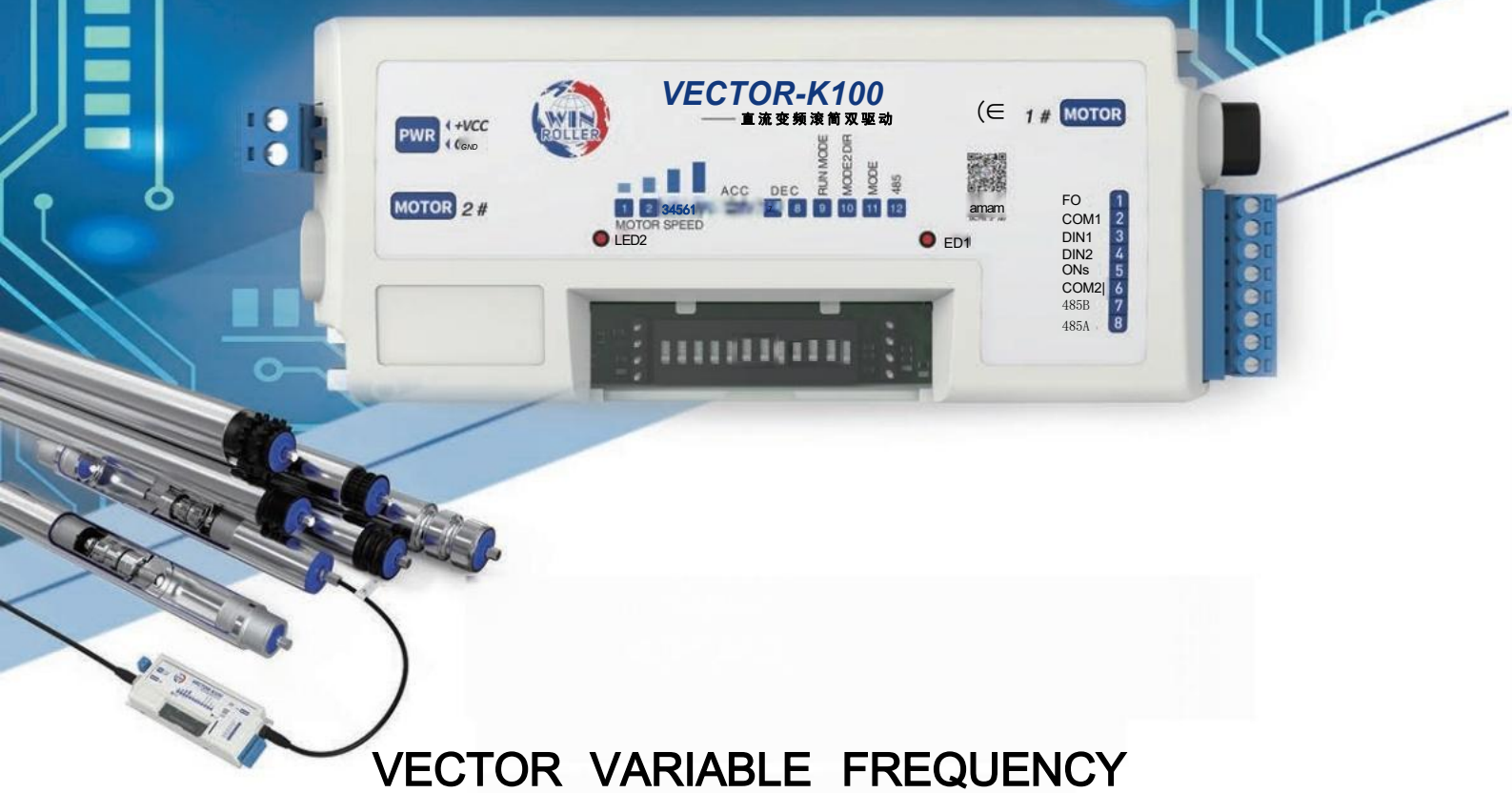
WINROLLER

VECTOR-K100



VECTOR VARIABLE FREQUENCY MOTOR ROLLER CONTROLLER

MANUAL

Explain

A short version of the manual can be viewed by scanning the QR code on the driver card.

Thank you for purchasing our motorized rollers WINROLLER.
The precautions herein are for the safe and proper use of the product to preven harm or injury to the customer and others, and to prevent damage before it occurs .Please use the product only when you fully understand the contents.
After reading these precautions, be sure to keep them in a designated place for easy access.

▲ warn

If this indication is disregarded and used incorrectly, it may cause death or serious injury.

If this indication is disregarded and used incorrectly, it may cause injury to persons and material damage.

precautionary note

※ Don't use in places where there are explosive materials, flammable materials, perishable goods, combustible materials and water. Failure to do so may result in fire, electric shock, or injury.

※ Please don't operate with wet hands, otherwise there will be a danger of electric shock.

※ Please be sure to turn off the power when installing, moving, arranging wires, or spot checking, otherwise there will be a danger of electric shock.

※ If installation, wiring, driving, operation, inspection, etc. is required, make sure that it is carried out by an expert, otherwise there is a risk of electric shock.

※ When installing a motor or driver on the equipment, be sure to connect a grounding wire, otherwise electric shock may result.

※ Be sure to observe the standard voltage when accessing the driver power supply voltage.

※ Don't twist the power cord or motor cord forcibly or pull it hard, otherwise it will cause the risk of fire or electric shock.

※ In the event of a power failure, be sure to turn off the power to the drive.

※ When the power is restored, there is a risk of injury or damage to the unit due to sudden starting of the motor.

※ Don't use for elevators. The driver will activate the protection function, stopping the motor and dropping the driver parts, which may cause injury or damage to the equipment.

