- Induction Heating
- Industrial Automation
- Photovoltaic energy storage

Canroon



Intelligent Drive Powerful Function

CV900A Series PMSM Drive



Product Introduction

The CV900A series is a high-performance universal current vector PMSM driver designed specifically for driving permanent magnet synchronous motors. The product has low-speed high-torque output, excellent dynamic characteristics, and super overload capacity. It is mainly used to control and regulate the speed and torque of three-phase AC synchronous motors.



Features and Performance Characteristics

The entire series includes a built-in braking unit

- Built in braking unit below 37KW, Optional for 45KW and above, and has protection against braking overload.

High Performance Vector Control To Improve Equipment Accuracy

- The maximum output frequency under vector control reaches 500Hz, achieving high-precision speed output within 10 times the field weakening speed regulation range.

Air-cooled/liquid-cooled options:

- Air-cooled models have a simple structure and easy installation. Liquid-cooled models are suitable for high-temperature and high-dust environments.

Wide voltage input design:

- Input power specifications can be selected to meet the application requirements of different countries/regions.

Long Life Design

- Refined design, long-life components selection, and automatic three-proof paint spraying process.

Low Speed And Large Torque Improve The Equipment Low Speed Control Performance

- Stable torque output, large low-frequency torque, capable of achieving ultra-low speed 0.01Hz stable load operation, torque mode and speed mode can be easily switched.

Independent Air Duct Design To Resist Various Harsh Pollution Environments

- Independent air duct design and long-life, large-volume fans are selected to improve reliability.

Built-in RS485 communication interface:

- Convenient for implementing PLC control and status monitoring.

Complies with international mainstream standards and certifications.

- CE、ISO 9001、EAC , etc .

Application Fields

The CV900A series driver is suitable for the following fields:



