

# SD710 Series General Servo System



Stock code : 688698

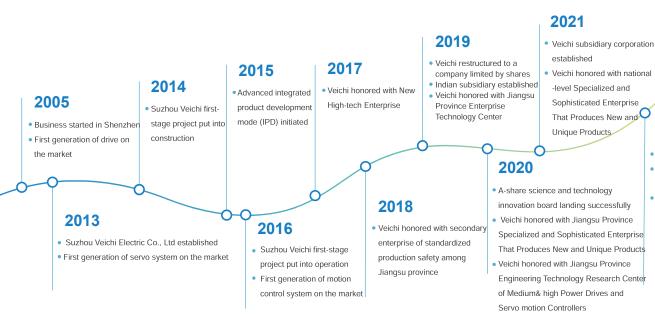


Veichi (stock code: 688698) has always committed to electric drive and industrial control since it's foundation. As an all-round company engaged in R & D, manufacturing and sales on high-tech industrial automation products, Veichi has been identified with several honorary titles such as Jiangsu provincial-level Enterprise Technology Center, Jiangsu Private-own Technical Enterprise, Specialized and sophisticated enterprises that produce new and unique products, Jiangsu Engineering Research Center, Jiangsu New and High-tech Enterprise and Suzhou city-level Gazelle Company (High Growth Enterprise) and has obtained the highest level of enterprise credit. Through years of independent research and development, Veichi now has authorized patents totaling 148 by the end of 12, 2022, and among them 36 are for invention. Having established R & D center and manufacturing bases in Suzhou, Shenzhen and Xi'an, added with the wholly-owned subsidiary in India, Veichi now are dealing with customers from several nations and regions and has the full capability to provide safe, competitive and trustworthy products and services to customers from the larger world.

Veichi provides various products including drives from 0.4kW to 5,600kW, servo systems from 50W to 200kW, motion controllers, PLC and HMI, which are applied in all sorts of fields occasions like lifting, mining, rail traffic, machine tools, compressors, plastic equipment, photo-voltaic pumping, construction, robots/mechanical arms, printing and packaging, chemical fibers for textile use, metallurgy, municipal works, petrol work and chemical engineering.

18 service stations and 182 contracted distributors cover 31 provinces on China mainland and Hong Kong, Macao and Taiwan regions, which guarantees a massive and efficient network for sales and services for our customers.

Veichi will continue to abide by the operation philosophy, that is, guided by market demand and driven by technical innovation, enlarge and enhance its core business like drives, servo systems, control systems and SIoTs. And Veichi will always be hard at providing quality products and services for customers and further make contributions to the development of electric drives and industrial controls.



#### 2023

- Suzhou Veichi second-stage project put into operation
- Suzhou Veichi third-stage project put into construction
- Veichi medical facility
   subsidiary established

### 2022

- Xi'an R&D center establishedVeichi digital energy subsidiary
- corporation establishedVeichi honored with AAA certificate
- of integrating IT application with industrialization



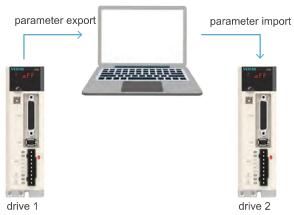
# **SD710 Series General Servo System**



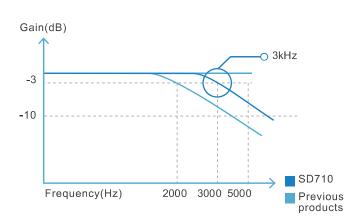
#### **Product Features**

#### **Drive parameters backup**

Backup function of debugging software avoids repeated setting on the same model.



# Continuation of outstanding performance of Veichi products



#### **Clear debugging panel**



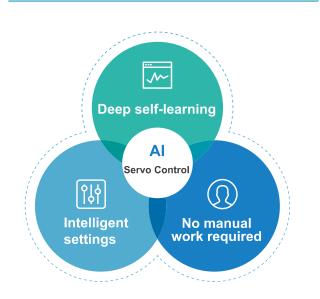
#### Automatic parameter tuning

- 1. Differentiate according to different mechanical structures complex loop parameters
- 2. Complete intelligent setting of
- Automatic set according to the mechanical situation without any manual work
- 4. Set position within as fast as 10ms



Mechanical structures such as screws, timing belts, rigid bodies, etc. are all dealt with differently

