



Hyundai's Technology for the Best

High performance inverter for efficient business design the best future with **FRUN N** 700 series



RUN 700 Series with Powerful Control Solution

| Excellent Applicability to Various Loads |

| Easy Maintenance & Simple Repair |

| High Reliability & Durability |

| Compliance with RoHS |

| Lower Audible Noise |



HYUNDAI's Inverter N700 series can be applied to various loads requiring precision and powerful control thanks to its excellent durability, speed and torque response.

Strong torque restriction function protects the machines from external torque changes.

The N700 series is compliant with RoHS directive and international safety standards such as CE, UL and cUL.



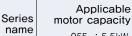
Model Name Indication

Model Name Indication

N700







055 : 5.5kW 1,320:132kW

> Power source L: 3-Phase, 220V H: 3-Phase, 440V

> > With digital operator

Model Configuration

plicable mo apacity(kW	3-Phase, 220V	3-Phase, 440V
5.5	N700-055LF	N700-055HF
7.5	N700-075LF	N700-075HF
11	N700-110LF	N700-110HF
15	N700-150LF	N700-150HF
18.5	N700-185LF	N700-185HF
22	N700-220LF	N700-220HF
30	N700-300LF	N700-300HF
37	N700-370LF	N700-370HF
45	N700-450LF	N700-450HF
55	N700-550LF	N700-550HF
75		N700-750HF
90		N700-900HF
110		N700-1100HF
132		N700-1320HF



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:: Improved Control Performance

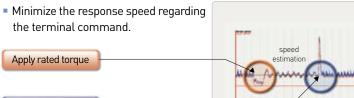
Advanced Sensorless Vector Control at Ultra Low Speed

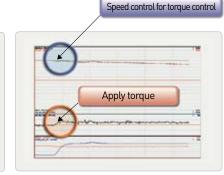
- Excellent control performance with all machines thanks to the improvement of torque characteristics at low speeds.
- Sensorless vector control
 :200% or greater at 0.5Hz
- Sensored vector control :150% or greater at 0Hz



Excellent Response Speeds and Toque Control Performance

- Improvement of the torque response characteristic minimizes the speed deviation when the load is changed.
 (Quick response to a sudden load change is realized.)
- Strong torque restriction function (adjustable 0~200%) can protect the machine from external unexpected load changes.





▶ Improved torque response characteristics

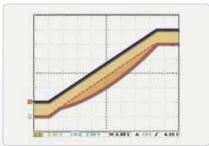
▶ Protection of machinery by torque restriction function

Improvement of Reduced Torque Characteristic

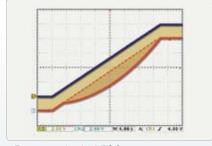
 Reduced torque characteristic (VP2.0 power) is added for softer motor operation.

After torque removal

 Optimization for energy saving by the characteristic of loads is achieved.



▶ Energy-saving by VP1.7 power



▶ Energy-saving by VP2.0 power

Expansion of Multi-speed Control Function

- Besides the basic accel.-decel. time, a maximum of 7 individual accel.-decel. time settings are available.
 With terminal input only, you can change the accel-deceleration time, which gives more precise control.
- Three step accel.-decel. time setting is possible.

Stable and Strong Torque Operation

 As users may select either speed control or torque control at their convenience, they can apply N700 inverters to various applications (Vector Control).

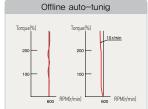
Expansion in The Field Weakening Operation Range

• The field weakening operation range where the maximum torque operation can be made is extended to 320Hz.

Advanced Online, Offline Auto-tuning

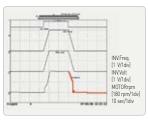
- Online and offline auto-tuning for sensorless control
- Even in case of offline auto-tuning, the characteristic of the torque and speed control is excellent.
- (Regardless of the load conditions, auto-tuning can be performed)
- In case of online auto-tuning, precise operation can be realized through the automatic compensation for motor constant method even when the motor's temperature changes.



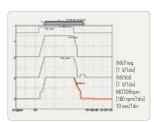


Improved DC Brake Function

 Improved brake characteristic at stop command by upgrading the DC brake function.



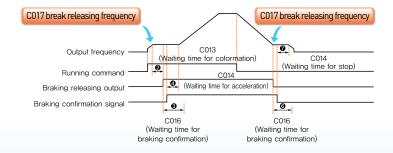




- ▶ Deceleration stop
- ▶ Free run stop
- ▶ DC braking

External Brake Control Function for Elevator

By using the external brake for the elevator application, safe and detailed control on all the variables is realized. The operating speed can be changed



High Quality Voltage and Current

according to the load.

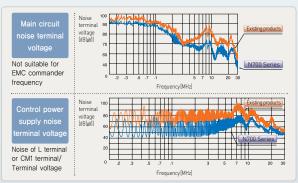
- Even if the incoming voltage fluctuates, the AVR function keeps the output voltage constant to the motor.
- The 'Trip Avoidance Function' to control the over-current and over-voltage helps supply the high quality of power source to the motor.

Automatic Speed Search after Unexpected Interruption of Input Power

- The inverter and motor can be safely restarted or protected by FRS and RETRY function.
- Variable speed search restart mode can be selected for safe driving.
- By using the frequency matching restart and speed search function, the inverter can match the motor's speed after unexpected power failure.

IGBT Temperature Check

The temperature of IGBT (core part of inverter) is checked and displayed.



[Reduction effect of noise and leakage current generated by inverter]

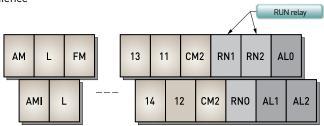
:: Easy Operation and Maintenance

Various Inverter Display Functions

- All the data of the inverter are displayed on the monitor.
- The trip data of each phase are displayed in case of input phase loss and output short
- Temperature on the IGBT
- Others (In-Out voltage, current, frequency, DC voltage, input power, RPM of motor, rotation direction, frequency change, PID Feedback, accumulated operating time (hour, minute), total power up time (hour, minute), error and trip count display)

RUN(0,1,2) Relay Control Terminal Added

Run output terminals (RN0,1,2) are added for user's convenience



12 User Group Codes

 Users can save the preferred codes (Max. 12) for fast and easy operation and set or adjust data in accordance with the characteristics of the loads.

Convenient Operation

- Operator
- Large LED and convenient settings (code/parameter)
- Noise resistant design (Max. 10m cable)
- OPE-N7 (standard) has parameter copy function.

Maintenance

 Detachable cooling fan and independent DC bus capacitor make replacement and maintenance easy and simple



Adoption of detachable control circuit terminals



:: Flexible Adaptability for Various Environments

Various Environments

- Noise
- Noise filter (EMC filter) is optional
- · Realization of low noise in the main and control circuit by adopting the circuit simulation technology
- Harmonic
- AC and DC reactor for harmonic restriction is optional

Built-in BRD Regenerative Braking Circuit

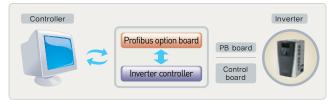
BRD regenerative circuit is built-in (5.5 ~ 22kW)

Powerful Communication Mode

- Circuit and individual terminals for RS485 / RS232C / CAN communication
- RS485 communication with mod bus-RTU protocol can control up to 32 inverters

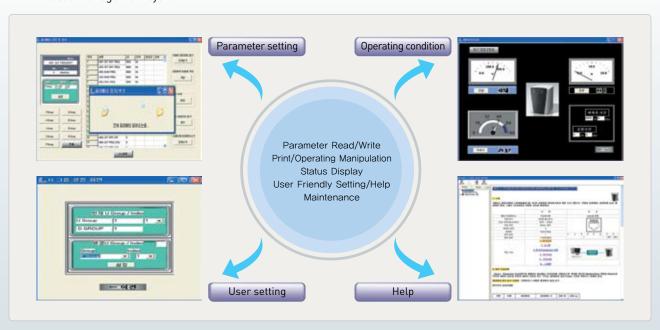


- Profibus (Option)
- Connectable with PLC/ DCS / SCADA
 [Easy application thanks to supply of product profile (GSD)]
 GSD: Generic Station Description
- Card built-in type (does not require additional power board)



Various Environments

- HIMS (Hyundai Inverter Management System)
- PC based management system



:: Various Load Compatibility | N700 series inverters can be applied to various loads. | Just by selecting the preset code by load, the N700 series will be optimized for the load.

Conveyor & Transport Machines

Conveyor

- Multi relay output terminal
- Accurate acceleration & Deceleration
- Overweight prevention by using over-torque signal
- Load sliding prevention by curve operating

Elevator and Parking Machine

- Multi step speed driving (slow, normal, fast)
- Overload protection by over-torque signal
- Load sliding prevention by high speed torque response
- High torque output at extremely slow speed range

Crane & Hoist

- High starting torque of 200% or greater at 0.5Hz
- Slip protection function (vector control)
- Multi speed operation (1~15 speed)
- Frequency arrival signal output (motor brake on/off)
- Built-in BRD for crane (22kW and under), braking resistor

Factory Automation

- Factory automation with PLC
- Lifting and traveling switching operation
- High speed torque response for slip down prevention
- Soft start/stop







Metal & General Machinery

Metal Spreader

- Over current protection
- Soft start/stop
- Direct and various braking method selection

Wire Drawing Machine

- Powerful operation at low speed
- Sensored vector control, line speed control, location control
- System construction by application control board

Press & Cutter

- Powerful DC braking for user protection
- Powerful starting torque
- 15 intelligent input-output terminals for precision control [input (1~8, FW), output (11~14, AL, RN)]



Centrifugal Separator & Agitator

- Stable operation at wide frequency range (0.1~400Hz)
- Machine protection by a built-in regenerative braking unit (below 22kW)
- Precise acceleration & deceleration and multi-speed setting

Fan & Pump

Air Conditioning & Dust Collecting Fan

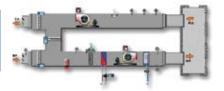
- Energy saving by selecting torque characteristic of load
- Restart function when input power is interrupted
- Machine protection by soft start/stop
- Auto operation by precise PID control function
- Low noise operation
- Quick responsiveness to load change by frequency jump and multi speed operation



Cooling Tower

- Stable operation by high quality energy supply
- Energy saving by speed and torque control
- System circumstance protection function to check the ambient temperature

Water supply pump
Cooling water circulation pump
Boiler water supply pump



Textile Machine

Spinning Machine

- Soft start/stop for prevention of snap and cut off
- Unit design for bad circumstance (dust, cotton)
- Improvement of product quality by stable operating speed

Tender & Sewing Machine

- Regular tension control function and load short protection function
- Accurate speed and torque control to improve product quality
- Synchronized control and PID control function

Washing Machine

Washing Machine

- Powerful torque boost function
- Over torque limit function
- Separate setting of acceleration and deceleration time
- Built-in regenerative braking unit (below 22kW)
- Soft start/stop

