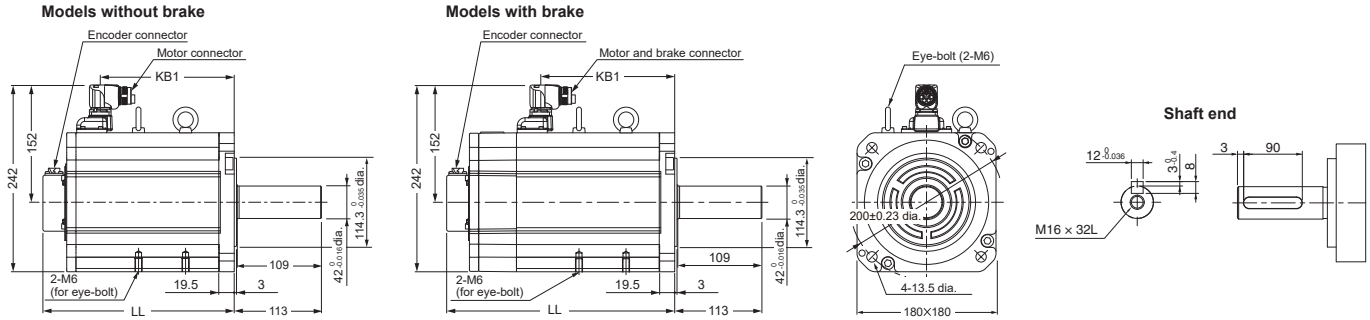

## Type 1500 r/min motors (400 V, 4 kW)

| Dimensions (mm) | Without brake | | With brake | | Approx. mass (kg) | |
|---|---|---|---|---|---|---|
| Model: R88M-1□ | LL | KB1 | LL | KB1 | Without brake | With brake |
| M4K015C-□S2 | 176 | 102 | 223 | 102 | 21.0 | 26.0 |




## Type 1500 r/min motors (400 V, 5.5 kW to 7.5 kW)

| Dimensions (mm) | Without brake | | With brake | | Approx. mass (kg) | |
|---|---|---|---|---|---|---|
| Model: R88M-1□ | LL | KB1 | LL | KB1 | Without brake | With brake |
| M5K515C-□S2 | 248 | 174 | 295 | 174 | 29.0 | 34.0 |
| M7K515C-□S2 | 295 | 221 | 352 | 221 | 39.0 | 45.0 |



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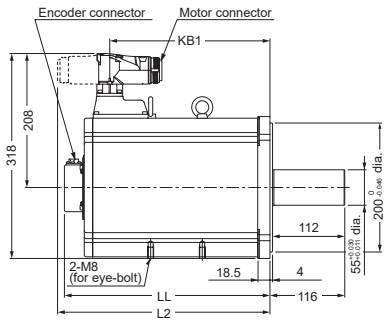
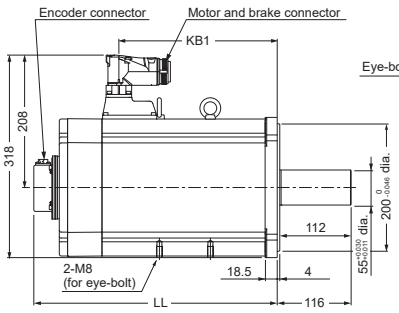
## Type 1500 r/min motors (400 V, 11 kW to 15 kW)

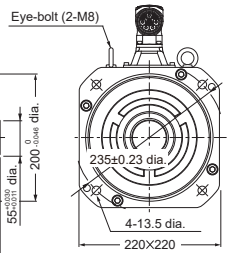
| Dimensions (mm) | Without brake | | | With brake | | Approx. mass (kg) | |
|---|---|---|---|---|---|---|---|
| Model: R88M-1□ | LL | L2 | KB1 | LL | KB1 | Without brake | With brake |
| M11K015C-□S2 | 319 | 330 | 249 | 382 | 249 | 63.0 | 73.0 |
| M15K015C-□S2 | 397 | 408 | 327 | 493 | 327 | 85.0 | 99.0 |

Models without brake

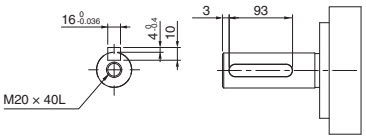



Models with brake



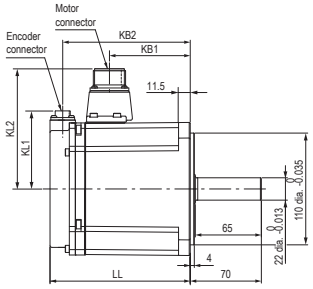

Shaft end



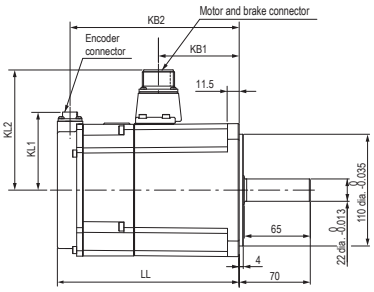

## Type 1000 r/min motors (230 V, 900 W / 400 V, 900 W)

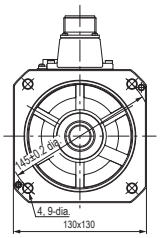
| Dimensions (mm) | Without brake | | | | | With brake | | | | | Approx. mass (kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model: R88M-1□ | LL | KB1 | KB2 | KL1 | KL2 | LL | KB1 | KB2 | KL1 | KL2 | Without brake | With brake |
| M90010T-□S2 | 138 | 79 | 125 | 76 | 118 | 179 | 79 | 166 | 76 | 118 | 8.5 | 10.5 |
| M90010C-□S2 | | | | | | | 81 | 167 | | 117 | | |