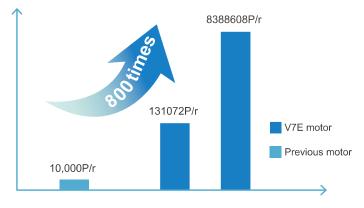
#### **Intelligent Settings**



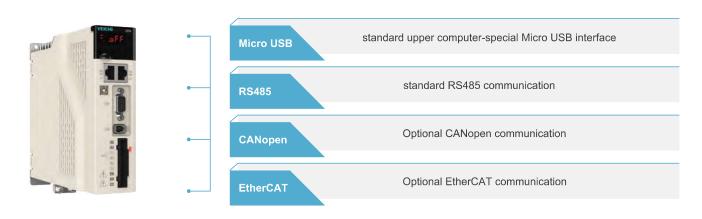
#### Compatible with 17bit/23bit absolute encoders

power-off position automatically saved with absolute value encoder battery life over 3 years

encoder with different resolutions to meet different application requirements



#### Superb bus communication

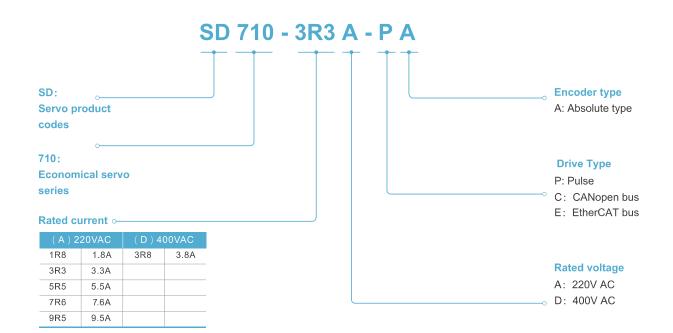


#### Hardware and structure upgrade for smaller size

Hardware & structure upgraded leading to 5R5 models reduced in size by 30%



## **Drive Model Description**



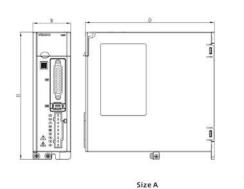
## **Drive Power and Case Division**

Model	Input	0	Case size	
woder	Rated voltage (V)	Rated current (A)	Instantaneous current(A)	0030 3120
SD710-1R8A	single-phase220	1.8	6.3	А
SD710-3R3A	single-phase220	3.3	11.6	
SD710-5R5A	single-phase/three-phase220	5.5	16.5	
SD710-7R6A	single-phase/three-phase220	7.6	22.8	В
SD710-9R5A	three-phase220	9.5	23.8	
SD710-3R8D	three-phase400	3.8	11.4	



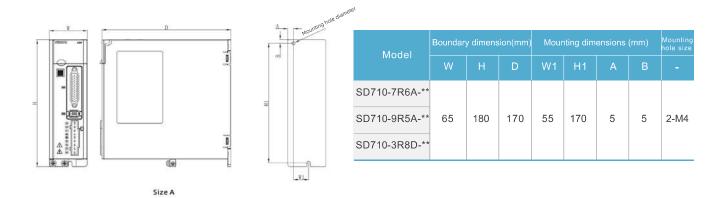
Mounting

W1.



Model	Boundary	dimens	ion(mm)	Moun	Mounting hole size			
Woder	W	н	D	W1	H1	А	В	-
SD710-1R8A-**								
SD710-3R3A-**		170	170	20	160	7.5	5	2-M4
SD710-5R5A-**								