Injection molding machines



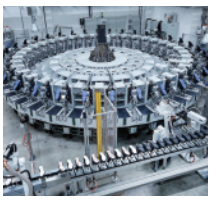
Die-casting machines



Hydraulic presses



Aluminum extrusion machines

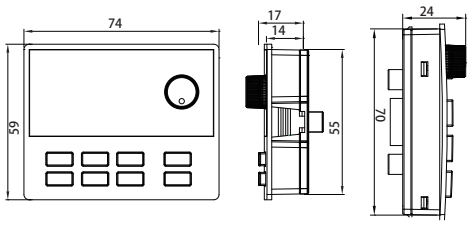


Shoe machines

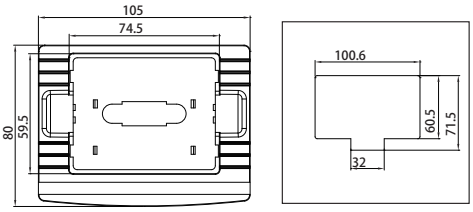


Garbage compactors

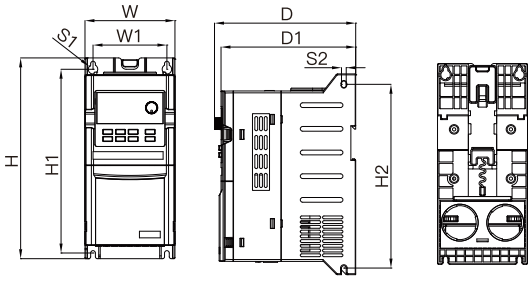
Structure And Dimensions



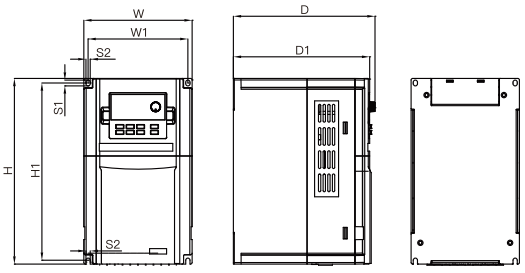
Keyboard size（mm）



Keyboard base size（mm）

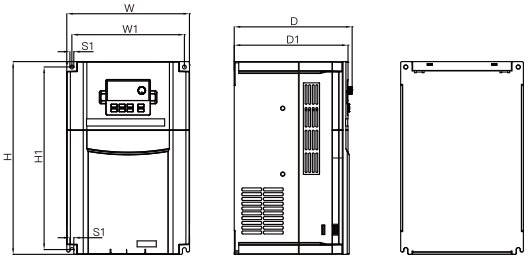


Picture 1: CV900A-00AG-12SB ~ 005G-14TB

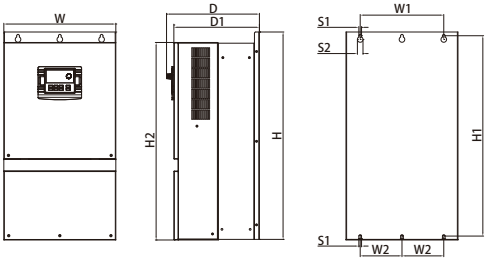


Picture 2: CV900A-004G-12SB ~ 011G-14TB

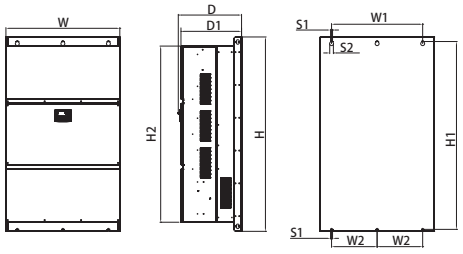
Specification Model	Installation Hole Position（mm）				Overall Dimensions（mm）			Installation Aperture（mm）		Picture
	W (mm)	H (mm)	D (mm)	D1 (mm)	W1 (mm)	H1 (mm)	H2 (mm)	S1 (mm)	S2 (mm)	
CV900A-00AG-12SB	95	212	149	142	78	194	194	Ø10	Ø5	1
CV900A-00BG-12SB										
CV900A-001G-12SB										
CV900A-002G-12SB										
CV900A-00AG-12TB										
CV900A-00BG-12TB										
CV900A-001G-12TB										
CV900A-002G-12TB										
CV900A-00BG-14TB										
CV900A-001G-14TB										
CV900A-002G-14TB										
CV900A-004G-14TB										
CV900A-005G-14TB										
CV900A-004G-12SB	140	240	183	176	129	229	/	Ø8	Ø6	2
CV900A-005G-12SB										
CV900A-004G-12TB										
CV900A-005G-12TB										
CV900A-007G-14TB										
CV900A-011G-14TB										



Picture 3: CV900A-015G~ 022G-14TB



Picture 4: CV900A-030G-14TB ~ 160G-14TF



Picture 5: CV900A-200G ~ 450G-14TF

Specification Model	Installation Hole Position (mm)					Overall Dimensions (mm)			Installation Aperture (mm)		Picture
	W (mm)	H (mm)	D (mm)	D1 (mm)	H2 (mm)	W1 (mm)	W2 (mm)	H1 (mm)	S1 (mm)	S2 (mm)	
CV900A-015G-14TB	205	322	197	190	/	188	/	305	Ø7	/	3
CV900A-018G-14TB											
CV900A-022G-14TB											
CV900A-030G-14TB	270	463	223.9	206.3	437.7	201.5	/	444.5	Ø6.5	Ø13.5	4
CV900A-037G-14TB											
CV900A-045G-14TF	320	522	257.6	240	489	200	100	499	Ø9	Ø16.5	
CV900A-055G-14TF											
CV900A-075G-14TF	340	720	305.6	288	663	260	130	700.5	Ø9	Ø16.5	
CV900A-090G-14TF											
CV900A-110G-14TF											
CV900A-132G-14TF	380	720	305.6	288	663	260	130	700.5	Ø9	Ø16.5	
CV900A-160G-14TF											
CV900A-200G-14TF	470	830	347.1	329.5	743	343	171.5	791	Ø11	Ø24	5
CV900A-220G-14TF											
CV900A-250G-14TF	540	1060	416.6	399	970	420	210	1031.5	Ø13	Ø26	
CV900A-280G-14TF											
CV900A-315G-14TF											
CV900A-355G-14TF	650	1090	416.6	399	1000	420	210	1061.5	Ø13	Ø26	
CV900A-400G-14TF											
CV900A-450G-14TF	750	1280	416.6	399	1160	600	300	1237	Ø13	Ø26	