Models without brake

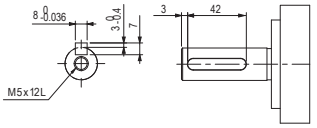



Models with brake



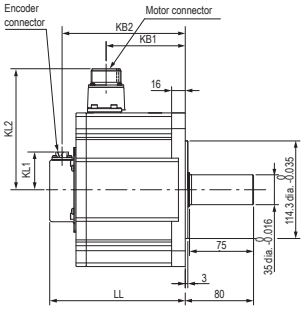

Shaft end



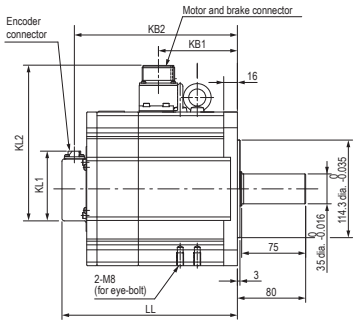

## Type 1000 r/min motors (400 V, 2 kW)

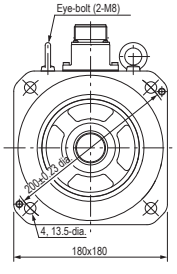
| Dimensions (mm) | Without brake | | | | | With brake | | | | | Approx. mass (kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model: R88M-1□ | LL | KB1 | KB2 | KL1 | KL2 | LL | KB1 | KB2 | KL1 | KL2 | Without brake | With brake |
| M2K010C-□S2 | 159 | 93 | 145 | 45 | 141 | 206 | 92 | 191 | 45 | 144 | 18.0 | 22.0 |

Models without brake

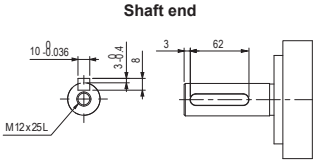



Models with brake




Shaft end



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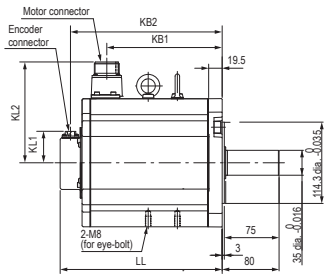
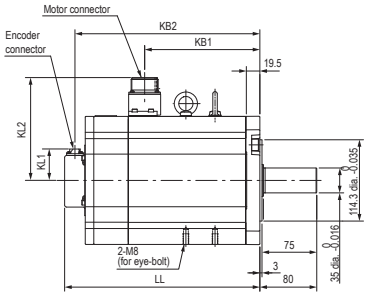
## Type 1000 r/min motors (400 V, 3 kW)

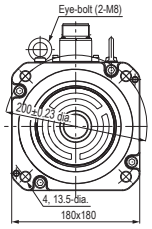
| Dimensions (mm) | Without brake | | | | | With brake | | | | | Approx. mass (kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model: R88M-1□ | LL | KB1 | KB2 | KL1 | KL2 | LL | KB1 | KB2 | KL1 | KL2 | Without brake | With brake |
| M3K010C-□S2 | 228 | 162 | 213 | 45 | 141 | 274 | 162 | 260 | 45 | 144 | 28.0 | 33.0 |

**Models without brake**

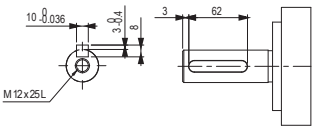



**Models with brake**




**Shaft end**



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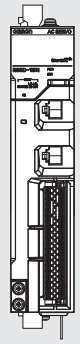
## Ordering information

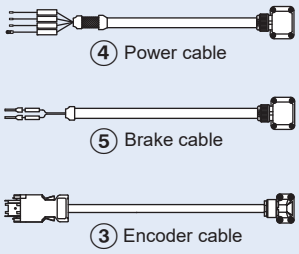
(Refer to servo drive chapter)

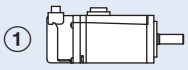
② Drive options



1S servo drive

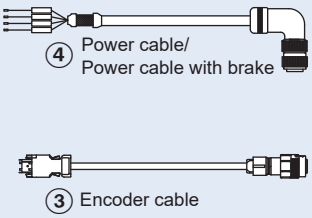
**1S servo motor (Flange size 80 mm or less)**

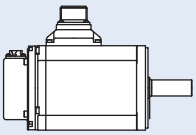


① 3000 rpm (50 W - 750 W)

**1S servo motor (Flange size 100 mm or more)**



① 3000 rpm (1 kW - 5 kW)
2000 rpm (400 W - 3 kW)
1500 rpm (4 kW - 15 kW)
1000 rpm (900 W - 3 kW)

### Servo motors

① Select motor from R88M-1□ family using motor tables in next pages.

### Servo drives

② Refer to the 1S servo drive chapter for detailed drive specifications and selection of drive accessories.