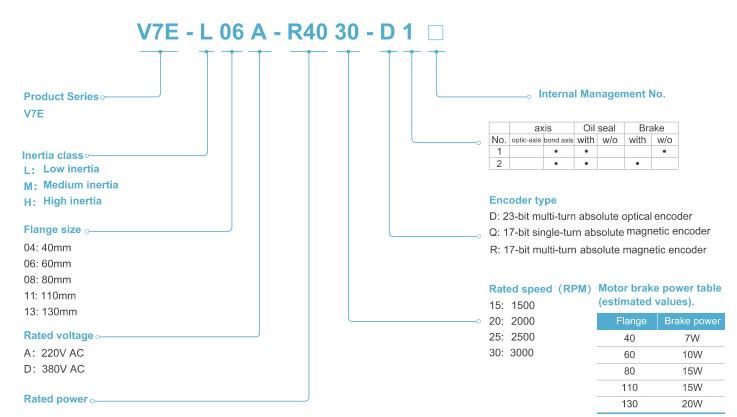


# **Technical Specifications**

	lt	ems		Specifications
	Contro	l met	hod	IGBT, PWM control, sine wave current drive
E	Incode	er feed	lback	Serial encoder: absolute encoder
	Op	peratio	on temperature	0°C~55°C ( usable by reducing the rated value under 55 $^\circ\!C$ ~ 60 $^\circ\!C$ )
	Ste	orage	temperature	-20°C∼65°C
Environment				Under 95%RH (No freezing and condensation)
Condition				Under 95%RH (No freezing and condensation)
				4.9m/s
	Im	pact s	strength	19.6m/s²
	Pro	otecti	on class	IP20
	Alt	itude		Lower than1000m (usable by reducing the rated value under 1000m~2000m
	Otl	ners		No electrostatic interference, strong electric field, strong magnetic field, radiation, etc.
	Sp	eed c	ontrol range	1:5000 (the lower limit of speed control range also means the value of not stopping at rated torque load)
Speed	-		Load fluctuation	Less than ±0.01% of rated speed (under load fluctuation: 0% to 100%)
Control	Spee fluctu		Voltage fluctuation	0% of rated speed (under voltage fluctuation: ±10%)
	ratio		Temperature fluctuation	Less than ±0.01% of rated speed (under temperature fluctuation: 25°C±25°C)
Torque	Tor	que c	ontrol accuracy	±1% (reproducible)
Control	So	ft sta	rt time setting	0s~10s (acceleration and deceleration can be set separately)
	Feed	forwa	rd compensation	0%~100%
D		Comm	nand pulse pattern	Command pulse pattern three types: "pulse + direction", "CW + CCW pulse sequence", and "A and B phase orthogonal pulse"
Position Control	mand	Inpu	ıt pattern	Linear drive with open collector
	pulse		imum t frequency	Differential input: high speed max. 4Mpps; open collector: max. 200Kpps.
	48	5		Standard
Commu- nication	CA	٨N		Optional
meanon	US	SВ		PC as upper machine, standard, compliant with USB 2.0 specifications (12Mbps)
Display				CHARGE, 8-segment LED × 5 bits
Panel o	perato	rs		Push button switch×4
Regene	ration	treatr	nent	Functions can be built-in/externally set
Protecti	on			Over current&voltage, undervoltage, overload, regenerative fault, encoder disconnection, OT protection
Auxiliar	y Func	tions		Gain adjustment, alarm recording, JOG operation, etc.
Encode	r pulse	e divid	ler output	Phase A, Phase B, Phase C: Linear drive output; number of divided pulses: 35~32767



## **Servo Motor Model Description**



Mark	Power	Mark	Power	Mark	Power
R10	100W	R75	750W	1R3	1.3KW
R20	200W	R85	850W	1R5	1.5KW
R40	400W	1R0	1.0KW	1R8	1.8KW
R60	600W	1R2	1.2KW	2R0	2KW

# Servo Motor Technical Parameters (General Model)

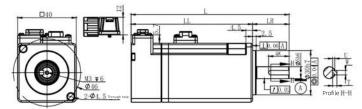
V7E model	Voltage (V)	Power (W)	Rated torque (N·m)	Rated speed (RPM)	Max.speed (RPM)	Rated current (A)	Max. current (A)	Rotor inertia
V7E-L04A-R1030-🗆1	220	100	0.32	3000	6000	1	3	0.051kg ⋅ cm²
V7E-L04A-R1030-02	220	100	0.32	3000	6000	1	3	0.052kg·cm <sup>2</sup>
V7E-L06A-R2030-□1	220	200	0.64	3000	6000	1.7	5.1	0.18kg·cm <sup>2</sup>
V7E-L06A-R2030-□2	220	200	0.64	3000	6000	1.7	5.1	0.2kg ⋅ cm <sup>2</sup>
V7E-L06A-R4030-□1	220	400	1.27	3000	6000	2.6	7.8	0.34kg·cm <sup>2</sup>
V7E-L06A-R4030-□2	220	400	1.27	3000	6000	2.6	7.8	0.36kg·cm <sup>2</sup>
V7E-M06A-R4030-□1	220	400	1.27	3000	6000	2.6	7.8	0.67kg·cm²
V7E-M06A-R4030- 2	220	400	1.27	3000	6000	2.6	7.8	0.69kg·cm <sup>2</sup>
V7E-L06A-R6030-🗆 1	220	600	1.91	3000	5000	3.3	9.9	0.51kg · cm²
V7E-L06A-R6030-□2	220	600	1.91	3000	5000	3.3	9.9	0.53kg·cm <sup>2</sup>
V7E-L08A-R7530-🗆 1	220	750	2.38	3000	6000	4.6	13.8	1.02kg·cm²
V7E-L08A-R7530-□2	220	750	2.38	3000	6000	4.6	13.8	1.13kg ⋅ cm²
V7E-M08A-R7530-□1	220	750	2.38	3000	6000	4.6	13.8	2.3kg·cm²
V7E-M08A-R7530-□2	220	750	2.38	3000	6000	4.6	13.8	2.41kg·cm <sup>2</sup>
V7E-L08A-1R030-□1	220	1000	3.18	3000	5000	5	16.5	1.34kg·cm²
V7E-L08A-1R030-□2	220	1000	3.18	3000	5000	5	16.5	1.45kg·cm <sup>2</sup>
V7E-M11A-1R230-□1	220	1200	3.82	3000	5000	6.3	18.9	4.91kg·cm <sup>2</sup>
V7E-M11A-1R230-□2	220	1200	3.82	3000	5000	6.3	18.9	5.52kg·cm <sup>2</sup>
V7E-M11A-1R530-□1	220	1500	4.78	3000	5000	7.6	22.8	6.1kg·cm²
V7E-M11A-1R530-□2	220	1500	4.78	3000	5000	7.6	22.8	6.71kg·cm²
V7E-M11A-1R830-□1	220	1800	5.73	3000	5000	9.3	27.9	7.28kg · cm²
V7E-M11A-1R830-□2	220	1800	5.73	3000	5000	9.3	27.9	7.89kg · cm²
V7E-M13A-1R020-□1	220	1000	4.78	2000	3000	4.9	14.7	12.98kg·cm <sup>2</sup>
V7E-M13A-1R020-□2	220	1000	4.78	2000	3000	4.9	14.7	15.12kg·cm <sup>2</sup>
V7E-M13A-1R520-□1	220	1500	7.16	2000	3000	7.1	21.3	18.38kg ⋅ cm²
V7E-M13A-1R520-□2	220	1500	7.16	2000	3000	7.1	21.3	20.52kg·cm <sup>2</sup>
V7E-M13A-2R020-□1	220	2000	9.55	2000	3000	9.4	28.2	25.58kg·cm²
V7E-M13A-2R020-□2	220	2000	9.55	2000	3000	9.4	28.2	27.72kg · cm²
V7E-M13D-1R020-□1	380	1000	4.78	2000	3000	3.2	9.6	12.98kg ⋅ cm²
V7E-M13D-1R020-02	380	1000	4.78	2000	3000	3.2	9.6	15.12kg · cm²