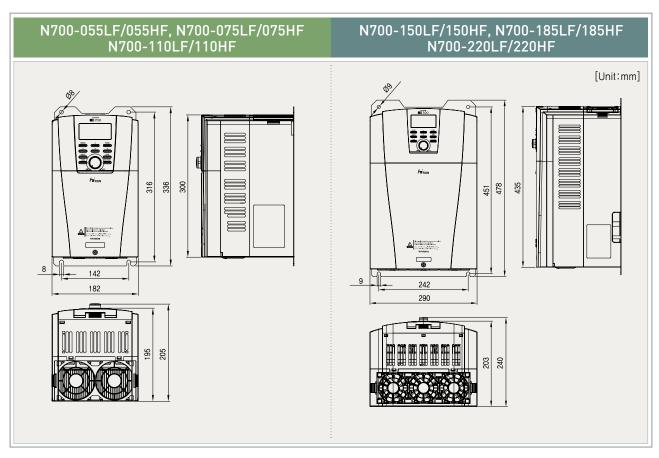


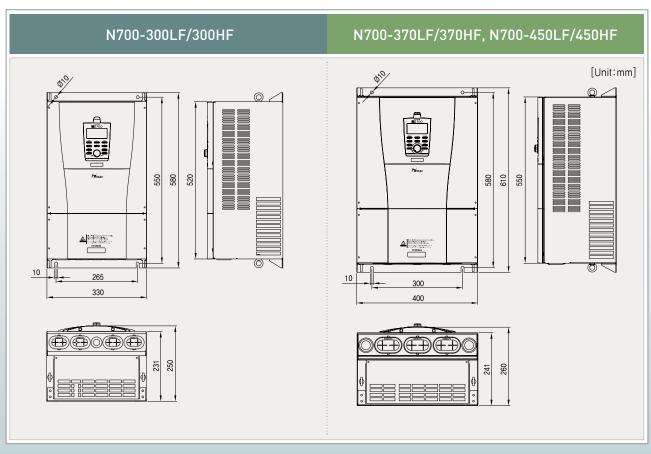
Standard 200V class

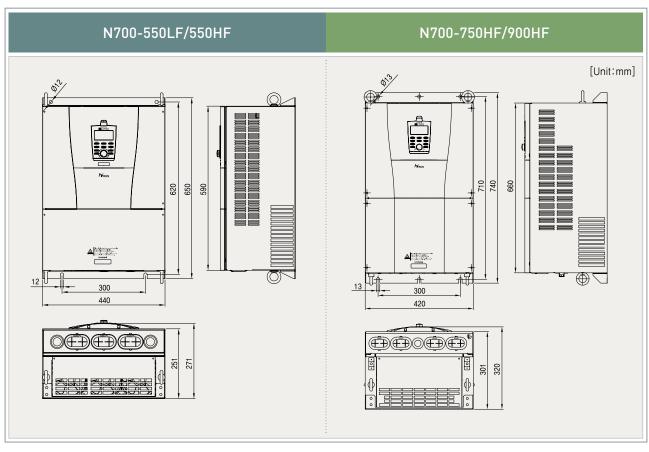
Enclosure	•	700-000LF)	055LF	075LF	110LF	150LF	185LF	220LF	300LF	370LF	450LF	550LF								
A I' I-		1.34()	F	7.5	44	45		20	00	07	45									
Rated Ca	le Motor(4P,	200V	5.5 8.3	7.5 11	11 15.9	15 22,1	18.5 26.3	22 32.9	30 41.9	37 50.2	45 63.0	55 76.2								
(kVA)		240V	9.9	13.3	19.1	26.6	31,5	39.4	50.2	60.2	75.8	91.4								
	utput Voltage		0.0	10.0	10.1			0V(±10%) 5		00.2	70.0	01,4								
	put Voltage				3-ph				to supply vo	Itage.)										
Rated Ou	utput Current	t(A)	24	32	46	64	76	95	121	145	182	220								
Droking	Dynamic Bra	aking(short-time)	Built-i	in BRD circ	cuit(The disc	charging res	sistor is opt	ional.)	Externa	al dynamic	braking uni	it(option)								
Braking	Minimum Va	lue of Resistor(Ω)	17	17	17	8.7	6	6	3.5	3.5	2.4	2.4								
Weight(k	.g)		7	7	7	15	15	15	25	37	37	51								
Dimensio	on(mm) (WxD	xH)	18	32 x 336 x 1	95	29	90 x 478 x 2	30	330 x 580 x 250	400 x 6	610 x 260	440 x 650 x 271								
Control N	Method		Space vec	Space vector modulation PWM system																
Output Fi	requency Ra	inge	0.1~400Hz	Z																
Frequenc	cy Accuracy		Digital: ±	0.01% of N	lax, frequen	cy, Analog	: ±0.2%(25	i±10℃)												
Frequenc	cy Resolution	า	Digital sett	ting: 0.01H	IZ, Analog s	etting: Max	. frequency	y / 4,000												
Voltage/I	Frequency C	Characteristic	V/f control	l (constant	torque, red	uced torque	e), free V/f	control, se	nsorless ved	ctor control										
Overload	I Capacity		150%/60se	ec																
Accelera	tion/Deceler	ation Time	0.1~3600.	Sec (Line	ar/curve set	tting)														
DC Braki	ing				ler set frequand tempera			via an exte	rnal input											
	Frequency	Operator	Set by up/																	
	Setting	External Signal	Input voltag	ge: DC 0^	·+10V, −10~	+10V(Input	impedance	10KΩ) / Inp	out current:	4~20mA(In	put impeda	nce 180Ω)								
	Forward	Operator		-	Change FW/		-													
	Reverse	External Signal	FW Run/St	top (No co	ntact), RV s	et by termin	al assignm	ent (NO/NC	selection),	3-wire inp	ut possible									
	Start/Stop	External Port	Set by RS4	485																
			FW and 8 t	terminal sel	ection:															
			RV(Reverse	e), CF1-CF	4(Multispeed	command),	JG(Jogging	ı), DB(Exteri	nal DC Braki	ing), SET(Se	econd Moto	r Constants								
Input			Setting),	2CH(Seco	nd Accel./I	Decel.), FF	S(Free-Ru	ın-Stop),	EXT(Externa	al Trip), U	ISP(Unatter	nded Start								
mpat			Protection)),CS(Chang	je to/from (Commercial	Power Sup	oply), SFT(Software Lo	ck), AT(An	alog Input	Selection),								
	Intelligent I	nput	SET3(Third	Motor Con	stant Setting), RS(Reset)	STA(3-wir	e Start), STF	P(S-wire Sto	p), F/R(3-w	rire Fwd./Re	ev.), PID(PID								
	Terminal								ote-controll											
												controlled Data Clearing), OPE(Operator Control), SF1-SF7(Multispeed Bit Command 1-7), OLR(Overload Limit Change), TL(Torque Limit Change), TRQ1, TRQ2(Torque Limit Selection(1),(2))PPI(P/PI Selection), BOK(Brake								
			Verification), ORT(Orientation), LAC(LAD Cancel), PCLR(Positioning Deviation Reset), STAT(90-degree/phase																	
			Difference Permission), XT1, XT2, XT3 (Multi-step Accel./Decel. Time 1~3)									gree/phase								
										Resell, S	1A1(90-de	gree/phase								
	Thermistor	Input Terminal	1 terminal(F	PTC charac	teristics)	(T3 (Multi-st	ep Accel./D	ecel. Time 1		Resell, S	1A1(90-de(gree/phase								
	Thermistor	Input Terminal	1 terminal(F 4 Open col	PTC charac llector term	teristics) nals and 2 r	(T3 (Multi-st	ep Accel./D act) selectio	ecel. Time 1	~3)											
	Thermistor	Input Terminal	1 terminal(F 4 Open col Run(Run Si	PTC characterm gnal), FA1(F	teristics) nals and 2 r requency Ar	CT3 (Multi-st elay (c conta rival Signal,	ep Accel./D act) selectio at the set fr	ecel. Time 1 n : equency), F	~3)	y Arrival Sig	nal at or ab	pove the set								
			1 terminal (F 4 Open col Run(Run Sin frequency)	PTC charac llector term gnal), FA1(F), OL(Over	teristics) nals and 2 r requency Ar load Advan	CT3 (Multi-st elay (c conta rival Signal, ce Notice S	ep Accel./D act) selectio at the set fr signal), OD	n: equency), F (Output De	~3) A2(Frequence viation for F	y Arrival Sig PID Control	gnal at or ab	pove the set								
	Intelligent (1 terminal(F 4 Open col Run(Run Signification) frequency) FA3(Frequency)	PTC characterm (lector term gnal), FA1(F), OL(Over ency Arrival)	teristics) nals and 2 r requency Ar load Advand Signal, only	CT3 (Multi-st elay (c conta rival Signal, ce Notice S at the set	ep Accel./D act) selection at the set from Signal), OD frequency),	n: equency), F (Output De OTQ(Over-	~3) A2(Frequency viation for Fitorque), IP(In	y Arrival Sig PID Control stantaneous	gnal at or ab), ALM(Ala : Power Fail	pove the set rm Signal), lure Signal),								
			1 terminal (F 4 Open col Run(Run Signifrequency) FA3(Frequency) UV(Under-N	PTC character llector term gnal), FA1(F), OL(Over ency Arrival voltage Sigr	teristics) nals and 2 r requency Ar load Advand Signal, only nal), TRQ(In T	cT3 (Multi-st elay (c conta rival Signal, ce Notice S at the set forque Limit),	ep Accel./D act) selectio at the set fr signal), OD frequency), RNT(Operat	ecel. Time 1 n: equency), F (Output De' OTQ(Over- ion Time Ov	~3) A2(Frequenciviation for Fatorque), IP(Iner), ONT(Plug	y Arrival Sig PID Control stantaneous g in Timeove	gnal at or ab), ALM(Ala Power Fail er), THM(The	pove the set rm Signal), lure Signal), rmal Alarm),								
	Intelligent (1 terminal (F 4 Open col Run(Run Sin frequency) FA3(Freque UV(Under-V BRK(Brake	PTC character lector term gnal), FA1(F), OL(Over ency Arrival voltage Sign Release), E	teristics) nals and 2 r requency Ar load Advan Signal, only nal), TRQ(In T BER(Brake Er	elay (c conta rival Signal, ce Notice S r at the set forque Limit), ror), ZS(Zero	ep Accel./D act) selectio at the set fr signal), OD frequency), RNT(Operat Speed), DS	n: equency), F (Output De OTQ(Over— ion Time Ov E(Speed De	~3) A2(Frequency viation for Fitorque), IP(Incer), ONT(Plugiviation Excess	y Arrival Sig PID Control stantaneous g in Timeove ssive), POK(gnal at or ab), ALM(Ala : Power Fail pr), THM(The Positioning	pove the set rm Signal), lure Signal), rrmal Alarm), Completion),								
	Intelligent (1 terminal (F 4 Open col Run(Run Si- frequency) FA3(Freque UV(Under- BRK(Brake FA4(Arrival	PTC character term (gnal), FA1(Fa), OL(Over ency Arrival voltage Sign Release), E	teristics) nals and 2 r frequency Ar foad Advan- Signal, only nal), TRQ(In T BER(Brake Er Over Setting	elay (c contarival Signal, ce Notice Sir at the set forque Limit), ror), ZS(Zero Frequency2)	ep Accel./D act) selectio at the set fr signal), OD frequency), RNT(Operat Speed), DS , A5(Arrival	n: requency), F (Output De OTQ(Over— cion Time Ov SE(Speed De Signal for C	~3) A2(Frequence viation for Filorque), IP(In er), ONT(Plugiviation Excessinly Setting Filoration	y Arrival Sig PID Control stantaneous g in Timeove ssive), POK(requency2),	gnal at or ab), ALM(Ala : Power Fail er), THM(The Positioning (OL2(Overlo	pove the set rm Signal), lure Signal), rrmal Alarm), Completion),								
Output	Intelligent (Terminal	Output	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under-v BRK(Brake FA4(Arrival Notice Sign	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sign Release), E Signal for al2), PALM(teristics) nals and 2 r frequency Ar frequency Ar load Advant Signal, only hal), TRQ(In T BER(Brake Er Over Setting Instantaneous	elay (c contarival Signal, ce Notice Strat the set forque Limit), ror), ZS(Zero Frequency2) s Power Failu	ep Accel./D act) selectio at the set fr signal), OD frequency), RNT(Operat Speed), DS , A5(Arrival ure Alarm Signar	n: requency), F (Output De OTQ(Over— cion Time Ov SE(Speed De Signal for C	~3) A2(Frequency viation for Fitorque), IP(Incer), ONT(Plugiviation Excess	y Arrival Sig PID Control stantaneous g in Timeove ssive), POK(requency2),	gnal at or ab), ALM(Ala : Power Fail er), THM(The Positioning (OL2(Overlo	pove the set rm Signal), lure Signal), rrmal Alarm), Completion),								
Output	Intelligent (Terminal		1 terminal (F 4 Open col Run(Run Si- frequency) FA3(Freque UV(Under- BRK(Brake FA4(Arrival Notice Sign Analog Vo	PTC character term gnal), FA1(Fa), OL(Over ency Arrival voltage Sign Release), Ealign, FALM(Itage, Anallector terms of the character of the ch	teristics) nals and 2 r frequency Ar load Advan- Signal, only nal), TRQ(In T SER(Brake Er Over Setting Instantaneous og Current,	elay (c contarival Signal, ce Notice Signal, ce Notice Signal, ce The set orque Limit), ror), ZS(Zero Frequency2) s Power Failt Pulse Line	ep Accel./D act) selectio at the set fr signal), OD frequency), RNT(Operat Speed), DS , A5(Arrival ure Alarm Sir Output	n: equency), F (Output De OTQ(Over— ion Time Ov SE(Speed De Signal for C gnal), UVALI	~3) A2(Frequency viation for Filter torque), IP(In er), ONT(Plug viation Excess nly Setting Filter M(Under Volta)	y Arrival Sig PID Control stantaneous g in Timeove ssive), POK(requency2), age Alarm S	gnal at or ab), ALM(Ala : Power Fail rr), THM(The Positioning of OL2(Overlo ignal)	pove the set rm Signal), lure Signal), rrmal Alarm), Completion), ad Advance								
Output	Intelligent (Terminal	Output	1 terminal (F 4 Open col Run(Run Si- frequency) FA3(Freque UV(Under-N BRK(Brake FA4(Arrival Notice Sign Analog Vo Output Fre	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sign Release), E Signal for ial2), PALM(Itage, Anaequency, O	teristics) nals and 2 r frequency Ar load Advani Signal, only nal), TRQ(In T BER(Brake Er Over Setting Instantaneous og Current, utput Currer	elay (c contarival Signal, ce Notice Signal, ce Notice Signal, corque Limit), cor), ZS(Zero Frequency2) s Power Failu Pulse Line nt, Motor To	ep Accel./D act) selectio at the set fr signal), OD frequency), RNT(Operat Speed), DS , A5(Arrival ure Alarm Sir Output	n: equency), F (Output De OTQ(Over— ion Time Ov SE(Speed De Signal for C gnal), UVALI	~3) A2(Frequence viation for Filorque), IP(In er), ONT(Plugiviation Excessinly Setting Filoration	y Arrival Sig PID Control stantaneous g in Timeove ssive), POK(requency2), age Alarm S	gnal at or ab), ALM(Ala : Power Fail rr), THM(The Positioning of OL2(Overlo ignal)	pove the set rm Signal), lure Signal), rrmal Alarm), Completion), ad Advance								
