Vectorque™

V8-H-V0 SERIES INVERTER ADDITIVE MANUAL

（V0）

V&T

V8-H Series

ADDITIVE MANUAL

Change Scope

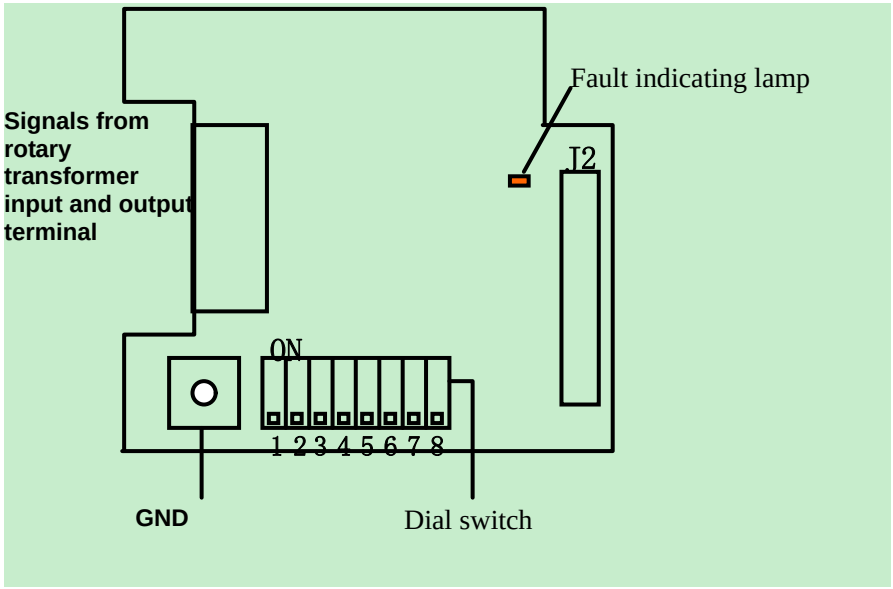
Increases function of Synchronous Motor close loop vector control with encoder speed feedback.

1. Hardware Prepare

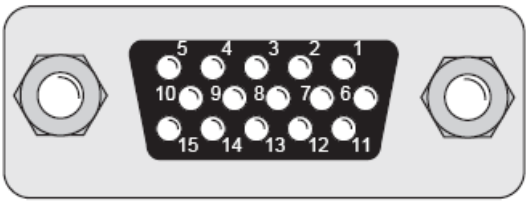
For rotary transformer as speed feedback, V&T speed feedback card EX-PG07 should be selected. For UVW encoder as speed feedback, V&T feedback frequency division output card EX-PG06 should be selected.

1.1 Interface Description of Rotary Transformer

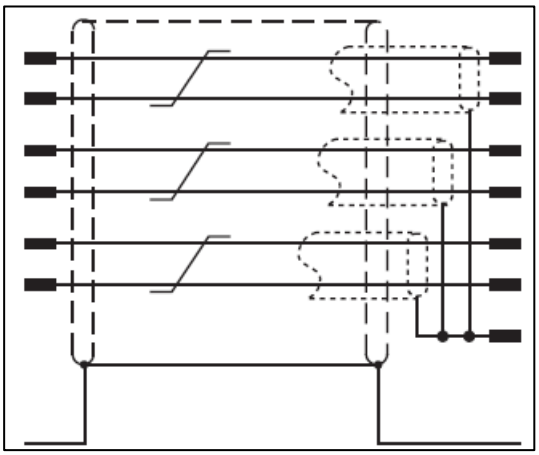
1.1.1 Expansion Card Chart of PG07



1.1.2 Interface Diagram and Signal Corresponding Relationships



Pin	Name
3	COS_LO
8	COS_HI
5	REF_LO
10	REF_HI
4	SIN_LO
9	SIN_HI
14	GND
Shielding layer	PE



Note:

The standard cable used for the wiring mode as shown:

Each group cable shielding layer should be connected to GND.

Shielding layer of all the cable must connect reliably with the attachment metal part.

For non-standard cable:

3 #, 8 # corresponding cable after twisted-pair as a group connect to terminal.

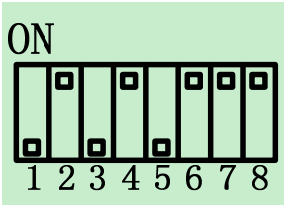
5 #, 10 # corresponding cable after twisted-pair as a group connect to terminal.

4 #, 9 # corresponding cable after twisted-pair as a group connect to terminal.