Product Series

CV900A - 015 G - 1 4 T B
① ② ③ ④ ⑤ ⑥ ⑦

①	Product Series	CV900A Series
②	Rated Power	00A：0.4KW ~ 450: 450KW
③	Load Type	G：Constant torque
④	Output	1: Three-phase 2: Single-phase
⑤	Voltage Level	1：110V　2：220V　4：380V
⑥	Output	S：Single-phase　T：Three-phase
⑦	Cooling Method	B：Air cooling (with built-in brake unit) F：Air cooling(No built-in brake unit)

Specification model		Rated Power (KW)	Rated output current(A)
1 phase 220V	CV900A-00AG-12SB	0.4	2.3
	CV900A-00BG-12SB	0.75	4
	CV900A-001G-12SB	1.5	7
	CV900A-002G-12SB	2.2	9.6
	CV900A-004G-12SB	4	17
	CV900A-005G-12SB	5.5	25
3 phase 220V	CV900A-00AG-12TB	0.4	2.3
	CV900A-00BG-12TB	0.75	4
	CV900A-001G-12TB	1.5	7
	CV900A-002G-12TB	2.2	9.5
	CV900A-004G-12TB	4	17
	CV900A-005G-12TB	5.5	25
3 phase 380V	CV900A-00BG-14TB	0.75	2.1
	CV900A-001G-14TB	1.5	3.8
	CV900A-002G-14TB	2.2	5.1
	CV900A-004G-14TB	4	9
	CV900A-005G-14TB	5.5	13
	CV900A-007G-14TB	7.5	17
	CV900A-011G-14TB	11	25
	CV900A-015G-14TB	15	32
	CV900A-018G-14TB	18.5	37
	CV900A-022G-14TB	22	45
	CV900A-030G-14TB	30	60
	CV900A-037G-14TB	37	75

Specification model	Rated Power (KW)	Rated output current(A)
Three-phase 380V		
CV900A-045G-14TF	45	90
CV900A-055G-14TF	55	110
CV900A-075G-14TF	75	152
CV900A-090G-14TF	90	176
CV900A-110G-14TF	110	210
CV900A-132G-14TF	132	253
CV900A-160G-14TF	160	304
CV900A-200G-14TF	200	380
CV900A-220G-14TF	220	426
CV900A-250G-14TF	250	465
CV900A-280G-14TF	280	520
CV900A-315G-14TF	315	585
CV900A-355G-14TF	355	650
CV900A-400G-14TF	400	725
CV900A-450G-14TF	450	820