Output	Intelligent (Terminal	Output	1 terminal (F 4 Open col Run(Run Sin frequency) FA3(Frequency) UV(Under Notice Sign Notice Sign Analog Vo Output Fre Condition,	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sign Release), E Signal for Italia, PALM(Itage, Ana equency, O Input Pow	teristics) nals and 2 r frequency Ar load Advani Signal, only nal), TRQ(In T BER(Brake Er Over Setting Instantaneous og Current, utput Currer er, Output V	elay (c contarival Signal, ce Notice Signal, ce	ep Accel./D act) selectio at the set fr signal). OD frequency). RNT(Operat Speed). DS , A5(Arrival ure Alarm Si Output rque, Scale	n: equency), F (Output Der OTQ(Over- ion Time Ov SE(Speed De Signal for C gnal), UVALN	~3) A2(Frequency viation for Factorque), IP(In er), ONT(Plugwiation Excessinly Setting FM(Under Voltation)	y Arrival Sig PID Control Istantaneous g in Timeove ssive), POK(requency2), age Alarm S	gnal at or at), ALM(Ala : Power Fail Top, THM(The Positioning of OL2(Overlo ignal)	pove the set rm Signal), lure Signal), rmal Alarm), Completion), ad Advance								
Output	Intelligent (Terminal	Output	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under-\ BRK(Brake FA4(Arrival Notice Sign Analog Vo Output Fre Condition, V/f free-se	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sigral for lal2), PALM(litage, Ana equency, O Input Powetting (up to	teristics) nals and 2 r frequency Ar load Advan- Signal, only hal), TRQ(in T BER(Brake Er Over Setting Instantaneous og Current, utput Currer er, Output V 7 points), Fr	elay (c contarival Signal, ce Notice Signal, ce	ep Accel./D act) selectio at the set fr ignal). OD frequency). RNT(Operat Speed). DS , A5(Arrival ure Alarm Si Output rque, Scale per/Lower L	n: equency), F (Output Der OTQ(Over— ion Time Ov EE(Speed De Signal for C gnal), UVALN ed Value of imit, Freque	~3) A2(Frequency viation for Fatorque), IP(In er), ONT(Plug viviation Excessinly Setting Fatorque) Volta Output Frequency Jump, Ac	y Arrival Sig PID Control Istantaneous g in Timeove ssive), POK(rrequency2), age Alarm S quency, Trip ccel./Decel.	gnal at or ab), ALM(Ala : Power Fail pr), THM(The Positioning of OL2(Overlo- ignal) D History, I/ Curve Selec	pove the set rm Signal), lure Signal), rrmal Alarm), Completion), ad Advance								
Output	Intelligent of Terminal Intelligent C	Output	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under-\) BRK(Brake FA4(Arrival Analog Vo Output Fre Condition, V/f free-se Torque Boo	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sign Release), E Signal for all 2), PALM(Itage, Anarequency, Olnput Powetting (up to cost Level/B	teristics) nals and 2 r frequency Ar frequency Ar fload Advan- Signal, only nal), TRQ(in T SER(Brake Er Over Setting Instantaneous og Current, utput Currer er, Output V 7 points), Fr raking Point	elay (c contarival Signal, ce Notice Sy at the set forque Limit), rorn, ZS(Zero Frequency2) is Power Failt Pulse Line Int, Motor To toltage equency Upp Setting, Ana	ep Accel./D act) selectio at the set fr tignal), OD frequency), RNT(Operal Speed), DS , A5(Arrival output rque, Scale per/Lower L tlog Meter T	n: equency), F (Output Der OTQ(Over— ion Time Ov SE(Speed De Signal for C gnal), UVALI ed Value of imit, Freque funing, Start	~3) A2(Frequency viation for F torque), IP(In er), ONT(Plug viviation Excess nly Setting F M(Under Volta) Output Frequency Frequency	y Arrival Sig PID Control Istantaneous g in Timeove ssive), POK(irequency2), age Alarm S quency, Trip ccel./Decel. Setting, Car	gnal at or ab), ALM(Ala : Power Fail pr), THM(The Positioning of OL2(Overlo- ignal) of History, I/ Curve Selec- trier Freque	pove the set rm Signal), lure Signal), rmal Alarm), Completion), ad Advance 'O Terminal tion, Manual ncy Setting.								
Output Display M	Intelligent of Terminal Intelligent C	Output	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under-\text{V} BRK(Brake FA4(Arrival Nalog Vo Output Fre Condition, V/f free-se Torque Boo Electronic	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sign Release), E Signal for anial2), PALM(Iltage, Ana equency, O Input Powetting (up to cost Level/BThermal, Fr	teristics) nals and 2 r frequency Ar frequency Ar fload Advan- Signal, only nal), TRQ(In T SER(Brake Er Over Setting Instantaneous og Current, utput Currer er, Output V 7 points), Fr raking Point ee—setting, I	elay (c contarival Signal, ce Notice Servet the set forque Limit), for, 2S(Zero Servet Feducancy2) s Power Failt Pulse Line Int, Motor Tooltage equency Up; Setting, AnaExternal Star	ep Accel./D act) selectio at the set fr signal), OD frequency), RNT(Operat Speed), DS , A5(Arrival ure Alarm Si Output rque, Scale per/Lower L alog Meter T t/End Freque	n: equency), F (Output Der OTQ(Over— cion Time Ov SE(Speed De Signal for C gnal), UVALI ed Value of imit, Freque funing, Start lency(freque	A2(Frequency viation for F torque), IP(In er), ONT(Plug viation Excess mly Setting F M(Under Volta) Output Frequency procy rate set	y Arrival Sig PID Control stantaneous g in Timeove ssive), POK(irequency2), age Alarm S quency, Trip ccel./Decel. Setting, Car ting), Analo	gnal at or ab), ALM(Ala : Power Fail pr), THM(The Positioning of 0L2(Overlo- ignal) De History, I/ Curve Selectrier Freque g Input Selectrier	pove the set rm Signal), lure Signal), rmal Alarm), Completion), ad Advance 'O Terminal tion, Manual ncy Setting, ection, Retry								
Output Display M	Intelligent of Terminal Intelligent C	Output	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under-\ BRK(Brake FA4(Arrival Notice Sign Analog Vo Output Fre Condition, V/f free-se Torque Boo Electronic After Trip,	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sign Release), E Signal for lal2), PALM(Itage, Ana equency, O Input Powetting (up to lost Level/B Thermal, Fr Restart Af	teristics) nals and 2 r frequency Ar frequency Ar fload Advan- Signal, only nal), TRQ(In T EER(Brake Er Over Setting the artificial and the artificial to a control of the artificial of the artificial to a control of the artificial of the artificial of the artificial of the artif	elay (c contarival Signal, ce Notice Servat the set forque Limit), ror), ZS(Zero Frequency2) is Power Failte ant, Motor To oltage equency Up, Setting, Anaexternal Starneous Powe	ep Accel./D act) selectio at the set fr fignal), OD frequency), RNT(Operat Speed), DS , A5(Arrival ure Alarm Sir Output rrque, Scale per/Lower L tolog Meter T t/End Frequer Failure, V	n: requency), F (Output Der OTQ(Over— rion Time Ov SE(Speed De Signal for C gnal), UVALI and Value of rimit, Freque funing, Start flency(freque Various Sign	A2(Frequence viation for Fitorque), IP(Iner), ONT(Plugiviation Excessing Setting FM(Under Voltation Frequency Jump, Active Frequency ency rate setial Outputs,	y Arrival Sig PID Control stantaneous g in Timeove ssive), POK(irequency2), age Alarm S quency, Trip ccel./Decel./ Setting, Car ting), Analo Reduced V	gnal at or ab), ALM(Ala : Power Fail er), THM(The Positioning of OL2(Overlo- ignal) D History, I/ Curve Selec- trier Freque- g Input Selec- foliage Star	pove the set rm Signal), lure Signal), rmal Alarm), Completion), ad Advance 'O Terminal tion, Manual ncy Setting, ection, Retry tt, Overload								
Output Display M	Intelligent of Terminal Intelligent C	Output	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under-\text{V} BRK(Brake FA4(Arrival Notice Sign Analog Vo Output Fre Condition, V/f free-se Torque Boo Electronic After Trip, Restriction,	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sign Release), E Signal for anial2), PALM(Iltage, Ana equency, O Input Powerting (up to lost Level/B Thermal, Fr Restart Af Default Va	teristics) nals and 2 r frequency Ar frequency Ar fload Advan- Signal, only nal), TRQ(In T SER(Brake Er Over Setting og Current, utput Currer er, Output V 7 points), Fr raking Point ee—setting, I ter Instantar uue Setting, A	elay (c contarival Signal, ce Notice Signal, ce	ep Accel./D act) selectio at the set fr signal), OD frequency), RNT(Operat Speed), DS , A5(Arrival ure Alarm Si Output rque, Scale per/Lower L slog Meter T t/End Frequer r Failure, V celeration a	n: equency), F (Output Der OTQ(Over— cion Time Ov SE(Speed De Signal for C gnal), UVALI ed Value of imit, Freque funing, Start lency(freque 'arious Sign nd Stop at F	A2(Frequency viation for F torque), IP(In er), ONT(Plug viation Excess mly Setting F M(Under Volta) Output Frequency ency Jump, Ac Frequency ency rate set all Outputs, Power Failure	y Arrival Sig PID Control stantaneous g in Timeove ssive), POK(irequency2), age Alarm S quency, Trip ccel./Decel./ Setting, Car ting), Analo Reduced V , AVR Func	gnal at or ab), ALM(Ala : Power Fail pr), THM(The Positioning of 0L2(Overlo- ignal) De History, I/ Curve Selec- trier Freque g Input Selec- foltage Star- tion, Auto-tu	pove the set rm Signal), lure Signal), rmal Alarm), Completion), ad Advance 'O Terminal tion, Manual ncy Setting, ection, Retry et, Overload uning								
Output Display M Main Fun	Intelligent of Terminal Intelligent C	Output	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under— BRK(Brake FA4(Arrival Notice Sign Analog Vo Output Free— Condition, V/f free—se Torque Bot Electronic After Trip, Restriction, Over—curre	PTC character term gnal), FA1(Fa), OL(Over ency Arrival voltage Sign Release), E Signal for la12), PALM(latage, Ana equency, Output (up to last Level/BThermal, Fragestart Afa Default Vaent Protec	teristics) nals and 2 r frequency Ar frequency Ar foad Advance Signal, only nal), TRQ(In T SER(Brake Er Over Setting Instantaneous og Current, utput Currer er, Output V 7 points), Fr raking Point ee—setting, f ter Instantar ue Setting, A	elay (c contarival Signal, ce Notice Sy at the set forque Limit), ror), ZS(Zero Frequency2) is Power Failu Pulse Line not, Motor To foltage equency Upp Setting, Anaexternal Starneous Power automatic Devoltage, Und	ep Accel./D act) selectio at the set fr fignal), OD frequency), RNT(Operat Speed), DS , A5(Arrival are Alarm Sir Output rque, Scale per/Lower L alog Meter T t/End Frequer Failure, V celeration a der-voltage	n: requency), F (Output Der OTQ(Over— rion Time Ov SE(Speed De Signal for O gnal), UVALI red Value of imit, Freque funing, Start lency(freque farious Sign nd Stop at F e, Electronic	A2(Frequence viation for Fitorque), IP(Iner), ONT(Plugiviation Exceeding Setting Follower Voltage Output Frequency Jump, Act Frequency and Outputs, Power Failure Control of Thermal,	y Arrival Sig PID Control stantaneous g in Timeove ssive), POK(requency2), age Alarm S quency, Trip ccel,/Decel, Setting, Car ting), Analo Reduced V , AVR Func Temperatur	gnal at or at), ALM(Ala : Power Fail er), THM(The Positioning of OL2(Overloignal) of History, I/Curve Selectrier Freque g Input Selectoliage Startion, Auto-tue Error, Gr	pove the set rm Signal), lure Signal), lure Signal), rmal Alarm), Completion), ad Advance (O Terminal tion, Manual ncy Setting, ection, Retry t, Overload uning round Fault								