### Servo motors

#### Servo motors 3000 r/min (100 W to 5 kW)

| Symbol | Specifications | | | | | | Model | Compatible 1S servo drive |
|---|---|---|---|---|---|---|---|---|
| | Voltage | Encoder and design | | Rated torque | Capacity | Flange size | | |
| ① | 230 V | Incremental encoder (23-bit)<br>Straight shaft with key and tap | Without brake | 0.318 Nm | 100 W | 40 mm | R88M-1M10030H-S2 | R88D-1SN01H-ECT |
| | | | | 0.637 Nm | 200 W | 60 mm | R88M-1M20030H-S2 | R88D-1SN02H-ECT |
| | | | | 1.27 Nm | 400 W | | R88M-1M40030H-S2 | R88D-1SN04H-ECT |
| | | | | 2.39 Nm | 750 W | 80 mm | R88M-1M75030H-S2 | R88D-1SN08H-ECT |
| | | | | 3.18 Nm | 1 kW | 100 mm | R88M-1L1K030H-S2 | R88D-1SN15H-ECT |
| | | | | 4.77 Nm | 1.5 kW | | R88M-1L1K530H-S2 | R88D-1SN15H-ECT |
| | | | With brake | 0.318 Nm | 100 W | 40 mm | R88M-1M10030H-BS2 | R88D-1SN01H-ECT |
| | | | | 0.637 Nm | 200 W | 60 mm | R88M-1M20030H-BS2 | R88D-1SN02H-ECT |
| | | | | 1.27 Nm | 400 W | | R88M-1M40030H-BS2 | R88D-1SN04H-ECT |
| | | | | 2.39 Nm | 750 W | 80 mm | R88M-1M75030H-BS2 | R88D-1SN08H-ECT |
| | | | | 3.18 Nm | 1 kW | 100 mm | R88M-1L1K030H-BS2 | R88D-1SN15H-ECT |
| | | | | 4.77 Nm | 1.5 kW | | R88M-1L1K530H-BS2 | R88D-1SN15H-ECT |
| | | Absolute encoder (23-bit)<br>Straight shaft with key and tap | Without brake | 0.159 Nm | 50 W | 40 mm | R88M-1M05030T-S2 | R88D-1SN01H-ECT |
| | | | | 0.318 Nm | 100 W | | R88M-1M10030T-S2 | R88D-1SN01H-ECT |
| | | | | 0.637 Nm | 200 W | 60 mm | R88M-1M20030T-S2 | R88D-1SN02H-ECT |
| | | | | 1.27 Nm | 400 W | | R88M-1M40030T-S2 | R88D-1SN04H-ECT |
| | | | | 2.39 Nm | 750 W | 80 mm | R88M-1M75030T-S2 | R88D-1SN08H-ECT |
| | | | | 3.18 Nm | 1 kW | 100 mm | R88M-1L1K030T-S2 | R88D-1SN15H-ECT |
| | | | | 4.77 Nm | 1.5 kW | | R88M-1L1K530T-S2 | R88D-1SN15H-ECT |
| | | | With brake | 0.159 Nm | 50 W | 40 mm | R88M-1M05030T-BS2 | R88D-1SN01H-ECT |
| | | | | 0.318 Nm | 100 W | | R88M-1M10030T-BS2 | R88D-1SN01H-ECT |
| | | | | 0.637 Nm | 200 W | 60 mm | R88M-1M20030T-BS2 | R88D-1SN02H-ECT |
| | | | | 1.27 Nm | 400 W | | R88M-1M40030T-BS2 | R88D-1SN04H-ECT |
| | | | | 2.39 Nm | 750 W | 80 mm | R88M-1M75030T-BS2 | R88D-1SN08H-ECT |
| | | | | 3.18 Nm | 1 kW | 100 mm | R88M-1L1K030T-BS2 | R88D-1SN15H-ECT |
| | | | | 4.77 Nm | 1.5 kW | | R88M-1L1K530T-BS2 | R88D-1SN15H-ECT |



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| Symbol | Specifications | | | | | | Model | Compatible 1S servo drive |
|---|---|---|---|---|---|---|---|---|
| | Voltage | Encoder and design | | Rated torque | Capacity | Flange size | | |
| ① | 400 V | Absolute encoder (23-bit) Straight shaft with key and tap | Without brake | 2.39 Nm | 750 W | 100 mm | R88M-1L75030C-S2 | R88D-1SN10F-ECT |
| | | | | 3.18 Nm | 1 kW | | R88M-1L1K030C-S2 | R88D-1SN10F-ECT |
| | | | | 4.77 Nm | 1.5 kW | | R88M-1L1K530C-S2 | R88D-1SN15F-ECT |
| | | | | 6.37 Nm | 2 kW | | R88M-1L2K030C-S2 | R88D-1SN20F-ECT |
| | | | | 9.55 Nm | 3 kW | 130 mm | R88M-1L3K030C-S2 | R88D-1SN30F-ECT |
| | | | | 12.7 Nm | 4 kW | | R88M-1L4K030C-S2 | R88D-1SN55F-ECT |
| | | | | 15.9 Nm | 5 kW | | R88M-1L5K030C-S2 | R88D-1SN55F-ECT |
| | | | With brake | 2.39 Nm | 750 W | 100 mm | R88M-1L75030C-BS2 | R88D-1SN10F-ECT |
| | | | | 3.18 Nm | 1 kW | | R88M-1L1K030C-BS2 | R88D-1SN10F-ECT |
| | | | | 4.77 Nm | 1.5 kW | | R88M-1L1K530C-BS2 | R88D-1SN15F-ECT |
| | | | | 6.37 Nm | 2 kW | | R88M-1L2K030C-BS2 | R88D-1SN20F-ECT |
| | | | | 9.55 Nm | 3 kW | 130 mm | R88M-1L3K030C-BS2 | R88D-1SN30F-ECT |
| | | | | 12.7 Nm | 4 kW | | R88M-1L4K030C-BS2 | R88D-1SN55F-ECT |
| | | | | 15.9 Nm | 5 kW | | R88M-1L5K030C-BS2 | R88D-1SN55F-ECT |

