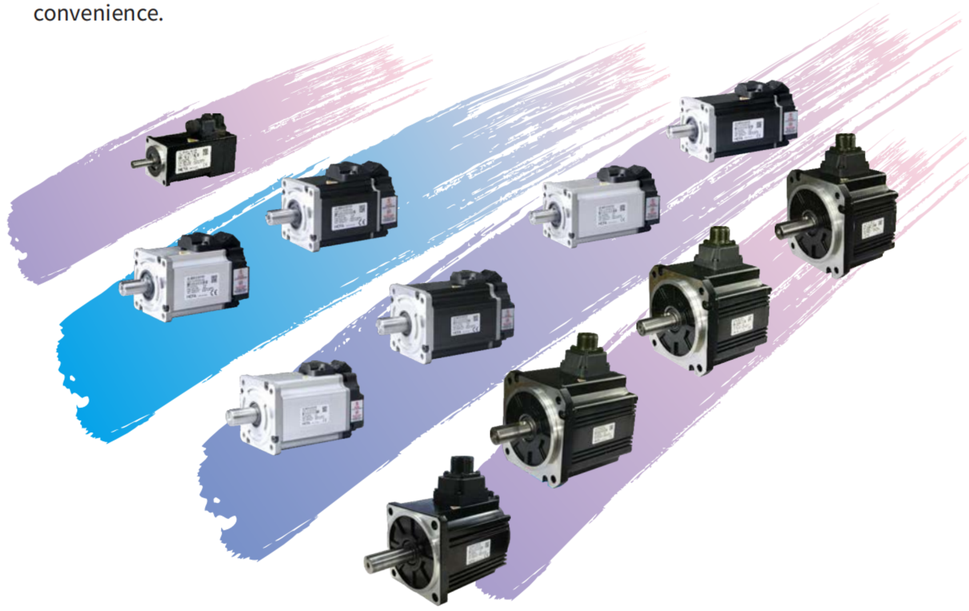
# HCSV-X1 series Servo motor

# HCSV-X3 series Servo motor

SV series servo has provided the best solution for all the fields of manufacturing, which requires automation, high-speed, high-precision and convenience.



## Model name identification

SV-X3 MA 075A - B 2 L N - **
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Product series

| Specifications |
|---|
| X1 series |
| X3 series |

② Inertia specifications

| Symbol | Specifications |
|---|---|
| MA | Low inertia |
| MM | Middle inertia |
| MH | High inertia |
| MG | Low-speed and high-torque |
| MQ | Straight type |

③ Power specifications

| Symbol | Specifications |
|---|---|
| 005A | 50W |
| 010A | 100W |
| 020A | 200W |
| 040A | 400W |
| 075A | 750W |
| 100A | 1KW |
| 150A | 1.5KW |
| 200A | 2KW |
| 300A | 3KW |
| 400A | 4KW |
| 500A | 5KW |
| 750A | 7.5KW |
| 115B | 11.5KW |
| 150B | 15KW |
| 220B | 22KW |

④ Brake specifications

| Symbol | Specifications |
|---|---|
| N | No brake |
| B | With brake |

⑤ Power voltage specifications

| Symbol | Specifications |
|---|---|
| 1 | 110V |
| 2 | 220V |
| 4 | 400V |
| 6 | 48V |

⑥ Shaft-end specifications

| Symbol | Specifications |
|---|---|
| K | Keyway shaft/no oil seal |
| L | Keyway shaft/with oil seal |

⑦ Encoder specifications

| Symbol | Specifications |
|---|---|
| N | Single-turn absolute 17-bit |
| A | Multi-turn absolute 17-bit |
| B | Multi-turn absolute 20-bit |
| C | Multi-turn absolute 22-bit |
| D | Multi-turn absolute 24-bit |
| T | Tama-gawa 17-bit |
| M | Tama-gawa 23-bit |
| K | Nikon single-turn absolute 20-bit |
| L | Nikon multi-turn absolute 20-bit |

⑧ Customized version

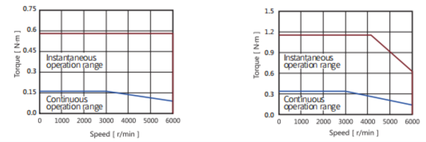
| Specifications |
|---|
| ** |

Notes: For special models, please refer to Model Selection.

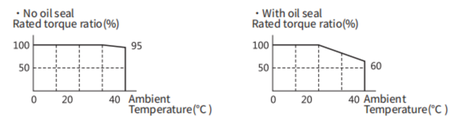
## MM005A/MM010A Outline

## NT characteristics

■ NT characteristics




■ Continuous torque-Ambient temperature

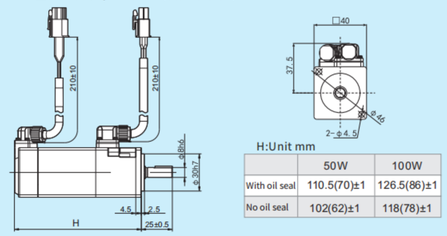



## Specifications

| Model Name M□□□□□2□□** | Units | 50W Middle inertia MM005A | 100W Middle inertia MM010A |
|---|---|---|---|
| Fitting flange size | mm | □40 | □40 |
| Approximate mass(No brake) | Kg | 0.4 | 0.4 |
| Approximate mass(With brake) | Kg | 0.6 | 0.8 |
| Rated voltage | V | AC200 | AC200 |
| Rated output | W | 50 | 100 |
| Rated torque | N·m | 0.16 | 0.32 |
| Instantaneous max. torque | N·m | 056 | 1.12 |
| Rated current | Arms | 0.6 | 0.8 |
| Instantaneous max. current | Arms | 1.8 | 2.4 |
| Rated speed | r/min | 3000 | 3000 |
| Max. speed | r/min | 6000 | 6000 |
| Torque constant | N·m/A | 0.30 | 0.45 |
| Induced voltage constant per phase | MV(r/min) | 10.6 | 15.8 |
| Rated power rate(No brake) | KW/S | 5.4 | 13.1 |
| Rated power rate(With brake) | KW/S | 4.7 | 12.2 |
| Mechanical time constant(No brake) | ms | 2.67 | 1.61 |
| Mechanical time constant(With brake) | ms | 3.04 | 1.74 |
| Electrical time constant | ms | 0.6 | 0.7 |
| Moment of inertia(No brake) | ×10⁻⁴Kg·m² | 0.047 | 0.077 |
| Moment of inertia(With brake) | ×10⁻⁴Kg·m² | 0.054 | 0.093 |
| Brake specification: Usage | — | Holding | Holding |
| Brake specification: Rated voltage | V | DC24V±10% | DC24V±10% |
| Brake specification: Rated current | A | 0.25 | 0.25 |
| Brake specification: Static friction torque | Nm | 0.16 or more | 0.29 or more |
| Brake specification: Suction time | ms | 35 at 100% voltage | 35 at 100% voltage |
| Brake specification: Release time | ms | 20 at 100% voltage | 20 at 100% voltage |
| Brake specification: Release voltage | V | DC1V or more | DC1V or more |

## External dimensions

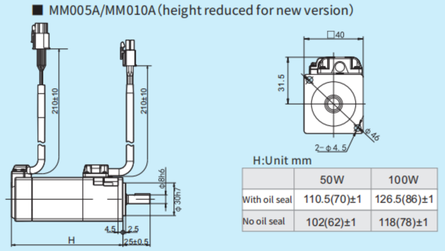
■ MM005A/MM010A (old version)




H:Unit mm

| | 50W | 100W |
|---|---|---|
| With oil seal | 110.5(70)±1 | 126.5(86)±1 |
| No oil seal | 102(62)±1 | 118(78)±1 |

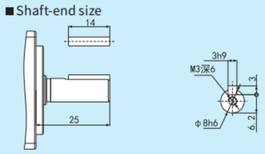
■ MM005A/MM010A (height reduced for new version)



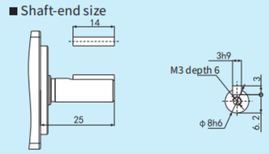

H:Unit mm

| | 50W | 100W |
|---|---|---|
| With oil seal | 110.5(70)±1 | 126.5(86)±1 |
| No oil seal | 102(62)±1 | 118(78)±1 |

