

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

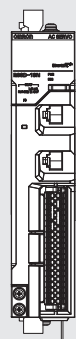
## Ratings

- 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)



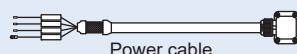
## System configuration

(Refer to servo drive chapter)

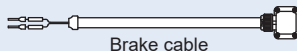


1S servo drive

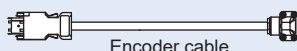
### 1S servo motor (Flange size 80 mm or less)



Power cable



Brake cable



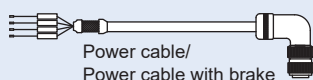
Encoder cable

**SYSMAC**  
always in control

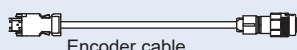


3000 rpm (50 W - 750 W)

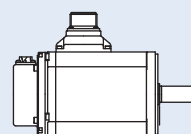
### 1S servo motor (Flange size 100 mm or more)



Power cable/  
Power cable with brake



Encoder cable



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

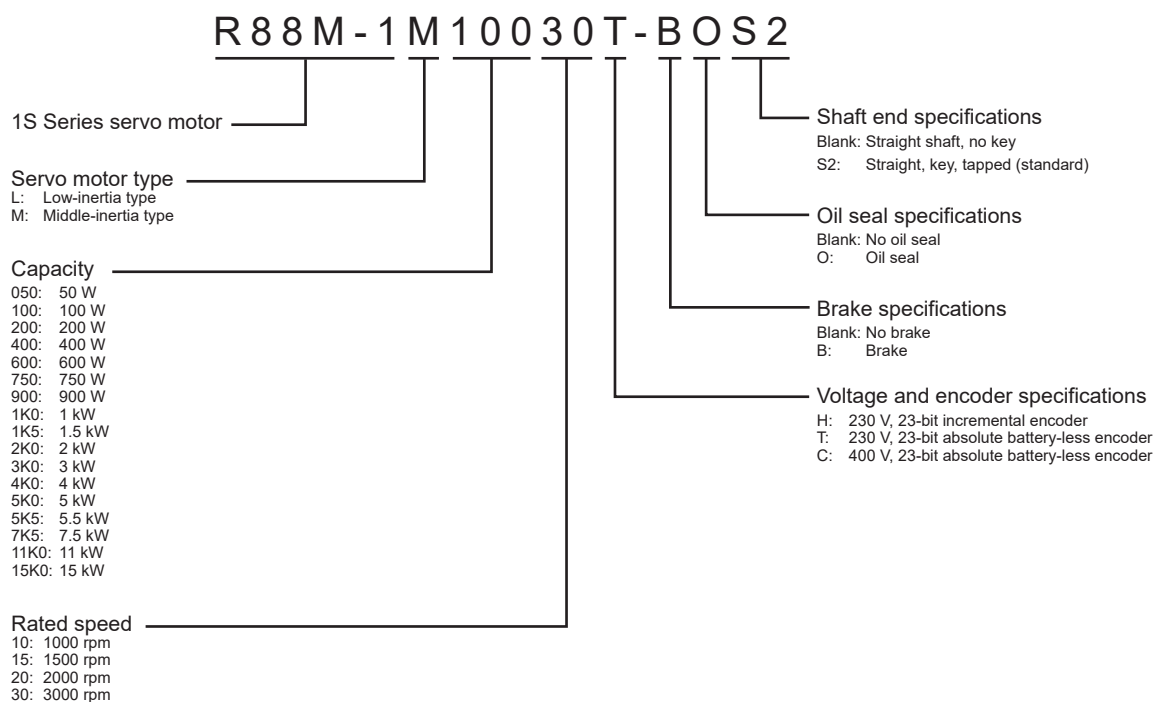
## Servo motor / Servo drive combination

| 1S servo motor                                                                    |                        |         |              |          |                     | 1S servo drive     |
|-----------------------------------------------------------------------------------|------------------------|---------|--------------|----------|---------------------|--------------------|
| Appearance                                                                        | Speed                  | Voltage | Rated torque | Capacity | Model               |                    |
|  | 3000 min <sup>-1</sup> | 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-□  |
|                                                                                   |                        | 400 V   | 4.77 Nm      | 1.5 kW   | R88M-1L1K530(H/T)-□ | R88D-1SN15H-ECT-□  |
|                                                                                   |                        |         | 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 <sup>-1</sup> | 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-□  |
|                                                                                   | 1500 min <sup>-1</sup> | 400 V   | 9.55 Nm      | 2 kW     | R88M-1M2K020C-□     | R88D-1SN20F-ECT-□  |
|                                                                                   |                        |         | 14.3 Nm      | 3 kW     | R88M-1M3K020C-□     | R88D-1SN30F-ECT-□  |
|                                                                                   |                        |         | 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-□  |
|                                                                                   | 1000 min <sup>-1</sup> | 400 V   | 70 Nm        | 11 kW    | R88M-1M11K015C-□    | R88D-1SN150F-ECT-□ |
|                                                                                   |                        |         | 95.5 Nm      | 15 kW    | R88M-1M15K015C-□    | R88D-1SN150F-ECT-□ |
|                                                                                   |                        | 230 V   | 8.59 Nm      | 900 W    | R88M-1M90010T-□     | R88D-1SN15H-ECT-□  |
|                                                                                   |                        |         | 8.59 Nm      | 900 W    | R88M-1M90010C-□     | R88D-1SN10F-ECT-□  |
|                                                                                   |                        |         | 19.1 Nm      | 2 kW     | R88M-1M2K010C-□     | R88D-1SN20F-ECT-□  |
|                                                                                   |                        | 400 V   | 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



