❶ servo description

1.1、servo driver mode

company name — **Samkoon** ® R8

MODEL: R8-2208P-N
INPUT: 1Ph AC 200-240V 50/60Hz
OUTPUT: 3Ph AC 0-240V 5.5A 0.8kW
S/N:

Type — MODEL
power supply — INPUT
output data — OUTPUT
S/N — S/N

Shen Zhen Samkoon Technology Corporation Ltd.

R8 - 22 - 08 - P - □

R8 Series AC servo driver | Power voltage | Output Power | communication type | non-standard code

identification	Power voltage
22	single-phase220V
38	three-phase380V

identification	Power
02	220W
04	400W
08	800W
10	1000W
15	1500W

identification	Communication
P	pulse input
Z	EtherCAT

identification	non-standard code
N	standard
other	non-standard

- ❶ EtherCAT with Ethernet port
- ❷ Digital Tube Display
- ❸ Control terminal
- ❹ Encoder terminal
- ❺ main line Voltage Indicator
- ❻ MicroUSB Debug port
- ❼ five-bit Keys
- ❽ Power Input Terminal
- ❾ Brake Resistance Terminal
- ❿ DC power main line negative
- ⓫ Motor Power Terminal
- ⓬ Grounding Terminal

1.2、Motor Type

Samkoon ®

MODEL: 80HK-A00630
AC 220V 1.3A 200W
3000 0.64N·m
IP65
S/N:

Company name — Samkoon
mode — MODEL
power mode
Rated Speed
rated torque
Waterproof
S/N

80 HK - A 024 30 - CS□□2

Flange size | Samkoon motor | Encoder | Rated torque | Rated Speed | other code

Identification	Flange size d (mm×mm)
60	60×60
80	80×80
110	110×110

identification	encoder type
A	Absolute type17bit
B	Absolute type23bit

identification	torque N·m
013	1.3
024	2.4

identification	speed rpm
20	2000
30	3000

identification	encoder
C	magnetic encoder
L	Single-line encoder
S	Single-lap encoder
M	Multi-lap encoder

identification	encoder
	Lock-motor
2	non-lock motor
3	Lock motor

❷ Servo installation

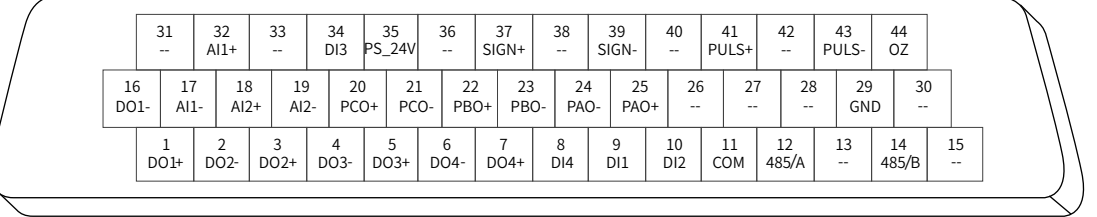out wind (×4)

≥10mm ≥50mm
≥20mm ≥20mm
≥50mm

into wind (×4)
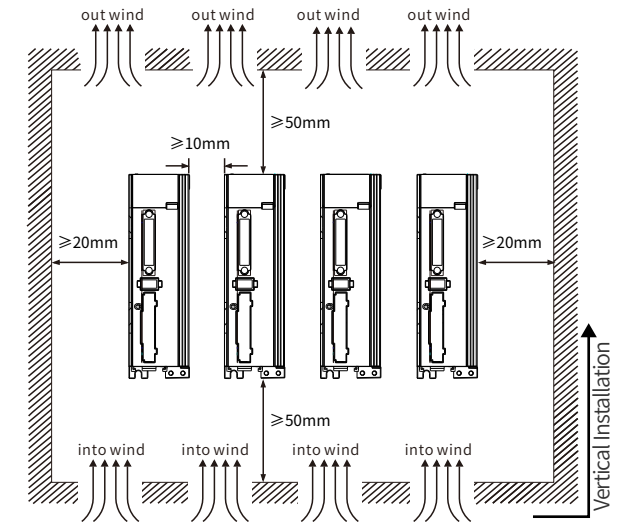
- install in cabinet and free of the Sun and rain
- Do not expose to flammable gases
- do not install in high temperature (>45 °C), humid (>90% Rh), there are dust, metal dust.
- Please ensure that the installation direction should vertical to wall, use natural wind and fan to cool the drive, when many servo drives are installed side by side, please install according to the distance requirement
- Please ground the terminal PE, otherwise there may be electric shock or interference caused by the risk of servo error action
- please do not immediately remove the drive or motor after power off,in case of electric shock or scalding
- Please wait for 5 minutes before operating (please make sure the CHARGE light on the servo panel is turned off)