# Servo Motor Technical Parameters (Special Model)

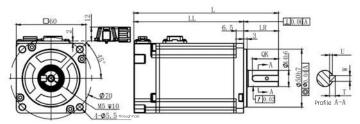
V7E Models	Voltage (V)	Power (W)	Rated torque	Rated speed (RPM)	Max.speed (RPM)	Rated current (A)	Max. current (A)	Rotor inertia
V7E-L08A-R7520-□1L	220	750	3.58	2000	2500	2.8	8.4	1.34kg·cm²
V7E-L08A-R7520-□2L	220	750	3.58	2000	2500	2.8	8.4	1.45kg · cm²
V7E-L08A-R7530-□1L	220	750	2.38	3000	4000	3.1	9.3	1.02kg · cm²
V7E-L08A-R7530-□2L	220	750	2.38	3000	4000	3.1	9.3	1.13kg·cm <sup>2</sup>
V7E-M13A-R8515-□1B	220	850	5.41	1500	3000	5.4	16.2	12.98kg · cm²
V7E-M13A-R8515-□2B	220	850	5.41	1500	3000	5.4	16.2	15.12kg · cm²
V7E-M13A-R8515-□1	220	850	5.41	1500	3000	5.4	16.2	12.98kg · cm²
V7E-M13A-R8515-□2	220	850	5.41	1500	3000	5.4	16.2	15.12kg · cm²
V7E-M13A-1R315-□1	220	1300	8.28	1500	3000	8.2	24.6	18.38kg · cm²
V7E-M13A-1R315-□2	220	1300	8.28	1500	3000	8.2	24.6	20.52kg · cm²
V7E-M13D-R8515-□1	380	850	5.41	1500	3000	3.3	9.9	12.98kg · cm²
V7E-M13D-R8515-□2	380	850	5.41	1500	3000	3.3	9.9	15.12kg·cm²
V7E-M13D-R8515-□1B	380	850	5.41	1500	3000	3.3	9.9	12.98kg · cm²
V7E-M13D-R8515-□2B	380	850	5.41	1500	3000	3.3	9.9	15.12kg · cm²

