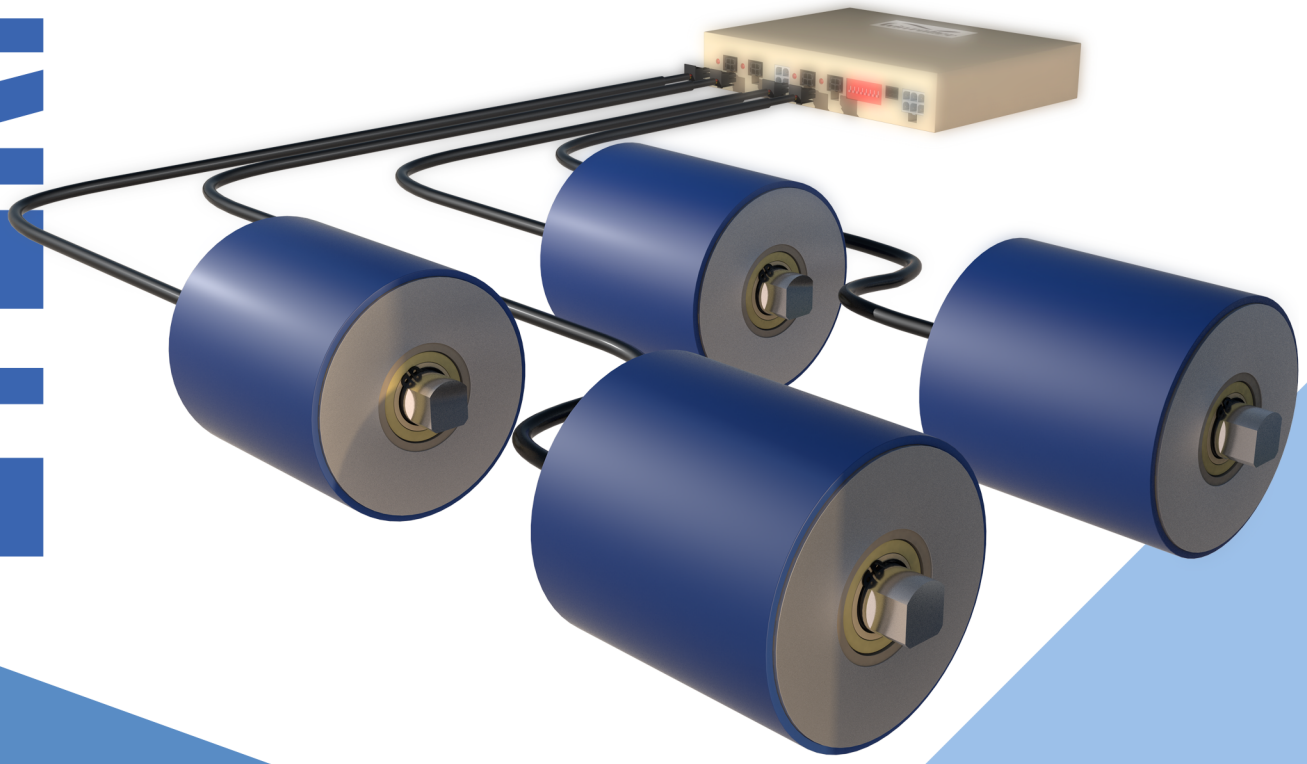
ETERNAL DRIVE

INTELLIGENT AUTO LOGISTICS SERIES

DGDD SMALL SORTING ROLLER



JIANGSU WINROLLER TECHNOLOGY CO.,LTD

NO: V1.3

DCR#	Rev.	Originator	Date	Remark
1	1.0	Hou Yangyang	01/13/2022	Initial release
2	1.1	Wang Lei	01/27/2022	Contour schema modification
3	1.2	Wang Lei	02/02/2022	Drive version modification
4	1.3	Hou Yangyang	02/20/2022	Shape drawing outlet wire length modification
5	1.4	Wang Lei	04/17/2022	Drum technical requirements parameter modification
6	1.5	Wang Lei	05/20/2022	The number of outlet wire core modification
7	1.6	Wang Lei	06/23/2022	Drive version modification
8	1.7	Hou Yangyang	07/01/2022	Shape drawing annotation mode modification