## Servo motors 2000 r/min (400 W to 3 kW)

| Symbol | Specifications | | | | | | Model | Compatible 1S servo drive |
|---|---|---|---|---|---|---|---|---|
| | Voltage | Encoder and design | | Rated torque | Capacity | Flange size | | |
| ① | 230 V | Incremental encoder (23-bit) Straight shaft with key and tap | Without brake | 4.77 Nm | 1 kW | 130 mm | R88M-1M1K020H-S2 | R88D-1SN15H-ECT |
| | | | | 7.16 Nm | 1.5 kW | | R88M-1M1K520H-S2 | R88D-1SN15H-ECT |
| | | | With brake | 4.77 Nm | 1 kW | | R88M-1M1K020H-BS2 | R88D-1SN15H-ECT |
| | | | | 7.16 Nm | 1.5 kW | | R88M-1M1K520H-BS2 | R88D-1SN15H-ECT |
| | | Absolute encoder (23-bit) Straight shaft with key and tap | Without brake | 4.77 Nm | 1 kW | | R88M-1M1K020T-S2 | R88D-1SN15H-ECT |
| | | | | 7.16 Nm | 1.5 kW | | R88M-1M1K520T-S2 | R88D-1SN15H-ECT |
| | | | With brake | 4.77 Nm | 1 kW | | R88M-1M1K020T-BS2 | R88D-1SN15H-ECT |
| | | | | 7.16 Nm | 1.5 kW | | R88M-1M1K520T-BS2 | R88D-1SN15H-ECT |
| | 400 V | | Without brake | 1.91 Nm | 400 W | 100 mm | R88M-1M40020C-S2 | R88D-1SN06F-ECT |
| | | | | 2.86 Nm | 600 W | | R88M-1M60020C-S2 | R88D-1SN06F-ECT |
| | | | | 4.77 Nm | 1 kW | 130 mm | R88M-1M1K020C-S2 | R88D-1SN10F-ECT |
| | | | | 7.16 Nm | 1.5 kW | | R88M-1M1K520C-S2 | R88D-1SN15F-ECT |
| | | | | 9.55 Nm | 2 kW | | R88M-1M2K020C-S2 | R88D-1SN20F-ECT |
| | | | | 14.3 Nm | 3 kW | | R88M-1M3K020C-S2 | R88D-1SN30F-ECT |
| | | | With brake | 1.91 Nm | 400 W | 100 mm | R88M-1M40020C-BS2 | R88D-1SN06F-ECT |
| | | | | 2.86 Nm | 600 W | | R88M-1M60020C-BS2 | R88D-1SN06F-ECT |
| | | | | 4.77 Nm | 1 kW | 130 mm | R88M-1M1K020C-BS2 | R88D-1SN10F-ECT |
| | | | | 7.16 Nm | 1.5 kW | | R88M-1M1K520C-BS2 | R88D-1SN15F-ECT |
| | | | | 9.55 Nm | 2 kW | | R88M-1M2K020C-BS2 | R88D-1SN20F-ECT |
| | | | | 14.3 Nm | 3 kW | | R88M-1M3K020C-BS2 | R88D-1SN30F-ECT |

## Servo motors 1500 r/min (4 kW to 15 kW)

| Symbol | Specifications | | | | | | Model | Compatible 1S servo drive |
|---|---|---|---|---|---|---|---|---|
| | Voltage | Encoder and design | | Rated torque | Capacity | Flange size | | |
| ① | 400 V | Absolute encoder (23-bit) Straight shaft with key and tap | Without brake | 25.5 Nm | 4 kW | 180 mm | R88M-1M4K015C-S2 | R88D-1SN55F-ECT |
| | | | | 35 Nm | 5.5 kW | | R88M-1M5K515C-S2 | R88D-1SN55F-ECT |
| | | | | 47.8 Nm | 7.5 kW | | R88M-1M7K515C-S2 | R88D-1SN75F-ECT |
| | | | | 70 Nm | 11 kW | 220 mm | R88M-1M11K015C-S2 | R88D-1SN150F-ECT |
| | | | | 95.5 Nm | 15 kW | | R88M-1M15K015C-S2 | R88D-1SN150F-ECT |
| | | | With brake | 25.5 Nm | 4 kW | 180 mm | R88M-1M4K015C-BS2 | R88D-1SN55F-ECT |
| | | | | 35 Nm | 5.5 kW | | R88M-1M5K515C-BS2 | R88D-1SN55F-ECT |
| | | | | 47.8 Nm | 7.5 kW | | R88M-1M7K515C-BS2 | R88D-1SN75F-ECT |
| | | | | 70 Nm | 11 kW | 220 mm | R88M-1M11K015C-BS2 | R88D-1SN150F-ECT |
| | | | | 95.5 Nm | 15 kW | | R88M-1M15K015C-BS2 | R88D-1SN150F-ECT |

