
10P-0003 Differential Encoder & IO Card

To be used with AC10P Series Inverter

Product Manual

Issue 1

(ENGLISH VERSION)

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I. Model and specification

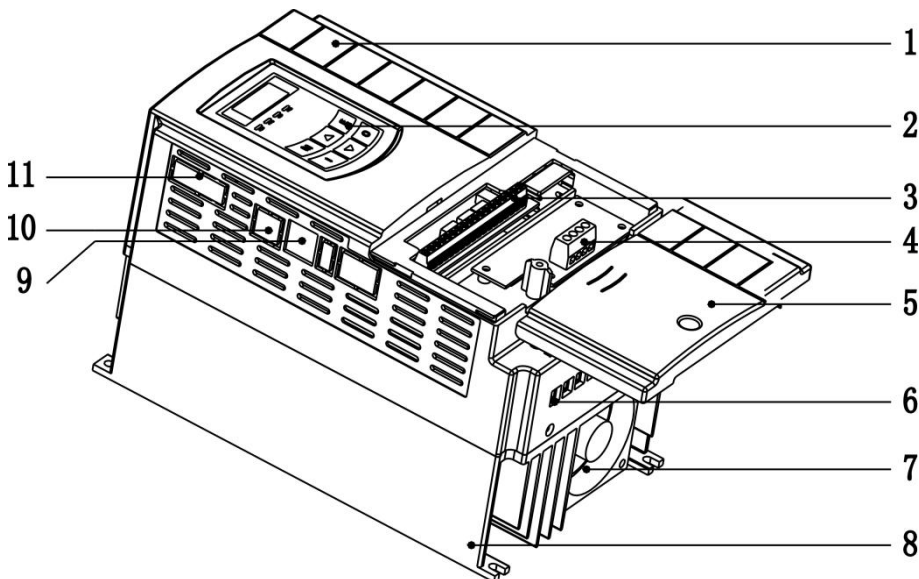
1.1 Model

Model	Function
10P-0003	4 terminals for DI input, and 2 terminals for relay output, with frequency-division differential PG card

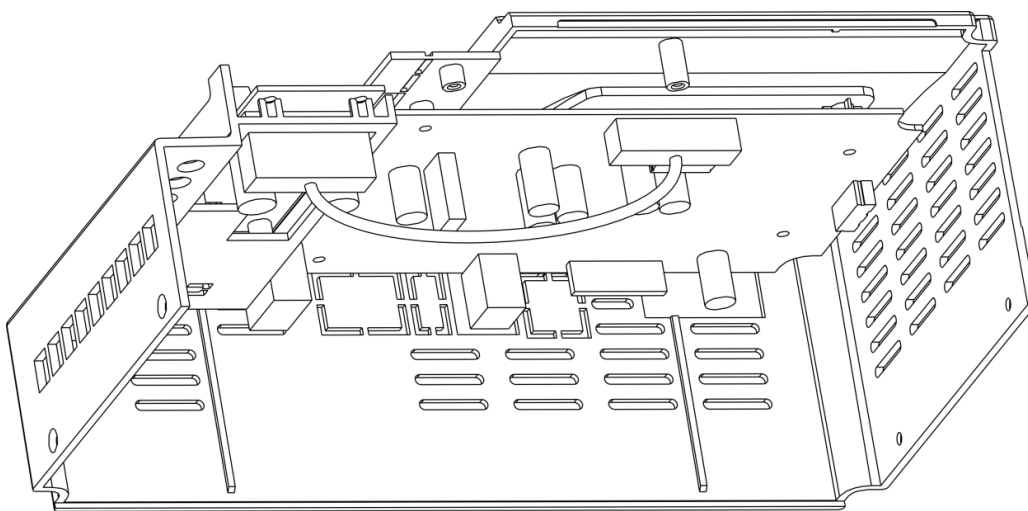
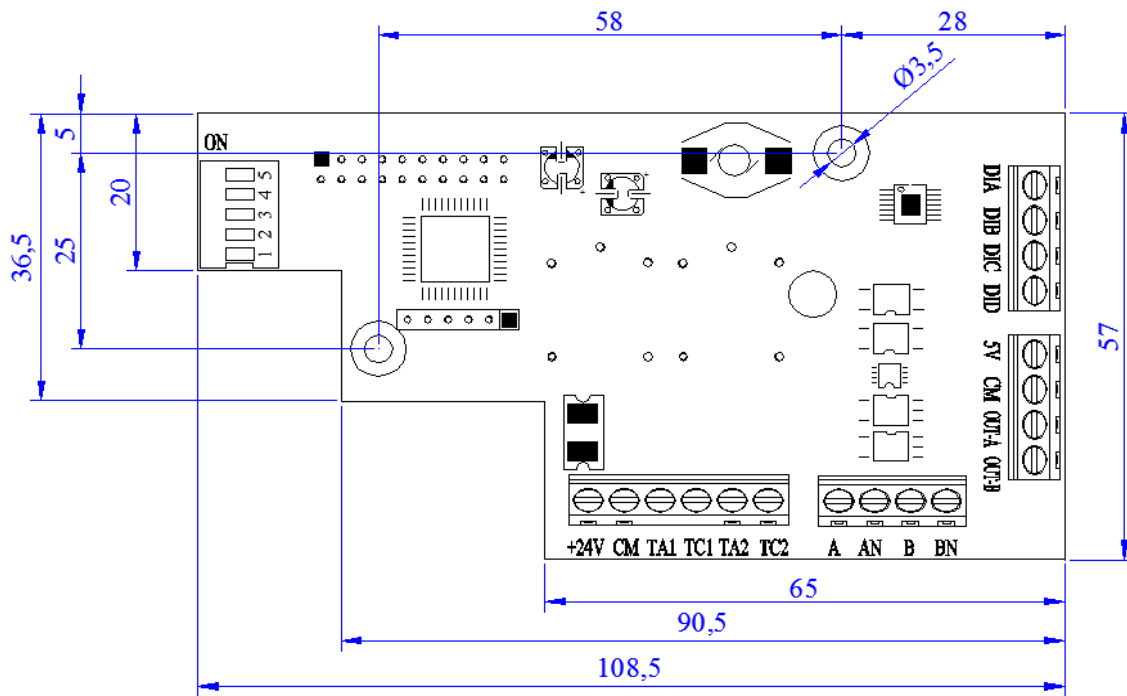
1.2 Specification

