global sources 4T11GB-15PB Series High Performance Frequency Inverter User Manual

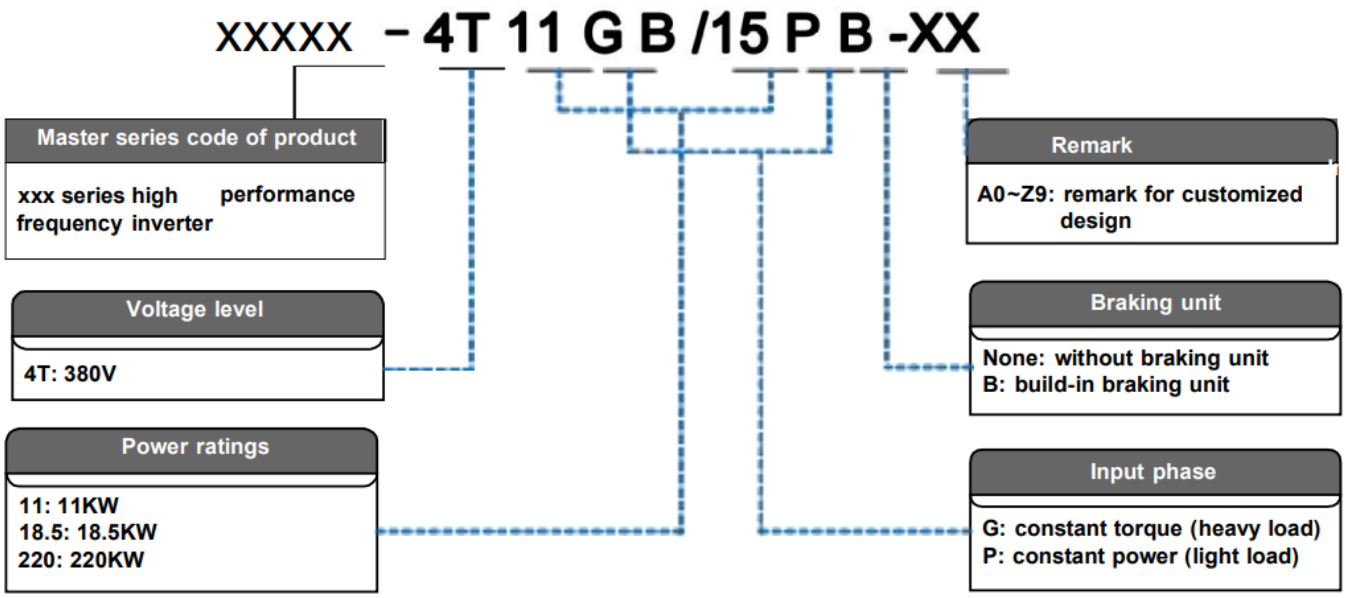
global sources

series inverter user manual

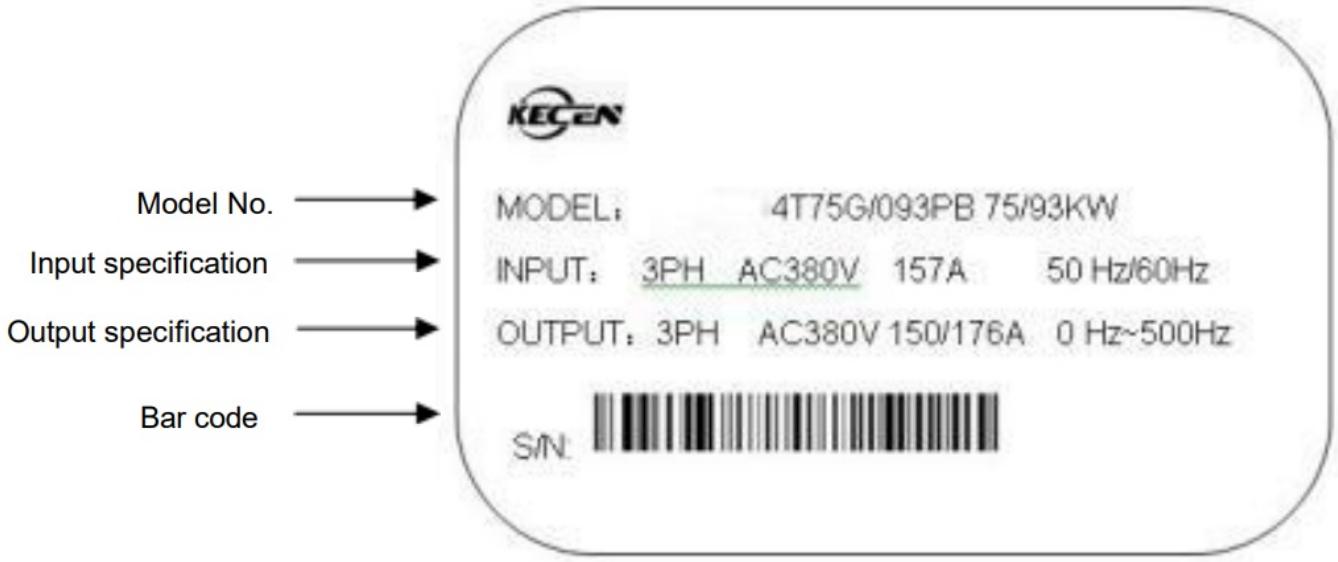
Contents

Product Information

2.1 Model Description



2.3 Description of Nameplate



2.3 Selection Guide

Model	Output capacity KVA	Input current A	Output current A	Suitable Motor	
				KW	HP
4T11GB/15PB	17.0	26.0	25/32	11/15	15/20
4T15GB/18.5PB	21.0	35.0	32/37	15/18.5	20/25
4T18.5G/22P	24.0	38.5	37/45	18.5/22	25/30
4T22G/30P	30.0	46.5	45/60	22/30	30/40
4T30G/37P	40.0	62.0	60/75	30/37	40/45

4T37G/45P	57.0	76.0	75/91	37/45	50/60
4T45G/55P	69.0	92.0	91/112	45/55	60/70
4T55G/75P	85.0	113.0	112/150	55/75	70/100
4T75G/93P	114.0	157.0	150/176	75/93	100/125
4T93G/110P	134.0	180.0	176/210	90/110	125/150
P110G/132P	160.0	214.0	210/253	110/132	150/175
4T132G/160P	192.0	256.0	253/304	132/160	175/210
4T160G/185P	231.0	307.0	304/340	160/185	210/260
4T185G/200P	242.0	350.0	340/377	185/200	240/260
4T200G/220P	250.0	385.0	377/426	200/220	260/300
4T220G/250P	280.0	430.0	426/465	220/250	300/350
4T250G/280P	355.0	468.0	465/520	250/280	350/370
4T280G/315P	396.0	525.0	520/585	280/315	370/420
4T315G/350P	445.0	590.0	585/650	315/355	420/460
4T350G/400P	500.0	665.0	650/725	355/400	460/530
4T400G/450P	565.0	785.0	725/800	400/450	530/600
4T450G/500P	630.0	883.0	800/860	450/500	600/670
4T500G/560P	750.0	950.0	860/950	500/560	670/750
4T560G/630P	840.0	1000.0	950/1260	560/630	750/840

2.4 Technical Specifications

Items		Specification
Basic functions	Maximum output frequency	Vector control mode: 0~500Hz V/f control mode: 0~500Hz
	Carrier frequency	0.5~16.0kHz, automatically adjusted according to load characteristics.
	Frequency accuracy	Digital setting: 0.01Hz Analog setting: maximum frequency * 0.025
	Control mode	V/f control Sensorless vector control (SVC) Close-loop vector control (FVC)
	Operation command mode	Keypad control Terminal control Serial communication control (Modbus)
	Starting torque	G model: 0.5Hz/150% (SVC); 0Hz/180% (FVC) P model: 0.5Hz/100%
	Speed control precision	±0.5% (SVC) ±0.02% (FVC)
	Torque control precision	±5% (FVC)
	Frequency setting mode	Digital setting, analog setting, pulse frequency setting, serial communication setting, multi- step speed setting & simple PLC, PID setting, etc. These frequency settings can be combined & switched in various modes.
	Overload capacity	G model: 150%/60s, 180%/3s. P model: 120%/60s, 150%/3s.
	Torque boost	Automatically torque boost; manually torque boost: 0.1%~30.0%
	V/f curve	Three types: linear, multiple point and square type (1.2 power, 1. 4 power, 1.6 power, 1.8 power, square)
	V/f separate	Two types: completely separate and partially separate.
	Acceleration/deceleration mode	Straight line or S curve; four kinds of acceleration/ deceleration time, range: 0.0s~6500.0s
	DC braking	DC braking frequency: 0.0Hz~maximum frequency, braking time: 0.0s~36.0s braking current: 0.0%~100.0%

	Jog operation	Jog operation frequency: 0.0Hz~50.00Hz Jog acceleration/deceleration time: 0.0s~6500.0s