Braking Resistor Selection Table

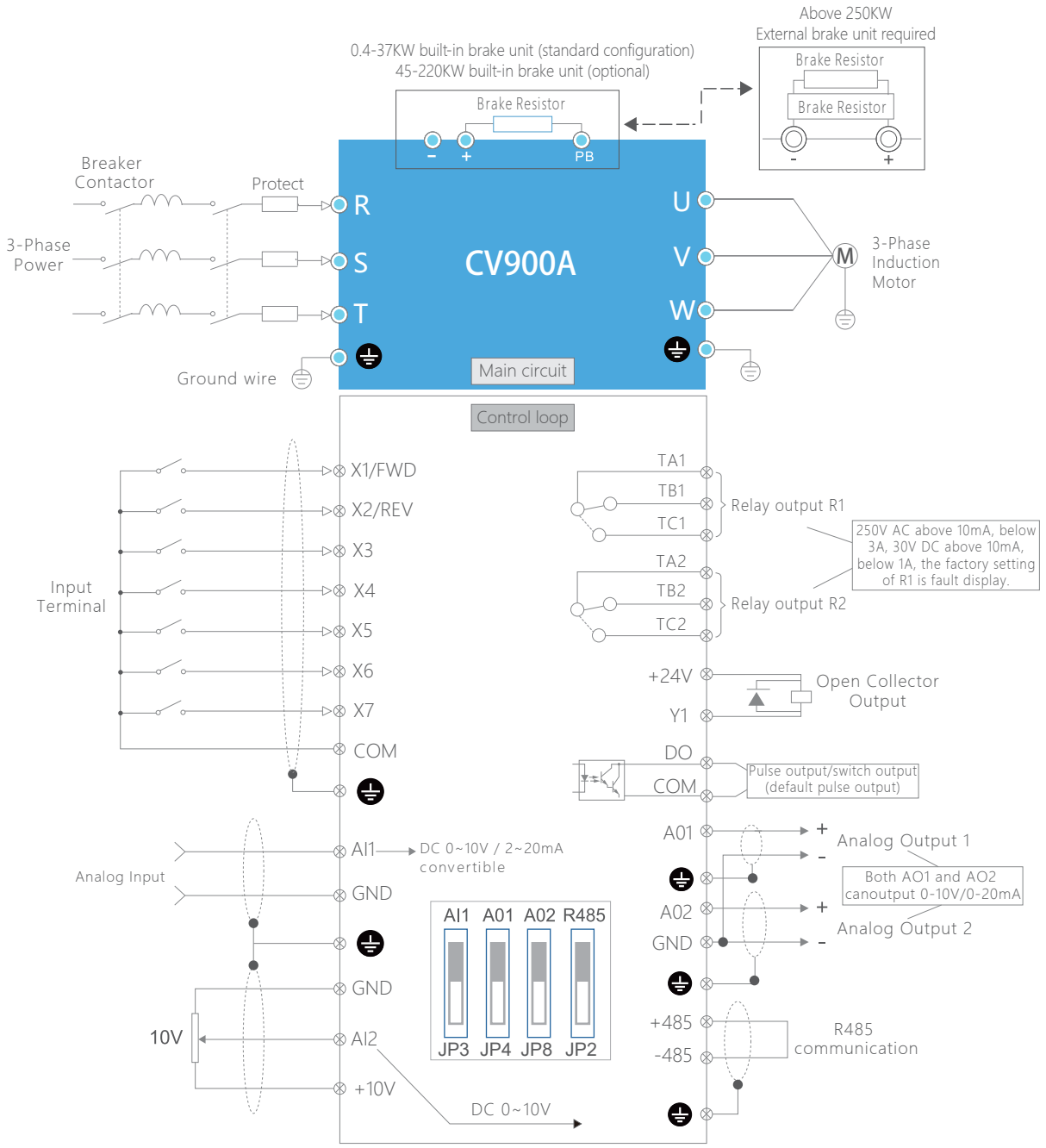
Voltage(V)	VFD Powe (KW)	Braking Resistor Specification		Braking Torque
		W	Ohm	10%ED
1-phase 220V	0.4	80	200	125
	0.75	80	150	
	1.5	100	100	
	2.2	100	70	
	4	300	50	
	5.5	300	50	
3-phase 220V	0.4	150	120	
	0.75	150	110	
	1.5	250	100	
	2.2	300	65	
	4	400	45	
	5.5	800	22	
3-phase 380V	0.75	100	750	
	1.5	300	400	
	2.2	300	250	
	4	400	150	
	5.5	500	100	
	7.5	1000	75	
	11	3000	43	
	15	3000	32	
	18.5	3000	25	
	22	4000	22	
	30	5000	16	
	37	6000	13	
	45	6000	10	
	55	6000	10	
	75	7500	6.3	
	93	9000	9.4/2	
	110	11000	9.4/2	
	132	13000	6.3/2	
	160	16000	6.3/2	
	200	20000	2.5	
	220	22000	2.5	
	250	25000	2.5/2	
	280	28000	2.5/2	
	315	32000	2.5/2	
	355	34000	2.5/2	
	400	42000	2.5/3	
	450	45000	2.5/3	