# Specifications

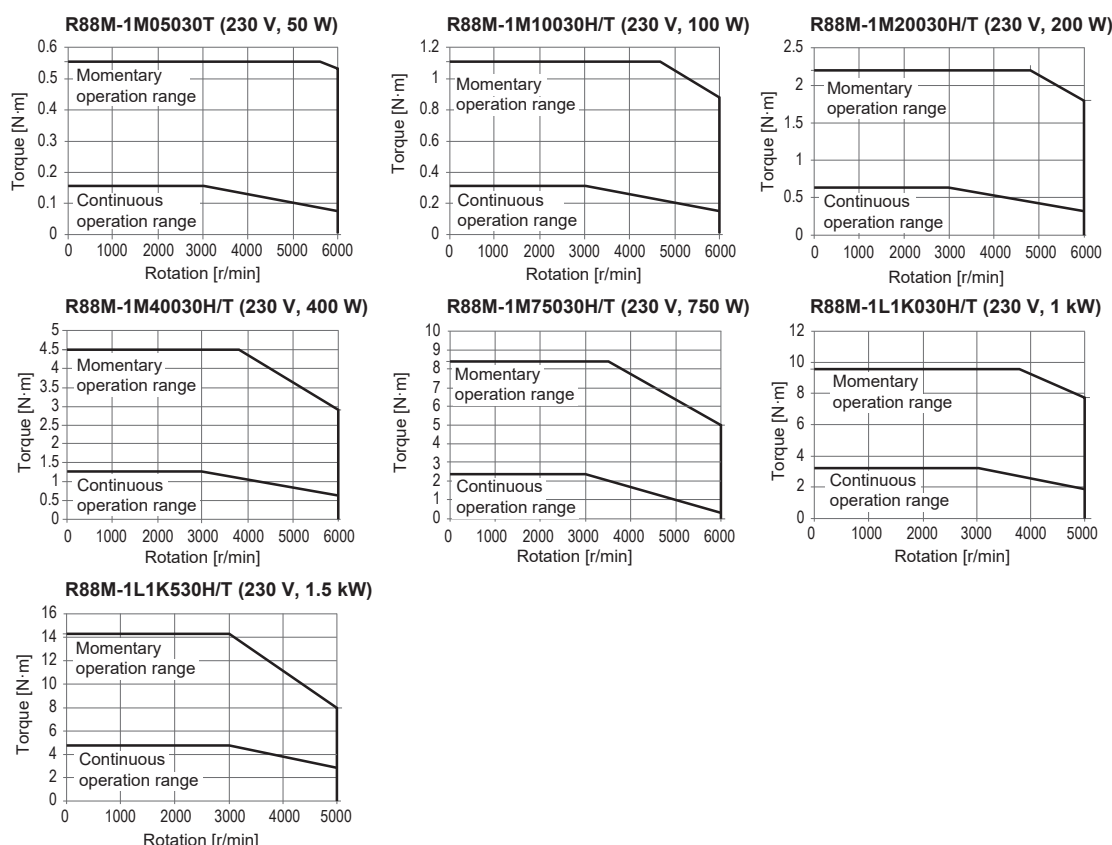
## 3000 r/min servo motors, 230 V

### 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 <sup>-1</sup>                                   | 3000                                |                                                                                |           |           |           |           |           |      |
| Max. speed                 | min <sup>-1</sup>                                   | 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 <sup>2</sup> ×10 <sup>-4</sup> (without brake) | 0.0418                              | 0.089                                                                          | 0.2232    | 0.4452    | 1.8242    | 2.1042    |           |      |
|                            | kg·m <sup>2</sup> ×10 <sup>-4</sup> (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 <sup>*1</sup>                    |                                     | 24 VDC ±10%                                                                    |           |           |           |           |           |      |
|                            | Holding brake moment of inertia J                   | kg·m <sup>2</sup> ×10 <sup>-4</sup> |                                                                                | 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 <sup>2</sup>                                  |           |           |           |           |           |      |
|                            | Impact resistance                                   |                                     | Acceleration of 98 m/s <sup>2</sup> max. 3 times each in X, Y and Z directions |           |           |           |           |           |      |
|                            | Enclosure                                           |                                     | IP67 (except for through-shaft parts when connectors are inserted)             |           |           |           |           |           |      |

<sup>\*1</sup> This is a non-excitable brake (it is released when excitation voltage is applied).