Vertical installation

❸ Servo wiring

single-phase power 220Vac

Encoder terminal CN2

1	+5v
2	0V
3	BAT+
4	BAT-
5	PS+
6	PS-
Shell	PE

24Vdc

how to ground please check the picture

System Ground

Control Terminal CN1 signal rules

31 --	32 AI1+	33 --	34 DI3	35 PS_24V	36 --	37 SIGN+	38 --	39 SIGN-	40 --	41 PULS+	42 --	43 PULS-	44 OZ

16 DO1-	17 AI1-	18 AI2+	19 AI2-	20 PCO+	21 PCO-	22 PBO+	23 PBO-	24 PAO-	25 PAO+	26 --	27 --	28 --	29 GND	30 --

1 DO1+	2 DO2-	3 DO2+	4 DO3-	5 DO3+	6 DO4-	7 DO4+	8 DI4	9 DI1	10 DI2	11 COM	12 485/A	13 --	14 485/B	15 --

Control Terminal CN1 signal definition

function	Terminal mark	name	Definition
pulse input	35	PS_24V	PLC power DC24V
	43	PULS-	pulse input signal/differential pulse input negative
	41	PULS+	differential pulse input negative positive
	39	SIGN-	Input 1(default function: servo enable)
	37	SIGN+	differential pulse input negative positive
input and output	9	DI1	Input 1(default function: servo enable)
	10	DI2	Input 2(default function: alarm reset)
	34	DI3	Input 3(default function: positive overrun)
	8	DI4	Input 4(default function: negative overrun)
	11	COM	Input Public Terminal
	1	DO1+	Output 1(default function: servo ready)
	16	DO1-	
	3	DO2+	Output 2(default function: arrived position)
	2	DO2-	
	5	DO3+	Output 3(default function: lock gate output)
	4	DO3-	
	7	DO4+	Output 4(default function: failure output)
	6	DO4-	
analog	32	AI1+	analog input Channel1, -10 v ~ + 10 V (can be used as speed and torque instruction)
	17	AI1-	
	18	AI2+	Analog Input Channel 2, -10V ~ + 10V (can be used as speed and torque instruction)
	19	AI2-	
Frequency division output	25	PAO+	differential output (5V level) (signal source can be chosen as encoder or pulse)
	24	PAO-	
	22	PBO+	
	23	PBO-	
	20	PCO+	
	21	PCO-	
	44	OZ	Single-terminal Z pulse output
	29	GND	Driver digital ground
RS485	12	485/A	Modbus Communication
	14	485/B	

Strong electricity terminal rules

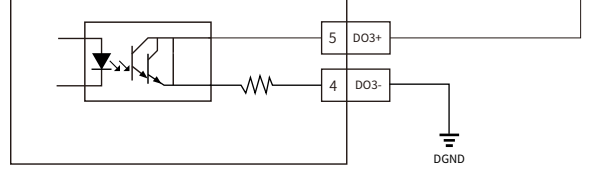| Terminal number	Name	Description
L1	power input	if connected to single-phase AC 220V, connected between L1 and L2, let L3 empty, do not connect
L2		
L3		
P	Brake Resistance Terminal	when using internal brake resistance, connect P and D ,when using external brake resistor, please disconnect P and D, do it between P and C .
D		
C		
N	DC power main line negative	The DC power main line terminals of the servo are P and N, which can be connected to main line when multiple machines
U	Motor cables	connected with the motor U, V, W, PE terminals
V		
W		
PE		