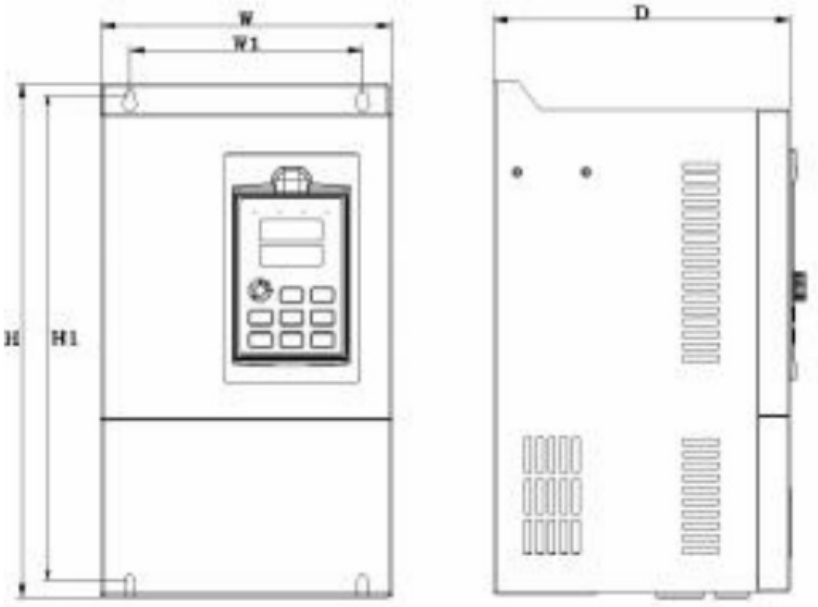
	Acceleration/decele r ation mode	Straight line/S curve; four kinds of acceleration/deceleration time, range: 0 .1s~65000s
	Braking unit	0.4~18.5kW: standard build-in. >18.5kW, additional one should be connected if necessary.
	Simple PLC & multi-st ep speed operation	It can realize a maximum of 16 multi-step speeds running via the built-in P LC or control terminals.
	Built-in PID	Built-in PID control to easily realize the close loop control of the process p arameters (such as pressure, temperature, flow, etc.)
	Automatic voltage reg ulation (AVR function)	Keep output voltage constant automatically when input voltage fluctuating
	Over-voltage & over-c urrent stall control	Limit current & voltage automatically during the running process, prevent fr equent over-current & over-voltage tripping
	Fast current limit function	Fast current limit, to make frequency inverter works normally.
	Torque limit and contr ol	“Rooter” characteristics, limit the torque automatically and prevent frequen t over-current tripping during the running process. Under FVC control model, it can realize torque control.
Featured f unctions	Excellent control perf ormance	Control the synchronous and asynchronous motor based on the high perfo rmance current vector control technology.
	Keep running while te mporary power off	While the temporary power off happens, the feedback energy will keep the load runs normally in a short time.
	Virtual IO	5 groups virtual DIDO can make simple logic control
	Timing function	Build-in timing function, the setting time range is 0.0Min~6500.0Min
	Multiple motors switching	Two groups of motor parameters, can realize four motors switching control .
	Multiple encoders co mpatible	Optional for differential encoder and open-collector encoder.
Run	Operation command channel	Keypad control Terminal control Serial communication control (Modbus)
	Frequency setting so urce	Digital setting, analog current setting, analog voltage setting, high speed p ulse frequency setting, serial communication setting, multi-step speed setti ng & simple PLC, PID setting, etc. These frequency settings can be combi ned & switched in various modes.
	Auxiliary frequency setting source	Realizes auxiliary frequency fine tuning and combining.

	Input terminals	**Programmable digital inputs**: DI1~DI5, DI5 can be set as high speed pul se input terminal (please point out if necessary while placing the order) **Programmable analog inputs**: AI1, AI2: AI works with 0~10V signal. AI2 works with both 0~10V & 4~20mA. **Extension capacity:** 5 digital input: (DI6~DI10) 1analog input (AI3), works with -10V~10V voltage (customized)
	Output terminals	**Programmable digital outputs**: 1 relay output (TA1-TB1-TC1), 1 High speed pulse output (FM), works with 0~1000kHz square wave sign al output (please point out if necessary while placing the order). **Programmable analog outputs**: AO1, AO2: compile with both 0 ~ 10 V & 4~ 20 mA. **Extension capacity:** 2 relay output: (TA2-TB2-TC2 and TA3-TB3-TC3)
Commun i cation	Communication termi nals	Standard RS485 communication interface, support MODBUS-RTU comm unication protocol
Display an d Keypad	LED display	Display frequency setting, output frequency, output voltage, output current , etc. Two lines display
	Keypad lock function	Lock the keypad partially or completely, to avoid incorrect operation
	Fault protection functi on	Comprehensive protections include over-current, over-voltage, under-volta ge, overheating, default phase, overload, shortcut, etc., can record the det ailed running status during failure & has fault automatic reset function
	Optional spare parts	Braking sub-units, I/O extension card, Isolation RS485 communication car d, differential PG card, UVW differential input PG card, open-collector PG card.
	Installation place	Indoor, without direct sunshine, without dust, corrosive gases, inflammable gases, oil mist, steam, water drop or salinity etc.
	Altitude	≤1000M: output rated power, 1000M: output derated
	Ambient temperature	-10℃~40℃ , higher then 40℃, output derated.
	Humidity	90%RH or less (non-condensing)

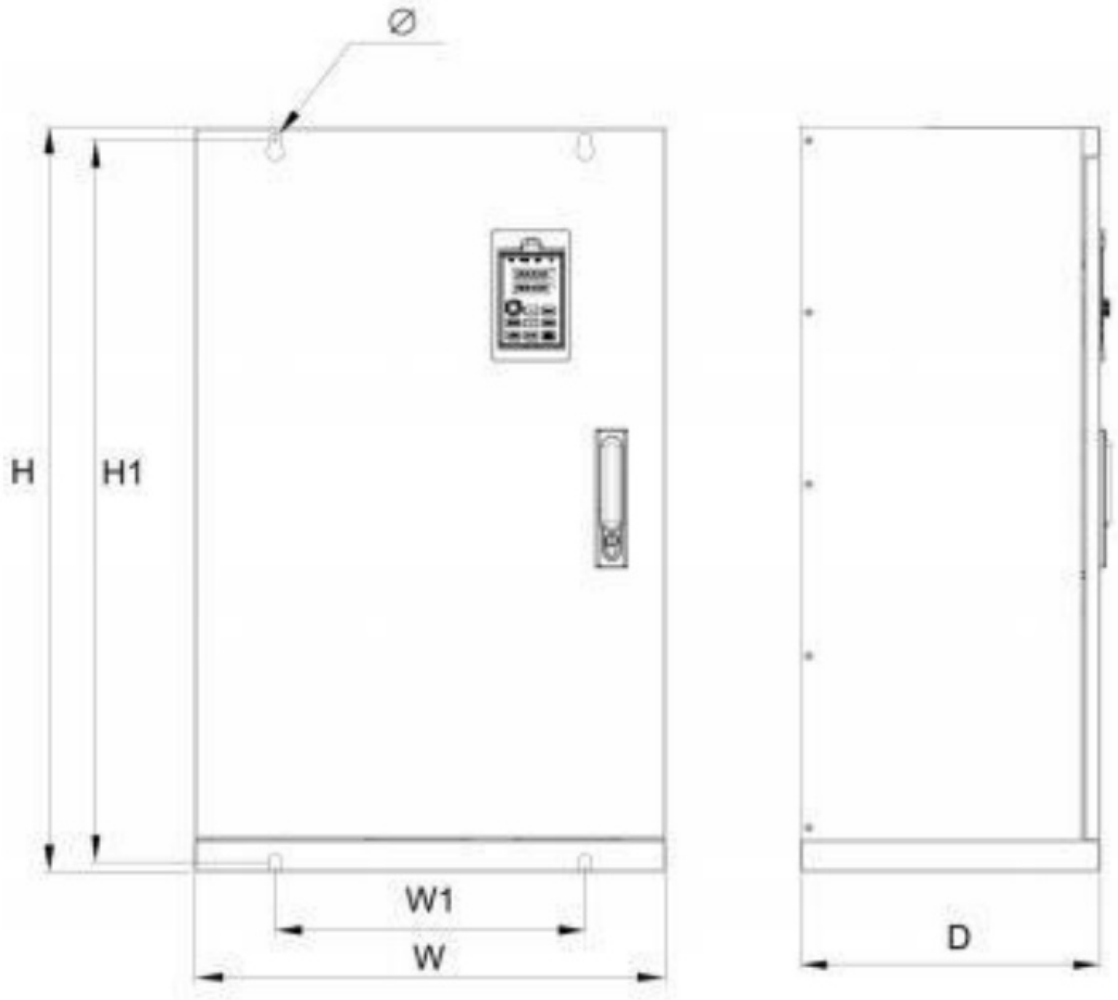
Environ-ment	Vibration	≤ 5 . 9 m/(s2)(0 . 6 g)
	Storage temperature	-20℃~60℃