## Servo motors 1000 r/min (900 W to 3 kW)

| Symbol | Specifications | | | | | | Model | Compatible 1S servo drive |
|---|---|---|---|---|---|---|---|---|
| | Voltage | Encoder and design | | Rated torque | Capacity | Flange size | | |
| ① | 230 V | Absolute encoder (23-bit) Straight shaft with key and tap | Without brake | 8.59 Nm | 900 W | 130 mm | R88M-1M90010T-S2 | R88D-1SN15H-ECT |
| | | | With brake | 8.59 Nm | 900 W | | R88M-1M90010T-BS2 | R88D-1SN15H-ECT |
| | 400 V | | Without brake | 8.59 Nm | 900 W | | R88M-1M90010C-S2 | R88D-1SN10F-ECT |
| | | | | 19.1 Nm | 2 kW | 180 mm | R88M-1M2K010C-S2 | R88D-1SN20F-ECT |
| | | | | 28.7 Nm | 3 kW | | R88M-1M3K010C-S2 | R88D-1SN30F-ECT |
| | | | With brake | 8.59 Nm | 900 W | 130 mm | R88M-1M90010C-BS2 | R88D-1SN10F-ECT |
| | | | | 19.1 Nm | 2 kW | 180 mm | R88M-1M2K010C-BS2 | R88D-1SN20F-ECT |
| | | | | 28.7 Nm | 3 kW | | R88M-1M3K010C-BS2 | R88D-1SN30F-ECT |



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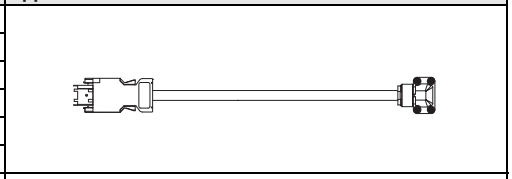
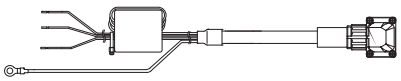
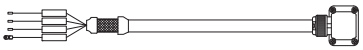
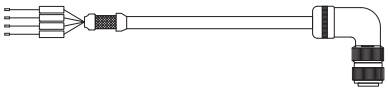
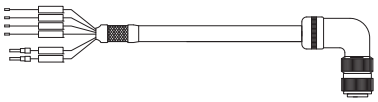
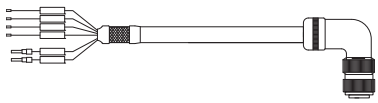
## Encoder cables

| Symbol | Specifications | | Model | Appearance |
|---|---|---|---|---|
| ③ | Encoder cable for servo motors<br>R88M-1M05030T-□<br>R88M-1M(100/200/400/750)30(H/T)-□ | 1.5 m | R88A-CR1A001-5CF-E |  |
| | | 3 m | R88A-CR1A003CF-E | |
| | | 5 m | R88A-CR1A005CF-E | |
| | | 10 m | R88A-CR1A010CF-E | |
| | | 15 m | R88A-CR1A015CF-E | |
| | | 20 m | R88A-CR1A020CF-E | |
| | Encoder cable for servo motors<br>R88M-1L(1K0/1K5)30(H/T)-□<br>R88M-1L(750/1K0/1K5/2K0/3K0/4K0/5K0)30C-□<br>R88M-1M(1K0/1K5)20(H/T)-□<br>R88M-1M(400/600/1K0/1K5/2K0/3K0)20C-□<br>R88M-1M(4K0/5K5/7K5/11K0/15K0)15C-□<br>R88M-1M90010T-□<br>R88M-1M(900/2K0/3K0)10C-□ | 1.5 m | R88A-CR1B001-5NF-E | |
| | | 3 m | R88A-CR1B003NF-E | |
| | | 5 m | R88A-CR1B005NF-E | |
| | | 10 m | R88A-CR1B010NF-E | |
| | | 15 m | R88A-CR1B015NF-E | |
| | | 20 m | R88A-CR1B020NF-E | |

## Power cables

| Symbol | Specifications | | | Model | Appearance |
|---|---|---|---|---|---|
| ④ | For 230 V servo motors<br>R88M-1M05030T-□S2<br><br>**Note:** For servo motors with brake R88M-1M05030T-BS2, the separate brake cable R88A-CA1A□□□BFR is needed. | Without brake | 3 m | R88A-CA1A003SFR |  |
| | | | 5 m | R88A-CA1A005SFR | |
| | | | 10 m | R88A-CA1A010SFR | |
| | | | 15 m | R88A-CA1A015SFR | |
| | | | 20 m | R88A-CA1A020SFR | |
| | For 230 V servo motors<br>R88M-1M(100/200/400/750)30(H/T)-□S2<br><br>**Note:** For servo motors with brake R88M-1M(100/200/400/750)30(H/T)-BS2, the separate brake cable R88A-CA1A□□□BF-E is needed. | Without brake | 1.5 m | R88A-CA1A001-5SF-E |  |
| | | | 3 m | R88A-CA1A003SF-E | |
| | | | 5 m | R88A-CA1A005SF-E | |
| | | | 10 m | R88A-CA1A010SF-E | |
| | | | 15 m | R88A-CA1A015SF-E | |
| | | | 20 m | R88A-CA1A020SF-E | |
| | For 230 V servo motors<br>R88M-1L(1K0/1K5)30(H/T)-□S2<br>R88M-1M(1K0/1K5)20(H/T)-□S2<br>R88M-1M90010T-□S2 | Without brake | 1.5 m | R88A-CA1C001-5SF-E |  |
| | | | 3 m | R88A-CA1C003SF-E | |
| | | | 5 m | R88A-CA1C005SF-E | |
| | | | 10 m | R88A-CA1C010SF-E | |
| | | | 15 m | R88A-CA1C015SF-E | |
| | | | 20 m | R88A-CA1C020SF-E | |
| | | With brake | 1.5 m | R88A-CA1C001-5BF-E |  |
| | | | 3 m | R88A-CA1C003BF-E | |
| | | | 5 m | R88A-CA1C005BF-E | |
| | | | 10 m | R88A-CA1C010BF-E | |
| | | | 15 m | R88A-CA1C015BF-E | |
| | | | 20 m | R88A-CA1C020BF-E | |
| | For 400 V servo motors<br>R88M-1L(750/1K0/1K5/2K0)30C-□S2<br>R88M-1M(400/600/1K0/1K5/2K0)20C-□S2<br>R88M-1M90010C-□S2 | Without brake | 1.5 m | R88A-CA1C001-5SF-E | |
| | | | 3 m | R88A-CA1C003SF-E | |
| | | | 5 m | R88A-CA1C005SF-E | |
| | | | 10 m | R88A-CA1C010SF-E | |
| | | | 15 m | R88A-CA1C015SF-E | |
| | | | 20 m | R88A-CA1C020SF-E | |
| | | With brake | 1.5 m | R88A-CA1E001-5BF-E |  |
| | | | 3 m | R88A-CA1E003BF-E | |
| | | | 5 m | R88A-CA1E005BF-E | |
| | | | 10 m | R88A-CA1E010BF-E | |
| | | | 15 m | R88A-CA1E015BF-E | |
| | | | 20 m | R88A-CA1E020BF-E | |