※ Do not touch the terminals of the drive within 30 seconds of turning off the power while it is energized, or there will be a risk of electric shock.

※ Don't disassemble or modify the motor, reducer, or driver. Failure to do so will result in danger of fire, electric shock, Or damage to the unit.

※ Don't exceed the rated range when using the motor or driver, as this may result in fire, electric shock, or damage to the equipment.

※ Be sure to prepare for emergency stops during test runs, otherwise there is a risk of injury.

※ If an abnormality occurs, stop the operation immediately and turn off the power to the driver, otherwise it will cause fire, electric shock, damage to the device, and other hazards.

※ When the protection function is activated, be sure to turn off the power and remove the problem before turning the power back on. Continuing to operate the motor without solving the problem may cause the motor and driver to operate incorrectly and may result in injury or damage to the equipment.

※ Be sure to use an insulated screwdriver when wiring the drive's power terminals, otherwise there is a risk of electric shock.

※ Don't touch the terminals during insulation resistance or insulation voltage withstand tests as there is a risk of electric shock.

※ When disposing of motors and drivers, please treat them as industrial waste.

※ The surface of the motor and driver may be hot during operation, so do not touch the motor or driver immediately during operation or after stopping, or you will be burned by high temperature.

※ The driver and motor need to be used together, so an abnormality may occur when used with other motors.

Installation matters

Install the motor and driver in a place where the following conditions are met , use in a place other than this may result in damage to the product.

※Indoor (This product is designed and manufactured for installation).

※Where there is no explosive gas, flammable gas, or corrosive gas.

※Where there is no direct light.

※Where there is no dust or metal debris.

※Where there is no splashing of water or oil.

※Places where heat can be easily dissipated.

※Don’ t vibrate continuously and do not apply excessive shocks.

※Where there is no radioactive material or magnetic field, and where there is no vacuum.

※A place where it will not be affected by electrical noise (e.g., welding machine, power tools).

※When an extension cable is required between the motor and the driver, use the factory-configured extension cable (sold separately).

VECTOR-K100 Vector Variable Frequency Electric Drum Drive Card

Features

--Two braking modes

--Free braking, servo(fixed) braking

--PNP and NPN Adaptive

--Isolated Input (Output) reverse design:PNP,NPN

--Acceleration and deceleration speed

--4500rpm/s-9000rpm/s

--7 Speed Level

--2 types of models: Model 1 with 4 speeds, Model 2 with 7 speeds

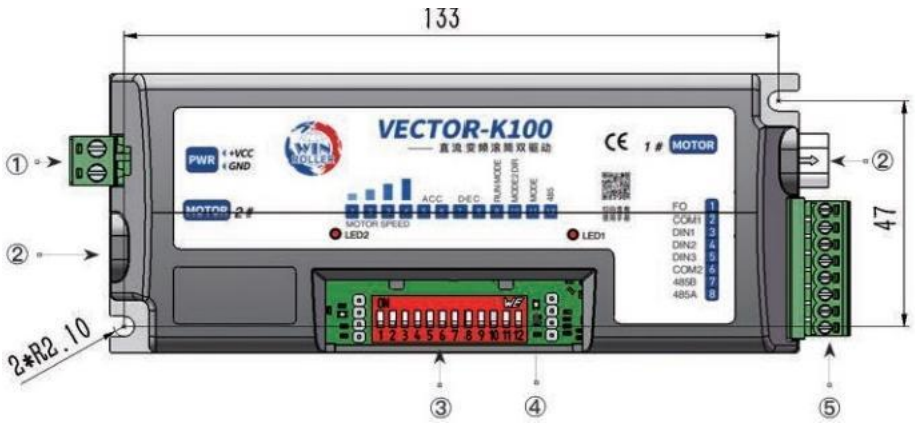
--Driver

--One drive two motors

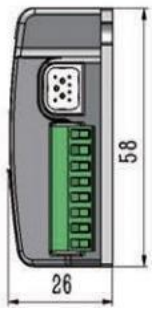
Technical data

Rated power input	24V
Allowable Voltage Range	20~65V
Rated Current	6.5A
Maximum current	20A

Dimensions and Layout



①Power input
②Motor interface
③Function dip switch
④Signal alarm lamp
⑤Control interface



unit: mm

Description of interface

● Power Port

Interface	Interface Model	Interface Definition	Remark
Power	sockets: KF2EDGR-X-5.08-2P plug: KF2EDG-X-2P	VIN+	Recommendation 2.5mm² Length within 20 meters
		VIN-	

VECTOR-K100

• Motor Interface

Interface	InterfaceModel	Interface Definition	Remark
Motor	/	U	Motor Output
		V	
		W	
		HA	Hall Signal
		HB	
		HC	
		5V-HL+	Hall power supply
		GND-HL-	
		NTC+	Measures the internal temperature of the motor in conjunction with the GND-HL-.

• Control Interface

Interface	Interface Model	Interface Definition	Remark
Control	sockets: ULO-TB01-15RC-3.5-08P plug: ULO-TB01-15K-3.5-08P	FO	Fault output port NPN and PNP connections available
		COM1	
		DIN1	I/O function
		DIN2	
		DIN3	
		COM2	
		B	RS485 communication
		A	