Servo IO terminals and PLC connection

PLC | servo input | R8 series servo driver
24V COM 11 / Y0 DI1 9 / COM1 / 0V
servo output
24V / SS / X0 DO1+ 1 / 0V DO1- 16

brake connection

VCC / BGND / VDD / RY
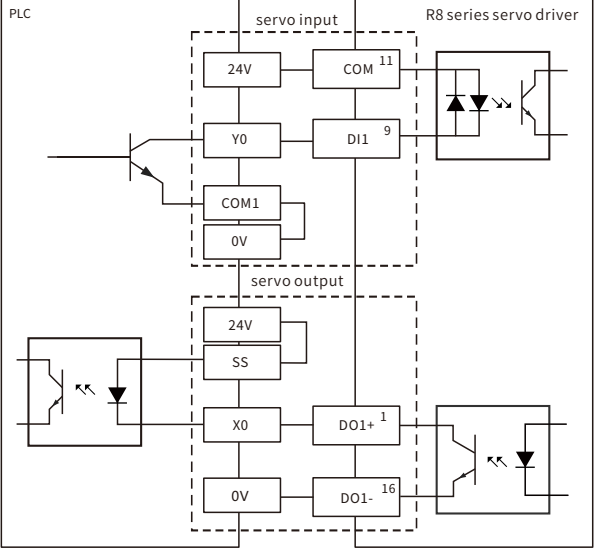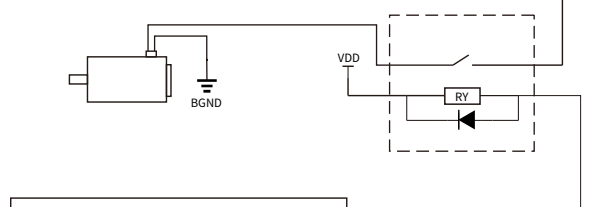
R8 series AC power servo driver
5 DO3+ / 4 DO3- / DGND

single-terminal pulse input wiring

PLC or controller VDD = 24V R8 series AC power servo driver
VDD / R / PS_24V 35 3k3 / PULS+ 41 / PULS- 43 330 VCC / GND
VDD / R / PS_24V 35 3k3 / SIGN+ 37 / SIGN- 39 330 VCC / GND
DGND
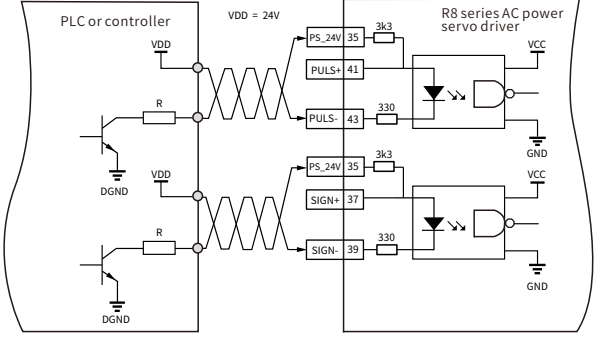
differential pulse input wiring (differential or external 5V power supply)

PLC or controller VDD = 5V R8 series AC power servo driver
VDD / R / PS_24V 35 3k3 / PULS+ 41 / PULS- 43 330 VCC / GND
DGND
VDD / R / PS_24V 35 3k3 / SIGN+ 37 / SIGN- 39 330 VCC / GND
DGND
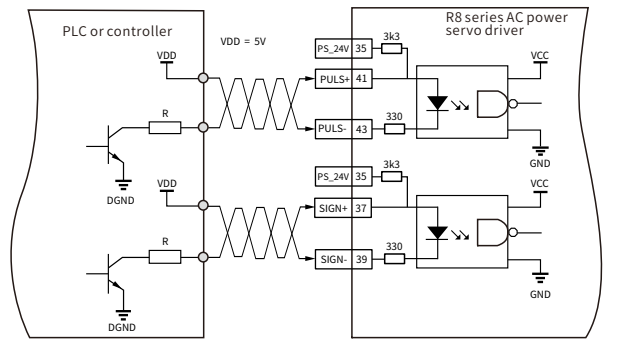
❹ Panel display and operation

