



Operation manual of frequency inverter
Single-phase input 220V (0.4kW-2.2kW)
Three-phase input 380V (0.4kW-160kW)
Max. Frequency range (0.1 Hz-3000Hz)

Scope of application:

- ◆ **Lathe, milling machine, planer, grinder, drilling machine**
- ◆ **Carving machinery, paper-making machinery, printing machinery, packing machinery, plastic moulding machine**
- ◆ **Blower, water pump, printing and dyeing machinery, carpentering machinery**
- ◆ **Textile high-speed doubling winder and other applications**

Please keep the manual after reading it for future reference

Basic safety knowledge



! Warning !



Caution

Pay attention to these warning and caution signs on the frequency inverter or in this instruction manual. They indicate danger to human body or damage to the frequency inverter.

Before installing and putting the inverter into operation, please read the safety precautions and warnings following this page.

Please read this manual carefully before installing and putting the frequency inverter into operation.

Only qualified and personnel are able to install, operate and ensure personal safety. Improper operation may result in serious personal injuries or damages to the frequency inverter.



Caution:

Once the frequency is turned on, it will create dangerous voltage and control the motor causing the machinery components to rotate.

Caution: The frequency inverter operates in high voltage. So be sure to shut down the main power before wiring.

Caution: AC power is forbidden to connect to the output terminals (U,V,W) of the frequency inverter; otherwise the frequency inverter will be damaged.

Caution: Be sure not to touch internal circuit and the components before indicating lamp “ CHARGE” stops flashing, for there still is comparatively high DC current inside the frequency converter. The frequency converter shouldn't be uncovered until five minutes after the main power is shut up.

Warning: Even when the motor is turn off, the following terminals may still have dangerous voltage: terminal **R、S、T、U、V、W、P、N、B**

Caution: Only qualified personnel are allowed to install the frequency convertor, arrange the wiring and remedy inverter troubles.

Caution: Once certain parameters are set, the frequency inverter may automatically rotate after being connected with the main power.



Dangers and warning

The frequency inverter shall be installed in well ventilated room and be kept away from direct sun light. It shall also not be exposed to dust, corrosive or explosive or flammable gases, oily earth or saline spots so as not to be burned.

This frequency inverter should only be applied under circumstances approved by the manufacturer. Unapproved modification or amendments may result in fire and electricity leakage.

Definition of Qualified personnel

Qualified personnel which is mentioned in this manual referred to those person who are familiar with internal structure, installation procedures, operation methods and maintenance procedures of the frequency inverter and can carry out safety measures to prevent accidents.

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I. Foreword

Thank you for buying TALENT series multi-functional high-performance frequency inverters. TALENT series include general purpose and high frequency types, which are equipped with a new generation of high-performance 16-bit CPU. The maximum frequency is up to 600Hz (general purpose type) or 3000Hz (180,000r/min) (high frequency type). It is compact, easy to install and operate.

Please read this manual carefully before use, so as to properly install and operate the products, and fully exert its functions and ensure safety. Please keep this manual for future service.

The document may be updated without notice!

I. Precautions

The product is carefully inspected and packed before delivery. However, damages may occur during the transportation process due to various factors. Please check the following items upon unpacking. Inform the vendor or us of any abnormality.

- 1 Verify the product is not damaged or deformed during transportation.
- 1 Verify there are a frequency inverter (the product) and an operation manual in the package.
- 1 Verify the model is identical to that on the nameplate (operating voltage and KW).
- 1 Verify there is no abnormality or foreign matter in the product.
- 1 Check the controller.
- 1 Verify there are a quality certificate and a guarantee card.

2. Description of TALENT series nameplates.

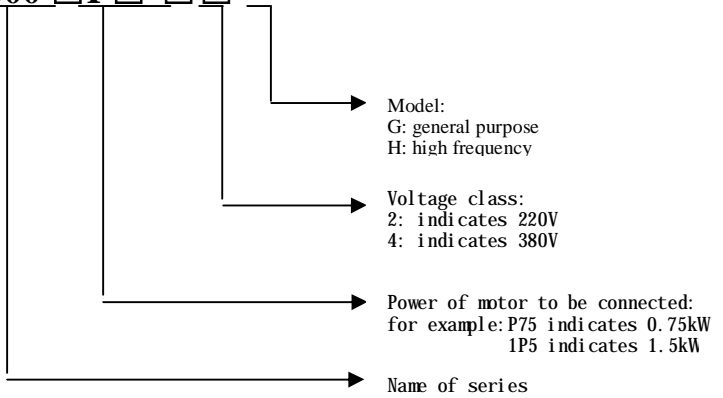
Verify the model and rated output indicated on the nameplate on one side of the frequency inverter are identical to those on the order.

Ex.



Model description:

VG3000-□P□-□□



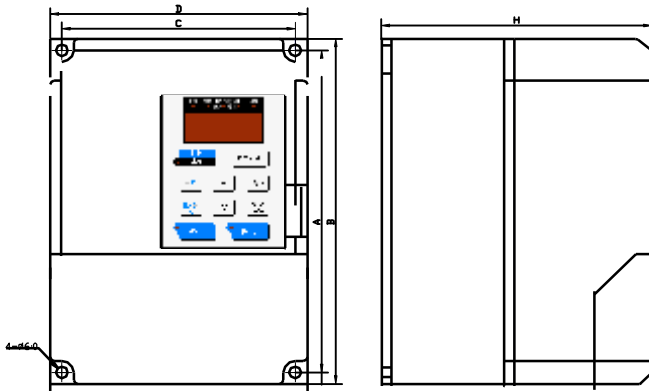
Note: Mark A on the enclosure indicates PIM module; mark B indicates high frequency type.

III. Product profile and component names:



II. INSTALLATION

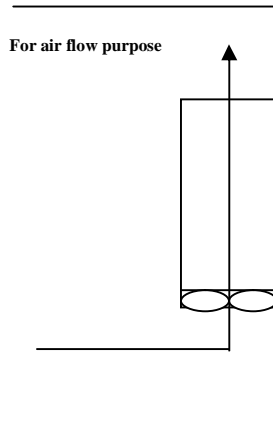
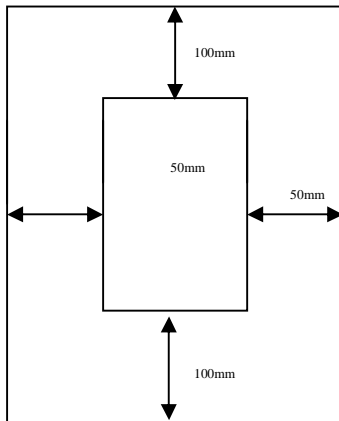
1. Physical and installation dimensions



General purpose /high frequency	Type	A (mm)	B (mm)	C (mm)	D (mm)	H (mm)
	Tri-phase	380V				
	0.75~2.2kW	213	225	119	130	141
	3.7~5.5kW	268	280	119	130	158
	7.5~11kW	300	313	148	160	190
	15kW	416	430	195	240	220
	22kW	416	430	195	240	260
	30~45kW	650	675	260	370	282
	55~90kW	846	880	360	523	318
	110~160kW	985	1014	360	580	350
Single phase	220V					
0.75~2.2kW	138	148	93	105	128	

2. Notices to Installation

- I. **Mount vertically**
- II. **Environmental temperature: $-10^{\circ}\text{C} \sim +45^{\circ}\text{C}$; relative moisture $<90\%\text{RH}$; air pressure: $86\text{kPa} \sim 106\text{kPa}$.**
- III. **In case the frequency inverter is mounted in a cabinet, heat-dissipation and the cabinet dimensions shall be considered, and a clearance of 50-100mm shall be left round the frequency inverter.**



- IV. **Installation environment:**
 - A. **Away from direct sunlight;**
 - B. **Away from water, vapor, dust or oily dust;**
 - C. **Away from corrosive, flammable gas or liquid;**
 - D. **Away from floating dust or metallic particles;**
 - E. **Robust, without vibration;**
 - F. **Without electromagnetic or noise interference.**

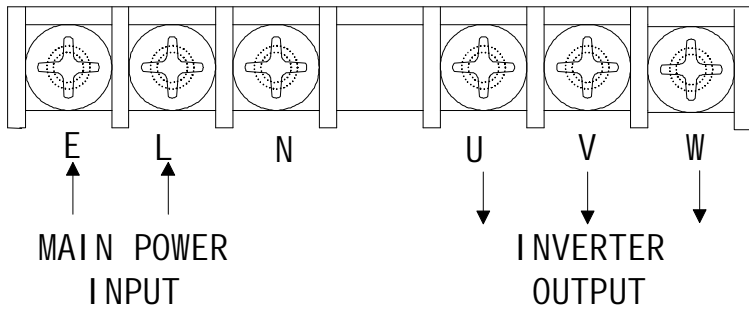
III. WIRING

1. DIAGRAM OF MAIN CIRCUIT TERMINALS

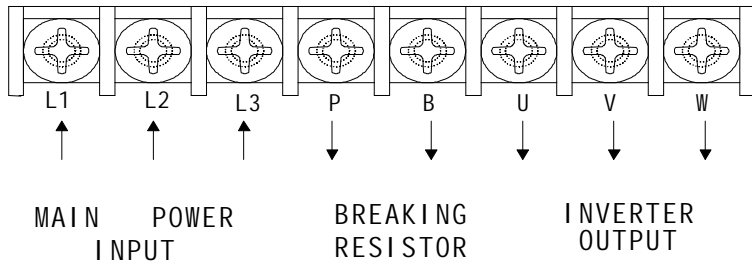


Caution! See indications on the frequency inverter.