Output Display M Main Fun	Intelligent of Terminal Intelligent of Monitor Inctions	Output	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under— BRK(Brake FA4(Arrival Notice Sign Analog Vo Output Fre Condition, V/f free—se Torque Bod Electronic After Trip, Restriction, Over—curre Current at	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Signal for hal2), PALM(litage, Ana equency, Output Power the protection of	teristics) nals and 2 r frequency Ar frequency Ar foad Advance Signal, only nal), TRQ(In T SER(Brake Er Over Setting Instantaneous og Current, utput Currer er, Output V 7 points), Fr raking Point ee—setting, f ter Instantar ue Setting, A	elay (c contarival Signal, ce Notice Strathe set orque Limit), cor), ZS(Zero Frequency2) s Power Failu Pulse Line nt, Motor To foltage equency Upp Setting, Anaexternal Starneous Power Sautomatic Devoltage, Uncower Failure	ep Accel./D act) selectio at the set fr fignal), OD frequency), RNT(Operat Speed), DS , A5(Arrival are Alarm Sir Output rque, Scale per/Lower L alog Meter T t/End Frequer Failure, V celeration a der-voltage	n: requency), F (Output Der OTQ(Over— rion Time Ov SE(Speed De Signal for O gnal), UVALI red Value of imit, Freque funing, Start lency(freque farious Sign nd Stop at F e, Electronic	A2(Frequency viation for F torque), IP(In er), ONT(Plug viation Excess mly Setting F M(Under Volta) Output Frequency ency Jump, Ac Frequency ency rate set all Outputs, Power Failure	y Arrival Sig PID Control stantaneous g in Timeove ssive), POK(requency2), age Alarm S quency, Trip ccel,/Decel, Setting, Car ting), Analo Reduced V , AVR Func Temperatur	gnal at or at), ALM(Ala : Power Fail er), THM(The Positioning of OL2(Overloignal) of History, I/Curve Selectrier Freque g Input Selectoliage Startion, Auto-tue Error, Gr	pove the set rm Signal), lure Signal), rmal Alarm), Completion), ad Advance (O Terminal tion, Manual ncy Setting, ection, Retry t, Overload uning round Fault								
Output Display M Main Fun Protectiv	Intelligent of Terminal Intelligent of Monitor Inctions	Output Output Terminal	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under— BRK(Brake FA4(Arrival Notice Sign Analog Vo Output Fre Condition, V/f free—se Torque Bot Electronic After Trip, Restriction, Over—curre Current at Trip, Option	PTC character term gnal), FA1(Fa), OL(Over ency Arrival voltage Sign Release), E Signal for eal2), PALM(litage, Ana equency, Output Power thermal, France Restart Al Default Valent Protec Start, Instan Error and	teristics) nals and 2 r frequency Ar frequency Ar foad Advance Signal, only nal), TRQ(In T SER(Brake Er Over Setting Instantaneous og Current, utput Currer er, Output V 7 points), Fr raking Point ee—setting, f ter Instantar uue Setting, A tion, Over—v antaneous P	elay (c contarival Signal, ce Notice Strathe set forque Limit), ror), ZS(Zero Frequency2) s Power Failure Line at Motor To foltage equency Upp Setting, Anaexternal Starteous Power Satton Devolution at the Court of	ep Accel./D act) selectio at the set fr signal), OD frequency), RNT(Operat Speed), DS , A5(Arrival are Alarm Sir Output rque, Scale per/Lower L tlog Meter T t/End Freque r Failure, V celeration a der-voltage e, USP Erro	n: requency), F (Output Der OTQ(Over— rion Time Ov SE(Speed De Signal for O gnal), UVALI red Value of rimit, Freque runing, Start rency(freque rarious Sign rnd Stop at F re, Electronie r, Phase Lo	A2(Frequency viation for Fitorque), IP(Iner), ONT(Plug viation Excess of the fit of the	y Arrival Sig PID Control stantaneous g in Timeove ssive), POK(requency2), age Alarm S quency, Trip ccel,/Decel, Setting, Car ting), Analo Reduced V , AVR Func Temperatur	gnal at or at), ALM(Ala : Power Fail er), THM(The Positioning of OL2(Overloignal) of History, I/Curve Selectrier Freque g Input Selectoliage Startion, Auto-tue Error, Gr	pove the set rm Signal), lure Signal), rmal Alarm), Completion), ad Advance (O Terminal tion, Manual ncy Setting, ection, Retry t, Overload uning round Fault								
Output Display M Main Fun Protectiv Standard	Intelligent of Terminal Intelligent of Monitor Intelligent of Monitor Ambient Ambient Ambient	Output Output Terminal	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under-\ BRK(Brake FA4(Arrival Notice Sign Analog Vo Output Fre Condition, V/f free-se Torque Boo Electronic After Trip, Restriction, Over-curre Current at Trip, Option Low voltage	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sign Release), E Signal for anial2), PALM(Itage, Ana equency, O Input Powerting (up to lost Level/B Thermal, Fr Restart Af Default Valent Protec Start, Instan Error and edirective	teristics) nals and 2 r frequency Ar frequency Ar foad Advance Signal, only nal), TRQ(In T SER(Brake Er Over Setting Instantaneous og Current, utput Curreer or, Output V 7 points), Fr raking Point ee—setting, f ter Instantar uue Setting, A tion, Over—v antaneous P d Communica	elay (c contarival Signal, ce Notice Signal, ce	ep Accel./D act) selectio at the set fr tignal), OD frequency), RNT(Operat Speed), DS , A5(Arrival ure Alarm Si Output rque, Scale per/Lower L tigng Meter T ti/End Freque r Failure, V celeration a der-voltage y, USP Erro tive 2004/1	n: requency), F (Output Der OTQ(Over— rion Time Ov SE(Speed De Signal for O gnal), UVALI red Value of rimit, Freque runing, Start rency(freque rarious Sign rnd Stop at F re, Electronie r, Phase Lo	A2(Frequency viation for Fitorque), IP(Iner), ONT(Plug viation Excess of the fit of the	y Arrival Sig PID Control stantaneous g in Timeove ssive), POK(requency2), age Alarm S quency, Trip ccel,/Decel, Setting, Car ting), Analo Reduced V , AVR Func Temperatur	gnal at or at), ALM(Ala : Power Fail er), THM(The Positioning of OL2(Overloignal) of History, I/Curve Selectrier Freque g Input Selectoliage Startion, Auto-tue Error, Gr	pove the set rm Signal), lure Signal), rmal Alarm), Completion), ad Advance (O Terminal tion, Manual ncy Setting, ection, Retry t, Overload uning round Fault								
Output Display M Main Fun Protectiv Standard Environm	Intelligent of Terminal Intelligent of Monitor Monitor Terminal Ambient of Temper	Output Output Terminal I Temperature/Storage	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under-N BRK(Brake FA4(Arrival Notice Sign Analog Vo Output Fre Condition, V/f free-se Torque Bot Electronic After Trip, Restriction, Over-curre Current at Trip, Option Low voltag	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sign Release), E Signal for nal2), PALM(Itage, Anarequency, O Input Powerting (up to lost Level/B Thermal, Fr Restart Af Default Valent Protect Start, Instance directive / -20~65	teristics) nals and 2 r frequency Ar load Advan- Signal, only hal), TRQ(In T ER(Brake Er Over Setting Instantaneous og Current, utput Currer er, Output V 7 points), Fr raking Point ee—setting, E ter Instantar ue Setting, A tion, Over— I Communica 72/73/EEC CC / 20~909	elay (c contarival Signal, ce Notice Signal, ce	ep Accel./D act) selectio at the set fr tignal), OD frequency), RNT(Operat Speed), DS , A5(Arrival ure Alarm Si Output rque, Scale per/Lower L tigng Meter T ti/End Freque r Failure, V celeration a der-voltage y, USP Erro tive 2004/1	n: requency), F (Output Der OTQ(Over— rion Time Ov SE(Speed De Signal for O gnal), UVALI red Value of rimit, Freque runing, Start rency(freque rarious Sign rnd Stop at F re, Electronie r, Phase Lo	A2(Frequency viation for Fatorque), IP(In er), ONT(Plug viviation Excessinly Setting FM(Under Voltation Frequency Jump, Activation Frequency rate set all Outputs, Power Failure or Thermal, Ses Error, Br. UL, cUL	y Arrival Sig PID Control Istantaneous g in Timeove ssive), POK(rrequency2), age Alarm S quency, Trip ccel./Decel.(Setting, Car ting), Analo Reduced V , AVR Func Temperatur aking Resis	gnal at or at), ALM(Ala Power Fail Power Fail Positioning (OL2(Overloignal) Power Position (Power Position) Power	pove the set rm Signal), lure Signal), lure Signal), completion), ad Advance (70 Terminal tion, Manual ncy Setting, ection, Retry tt, Overload uning round Fault ad, External								
Output Display M Main Fun Protectiv Standard	Intelligent of Terminal Intelligent of Monitor Monitor Terminal Ambient of Temper	Output Output Terminal I Temperature/Storage ature/Humidity	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under Sign Analog Vo Output Fre Condition, V/f free-se Torque Bot Electronic After Trip, Restriction, Over-curre Current at Trip, Option Low voltag -10~50°C 5.9%(0.6G)	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sign Release), E Signal for all2), PALM(litage, Anarequency, Ol Input Powelting (up to lost Level/B Thermal, Fraguent Protec Start, Instan Error and le directive / -20~65, 10~55Hz	teristics) nals and 2 r frequency Ar load Advan- Signal, only hal), TRQ(In T SER(Brake Er Over Setting Instantaneous og Current, utput Currer er, Output V 7 points), Fr raking Point ee—setting, E ter Instantar ue Setting, A tion, Over— I Communica 72/73/EEC C / 20~909 (5.5~22kW)	elay (c contarival Signal, ce Notice Signal, ce	ep Accel./D act) selectio at the set fr ignal). OD frequency). RNT(Operat Speed). DS A5(Arrival ure Alarm Sir Output rque, Scale per/Lower L tlog Meter T t/End Frequ r Failure, V celeration a der-voltage e, USP Erro tive 2004/1 ondensing)	n: equency), F (Output Der (Output Der OTQ(Over— ion Time Ov Signal for O gnal), UVALN ed Value of imit, Freque runing, Start sency(freque various Sign d Stop at F e, Electronie r, Phase Lc 08/EC, CE,	A2(Frequency viation for Fatorque), IP(In er), ONT(Plug viviation Excessinly Setting FM(Under Voltation Frequency Jump, Activation Frequency rate set all Outputs, Power Failure or Thermal, Ses Error, Br. UL, cUL	y Arrival Sig PID Control Istantaneous g in Timeove ssive), POK(rrequency2), age Alarm S quency, Trip ccel./Decel.(Setting, Car ting), Analo Reduced V , AVR Func Temperatur aking Resis	gnal at or at), ALM(Ala : Power Fail er), THM(The Positioning of OL2(Overloignal) of History, I/Curve Selectrier Freque g Input Selectoliage Startion, Auto-tue Error, Gr	pove the set rm Signal), lure Signal), lure Signal), completion), ad Advance of the set								