### Torque-speed characteristics



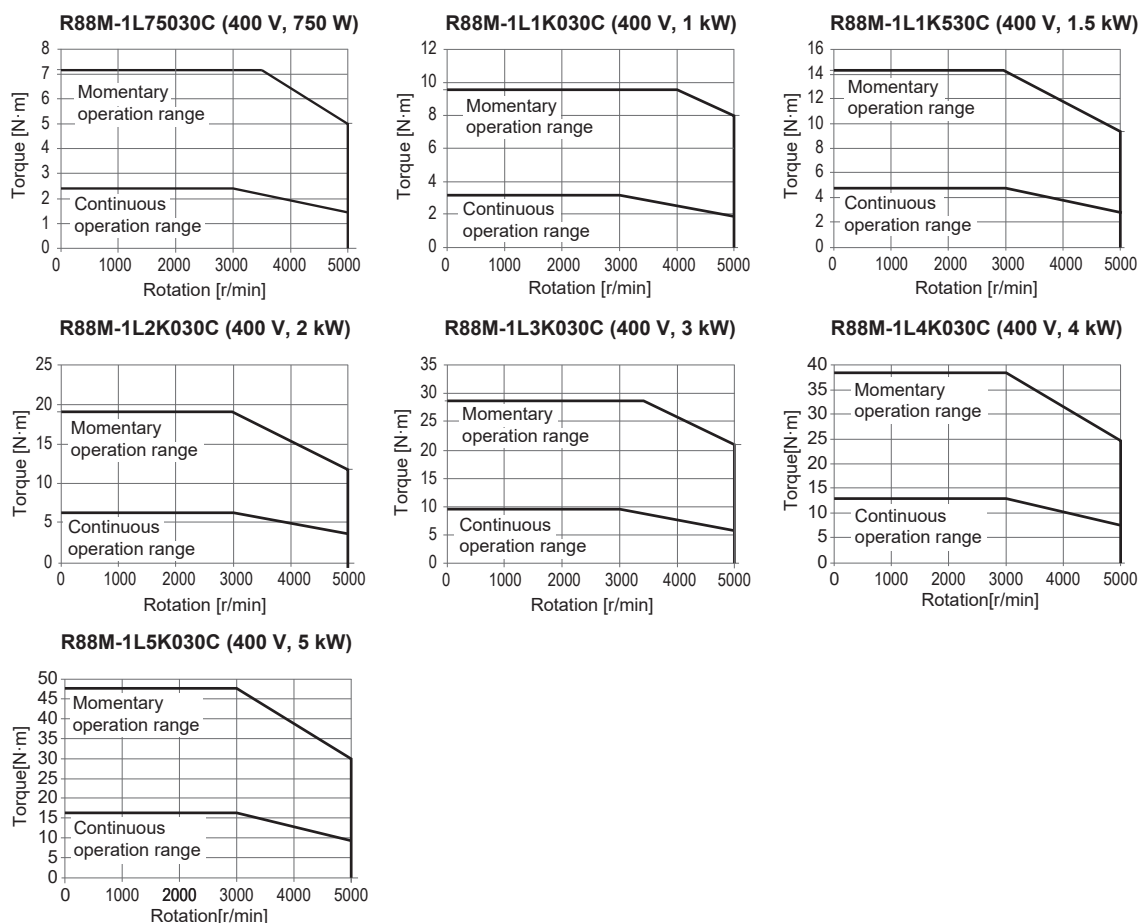
## 3000 r/min servo motors, 400 V

### 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 <sup>-1</sup>                                   | 3000                                                                           |           |           |           |           |           |           |
| Max. speed                 | min <sup>-1</sup>                                   | 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 <sup>2</sup> x10 <sup>-4</sup> (without brake) | 1.3042                                                                         | 2.1042    |           | 2.4042    | 6.8122    | 8.8122    | 10.6122   |
|                            | kg·m <sup>2</sup> x10 <sup>-4</sup> (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 <sup>*1</sup>                    | 24 VDC ±10%                                                                    |           |           |           |           |           |           |
|                            | Holding brake moment of inertia J                   | kg·m <sup>2</sup> x10 <sup>-4</sup>                                            | 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 <sup>2</sup>                                  |           |           |           |           |           |           |
|                            | Impact resistance                                   | Acceleration of 98 m/s <sup>2</sup> max. 3 times each in X, Y and Z directions |           |           |           |           |           |           |
|                            | Enclosure                                           | IP67 (except for through-shaft parts when connectors are inserted)             |           |           |           |           |           |           |

<sup>\*1</sup> This is a non-excitable brake (it is released when excitation voltage is applied).

### Torque-speed characteristics



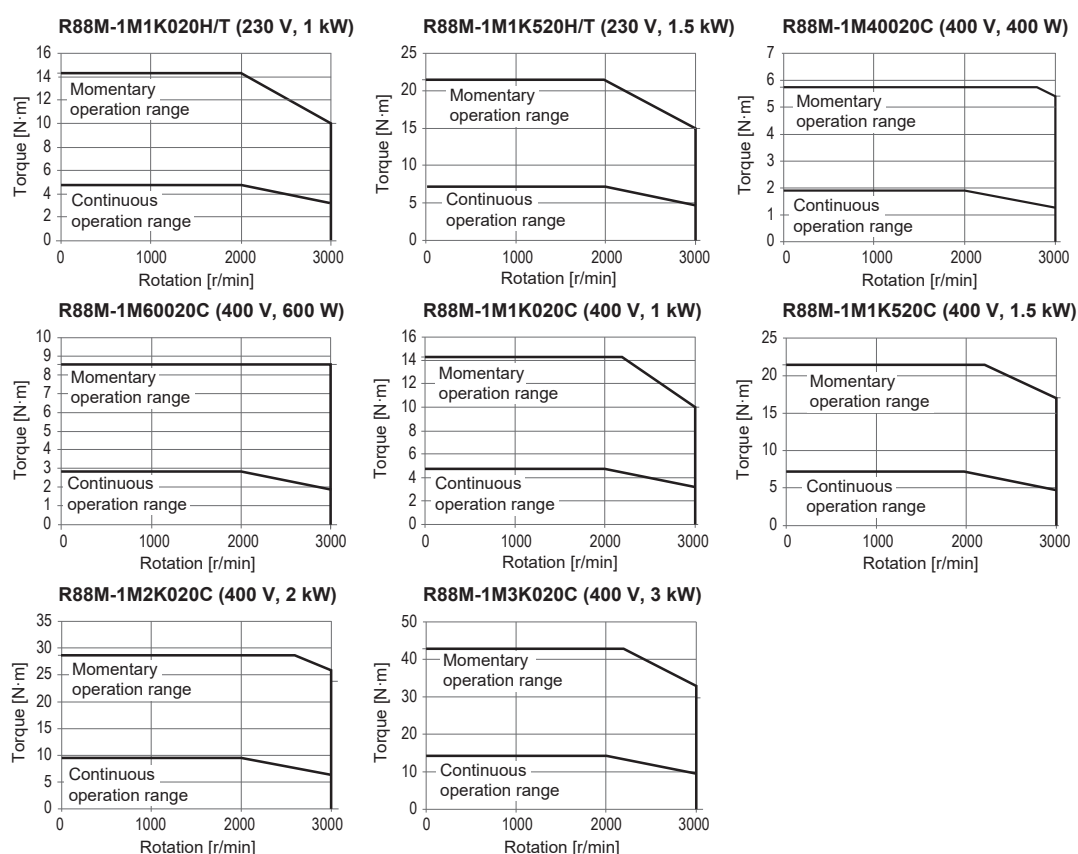
# 2000 r/min servo motors, 230 V/400 V

## 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 <sup>-1</sup>                                   | 2000                                                                           |           |           |           |           |           |           |           |
| Max. speed                 |                                       | min <sup>-1</sup>                                   | 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 <sup>2</sup> x10 <sup>-4</sup> (without brake) | 6.0042                                                                         | 9.0042    | 2.5042    | 3.9042    | 6.0042    | 9.0042    | 12.2042   | 15.3122   |
|                            |                                       | kg·m <sup>2</sup> x10 <sup>-4</sup> (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 <sup>*1</sup>      |                                                     | 24 VDC ±10%                                                                    |           |           |           |           |           |           |           |
|                            | Holding brake moment of inertia J     |                                                     | kg·m <sup>2</sup> x10 <sup>-4</sup>                                            |           | 0.5       |           | 0.343     |           | 0.5       |           |
|                            | Current consumption (at 20°C)         |                                                     | A                                                                              |           | 0.51      |           | 0.3       |           | 0.51      |           |
|                            | Static friction torque                |                                                     | Nm (minimum)                                                                   |           | 9.0       |           | 3.92      |           | 9.0       |           |
| 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 <sup>2</sup>                                  |           |           |           |           |           |           |           |
|                            | Impact resistance                     |                                                     | Acceleration of 98 m/s <sup>2</sup> max. 3 times each in X, Y and Z directions |           |           |           |           |           |           |           |
|                            | Enclosure                             |                                                     | IP67 (except for through-shaft parts when connectors are inserted)             |           |           |           |           |           |           |           |

<sup>\*1</sup> This is a non-excitabile brake (it is released when excitation voltage is applied).

