Variable Freqency Inverter
user's Instructions

Chapter 1 Reviews

Thank you for your choose ZW series inverter!

ZW series inverter is in accordance with international standards of design, development, manufacture high quality, low noise, simple type frequency converter, USES the advanced space voltage vector PWM control technology, has a variety of speed adjustment, to ensure that the basic control requirements; Compact structure, easy to install.

Before using ZW series inverter, please read this manual carefully, to ensure that the correct use and users and equipment safety. At the same time, will you please keep this manual for the machine, maintenance and overhaul.

This manual provides the following ZW instructions on the use of the series of products:

1.1 purchase inspection

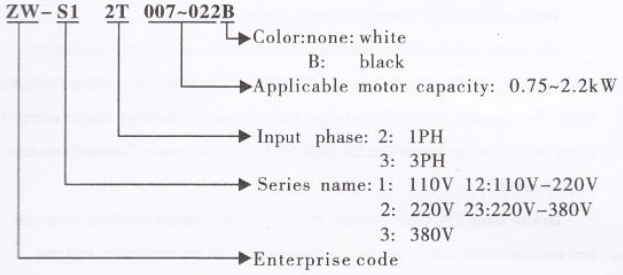
When unpacking, please confirm the following items.

Table 1-1 confirm project

Check Items	Confirmation Method
And ordered goods are the same.	Please confirm the nameplate ZW side.
If there is damaged.	Check the overall appearance and check shipping damage.
If there is a loose fastening parts such as screws.	If necessary, use a screwdriver to check.

If you have additional questions, please contact the dealer.

1.2 Inverter type(S series)



* Maximum motor power adaptation: 007 represents 0.75kW

015 represents 1.5kW 022 represents 2.2kW

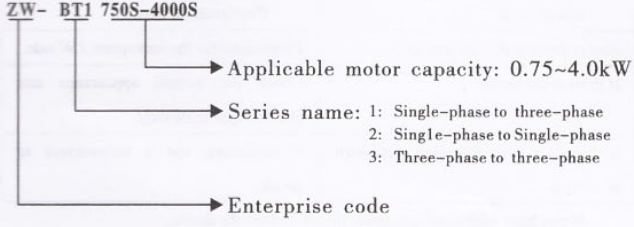
* Input Power: 2 represents single-phase / 3 represents 3 phase

* Series: S1 represents 110V, S2 represents 220V, S3 represents 380V,

S12 represents 110V to220V, S23 represents 220V to 380V

* Simple series / Enterprise Product Code

1.3 Inverter type(BT1 series and CT1 series)



Chapter 2 Wiring

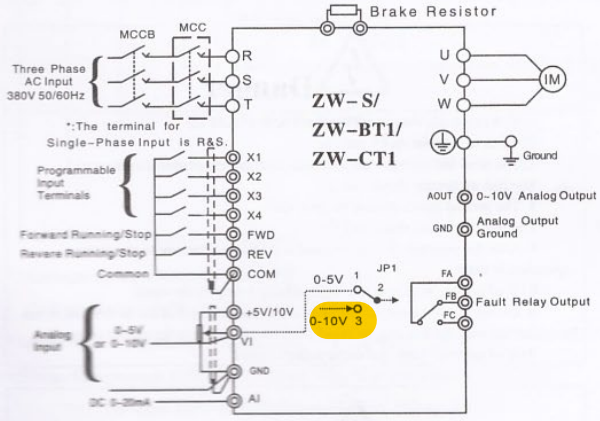
Danger

1. Before wiring, make sure the input power is cut off.
The risk of electric shock and fire.
2. The need for wiring to the electrical engineering professionals.
The risk of electric shock and fire.
3. The ground terminal must be grounded.
The risk of electric shock and fire.
4. After the emergency stop terminal is connected, be sure to check the operation is valid.
Risk of injury. (Wiring is the responsibility borne by the user)
5. Do not touch the output terminal, an output terminal of the inverter must not be connected with the housing, to avoid short circuit between the output terminals.
Risk of electric shock and cause a short circuit.

Notice

1. Make sure the main AC power supply and the rated voltage of the inverter are the same.
Risk of injury and fire.
2. Do not perform voltage withstand tests on the drive.
It can cause damage to the semiconductor components and the like.
3. Press the wiring diagram to connect the braking resistor or braking unit.
There are a fire hazard.
4. Tighten the terminal with the specified torque screwdriver.
There are a fire hazard.
5. Do not connect the power cable to the output U, V, W terminals.
Voltage applied to the output terminals may cause internal inverter damage.
6. Do not phase-shifting capacitor output circuit.
It can cause internal inverter damage.
7. Do not connect an electromagnetic switch, magnetic contactor to the output circuit.
Inverter running with load, the electromagnetic switch and electromagnetic contactor operation inrush currents can cause drive over-current protection circuit operation.

Connecting peripheral devices



Note 1: there is no FC port in the BT1 and CT1

Note 2: Brake unit is optional,and the BT1 and the CT1 series do not provide brake unit.

Chapter 3 Control panel keyboard

3.1 Keyboard control panel functions

ZW series inverter control panel keypad by the five LED digital monitor, LED indicators, keys, panel potentiometers and other components, shown in Figure 3-1.