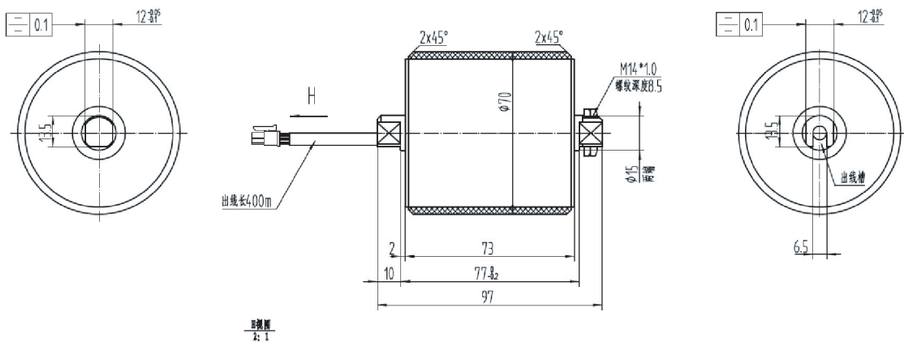
CATALOG

motor roller main parameters

DCBL motor parameters

Rev.	Unit	Specification	Explain
Motor type		DC brushless motor	
Motor mode		External-rotor motor	
Roller OD	mm	70	Rubber coated thickness 2mm
Rated voltage	V	DC48	+/-10%
Maximum current	A	10	
Rated power	W	50	S1 work schedule
Peak torque	N.m	2	
Speed range	rpm	350-1000	
Linear speed range	m/s	1-3.5	
Insulation grade		F	

Roller dimensions

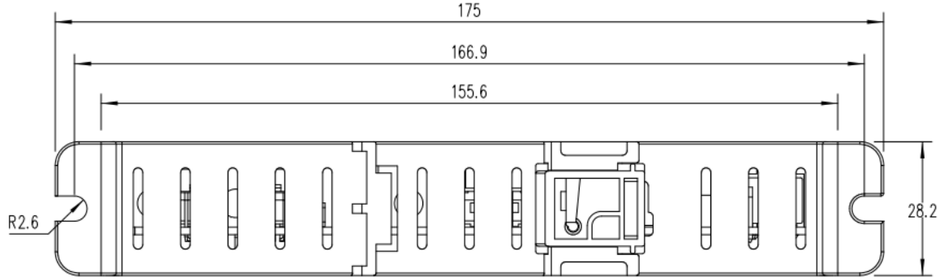


Driver main parameters

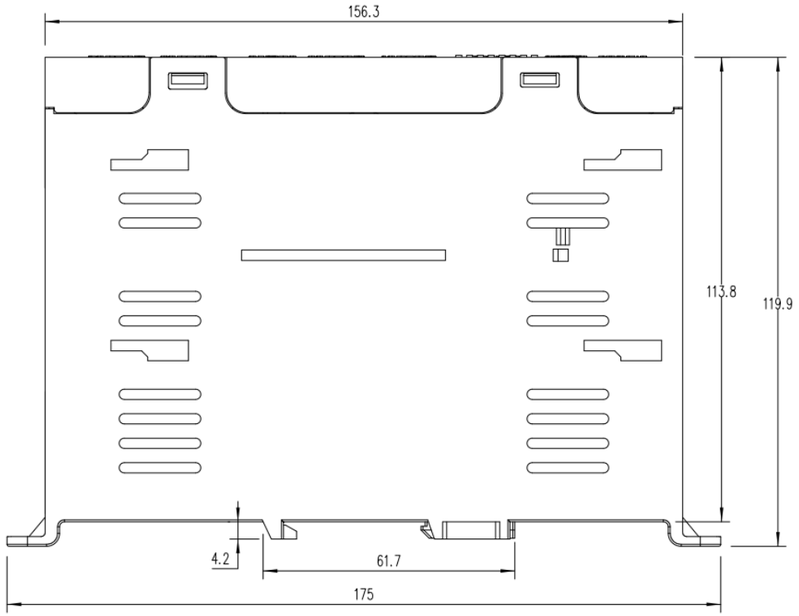
Rev.	Unit	Specification	Explain
Driver type		DC brushless driver	Sensorless
Input rated voltage	V	DC48V+/- 10%	Dc voltage regulator
Output power	W	100*4	100W for each motor interface
Driver dimensions	mm	175*120*35.2	
Diver communication mode		RS485	38400 bps,N,8,1 Fee agreement
Operation temperature	℃	-25~60	
Operation humidity		85% 以下	Condensation free(RH)
Protection level		IP20	No special protection against water or moisture; Prevent the invasion of solid foreign bodies larger than 12.5mm in diameter