I/O Control

dip switch function

No.	name	ON	OFF	Remark
1	Speed dip switch 1	1,By using a combination of the 4-bit dip switch's ON and OFF positions, you can adjust the motor rotated speed at I/O operation mode. 2、The total number of combinations is 16.		Specific combinations and speeds are shown in the table below
2	Speed dip switch 2			
3	Speed dip switch 3			
4	Speed dip switch 4			
5	Acceleration dial code 1	1,By using a combination of the 2-bit dip switch's ON and OFF positions, you can adjust the acceleration speed of the circuit operation in I/O mode, with a total of 4 levels.		Specific combinations and speeds are shown in the table below
6	Acceleration dial code 2			
7	Deceleration dial code 1	1,By using a combination of the 2-bit dip switch's ON and OFF positions, you can adjust the deceleration speed of the circuit operation in I/O mode, with a total of 4 levels.		Specific combinations and speeds are shown in the table below
8	Deceleration dial code 2			
9	I/O mode selection	Mode 1	Mode 2	
10	Mode 2 direction	CW	CCW	In Mode 1, the functions of DIN1 and DIN2 are swapped.
11	Stop mode selection	Free stop release	Lockout after deceleration stop	
12	Communication Terminal Resistance	Connect terminal resistance	No connect terminal resistance	

●I/O mode 1——Speed dip switch and ACC/DEC dip switch combination table

dip switch position				rotation speed RPM	dip switch position		Acceleration RPM/s	dip switch position		Deceleration RPM/s
1	2	3	4		5	6		7	8	
0	0	0	0	speed level 0	0	0	level 0 Acceleration	0	0	level 0 Deceleration
	0	0	0	speed level 1						
0	1		0	speed level 2						
1	1	0	0	speed level 3	1	0	level 1 Acceleration	1	0	level 1 Deceleration
	0	1	0	speed level 4						
1	0	1	0	speed level 5						
0	1	1	0	speed level 6	0	1	level 2 Acceleration	0	1	level 2 Deceleration
1	1	1	0	speed level 7						
0	0	0	1	speed level 8						
1	0	0	1	speed level 9	1	1	level 3 Acceleration	1	1	level 3 Deceleration
0	1			speed level 10						
	1	0	1	speed level 11						
0	0	1	1	speed level 12	Rotation speeds and acceleration/deceleration speeds can be arbitrarily combined					
1	0	1	1	speed level 13						
0	1	1	1	speed level 14						
1	1	1	1	speed level 15						

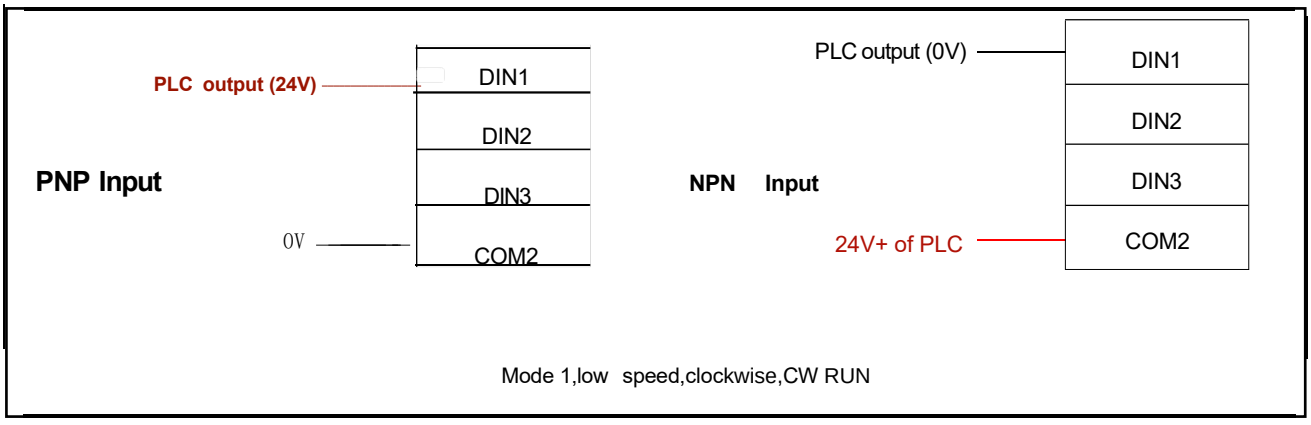
●I/O mode1——I/O control function

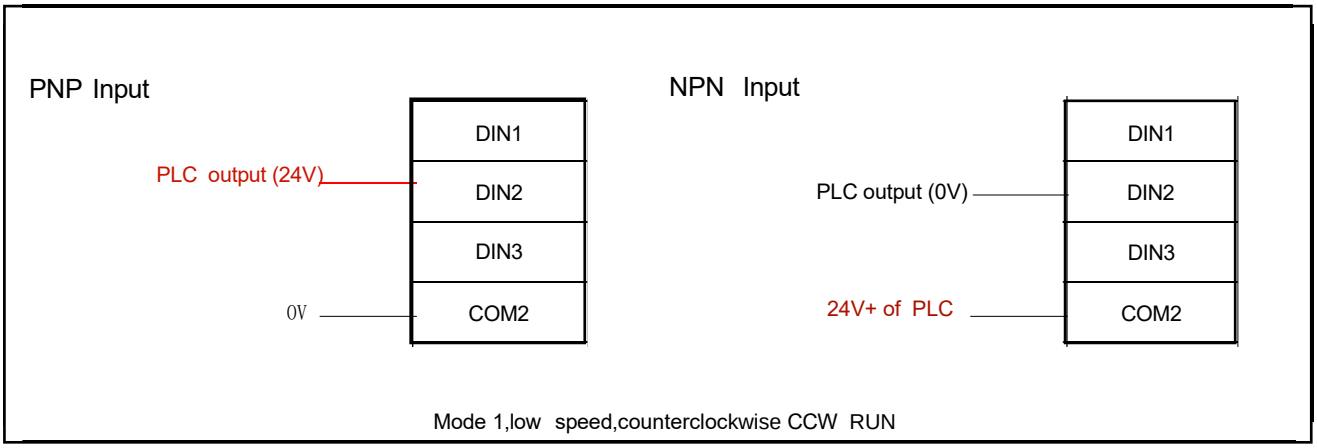
Note: SPEED x 1.5 will not exceed the max speed of the motor