■ Shaft-end size




■ Shaft-end size




Note: Dimension with parentheses( ) show the length with no brake



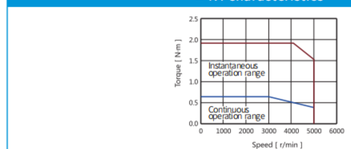




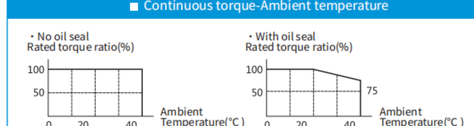
## MA020A/MH020A Outline

## NT characteristics

■ NT characteristics




■ Continuous torque-Ambient temperature

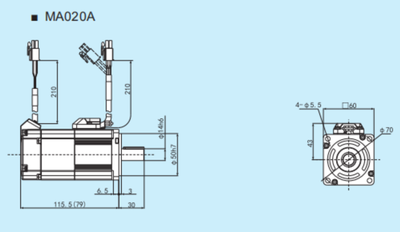



## Specifications

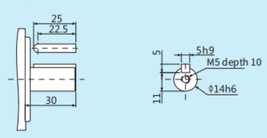
| Model Name M□□□□□2□□** | Units | 200W Low inertia MA020A | 200W High inertia MH020A |
|---|---|---|---|
| Fitting flange size | mm | □60 | □60 |
| Approximate mass(No brake) | Kg | 0.9 | 1.0 |
| Approximate mass(With brake) | Kg | 1.4 | 1.5 |
| Rated voltage | V | AC200 | AC200 |
| Rated output | W | 200 | 200 |
| Rated torque | N·m | 0.64 | 0.64 |
| Instantaneous max. torque | N·m | 1.91 | 1.91 |
| Rated current | Arms | 1.7 | 1.7 |
| Instantaneous max. current | Arms | 4.9 | 4.9 |
| Rated speed | r/min | 3000 | 3000 |
| Max. speed | r/min | 5000 | 5000 |
| Torque constant | N·m/A | 0.417 | 0.417 |
| Induced voltage constant per phase | MV(r/min) | 14.5 | 14.5 |
| Rated power rate(No brake) | KW/S | 23.9 | 9.3 |
| Rated power rate(With brake) | KW/S | 19.5 | 8.6 |
| Mechanical time constant(No brake) | ms | 1.12 | 2.87 |
| Mechanical time constant(With brake) | ms | 1.37 | 3.12 |
| Electrical time constant | ms | 1.99 | 1.99 |
| Moment of inertia(No brake) | ×10⁻⁴Kg·m² | 0.17 | 0.43 |
| Moment of inertia(With brake) | ×10⁻⁴Kg·m² | 0.21 | 0.47 |
| Brake specification: Usage | — | Holding | Holding |
| Brake specification: Rated voltage | V | DC24V±10% | DC24V±10% |
| Brake specification: Rated current | A | 0.4 MAX | 0.4 MAX |
| Brake specification: Static friction torque | Nm | 1.27 or more | 1.27 or more |
| Brake specification: Suction time | ms | 50 at 100% voltage | 50 at 100% voltage |
| Brake specification: Release time | ms | 15 at 100% voltage | 15 at 100% voltage |
| Brake specification: Release voltage | V | DC1V or more | DC1V or more |

## External dimensions

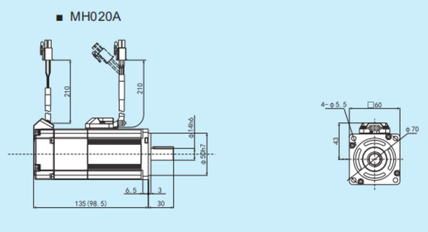
■ MA020A



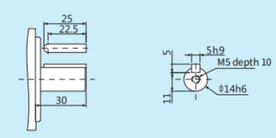

■ Shaft-end size




■ MH020A




■ Shaft-end size



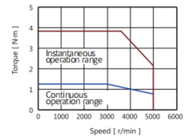

※For the specification ofΦ11 please refer to HCFA' s engineer

※Dimension with parentheses( ) show dimensions with no brake.

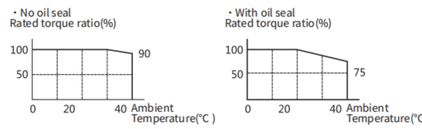
## MA040A/MH040A Outline

## NT characteristics

■ NT characteristics




■ Continuous torque-Ambient temperature

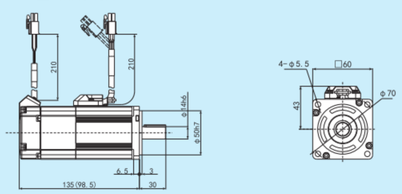



## Specifications

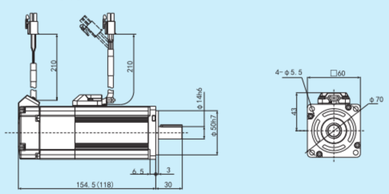
| Model Name M□□□□□2□□** | Units | 400W Low inertia MA040A | 400W High inertia MH040A |
|---|---|---|---|
| Fitting flange size | mm | □60 | □60 |
| Approximate mass(No brake) | Kg | 1.3 | 1.5 |
| Approximate mass(With brake) | Kg | 1.8 | 2.0 |
| Rated voltage | V | AC200 | AC200 |
| Rated output | W | 400 | 400 |
| Rated torque | N·m | 1.27 | 1.27 |
| Instantaneous max. torque | N·m | 3.82 | 3.82 |
| Rated current | Arms | 2.7 | 2.7 |
| Instantaneous max. current | Arms | 7.8 | 7.8 |
| Rated speed | r/min | 3000 | 3000 |
| Max. speed | r/min | 5000 | 5000 |
| Torque constant | N·m/A | 0.498 | 0.498 |
| Induced voltage constant per phase | MV(r/min) | 17.4 | 17.4 |
| Rated power rate(No brake) | KW/S | 58.7 | 23.5 |
| Rated power rate(With brake) | KW/S | 51.9 | 22.4 |
| Mechanical time constant(No brake) | ms | 0.67 | 1.66 |
| Mechanical time constant(With brake) | ms | 0.75 | 1.75 |
| Electrical time constant | ms | 2.47 | 2.47 |
| Moment of inertia(No brake) | $\times10^{-4}$Kg·m$^2$ | 0.28 | 0.69 |
| Moment of inertia(With brake) | $\times10^{-4}$Kg·m$^2$ | 0.31 | 0.72 |
| Brake specification: Usage | — | Holding | Holding |
| Brake specification: Rated voltage | V | DC24V±10% | DC24V±10% |
| Brake specification: Rated current | A | 0.4 MAX | 0.4 MAX |
| Brake specification: Static friction torque | Nm | 1.27 or more | 1.27 or more |
| Brake specification: Suction time | ms | 50 at 100% voltage | 50 at 100% voltage |
| Brake specification: Release time | ms | 15 at 100% voltage | 15 at 100% voltage |
| Brake specification: Release voltage | V | DC1V or more | DC1V or more |

## External dimensions

■ MA040A




■ MH040A




※Dimension with parentheses( ) show dimensions with no brake.



