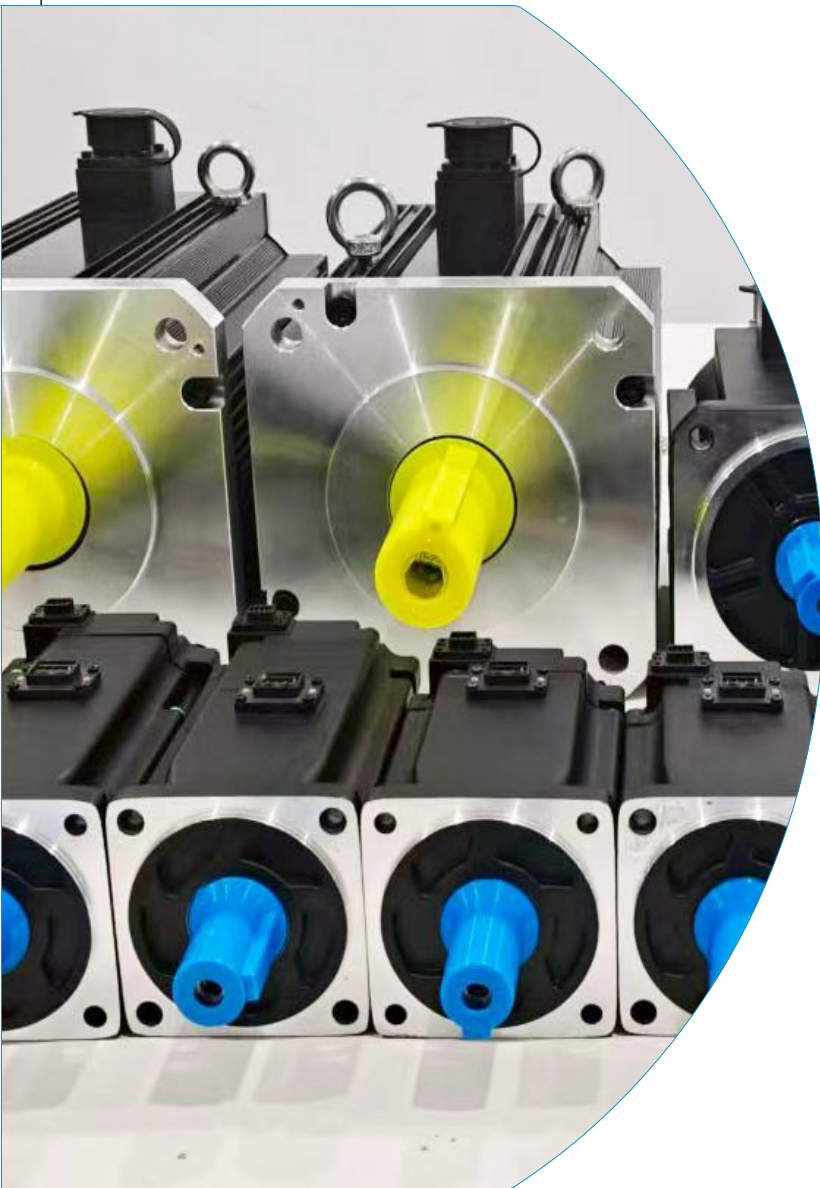


AC Permanent Magnet Synchronous Motors  
Servo Motors · Brushless DC Motors  
Stepper Motors



Our AC permanent magnet synchronous motors, servo motors, brushless DC motors and stepper motors cover more than 500 models and specifications. Frame sizes include 40, 60, 80, 110, 130, 180, 200 and 264, extending up to 620. Power ratings range from 50 W to 500 kW, with optical encoders, magnetic encoders and resolvers available.

Permanent magnet rotors provide smooth starting, low noise, high power density and high efficiency. The motors offer high precision, fast response, accurate positioning, flexible speed control and stable operation.

Applications include CNC machine tools, packaging, textile and printing machinery, robots and automation equipment.

We also develop customized, non-standard motors for specific applications and operating environments. Fast sample preparation, short lead times and strong value help meet your motor requirements.