2.5 Product appearance diagram and installation diagram

2.5.1 Product appearance diagram



11~110KW appearance dimensions



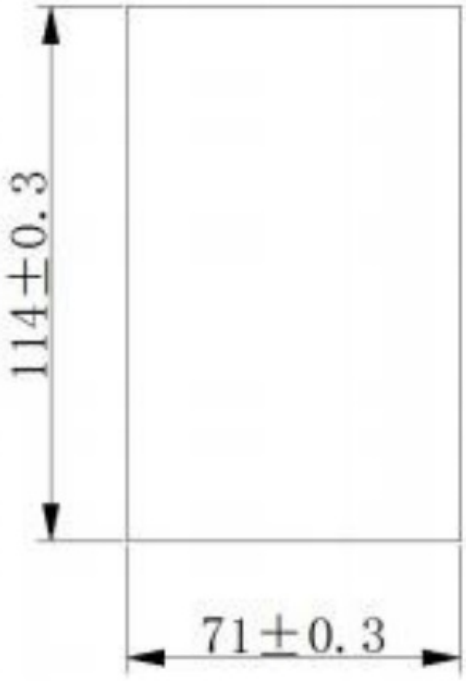
132~560KW appearance dimensions

2.5.2 Product appearance dimensions and installation dimensions list

Model	Installation dimensions		Appearance dimension			Aperture
	W1	H 1	W	H	D	Φ
3AC 380V 50Hz/60Hz						
4T11GB/15PB	130	287	170	300	183	6.5
4T15GB/18.5PB						
4T18.5GB/22PB	140	318	200	330	204	6.5
4T22GB/30PB						
4T30G/37P	170	370	250	390	220	6.5
4T37G/45P						
4T45G/55P	180	452	280	470	258	9.0
4T55G/75P						
4T75G/90P	200	535	300	550	278	9.0
4T90G/110P						
4T110G/132P	250	576	370	600	300	9.0
4T132G/160P	320	744	485	768	310	13.0
4T160G/185P						
4T185G/200P						
4T200G/220P	220+220	955	500	992	405	13.0
4T220G/250P						
4T250G/280P						
4T280G/315P	246.5+246.5	1065	650	1097	400	13.0
4T315G/350P						
4T350G/400P						

4T400G/450P	300+300	1350	700	1384	440	16.0
4T450G/500P						
4T500G/560P						
4T560G/630P						

2.5.3 Hole sizes for keypad extension (unit: mm)



2.6 Optional spare parts

If below spare parts are necessary, please point out while placing the order

Name	Model	Functions	Remark
Build-in braking unit	The Model has the mark of “B”	11~22kW build-in standardly	3 0 ~ 75 KW optional for build- in
External braking unit	BCM series braking unit	During fast braking process, the feedback energy will be consumed by braking resistor.	
Dynamic energy feedback unit	RGU series energy feedback unit	Feedback the generated energy to grid power during the braking process.	
I/O extension card 2	xxx-EXT2	3 digital input terminals will be added	
RS-485 communication card	xxx-EXT485	Isolated RS-485 communication card	
Differential encoder PG card	xxx-PG1	Differential encoder PG card, compatible with 5V/12 V power supply.	
External connected LED keypad	xxx-EXTJP	External connected LED display and operated keypad, together with the keypad bracket.	RJ45 internet interface
Keypad extension cable	xxx-JPL2	Standard 8P8C internet cable	2 meters in the packing box standardly

2.7 Routine Maintenance of Inverter
2.7.1 Routine Maintenance

The influence of the ambient temperature, humidity, dust and vibration will cause the aging of the devices in the inverter, which may cause potential fault of the inverter or reduce the service life of the inverter.
Therefore, it is necessary to carry out routine and periodical maintenance on the inverter.
Routine inspection Items include:

1. Whether there is any abnormal change in the running sound of the motor;
2. Whether the motor has vibration during the running;
3. Whether there is any change to the installation environment of the inverter:
4. Whether the inverter cooling fan works normally;
5. Whether the inverter has over temperature.

Routine cleaning:

1. The inverter should be kept clean all the time.
2. The dust on the surface of the inverter should be effectively removed, so as to prevent the dust entering the inverter. Especially the metal dust is not allowed.
3. The oil stain on the inverter cooling fan should be effectively removed.

2.7.2 Periodic Inspection

Please perform periodic inspection on the places where the inspection is a difficult thing.

Periodic inspection Iterns include:

1. Check and clean the air duct periodically:
2. Check if the screws are loose:
3. Check if the inverter is corroded:
4. Check if the wire connector has arc signs;
5. Main circuit insulation test.

Remainder: When using the megameter (DC 500V megameter recommended) to measure the insulating resistance, the main circuit should be disconnected with the inverter. Do not use the insulating resistance meter to test the insulation of control circuit. It is not necessary to conduct the high voltage test (which has been completed upon delivery).

2.7.3 Replacement of inverter vulnerable parts

The main vulnerable parts of inverter are capacitors and cooling fans, the working lifetime has strong relationship with the environment conditions and the maintenance status. In normal conditions, the working life time of them as below:

Parts name	**Working lifetime in normal conditions**
Cooling fans	2~3 years
Capacitors	4~5 years

Please calculate working life based on specific usage

1. The cooling fan may be damaged due to: bearing wear and blade aging. Judging criteria: Whether there are cracks in the fan blades, etc., whether the sound has abnormal vibration when starting up.
2. Filter electrolytic capacitor may be damaged causes: Input power quality is bad, ambient temperature is high, the load changes frequently, electrolytes are ageing.
   Judging criteria: Whether there is liquid leakage, whether the safety valve has protruded, the measurement of electrostatic capacitance, and the measurement of insulation resistance

2.7.4 Storage of Inverter

Upon acquiting the inverter, the user should pay attention to the following points regarding the temporary and long-term storage of the inverter

1. Pack the inverter with original package and place back into the packing box of our company.
2. Long-term storage will degrade the electrolytic capacitor. Thus, the product should be powered up once every 2 years, each time lasting at least five hours. The input voltage should be increased slowly to the rated value with the regulator.

2.9 Instructions on Warranty of Inverter

Free warranty only applies to the inverter itself.

1. Kecen provides 18 months warranty (starting from the date s indicated on the barcode) for the failure or damage under normal use conditions. If the equipment has been used for over 18 months, reasonable repair expenses will be charged
2. Reasonable repair expenses will be charged for the following situations within 18 months:

a) The equipment is damaged because the user fails to comply with the requirements of the user's manual;

b) Damage caused by fire, flood and abnormal voltage;

3. Damage caused when the inverter is used for abnormal function

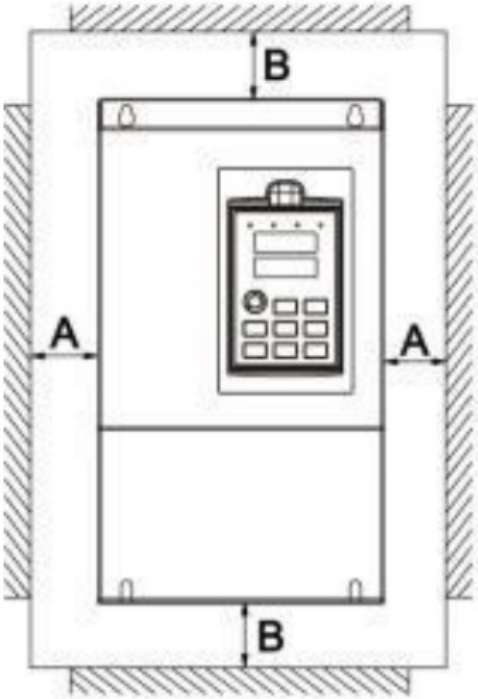
   The service expenses will be calculated according to the standard of the manufacturer. If there is any agreement, the agreement should prevail.

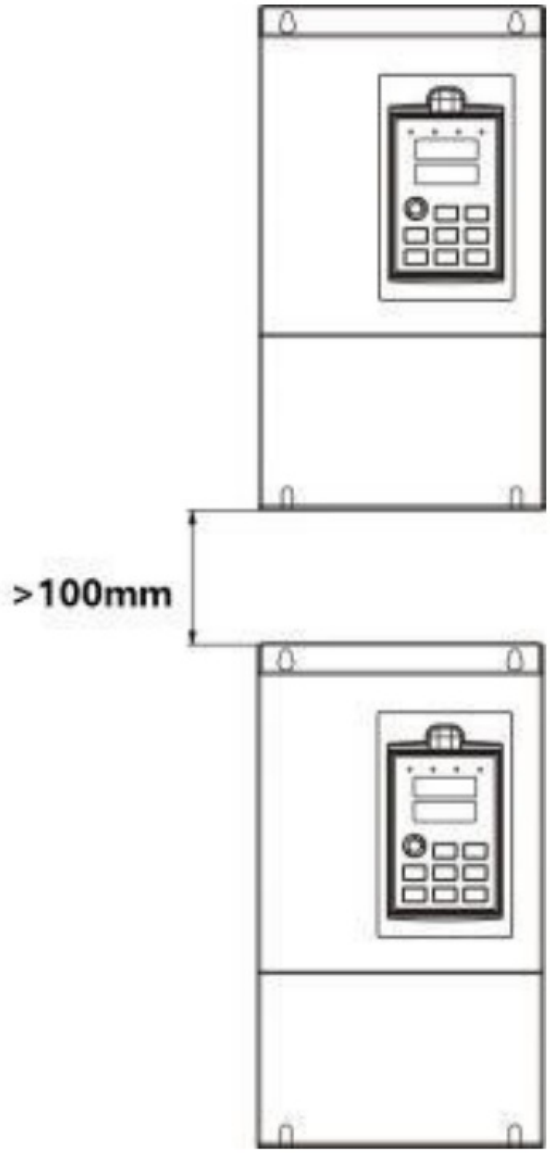
Installation and wiring

3.1 Mechanical Installation

3.1.1 Installation environment

1. Ambient temperature: The ambient temperature exerts great influences on the service life of the inverter and is not allowed to exceed the allowable temperature range (-10°C to 50°C).
2. The inverter should be mounted on the surface of incombustible articles, with sufficient spaces nearby for heat sinking. The inverter is easy to generate large amount of heat during the operation. The inverter should be mounted vertically on the base with screws
3. The inverter should be mounted in the place without vibration or with vibration of less than 0.6G, and should be kept away from such equipment as punching machine.
4. The inverter should be mounted in locations free from direct sunlight, high humidity and condensate
5. The inverter should be mounted in locations free from corrosive gas, explosive gas or combustible gas
6. The inverter should be mounted in locations free from oil dirt, dust, and metal powder.