# **Servo Motor Installation Dimensions**

#### 40 flange



60 flange



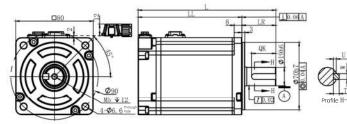
#### unit: mm

Motor Model	L	LL	LR	S	QK	U	W	Т
V7E-L04A-R1030-□1	108	83	25	8	14	1.5	3	3
V7E-L04A-R1030- 2	134	109	25	8	14	1.5	3	3

unit: mm								
Motor Model		LL	LR		QK	U	W	
V7E-L06A-R2030-□1	105.5	75.5	30	14	22.5	2.5	5	5
V7E-L06A-R2030- 2	136.5	106.5	30	14	22.5	2.5	5	5
V7E-L06A-R4030-□1	124.5	94.5	30	14	22.5	2.5	5	5
V7E-L06A-R4030- 2	155.5	125.5	30	14	22.5	2.5	5	5
V7E-M06A-R4030-□1	134.5	104.5	30	14	22.5	2.5	5	5
V7E-M06A-R4030-02	165.5	135.5	30	14	22.5	2.5	5	5
V7E-L06A-R6030-□1	143.5	113.5	30	14	22.5	2.5	5	5
V7E-L06A-R6030- 2	174.5	144.5	30	14	22.5	2.5	5	5

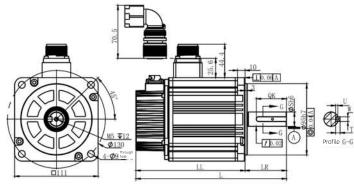


### 80 flange



unit: mm									
Motor Model		LL	LR		QK	U			
V7E-L08A-R7520-□1L	156	121	35	19	25	3	6	6	
V7E-L08A-R7520-□2L	188	153	35	19	25	3	6	6	
V7E-L08A-R7530-□1L	142	107	35	19	25	3	6	6	
V7E-L08A-R7530-□2L	174	139	35	19	25	3	6	6	
V7E-L08A-R7530-□1	142	107	35	19	25	3	6	6	
V7E-L08A-R7530-□2	174	139	35	19	25	3	6	6	
V7E-M08A-R7530-01	152	117	35	19	25	3	6	6	
V7E-M08A-R7530-02	184.5	149.5	35	19	25	3	6	6	
V7E-L08A-1R030-□1	156	121	35	19	25	3	6	6	
V7E-L08A-1R030-02	188	153	35	19	25	3	6	6	

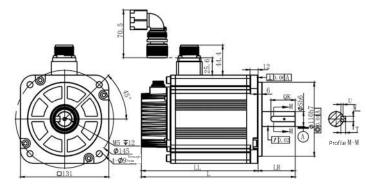
#### 110 flange



unit: mm

Motor Model		LL	LR		QK	U				
V7E-M11A-1R230-□1	190	135	55	19	40	3	6	6		
V7E-M11A-1R230-□2	221.2	166.2	55	19	40	3	6	6		
V7E-M11A-1R530-□1	200	145	55	19	40	3	6	6		
V7E-M11A-1R530-02	231.2	176.2	55	19	40	3	6	6		
V7E-M11A-1R830-□1	210	155	55	19	40	3	6	6		
V7E-M11A-1R830-□2	241.2	186.2	55	19	40	3	6	6		

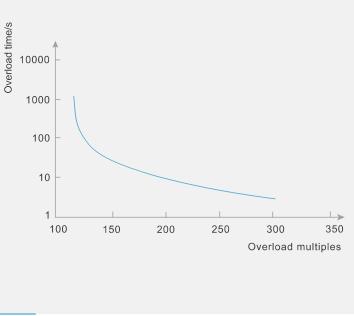
#### 130 flange



unit: mm								
Motor Model		LL	LR		QK	U		
V7E-M13A-R8515-□1	193	138	55	22	36	3.2	8	7
V7E-M13A-R8515-D2	221.2	166.2	55	22	36	3.2	8	7
V7E-M13A-1R020-□1	193	138	55	22	36	3.2	8	7
V7E-M13A-1R020-D2	221.2	166.2	55	22	36	3.2	8	7
V7E-M13A-1R315-□1	208	153	55	22	36	3.2	8	7
V7E-M13A-1R315-□2	236.2	181.2	55	22	36	3.2	8	7
V7E-M13A-1R520-□1	208	153	55	22	36	3.2	8	7
V7E-M13A-1R520-02	236.2	181.2	55	22	36	3.2	8	7
V7E-M13A-2R020-□1	228	173	55	22	36	3.2	8	7
V7E-M13A-2R020-02	256.2	201.2	55	22	36	3.2	8	7

# **Motor Overload Characteristics Curve**

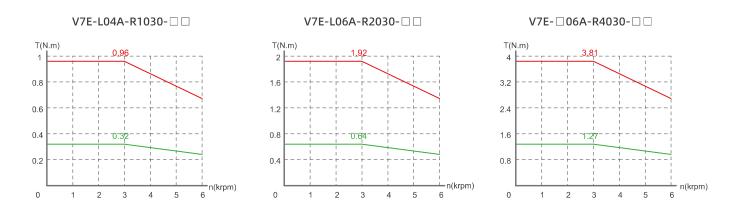




# Servo Motor Torque Characteristics

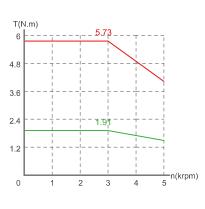
Note:" \_\_\_\_\_ "for rated torque

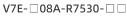
" \_\_\_\_\_ for maximum instantaneous torque