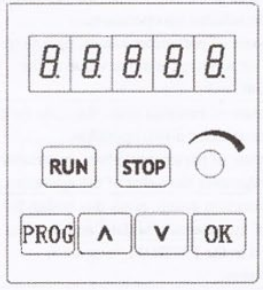


Figure 3-1a S series Control Panel Keypad

Figure 3-1 b BT1/CT1 series and External Control Panel Keypad

(A) Display format

The keyboard has five 8-segment red LED monitor to display the operating status, function code, parameter values, fault codes.

(B) Keyboard control

Key features shown in Table 3-1.

Table 3-1 Key features

Button	Name	Features
PROG	Conversion key	In a state function group, the functional group of options (01 groups, 02 groups) selection operation. Under the direct display, press this button to enter the function set of options, and the functional group cycling page.
▲	Increase key	In the state of function code, the function of the code selector up operation. In the state of parameter values, parameter values set to increase in the value of the operation.
▼	Down key	In the state of function code, the code for the function selector down operation. In the state of parameter values, parameter values decrease the value of the operation.
OK	Memory key	In the function group, press this button to confirm the selection or data, and the data set is stored in the E2PROM, long-term preservation.
RUN	Run key	Starting with the control panel of the control command keys. When the key is pressed and released, the operation command issued, the inverter will set the acceleration time to run.
STOP	Stop / Reset key	Stop control panel with control of the command keys. When the key is pressed and released, issued a stop command, inverter will set deceleration time. The drive fault trip, with the key to reset the inverter.
JOG	--	No use in the S and BT1 series
REV	Reverse key	Starting with the control panel of the control command keys. When the key is pressed and released, the operation command issued, the inverter will set the acceleration time to reverse.

3.2 Basic Operations

3.2.1 Direct keyboard display state

Direct display state ZW series inverter refers to the initial display mode after power.

3.2.2 Display switching parameter

Under the direct display status, you can view or modify the function parameters via the keyboard. First you sure you want to view the parameter display code and find out the feature set that is located, and then press the following sequence:

Parameters Setting Operation Illustration

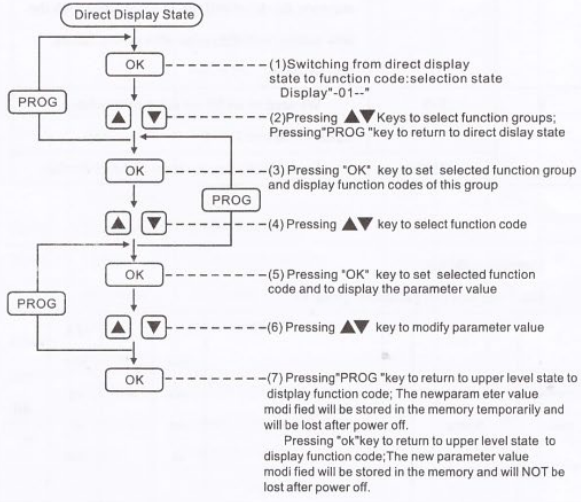


Figure 3-2 Parameter Settings Operation

Jeśli silnikPotrzebujesz dużej prędkości obrotowej, Jak silnik wrzeciona, dlaCT1,
Powinieneś ustawić parametr falownika jak poniżej:
Musisz ustawić P0-06 ,P0-07,P0-08 na 400, domyślnie 50hz, możesz ustawić na 400hz MAX
I pamiętaj, że powinien działać pod lampką kontrolną.

Jeśli silnikPotrzebujesz dużej prędkości obrotowej, Jak silnik wrzeciona, dlaXSY-AT1 lub ZW-AT1Powinieneś ustawić parametr falownika jak poniżej:
P001 = 400,P003 = 200,P006 = 400 **<-- this parameters should be set for 400 Hz spindle)**
Tak, że wszystko jest w porządku
P001 = 400, P003 = 200, P006 = 400
Jest to ustawione na maks. 400hz
Jeśli chcesz ustawić maks. 70hz,
P001 = 70,P003 = 35 ,P006 = 70
Ten model fabrycznej domyślnej częstotliwości falownika wynosi 50HZ
Pytamy kupującego, czy twój falownik pokazuje błąd na wyświetlaczu, najpierw skontaktuj się z nami,Nie otwierać spór,
Jest to dla nas bardzo szkodliwe, wpłynie to na naszą sprzedaż.

Function setting and parameter adjustment sample (direct display):

Example 1: The "maximum frequency" is set to 50.00Hz:

Order	Operating	Explanation
1	PROG	01 functional groups into the state, then display 01-00
Order	Operating	Explanation
2	▲	Press the button continuously until 01-03
3	OK	Displays the current set value of 60.00
4	▼	Continue pressing until 50.00
5	OK	50.00 The current settings stored in the memory, the drive will run in accordance with the new setting, new data even after power failure will be saved.
6	2~5	We need to set 01 set other parameters, repeat the above 2 ～5
	PROG	Press PROG key to return to direct display.