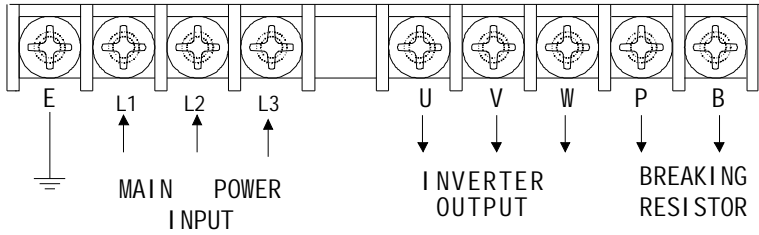
220V (0.75kW~2.2kW) – IPM



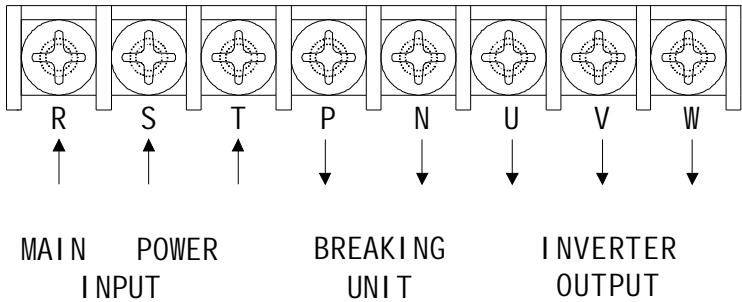
380V (0.75kW~5.5kW) – IPM



380V (7.5kW~11kW) – IPM



380V (15kW~160kW) – IPM



2. Diagram of control circuit terminals and their functions

220V (0.75kW~2.2kW) – simplified type

Y1	Y2		TB	TC	TA	FOR	REV
BX	SC			RST	X1	X2	X3
X4	X5	FS	FV		FC	FM	

380V (0.75kW~160kW)

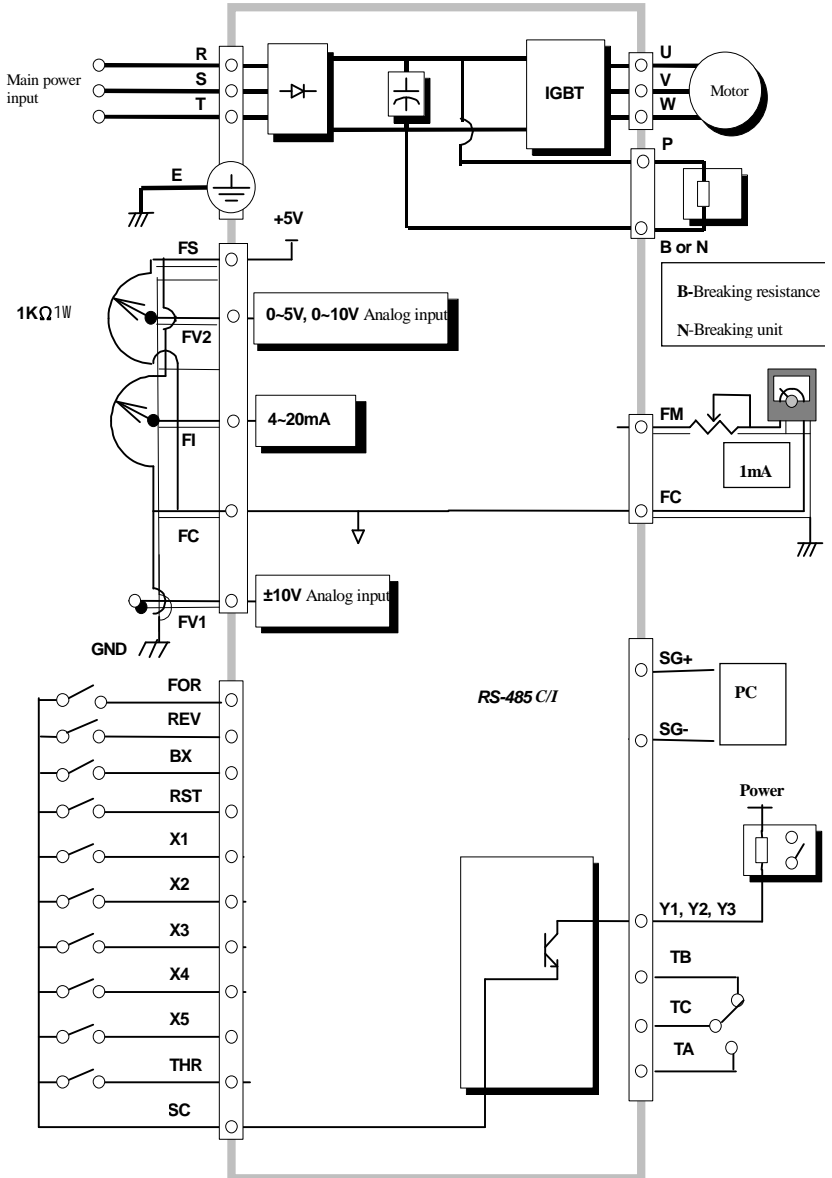
Y1	Y2	Y3	TB	TC	TA	FOR	REV
BX	SC	SC	THR	RST	X1	X2	X3
X4	X5	FS	FV1	FI	FC	FM	FV2

Caution : Customers who select $\pm 10V$ (FV1) shall specify this upon ordering !!!

Terminal symbol	Name	Function
Y1	Feedback	For collector open circuit, switch signals, please see items C - 36、C - 37、C-38 for their conditions.
Y2	Feedback	
Y3	Feedback	
TB	Alarm output	Normal: "TC"- "TB";
TC		Abnormal: "TC" – "TA"
TA		Maximum capacity: DC30V 5A or AC250V5A
FOR	Forward rotation	When it is short connected with "SC", the motor rotates in forward direction. It is in effect only when "C-002 is set to 1.
REV	Reverse rotation	When it is short connected with "SC", the motor rotates in reverse direction. This is in effect only when function code "C-002" is set to 1.
BX	Sliding stop	During operation, if "SC" is short connected with "BX", the inverter will stop output and therefore the motor is in idle state. After "BX" signal is stopped, the inverter will be automatically restarted to its formally set frequency. Please use this function when an external breaker is equipped to the motor.
SC	Common terminal of input	This is not allowed to form a circuit with "FC".

	control signals	
THR	Overheat protection	In case that the constantly closed thermal protector should be used, please disconnect "SC" and "THR". When this protector is not used, "SC" and "THR" should be short circuited.
RST	Alarm reset	When it is short connected with "SC" and then disconnected with it, the fault signal is restored. It shall be used after the trouble is remedied. .
X1	Multi-speed selection	X3, X2 and X1, which correspond to high and low level of code 8421, are short connected with "SC" respectively and 1~7 stage speeds are created. These speeds respectively correspond to the frequencies set by functional codes "C-046" –"C-052". When X1, X2 and X3 are all disconnected with "SC", they all correspond to 0 stage speed, which is the analog quantity input frequency.
X2		
X3		
X4	Jog motion	When "FOR" is short circuited with "X4" and "SC", the motor jogs forward. When "REV" is short circuited with "X4" and "SC", the motor jogs reversely; or it may be used for terminal control acceleration.
X5	DC breaking selection	When it is short circuited with "SC", the DC breaker is actuated or it functions as terminal control acceleration.
FS	Positive pole of Analog voltage input	Capacity : 5V, 20mA.
FV1	Analog voltage signal input ($\pm 10V$)	Pay attention to function "C-001" and "C-031" settings (<i>these should be clarified upon ordering</i>)
FI	4~20mA analog current signal input	Pay attention to function codes "C-001" and "C-031" settings
FC	Analog signal input earth	Analog voltage and analog current input of power negative pole are included.
FM	Terminal for frequency meter	A 1mA current meter is connected in between "FC" and "FM".
FV / FV2	Analog voltage signal input 0~5V, 0~10V	Pay attention to function codes "C-001" and "C-031" settings.

