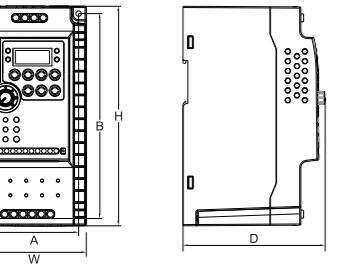


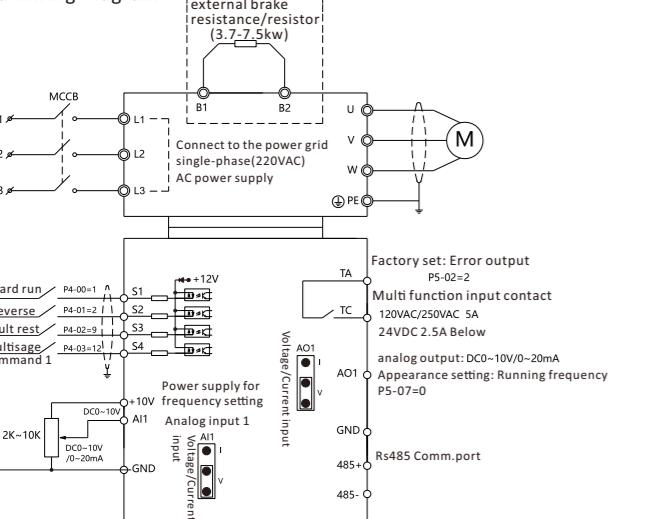
# User Manual for EV200 series Variable Frequency Drive

## 1. Outsize



Voltage	Model type	Power(kW)	Install size(mm)		outsize(mm)		Install hole
			A	B	W	H	
Single phase 220V	EV200-0400G-S2	0.4	60	129	73	143	112.6 $\Phi 4.4$
	EV200-0750G-S2	0.75					
	EV200-1500G-S2	1.5					
	EV200-2200G-S2	2.2					
Three phase 380V	EV200-0750G-T3	0.75	73	168	85.5	180	116.4 $\Phi 4.4$
	EV200-1500G-T3	1.5					
	EV200-2200G-T3	2.2					
	EV200-3700G-T3	3.7					
	EV200-5500G-T3	5.5					

## 2. Standard Wiring Diagram



## Wiring instructions

Terminal symbol	Function description
E	Grounding terminal
L1, L3	Connect to the power grid single-phase (220Vac) AC power supply
L1, L2, L3	Connected to the grid three-phase (380vac) AC power supply
U,V,W	Connect a three-phase AC motor
B1	Filter capacitor DC side voltage positive terminal
B2	A DC braking resistor can be connected directly to B1

## 3. Technical specifications

Item	Specification
Highest frequency	Vector control: 0~500Hz; V/F control: 0~500Hz
Carrier frequency	0.8kHz ~ 12kHz Carrier frequency can be adjusted automatically according to temperature characteristics
Input frequency resolution	Digital setting: 0.01Hz Analog setting: maximum frequency $\times 0.025\%$
control mode	without PG Vector(SVC), Feedback vector(FVC) and V/F control
Start torque	G type: 0.5Hz/150% (SVC); 0Hz/180% (FVC) P type: 0.5Hz/100%
Speed range	1: 100 (SVC) 1: 1000 (FVC)
Speed control accuracy	$\pm 0.5\%$ (SVC) $\pm 0.02\%$ (FVC)
Torque control accuracy	$\pm 5\%$ (FVC)
Overload capacity	G type: 150% rated current 60sec; 180% rated current 3sec

## 4. Function Parameters Table

When PP-00 is set as a non-zero value, that is, the parameter protection password is set. In the function parameter and the user changes the parameter mode, the parameter menu must enter the password correctly. It can cancel the password protection function by setting PP-00 as 0. The parameter menu in user-defined parameter mode is not password protected. Group P and A include basic function parameters, group d includes the monitoring function parameters. The symbols in the function code table are described as follows:

- "\*": it is possible to modify the parameter when the drive is in the stop or in the run status;
- "\*": the parameter is the actual measured value and can not be modified;
- "\*\*": the parameter is a "factory parameter", can be set only by the manufacturer, prohibit the user to operate.