## Torque-speed characteristics



## 1500 r/min servo motors, 400 V

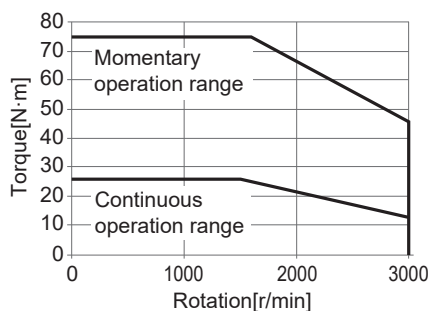
### Ratings and specifications

| 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 <sup>-1</sup>                                   | 1,500                                                                          |           |           |            |            |
| Max. speed                 | min <sup>-1</sup>                                   | 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 <sup>2</sup> x10 <sup>-4</sup> (without brake) | 54.0122                                                                        | 77.0122   | 113.0122  | 229.0122   | 340.0122   |
|                            | kg·m <sup>2</sup> x10 <sup>-4</sup> (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 <sup>*1</sup>                    | 24 VDC ±10%                                                                    |           |           |            |            |
|                            | Holding brake moment of inertia J                   | 6.0                                                                            |           | 5.0       | 24.0       | 25.0       |
|                            | Current consumption (at 20°C)                       | 1.0                                                                            |           | 1.4       | 1.7        | 0.92       |
|                            | Static friction torque                              | Nm (minimum)                                                                   | 32 min.   | 42 min.   | 54.9 min.  | 90 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 <sup>2</sup>                                  |           |           |            |            |
|                            | Impact resistance                                   | Acceleration of 98 m/s <sup>2</sup> max. 3 times each in X, Y and Z directions |           |           |            |            |
|                            | Enclosure                                           | IP67 (except for through-shaft parts when connectors are inserted)             |           |           |            |            |

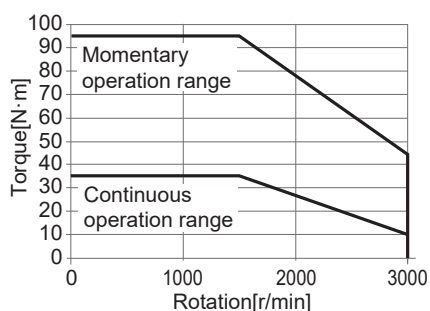
<sup>\*1</sup> This is a non-excitable brake (it is released when excitation voltage is applied).

### Torque-speed characteristics

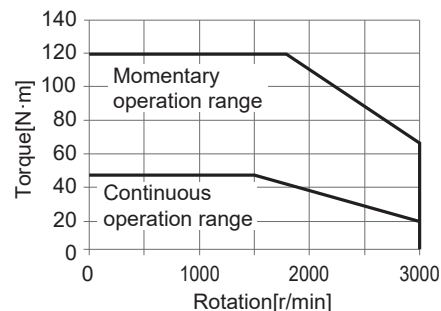
R88M-1M4K015C (400 V, 4 kW)



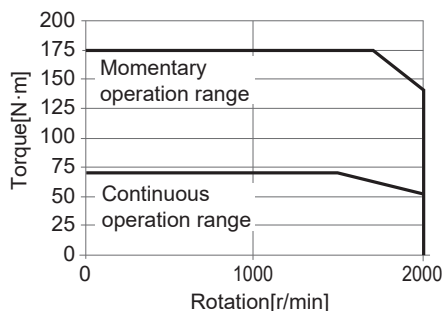
R88M-1M5K515C (400 V, 5.5 kW)



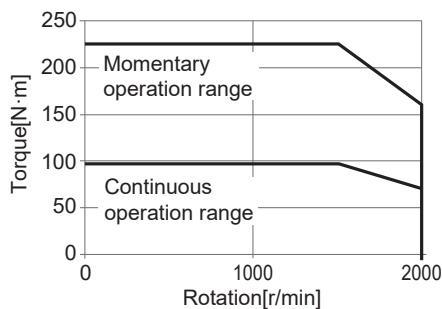
R88M-1M7K515C (400 V, 7.5 kW)



R88M-1M11K015C (400 V, 11 kW)



R88M-1M15K015C (400 V, 15 kW)



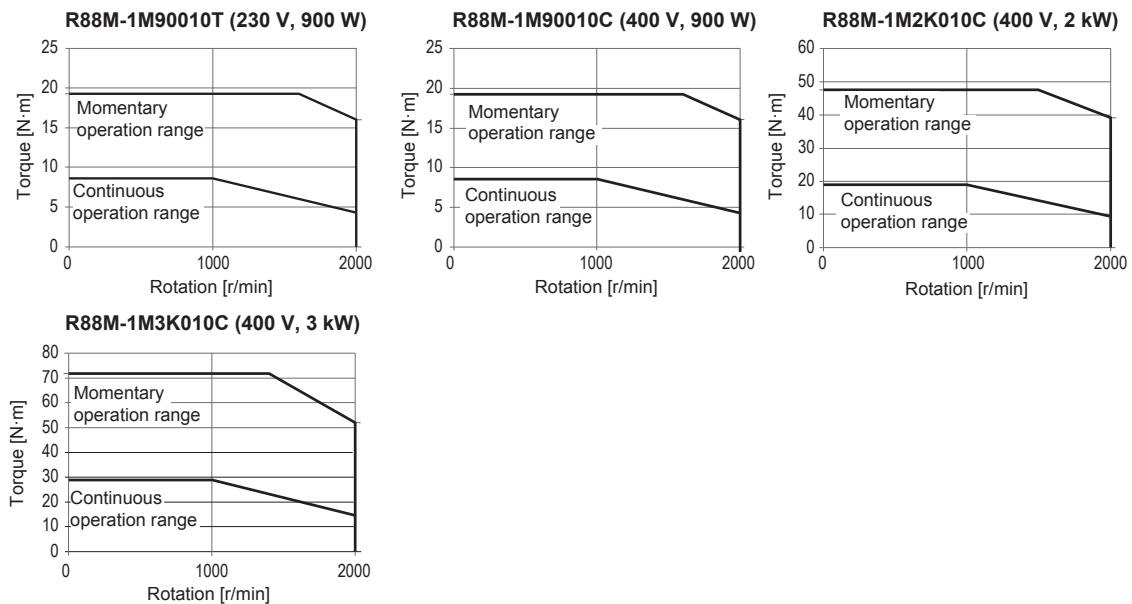
# 1000 r/min servo motors, 230 V/400 V

## 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 <sup>-1</sup>                                   | 1000                                                                           |           |           |           |
| Max. speed                 | min <sup>-1</sup>                                   | 2000                                                                           |           |           |           |
| Torque constant            | N·m/A                                               | 1.28                                                                           | 2.41      | 3.00      | 2.97      |
| Rotor moment of inertia    | kg·m <sup>2</sup> ×10 <sup>-4</sup> (without brake) | 9.0042                                                                         |           | 40.0122   | 68.0122   |
|                            | kg·m <sup>2</sup> ×10 <sup>-4</sup> (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 <sup>2</sup> ×10 <sup>-4</sup>                                            | 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 <sup>2</sup>                                  |           |           |           |
|                            | Impact resistance                                   | Acceleration of 98 m/s <sup>2</sup> 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