Function code list

Basic run function parameter group 01

Function code	Function Name	Setting range	Increment al	unit	Factory default	modify
01-00	Panel digital set frequency	0.00 ～highest frequency	0.01	Hz	0.00	√

01-01	Run command source selection	0: external terminal FWD, REV control Run / Stop 1: the panel RUN / STOP keys to control operationLine / Stop	1		1	√
01-02	Setting frequency source selection	0: external analog voltage signal (0 ～5V / 10V) setting 1: 2 by the panel potentiometer setting: Digital setting by the panel (01-00) 3: external analog current signal (0 ～20mA) setting	1		1	√
01-03	Base frequency	25.00～400.00	0.01	Hz	50.00	
01-04	The highest frequency	25.00～400.00	0.01	Hz	50.00	
01-05	Upper frequency	Lower frequency ～ Maximum frequency	0.01	Hz	50.00	√
01-06	Lower frequency	0.00 ～upper frequency	0.01	Hz	0.00	√
01-07	Lower frequency mode	0: Low Frequency stop mode; 1: lower frequency operation mode.	1		0	
01-08	The lower limit frequency hysteresis	0.00 ～highest frequency	0.01	Hz	0.00	√

01-09	Acceleration time 1	0.1～6000.0	0.1	s	15.0	√
01-10	Deceleration time 1	0.1～6000.0	0.1	s	15.0	√
01-11	Acceleration time 2	0.1～6000.0	0.1	s	15.0	√
01-12	Deceleration time 1	0.1～6000.0	0.1	s	15.0	√
01-13	Deceleration time selection	0: acceleration time 1; 1: Select time plus or minus 2.	1		0	
01-14	Torque compensation voltage value	0~30	1	%	2	
01-15	PWM carrier frequency	1~16	1	KHz	3	
01-16	Motor direction selection	0: The motor is transferred; 1: Motor reverse.	1		0	
01-17	Overcurrent stall function selection	0: Over current stall protection invalid; 1: valid overcurrent stall protection.	1		0	√
01-18	The stall reference value	50~200	1	%	150	√

01-19	Power-start	0: power-start function is invalid; 1: power-start function effectively.	1		0	√
01-20	Parking Options	0: Deceleration to stop; 1: free parking.	1		0	√
01-21	Stop under-voltage mode	0: Free stop; 1: Deceleration stop	1		0	√
01-22	FWD, REV terminal function	0: Forward / Reverse mode --FWD-COM shorting the motor is transferred, REV-COM shorting the motor reversal; 1: run, forward / reverse mode FWD-COM shorted and the motor runs forward, FWD-COM, REV-COM are short-circuited the motor running and the reverse, FWD-COM disconnect the motor stops running; 2: Three-wire mode	1		0	√
01-23	Multi-speed operation is enabled	0: multi-speed operation is invalid; 1: valid multi-speed running.	1		0	√
01-24	Speed running direction of	0～255	1		0	√

	each section setting					
01-25	Multi-speed 1	0.00～upper frequency	0.01	Hz	0.00	√
01-26	Multi-speed 2	0.00～upper frequency	0.01	Hz	0.00	√
01-27	Multi-speed 3	0.00～upper frequency	0.01	Hz	0.00	√
01-28	DC braking duration	0.0~10.0	0.1	s	0.0	√
01-29	DC braking	0: No DC braking; 1: DC braking stop.	1		0	√
01-30	DC braking initial frequency	0.00~15.00	0.01	Hz	5.00	
01-31	DC braking level	0~50	1		10	
01-32	Write protect selection	0: All parameters can be modified; 1: 01-00 In addition to the parameters, the other parameters are prohibited modification; 2: All parameters are modified is prohibited; 3~100: Factory reserved.	1		0	√
01-33	Parameter	0: The factory reserves;	1		0	

	Initialization	1: All parameters restore factory value; 2: Clear fault records.				
01-34	Retention					
01-35	AOUT Output mode	0: The maximum output frequency between AOUT-GND voltage is about 10V; 1: The rated output current between AOUT-GND voltage of about 5V; 2: When the rated output voltage AOUT-GND voltage between about 10V.	1		0	√
01-36	AOUT output gain	0.50~1.20	0.01		1.00	√
01-37	Torque compensation voltage mode	0: 1 constant torque mode: torque mode power decreasing 1.2	1		0	
01-38	Analog input gain	0.10~2.00	0.01		1.00	√

Monitoring function parameter group 02

Function code	Function Description
02-00	Display set frequency (Hz)
02-01	The inverter output frequency (Hz)
02-02	The inverter output voltage
02-03	The inverter output current
02-04	Display the DC bus voltage value
02-05	Power module temperature display (℃)
02-06	The factory reserves
02-07	The fault record
02-08	Previous record of failure
02-09	Previous two faults record
02-10	The first three fault record

PID tuning parameters Group 03

Function code	Function Name	Setting range	Incremental	unit	Factory default	modify
03-00	PID adjustment options	0: PID regulator invalid; 1: PID regulator valid.	1		0	√
03-01	A given amount of channel selection	0: from [03-02] setting; 1: from [03-03] setting; 2: set by the VI-GND; 3: set by AI-GND.	1		0	√
03-02	Digital voltage setpoint	0.00~10.00	0.01	V	0.00	√