Driver dimensions

Driver dimensions 1

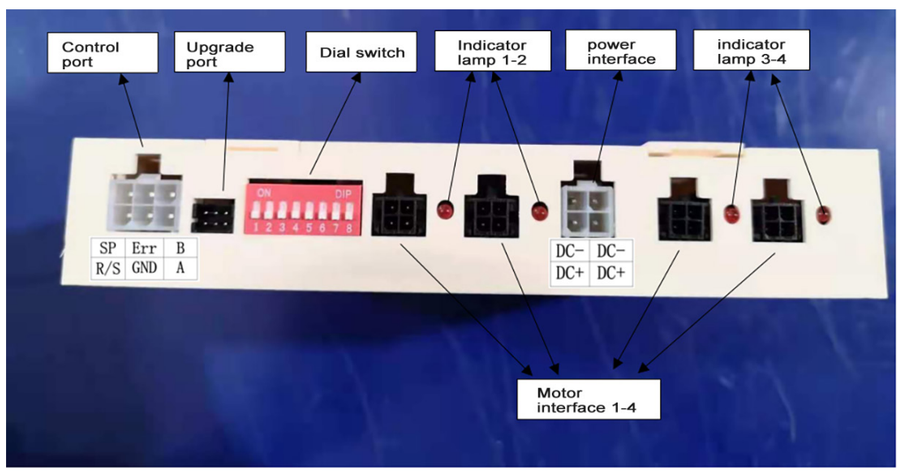


Driver dimensions 2



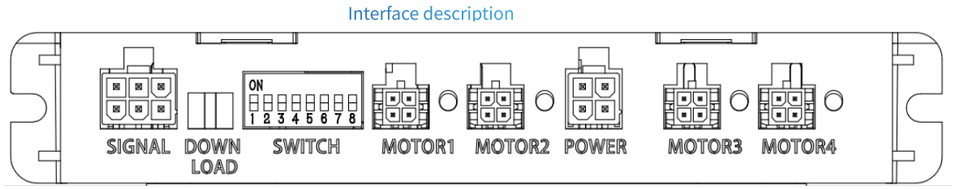
interface definition

Driver layout



Interface description

Interface description



Interface description

Name	Adaptation plug-in	Port definition	Remark
Power interface	HX42000-4R	DC+	48V direct current +
		DC-	48V direct current —
Control interface	HX42000-6R	SP	High and low speed switching (invalid low speed, effective high speed)
		R/S	Run enable (invalid stop, effective run)
		Err	Triode collector open output (fault output 0V, normal suspension)
		GND	Signal reference(provides 0V active level for R/S and SP)
		B	485 Interface B
		A	485 Interface A

Interface description

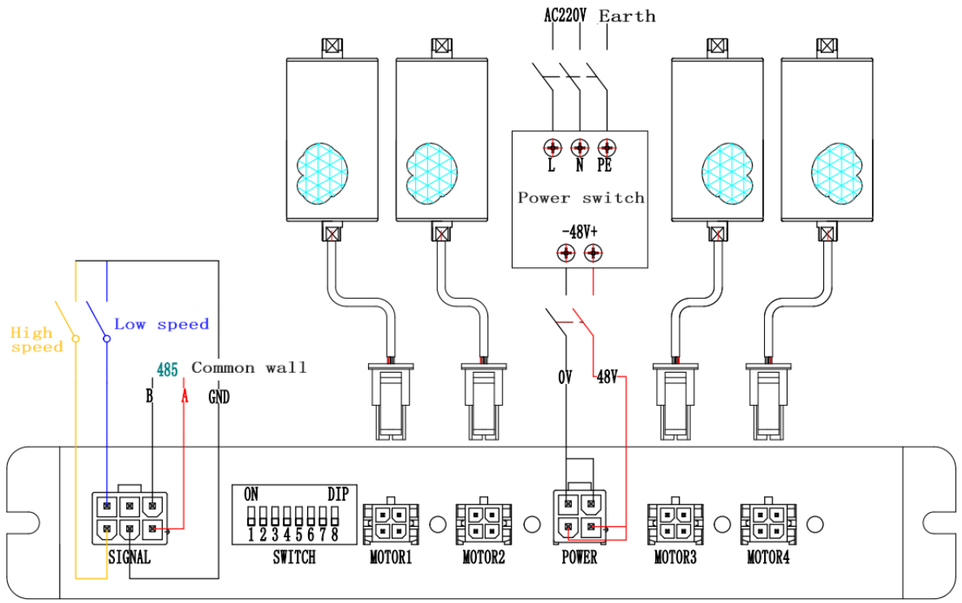
Control mode	Dial number	Dial definition	Remark
I/O	1~3	Lb0~Lb3	Set the roller speed for low speed operation (invalid SP port)
	4~6	Hb0~Hb3	Set the roller speed for high speed operation (invalid SP port)
	7	Reserve	Reserve
	8	Operation direction	Motor rotation direction
485	1~6	addr0~addr5	Set the communication address of the 485. The value ranges from 1 to 63
	7~8	Reserve	Reserve

Test connection example

Infrared module driver installation requirements

The connection between the driver and the power supply and the motor roller, as well as the simple connection example of the control part are shown in the figure below. I/O control is recommended for testing. R/S and GND short-circuit running at low speed; In the running state, short-circuit SP and GND, and switch to high-speed running.