Output Display M Main Fun Protectiv Standard Environm. Condition	Intelligent of Terminal Intelligent of Monitor Monitor Terminal Ambient of Temper	Output Output Terminal I Temperature/Storage ature/Humidity	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under-N BRK(Brake FA4(Arrival Notice Sign Analog Vo Output Fre Condition, V/f free-se Torque Boo Electronic After Trip, Restriction, Over-curre Current at Trip, Optio Low voltag -10~50°C 5.9%(0.6G) Less than 1	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sigra Release), E Signal for all 2), PALM(Itage, Anarequency, O Input Powetting (up to post Level/B Thermal, Fr Restart At Default Valent Protection Error and edirective / -20~65), 10~55Hz 1000m about 100.	teristics) nals and 2 r frequency Ar load Advan- Signal, only hall), TRQ(In T SER(Brake Er Over Setting Instantaneous og Current, utput Currer er, Output V 7 points), Fr raking Point ee—setting, I ster Instantar lue Setting, A tion, Over—v and Communica 72/73/EEC 62 / 20~909 75.5~22kW) ve sea level,	elay (c contarious) contarious (c c contarious) contarious (c c contarious) contarious (c c contarious) contarious (c c c c c c c c c c c c c c c c c c c	ep Accel./D act) selectio at the set fr ignal). OD frequency). RNT(Operat Speed). DS A5(Arrival ure Alarm Sir Output rque, Scale per/Lower L tlog Meter T t/End Frequ r Failure, V celeration a der-voltage e, USP Erro tive 2004/1 ondensing)	n: equency), F (Output Der (Output Der OTQ(Over— ion Time Ov Signal for O gnal), UVALN ed Value of imit, Freque runing, Start sency(freque various Sign d Stop at F e, Electronie r, Phase Lc 08/EC, CE,	A2(Frequency viation for Fatorque), IP(In er), ONT(Plug viviation Excessinly Setting FM(Under Voltation Frequency Jump, Activation Frequency rate set all Outputs, Power Failure or Thermal, Ses Error, Br. UL, cUL	y Arrival Sig PID Control Istantaneous g in Timeove ssive), POK(rrequency2), age Alarm S quency, Trip ccel./Decel.(Setting, Car ting), Analo Reduced V , AVR Func Temperatur aking Resis	gnal at or at), ALM(Ala Power Fail Power Fail Positioning (OL2(Overloignal) Power Position Power Position, Alabert Power Powe	pove the set rm Signal), lure Signal), lure Signal), completion), ad Advance (70 Terminal tion, Manual ncy Setting, ection, Retry tt, Overload uning round Fault ad, External								
Output Display M Main Fun Protectiv Standard Environm	Intelligent of Terminal Intelligent of Monitor Intel	Output Output Terminal I Temperature/Storage lature/Humidity tion ion	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under BRK(Brake FA4(Arrival National Signature Signal Analog Vo Output Fre Condition, V/f free-se Torque Boo Electronic After Trip, Restriction, Over-current at Trip. Optio Low voltag -10~50°C 5.9%(0.6G) Less than 1 DIC-582(ur	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sign Release), E Signal for all 2), PALM(Itage, Anatequency, O Input Powerting (up to post Level/B Thermal, Fr Restart Af Default Valent Protection of the directive and Error and the directive and the	teristics) nals and 2 r frequency Ar load Advan- Signal, only nal), TRQ(in T SER(Brake Er Over Setting Instantaneous og Current, utput Currerer, Output V 7 points), Fr raking Point ee-setting, E ter Instantar fue Setting, A tion, Over- tion, Over	elay (c contarious) contarious (c c contarious) contarious (c c contarious) contarious (c c contarious) contarious (c c c c c c c c c c c c c c c c c c c	ep Accel./D act) selectio at the set fr ignal). OD frequency). RNT(Operat Speed). DS A5(Arrival ure Alarm Sir Output rque, Scale per/Lower L tlog Meter T t/End Frequ r Failure, V celeration a der-voltage e, USP Erro tive 2004/1 ondensing)	n: equency), F (Output Der (Output Der OTQ(Over— ion Time Ov Signal for O gnal), UVALN ed Value of imit, Freque runing, Start sency(freque various Sign d Stop at F e, Electronie r, Phase Lc 08/EC, CE,	A2(Frequency viation for Fatorque), IP(In er), ONT(Plug viviation Excessinly Setting FM(Under Voltation Frequency Jump, Activation Frequency rate set all Outputs, Power Failure or Thermal, Ses Error, Br. UL, cUL	y Arrival Sig PID Control Istantaneous g in Timeove ssive), POK(rrequency2), age Alarm S quency, Trip ccel./Decel.(Setting, Car ting), Analo Reduced V , AVR Func Temperatur aking Resis	gnal at or at), ALM(Ala Power Fail Power Fail Positioning (OL2(Overloignal) Power Position Power Position, Alabert Power Powe	pove the set rm Signal), lure Signal), lure Signal), completion), ad Advance (70 Terminal tion, Manual ncy Setting, ection, Retry tt, Overload uning round Fault ad, External								
Output Display M Main Fun Protectiv. Standard Environm. Condition Color	Intelligent of Terminal Intelligent of Monitor Monitor Terminal Ambient of Temper	Output Output Terminal I Temperature/Storage lature/Humidity tion ion	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under-N BRK(Brake FA4(Arrival Nanlog Vo Output Fre Condition, V/f free-se Torque Boo Electronic After Trip, Restriction, Over-curre Current at Trip. Optio Low voltag -10~50°C 5.9%(0.6G) Less than 1 DIC-582(up Feedback I	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sign Release), E Signal for all 2), PALM(Itage, Anarequency, Olinput Powerting (up to lost Level/B Thermal, Fr Restart All Default Valent Protective (100 m edirective 100 m about per case), PCB, Profib	teristics) nals and 2 r frequency Ar load Advan- Signal, only nal), TRQ(in T SER(Brake Er Over Setting Instantaneous og Current, utput Currer er, Output V 7 points), Fr raking Point ee—setting, E ter Instantar fue Setting, A tion, Over—v and Communica 72/73/EEC 60 / 20~909 75.5~22kW) ve sea level, DIC—P819(lo us PCB	elay (c contarival Signal, ce Notice Signal, ce	ep Accel./D act) selectio at the set fr fignal). OD frequency). RNT(Operat Speed). DS , A5(Arrival ure Alarm Si Output rque. Scale per/Lower L tlog Meter T t/End Frequ r Failure, V celeration a der-voltage e. USP Erro tive 2004/1 andensing) corrosive ga	n: equency), F (Output Der OTQ(Over— ion Time Ov SE(Speed De Signal for C gnal), UVALN ed Value of imit, Freque funing, Start iency(freque farious Sigr nd Stop at F p, Electronia r, Phase Lc 08/EC, CE,	A2(Frequency viation for Fidorque), IP(In er), ONT(Plug viviation Excessinly Setting Fid/(Under Voltation Frequency Jump, Ac Frequency rate set all Outputs, Power Failure Community Thermal, Section From Br. UL, cUL	y Arrival Sig-PID Control istantaneous gi in Timeove ssive), POK(irequency2), age Alarm Siguency, Trip ccel./Decel./Setting, Carting), Analo Reduced Vo., AVR Funct Temperatur aking Resis 9.3G), 10~58	gnal at or ab.), ALM(Ala : Power Fail pr), THM(The Positioning of OL2(Overloaignal) De History, I/ Curve Selectorier Freque gong Input Selectorier Freque gong Input Selectorier Freque storn, Auto-tu ee Error, Gr stor Overloaignal	pove the set rm Signal), lure Signal), rmal Alarm), Completion), ad Advance of Completion, Manual tion, Manual ncy Setting, rection, Retry t, Overload uning round Fault ad, External kW)								
Output Display M Main Fun Protectiv Standard Environm. Condition	Intelligent of Terminal Intelligent of Monitor Intel	Output Output Terminal I Temperature/Storage ature/Humidity tion ion	1 terminal (F 4 Open col Run(Run Si frequency) FA3(Freque UV(Under-\text{V} BRK(Brake FA4(Arrival Notice Sign Analog Vo Output Fre Condition, V/f free-se Torque Boo Electronic After Trip, Restriction, Over-curre Current at Trip, Option Low voltag -10~50°C 5.9%(0.6G) Less than 1 DIC-582(up Feedback Braking ur	PTC character term gnal), FA1(F), OL(Over ency Arrival voltage Sign Release), E Signal for an arguency, O Input Powerting (up to lost Level/B Thermal, Fr Restart Af Default Valent Protect Start, Instate in Error and le directive 1, 10~55Hz 1000m aborder case), PCB, Profibit, AC reaing resistor	teristics) nals and 2 r frequency Ar load Advan- Signal, only nal), TRQ(in T SER(Brake Er Over Setting Instantaneous og Current, utput Currer er, Output V 7 points), Fr raking Point ee—setting, E ter Instantar fue Setting, A tion, Over—v and Communica 72/73/EEC 60 / 20~909 75.5~22kW) ve sea level, DIC—P819(lo us PCB	elay (c contarival Signal, ce Notice Signal, ce	ep Accel./D act) selectio at the set fr signal), OD frequency), RNT(Operat Speed), DS , A5(Arrival ure Alarm Si Output rque, Scale per/Lower L allog Meter T t/End Freque r Failure, V celeration a der-voltage by USP Erro tive 2004/1 corrosive ga ilter, Opera	n: equency), F (Output Der OTQ(Over— ion Time Ov SE(Speed De Signal for C gnal), UVALI ed Value of imit, Freque funing, Start iency(freque 'arious Sign nd Stop at F a, Electronia r, Phase Lc 08/EC, CE, as nor dust)	A2(Frequency viation for Florque), IP(In er), ONT(Plug viation Excession), Section Excession of the Frequency Jump, Activation Frequency ency rate set all Outputs, Power Failure of Thermal, Ses Error, Br. UL, cUL All Parmonic co	y Arrival Sig-PID Control istantaneous gi in Timeove ssive), POK(irequency2), age Alarm Siguency, Trip ccel./Decel./Setting, Carting), Analo Reduced Vo., AVR Funct Temperatur aking Resis 9.3G), 10~58	gnal at or ab.), ALM(Ala : Power Fail pr), THM(The Positioning of OL2(Overloaignal) De History, I/ Curve Selectorier Freque gong Input Selectorier Freque gong Input Selectorier Freque storn, Auto-tu ee Error, Gr stor Overloaignal	pove the set rm Signal), lure Signal), rmal Alarm), Completion), ad Advance of Completion, Manual tion, Manual ncy Setting, rection, Retry t, Overload uning round Fault ad, External kW)								