Function Code	Name	Setting Range	Default	Modify
<b>P0 Group: Basic Function</b>				
P0-01	Motor 1 control mode	0: No speed sensor vector control (SVC) 1: Speed sensor vector control (FVC) 2: V/F control	2	★
P0-02	Command source selection	0: Operation panel instruction channel 1: Terminal command channel 2: communication command channel	0	★
P0-03	Main frequency reference setting A channel selection	0: digital setting (preset frequency P0-08, UP/DOWN can be modified, power is not memory) 1: digital setting (preset frequency P0-08, UP/DOWN can be modified, power-down memory 2: AI1 (Note: J4 jumper in the PANEL and AI1 connected to the keyboard potentiometer input, PORT and AI1 connected to the external terminal AI1 input) 3: A12 4: A13 5: High-speed pulse input setting (S5) 6: multi-segment instructions 7: Simple PLC 8: PID 9: communication given 10: Reserved	2	★
P0-04	Auxiliary frequency source B command input selection	With P0-03 (main frequency source A instruction input selection)	0	★
P0-05	Auxiliary frequency source B Reference object selection	0: relative to maximum frequency 1: relative to frequency source A	0	★
P0-06	Auxiliary frequency source B command range	0%~150%	100%	★
P0-07	Frequency source combination mode selection	Bit: frequency source selection 0: Main frequency source A 1: main and auxiliary operation results (operation relationship determined by ten) 2: Main frequency source A and auxiliary frequency source B switch 3: Main frequency source A and master and slave operation result switching 4: auxiliary frequency source B and master and slave operation result switching Ten: frequency source main and auxiliary operation relationship 0: main + auxiliary 1: main - auxiliary 2: the two maximum 3: the two minimum	00	★
P0-08	Preset frequency	0.00Hz~max(P0-10) frequency	50.00Hz	★
P0-09	Running direction	0: same direction 1: opposite direction	0	★
P0-10	Max.output frequency	50.00Hz~500.00Hz	50.00Hz	★
P0-11	Setting channel of frequency upper limit	2: A12 3: A13 4: High-speed pulse setting (S5) 5: communication given	0	★
P0-12	Frequency reference upper limit	Upper limit P0-10 P0-14~max frequency	50.00Hz	★
P0-13	Frequency reference upper limit offset	0.00Hz~frequency max. P0-10	0.00Hz	★
P0-14	Frequency Reference lower limit	0.00Hz~frequency upper limit P0-12	0.00Hz	★
P0-15	Carrier frequency	0.8KHz~12.0KHz	Model dependent	★
P0-16	Carrier frequency adjusted with temperature	0: Disabled 1: Enabled	1	★
P0-17	Acceleration time 1	0.005s~65000s	Model dependent	★
P0-18	Deceleration time 1	0.005s~65000s	Model dependent	★
P0-19	Acceleration/Deceleration time unit	0: 1s 1: 0.1s 2: 0.01s	1	★
P0-20	Frequency offset of auxiliary frequency setting channel for main and auxiliary calculation	0.00Hz~max.frequency P0-10	0.00Hz	★
P0-21	Frequency reference resolution	2: 0.01Hz	2	★
P0-22	Retentive of digital setting frequency upon stop	0: do not remember 1: memory	1	★
P0-23	Motor parameter group selection	0: 1st motor parameter 1: 2nd motor parameter	0	★
P0-24	Acceleration/Deceleration time base frequency	0:maximum (P0-10) 1: Set frequency 2: 100Hz frequency	0	★
P0-25	Base frequency for UP/DOW modification during running	0: Run frequency 1: Set frequency	0	★
P0-26	The run command is tied to the main frequency source A command selection	Bit: Operation panel command Bind frequency source selection 0: no binding 1: Digital setting frequency 2: AI1 (Note: J6 jumper) 3: A12 4: A13 5: High-speed pulse input setting (S5) 6: multi-speed 7: Simple PLC 8: PID 9: communication given	0	★
P0-27	Hundreds: communication command binding frequency source Selection			
P0-28	Serial port communication protocol	0: Modbus communication	0	★
<b>P1 Group: Motor 1 Parameters</b>				
P1-00	Motor type selection	0: ordinary asynchronous motor 1: Variable frequency asynchronous motor	0	★
P1-01	Rated motor power	0.1KW~1000.0KW	Model dependent	★
P1-02	Rated motor voltage	1V~200V	Model dependent	★
P1-03	Rated motor current	0.01 to 655.35A (AC drive power < 55kW) 0.1 to 6553.5A (AC drive power > 55kW)	Model dependent	★
P1-04	Rated motor frequency	0.01Hz~max. frequency	Model dependent	★
P1-05	Rated motor speed	1rpm~65535rpm	Model dependent	★
P1-06	Stator resistance	0.001Ω~65.535Ω (AC drive power≤55kW) 0.0001Ω~6.535Ω (AC drive power>55kW)	Auto-tuning dependent	★