DIN1(CW RUN)	DIN2(CCW RUN)	DIN3(SPEED×1.5)	remark
1	0	0	Low speed clockwise operation
0	1	0	Low speed counterclockwise operation
1	0	1	High speed clockwise operation
0	1	1	High speed counterclockwise operation
0	0	/	Stop
1	1	/	Stop

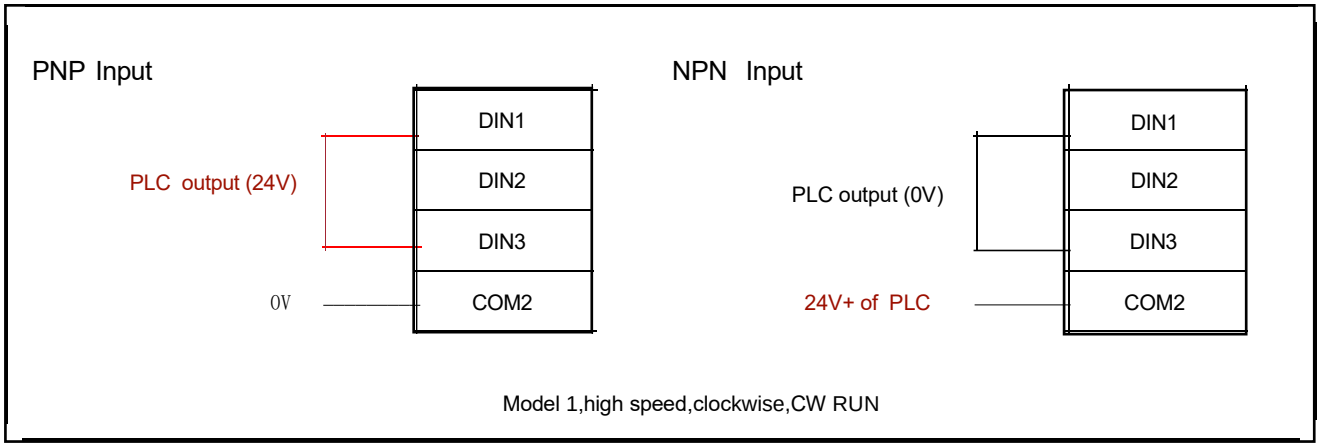
●I/O mode1——I/O connection mode: isolated input connection