HASE Precision Machinery Technology  
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Website: [www.hase-cnc.cn](http://www.hase-cnc.cn)

HASE  
TECHNOLOGY



- Creating value
- Contributing to society
- Trusted cooperation
- Continuous improvement



## ZC-22TA

EtherCAT CNC drilling and milling system  
for machining centers  
7 axes as standard · up to 20 axes  
Tapping supported



## ZC-2000TC/TB

A high-performance 32-bit CPU and large-scale FPGA combine real-time control with hardware interpolation for efficient machining at micrometer-level precision. A programmable PLC provides flexible, powerful logic control. The system controls 5 feed axes and 2 analog spindles, with 1 ms interpolation and 0.1 μm control resolution to improve productivity, accuracy and surface finish.



**ZC-26Y Motor Speed Controllers**  
100-750 W; for permanent magnet, brushless and induction motors. Suitable for small fans, conveyors, woodworking, packaging and food machinery. Compact size, high torque, digital display and easy installation and commissioning.



## AC Permanent Magnet Synchronous Motors

Our in-house developed, three-phase variable-speed permanent magnet synchronous motors meet IE5-IE4 efficiency levels under IEC 60034-30-1 and Grades 1-2 under GB/T 30253-2013. Permanent magnet rotors deliver higher efficiency and power density than induction motors, allowing smaller frames for the same power and torque. A self-ventilated design supports inverter-driven variable-speed operation without forced ventilation, with good low-speed constant-torque performance, a wide speed range and high efficiency throughout.



Mounting dimensions match three-phase induction motors of the same frame size and comply with IEC and relevant national standards for easy installation. The motors combine attractive styling, high efficiency, low noise and vibration, reliability and easy maintenance. Applications include pumps, fans, air compressors, machine tools, gear reducers, packaging, mining and construction machinery. Customized designs are available for specialized industries.



An embedded, scalable architecture combines a hybrid real-time operating system with advanced motion and force-control algorithms. It supports 3- to 7-axis industrial robots in serial or parallel configurations, with machine vision, CAM, real-time trajectory tracking, hand-guided teaching and collision detection.



## ZC-X5-7



ZCX5-7 fully digital AC servo drives use advanced control algorithms and intelligent power modules (IPM) for precise digital positioning. Compared with ZCX1, they add terminals for an external braking resistor and DC reactor. The expanded power range covers 50 W to 7.5 kW.

PRODUCT MODEL DESIGNATION

Model code example: EAM-WH-0430A-U30XX

|               |                |               |             |             |               |              |            |                  |               |
|---------------|----------------|---------------|-------------|-------------|---------------|--------------|------------|------------------|---------------|
| EAM           | W              | H             | 04          | 30          | A             | U            | 3          | 0                | XX            |
| 1             | 2              | 3             | 4           | 5           | 6             | 7            | 8          | 9                | 10            |
| Product class | Product series | Rotor inertia | Rated power | Rated speed | Voltage class | Encoder type | Shaft type | Oil seal / brake | Other options |

Table 1.2 Model designation guide

| No. | Field             | Definition                                                                                                                                                            |
|-----|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Product class     | Rotary motor                                                                                                                                                          |
| 2   | Product series    | W series                                                                                                                                                              |
| 3   | Rotor inertia     | F: Low inertia   G: Medium inertia   H: High inertia                                                                                                                  |
| 4   | Rated power (W)   | A5: 50   08: 750   18: 1800<br>01: 100   09: 850   20: 2000<br>02: 200   10: 1000   23: 2300<br>04: 400   13: 1300   29: 2900<br>06: 600   15: 1500   30: 3000        |
| 5   | Rated speed (rpm) | 15: 1500   25: 2500<br>20: 2000   30: 3000                                                                                                                            |
| 6   | Voltage class (V) | A: 220 V AC   D: 48 V DC   E: 36 V<br>T: 380 V AC   F: 24 V DC                                                                                                        |
| 7   | Encoder type      | 2: 17-bit multi-turn absolute encoder<br>3: 17-bit single-turn absolute encoder<br>U: 23-bit multi-turn absolute encoder<br>H: 2500-line incremental magnetic encoder |
| 8   | Shaft type        | 1: Plain shaft<br>2: Solid shaft with key<br>3: Solid shaft with key and threaded hole<br>4: Solid shaft with threaded hole                                           |
| 9   | Oil seal / brake  | 0: Oil seal, without brake<br>1: No oil seal, without brake<br>2: Oil seal, with brake<br>4: No oil seal, with brake                                                  |
| 10  | Other options     | Omitted: Standard<br>XX: Non-standard                                                                                                                                 |

