

VEICHI

SD780 Series General High-performance Servo System



CE   EtherCAT 

Stock Code : 688698



Official Website
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VEICHI

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About us



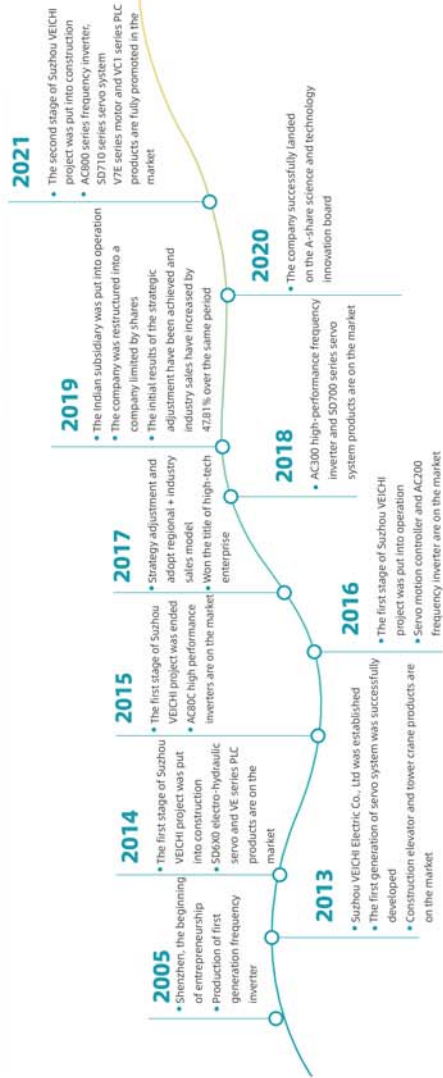
VEICHI Electric (Stock code: 689698), a high-tech enterprise engaged in the R&D, production and sales of industrial automation products, has always focused on the fields of electric drive and industrial control since its establishment. It has been listed as the "Jiangsu Provincial Enterprise Technology Center", "Jiangsu Private Technology Enterprise", "Jiangsu Provincial Specialized and New Giant Enterprise", "Jiangsu Provincial Engineering Technology Research Center", "Suzhou Gazelle Enterprise" and "Competitive Brand in Motion Control Field". After years of independent R&D and innovation, VEICHI has developed a series of independent intellectual property rights. By the end of June 30, 2022, a total of 140 patents have been granted, including 33 invention patents.

VEICHI has R&D and production bases in Suzhou and Shenzhen, and has established a wholly-owned subsidiary in India. At present, the company's business covers many countries and regions, providing global customers with competitive, safe and reliable products and services. We supply a wide range of products, including inverters from 0.4kW to

5,600kW, servo systems from 50W to 200kW, motion controllers, PLCs and HMIs, to diverse customers in lifting and mining equipment, rail transportation, machine tools, compressors, plastics, solar water pumping, building materials, robots or manipulators, printing and packaging, textile and chemical fiber, metallurgy, municipal, petroleum, chemical and other industries. VEICHI has established 20 service outlets in China, and developed 153 channel dealers, covering 31 provinces and Hong Kong, Macao and Taiwan regions across the country, forming a wide-ranging and efficient distribution and service network to provide customers with high-quality products and efficient service.

VEICHI will continue to adhere to the business philosophy of "Guided by market demand, Driven by technological innovation", to expand and strengthen the core businesses of inverters, servo systems and motion controllers, and intelligent IoT, and always insist on providing customers with best products and services. VEICHI will spare no effort to make contributions to promote the development of electric drive and industrial control.

SD780 General High-performance Servo System



Product features

International standard UL certification

International standard UL certification. Applicable to all countries with UL certification requirements worldwide



Data copy & Transfer

The debugging software has the function of copying drive parameters, eliminating the tedious operation of parameter setting of the same model.