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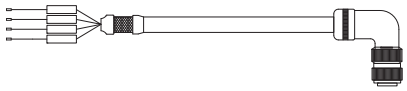
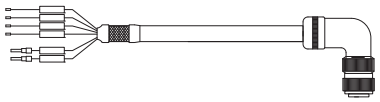
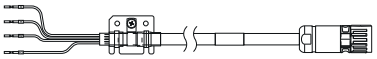
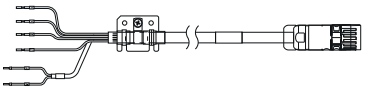
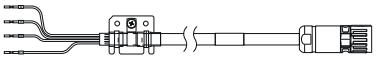
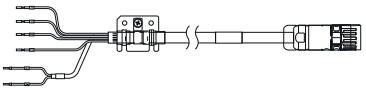
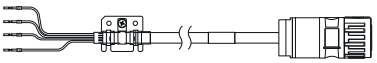
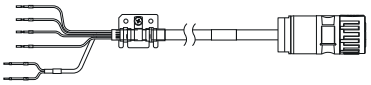
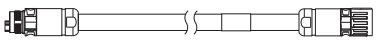
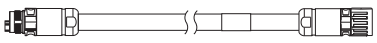
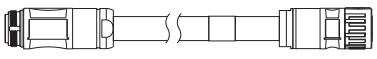
| Symbol | Specifications | | | Model | Appearance |
|---|---|---|---|---|---|
| ④ | For 400 V servo motors<br>R88M-1L3K030C-□S2<br>R88M-1M3K020C-□S2<br>R88M-1M(2K0/3K0)10C-□S2 | Without brake | 1.5 m | R88A-CA1E001-5SF-E |  |
| | | | 3 m | R88A-CA1E003SF-E | |
| | | | 5 m | R88A-CA1E005SF-E | |
| | | | 10 m | R88A-CA1E010SF-E | |
| | | | 15 m | R88A-CA1E015SF-E | |
| | | | 20 m | R88A-CA1E020SF-E | |
| | | With brake | 1.5 m | R88A-CA1E001-5BF-E |  |
| | | | 3 m | R88A-CA1E003BF-E | |
| | | | 5 m | R88A-CA1E005BF-E | |
| | | | 10 m | R88A-CA1E010BF-E | |
| | | | 15 m | R88A-CA1E015BF-E | |
| | | | 20 m | R88A-CA1E020BF-E | |
| | For 400 V servo motors*1<br>R88M-1L(4K0/5K0)30C-□S2<br>R88M-1M(4K0/5K5)15C-□S2 | Without brake | 3 m | R88A-CA1G003SF |  |
| | | | 5 m | R88A-CA1G005SF | |
| | | | 10 m | R88A-CA1G010SF | |
| | | | 15 m | R88A-CA1G015SF | |
| | | | 20 m | R88A-CA1G020SF | |
| | | With brake | 3 m | R88A-CA1G003BF |  |
| | | | 5 m | R88A-CA1G005BF | |
| | | | 10 m | R88A-CA1G010BF | |
| | | | 15 m | R88A-CA1G015BF | |
| | | | 20 m | R88A-CA1G020BF | |
| | For 400 V servo motors<br>R88M-1M7K515C-□S2 | Without brake | 3 m | R88A-CA1H003SF |  |
| | | | 5 m | R88A-CA1H005SF | |
| | | | 10 m | R88A-CA1H010SF | |
| | | | 15 m | R88A-CA1H015SF | |
| | | | 20 m | R88A-CA1H020SF | |
| | | With brake | 3 m | R88A-CA1H003BF |  |
| | | | 5 m | R88A-CA1H005BF | |
| | | | 10 m | R88A-CA1H010BF | |
| | | | 15 m | R88A-CA1H015BF | |
| | | | 20 m | R88A-CA1H020BF | |
| | For 400 V servo motors<br>R88M-1M(11K0/15K0)15C-□S2 | Without brake | 3 m | R88A-CA1J003SF |  |
| | | | 5 m | R88A-CA1J005SF | |
| | | | 10 m | R88A-CA1J010SF | |
| | | | 15 m | R88A-CA1J015SF | |
| | | | 20 m | R88A-CA1J020SF | |
| | | With brake | 3 m | R88A-CA1J003BF |  |
| | | | 5 m | R88A-CA1J005BF | |
| | | | 10 m | R88A-CA1J010BF | |
| | | | 15 m | R88A-CA1J015BF | |
| | | | 20 m | R88A-CA1J020BF | |

*1 Refer to the “Using R88A-CA1G power cables” technical note when using multiple cables in the same duct.