Driver wiring example diagram



IO control

Operating status under different input signals

SP	R/S	Explain
Invalid	Invalid	Stop
Invalid	Valid	For low speed operation, refer to the dial table for low speed operation, and use dial 8 to control the running direction
Valid	Invalid	Stop
Valid	Valid	For high speed operation, refer to the dial table for low speed operation, and use dial 8 to control the running direction

Different dial switch states correspond to different dial switch states

Low speed operation dial table

Dial number	Dial definition	L0 level	L1 level	L2 level	L3 level	L4 level	L5 level	L6 level	L7 level
1#	Lb0	OFF	ON	OFF	ON	OFF	ON	OFF	ON
2#	Lb1	OFF	OFF	ON	ON	OFF	OFF	ON	ON
3#	Lb2	OFF	OFF	OFF	OFF	ON	ON	ON	ON
Corresponding speed rpm		350	400	450	500	550	600	650	700

High speed operation dial table

Dial number	Dial definition	L0 level	L1 level	L2 level	L3 level	L4 level	L5 level	L6 level	L7 level
4#	Hb0	OFF	ON	OFF	ON	OFF	ON	OFF	ON
5#	Hb1	OFF	OFF	ON	ON	OFF	OFF	ON	ON
6#	Hb2	OFF	OFF	OFF	OFF	ON	ON	ON	ON
Corresponding speed rpm		650	700	750	800	850	900	950	1000

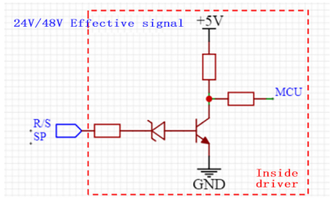
Input port R/S&SP wiring explain

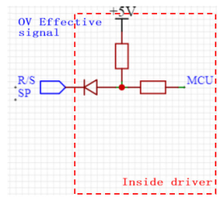
R/S & SP port valid signal

1. Automatic recognition of high （DC48V）and low （0V）levels.
2. If the DC48V signal is used, it is recommended to access the signal from the positive terminal (+) of the driver power supply. For details see the connection reference diagram on this page.
3. If the 0V signal is used, the signal must be connected through the driver interface GND. For details see the connection reference diagram on this page.
4. If DC24V signal (PLC, etc.) is used, connect the DC24V control system to a common negative terminal with the driver power system.
5. I/O signal priority lower than 485 communication instruction.

R/S & SP port R/S & SP port internal circuit diagram

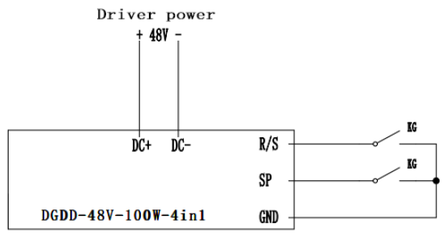
When access high level(left) and low level(right), Drive internal effective circuit diagram

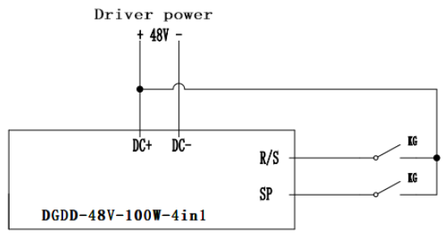




R/S & SP port R/S & SP port internal circuit diagram

Access DC48V-(0V) wiring diagram（left）,access DC48V+ wiring diagram(right)



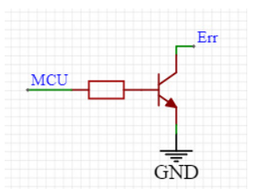


Input （ERR） wiring explain

Open collector output,only output low level

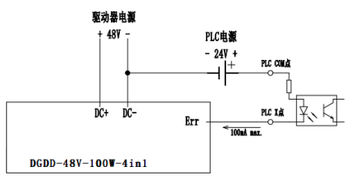
ERR port internal circuit diagram

ERR port internal circuit diagram



Reference wiring diagram

Report the fault output low level wiring diagram



485 Communication control

DIP dial instruction

485 communication control, DIP used to set the driver's communication station number