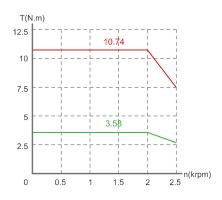




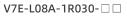
#### V7E-L06A-R6030- 🗆 🗆

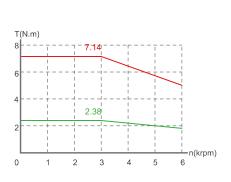




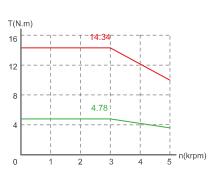


V7E-L08A-R7520- 🗆 🗆 L

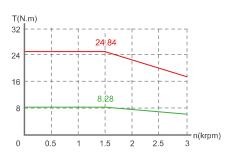


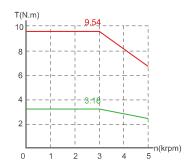


V7E-M11A-1R530- 🗆 🗆

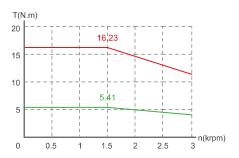


V7E-M13 - 1R315 - 🗆 🗆

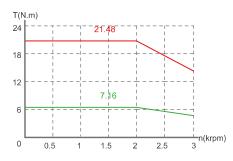




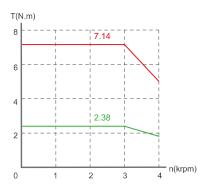
V7E-M13 -R8515- -



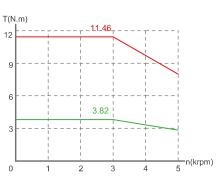
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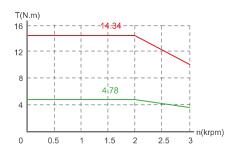
V7E-L08A-R7530- 🗆 🗆 L