4.1、panel
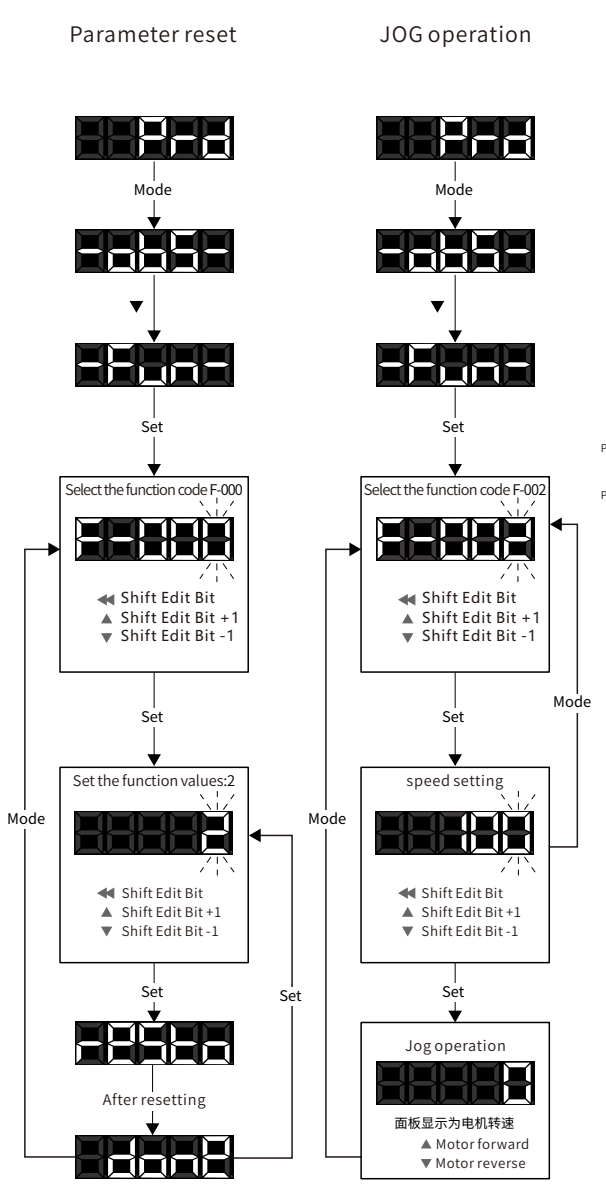
Mode | ▲ | ▼ | ◀◀ | Set
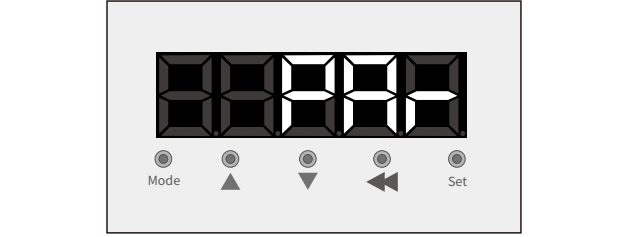
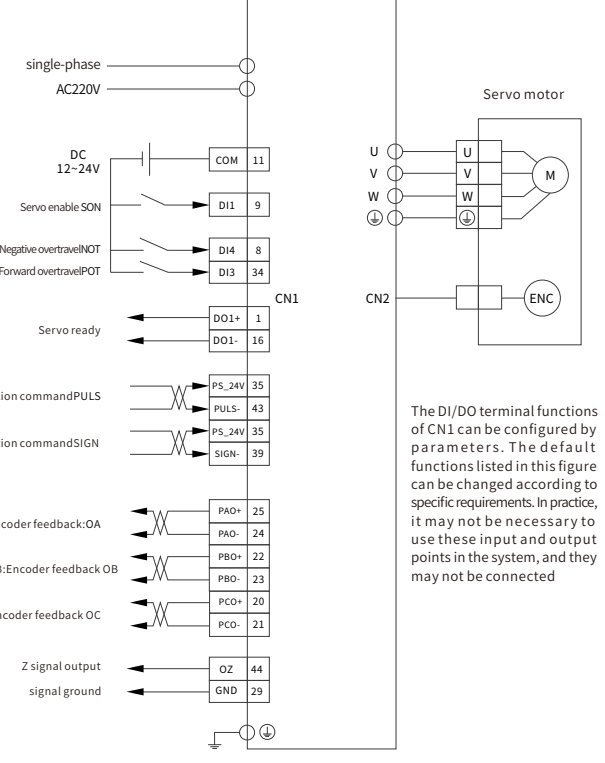| Name	Description
Digital Tube	5-digit digital tube
Mode	mode/return key, switch menu/return to the previous
▲	Up Flip Key, menu flip/value +1
▼	down Flip Key, menu flippers/value -1
◀◀	shift, set values when shift operation:
Set	set, confirm