03-03	Digital current setpoint	0.0~20.0	0.1	mA	0.0	√
03-04	Feedback channel selection	0: the analog voltage input VI-GND; 1: Select the analog current input AI-GND.	1	1	0	√
03-05	Feedback bias	-100.0~100.0	0.1	%	0.0	√
03-06	Feedback gain setting	0.0~10.0	0.1		1.0	√
03-07	Positive feedback / reverse characteristic	0: positive character; 1: Negative characteristics.	1		0	
03-08	PID regulator proportional Kp	0.0~10.0	0.1		1.5	√
03-09	PID regulator integral Ti	0.0~100.0	0.1	s	0.1	√
03-10	PID controller Td Differential	0.0~100.0	0.1	s	0.0	√
03-11	Sampling period Ts	0.1~50.0	0.1	s	0.1	√
03-12	PID deviation limit regulation	1~20	1	%	1	√
03-	Setpoint and	0.1~600.0	0.1		1.0	√

13	feedback values are displayed magnification					
03-14	PID Sleep Select	0: Sleep invalid; 1: Sleep valid.	1		0	√
03-15	PID sleep delay	0.0~6000.0	0.1	s	0.1	√
03-16	PID sleep frequency	0.00~[01-05]	0.01	Hz		√
03-17	PID wake-up level	0.00～100.00	0.01	%		√
03-18	PID wake-up delay	0.0~60.0	0.1	s		√
03-19	Retention					
03-20	Retention					

Extended function parameter group 04

Function code	Function Name	Setting range	Incremental	unit	Factory default	modify
04-00	Multi-speed 4	0.00～upper frequency	0.01	Hz	0.00	√
04-01	Multi-speed 5	0.00～upper frequency	0.01	Hz	0.00	√
04-02	Multi-speed 6	0.00～upper frequency	0.01	Hz	0.00	√
04-03	Multi-speed 7	0.00～upper frequency	0.01	Hz	0.00	√

04-04	Jog Select	0~3	1		0	√
04-05	Jog frequency	0.00～upper frequency	0.01	Hz	0.00	√
04-06	Jog acceleration and deceleration patterns	0~1	0		0	√
04-07	Jog acceleration time	0.1~6000.0	0.1	s	15.0	√
04-08	Jog deceleration time	0.1~6000.0	0.1	s	15.0	√
04-09	Retention					
04-10	Motor reverse ban	0: Reverse; 1: Disable reverse	1		0	
04-11~20	Retention					

√: The parameters can be modified on the fly

Chapter 5
Troubleshooting and Countermeasures

After the drive detects an abnormal situation, the protective circuit and fault relay outputs, and displays the fault and stop, be sure to find the cause of the malfunction and the appropriate countermeasures, and troubleshooting and then run.

5.1 Protection

Table 5-1 Protection

Name	Function
Overcurrent protection intelligent power module (001)	When the above output current exceeds the rated current of 200 °%, or when the intelligent power module fails, cut off the inverter output and stop running.
Undervoltage protection (002)	In operation, if the voltage drops due to power outages or the inverter power supply voltage drops below about single-phase 170V (three-phase 380V), the output and shut off.
Overvoltage protection (003)	Regenerative energy during deceleration so that the main circuit DC voltage rises to about single-phase 400V (three-phase 800V) or more, and cut off the output and stop running.
Overheating protection (004)	Radiator temperature detection, about 85 ° C at about cutting output and downtime.
Overload protection (005)	When the load exceeds the output characteristics (parameters 01-18) and shut off the output. (Default value of 150% of rated current for 1 minute)

5.2 fault code and cause analysis

Inverter record the reasons for the last four faults. Reset the fault can be viewed at any time (parameter 02-07~02-10) function parameter group 02, fault codes are described in Table 5-2.

Table 5–2 Fault name and cause analysis

Fault code	Name	Reason	Countermeasure
001	Running overcurrent	Output short circuit or load mutation	Please identify the causes and take appropriate countermeasures reset. If this does not resolve, call for technical support.
	Overcurrent during acceleration	1. Acceleration time setting value is too small; 2. The torque compensation voltage value mistaken.	1. Zeng large acceleration time value; 2. zo or decreases torque up Offset voltage value.
	Deceleration overcurrent	1. The deceleration time setting is too small; 2. Output short circuit or load mutations.	1. Zeng large deceleration time value; 2. Eliminate short circuit or sudden load change.
	Intelligent power module protection	1. intelligent power module upper and lower arm short circuit fault; 2. Other causes of transient current is too large.	Please identify the causes and take appropriate countermeasures reset. If this does not resolve, call for technical support.
002	Instantaneous power failure or undervoltage fault	The emergence of the supply voltage drops or momentary power failure during operation.	Please check the wiring of the power state and input side.