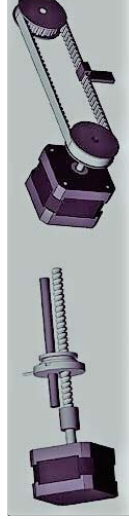


Simplified debugging panel



Self-adjusting for different applications

1. Treat differently according to different mechanical structures
2. Complete the intelligent setting of various complex loop parameters
3. Automatic setting according to mechanical conditions, no manual setting required
4. The fastest position setting time is up to 10ms

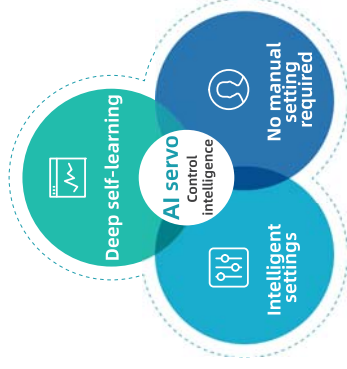


Mechanical structures such as lead screws, timing belts, and rigid bodies are treated differently

STO function

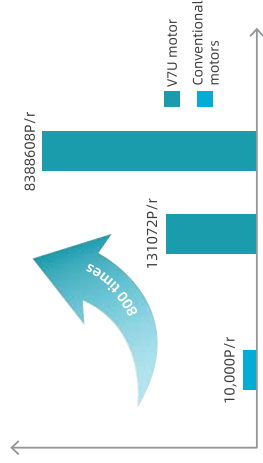
Standard SIL3 safety torque off function, suitable for new energy, lithium battery, photovoltaic equipment and other industries. Provide greater security to device users.

Intelligent settings



Compatible with 17bit/23bit absolute encoders

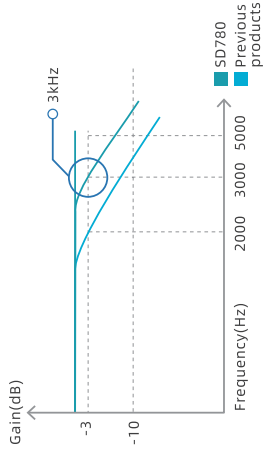
With absolute encoder, the position is remembered when the power is turned off.
Battery life is more than 3 years.
Encoders with different resolutions to meet different application options.



Powerful bus communication function



High-performance as ever



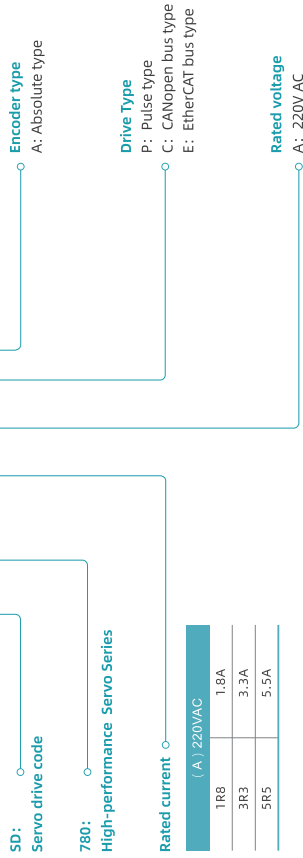
Upgraded hardware, Compacted structure

Hardware and structure upgrades, the size of the 5R5 model is reduced by 30%.



Drive Model Description

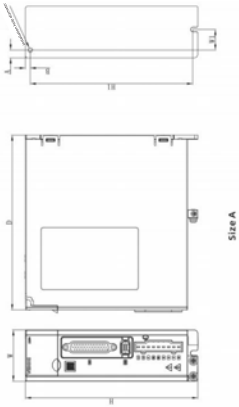
SD 780 - 3R3 A - P A



Drive power and chassis division

| Model number | Input | | Output | | Chassis size |
|--------------|-------------------------------|-------------------|---------------------------|--|--------------|
| | Rated voltage (V) | Rated current (A) | Instantaneous current (A) | | |
| SD780-1R8A | single-phase 220 | 1.8 | 6.3 | | |
| SD780-3R3A | single-phase 220 | 3.3 | 11.6 | | A |
| SD780-5R5A | single-phase /three-phase 220 | 5.5 | 16.5 | | |