DIM 1/2/3 and COM2 are bidirectional design

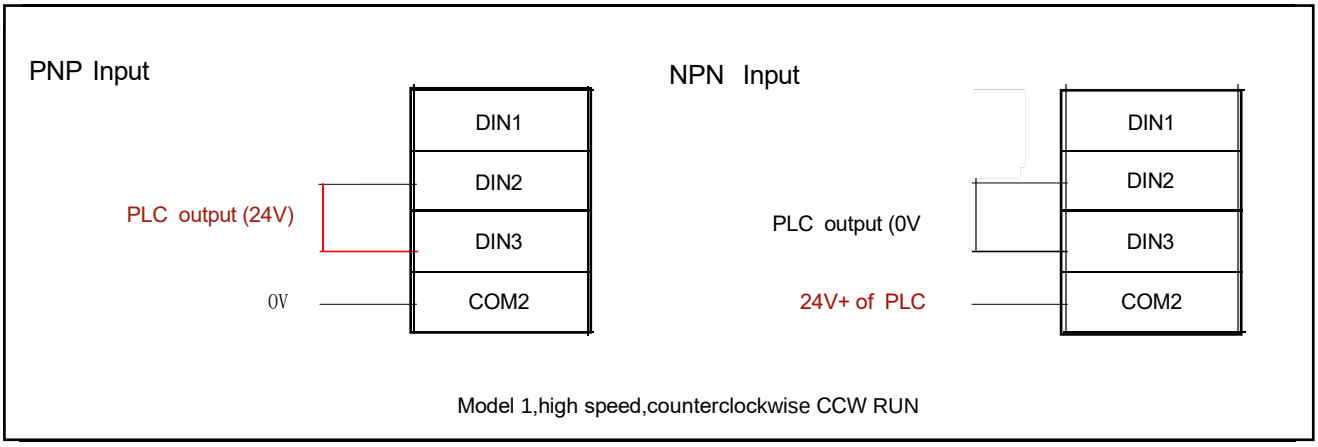




Mode 1,low speed,counterclockwise CCW RUN



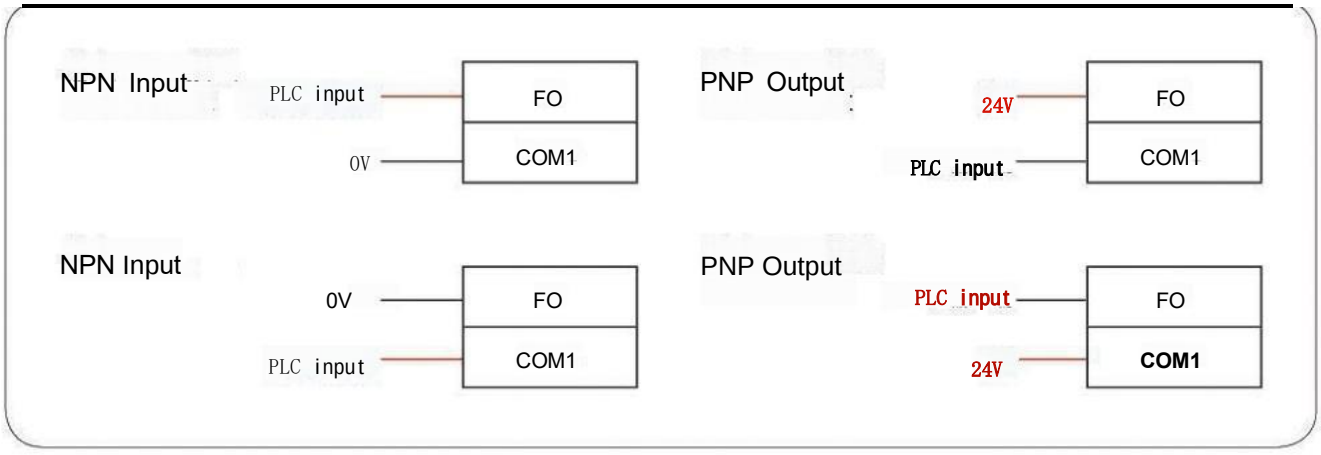
Model 1,high speed,clockwise,CW RUN



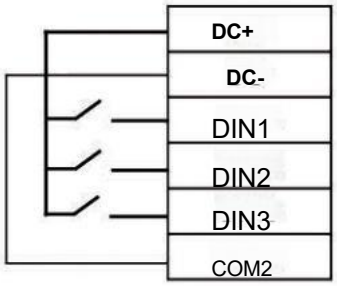
Model 1,high speed,counterclockwise CCW RUN

●I/O mode1——I/O connection mode: isolated output connection

FO and COM are Bidirectional design, the signal can go from FO to COM1 or from COM1 to FO.



●I/O Mode 1 - connection mode - non isolated input connection



●I/O Mode 2

I/O control function

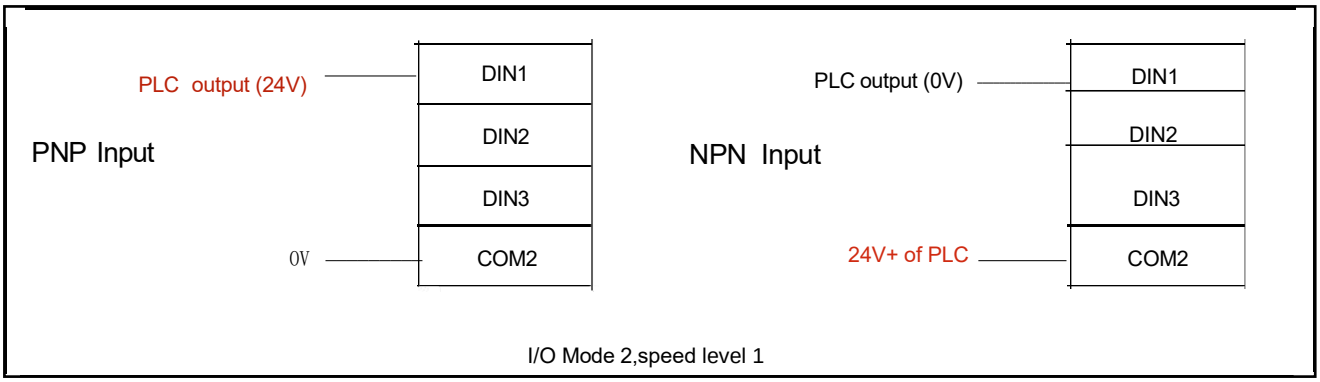
DIN1	DIN2	DIN3	Remarks
0	0	0	Motor stop
1	0	0	level 1 speed operation
0	1	0	level 2 speed operation
1	1	0	level 3 speed operation
0	0	1	level 4 speed operation
1	0	1	level 5 speed operation
0	1	1	level 6 speed operation
1	1	1	level 7 speed operation

Acceleration and Deceleration Dip Switch Combination Table

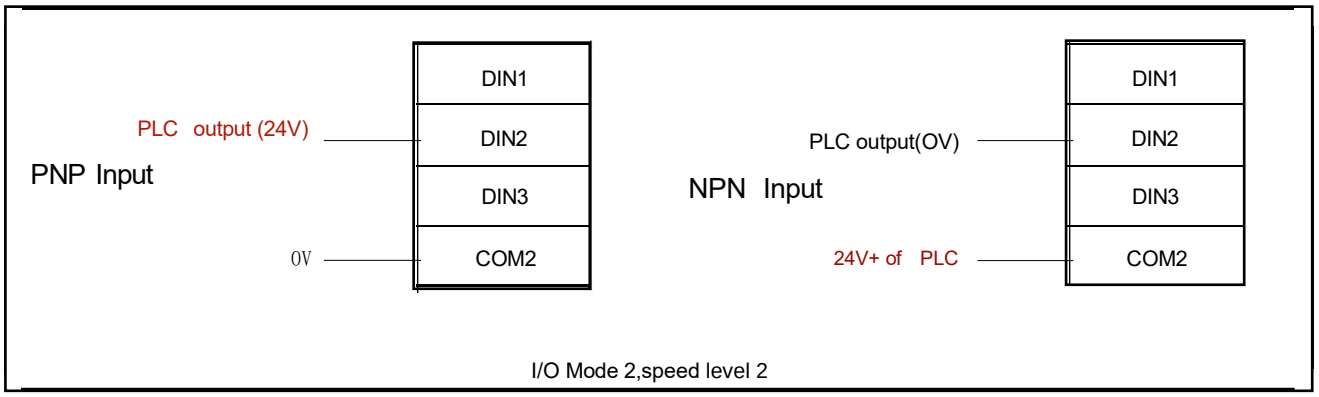
dip switch position		Accelerations RPM/s	dialing code digit		Deceleration RPM/s
5	6		7	8	
0	0	level 0 Acceleration	0	0	level 0 deceleration
1	0	level 1 Acceleration	1	0	level 1 deceleration
0	1	level 2 Acceleration	0	1	level 2 deceleration
1	1	level 3 Acceleration	1	1	level 3 deceleration