P1-07	Rotor resistance	0.001Ω~65.535Ω (AC drive power≤55kW) 0.0001Ω~6.535Ω (AC drive power>55kW)	Auto-tuning dependent	★
P1-08	Leakage inductive reactance	0.01mH~655.35mH (AC drive power≤55kW) 0.001mH~65.535mH (AC drive power>55kW)	Auto-tuning dependent	★
P1-09	Mutual inductive reactance	0.1mH~6553.5mH (AC drive power≤55kW) 0.01mH~655.35mH (AC drive power>55kW)	Auto-tuning dependent	★
P1-10	No-load current	0.01A~P1-03 (AC drive power≤55kW) 0.1A~P1-03 (AC drive power>55kW)	Auto-tuning dependent	★
P1-11	Encoder pulses per revolution	1~65535	1024	★
P1-12	Encoder type	0: ABZ incremental encoder 1: Resolver	0	★
P1-13	A/B phase sequence of ABZ incremental encoder	0: Forward 1: Reserve	0	★
P1-14	Number of pole pairs of resolver	1~65535	1	★
P1-15	Encoder wire-break fault detection time	0.0: no operation 0.1~10.0s	0.0s	★
P1-16	Motor auto-tuning method selection	1: Asynchronous machine static part of the parameters of self-learning 2: asynchronous machine dynamic complete self-learning 3: asynchronous machine static complete self-learning	0	★
<b>P2 Group: Vector Control Parameters</b>				
P2-00	Speed loop proportional gain 1	1~100	30	★
P2-01	Speed loop integral time 1	0.01s~10.0s	0.50s	★
P2-02	Switcher frequency 1	0.00~P2-05	5.00Hz	★
P2-03	Speed loop proportional gain 2	1~100	20	★
P2-04	Speed loop integral time 2	0.01s~10.0s	1.01.00s	★
P2-05	Switcher frequency 2	P2-02~max frequency (P0-10)	10.00Hz	★
P2-06	SVC/FVC slip compensation gain	50%~200%	100%	★
P2-07	SVC Speed feedback filter time constant	0.000s~0.100s	0.015s	★
P2-08	Torque upper limit command channel selection under speed control	0: function code P2-10 setting 1: AI1 2: AI2 3: A13 4: high-speed pulse input setting (S5) 5: communication given 6: MIN (AI1, AI2) 7: MAX (AI1, AI2)	0	★
P2-09	Torque upper limit command channel selection under speed control	1-7 option full scale corresponds to P2-10	1-7 option full scale corresponds to P2-10	★
P2-10	Digital setting of torque limit in speed control	0.0%~200.0%	150.0%	★
P2-11	Torque limit source in speed control (in regenerative state)	0: Function code P2-12 setting (no distinction between electric and power generation) 1: AI1 2: AI2 3: A13 4: high-speed pulse input setting 5: communication given 6: MIN (AI1, AI2) 7: MAX (AI1, AI2) 8: Function code P2-12 setting 1-7 The full scale of the option corresponds to P2-12	0	★
P2-12	Digital setting of torque limit in speed control (in regenerative state)	0.0%~200.0%	150.0%	★
P2-13	Excitation adjustment proportional gain	0~60000	2000	★
P2-14	Excitation adjustment integral gain	0~60000	1300	★
P2-15	Torque adjustment proportional gain	0~60000	2000	★
P2				