Drive model	Mounting clearances (mm)	
	B	A
≤ 15kW	≥100	No limitation
18.5~30kW	≥200	≥50
≥37kW	≥300	≥50

3 .1.2 Heat dissipation should be taken into account during the mechanical installation. Please pay attention the following items:

1. Install the inverter vertically so that the heat may be expelled from the top. However, the equipment cannot be installed upside down. f there are multiple inverters, parallel installation is a better choice. In applications where the upper and lower inverters need to be installed, please refer to 3.1.2 “xxx Series Inverter Installation Diagram’” and install an insulating spliter.
2. The mounting space should be as indicated as 3.1.2, 50 s to ensure the heat dissipation space of the inverter. However, the heat dissipation of other devices in the cabinet should also be taken into account
3. The installation bracket must be flame retardant.

4. In the applications where there are metal dusts, it is recommended to mount the radiator outside the cabinet. In this case, the space in the sealed cabinet should be large enough

3.2 Electrical installation

3.2.1 Selection guide of electric parts

Inverter Model	Circuit Breaker (MCCB) (A)	Recommended Contactor A	Recommended Conducting Wire of Main Circuit at Input Side (mm^2)	Recommended Conducting Wire of Main Circuit at Output Side (mm^2)	Recommended Conducting Wire of Control Circuit (mm^2)
4T11GB/15PB	63	40	4.0	4.0	1.0
4T15GB/18.5PB	63	40	6.0	6.0	1.0
4T18.5GB/22PB	100	63	6	6.0	1.5
4T22GB/30PB	100	63	10	10	1.5
4T30G/37P	125	100	16	10	1.5
4T37G/45P	160	100	16	16	1.5
4T45G/55P	200	125	25	25	1.5

4T55G/75P	200	125	35	25	1.5
4T75G/90P	250	160	50	35	1.5
4T90G/110P	250	160	70	50	1.5
4T110G/132P	350	350	120	120	1.5
4T132G/160P	400	400	150	150	1.5
4T160G/185P	500	400	185	185	1.5
4T185G/200P	600	600	150*2	150*2	1.5
4T200G/220P	600	600	150*2	150*2	1.5
4T220G/250P	600	600	150*2	150*2	1.5
4T250G/280P	800	600	185*2	185*2	1.5
4T280G/315P	800	800	185*2	185*2	1.5
4T315G/350P	800	800	150*3	150*3	1.5
4T350G/400P	800	800	150*4	150*4	1.5
4T400G/450P	1000	1000	150*4	150*4	1.5
4T450G/500P	1200	1200	180*4	180*4	1.5
4T500G/560P	1200	1200	180*4	180*4	1.5
4T560G/630P	1200	1200	180*4	180*4	1.5

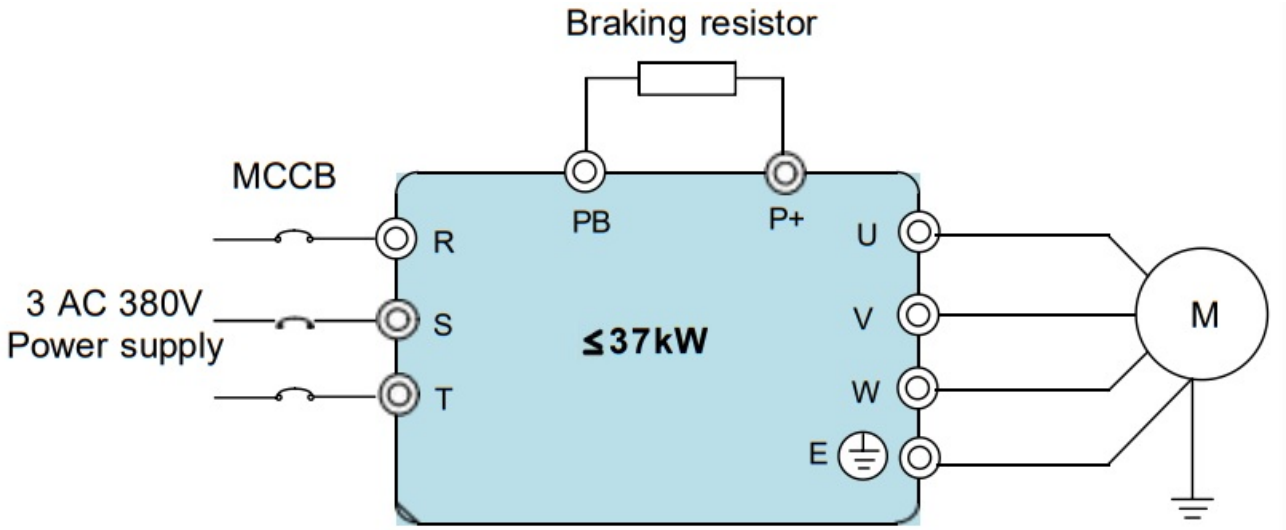
3.2.2 Instructions of peripheral devices

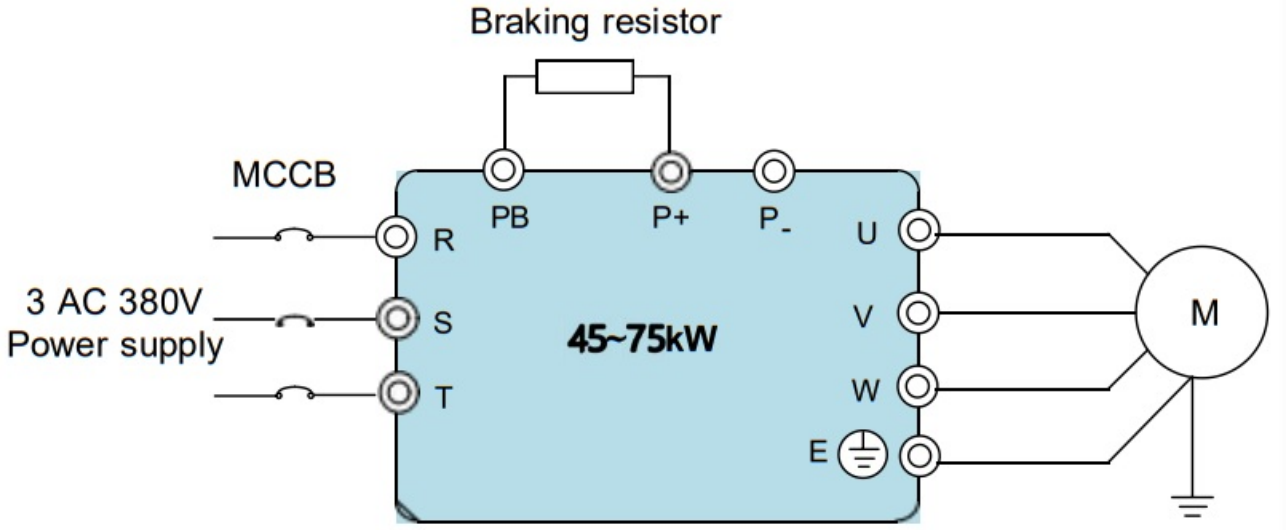
Device	Installation place	Instructions
Circuit breaker	Input side of inverter	Purpose: disconnect power supply and protect the equipment in case of abnormal overcorrect occurs Type selection: breaking current of circuit breaker is defined to be 1.5~2 times the rated current of the drive Breaking time characteristic of circuit breaker should be selected based on overload protection time characteristic of the drive
Contactor	Between circuit breaker and inverter input side	Switch ON/OFF the inverter, it is prohibited to switch on/off the power supply of inverter frequently (less than two times in one minute).