3. PRIMARY WIRING DIAGRAM

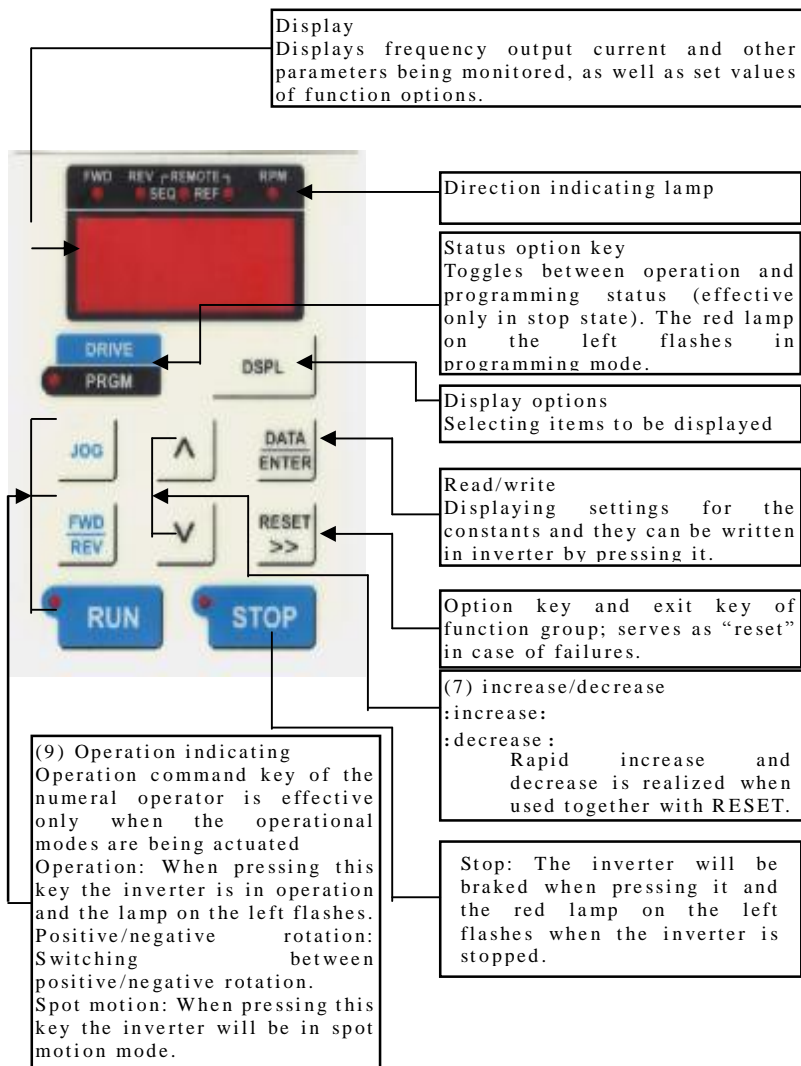


4. Notices to wiring

- I. Power voltage beyond specified range is forbidden; otherwise the frequency inverter may be damaged.**
- II. It is absolutely forbidden to connect the main power to the output terminals (U,V,W)of the main circuit of the inverter; otherwise the inverter will be damaged.**
- III. The wire between inverter and motor should be shorter than 100m. The connection wire to control circuit terminal should be shorter than 30m and shielded or twisted type of wire should be used, and it shall be kept away from the main circuit and heavy current circuits (alarm relay circuit).**
- IV. It is forbidden to directly start or shut down the motor using the electromagnetic switch of the input circuit. Please use the switch on the inverter to start or shut down the motor.**
- V. An electromagnetic switch shouldn't be mounted between the inverter output circuit and the motor to directly start or shut down the motor**
- VI. A power factor rectifying capacitor is not allowed to connect to the inverter output circuit.**
- VII. A $K\Omega$ meter should not be used to measure the control terminal or be fit between two main circuit terminals.**
- VIII. In case that the inverter is directly connected to a heavy-duty power transformer (with capacity over 500KVA and wire less 10m), the inverter may be damaged because of peak current going through the inverter. So please equip it with an AC reactor in the inverter input circuit.**
- IX. Be sure that there isn't any small wire piece entering the inverter while the wiring is carried out.**

IV. NUMERICAL OPERATION PANEL

1. Functions of keypad



2. How to use the keypad?

I. Mode selection key

When the inverter is shut down,

DRIVE
PRGM

 can be used to switch between operation mode and programming mode. When changing function code parameters,

DRIVE
PRGM

 on the six-key keypad can be used as confirmation key.

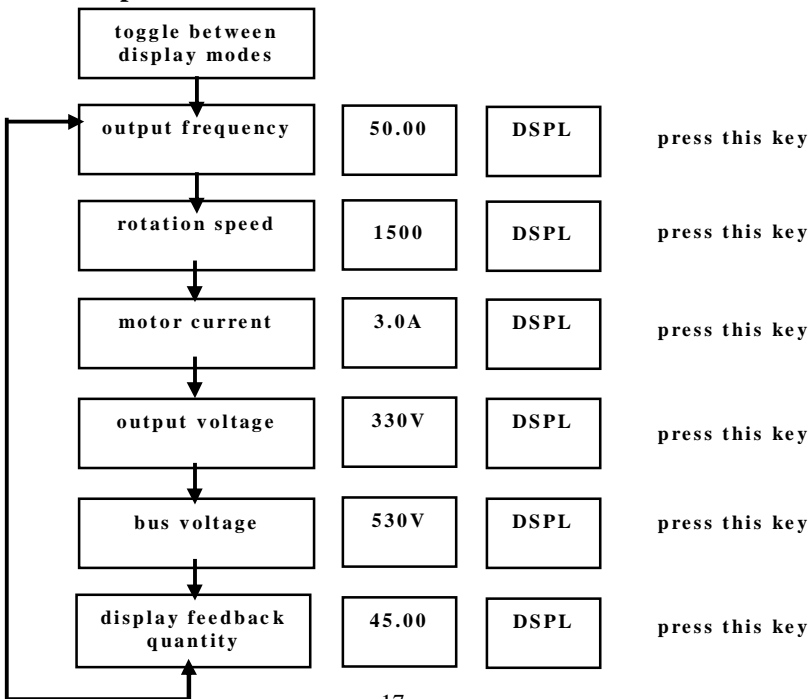
II. Operation selection key

When in operation,


DSPL

 can be used to toggle contents displayed on the screen.



For example:





III. Read/write key

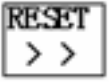
After selecting the function code, press  and the setting of the selected function code can be read out; after being set, the setting is written in the inverter by pressing.

Note: (for inverter power below 11kW, setting of the function code

can be read out by pressing  or . After being set, the setting is written in the inverter by pressing it once again.

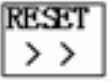
IV. Value modification key:

The settings, function codes can be modified by pressing   and, if in operation, the inverter output frequency can also be changed.






If one of them is used together with , settings may quickly changed.

V. -Function group option key

In programming mode, function code group can be selected by

pressing . Press this key once and the next function group will replace the present one; when setting function code, this key is used as “Escape” key; under abnormal conditions, this key is used as reset key.

VI. Operation indication key:

- * Press  and the inverter is in operation and the red lamp on the left side flashes.
- * Press  and the inverter is stopped. The red lamp on the left side stops flashing when the inverter is completely stopped. 
- * Press , the inverter begins to toggle between forward and reverse rotations. The inverter reverses its rotation when reaching the settings.
- * Press , the inverter begins jog operation at the frequency set according to 0-14 code.

III. Input and modification of parameters

i. Factory settings

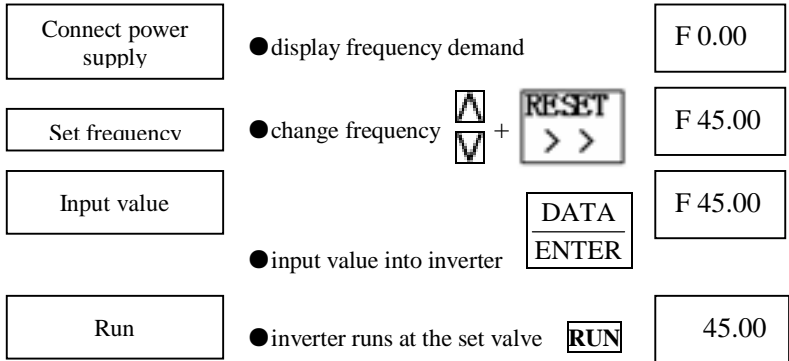
Item	Setting
frequency command input	This can be carried out on the input keypad
operation command input	This can be carried out on the input keypad
V/F curve	50Hz constant torque (standard motor)
acceleration and deceleration period	10 seconds

Notices to setting of constants

- Those modified constants shall be recorded and the stored final settings may assist in solving problems when carrying out maintenance and faults occur.*
- Modifications for torque upgrading and max. output frequency of motor and other motor control constants shall not be completed within one step. Small modifications may be made after understanding motor current, load and other motor status. A major modification for the settings may result in unfavorable influence over the inverter and other equipments.*

ii. Setting and changing of frequency demand

For example: set the frequency demand as 45HZ



Note: six-key and ten-key input keypads are similar in operation.

For six-key input keypad,

DRIVE
PRGM

 also functions as Enter.

For ten-key input keypad,



DRIVE
PRGM

 also functions as Enter for 11kW model and under.

(For models above 11kW,

DRIVE
PRGM

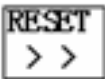


 doesn't function as Enter)

Note: if C----- occurs for models with concurrent function, press   then enter C-000 status for programming.

iii. Modification of constants and selection of functions

For example: Setting or changing of inverter acceleration and deceleration period.