Drive dimension



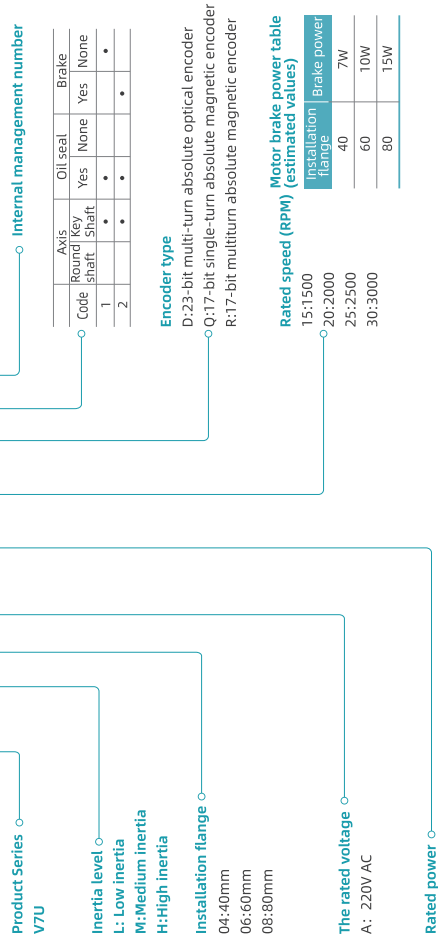
| Model | External dimensions (mm) | | | Installation dimension (mm) | | | Installation parameter |
|----------------|--------------------------|-----|-----|-----------------------------|-----|-----|------------------------|
| | W | H | D | W1 | H1 | A | |
| SD780-1R8A-**- | | | | | | | - |
| SD780-3R3A-**- | 50 | 170 | 170 | 20 | 160 | 7.5 | 5 |
| SD780-5R5A-**- | | | | | | | 2-M4 |

Technical Specifications

| Items | Specification | |
|--------------------------|---|--|
| Control method | IGBT, PWM control, sine wave current drive mode | |
| Encoder feedback | Serial encoders: Absolute encoders | |
| Operating temperature | 0°C-55°C (55°C-60°C, can be used after reducing the rated value) | |
| Storage temperature | -20°C-65°C | |
| Operating humidity | Below 95%RH (no freezing, condensation) | |
| Storage humidity | Below 95%RH (no freezing, condensation) | |
| Environmental conditions | Seismic resistance 4.9m/s ² | |
| Impact resistance | 19.6m/s ² | |
| Protection level | IP20 | |
| Altitude | Below 1000m (When 1000m~2000m, need to reduce the rated value after use) | |
| Other | No electrostatic interference, strong electric field, strong magnetic field, radiation, etc | |
| Speed control range | 1: 5000 | |
| Speed Control | Load fluctuation | Less than ±0.01% of rated speed |
| | Voltage fluctuation | 0% of rated speed |
| | Temperature fluctuation | Less than ±0.01% of rated speed |
| Torque Control | Torque control accuracy | ±1% |
| | Soft start time setting | 0s~10s |
| Position control | Feed-forward compensation | 0%~100% |
| | Command pulse pattern | It includes three command forms: "pulse+direction", "CW+CCW pulse sequence" and "A, B phase quadrature pulse" |
| | Input form | Linear drive, open collector |
| Communication function | Maximum input frequency | Differential input: high speed max. 4Mpps; Open collector: maximum 200Kpps; |
| | 485 | Standard configuration |
| CAN | Optional | |
| | USB | Computer host, standard, USB 2.0 compliant (1.2Mbps) |
| Display function | CHARGE | 8-segment LEDx5 digits |
| | Panel operator function | Push button switchx4pcs |
| Regeneration treatment | Function | Function can be built-in/external |
| | Protection function | Overcurrent, overvoltage, undervoltage, overload, regenerative fault, encoder disconnection, overtravel protection, etc. |
| Auxiliary function | Gain adjustment, alarm recording, JOG operation, etc. | |
| | Encoder pulse frequency division output | Phase A, Phase B, Phase C: Linear drive output, number of divided pulses: 35~32767 |

