

To ensure good drive control service and its safe use, please read the following instructions carefully before using this product and its electrical and mechanical systems. In order to continuously improve and improve the products and related materials

### 1. Mechanical and electrical installation instructions

- Before installation, please make sure that the drive is in the power off state, it is forbidden to insert the power plug
- Remove the pre-sealed cover on the C-type SLOT3 card slot and insert the option vertically after inserting the option. After opening the R-type cover, insert the option from SLOT5 and lock it with the screw.
- Use a flat-blade screwdriver or standard DB9 and DB15 heads to complete the wiring according to the wiring diagram after checking the model.
- The wiring diameter is AWG14~24 (2.1~0.2mm<sup>2</sup>), and the terminal torque is up to 5kgf-cm.
- To prevent interference, use a qualified shielded cable, and do not route alongside the AC220V and above circuits, and keep the distance between the motor and power cables at 15CM or more. When interlacing, please observe the principle of vertical wiring.
- When connecting an inductive load (relay, electromagnetic contactor, motor, etc.), install an arc eliminator (RC absorber) on the coil side.
- Try to control the length of the wiring (because this length is inversely proportional to the signal frequency).
- Please use this product in a non-corrosive gas, liquid and dust-free indoor environment.
- For safety reasons, please install a fuse in the circuit (the specification cannot be greater than the contact limit)

**Do not plug or unplug this card with power, otherwise the machine may be damaged. Before the signal is connected, it must be confirmed that the motor is well grounded, otherwise the motor is inductive and has the risk of electric shock and equipment.**

This product is a static-sensitive component. Although it has been treated with anti-static damage before leaving the factory, it is recommended that you minimize unnecessary hand-free contact during the installation and use process to avoid damage.

DB Plug eg.



### 2. Specifications

Universal DB series gold-plated solderless terminal block connector, as above

1	High-speed differential encoder module	+TTL33	9+15Pin+C type, Non-isolated, high-speed differential encoder
2	Resolver encoder module	+RT35	9+15Pin+C type, Suitable for rotary transformers with excitation voltage of 7V and transformation ratio of 0.5
3	SinCos encoder module	+SN34	9+15Pin+C type, for resolver type encoder, frequency doubling inside
4	HTL pulse encoder module	+HTL39	9+15Pin+C type, HTL pulse encoder by DC12V, frequency dividing inside
5	TTL pulse encoder module	+TTL39	9+15Pin+C type, TTL pulse encoder by DC5V, frequency dividing inside
6	HTL pulse encoder module	+HTL52	9Pin Screw+R type, HTL pulse encoder by DC12V
7	Resolver encoder module	+RT55	9+15Pin+R type, for resolver type encoder
8	HTL pulse encoder module	+HTL59	9+15Pin+R type, HTL pulse encoder by DC12V, frequency dividing inside
9	TTL pulse encoder module	+TTL59	9+15Pin+R type, TTL pulse encoder by DC5V, frequency dividing inside
10	DB15VGA female plug with 15pin	+DB15F	Plug in X31 on C and R type drive with DB15 Pin
11	DB9VGA male plug with 9pin	+DB9M	Plug in X32 on C and R type drive with DB9 Pin

## +TTL39T Multi-function crossover encoder card wiring guide

- 1、 Only Support differential encoder, Please use shielded cable.
- 2、 Control System(CNC system、 PLC...)Wiring definition:

**When using the terminal PA±/PB±, please refer to the jumper mode of Figure 2 to select the given mode.**

- 1、 Differential pulse, connected to PA+/PA-, PB+/PB-, 0V to COM, J12 and J13 are shown in Fig. 2, which is mostly used in CNC systems, as shown in **Figure 4**.
- 2、 NPN pulse, when using internal power, connect to PA-/PB-, 0V to COM, J12 and J13 are shown in Fig. 2, application PLC... as shown in **Figure 5**.
- 3、 NPN pulse, when using external power supply, connect PA-/PB-, PA+/PB+ connect to 24V, and remove J12, J13 jumper, application PLC, as shown in **Figure 6**.
- 4、 PNP pulse, connected to PA+/PB+, PA-/PB- connected to 0V of external system, application PLC, as shown in **Figure 7**.
- 5、 The differential pulse frequency division output is connected to AO+/AO-, BO+/BO-, ZO+/ZO-, 0V is connected to **GND**, as shown in **Figure 8**.
- 6、 The open collector pulse frequency division output is connected to AO, BO, ZO, 0V and COM, as shown in **Figure 9**

Encoder port	
Port Name	Description
A+	Encoder signal
A-	
B+	
B-	
Z+	Frequency < 1MHZ
Z-	
VCC (+5V)	
COM (0V)	
PE	

System port	
Port Name	Description
AO+	5V Differential signal output (Parameter 61)
AO-	
BO+	
BO-	
ZO+	Open collector output
ZO-	
GND (0V)	
AO	Pulse input
BO	
ZO	
COM (0V)	
PA+	
PA-	
PB+	
PB-	