4.2、menu structure

status menu — alarm occurs / alarm clears — alarming

parameter menu
Monitoring parameter — ◀◀ flip next page
Parameter setting — Value change time
Parameter Select Menu
◀◀ Shift Edit Bit / ▲ Shift Edit Bit +1 / ▼ Shift Edit Bit -1
Function setting
◀◀ Shift Edit Bit / ▲ Shift Edit Bit +1 / ▼ Shift Edit Bit -1
Function operation/ display show
Different functions operate differently. Taking F-002 as an example, the display shows the motor speed
▲ Motor forward / ▼ Motor reverse

4.3、Parameter reset and JOG operation

Parameter reset

Mode → Mode → Set
Select the function code F-000
◀◀ Shift Edit Bit / ▲ Shift Edit Bit +1 / ▼ Shift Edit Bit -1
Set
Set the function values:2
◀◀ Shift Edit Bit / ▲ Shift Edit Bit +1 / ▼ Shift Edit Bit -1
Set
After resetting

JOG operation

Mode → Mode → Set
Select the function code F-002
◀◀ Shift Edit Bit / ▲ Shift Edit Bit +1 / ▼ Shift Edit Bit -1
Set
speed setting
◀◀ Shift Edit Bit / ▲ Shift Edit Bit +1 / ▼ Shift Edit Bit -1
Set
Jog operation
▲ Motor forward / ▼ Motor reverse
面板显示为电机转速

❺ Position mode wiring and operation

5.1、Wiring

single-phase AC220V
DC 12~24V
Servo enable SON
Negative overtravelNOT
Forward overtravelPOT
Servo ready
Position commandPULS
Position commandSIGN
Encoder feedback OA
OB:Encoder feedback OB
Encoder feedback OC
Z signal output
signal ground

R8 series servo driver
COM 11 / DI1 9 / DI4 8 / DI3 34 / DO1+ 1 / DO1- 16 / PS_24V 35 / PULS+ 41 / PULS- 43 / SIGN- 39 / PAO+ 25 / PAO- 24 / PBO+ 22 / PBO- 23 / PCO+ 20 / PCO- 21 / OZ 44 / GND 29

CN1 / CN2
Servo motor — U V W — ENC

The DI/DO terminal functions of CN1 can be configured by parameters. The default functions listed in this figure can be changed according to specific requirements. In practice, it may not be necessary to use the input and output points in the system, and they may not be connected

5.2、Parameter settings

After confirming the wiring , according to the actual usage , set the basic parameters according to the parameter sequence in the following table

Parameter number	name	frist value	Parameter Description
C-000	Operation mode	0	set to position operation mode. For other operation modes, please refer to the "R8 servo manual"
C-004	pulse form	0	Set the actual output pulse to the following values [0] Pulse+direction [2] CW+CCW [1] AB phase, 4 times harmonic [3]AB phase
C-005	pulses one cycle	10000	Set the number of pulse commands required for the motor rotate one cycle, if ask for Electric wheel ratio, please set the value to 0
C-006	Electric wheel ratio molecular1	1	It takes effect when the value of "C-005 single cycle pulse count" is 0. Displacement=,The instruction displacement unit is the motor encoder counting unit
C-007	Electric wheel ratio molecular1	1	
C-003	DI1 terminal logic selection		In the default configuration, "P01-04 DI1 terminal function selection" is set to "[1] Servo enable". When the external DI input is not used to control the servo enable,the parameter could be used to set the servo enable. When set to 1, the servo enable, and when set to 0, the servo disable When using external DI input to control servo enable, please configure the input enable logic correctly

5.3、Status monitoring

During the operation process, the servo operation status can be confirmed through the following parameters

Parameter number	name	unit	Parameter Description
O-000	Servo operation status	–	During normal operation, the value is 2. For other values, follow the following formula for troubleshooting: [0] Please check if the power supply voltage input is normal [1] Check if the servo enable signal input is correct [3] Refer to "9.3 Alarm solve" for troubleshooting issues
O-001	alarming id	–	When the value is not 0, refer to "9.3 Alarm solve" to troubleshoot the problem
O-002	Motor speed	rpm	Check the current motor running speed
O-003	Speed command	rpm	Speed command given in servo operation
O-004	Torque command	‰	Torque command given in servo operation
O-005	Torque feedback	‰	Actual output torque during servo operation
O-010	pulse count	ins	Count the pulses only after the servo is enabled
O-012	Input pulse count	ins	Count input pulses even if the servo is not enabled
O-014	Feedback pulse count	p	It is 0 after restarting, and start count after motor rotation