I/O Mode2 - connection mode - isolated input connection

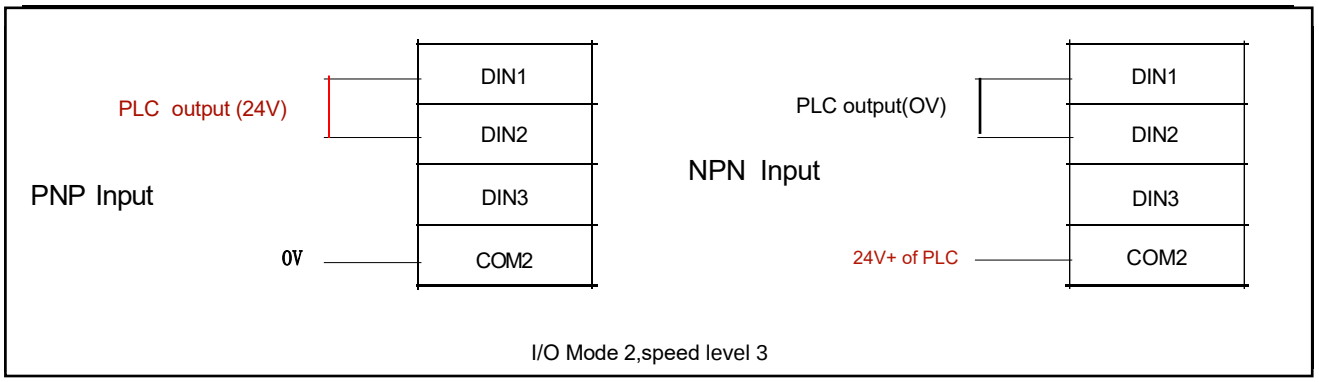
DIN1/2/3 and COM2 are bidirectional design.