1.1.3 Dial Switch Description

NO.	Name	Function	Default
1	F2	Setting magnetizing frequency	01 (Magnetizing frequency 10kHz)
2	F1		
3	ERRSTB	Fault reset	0 (Fault allowable)
4	MDS	Setting resolution	1(2Bits, Corresponds to A/B per-turn output pulse)
5	ACMD	Acceleration mode selection	0 (Enable)
6	XSET1	Motor poles selection	11 (4double poles)
7	XSET2		
8	OUTMD	Output mode selection	1 (Encoder output mode)

1.1.4 Factory Setting of Dial Switch

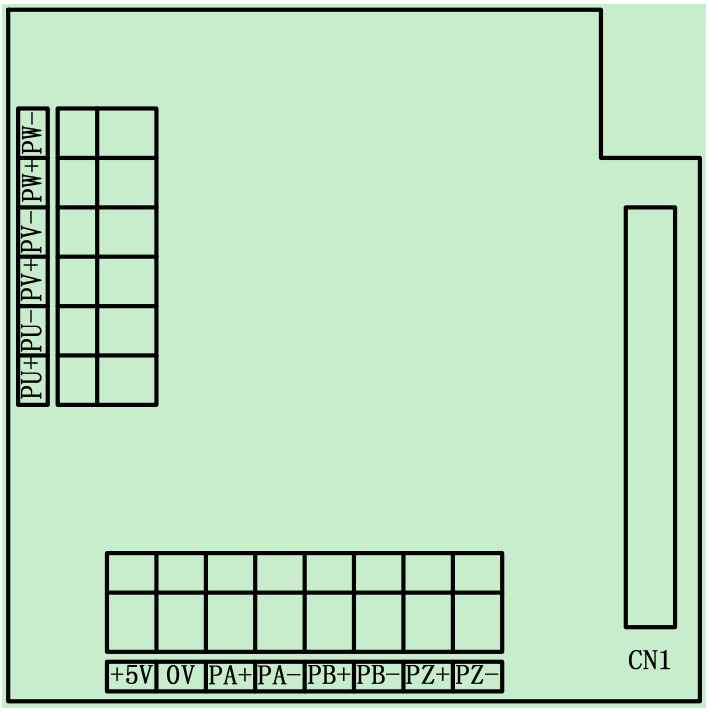


1.1.5 Fault Reset

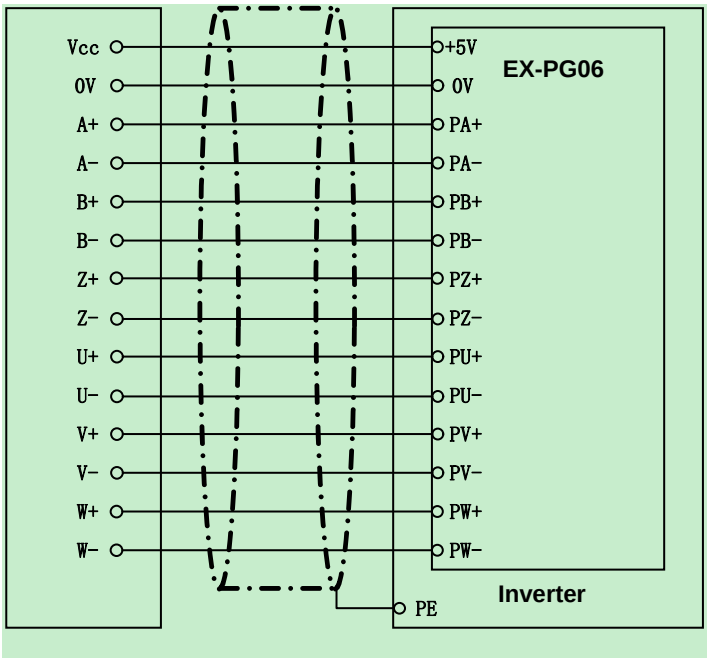
When abnormal of rotary transformer appears, expansion cards in the upper right side there is a red indicator light instructions anomaly. After troubleshooting, through 3# Dial switch realize fault reset or power off for a while to realize fault reset.