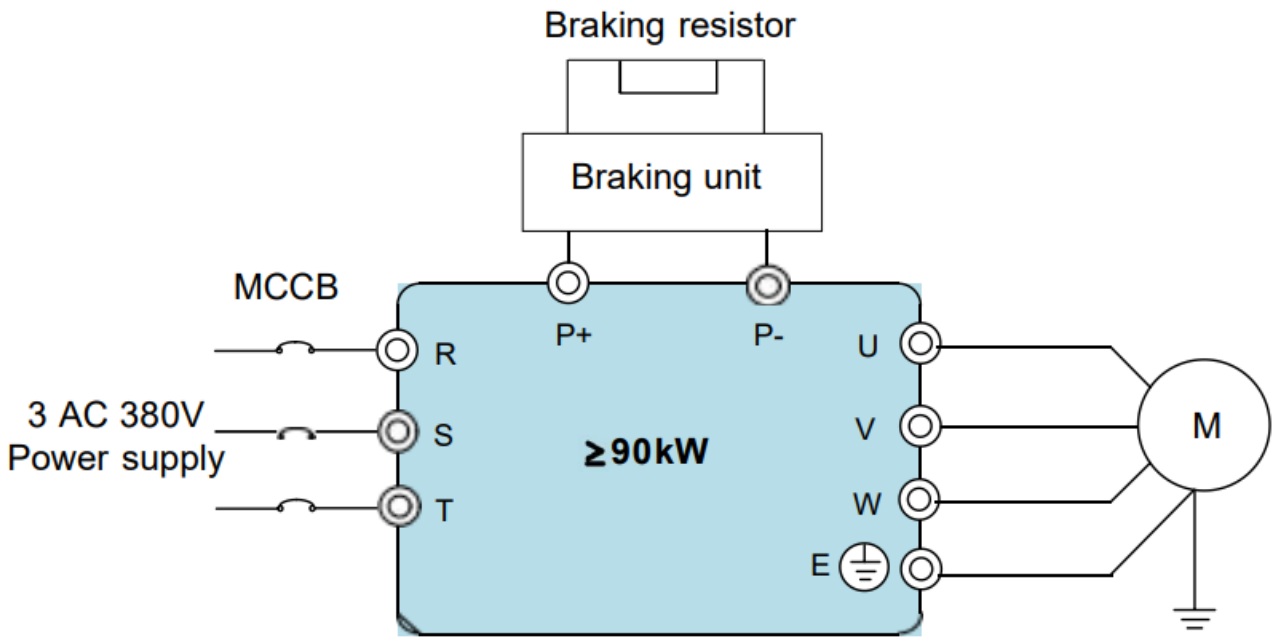
Input reactor	Input side of inverter	Improve power factor Reduce the impact of imbalanced three-phase input AC power supply on the system Suppress higher harmonics and reduce the conducted and radiated interference to peripheral devices Restrict the impact of impulse current on rectifier bridges
Input EMC filter	Input side of inverter	Reduce conducted interference from power supply to the drive, improve the immunity of the drive from noise Reduce conducted and radiated interference of the drive to peripheral device
DC reactor	45~110KW standard build-in	Increase the input side power factor, increase the inverter working efficiency and thermal stability. It can eliminate the input higher harmonics, and also reduce the conduction and radiation interference to external devices.
Output reactor	Between the inverter output side and motor (install it close to inverter).	Avoid the motor insulation damage result from harmonic voltage Reduce frequent protection from the drive caused by leakage current In case the cable connecting drive and motor is over 100 meters, output AC reactor recommended

- Do not install the capacitor or surge suppressor at the output side of the inverter, otherwise it may cause inverter failure or capacitor and surge suppressor damaged
- The Inverter input / output (main circuit) contains harmonic components, it may interfere with inverter accessories communications equipment. Therefore, please install anti-interference filter to minimize interference.
- The details of external devices and accessories selection refer to the manual of external devices

3.2.3 Wiring diagram
Main circuit wiring diagram







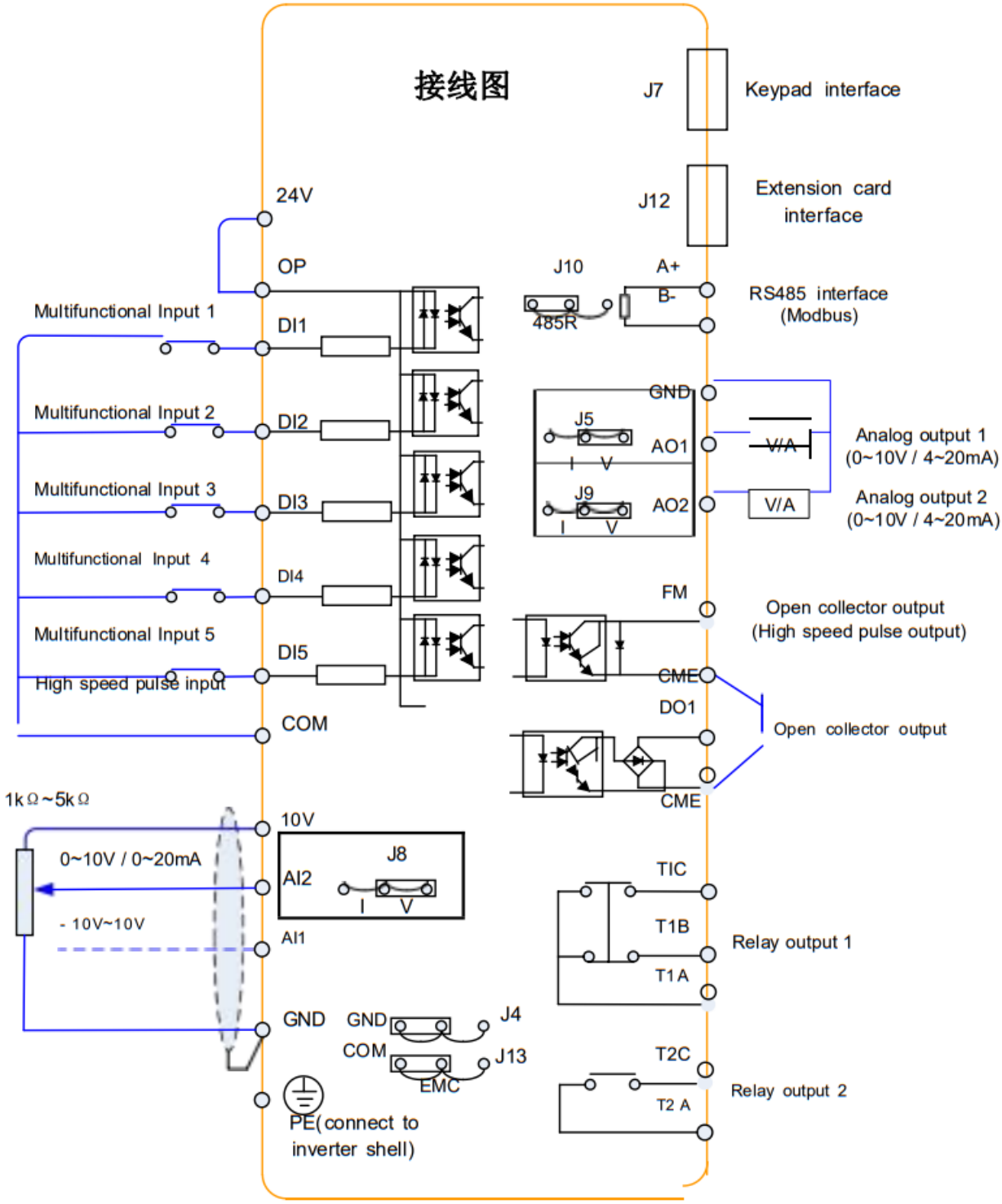
3.2.4 Description of inverter main circuit terminals.

Terminals	Name	Description
R, S, T	Three phase power supply terminals	Terminals for three phase power supply
P+, P-	DC Bus +, – terminals	External terminals of DC Bus, used to connect braking uni t.
P+, PB	Braking resistor terminals	Terminals for connecting braking resistor
U, V, W	Output terminals	Connect to three phase motor
E	Ground connection terminal	Connect to ground

Principle of wiring connection

1. Terminals R, S, T are input side power supply terminals, no phase sequence requirement
2. DC bus P+ and P- terminals: Please note that after the power switching off, the DC bus P+ and P- terminals still have residual voltage. It must be confirmed that the voltage s less than 36V, otherwise there is danger of electric shock. When using an exteral brake component above 90KW, be careful that the P+ and P- polarity cannot be reversed, otherwise the inverter may be damaged or even causing fire The wiring length of the brake unit should not exceed 10m. Twisted pair o tight two-wire parallel wiring
   should be used. Do not connect the braking resistor directly to the DC bus, which may cause damage to the inverter or even causing fire.
3. Braking resistor connection terminals P+, PB:
   Models with a built-in brake unit below 22 kW or models with a built-in brake unit of 30~75kW have these two terminals. The selected braking resistor must follow the recommended value, and the wiring distance should be less than 5m, otherwise it may damage the inverter.
4. Inverter output terminals U, V, W:
   The capacitor or the surge absorber cannot be connected to the output side of the inverter, otherwise the failures will happen frequency or cause the inverter be damaged. When the motor cable is too long, due to the influence of distributed capacitance, itis easy to generate electrical resonance, which may cause motor insulation damage or generate large leakage current to protect the inverter from overcurrent. When the motor cable length is longer than 100m, an AC output reactor must be installed.
5. the grounding terminal
   The terminals must be reliably grounded and the ground wire resistance must be less than 0.10Q Otherwise it may cause the inverter works abnormally or even damage the equipment. Do not share the ground terminal with the power supply neutral N terminal