The acceleration and deceleration period of the inverter is set to 10 sec. at factory. Now it is 15 sec.

In programming mode	$\frac{\text{DRIVE}}{\text{PRGM}}$	press it once and red lamp on the left flashes	C-000
Select function code group		acceleration code is the second function group and this key need to be pressed twice.	C-009
Read out original setting	$\frac{\text{DATA}}{\text{ENTER}}$	press once and original factory setting can be read out	10
Confirm value	$\frac{\text{DATA}}{\text{ENTER}}$	value is confirmed and written in inverter	C-009
Select deceleration code		Deceleration code is the same function group code. Use upward key for selecting.	C-010
Read out original setting	$\frac{\text{DATA}}{\text{ENTER}}$	Press it once and the original factory setting is read out.	10
Modification of parameters		Press the upward key to modify parameters.	15
Confirm values	$\frac{\text{DATA}}{\text{ENTER}}$	Values are confirmed and written in inverter	C-010
Exit programming status	$\frac{\text{DRIVE}}{\text{PRGM}}$	Press it once and lamp on the left side stops flashing	F50.00

V. Functional Schedule of Constants

function code			data code			
Group	function	range of settings	items being set	factory setting		
Basic function	00	LED display	0,1,2,3,4,5	0—frequency, 1—rotation speed, 2—current, 3—output voltage, 4—bus voltage, 5—feedback amount	0	
	01	frequency command	0,1,2,3,4,5,6	0—keypad, 1—analog, 2—automation A, 3—automation B, 4—serial interface, 5-X4, X5 terminal acceleration/deceleration control without memory, 6-X4, X5t terminal acceleration/deceleration control with memory	0	
	02	operation command	0,1,2	0—keypad, 1—terminal, 2—series interface	0	
	03	application macro option	0,1,2,3	0—standard, 1—process control, 2—pump control, 3—retaining	0	
	04	carrier frequency	0.5~16.0	kHz	8.0	
	1	*05	base frequency	30.00~600.0/3000	Hz	50.00
		*06	max. frequency	50.00~600.0/3000	Hz	50.00
		07	max. output voltage	0~100	%	100
		08	torque upgrading	0.0~40.0	%	8.0
	2	09	acceleration period	0.1~3000	second	10.0
		10	deceleration period	0.1~3000	second	10.0
		11	smooth period	0.0~40.0	second	0.0
	3	12	upper limit of frequency	0.0~100.0	%	100.0
		*13	lower limit of frequency	0.0~100.0	%	0.0

	*14	jog motion frequency	0.00~600.0 /3000	Hz	5.00
4	15	DC breaking starting frequency	0.00~5.00	Hz	0.00
	16	DC breaking torque	0.0~14.0	%	0.0
	17	DC breaking period	0.0~60.0	second	0.0
5	18	automatic voltage regulation	0,1	0—AVR out of effect , 1 — A V R in effect	0
	19	speed loss prevention option	0,1	0—in effect, 1-out of effect	0
	20	electronic thermister time delay relay	30~100	%	100
6	*21	skip frequency 1	0.00~600.0 /3000	Hz	0.00
	*22	skip frequency 2	0.00~600.0 /3000	Hz	0.00
	*23	skip frequency 3	0.00~600.0 /3000	Hz	0.00
	24	skip band width	0.50~5.00	Hz	1.00
7	25	motor	0.0~600.0	A	*
	26	main shaft rotation speed factor K	0.10~99.99		30.00
	27	Drift error compensation	0.0~10.0	%	0.0
	28	rated input voltage	0,1	0—380V, 1—220V	0
	29	torque compensation mode	0,1	0-corresponds to 08 code 1-corresponding to codes 75~86	0
	30	times of automatic retrial rotation	0~10		0
8	31	analog input option	0,1,2,3	0-0~5VDC,1-0~10VDC, 2-current,4~20mA,3-±10V	0
	32	analog meter output option	0,1,2	0-frequency, 1-current, 2-voltage,	0
	33	calibration factor of analog meter	0~100	%	100
9	34	low-speed-approaching signal output	0.1~600.0/3000	Hz	0.10
	35	high-speed approaching signal output	0.0~600.0/3000	Hz	50.00
	36	Y1 function	0~12	0- high-speed	0

10	37	Y2 function	0~12	approaching, 1- low-speed approaching,	1	
	38	Y3 function	0~12	2- operation, 3- stop, 4-DC breaking, 5- speed loss, 6- fault, 7- voltage deficiency, 8- restart, 9- Each stage of the multi-stage speed ends, 10- Each cycle of the multi-stage speed ends, 11-various speed, 12- constant speed	2	
	39	X4, X5 function	0, 1	0- 4 options for acceleration, 1- X4 is JOG, X5 is DC breaking In case that frequency command (code 01) is 5, 6, X4、 X5 are terminal acceleration and deceleration control. X4 is acceleration and X5 is deceleration.	0	
	11	40	1 st acceleration period	0.1~3000	second	10.0
		41	1 st deceleration period	0.1~3000	second	10.0
		42	2 nd acceleration period	0.1~3000	second	10.0
		43	2 nd deceleration period	0.1~3000	second	10.0
		44	3 rd acceleration period	0.1~3000	second	10.0
		45	3 rd deceleration period	0.1~3000	second	10.0
Function	*46	multi stage speed frequency 1	0.00~± 600.0 /3000	note : ± can be set with positive/negative rotation key	10.00	
	*47	multi stage speed frequency 2	0.00~± 600.0 /3000		2.00	
	*48	multi stage speed frequency 3	0.00~± 600.0 /3000		30.00	
	*49	multi stage speed frequency 4	0.00~± 600.0 /3000		20.00	
	12	*50	multi stage speed frequency 5	0.00~± 600.0 /3000		15.00

expansion		*51	multi stage speed frequency 6	0.00~± 600.0 /3000		35.00	
		*52	multi stage speed frequency 7	0.00~± 600.0/ 3000		50.00	
	13	53	multi-stage speed acceleration/deceleration period	0, 1	0 is controlled through this terminal and 1 is set respectively by codes C-061~ C-074	0	
14		54	multi-stage speed timing 1	0.1~4000	note:1:quantity of stages in the multi-stage of the software(that is automation A or automation B) Self-recognizing, that is auto recognizing. The quantity of stages in operation at that time is N-1 in case that the timing N is set to 0. For example, if a 5-stage speed auto operation is intended, then C—059 is set to 02; in case that C-054 is set to 0, then the multi-stage speed auto operation can't be put into operation.	3.0	
		55	multi-stage speed timing 2	0.1~4000		3.0	
		56	multi-stage speed timing 3	0.1~4000		3.0	
		57	multi-stage speed timing 4	0.1~4000		3.0	
		58	multi-stage speed timing 5	0.1~4000		3.0	
		59	multi-stage speed timing 6	0.1~4000		3.0	
		60	multi-stage speed timing 7	0.1~4000		3.0	
	15	61	multi-stage speed acceleration period 1	0.1~3000			10.0
		62	multi-stage speed deceleration period 1	0.1~3000			10.0
		63	multi-stage speed acceleration period2	0.1~3000			10.0
	64	multi-stage speed	0.1~3000		10.0		

		deceleration period 2			
	65	multi-stage speed acceleration period 3	0.1~3000		10.0
	66	multi speed-phase deceleration period 3	0.1~3000		10.0
	67	multi speed-phase acceleration period 4	0.1~3000		10.0
	68	multi speed-phase deceleration period 4	0.1~3000		10.0
	69	multi speed-phase acceleration period5	0.1~3000		10.0
	70	multi speed-phase deceleration period 5	0.1~3000		10.0
	71	multi speed-phase acceleration period6	0.1~3000		10.0
	72	multi speed-phase deceleration period 6	0.1~3000		10.0
	73	multi speed-phase acceleration period7	0.1~3000		10.0
	74	multi speed-phase deceleration period 7	0.1~3000		10.0
16	*75	frequency F0	0.1~600.0 /3000	Hz	0.10
	76	voltage V0	0~100	%	0
	*77	frequency F1	0.00~600.0 /3000	Hz	10.00
	78	voltage V1	0~100	%	20
	*79	frequency F2	0.00~600.0 /3000	Hz	20.00
	80	voltage V2	0~100	%	40
	*81	voltage F3	0.00~600.0 /3000	Hz	30.00
	82	voltage V3	0~100	%	60
	*83	frequency F4	0.00~600.0 /3000	Hz	40.00
	84	voltage V4	0~100	%	80
	*85	frequency F5	0.00~600.0 /3000	Hz	50.00
	86	voltage V5	0~100	%	100
17	87	serial number of auxiliary inverter station	0~98		0
	88	serial communication baudrate	0,1,2,3	0—4800, 1—9600, —19200, 3—28840	2 1

18	89	protection actuation history		last 10 fault signals memory	
	90	keypad lock-out	0,1,2	0-out of effect, 1-parameter lock-out, 2-parameter and set frequency lock-out	0
	91	data initialization	0,1	When it is set to 1, all data will be initialized to factory setting.	0
21	108	analog voltage restoring difference precision	0.0~4.0	%	0.0
	109	reverse lock-out	0, 1	0-out of effect, 1- effect	0
	110	shut-down mode	0, 1	0-shut down through deceleration, 1-shut down through sliding	0
	111	checking the parameters	0, 1	0-omitting parameter being checked, 1-checking parameters	1
	112	setting for current zero sampling	0~100	%	0
	113	Voltage compensation	0.0~20.0	%	0.0
	114	frequency command gain	0.0~100.0	%	100.0
	115	frequency command deviation	0.0~100.0	%	0.0

Note 1: $K \gg 60 * s / (p * n)$, wherein s: transmission difference ratio n: system deceleration ration p: Pole pair quantity of the motor.

