

## SERVO SYSTEM CATALOGUE



**Chnchi Nanjing Electric Co.,Ltd.**

Servo motor | Servo driver | Frequency converter





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## ABOUT US >>>

Chnchi Electric Nanjing Co.,Ltd was established in 2007, covers an area of about 42000 square meters, is located in Nanjing where is known as the ancient Chinese capital. The company focuses on industrial electrical equipment of transmission control and energy saving technology, new energy generation equipment and its control technology. The company is private high-tech enterprises, and its business includes R & D, production,sales and service. On the basis of industrial automation control technology with independent intellectual property rights, the main business model is to provide customers with personalized solutions as fast as possible, realize the growth of enterprise value and customer value together.

The company has strong scientific research, and has an experienced high-quality management team and highly innovative research and development team, with advanced production equipment and testing facilities.

The company has passed the ISO9001 quality management system certification, ISO14001 environmental management system certification, OHSAS 18001 occupational health and safety management system certification, a series of products pass through the authority of the domestic testing.

## Our products

Industrial automation control and energy saving, the main products are low voltage inverter, and the integration of machine, servo system, permanent magnet synchronous motor, motor controller; Main service for three areas: the equipment manufacturing industry, energy saving and environmental protection, new energy. The products are widely used in oil fields, machine tools, metal products, plastics, wire and cable,printing and packaging, textile, building materials, metallurgy, coal, municipal, automotive and other industries. In the low voltage inverter market share, the company is one of the best manufacturers among the domestic brand. For integration and special plane products in many segments of the industry, our company takes the first or leading position.

The company has strong scientific research, and has an experienced high-quality management team and highly innovative research and development team, with advanced production equipment and testing facilities.

The company has passed the ISO9001 quality management system certification, ISO14001 environmental management system certification, OHSAS 18001 occupational health and safety management system certification, a series of products pass through the authority of the domestic testing.

## Quality commitment

We have strict control over production management, process technology, equipment maintenance and quality control. Advanced manufacturing equipment, testing instruments, professional technical personnel, integrated production and processing flow, we strictly follow the standard operating standards, to ensure the product quality of stability and accuracy.



# Certification

## ISO9001



## ISO14001



## OHSAS18001



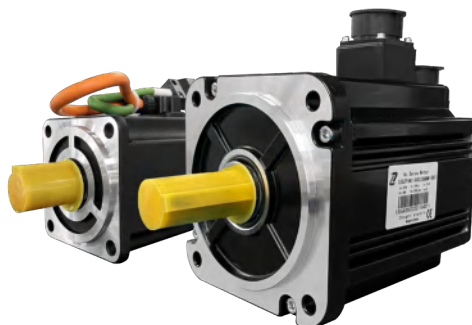
## Certificate



## Patent



# ZE Series Servo Motor



## Name Rule

ZE 60 MA 1 - 0D40 D Q N M

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

| ① Product code          |                                       |
|-------------------------|---------------------------------------|
| ② Frame No.             |                                       |
| Code                    | Specs                                 |
| 40                      | 40 Flange                             |
| 60                      | 60 Flange                             |
| 80                      | 80 Flange                             |
| 130                     | 130 Flange                            |
| ③ Inertia rated voltage |                                       |
| Code                    | Specs                                 |
| MA                      | middle & high inertia 220V            |
| MB                      | middle & high inertia 380V            |
| HA                      | middle & high inertia 220V(130flange) |
| HB                      | middle & high inertia 380V(130flange) |
| ④ Code name             |                                       |
| Code                    | Specs                                 |
| 1                       | standard design                       |

| ⑤ Rated power |       |
|---------------|-------|
| Code          | Specs |
| 0D10          | 100W  |
| 0D20          | 200W  |
| 0D40          | 400W  |
| 0D75          | 750W  |
| 0D85          | 850W  |
| 0001          | 1.0kW |
| 01D3          | 1.3kW |
| 01D5          | 1.5kW |
| 0002          | 2.0kW |
| 0003          | 3.0kW |

| ⑥ Rated speed |         |
|---------------|---------|
| Code          | Specs   |
| B             | 1500rpm |
| C             | 2000rpm |
| D             | 3000rpm |

| ⑦ Encoder code |                                                    |
|----------------|----------------------------------------------------|
| Code           | Specs                                              |
| I              | 17 bit photoelectric absolute value single turn    |
| Q              | 17 bit magnetic encoder absolute value single turn |
| S              | 17 bit magnetic encoder absolute value multi turn  |
| J              | 17 bit photoelectric absolute value multi turn     |
| L              | 23 bit photoelectric absolute value single turn    |
| P              | 23 bit photoelectric absolute value multi turn     |

| ⑧ Brake selection |               |
|-------------------|---------------|
| Code              | Specs         |
| N                 | without brake |
| Y                 | with brake    |

| ⑨ Keyway oil seal selection |                          |
|-----------------------------|--------------------------|
| Code                        | Specs                    |
| M                           | with key slot & oil seal |

## Product Characteristic

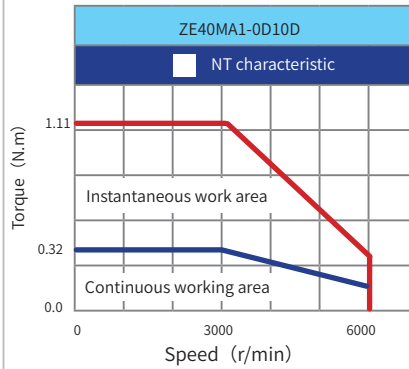
|                                                                                                                                                                        |                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power range: 100W-3kW                                                                                                                                                  |                                                                                                                                                                                                                                                                  |
| Design: adopt the latest 5-pair pole IPM design                                                                                                                        |                                                                                                                                                                                                                                                                  |
| Intelligence                                                                                                                                                           | <ul style="list-style-type: none"> <li>Equipped with magnetic encoder/photoelectric encoder</li> <li>The maximum resolution of magnetic encoder is 23bit (8388608p/r)</li> <li>Work system: S1 continuous work</li> </ul>                                        |
|                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Protection level: IP65/IP67 (optional)</li> <li>The special structure of encoder installation has strong anti-interference ability</li> <li>The economic cost advantage of mass production is more significant</li> </ul> |
|                                                                                                                                                                        |                                                                                                                                                                                                                                                                  |
| High overload capacity: up to 3 times the instantaneous maximum overload capacity                                                                                      |                                                                                                                                                                                                                                                                  |
| High-speed small servo motor: rated speed 3000 rpm, maximum speed 6000 rpm; rated speed 2000 rpm, maximum speed 3000 rpm; rated speed 1500 rpm, maximum speed 3000 rpm |                                                                                                                                                                                                                                                                  |
| Miniaturization: embedded structure, integrated structure design, small size, equivalent power saving of 20%                                                           |                                                                                                                                                                                                                                                                  |

# Servo Motor ZE40MA1-0D10D M Specifications

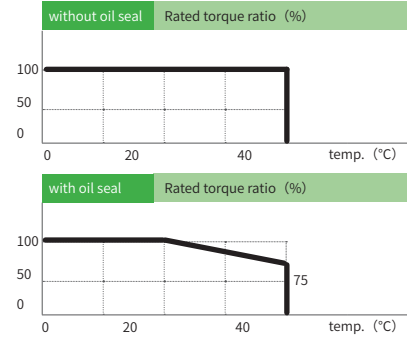
## ZE40MA1-0D10D outline



## NT characteristic



## Continuous torque-ambient temperature

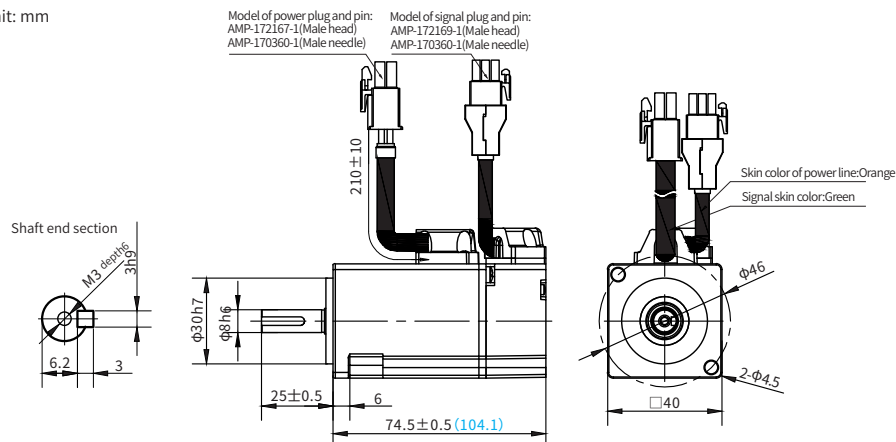


## Specification Table

| Model type : ZE40MA1-0D10D  M | Unit                                                                                                                          | 100W                                                                                   |
|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Flange size                                                                                                    | mm                                                                                                                            |  40 |
| Rated voltage                                                                                                  | V                                                                                                                             | AC220                                                                                  |
| Rated power                                                                                                    | W                                                                                                                             | 100                                                                                    |
| Rated torque                                                                                                   | N.m                                                                                                                           | 0.32                                                                                   |
| Peak torque                                                                                                    | N.m                                                                                                                           | 1.11                                                                                   |
| Rated current                                                                                                  | Arms                                                                                                                          | 0.84                                                                                   |
| Max current                                                                                                    | Arms                                                                                                                          | 2.9                                                                                    |
| Rated speed                                                                                                    | r/min                                                                                                                         | 3000                                                                                   |
| Maximum speed                                                                                                  | r/min                                                                                                                         | 6500                                                                                   |
| Torque coefficient                                                                                             | N.m/Arms                                                                                                                      | $0.3 \pm 10\%$                                                                         |
| EMF constant                                                                                                   | V/KRPM                                                                                                                        | $24.5 \pm 10\%$                                                                        |
| Line-to-line resistance                                                                                        | $\Omega$                                                                                                                      | $18.15 \pm 10\%$                                                                       |
| Line-to-line inductance                                                                                        | mH                                                                                                                            | $9.81 \pm 10\%$                                                                        |
| Moment of inertia                                                                                              | $\text{kg.m}^2 \times 10^{-4}$                                                                                                | $0.66 \pm 10\%$                                                                        |
| Polar logarithm                                                                                                | Pair                                                                                                                          | 5                                                                                      |
| Feedback element                                                                                               | Incremental                                                                                                                   | 17bit                                                                                  |
| Protection grade                                                                                               | IP65/IP67(Optional)(Except the shaft penetration part)                                                                        |                                                                                        |
| Insulation class                                                                                               | F                                                                                                                             |                                                                                        |
| Insulation resistance                                                                                          | $> 200\text{M}\Omega$ DC500V                                                                                                  |                                                                                        |
| Working temperature                                                                                            | $-20^\circ\text{C} - 50^\circ\text{C}$                                                                                        |                                                                                        |
| Storage temperature                                                                                            | 20%-80% no condensation                                                                                                       |                                                                                        |
| Use environment                                                                                                | Keep away from active gas, combustible gas, oil and ash                                                                       |                                                                                        |
| Altitude                                                                                                       | Below 1000m<br>Derating use above 1000m                                                                                       |                                                                                        |
| Test conditions                                                                                                | Fixed on 200*200*20 aluminum plate                                                                                            |                                                                                        |
| Cable specification                                                                                            | 4*0.75mm <sup>2</sup> +2p*0.2mm <sup>2</sup> High flexible drag chain cable, with bending times not less than 5 million times |                                                                                        |

## Drawing

unit: mm



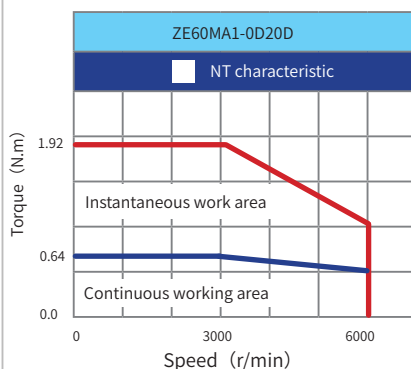
Note: The dimensions in brackets are the length of the motor with brake

## Servo Motor ZE60MA1-0D20D M Specifications

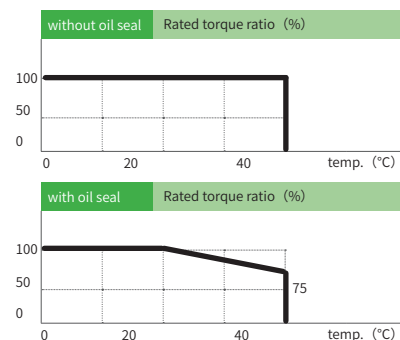
### ZE60MA1-0D20D outline



### NT characteristic



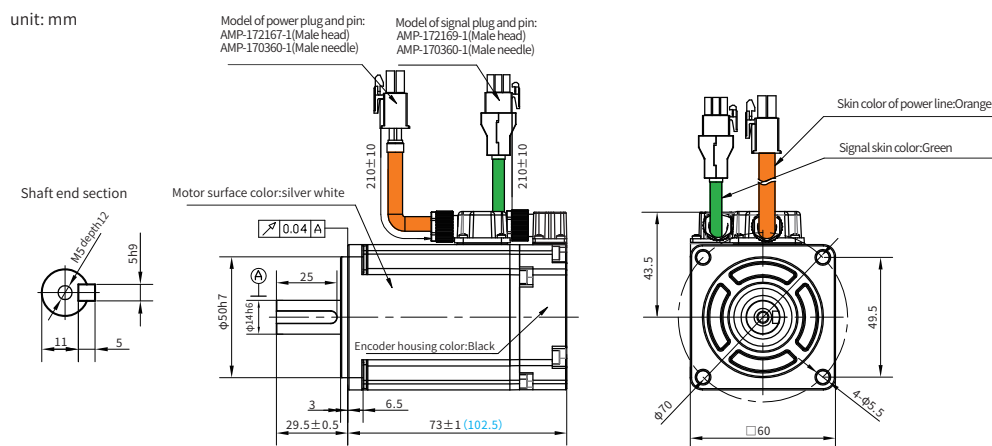
### Continuous torque-ambient temperature



### Specification Table

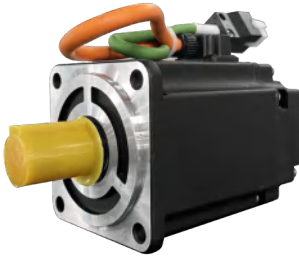
| Model type : ZE60MA1-0D20D M | Unit                                                                                                                          | 200W       |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------|
| Flange size                  | mm                                                                                                                            | □ 60       |
| Rated voltage                | V                                                                                                                             | AC220      |
| Rated power                  | W                                                                                                                             | 200        |
| Rated torque                 | N.m                                                                                                                           | 0.64       |
| Peak torque                  | N.m                                                                                                                           | 1.92       |
| Rated current                | Arms                                                                                                                          | 1.7        |
| Max current                  | Arms                                                                                                                          | 5.7        |
| Rated speed                  | r/min                                                                                                                         | 3000       |
| Maximum speed                | r/min                                                                                                                         | 6000       |
| Torque coefficient           | N.m/Arms                                                                                                                      | 0.38 ± 10% |
| EMF constant                 | V/KRPM                                                                                                                        | 23 ± 10%   |
| Line-to-line resistance      | Ω                                                                                                                             | 4.5 ± 10%  |
| Line-to-line inductance      | mH                                                                                                                            | 3.7 ± 10%  |
| Moment of inertia            | kg.m <sup>2</sup> × 10 <sup>-4</sup>                                                                                          | 0.28 ± 10% |
| Polar logarithm              | Pair                                                                                                                          | 5          |
| Feedback element             | Incremental                                                                                                                   | 17bit      |
| Protection grade             | IP65/IP67(Optional)(Except the shaft penetration part)                                                                        |            |
| Insulation class             | F                                                                                                                             |            |
| Insulation resistance        | > 200MΩ DC500V                                                                                                                |            |
| Working temperature          | -20°C -50°C                                                                                                                   |            |
| Storage temperature          | 20%-80% no condensation                                                                                                       |            |
| Use environment              | Keep away from active gas, combustible gas, oil and ash                                                                       |            |
| Altitude                     | Below 1000m<br>Derating use above 1000m                                                                                       |            |
| Test conditions              | Fixed on 200*200*20 aluminum plate                                                                                            |            |
| Cable specification          | 4*0.75mm <sup>2</sup> +2p*0.2mm <sup>2</sup> High flexible drag chain cable ,with bending times not less than 5 million times |            |

### Drawing

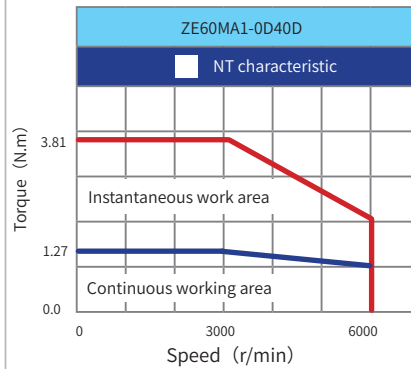


## Servo Motor ZE60MA1-0D40D Specifications

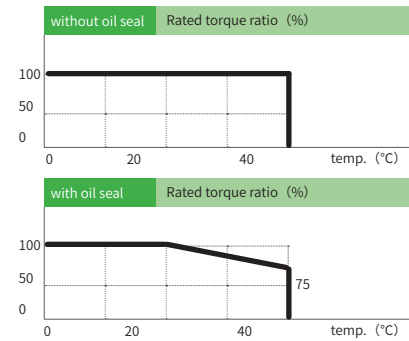
### ZE60MA1-0D40D outline



### NT characteristic



### Continuous torque-ambient temperature

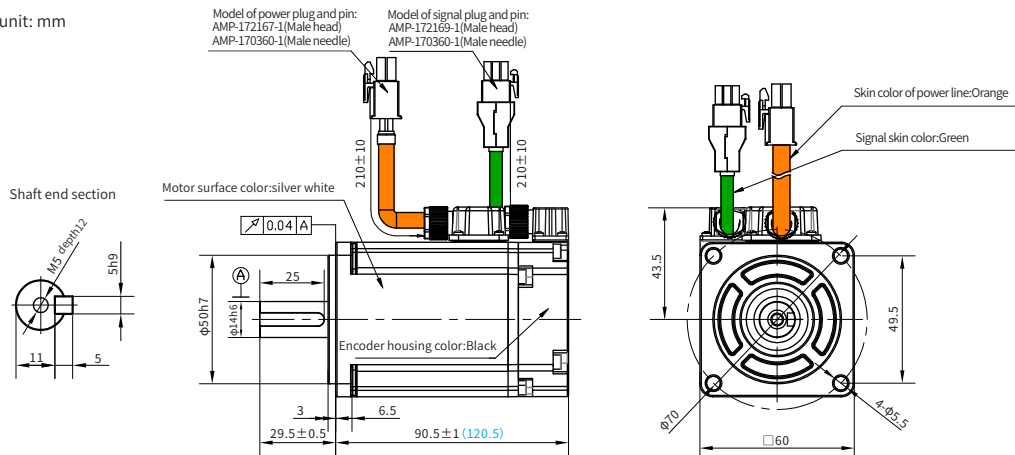


### Specification Table

| Model type : ZE60MA1-0D40D  | Unit                                                                                                                          | 400W                                                                                   |
|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Flange size                                                                                                  | mm                                                                                                                            |  60 |
| Rated voltage                                                                                                | V                                                                                                                             | AC220                                                                                  |
| Rated power                                                                                                  | W                                                                                                                             | 400                                                                                    |
| Rated torque                                                                                                 | N.m                                                                                                                           | 1.27                                                                                   |
| Peak torque                                                                                                  | N.m                                                                                                                           | 3.81                                                                                   |
| Rated current                                                                                                | Arms                                                                                                                          | 2.8                                                                                    |
| Max current                                                                                                  | Arms                                                                                                                          | 7.5                                                                                    |
| Rated speed                                                                                                  | r/min                                                                                                                         | 3000                                                                                   |
| Maximum speed                                                                                                | r/min                                                                                                                         | 6000                                                                                   |
| Torque coefficient                                                                                           | N.m/Arms                                                                                                                      | 0.5±10%                                                                                |
| EMF constant                                                                                                 | V/KRPM                                                                                                                        | 31±10%                                                                                 |
| Line-to-line resistance                                                                                      | Ω                                                                                                                             | 3.4±10%                                                                                |
| Line-to-line inductance                                                                                      | mH                                                                                                                            | 5.8±10%                                                                                |
| Moment of inertia                                                                                            | kg.m <sup>2</sup> × 10 <sup>-4</sup>                                                                                          | 0.53±10%                                                                               |
| Polar logarithm                                                                                              | Pair                                                                                                                          | 5                                                                                      |
| Feedback element                                                                                             | Incremental                                                                                                                   | 17bit                                                                                  |
| Protection grade                                                                                             | IP65/IP67(Optional)(Except the shaft penetration part)                                                                        |                                                                                        |
| Insulation class                                                                                             | F                                                                                                                             |                                                                                        |
| Insulation resistance                                                                                        | > 200MΩ DC500V                                                                                                                |                                                                                        |
| Working temperature                                                                                          | -20°C -50°C                                                                                                                   |                                                                                        |
| Storage temperature                                                                                          | 20%-80% no condensation                                                                                                       |                                                                                        |
| Use environment                                                                                              | Keep away from active gas, combustible gas, oil and ash                                                                       |                                                                                        |
| Altitude                                                                                                     | Below 1000m<br>Derating use above 1000m                                                                                       |                                                                                        |
| Test conditions                                                                                              | Fixed on 200*200*20 aluminum plate                                                                                            |                                                                                        |
| Cable specification                                                                                          | 4*0.75mm <sup>2</sup> +2p*0.2mm <sup>2</sup> High flexible drag chain cable ,with bending times not less than 5 million times |                                                                                        |

### Drawing

unit: mm

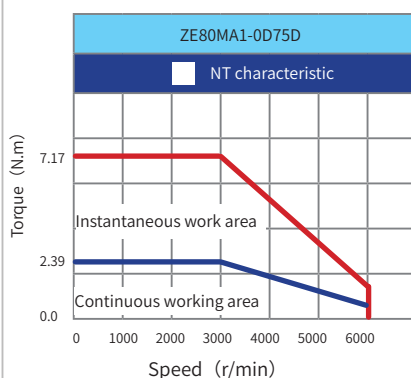


## Servo Motor ZE80MA1-0D75D Specifications

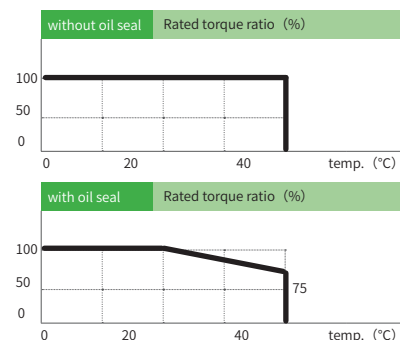
### ZE80MA1-0D75D outline



### NT characteristic



### Continuous torque-ambient temperature

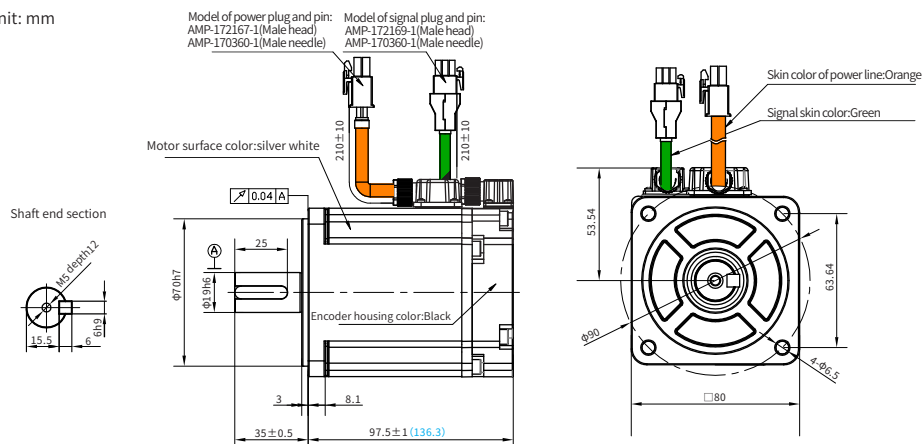


### Specification Table

| Model type : ZE80MA1-0D75D  | Unit                                                                                                                          | 750W                                                                                   |
|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Flange size                                                                                                  | mm                                                                                                                            |  80 |
| Rated voltage                                                                                                | V                                                                                                                             | AC220                                                                                  |
| Rated power                                                                                                  | W                                                                                                                             | 750                                                                                    |
| Rated torque                                                                                                 | N.m                                                                                                                           | 2.39                                                                                   |
| Peak torque                                                                                                  | N.m                                                                                                                           | 7.17                                                                                   |
| Rated current                                                                                                | Arms                                                                                                                          | 4.8                                                                                    |
| Max current                                                                                                  | Arms                                                                                                                          | 13.3                                                                                   |
| Rated speed                                                                                                  | r/min                                                                                                                         | 3000                                                                                   |
| Maximum speed                                                                                                | r/min                                                                                                                         | 6000                                                                                   |
| Torque coefficient                                                                                           | N.m/Arms                                                                                                                      | 0.54 ± 10%                                                                             |
| EMF constant                                                                                                 | V/KRPM                                                                                                                        | 33 ± 10%                                                                               |
| Line-to-line resistance                                                                                      | Ω                                                                                                                             | 1.1 ± 10%                                                                              |
| Line-to-line inductance                                                                                      | mH                                                                                                                            | 2.4 ± 10%                                                                              |
| Moment of inertia                                                                                            | kg.m <sup>2</sup> × 10 <sup>-4</sup>                                                                                          | 1.5 ± 10%                                                                              |
| Polar logarithm                                                                                              | Pair                                                                                                                          | 5                                                                                      |
| Feedback element                                                                                             | Incremental                                                                                                                   | 17bit                                                                                  |
| Protection grade                                                                                             | IP65/IP67(Optional)(Except the shaft penetration part)                                                                        |                                                                                        |
| Insulation class                                                                                             | F                                                                                                                             |                                                                                        |
| Insulation resistance                                                                                        | > 200MΩ DC500V                                                                                                                |                                                                                        |
| Working temperature                                                                                          | -20°C -50°C                                                                                                                   |                                                                                        |
| Storage temperature                                                                                          | 20%-80% no condensation                                                                                                       |                                                                                        |
| Use environment                                                                                              | Keep away from active gas, combustible gas, oil and ash                                                                       |                                                                                        |
| Altitude                                                                                                     | Below 1000m<br>Derating use above 1000m                                                                                       |                                                                                        |
| Test conditions                                                                                              | Fixed on 250*250*20 aluminum plate                                                                                            |                                                                                        |
| Cable specification                                                                                          | 4*0.75mm <sup>2</sup> +2p*0.2mm <sup>2</sup> High flexible drag chain cable ,with bending times not less than 5 million times |                                                                                        |

### Drawing

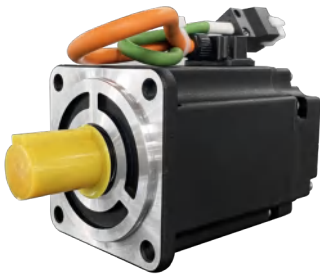
unit: mm



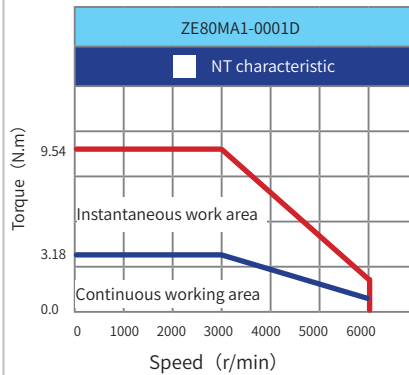
Note: The dimensions in brackets are the length of the motor with brake

## Servo Motor ZE80MA1-0001D Specifications

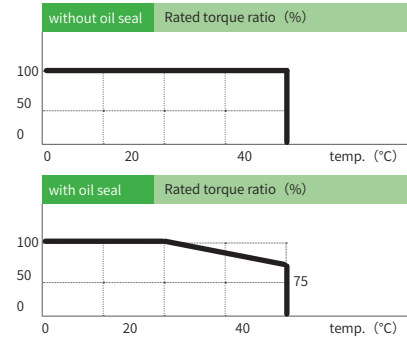
### ZE80MA1-0001D outline



### NT characteristic



### Continuous torque-ambient temperature

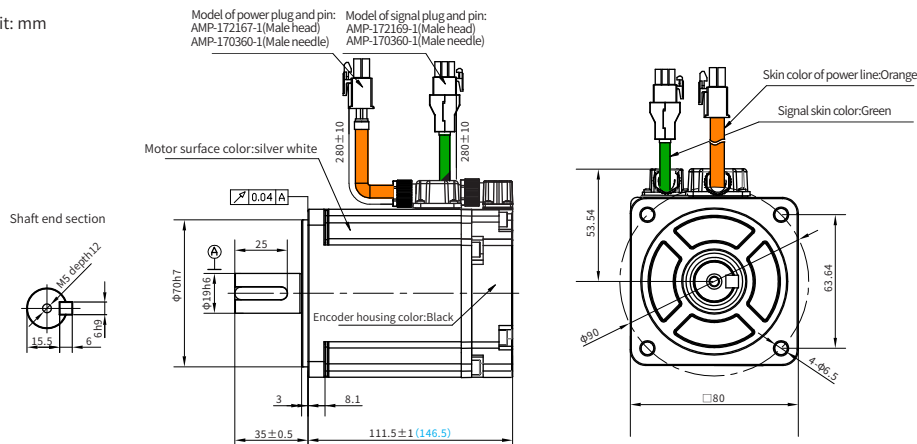


### Specification Table

| Model type : ZE80MA1-0001D  | Unit                                                                                                                          | 1000W       |
|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------|
| Flange size                                                                                                  | mm                                                                                                                            | □ 80        |
| Rated voltage                                                                                                | V                                                                                                                             | AC220       |
| Rated power                                                                                                  | W                                                                                                                             | 1000        |
| Rated torque                                                                                                 | N.m                                                                                                                           | 3.18        |
| Peak torque                                                                                                  | N.m                                                                                                                           | 9.54        |
| Rated current                                                                                                | Arms                                                                                                                          | 5.8         |
| Max current                                                                                                  | Arms                                                                                                                          | 18.1        |
| Rated speed                                                                                                  | r/min                                                                                                                         | 3000        |
| Maximum speed                                                                                                | r/min                                                                                                                         | 6000        |
| Torque coefficient                                                                                           | N.m/Arms                                                                                                                      | 0.54±10%    |
| EMF constant                                                                                                 | V/KRPM                                                                                                                        | 34±10%      |
| Line-to-line resistance                                                                                      | Ω                                                                                                                             | 0.68±10%    |
| Line-to-line inductance                                                                                      | mH                                                                                                                            | 1.4/1.7±10% |
| Moment of inertia                                                                                            | kg.m <sup>2</sup> × 10 <sup>-4</sup>                                                                                          | 1.97±10%    |
| Polar logarithm                                                                                              | Pair                                                                                                                          | 5           |
| Feedback element                                                                                             | Incremental                                                                                                                   | 17bit       |
| Protection grade                                                                                             | IP65/IP67(Optional)(Except the shaft penetration part)                                                                        |             |
| Insulation class                                                                                             | F                                                                                                                             |             |
| Insulation resistance                                                                                        | > 200MΩ DC500V                                                                                                                |             |
| Working temperature                                                                                          | -20°C -50°C                                                                                                                   |             |
| Storage temperature                                                                                          | 20%-80% no condensation                                                                                                       |             |
| Use environment                                                                                              | Keep away from active gas, combustible gas, oil and ash                                                                       |             |
| Altitude                                                                                                     | Below 1000m<br>Derating use above 1000m                                                                                       |             |
| Test conditions                                                                                              | Fixed on 250*250*20 aluminum plate                                                                                            |             |
| Cable specification                                                                                          | 4*0.75mm <sup>2</sup> +2p*0.2mm <sup>2</sup> High flexible drag chain cable ,with bending times not less than 5 million times |             |