1.2 Interface Description of UVW Encoder

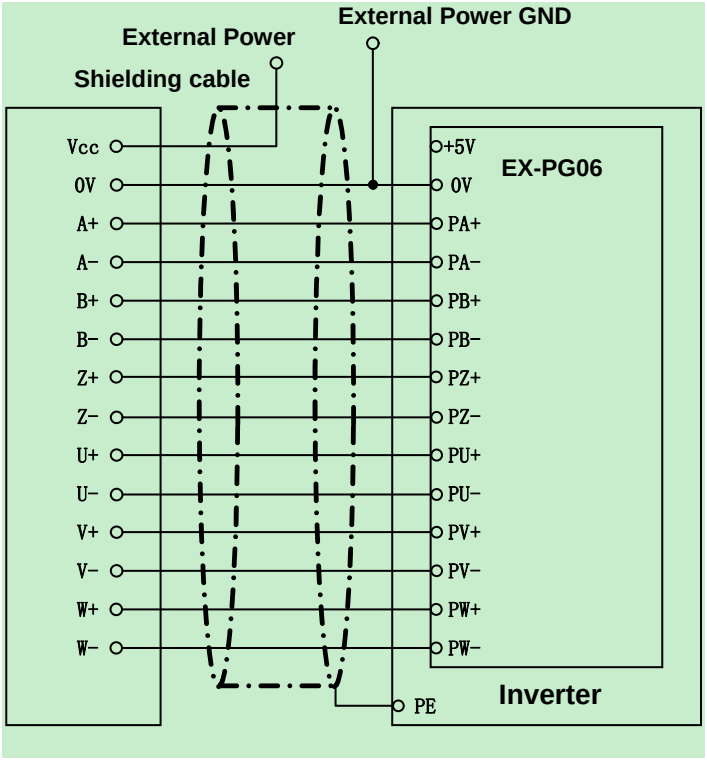
Expansion card chart of PG06



Connection diagram for EX-PG06 card adopting internal power supply



Connection diagram for EX-PG06 card adopting external power supply



2. Debugging Steps

2.1 Setting P0.03=8(vector control 2 with encoder speed feedback).
2.2 Setting basic frequency P0.15 corresponds to motor rated speed.
P0.15＝nN×NP/120
nN： Motor rated speed
NP： Motor poles, which is the value of P9.01
2.3 Setting maximum voltage P0.12, which is the back electro motive force correspond to motor rated speed.
2.4 Setting maximum frequency P0.11 and frequency upper limited P0.13.
2.5 Setting motor parameters P9.00 to P9.04, P9.04=2: Synchronous Motor.
2.6 Setting P9.15=3, and press RUN key to auto-tuning, after auto-tuning, initial rotor angle kept in Pb.22.

The encoder parameter is in Pd.21 and Pd.22, Pd.21 is pulse of per turn for encoder, when use rotary transformer, Pd.21 should be set to 1024, and Pd.22 is encoder direction selection. If E.Aut or E.dL1 occur while auto-tuning, please set Pd.22 =1, or check the wiring of rotary transformer.

Step 6 parameters auto-tuning can be operated 2 times, compare with Pb.22 of the two auto-tuning, it is normal if the result difference of 2 times being smaller than 5.0 degrees.

After set up and debugging has been completed accordance with the above steps, please first jog operation. If operations normally under vector control 2 with encoder speed feedback, other function can be setting according to V6-H user manual. For details, refer to V6-H high performance vector control/torque control inverter user manual. Since then, kinds of operation control can be operated under vector control 2 with encoder speed feedback.

3. Related Function Code

Function code number	Function code name	Factory setting	Setting range	Unit	property	Function code selection	User setting
P0.03	Control mode	0	0~8	/	×	0: Vector control 1 4: Vector control 2 without encoder speed feedback 8: Vector control 2 with encoder speed feedback	8
P2.03	Stopping state display parameters selection	3210	0~FFFF	/	○	Add: F: Encoder pulse numbers display	
P6.21	Analogy channel function selection	0	0~6666	/	×	Add: 3: Torque limited （ 0~10V correspond to 0~200% rated torque）	
P9.00	Load type	0	0~3	/	×	0: Asynchronous motor G type constant torque/heavy-duty 1: Asynchronous motor L type variable torque/light-duty 2:Synchronous motor 3:Reserved	2
P9.15	Auto-tuning	0	0~3	/	×	0: Disable 1: Asynchronous motor static auto tuning 2: Asynchronous motor rotating auto tuning 3: Synchronous motor auto-tuning	select 3 to Auto-tuning
Pb.22	Asynchronous motor Magnetopolaron initial angle	360.0	0.0~360.0	/	×	0.0~360.0	Auto-tuning generate
H0.16	Over peed detection value (OS)	110.0	0.0~115.0	%	×	0.0~115.0	
H0.17	Over speed detection time (OS)	0.10	0.00~2.00	S	×	0.00~2.00	
H0.18	Speed deviation Excessive detection value(DEV)	10.0	0.0~50.0	%	×	0.0~50.0	
H0.19	Speed deviation Excessive detection time(DEV)	0.50	0.00~10.00	S	×	0.00~10.00	

H0.16	Over speed detect value(OS)	110.0	0.0~115.0
H0.17	Over speed detect time(OS)	0.10	0.00~2.00

The H0.16 setting value is relative on the percentage of maximum frequency (P0.11), when detect the motor speed is greater than the setting value H0.16 and reach the holding time H0.17, the inverter stop output immediately, the motor coast to stop, and fault display E.oUt. H0.17=0 indicate over speed detection is disable.

H0.18	Speed deviation Excessive detection value(DEV)	10.0	0.0~50.0
H0.19	Speed deviation Excessive detection time(DEV)	0.50	0.00~10.00

Speed deviation is the difference of the actual motor speed and the command speed, the setting value H0.18 is relative on the percentage of maximum frequency (P0.11), when detect the speed deviation greater than the setting value H0.18 and reach holding time H0.19, the inverter stop output immediately, the motor coast to stop, and fault display E.oUt. H0.19=0 indicate speed deviation excessive detection is disable.

Note:

This version non-standard product cancels the following function from V6-H standard product:

1. Menu mode of last change 10 function codes
2. Process PID(Group P8)
3. High speed pulse input DI
4. High speed pulse output DO
5. Some parameters display of D0 and D2
6. Composite control
7. Auxiliary reference and calculation
8. Terminal 485 and master/slave mode
9. UP/DN functions of key-board and terminal.

Dear Users:

To further expand our products range of applications, V6-H inverter made to improve the local design, in order not to affect your use, please refer to this manual of change information and debug instructions before operation. This manual should be used with V6-H user manual.

Thank you for your cooperation!

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