003	Operation overpressure	1. The power supply voltage is too high; 2. load speed fluctuations.	1. the power supply voltage within the specified range; 2. Reduce load speed wave move.
	Overvoltage during acceleration		
	Deceleration Overvoltage	Load inertia (GD2) is too large	1. Change the deceleration time so that it is suitable for load inertia; 2. External brake unit.
004	Inverter overheat	1. The cooling fan is abnormal; 2. The ambient temperature is too high; 3. Vent blockage.	1. Check the operation of the fan; 2. To make the drive operating environment to meet the requirements; 3. Elimination of the vents, etc. of the dust and dirt.
005	overload	1. Motor overload; 2. V / F or torque characteristics complement Compensation amount of uncertainty.	1. To reduce the load or put a larger capacity drive; 2. zo or decrease the torque compensation voltage.
006	Read / write data error		

(Note) E2PROM write data errors, only displays the exception instead the trip.

5.3 Anomaly and Countermeasures

Causes and Countermeasures abnormalities shown in Table 5-3.

Table 5-3 Anomaly and Countermeasures

Abnormal items	Reason	Countermeasure
Motor does not turn	1. The input and output lines are wrong or the occurrence of a phase output; 2. overload or motor stall occurs; 4. Set the frequency to 0; 5. The output terminal of the inverter has no output voltage; 6. due to a failure to stop.	1. Check the wiring of inputs and outputs; 2. Reduce the load; 3. Measure the output voltage, confirm the three-phase output is balanced; 4. If a failure occurs, troubleshooting and then run.
Motor reverse operation	The order of output terminals U, V, W is reversed.	Please adjust wiring sequence U, V, W's.
Motor While running but the speed constant	1. overloaded; 2. The upper frequency is too low; 3. The frequency setting signal is too low.	1. Reduce the load; 2. Make sure the frequency upper limit 3. Make sure the signal value and even loops connection.
The motor can not smooth acceleration and deceleration	Plus, the setpoint deceleration time is too short.	Increase the value of acceleration and deceleration time.
Motor speed fluctuates	1. Large fluctuations or overloading the load; 2. If the inverter and motor ratings and load match.	1. Reduce the load fluctuations or reduce the load; 2. Select the drive and motor load match.
Motor speed does not match setpoint	1. Set the display scale does not; 2. Set the value of the highest frequency or base frequency is incorrect; 3. The motor terminal voltage is low.	1. Make sure that the motor pole pairs; 2. Check the settings in the highest frequency or frequencies of the base; 3. Make a bold line output.

Chapter 6
ZW series inverter operation example

Case one: start-stop control panel, with the panel potentiometer speed control (0 ～65Hz)

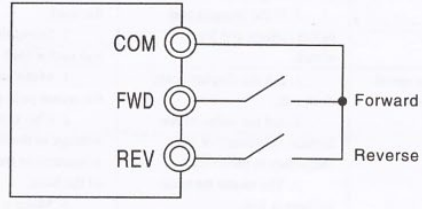
A: Please 65.00,01-04 parameter 01-03 = = = 65.00 65.00,01-05 "Note: If you want to get a little higher frequency modulation,01-03,01-04,01-05 can put inside to raise the value of the corresponding recommended ordinary three-phase asynchronous motor is adjusted to the highest frequency of about 80Hz for higher frequency please replace the motor. "

B: Because the panel potentiometer is a very delicate element, prolonged use of easily damaged, then please "increase", "decrease" keys to the governor, "this time set 01-02 = 2 on the panel, and then adjust 01- 00 values for speed. "

Case two: the drive is in use often occurs at low frequencies with fixed motor, please adjust the following parameters: 01-14 = 2~10,01-15=1～3

Case three: external control switches reversing the drive with the panel potentiometer speed (such as 0 ～50Hz)

A: ordinary rotary switch control:



Description: as long as 01-01 = 0

B: drive with a reversing switch control jog stop. SB1 Forward (normally open contact), SB2 reversed (normally open contact), SB3 Stop (normally closed contact)

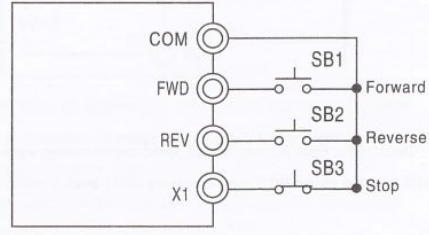
Parameters: 01-01=0, 01-22 = 2

Description:

SB1 (normally open contact) is closed it, drive forward

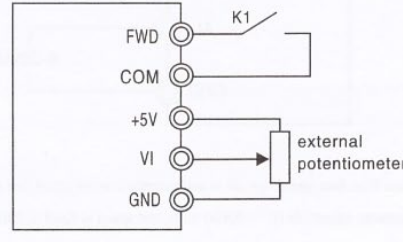
SB2 (normally open contact) is closed at the frequency converter reverse

SB3 (normally closed contact) off it, the drive is stopped



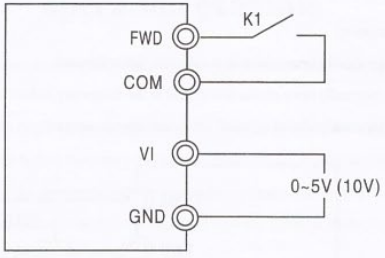
Case Four: inverter operation with an external switch control, speed control with an external signal (voltage, current, resistance) 0 ～50Hz

A: external switch K1 control inverter operation, an external potentiometer (2~10K), governor 0~50Hz parameters: 01-01 = 0,01-02=0