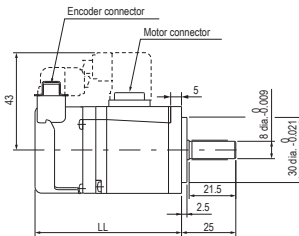
## Dimensions

### Servo motors

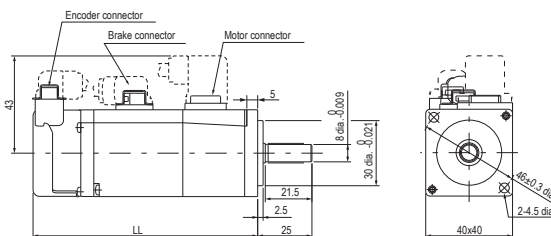
#### Type 3000 r/min motors (230 V, 50 W)

| 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       |

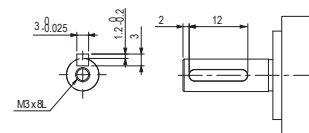
Models without brake



Models with brake



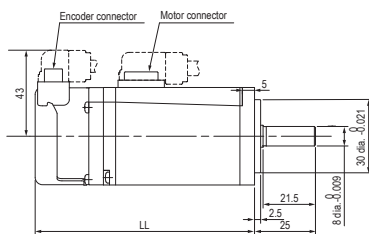
Shaft end



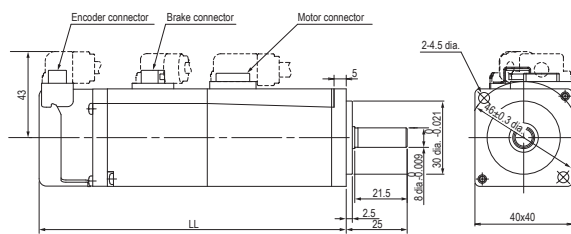
#### Type 3000 r/min motors (230 V, 100 W)

| 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       |

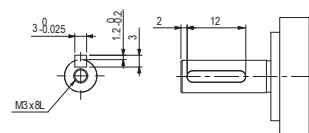
Models without brake



Models with brake



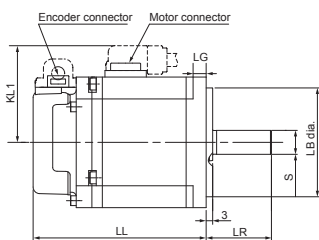
Shaft end



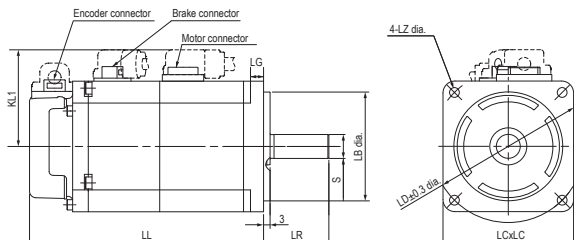
#### Type 3000 r/min motors (230 V, 200 W to 750 W)

| 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. <sup>0</sup> <sub>-0.025</sub> | 60 | 70 | 6  | 4.5 | 11 dia. <sup>0</sup> <sub>-0.011</sub> | 2  | 20 | 4 <sup>0</sup> <sub>-0.03</sub> | 1.5 <sup>0</sup> <sub>-0.2</sub> | 4 | M4 x 10L    | 1.0               | 1.3        |
| M40030(H/T)-□S2 | 105.5         |      | 133.5      |      |    |                                        |    |    |    |     | 14 dia. <sup>0</sup> <sub>-0.011</sub> |    |    | 5 <sup>0</sup> <sub>-0.03</sub> | 2 <sup>0</sup> <sub>-0.2</sub>   | 5 | M5 x 12L    | 1.4               | 1.9        |
| M75030(H/T)-□S2 | 117.3         | 63.2 | 153        | 63.2 | 35 | 70 dia. <sup>0</sup> <sub>-0.03</sub>  | 80 | 90 | 8  | 6   | 19 dia. <sup>0</sup> <sub>-0.013</sub> | 3  | 24 | 6 <sup>0</sup> <sub>-0.03</sub> | 2.5 <sup>0</sup> <sub>-0.2</sub> | 6 |             | 2.9               | 3.9        |

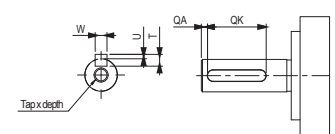
Models without brake



Models with brake



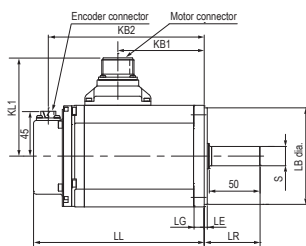
Shaft end



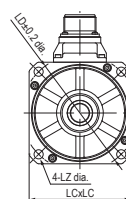
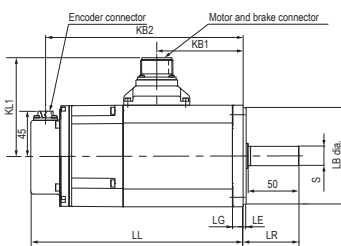
# Type 3000 r/min motors (230 V, 1 kW to 1.5 kW / 400 V, 750 W to 3 kW)

| 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. <sup>0</sup> <sub>-0.035</sub>  | 100 | 115 | 3  | 10 | 9  | 19 dia. <sup>0</sup> <sub>-0.013</sub> | 3  | 42 | 6 <sup>0</sup> <sub>-0.03</sub>  | 2.5 <sup>0</sup> <sub>-0.2</sub> | 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. <sup>0</sup> <sub>-0.035</sub> | 130 | 145 | 4  | 12 | 9  | 22 dia. <sup>0</sup> <sub>-0.013</sub> |    |    | 8 <sup>0</sup> <sub>-0.036</sub> | 3 <sup>0</sup> <sub>-0.4</sub>   | 7 |                   | 11.5          | 12.5       |  |  |  |  |  |  |  |  |  |  |  |  |     |     |