## Extension power cables (for 400 V, 4 kW to 15 kW servo motors)

| Symbol | Specifications | | Model | Appearance |
|---|---|---|---|---|
| ④ | R88M-1L(4K0/5K0)30C-□S2<br>R88M-1M(4K0/5K5)15C-□S2 | 10 m | R88A-CA1GE10BF |  |
| | | 20 m | R88A-CA1GE20BF | |
| | R88M-1M7K515C-□S2 | 10 m | R88A-CA1HE10BF |  |
| | | 20 m | R88A-CA1HE20BF | |
| | R88M-1M(11K0/15K0)15C-□S2 | 10 m | R88A-CA1JE10BF |  |
| | | 20 m | R88A-CA1JE20BF | |



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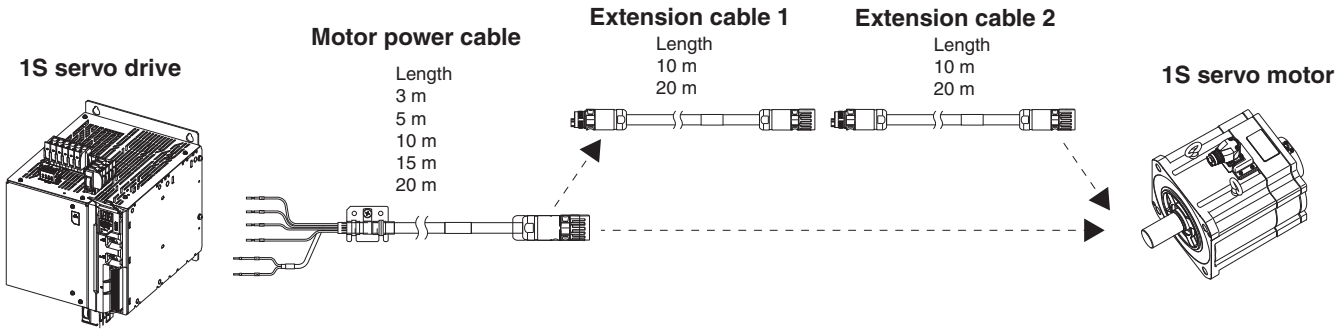
## Combinations of Motor power cables and Extension power cables

The table below lists the combinations of cables that can be used to extend the motor power cable for a servomotor of 4 kW or more to more than 20 m.

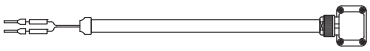
Use the motor power cable and extension power cable in a specified combination. Not doing so may cause fire, equipment damage, or operation failure.




| Length | | | | Combination |
|---|---|---|---|---|
| Total | Motor power cable | Extension cable 1 | Extension cable 2 | |
| 3 | 3 | – | – | Motor power cable only |
| 5 | 5 | – | – | Motor power cable only |
| 10 | 10 | – | – | Motor power cable only |
| 15 | 15 | – | – | Motor power cable only |
| 20 | 20 | – | – | Motor power cable only |
| 30 | 20 | 10 | – | Motor power cable + extension cable 1 |
| 40 | 20 | 20 | – | Motor power cable + extension cable 1 |
| 50 | 20 | 10 | 20 | Motor power cable + extension cable 1 + extension cable 2*1 |

*1 A 20 m extension cable 1 and a 10 m extension cable 2 can also be used.

## Brake cables (for 230 V, 50 W to 750 W servo motors)

| Symbol | Specifications | | Model | Appearance |
|---|---|---|---|---|
| ⑤ | Brake cable only<br>For 230 V servo motors with brake<br>R88M-1M05030T-BS2 | 3 m | R88A-CA1A003BFR | |
| | | 5 m | R88A-CA1A005BFR | |
| | | 10 m | R88A-CA1A010BFR | |
| | | 15 m | R88A-CA1A015BFR | |
| | | 20 m | R88A-CA1A020BFR | |
| | Brake cable only<br>For 230 V servo motors with brake<br>R88M-1M(100/200/400/750)30(H/T)-BS2 | 1.5 m | R88A-CA1A001-5BF-E |  |
| | | 3 m | R88A-CA1A003BF-E | |
| | | 5 m | R88A-CA1A005BF-E | |
| | | 10 m | R88A-CA1A010BF-E | |
| | | 15 m | R88A-CA1A015BF-E | |
| | | 20 m | R88A-CA1A020BF-E | |



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## Connectors for encoder, power and brake cables