Note 2: C-025, C-028, C-091 and C-112 function are set by the manufacturer, which should not be modified by users. Otherwise performance of the inverter shall be seriously affected!

Note 3: Functions in function group 19 and function group 20 are unavailable in the inverter.

* Note 4: C-004 frequency of high frequency inverters should not be adjusted manually and C014 is 10Hz; For high frequency inverters, C-005、C-006、C-013、C-014、C-021~C-023、C-034~C-035、C-046~C-052, the frequency range is 3000Hz.

VI. Description of functions

Function group 0

LED display

- 0—frequency(in operation mode, the screen displays operational frequency)
- 1—rotation speed (in operation mode, the screen displays the rotation speed)
- 2—current(in operation mode, the screen displays motor current)
- 3—output voltage(in operation mode, the screen displays output voltage.)
- 4—bus voltage(in operation mode, the screen displays bus wire voltage.)
- 5—feedback (in operation mode, the screen displays set frequency)

frequency command

Change frequency adjusting modes.

- 0—Keypad (frequency is changed through ascending and descending of keypad.)
- 1—Analog (Frequency is changed through variable input analog signals from FV1、FV2.)
- 2—Automation A (Only one cycle for the seven-stage speed of auto operation is carried out.)
- 3—Automation B (Seven speed-stage speed is in auto operation and this process is recycled until the stop signal is entered.)
- 4—serial interface (Inverter status is controlled through RS485 C/I)
- 5—X4、X5 are acceleration and deceleration control, there is no after-power-off memory. X4、X5 are acceleration-deceleration control and there is after-power-off memory. **Note: Item 2 and 3 correspond to function code C—046~C—074.**

Operation commands

Changing operation control mode

- 0—keypad (The operation controlling is achieved through function key on keypad.)
- 1—Terminal (The operation control is realized through FOR、REV and etc on the terminal.)
- 2—Serial interface (Inverter status is controlled through RS485 I/C.)

Macro options

Reserved.

Carrier frequency

Reducing the carrier frequency can reduce electronic distorted wave and current leakage from

the inverter as well as the heat discharge of the inverter, so the motor can operate more smoothly though operational noises of the motor may increase. Increasing the carrier frequency can reduce electromagnetic noises of the motor but can increase heat discharge of the inverter and, in some serious cases, may result in damages of the inverter. Generally, for an inverter of 15kW-37kW its suitable carrier frequency shall be under 8kHz and an carrier frequency over 10kHz is forbidden.

For an inverter of 45kW or above, its frequency shall not be above 4kHz.

Function group 1

C-005

Base frequency

When operating frequency reaches this frequency setting, the inverter may output set voltage. (see item C—007)

For any particular requirement concerning this setting from users, please clarify them in the order.

C-006

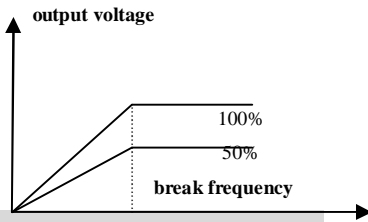
Max. frequency

It is user-intended max. frequency. For example, a user want the max. frequency of his inverter to be 120Hz and then this item shall be set to 120Hz.

C-007

Max. output voltage

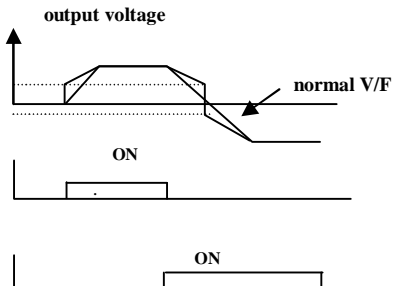
When an inverter operates to the set max. frequency, the ratio between output voltage and input voltage. 100%



C-008

Torque Increase

Increase output torque of the inverter. This value shall not be too high. Otherwise the rotation speed of the rotation speed of the motor may be unstable or inverter protection is frequently actuated or, in some serious cases, the inverter may be damaged.



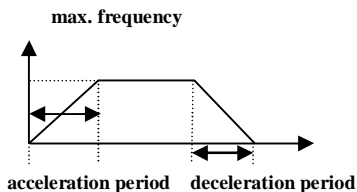
Function group 2

C-009 Acceleration period

It is the time required by the motor from zero speed operation to max. speed operation.

C-010 Deceleration period

It is the time required by the motor
From zero speed operation to max. speed
Operation.



C-011 Smooth period

Its range is 0.0-40.0 second.

Function group 3

C-012 Upper limit of frequency

Ratio of max. frequency(C-006)

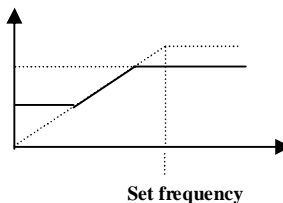
C-013

Frequency upper limit

Frequency lower limit

It is percentage of the max. frequency (item C-006). For example, when max. frequency is set as 100Hz and upper limit of frequency 80% and lower limit of frequency 20%, the max. operational frequency of the inverter is 80Hz. Under this condition, the min. operational frequency of the inverter is 20Hz if there is any rotational signal for it.

Output frequency



C-014 Jog motion frequency

This parameter sets the output jog motion frequency of the AC motor when the AC motor driver receives a jog motion command.

Function group 4

C-015 DC breaking initial frequency

When setting this value, the inverter will block the tri-phase AC output and send randomly a DC current voltage at either two of the three phases so as to prevent the motor from continuing its low-speed operation when the inverter ceases its output.

(see C—016、C—017)

C-016 DC breaking torque

This function can cause the motor to stop rapidly by leading DC voltage to the motor. The max. output voltage of the inverter is the base value.

C-017 DC breaking period

It is the period set for maintaining the DC breaking voltage.

Function group 5

C-018 Automatic voltage regulation

When is set to “1”, C-113 is in effect.

C-019 Speed loss prevention option

During starting when the current reaches the set value, the inverter will keep its present frequency until the current falls below the set value. Then the frequency of the inverter continues to grow.

During stopping when the voltage reaches the set value, the inverter will keep its present frequency until the voltage falls below the set value. Then the inverter continues to fall.

C-020 Electronic thermister time delay relay

It is used to adjust sensitivity of the overload protection.

For example, when it is set 70%, the setting for the overload protection $I = I_E * 150% * 70% = 105%$.

I_E is one minute

Function group 6

C-021 skip frequency 1

This function can cause the motor to jump over those frequency bands of unstable rotation speed or avoid a resonant area which is formed in certain frequency band together with other machinery.

C-022 Skip frequency 2

It is the same as C-021.

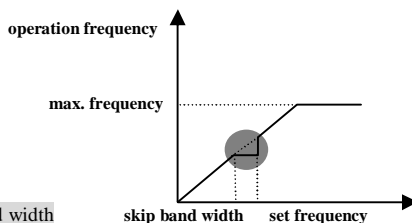
C-023 skip frequency 3

It is the same as C-021.

C-024 Skip frequency band width

It is used to set skip frequency band width.

For example, when skip frequency is set to 10.00Hz and this is set to 5.00Hz, then the inverter shall not operate in 7.50~12.50Hz.



Function group 7

C-025 Motor

It is used to set rated current of the inverter.

C-026 Main shaft rotation speed factor K

The inverter will indicate actual rotation speed of the machinery with min. speed of 1 rpm through adjust this item. (please refer to note 1)

C-027 Drifting error compensation

It is used to compensate for speed drop caused by motor loading.

For example, if the current indicated by the inverter is 0.8Ie and then the upper limit of the frequency is set to 50Hz and the drifting error compensation is set to the actual operating frequency of the inverter is $F=50\text{Hz}+50*10\%*0.8=54\text{Hz}$.

C-028 Rated input voltage

The input voltage is indicated on the panel of the inverter.

C-029 Torque compensation mode

See C-008, C-075~C-086 for more comprehensive information.