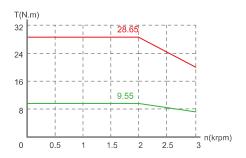
V7E-M11A-1R230- 🗆 🗆



V7E-M13 🗆 - 1R020- 🗆 🗆

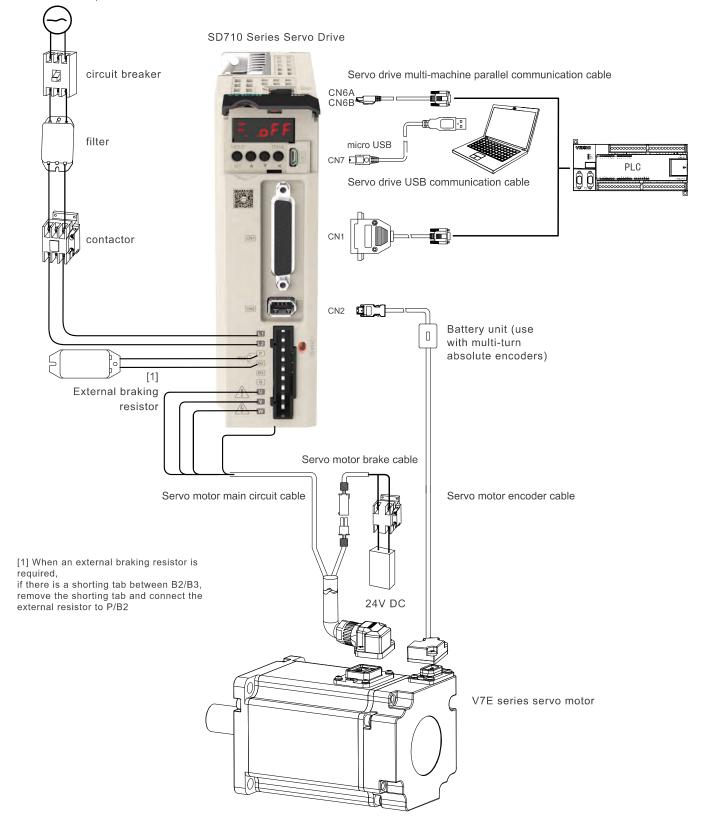


V7E-M13 -2R020- -

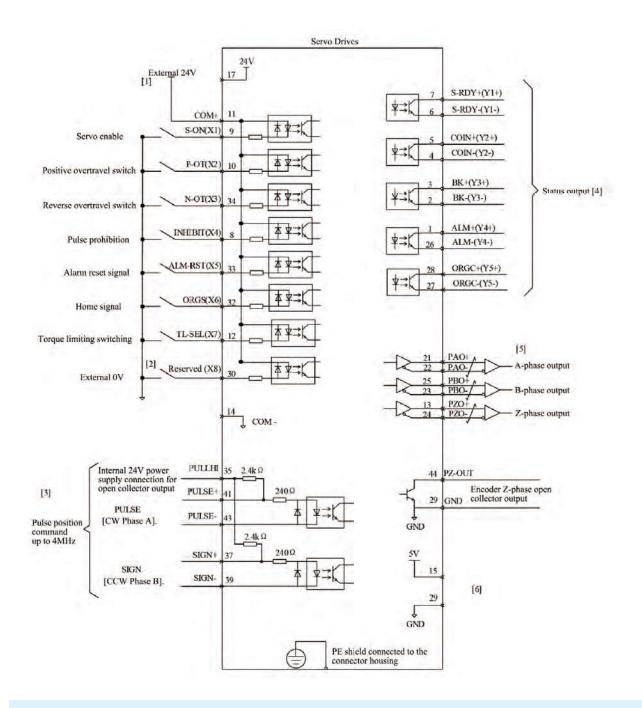


# **System Application Wiring Guide**

AC220V/AC400V power



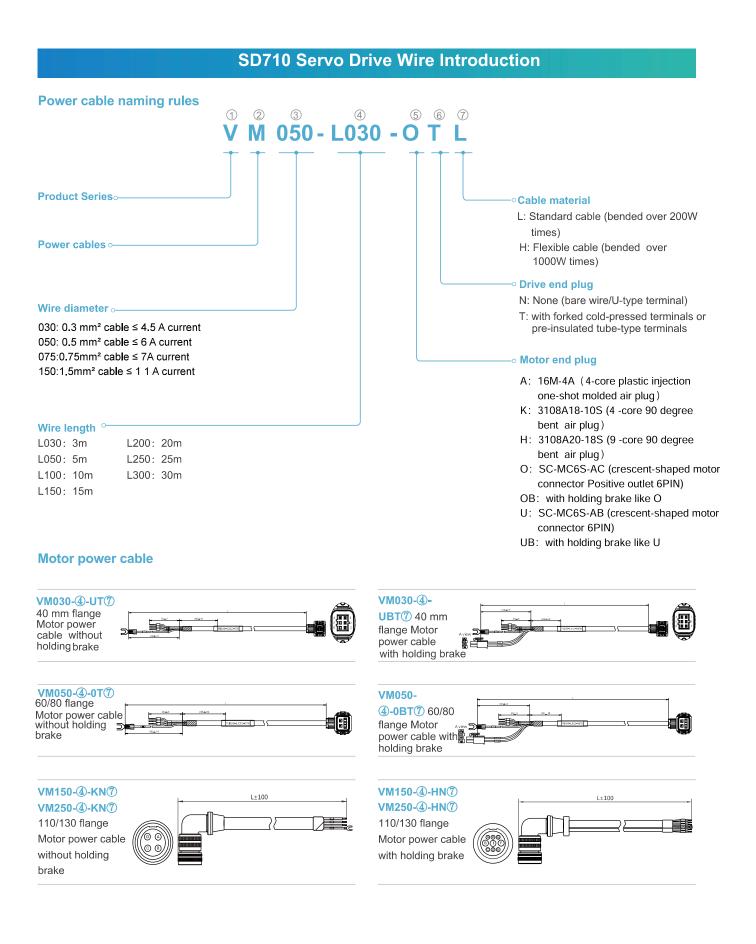
### **Position Control Wiring Diagram**



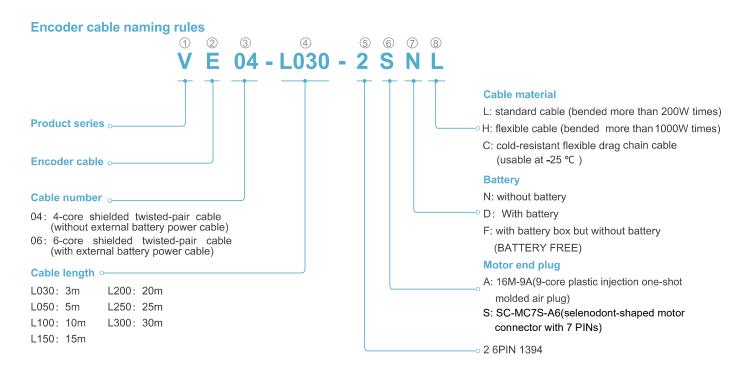
- Example shows external power supply wiring; if using internal 24V power supply, please connect pin 17 (24V positive) to pin 11, and the connection of input terminal corresponds to pin and pin 14 (COM-).