Figure 1 +TTL39T Port Definition

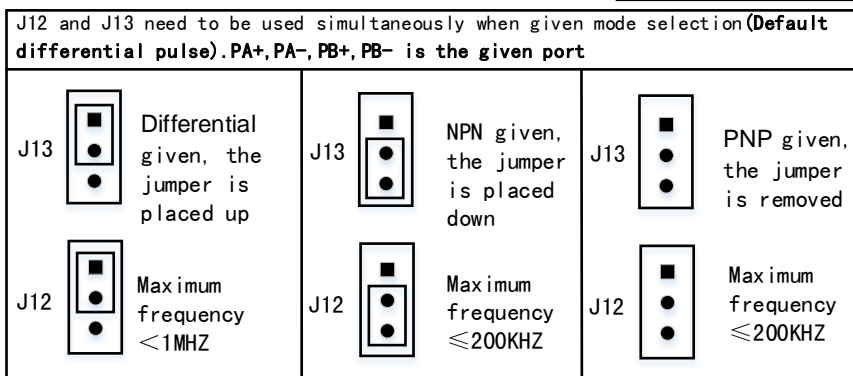


Figure 2 Control System Pulse Given Selection

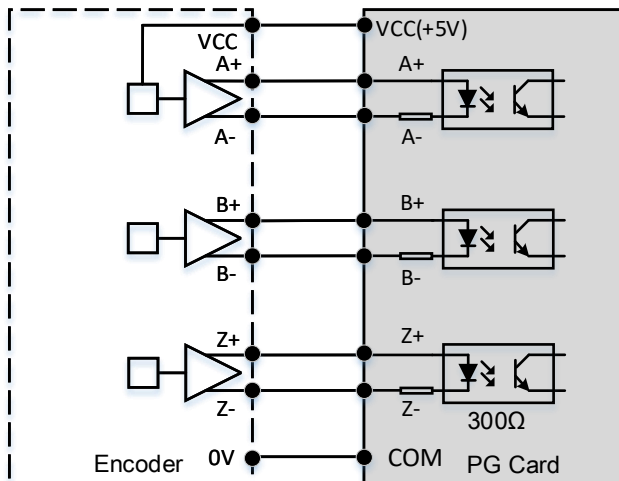


Figure 3 Differential encoder wiring diagram

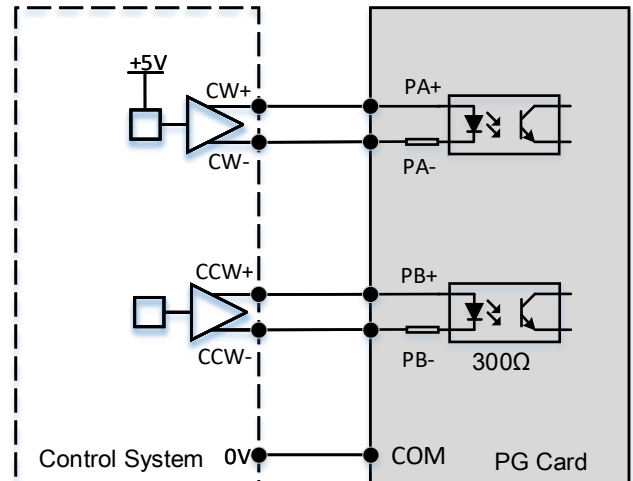
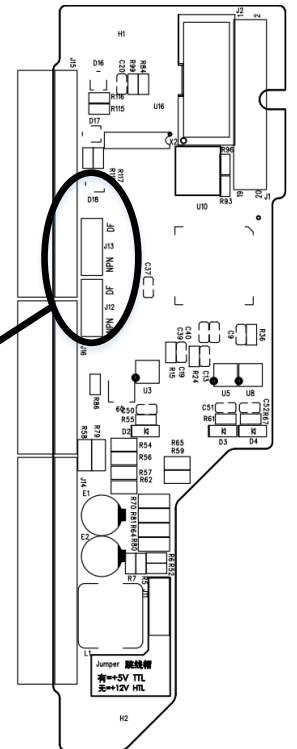


Figure 4 Differential pulse is given wiring diagram



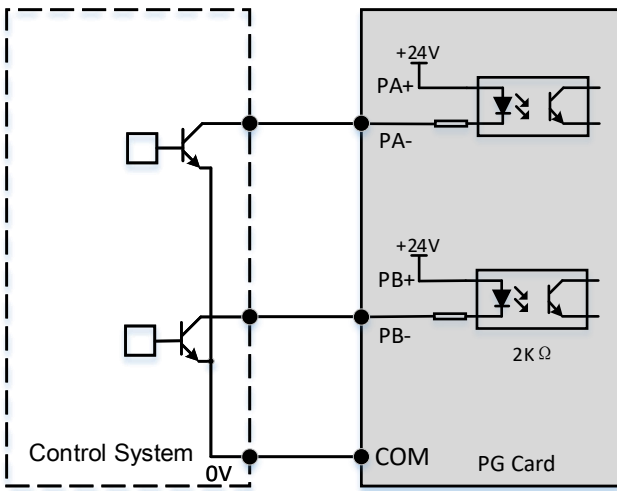


Figure 5 NPN pulse given wiring diagram  
(internal power)