Motor model description

V7U - L 06 A - R40 30 - D 1 □



Motor features

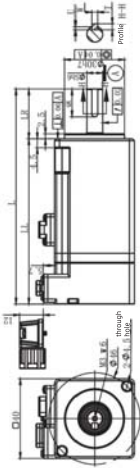
| V7U Model | Voltage (V) | Power (W) | Rated torque (N.m) | Rated speed (RPM) | Max. Speed (RPM) | Rated current (A) | Max. current (A) | Moment of inertia |
|--------------------|-------------|-----------|--------------------|-------------------|------------------|-------------------|------------------|-------------------------|
| V7U-L04A-R0530-□1 | 220 | 50 | 0.16 | 3000 | 6000 | 1 | 3 | 0.027kg·cm ² |
| V7U-R04A-R0530-□2 | 220 | 50 | 0.16 | 3000 | 6000 | 1 | 3 | 0.028kg·cm ² |
| V7U-L04A-R1030-□1 | 220 | 100 | 0.32 | 3000 | 6000 | 1 | 3 | 0.051kg·cm ² |
| V7U-L04A-R1030-□2 | 220 | 100 | 0.32 | 3000 | 6000 | 1 | 3 | 0.052kg·cm ² |
| V7U-L06A-R2030-□1 | 220 | 200 | 0.64 | 3000 | 6000 | 1.7 | 5.1 | 0.18kg·cm ² |
| V7U-L06A-R2030-□2 | 220 | 200 | 0.64 | 3000 | 6000 | 1.7 | 5.1 | 0.2kg·cm ² |
| V7U-L06A-R4030-□1 | 220 | 400 | 1.27 | 3000 | 6000 | 2.6 | 7.8 | 0.34kg·cm ² |
| V7U-L06A-R4030-□2 | 220 | 400 | 1.27 | 3000 | 6000 | 2.6 | 7.8 | 0.36kg·cm ² |
| V7U-M06A-R4030-□1 | 220 | 400 | 1.27 | 3000 | 6000 | 2.6 | 7.8 | 0.67kg·cm ² |
| V7U-M06A-R4030-□2 | 220 | 400 | 1.27 | 3000 | 6000 | 2.6 | 7.8 | 0.69kg·cm ² |
| V7U-L08A-R7530-□1 | 220 | 750 | 2.38 | 3000 | 6000 | 4.6 | 13.8 | 1.02kg·cm ² |
| V7U-L08A-R7530-□2 | 220 | 750 | 2.38 | 3000 | 6000 | 4.6 | 13.8 | 1.13kg·cm ² |
| V7U-L08A-R7530-□1L | 220 | 750 | 2.38 | 3000 | 4000 | 3.1 | 9.3 | 1.02kg·cm ² |
| V7U-L08A-R7530-□2L | 220 | 750 | 2.38 | 3000 | 4000 | 3.1 | 9.3 | 1.13kg·cm ² |
| V7U-M08A-R7530-□1 | 220 | 750 | 2.38 | 3000 | 6000 | 4.6 | 13.8 | 2.3kg·cm ² |
| V7U-M08A-R7530-□2 | 220 | 750 | 2.38 | 3000 | 6000 | 4.6 | 13.8 | 2.41kg·cm ² |
| V7U-M08A-R7530-□1L | 220 | 750 | 2.38 | 3000 | 4000 | 3.1 | 9.3 | 2.3kg·cm ² |
| V7U-M08A-R7530-□2L | 220 | 750 | 2.38 | 3000 | 4000 | 3.1 | 9.3 | 2.41kg·cm ² |
| V7U-L08A-1R030-□1 | 220 | 1000 | 3.18 | 3000 | 5000 | 5 | 16.5 | 1.34kg·cm ² |
| V7U-L08A-1R030-□2 | 220 | 1000 | 3.18 | 3000 | 5000 | 5 | 16.5 | 1.45kg·cm ² |
| V7U-M08A-1R030-□1 | 220 | 1000 | 3.18 | 3000 | 5000 | 5 | 15 | 2.62kg·cm ² |
| V7U-M08A-1R030-□2 | 220 | 1000 | 3.18 | 3000 | 5000 | 5 | 15 | 2.73kg·cm ² |



| Code | Power | Code | Power |
|------|-------|------|-------|
| R05 | 50W | R60 | 600W |
| R10 | 100W | R75 | 750W |
| R20 | 200W | 1R0 | 1.0KW |
| R40 | 400W | | |

Motor Dimension

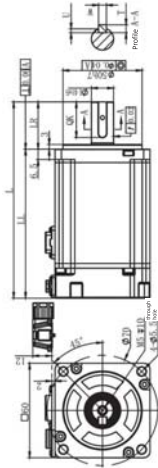
40 flange



Unit: mm

| Motor model | L | LL | LR | S | OK | U | W | T |
|--------------------|-----|-----|----|---|----|-----|---|---|
| V7U-L04A-R030-□□ | 94 | 69 | 25 | 8 | 14 | 1.5 | 3 | 3 |
| V7U-L04A-R030-□□□ | 120 | 95 | 25 | 8 | 14 | 1.5 | 3 | 3 |
| V7U-L04A-R1030-□□ | 108 | 83 | 25 | 8 | 14 | 1.5 | 3 | 3 |
| V7U-L04A-R1030-□□□ | 134 | 109 | 25 | 8 | 14 | 1.5 | 3 | 3 |