3 .2.5 Wiring diagram of control circuit



3.2.6 Control terminals and connections

1. Layout of control terminals

A+	+10V	AI1	AI2	DI1	DI2	DI3	DI4	DI5	COM
B-	GND	AO1	AO2	CME	COM	DO1	FM	+24V	OP

PE	TA2	TC2
TA1	TB1	TC1

2. Description of Control Terminals Function

Type	Terminal Symbol	Terminal Name	Function Description
Power supply	+10V-GND	+10V power supply	1.Provide +10V power supply for external units, and the maxim um output current is lOrnA. 2.It is generally used as the operating power supply for the external potentiometer. The potentiometer resistance range is 1 k0-5k0 .
	24V-COM	+24V power supply	1.Provide +24V power supply for external units. 2.It is generally used as the operating power supply for digital input/output terminals and the external sensor. The maxi mum output current is 100mA
	OP	External 24V power input terminal	1.Short conned with 24V as default. 2.When external signal is used to drive DI1 – 015, OP needs to connect to the external power supply and disconnect from the + 24V power terminal
Analog Input	Alt -GND	Analog input terminal 1	1,input voltage range: DC -10V-10V 2,input resistance: 22ko
	Al2-GND	Analog input terminal 2	1,input range: DC 0V-10V/4-20mA signal changed by J8 jumper on control board. 2,input resistance: voltage signal is 22ko , current signal is 500o
Digital Input	D11-0P	Digital input 1	1.Optical coupling isolation, compatible with both PNP and NPN input 2.Input impedance’ 4k0 3.Voltage range for level input: 9V-30V 4.015 terminal can work at both digital input and high speed
	012-OP	Digital input 2	
	013-OP	Digital input 3	
	014-OP	Digital input 4	

	DI5-OP	Digital input 5	pulse (maximum input frequency is 100kHz) input. High speed pulse terminal is optional; please point out while placing the order.
Digital Output	DO1-CME	open collector output	1. Compile with both PNP and NPN output; 2. External connection voltage range: 0~24V 3. Output current range: 0~50mA Note: terminals CME and COM are isolated internally. J10 is used to short connect CME and COM as default (DO1 is driven by 24V) If DO1 will be driven by external power supply, the jumper must be removed firstly.
	FM-CME	High speed pulse output	The output type is controlled by parameter P5-00, if set as high speed pulse output, the maximum output frequency is 100kHz. If set as open collector output, it has the same specification as DO1
Analog Output	AO1~GND	Analog output 1	Output range: DC 0~10V/4~20mA, determined by jumper J5 on the control board.
	AO2~GND	Analog output 2	Output range: DC 0~10V/4~20mA, determined by jumper J9 on the control board.
Relay Output 1	TA1-TB1	Normally close output	Driving capacity: AC 250V/3A, cosØ=0.4 DC 30V/1A
	TA1-TC1	Normally open output	
Relay Output 2	TA2-TC2	Normally close output	
RS485	A+	Modbus terminals	Communication interface of Modbus, it is suggested to use twisted-pair cable or shielded cable.
	B-		
Inter -face	J12	Extension cards interface	Optional cards as, I/O extension card, isolated RS485 communication card etc.
	J3	PG card interface	Open-collector PG card, differential PG card etc.
	J7	Extension keypad interface	Used to connect extension keypad

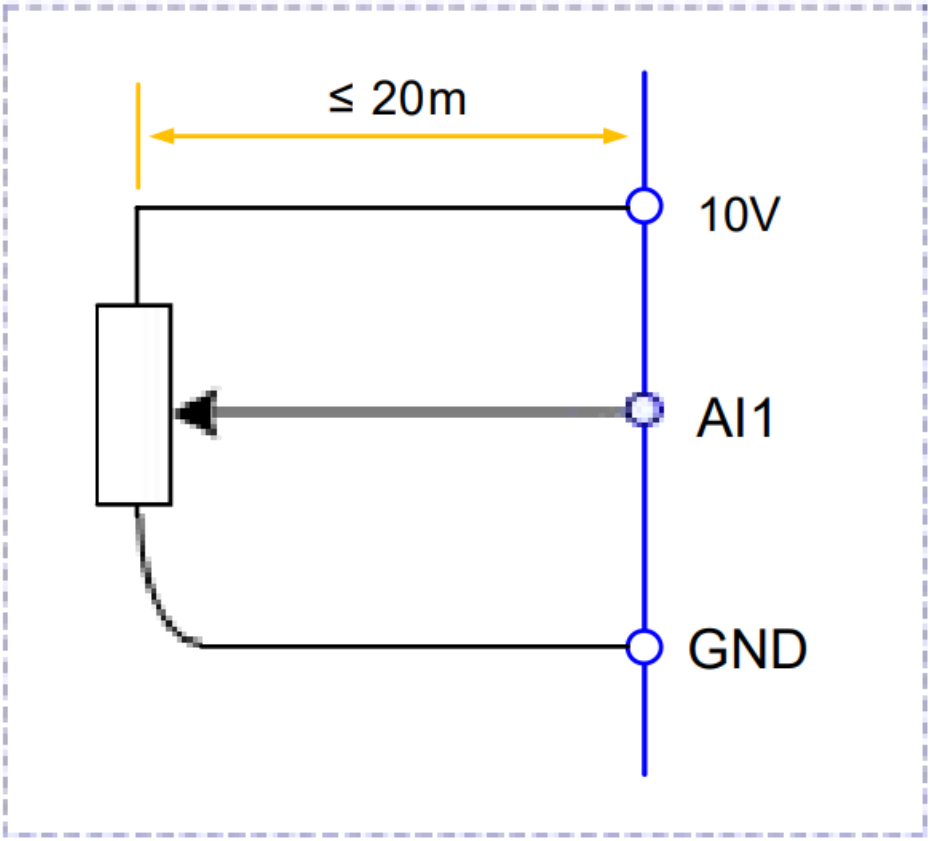
3. Principle of wiring connection for control cables

(1) Analog input terminals

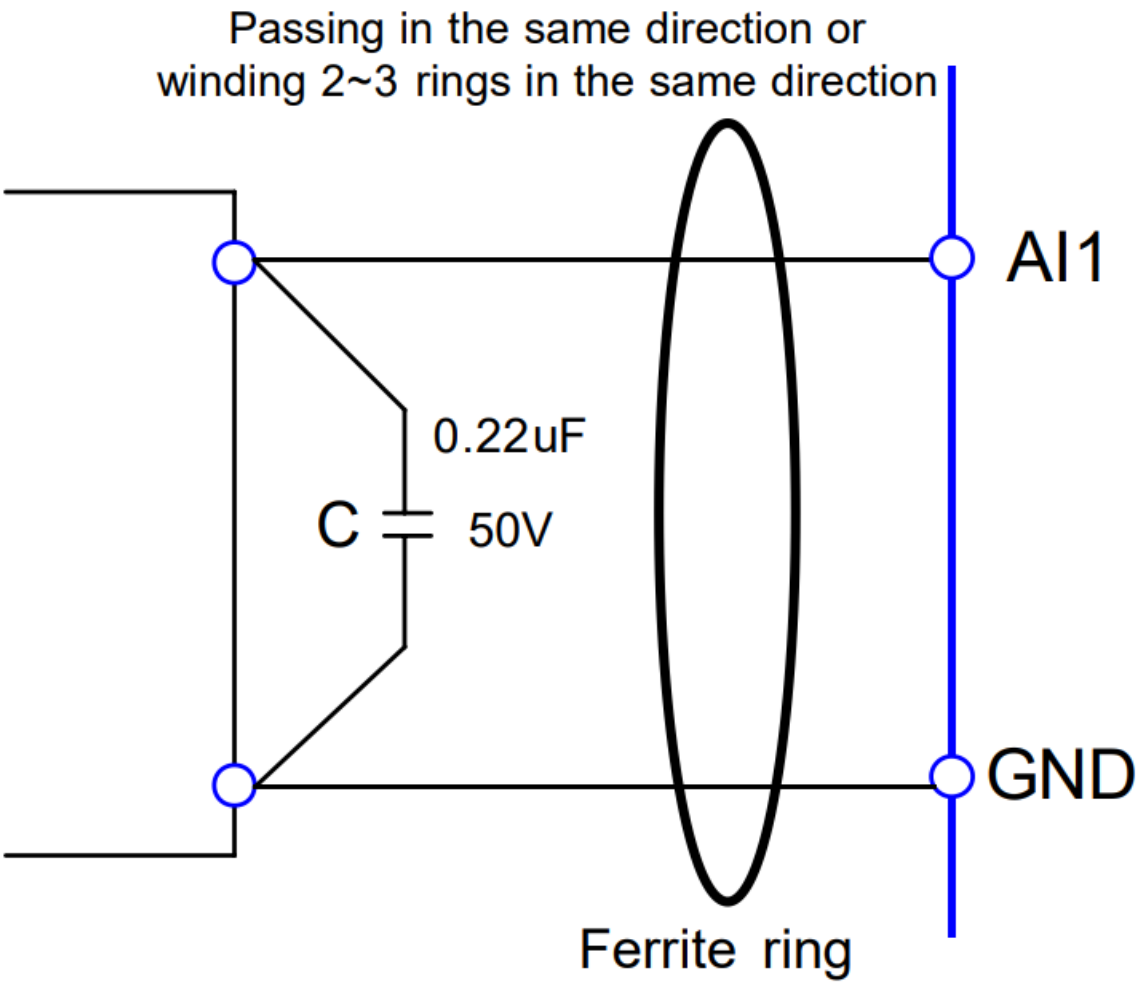
• Don’t put the power cables and control cables in one wire casing, otherwise it will cause interferences

• please use shield cables for control circuit, and it is suggested to use 1mm? shield cables

• Don’t make the analog signal cables’ length longer than 20 meters.