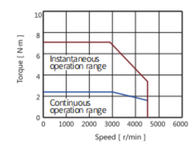




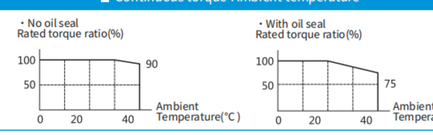
## MA075A/MH075A Outline

## NT characteristics

■ NT characteristics




■ Continuous torque-Ambient temperature

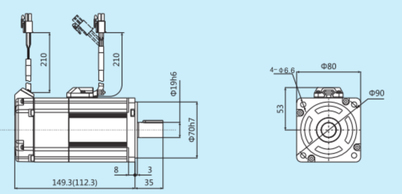



## Specifications

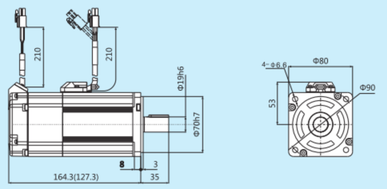
| Model Name M□□□□□2□□** | Units | 750W Low inertia MA075A | 750W High inertia MH075A |
|---|---|---|---|
| Fitting flange size | mm | □80 | □80 |
| Approximate mass(No brake) | Kg | 2.5 | 2.7 |
| Approximate mass(With brake) | Kg | 3.3 | 3.5 |
| Rated voltage | V | AC200 | AC200 |
| Rated output | W | 750 | 750 |
| Rated torque | N·m | 2.39 | 2.39 |
| Instantaneous max. torque | N·m | 7.1 | 7.1 |
| Rated current | Arms | 4.3 | 4.3 |
| Instantaneous max. current | Arms | 12.8 | 12.8 |
| Rated speed | r/min | 3000 | 3000 |
| Max. speed | r/min | 4500 | 4500 |
| Torque constant | N·m/A | 0.61 | 0.61 |
| Induced voltage constant per phase | MV(r/min) | 21.3 | 21.3 |
| Rated power rate(No brake) | KW/S | 64.1 | 35.9 |
| Rated power rate(With brake) | KW/S | 52.8 | 32.1 |
| Mechanical time constant(No brake) | ms | 0.53 | 0.94 |
| Mechanical time constant(With brake) | ms | 0.64 | 1.06 |
| Electrical time constant | ms | 4.3 | 4.3 |
| Moment of inertia(No brake) | $\times10^{-4}$Kg·m$^2$ | 0.89 | 1.59 |
| Moment of inertia(With brake) | $\times10^{-4}$Kg·m$^2$ | 1.08 | 1.78 |
| Brake specification: Usage | — | Holding | Holding |
| Brake specification: Rated voltage | V | DC24V±10% | DC24V±10% |
| Brake specification: Rated current | A | 0.4 | 0.4 |
| Brake specification: Static friction torque | Nm | 2.39 or more | 2.39 or more |
| Brake specification: Suction time | ms | 70 at 100% voltage | 70 at 100% voltage |
| Brake specification: Release time | ms | 20 at 100% voltage | 20 at 100% voltage |
| Brake specification: Release voltage | V | DC1V or more | DC1V or more |

## External dimensions

■ MA075A



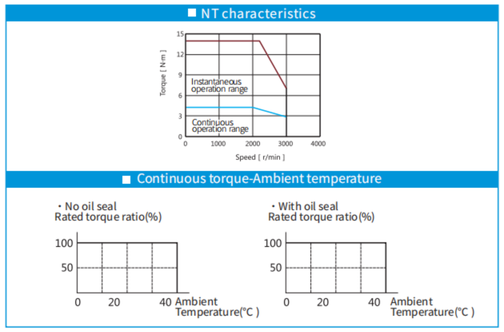

■ MH075A




※Dimension with parentheses( ) show dimensions with no brake.

## MM100A/MH100A Outline

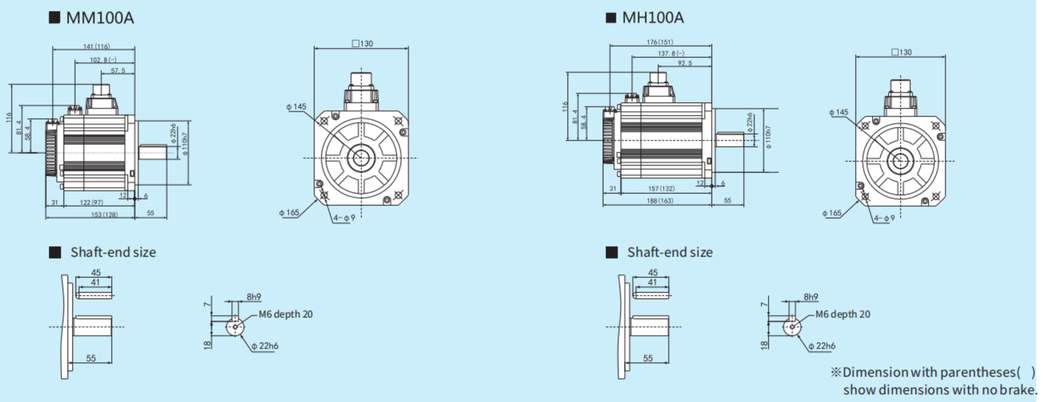
## NT characteristics




## Specifications

| Model Name M□□□□□2□□** | Units | 1KW Middle inertia MM100A | 1KW High inertia MH100A |
|---|---|---|---|
| Fitting flange size | mm | □130 | □130 |
| Approximate mass(No brake) | Kg | 5.6 | 1.5 |
| Approximate mass(With brake) | Kg | 7.0 | 2.0 |
| Rated voltage | V | AC200 | AC200 |
| Rated output | W | 1000 | 1000 |
| Rated torque | N·m | 4.77 | 4.77 |
| Instantaneous max. torque | N·m | 14.3 | 14.3 |
| Rated current | Arms | 5.6 | 5.6 |
| Instantaneous max. current | Arms | 15.6 | 15.6 |
| Rated speed | r/min | 2000 | 2000 |
| Max. speed | r/min | 3000 | 3000 |
| Torque constant | N·m/A | 0.88 | 0.88 |
| Induced voltage constant per phase | MV(r/min) | 30.9 | 30.9 |
| Rated power rate(No brake) | KW/S | 58.7 | 23.5 |
| Rated power rate(With brake) | KW/S | 51.9 | 22.4 |
| Mechanical time constant(No brake) | ms | 0.67 | 1.66 |
| Mechanical time constant(With brake) | ms | 0.75 | 1.75 |
| Electrical time constant | ms | 10.1 | 10.1 |
| Moment of inertia(No brake) | $\times 10^{-4}$Kg·m$^2$ | 4.56 | 24.9 |
| Moment of inertia(With brake) | $\times 10^{-4}$Kg·m$^2$ | 6.24 | 26.4 |
| Brake specification: Usage | — | Holding | Holding |
| Brake specification: Rated voltage | V | DC24V±10% | DC24V±10% |
| Brake specification: Rated current | A | 1 | 1 |
| Brake specification: Static friction torque | Nm | 9.55 or more | 9.55 or more |
| Brake specification: Suction time | ms | 120 at 100% voltage | 120 at 100% voltage |
| Brake specification: Release time | ms | 30 at 100% voltage | 30 at 100% voltage |
| Brake specification: Release voltage | V | DC1V or more | DC1V or more |