### Drawing

unit: mm





## Servo Motor ZE130HA1 Specifications

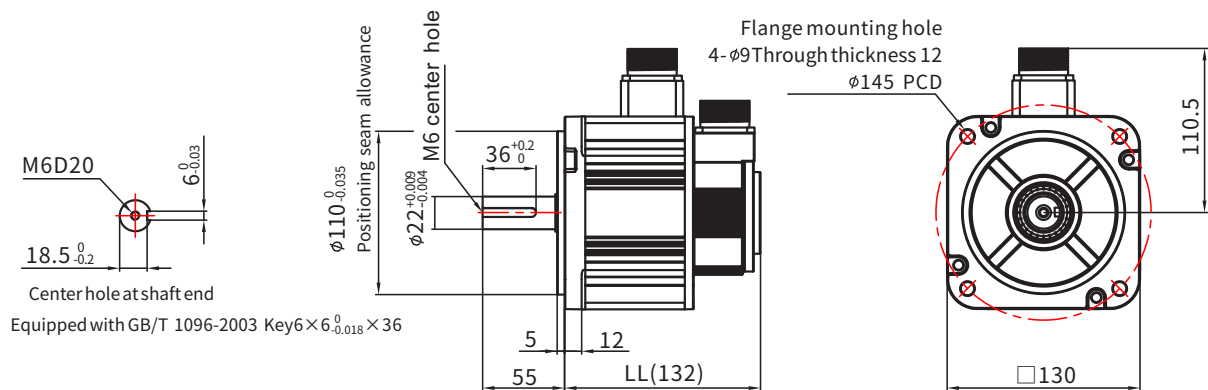
| Model type                               | Unit                                                   | ZE130HA1-0D85B | ZE130HA1-0001C | ZE130HA1-01D3B | ZE130HA1-01D5C | ZE130HA1-01D8B | ZE130HA1-0002C | ZE130HA1-02D3B | ZE130HA1-0003C |
|------------------------------------------|--------------------------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Flange size                              | mm                                                     | □ 130          |                |                |                |                |                |                |                |
| Rated voltage                            | V                                                      | AC220          |                |                |                |                |                |                |                |
| Rated power                              | W                                                      | 850            | 1000           | 1300           | 1500           | 1800           | 2000           | 2300           | 3000           |
| Rated torque                             | N.m                                                    | 5.4            | 4.77           | 8.3            | 7.16           | 11.4           | 9.55           | 14.64          | 14.3           |
| Instantaneous peak torque                | N.m                                                    | 16.9           | 14.2           | 20.75          | 21.8           | 28.9           | 24.5           | 43.7           | 43.1           |
| Rated current                            | Arms                                                   | 6.7            | 5.7            | 8              | 6.8            | 11.2           | 7.8            | 11.2           | 14             |
| Max current                              | Arms                                                   | 20.6           | 17.2           | 21.5           | 20.3           | 29.1           | 22.2           | 35.8           | 44.7           |
| Rated speed                              | r/min                                                  | 1500           | 2000           | 1500           | 2000           | 1500           | 2000           | 1500           | 2000           |
| Maximum speed                            | r/min                                                  | 3000           | 3000           | 3000           | 3000           | 3000           | 3000           | 3000           | 3000           |
| Torque constant                          | N.m/A                                                  | 0.82           | 0.84           | 1.04           | 1.05           | 1.02           | 1.22           | 1.31           | 1.02           |
| Three-phase induced voltage constant     | MV(r/min)                                              | 56.5           | 56.5           | 67             | 46.91          | 70             | 69             | 64.8           | 64.8           |
| Rated power change rate (without brake)  | kW/S                                                   | 21             | 36.9           | 35             | 56             | 56             | 75.4           | 94.6           | 94.6           |
| Rated power change rate (with brake)     | kW/S                                                   | 18.3           | 30.8           | 31.6           | 49.3           | 18.3           | 68.6           | 88             | 88             |
| Mechanical time constant (without brake) | ms                                                     | 2.75           | 1.76           | 2.23           | 1.41           | 2.52           | 1.24           | 1.08           | 1.08           |
| Mechanical time constant (with brake)    | ms                                                     | 3.15           | 2.11           | 2.46           | 1.6            | 2.63           | 1.37           | 1.14           | 1.14           |
| Electrical time constant                 | ms                                                     | 10.3           | 9.5            | 10.7           | 12.7           | 14.1           | 13.9           | 15.2           | 15.2           |
| Motor rotor inertia (without brake)      | $\times 10^{-4} \text{kg} \cdot \text{m}^2$            | 6.2            | 6.2            | 9.2            | 9.2            | 12.3           | 12.3           | 18.8           | 18.8           |
| Motor rotor inertia (with brake)         | $\times 10^{-4} \text{kg} \cdot \text{m}^2$            | 7.5            | 7.5            | 10.5           | 10.5           | 13.5           | 13.5           | 19.9           | 19.9           |
| Line resistance                          | $\Omega$                                               | 0.71           | 0.71           | 0.48           | 0.39           | 0.44           | 0.375          | 0.23           | 0.23           |
| Inductance Ld                            | mH                                                     | 5.72           | 5.72           | 4.76           | 3.23           | 6              | 3.6            | 2.78           | 2.78           |
| Inductance Lq                            | mH                                                     | 5.72           | 5.72           | 10.57          | 3.23           | 6              | 3.6            | 2.78           | 2.78           |
| Protection grade                         | IP65/IP67(Optional)(Except the shaft penetration part) |                |                |                |                |                |                |                |                |
| Brake performance parameters             | Rated voltage                                          | V              | DC24 $\pm$ 10% |                |                |                |                |                |                |
|                                          | Rated power                                            | W              | 23             |                |                |                |                |                |                |
|                                          | Static friction torque                                 | N.m            | $\geq 16$      |                |                |                |                |                |                |
|                                          | Attract time                                           | ms             | $< 80$         |                |                |                |                |                |                |
|                                          | Release time                                           | ms             | $< 40$         |                |                |                |                |                |                |
|                                          | Release voltage                                        | V              | $> 0.5$        |                |                |                |                |                |                |
|                                          | Running noise                                          | dB             | $< 65$         |                |                |                |                |                |                |

## Servo Motor ZE130HB1 Specifications

| Model type                   | Unit                   | ZE130HB1-0D85B                                         | ZE130HB1-0001C | ZE130HB1-01D3B | ZE130HB1-01D5C | ZE130HB1-01D8B | ZE130HB1-0002C | ZE130HB1-02D3B | ZE130HB1-0003C |
|------------------------------|------------------------|--------------------------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Flange size                  | mm                     | □ 130                                                  |                |                |                |                |                |                |                |
| Rated voltage                | V                      | AC380                                                  |                |                |                |                |                |                |                |
| Rated power                  | W                      | 850                                                    | 1000           | 1300           | 1500           | 1800           | 2000           | 2300           | 3000           |
| Rated torque                 | N.m                    | 5.4                                                    | 4.77           | 8.3            | 7.16           | 11.4           | 9.55           | 14.3           | 14.3           |
| Instantaneous peak torque    | N.m                    | 16.00                                                  | 13.85          | 21.3           | 17.9           | 28.9           | 27.7           | 35.75          | 36.6           |
| Rated current                | Arms                   | 2.9                                                    | 2.5            | 4.3            | 5.7            | 5.5            | 5              | 8.2            | 7.5            |
| Max current                  | Arms                   | 8.8                                                    | 7.5            | 11.1           | 14.25          | 15.2           | 14             | 21.1           | 19.4           |
| Rated speed                  | r/min                  | 1500                                                   | 2000           | 1500           | 2000           | 1500           | 2000           | 1500           | 2000           |
| Maximum speed                | r/min                  | 3000                                                   | 3000           | 3000           | 3000           | 3000           | 3000           | 2500           | 3000           |
| Motor rotor inertia          | N.m/A                  | 6.2                                                    | 6.2            | 9.2            | 9.2            | 12.3           | 12.3           | 18.6           | 18.8           |
| Line resistance              | MV(r/min)              | 2.9                                                    | 2.9            | 2.11           | 0.81           | 1.11           | 1.165          | 0.69           | 0.69           |
| Inductance Ld                | kW/S                   | 24                                                     | 24             | 20.1           | 4.56           | 12.65          | 10.9           | 4.54           | 4.54           |
| Inductance Lq                | kW/S                   | 24                                                     | 24             | 20.1           | 5.93           | 12.65          | 10.9           | 5.97           | 5.97           |
| Protection grade             |                        | IP65/IP67(Optional)(Except the shaft penetration part) |                |                |                |                |                |                |                |
| Brake performance parameters | Rated voltage          | V                                                      | DC24±10%       |                |                |                |                |                |                |
|                              | Rated power            | W                                                      | 23             |                |                |                |                |                |                |
|                              | Static friction torque | N.m                                                    | ≥ 16           |                |                |                |                |                |                |
|                              | Attract time           | ms                                                     | < 80           |                |                |                |                |                |                |
|                              | Release time           | ms                                                     | < 40           |                |                |                |                |                |                |
|                              | Release voltage        | V                                                      | > 0.5          |                |                |                |                |                |                |
|                              | Running noise          | dB                                                     | < 65           |                |                |                |                |                |                |

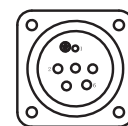
## Servo Motor ZE130 Drawing

unit: mm

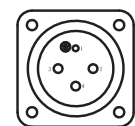


| Model type                             | Regular model body length LL | Brake model body length LL |
|----------------------------------------|------------------------------|----------------------------|
| ZE130H*1-0D85B**M<br>ZE130H*1-0001C**M | 132                          | 160                        |
| ZE130H*1-01D3B**M<br>ZE130H*1-01D5C**M | 146                          | 174                        |
| ZE130H*1-01D8B**M<br>ZE130H*1-0002C**M | 160                          | 188                        |
| ZE130H*1-0003C**M<br>ZE130H*1-02D3B**M | 188                          | 216                        |

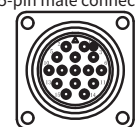
Brake power line plug  
(6-pin male connector)



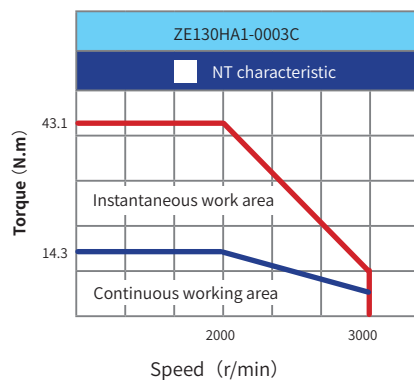
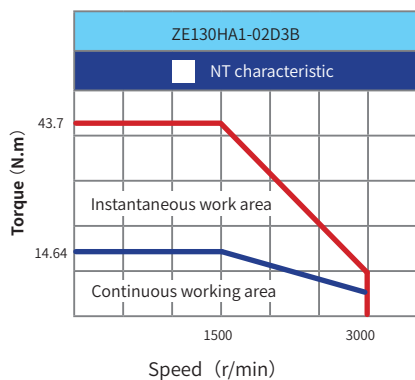
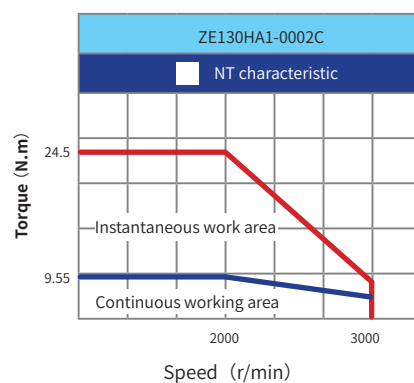
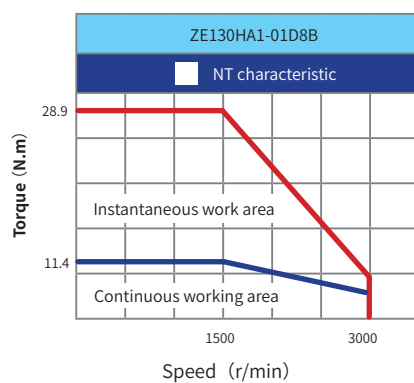
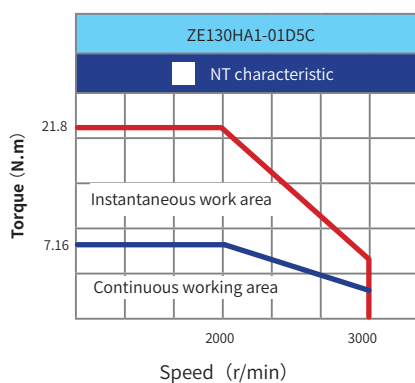
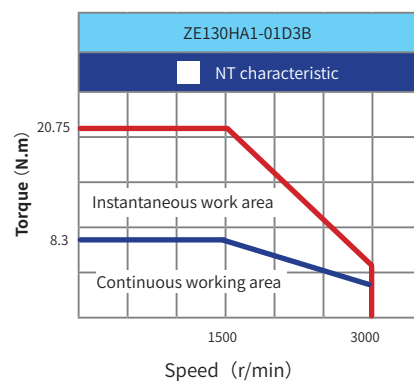
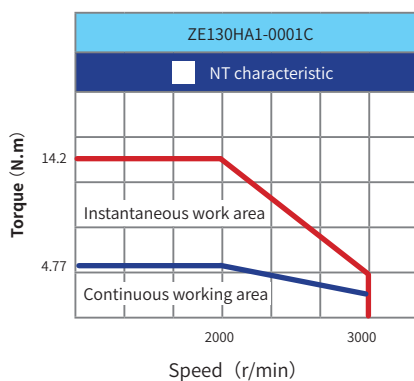
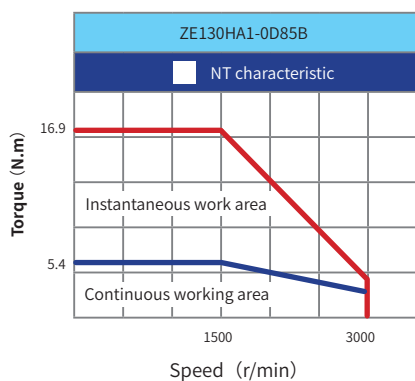
Standard power cord plug  
(4-pin male)



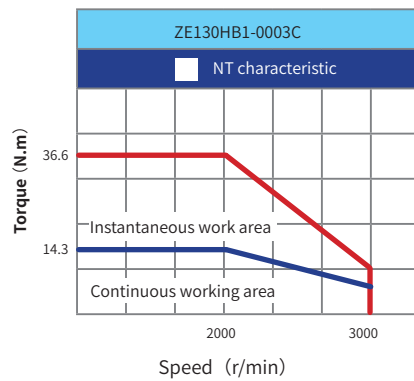
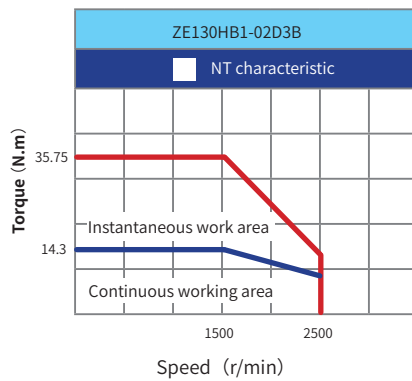
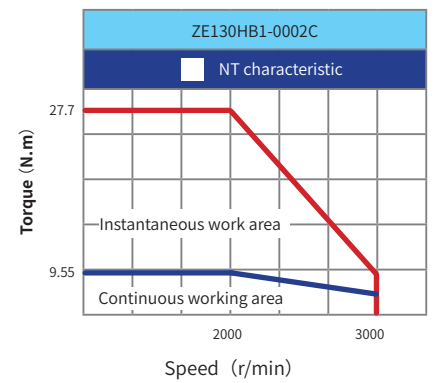
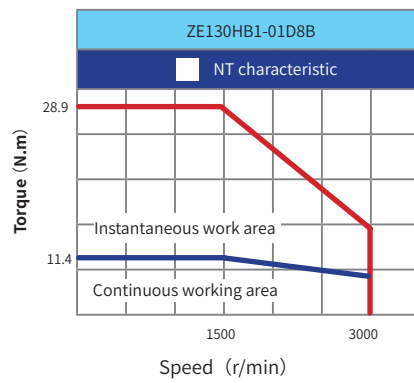
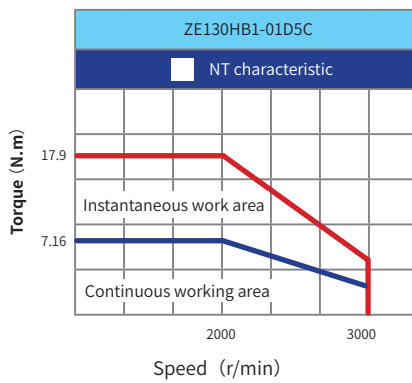
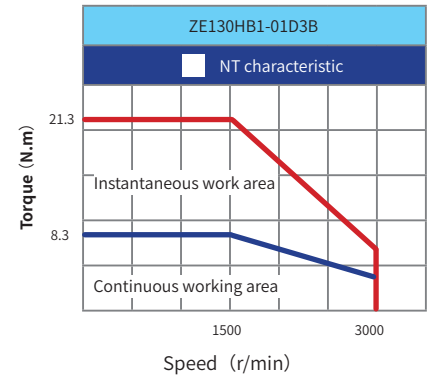
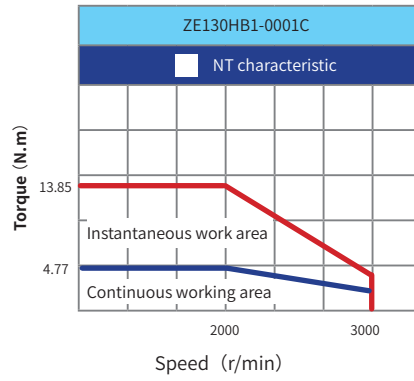
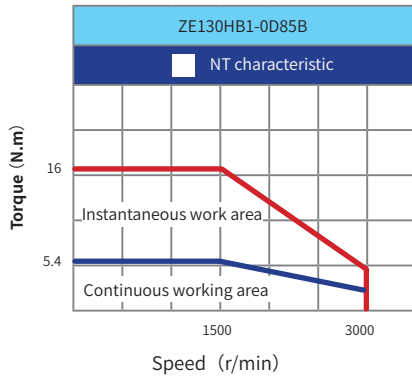
Signal line plug  
(15-pin male connector)



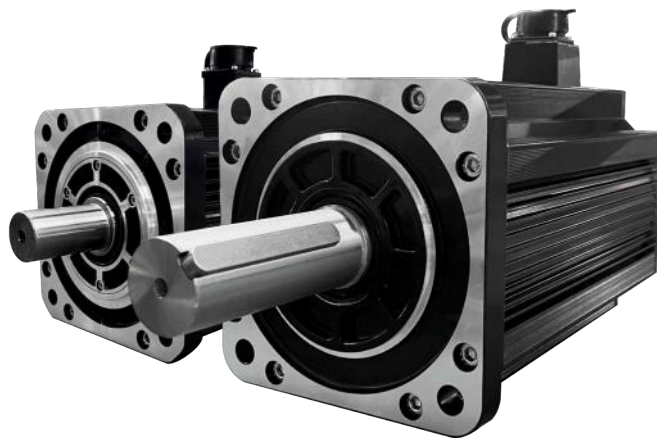
## Servo Motor **ZE130HA1** NT characteristic



## Servo Motor ZE130HB1 NT characteristic



## ZF Series General Use Servo Motor (small power) >>>



### Motor technical characteristics

- ★ **Ultra-stability:** use rare earth permanent magnet materials with high performance and high magnetic energy product.
- ★ **Long life, low noise:** the motor casing is designed with air grooves, which increases the heat dissipation area and prolongs the life of the motor.
- ★ **High precision and high response:** the motor adopts a high-resolution encoder, so that the motor precision can reach more than  $0.036^\circ$ , which meets the requirements of high-precision control. and can support 17bit / 23bit ( 131,072 lines / 8388,608 lines ) absolute encoder to improve positioning accuracy and low-speed running accuracy. (As shown in Figure 1 on the right)

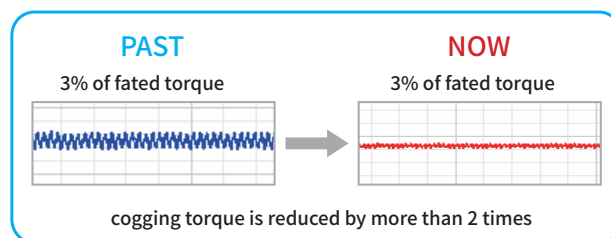


Figure 1

## Motor technical characteristics

- ★ **Structure:** fully enclosed, self-cooling;
- ★ **Installation method:** flange installation;
- ★ **Working system:** S1 continuous;
- ★ **Insulation class:** B/F class;
- ★ **Insulation withstand voltage:** AC1500V, 1 minute;
- ★ **Insulation resistance:** DC500V, above 50MΩ;
- ★ **Vibration:** 5G;
- ★ **Altitude:** altitude 1000;
- ★ **Working temperature:** 0-40°C (no freezing);
- ★ **Working humidity:** 20%~80% (no condensation);
- ★ **Protection method:** fully enclosed self-cooling IP 65 (except the shaft penetration part);

## Name Rule

180
ZF
MA
1
-
0D75
D
B
Y
M

①
②
③
④
⑤
⑥
⑦
⑧
⑨

| ① Frame No. |            |
|-------------|------------|
| Code        | Specs      |
| 110         | 110 Flange |
| 180         | 180 Flange |

### ② Product code

| ③ Inertia rated voltage |                            |
|-------------------------|----------------------------|
| Code                    | Specs                      |
| MA                      | middle & small inertia220V |
| MB                      | middle & small inertia380V |

| ④ Code name |                     |
|-------------|---------------------|
| Code        | Specs               |
| 1           | standard design     |
| 2           | Non-standard design |

| ⑤ Rated power |        |
|---------------|--------|
| Code          | Specs  |
| 0D80          | 0.8kW  |
| 01D2          | 1. 2kW |
| 01D5          | 1.5kW  |
| 0003          | 3.0kW  |
| 0004          | 4.0kW  |
| 04D5          | 4.5kW  |
| 05D5          | 5.5kW  |
| 07D5          | 7.5kW  |
| 0011          | 11kW   |

| ⑥ Rated speed |         |
|---------------|---------|
| Code          | Specs   |
| A             | 1000rpm |
| B             | 1500rpm |
| C             | 2000rpm |
| F             | 2500rpm |
| D             | 3000rpm |

| ⑦ Encoder code |                                                    |
|----------------|----------------------------------------------------|
| Code           | Specs                                              |
| K              | Incremental 2500P/R                                |
| B              | Non-Incremental                                    |
| I              | 17 bit photoelectric absolute value single turn    |
| J              | 17 bit photoelectric absolute value multi turn     |
| L              | 23 bit photoelectric absolute value single turn    |
| P              | 23bit photoelectric absolute value multi turn      |
| Q              | 17 bit magnetic encoder absolute value single turn |
| S              | 17 bit magnetic encoder absolute value multi turn  |
| R              | Rotary encoder                                     |

| ⑧ Brake selection |               |
|-------------------|---------------|
| Code              | Specs         |
| N                 | without brake |
| Y                 | with brake    |

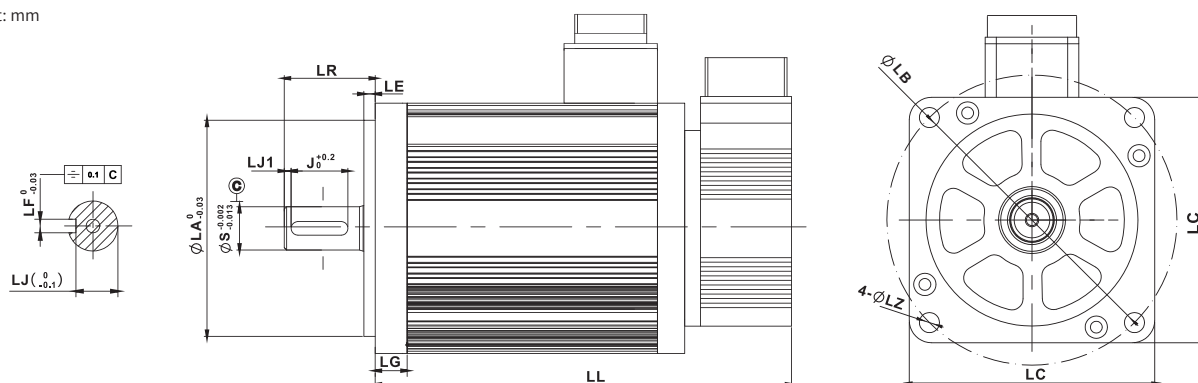
| ⑨ Keyway oil seal selection |                                |
|-----------------------------|--------------------------------|
| Code                        | Specs                          |
| K                           | with key slot without oil seal |
| O                           | with oil seal without key slot |
| M                           | with key slot & oil seal       |

## Servo Motor 110ZF Specifications

| Model type     | Rated power (kW) | Rated Speed (rpm) | Rated torque (N.m) | Rated voltage (V) | Rated current (A) | Max Speed (rpm) | Max torque (N.m) | Phase resistance (Ω) | Phase inductance (mH) | Torque constant (N.m/A) | Rotor inertia (kg·m <sup>2</sup> ) | Number of poles | Insulation class | Protection level                        | Use environment                                                         |
|----------------|------------------|-------------------|--------------------|-------------------|-------------------|-----------------|------------------|----------------------|-----------------------|-------------------------|------------------------------------|-----------------|------------------|-----------------------------------------|-------------------------------------------------------------------------|
| 110ZFMA1-0D80C | 0.8              | 2000              | 3.82               | 220               | 3.5               | 2500            | 11.4             | 1.97                 | 10.5                  | 1.18                    | $0.55 \times 10^{-4}$              | 8               | F class (155°C)  | IP65(Except the shaft penetration part) | Temperature: 0-40 °C (no freezing), humidity: 20%-80% (no condensation) |
| 110ZFMA1-01D2C | 1.2              | 2000              | 5.73               | 220               | 5.6               | 2500            | 15.4             | 1.67                 | 6.6                   | 1.33                    | $0.77 \times 10^{-4}$              | 8               |                  |                                         |                                                                         |
| 110ZFMA1-01D2D | 1.2              | 3000              | 3.82               | 220               | 5.6               | 3300            | 11.5             | 1.73                 | 5.6                   | 0.8                     | $0.55 \times 10^{-4}$              | 8               |                  |                                         |                                                                         |
| 110ZFMA1-01D5D | 1.5              | 3000              | 4.77               | 220               | 6.5               | 3300            | 14.3             | 1.04                 | 3.45                  | 0.83                    | $0.64 \times 10^{-4}$              | 8               |                  |                                         |                                                                         |

## Servo Motor 110ZF outline drawing and dimension table

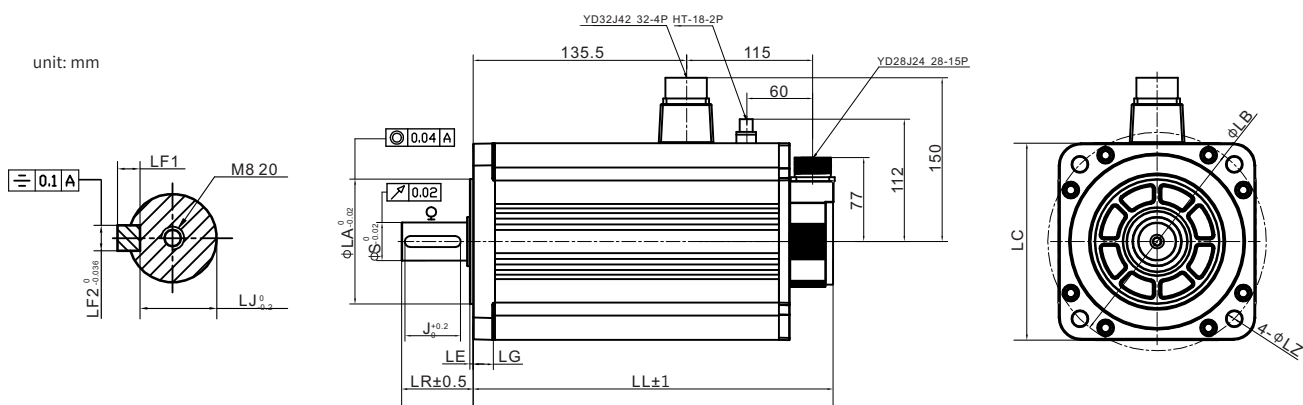
unit: mm



| Servo motor<br>model | Flange size |    |     |    |                | Shaft end size |      |    |     |     |    |    |    |
|----------------------|-------------|----|-----|----|----------------|----------------|------|----|-----|-----|----|----|----|
|                      | LC          | LA | LB  | LZ | LL(with brake) | S              | L J  | J  | LF1 | LF2 | LR | LE | LG |
| 110ZFMA1-0D80C       | 110         | 95 | 130 | 9  | 179(219)       | 19             | 15.5 | 30 | 6   | 6   | 45 | 5  | 12 |
| 110ZFMA1-01D2C       | 110         | 95 | 130 | 9  | 209(249)       | 19             | 15.5 | 30 | 6   | 6   | 45 | 5  | 2  |
| 110ZFMA1-01D2D       | 110         | 95 | 130 | 9  | 209(249)       | 19             | 15.5 | 30 | 6   | 6   | 45 | 5  | 12 |
| 110ZFMA1-01D5D       | 110         | 95 | 130 | 9  | 209(249)       | 19             | 15.5 | 30 | 6   | 6   | 45 | 5  | 12 |

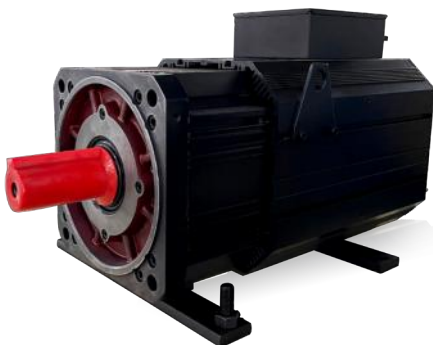


| Model type     | Rated power (kW) | Rated Speed (rpm) | Rated torque (N.m) | Rated voltage (V) | Rated current (A) | Max Speed (rpm) | Max torque (N.m) | Max current (A) | Torque constant (N.m/A) | Rotor inertia (kg*cm2) | Number of poles | Insulation class | Protection level                        | Use environment                                                        |
|----------------|------------------|-------------------|--------------------|-------------------|-------------------|-----------------|------------------|-----------------|-------------------------|------------------------|-----------------|------------------|-----------------------------------------|------------------------------------------------------------------------|
| 180ZFMA1-0003B | 3                | 1500              | 19.1               | 220               | 12                | 1800            | 47               | 24              | 1.8                     | 49.5×10 <sup>-4</sup>  | 8               | F class (155℃)   | IP65(Except the shaft penetration part) | Temperature: 0-40℃ (no freezing), humidity: 20% -80% (no condensation) |
| 180ZFMA1-0003A | 3                | 1000              | 28.6               | 220               | 12                | 1500            | 67               | 24              | 2.7                     | 63.7×10 <sup>-4</sup>  | 8               |                  |                                         |                                                                        |
| 180ZFMA1-0004B | 4                | 1500              | 25.4               | 220               | 17                | 1800            | 76.5             | 51              | 1.67                    | 63.7×10 <sup>-4</sup>  | 8               |                  |                                         |                                                                        |
| 180ZFMA1-04D5C | 4.5              | 2000              | 21.4               | 220               | 18.4              | 2200            | 53               | 34              | 1.3                     | 63.7×10 <sup>-4</sup>  | 8               |                  |                                         |                                                                        |
| 180ZFMA1-04D5B | 4.5              | 1500              | 28.6               | 220               | 18.4              | 1800            | 85.8             | 55.2            | 1.71                    | 77.9×10 <sup>-4</sup>  | 8               |                  |                                         |                                                                        |
| 180ZFMA1-05D5B | 5.5              | 1500              | 35                 | 220               | 23.5              | 1800            | 105              | 70.5            | 1.6                     | 92×10 <sup>-4</sup>    | 8               |                  |                                         |                                                                        |
| 180ZFMB1-0003B | 3                | 1500              | 19.1               | 380               | 6.8               | 1800            | 47               | 24              | 1.58                    | 49.5×10 <sup>-4</sup>  | 8               |                  |                                         |                                                                        |
| 180ZFMB1-04D5C | 4.5              | 2000              | 21.4               | 380               | 10                | 2300            | 53.7             | 25              | 1.26                    | 53.7×10 <sup>-4</sup>  | 8               |                  |                                         |                                                                        |
| 180ZFMB1-04D5B | 4.5              | 1500              | 28.6               | 380               | 10                | 1800            | 71.6             | 25              | 2.67                    | 71.6×10 <sup>-4</sup>  | 8               |                  |                                         |                                                                        |
| 180ZFMB1-05D5B | 5.5              | 1500              | 35                 | 380               | 12                | 1850            | 87.5             | 30              | 3                       | 92×10 <sup>-4</sup>    | 8               |                  |                                         |                                                                        |
| 180ZFMB1-07D5B | 7.5              | 1500              | 47.7               | 380               | 17.5              | 1850            | 119.4            | 43.75           | 2.9                     | 104×10 <sup>-4</sup>   | 8               |                  |                                         |                                                                        |
| 180ZFMB1-0011B | 11               | 1500              | 70                 | 380               | 23                | 1850            | 154              | 50.6            | 3.04                    | 150×10 <sup>-4</sup>   | 8               |                  |                                         |                                                                        |



| Servo motor model | Flange size |       |     |    |                | Shaft end size |     |    |     |     |    |    |    |
|-------------------|-------------|-------|-----|----|----------------|----------------|-----|----|-----|-----|----|----|----|
|                   | LC          | LA    | LB  | LZ | LL(with brake) | S              | L J | J  | LF1 | LF2 | LR | LE | LG |
| 180ZFMA1-0003B    | 180         | 114.3 | 200 | 13 | 216.5(269.5)   | 35             | 30  | 51 | 8   | 10  | 65 | 3  | 20 |
| 180ZFMA1-0003A    | 180         | 114.3 | 200 | 13 | 216.5(269.5)   | 35             | 30  | 51 | 8   | 10  | 65 | 3  | 20 |
| 180ZFMA1-0004B    | 180         | 114.3 | 200 | 13 | 236.5(289.5)   | 35             | 30  | 51 | 8   | 10  | 65 | 3  | 20 |
| 180ZFMA1-04D5C    | 180         | 114.3 | 200 | 13 | 256.5(309.5)   | 35             | 30  | 51 | 8   | 10  | 65 | 3  | 20 |
| 180ZFMA1-04D5B    | 180         | 114.3 | 200 | 13 | 256.5(309.5)   | 35             | 30  | 51 | 8   | 10  | 65 | 3  | 20 |
| 180ZFMA1-05D5B    | 180         | 114.3 | 200 | 13 | 276.5(329.5)   | 35             | 30  | 51 | 8   | 10  | 65 | 3  | 20 |
| 180ZFMB1-0003B    | 180         | 114.3 | 200 | 13 | 216.5(269.5)   | 35             | 30  | 51 | 8   | 10  | 65 | 3  | 20 |
| 180ZFMB1-04D5C    | 180         | 114.3 | 200 | 13 | 256.5(309.5)   | 35             | 30  | 51 | 8   | 10  | 65 | 3  | 20 |
| 180ZFMB1-04D5B    | 180         | 114.3 | 200 | 13 | 256.5(309.5)   | 35             | 30  | 51 | 8   | 10  | 65 | 3  | 20 |
| 180ZFMB1-05D5B    | 180         | 114.3 | 200 | 13 | 276.5(329.5)   | 35             | 30  | 51 | 8   | 10  | 65 | 3  | 20 |
| 180ZFMB1-07D5B    | 180         | 114.3 | 200 | 13 | 336.5(389.5)   | 35             | 30  | 51 | 8   | 10  | 65 | 3  | 20 |
| 180ZFMB1-0011B    | 180         | 114.3 | 200 | 13 | 376.5(429.5)   | 35             | 30  | 51 | 8   | 10  | 65 | 3  | 20 |