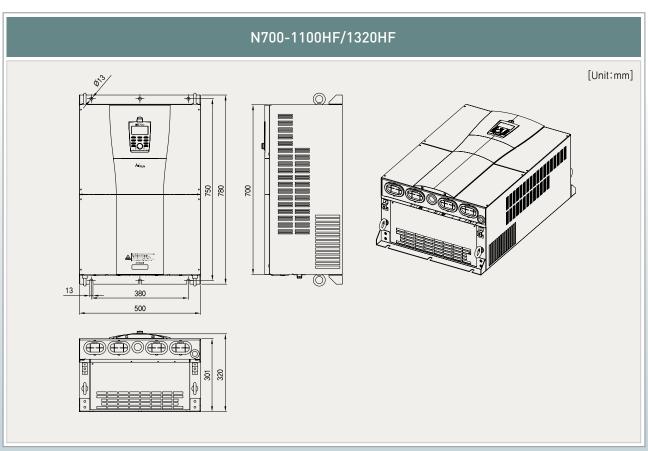
Standard 400V class

Enclosu	ter Model (N	/00-UUULF)	055HF	075HF	110HF	150HF	185HF	220HF	300HF	370HF	450HF	550HF	750HF		1100HF	1320H	
							IP2								00		
	ble Motor(4P,		5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	
Rated C (kVA)		100V 180V	8.3	11.0	15.9	22.1	26.3	33.2	41.9	50.2	63.0	76.2	103.2	121.9	150.3	180.1	
	utput Voltage		9.9	13.3	19.1	26.6	31.5	39.9 -phase 3	50.2	60.2	75.8	91.4	123.8	146.3	180.4	216.1	
	nput Voltage	-				3-n		-pnase √ 0~480V					ane)				
	output Curren	t(A)	12	16	23	32	38	48	58	75	90	110	149	176	217	260	
		aking(short-time)				he disc									unit(opt		
Braking		lue of Resistor(Ω)	70	50	50	30	20	20	12	12	8	8	6	6	6	6	
Weight(I			7	7	7	15	15	15	25	37	37	51	70	70	90	90	
	on(mm) (WxD	xH)		2 x 336 x) x 478 x 2		330 x 580 x 250			440 x 650			500 x 78		
Control	Method		Space	vector n	nodulatio	n PWM :	system		X 2.50			X Z I I					
	Frequency Ra	ange	0.1~40				.,										
	ncy Accuracy	•			% of Max	. freque	ncv. Ana	alog: ±	0.2%(25	±10℃)							
	ncy Resolutio					Analog)						
	/Frequency (-			rque, re	-					ss vecto	or contro	ol			
	d Capacity		150%/6														
	ation/Deceler	ation Time			(Linear	curve se	etting)										
						et freque	•	eceleration	n via a	n externs	ıl innut						
DC Brak	king					temperati			on, via a	CALCITIC	Input						
	Frequency	Operator		up/dow		,		//									
	Setting	External Signal				10V, -10	~+10V(I	nput imp	edance	10ΚΩ)/	Input cu	rrent: 4	~20mA(Input imp	edance '	180Ω)	
	Forward	Operator				ange FW					,					.,	
	Reverse	External Signal									NC sele	ction), 3	-wire in	put poss	ible		
	Start/Stop	External Port	Set by	RS485													
			FW and	d 8 term	inal sele	ction:											
			RV(Rev	erse), C	F1-CF4(I	Multispee	ed comm	and), JG	(Jogging), DB(Ex	ternal D	C Brakin	g), SET(Second I	Motor Co	nstants	
I married			Setting), 2CH	Second	Accel.,	/Decel.)	, FRS(F	ree-Ru	n-Stop	, EXT(E	xternal	Trip),	USP(Un	attended	Start	
Input			Protect	ion),CS(Change	to/from	Comme	rcial Po	wer Sup	ply), SF	T(Softwa	are Loc	k), AT(A	analog Ir	nput Sele	ction),	
	Intelligent	Input	SET3(T	hird Mot	or Consta	ant Settin	g), RS(R	eset), ST	A(3-wire	e Start), :	STP(S-w	ire Stop)	, F/R(3-	wire Fwo	d./Rev.), f	PID(PID	
	Terminal		On/Off)	, PIDC(I	PID Rese	t), CAS(Control	Gainsett	ing), UF	/DWN(R	emote-c	ontrolle	d Accel.	./Decel.)	, UDC(Re	emote-	
			control	On/Off), PIDC(PID Reset), CAS(Control Gainsetting), UP/DWN(Remote-controlled Accel./Decel.), UDC(Remote-controlled Data Clearing), OPE(Operator Control), SF1-SF7(Multispeed Bit Command 1-7), OLR(Overload Limit													
			Change	e), TL(T	orque Li	mit Char	nge), TF	RQ1, TRO	22(Torqu	ie Limit	Selectio	n(1),(2))	PPI(P/PI	Selection	on), BOK	(Brake	
			Verifica	ation), C	RT(Orier	ntation),	LAC(LA	D Cance	i), PCLI	R(Positio	ning De	viation I	Reset),	STAT(90	-degree,	/phase	
			Difference Permission), XT1, XT2, XT3 (Multi-step Accel./Decel. Time 1~3)														
	Thermistor	Input Terminal	1 terminal (PTC characteristics)														
								4 Open collector terminals and 2 relay (c contact) selection: Run(Run Signal), FA1(Frequency Arrival Signal, at the set frequency), FA2(Frequency Arrival Signal at or above the set									
			frequency), OL(Overload Advance Notice Signal), OD(Output Deviation for PID Control), ALM(Alarm Signal),										- T.				
	Intelligent			FA3(Frequency Arrival Signal, only at the set frequency), OTQ(Over-torque), IP(Instantaneous Power Failure Signal),										ol), ALM	(Alarm S	ignal),	
	Torminal	Output	FA3(Fre			-	ly at the	ice Sign set fred	al), OD(quency),	Output OTQ(Ove	Deviation er-torque	n for Pl e), IP(Inst	antaneou	ol), ALM us Power	(Alarm S Failure S	ignal), Signal),	
Output	Terminal	Output	FA3(Fre	er-voltag	ge Signal)	, TRQ(In	ly at the Torque L	ice Sign set frec imit), RN	al), OD(quency), T(Operat	Output OTQ(Ove ion Time	Deviation er-torque Over), O	n for Pl), IP(Inst NT(Plug	antaneou in Timeov	ol), ALM us Power ver), THM	(Alarm S Failure S (Thermal	ignal), Signal), Alarm),	
Output	Terminal	Output	FA3(Fre UV(Und BRK(Bra	er-voltag ake Rele	ge Signal) ase), BEF	, TRQ(In R(Brake E	ly at the Torque L Error), ZS	ice Sign set frec Limit), RN (Zero Sp	al), OD(quency), T(Operat eed), DS	Output OTQ(Ove ion Time E(Speed	Deviation er-torque Over), O Deviation	n for PI e), IP(Inst NT(Plug n Excess	antaneou in Timeov ive), POI	ol), ALM us Power ver), THM K(Position	(Alarm S Failure S (Thermal hing Comp	ignal), Signal), Alarm), bletion),	
Output	remina	Output	FA3(Fre UV(Und BRK(Bra FA4(Arr	er-voltag ake Rele ival Sign	ge Signal ase), BEF al for Ov	, TRQ(In R(Brake E er Setting	ly at the Torque L Error), ZS g Freque	ice Sign set frec limit), RN (Zero Sp ncy2), As	al), OD(quency), T(Operat eed), DS 5(Arrival	Output OTQ(Ove ion Time E(Speed Signal fo	Deviation er-torque Over), O Deviation r Only Se	n for PI e), IP(Inst NT(Plug n Excess etting Fre	antaneou in Timeov ive), POI equency2	ol), ALM us Power ver), THM K(Position 2), OL2(O	(Alarm S Failure S (Thermal	ignal), Signal), Alarm), bletion),	
Output			FA3(Fre UV(Und BRK(Bra FA4(Arr Notice S	er-voltag ake Rele ival Sign Signal2),	ge Signal) ase), BEF al for Ov PALM(Ins	, TRQ(In R(Brake E er Setting tantaneo	ly at the Torque L Error), ZS g Freque us Power	set free set free Limit), RN (Zero Sp ncy2), A5 Failure	al), OD(quency), T(Operat eed), DS 5(Arrival Alarm Sig	Output OTQ(Ove ion Time E(Speed Signal fo	Deviation er-torque Over), O Deviation r Only Se	n for PI e), IP(Inst NT(Plug n Excess etting Fre	antaneou in Timeov ive), POI equency2	ol), ALM us Power ver), THM K(Position 2), OL2(O	(Alarm S Failure S (Thermal hing Comp	ignal), Signal), Alarm), bletion),	
Output		Output Output Terminal	FA3(Fre UV(Und BRK(Bra FA4(Arr Notice S	er-voltag ake Rele ival Sign Signal2),	ge Signal) ase), BEF al for Ov PALM(Ins	, TRQ(In R(Brake E er Setting	ly at the Torque L Error), ZS g Freque us Power	set free set free Limit), RN (Zero Sp ncy2), A5 Failure	al), OD(quency), T(Operat eed), DS 5(Arrival Alarm Sig	Output OTQ(Ove ion Time E(Speed Signal fo	Deviation er-torque Over), O Deviation r Only Se	n for PI e), IP(Inst NT(Plug n Excess etting Fre	antaneou in Timeov ive), POI equency2	ol), ALM us Power ver), THM K(Position 2), OL2(O	(Alarm S Failure S (Thermal hing Comp	ignal), Signal), Alarm), bletion),	
Output	Intelligent (FA3(Fre UV(Und BRK(Bra FA4(Arr Notice S Analog Output	er-voltag ake Rele- ival Sign Bignal2), Voltage, Frequer	ge Signal gase), BEF al for Ov PALM(Ins Analog ncy, Outp	R(Brake E er Setting stantaneon Current, but Curre	ly at the Torque L Error), ZS g Freque us Power Pulse Lir ent, Moto	ice Sign set frec Limit), RN (Zero Sp ncy2), A5 Failure ne Outpu	al), OD(quency), T(Operat eed), DS 5(Arrival Alarm Siç t	Output OTQ(Over ion Time E(Speed Signal fo gnal), UV	Deviation er-torque Over), O Deviation r Only Se ALM(Und	n for PI), IP(Inst NT(Plug n Excess etting Fre er Voltag	antaneou in Timeov ive), POI equency2 ie Alarm	ol), ALM us Power ver), THM K(Position 2), OL2(On Signal)	(Alarm S Failure S (Thermal hing Comp	ignal), Signal), Alarm), bletion), dvance	
	Intelligent (FA3(Fre UV(Und BRK(Bra FA4(Arr Notice S Analog Output Conditi	er-voltag ake Rele- ival Sign Signal2), Voltage, Frequer on, Inpu	ge Signal, ase), BEF al for Ov PALM(Ins Analog ncy, Outp t Power,	I, TRQ(In R(Brake E er Setting stantaneon Current, out Curre Output	ly at the Torque Lerror), ZS g Freque us Power Pulse Lirent, Moto Voltage	ice Sign set frec imit), RN (Zero Sp ncy2), A5 Failure ne Outpu or Torqu	al), OD(quency), T(Operat eed), DS 5(Arrival Alarm Sig t e, Scale	Output OTQ(Oversion Time E(Speed Signal forgal), UV	Deviation er-torque Over), O Deviation r Only Se ALM(Und	n for PI n for PI n IP(Inst NT(Plug n Excess etting Fre er Voltag ut Frequ	antaneou in Timeov ive), POI equency2 e Alarm ency, Ti	ol), ALM us Power ver), THM K(Position t), OL2(O Signal)	(Alarm S Failure S I(Thermal Ining Comp Verload A	signal), Signal), Alarm), Oletion), dvance	
	Intelligent (FA3(Fre UV(Und BRK(Bra FA4(Arr Notice S Analog Output Conditi V/f free	er-voltagake Reletival Signal2), Voltage, Frequeron, Inpur-setting	ge Signal, ase), BEF al for Ov PALM(Ins Analog acy, Outp t Power, (up to 7	TRQ(In R(Brake E) er Setting stantaneon Current, Dut Curre Output points), F	ly at the Torque Lerror), ZS g Freque us Power Pulse Lirent, Moto Voltage	ice Sign set frec Limit), RN (Zero Sp ncy2), As Failure ne Outpu or Torque y Upper/	al), OD(quency), T(Operateed), DS 5(Arrival Alarm Sigt te, Scale	Output OTQ(Over ion Time E(Speed Signal for gnal), UV d Value	Deviation Per-torque Over), O Deviation Over Only Se ALM(Und Of Output Unency Ju	n for PI NT(Plug n Excess etting Fre er Voltag ut Frequ	antaneou in Timeov ive), POI equency2 ie Alarm ency, Ti	ol), ALM us Power ver), THM K(Position t), OL2(0 Signal) rip Histor	(Alarm S Failure S I(Thermal hing Comp verload A	signal), Signal), Alarm), bletion), dvance erminal	
Display	Intelligent (FA3(Free UV(Und BRK(Bra FA4(Arr Notice S Analog Output Conditi V/f free Torque	er-voltage ake Rele- ival Sign Signal2), Voltage, Frequer on, Inpu -setting Boost L	ge Signal, ase), BEF al for Ov PALM(Ins Analog acy, Out to Power, (up to 7 evel/Brakers).	I, TRQ(In R(Brake E er Setting stantaneor Current, out Curre Output points), F king Poin	ly at the Torque L Fror), ZS g Freque us Power Pulse Lir ent, Moto Voltage Frequence t Setting	ice Sign set frec Limit), RN (Zero Sp ncy2), As r Failure ne Outpu or Torqu y Upper/ , Analog	al), OD(quency), T(Operateed), DS 5(Arrival Alarm Sigt te, Scale Lower L Meter T	Output OTQ(Ove ion Time E(Speed Signal fo gnal), UV d Value imit, Frec uning, S	Deviation Per-torque Over), O Deviation Per Only Se ALM(Und Of Output Uency Ju Lart Freq	n for PI), IP(Inst NT(Plug n Excess etting Fre er Voltag ut Frequ ump, Accuency S	antaneou in Timeov ive), POI equency2 ie Alarm ency, Ti eel./Dece etting, C	ool), ALM us Power ver), THM K(Position K(Position Signal) rip Histor darrier Fre darrier Fre	(Alarm S Failure S I(Thermal aling Composerload Alary, I/O Te Selection, equency S	signal), Signal), Alarm), bletion), dvance erminal Manual Setting,	