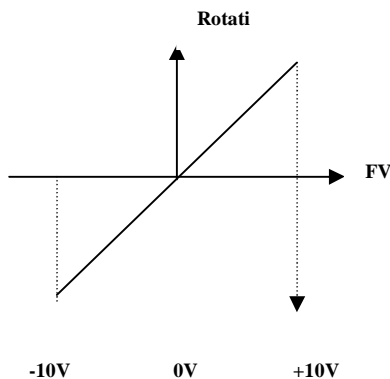
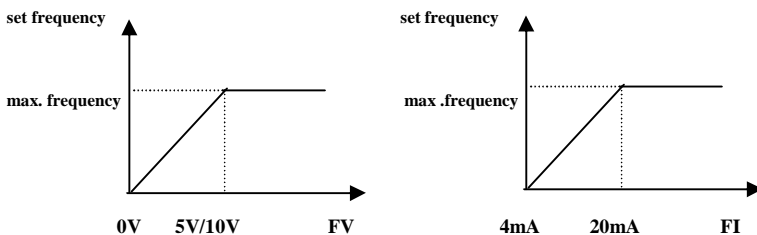
C-030 Times of automatic re-trial rotation.

The range is within 0-10 times.

Function group 8

[- 031] Analogue quantity input option

This shall be determined according to types of external analog signal.



[- 032] Analog meter output option

This can be set according to the type of the analog meter between FM and FC. If a frequency meter is connected between FM and FC, this shall be set to "0". If a current meter is connected between FM and FC, this shall be set to "1". If a voltage meter is connected between FM and FC, this shall be set to "2"(range of voltage meter is $\leq 5V$).

[- 033] Calibration factor for analog meter

The indication of the analog can be calibrated by adjusting analog signal output of FM.

Function group 9

C-034 Speed approaching signal output

When the operational frequency reaches the set frequency, Y1 and Y2 and Y3 send out the turn on/off signals. (see C-036, C-037 and C-038 for comprehensive information)

C-035 Speed approaching signal output

It is the same as C-034.

Function group 10

C-036 Y1 function Collector open circuit

Before the signal reaches the set condition it is in open status and upon reaching the set conditions it is connected. It becomes open after fault signals occur.

C-037 Y2 function Collector open circuit

Before the signal reaches the set condition it is disconnected and when reaching the set conditions it is connected. It is disconnected after a fault signal occur.

C-038 Y3 function Collector circuit disconnected

Before the signal reaches the set condition it is disconnected and upon reaching the set conditions it is connected. It is disconnected after fault signals occur.

C-039 X4, X5 function

If C-002 is set to "1" and this item is set to "0", the acceleration period and the deceleration period shall be determined by "C-009, C-010, C-040~C-045".

For example, if C-002 is "1" and C-039 is "0", the acceleration and deceleration period shall be the following: They shall be decided by "C-009, C-010" when neither X4 nor X5 is connected with SC. They shall be decided by "C-040, C-041" if X4 is connected with SC. They shall be decided by "C-042, C-043" if X5 is connected with SC. They shall be decided by "C-044, C-045" if X4 and X5 are both connected with SC.

Function group 11

C-040 No.1 acceleration period

The period needed by the motor from zero speed to max. speed. (see C-039)

C-041 No.1 deceleration period

The period needed by the motor from zero speed to max. speed. (see C-039)

C-042 No.2 acceleration period

It is the same as C-040.

C-043 No. 2 deceleration period

It is the same as C-041.

C-044 No.3 acceleration period

It is the same as C-040.

C-045

No. 3 deceleration period

It is the same as C-041.

Function group12

C-046

Multi-stage speed frequency 1

When the inverter is in auto operation(see C-001 for comprehensive information), the first frequency-division in which the inverter is operating or X1 and SC are connected shall be the set frequency in which the inverter shall operate.

C-047

Multi-stage speed frequency 2

When the inverter is in auto operation(see C-001 for comprehensive information), the second frequency-division in which the inverter is operating or X2 and SC are connected shall be the set frequency in which the inverter shall operate.

C-048

Multi-stage speed frequency 3

When the inverter is in auto operation(see C-001 for comprehensive information), the third frequency-division in which the inverter is operating or X1 and X2 are connected with SC at the same time shall be the set frequency in which the inverter shall operate.

C-049

Multi-stage speed frequency 4

When the inverter is in auto operation(see C-001 for comprehensive information), the fourth frequency-division in which the inverter is operating or X3 and SC are connected shall be the set frequency in which the inverter shall operate.

C-050

Multi-stage speed frequency 5

When the inverter is in auto operation(see C-001 for comprehensive information), the fifth frequency-division in which the inverter is operating or X1 and X3 are connected with SC at the same time shall be the set frequency in which the inverter shall operate.

C-051

Multi-stage speed frequency 6

When the inverter is in auto operation(see C-001 for comprehensive information), the sixth frequency-division in which the inverter is operating or X2 and X3 are connected with SC at the same time shall be the set frequency in which the inverter shall operate.

C-052

Multi-stage speed frequency 7

When the inverter is in auto operation(see C-001 for comprehensive information), the seventh frequency-division in which the inverter is operating or X1 and X2 and X3 are connected with SC at the same time shall be the set frequency in which the inverter shall operate.

Function group 13

C-053

Multi-stage speed acceleration and deceleration period

If this item is set to “0”, the acceleration period and the deceleration period shall be decided by “C-009, C-010, C-040~C-045”. If this item is set to “1”, the acceleration period and the deceleration period shall be decided by “C-061~C-074”.

Function group 14

C-054

Multi-stage speed timer 1

It is the operating period in the frequency 1 (C-046) of the multi-stage speed (including acceleration period and deceleration period).

C-055

Multi-stage speed timer 2

It is the operating period in the frequency 2(C-047) of the multi-stage speed frequency 1(including acceleration period and deceleration period).

C-056

Multi-stage speed timer 3

It is the operating period in the frequency 3(C-048) of the multi-stage speed frequency 1(including acceleration period and deceleration period).

C-057

Multi frequency-division timer 4

It is the operating period in the frequency 4(C-049) of the multi-stage speed frequency 1(including acceleration period and deceleration period).

C-058

Multi-stage speed timer 5

It is the operating period in the frequency 5(C-050) of the multi-stage speed frequency 1(including acceleration period and deceleration period).

C-059

Multi-stage speed timer 6

It is the operating period in the frequency 6(C-051) of the multi-stage speed frequency 1(including acceleration period and deceleration period).

C-060

Multi-stage speed timer 7

It is the operating period in the frequency 7(C-052) of the multi-stage speed frequency 1(including acceleration period and deceleration period).

Function group 15

C-061

Multi-stage speed acceleration period 1

The period needed by the motor from zero speed to the frequency set by multi-stage speed frequency 1(C-046).(note: C-053 shall be set to 1)

C-062

Multi-stage speed acceleration period 1

The period needed by the motor from the frequency set by multi-stage speed frequency 1 (C-046) to zero speed .

C-063

Multi-stage speed acceleration period 2

The period needed by the motor from zero speed to the frequency set by multi-stage speed frequency 2(C-047).(note: C-053 shall be set to 1)

C-064

Multi-stage speed deceleration period 2

The period needed by the motor from the frequency set by multi-stage speed frequency 2 (C-047) to zero speed .(note: C-053 shall be set to 1)

C-065

Multi-stage speed acceleration period 3

The period needed by the motor from zero speed to the frequency set by multi-stage speed frequency 3(C-048).(note: C-053 shall be set to 1)

C-066

Multi-stage speed deceleration period 3

The period needed by the motor from the frequency set by multi-stage speed frequency 3 (C-048) to zero speed .

C-067

Multi-stage speed acceleration period 4

The period needed by the motor from zero speed to the frequency set by multi-stage frequency 4(C-049).(note: C-053 shall be set to 1)

C-068

Multi-stage speed deceleration period 4

The period needed by the motor from the frequency set by multi-stage speed frequency 4 (C-049) to zero speed .

C-069

Multi-stage speed acceleration period 5

The period needed by the motor from zero speed to the frequency set by multi-stage frequency 5(C-050).(note: C-053 shall be set to 1)

C-070

Multi-stage speed deceleration period 5

The period needed by the motor from the frequency set by multi-stage speed frequency 5 (C-050) to zero speed .

C-071

Multi-stage speed acceleration period 6

The period needed by the motor from zero speed to the frequency set by multi-stage speed frequency 6(C-051).(note: C-053 shall be set to 1)

C-072

Multi-stage speed deceleration period 6

The period needed by the motor from the frequency set by multi-stage speed frequency 6 (C-051) to zero speed .

C-073

Multi-stage speed acceleration period 7

The period needed by the motor from zero speed to the frequency set by multi-stage speed frequency 7(C-052).(note: C-053 shall be set to 1)

C-074

Multi-stage deceleration period 7

The period needed by the motor from zero speed to the frequency set by multi-stage speed frequency 7 (C-052) to zero speed .

Function group 16

C-075

F0 Frequency F0

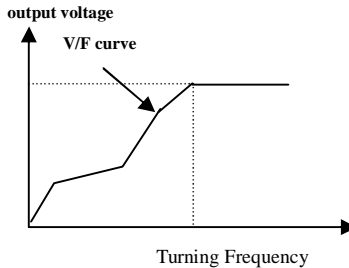
The inverter output V/F curve may be changed by means of (C-075~C-86). In those special circumstances where belt transmission are suitable, there is no need for adjusting the motors. Otherwise performance of the motors may be affected.