# ZE Series embedded permanent magnet synchronous servo motor



## Name Rule

ZE 18 15 20.4 130 \* \* \* - X  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

### ① Product code

### ② Flange code

| Code | Specs                 |
|------|-----------------------|
| 18   | 180mm (200*200 Mount) |
| 25   | 250mm (264*264 Mount) |

### ③ Rated speed

| Code | Specs   |
|------|---------|
| 15   | 1500rpm |
| 17   | 1700rpm |
| 20   | 2000rpm |

### ④ Rated power

| Code  | Specs  |
|-------|--------|
| 7.1   | 7.1kW  |
| 20.4  | 20.4kW |
| ..... |        |
| 111   | 111kW  |

### ⑤ Rated torque

| Code | Specs  |
|------|--------|
| 130  | 130N.m |
| 282  | 282N.m |
| 530  | 530N.m |

### ⑥ Encoder code

| Code | Specs                                           |
|------|-------------------------------------------------|
| R    | Rotary encoder                                  |
| B    | Non-Incremental                                 |
| I    | 17 bit photoelectric absolute value single turn |
| L    | 23 bit photoelectric absolute value single turn |
| T    | Universal Joint Encoder                         |
| N    | No encoder                                      |

### ⑦ Rated voltage

| Code | Specs          |
|------|----------------|
| 2    | 220V           |
| 3    | 380V           |
| 4    | 440V/460V/480V |

### ⑧ Brake

| Code                  | Specs      |
|-----------------------|------------|
| Y                     | with brake |
| N(new)<br>Vacant(old) | No Brake   |

### ⑨ Product /Customization code

“X” refers to the product group code, custom code, or customer code, which can be used as the suffix “xxxxxxxx,” where each “x” can be a digit (0-9), an uppercase letter (A-Z), a hyphen (-), a dot (.), or a space.

| Label  | Code type          |
|--------|--------------------|
| 05A    | Product group code |
| 05X    | Product group code |
| 05AXXX | A customized code  |
| 05XXXX | A customized code  |

## ZE18 series Servo Motor

### ZE18-A series Servo Motor Model and Specification

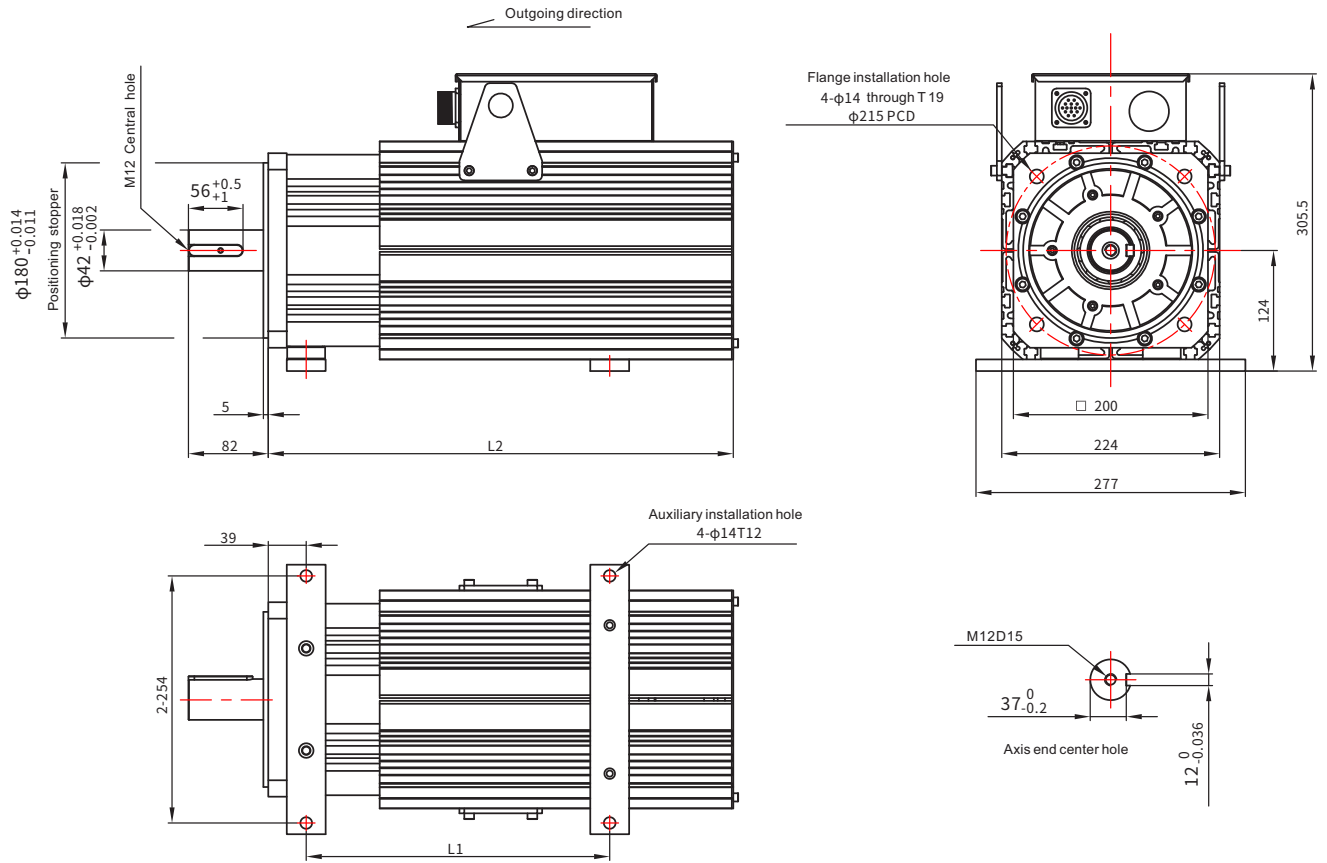
| Product Series | Rated Power (kW) | Rated Speed (rpm) | Rated Torque (N.m) | Rated Voltage (V/1krpm) | Rated Current (A) | Frequency (Hz) | Counter Electromotive Force (V/**rpm) | Max Speed (rpm) | Max Torque (N.m) | Max Current (A) | Rotor inertia (kgcm <sup>2</sup> ) | Line Resistance (Ω) | Line Inductance Ld (mH) | Line Inductance Lq (mH) |
|----------------|------------------|-------------------|--------------------|-------------------------|-------------------|----------------|---------------------------------------|-----------------|------------------|-----------------|------------------------------------|---------------------|-------------------------|-------------------------|
| 1802A          | 8.6              | 1500              | 55                 | 380                     | 16.2              | 100            | 214.5                                 | 2200            | 95.1             | 38.1            | 58                                 | 1.33                | 13.8                    | 28.86                   |
|                | 9.8              | 1700              | 55                 | 380                     | 19.2              | 113.3          | 179.7                                 | 2500            | 100.2            | 45.6            |                                    | 1.02                | 10.38                   | 21.22                   |
|                | 11.3             | 2000              | 54                 | 380                     | 21.5              | 133.3          | 160                                   | 2800            | 100              | 40.2            |                                    | 0.32                | 8                       | 21                      |
| 1802.5A        | 11.6             | 1500              | 74                 | 380                     | 21.6              | 100            | 211                                   | 2200            | 121              | 44              | 77                                 | 1.03                | 10.95                   | 22.57                   |
|                | 13               | 1700              | 73                 | 380                     | 22.6              | 113.3          | 197                                   | 2500            | 118.9            | 50.4            |                                    | 0.28                | 8                       | 20.3                    |
|                | 14.7             | 2000              | 70                 | 380                     | 27.4              | 133.3          | 160                                   | 2800            | 120              | 54.7            |                                    | 0.59                | 6.2                     | 13.26                   |
| 1803A          | 13.2             | 1500              | 84                 | 380                     | 25.1              | 100            | 216                                   | 2200            | 153              | 59.4            | 82                                 | 0.69                | 8.47                    | 17.73                   |
|                | 15               | 1700              | 84                 | 380                     | 28.2              | 113.3          | 218                                   | 2500            | 150.5            | 65.5            |                                    | 0.26                | 8.1                     | 20.6                    |
|                | 17.2             | 2000              | 82                 | 380                     | 32.1              | 133.3          | 159                                   | 2800            | 157.2            | 74.8            |                                    | 0.43                | 5.08                    | 10.54                   |
| 1803.5A        | 14.5             | 1500              | 92                 | 380                     | 27.4              | 100            | 208                                   | 2200            | 170.4            | 60.9            | 91                                 | 0.53                | 6.95                    | 14.81                   |
|                | 16.4             | 1700              | 92                 | 380                     | 30.7              | 113.3          | 186.9                                 | 2500            | 179              | 73.1            |                                    | 0.44                | 5.84                    | 12.62                   |
|                | 19.3             | 2000              | 92                 | 380                     | 35.4              | 133.3          | 159                                   | 2800            | 175              | 83.3            |                                    | 0.34                | 4.26                    | 9.1                     |
| 1804A          | 17               | 1500              | 108                | 380                     | 31.3              | 100            | 216                                   | 2200            | 199.7            | 69.2            | 108                                | 0.49                | 6.53                    | 13.97                   |
|                | 18.7             | 1700              | 105                | 380                     | 36.2              | 113.3          | 181.3                                 | 2500            | 216.3            | 86.8            |                                    | 0.37                | 4.77                    | 10.47                   |
|                | 21.8             | 2000              | 104                | 380                     | 40.5              | 133.3          | 159                                   | 2800            | 213.4            | 99.6            |                                    | 0.28                | 3.73                    | 7.71                    |
| 1804.5A        | 18.1             | 1500              | 115                | 380                     | 33                | 100            | 216                                   | 2200            | 219.2            | 74.4            | 116                                | 0.48                | 5.9                     | 13.02                   |
|                | 19.9             | 1700              | 112                | 380                     | 35.9              | 113.3          | 191                                   | 2500            | 236.8            | 95.2            |                                    | 0.35                | 4.76                    | 10.22                   |
|                | 23.5             | 2000              | 112                | 380                     | 44.3              | 133.3          | 155                                   | 2800            | 243              | 108.3           |                                    | 0.24                | 3.11                    | 6.75                    |
| 1805A          | 20.4             | 1500              | 130                | 380                     | 37.1              | 100            | 213                                   | 2200            | 244.3            | 80.6            | 133                                | 0.37                | 5.16                    | 11.5                    |
|                | 23               | 1700              | 129                | 380                     | 42.8              | 113.3          | 186                                   | 2500            | 266.4            | 106.9           |                                    | 0.28                | 3.93                    | 8.61                    |
|                | 26.8             | 2000              | 128                | 380                     | 51.7              | 133.3          | 159                                   | 2800            | 244.6            | 107.9           |                                    | 0.21                | 1.31                    | 2.79                    |
| 1805.5A        | 22.3             | 1500              | 142                | 380                     | 41.8              | 100            | 205                                   | 2200            | 272.9            | 93.2            | 141                                | 0.3                 | 4.31                    | 9.45                    |
|                | 25.6             | 1700              | 144                | 380                     | 45.8              | 113.3          | 187.8                                 | 2500            | 275.3            | 102.6           |                                    | 0.28                | 3.81                    | 8.27                    |
|                | 28.7             | 2000              | 137                | 380                     | 52.2              | 133.3          | 159                                   | 2800            | 272              | 125.2           |                                    | 0.19                | 3                       | 7.8                     |
| 1806A          | 24.5             | 1500              | 156                | 380                     | 45.3              | 100            | 208.5                                 | 2200            | 282              | 92.4            | 156                                | 0.28                | 4.01                    | 9.19                    |
|                | 27.8             | 1700              | 156                | 380                     | 49.9              | 113.3          | 190                                   | 2500            | 296.5            | 114.8           |                                    | 0.24                | 3.55                    | 7.71                    |
|                | 32.5             | 2000              | 155                | 380                     | 59.7              | 133.3          | 160                                   | 2800            | 306              | 141.7           |                                    | 0.16                | 2.7                     | 7.1                     |
| 1806.5A        | 25.9             | 1500              | 165                | 380                     | 47.7              | 100            | 208                                   | 2200            | 311              | 102.4           | 164                                | 0.25                | 3.81                    | 8.43                    |
|                | 28.8             | 1700              | 162                | 380                     | 50.3              | 113.3          | 190                                   | 2500            | 342.5            | 126.5           |                                    | 0.22                | 3.2                     | 6.96                    |
|                | 33.3             | 2000              | 159                | 380                     | 62.2              | 133.3          | 151                                   | 2800            | 327              | 145.2           |                                    | 0.14                | 2.4                     | 4.7                     |
| 1807A          | 28.3             | 1500              | 180                | 380                     | 56                | 100            | 205                                   | 2200            | 322              | 106.6           | 179                                | 0.22                | 3.4                     | 7.4                     |
|                | 31.3             | 1700              | 176                | 380                     | 57.5              | 113.3          | 189                                   | 2500            | 365.7            | 129.3           |                                    | 0.18                | 2.8                     | 6.1                     |
|                | 36.4             | 2000              | 174                | 380                     | 67.4              | 133.3          | 155                                   | 2800            | 348              | 157             |                                    | 0.13                | 2.05                    | 4.45                    |
| 1807.5A        | 29.8             | 1500              | 190                | 380                     | 59.2              | 100            | 200                                   | 2200            | 369.7            | 124.6           | 191                                | 0.19                | 3.01                    | 6.51                    |
|                | 33.5             | 1700              | 188                | 380                     | 59.6              | 113.3          | 188.6                                 | 2500            | 373.9            | 136.5           |                                    | 0.18                | 2.74                    | 5.94                    |
|                | 38.7             | 2000              | 185                | 380                     | 74.8              | 133.3          | 157                                   | 2800            | 354              | 156.7           |                                    | 0.13                | 1.98                    | 4.24                    |
| 1808A          | 32.2             | 1500              | 205                | 380                     | 57.4              | 100            | 213                                   | 2200            | 389.5            | 128.3           | 209                                | 0.09                | 3.6                     | 9.4                     |
|                | 36.5             | 1700              | 205                | 380                     | 66.4              | 113.3          | 190                                   | 2500            | 384.9            | 134.8           |                                    | 0.07                | 2.9                     | 7.6                     |
|                | 40.8             | 2000              | 195                | 380                     | 72.9              | 133.3          | 151                                   | 2800            | 363              | 158.1           |                                    | 0.17                | 1.78                    | 3.9                     |

 **ZE18-X series Servo Motor Model and Specification**

| Product Series | Rated Power (kW) | Rated Speed (rpm) | Rated Torque (N.m) | Rated Voltage (V) | Rated Current (A) | Frequency (HZ) | Counter Electromotive Force (V/**rpm) | Max Speed (rpm) | Max Torque (N.m) | Max Current (A) | Rotor inertia (kgcm <sup>2</sup> ) | Line Resistance (Ω) | Line Inductance Ld (mH) | Line Inductance Lq (mH) |
|----------------|------------------|-------------------|--------------------|-------------------|-------------------|----------------|---------------------------------------|-----------------|------------------|-----------------|------------------------------------|---------------------|-------------------------|-------------------------|
| 1802X          | 7.1              | 1500              | 45                 | 380               | 13.6              | 100            | 312                                   | 2200            | 88               | 28              | 62                                 | 1.531               | 10.5                    | 20.7                    |
|                | 8                | 1700              | 45                 | 380               | 15.1              | 113.3          | 318                                   | 2500            | 89               | 33              |                                    | 1.272               | 9.21                    | 18.73                   |
|                | 9.4              | 2000              | 45                 | 380               | 16.6              | 133.33         | 332                                   | 2600            | 88               | 34.5            |                                    | 0.981               | 6.72                    | 13.26                   |
| 1802.5X        | 10.2             | 1500              | 65                 | 380               | 19.1              | 100            | 321                                   | 2200            | 104              | 32.5            | 73                                 | 1.098               | 9.32                    | 18.32                   |
|                | 11.5             | 1700              | 65                 | 380               | 21.3              | 113.3          | 321                                   | 2500            | 104              | 37.5            |                                    | 0.917               | 7.72                    | 15.21                   |
|                | 13.6             | 2000              | 65                 | 380               | 24.8              | 133.33         | 327                                   | 2600            | 104              | 44.5            |                                    | 0.623               | 5.43                    | 10.73                   |
| 1803X          | 13.2             | 1500              | 84                 | 380               | 24.6              | 100            | 327                                   | 2200            | 145              | 45              | 87                                 | 0.805               | 7.75                    | 15.33                   |
|                | 15               | 1700              | 84                 | 380               | 28.3              | 113.3          | 318                                   | 2500            | 147              | 54              |                                    | 0.608               | 5.75                    | 11.15                   |
|                | 17.4             | 2000              | 82                 | 380               | 31.6              | 133.33         | 327                                   | 2600            | 145              | 62              |                                    | 0.457               | 4.31                    | 8.65                    |
| 1804X          | 17               | 1500              | 108                | 380               | 31.8              | 100            | 327                                   | 2200            | 195              | 63              | 112                                | 0.533               | 5.95                    | 11.65                   |
|                | 18.7             | 1700              | 105                | 380               | 35.3              | 113.3          | 318                                   | 2500            | 202              | 74              |                                    | 0.391               | 4.15                    | 8.3                     |
|                | 21.8             | 2000              | 104                | 380               | 38.3              | 133.33         | 332                                   | 2600            | 194              | 80              |                                    | 0.305               | 3.45                    | 6.8                     |
| 1805X          | 20.4             | 1500              | 130                | 380               | 39.2              | 100            | 312                                   | 2200            | 248              | 83              | 137                                | 0.358               | 4.12                    | 8.54                    |
|                | 23               | 1700              | 129                | 380               | 44.8              | 113.3          | 309                                   | 2500            | 247              | 89              |                                    | 0.281               | 3.11                    | 6.25                    |
|                | 26.8             | 2000              | 128                | 380               | 51.3              | 133.33         | 312                                   | 2600            | 248              | 110             |                                    | 0.205               | 2.35                    | 4.75                    |
| 1806X          | 24.5             | 1500              | 156                | 380               | 44.7              | 100            | 327                                   | 2200            | 300              | 104             | 160                                | 0.311               | 3.83                    | 7.56                    |
|                | 27.8             | 1700              | 156                | 380               | 53.3              | 113.3          | 318                                   | 2500            | 302              | 110             |                                    | 0.223               | 2.85                    | 5.62                    |
|                | 32.5             | 2000              | 155                | 380               | 60.9              | 133.33         | 312                                   | 2600            | 310              | 140             |                                    | 0.161               | 1.97                    | 4.02                    |
| 1807X          | 28.3             | 1500              | 180                | 380               | 52                | 100            | 327                                   | 2200            | 360              | 130             | 187                                | 0.261               | 3.35                    | 6.75                    |
|                | 31.3             | 1700              | 176                | 380               | 61.5              | 113.3          | 309                                   | 2500            | 370              | 138             |                                    | 0.181               | 2.31                    | 4.56                    |
|                | 36.4             | 2000              | 174                | 380               | 66.8              | 133.33         | 327                                   | 2600            | 360              | 154             |                                    | 0.148               | 1.85                    | 3.75                    |
| 1808X          | 32.2             | 1500              | 205                | 380               | 61.8              | 100            | 312                                   | 2200            | 420              | 140             | 213                                | 0.201               | 2.55                    | 5.05                    |
|                | 36.5             | 1700              | 205                | 380               | 70                | 113.3          | 318                                   | 2500            | 425              | 157             |                                    | 0.158               | 2.06                    | 4.12                    |
|                | 40.8             | 2000              | 195                | 380               | 74                | 133.33         | 332                                   | 2600            | 400              | 185             |                                    | 0.131               | 1.65                    | 3.52                    |

## ZE18 series Servo Motor

### ZE18 series Servo Motor outline drawing and dimension table



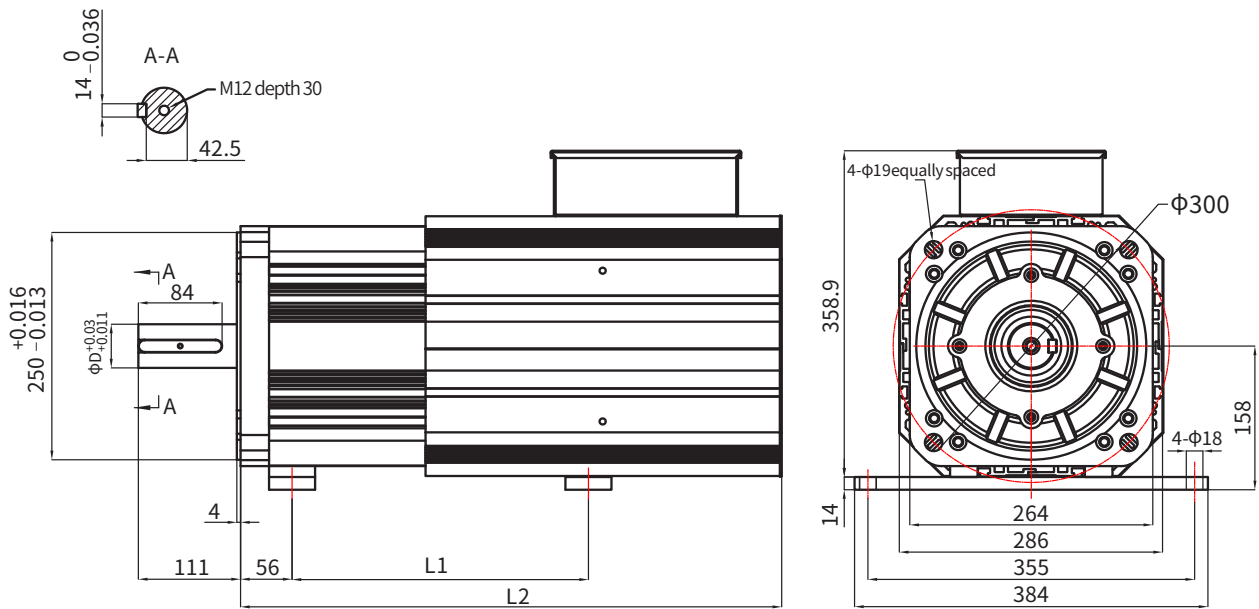
| Normal ZE | 1802A<br>1802X | 1802.5A/1803A<br>1802.5X/1803X | 1803.5A/1804A<br>1804X | 1804.5A/1805A<br>1805X | 1805.5A/1806A<br>1806X | 1806.5A/1807A<br>1807X | 1807.5A/1808A<br>1808X |
|-----------|----------------|--------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| L1 (mm)   | 190            | 240                            | 240                    | 312                    | 312                    | 312                    | 396                    |
| L2 (mm)   | 334            | 370                            | 406                    | 442                    | 478                    | 514                    | 550                    |

 **ZE25 series Servo Motor Model and Specification**

| Product Series | Rated Power (kW) | Rated Speed (rpm) | Rated Torque (N.m) | Rated Voltage (V) | Rated Current (A) | Frequency (HZ) | Counter Electromotive Force (V/**rpm) | Max Speed (rpm) | Max Torque (N.m) | Max Current (A) | Rotor inertia (kgcm <sup>2</sup> ) | Line Resistance (Ω) | Line Inductance Ld (mH) | Line Inductance Lq (mH) |
|----------------|------------------|-------------------|--------------------|-------------------|-------------------|----------------|---------------------------------------|-----------------|------------------|-----------------|------------------------------------|---------------------|-------------------------|-------------------------|
| 2502.5X        | 29               | 1500              | 185                | 380               | 55.5              | 100            | 315                                   | 2200            | 290              | 94              | 320                                | 0.181               | 3.62                    | 7.25                    |
|                | 32               | 1700              | 180                | 380               | 61.4              | 113.3          | 310                                   | 2500            | 290              | 110             |                                    | 0.1379              | 2.77                    | 5.5                     |
|                | 36.8             | 2000              | 176                | 380               | 68.7              | 133.33         | 313                                   | 2600            | 290              | 123             |                                    | 0.1014              | 2.02                    | 4.02                    |
| 2503X          | 33.8             | 1500              | 215                | 380               | 63                | 100            | 328                                   | 2200            | 355              | 118             | 380                                | 0.158               | 3.31                    | 6.61                    |
|                | 38.8             | 1700              | 218                | 380               | 74                | 113.3          | 318                                   | 2500            | 360              | 131             |                                    | 0.117               | 2.35                    | 4.9                     |
|                | 43.4             | 2000              | 207                | 380               | 81.5              | 133.33         | 312                                   | 2600            | 365              | 160             |                                    | 0.0832              | 1.71                    | 3.41                    |
| 2503.5X        | 39.2             | 1500              | 250                | 380               | 73.3              | 100            | 328                                   | 2200            | 400              | 130             | 440                                | 0.126               | 2.84                    | 5.68                    |
|                | 44               | 1700              | 247                | 380               | 83.5              | 113.3          | 312                                   | 2500            | 410              | 150             |                                    | 0.0899              | 1.97                    | 3.95                    |
|                | 50.8             | 2000              | 243                | 380               | 91.6              | 133.33         | 328                                   | 2600            | 400              | 170             |                                    | 0.0708              | 1.61                    | 3.2                     |
| 2504X          | 45.9             | 1500              | 292                | 380               | 87                | 100            | 312                                   | 2200            | 500              | 160             | 500                                | 0.102               | 2.11                    | 4.25                    |
|                | 50.2             | 1700              | 282                | 380               | 95                | 113.3          | 318                                   | 2500            | 500              | 187             |                                    | 0.0852              | 1.65                    | 3.35                    |
|                | 58.6             | 2000              | 280                | 380               | 104               | 133.33         | 333                                   | 2600            | 490              | 205             |                                    | 0.0631              | 1.45                    | 2.9                     |
| 2504.5X        | 53.4             | 1500              | 340                | 380               | 100               | 100            | 316                                   | 2200            | 520              | 170             | 560                                | 0.0844              | 2.05                    | 4.1                     |
|                | 59.8             | 1700              | 336                | 380               | 110               | 113.3          | 318                                   | 2500            | 520              | 195             |                                    | 0.0667              | 1.62                    | 3.24                    |
|                | 69.1             | 2000              | 330                | 380               | 125               | 133.33         | 328                                   | 2600            | 520              | 210             |                                    | 0.0508              | 1.24                    | 2.5                     |
| 2505X          | 58.1             | 1500              | 370                | 380               | 110               | 100            | 312                                   | 2200            | 605              | 200             | 630                                | 0.0741              | 1.81                    | 3.62                    |
|                | 64.6             | 1700              | 363                | 380               | 126               | 113.3          | 310                                   | 2500            | 605              | 225             |                                    | 0.0562              | 1.32                    | 2.65                    |
|                | 75.4             | 2000              | 360                | 380               | 143               | 133.33         | 312                                   | 2600            | 605              | 255             |                                    | 0.0409              | 1.01                    | 2.02                    |
| 2505.5X        | 63.6             | 1500              | 405                | 380               | 115               | 100            | 343                                   | 2200            | 590              | 190             | 690                                | 0.0774              | 1.98                    | 3.95                    |
|                | 71.2             | 1700              | 400                | 380               | 128               | 113.3          | 314                                   | 2500            | 595              | 210             |                                    | 0.059               | 1.5                     | 3                       |
|                | 82               | 2000              | 392                | 380               | 140               | 133.33         | 343                                   | 2500            | 595              | 243             |                                    | 0.0448              | 1.1                     | 2.08                    |
| 2506X          | 67.4             | 1500              | 429                | 380               | 126               | 100            | 328                                   | 2200            | 670              | 220             | 720                                | 0.0669              | 1.65                    | 3.3                     |
|                | 76               | 1700              | 427                | 380               | 146               | 113.3          | 318                                   | 2500            | 675              | 255             |                                    | 0.0481              | 1.11                    | 2.35                    |
|                | 88.6             | 2000              | 423                | 380               | 167               | 133.33         | 312                                   | 2600            | 680              | 300             |                                    | 0.0339              | 0.83                    | 1.63                    |
| 2507X          | 77.3             | 1500              | 492                | 380               | 146               | 100            | 328                                   | 2200            | 780              | 270             | 815                                | 0.0551              | 1.41                    | 2.85                    |
|                | 86.3             | 1700              | 485                | 380               | 168               | 113.3          | 310                                   | 2500            | 790              | 300             |                                    | 0.0382              | 1.01                    | 2.02                    |
|                | 101              | 2000              | 482                | 380               | 181               | 133.33         | 328                                   | 2600            | 780              | 338             |                                    | 0.0311              | 0.77                    | 1.52                    |
| 2508X          | 85.6             | 1500              | 545                | 380               | 166               | 100            | 312                                   | 2200            | 910              | 310             | 905                                | 0.0419              | 1.13                    | 2.25                    |
|                | 96.1             | 1700              | 540                | 380               | 183               | 113.3          | 318                                   | 2500            | 910              | 343             |                                    | 0.0351              | 0.91                    | 1.81                    |
|                | 111              | 2000              | 530                | 380               | 203               | 133.33         | 333                                   | 2600            | 900              | 380             |                                    | 0.0269              | 0.67                    | 1.35                    |

**ZE series Servo Motor** 

 **ZE25 series Servo Motor outline drawing and dimension table**

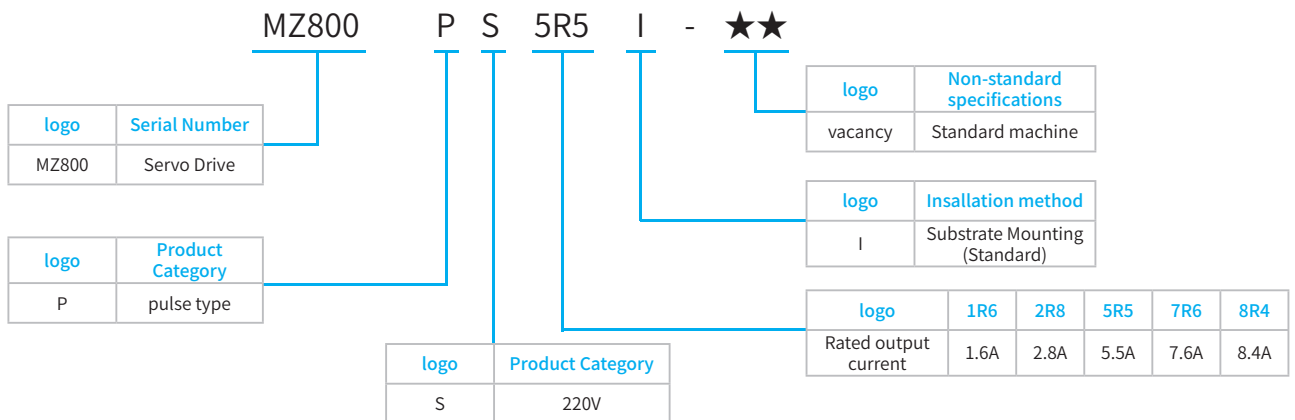


| Normal ZE     | 2502.5X/2503X | 2503.5X/2504X | 2504.5X | 2505X | 2505.5X | 2506X | 2507X | 2508X |
|---------------|---------------|---------------|---------|-------|---------|-------|-------|-------|
| L1 (mm)       | 322           | 322           | 322     | 322   | 322     | 362   | 402   | 482   |
| L2 (mm)       | 510           | 550           | 590     | 630   | 630     | 670   | 710   | 790   |
| $\phi D$ (mm) | 48            | 48            | 48      | 60    | 60      | 60    | 60    | 60    |

# MZ800P Series Servo Drive



## Name Rule



## Product Characteristic

| Type        | Series | Characteristic                                 |
|-------------|--------|------------------------------------------------|
| Servo drive | MZ800P | Quickly                                        |
|             |        | 0 1.2kHz Corresponding bandwidth of speed loop |
|             |        | Convenient                                     |
|             |        | 0 Wiring is simple and convenient              |
|             |        | 0 Eliminate limit and origin                   |
|             |        | 0 One-touch adjustment                         |
|             |        | 0 asy to replace encoder battery               |
|             |        | Precise                                        |
|             |        | 0 The encoder resolution reaches 17/23bit      |
|             |        | Strong adaptability to the environment         |
|             |        | 0 The motor reaches a higher waterproof level  |
|             |        | 0 Safe and reliable to use                     |
|             |        | 0 Wiring is simple and convenient              |

## Servo System Wiring connection

### Circuit breaker for wiring

Used to protect the power line and cut off the circuit if over current.