## External dimensions



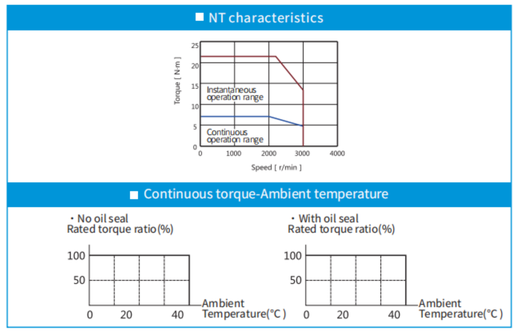







## MM150A/MH150A Outline

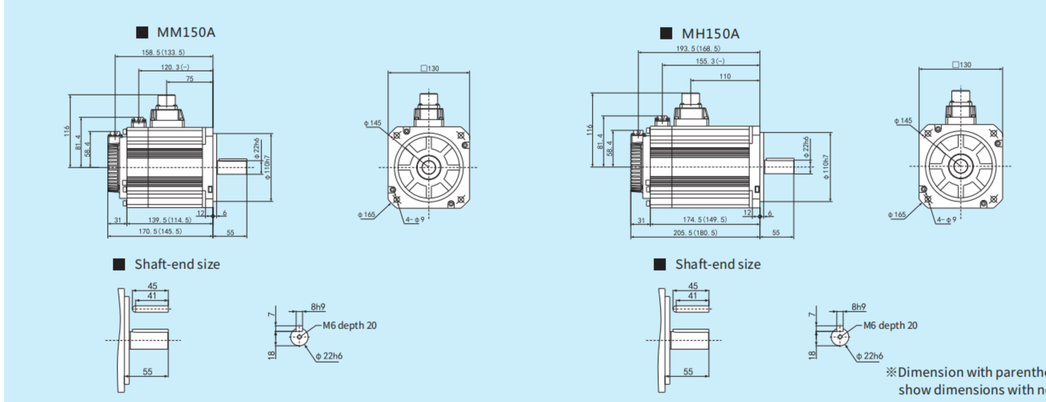
## NT characteristics




## Specifications

| Model Name M□□□□□2□□** | Units | 1.5KW Middle inertia MM150A | 1.5KW High inertia MH150A |
|---|---|---|---|
| Fitting flange size | mm | □130 | □130 |
| Approximate mass(No brake) | Kg | 7.0 | 9.0 |
| Approximate mass(With brake) | Kg | 8.4 | 10.4 |
| Rated voltage | V | AC200 | AC200 |
| Rated output | W | 1500 | 1500 |
| Rated torque | N·m | 7.16 | 7.16 |
| Instantaneous max. torque | N·m | 21.5 | 21.5 |
| Rated current | Arms | 9.9 | 9.9 |
| Instantaneous max. current | Arms | 27.9 | 27.9 |
| Rated speed | r/min | 2000 | 2000 |
| Max. speed | r/min | 3000 | 3000 |
| Torque constant | N·m/A | 0.81 | 0.81 |
| Induced voltage constant per phase | MV(r/min) | 28.4 | 28.4 |
| Rated power rate(No brake) | KW/S | 76.9 | 35.9 |
| Rated power rate(With brake) | KW/S | 61.4 | 32.1 |
| Mechanical time constant(No brake) | ms | 0.60 | 0.94 |
| Mechanical time constant(With brake) | ms | 0.75 | 1.06 |
| Electrical time constant | ms | 12.2 | 12.2 |
| Moment of inertia(No brake) | $\times 10^{-4}$Kg·m$^2$ | 6.67 | 37.12 |
| Moment of inertia(With brake) | $\times 10^{-4}$Kg·m$^2$ | 8.35 | 38.65 |
| Brake specification: Usage | — | Holding | Holding |
| Brake specification: Rated voltage | V | DC24V±10% | DC24V±10% |
| Brake specification: Rated current | A | 1 | 1 |
| Brake specification: Static friction torque | Nm | 9.55 or more | 9.55 or more |
| Brake specification: Suction time | ms | 120 at 100% voltage | 120 at 100% voltage |
| Brake specification: Release time | ms | 30 at 100% voltage | 30 at 100% voltage |
| Brake specification: Release voltage | V | DC1V or more | DC1V or more |

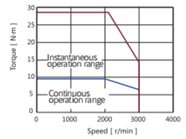
## External dimensions



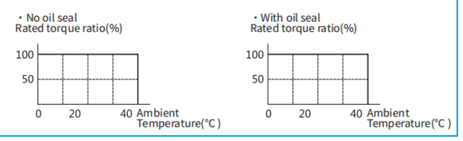
## MM200A Outline

## NT characteristics

■ NT characteristics




■ Continuous torque-Ambient temperature

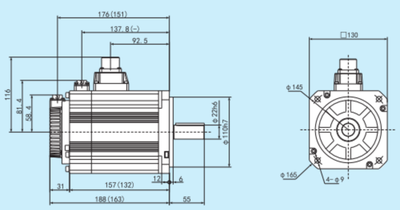



## Specifications

| Model Name M□□□□□2□□** | Units | 2KW Middle inertia MM200A |
|---|---|---|
| Fitting flange size | mm | □130 |
| Approximate mass(No brake) | Kg | 8.4 |
| Approximate mass(With brake) | Kg | 9.8 |
| Rated voltage | V | AC200 |
| Rated output | W | 2000 |
| Rated torque | N·m | 9.55 |
| Instantaneous max. torque | N·m | 28.6 |
| Rated current | Arms | 12.2 |
| Instantaneous max. current | Arms | 34.6 |
| Rated speed | r/min | 2000 |
| Max. speed | r/min | 3000 |
| Torque constant | N·m/A | 0.85 |
| Induced voltage constant per phase | MV(r/min) | 29.6 |
| Rated power rate(No brake) | KW/S | 104.9 |
| Rated power rate(With brake) | KW/S | 87.9 |
| Mechanical time constant(No brake) | ms | 0.58 |
| Mechanical time constant(With brake) | ms | 0.69 |
| Electrical time constant | ms | 12.2 |
| Moment of inertia(No brake) | $\times10^{-4}$Kg·m$^2$ | 8.70 |
| Moment of inertia(With brake) | $\times10^{-4}$Kg·m$^2$ | 10.38 |
| Brake specification: Usage | — | Holding |
| Brake specification: Rated voltage | V | DC24V±10% |
| Brake specification: Rated current | A | 1 |
| Brake specification: Static friction torque | Nm | 9.55 or more |
| Brake specification: Suction time | ms | 120 at 100% voltage |
| Brake specification: Release time | ms | 30 at 100% voltage |
| Brake specification: Release voltage | V | DC1V or more |

## External dimensions

■ MM200A




■ Shaft-end dimension


※Dimension with parentheses( ) show dimensions with no brake.



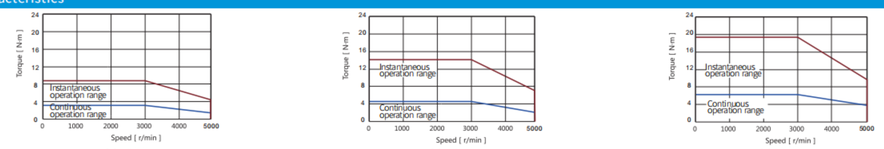




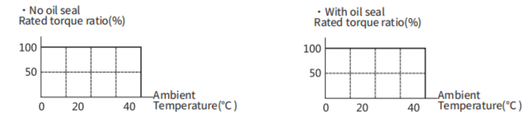
## MA100A/MA150A /MA200A Outline

## NT characteristics

■ NT characteristics




■ Continuous torque-Ambient temperature

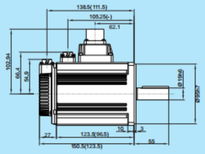


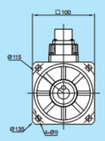

## Specifications

| Model Name M□□□□□2□□** | Units | 1KW Low inertia MA100A | 1.5KW Low inertia MA150A | 2KW Low inertia MA200A |
|---|---|---|---|---|
| Fitting flange size | mm | 100 | 100 | 100 |
| Approximate mass(No brake) | Kg | 3.5 | 4.4 | 5.3 |
| Approximate mass(With brake) | Kg | 4.5 | 5.4 | 6.3 |
| Rated voltage | V | 200 | 200 | 200 |
| Rated output | W | 1000 | 1500 | 2000 |
| Rated torque | N·m | 3.18 | 4.77 | 6.37 |
| Instantaneous max. torque | N·m | 9.55 | 14.3 | 19.1 |
| Rated current | Arms | 6.6 | 8.2 | 11.3 |
| Instantaneous max. current | Arms | 28 | 35 | 48 |
| Rated speed | r/min | 3000 | 3000 | 3000 |
| Max. speed | r/min | 5000 | 5000 | 5000 |
| Torque constant | N·m/A | 0.52 | 0.628 | 0.607 |
| Induced voltage constant per phase | MV(r/min) | 18.15 | 21.92 | 21.247 |
| Rated power rate(No brake) | KW/S | 49.82 | 80.12 | 110.26 |
| Rated power rate(With brake) | KW/S | 43.03 | 71.775 | 101.19 |
| Mechanical time constant(No brake) | ms | 0.619 | 5.220.507 | 0.425 |
| Mechanical time constant(With brake) | ms | 0.717 | 0.566 | 0.463 |
| Electrical time constant | ms | 7.22 | 8.08 | 9.31 |
| Moment of inertia(No brake) | $\times10^{-4}$Kg·m$^2$ | 2.03 | 2.84 | 3.68 |
| Moment of inertia(With brake) | $\times10^{-4}$Kg·m$^2$ | 2.35 | 3.17 | 4.01 |
| Brake specification: Usage | — | Holding | Holding | Holding |
| Brake specification: Rated voltage | V | 24±10% | 24±10% | 24±10% |
| Brake specification: Rated current | A | 0.81±10% | 0.81±10% | 0.81±10% |
| Brake specification: Static friction torque | Nm | 7.8 or more | 7.8 or more | 7.8 or more |
| Brake specification: Suction time | ms | 50 | 50 | 50 |
| Brake specification: Release time | ms | 15 | 15 | 15 |
| Brake specification: Release voltage | V | 2V or more | 2V or more | 2V or more |

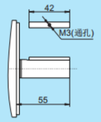
## External Dimension

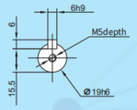
■ MA100A





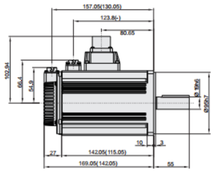
■ Shaft-end dimension

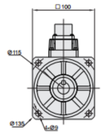


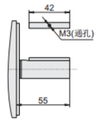

※Dimension with parentheses( ) show dimensions with no brake.