C-076

voltage V0

C-077

frequency F1



C-078

voltage V1

C-079

frequency F2

C-080

voltage V2

C-081

frequency F3

C-082

voltage V3

C-083

frequency F4

C-084

voltage V4

C-085

frequency F5

C-086

voltage V5

Function group 17

[- 087]

Auxiliary station series number

It is the inverter station series number set for R485 communication.

[- 088]

Baudrate of serial communication

It is the data transmission rate set for R485 communication.

Function group 18

[- 089]

Protection actuation history

It storages the last 10 fault signals of the inverter.

[- 090]

Keypad lock-out

Frequencies and parameters can be locked out by this item so as to prevent irrelevant people from modifying inverter parameters.

[- 091]

Initialization of data

When this is set to "1", all data shall be restored to factory settings.



Caution:

The functions indicated by function group 19 and 20 are not available within the inverter. Additional components shall be purchased.

Function group 21

[- 108]

Restoring difference precision is 0.0~4.0%

In case of X% of changing in the analog input and input signal, the frequency shall remain unchanged.

[- 109]

Reversing lock-out 0~out of effect, 1~in effect

When this is set to "1", reversing of keypad or terminal operation is out of effect. This is used in reversing-forbidden occasions.

[- 110]

Shut-down mode

In case that this is set to "1", when the motor is being shut down, the speed of motor will decrease as the inverter frequency decreases. If this is set to "1", when the motor is being shut down, the inverter will block its output once the shut down signal is given. and then the motor will stop.

[- 111]

Checking of parameters

0~omitting checking of CPU fault, 1~checking CPU fault.

[- 112]

Zero-point-designating for current sampling

It is used to set the zero voltage indicated by the current. (Users are not allowed to modify this item without obtaining the company personnel's approval.)

E-113 Voltage compensation

When the load increases, the output voltage shall be increased to keep sufficient torque output. The output voltage shall not be too high. Otherwise it will cause unstable output torque of the inverter.

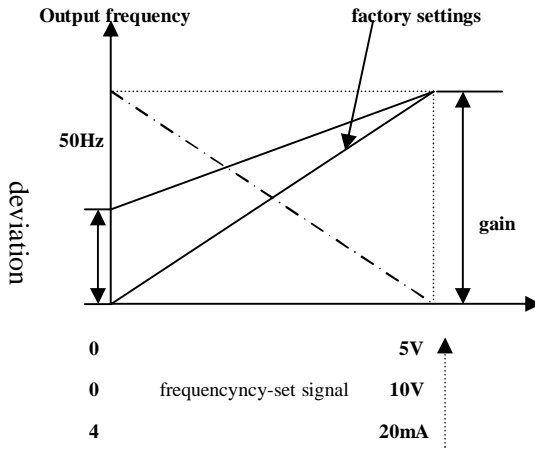
E-114 Frequency command gain

The gain of the output frequency corresponding to analog input(5V, 10V, 20mA) are shown in the diagram below.

E-115 Frequency command deviation

Analog input(0V, 4mA) corresponds to deviation of the same size as the output frequency.

Note: A random setting may be used to correspond to output of frequent-set signal(0~5V, 0~10V or 4~20mA). See the diagram below for values of the frequency (inclination).



It can also be designated in this way.

VII. Description of fault indication functions

1. Description of faults:

No.	function	indication	description	actuation guarantee
1	instantaneous overcurrent	EOCn	overcurrent during constant speed operation	In case that the inverter output is closed, the inverter will be in alarm state and indicate signals until a restoration signal is applied to the inverter. After restoration, the content of the fault shall be stored in C-090.
		EOCA	over-current during acceleration	
		EOCd	overcurrent during deceleration	
2	overloading protection	E OL	over-current protection of motor	
3	over-voltage	E OU	over-current of power network	
4	undervoltage	E LU	voltage deficiency	
5	overheating protection	E OH	overheating protection of heat dissipater	
6	CPU fault	EXXX	The last digits represent on functional code which indicates that the data is fault and the code shall be reset after restoration.	

2. Troubleshooting

indication	item	measures
EOCA	① main power (its fluctuation is within permitted range)	The voltage of main power shall be adjusted suitable
	②phase fault or phase touchdown fault in output circuit	Check wiring and motor windings.
	③torque upgrading (being upgraded too much)	It shall be adjusted suitable.
	④acceleration period(set period too short)	It shall be adjusted suitable.
	⑤others	Inverter of bigger capacity shall be used.
EOCd	① Main power(its fluctuation is within permitted range)	The main power voltage shall be adjusted suitable.
	②phase fault or phase touchdown fault in output circuit	Check wiring and motor windings.
	③deceleration period(set period too short)	It shall be adjusted suitable.
	④others	Inverter of bigger capacity shall be used. External breaking resistances shall be used.
EOCn	① Main power(its fluctuation is within permitted range)	The main power voltage shall be adjusted suitable.
	②phase fault or phase touchdown fault in output circuit	Check wiring and motor windings.
	③abrupt change in load	Eliminate load fluctuation
	④others	Check sources and passages of noises.
E OL	overloading	Reduce load or use inverter and motor with bigger capacity.
E OH	① environmental temperature(variations within permitted range)	Install inverter in suitable environment.
	②chiller fan(fault)	Replace
	③overloading condition(overload)	Reduce load or use inverter or motor of bigger capacity.
E LU	① main power(its fluctuation within permitted range)	The main power voltage shall be adjusted suitable.
	②phase-losing of main power	Check wiring and motor windings.
	③electromagnetic contactor or MCCB	Confirm reliable actuation
	④others	Check the capacity of main power
-TL-	external disturbance	Separate the control line and the strong current line.

VIII. Maintenance and inspection

VG3000 series inverter governor are electronic products made with latest hi-tech semi-conductor components to be used as manufacture power control. They may be affected by temperature, moisture, vibration and other conditions or prolonged period of time and they are subjected to various faults. In order to prevent any possible faults and make full use of the unit, daily maintenance shall be paid utmost attention.

1. Inspection points

inspection category	item	requirements	measures
environment	main power	input voltage 220V, 380V	measured implemented
	environmental temperature	-10℃~+45℃	
	environmental moisture	≤90%RH, no condensation	
	vibration	≤0.5G	
others	noise	check noise of chiller fan bearing	replace
	flavor	check if there is any burning flavor	replace
	dust	check if there is any dust in chiller fan or in heat dissipater.	Clean away.
	connector	check if it is loose	tighten it
	screw	check if it is loose or rusty	tighten or replace it

2. Replace components at regular intervals

The service life of the inverter shall depend on the installing environment and its operating hours. When operating continuously in permitted temperature range, the estimated service life of the capacitor and the fan are 5 year and 3 year respectively. It suggested that these components be replaced before their expiration date.

3. Pay attention to the following while carrying out maintenance

1 The operator shall directly confirm status of input main power of the inverter when carrying out maintenance for the product.

1 There may be remaining high pressure in the main circuit electrolytic capacitor of the inverter after the main power is shut off. Don't operate the unit until the remaining voltage in the electrolytic capacitor has been totally discharged.

1 When measuring the output voltage of the inverter directly, rectification type AC voltage meter shall be used, because fault handling or inaccurate display are subjected to occur when general purpose voltage meters or digital voltage meters are used in measuring high frequency impulse voltage.



Caution:

Confirm the main power has been turned off and don't carry out inspection until "CHARGE" is off.

IV. Other matters to be noted

1. All the electricity meter on the master board shall not be adjusted unless approvals of technical personnel of our company are obtained.
2. In case of trip-out of the inverter, inspect the unit and remedy the trouble. Don't restart the inverter until the abnormalities are eliminated. Wait until inverter display disappears completely after the inverter main power is turned off. Otherwise the inverter may be damaged.
3. In case of an above-6-class motor or an deep water submerged pump, capacity of the inverter should be increased.
4. Please contact the manufacturer in case that any change in profile of the inverter or any function amendments are required.

Note: Due to limited time to, further announcements shall not be made for any change in designation or this instruction manual aiming at improving product performance. Please contact us through telephone upon purchasing our products.

Appendix A: Specifications

Technical specifications

item		contents
input power	main	rated voltage
		rated frequency
output		control mode
		rated voltage
		frequency range
		frequency precision
		voltage/frequency
		overloading capacity
function		frequency setting
		stopping operation
		acceleration and deceleration period
		external control
protection		
indication	frequency indication	
	abnormality indication	
surroundings	environmental temperature	
	environmental temperature	
condition	vibration	
	form	
structure	chilling mode	

Appendix B: RS485 communication

In order to cater to technological advancement, our company also developed RS485 communication. It may be implemented easily in user procedures during factory automation. It is possible to carry out computer monitoring and parameter amending with RS485 communication.

RS485 communication may be installed in WIN98 operational system and its people-machine dialogue interface is simple and convenient. RS485 communication makes it possible to control multi inverters (0-99) by only one personnel through one computer and to change parameters of one or more inverters. So we are fully prepared for factory automation.

Its installation is very simple. C-001(frequency command) is set to 4-serial interface and C-002(operation command) as 2-serial interface and C-088(serial communication baudrate) may be set according to user requirements.