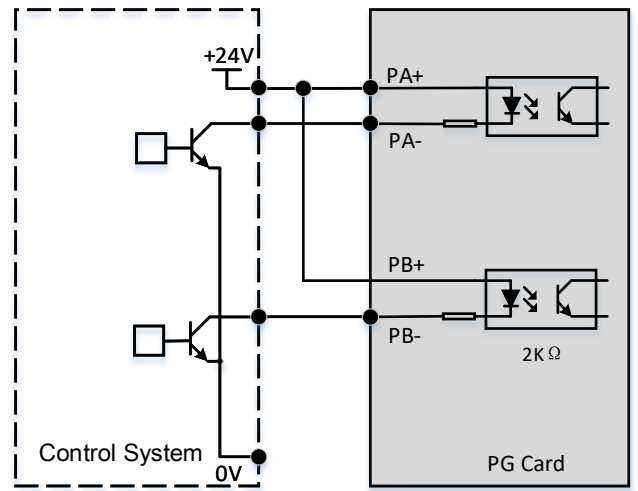


Figure 6 NPN pulse given wiring diagram  
(external power)  
remove J12,J13

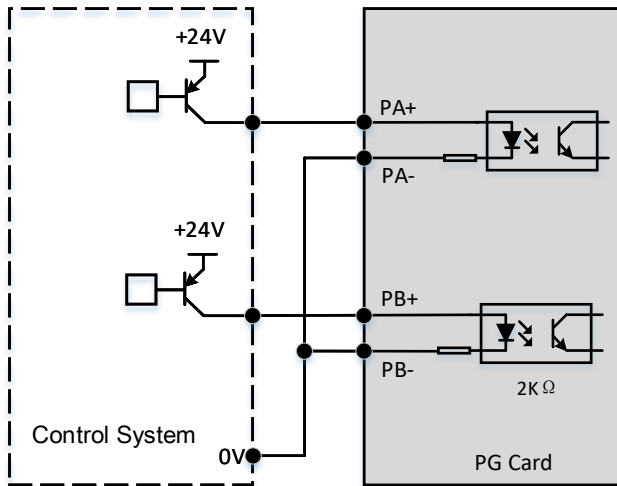


Figure 7 PNP pulse given wiring diagram

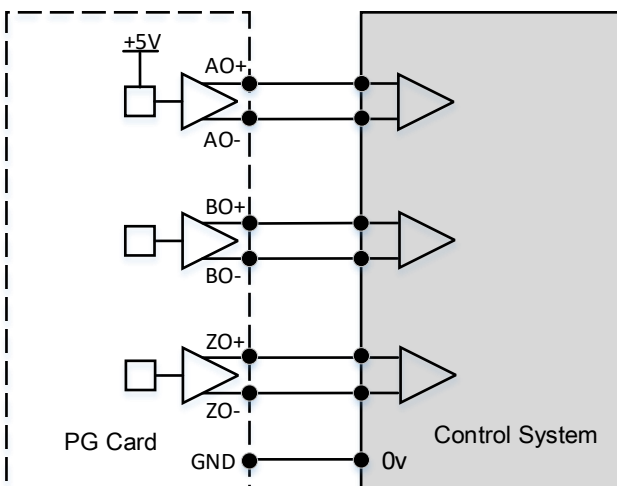


Figure 8 Differential pulse divider  
output wiring diagram

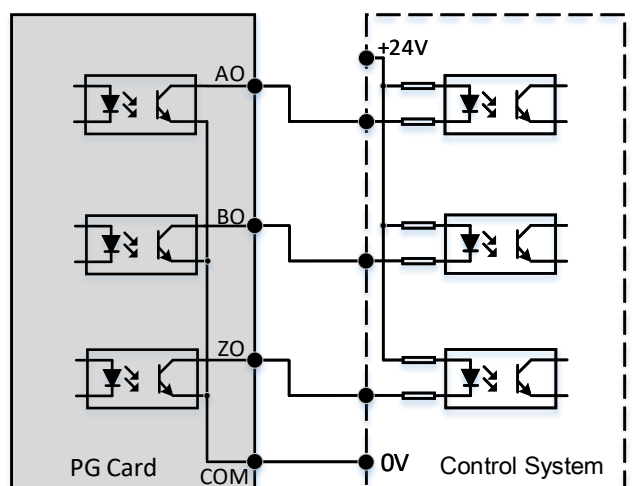


Figure 9 NPN pulse divider  
output wiring diagram