| Specifications | | Applicable servo motor | Model |
|---|---|---|---|
| Connectors for encoder cables | Drive side (CN2) | All models | R88A-CN101R |
| | Motor side | R88M-1M05030T-□<br>R88M-1M(100/200/400/750)30(H/T)-□ | R88A-CNK02R |
| | | R88M-1L(1K0/1K5)30(H/T)-□<br>R88M-1L(750/1K0/1K5/2K0/3K0/4K0/5K0)30C-□<br>R88M-1M(1K0/1K5)20(H/T)-□<br>R88M-1M(400/600/1K0/1K5/2K0/3K0)20C-□<br>R88M-1M(4K0/5K5/7K5/11K0/15K0)15C-□<br>R88M-1M90010T-□<br>R88M-1M(900/2K0/3K0)10C-□ | R88A-CN104R |
| Connectors for power cables | Motor side | R88M-1M(100/200/400/750)30(H/T)-_S2 | R88A-CN111A |
| | | R88M-1L(1K0/1K5)30(H/T)-S2<br>R88M-1M(1K0/1K5)20(H/T)-S2<br>R88M-1M90010T-S2<br>R88M-1L(750/1K0/1K5/2K0)30C-S2<br>R88M-1M(400/600/1K0/1K5/2K0)20C-S2<br>R88M-1M90010C-S2 | MS3108E20-4S |
| | | R88M-1L(1K0/1K5)30(H/T)-BS2<br>R88M-1M(1K0/1K5)20(H/T)-BS2<br>R88M-1M90010T-BS2 | MS3108E20-18S |
| | | R88M-1L3K030C-S2<br>R88M-1M3K020C-S2<br>R88M-1M(2K0/3K0)10C-S2 | MS3108E22-22S |
| | | R88M-1L(750/1K0/1K5/2K0/3K0)30C-BS2<br>R88M-1M(400/600/1K0/1K5/2K0/3K0)20C-BS2<br>R88M-1M(900/2K0/3K0)10C-BS2 | MS3108E24-11S |
| Connectors for brake cables | Motor side | R88M-1M(100/200/400/750)30(H/T)-BS2 | R88A-CN111B |

**Cable shield clamp (spare parts)**

| Applicable 1S power cable | Model |
|---|---|
| 230 V, 100 W to 750 W models | R88A-SC011S-E |
| 230 V, 1.5 kW model<br>400 V, 600 W to 3 kW models | R88A-SC021S-E |
| 400 V, 5.5 kW to 15 kW models | R88A-SC10CA-PE |

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

Cat. No. SysCat_I189E-EN-04C In the interest of product improvement, specifications are subject to change without notice.



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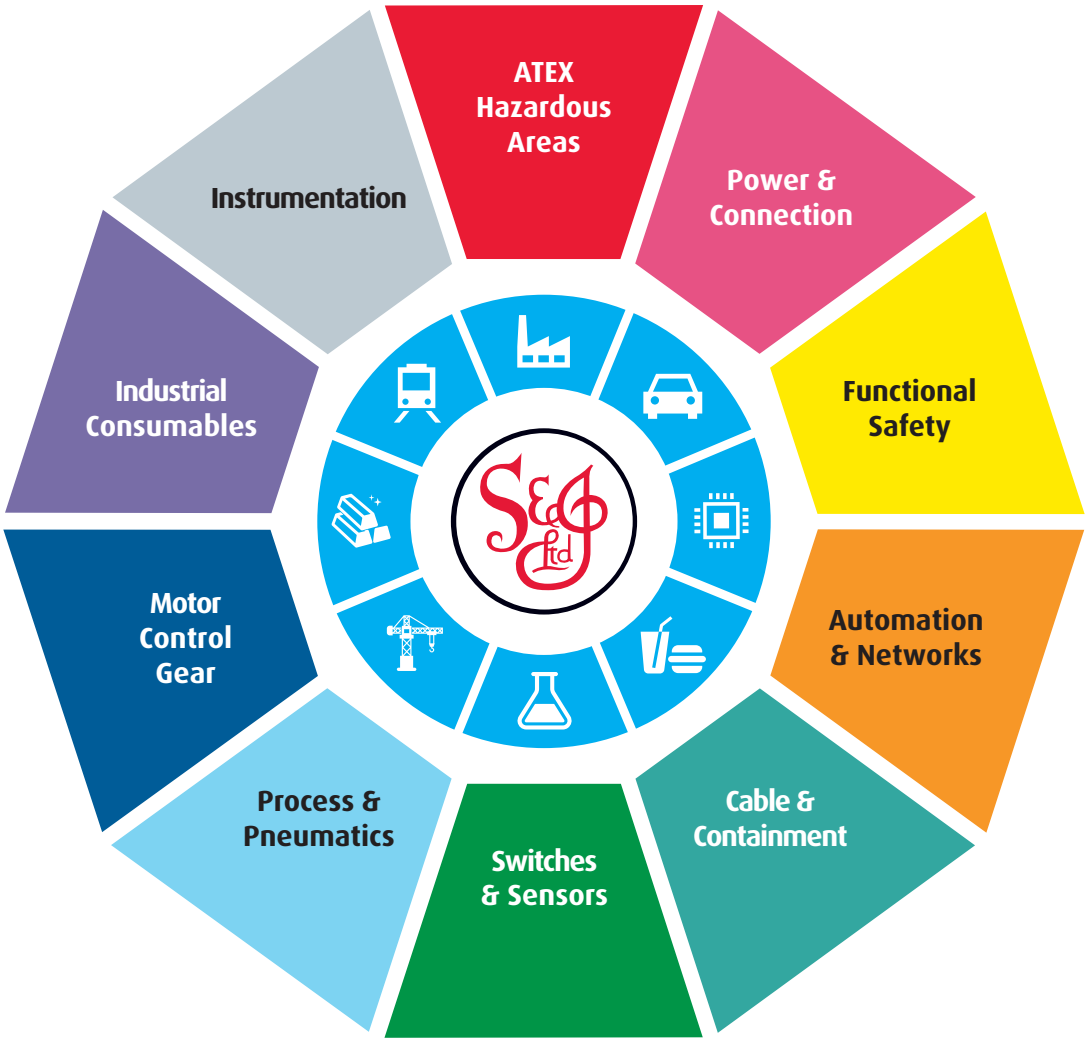


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