Technical Parameter

	Functional description		Specification index
Input	Rated Voltage,Frequency		3-phase (4T) AC 380V, 47-63Hz; 1-phase (2S) AC 220V, 47-63 Hz
	Allowed Voltage Range		3-phase (4T) AC 320V～480V; 1-phase (2S) AC 160V～260V
Output	Voltage		14T，0～480V；12S，0～260V
	Frequency		Vector control: 0~500Hz V/F control: 0~500Hz
	Overload Capacity		150% rated current 60s, 180% rated current 5s; 195% rated current 0.5s
Control Mode			V/F control, speed-sensor-less vector control (SVC)
Control Character	Frequency Setting Resolution	Analog Input	Maximum frequency X0.025%
		Digital Setting	0.01Hz
	V/F Control	V/F Curve(voltage frequency character)	Three types: linear type; multi-point type; Nth power type V/F curve (to the power of 1.2, 1.4,1.6,1.8,2)
		Torque boost	Manual setting: 0.0~30% of rated output. Automatic boost: automatically determine the boost torque according to the output current and combined with the motor parameters.
		Automatic Currentlimiting and Voltage-limiting	During acceleration, deceleration or steady running, detect automatically the current and voltage of motor stator, and control it within bounds based on unique algorithm, minimize fault-trip chanc
	Senseless Vector Control	Voltage Frequency Character	Adjust pressure/frequency ratio according to motor parameter and unique algorithm
		Torque Character	Starting torque:150% rated torque at 1.0Hz (VF control) 150% rated torque at 0.25Hz (SVC) Running speed steady-state accuracy: ≤±0.2% of rated synchronous speed Speed fluctuation: ≤±0.5% rated synchronous speed Torque response: ≤20ms (SVC)
		Motor Parameter Self-measurement	Without any restrictions, the automatic detection of parameters can be completed under the static and dynamic conditions of the motor to obtain the best control effect.
		Current and Voltage Restrain	Current closed-loop control, free from current impact, perfect restrain function of overcurrent and overvoltage
	Undervoltage Restrain during Running		Specially for users with a low or unsteady voltage power grid: even lower than the allowable voltage range, the system can maintain the longest possible operating time based on its unique algorithm and residual energy allocation strategy
Typical Function	Multi-velocity and Traverse Operation		16 segments programmable multi-velocity control, multiple operation mode. Traverse operation: preset frequency and center frequency adjustable, parameter memory and recovery after power cut.
	PID Control RS485 Communication		Built-in PID controller (frequency can be preset) Standard RS485 communication function
	Frequency Setting	Analog Input	Direct voltage 0~10V, direct current 0~20mA (optional up limit and lower limit)
		Digital Input	Operation panel setting, RS485 port setting, UP/DOWN terminal control, or combined with analog input
	Output Signal	Digital Output	1-way Y terminal open collector output and 2-way programmable relay output (TA, TB, TC)
		Analog Output	2 channel analog signal output, output ranging within 0~20mA or 0~10V with flexibly setting, achievable output of physical quantities like set frequency, output frequency
	Automatic Steady voltage Operation		Dynamic steady state, static steady state, and unsteady voltage for choices to obtain the steadiest operation
	Acceleration and Deceleration Time Setting		0.0s～65000.0s can be set continuously, S-type and linear type are optional
	Brake	Dynamic Braking	Dynamic braking initial voltage, backlash voltage and dynamic braking continuous adjustable
		DC Braking	Halt DC braking initial frequency: 0.00~[F00.10] upper limit frequency Braking time: 0.0~100.0s; Braking current: 0.0%~100.0% of rated current
	Low Noise Running		Carrier frequency 0.5kHz~16.0kHz continuous adjustable, minimize motor noise
	Speed Tracking and Restart Function		Smooth restart during operation, instantaneous stop and restart
	Operation Function		Upper limit and lower limit frequency setting, frequency hopping operation, reversal running restraint, slip frequency compensation, RS485 communication, frequency control of progressive increase and decrease, failure recovery aomatically, etc.
Display	Operation Panel Display	Running State	Output frequency, output current, output voltage, motor speed, set frequency, module temperature, PID setting, feedback, analog input and output, etc.
		Alarm	There are 8 operating parameter records including output frequency, output current, bus voltage, input terminal status, output terminal status, inverter status, power-on time, and running time when three faults trip.
Protective Function			Overcurrent, overvoltage, undervoltage, module fault, electric thermal relay, overheat, short circuit, default phase of input and output, motor parameter adjustment abnormality, internal memory fault, etc.
Environment	Ambient Temperature		-10°C ~ +40°C (please run the VFD in derated capacity when ambient temperature is 40°C~50°C)
	Ambient Humidity		5%~95%RH, without condensing drops
	Surroundings		Indoors (without direct sunlight, corrosive or flammable gas, oil fog and dust)
	Altitude		Running in derated capacity above 1000m, derate 10% for every 1000m rise.
Structure	Protection Level		IP20
	Cooling Method		Air cooling with fan control
Installation Method			Wall-hanging type

System Wiring Diagram

Connect the control circuit terminals according to the figure below.



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