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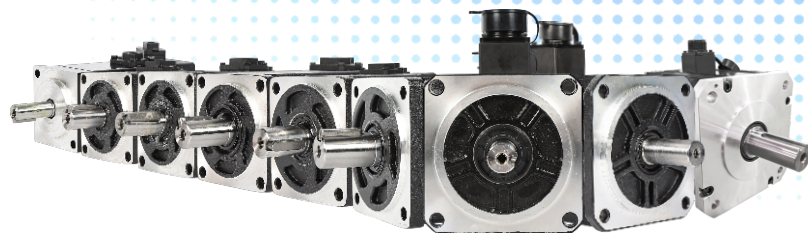
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Product designs and specifications may change without notice as part of continuous improvement.



PRODUCT SELECTION CHART



| Product                         | SERVO DRIVES                                                                                             |              |                               |              | SERVO DRIVES                 |         |          |          | SERVO DRIVES                  |              |              |              | SERVO DRIVES                       |              |              |              | SERVO DRIVES                                                                                       |              |              |              | SERVO DRIVES                     |              |              |              | SERVO DRIVES                   |              |              |              |
|---------------------------------|----------------------------------------------------------------------------------------------------------|--------------|-------------------------------|--------------|------------------------------|---------|----------|----------|-------------------------------|--------------|--------------|--------------|------------------------------------|--------------|--------------|--------------|----------------------------------------------------------------------------------------------------|--------------|--------------|--------------|----------------------------------|--------------|--------------|--------------|--------------------------------|--------------|--------------|--------------|
| Configuration                   | Single-board pulse · basic                                                                               |              | Single-board EtherCAT · basic |              | Single-board pulse · economy |         |          |          | Single-board pulse · standard |              |              |              | Single-board pulse · full-featured |              |              |              | Single-board bus · standard                                                                        |              |              |              | Dual-board pulse · full-featured |              |              |              | Dual-board bus · full-featured |              |              |              |
| Model                           | X1P2R8-20ARA                                                                                             | X1P5R5-20ARA | X1S2R8-20ARA                  | X1S5R5-20ARA | X3P400W                      | X3P750W | X3P1000W | X3P1500W | X5P2R8-20ARA                  | X5P5R5-20ARA | X5P7R6-20ARA | X5P010-20ARA | X7P2R8-20ARA                       | X7P5R5-20ARA | X7P7R6-20ARA | X7P010-20ARA | X5S2R8-20ARA                                                                                       | X5S5R5-20ARA | X5S7R6-20ARA | X5S010-20ARA | X7P015-20ARA                     | X7P012-40ARA | X7P018-40ARA | X7P026-40ARA | X7S015-20ARA                   | X7S012-40ARA | X7S018-40ARA | X7S026-40ARA |
| Output current (A)              | 2.8                                                                                                      | 5.5          | 2.8                           | 5.5          | 2.8                          | 5.5     | 7        | 15       | 2.8                           | 5.5          | 7.6          | 10           | 2.8                                | 5.5          | 7.6          | 10           | 2.8                                                                                                | 5.5          | 7.6          | 10           | 15                               | 12           | 18           | 26           | 15                             | 12           | 18           | 26           |
| Compatible motor (W)            | ≤400                                                                                                     | 600-1000     | ≤400                          | 600-1000     | ≤400                         | 400-750 | 750-1000 | 850-2300 | ≤400                          | 750-1000     | 600-1300     | 850-2300     | ≤400                               | 750-1000     | 600-1300     | 850-2300     | ≤400                                                                                               | 750-1000     | 600-1300     | 850-2300     | 1500-3000                        | 1800-3000    | 3000-5500    | 5500-7500    | 1500-3000                      | 1800-3000    | 3000-5500    | 5500-7500    |
| Power supply (V AC)             | 220, 1-phase                                                                                             |              |                               |              | 220, 1- / 3-phase            |         |          |          | 220, 1-phase                  |              |              |              | 220, 1-phase                       |              |              |              | 220, 1-phase                                                                                       |              |              |              | 220, 1- / 3-phase                | 380, 3-phase |              |              | 220, 1- / 3-phase              | 380, 3-phase |              |              |