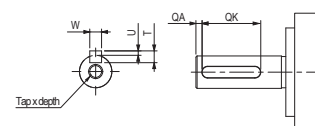
Models without brake



Models with brake



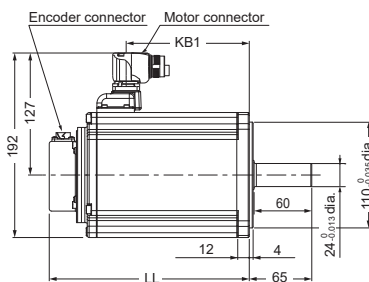
Shaft end



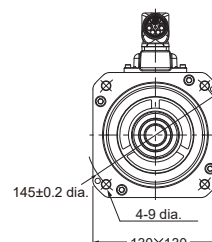
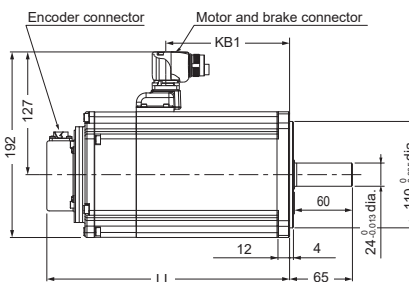
# Type 3000 r/min motors (400 V, 4 kW to 5 kW)

| 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       |

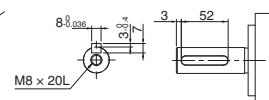
Models without brake



Models with brake



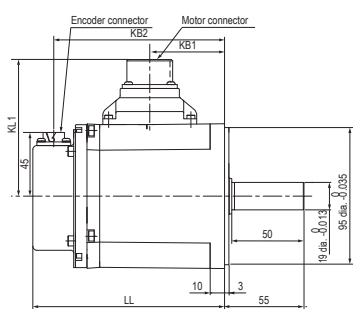
Shaft end



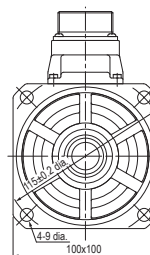
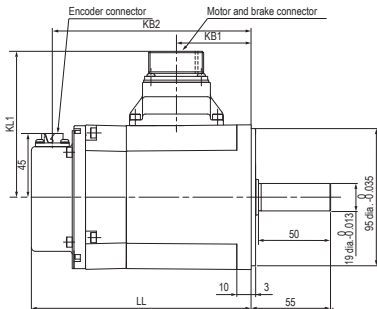
# Type 2000 r/min motors (400 V, 400 W to 600 W)

| 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        |

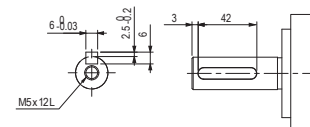
Models without brake



Models with brake



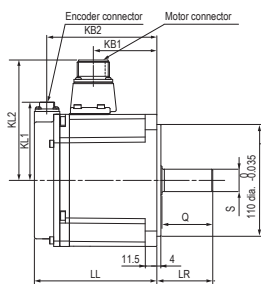
Shaft end



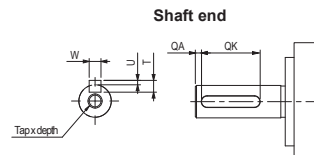
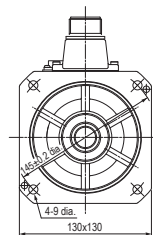
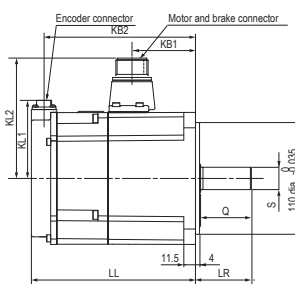
## Type 2000 r/min motors (230 V, 1 kW to 1.5 kW / 400 V, 1 kW to 3 kW)

| 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       |

Models without brake



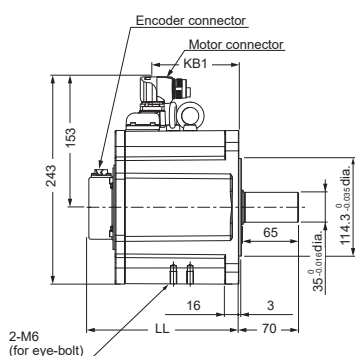
Models with brake



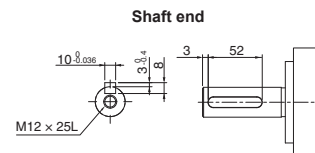
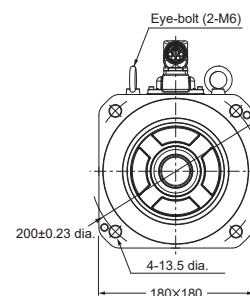
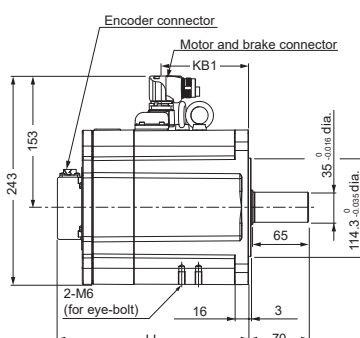
## Type 1500 r/min motors (400 V, 4 kW)

| 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       |

Models without brake



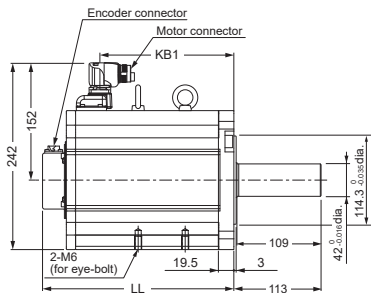
Models with brake



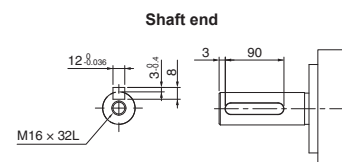
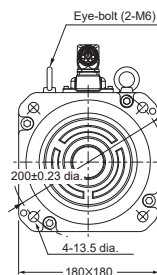
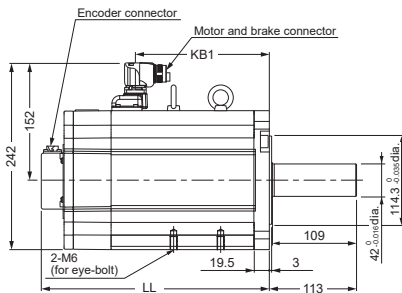
## Type 1500 r/min motors (400 V, 5.5 kW to 7.5 kW)