	Intelligent (FA3(Free UV(Und BRK(Bra FA4(Arr Notice S Analog Output Conditi V/f free Torque Electror	er-voltagake Releival Signal2), Voltage, Frequeron, Inpu-setting Boost Laic Therri	ge Signal; ase), BEF al for Ov PALM(Ins Analog ncy, Out; t Power, (up to 7 evel/Brak nal, Free	R. TRQ(In R(Brake E er Setting stantaneor Current, Out Curre Output points), Fixing Poin—setting,	ly at the Torque L Error), ZS g Freque us Power Pulse Lir ent, Moto Voltage Frequenc t Setting External	ice Sign set frec (imit), RN (Zero Sp ncy2), As r Failure ne Outpu or Torqu y Upper/ , Analog Start/En	al), OD(quency), T(Operat eed), DS 5(Arrival Alarm Sig t e, Scale Lower L Meter T d Frequ	Output OTQ(Ove ion Time E(Speed Signal fo gnal), UV. d Value imit, Frec uning, S ency(frec	Deviation Per-torque Over), O Deviation Per Only Se ALM(Und Of Output Usency Ju Usency Te Usency	n for PI NT(Plug n Excess etting Fre er Voltag ut Frequ ump, Accuracy S ate settin	antaneou in Timeov ive), POI equency2 e Alarm ency, Ti cel./Dece etting, C ig), Anal	ol), ALM us Power ver), THM K(Position K(Position OL2(O Signal) rip Histor rip Histor el.Curve S arrier Fro og Input	(Alarm S Failure S Failure S (Thermal ing Compverload Ar ry, I/O Te Selection, equency S Selection	signal), Signal), Alarm), bletion), dvance erminal Manual Setting, Retry	
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Display Main Fu Protectiv Standard Environn	Intelligent (Monitor Inctions Ve Functions d Application Ambien Temper Ins Vibra Locat	Output Terminal t Temperature/Storage ature/Humidity tion ion	FA3(Fre UV(Und BRK(Bra FA4(Arr Notice S Analog Output Conditi V/f free Torque Electror After T Restrict Over—C Current Trip, Ol Low vo —10~5 5.9%(0 Less th DIC—58	er-voltagake Relevival Signal2). Voltage. Frequeron, Inpursetting Boost Laic Therrip, Resion, Defautrent Fat Startion Erritage dir 0°C / -2.6G), 10°an 1000 2(upper	ge Signal, ase). BEFal for Ov PALM(Ins Analog ncy, Outpt Power, (up to 7 evel/Brah nal, Free tault Value Protectio ot, Instant or and C ective 72 0 ~ 65 °C ~ 55Hz(5, m above case), D	A TRQ(In R(Brake E er Setting R(Brake E er Setting Rear Setting) out Current, but C	ly at the Torque L Error), ZS g Freque us Power Pulse Lir ent, Moto Voltage Frequenct t Setting External aneous F Automaticvoltage. Power F eation Er & EMC 20% RH (n)	ice Sign set frecinit), RN (Zero Spincy2), A5 Failure and Output pr Torquity Upper/, Analog Start/En Power Fac Deceler, Under-ailure, Uror directive on-concers (no coolers (no coolers))	al), OD(quency), T(Operat eed), DS 5(Arrival Alarm Sig t e, Scale Lower L Meter T dd Frequ aillure, V ation and -voltage SP Erroi 2004/10 lensing) 2.94m/5	Output OTQ(Ove ion Time E(Speed Signal fo gnal), UV. d Value imit, Frec funing, S ency(frec arious S d Stop at , Electro , Phase D8/EC, C S2(0.3G),	Deviation or The Loss Er. UL, c	n for PI), IP(Inst NT(Plug n Excess etting Fre er Voltag ut Frequ ump, Acc uency S ate settir ttputs, R ailure, A' rmal, Te ror, Bra	antaneou in Timeov ive), POI equency2 ie Alarm ency, Ti eel./Dece etting, C ng), Anal educed VR Funct emperatu	ol), ALM us Power ver), THM K(Positior c), OL2(O Signal) rip Histor clarrier Fro og Input Voltage clion, Auto ure Error	(Alarm S Failure S (Thermal ling Compverload Alarmony I/O Te Selection, equency Selection Start, Ou- tuning	signal), Signal), Alarm), bletion), dvance erminal Manual Setting, Retry verload	
Display Main Fu Protectiv Standard Environn Condition Color	Intelligent (Monitor Inctions Ve Functions d Application Ambien Temper ns Vibra Locat Interr	Output Terminal t Temperature/Storage ature/Humidity tion ion	FA3(Fre UV(Und BRK(Bra FA4(Arr Notice S Analog Output Conditi V/f free Torque Electror After T Restrict Over—c Current Trip, Ol Low vo —10~5 5.9%(0 Less th DIC—58 Feedba	er-voltagake Relevival Signal2). Voltage, Frequeron, Inpu-setting Boost Labic Therrip, Resion, Defaurrent Fat Startion Errltage dir 0°C / -2 66), 10°an 1000 2(upper ck PCB,	ge Signal, ase). BEFal for Ov PALM(Ins Analog ncy, Outpt Power, (up to 7 evel/Brah nal, Free tault Value Protectio or and Cective 72 0 ~ 65 °C ~ 55Hz(5, m above case), D Profibus	R(Brake E er Setting R(Brake E er Setting R(Brake E er Setting R(Brake E er Setting R) R(Brake E er R) R(Brake	ly at the Torque L Error), ZS g Freque us Power Pulse Lir ent, Moto Voltage Frequenct t Setting External aneous F Automatic Voltage Power F eation Er & EMC 20% RH(n)) el, indoor lower ca	ice Sign set frecinit), RN (Zero Spincy2), A5 Failure and Output pr Torquity Upper/, Analog Start/En Power Fac Deceler, Under-ailure, Uror directive on-concers (no coluse)	al), OD(quency), T(Operat eed), DS 5(Arrival Alarm Sig t e, Scale Lower L Meter T dd Frequ aillure, V ation and voltage SP Errol 2004/10 lensing) 2,94m/S rrosive s	Output OTQ(Ove ion Time E(Speed Signal fo gnal), UV. d Value imit, Frec funing, S ency(frec arious S d Stop at , Electro , Phase D8/EC, C S2(0.3G), gas nor c	Deviation or The Loss Er. UL, c. 10~55Hust)	n for PI), IP(Inst NT(Plug n Excess etting Fre er Voltag ut Frequ ump, Acc uency S ate settir ttputs, R aillure, A' rrmal, Te ror, Bra	antaneou in Timeov ive), POI equency2 le Alarm ency, Ti cel./Dece etting, C ng), Anal leduced VR Funct emperatu king Res	oil), ALM us Power ver), THM K(Positior V(Positior V), OL2(O Signal) rip Histor Starrier Fre Grammer Voltage Gion, Auto ure Error Sistor Ov	(Alarm S Failure S (Thermal Jing Composer) Verload Alarmy, I/O Te Selection, equency S Selection, On—tuning T. Ground erload, E	ignal), Alarm), Alarm), dvance erminal Manual Setting, , Retroad	
Display Main Fu Protectiv Standard Environn Condition	Intelligent (Monitor Inctions Ve Functions d Application Ambien Temper ns Vibra Locat Interr	Dutput Terminal It Temperature/Storage rature/Humidity tion ion	FA3(Fre UV(Und BRK(Bra FA4(Arr Notice S Analog Output Condition of Torque Electror After T Restrict Over—C Current Trip, Ol Low vo —10~5 5.9%(0 Less th DIC—58 Feedba Braking	er-voltagake Relevival Signal2). Voltage, Frequeron, Inpu-setting Boost Laic Therrip, Resion, Defaurrent Fat Startotion Err Itage dir 0°C / -2 an 1000 2(upper ick PCB, I unit, A	ge Signal; ase). BEF al for Ov PALM(Ins Analog ncy, Outpt Power, (up to 7 evel/Brah nal, Free tault Value Protection, Instant or and Cective 72 0 ~ 65°C ~ 55Hz(5, m above case). D Profibus C reactor Company of the control of the co	A TRQ(In R(Brake E er Setting R(Brake E er Setting Rear S	ly at the Torque L Error), ZS g Freque us Power Pulse Lir ent, Moto Voltage Frequenc t Setting External aneous F Automatic Power F & EMC 20% RH(n el.) el., indoor lower careactor, E eactor, E eactor, E	ice Sign set frecimit), RN (Zero Spinoy2), A& Failure in Power Failure in Community Upper/, Analog Start/En Power Failure, Under-ailure, Uror directive on-concess)	al), OD(quency), T(Operat eed), DS 6(Arrival Alarm Sig t e, Scale 'Lower L Meter T dd Frequ ailure, V ation and -voltage SP Error 2004/10 lensing) 2.94m/S rrosive g	Output OTQ(Ove ion Time E(Speed Signal fo gnal), UV. d Value imit, Frec funing, S ency(frec arious S d Stop at , Electro , Phase D8/EC, C S2(0.3G), has nor c tor cable	Deviation or — torque Over). O Deviation of Output of Ou	n for PI), IP(Inst NT(Plug n Excess etting Fre er Voltag ut Frequ ump, Acc uency S ate settir ttputs, R aillure, A' rrmal, Te ror, Bra	antaneou in Timeov ive), POI equency2 le Alarm ency, Ti cel./Dece etting, C ng), Anal leduced VR Funct emperatu king Res	oil), ALM us Power ver), THM K(Positior V(Positior V), OL2(O Signal) rip Histor Starrier Fre Grammer Voltage Gion, Auto ure Error Sistor Ov	(Alarm S Failure S (Thermal ling Compverload Alarmony I/O Te Selection, equency Selection Start, Ou- tuning	ignal), Alarm), Alarm), dvance erminal Manual Setting, , Retroad	
Display Main Fu Protectiv Standard Environn Condition Color	Intelligent (Monitor Inctions ve Functions d Application Temper Nibra Locat Interr	Dutput Terminal It Temperature/Storage rature/Humidity tion ion	FA3(Fre UV(Und BRK(Bra FA4(Arr Notice S Analog Output Condition of Torque Electror After T Restrict Over—C Current Trip. Ol Low vo —10~5 5.9%(0 Less th DIC—58 Feedba Braking filter, B	er-voltagake Relevival Signal2). Voltage, Frequeron, Inpu-setting Boost Laic Therrip, Resion, Defaurrent Fat Startotion Err Itage dir 0°C / -2 an 1000 2(upper ick PCB, I unit, A	ge Signal, ase), BEF al for Ov PALM(Ins Analog ney, Outp to Power, (up to 7 ever) Fraid and, Free art After uit Value Protection, Instant or and Cective 72 0 ~65°C ~55Hz(5, m above case), D Profibus C reactives istor, A	R(Brake E er Setting R(Brake E er Setting R(Brake E er Setting R(Brake E er Setting R) R(Brake E er R) R(Brake	ly at the Torque L Error), ZS g Freque us Power Pulse Lir ent, Moto Voltage Frequenc t Setting External aneous F Automatic Power F & EMC 20% RH(n el.) el., indoor lower careactor, E eactor, E eactor, E	ice Sign set frecimit), RN (Zero Spinoy2), A& Failure in Power Failure in Community Upper/, Analog Start/En Power Failure, Under-ailure, Uror directive on-concess)	al), OD(quency), T(Operat eed), DS 6(Arrival Alarm Sig t e, Scale 'Lower L Meter T dd Frequ ailure, V ation and -voltage SP Error 2004/10 lensing) 2.94m/S rrosive g	Output OTQ(Ove ion Time E(Speed Signal fo gnal), UV. d Value imit, Frec funing, S ency(frec arious S d Stop at , Electro , Phase D8/EC, C S2(0.3G), has nor c tor cable	Deviation or — torque Over). O Deviation of Output of Ou	n for PI), IP(Inst NT(Plug n Excess etting Fre er Voltag ut Frequ ump, Acc uency S ate settir ttputs, R aillure, A' rrmal, Te ror, Bra	antaneou in Timeov ive), POI equency2 le Alarm ency, Ti cel./Dece etting, C ng), Anal leduced VR Funct emperatu king Res	oil), ALM us Power ver), THM K(Positior V(Positior V), OL2(O Signal) rip Histor Starrier Fre Grammer Voltage Gion, Auto ure Error Sistor Ov	(Alarm S Failure S (Thermal Jing Composer) Verload Alarmy, I/O Te Selection, equency S Selection, On—tuning T. Ground erload, E	ignal), Alarm), Alarm), dvance erminal Manual Setting, , Retroad	