### Noise filter

Install a noise filter to prevent external noise.

### Electromagnetic contactor

Turns on/off servo power .  
Please install a surge suppressor.

### Electromagnetic contactor

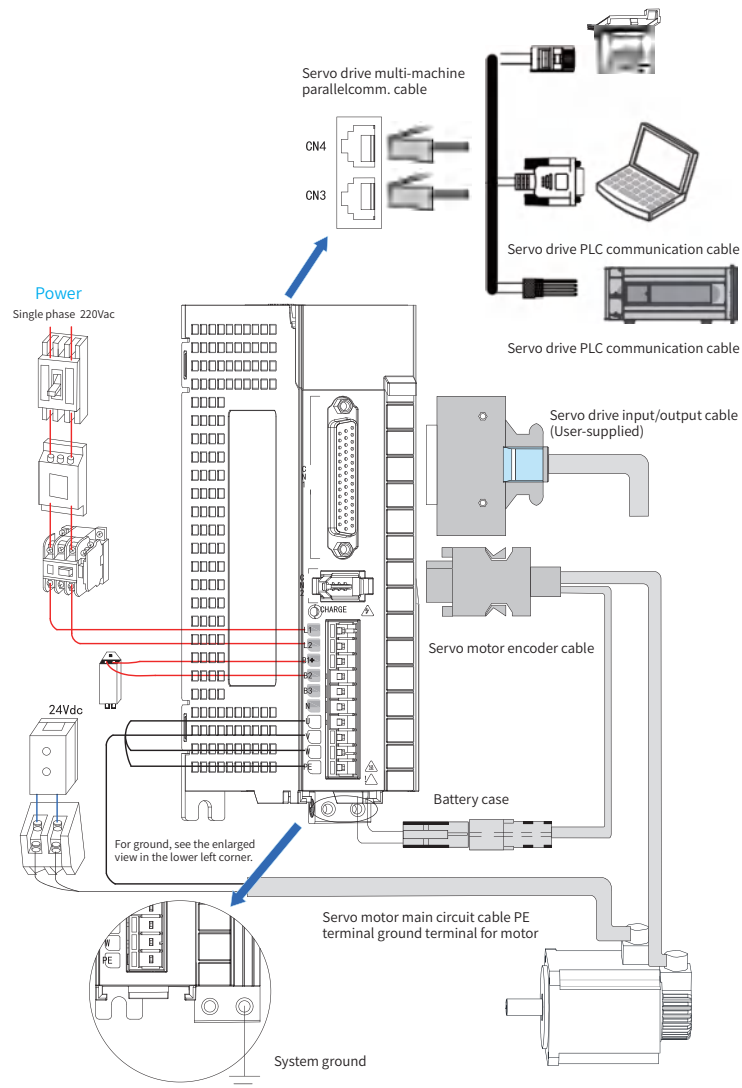
Use external resistor,remove the B2 and B3 tabs, connect the braking resistor between B1+ and B2,use an internal braking,short circuit B2 and B3.

### Brake power

24Vdc voltage source, used as the motor has a hol brake.

### Electromagnetic contactor

Brake control signal, turn on/off brake power.Install a surge suppressor.

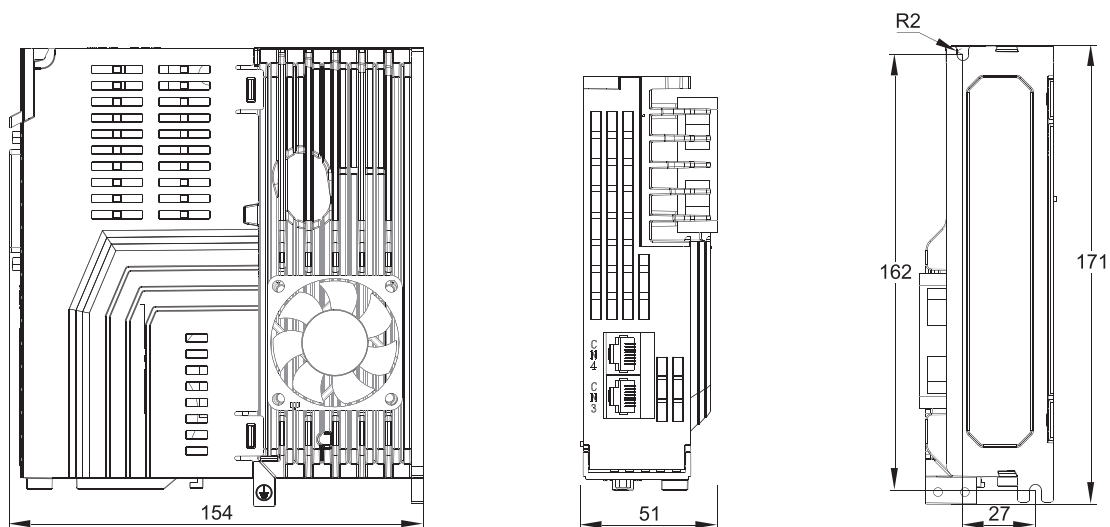


Please pay attention to the power supply capacity when connecting external control power supply or 24Vdc power supply, especially when supplying power to several drives or multiple brakes at the same time, insufficient power supply capacity will lead to insufficient supply current and failure of the drive or the brake. The braking power supply is a 24V DC voltage source. The power should refer to the motor model and meet the braking power requirements.

System wiring precautions:

1. When connecting an external braking resistor, please remove the short-circuit wire between terminals B2 and B3 of the servo drive before connecting. Pay attention to modify the internal parameters.
2. CN3 and CN4 define exactly the same communication interface for the two pins, which can be used arbitrarily between the two.
3. In single-phase 220V wiring, the main circuit terminals are L1 and L2, and the reserved terminals should not be connected.

## Servo drive specifications



| Item                     |                       |                              |                                 | Specifications                                                                                              |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|--------------------------|-----------------------|------------------------------|---------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--|------|--|------|--|------|--|--|
| Model Type MZ800PS □□□ I |                       |                              |                                 | 1R6                                                                                                         |                                                                                                                                                                       | 2R8  |  | 5R5  |  | 7R6  |  | 8R4  |  |  |
| Rated output current     |                       |                              |                                 | 1.6A                                                                                                        |                                                                                                                                                                       | 2.8A |  | 5.5A |  | 7.6A |  | 8.4A |  |  |
| outlook                  | A(mm)                 |                              |                                 | 27                                                                                                          |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          | B(mm)                 |                              |                                 | 162                                                                                                         |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          | W(mm)                 |                              |                                 | 154                                                                                                         |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          | H(mm)                 |                              |                                 | 171                                                                                                         |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          | D(mm)                 |                              |                                 | 51                                                                                                          |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          | R(mm)                 |                              |                                 | 2                                                                                                           |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          | Weight(kg)            |                              |                                 | 0.9                                                                                                         |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          | Input Power           |                              |                                 | Single phase AC200V-240V, -15% ~ 10%, 50/60Hz                                                               |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
| Basic information        | Environment           | Temp °C                      | Use environment temperature     | 0~+55°C (decrease if the ambient temperature is between 40°C and 50°C )                                     |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          |                       |                              | Storage environment temperature | -20 ~ 65°C                                                                                                  |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          |                       | Humidity                     | Use environment humidity        | 20~85% RH below(No condensation)                                                                            |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          |                       |                              | Storage environment humidity    | 20~85% RH below(No condensation)                                                                            |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          |                       | Use and preserve ambient air |                                 | indoor(no sunshine)、No corrosive gas, flammable gas, oil mist, dust                                         |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          |                       | altitude                     |                                 | Below 1000m                                                                                                 |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          |                       | vibration                    |                                 | 5.8m/s2(0.6G)below 10~60Hz(Can not be used continuously at resonance frequency)                             |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          |                       | Insulation withstand voltage |                                 |                                                                                                             | Basic-FG between AC1500V 1min                                                                                                                                         |      |  |      |  |      |  |      |  |  |
|                          | Control way           |                              |                                 | IGBT PWM control, sine wave current drive mode                                                              |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          | Encoder feedback      |                              |                                 | 17bit、 23bit (after adding a battery, it can be used as a multi-turn absolute encoder)                      |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          | Control signal        | Input                        |                                 | 6 inputs (DC24V optocoupler isolation) switch according to the control mode function                        |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          |                       | Output                       |                                 | 3 output (DC24V optocoupler isolation, open collector output) switch according to the control mode function |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          | Pulse signal          | Input                        |                                 | 2 inputs (optocoupler isolation, RS-422 differential, open collector output)                                |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          |                       | Output                       |                                 | 1 outputs (Z phase open collector output)                                                                   |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          | Comm. function        | RS232                        |                                 | For PC communication (for "Servostudio" connection)                                                         |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          |                       | RS-485                       |                                 | For upper remote control communication (1:n)                                                                |                                                                                                                                                                       |      |  |      |  |      |  |      |  |  |
|                          | Regeneration function |                              |                                 |                                                                                                             | Optional regenerative resistor, external regenerative resistor. Pay attention to modify internal parameters                                                           |      |  |      |  |      |  |      |  |  |
|                          | Control model         |                              |                                 |                                                                                                             | 6 control modes: speed control, position control, torque control, torque/speed control, speed/position control, torque/position, torque/speed/position hybrid control |      |  |      |  |      |  |      |  |  |

## Servo drive specifications

| Item     |                  |                                     |                                                                      | Specifications                                                                                                                                                                                                                                                                                                                                     |
|----------|------------------|-------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function | Control input    |                                     |                                                                      | Alarm reset, proportional action switching, zero fixed function enable, forward drive prohibited, reverse drive prohibited, external torque limit for forward rotation, external torque limit for reverse rotation, forward jog, reverse jog, forward Reset switch, reverse reset switch, origin switch, emergency stop, servo enable, gain switch |
|          | Control output   |                                     |                                                                      | Servo ready, motor rotating, zero speed signal, speed reached, position reached, positioning approach signal, torque limit, speed limit, brake output, warning, servo failure, alarm code (3-digit output)                                                                                                                                         |
|          | Position control | Pulse input                         | Maximum command pulse frequency                                      | Differential input: high-speed maximum 4Mpps, pulse width cannot be less than 0.125μs<br>The maximum low speed is 500Kpps, and the pulse width cannot be less than 1μs<br>Open collector: maximum 200Kpps, pulse width cannot be less than 2.5μs                                                                                                   |
|          |                  |                                     | Input pulse signal form                                              | Differential input; open collector                                                                                                                                                                                                                                                                                                                 |
|          |                  |                                     | Input pulse signal method                                            | Differential input; open collector                                                                                                                                                                                                                                                                                                                 |
|          |                  |                                     | Command pulse division/multiplication (Electronic gearratio setting) | 1~8388608/1~8388608                                                                                                                                                                                                                                                                                                                                |
|          |                  |                                     | Command filter                                                       | Smoothing filter, FIR filter                                                                                                                                                                                                                                                                                                                       |
|          | Speed control    | Control input                       |                                                                      | Servo ON, alarm reset, speed command reverse, zero speed clamp, internal command selection input 1, internal command selection input 2, internal command selection input 3, internal command selection input 4, forward rotation external torque limit input, reverse rotation External torque limit input, emergency stop                         |
|          |                  | Control output                      |                                                                      | Alarm status, servo preparation, brake release, torque limit output, speed limit output speed reached, speed consistent, motor rotation output, zero-speed signal output                                                                                                                                                                           |
|          | Torque Control   | Control input                       |                                                                      | Servo ON, alarm reset, torque command reverse, zero speed clamp                                                                                                                                                                                                                                                                                    |
|          |                  | Control output                      |                                                                      | Alarm status, servo preparation, brake release, torque limit, speed limit output, emergency stop                                                                                                                                                                                                                                                   |
|          |                  | Torque command input                |                                                                      | (Factory default setting, the range can be set by function code)                                                                                                                                                                                                                                                                                   |
|          |                  | Speed limit function                |                                                                      | Positive and negative internal speed limit P03.27, P03.28                                                                                                                                                                                                                                                                                          |
|          | Common           | Speed observer function             |                                                                      | YES                                                                                                                                                                                                                                                                                                                                                |
|          |                  | Damping control function            |                                                                      | YES                                                                                                                                                                                                                                                                                                                                                |
|          |                  | Adaptive notch filter               |                                                                      | YES                                                                                                                                                                                                                                                                                                                                                |
|          |                  | Automatic adjustment function       |                                                                      | YES                                                                                                                                                                                                                                                                                                                                                |
|          |                  | Encoder output frequency division   |                                                                      | YES                                                                                                                                                                                                                                                                                                                                                |
|          |                  | Internal location planning function |                                                                      | YES                                                                                                                                                                                                                                                                                                                                                |
|          |                  | Adjustment/function setting         |                                                                      | Use the host computer setting software "Servo studio" to adjust                                                                                                                                                                                                                                                                                    |
|          |                  | Protection                          |                                                                      | Over voltage, abnormal power supply, over current, overload, abnormal encoder, over speed, excessive position deviation, abnormal parameters, etc.                                                                                                                                                                                                 |

## Braking resistor related specifications

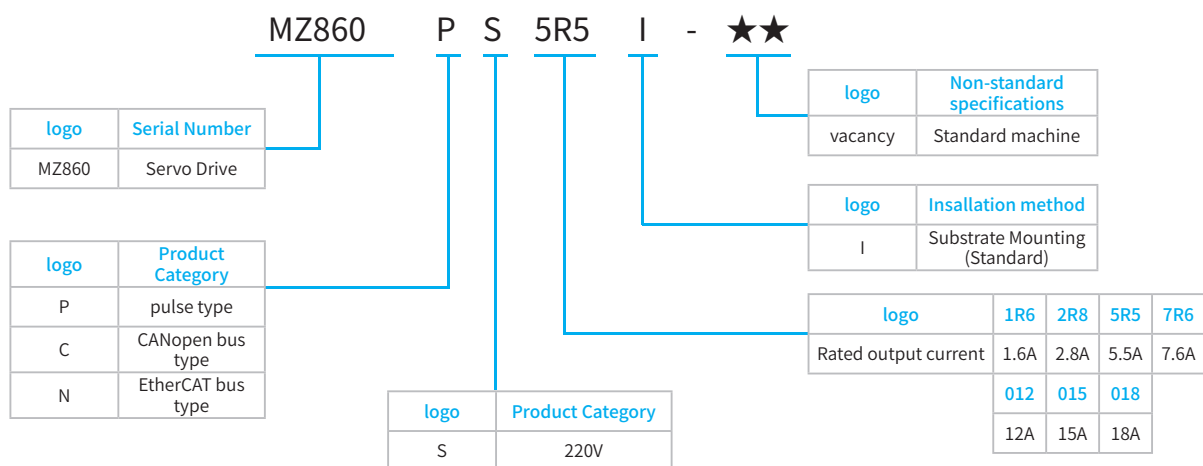
| Model Type        |         | Built-in braking resistor specifications |          | Min. Allowed Resistance (Ω) | Max. Braking Energy Absorbed by Capacitor (J) |
|-------------------|---------|------------------------------------------|----------|-----------------------------|-----------------------------------------------|
|                   |         | Resistance (Ω)                           | Power(W) |                             |                                               |
| Single phase 220V | 1R6     | -                                        | -        | 50                          | 9                                             |
|                   | 2R8     | -                                        | -        | 45                          | 18                                            |
|                   | 5R5     | 50                                       | 50       | 40                          | 26                                            |
|                   | 7R6、8R4 | 50                                       | 50       | 40                          | 26                                            |

Note: ■ 1R6 and 2R8 models have no built-in braking resistor. If you need to use them, please configure the external braking resistor by yourself. Please consult our technical support for the power selection of the external braking resistor.

# MZ860 Series Servo Drive



## Name Rule



## Product Characteristic

| Type        | Series | Characteristic                                                      |
|-------------|--------|---------------------------------------------------------------------|
| Servo drive | MZ860  | Quickly                                                             |
|             |        | 0 1.2kHz Corresponding bandwidth of speed loop                      |
|             |        | Convenient                                                          |
|             |        | 0 Wiring is simple and convenient      0 One-touch adjustment       |
|             |        | 0 Eliminate limit and origin      0 Easy to replace encoder battery |
|             |        | Precise                                                             |
|             |        | 0 The encoder resolution reaches 17/23bit                           |
|             |        | Strong adaptability to the environment                              |
|             |        | 0 Meet safety standards                                             |
|             |        | 0 The motor reaches a higher waterproof level                       |
|             |        | 0 Safe and reliable to use, Wiring is simple and convenient         |

## Servo System Wiring connection

### Circuit breaker for wiring

Used to protect the power line and cut off the circuit if over current.

### Noise filter

Install a noise filter to prevent external noise.

### Electromagnetic contactor

Turns on/off servo power .  
Please install a surge suppressor.

### Electromagnetic contactor

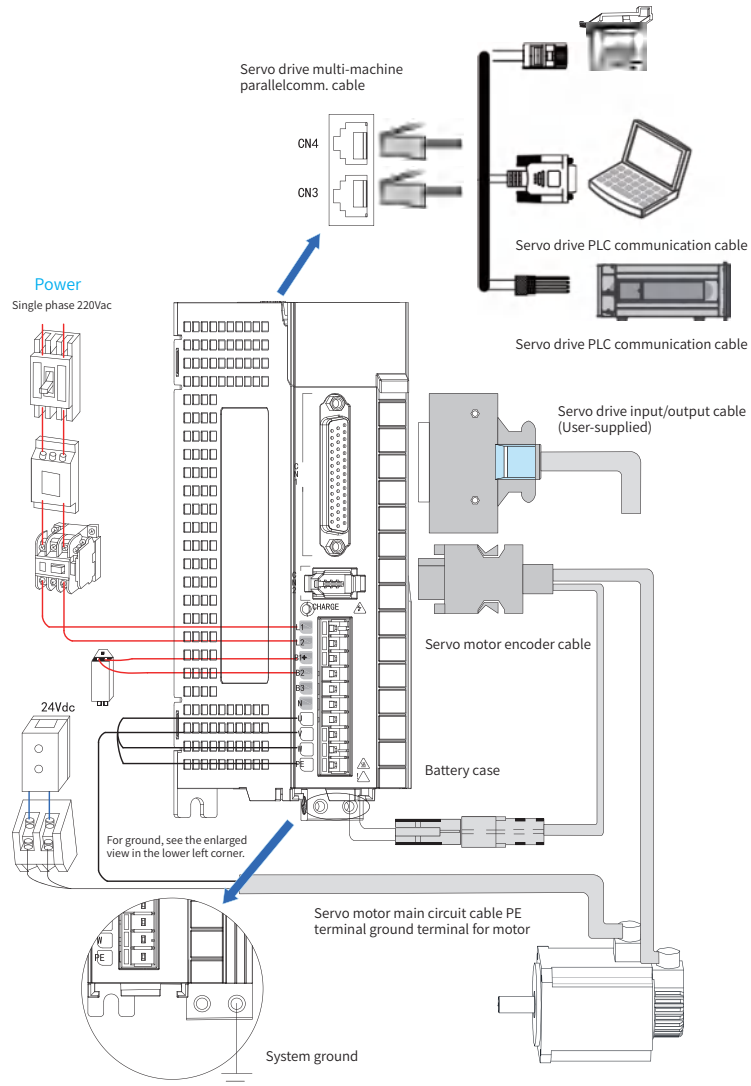
Use external resistor,remove the B2 and B3 tabs, connect the braking resistor between B1+ and B2;use an internal braking,short circuit B2 and B3.

### Brake power

24Vdc voltage source, used as the motor has a hol brake.

### Electromagnetic contactor

Brake control signal, turn on/off brake power.Install a surge suppressor.



Please pay attention to the power supply capacity when connecting external control power supply or 24Vdc power supply, especially when supplying power to several drives or multiple brakes at the same time, insufficient power supply capacity will lead to insufficient supply current and failure of the drive or the brake. The braking power supply is a 24V DC voltage source. The power should refer to the motor model and meet the braking power requirements.

System wiring precautions:

1. When connecting an external braking resistor, please remove the short-circuit wire between terminals B2 and B3 of the servo drive before connecting. Pay attention to modify the internal parameters.
2. CN3 and CN4 define exactly the same communication interface for the two pins, which can be used arbitrarily between the two.
3. In single-phase 220V wiring, the main circuit terminals are L1 and L2, and the reserved terminals should not be connected.

# MZ860 Series Servo Drive

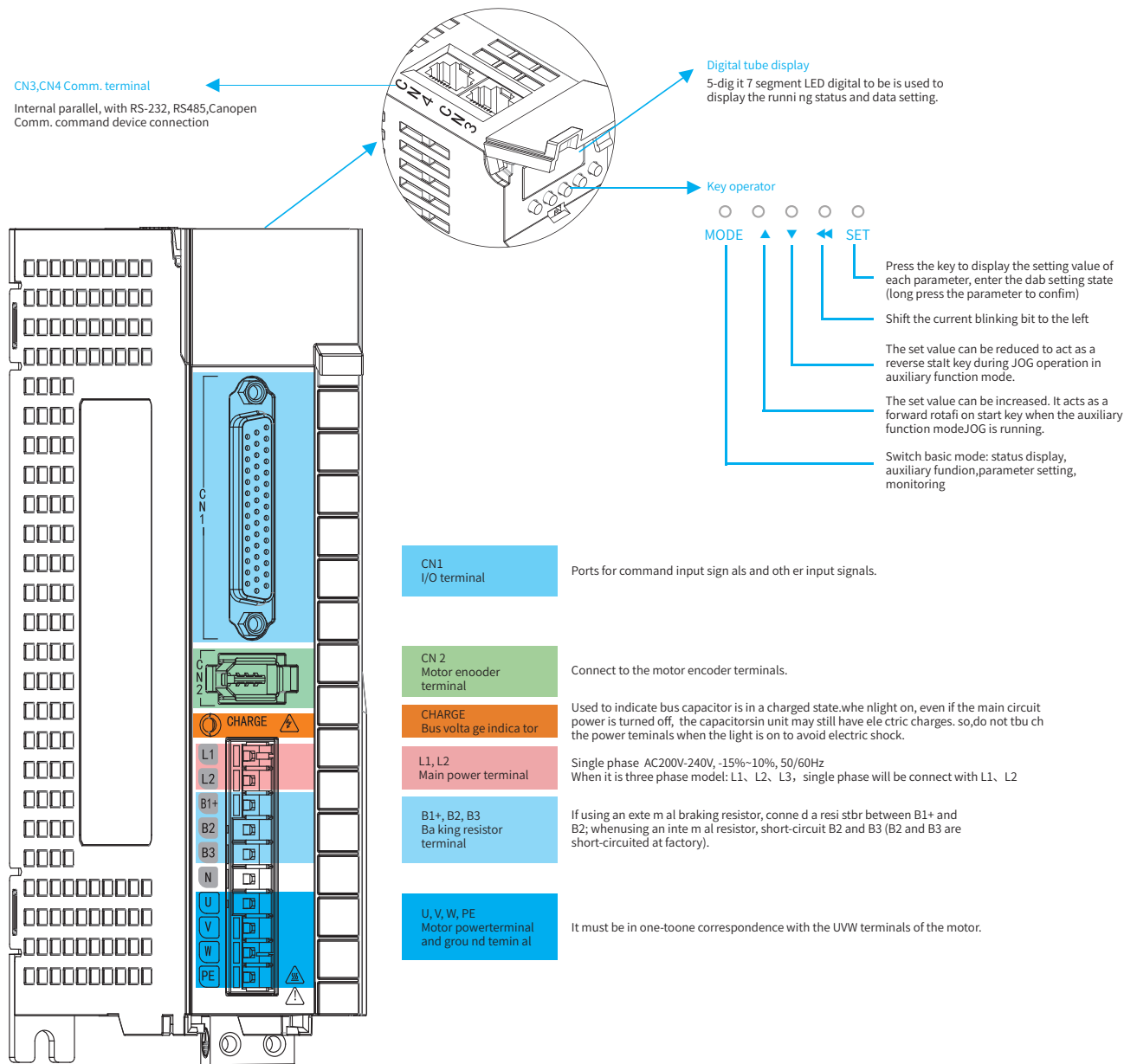
## Servo drive specifications

| Item                        |                                   |                              | Specifications                                                                                              |                                                                                                                                                                       |      |      |                         |      |      |
|-----------------------------|-----------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-------------------------|------|------|
| Model Type<br>MZ860P □□□□ I |                                   |                              | S1R6                                                                                                        | S2R8                                                                                                                                                                  | S5R5 | S7R6 | S012                    | S015 | S018 |
| Rated output current        |                                   |                              | 1.6A                                                                                                        | 2.8A                                                                                                                                                                  | 5.5A | 7.6A | 12A                     | 15A  | 18A  |
| outlook                     | A(mm)                             |                              | 27                                                                                                          |                                                                                                                                                                       |      |      | 52                      |      |      |
|                             | B(mm)                             |                              | 162                                                                                                         |                                                                                                                                                                       |      |      | 185                     |      |      |
|                             | W(mm)                             |                              | 154                                                                                                         |                                                                                                                                                                       |      |      | 177                     |      |      |
|                             | H(mm)                             |                              | 171                                                                                                         |                                                                                                                                                                       |      |      | 196                     |      |      |
|                             | D(mm)                             |                              | 51                                                                                                          |                                                                                                                                                                       |      |      | 66                      |      |      |
|                             | R(mm)                             |                              | 2                                                                                                           |                                                                                                                                                                       |      |      | 3                       |      |      |
|                             | Weight(kg)                        |                              | 0.9                                                                                                         |                                                                                                                                                                       |      |      | 1.5                     |      |      |
|                             | Input Power<br>(-15%~10%,50/60Hz) |                              | Single phase AC200V-240V                                                                                    |                                                                                                                                                                       |      |      | Three phase AC200V-240V |      |      |
| Basic information           | Environment                       | Temp °C                      | Use environment temperature                                                                                 | 0~+55°C (decrease if the ambient temperature is between 40°C and 50°C )                                                                                               |      |      |                         |      |      |
|                             |                                   |                              | Storage environment temperature                                                                             | -20~65°C                                                                                                                                                              |      |      |                         |      |      |
|                             |                                   | Humidity                     | Use environment humidity                                                                                    | 20~85% RH below(No condensation)                                                                                                                                      |      |      |                         |      |      |
|                             |                                   |                              | Storage environment humidity                                                                                | 20~85% RH below(No condensation)                                                                                                                                      |      |      |                         |      |      |
|                             |                                   | Use and preserve ambient air |                                                                                                             | indoor(no sunshine)、No corrosive gas, flammable gas, oil mist, dust                                                                                                   |      |      |                         |      |      |
|                             |                                   | altitude                     |                                                                                                             | Below 1000m                                                                                                                                                           |      |      |                         |      |      |
|                             |                                   | vibration                    |                                                                                                             | 5.8m/s2(0.6G)below 10~60Hz(Can not be used continuously at resonance frequency)                                                                                       |      |      |                         |      |      |
|                             |                                   | Insulation withstand voltage |                                                                                                             | Basic-FG between AC1500V 1min                                                                                                                                         |      |      |                         |      |      |
|                             | Control way                       |                              | IGBT PWM control, sine wave current drive mode                                                              |                                                                                                                                                                       |      |      |                         |      |      |
|                             | Encoder feedback                  |                              | 17bit、 23bit (after adding a battery, it can be used as a multi-turn absolute encoder)                      |                                                                                                                                                                       |      |      |                         |      |      |
|                             | Control signal                    | Input                        | 9 inputs (DC24V optocoupler isolation) switch according to the control mode function                        |                                                                                                                                                                       |      |      |                         |      |      |
|                             |                                   | Output                       | 5 output (DC24V optocoupler isolation, open collector output) switch according to the control mode function |                                                                                                                                                                       |      |      |                         |      |      |
|                             | Pulse signal                      | Input                        | 2 inputs (optocoupler isolation, RS-422 differential, open collector output)                                |                                                                                                                                                                       |      |      |                         |      |      |
|                             |                                   | Output                       | 4 outputs (A/B/Z phase RS-422 differential; Z phase open collector output)                                  |                                                                                                                                                                       |      |      |                         |      |      |
|                             | Comm. function                    | RS232                        | For PC communication (for "Servostudio" connection)                                                         |                                                                                                                                                                       |      |      |                         |      |      |
|                             |                                   | RS-485                       | For upper remote control communication (1:n)                                                                |                                                                                                                                                                       |      |      |                         |      |      |
|                             |                                   | CAN                          | CANOPEN bus communication                                                                                   |                                                                                                                                                                       |      |      |                         |      |      |
|                             | Regeneration function             |                              |                                                                                                             | Optional regenerative resistor, external regenerative resistor. Pay attention to modify internal parameters                                                           |      |      |                         |      |      |
|                             | Control model                     |                              |                                                                                                             | 6 control modes: speed control, position control, torque control, torque/speed control, speed/position control, torque/position, torque/speed/position hybrid control |      |      |                         |      |      |

| Item     |                  |                                                                      | Specifications                                                                                                                                                                                                                                                                                                                                      |
|----------|------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function | Control input    |                                                                      | Alarm reset, proportional action switching, zero fixed function enable, forward drive prohibited, reverse drive prohibited, external torque limit for forward rotation, external torque limit for reverse rotation, forward jog, reverse jog, forward Reset switch, reverse reset switch, origin switch, emergency stop, servo enable, gain switch. |
|          | Control output   |                                                                      | Servo ready, motor rotating, zero speed signal, speed reached, position reached, positioning approach signal, torque limit, speed limit, brake output, warning, servo failure, alarm code (3-digit output)                                                                                                                                          |
|          | Position control | Maximum command pulse frequency                                      | The maximum low speed is 500Kpps, and the pulse width cannot be less than 1μs<br>Open collector: maximum 200Kpps, pulse width cannot be less than 2.5μs                                                                                                                                                                                             |
|          |                  | Input pulse signal form                                              | Differential input; open collector                                                                                                                                                                                                                                                                                                                  |
|          |                  | Input pulse signal method                                            | Pulse + direction, right angle phase difference (A phase + B phase), CW + CCW pulse                                                                                                                                                                                                                                                                 |
|          |                  | Command pulse division/multiplication (Electronic gearratio setting) | 1~8388608/1~8388608                                                                                                                                                                                                                                                                                                                                 |
|          |                  | Command filter                                                       | Smoothing filter, FIR filter                                                                                                                                                                                                                                                                                                                        |
|          |                  | Pulse output                                                         | Output pulse form<br>Phase A, Phase B: Differential output<br>Z phase: differential output or open collector output                                                                                                                                                                                                                                 |
|          |                  |                                                                      | Frequency division ratio<br>Arbitrary frequency division                                                                                                                                                                                                                                                                                            |
|          |                  |                                                                      | Output pulse function<br>Encoder position pulse and position pulse command (can be set)                                                                                                                                                                                                                                                             |
|          | Speed control    | Control input                                                        | Servo ON, alarm reset, speed command reverse, zero speed clamp, internal command selection input 1, internal command selection input 2, internal command selection input 3, internal command selection input 4, forward rotation external torque limit input, reverse rotation External torque limit input, emergency stop                          |
|          |                  | Control output                                                       | Alarm status, servo preparation, brake release, torque limit output, speed limit output speed reached, speed consistent, motor rotation output, zero-speed signal output                                                                                                                                                                            |
|          | Torque Control   | Control input                                                        | Servo ON, alarm reset, torque command reverse, zero speed clamp                                                                                                                                                                                                                                                                                     |
|          |                  | Control output                                                       | Alarm status, servo preparation, brake release, torque limit, speed limit output, emergency stop                                                                                                                                                                                                                                                    |
|          |                  | Torque command input                                                 | (Factory default setting, the range can be set by function code)                                                                                                                                                                                                                                                                                    |
|          |                  | Speed limit function                                                 | Positive and negative internal speed limit P03.27, P03.28                                                                                                                                                                                                                                                                                           |
|          | Common           | Speed observer function                                              | YES                                                                                                                                                                                                                                                                                                                                                 |
|          |                  | Damping control function                                             | YES                                                                                                                                                                                                                                                                                                                                                 |
|          |                  | Adaptive notch filter                                                | YES                                                                                                                                                                                                                                                                                                                                                 |
|          |                  | Automatic adjustment function                                        | YES                                                                                                                                                                                                                                                                                                                                                 |
|          |                  | Encoder output frequency division                                    | YES                                                                                                                                                                                                                                                                                                                                                 |
|          |                  | Internal location planning function                                  | YES                                                                                                                                                                                                                                                                                                                                                 |
|          |                  | Adjustment/function setting                                          | Use the host computer setting software "Servo studio" to adjust                                                                                                                                                                                                                                                                                     |
|          | Protection       |                                                                      | Over voltage, abnormal power supply, over current, overload, abnormal encoder, over speed, excessive position deviation, abnormal parameters, etc.                                                                                                                                                                                                  |

# MZ860 Series Servo Drive

## The name of each part of the drive



## Braking resistor related specifications

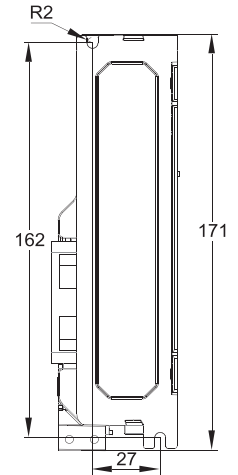
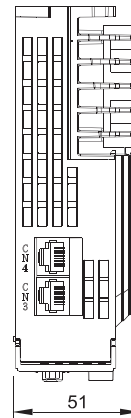
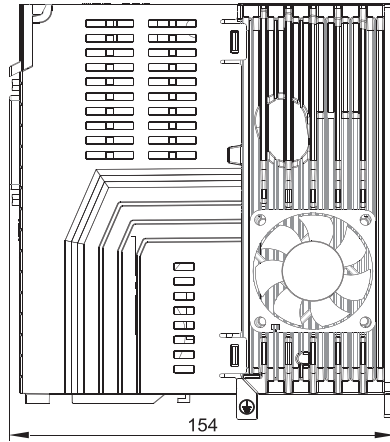
| Model Type        |      | Built-in braking resistor specifications |          | Min. Allowed Resistance (Ω) | Max. Braking Energy Absorbed by Capacitor (J) |
|-------------------|------|------------------------------------------|----------|-----------------------------|-----------------------------------------------|
|                   |      | Resistance (Ω)                           | Power(W) |                             |                                               |
| Single phase 220V | S1R6 | -                                        | -        | 50                          | 9                                             |
|                   | S2R8 | -                                        | -        | 45                          | 18                                            |
|                   | S5R5 | 50                                       | 50       | 40                          | 26                                            |
|                   | S7R6 | 50                                       | 50       | 40                          | 26                                            |
| Three phase 220V  | S012 | 30                                       | 100      | 25                          | 47                                            |
|                   | S015 | 30                                       | 100      | 25                          | 47                                            |
|                   | S018 | 30                                       | 100      | 25                          | 55                                            |

Note: ■ S1R6 and S2R8 models have no built-in braking resistor. If you need to use them, please configure the external braking resistor by yourself. Please consult our technical support for the power selection of the external braking resistor.