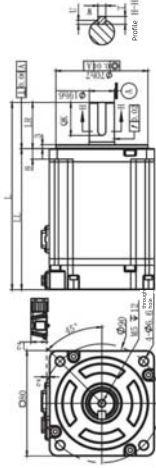
60 flange



Unit: mm

| Motor model | L | LL | LR | S | OK | U | W | T |
|--------------------|-------|-------|----|----|------|-----|---|---|
| V7U-L06A-R2030-□□ | 105.5 | 75.5 | 30 | 14 | 22.5 | 2.5 | 5 | 5 |
| V7U-L06A-R2030-□□□ | 136.5 | 106.5 | 30 | 14 | 22.5 | 2.5 | 5 | 5 |
| V7U-L06A-R4030-□□ | 124.5 | 94.5 | 30 | 14 | 22.5 | 2.5 | 5 | 5 |
| V7U-L06A-R4030-□□□ | 155.5 | 125.5 | 30 | 14 | 22.5 | 2.5 | 5 | 5 |
| V7U-M06A-R4030-□□ | 134.5 | 104.5 | 30 | 14 | 22.5 | 2.5 | 5 | 5 |
| V7U-M06A-R4030-□□□ | 165.5 | 135.5 | 30 | 14 | 22.5 | 2.5 | 5 | 5 |

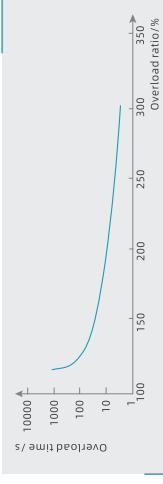
80 flange



Unit: mm

| Motor model | L | LL | LR | S | OK | U | W | T |
|----------------------|-------|-------|----|----|----|---|---|---|
| V7U-L08A-R7530-□□□ | 142 | 107 | 35 | 19 | 25 | 3 | 6 | 6 |
| V7U-L08A-R7530-□□□□ | 174 | 139 | 35 | 19 | 25 | 3 | 6 | 6 |
| V7U-L08A-R7530-□□ | 142 | 107 | 35 | 19 | 25 | 3 | 6 | 6 |
| V7U-L08A-R7530-□□□□ | 174 | 139 | 35 | 19 | 25 | 3 | 6 | 6 |
| V7U-M08A-R7530-□□ | 152 | 117 | 35 | 19 | 25 | 3 | 6 | 6 |
| V7U-M08A-R7530-□□□□ | 184.5 | 149.5 | 35 | 19 | 25 | 3 | 6 | 6 |
| V7U-M08A-R7530-□□□□ | 152 | 117 | 35 | 19 | 25 | 3 | 6 | 6 |
| V7U-M08A-R7530-□□□□□ | 162 | 149 | 35 | 19 | 25 | 3 | 6 | 6 |
| V7U-L08A-TR030-□□ | 156 | 121 | 35 | 19 | 25 | 3 | 6 | 6 |
| V7U-L08A-TR030-□□□ | 188 | 153 | 35 | 19 | 25 | 3 | 6 | 6 |
| V7U-M08A-TR030-□□ | 166 | 131 | 35 | 19 | 25 | 3 | 6 | 6 |
| V7U-M08A-TR030-□□□ | 198 | 163 | 35 | 19 | 25 | 3 | 6 | 6 |