| 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       |

Models without brake

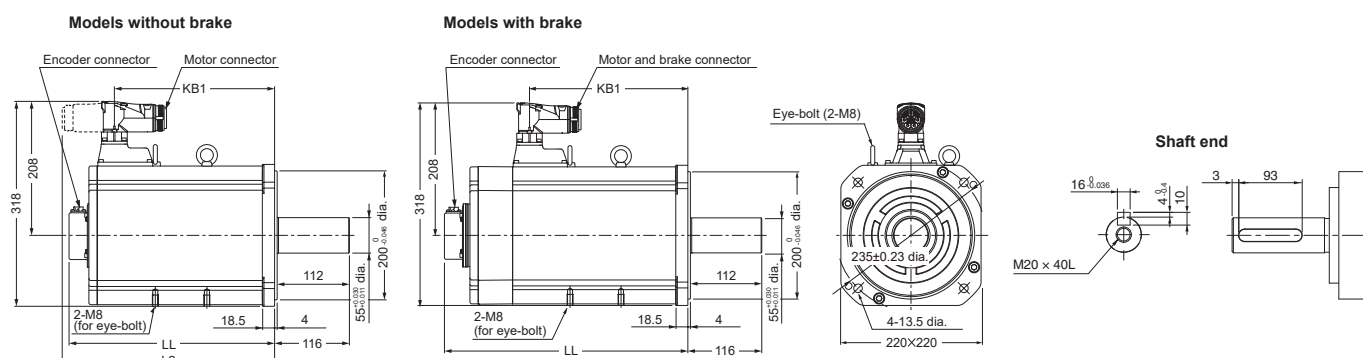


Models with brake



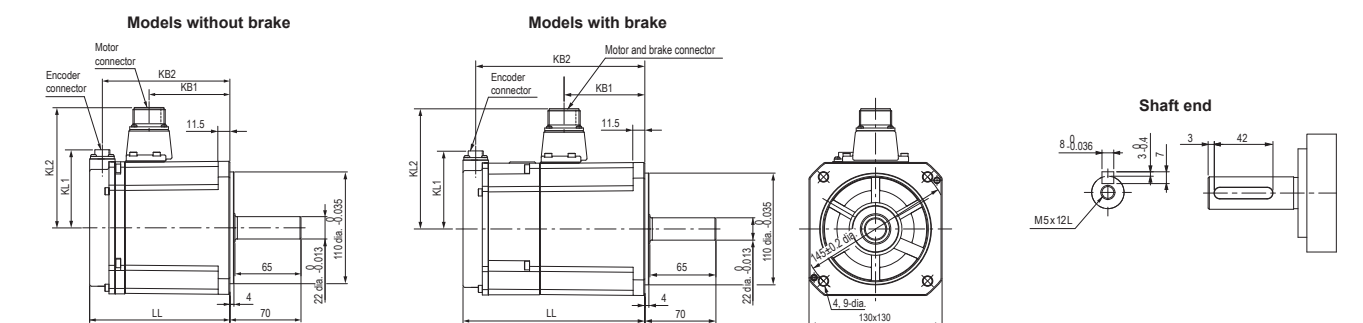
## Type 1500 r/min motors (400 V, 11 kW to 15 kW)

| 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       |



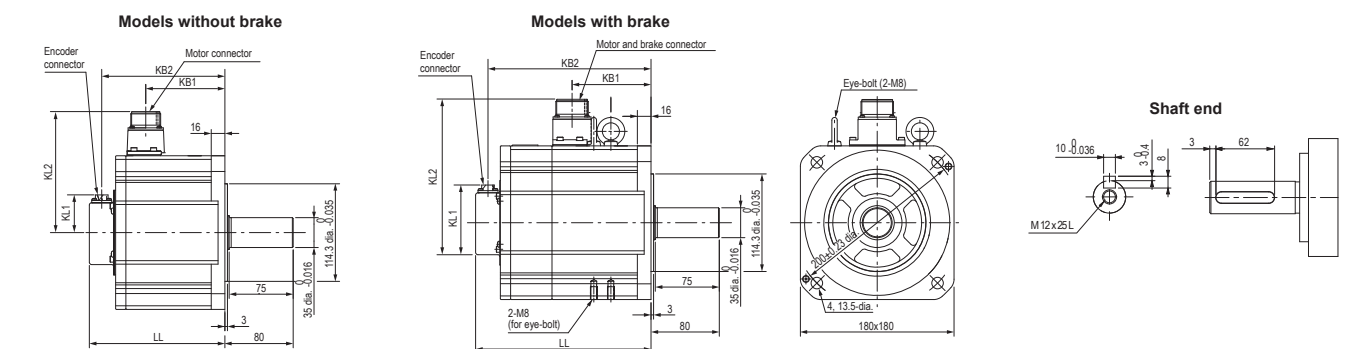
## Type 1000 r/min motors (230 V, 900 W / 400 V, 900 W)

| 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 |                   |            |



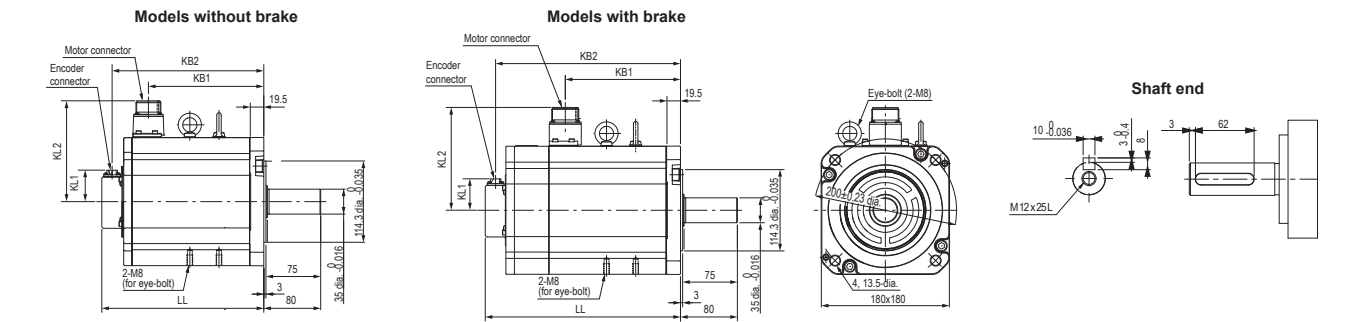
## Type 1000 r/min motors (400 V, 2 kW)

| 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       |



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

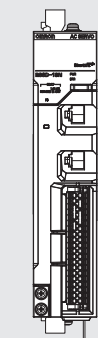
| Dimensions (mm) | Without brake |     |     |     |     | With brake |     |     |     |     | Approx. mass (kg) |            |
|-----------------|---------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|-------------------|------------|
| Model: R88M-1□  | LL            | KB1 | 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       |