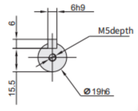
■ MA150A





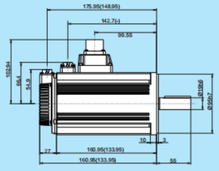
■ Shaft-end dimension

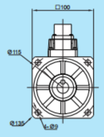


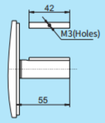

※Dimension with parentheses( ) show dimensions with no brake.

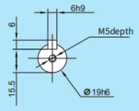
■ MA200A





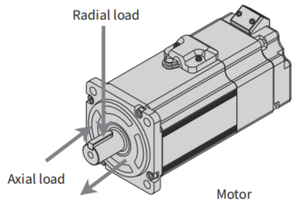
■ Shaft-end dimension

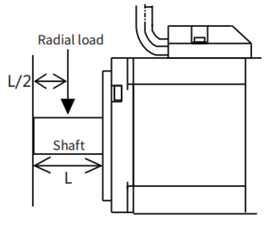



※Dimension with parentheses( ) show dimensions with no brake.

## Output shaft permissible load for X3/X1 series servo motor




| Permissible load | Units | 50W | 100W | 200W | 400W | 750W | 1kW | 1.5kW | 2kW | 850W | 1.3KW | 1.8KW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Radial load | N | 68 | 68 | 245 | 245 | 392 | 490 | 490 | 490 | 490 | 686 | 980 |
| Axial load | N | 58 | 58 | 98 | 98 | 147 | 196 | 196 | 196 | 98 | 343 | 392 |



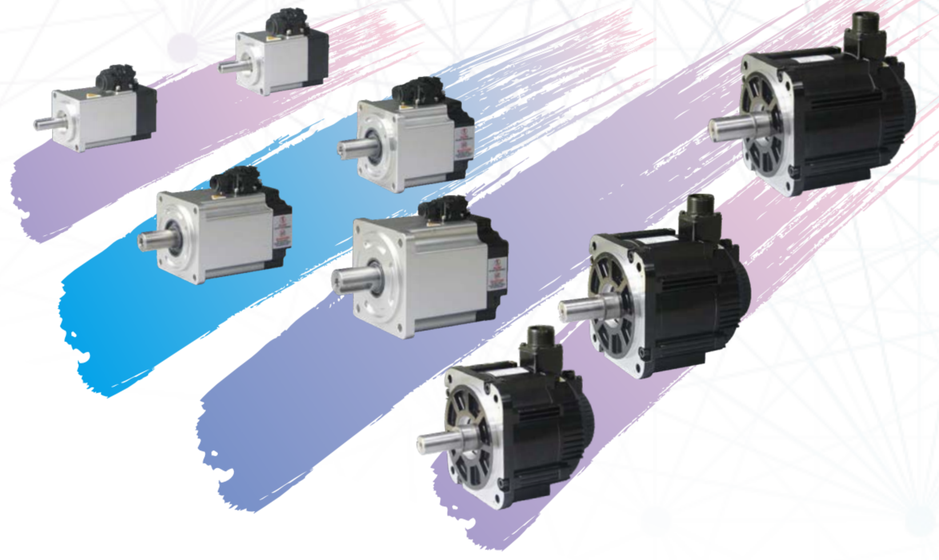




# HCSV-X2 / X6

SV series servo has provided the best solution for all the fields of manufacturing, which requires automation, high-speed, high-precision and convenience.

**IP** 67 WATER-PROOF LEVEL
5-POLE CONNECTOR TYPE



## Model name identification

SV-X6 MH 075A - B 2 L N - **
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Product series

| Specifications |
|---|
| X2 series |
| X6 series |

② Inertia specifications

| Symbol | Specifications |
|---|---|
| MA | Low inertia |
| MM | Middle inertia |
| MH | High inertia |
| MG | Low-speed and high-torque |

③ Power specifications

| Symbol | Specifications |
|---|---|
| 005A | 50W |
| 010A | 100W |
| 020A | 200W |
| 040A | 400W |
| 075A | 750W |
| 100C | 1KW |
| 085A | 850W |
| 130A | 1.3KW |
| 180A | 1.8KW |

④ Holding brake

| Symbol | Brake |
|---|---|
| N | No brake |
| B | 24V brake |
| X | 7V brake (ultra-thin) |

⑤ Power voltage specifications

| Symbol | Voltage |
|---|---|
| 2 | DC280 ~ 325V (AC200 ~ 230V) |

⑥ Shaft-end specifications

| Symbol | Shaft-end/oil seal |
|---|---|
| L | Lead-wire/with oil seal |
| K | Lead-wire/no oil seal |
| C | Connector/with oil seal |
| D | Connector/no oil seal |

⑦ Encoder specifications

| Symbol | Specifications |
|---|---|
| N | Single-turn absolute 17-bit |
| A | Multi-turn absolute 17-bit |

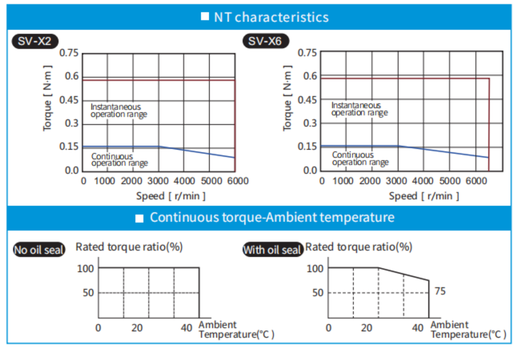
⑧ Customized version

| Specifications |
|---|
| ** |

Notes: For special models, please refer to Model Selection.

## MH005A Outline

## NT characteristics

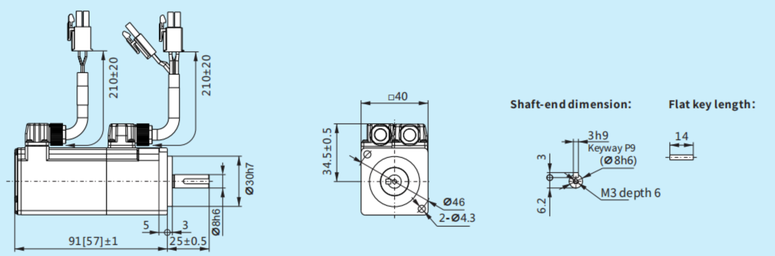



## Specifications

| Model Name M□□□□□2□□** | Units | 50W High inertia MH005A |
|---|---|---|
| Fitting flange size | mm | □40 |
| Approximate mass(No brake) | Kg | 0.33 |
| Approximate mass(With brake) | Kg | 0.55 |
| Rated voltage | V | AC200 |
| Rated output | W | 50 |
| Rated torque | N·m | 0.16 |
| Instantaneous max. torque | N·m | 0.56 |
| Rated current | Arms | 1.1 |
| Instantaneous max. current | Arms | 5.5 |
| Rated speed | r/min | 3000 |
| Max. speed | r/min | 6500/6000※ ("※" is parameter for X2 series servo motor) |
| Torque constant | N·m/A | 0.168 |
| Induced voltage constant per phase | MV(r/min) | 5 |
| Rated power rate(No brake) | KW/S | 6.7 |
| Rated power rate(With brake) | KW/S | 6.1 |
| Mechanical time constant(No brake) | ms | 2.8 |
| Mechanical time constant(With brake) | ms | 3.09 |
| Electrical time constant | ms | 1.12 |
| Moment of inertia(No brake) | $\times10^{-4}$Kg·m$^2$ | 0.038 |
| Moment of inertia(With brake) | $\times10^{-4}$Kg·m$^2$ | 0.042 |
| Brake specification — Usage | — | Holding |
| Brake specification — Rated voltage | V | DC24V±2.4 |
| Brake specification — Rated current | A | 0.25 |
| Brake specification — Static friction torque | Nm | 0.38 or more |
| Brake specification — Suction time | ms | 35 or less |
| Brake specification — Release time | ms | 20 or less |
| Brake specification — Release voltage | V | 1V or more |

## External dimensions

■ MH005A




※Dimension with parentheses( ) show dimensions with no brake.