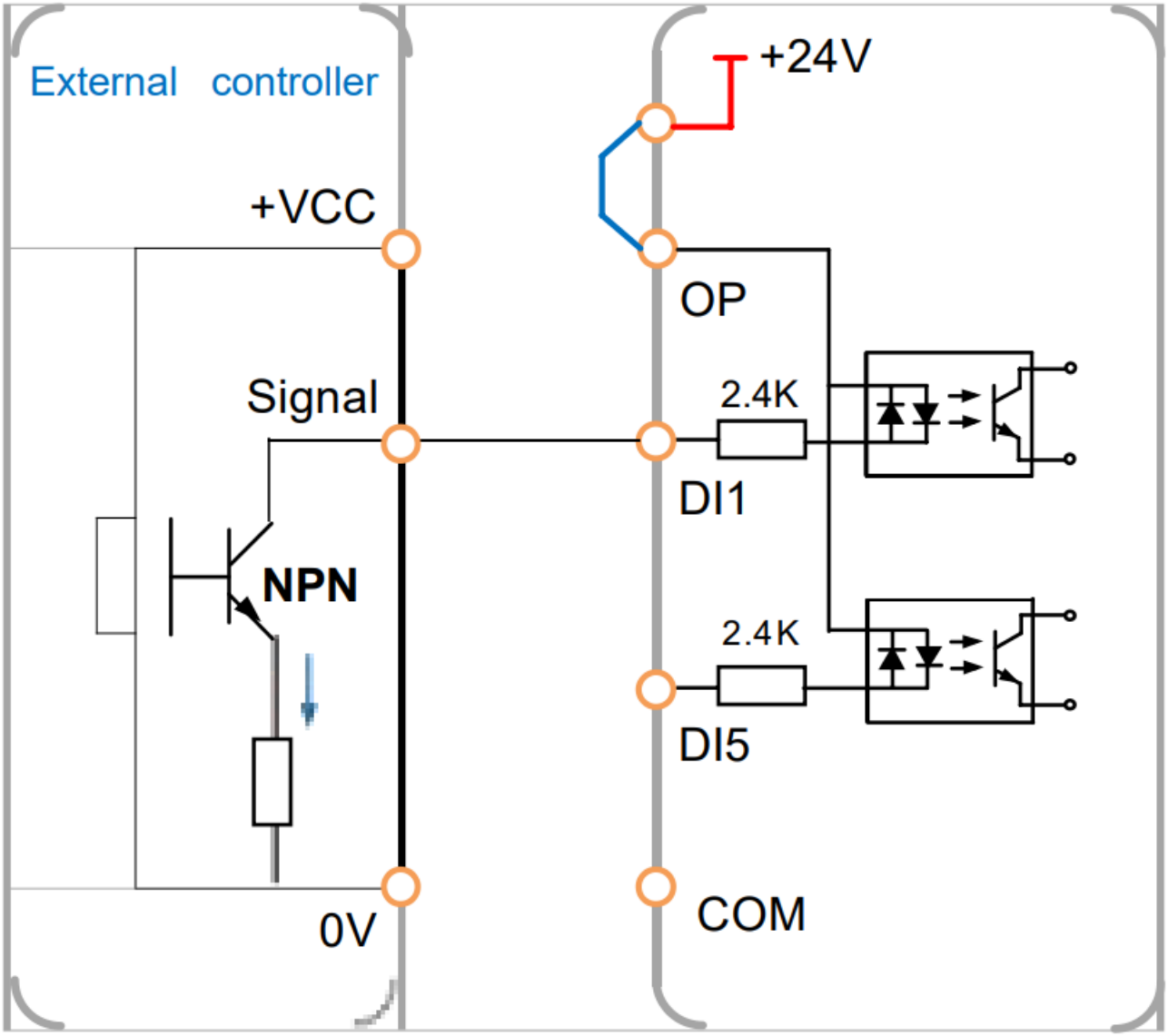
• Incase if the analog signals are severely interfered, afilter capacitor or a ferrite core is required on the analog signal source side.



2) Digital input terminals

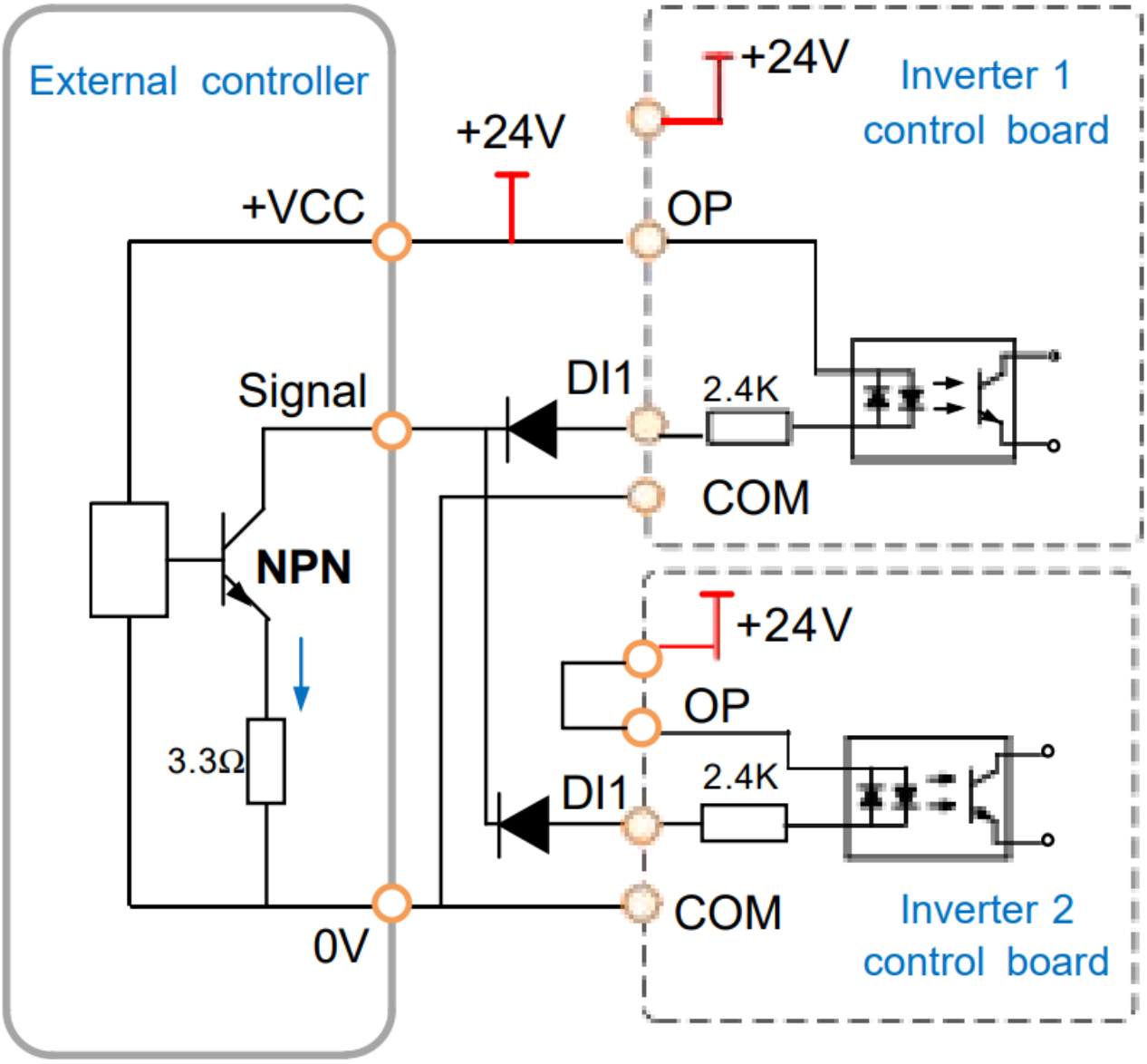
Generally, shielded cables are required, and the wiring distance should be as short as possible, not more than 20m. When the active mode is selected, the necessary filtering measures should be taken for the crosstalk of the power supply. Contact control is recommended.