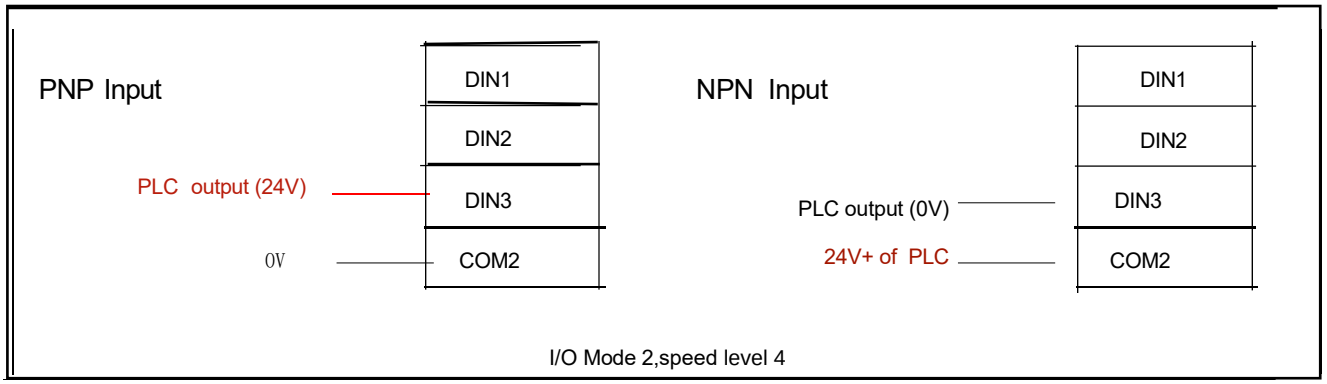
I/O Mode 2,speed level 1



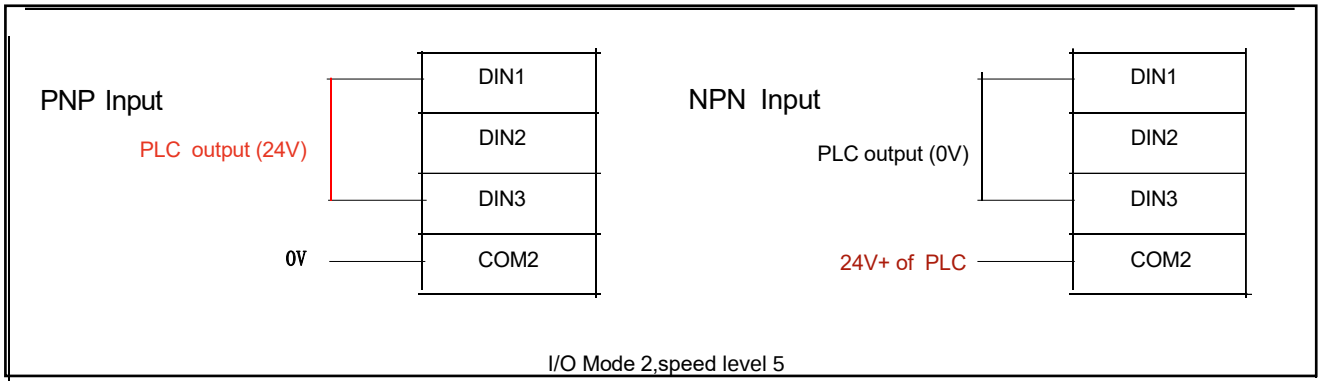
I/O Mode 2,speed level 2



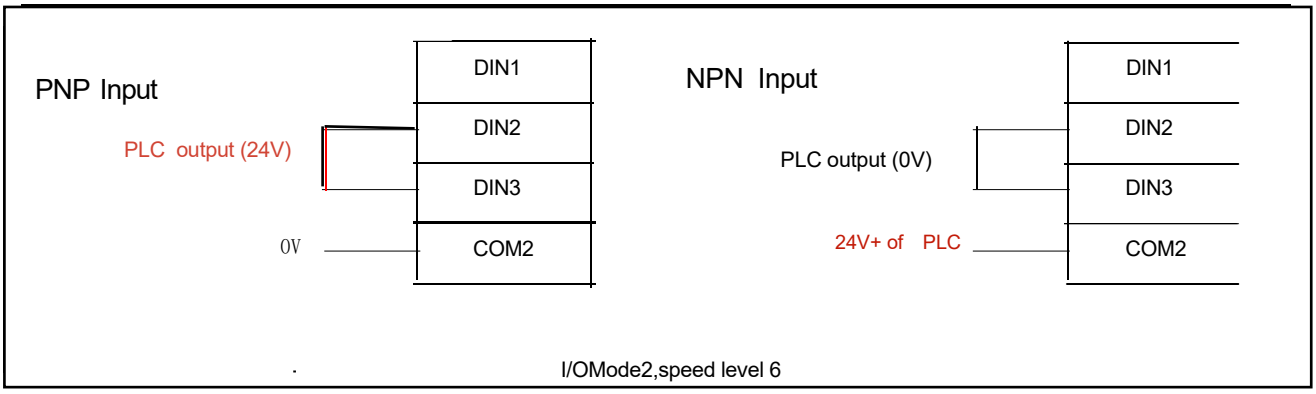
I/O Mode 2,speed level 3



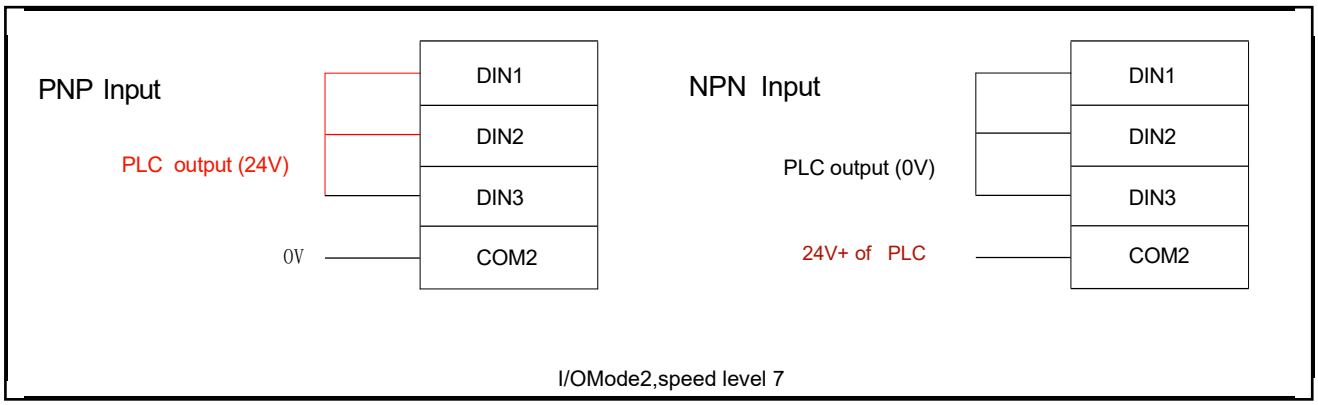
I/O Mode 2,speed level 4



I/O Mode 2,speed level 5



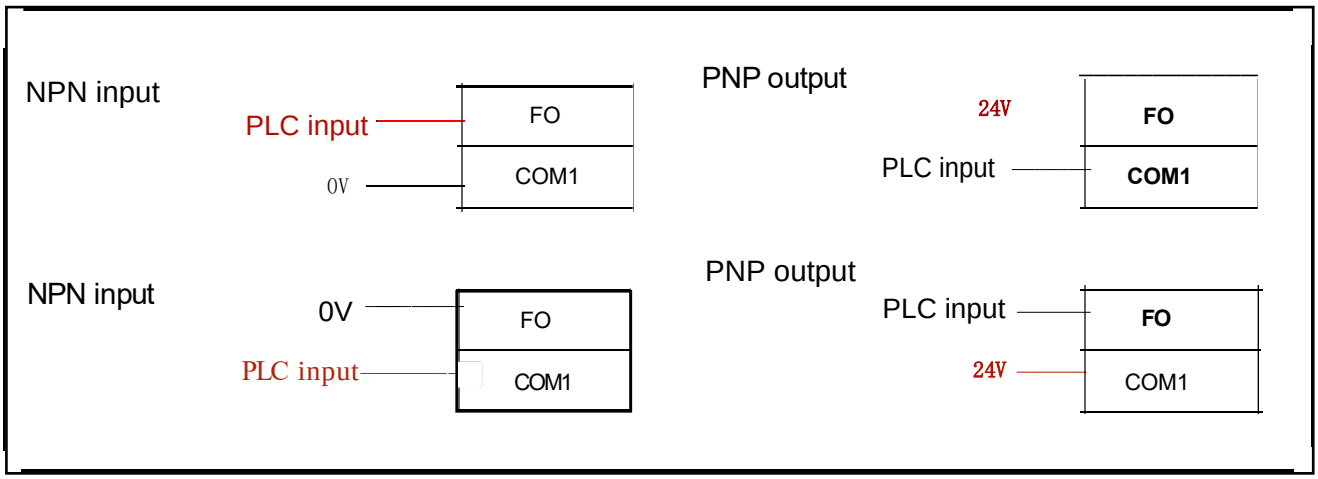
I/OMode2,speed level 6



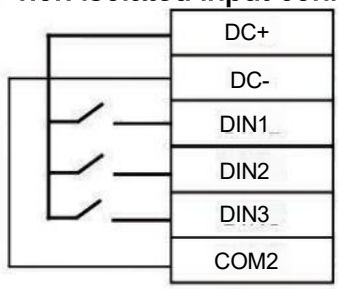
I/OMode2,speed level 7

●I/O Mode2 - connection mode - isolated output connection

FO and COM are Bidirectional design, the signal can go from FO to COM1 or from COM1 to FO.