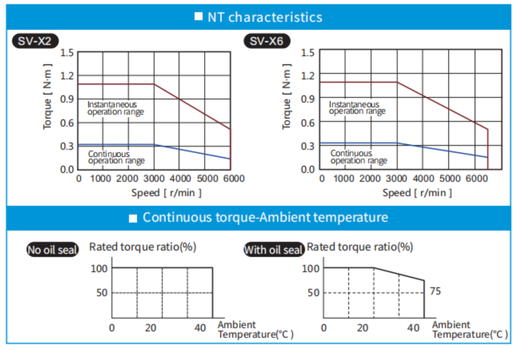






## MH010A Outline

## NT characteristics

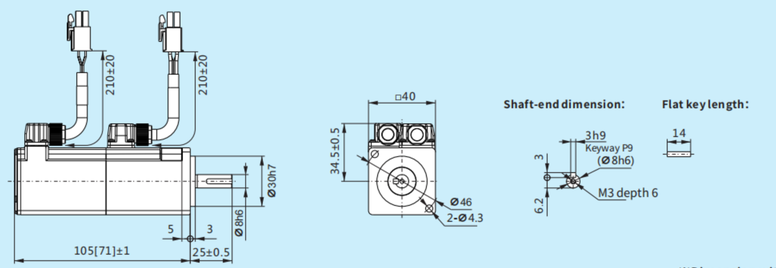



## Specifications

| Model Name M□□□□□2□□** | Units | 100W High inertia MH010A |
|---|---|---|
| Fitting flange size | mm | □40 |
| Approximate mass(No brake) | Kg | 0.45 |
| Approximate mass(With brake) | Kg | 0.66 |
| Rated voltage | V | AC200 |
| Rated output | W | 100 |
| Rated torque | N·m | 0.32 |
| Instantaneous max. torque | N·m | 1.11 |
| Rated current | Arms | 1.1 |
| Instantaneous max. current | Arms | 5.5 |
| Rated speed | r/min | 3000 |
| Max. speed | r/min | 6500 |
| Torque constant | N·m/A | 0.327 |
| Induced voltage constant per phase | MV(r/min) | 10.43 |
| Rated power rate(No brake) | KW/S | 14.4 |
| Rated power rate(With brake) | KW/S | 13.8 |
| Mechanical time constant(No brake) | ms | 2.17 |
| Mechanical time constant(With brake) | ms | 2.26 |
| Electrical time constant | ms | 1.32 |
| Moment of inertia(No brake) | $\times10^{-4}$Kg·m$^2$ | 0.071 |
| Moment of inertia(With brake) | $\times10^{-4}$Kg·m$^2$ | 0.074 |
| Brake specification — Usage | — | Holding |
| Brake specification — Rated voltage | V | DC24V±2.4 |
| Brake specification — Rated current | A | 0.3 |
| Brake specification — Static friction torque | Nm | 0.38 or more |
| Brake specification — Suction time | ms | 35 or less |
| Brake specification — Release time | ms | 20 or less |
| Brake specification — Release voltage | V | 1V or more |

## External dimensions

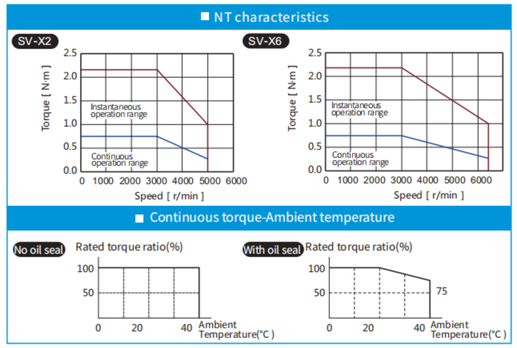
■ MH010A




※Dimension with parentheses( ) show dimensions with no brake.

## MH020A Outline

## NT characteristics

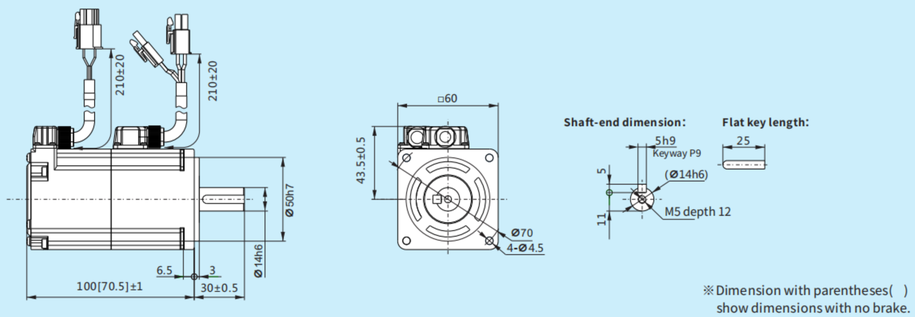



## Specifications

| Model Name M□□□□□2□□** | Units | 200W High inertia MH020A | |
|---|---|---|---|
| Fitting flange size | mm | □60 | |
| Approximate mass(No brake) | Kg | 0.87 | |
| Approximate mass(With brake) | Kg | 1.27 | |
| Rated voltage | V | AC200 | |
| Rated output | W | 200 | |
| Rated torque | N·m | 0.64 | |
| Instantaneous max. torque | N·m | 2.23 | |
| Rated current | Arms | 1.4 | |
| Instantaneous max. current | Arms | 6.9 | |
| Rated speed | r/min | 3000 | |
| Max. speed | r/min | 6500/5000※ | ("※" is parameter for X2 series servo motor) |
| Torque constant | N·m/A | 0.5 | |
| Induced voltage constant per phase | MV(r/min) | 14.61 | |
| Rated power rate(No brake) | KW/S | 14.1 | |
| Rated power rate(With brake) | KW/S | 13.2 | |
| Mechanical time constant(No brake) | ms | 1.39 | |
| Mechanical time constant(With brake) | ms | 1.49 | |
| Electrical time constant | ms | 3.9 | |
| Moment of inertia(No brake) | $\times 10^{-4}$Kg·m$^2$ | 0.29 | |
| Moment of inertia(With brake) | $\times 10^{-4}$Kg·m$^2$ | 0.31 | |
| Brake specification: Usage | — | Holding | |
| Brake specification: Rated voltage | V | DC24V±2.4 | |
| Brake specification: Rated current | A | 0.36 | |
| Brake specification: Static friction torque | Nm | 1.6 or more | |
| Brake specification: Suction time | ms | 50 or less | |
| Brake specification: Release time | ms | 20 or less | |
| Brake specification: Release voltage | V | 1V or more | |

## External dimensions

■ MH020A




※Dimension with parentheses( ) show dimensions with no brake.