AC Group: AI/AO Correction						
AC-00	AI1 measured voltage 1	-10.00 to 10.000V	factory corrected	★		
AC-01	AI1 displayed voltage 1	-10.00 to 10.000V	factory corrected	★		
AC-02	AI1 measured voltage 2	-10.00 to 10.000V	factory corrected	★		
AC-03	AI1 displayed voltage 2	-10.00 to 10.000V	factory corrected	★		
AC-12	Ao1 Target voltage1	-10.00 to 10.000V	factory corrected	★		
AC-13	Ao1 measured voltage 1	-10.00 to 10.000V	factory corrected	★		
AC-14	Ao1Target voltage 2	-10.00 to 10.000V	factory corrected	★		
AC-15	Ao1 measured voltage 2	-10.00 to 10.000V	factory corrected	★		
5. Monitoring Parameters						
Function Code	Name	Display Range	Communication Address			
Group d0: Monitoring Parameters						
d0-00	Running frequency	0.01Hz	7000H			
d0-01	Frequency reference	0.01Hz	7001H			
d0-02	Bus voltage	0.1V	7002H			
d0-03	Output voltage	1V	7003H			
d0-04	Output current	0.01A	7004H			
d0-05	Output power	0.1kW	7005H			
d0-06	Output torque	0.1%	7006H			
d0-07	S input state	1	7007H			
d0-08	HDO output state	1	7008H			
d0-09	A1 voltage	0.01V	7009H			
d0-10	A12 voltage/current	0.01V/0.01mA	700AH			
d0-11	A13 voltage	0.01V	700BH			
d0-12	Count value	1	700CH			
d0-13	length value	1	700DH			
d0-14	Load speed display	1	700EH			
d0-15	PID reference	1	700FH			
d0-16	PID feedback	1	7010H			
d0-17	PLC stage	1	7011H			
PP Group: Function Parameter Management						
PP-00	User password	0 to 65535	0	★		
PP-01	Parameter initialization	0: No operation 1: Restore factory 0: No operation				
		1: Restore factory parameters except motor parameters 2: Clear records 4: Back up current user parameters 501: Restore user backup parameter	0	★		
		O: Stop at the end of a single run 1: Keep the final value at the end of a single run 2: keep circulating	0	★		
		Single digit: power-down memory selection 0: No memory when power off 1: power-down memory	00	★		
		Tenth place: Stop memory selection 0: Stop memory 1: shutdown memory				
PP-02	Parameter display property	Bit: d group display selection 0: not displayed 1: display Ten: Group A shows the selection 0: not displayed 1: display	11	★		
PP-03	Selection of individualized parameter display	Bit: user custom parameter group display selection 0: not displayed 1: display Ten: User Change Parameter Group Display Selection 0: not displayed 1: display	00	★		
PP-04	Selection of parameter modification	0: can be modified 1: can not be modified	0	★		
AO Group: Torque Control and Limit						
A0-00	Speed/Torque control selection	0: speed control 1: torque control	0	★		
A0-01	Torque reference source in torque control	0: Digital setting 1 (A0-03) 1: A11 (Note: J6 jumper) 2: A12 3: A13 4: High-speed pulse input (S5) 5: Communication given: 6: MIN (A11, A12) 7: MAX (A11, A12) 1-7 option full scale, corresponding to A0-03 digital setting	0	★		
		Torque digital setting in torque control -200.0% to 200.0%	150.0%	★		
		Fault code Fault FU02 Over current during acceleration FU03 Over current during deceleration FU04 Over current at constant speed FU05 Over voltage during acceleration FU06 Over voltage during deceleration FU07 Over voltage at constant speed FU08 Pre-charge resistor fault FU09 Under voltage FU10 AC drive overload FU11 Motor overload FU13 Output phase loss FU14 Overheat FU15 Out project fault FU16 Communication fault FU42 Excessive speed deviation FU43 Motor over speed				
6.Fault Display						
FU01	Fault	Fault				
FU02	Over current during acceleration	Current detection failure				
FU03	Over current during deceleration	Motor self learning malfunction				
FU04	Over current at constant speed	Encoder fault				
FU05	Over voltage during acceleration	EEPROM read-write				
FU06	Over voltage during deceleration	FU23 Short circuit to ground				
FU07	Over voltage at constant speed	FU26 Accumulative running time				
FU08	Pre-charge resistor fault	FU27 User-defined fault 1				
FU09	Under voltage	FU28 User-defined fault 2				
FU10	AC drive overload	FU29 Accumulative power reach error				