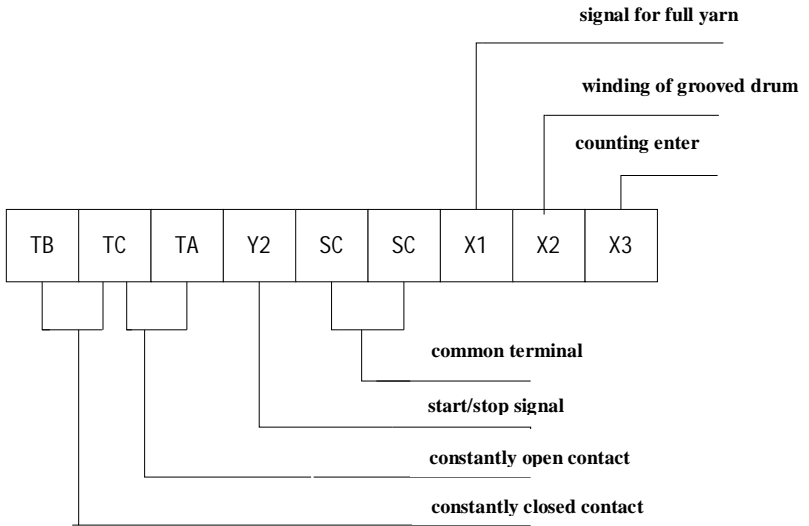
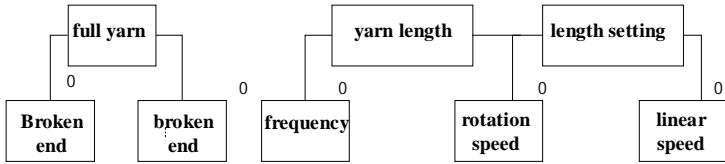
Note: In case that this function is needed, please clarify this upon ordering!

Appendix C: Code sheet for textile machinery inverters

		function code		data code	
		description of function		set content of the data	factory setting
0	0	LE D display	0, 1, 2, 3, 4	0-frequency(HZ) , 1-rotation speed (rpm), 2-linear speed(m/min.), 3-actual spinning length(m), 4-set length(m)	0
	1		0.1~599.99	rotation speed=rotation speed display factor*output frequency	30
	2	rotation display factor	0.1~599.99	linear speed= linear speed display factor*output frequency	30
	3	linear speed display factor	0.001~ 9.999	recorded length=spinning length recording factor *counter reading	0.1
	4	Spinning length recording factor	0.500~1.000	actual spinning length=recorded length, grooved drum sliding factor.	1
	5	grooved drum sliding factor	0~60000	Actual spinning length and memory is kept after power-off. The memory may be ?be modified.	0
	6	actual spinning length	0~60000	m	10000
1	7	delta wave upper limit frequency	0.10~600.0	Hz	50
	8	delta wave	0.00~600.0	Hz	40

		lower limit frequency			
	9	delta wave anti-overlapping interval	1.0~10.0	second	5
2	10	acceleration period	0.1~3000.0	second	10
	11	acceleration period	0.1~3000.0	second	10
	12	base frequency	50.0~600.0	Hz	50
	13	max. frequency	50.0~600.0	Hz	50
	14	max. output voltage	0~100	%	100
	15	torque upgrading	0~40.0	%	8
	16	carrier frequency	0.5~16.0	Hz	8
	17	DC breaking torque	0~20	%	0
	18	DC breaking period	0.1~60	second	0
3	19	protection actuation history			
	20	keypad lock-out	0, 1	0-out of effect , 1-parameter lock-out	
	21	data initialization	0, 1	When it is set to 1, all data shall be initialized to their factory settings.	

Modifications made on keypad indicating lamps:



Appendix D: Standards and Specifications of series products

Model G	rated voltage	Rated current	Capacity	Motor power (HP)	motor (kW)
VG3000-P75-2G	220 V	4A	1.9 kVA	1	0.75 kW
VG3000-1P5-2G	220 V	7A	3 kVA	2	1.5 kW
VG3000-2P2-2G	220 V	10A	4 kVA	3	2.2 kW
VG3000-P75-4G	380 V	2.5A	1.9 kVA	1	0.75 kW
VG3000-1P5-4G	380 V	4A	3 kVA	2	1.5 kW
VG3000-2P2-4G	380 V	5.8A	4.2 kVA	3	2.2 kW
VG3000-3P7-4G	380 V	8.5A	6.5 kVA	5	3.7 kW
VG3000-4P0-4G	380 V	10A	8.5 kVA	5.4	4.0 kW
VG3000-5P5-4G	380 V	12.5A	10 kVA	7.5	5.5 kW
VG3000-7P5-4G	380 V	18A	13 kVA	10	7.5 kW
VG3000-11P0-4G	380 V	23A	19 kVA	15	11 kW
VG3000-15P0-4G	380 V	33A	26 kVA	20	15 kW
VG3000-18P5-4G	380 V	40A	32 kVA	25	18.5 kW
VG3000-22P0-4G	380 V	46A	38 kVA	30	22 kW
VG3000-30P0-4G	380 V	60A	46 KVA	40	30 kW
VG3000-37P0-4G	380 V	75A	57 KVA	50	37 kW
VG3000-45P0-4G	380 V	90A	63 KVA	60	45 kW
VG3000-55P0-4G	380 V	105A	75 KVA	74	55 kW
VG3000-75P0-4G	380 V	137A	115 KVA	100	75 kW
VG3000-90P0-4G	380V	175A	165 KVA	120	90 kW
VG3000-110P0-4G	380V	205A	200 KVA	147	110 kW
VG3000-130P0-4G	380V	255A	250 KVA	174	130 kW
VG3000-160P0-4G	380V	305A	300 KVA	214	160 kW

Model H	Rated voltage	Rated current	Capacity	motor (HP)	motor (kW)
VG3000-P75-2H	220 V	4A	1.9 KVA	0.5	0.75 kW
VG3000-1P5-2H	220 V	7A	3 KVA	1	1.5 kW
VG3000-2P2-2H	220 V	10A	4 KVA	2	2.2 kW
VG3000-P75-4H	380 V	2.5A	1.9 KVA	0.5	0.75 kW
VG3000-1P5-4H	380 V	4A	3 KVA	1	1.5 kW
VG3000-2P2-4H	380 V	5.8A	4.2 KVA	2	2.2 kW
VG3000-3P7-4H	380 V	8.5A	6.5 KVA	5	3.7 kW
VG3000-4P0-4H	380 V	10A	8.5 KVA	5.4	4 kW
VG3000-5P5-4H	380 V	12.5A	10 KVA	7.5	5.5 kW
VG3000-7P5-4H	380 V	18A	13 KVA	10	7.5 kW
VG3000-11P0-4H	380 V	23A	19 KVA	15	11 kW
VG3000-15P0-4H	380 V	33A	26 KVA	20	15 kW
VG3000-18P5-4H	380 V	40A	32 KVA	25	18.5 kW
VG3000-22P0-4H	380 V	46A	38 KVA	30	22 kW
VG3000-30P0-4H	380 V	60A	46 KVA	40	30 kW
VG3000-37P0-4H	380 V	75A	57KVA	50	37 kW
VG3000-45P0-4H	380 V	90A	63 KVA	60	45 kW

VG3000-55P0-4H	380 V	105A	75 KVA	74	55 kW
VG3000-75P0-4H	380 V	137A	115 KVA	100	75 kW
VG3000-90P0-4H	380V	175A	165 KVA	120	90 kW
VG3000-110P0-4H	380V	205A	200 KVA	147	110 kW
VG3000-130P0-4H	380V	255A	250KVA	174	130 kW
VG3000-160P0-4H	380V	305A	300 KVA	214	160 kW

Appendix E: Breaking resistance

voltage	Inverter power kW	applied resistance specification	breaking torque %	quantity	min. resistance
3	0.75	200W400 Ω	125	1	250 Ω
	1.5	400W400 Ω	125	1	250 Ω
8	2.2	400W250 Ω	125	1	150 Ω
	3.7	800W120 Ω	125	1	100 Ω
0	5.5	900W100 Ω	125	1	85 Ω
	7.5	1000W80 Ω	125	1	65 Ω
V	11	1000W70 Ω	125	1	60 Ω

Note: For an inverter above 15kW, an external breaking unit should be equipped before fitting the breaking resistance when fast shut-down is required.

Appendix F: User Feedback Information & Guarantee Card

- 1 Our company will repair or replace Talent products due to quality problems;
- 2 The guaranteed period for Talent products is one year since it is delivered.
- 3 Our company won't be responsible for Talent product problems due to improperly operation or not being in compliance with the product instruction manual.
- 4 If Talent products are dismantled without approval of our technical department, our company won't be responsible for any problems therein.
- 5 Please contact with us promptly in case any damages to the goods occur during transportation process.

User Information Feedback & Guarantee Card

designation		model	
series number		delivery date	
Application:	industry		equipment
date of installation		date of trial run	
Date of production operation	_____ (date) to _____ (date)		
Operation record:			

Please fill in this sheet and keep it well! One card is exclusively for each inverter. Guaranteed repairs will only be performed upon presentation of the card!