## Servo drive installation dimensions

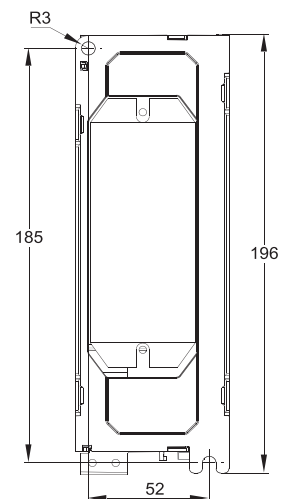
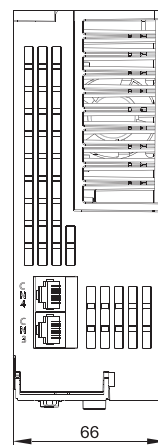
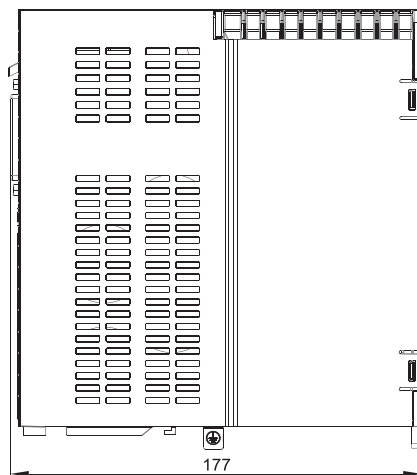
### MZ860(single phase 220V)(Unit:mm)

MZ860PS1R6I  
MZ860PS2R8I  
MZ860PS5R5I  
MZ860PS7R6I



### MZ860(three phase 220V) (Unit:mm)

MZ860PS012I  
MZ860PS015I  
MZ860PS018I



# MZ870 Series Servo Drive



## Name Rule

MZ870   A   P   S   5R5   I   -   ★★

①   ②   ③   ④   ⑤   ⑥   ⑦

|                                                              |                                                                                         |                                                                                                                                                                                                   |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ① Product series<br>MZ870 Series Servo Drive                 | ④ Voltage level<br>A: 110V<br>S: 220V<br>T: 380V                                        | ⑤ Rated output current<br>■ A:110V   S:220V<br>1R6: 1.6A   7R6: 7.6A<br>2R8: 2.8A   012: 12.0A<br>5R5: 5.5A   018: 18.0A<br>-----<br>■ T: 380V<br>3R5: 3.5A   5R4: 5.4A<br>8R4: 8.4A   012: 12.0A |
| ② Subdivision series<br>A/B/E                                | ⑥ Installation Method<br>I: Substrate Installation                                      |                                                                                                                                                                                                   |
| ③ Product Categories<br>P: Pulse type<br>C: CANopen Bus Type | ⑦ Model Description<br>Marking: Non-standard specification<br>Vacancy: Standard machine |                                                                                                                                                                                                   |

## Product Characteristic

| Type        | Series | Characteristic                                                                                                                                                                                                   |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Servo drive | MZ870  | <b>Versatility</b><br>0 It supports multiple control modes (such as position control, speed control, torque control, etc. ) and can be adapted to different application requirements through parameter settings. |
|             |        | <b>Convenient</b><br>0 Wiring is simple and convenient      0 One-touch adjustment<br>0 Eliminate limit and origin      0 Easy to replace encoder battery                                                        |
|             |        | <b>Precise</b><br>0 The encoder resolution reaches 23bit                                                                                                                                                         |
|             |        | <b>Strong adaptability to the environment</b><br>0 Meet safety standards<br>0 The motor reaches a higher waterproof level<br>0 Safe and reliable to use, Wiring is simple and convenient                         |
|             |        |                                                                                                                                                                                                                  |
|             |        |                                                                                                                                                                                                                  |
|             |        |                                                                                                                                                                                                                  |

## Servo System Wiring connection

### Circuit breaker for wiring

Used to protect the power line and cut off the circuit if over current.

### Noise filter

Install a noise filter to prevent external noise.

### Electromagnetic contactor

Turns on/off servo power .  
Please install a surge suppressor.

### Electromagnetic contactor

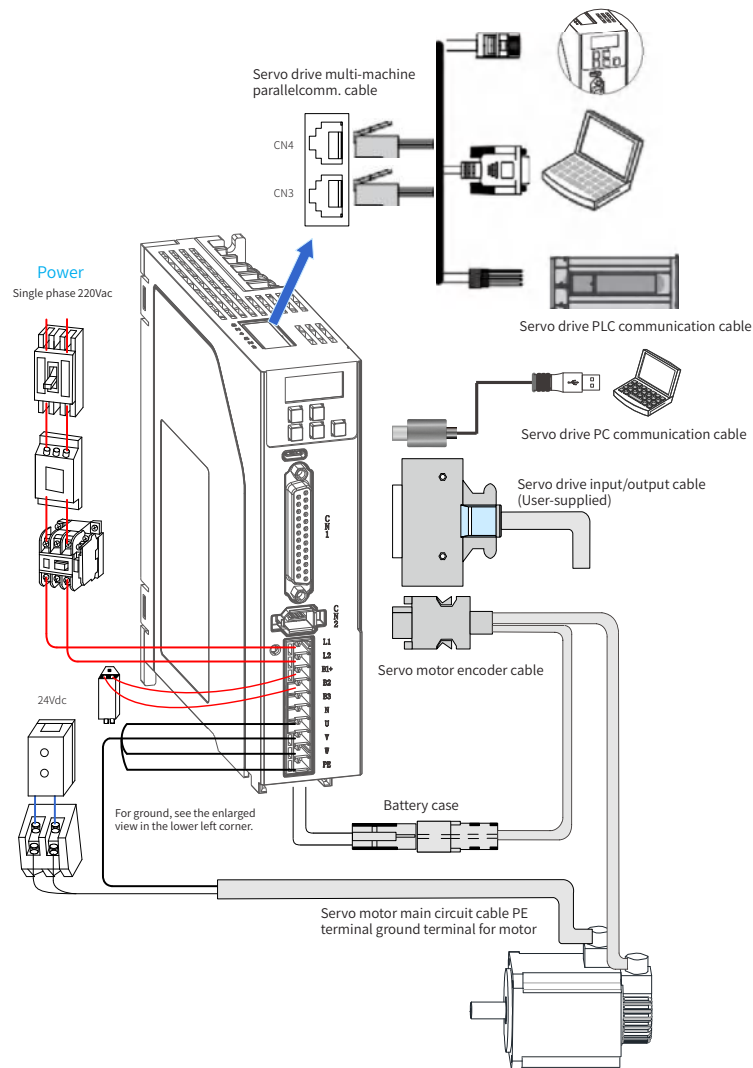
Use external resistor,remove the B2 and B3 tabs, connect the braking resistor between B1+ and B2;use an internal braking,short circuit B2 and B3.

### Brake power

24Vdc voltage source, used as the motor has a hol brake.

### Electromagnetic contactor

Brake control signal, turn on/off brake power.Install a surge suppressor.



Please pay attention to the power supply capacity when connecting external control power supply or 24Vdc power supply, especially when supplying power to several drives or multiple brakes at the same time, insufficient power supply capacity will lead to insufficient supply current and failure of the drive or the brake. The braking power supply is a 24V DC voltage source. The power should refer to the motor model and meet the braking power requirements.

System wiring precautions:

1. When connecting an external braking resistor, please remove the short-circuit wire between terminals B2 and B3 of the servo drive before connecting. Pay attention to modify the internal parameters.
2. CN3 and CN4 define exactly the same communication interface for the two pins, which can be used arbitrarily between the two.
3. In single-phase 220V wiring, the main circuit terminals are L1 and L2, and the reserved terminals should not be connected.

# MZ870 Series Servo Drive

## Servo drive specifications

| Item                 |                                |                                      | SIZE A                                                                                                                                                              |      | SIZE B |      | SIZE C                  |      |                        |      |      |      |
|----------------------|--------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------|------|-------------------------|------|------------------------|------|------|------|
| Model Type           |                                |                                      | S1R6                                                                                                                                                                | S2R8 | S5R5   | S7R6 | S012                    | S018 | T3R5                   | T5R4 | T8R4 | T012 |
| Rated output current |                                |                                      | 1.6A                                                                                                                                                                | 2.8A | 5.5A   | 7.6A | 12A                     | 18A  | 3.5A                   | 5.4A | 8.4A | 12A  |
| Outlook              | A(mm)                          |                                      | 27                                                                                                                                                                  |      | 37     |      | 52                      |      |                        |      |      |      |
|                      | B(mm)                          |                                      | 162                                                                                                                                                                 |      | 162    |      | 185                     |      |                        |      |      |      |
|                      | W(mm)                          |                                      | 156                                                                                                                                                                 |      | 156    |      | 177                     |      |                        |      |      |      |
|                      | H(mm)                          |                                      | 171                                                                                                                                                                 |      | 171    |      | 196                     |      |                        |      |      |      |
|                      | D(mm)                          |                                      | 40                                                                                                                                                                  |      | 50     |      | 66                      |      |                        |      |      |      |
|                      | R(mm)                          |                                      | 2.3                                                                                                                                                                 |      | 2.3    |      | 2.9                     |      |                        |      |      |      |
|                      | Weight(kg)                     |                                      | 0.8                                                                                                                                                                 |      | 0.9    |      | 1.5                     |      |                        |      |      |      |
|                      | Input Power(-15%~10%, 50/60Hz) |                                      | Single phase AC200V-240V                                                                                                                                            |      |        |      | Three phase AC200V-240V |      | Three phaseAC380V-440V |      |      |      |
| Basic information    | Environment                    | Use /Storage environment temperature | 0°C ~+55°C (decrease if the ambient temperature is between 40°C and 50°C )/-20°C ~70°C                                                                              |      |        |      |                         |      |                        |      |      |      |
|                      |                                | Use /Storage environment humidity    | 90%RH below(No condensation)                                                                                                                                        |      |        |      |                         |      |                        |      |      |      |
|                      |                                | Use and preserve ambient air         | indoor(no sunshine)、No corrosive gas, flammable gas, oil mist, dust                                                                                                 |      |        |      |                         |      |                        |      |      |      |
|                      |                                | Altitude                             | Below 1000m                                                                                                                                                         |      |        |      |                         |      |                        |      |      |      |
|                      |                                | Vibration                            | 5.8m/s² (0.6G) below 10~60Hz(Can not be used continuously at resonance frequency)                                                                                   |      |        |      |                         |      |                        |      |      |      |
|                      | Insulation withstand voltage   |                                      | Basic-FG between AC1500V 1min                                                                                                                                       |      |        |      |                         |      |                        |      |      |      |
|                      | Control way                    |                                      | IGBT PWM control, sine wave current drive mode                                                                                                                      |      |        |      |                         |      |                        |      |      |      |
|                      | Encoder feedback               |                                      | 17bit、 23bit (after adding a battery, it can be used as a multi-turn absolute encoder)                                                                              |      |        |      |                         |      |                        |      |      |      |
|                      | Control signal                 | Input                                | Up to 9-channel input (DC24V optically isolated) with function switching based on control mode.                                                                     |      |        |      |                         |      |                        |      |      |      |
|                      |                                | Output                               | Up to 5-channel output (DC24V optically isolated, collector open-drain output) is functionally switched according to the control mode.                              |      |        |      |                         |      |                        |      |      |      |
|                      | Pulse signal                   | Input                                | 2 inputs (optocoupler isolation, RS-422 differential, open collector output)                                                                                        |      |        |      |                         |      |                        |      |      |      |
|                      |                                | Output                               | A:4 outputs (A/B/Z phase RS-422 differential; Z phase open collector output)<br>B、 E: 1 outputs (Z phase open collector output)                                     |      |        |      |                         |      |                        |      |      |      |
|                      | Comm. function                 | USB                                  | For PC communication (for 「Servostudio」 connection)                                                                                                                 |      |        |      |                         |      |                        |      |      |      |
|                      |                                | RS-485                               | For upper remote control communication (1:n)                                                                                                                        |      |        |      |                         |      |                        |      |      |      |
|                      |                                | CAN                                  | CANOPEN bus communication                                                                                                                                           |      |        |      |                         |      |                        |      |      |      |
|                      | Regeneration function          |                                      | Optional regenerative resistor, external regenerative resistor. Pay attention to modify internal parameters                                                         |      |        |      |                         |      |                        |      |      |      |
|                      | Control model                  |                                      | 6 control modes: speed control, position control, torque control, torque/speed control, speed/position control,torque/position,torque/speed/position hybrid control |      |        |      |                         |      |                        |      |      |      |

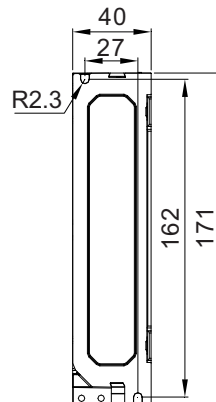
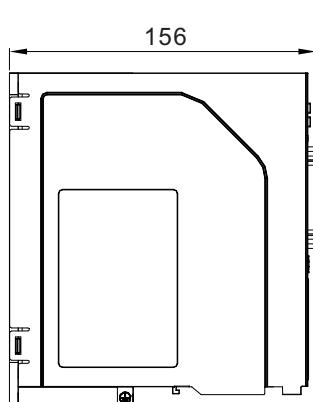
| Item     |                  |                                                                      | Specifications                                                                                                                                                                                                                                                                                                                                      |
|----------|------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function | Control input    |                                                                      | Alarm reset, proportional action switching, zero fixed function enable, forward drive prohibited, reverse drive prohibited, external torque limit for forward rotation, external torque limit for reverse rotation, forward jog, reverse jog, forward Reset switch, reverse reset switch, origin switch, emergency stop, servo enable, gain switch. |
|          | Control output   |                                                                      | Servo ready, motor rotating, zero speed signal, speed reached, position reached, positioning approach signal, torque limit, speed limit, brake output, warning, servo failure, alarm code (3-digit output)                                                                                                                                          |
|          | Position control | Maximum command pulse frequency                                      | The maximum low speed is 500Kpps, and the pulse width cannot be less than 1μs<br>Open collector: maximum 200Kpps, pulse width cannot be less than 2.5μs                                                                                                                                                                                             |
|          |                  | Input pulse signal form                                              | Differential input; open collector                                                                                                                                                                                                                                                                                                                  |
|          |                  | Input pulse signal method                                            | Pulse + direction, right angle phase difference (A phase + B phase), CW + CCW pulse                                                                                                                                                                                                                                                                 |
|          |                  | Command pulse division/multiplication (Electronic gearratio setting) | 1~8388608/1~8388608                                                                                                                                                                                                                                                                                                                                 |
|          |                  | Command filter                                                       | Smoothing filter, FIR filter                                                                                                                                                                                                                                                                                                                        |
|          |                  | Pulse output                                                         | Output pulse form                                                                                                                                                                                                                                                                                                                                   |
|          |                  |                                                                      | Phase A, Phase B: Differential output<br>Z phase: differential output or open collector output                                                                                                                                                                                                                                                      |
|          |                  |                                                                      | Frequency division ratio                                                                                                                                                                                                                                                                                                                            |
|          |                  |                                                                      | Arbitrary frequency division                                                                                                                                                                                                                                                                                                                        |
|          |                  |                                                                      | Encoder position pulse and position pulse command(can be set)                                                                                                                                                                                                                                                                                       |
|          | Speed control    | Control input                                                        | Servo ON, alarm reset, speed command reverse, zero speed clamp, internal command selection input 1, internal command selection input 2, internal command selection input 3, internal command selection input 4, forward rotation external torque limit input, reverse rotation External torque limit input, emergency stop                          |
|          |                  | Control output                                                       | Alarm status, servo preparation, brake release, torque limit output, speed limit output speed reached, speed consistent, motor rotation output, zero-speed signal output                                                                                                                                                                            |
|          | Torque control   | Control input                                                        | Servo ON, alarm reset, torque command reverse, zero speed clamp                                                                                                                                                                                                                                                                                     |
|          |                  | Control output                                                       | Alarm status, servo preparation, brake release, torque limit, speed limit output, emergency stop                                                                                                                                                                                                                                                    |
|          |                  | Torque command input                                                 | (Factory default setting, the range can be set by function code)                                                                                                                                                                                                                                                                                    |
|          |                  | Speed limit function                                                 | Positive and negative internal speed limit P03.27, P03.28                                                                                                                                                                                                                                                                                           |
|          | Common           | Dynamic braking function                                             | Only A model 220V includes this function                                                                                                                                                                                                                                                                                                            |
|          |                  | Speed observer function                                              | YES                                                                                                                                                                                                                                                                                                                                                 |
|          |                  | Damping control function                                             | YES                                                                                                                                                                                                                                                                                                                                                 |
|          |                  | Adaptive notch filter                                                | YES                                                                                                                                                                                                                                                                                                                                                 |
|          |                  | Automatic adjustment function                                        | YES                                                                                                                                                                                                                                                                                                                                                 |
|          |                  | Encoder output frequency division                                    | YES                                                                                                                                                                                                                                                                                                                                                 |
|          |                  | Internal location planning function                                  | YES                                                                                                                                                                                                                                                                                                                                                 |
|          |                  | Adjustment/function setting                                          | Use the host computer setting software 「Servostudio」 to adjust                                                                                                                                                                                                                                                                                      |
|          |                  | Protection                                                           | Over voltage, abnormal power supply, over current, overload, abnormal encoder, over speed, excessive position deviation, abnormal parameters, etc.                                                                                                                                                                                                  |

# MZ870 Series Servo Drive

## Servo drive installation dimensions

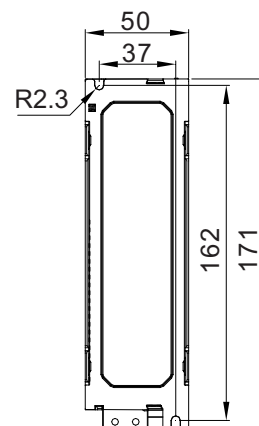
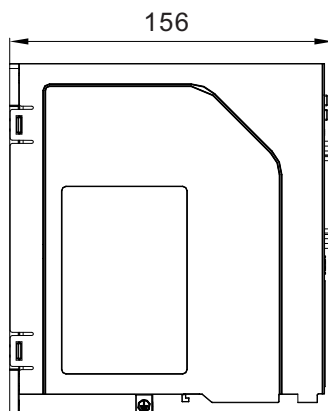
### SIZE-A (S:Single phase 220V)

MZ870APS1R6I  
MZ870APS2R8I  
MZ870BPS1R6I  
MZ870BPS2R8I  
MZ870EPS1R6I  
MZ870EPS2R8I



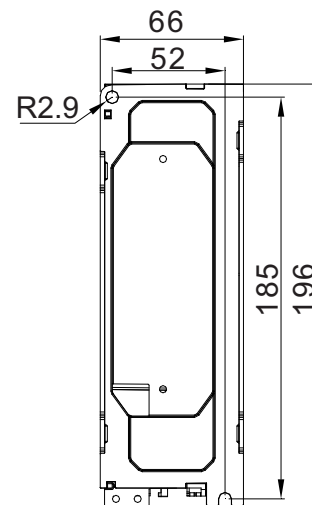
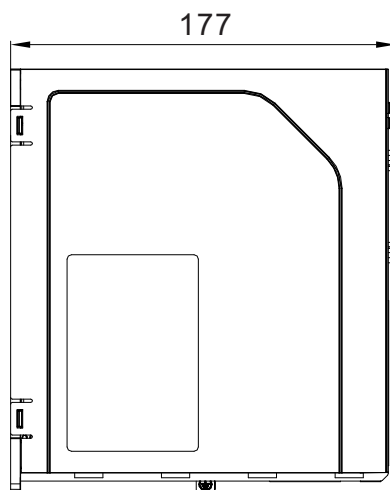
### SIZE-B (S:Single phase 220V)

MZ870APS5R5I  
MZ870APS7R6I  
MZ870BPS5R5I  
MZ870BPS7R6I  
MZ870EPS5R5I  
MZ870EPS7R6I



### SIZE-C (A: Three phase 110V S: Three phase 220V T: Three phase 380V)

MZ870APS012I  
MZ870APS018I  
MZ870APT3R5I  
MZ870APT5R4I  
MZ870APT8R4I  
MZ870APT012I  
MZ870BPS012I  
MZ870BPS018I



# MZ870N Series Servo Drive



## Name Rule

MZ870 A N S 5R5 I - ★★

① ② ③ ④ ⑤ ⑥ ⑦

|                                              |                                                                                         |                                                                                                                            |
|----------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| ① Product series<br>MZ870 Series Servo Drive | ④ Voltage level<br>S: 220V T: 380V                                                      | ⑤ Rated output current<br>S: 220V 1R6:1.6A<br>2R8: 2.8A<br>5R5: 5.5A<br>7R6: 7.6A<br>012: 12.0A<br>018: 18.0A<br>T: 380V — |
| ② Subdivision series<br>A/B                  | ⑥ Installation Method<br>I: Substrate Installation                                      |                                                                                                                            |
| ③ Product Category<br>N: EtherCAT Bus Type   | ⑦ Model Description<br>Marking: Non-standard specification<br>Vacancy: Standard machine |                                                                                                                            |

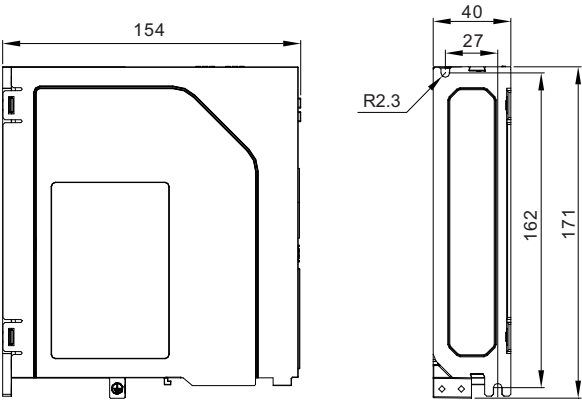
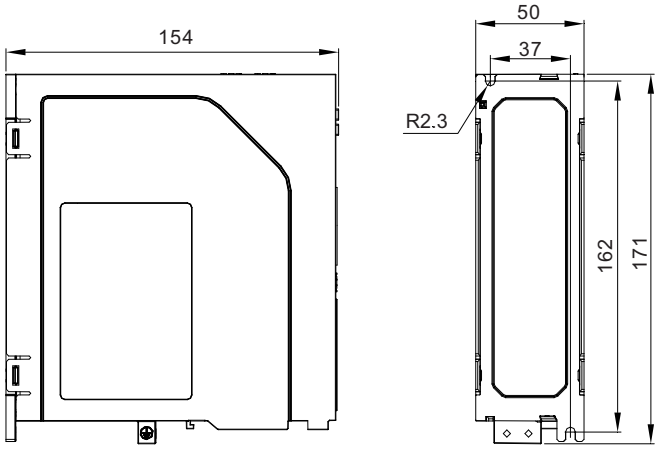
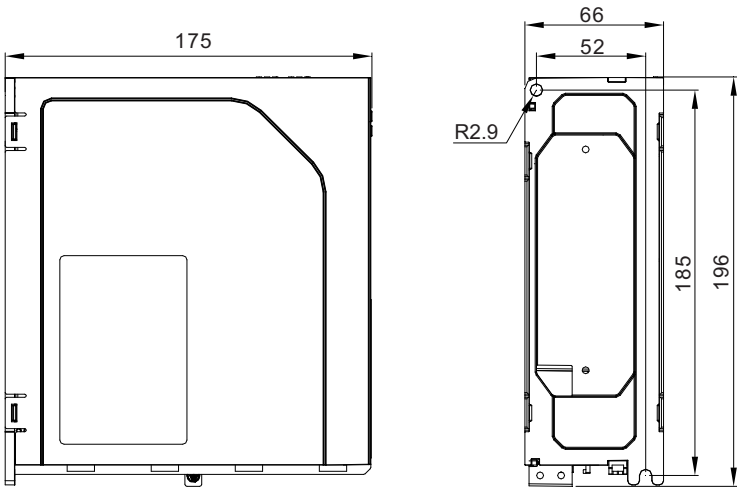
## Product Characteristic

| Type        | Series | Characteristic                                                                                                                           |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------|
| Servo drive | MZ870N | <b>Quickly</b>                                                                                                                           |
|             |        | 0 1.2kHz Corresponding bandwidth of speed loop                                                                                           |
|             |        | <b>Versatility</b>                                                                                                                       |
|             |        | 0 It supports multiple control modes, dynamic braking function (220V), and has STO function, meeting different application requirements. |
|             |        | <b>Convenient</b>                                                                                                                        |
|             |        | 0 Wiring is simple and convenient      0 One-touch adjustment                                                                            |
|             |        | 0 Eliminate limit and origin      0 Easy to replace encoder battery                                                                      |
|             |        | <b>Precise</b>                                                                                                                           |
|             |        | 0 The encoder resolution reaches 23bit                                                                                                   |
|             |        | <b>Strong adaptability to the environment</b>                                                                                            |
|             |        | 0 Meet safety standards                                                                                                                  |
|             |        | 0 The motor reaches a higher waterproof level                                                                                            |
|             |        | 0 Safe and reliable to use, Wiring is simple and convenient                                                                              |

## Servo drive specifications

| Item                            |                                              | SIZE A                                     |                                                                                                                                                                                                                      | SIZE B                  |      | SIZE C                  |      |      |      |      |      |
|---------------------------------|----------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------|-------------------------|------|------|------|------|------|
| Model Type                      |                                              | S1R6                                       | S2R8                                                                                                                                                                                                                 | S5R5                    | S7R6 | S012                    | S018 | T3R5 | T5R4 | T8R4 | T012 |
| Rated output current            |                                              | 1.6A                                       | 2.8A                                                                                                                                                                                                                 | 5.5A                    | 7.6A | 12A                     | 18A  | 3.5A | 5.4A | 8.4A | 12A  |
| Outlook                         | A(mm)                                        | 27                                         |                                                                                                                                                                                                                      | 37                      |      | 52                      |      |      |      |      |      |
|                                 | B(mm)                                        | 162                                        |                                                                                                                                                                                                                      | 162                     |      | 185                     |      |      |      |      |      |
|                                 | W(mm)                                        | 154                                        |                                                                                                                                                                                                                      | 154                     |      | 175                     |      |      |      |      |      |
|                                 | H(mm)                                        | 171                                        |                                                                                                                                                                                                                      | 171                     |      | 196                     |      |      |      |      |      |
|                                 | D(mm)                                        | 40                                         |                                                                                                                                                                                                                      | 50                      |      | 66                      |      |      |      |      |      |
|                                 | R(mm)                                        | 2.3                                        |                                                                                                                                                                                                                      | 2.3                     |      | 2.9                     |      |      |      |      |      |
|                                 | Weight(kg)                                   | 0.8                                        |                                                                                                                                                                                                                      | 0.9                     |      | 1.5                     |      |      |      |      |      |
|                                 | Input Power(-15%~10%, 50/60Hz)               | Single phase AC200V-240V                   |                                                                                                                                                                                                                      | Three phase AC200V-240V |      | Three phase AC380V-440V |      |      |      |      |      |
| Basic information               | Control mode                                 |                                            | IGBT PWM control, sinusoidal current drive mode                                                                                                                                                                      |                         |      |                         |      |      |      |      |      |
|                                 | Encoder feedback                             |                                            | 17-bit and 23-bit bus-type absolute encoders                                                                                                                                                                         |                         |      |                         |      |      |      |      |      |
|                                 | Conditions of Use                            | Operating / Storage Temperature            | 0 ~ +55°C (When the ambient temperature is between 45°C and 55°C , the average load rate should not exceed 80%.) (Non-freezing) / -20°C ~ +70°C                                                                      |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Operating / Storage Humidity               | Below 90% RH (no condensation allowed)                                                                                                                                                                               |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Vibration resistance / Impact strength     | 4.9m/s² / 19.6m/s²                                                                                                                                                                                                   |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Degree of protection                       | IP20                                                                                                                                                                                                                 |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Altitude                                   | Below 1,000 meters                                                                                                                                                                                                   |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Environmental pollution level              | PD2                                                                                                                                                                                                                  |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Overvoltage level                          | OVCIII                                                                                                                                                                                                               |                         |      |                         |      |      |      |      |      |
| EtherCAT Station specifications | EEtherCAT Basic performance of slave station | Communication protocol                     | EtherCAT Protocol                                                                                                                                                                                                    |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Support services                           | CoE(PDO、SDO)                                                                                                                                                                                                         |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Synchronous mode                           | DC - Distributed Clock                                                                                                                                                                                               |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Physical layer                             | 100BASE-TX                                                                                                                                                                                                           |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Baud rate                                  | 100Nbit/s(100Base-TX)                                                                                                                                                                                                |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Duplex mode                                | Full duplex                                                                                                                                                                                                          |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Topological structure                      | Circular, linear                                                                                                                                                                                                     |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Transmission medium                        | Shielded Cat 5e or better network cable                                                                                                                                                                              |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Transmission distance                      | Less than 100M between two nodes (in a good environment with high-quality cables)                                                                                                                                    |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Slave station number                       | The protocol supports up to 65,535 devices, but in actual use, no more than 100 devices are employed.                                                                                                                |                         |      |                         |      |      |      |      |      |
|                                 |                                              | EtherCAT frame length                      | 44 bytes to 1498 bytes                                                                                                                                                                                               |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Process data                               | The maximum size of a single Ethernet frame is 1,486 bytes.                                                                                                                                                          |                         |      |                         |      |      |      |      |      |
|                                 |                                              | The synchronization jitter of two stations | <1us                                                                                                                                                                                                                 |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Refresh time                               | Approximately 30 microseconds for 1000 digital input/output signals and about 100 microseconds for 100 servo axes.                                                                                                   |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Communication bit error rate               | 10 <sup>-10</sup> Ethernet standard                                                                                                                                                                                  |                         |      |                         |      |      |      |      |      |
|                                 | EtherCAT configuration unit                  | FMMU unit                                  | Eight                                                                                                                                                                                                                |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Storage Synchronization Management Unit    | Eight                                                                                                                                                                                                                |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Process data RAM                           | 8KB                                                                                                                                                                                                                  |                         |      |                         |      |      |      |      |      |
|                                 |                                              | Distributed clock                          | 64-bit                                                                                                                                                                                                               |                         |      |                         |      |      |      |      |      |
|                                 |                                              | EEPROM capacity                            | 32Kbit                                                                                                                                                                                                               |                         |      |                         |      |      |      |      |      |
| Build-in function               | Overtravel (OT) prevention function          |                                            | Immediately stop when P-OT and N-OT actions occur.                                                                                                                                                                   |                         |      |                         |      |      |      |      |      |
|                                 | Electronic gear ratio                        |                                            | 1~8388608/1-8388608                                                                                                                                                                                                  |                         |      |                         |      |      |      |      |      |
|                                 | Protective function                          |                                            | Overcurrent, overvoltage, undervoltage, overload, abnormal main circuit detection, overheated radiator, missing phase in power supply, overspeed, encoder abnormality,CPU abnormality, parameter abnormality, others |                         |      |                         |      |      |      |      |      |
|                                 | LED display function                         |                                            | Main power supply CHARGE, 5-digit LED display                                                                                                                                                                        |                         |      |                         |      |      |      |      |      |
|                                 | Back-end debugging                           |                                            | Type_C                                                                                                                                                                                                               |                         |      |                         |      |      |      |      |      |
|                                 | Dynamic braking function                     |                                            | Only A model 220V includes this function                                                                                                                                                                             |                         |      |                         |      |      |      |      |      |
|                                 | Others                                       |                                            | Gain adjustment, alarm record, JOG operation                                                                                                                                                                         |                         |      |                         |      |      |      |      |      |