Motor overload characteristic curve

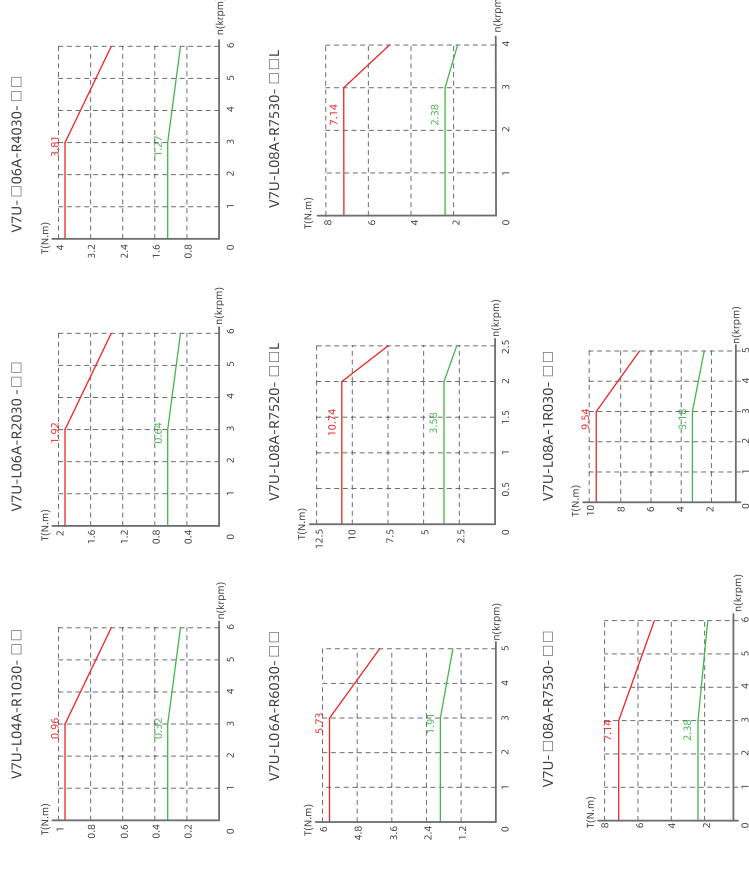


| Overload ratio | Overload time / s |
|----------------|-------------------|
| 2.0 | 10 |
| 2.1 | 8 |
| 2.2 | 7 |
| 2.3 | 6 |
| 2.4 | 5 |
| 2.5 | 4.5 |
| 3.0 | 3 |