| Communication                   | RS485 Modbus                                                                                             |              | EtherCAT                      |              | RS485 Modbus                 |         |          |          | RS485 Modbus                  |              |              |              | RS485 Modbus                       |              |              |              | EtherCAT                                                                                           |              |              |              | RS485 Modbus                     |              |              |              | EtherCAT                       |              |              |              |
| Digital inputs                  | 4 DI                                                                                                     |              | 3 DI                          |              | 4 DI                         |         |          |          | 4 DI                          |              |              |              | 8 DI                               |              |              |              | 4 DI                                                                                               |              |              |              | 8 DI                             |              |              |              | 5 DI                           |              |              |              |
| Digital outputs                 | 2 DO                                                                                                     |              | 2 DO                          |              | 4 DO                         |         |          |          | 2 DO                          |              |              |              | 4 DO                               |              |              |              | 2 DO                                                                                               |              |              |              | 4 DO                             |              |              |              | 3 DO                           |              |              |              |
| Protection rating               | IP20                                                                                                     |              |                               |              | IP20                         |         |          |          | IP20                          |              |              |              | IP20                               |              |              |              | IP20                                                                                               |              |              |              | IP20                             |              |              |              | IP20                           |              |              |              |
| Operating / storage temperature | Operating: 0-55°C (average load must not exceed 80% at 45-55°C; non-freezing).    Storage: -20 to +70°C. |              |                               |              |                              |         |          |          |                               |              |              |              |                                    |              |              |              |                                                                                                    |              |              |              |                                  |              |              |              |                                |              |              |              |
| Operating / storage humidity    | Below 90% RH; no frost                                                                                   |              |                               |              |                              |         |          |          |                               |              |              |              |                                    |              |              |              |                                                                                                    |              |              |              |                                  |              |              |              |                                |              |              |              |
| Control method                  | IGBT PWM; sinusoidal current drive; 220 V single-phase full-wave rectification                           |              |                               |              |                              |         |          |          |                               |              |              |              |                                    |              |              |              | IGBT PWM; sinusoidal current drive; 220 V single-phase / 380 V three-phase full-wave rectification |              |              |              |                                  |              |              |              |                                |              |              |              |
| Control modes                   | Position, speed, torque, position/speed, position/torque, speed/torque                                   |              |                               |              |                              |         |          |          |                               |              |              |              |                                    |              |              |              |                                                                                                    |              |              |              |                                  |              |              |              |                                |              |              |              |