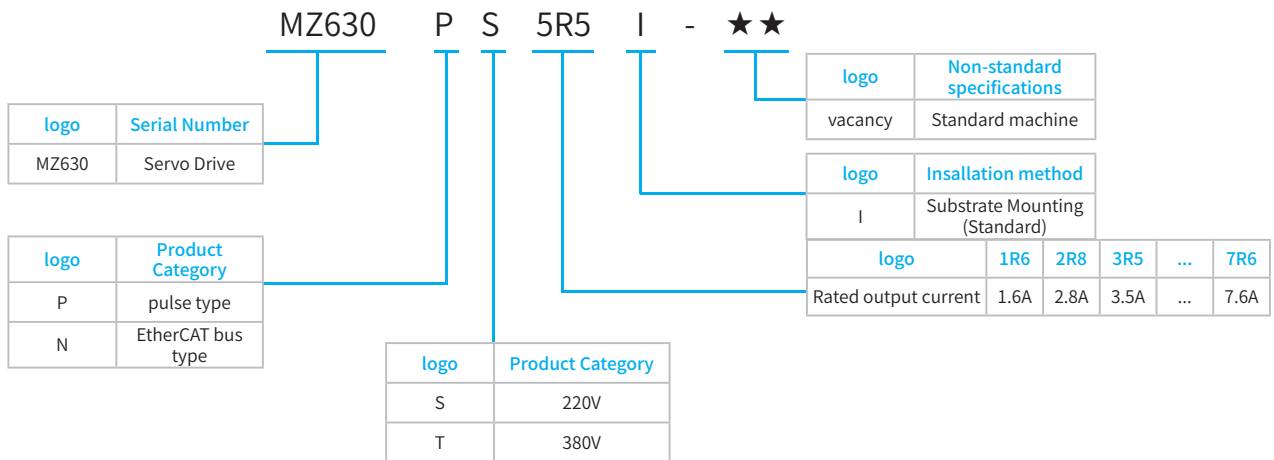
## Servo drive installation dimensions

|                                                                                                                                                                                                                                                                                                               |                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <p>SIZE-A<br/>(S:Single phase220V)</p> <p>MZ870ANS1R6I</p> <p>MZ870ANS2R8I</p> <p>MZ870BNS1R6I</p> <p>MZ870BNS2R8I</p>                                                                                                                                                                                        |    |
| <p>SIZE-B<br/>(S:Single phase 220V)</p> <p>MZ870ANS5R5I</p> <p>MZ870ANS7R6I</p> <p>MZ870BNS5R5I</p> <p>MZ870BNS7R6I</p>                                                                                                                                                                                       |   |
| <p>SIZE-C<br/>(S:Three phase 220V<br/>T:Three phase 380V)</p> <p>MZ870ANS012I</p> <p>MZ870ANS018I</p> <p>MZ870ANT3R5I</p> <p>MZ870ANT5R4I</p> <p>MZ870ANT8R4I</p> <p>MZ870ANT012I</p> <p>MZ870BNS012I</p> <p>MZ870BNS018I</p> <p>MZ870BNT3R5I</p> <p>MZ870BNT5R4I</p> <p>MZ870BNT8R4I</p> <p>MZ870BNT012I</p> |  |

# MZ630P Series Servo Drive



## Name Rule



## Product Characteristic

| Type        | Series | Characteristic                                                            |
|-------------|--------|---------------------------------------------------------------------------|
| Servo drive | MZ630P | Quickly                                                                   |
|             |        | 0 3.0kHz Corresponding bandwidth of speed loop                            |
|             |        | Convenient                                                                |
|             |        | 0 Wiring is simple and convenient      0 Eliminate limit and origin       |
|             |        | 0 One-touch adjustment                  0 Easy to replace encoder battery |
|             |        | Precise                                                                   |
|             |        | 0 The encoder resolution reaches 17bit                                    |
|             |        | Strong adaptability to the environment                                    |
|             |        | 0 Meet safety standards                                                   |
|             |        | 0 The motor reaches a higher waterproof level                             |
|             |        | 0 Safe and reliable to use, Wiring is simple and convenient               |

## MZ630P Servo System Wiring connection

### Circuit breaker for wiring

Used to protect the power line and cut off the circuit if over current.

### Noise filter

Install a noise filter to prevent external noise.

### Electromagnetic contactor

Turns on/off servo power .  
Please install a surge suppressor.

### Electromagnetic contactor

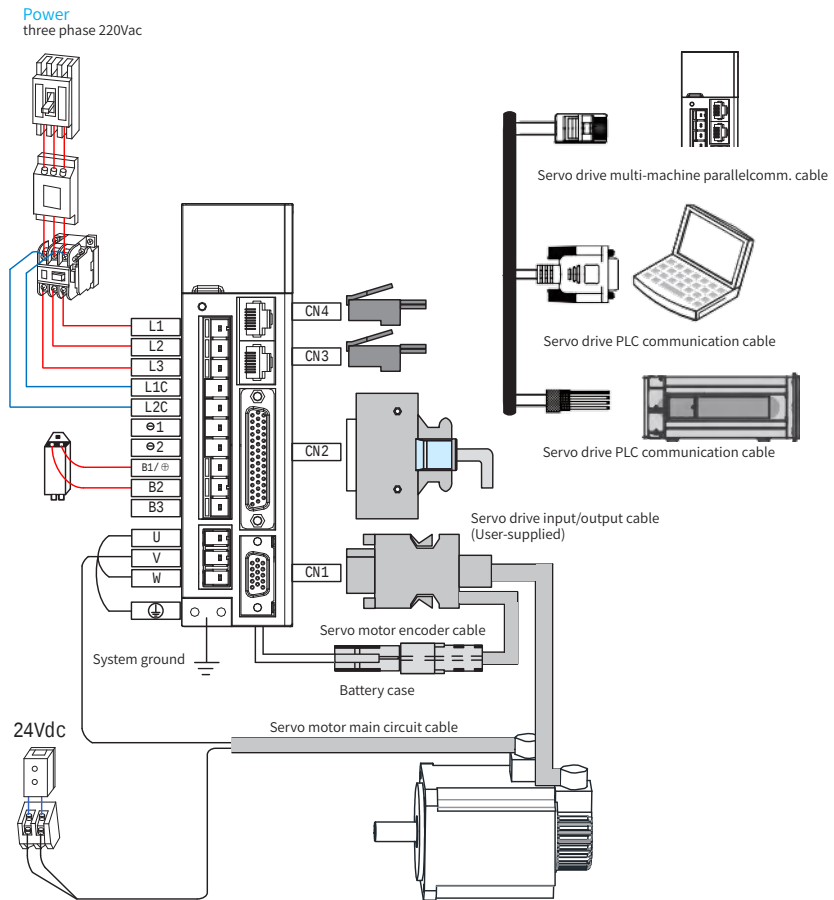
Use external resistor,remove the B2 and B3 tabs, connect the braking resistor between B1+ and B2;use an internal braking,short circuit B2 and B3.

### Brake power

24Vdc voltage source, used as the motor has a hol brake.

### Electromagnetic contactor

Brake control signal, turn on/off brake power.Install a surge suppressor.



Please pay attention to the power supply capacity when connecting external control power supply or 24Vdc power supply, especially when supplying power to several drives or multiple brakes at the same time, insufficient power supply capacity will lead to insufficient supply current and failure of the drive or the brake. The braking power supply is a 24V DC voltage source. The power should refer to the motor model and meet the braking power requirements.

System wiring precautions:

1. When connecting an external braking resistor, please remove the short-circuit wire between terminals B2 and B3 of the servo drive before connecting. Pay attention to modify the internal parameters.
2. CN3 and CN4 define exactly the same communication interface for the two pins, which can be used arbitrarily between the two.
3. In single-phase 220V wiring, the main circuit terminals are L1 and L2, and the reserved terminals should not be connected.

# MZ630P Series Servo Drive

## MZ630P Servo drive specifications

| Item                            |                              |                              |                                                                                                             | Specifications                                                                                                                                                                                |              |                  |         |         |                         |
|---------------------------------|------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------|---------|---------|-------------------------|
| Model Type MZ630PS □□□ I        |                              |                              |                                                                                                             | 1R6/2R8                                                                                                                                                                                       | 5R5          | 7R6/012/015/018  | 025/032 | 045     | 060/075                 |
| Rated output current            |                              |                              |                                                                                                             | 1.6A/2.8A                                                                                                                                                                                     | 5.5A         | 7.6A/12A/15A/18A | 25A/32A | 45A     | 60A/75A                 |
| outlook                         | A(mm)                        |                              |                                                                                                             | 32                                                                                                                                                                                            | 32           | 53               | 88      | 130     | 190                     |
|                                 | B(mm)                        |                              |                                                                                                             | 152                                                                                                                                                                                           | 152          | 152              | 248     | 352     | 447                     |
|                                 | W(mm)                        |                              |                                                                                                             | 152                                                                                                                                                                                           | 152          | 190              | 215     | 215     | 215                     |
|                                 | H(mm)                        |                              |                                                                                                             | 160                                                                                                                                                                                           | 160          | 160              | 258     | 368     | 463                     |
|                                 | D(mm)                        |                              |                                                                                                             | 42                                                                                                                                                                                            | 56           | 65               | 110     | 206     | 224                     |
|                                 | R(mm)                        |                              |                                                                                                             | 2.5                                                                                                                                                                                           | 2.5          | 2.5              | 2.8     | 3.5     | 3.5                     |
|                                 | Weight(kg)                   |                              |                                                                                                             | 0.8                                                                                                                                                                                           | 1.0          | 1.5              | 5.1     | 8.3     | 12                      |
|                                 | Input Power                  |                              |                                                                                                             | Single phase/ three phase                                                                                                                                                                     |              | Three phase      |         |         |                         |
| AC200V-240V,-15% ~ 10%, 50/60Hz |                              |                              |                                                                                                             |                                                                                                                                                                                               |              |                  |         |         |                         |
| Model Type MZ630PT □□□ I        |                              |                              |                                                                                                             | 3R5/5R4                                                                                                                                                                                       | 8R4/012/017  | 021/026/032      | 037/045 | 060/075 | 090/112/140/170/210     |
| Rated output current            |                              |                              |                                                                                                             | 3.5A/5.4A                                                                                                                                                                                     | 8.4A/12A/17A | 21A/26A/32A      | 37A/45A | 60A/75A | 90A/112A/140/A170A/210A |
| outlook                         | A(mm)                        |                              |                                                                                                             | 49                                                                                                                                                                                            | 70           | 88               | 130     | 190     | 200                     |
|                                 | B(mm)                        |                              |                                                                                                             | 162                                                                                                                                                                                           | 193          | 248              | 352     | 447     | 614                     |
|                                 | W(mm)                        |                              |                                                                                                             | 177                                                                                                                                                                                           | 204          | 215              | 215     | 215     | 310                     |
|                                 | H(mm)                        |                              |                                                                                                             | 174                                                                                                                                                                                           | 203          | 258              | 368     | 463     | 630                     |
|                                 | D(mm)                        |                              |                                                                                                             | 60                                                                                                                                                                                            | 92           | 110              | 206     | 224     | 278                     |
|                                 | R(mm)                        |                              |                                                                                                             | 2.5                                                                                                                                                                                           | 2.8          | 2.8              | 3.5     | 3.5     | 4.5                     |
|                                 | Weight(kg)                   |                              |                                                                                                             | 1.3                                                                                                                                                                                           | 2.7          | 5.1              | 8.3     | 12      | 39                      |
|                                 | Input Power                  |                              |                                                                                                             | Three phase AC380V-440V, -15%~ 10%, 50/ 60Hz                                                                                                                                                  |              |                  |         |         |                         |
| Basic information               | Environment                  | Temp °C                      | Use environment temperature                                                                                 | 0~+55°C (decrease if the ambient temperature is between 40°C and 50°C )                                                                                                                       |              |                  |         |         |                         |
|                                 |                              |                              | Storage environment temperature                                                                             | -20 ~ 65°C                                                                                                                                                                                    |              |                  |         |         |                         |
|                                 |                              | Humidity                     | Use environment humidity                                                                                    | 20~85% RH below(No condensation)                                                                                                                                                              |              |                  |         |         |                         |
|                                 |                              |                              | Storage environment humidity                                                                                | 20~85% RH below(No condensation)                                                                                                                                                              |              |                  |         |         |                         |
|                                 |                              | Use and preserve ambient air |                                                                                                             | indoor(no sunshine)、No corrosive gas, flammable gas, oil mist, dust                                                                                                                           |              |                  |         |         |                         |
|                                 |                              | altitude                     |                                                                                                             | Below 1000m                                                                                                                                                                                   |              |                  |         |         |                         |
|                                 |                              | vibration                    |                                                                                                             | 5.8m/s2(0.6G)below 10~60Hz(Can not be used continuously at resonance frequency)                                                                                                               |              |                  |         |         |                         |
|                                 | Insulation withstand voltage |                              |                                                                                                             | Basic-FG between AC1500V 1min                                                                                                                                                                 |              |                  |         |         |                         |
|                                 | Control way                  |                              |                                                                                                             | IGBT PWM control, sine wave current drive mode                                                                                                                                                |              |                  |         |         |                         |
|                                 | Encoder feedback             |                              |                                                                                                             | 1: 17bit (after adding a battery, it can be used as a multi-turn absolute encoder)<br>2: 23bit (after adding a battery, it can be used as a multi-turn absolute encoder)<br>3: rotary encoder |              |                  |         |         |                         |
|                                 | Control signal               | Input                        | 9 inputs (DC24V optocoupler isolation) switch according to the control mode function                        |                                                                                                                                                                                               |              |                  |         |         |                         |
|                                 |                              | Output                       | 5 output (DC24V optocoupler isolation, open collector output) switch according to the control mode function |                                                                                                                                                                                               |              |                  |         |         |                         |
|                                 | Pulse signal                 | Input                        | 2 inputs (optocoupler isolation, RS-422 differential, open collector output)                                |                                                                                                                                                                                               |              |                  |         |         |                         |
|                                 |                              | Output                       | 4 outputs (A/B/Z phase RS-422 differential; Z phase open collector output)                                  |                                                                                                                                                                                               |              |                  |         |         |                         |
|                                 | Comm. function               | RS232                        | For PC communication (for "Servostudio" connection)                                                         |                                                                                                                                                                                               |              |                  |         |         |                         |
|                                 |                              | RS-485                       | For upper remote control communication (1:n)                                                                |                                                                                                                                                                                               |              |                  |         |         |                         |
|                                 |                              | CAN                          | CANOPEN bus communication                                                                                   |                                                                                                                                                                                               |              |                  |         |         |                         |
| Regeneration function           |                              |                              |                                                                                                             | Optional regenerative resistor, external regenerative resistor. Pay attention to modify internal parameters                                                                                   |              |                  |         |         |                         |
| Control model                   |                              |                              |                                                                                                             | 6 control modes: speed control, position control, torque control, torque/speed control, speed/position control, torque/position, torque/speed/position hybrid control                         |              |                  |         |         |                         |

 **MZ630P Servo drive specifications**

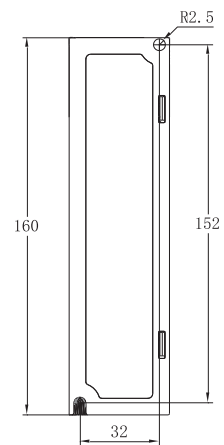
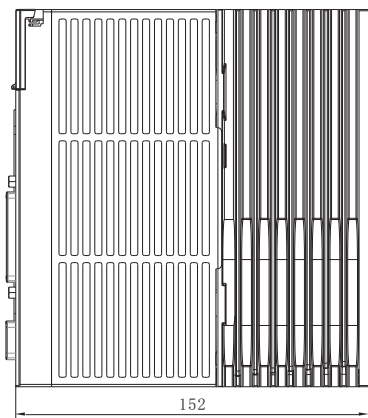
| Item     |                  |                                                                       | Specifications                                                                                                                                                                                                                                                                                                                                     |
|----------|------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function | Control input    |                                                                       | Alarm reset, proportional action switching, zero fixed function enable, forward drive prohibited, reverse drive prohibited, external torque limit for forward rotation, external torque limit for reverse rotation, forward jog, reverse jog, forward Reset switch, reverse reset switch, origin switch, emergency stop, servo enable, gain switch |
|          | Control output   |                                                                       | Servo ready, motor rotating, zero speed signal, speed reached, position reached, positioning approach signal, torque limit, speed limit, brake output, warning, servo failure, alarm code (3-digit output)                                                                                                                                         |
|          | Position control | Maximum command pulse frequency                                       | Differential input: high-speed maximum 4Mpps, pulse width cannot be less than 0.125μs<br>The maximum low speed is 500Kpps, and the pulse width cannot be less than 1μs<br>Open collector: maximum 200Kpps, pulse width cannot be less than 2.5μs                                                                                                   |
|          |                  | Input pulse signal form                                               | Differential input; open collector                                                                                                                                                                                                                                                                                                                 |
|          |                  | Input pulse signal method                                             | Pulse + direction, right angle phase difference (A phase + B phase), CW + CCW pulse                                                                                                                                                                                                                                                                |
|          |                  | Command pulse division/multiplication (Electronic gear ratio setting) | 1~8388608/1~8388608                                                                                                                                                                                                                                                                                                                                |
|          |                  | Command filter                                                        | Smoothing filter, FIR filter                                                                                                                                                                                                                                                                                                                       |
|          |                  | Pulse output                                                          | Output pulse form                                                                                                                                                                                                                                                                                                                                  |
|          |                  |                                                                       | Phase A, Phase B: Differential output<br>Z phase: differential output or open collector output                                                                                                                                                                                                                                                     |
|          |                  |                                                                       | Frequency division ratio                                                                                                                                                                                                                                                                                                                           |
|          |                  |                                                                       | Arbitrary frequency division                                                                                                                                                                                                                                                                                                                       |
|          |                  |                                                                       | Output pulse function                                                                                                                                                                                                                                                                                                                              |
|          |                  |                                                                       | Encoder position pulse and position pulse command (can be set)                                                                                                                                                                                                                                                                                     |
|          | Speed control    | Control input                                                         | Servo ON, alarm reset, speed command reverse, zero speed clamp, internal command selection input 1, internal command selection input 2, internal command selection input 3, internal command selection input 4, forward rotation external torque limit input, reverse rotation External torque limit input, emergency stop                         |
|          |                  | Control output                                                        | Alarm status, servo preparation, brake release, torque limit output, speed limit output speed reached, speed consistent, motor rotation output, zero-speed signal output                                                                                                                                                                           |
|          | Torque Control   | Control input                                                         | Servo ON, alarm reset, torque command reverse, zero speed clamp                                                                                                                                                                                                                                                                                    |
|          |                  | Control output                                                        | Alarm status, servo preparation, brake release, torque limit, speed limit output, emergency stop                                                                                                                                                                                                                                                   |
|          |                  | Torque command input                                                  | (Factory default setting, the range can be set by function code)                                                                                                                                                                                                                                                                                   |
|          |                  | Speed limit function                                                  | Positive and negative internal speed limit P03.27, P03.28                                                                                                                                                                                                                                                                                          |
|          | Common           | Speed observer function                                               | YES                                                                                                                                                                                                                                                                                                                                                |
|          |                  | Damping control function                                              | YES                                                                                                                                                                                                                                                                                                                                                |
|          |                  | Adaptive notch filter                                                 | YES                                                                                                                                                                                                                                                                                                                                                |
|          |                  | Automatic adjustment function                                         | YES                                                                                                                                                                                                                                                                                                                                                |
|          |                  | Encoder output frequency division                                     | YES                                                                                                                                                                                                                                                                                                                                                |
|          |                  | Internal location planning function                                   | YES                                                                                                                                                                                                                                                                                                                                                |
|          |                  | Adjustment/function setting                                           | Use the host computer setting software "Servo studio" to adjust                                                                                                                                                                                                                                                                                    |
|          |                  | Protection                                                            | Over voltage, abnormal power supply, over current, overload, abnormal encoder, over speed, excessive position deviation, abnormal parameters, etc.                                                                                                                                                                                                 |

# MZ630P Series Servo Drive

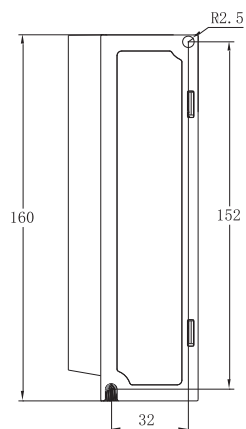
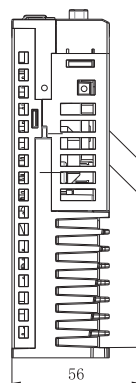
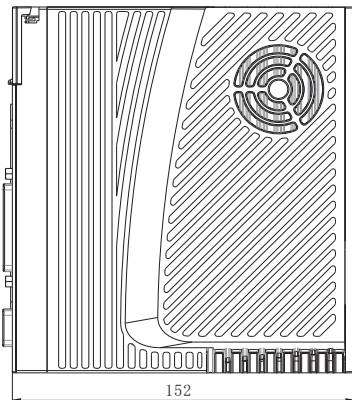
## Servo drive installation dimensions

MZ630PS1R6I

MZ630PS2R8I



MZ630PS5R5I

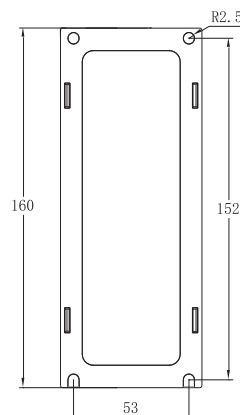
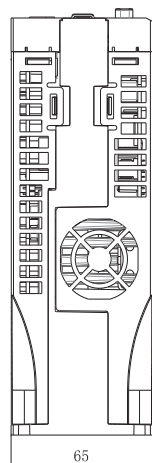
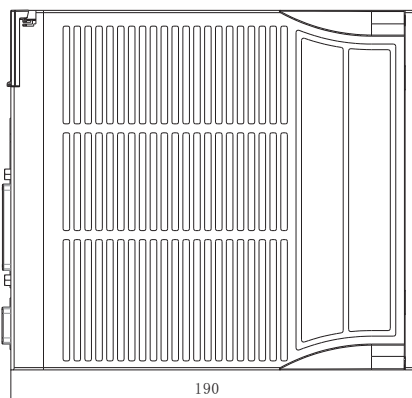


MZ630PS7R6I

MZ630PS012I

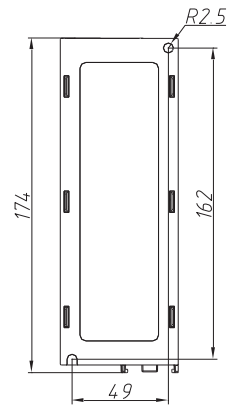
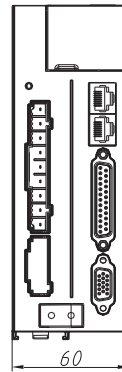
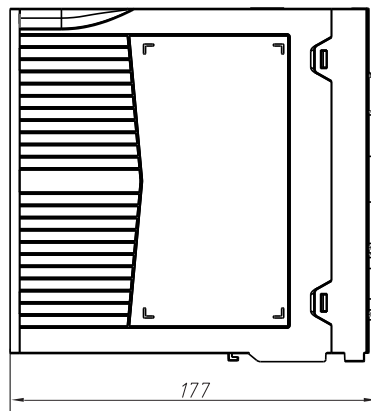
MZ630PS015I

MZ630PS018I



MZ630PT3R5I

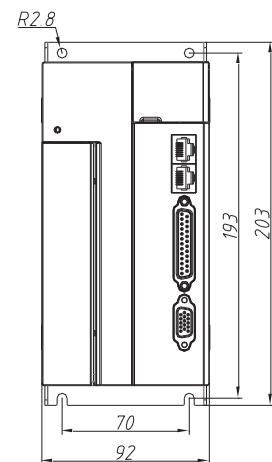
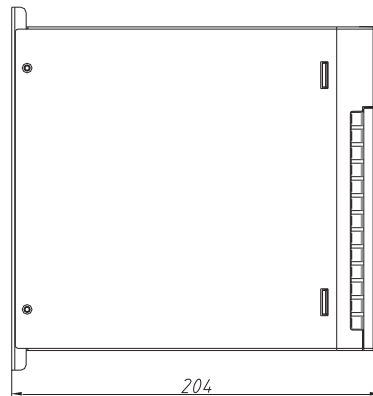
MZ630PT5R4I



MZ630PT8R4I

MZ630PT012I

MZ630PT017I



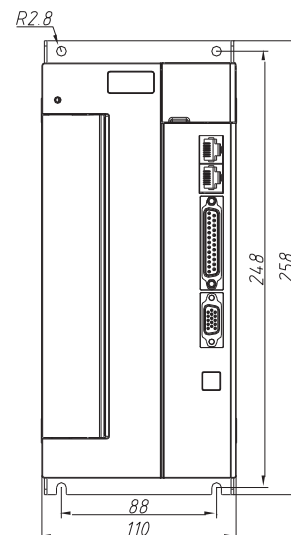
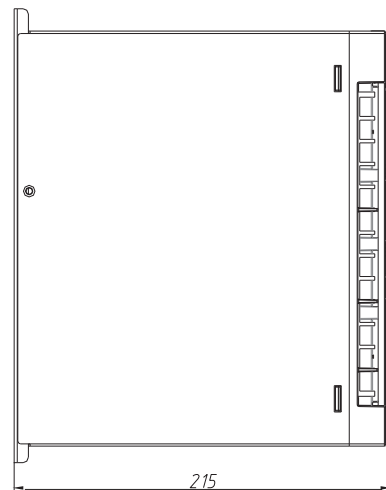
MZ630PS025I

MZ630PS032I

MZ630PT021I

MZ630PT026I

MZ630PT032I



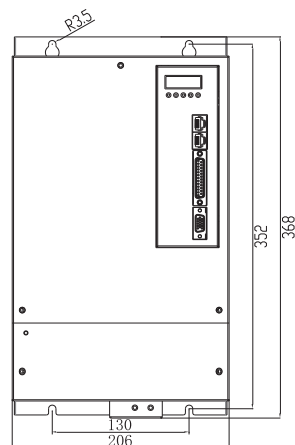
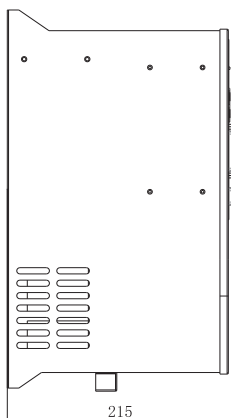
# MZ630P Series Servo Drive

## Servo drive installation dimensions

MZ630PS045I

MZ630PT037I

MZ630PT045I

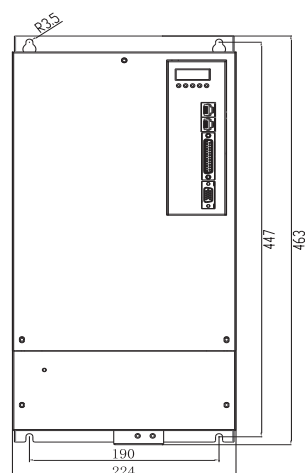
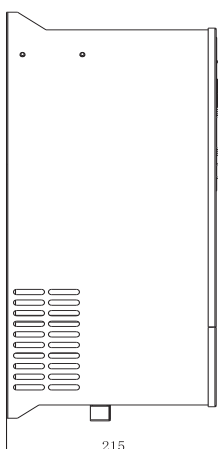


MZ630PS060I

MZ630PS075I

MZ630PT060I

MZ630PT075I



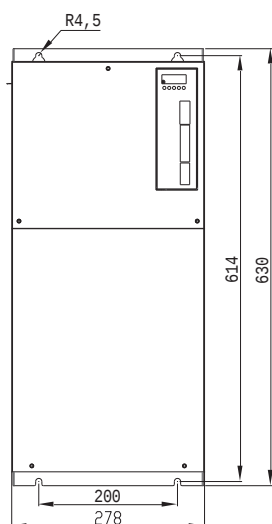
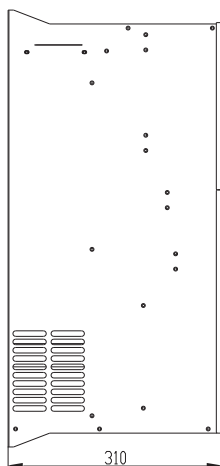
MZ630PT090I

MZ630PT112I

MZ630PT140I

MZ630PT170I

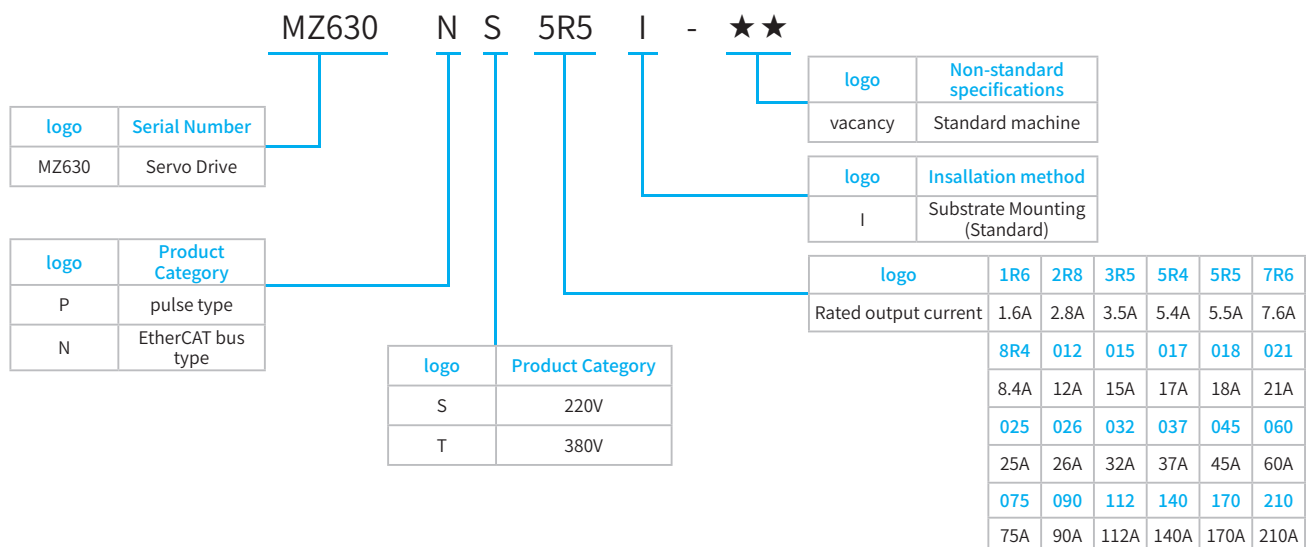
MZ630PT210I



# MZ630N Series Servo Drive



## Name Rule



## Product Characteristic

| Type        | Series | Characteristic                                                            |
|-------------|--------|---------------------------------------------------------------------------|
| Servo drive | MZ630N | Quickly                                                                   |
|             |        | 0 3.0kHz Corresponding bandwidth of speed loop                            |
|             |        | Convenient                                                                |
|             |        | 0 Wiring is simple and convenient      0 Eliminate limit and origin       |
|             |        | 0 One-touch adjustment                  0 Easy to replace encoder battery |
|             |        | Precise                                                                   |
|             |        | 0 The encoder resolution reaches 17/23bit                                 |
|             |        | Strong adaptability to the environment                                    |
|             |        | 0 Meet safety standards                                                   |
|             |        | 0 The motor reaches a higher waterproof level                             |
|             |        | 0 Safe and reliable to use, Wiring is simple and convenient               |