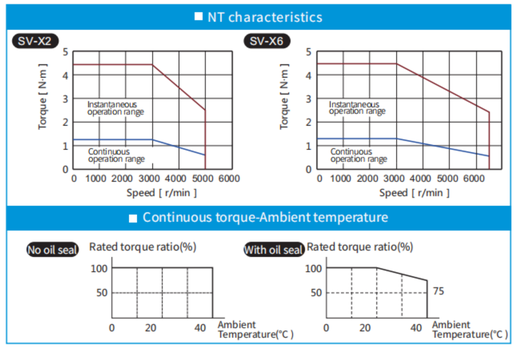






## MH040A Outline

## NT characteristics

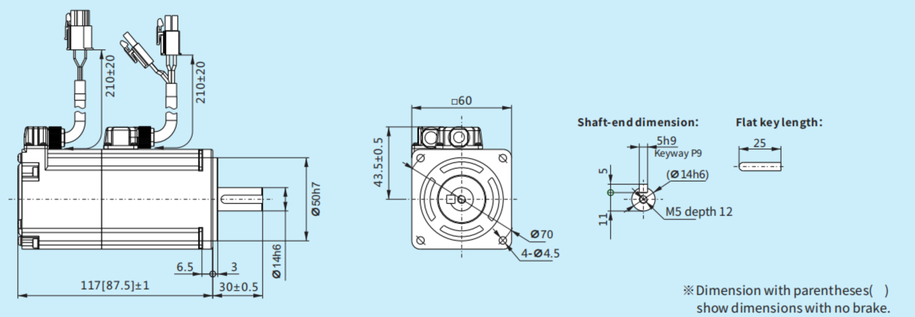



## Specifications

| Model Name M□□□□□2□□** | Units | 400W High inertia MH040A | |
|---|---|---|---|
| Fitting flange size | mm | □60 | |
| Approximate mass(No brake) | Kg | 1.22 | |
| Approximate mass(With brake) | Kg | 1.61 | |
| Rated voltage | V | AC200 | |
| Rated output | W | 400 | |
| Rated torque | N·m | 1.27 | |
| Instantaneous max. torque | N·m | 4.46 | |
| Rated current | Arms | 2.1 | |
| Instantaneous max. current | Arms | 10.4 | |
| Rated speed | r/min | 3000 | |
| Max. speed | r/min | 6500/5000※ | ("※" is parameter for X2 series servo motor) |
| Torque constant | N·m/A | 0.67 | |
| Induced voltage constant per phase | MV(r/min) | 20.85 | |
| Rated power rate(No brake) | KW/S | 28.8 | |
| Rated power rate(With brake) | KW/S | 27.8 | |
| Mechanical time constant(No brake) | ms | 1.3 | |
| Mechanical time constant(With brake) | ms | 1.35 | |
| Electrical time constant | ms | 4.21 | |
| Moment of inertia(No brake) | $\times 10^{-4}$Kg·m$^2$ | 0.56 | |
| Moment of inertia(With brake) | $\times 10^{-4}$Kg·m$^2$ | 0.58 | |
| Brake specification: Usage | — | Holding | |
| Brake specification: Rated voltage | V | DC24V±2.4 | |
| Brake specification: Rated current | A | 0.36 | |
| Brake specification: Static friction torque | Nm | 1.6 or more | |
| Brake specification: Suction time | ms | 50 or less | |
| Brake specification: Release time | ms | 20 or less | |
| Brake specification: Release voltage | V | 1V or more | |

## External dimensions

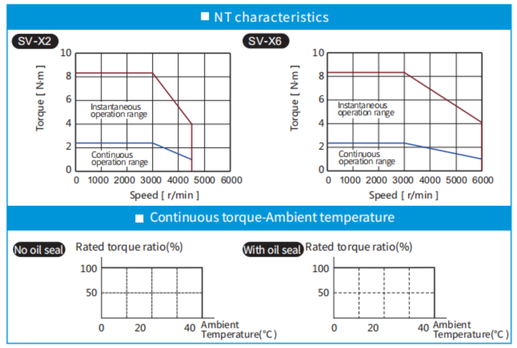
■ MH040A




※Dimension with parentheses( ) show dimensions with no brake.

## MH075A Outline

## NT characteristics

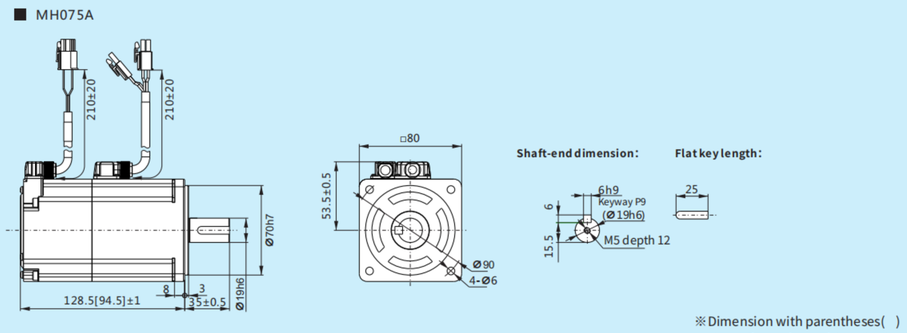



## Specifications

| Model Name M□□□□□2□□** | Units | 750W High inertia MH075A | |
|---|---|---|---|
| Fitting flange size | mm | □80 | |
| Approximate mass(No brake) | Kg | 2.25 | |
| Approximate mass(With brake) | Kg | 3.01 | |
| Rated voltage | V | AC200 | |
| Rated output | W | 750 | |
| Rated torque | N·m | 2.39 | |
| Instantaneous max. torque | N·m | 8.36 | |
| Rated current | Arms | 3.8 | |
| Instantaneous max. current | Arms | 18.8 | |
| Rated speed | r/min | 3000 | |
| Max. speed | r/min | 6000/4500※ | ("※" is parameter for X2 series servo motor) |
| Torque constant | N·m/A | 0.63 | |
| Induced voltage constant per phase | MV(r/min) | 22.5 | |
| Rated power rate(No brake) | KW/S | 36.6 | |
| Rated power rate(With brake) | KW/S | 34.4 | |
| Mechanical time constant(No brake) | ms | 1.26 | |
| Mechanical time constant(With brake) | ms | 1.34 | |
| Electrical time constant | ms | 6.54 | |
| Moment of inertia(No brake) | $\times 10^{-4}$Kg·m$^2$ | 1.56 | |
| Moment of inertia(With brake) | $\times 10^{-4}$Kg·m$^2$ | 1.66 | |
| Brake specification: Usage | — | Holding | |
| Brake specification: Rated voltage | V | DC24V±2.4 | |
| Brake specification: Rated current | A | 0.42 | |
| Brake specification: Static friction torque | Nm | 3.8 or more | |
| Brake specification: Suction time | ms | 70 or less | |
| Brake specification: Release time | ms | 20 or less | |
| Brake specification: Release voltage | V | 1V or more | |

## External dimensions

■ MH075A




※Dimension with parentheses( ) show dimensions with no brake.