• NPN connection

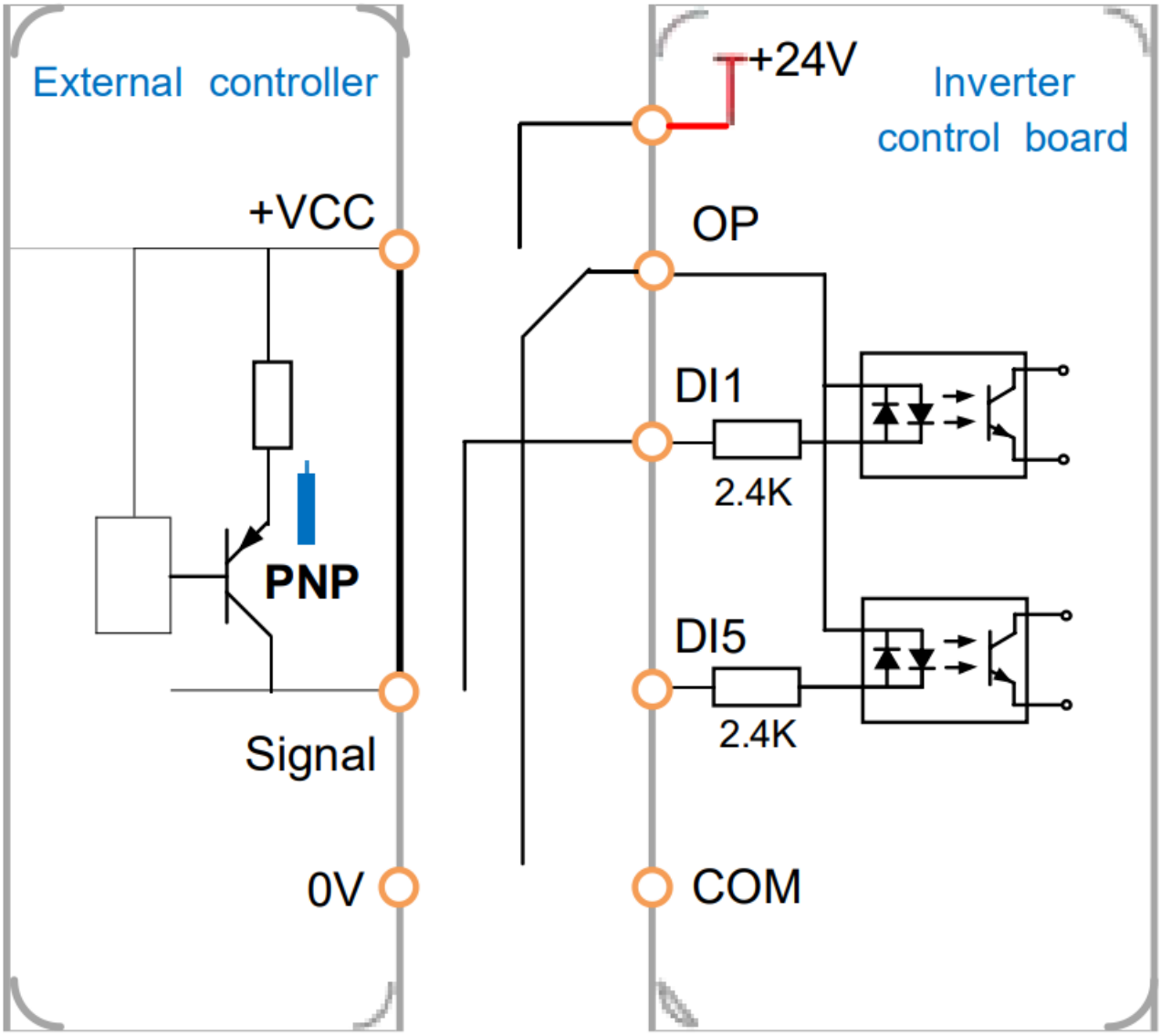


This is one of the most common wiring methods. If an external power supply is used, the jumper between +24 and OP must be removed, the positive pole of the exteral power supply is connected to the OP terminal, and the negative pole of the external power supply is connected to the CME terminal

Note: Under this type of wiring, the DI digital input terminals of different inverters cannot be used in parallel, otherwise the DI digtal input terminals may be malfunctioned. If the DI digital input terminals are connected in parallel (between different inverters), it needs connect a diode at the DI input terminal (the positive pole of diode connect to digital input terminal side) 1. The diode must meet: IP>10mA, UP<1V, as shown below.

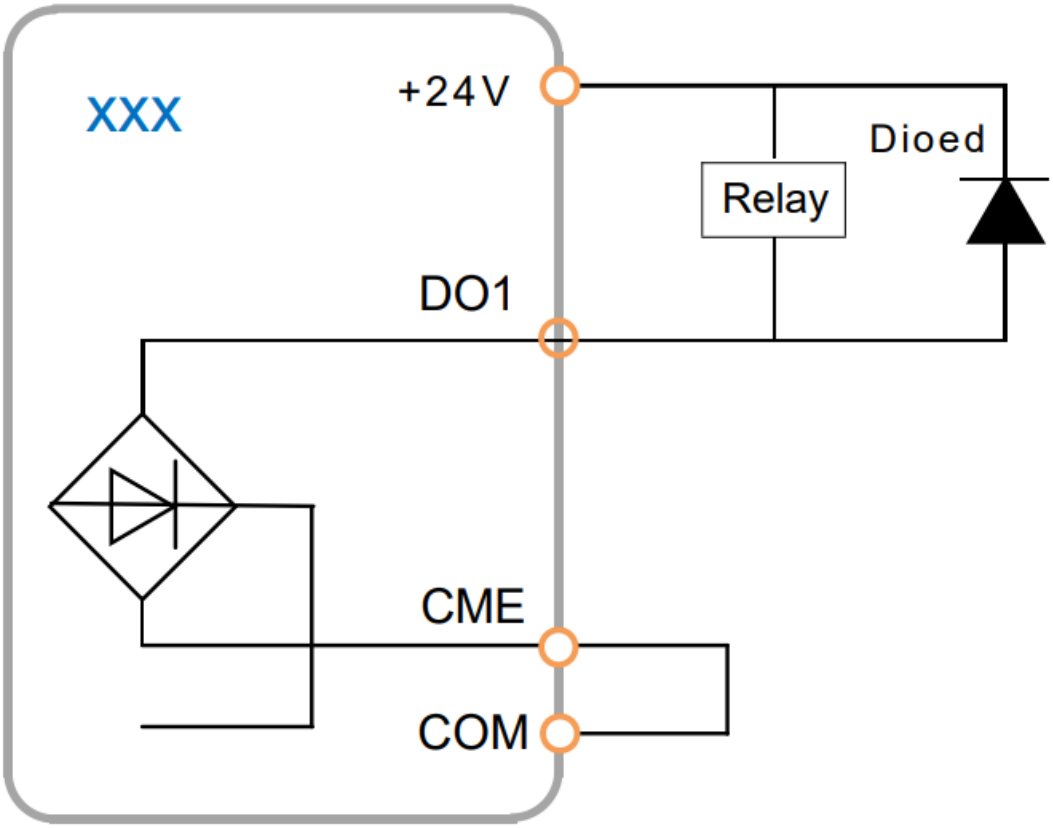


• PNP connection



This type of wiring must remove the short connected sheet between +24V and OP and connect +24V to the common terminal of the external controller. At the same time, OP and COM are connected. If an external power supply is used, the short connected sheet between CME and COM must also be removed. (3) control signal output terminals wiring instructions DO digital output terminals When the digital output terminal needs to drive the relay, an absorbing diode should be installed on both sides of the relay coil. Otherwise, it may cause damage to the DC 24V power supply. The drive capacity is no more than 50mA.

Note: Be sure to properly install the polarity of the absorption diode. As shown below. Otherwise, when the digital output terminal has an output, the DC 24V power supply will be burned out immediately.



Operation and Display

4.1 Keypad Description

With the operation keypad, it can perform such operations on the inverter s function parameter modification, working status monitor and running control (start and stop).

4.1.1 Function keys description

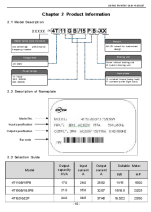
Functional indicator	Description
RUN	Light-on: inverter is running; Light-off: inverter is stopped.
FWD/REV	Light-on: inverter is reverser running.
TUNE/TC	Light-on: inverter is under torque control mode; Light flickering slowly: inverter is under auto-tuning; Light flickering quickly: inverter is under fault status.

LOCAL/REMOT	Light-on: inverter is under terminal control mode; Light flickering: inverter is under communication control mode; Light-off: inverter is keypad control mode.
Hz	Unit of frequency
A	Unit of current
V	Unit of voltage
RPM (Hz+V)	Unit of speed
% (A+V)	Percentage
5 bits of LED	Can display setting frequency, output frequency, various monitoring data and alarm code.

4.1.2 Keypad push-button description

Button	Name	Function
PRG	Programming key	Entry and exit of primary menu
ENT	Confimation key	Progressively enter menu, and confirm parameters
	Increment key	Progressively increase of data or function codes
	Decrement key	Progressively decrease of data or function codes
SHIFT	Shift key	Select the displayed parameters in turn on the stop display interface and running display interface, and select the modification bit of parameters when modifying parameters.
RUN	Running key	Start to run inverter under keyboard control mode
STOP/ RESET	Stop / Reset	Stop inerter in running status and reset operation in fault alarm status. The reactions are controlled by P7-02.
JOG	Multi-function selection key	The corresponding functions are defined by P7-01.

Documents / Resources

	global sources 4T11GB-15PB Series High Performance Frequency Inverter [pdf] User Manual 4T11GB-15PB Series High Performance Frequency Inverter, 4T11GB-15PB Series, High Performance Frequency Inverter, Performance Frequency Inverter, Frequency Inverter

References

- User Manual

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