- [2] X7 and X8 are high-speed DI terminals, please choose according to different functions.
  [3] Pulse port wiring must be connected with shielded twisted-pair wires, and the shielding layer must be connected to PE at both ends. GND must be reliably connected to the upper computer signal ground terminal.
  [4] Y output power supply needs to be prepared by user-selves. The power supply range is 5~24V. Y port maximum allowable with shield some the Computer signal ground terminal. voltage is DC30V and maximum allowable current 50mA.
- [5] Please use shielded twisted-pair cables for the encoder frequency divider output, and the shielding layer must be connected to PE at both ends. GND must be reliably connected to the upper computer signal ground terminal.
- [6] Internal +5V power supply and maximum running current is 200mA.

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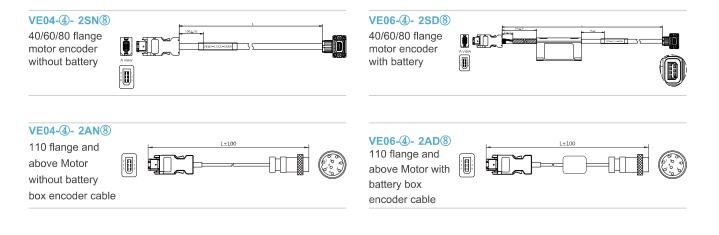






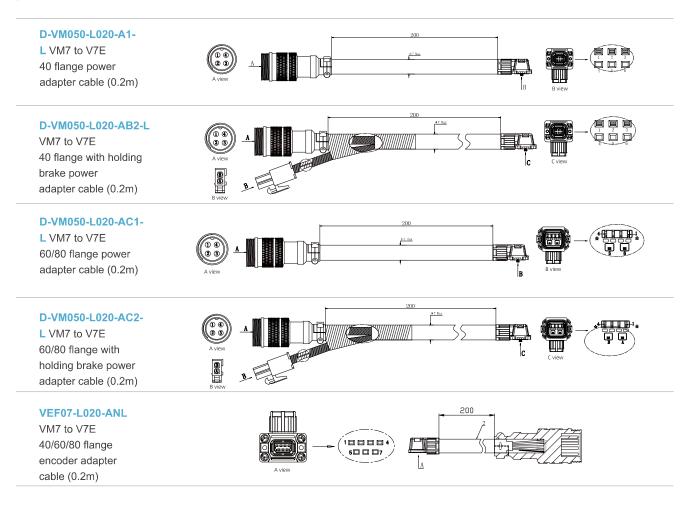
Note: If the length of the encoder wire (5) (6) defined as " 2S " is longer than 15 meters, please use the encoder wire whose (5) (6) is defined as " 2A " plus adapter cable.

#### **Encoder cable**





#### patch cord



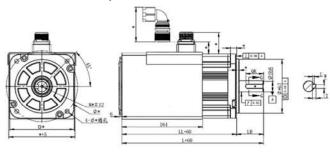
# **Brake Resistor Type**

Model	Brake Voltage	Built-in resistor	External resistor min.	External resistor max.
SD710-1R8A	380V	none	40Ω	200Ω
SD710-3R3A	380V	none	40Ω	100Ω
SD710-5R5A	380V	40Ω 60W	25Ω	70Ω
SD710-7R6A	380V	40Ω 60W	15Ω	50Ω
SD710-9R5A	380V	40Ω 60W	15Ω	40Ω
SD710-3R8D	700V	80Ω 60W	55Ω	180Ω

# **Motor Fan Column**

All models of 110/130 motors can be equipped with optional fans, and those with fans will be added an "F" after the original specifications.

#### Motor size with optional fan



#### **Fan specifications**

	F12038N27A230
Voltage level V	230±15AC
Rated current A	0.135A
Rated air delivery CFM	89
Rated speed rpm	2650

The optional fan increases the length of the motor body by 60mm, while the rest of the dimensions remain the same.

## **Brake Column**

	Model	Static torque N.m	Rated voltage V	Rated current A
40	Z092-S040B(24V)0.38G8.5-001	0.38	24±10%	0.25
60	Z029-S060B(24V)1.5G12	1.5	24±10%	0.32
80	Z122-S080B(24V)3.8G16-002	3.8	24±10%	0.35
110	Z029-S110B(24V)10G21	10	24±10%	0.81
130	Z092-S130B(24V)16C25-002	16	24±10%	1

# **Applications**







Carving machine





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