●I/O Mode 2 - connection mode - non isolated input connection



Fault code

No	Indicator light flashes	Message Description	Treatment
1	Periodic flashes 1 time	Motor Hall Faults	Check the motor
2	Periodic flashes 2 times	Driver overheat faults	Lower the load
3	Periodic flashes 3 times	Over-current faults	Check the drive
4	Periodic flashes 4 times	Blocking fault	Check the load
6	Periodic flashes 5 times	Under-voltage fault (VIN<16V)	Increase voltage to 18V or more
7	Periodic flashes 6 times	Over-voltage fault (VIN>65V)	Decrease voltage to below 63V
8	Periodic flashes 7 times	Motor overheat	Allow motor to cool

RS485

Data Frame Format

data bit	8
calibration	N
stop bit	1

Driver address and baud rate set as follow:

1	2	3	4	5	address	6	7	8	baud rate
1	0	0	0	0	1	-	0	0	4800
0	1	0	0	0	2	-	1	0	9600
	*	**	*	*	...	-	0	1	19200
1	1	1	1	1	31	-	1	1	38400

The device address is a binary combination of DIP switches 1 to 5.
In I/O mode, it is used for speed selection, and in communication mode, it serves as the device address. These functions are multiplexed.

The supported instructions are 03/06/16, and the register addresses are as follows

Address (decimal)	Name	Definition
100	Start(R/W)	Bit 0:Right motor start/stop control
Bit 4:Left motor start/stop control		
101	Direction (R/W)	0:CW 1:CCW(default:0)
102	Speed(R/W)	Default maximum speed
103	Acceleration(R/W)	Default 1sec for command acceleration
104	Deceleration(R/W)	Default 1sec to decelerate
105		
106		
107		
108		
109	Maximum Input Power(R/W)	Single 40~240, the actual error range is about 5%.
110	Control Bit(W)	Bit 1:1 clear history faults
Bit 0:1 Restore default parameters		
111	Current fault code(R)	Refer to the fault flashing light comment
112	Historical Fault Code 1(R)	
113	History Fault Code 2(R)	
114	History Fault Code 3(R)	
115	History Fault Code 4(R)	

Address (decimal)	Name	Definition
200	Motor No.(R/W)	Select the appropriate motor number according to the different motors
201	Gear 0 Speed(R/W)	
202	Speed of gear 1(R/W)	
203	Speed of gear 2(R/W)	
204	Speed of gear 3(R/W)	
205	Gear 4 speed (R/W)	
206	Gear 5 RPM (R/W)	
207	Gear 6 RPM (R/W)	
208	Gear 7 RPM (R/W)	
209	Gear 8 RPM (R/W)	
210	Gear 9 RPM (R/W)	
211	Gear 10 RPM (R/W)	
212	Gear 11 RPM (R/W)	
213	Gear 12 speed(R/W)	
214	Gear 13 speed(R/W)	
215	Gear 14 RPM (R/W)	
216	Gear 15 speed (R/W)	
217	Gear 0 acceleration (R/W)	
218	Gear 1 acceleration (R/W)	
219	Gear 2 acceleration (R/W)	
220	Gear 3 acceleration (R/W)	
221	Gear 0 deceleration (R/W)	
222	Gear 1 deceleration (R/W)	
223	Gear 2 deceleration (R/W)	
224	Gear 3 deceleration (R/W)	

Address 201-224, user can customize via 485 to meet customer's needs.

Motor Default Parameters

#1 (4 - poles 500rpm-6500rpm)

level 0 RPM	2000rpm	level 0 acceleration	4500rpm/s	level 0 Deceleration	4500rpm/s
level 1 RPM	2300rpm				
level 2 RPM	2600rpm				
level 3 RPM	2900rpm				
level 4 RPM	3200rpm	level 1 acceleration	6000rpm/s	level 1 Deceleration	6000rpm/s
level 5 RPM	3500rpm				
level 6 RPM	3800rpm				
level 7 RPM	4100rpm				
level 8 RPM	4400rpm	level 2 acceleration	7500rpm/s	level 2 Deceleration	7500rpm/s
level 9 RPM	4700rpm				
level 10 RPM	5000rpm				
level 11 RPM	5300rpm				
level 12 RPM	5600rpm	level 3 acceleration	9000rpm/s	level 3 Deceleration	9000rpm/s
level 13 RPM	5900rpm				
level 14 RPM	6200rpm				
level 15 RPM	6500rpm				

#2 (6 - poles 600rpm-6900rpm)

level 0 RPM	2400rpm	level 0 acceleration	4500rpm/s	level 0 Deceleration	4500rpm/s
level 1 RPM	2700rpm				
level 2 RPM	3000rpm				
level 3 RPM	3300rpm				
level 4 RPM	3600rpm	level 1 acceleration	6000rpm/s	level 1 Deceleration	6000rpm/s
level 5 RPM	3900rpm				
level 6 RPM	4200rpm				
Glevel 7 RPM	4500rpm				
level 8 RPM	4800rpm	level 2 acceleration	7500rpm/s	level 2 Deceleration	7500rpm/s
level 9 RPM	5100rpm				
level 10 RPM	5400rpm				
level 11 RPM	5700rpm				
level 12 RPM	6000rpm	level 3 acceleration	9000rpm/s	level 3 Deceleration	9000rpm/s
level 13 RPM	6300rpm				
level 14 RPM	6600rpm				
level 15 RPM	6900rpm				

The #1 and #2 motors correspond to our DGBL motors and Win 50 motors, and the motor manuals of the new products will be modified in real time.

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