	Function	Response speed	Output resistance	Voltage range	Output current	Frequency-division range
DIA~DID	4 terminals for digital input	---	---	0~24V	---	---
TA1/TC1 TA2/TC2	2terminals for relay normal-open contact	---	---	---	12A/125VAC 7A/250VAC 7A/30VDC	---
+24V,CM	DIA~DID power	---	---	24±1.5V	50mA	---
5V,CM	Power of differential encoder	---	About 300ohm	5V	300mA	---
A, AN B, BN	Differential encoder signal	0~80KHz	---	±5V	---	---
OUT-A,O UT-B	Frequency-division signal output	0~80KHz	About 30 ohm	---	100mA	1,2~62(even number)

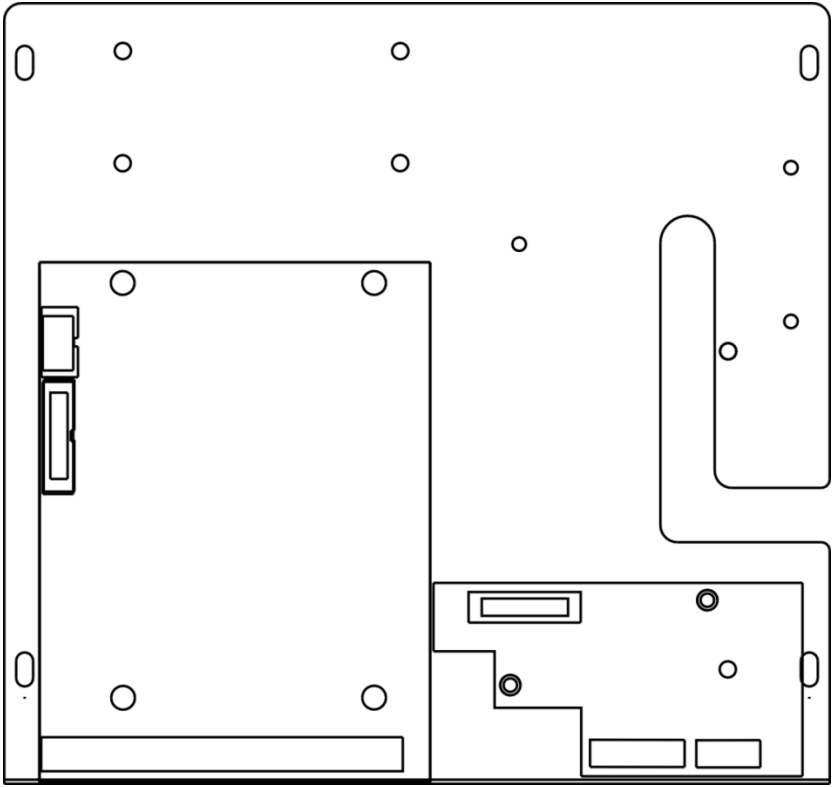
1.3 Dimension and installation



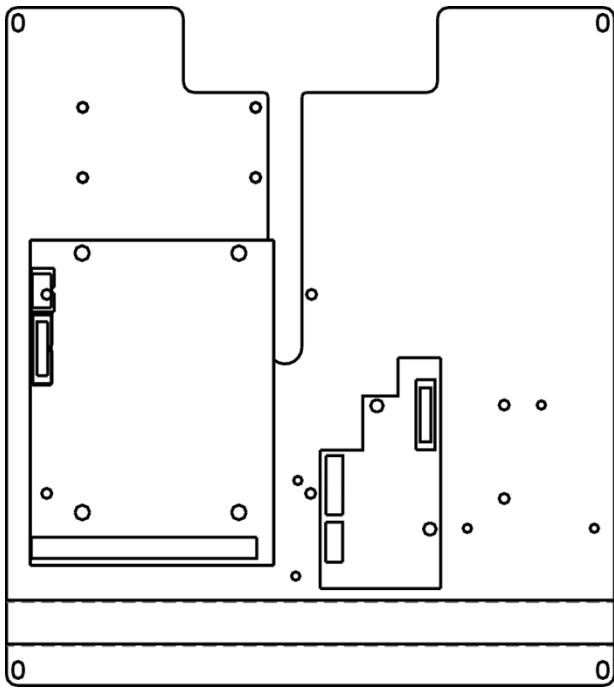
1	Cover	7	Fan
2	keypad	8	heatsink
3	Control terminals	9	Modbus interface
4	PG card	10	Remote keypad interface
5	Removable cover	11	Communication interface
6	Power terminals		



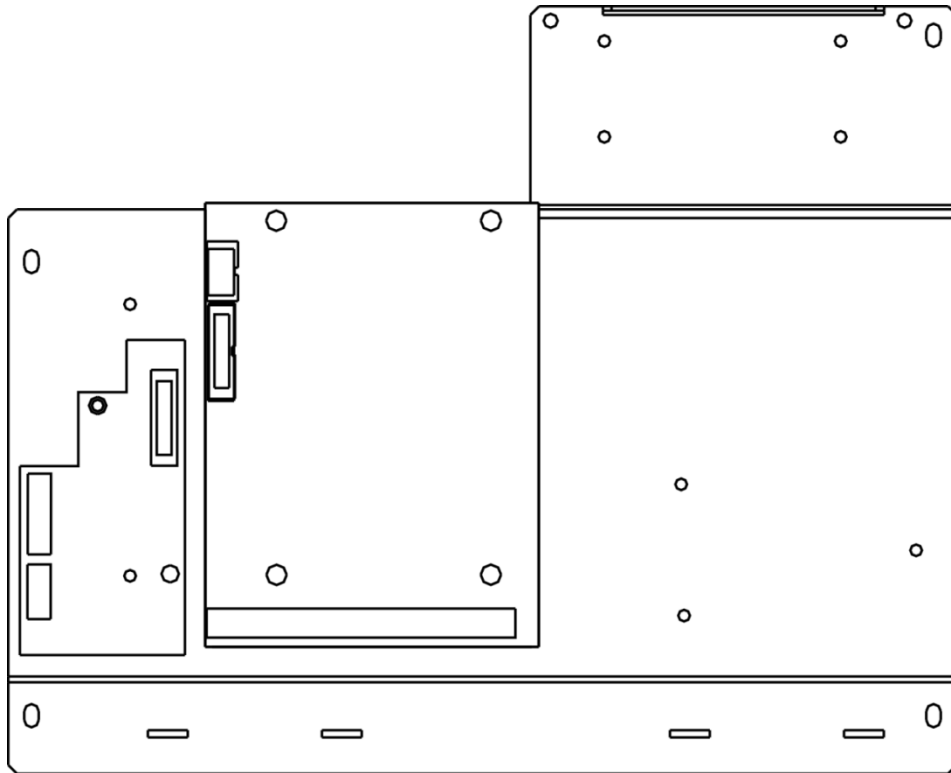
Internal Wiring diagram for frame size 3, 4, 5