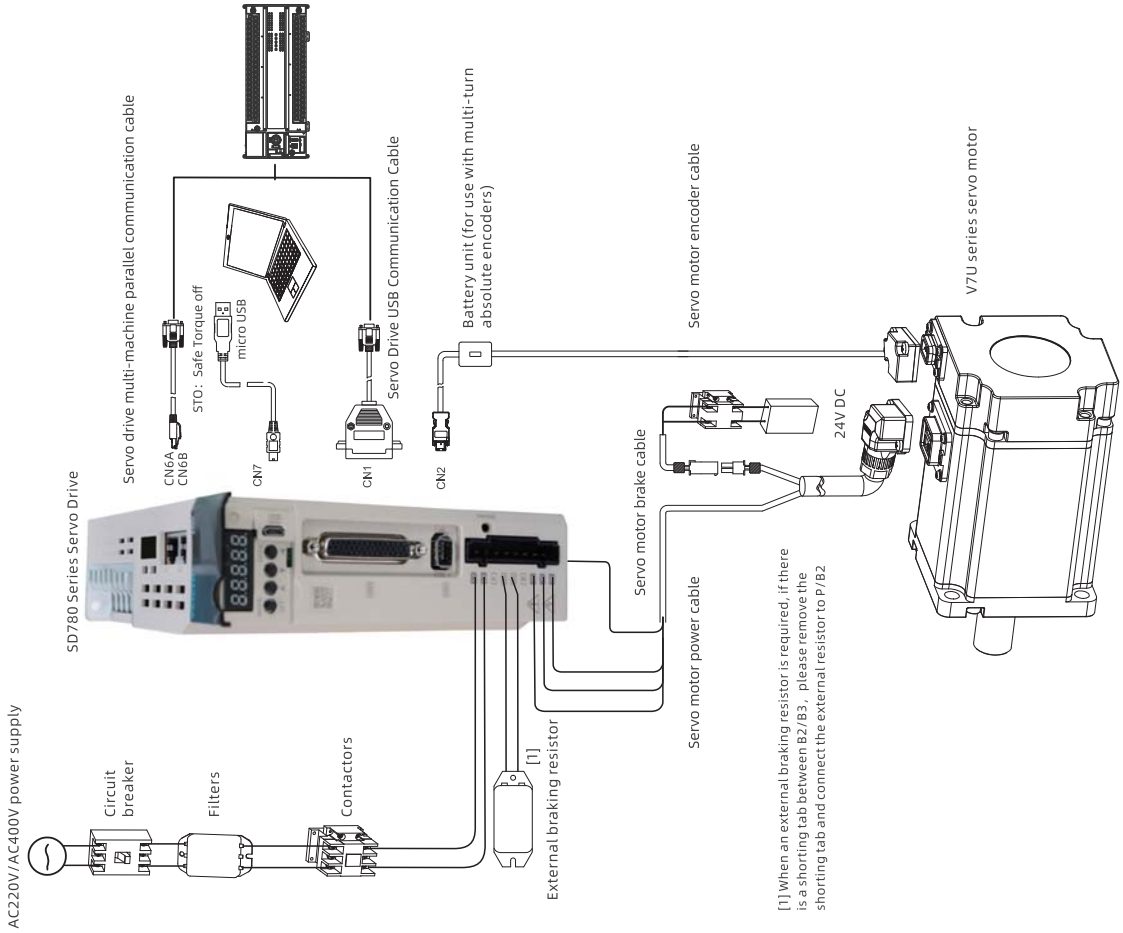
Torque characteristics of servo motor

Note: "—" is the rated torque

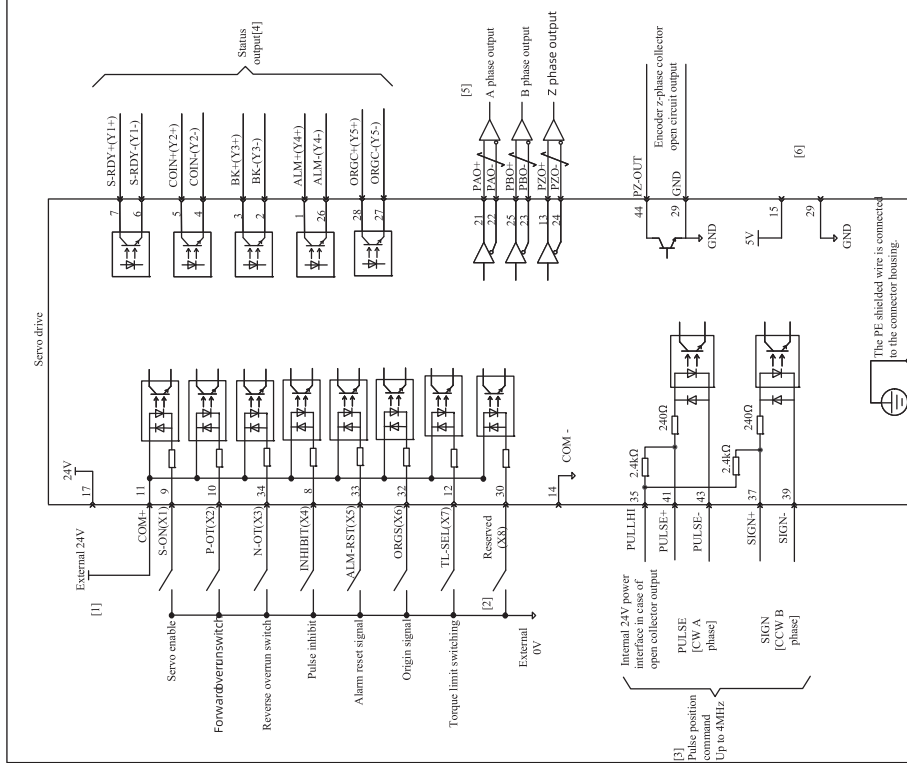
"——" is the instantaneous maximum torque



System application wiring guide



Position control wiring diagram



- [1] Example is external power supply wiring; if using internal 24V power supply, please connect pin 17 (24V positive) to pin 11, and the connection of input terminal corresponds to pin and pin 14 (COM-).
- [2] X7 and X8 are high-speed DI terminals, please choose to use them according to the function.
- [3] Pulse port wiring please use twisted shielded wire, the shield must be connected to PE at both ends, GND and the upper computer signal ground reliable connection.
- [4] Y output power supply is user-provided, the power supply range is 5-24V, Y port maximum allowable voltage DC30V, maximum allowable current 50mA.
- [5] Please use twisted shielded cable for the encoder frequency divider output cable, the shield layer must be connected to PE at both ends, and GND must be connected to the signal ground of the upper computer reliably.
- [6] Internal +5V power supply, maximum running current 200mA.