**MZ630N Servo drive specifications**

| Item                             |                                             |                                          | Specifications                                                                                                                    |              |                  |         |         |                         |
|----------------------------------|---------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------|------------------|---------|---------|-------------------------|
| Model Type MZ630NS □□□ I         |                                             |                                          | 1R6/2R8                                                                                                                           | 5R5          | 7R6/012/015/018  | 025/032 | 045     | 060/075                 |
| Rated output current             |                                             |                                          | 1.6A/2.8A                                                                                                                         | 5.5A         | 7.6A/12A/15A/18A | 25A/32A | 45A     | 60A/75A                 |
|                                  | A(mm)                                       |                                          | 32                                                                                                                                | 32           | 53               | 88      | 130     | 190                     |
|                                  | B(mm)                                       |                                          | 152                                                                                                                               | 152          | 152              | 248     | 352     | 447                     |
|                                  | W(mm)                                       |                                          | 152                                                                                                                               | 152          | 190              | 215     | 215     | 215                     |
|                                  | H(mm)                                       |                                          | 160                                                                                                                               | 160          | 160              | 258     | 368     | 463                     |
|                                  | D(mm)                                       |                                          | 42                                                                                                                                | 56           | 65               | 110     | 206     | 224                     |
|                                  | R(mm)                                       |                                          | 2.5                                                                                                                               | 2.5          | 2.5              | 2.8     | 3.5     | 3.5                     |
|                                  | Weight(kg)                                  |                                          | 0.8                                                                                                                               | 1.0          | 1.5              | 5.1     | 8.3     | 12                      |
|                                  | Input Power                                 |                                          | Single phase/ three phase                                                                                                         |              | Three phase      |         |         |                         |
| AC200V-240V, -15%~ 10%, 50/ 60Hz |                                             |                                          |                                                                                                                                   |              |                  |         |         |                         |
| Model Type MZ630NT □□□ I         |                                             |                                          | 3R5/5R4                                                                                                                           | 8R4/012/017  | 021/026/032      | 037/045 | 060/075 | 090/112/140/170/210     |
| Rated output current             |                                             |                                          | 3.5A/5.4A                                                                                                                         | 8.4A/12A/17A | 21A/26A/32A      | 37A/45A | 60A/75A | 90A/112A/140A/170A/210A |
|                                  | A(mm)                                       |                                          | 49                                                                                                                                | 70           | 88               | 130     | 190     | 200                     |
|                                  | B(mm)                                       |                                          | 162                                                                                                                               | 193          | 248              | 352     | 447     | 614                     |
|                                  | W(mm)                                       |                                          | 177                                                                                                                               | 204          | 215              | 215     | 215     | 310                     |
|                                  | H(mm)                                       |                                          | 174                                                                                                                               | 203          | 258              | 368     | 463     | 630                     |
|                                  | D(mm)                                       |                                          | 60                                                                                                                                | 92           | 110              | 206     | 224     | 278                     |
|                                  | R(mm)                                       |                                          | 2.5                                                                                                                               | 2.8          | 2.8              | 3.5     | 3.5     | 4.5                     |
|                                  | Weight(kg)                                  |                                          | 1.3                                                                                                                               | 2.7          | 5.1              | 8.3     | 12      | 39                      |
|                                  | Input Power                                 |                                          | Three phase AC380V-440V, -15%~ 10%, 50/ 60Hz                                                                                      |              |                  |         |         |                         |
| Basic information                | Control mode                                |                                          | IGBT PWM control, sine wave current drive mode<br>220V, 380V: single-phase or three-phase full-wave rectification                 |              |                  |         |         |                         |
|                                  | Encoder feedback                            |                                          | 17/23bit bus absolute value encoder                                                                                               |              |                  |         |         |                         |
|                                  | Service conditions                          | Use/storage temperature                  | 0~+45 °C (please derate if the ambient temperature is above 45°C , and the average load rate cannot be higher than 80%)/-40~+70°C |              |                  |         |         |                         |
|                                  |                                             | Use/storage humidity                     | 90%RH below(No condensation)                                                                                                      |              |                  |         |         |                         |
|                                  |                                             | Vibration/impact resistance              | 4.9m/s² / 19. 6m/s²                                                                                                               |              |                  |         |         |                         |
|                                  |                                             | Protection level                         | IP10                                                                                                                              |              |                  |         |         |                         |
|                                  |                                             | Altitude                                 | Below 1000m                                                                                                                       |              |                  |         |         |                         |
|                                  |                                             | Environmental pollution level            | PD2                                                                                                                               |              |                  |         |         |                         |
| Overvoltage level                |                                             | OVCIII                                   |                                                                                                                                   |              |                  |         |         |                         |
| EtherCAT slave specifications    | EtherCAT Basic performance of slave station | communication protocol                   | EtherCAT protocol                                                                                                                 |              |                  |         |         |                         |
|                                  |                                             | Support Services                         | CoE (PDO、SDO)                                                                                                                     |              |                  |         |         |                         |
|                                  |                                             | Synchronization mode                     | DC-Distributed clock                                                                                                              |              |                  |         |         |                         |
|                                  |                                             | Physical layer                           | 100BASE-TX                                                                                                                        |              |                  |         |         |                         |
|                                  |                                             | Baud rate                                | 100Mbit/s (100Base-TX)                                                                                                            |              |                  |         |         |                         |
|                                  |                                             | Duplex mode                              | full duplex                                                                                                                       |              |                  |         |         |                         |
|                                  |                                             | Topological structure                    | Circular, linear                                                                                                                  |              |                  |         |         |                         |
|                                  |                                             | Transmission medium                      | Shielded Cat 5 or better network cable                                                                                            |              |                  |         |         |                         |
|                                  |                                             | Number of slave stations                 | The protocol supports up to 65535, and the actual use is not more than 100                                                        |              |                  |         |         |                         |
|                                  |                                             | EtherCAT Frame length                    | 44 bytes~1498 bytes                                                                                                               |              |                  |         |         |                         |
|                                  |                                             | process data                             | 1486 bytes maximum for a single Ethernet frame                                                                                    |              |                  |         |         |                         |
|                                  |                                             | Synchronous jitter of two slave stations | < 1us                                                                                                                             |              |                  |         |         |                         |
|                                  |                                             | Refresh time                             | 1000 switch inputs and outputs about 30us; About 100us for 100 servo axes                                                         |              |                  |         |         |                         |
|                                  |                                             | Communication error rate                 | 10 <sup>-10</sup> Ethernet standard                                                                                               |              |                  |         |         |                         |
|                                  | EtherCAT Configuration unit                 | FMM Uunit                                | 8 个                                                                                                                               |              |                  |         |         |                         |
|                                  |                                             | Storage Synchronization Snap-in          | 8 个                                                                                                                               |              |                  |         |         |                         |
|                                  |                                             | Process data RAM                         | 8KB                                                                                                                               |              |                  |         |         |                         |
|                                  |                                             | Distributed clock                        | 64-bit                                                                                                                            |              |                  |         |         |                         |
|                                  |                                             | EEPROM volume                            | 32Kbit                                                                                                                            |              |                  |         |         |                         |

## MZ630N Servo System Wiring connection

### Circuit breaker for wiring

Used to protect the power line and cut off the circuit if over current.

### Noise filter

Install a noise filter to prevent external noise.

### Electromagnetic contactor

Turns on/off servo power .  
Please install a surge suppressor.

### Electromagnetic contactor

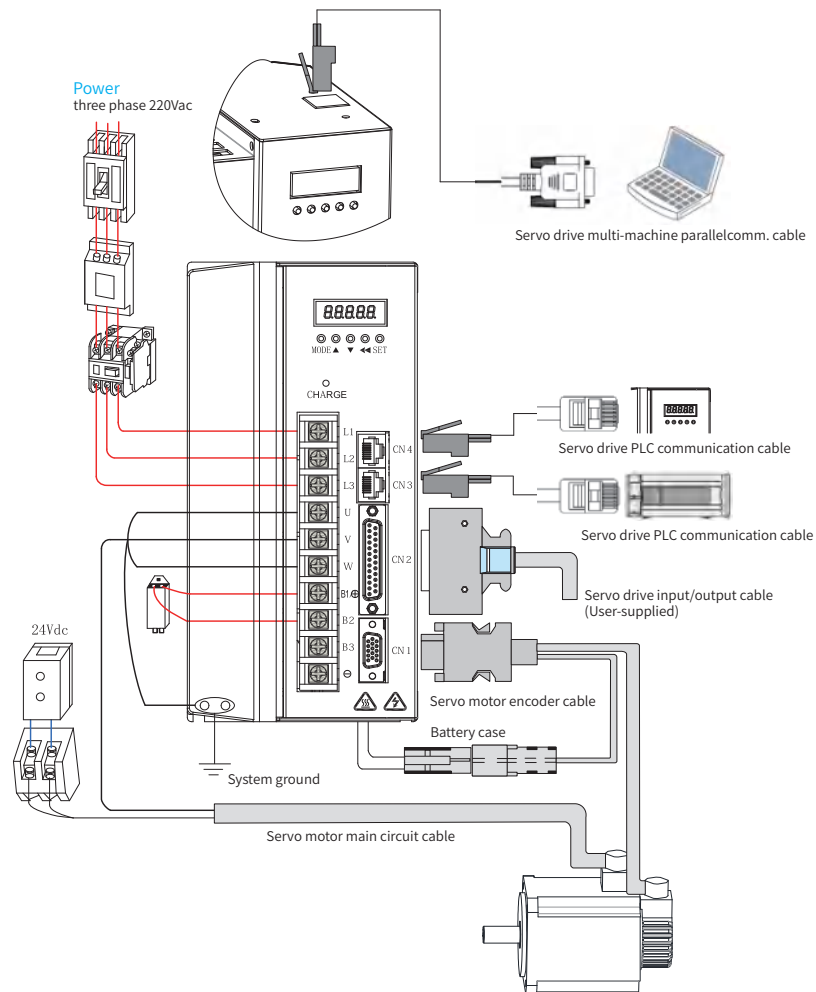
Use external resistor,remove the B2 and B3 tabs, connect the braking resistor between B1+ and B2;use an internal braking,short circuit B2 and B3.

### Brake power

24Vdc voltage source, used as the motor has a hol brake.

### Electromagnetic contactor

Brake control signal, turn on/off brake power.Install a surge suppressor.



Please pay attention to the power supply capacity when connecting external control power supply or 24Vdc power supply, especially when supplying power to several drives or multiple brakes at the same time, insufficient power supply capacity will lead to insufficient supply current and failure of the drive or the brake. The braking power supply is a 24V DC voltage source. The power should refer to the motor model and meet the braking power requirements.

System wiring precautions:

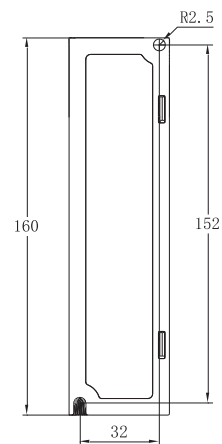
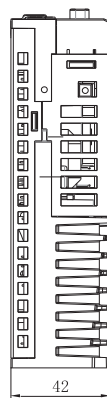
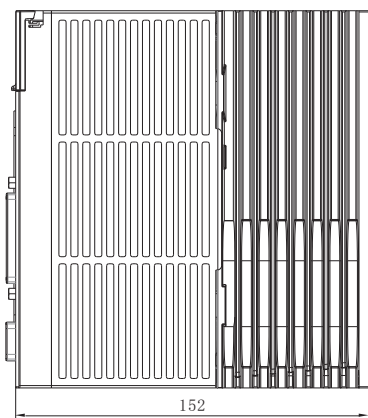
1. When connecting an external braking resistor, please remove the short-circuit wire between terminals B2 and B3 of the servo drive before connecting. Pay attention to modify the internal parameters.
2. CN3 and CN4 define exactly the same communication interface for the two pins, which can be used arbitrarily between the two.
3. In single-phase 220V wiring, the main circuit terminals are L1 and L2, and the reserved terminals should not be connected.

# MZ630N Series Servo Drive

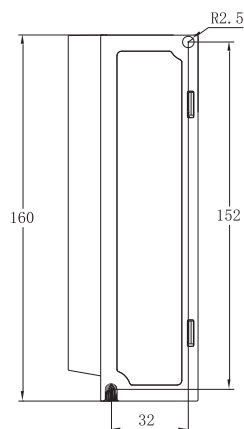
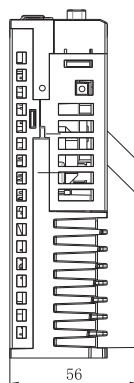
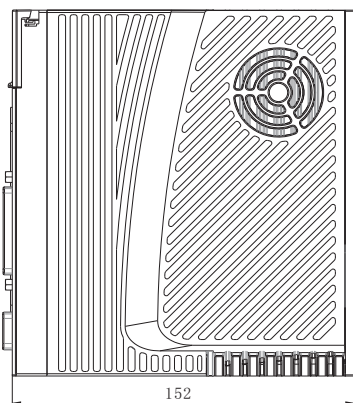
## Servo drive installation dimensions

MZ630NS1R6I

MZ630NS2R8I



MZ630NS5R5I

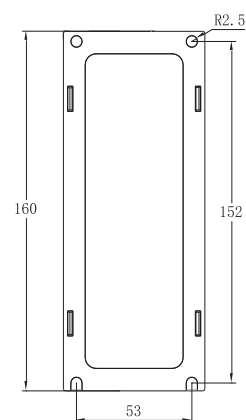
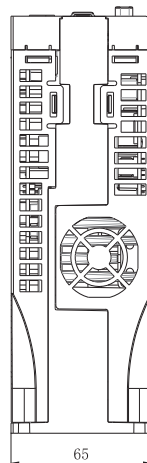
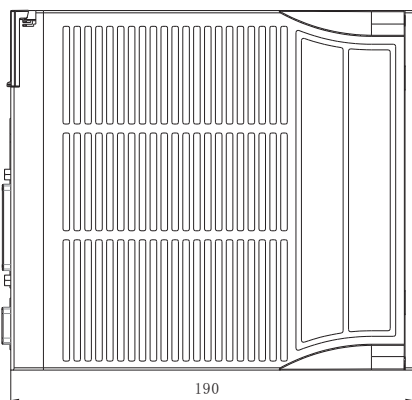


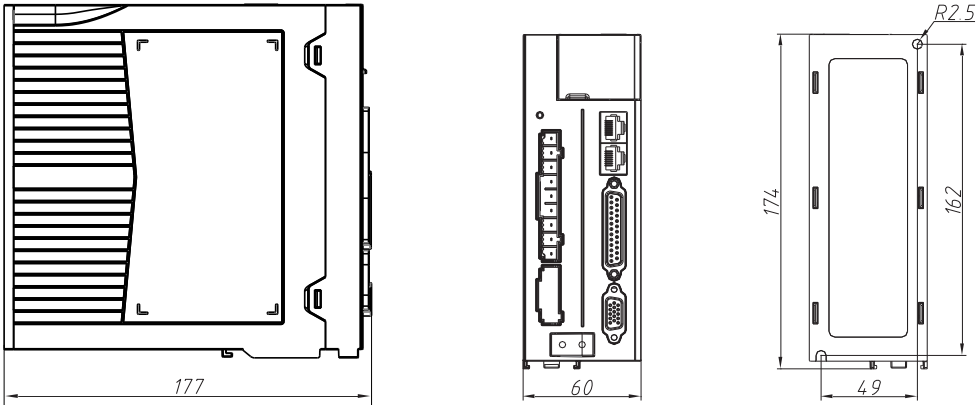
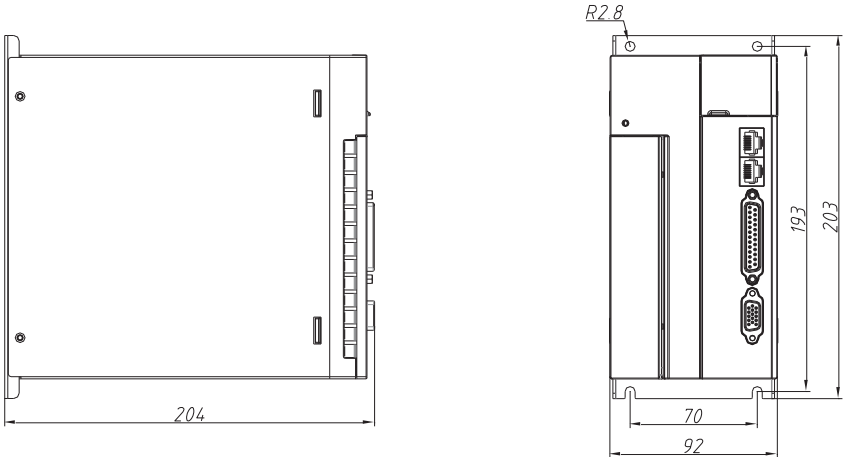
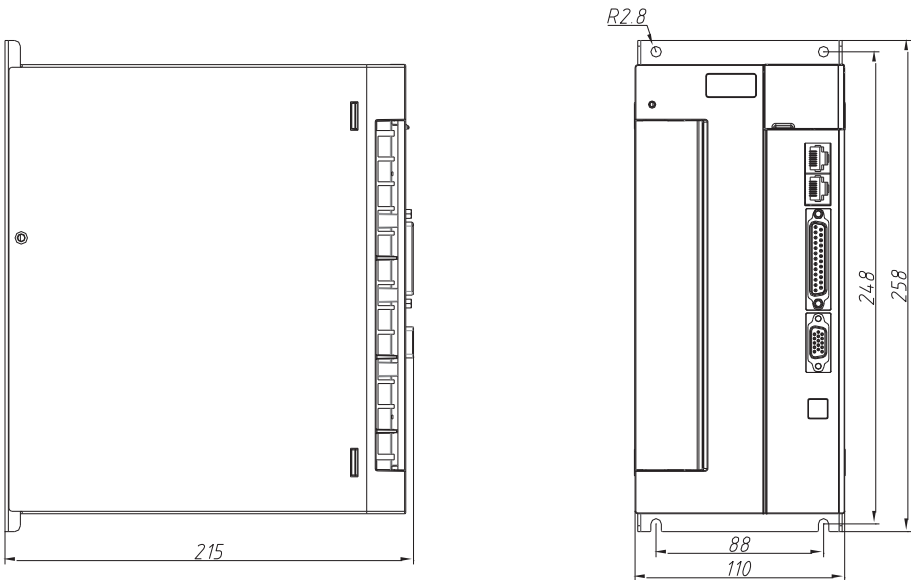
MZ630NS7R6I

MZ630NS012I

MZ630NS015I

MZ630NS018I



|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>MZ630NT3R5I</p> <p>MZ630NT5R4I</p>                                                          |  <p>Technical drawing showing three views of the MZ630NT3R5I and MZ630NT5R4I modules. The front view shows a width of 177. The side view shows a depth of 60. The top view shows a height of 174, a mounting hole offset of R2.5, and a base width of 49.</p>                                     |
| <p>MZ630NT8R4I</p> <p>MZ630NT012I</p> <p>MZ630NT017I</p>                                       |  <p>Technical drawing showing two views of the MZ630NT8R4I, MZ630NT012I, and MZ630NT017I modules. The front view shows a width of 204. The side view shows a height of 193, a total height of 203, a mounting hole offset of R2.8, and base widths of 70 and 92.</p>                             |
| <p>MZ630NS025I</p> <p>MZ630NS032I</p> <p>MZ630NT021I</p> <p>MZ630NT026I</p> <p>MZ630NT032I</p> |  <p>Technical drawing showing two views of the MZ630NS025I, MZ630NS032I, MZ630NT021I, MZ630NT026I, and MZ630NT032I modules. The front view shows a width of 215. The side view shows a height of 248, a total height of 258, a mounting hole offset of R2.8, and base widths of 88 and 110.</p> |

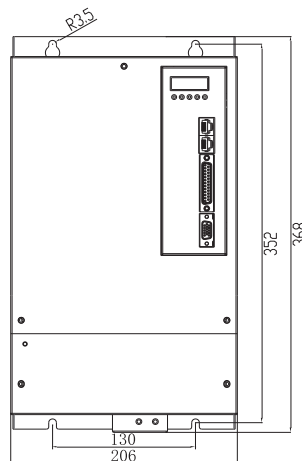
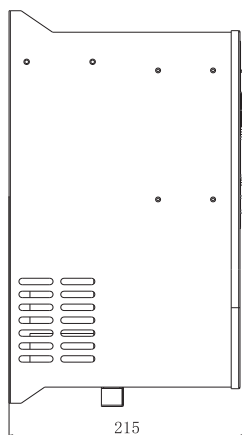
# MZ630N Series Servo Drive

## Servo drive installation dimensions

MZ630NS045I

MZ630NT037I

MZ630NT045I

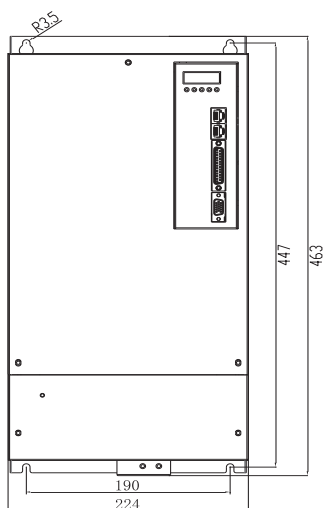
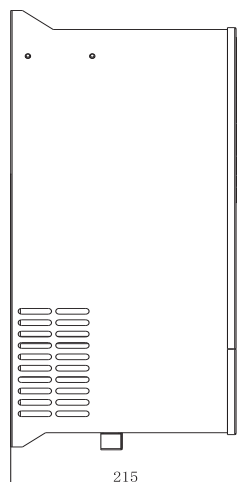


MZ630NS060I

MZ630NS075I

MZ630NT060I

MZ630NT075I



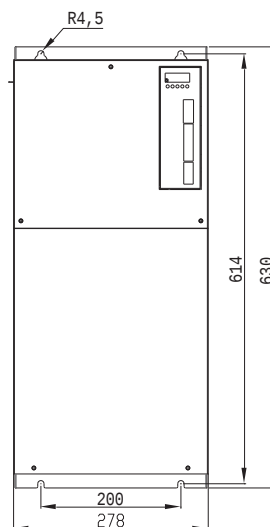
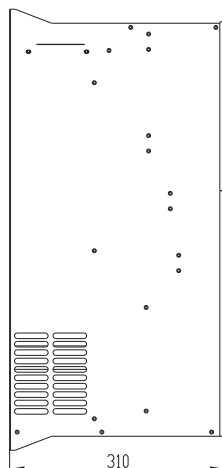
MZ630NT090I

MZ630NT112I

MZ630NT140I

MZ630NT170I

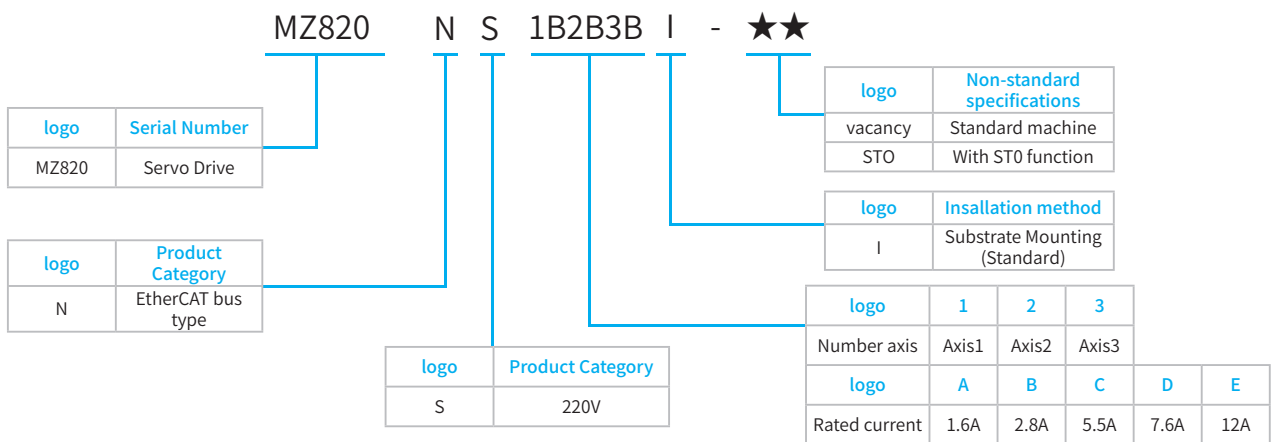
MZ630NT210I



# MZ820N Series Servo Drive



## Name Rule



## Product Characteristic

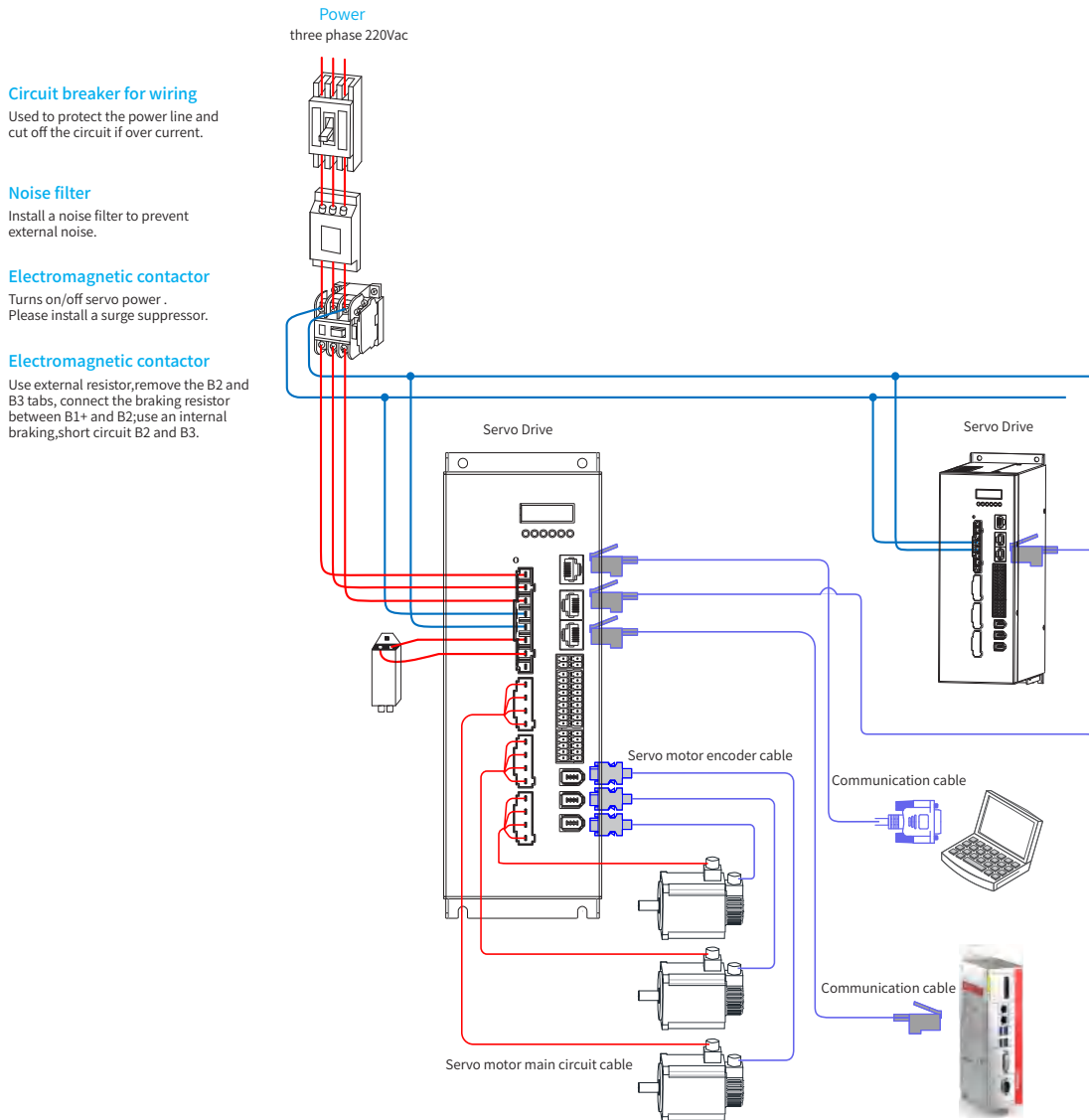
| Type        | Series | Characteristic                                                                |
|-------------|--------|-------------------------------------------------------------------------------|
| Servo drive | MZ820  | Quickly                                                                       |
|             |        | 0 3.0kHz Corresponding bandwidth of speed loop                                |
|             |        | Convenient                                                                    |
|             |        | 0 Wiring is simple and convenient      0 Eliminate limit and origin           |
|             |        | 0 One-touch adjustment                      0 Easy to replace encoder battery |
|             |        | Precise                                                                       |
|             |        | 0 The encoder resolution reaches 17/23bit                                     |
|             |        | Strong adaptability to the environment                                        |
|             |        | 0 Meet safety standards                                                       |
|             |        | 0 The motor reaches a higher waterproof level                                 |
|             |        | 0 Safe and reliable to use, Wiring is simple and convenient                   |

# MZ820N Series Servo Drive

## Servo drive specifications and dimensions

| Item                          |                                             |                                          | Specifications                                                                                                                                                                                                                                                 |
|-------------------------------|---------------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Basic information             | Control mode                                |                                          | IGBT PWM control, sine wave current drive mode<br>220V:three-phase full-wave rectification                                                                                                                                                                     |
|                               | Encoder feedback                            |                                          | 17bit、23bit                                                                                                                                                                                                                                                    |
|                               | Service conditions                          | Use/storage temperature                  | 0~+45 °C (please derate if the ambient temperature is above 45°C , and the average load rate cannot be higher than 80%)/-40~+70°C                                                                                                                              |
|                               |                                             | Use/storage humidity                     | 90%RH below(No condensation)                                                                                                                                                                                                                                   |
|                               |                                             | Vibration/impact resistance              | 4.9m/s <sup>2</sup> / 19. 6m/s <sup>2</sup>                                                                                                                                                                                                                    |
|                               |                                             | Protection level                         | IP10                                                                                                                                                                                                                                                           |
|                               |                                             | Altitude                                 | Below 1000m                                                                                                                                                                                                                                                    |
|                               |                                             | Environmental pollution level            | PD2                                                                                                                                                                                                                                                            |
| EtherCAT slave specifications | EtherCAT Basic performance of slave station | Overvoltage level                        | OVCIII                                                                                                                                                                                                                                                         |
|                               |                                             | Communication protocol                   | EtherCAT protocol                                                                                                                                                                                                                                              |
|                               |                                             | Support Services                         | CoE (PDO、 SDO)                                                                                                                                                                                                                                                 |
|                               |                                             | Synchronization mode                     | DC-Distributed clock                                                                                                                                                                                                                                           |
|                               |                                             | Physical layer                           | 100BASE-TX                                                                                                                                                                                                                                                     |
|                               |                                             | Baud rate                                | 100Mbit/s (100Base-TX)                                                                                                                                                                                                                                         |
|                               |                                             | Duplex mode                              | full duplex                                                                                                                                                                                                                                                    |
|                               |                                             | Topological structure                    | Circular, linear                                                                                                                                                                                                                                               |
|                               |                                             | Transmission medium                      | Shielded Cat 5 or better network cable                                                                                                                                                                                                                         |
|                               |                                             | Transmission distance                    | Transmission distance: less than 100M between two nodes (good environment, good cables)                                                                                                                                                                        |
|                               |                                             | Number of slave stations                 | The protocol supports up to 65535, and the actual use is not more than 100                                                                                                                                                                                     |
|                               |                                             | EtherCAT Frame length                    | 44 bytes~1498 bytes                                                                                                                                                                                                                                            |
|                               |                                             | Process data                             | 1486 bytes maximum for a single Ethernet frame                                                                                                                                                                                                                 |
|                               |                                             | Synchronous jitter of two slave stations | < 1us                                                                                                                                                                                                                                                          |
|                               |                                             | Refresh time                             | 1000 switch inputs and outputs about 30us; About 100us for 100 servo axes                                                                                                                                                                                      |
|                               |                                             | Communication error rate                 | 10 <sup>-10</sup> Ethernet standard                                                                                                                                                                                                                            |
|                               | EtherCAT Configuration unit                 | FMM Uunit                                | 8 个                                                                                                                                                                                                                                                            |
|                               |                                             | Storage Synchronization Snap-in          | 8 个                                                                                                                                                                                                                                                            |
|                               |                                             | Process data RAM                         | 8KB                                                                                                                                                                                                                                                            |
|                               |                                             | Distributed clock                        | 64-bit                                                                                                                                                                                                                                                         |
|                               |                                             | EEPROM volume                            | 32Kbit                                                                                                                                                                                                                                                         |
| Input and output signals      | Digital input signal                        | Signal assignment changes are possible   | 8DI<br>DI function<br>Alarm reset, gain switching, forward overtravel switch, reverse overtravel switch, positive external torque limit, negative external torque limit, forward jog, reverse jog, origin switch, position deviation clearing, probe selection |
|                               | Digital output signal                       | Signal assignment changes are possible   | 4DO<br>DO function<br>Prepare the servo drive, rotate the motor, complete the origin return and the electrical zero return, reach the torque and the speed.                                                                                                    |
| Built-in fncions              | Overtravel (OT) prevention function         |                                          | Stop immediately when POT or NOT operates                                                                                                                                                                                                                      |
|                               | Protective function                         |                                          | Overcurrent, overvoltage, undervoltage, overload, main circuit detection abnormality, radiator overheating, power supply phase loss, overspeed, encoder abnormality, CPU abnormality, parameter abnormality, others                                            |
|                               | LED display function                        |                                          | Main power CHARGE, 6-digit LED display                                                                                                                                                                                                                         |
|                               | RS232 communication                         |                                          | Status display, user parameter setting, monitoring display, alarm tracking display, JOG operation and automatic tuning operation, mapping function of speed and torque command signals, etc.                                                                   |
|                               | Others                                      |                                          | Gain adjustment, alarm recording, JOG operation                                                                                                                                                                                                                |

## Servo System Wiring connection



The servo drive is directly connected to the industrial power supply without using a transformer or other power source for isolation. To prevent cross-electric shock accidents in the servo system, please use a fuse or wiring circuit breaker on the input power supply. To create a safer system, please use a circuit breaker with both overload and short-circuit protection or a dedicated circuit breaker with ground wire protection.