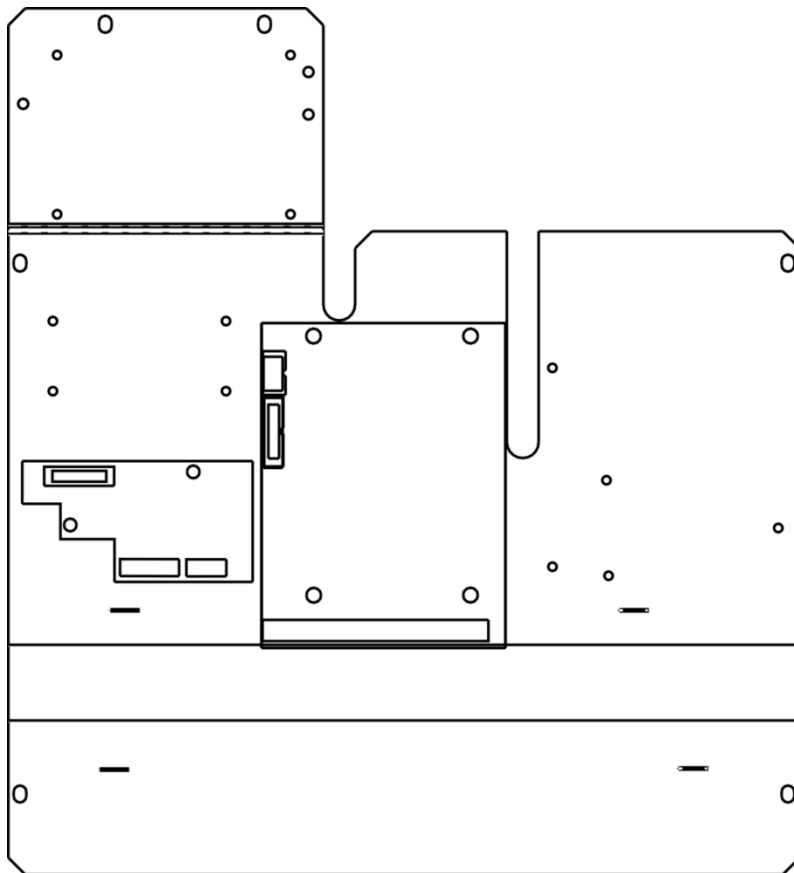
Installing diagram for size 6



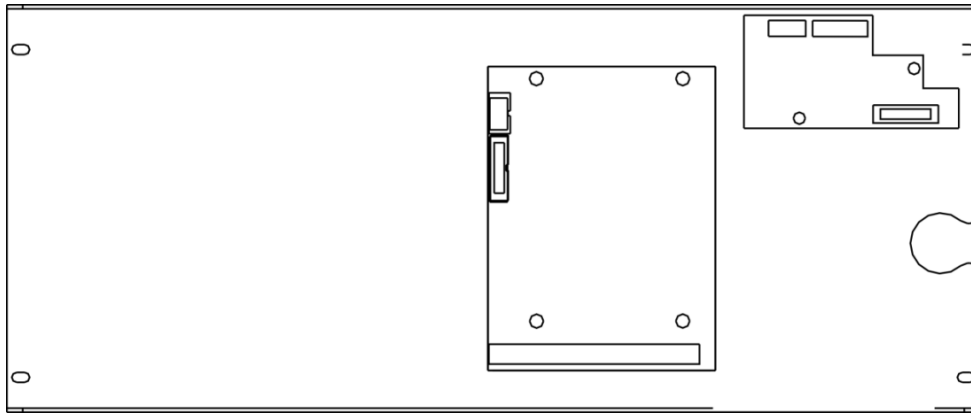
Installing diagram for size 7



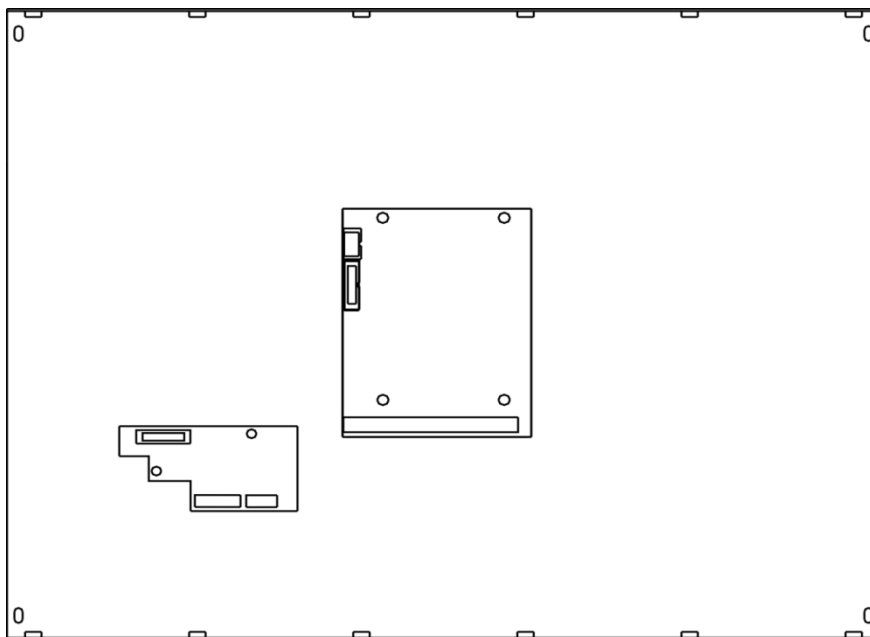
Installing diagram for size 8



Installing diagram for size 9



Installing diagram for size 10



Installing diagram for size 11

- For 4KW and above 4kW inverters, the expansion card is installed inside of inverter. The card is installed nearby control board, which is fastened by 3*5 self-tapping screw. J1 connector is connected to J10 in the control board by 20-core flat cable.
- For below 4.0kW inverters, PG card is installed outside of inverter, the cable should be shorter than 30cm.

II. Instructions

2.1 Function

Please refer to instructions of FF section in the user manual of inverter for 4 terminals of DI input, 2 terminals of relay output.

PG card must be selected when the drive is at the closed-loop vector control mode. PG card includes 2 orthogonal encoder signal process circuits, which can accept encoder signal of differential output, open-collector output, and push-pull output type. 10P-0003 is differential output PG card. The power of