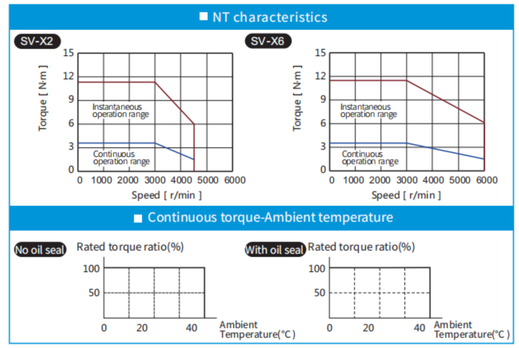






## MH100C Outline

## NT characteristics

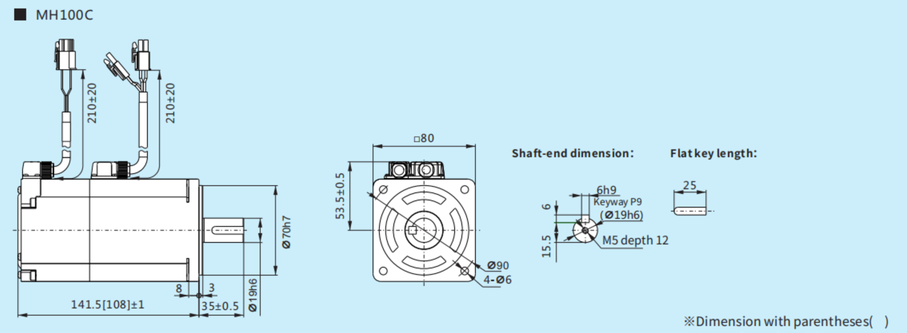



## Specifications

| Model Name M□□□□□2□□** | Units | 1KW High inertia MH100C | |
|---|---|---|---|
| Fitting flange size | mm | □80 | |
| Approximate mass(No brake) | Kg | 2.68 | |
| Approximate mass(With brake) | Kg | 3.45 | |
| Rated voltage | V | AC200 | |
| Rated output | W | 1000 | |
| Rated torque | N·m | 3.815 | |
| Instantaneous max. torque | N·m | 11.13 | |
| Rated current | Arms | 5.7 | |
| Instantaneous max. current | Arms | 30 | |
| Rated speed | r/min | 3000 | |
| Max. speed | r/min | 6000/4500※ | ("※" is parameter for X2 series servo motor) |
| Torque constant | N·m/A | 0.552 | |
| Induced voltage constant per phase | MV(r/min) | 21.2 | |
| Rated power rate(No brake) | KW/S | 50.6 | |
| Rated power rate(With brake) | KW/S | 48.2 | |
| Mechanical time constant(No brake) | ms | 0.78 | |
| Mechanical time constant(With brake) | ms | 0.82 | |
| Electrical time constant | ms | 4.68 | |
| Moment of inertia(No brake) | $\times 10^{-4}$Kg·m$^2$ | 2 | |
| Moment of inertia(With brake) | $\times 10^{-4}$Kg·m$^2$ | 2.1 | |
| Brake specification: Usage | — | Holding | |
| Brake specification: Rated voltage | V | DC24V±2.4 | |
| Brake specification: Rated current | A | 0.42 | |
| Brake specification: Static friction torque | Nm | 3.8 or more | |
| Brake specification: Suction time | ms | 70 or less | |
| Brake specification: Release time | ms | 20 or less | |
| Brake specification: Release voltage | V | 1V or more | |

## External dimensions

■ MH100C




※Dimension with parentheses( ) show dimensions with no brake.

## MG085A/MG130A/MG180A Outline

MG085A

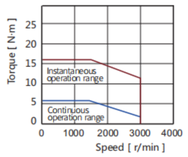
MG130A

MG180A

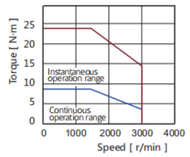
## NT characteristics

### ■ NT characteristics

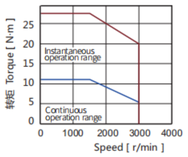
■ MG085A



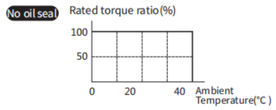

■ MG130A

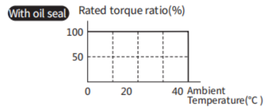



■ MG180A




### ■ Continuous torque-Ambient temperature




## Specifications

| Model Name M□□□□□2□□** | Units | 850W MG085 | 1.3KW MG130 | 1.8KW MG180 |
|---|---|---|---|---|
| Fitting flange size | mm | □130 | □130 | □130 |
| Approximate mass(No brake) | Kg | 5.5 | 7.1 | 8.6 |
| Approximate mass(With brake) | Kg | 7.5 | 9 | 11 |
| Rated voltage | V | 200 | 200 | 200 |
| Rated output | W | 850 | 1300 | 1800 |
| Rated torque | N·m | 5.39 | 8.28 | 11.5 |
| Instantaneous max. torque | N·m | 16.2 | 24.84 | 34.5 |
| Rated current | Arms | 6.7 | 9.6 | 15.6 |
| Instantaneous max. current | Arms | 17 | 28 | 42 |
| Rated speed | r/min | 1500 | 1500 | 1500 |
| Max. speed | r/min | 3000 | 3000 | 3000 |
| Torque constant | N·m/A | 0.89 | 0.92 | 0.774 |
| Induced voltage constant per phase | MV(r/min) | 31.04 | 32.08 | 27 |
| Rated power rate(No brake) | KW/S | 20.9 | 35 | 50.9 |
| Rated power rate(With brake) | KW/S | 18.2 | 31.6 | 47.1 |
| Mechanical time constant(No brake) | ms | 2.74 | 2.23 | 1.95 |
| Mechanical time constant(With brake) | ms | 3.16 | 2.46 | 2.29 |
| Electrical time constant | ms | 4.61 | 5.4 | 5.58 |
| Moment of inertia(No brake) | $\times10^{-4}$Kg·m$^2$ | 12.2 | 18.2 | 24.4 |
| Moment of inertia(With brake) | $\times10^{-4}$Kg·m$^2$ | 16 | 22 | 28.1 |
| Brake specification — Usage | — | Holding | Holding | Holding |
| Brake specification — Rated voltage | V | DC24V±2.4 | DC24V±2.4 | DC24V±2.4 |
| Brake specification — Rated current | A | 0.41 | 0.41 | 0.41 |
| Brake specification — Static friction torque | Nm | 19.6 | 19.6 | 19.6 |
| Brake specification — Suction time | ms | 80 | 80 | 80 |
| Brake specification — Release time | ms | 100 | 100 | 100 |
| Brake specification — Release voltage | V | 1.5V or more | 1.5V or more | 1.5V or more |

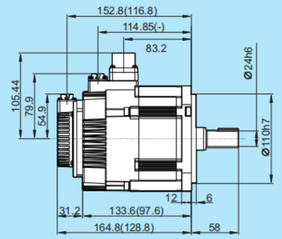


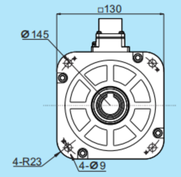




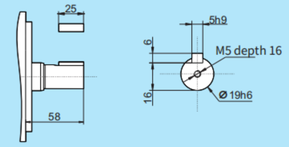
## External dimensions

■ MG085A



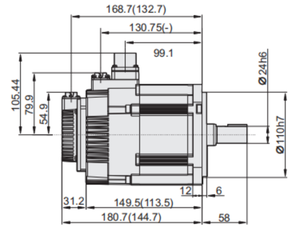



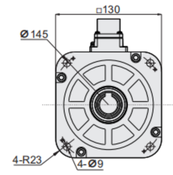

■ Shaft-end size



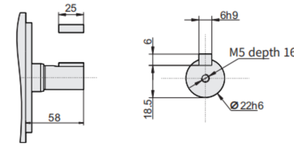

※Dimension with parentheses( ) show dimensions with no brake.

■ MG130A



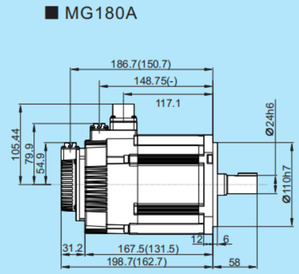



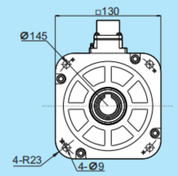

■ Shaft-end size



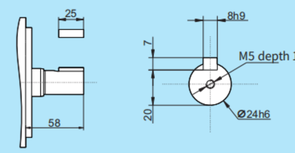

※Dimension with parentheses( ) show dimensions with no brake.

■ MG180A



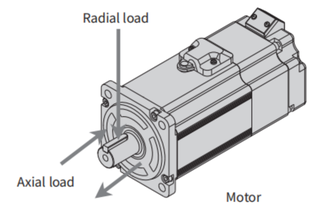



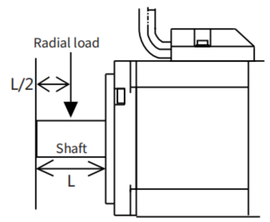

■ Shaft-end size




※Dimension with parentheses( ) show dimensions with no brake.

## Output shaft permissible load for X2/X6 series servo motor




| Permissible load | Units | 50W | 100W | 200W | 400W | 750W | 1kW | 1.5kW | 2kW | 850W | 1.3KW | 1.8KW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Radial load | N | 68 | 68 | 245 | 245 | 392 | 490 | 490 | 490 | 490 | 686 | 980 |
| Axial load | N | 58 | 58 | 98 | 98 | 147 | 196 | 196 | 196 | 98 | 343 | 392 |