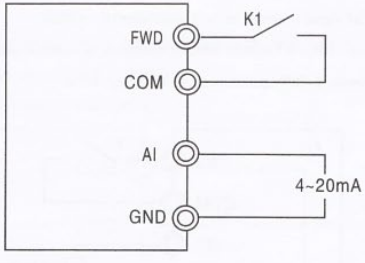
Description: From K1 stop control, external potentiometer speed 0~50Hz

B: external switch K1 control operation, external voltage signal 0~5V (or 0~10V) Speed 0~50Hz parameters: 01-01 = 0,01-02=0



Description: From K1 stop control, speed control voltage signal, if necessary 0~10V to speed, please JP1 2,3-pin connector with a black short-circuit block

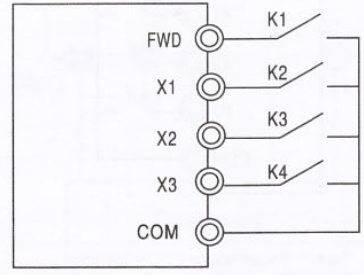
C: drive is running with an external switch control, external current signal 4~20mA (or 0~20mA) Speed 0~50Hz parameters: 0,01-02 = 01-01 = 3



Case five: four-speed operation and external control panel first speed potentiometer adjustable (0 ~50Hz) with; 2nd speed is fixed at 20Hz; third speed

is fixed at 30Hz; fourth paragraph rate is fixed at 40Hz

Parameters: 01-01=0,01-23 =1, 01-25 = 20.00, 01-26=30.00, 04-00 = 40.00

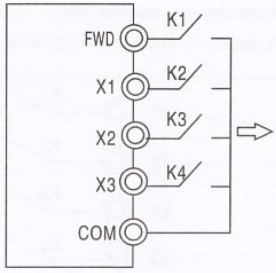


Description: When K1 is closed, the drive speed is first speed, frequency 0~50Hz panel potentiometer adjustable when K2, K3, K4 sequentially close for the corresponding frequency 20Hz, 30Hz, 40Hz.

Note: When using 2,3,4 speed must be closed K1, K2, K3, K4 only one switching operation.

Case six: external control over four-speed is less than (or equal to) 8-speed use presentation (8 speed were 5Hz, 10Hz, 15Hz, 20Hz, 25Hz, 30Hz, 35Hz, 40Hz)

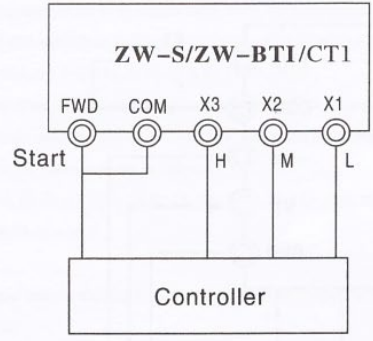
Parameters: 01-01 = 0,01-02 2,01-23 = = = 10.00,01-26 5.00,01-25 1,01-00 = = = 15.00,01-27 20.00,04-00 = 25.00, 04-01 = 30.00 = 35.00 04-02, 04-03 = 40.00



K2	K3	K4	Speed source
Open	Open	Open	Speed 1 by 01-00 or potentiometer setting
Close	Open	Open	Period of speed 2 are set in the 01-25
Open	Close	Open	Period of speed 2 are set in the 01-26
Close	Close	Open	Period of speed 2 are set in the 01-27
Open	Open	Close	Period of speed 2 are set in the 04-00
Close	Open	Close	Period of speed 2 are set in the 04-01
Open	Close	Close	Period of speed 2 are set in the 04-02
Close	Close	Close	Period of speed 2 are set in the 04-03

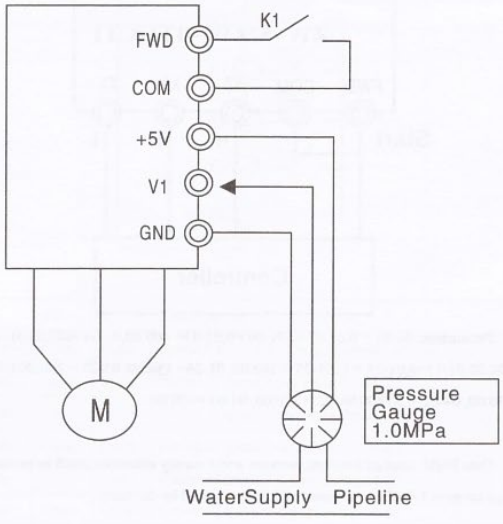
Note: The default speed can be set by the panel potentiometer 01-00 or digital panel can be selected in parameter 01-02 in; X1 is low, X2 is medium, X3 is high-speed

Case seven: engraving machine spindle motor (220V1.5kW frequency is 400Hz speed of 24,000 rpm) applications (with Weihong card to control the drive speed)



Parameters: 01-01 = 0,01-02=2,01-00 =0,01-03= 400.00,01-04=400.00,01-15 = 400.00,01-15=6,01-23 = 1, 01-25 = 100.00, 01-26= 150.00, 01-27 = 200.00,04-00 = 250.00, 04-01 = 300.00,04-02 = 350.00, 04-03 =400.00