differential encoder is +5V. Besides, PG card can deal with encoder signal for frequency-division output (output is 2 orthogonal signal). User can select it according to actual situation.

2.2 Terminal and DIP

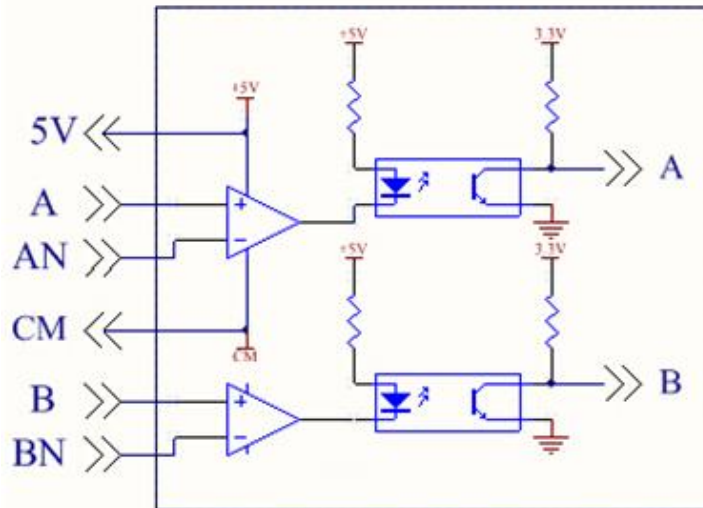
DIA	DIB	DIC	DID	+24V	CM	TA1	TC1	TA2	TC2	A	AN	B	BN	5V	CM	OUT-A	OUT-B
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- DIA~DID are DI input terminals, TA1/TC1, TA2/TC2 are relay normal-open contact terminals. A, AN, B and BN are differential encoder signal input terminals. 5V and CM are power and grounding of differential encoder. OUT-A、OUT-B + are frequency-division signal output terminals.
- The frequency-division coefficient is set by DIP switch on the PG card. DIP switch has 5-digit, binary numbers stand for coefficient. DIP 1 stands for low byte of binary, DIP 5 stands for high byte of binary. When the switch is turned to ON, it means “1” or else, it means “0”.