| Product                                   | SERVO MOTORS                                                                                                                      |       |       |      |      |      |      | SERVO MOTORS                                                                                                                      |      |      |      |       |      | SERVO MOTORS    |      |      |      |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------|-------|------|------|------|------|-----------------------------------------------------------------------------------------------------------------------------------|------|------|------|-------|------|-----------------|------|------|------|
| Flange size (mm)                          | 40                                                                                                                                |       | 60    |      |      | 80   |      | 110                                                                                                                               |      | 130  |      |       |      | 180             |      |      |      |
| Rated power (W)                           | 50                                                                                                                                | 100   | 200   | 400  | 600  | 750  | 1000 | 1200                                                                                                                              | 1800 | 850  | 1300 | 1800  | 2300 | 2900            | 4400 | 5500 | 7500 |
| Rated voltage (V)                         | 220                                                                                                                               | 220   | 220   | 220  | 220  | 220  | 220  | 220                                                                                                                               | 220  | 220  | 220  | 220   | 220  | 380             | 380  | 380  | 380  |
| Rated current (A)                         | 1.4                                                                                                                               | 1.4   | 1.6   | 2.6  | 4    | 4.6  | 4.8  | 7.5                                                                                                                               | 11.5 | 5.4  | 7.7  | 12.5  | 13   | 10.5            | 13   | 17   | 22   |
| Rated torque (N·m)                        | 0.16                                                                                                                              | 0.32  | 0.64  | 1.27 | 1.91 | 2.39 | 3.2  | 4                                                                                                                                 | 6    | 5.4  | 8.3  | 11.46 | 14.6 | 19.1            | 28   | 35   | 48   |
| Rated speed (rpm)                         | 3000                                                                                                                              | 3000  | 3000  | 3000 | 3000 | 3000 | 3000 | 3000                                                                                                                              | 3000 | 1500 | 1500 | 1500  | 1500 | 1500            | 1500 | 1500 | 1500 |
| Peak current (A)                          | 4.2                                                                                                                               | 4.3   | 5.7   | 8.6  | 13   | 15   | 15   | 22.5                                                                                                                              | 35   | 17   | 26   | 37.5  | 39   | 33.6            | 45.6 | 52.8 | 78.5 |
| Peak torque (N·m)                         | 0.48                                                                                                                              | 0.96  | 1.92  | 3.81 | 5.7  | 7.1  | 9.6  | 12                                                                                                                                | 18   | 16.2 | 24.9 | 28.7  | 43   | 47.75           | 70   | 87.5 | 96   |
| Peak speed (rpm)                          | 6000                                                                                                                              | 6000  | 6000  | 6000 | 6000 | 6000 | 5200 | 4000                                                                                                                              | 4000 | 3000 | 3000 | 3000  | 3000 | 3000            | 3000 | 3000 | 3000 |
| Back EMF (V/1000 rpm)                     | 8.3                                                                                                                               | 16.7  | 26.5  | 34.5 | 32.3 | 37   | 43   | 35                                                                                                                                | 35   | 60.5 | 63.9 | 57.6  | 67.2 | 107             | 128  | 124  | 128  |
| Torque constant (N·m/A)                   | 0.139                                                                                                                             | 0.276 | 0.41  | 0.49 | 0.48 | 0.52 | 0.66 | 0.53                                                                                                                              | 0.53 | 1.08 | 1.08 | 0.87  | 1.12 | 1.81            | 2.15 | 2.05 | 2.18 |
| Line-to-line resistance (Ω)               | 8.4                                                                                                                               | 14    | 6.8   | 4.38 | 2.32 | 1.77 | 1.76 | 0.8                                                                                                                               | 0.52 | 1.38 | 1    | 0.9   | 0.47 | 0.8             | 0.7  | 0.6  | 0.5  |
| Line inductance (mH)                      | 7.5                                                                                                                               | 13.3  | 12.35 | 9.3  | 3.76 | 8.14 | 8.7  | 3.9                                                                                                                               | 2.8  | 12.5 | 9.6  | 7.5   | 5.39 | 8.7             | 9.3  | 7.3  | 4.9  |
| Rotor inertia (kg·m² × 10 <sup>-4</sup> ) | 0.04                                                                                                                              | 0.05  | 0.33  | 0.5  | 0.5  | 1.5  | 2.1  | 3.4                                                                                                                               | 5    | 13.8 | 19.3 | 19.3  | 33.4 | 5.9             | 6.6  | 10.2 | 14.6 |
| Pole pairs                                | 5                                                                                                                                 |       |       |      |      |      |      | 5                                                                                                                                 |      |      |      |       |      | 5               |      |      |      |
| Encoder type                              | Options: 17-bit single-turn absolute magnetic, 17-bit multi-turn absolute magnetic, or 23-bit multi-turn absolute optical encoder |       |       |      |      |      |      | Options: 17-bit single-turn absolute magnetic, 17-bit multi-turn absolute magnetic, or 23-bit multi-turn absolute optical encoder |      |      |      |       |      |                 |      |      |      |
| Brake option                              | Brake available                                                                                                                   |       |       |      |      |      |      | Brake available                                                                                                                   |      |      |      |       |      | Brake available |      |      |      |
| Insulation class                          | Class F                                                                                                                           |       |       |      |      |      |      | Class F                                                                                                                           |      |      |      |       |      | Class F         |      |      |      |
| Protection rating                         | IP65                                                                                                                              |       |       |      |      |      |      | IP67                                                                                                                              |      |      |      |       |      | IP67            |      |      |      |
| Operating environment                     | Ambient: -20 to +40°C; relative humidity ≤90% (no frost)                                                                          |       |       |      |      |      |      | Ambient: -20 to +40°C; relative humidity ≤90% (no frost)                                                                          |      |      |      |       |      |                 |      |      |      |