# Ordering information

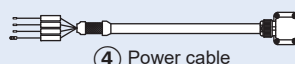
(Refer to servo drive chapter)

②  
Drive options

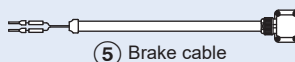


1S servo drive

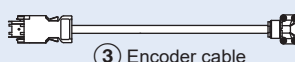
## 1S servo motor (Flange size 80 mm or less)



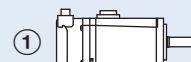
④ Power cable



⑤ Brake cable

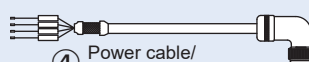


③ Encoder cable

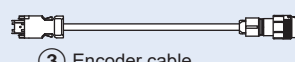


3000 rpm (50 W - 750 W)

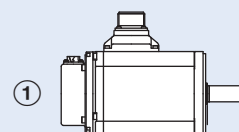
## 1S servo motor (Flange size 100 mm or more)



④ Power cable/  
Power cable with brake



③ Encoder cable



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) | 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)    | 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-□ |

| Symbol | Specifications |                                 |               |              |          | Model             | Compatible 1S servo drive |                   |                   |
|--------|----------------|---------------------------------|---------------|--------------|----------|-------------------|---------------------------|-------------------|-------------------|
|        | Voltage        | Encoder and design              |               | Rated torque | Capacity |                   |                           | Flange size       |                   |
| ①      | 400 V          | Absolute encoder (23-bit)       | 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-□ |                   |
|        |                | Straight shaft with key and tap |               | 4.77 Nm      | 1.5 kW   |                   | 130 mm                    | R88M-1L1K530C-S2  | R88D-1SN15F-ECT-□ |
|        |                |                                 |               | 6.37 Nm      | 2 kW     |                   |                           | R88M-1L2K030C-S2  | R88D-1SN20F-ECT-□ |
|        |                |                                 |               | 9.55 Nm      | 3 kW     | 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)    | 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-□ |                   |                   |
|        |                | Straight shaft with key and tap | 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)       | 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-□ |                   |                   |
|        |                | Straight shaft with key and tap | 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                           | Straight shaft with key and tap | 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)       | 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-□        |
|        |                | Straight shaft with key and tap | 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-□        |

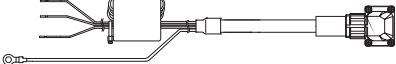
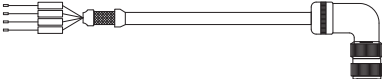
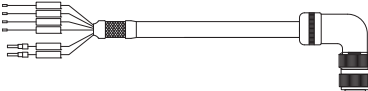
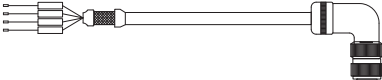
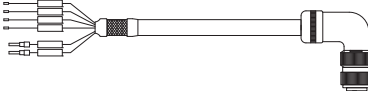
## Servo motors 1000 r/min (900 W to 3 kW)

| Symbol | Specifications |                                 |               |          |             | Model  | Compatible 1S servo drive |                   |                   |
|--------|----------------|---------------------------------|---------------|----------|-------------|--------|---------------------------|-------------------|-------------------|
|        | Voltage        | Encoder and design              | Rated torque  | Capacity | Flange size |        |                           |                   |                   |
| ①      | 230 V          | Absolute encoder (23-bit)       | 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          | Straight shaft with key and tap | Without brake | 8.59 Nm  | 900 W       | 180 mm | R88M-1M90010C-S2          | R88D-1SN10F-ECT-□ |                   |
|        |                |                                 |               | 19.1 Nm  | 2 kW        |        | 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-□ |

# 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<br>R88M-1M05030T-BS2, the separate brake<br>cable R88A-CA1A□□□BFR is needed.                                         | Without<br>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<br>R88M-1M(100/200/400/750)30(H/T)-BS2,<br>the separate brake cable<br>R88A-CA1A□□□BF-E is needed. | Without<br>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<br>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<br>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   |                                                                                       |                                                                                       |

| 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 <sup>*1</sup><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      |            |

<sup>\*1</sup> Refer to the "Using R88A-CA1G power cables" technical note when using multiple cables in the same duct.

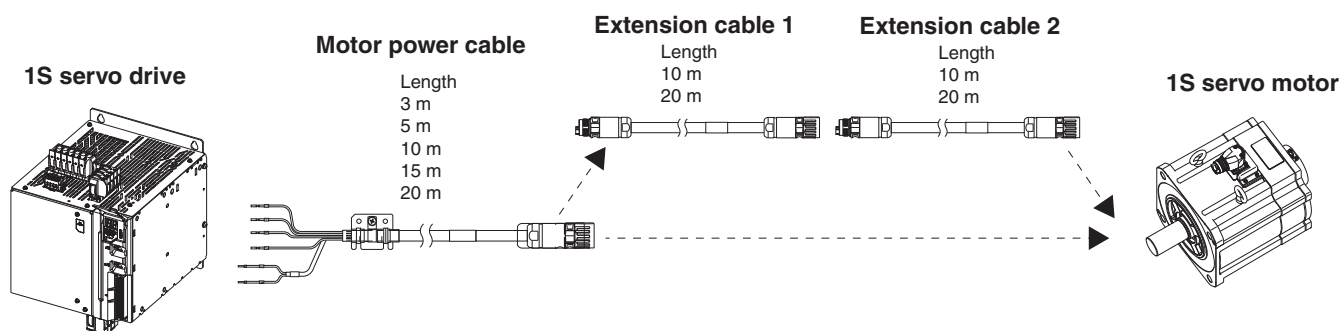
## Extension power cables (for 400 V, 4 kW to 15 kW servo motors)

| 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 |            |

## 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 <sup>*1</sup> |

<sup>\*1</sup> 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   |            |

## 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)-□<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-□ | R88A-CN02R<br>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             |
|                               |                  | R88M-1M(100/200/400/750)30(H/T)-BS2                                                                                                                                                                                                                                                         | R88A-CN111B               |
| 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.