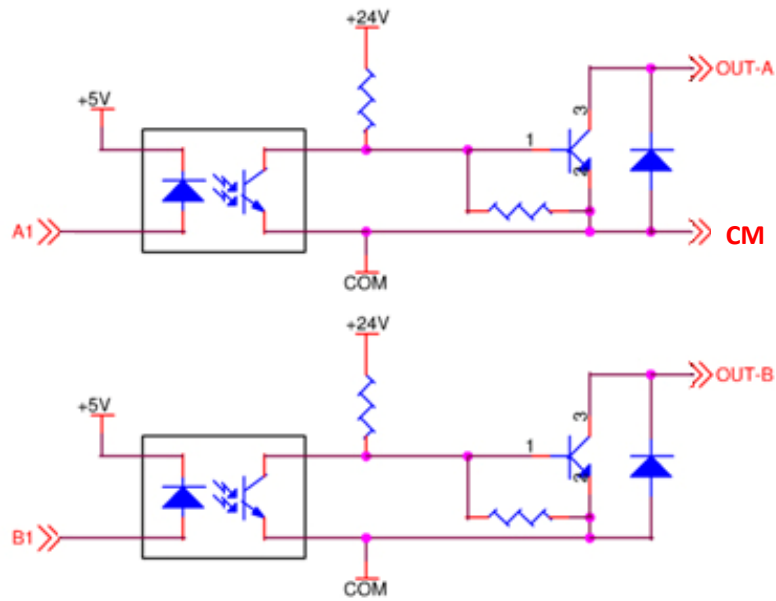
Please refer to below table:

	Binary	Frequency-division coefficient
0	00000	1
1	00001	2
2	00010	4
...
N	...	2N
31	11111	62

2.3 Diagram



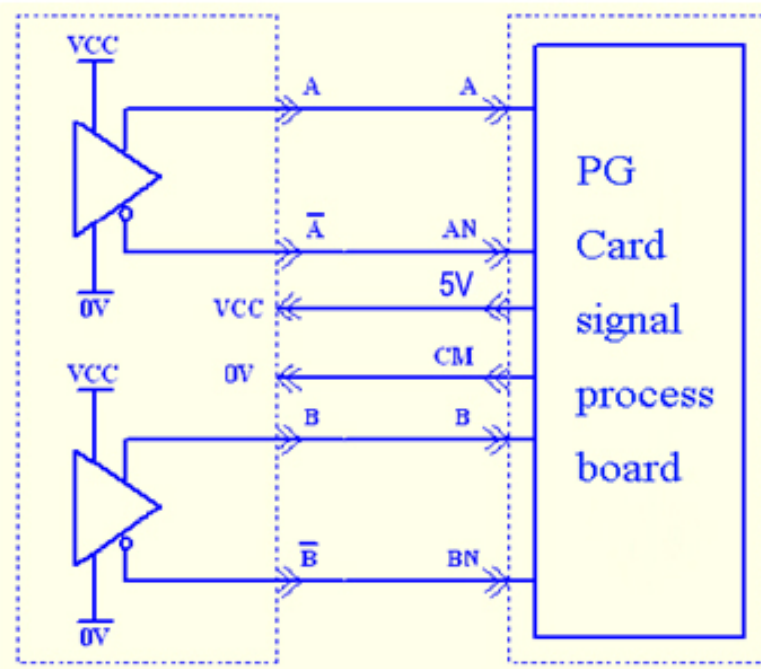
2.4 Frequency-division diagram



2.5 Caution

1. The signal wire of encoder should be far away from power wire.
2. Please select shielding wire as the encoder signal wire, and one end of it should be connected to grounding.
3. The given direction of inverter, the rotation direction of motor (from output axis of motor) and the rotation direction of encoder should be the same

III. Connection



- Differential output encoder (VCC=5V, please indicate it when differential encoder is selected).