FU11	Motor overload	FU30 Load loss				
FU13	Output phase loss	FU31 PID feedback lost during running				
FU14	Overheat	FU40 Pulse-by-pulse current limit fault				
FU15	Out project fault	FU41 Motor switchover fault during running				
FU16	Communication fault	FU42 Excessive speed deviation				
FU17	Contact or fault	FU43 Motor over speed				
A5 Group: Control Optimization						
A5-00	DPWM switch over frequency upper limit	5.00Hz to max. frequency	8.00Hz	★		
A5-01	PWM modulation pattern	0: Asynchronous modulation, 1: Synchronous modulation	0	★		
A5-02	Dead zone compensation mode selection	0: No compensation, 1: Compensation Mode 1	1	★		
A5-03	Random PWM depth	0:PWM invalid 1:PWM can choose	0	★		
A5-04	Over current fast prevention	0:enable 1:uncable	1	★		
A5-05	Voltage over modulation coefficient	100% to 110%	105%	★		
A5-06	Under voltage threshold	150 to 420V	350V	★		
A5-08	Dead-zone time adjustment	0.0% to 8.0%	0.0%	★		
A5-09	Over voltage threshold	650 to 820V	Model dependent	★		
A6 Group: AI CA6 Group: AI Curve Settingcurve Setting						
A6-00	AI curve 4 min. input	-10.00V to A6-02	0.00V	★		
A6-01	Corresponding percentage of AI curve 4 min. input	-100.0% to 100.0%	0.0%	★		
A6-02	AI curve 4 in flexion 1 input	A6-00 to A6-04	3.00V	★		
A6-15	Corresponding percentage of AI curve 5 max. input	-100.0% to 100.0%	30.0%	★		
A6-24	Jump point of AI1 input corresponding setting	-100.0% to 100.0%	0.0%	★		
P9 Group: Fault and Protection						
P9-00	Motor overload protection	0:Forbidden 1:Allowed	1	★		
P9-01	Motor overload protection gain	0.20 to 10.00	1.00	★		
P9-02	Motor overload pre-warning coefficient	50% to 100%	80%	★		
P9-03	Oversupply protection gain	0~100	30	★		
P9-04	Oversupply protection voltage	650 to 800V	770V	★		
P9-07	Detection of short-circuit to ground upon power-on	Units: Power-to-ground short-circuit protection selection 0:Invalid 1: valid Tens place: Selection of short-to-ground protection before running 0:Invalid	01	★		
P9-08	Braking unit applied voltage	650 to 800V	720V	★		
P9 Group: Fault and Protection						
P9-09	Auto reset times	0 to 20	0	★		
P9-10	Selection of DO action during auto reset	0: No action 1: Action	0	★		
P9-11	Delay of auto reset	0.1s to 100.0s	1.0s	★		
P9-12	Input phase loss/pre-charge relay protection	Unit digit: input phase loss protection selection Tenth place: Contact or pull-in protection selection 0:Forbidden 1: Allowed	-	-		
P9-13	Output phase loss protection	Unit digits : output phase loss protection selection 0:Forbidden 1: Allowed Tens place: output phase loss protection selection before running 0:Forbidden 1: Allowed	01	★		
P9-14	1st fault type	00-55				
P9-15	2nd fault type					
P9-16	3rd (latest) fault type					
P9-17	Frequency upon 3rd fault	-	-	●		
P9-18	Current upon 3rd fault	-	-	●		
P9-19	Bus voltage upon 3rd fault	-	-	●		
P9-20	Di state upon 3rd fault	-	-	●		
P9-21	Do state upon 3rd fault	-	-	●		
P9-22	AC drive state upon 3rd fault	-	-	●		
P9-23	Power-on time upon 3rd fault	-	-	●		
P9-24	Running time upon 3rd fault	-	-	●		
P9-27	Frequency upon 2nd fault	-	-	●		
P9-28	Current upon 2nd fault	-	-	●		
P9-29	Bus voltage upon 2nd fault	-	-	●		
P9-30	Di state upon 2nd fault	-	-	●		
P9-31	DO state upon 2nd fault	-	-	●		
P9-32	AC drive state upon 2nd fault	-	-	●		
P9-33	Power-on time upon 2nd fault	-	-	●		
P9-34	Running time upon 2nd fault	-	-	●		
P9-37	Frequency Upon 1st fault	-	-	●		
P9-38	Current Upon 1st fault	-	-	●		
P9-39	Bus voltage Upon 1st fault	-	-	●		
P9-40	Di state Upon 1st fault	-	-	●		
P9-41	DO state Upon 1st fault	-	-	●		
P9-42	AC drive state Upon 1st fault	-	-	●		
P9-43	Power-on time upon 1st fault	-	-	●		
P9-44	Running time upon 1st fault	-	-	●		
P9-47	Fault protection action selection 1	0: free 1:stop 2:continue running	00000	★		
P9-48	Fault protection action selection 2	00000 to 11111	00000	★		
P9-49	Fault protection action selection 3	00000 to 22222	00000	★		
P9-50	Fault protection action selection 4	00000 to 22222	00000	★		
P						