SD780 drive wire introduction

Power cable naming rules

① ② ③ ④ ⑤ ⑥ ⑦
V M 050 - L030 - O T L (UL)

Product Line

Power Cables

Wire diameter
 030: 0.3mm² cable ≤ 4.5A current
 050: 0.5mm² cable ≤ 6A current
 075: 0.75mm² cable ≤ 7A current
 150: 1.5mm² cable ≤ 11 A current

Cable length

L030: 3m
 L050: 5m
 L100: 10m
 L150: 15m
 L200: 20m
 L250: 25m
 L300: 30m

Motor power cord

VM030-④-JT⑦ (UL)

40 Flange
 Motor power
 cable without brake

VM050-④-OT⑦ (UL)

60/80 flange
 Motor power
 cable without brake

VM150-④-KN⑦ (UL)

110/130 flange
 Motor power
 cable without brake

UL certification

Cable material

L: standard cable (bending times more than 200W times)
 H: flexible cable (bending times more than 10000W times)

Driver end plug

N: None (bare wire/U-type terminal)
 T: with forked cold press type terminal or pre-insulated tube type terminal

Motor end plugs

A: 16M-4A (4 core injection one aviation plug)
 K: 3108A18-105 (4-core bent 90 degree aviation plug)
 H: 3108A20-185 (9-core bent 90 degree aviation plug)
 O: SC-MC65-AC (hook and loop type motor connector positive out 6PIN)
 OB: Same as O with holding brake
 U: SC-MC65-AB (6PIN hook and loop motor connector)
 UB: Same as U with holding brake

VM030-④-UBT⑦ (UL)

40 Flange
 Motor power
 cable with brake

VM050-④-OBT⑦ (UL)

60/80 flange
 Motor power
 cable with brake

VM150-④-HN⑦ (UL)

110/130 flange
 Motor power
 cable with brake

Encoder cable naming rules

① ② ③ ④ ⑤ ⑥ ⑦ ⑧
V E 04 - L030 - 2 S N L (UL)

Product Line

Encoder wire

Number of lines
 04: 4-core twisted shielded cable (without external battery power cable)
 06: 6-core twisted shielded cable (with external battery power cable)

Cable length

L030: 3m
 L050: 5m
 L100: 10m
 L150: 15m
 2 6PIN 1394

UL certification

Cable material

L: standard cable (bending times more than 200W times)
 H: flexible cable (bending times more than 10000W times)
 C: cold-resistant flexible drag chain cable (to meet -25 °C use environment)

Battery

N: without battery
 D: With battery
 F: with battery box without battery (BATTERY FREE)

Motor end plug

A: 16M-9A(9-core injection molding one piece aviation head)
 S: SC-MC75-A6(hook and loop type motor connector 7PIN)

Note: The length of the encoder wire ⑤ ⑥ defined as "25" is more than 15 meters, you need to use the encoder wire ⑤ ⑥ defined as "2A" plus adapter wire solution.

Encoder wire

VE04-④-25N⑥ (UL)

40/60/80
 Flange motor
 encoder cable
 Without battery

VE06-④-25D⑥ (UL)

40/60/80
 Flange motor
 encoder cable
 With battery

VE04-④-2AN⑥ (UL)

110
 Flange motor
 encoder cable
 Without battery

VE06-④-2AD⑥ (UL)

110
 Flange motor
 encoder cable
 With battery


Braking resistor selection

| Model | Braking voltage | Built-in resistors | External resistor minimum | External resistor max |
|------------|-----------------|--------------------|---------------------------|-----------------------|
| SD780-1R8A | 380V | None | 400 | 2000 |
| SD780-3R3A | 380V | None | 400 | 1000 |
| SD780-5R5A | 380V | 400, 60W | 250 | 700 |


Motor brake column

| | Model | Static torque N.m | Rated voltage V | Rated current A |
|----|-----------------------------|-------------------|-----------------|-----------------|
| 40 | Z092-5040B(24V)0.38GB-S-001 | 0.38 | 24±10% | 0.25 |
| 60 | Z029-5060B(24V)1.5G12 | 1.5 | 24±10% | 0.32 |
| 80 | Z122-5080B(24V)3.8G16-002 | 3.8 | 24±10% | 0.35 |


Applications




Printing and Packaging




3C Products




Engraving Machine




Woodworking Machine



Manipulator



New Energy Vehicles



Power Battery

Service and Support