It is strictly prohibited to use the electromagnetic contactor to run or stop the motor. Since the motor is a large inductance component, the instantaneous high voltage generated may breakdown the contactor.

Please pay attention to the power supply capacity when connecting an external control power supply or 24VDC power supply, especially when powering several drives or multiple brakes at the same time. Insufficient power supply capacity will lead to insufficient supply current and failure of the drive or brake. The braking power supply is a 24V DC voltage source. The power must refer to the motor model and meet the brake power requirements.

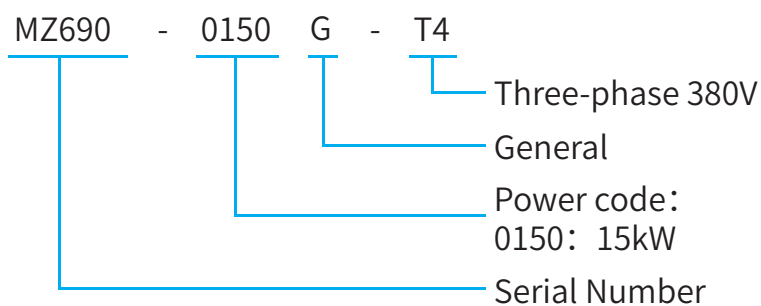
System wiring precautions:

- 1.When the servo system is in feedback braking, please connect the braking resistor between B1 ⊕ and B2; when using the internal braking resistor, please short-circuit B2 and B3 (B2 and B3 are short-circuited at the factory).
- 2.CN6 is the RS232 host computer connection port, and CN4 and CN5 are EtherCAT connection ports. Among them, CN5 is connected to the next slave device, and CN4 is connected to the master station or the previous slave device.

# MZ690 Series Servo Drive hydraulic industry specialized



## Name Rule



## Servo driver parameters

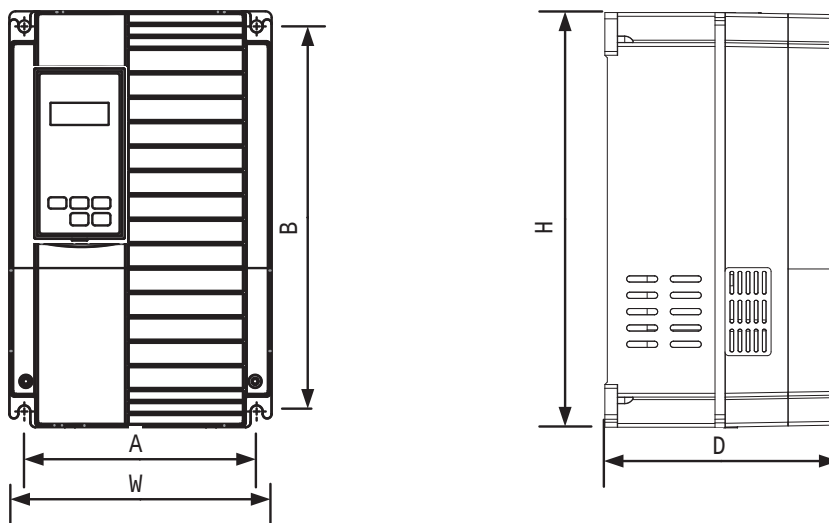
| Model          | Power capacity KVA | Input current A | Output current A | Adapted motor kW |
|----------------|--------------------|-----------------|------------------|------------------|
| MZ690-0075G-T4 | 11.0               | 20.5            | 17.0             | 7.5              |
| MZ690-0110G-T4 | 17.0               | 26.0            | 25.0             | 11               |
| MZ690-0150G-T4 | 21.0               | 35.0            | 32.0             | 15               |
| MZ690-0185G-T4 | 24.0               | 38.5            | 37.0             | 18.5             |
| MZ690-0220G-T4 | 30.0               | 46.5            | 45.0             | 22               |
| MZ690-0300G-T4 | 40.0               | 62.0            | 60.0             | 30               |
| MZ690-0370G-T4 | 57.0               | 76.0            | 75.0             | 37               |
| MZ690-0450G-T4 | 69.0               | 92.0            | 91.0             | 45               |
| MZ690-0550G-T4 | 85.0               | 113.0           | 112.0            | 55               |
| MZ690-0750G-T4 | 114.0              | 157.0           | 150.0            | 75               |
| MZ690-0900G-T4 | 134.0              | 180.0           | 176.0            | 90               |
| MZ690-1100G-T4 | 160.0              | 214.0           | 210.0            | 110              |

## Servo drive specifications and dimensions

| Item                  |                              |                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                    | Specifications                                                                  |  |
|-----------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--|
| Basic information     | Environment                  | Temp °C                                                                                                                                                                             | Use environment temperature                                                                                                                                                                                                                                                                                                                        | 0~+55℃ (decrease if the ambient temperature is between 40℃ and 50℃ )            |  |
|                       |                              |                                                                                                                                                                                     | Storage environment temperature                                                                                                                                                                                                                                                                                                                    | -20 ~ 65℃                                                                       |  |
|                       |                              | Humidity                                                                                                                                                                            | Use environment humidity                                                                                                                                                                                                                                                                                                                           | 20~85% RH below(No condensation)                                                |  |
|                       |                              |                                                                                                                                                                                     | Storage environment humidity                                                                                                                                                                                                                                                                                                                       | 20~85% RH below(No condensation)                                                |  |
|                       |                              | Use and preserve ambient air                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                    | indoor(no sunshine)、No corrosive gas, flammable gas, oil mist, dust             |  |
|                       |                              | Altitude                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                    | Below 1000m                                                                     |  |
|                       |                              | vibration                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                    | 5.8m/s2(0.6G)below 10-60Hz(Can not be used continuously at resonance frequency) |  |
|                       | Insulation withstand voltage |                                                                                                                                                                                     | Basic-FG between AC1500V 1min                                                                                                                                                                                                                                                                                                                      |                                                                                 |  |
|                       | Control way                  |                                                                                                                                                                                     | IGBT PWM control, sine wave current drive mode                                                                                                                                                                                                                                                                                                     |                                                                                 |  |
|                       | Encoder feedback             |                                                                                                                                                                                     | 1: rotary encoder<br>2: 17 bit/23bit (after adding a battery, it can be used as a multi-turn absolute encoder)                                                                                                                                                                                                                                     |                                                                                 |  |
|                       | Input terminal               |                                                                                                                                                                                     | Standard:<br>5 digital input terminals;<br>3 analog voltage input terminals, all support 0 ~ 10V voltage input, of which AI3 can also support 0 ~ 20mA current input                                                                                                                                                                               |                                                                                 |  |
|                       | Output terminal              |                                                                                                                                                                                     | Standard:<br>1 digital output terminal;<br>2 relay output terminals;<br>2 analog output terminals, both support 0~20mA current output or voltage output                                                                                                                                                                                            |                                                                                 |  |
|                       | Communication function       | RS-485                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                    | For upper remote control communication (1:n)                                    |  |
|                       |                              | CAN                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                    | CANOPEN bus communication                                                       |  |
| Regeneration function |                              | Optional regenerative resistor, external regenerative resistor. Pay attention to modify internal parameters                                                                         |                                                                                                                                                                                                                                                                                                                                                    |                                                                                 |  |
| Control model         |                              | 7control modes: speed control, position control, torque control, torque/speed control, speed/position control, torque/position, torque/speed/position hybrid control,hydraulic mode |                                                                                                                                                                                                                                                                                                                                                    |                                                                                 |  |
| Function              | Control input                |                                                                                                                                                                                     | Alarm reset, proportional action switching, zero fixed function enable, forward drive prohibited, reverse drive prohibited, external torque limit for forward rotation, external torque limit for reverse rotation, forward jog, reverse jog, forward Reset switch, reverse reset switch, origin switch, emergency stop, servo enable, gain switch |                                                                                 |  |
|                       | Control output               |                                                                                                                                                                                     | Servo ready, motor rotating, zero speed signal, speed reached, position reached, positioning approach signal, torque limit, speed limit, brake output, warning, servo failure, alarm code (3-digit output)                                                                                                                                         |                                                                                 |  |
|                       | Speed control                | Control input                                                                                                                                                                       | Servo ON, alarm reset, speed command reverse, zero speed clamp, internal command selection input 1, internal command selection input 2, internal command selection input 3, internal command selection input 4, forward rotation external torque limit input, reverse rotation External torque limit input, emergency stop                         |                                                                                 |  |
|                       |                              | Control output                                                                                                                                                                      | Alarm status, servo preparation, brake release, torque limit output, speed limit output speed reached, speed consistent, motor rotation output, zero-speed signal output                                                                                                                                                                           |                                                                                 |  |
|                       | Torque Control               | Control input                                                                                                                                                                       | Servo ON, alarm reset, torque command reverse, zero speed clamp                                                                                                                                                                                                                                                                                    |                                                                                 |  |
|                       |                              | Control output                                                                                                                                                                      | Alarm status, servo preparation, brake release, torque limit, speed limit output, emergency stop                                                                                                                                                                                                                                                   |                                                                                 |  |
|                       |                              | Torque command input                                                                                                                                                                | (Factory default setting, the range can be set by function code)                                                                                                                                                                                                                                                                                   |                                                                                 |  |
|                       |                              | Speed limit function                                                                                                                                                                | Positive and negative internal speed limit P03.27, P03.28                                                                                                                                                                                                                                                                                          |                                                                                 |  |
|                       | Common                       | Speed observer function                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                    | YES                                                                             |  |
|                       |                              | Damping control function                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                    | YES                                                                             |  |
|                       |                              | Adaptive notch filter                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                    | YES                                                                             |  |
|                       |                              | Automatic adjustment function                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                    | YES                                                                             |  |
|                       |                              | Encoder output frequency division                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                    | YES                                                                             |  |
|                       |                              | Internal location planning function                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                    | YES                                                                             |  |
|                       |                              | Adjustment/ function setting                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                    | Use the host computer setting software "Servo studio" to adjust                 |  |
|                       | Protection                   |                                                                                                                                                                                     | Over voltage, abnormal power supply, over current, overload, abnormal encoder, over speed, excessive position deviation, abnormal parameters, etc.                                                                                                                                                                                                 |                                                                                 |  |

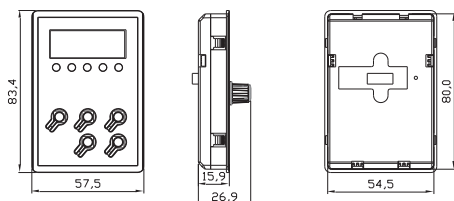
# MZ690 Series Servo Drive hydraulic industry specialized

## Servo drive installation dimensions

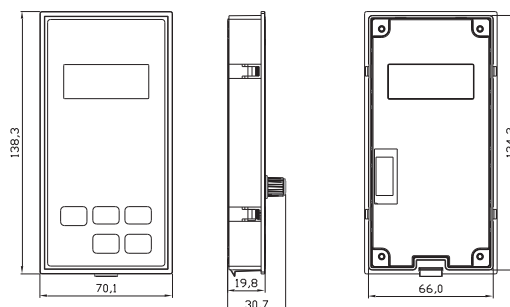


| Model          | Installation size (mm) |     | Outline size (mm) |       |     | Installation hole | Weight (KG) ≈ |
|----------------|------------------------|-----|-------------------|-------|-----|-------------------|---------------|
|                | A                      | B   | W                 | H     | D   |                   |               |
| MZ690-0075G-T4 | 135                    | 245 | 150               | 260   | 153 | Φ6                | 3.9           |
| MZ690-0110G-T4 |                        |     |                   |       |     |                   |               |
| MZ690-0150G-T4 |                        |     |                   |       |     |                   |               |
| MZ690-0185G-T4 | 186                    | 306 | 210               | 330.5 | 188 | Φ9.5              | 7.5           |
| MZ690-0220G-T4 |                        |     |                   |       |     |                   |               |
| MZ690-0300G-T4 |                        |     |                   |       |     |                   |               |
| MZ690-0370G-T4 | 238                    | 396 | 260               | 420   | 196 | Φ8.5              | 12.5          |
| MZ690-0450G-T4 |                        |     |                   |       |     |                   |               |
| MZ690-0550G-T4 | 272                    | 455 | 304               | 470   | 259 | Φ9                | 23            |
| MZ690-0750G-T4 | 200                    | 614 | 278               | 630   | 329 | Φ9                | 39            |
| MZ690-0900G-T4 |                        |     |                   |       |     |                   |               |
| MZ690-1100G-T4 |                        |     |                   |       |     |                   |               |

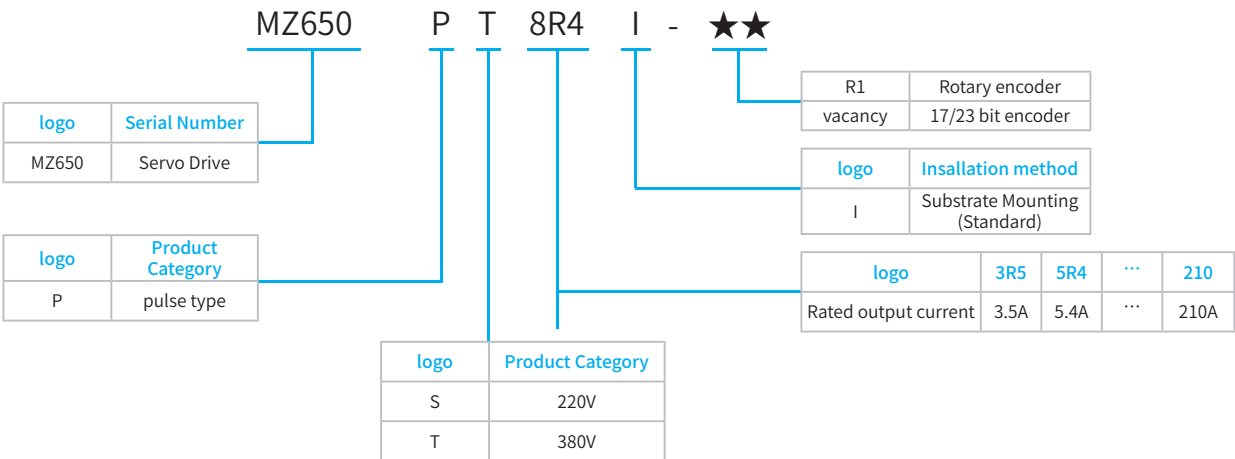
## Keypad outline



Below 18.5kW



18.5kW and above



| Type                                                        | Series | Characteristic                                 |
|-------------------------------------------------------------|--------|------------------------------------------------|
| Servo drive                                                 | MZ650P | Quickly                                        |
|                                                             |        | 0 3.0kHz Corresponding bandwidth of speed loop |
|                                                             |        | Convenient                                     |
|                                                             |        | 0 Wiring is simple and convenient              |
|                                                             |        | 0 Eliminate limit and origin                   |
|                                                             |        | 0 One-touch adjustment                         |
|                                                             |        | 0 Easy to replace encoder battery              |
|                                                             |        | Precise                                        |
|                                                             |        | 0 The encoder resolution reaches 23bit         |
|                                                             |        | Strong adaptability to the environment         |
| 0 Meet safety standards                                     |        |                                                |
| 0 The motor reaches a higher waterproof level               |        |                                                |
| 0 Safe and reliable to use, Wiring is simple and convenient |        |                                                |

# MZ650P Series Servo Drive

## Servo drive specifications

| Item                 |                       |                              |                                                                                                             | Specifications                                                                                                                                                        |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|----------------------|-----------------------|------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----|-----|-----|----------------------------------------------|------|------|-----|-----|------|-----|------|--|------|--|------|--|
| 机种名                  |                       |                              |                                                                                                             | MZ650PS □□□ I                                                                                                                                                         |                               |     |     |     | MZ650PT □□□ I                                |      |      |     |     |      |     |      |  |      |  |      |  |
|                      |                       |                              |                                                                                                             | 025                                                                                                                                                                   | 032                           | 045 | 060 | 075 | 3R5                                          | 5R4  | 8R4  | 012 | 017 | 021  | 026 | 032  |  |      |  |      |  |
| Rated output current |                       |                              |                                                                                                             | 25A                                                                                                                                                                   | 32A                           | 45A | 60A | 75A | 3.5A                                         | 5.4A | 8.4A | 12A | 17A | 21A  | 26A | 32A  |  |      |  |      |  |
| outlook              | A(mm)                 |                              |                                                                                                             | 88                                                                                                                                                                    |                               | 130 |     | 190 |                                              | 49   |      | 70  |     | 88   |     |      |  |      |  |      |  |
|                      | B(mm)                 |                              |                                                                                                             | 248                                                                                                                                                                   |                               | 352 |     | 447 |                                              | 162  |      | 193 |     | 248  |     |      |  |      |  |      |  |
|                      | W(mm)                 |                              |                                                                                                             | 215                                                                                                                                                                   |                               | 215 |     | 215 |                                              | 177  |      | 204 |     | 215  |     |      |  |      |  |      |  |
|                      | H(mm)                 |                              |                                                                                                             | 258                                                                                                                                                                   |                               | 368 |     | 463 |                                              | 174  |      | 203 |     | 258  |     |      |  |      |  |      |  |
|                      | D(mm)                 |                              |                                                                                                             | 110                                                                                                                                                                   |                               | 206 |     | 224 |                                              | 60   |      | 92  |     | 110  |     |      |  |      |  |      |  |
|                      | R(mm)                 |                              |                                                                                                             | 2.8                                                                                                                                                                   |                               | 3.5 |     | 3.5 |                                              | 2.5  |      | 2.8 |     | 2.8  |     |      |  |      |  |      |  |
|                      | Weight(kg)            |                              |                                                                                                             | 5.1                                                                                                                                                                   |                               | 8.3 |     | 12  |                                              | 1.3  |      | 2.7 |     | 5.1  |     |      |  |      |  |      |  |
|                      | Input Power           |                              |                                                                                                             | Three phase AC200V-240V,-15% ~ 10%, 50/60Hz                                                                                                                           |                               |     |     |     | Three phase AC380V-440V, -15% ~ 10%, 50/60Hz |      |      |     |     |      |     |      |  |      |  |      |  |
| 机种名                  |                       |                              |                                                                                                             | MZ650PT □□□ I                                                                                                                                                         |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      |                       |                              |                                                                                                             | 037                                                                                                                                                                   |                               | 045 |     | 060 |                                              | 075  |      | 090 |     | 112  |     | 140  |  | 170  |  | 210  |  |
| Rated output current |                       |                              |                                                                                                             | 37A                                                                                                                                                                   |                               | 45A |     | 60A |                                              | 75A  |      | 90A |     | 112A |     | 140A |  | 170A |  | 210A |  |
| outlook              | A(mm)                 |                              |                                                                                                             | 130                                                                                                                                                                   |                               |     |     | 190 |                                              |      |      | 200 |     |      |     |      |  |      |  |      |  |
|                      | B(mm)                 |                              |                                                                                                             | 352                                                                                                                                                                   |                               |     |     | 447 |                                              |      |      | 614 |     |      |     |      |  |      |  |      |  |
|                      | W(mm)                 |                              |                                                                                                             | 215                                                                                                                                                                   |                               |     |     | 215 |                                              |      |      | 310 |     |      |     |      |  |      |  |      |  |
|                      | H(mm)                 |                              |                                                                                                             | 368                                                                                                                                                                   |                               |     |     | 463 |                                              |      |      | 630 |     |      |     |      |  |      |  |      |  |
|                      | D(mm)                 |                              |                                                                                                             | 206                                                                                                                                                                   |                               |     |     | 224 |                                              |      |      | 278 |     |      |     |      |  |      |  |      |  |
|                      | R(mm)                 |                              |                                                                                                             | 3.5                                                                                                                                                                   |                               |     |     | 3.5 |                                              |      |      | 4.5 |     |      |     |      |  |      |  |      |  |
|                      | Weight(kg)            |                              |                                                                                                             | 8.3                                                                                                                                                                   |                               |     |     | 12  |                                              |      |      | 39  |     |      |     |      |  |      |  |      |  |
|                      | Input Power           |                              |                                                                                                             | Three phase AC380V-440V, -15% ~ 10%, 50/60Hz                                                                                                                          |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
| Basic information    | Environment           | Temp °C                      | Use environment temperature                                                                                 | 0~+55°C (decrease if the ambient temperature is between 40°C and 50°C )                                                                                               |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      |                       |                              | Storage environment temperature                                                                             | -20 ~ 65°C                                                                                                                                                            |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      |                       | Humidity                     | Use environment humidity                                                                                    | 20~85% RH below(No condensation)                                                                                                                                      |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      |                       |                              | Storage environment humidity                                                                                | 20~85% RH below(No condensation)                                                                                                                                      |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      |                       | Use and preserve ambient air |                                                                                                             | indoor(no sunshine)、 No corrosive gas, flammable gas, oil mist, dust                                                                                                  |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      |                       | altitude                     |                                                                                                             | Below 1000m                                                                                                                                                           |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      |                       | vibration                    |                                                                                                             | 5.8m/s2(0.6G)below 10~60Hz(Can not be used continuously at resonance frequency)                                                                                       |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      |                       | Insulation withstand voltage |                                                                                                             |                                                                                                                                                                       | Basic-FG between AC1500V 1min |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      | Control way           |                              |                                                                                                             | IGBT PWM control, sine wave current drive mode                                                                                                                        |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      | Encoder feedback      |                              |                                                                                                             | 1: 23bit (after adding a battery, it can be used as a multi-turn absolute encoder)<br>2: rotary encoder                                                               |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      | Control signal        | Input                        | 8 inputs (DC24V optocoupler isolation) switch according to the control mode function                        |                                                                                                                                                                       |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      |                       | Output                       | 5 output (DC24V optocoupler isolation, open collector output) switch according to the control mode function |                                                                                                                                                                       |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      | Pulse signal          | Input                        | 2 inputs (optocoupler isolation, RS-422 differential, open collector output)                                |                                                                                                                                                                       |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      |                       | Output                       | 4 outputs (A/B/Z phase RS-422 differential; Z phase open collector output)                                  |                                                                                                                                                                       |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      | Comm. function        | RS232                        | For PC communication (for "Servostudio" connection)                                                         |                                                                                                                                                                       |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      |                       | RS-485                       | For upper remote control communication (1:n)                                                                |                                                                                                                                                                       |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      |                       | CAN                          | CANOPEN bus communication                                                                                   |                                                                                                                                                                       |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      | Regeneration function |                              |                                                                                                             | Optional regenerative resistor, external regenerative resistor. Pay attention to modify internal parameters                                                           |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |
|                      | Control model         |                              |                                                                                                             | 6 control modes: speed control, position control, torque control, torque/speed control, speed/position control, torque/position, torque/speed/position hybrid control |                               |     |     |     |                                              |      |      |     |     |      |     |      |  |      |  |      |  |

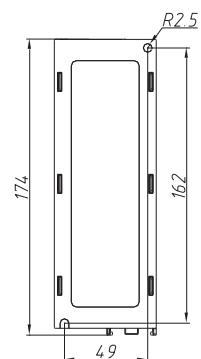
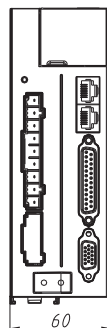
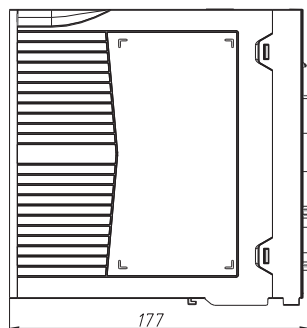
| Item     |                  |                                     | Specifications                                                                                                                                                                                                                                                                                                                                     |
|----------|------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function | Control input    |                                     | Alarm reset, proportional action switching, zero fixed function enable, forward drive prohibited, reverse drive prohibited, external torque limit for forward rotation, external torque limit for reverse rotation, forward jog, reverse jog, forward Reset switch, reverse reset switch, origin switch, emergency stop, servo enable, gain switch |
|          | Control output   |                                     | Servo ready, motor rotating, zero speed signal, speed reached, position reached, positioning approach signal, torque limit, speed limit, brake output, warning, servo failure, alarm code (3-digit output)                                                                                                                                         |
|          | Position control | Pulse input                         | Maximum command pulse frequency                                                                                                                                                                                                                                                                                                                    |
|          |                  |                                     | The maximum low speed is 500Kpps, and the pulse width cannot be less than 1μs<br>Open collector: maximum 200Kpps, pulse width cannot be less than 2.5μs                                                                                                                                                                                            |
|          |                  |                                     | Input pulse signal form                                                                                                                                                                                                                                                                                                                            |
|          |                  |                                     | Differential input; open collector                                                                                                                                                                                                                                                                                                                 |
|          |                  |                                     | Input pulse signal method                                                                                                                                                                                                                                                                                                                          |
|          |                  |                                     | Pulse + direction, right angle phase difference (A phase + B phase), CW + CCW pulse                                                                                                                                                                                                                                                                |
|          |                  |                                     | Command pulse division/multiplication (Electronic gear ratio setting)                                                                                                                                                                                                                                                                              |
|          |                  |                                     | 1~8388608/1~8388608                                                                                                                                                                                                                                                                                                                                |
|          |                  |                                     | Command filter                                                                                                                                                                                                                                                                                                                                     |
|          |                  |                                     | Smoothing filter, FIR filter                                                                                                                                                                                                                                                                                                                       |
|          | Pulse output     | Output pulse form                   | Phase A, Phase B: Differential output<br>Z phase: differential output or open collector output                                                                                                                                                                                                                                                     |
|          |                  |                                     | Frequency division ratio                                                                                                                                                                                                                                                                                                                           |
|          |                  |                                     | Arbitrary frequency division                                                                                                                                                                                                                                                                                                                       |
|          | Speed control    | Control input                       |                                                                                                                                                                                                                                                                                                                                                    |
|          |                  | Control output                      |                                                                                                                                                                                                                                                                                                                                                    |
|          | Torque Control   | Control input                       |                                                                                                                                                                                                                                                                                                                                                    |
|          |                  | Control output                      |                                                                                                                                                                                                                                                                                                                                                    |
|          |                  | Torque command input                |                                                                                                                                                                                                                                                                                                                                                    |
|          |                  | Speed limit function                |                                                                                                                                                                                                                                                                                                                                                    |
|          | Common           | Speed observer function             |                                                                                                                                                                                                                                                                                                                                                    |
|          |                  | Damping control function            |                                                                                                                                                                                                                                                                                                                                                    |
|          |                  | Adaptive notch filter               |                                                                                                                                                                                                                                                                                                                                                    |
|          |                  | Automatic adjustment function       |                                                                                                                                                                                                                                                                                                                                                    |
|          |                  | Encoder output frequency division   |                                                                                                                                                                                                                                                                                                                                                    |
|          |                  | Internal location planning function |                                                                                                                                                                                                                                                                                                                                                    |
|          |                  | Adjustment/function setting         |                                                                                                                                                                                                                                                                                                                                                    |
|          |                  | Protection                          |                                                                                                                                                                                                                                                                                                                                                    |

# MZ650P Series Servo Drive

## Servo drive installation dimensions

MZ650PT3R5I

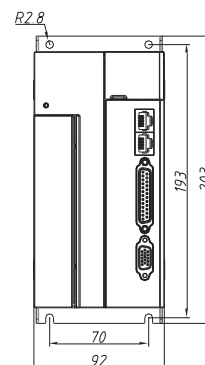
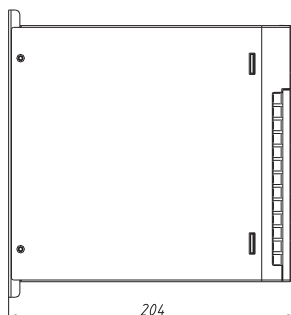
MZ650PT5R4I



MZ650PT8R4I

MZ650PT012I

MZ650PT017I



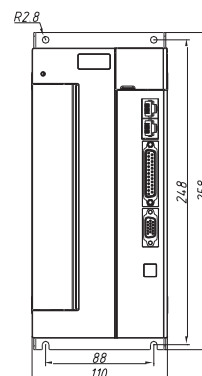
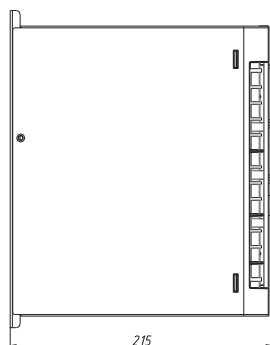
MZ650PS025I

MZ650PS032I

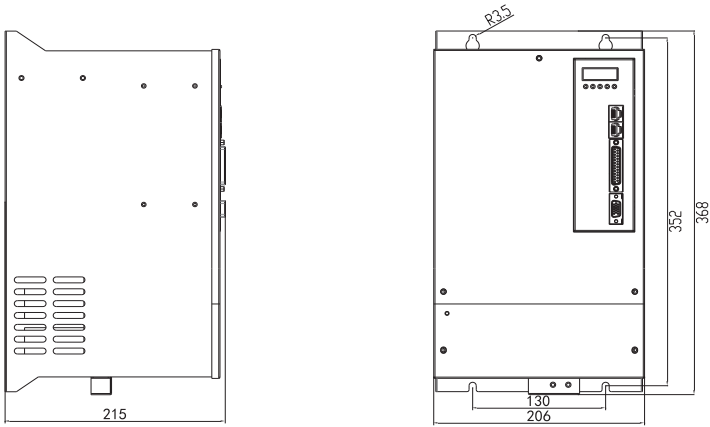
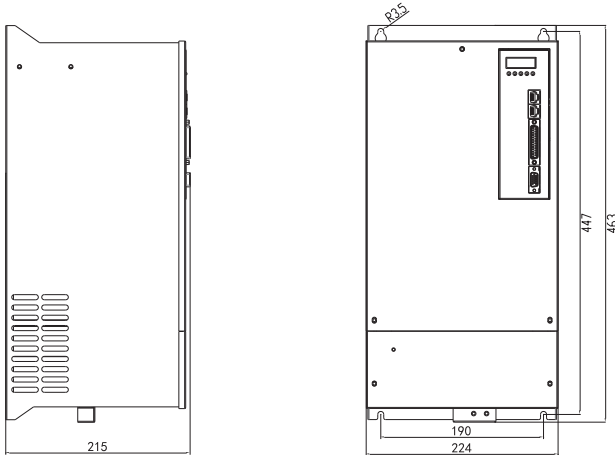
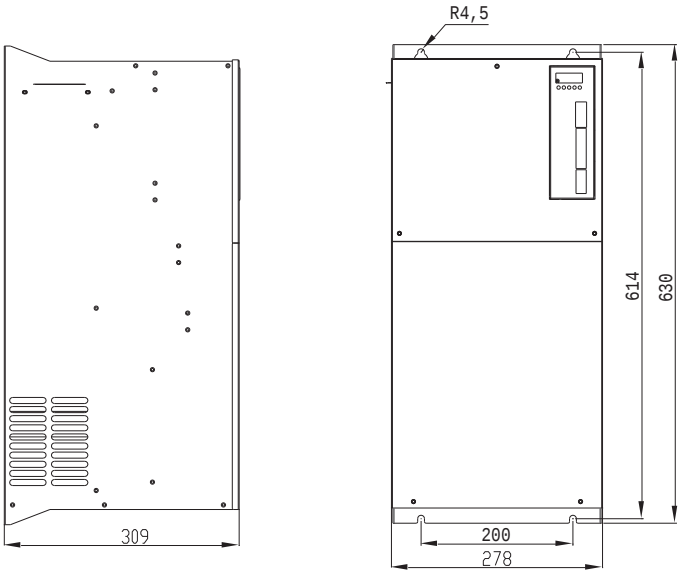
MZ650PT021I

MZ650PT026I

MZ650PT032I



## Servo drive installation dimensions

|                                                                                    |                                                                                      |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <p>MZ650PS045I<br/>MZ650PT037I<br/>MZ650PT045I</p>                                 |    |
| <p>MZ650PS060I<br/>MZ650PS075I<br/>MZ650PT060I<br/>MZ650PT075I</p>                 |   |
| <p>MZ650PT090I<br/>MZ650PT112I<br/>MZ650PT140I<br/>MZ650PT170I<br/>MZ650PT210I</p> |  |

August 10, 2026



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