Case Eight: applied constant pressure water supply situations (such as pressure gauge range is 1.0MPa, a pressure of 2.5 kg required by the user)



1, first determine the order of the gauge resistance value, the multimeter resistance profile two measuring its resistance, the largest of a group of potentiometer "the beginning" and "end" of the rest of the line is a center tap (contact drive port VI), and then the other two lines and center Tap measure its resistance, wherein the resistance of a large pick 5V, the remaining one to GND

2, if you want to use the external control operation will be 01-01 = 0, with FWD and COM port to control the on-off (if you do not want to switch to start and want to drive a power-running, FWD and COM wire Short)

3, parameter group 03 parameters of water supply, the first "PID select" 03-00 = 1, 03-02 = 2.50,03-13 target = 1.0 (since the gauge range is 1.0MPa, then the set 03-13 1.0, assuming a pressure of 2.5 kg will be required to 03-02 2.50)

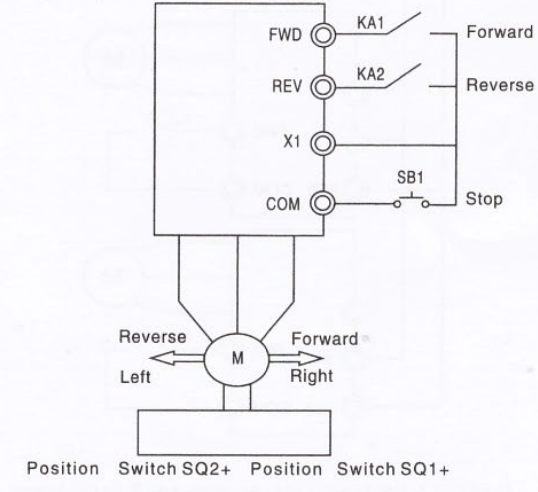
4, the frequency of 03-16 to sleep around 20.00, the corresponding sleep latency 03-15 (0.1~6000.0 seconds), wake-up value of 03-17 to 03-02 target 60~80 °%, which is 1.5~2.0 kg, so 03-02 is set 15.00~20.00

5, or later if the drive to work long hours to achieve their pressure (pipe network for leaks case), by 03-19 and 03-20 to set the alarm parameters.

Water Supply parameters are as follows:

03-00 = 1, 03-02 = 2.50, = 1.0 03-13, 03-14 = 1, 03-15 = 10.0, 20.00 = 03-16, 03-17 = 20.00,03-18 = 10.0

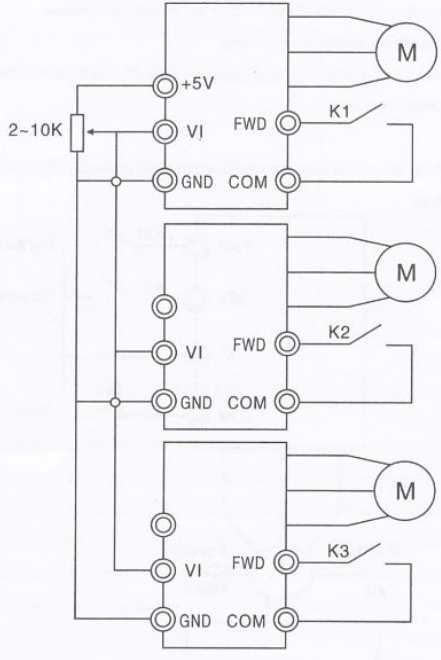
Case Nine: drive in the loop line retrofit applications (manually adjustable motor position)



Description: This function requires two complete limit switch (SQ1, SQ2) two relays (two relay a normally open contact normally closed contact), a stop switch

(normally closed contact). SB2, SB3 motor position can be changed manually or automatically run. Parameters: 0,01-22 = 01-01 = 2 (p18)

Case Ten: Multiple inverters linkage application



Description: A: Host frequency set by the potentiometer B: the ratio between each drive by 01-03,01-04,01-05 adjustment C: for example,Frequency 1: Frequency 2:Frequency 3 = 1: 2: 3 can be frequency adjustment parameters

Frequency 1:01-03=50.00, 01-04=50.00, 01-05=50.00

Frequency 1:01-03=100.00, 01-04=100.00, 01-05=100.00

Frequency 1:01-03=150.00, 01-04=150.00, 01-05=150.00

In the case of 5V analog corresponding to frequencies were: 50Hz 100Hz 150Hz

Heartfelt thanks to the strong support of the majority of users continue to ZW drive as drive manufacturers, we are constantly optimize the product at the same time, continue to improve the quality of service to customers. If you encounter any problems in use, our sales staff will be the first time for you to solve.