Dial number	Dial definition	Explain
8#	–	–
7#	–	–
6#	addr5	1.Dial ON=1，OFF=0； 2.Communication station number addr5–addr0 is a 6–bit binary number, ranging from 1 to 63 3.Example： (1) addr5–addr0=000001，1 the add set to 1 (2) addr5–addr0=000010，1 the add set to 2 (3) And so on
5#	addr4	
4#	addr3	
3#	addr2	
2#	addr1	
1#	addr0	

RS485 communication parameter

No	Project	Parameter	Remark
1	Maximum number of sites	63	The station number is set by DIP 1#~6#
2	Communication mode	38400,N,8,1	
3	Examine mode	Frame check（FCS）	

RS485 Free agreement

Parameter setting frame

No	Project	Parameter	Remark
byte1	Start byte (fixed)	D0H	1.The start byte can be D0H, D1H, or D3H 2. When D0H, the drive returns a parameter reply frame 3.When D1H, the drive does not return a parameter reply frame 4. When D3H, the instruction is broadcast, and the drivers on the same bus respond to the control, and do not return the parameter reply frame
byte2	Direction Drive communication station number	byte2.b7 = 0 byte2.b6 = Direction bit byte2.b5–b0 = Communication station number	1.byte2.b6=0 forward turn; byte2.b6=1 reverse 2.The communication station number should be the same as that set by DIP (except D3H beginning command)
byte3	Run enable bit	byte3.b7 = 0 byte3.b6–b0 = spd.b6–spd.b0	1.byte4.b5=1 run, and byte4.b5=0 stop 2.Running speed spd is a binary value of 12 bits, which is composed of bits of byte3 and byte4 (1)spd.b11–b8 = byte4.b3–b0 (2)spd.b7 = byte4.b4 (3)spd.b6–spd.b0 = byte3.b6–b0 3.The unit of the running speed is rpm
byte4		byte4.b7–b6 = 00 byte4.b5 = Run enable bit byte4.b4 = spd.b7 byte4.b3–b0 = spd.b11–b8	
byte5	Check byte	byte2 XOR byte3 XOR byte4	byte5 is the result of bitwise XOR operation by byte2~byte4

Fault return frame (drive return)

No	Project	Parameter	Remark
byte1	Start byte (fixed)	D0H	
byte2	Drive communication station number	byte2.b7–b6 = 00	
byte3	Reply byte	55H indicates that the packet is properly received	
byte4	Check byte	byte2 XOR byte3	byte5 is the result of bitwise XOR operation by byte2~byte4

Fault polling frame

No	Project	Parameter	Remark
byte1	Start byte (fixed)	D2H	
byte2	Drive communication station number	byte2.b7–b6 = 00 byte2.b5–b0 = Communication station number	The address is set by DIP switch (range 0 to 63)
byte3	Reserved	00H	
byte4	Reserved	00H	
byte5	Check character	byte2 XOR byte3 XOR byte4	byte5 is the result of bitwise XOR operation by byte2~byte4

Fault return frame (drive return)

No	Project	Parameter	Remark
byte1	Start byte (fixed)	D2H	
byte2	Drive communication station number	byte2.b7–b6 = 00 byte2.b5–b0 = communication station number	
byte3	flt	byte3.b7 = 0 byte3.b6–b0 = flt.b6–flt.b0	FLT is a 7–bit binary number. Each bit corresponds to a different fault state. A value of 1 indicates a fault, and a value of 0 indicates no fault. 1.flt.b6: reserved 2.flt.b5:1, 2 motor under–voltage 3.flt.b4: No. 3, No. 4 motor under–voltage 4.flt.b3–b0: Corresponding to motor No.4, No.3, No.2, and No.1
byte4	Check byte	byte2 XOR byte3	Byte4 is the result of bitwise XOR operation by byte2~byte3

Indicator status definition

4 indicators respectively indicate the state of the 4 motors

No	Indicator status	Information description	Processing method
1	Steady light	Normal standby	
2	Flow scintillation	change below The speed of the motor running	
3	2 flickers, pause	Motor cable is not connected	Check that the plug is properly inserted
4	3 flickers, pause	Controller failure	Change controller
5	4 flickers, pause	Motor Locked-rotor	Remove load or blockage
6	5 flickers, pause	Voltage anomaly	Check the power supply voltage. If no problem, replace the controller
7	6 flickers, pause	Overcurrent	Remove load or blockage

JIANGSU WINROLLER TECHNOLOGY CO,.LTD
FAX:0510-8022138
ADD:38 north Xizhang Road,Huishan Economic Development Zone,Wixi city,Jiangsu Province,China
HTTP:www.win-roller.com