Chapter 7 Drives Technical Specifications

Table 7.1 Specifications Model

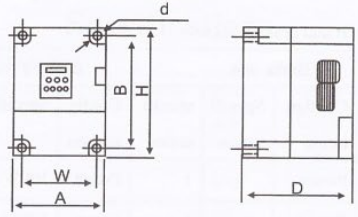
model	Input voltage	Output voltage	Power (kW)	Output current (A)	Applicable Motor Power (kW)
ZW-S1-2T -0.7	Single-phase AC 110V～50Hz	Single-phase AC 0～110V	0.75	7	0.75
ZW-S1-2T -1.5			1.5	12	1.5
ZW-S1-2T- 2.2			2.2	20	2.2
ZW-S12-2T -0.7		Single-phase AC 0～220V	0.75	4	0.75
ZW-S12-2T -1.5			1.5	7	1.5
ZW-S12-2T- 2.2			2.2	11	2.2
ZW-S2-2T- 0.4	Single-phase AC 220V50Hz	Three-phase AC 0～220V	0.4	2.5	0.4
ZW-S2-2T- 0.7 ZW-BT1-750S ZW-CT1-750S			0.75	5	0.75
ZW-S2-2T- 1.5 ZW-BT1-1500S ZW-CT1-1500S			1.5	8.2	1.5
ZW-S2-2T- 2.2 ZW-BT1-2200S ZW-CT1-2200S			2.2	12.2	2.2
ZW-BT1-3000S			3.0	15	3.0
ZW-BT1-4000S			4.0	20	4.0
ZW-S23-3T- 0.4		Three-phase AC 0～380V	0.4	1.2	0.4
ZW-S23-3T- 0.7			0.75	2.5	0.75
ZW-S23-3T- 1.5			1.5	4	1.5
ZW-S3-3T -0.4	Three-phase AC 380V50Hz	Three-phase AC 0～380V	0.4	1.2	0.4
ZW-S3-3T- 0.7			0.75	2.5	0.75
ZW-S3-3T- 1.5			1.5	4	1.5
ZW-S3-3T- 2.2			2.2	5.5	2.2

7.2 braking unit and braking resistor

Inverter		Brake unit			Braking resistor		
Voltage	capacity (kW)	Configuration	Specification	specification	Configuration	Specification	Usage amount
Single-phase 220V	0.4	Preset		1	Preset	100W、150Ω	1
	0.75	Preset		1	Preset	100W、150Ω	1
	1.5	Preset		1	Preset	400W、100Ω	1
	2.2	Preset		1	Preset	600W、100Ω	1
Three-phase 380V	0.4	-		-	Preset	100W、750Ω	1
	0.75	-		-	Preset	100W、750Ω	1
	1.5	-		-	Preset	260W、400Ω	1
	2.2	-		-	Preset	260W、250Ω	1

Note:The S1 Series and BT1 Series does not provide Brake unit!

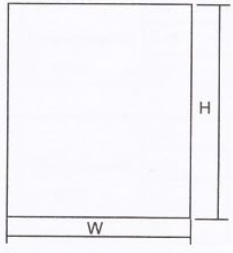
7.3 Outline and installation dimensions



Input Power	Power (kW)	Size（mm） A	B	H	W	D	d	GW (kg)	Chassis
110V	0.4～2.2	104	138	149	91	127	4.5	1.1	PC26 (white)
220V									
380V								1.5	
220V	0.75~4.0	130	185	195	120	103	4.5	1.2	BT1~BT3 CT1~CT3

External keyboard box hole size: Unit（mm）

Specification	W	H
G Series Keyboard	61	94



Schematic openings

Chapter 8 Warranty

The Company's solemn commitment, from the day that you buy from my company (hereinafter referred to as manufacturers) date, users have the following products sales warranty service:

1, the product from the date of purchase from manufacturers to users since the implementation of the 18-month free warranty (except export foreign / non-standard machine);

2, the product from the user from the date of purchase from the manufacturer, the product itself quality problems within a month, the manufacturers replacement repair kits;

3, the product from the date of purchase from manufacturers from users enjoy paid service for life.

4. Disclaimer:

Within suffered as a result of product failure is not the factory warranty of 18 months of free services:

① users do not follow the procedures listed in the instructions for proper operation;

② users without communication with manufacturers to repair or modifications to the product caused by product failure;

⑤ user exceeds the standard range of products using the product caused by fault;

④ due to poor user environment cause the product to malfunction or cause abnormal aging;

⑥ due to irresistible earthquake, fire, wind and flood damage, lightning, abnormal voltage or other natural disasters caused damage to the product;

⑥ After the purchase of products in transit due to the inappropriate choice of mode of transport or other damage occurred down forces invade result in product losses.

5, in the following cases, the manufacturers do not have the right to provide warranty service:

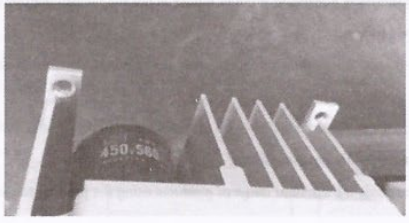
① brand manufacturers in product identification, trademark, serial number and other identification have been damaged or not recognized when;

② user does not press the two sides "purchase and sale contract" when full payment;

③ user to the manufacturer's service providers deliberately concealed product installation, wiring, operation, maintenance, or other processes in the case of improper use of the time.

More pay attention to
1: the Plastics shell due to uncertainties in transport occasionally loose, does not affect the product quality, please relax to use your Inverter.

2: Ground wire should to be connected to one of the four mounting holes of aluminum Radiator (S series).



3: due to the differences in conditions of use, digital display of frequency converter will be occasionally a little shaking, is normal, non–product quality problems, please feel free to use.