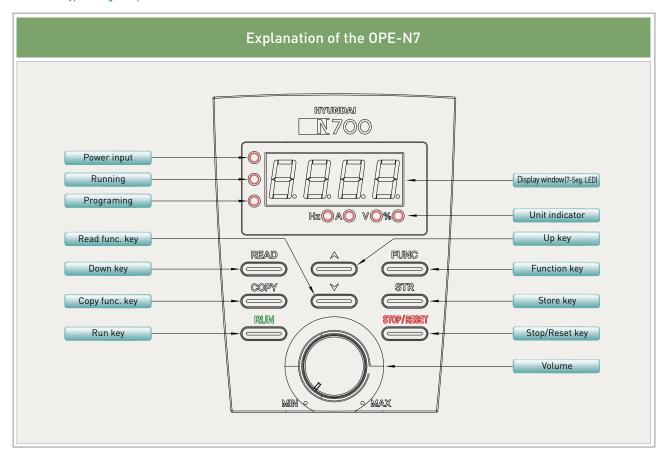


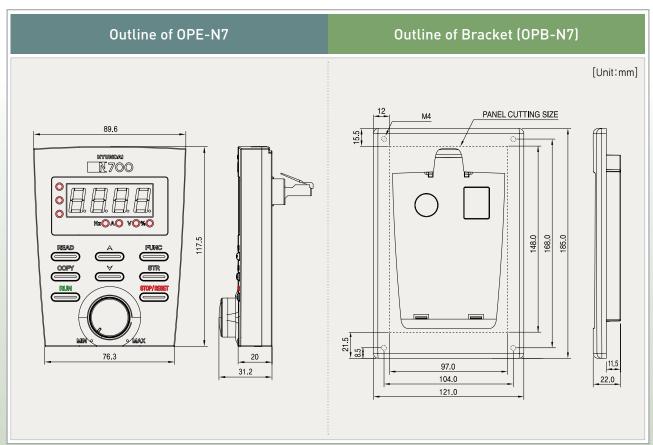


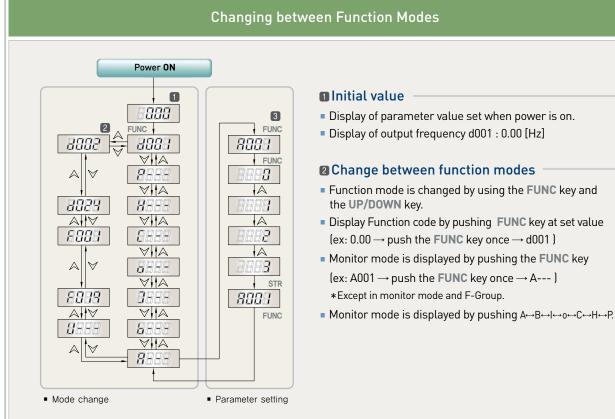




*The LED type of digital operator(OPE-N7) comes as standard.



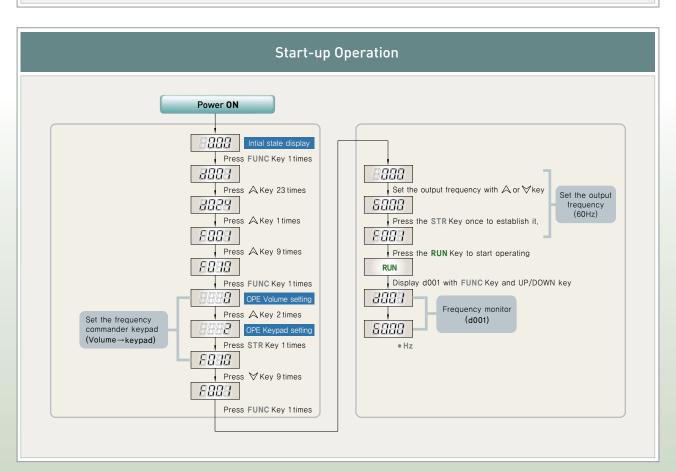




- Display of parameter value set when power is on.
- Display of output frequency d001: 0.00 [Hz]

Change between function modes

- Function mode is changed by using the FUNC key and
- Display Function code by pushing FUNC key at set value (ex: $0.00 \rightarrow \text{push the } \text{FUNC}$ key once $\rightarrow \text{d001}$)
- Monitor mode is displayed by pushing the FUNC key (ex: A001 \rightarrow push the **FUNC** key once \rightarrow A---)



Monitor Modes (d-group)

Main Function	Code	Function Name	Description	Initial Data	Change Mode On Run
Display Group					
	d001	Output Frequency Monitor	0~99.99/100.0~400.0[Hz]	0.00	_
	d002	Motor Rotational Direction Monitor	F(forward), R(reverse), O(stop)	F	-
	d003	Output Current Monitor	0.0~999.9[A]	0.0	_
	d004	Output Voltage Monitor	0.0~999.9[V]	0.0	-
	d005	DC Link Voltage Monitor	0.0~999.9[V]	0.0	-
	d006	Motor Input Power Monitor	0.0~999.9[Kw]	0.0	-
	d007	Output Torque Monitor	-300~300[%]	0	-
Basic	d008	Number of Motor Rotation	0~9999[RPM]	0	-
Monitor	d009	PID Feedback Monitor	0.00~100.0(= PID F/B×C026)[%]	0	-
	d010	Intelligent Input Terminal Monitor	Display the state of the intelligent input terminals	-	-
	d011	Intelligent Output Terminal Monitor	Display the state of the intelligent output terminals	-	_
	d012	Frequency Conversion Monitor	0.00~99.99/100.0~400.0(=d001×b009)	0	-
	d013	Accumulated Time Monitor During RUN(Hr)	0~9999./1000~6553[Hr]	0	-
	d014	Accumulated Time Monitor During RUN(Min)	0~59[Min]	0	-
	d015	Power on Time Monitor(Hr)	0~9999./1000~6553[Hr]	0	-
	d016	Power on Time Monitor(Min)	0~59[Min]	0	-
Trip & Warning M	onitor				
	d017	IGBT Temperature Monitor	0~9999[℃]	-	_
	d018	Trip Counter	Display the number of inverter trips.	0	-
	d019	Trip Monitor 1		-	-
Trip &	d020	Trip Monitor 2	Display the details for the last six protective trips.	-	-
Warning Monitor	d021	Trip Monitor 3	Trip code, output frequency [Hz], output current [A].	-	-
	d022	Trip Monitor 4	the direct voltage (between P and N) on tripping [V].	-	-
	d023	Trip Monitor 5	the direct voltage (between 1 and 14) on hipping [V].	_	_
	d024	Trip Monitor 6		-	-



Fundamental and Operating Curve Settings (F&A-group)

Main Function	Code	Function Name	Setting Range	Initial Data	Change Mode On Run
Output	F001	Output Frequency Setting	0.00~99.99/100.0~400.0[Hz]	0.00	0
Frequency	F201	Output Frequency Setting, 2nd Motor	0.00~99.99/100.0~400.0[Hz]	0.00	0
	F002	Base Frequency Setting	$30.00 \sim 99.99/100.0 \sim 400.0$, up to max. frequency[Hz]	60.00	×
	F202	Base Frequency, 2nd Motor	$30.00{\sim}99.99/100.0{\sim}400.0,$ up to max. frequency[Hz]	60.00	×
	F003	Maximum Frequency Setting	30.00~99.99/100.0~400.0, from base frequency[Hz]	60.00	×
	F203	Maximum Frequency Setting, 2nd Motor	$30.00\sim99.99/100.0\sim400.0$, from base frequency[Hz]	60.00	×
Basic Setting	F004	Starting Frequency Setting	0.10~10.0[Hz]	0.50	0
	F005	Frequency Upper Limit	0.00 \sim 99.99/100.0 \sim 400.0[Hz] Frequency min. \sim Max. frequency	0.00	0
	F205	Frequency Upper Limit, 2nd Motor	0.00 \sim 99.99/100.0 \sim 400.0[Hz] Frequency min. \sim Max. frequency	0.00	0
	F006	Frequency Lower Limit	0.00 \sim 99.99/100.0 \sim 400.0[Hz] Starting frequency \sim Max. frequency	0.00	0
	F206	Frequency Lower Limit, 2nd Motor	0.00 \sim 99.99/100.0 \sim 400.0[Hz] Starting frequency \sim Max. frequency	0.00	0
	F007	Accelerating Time Setting	0.1~999.9,1000.~3600.[sec]	30.0	0
Acceleration/	F207	Accelerating Time Setting, 2nd Motor	0.1~999.9,1000.~3600.[sec]	30.0	0
Deceleration Time Setting	F008	Decelerating Time Setting	0.1~999.9,1000.~3600.[sec]	30.0	0
Time Setting	F208	Decelerating Time Setting, 2nd Motor	0.1~999.9,1000.~3600.[sec]	30.0	0
	F009	Driving Direction Selection	0(FWD), 1(REV)	0	×
Basic Setting	F010	Frequency Source Selection	0(OPE VOL),1(Terminal),2(OPE keypad),3(COM),4(OPT1),5(OPT2)	0	×
	F011	RUN Command Source Selection	1(Terminal),2(OPE),3(COM),4(OPT1),5(OPT2)	2	×
Motor	F012	Motor Control Method	0(VC),1(VP1),2(VP2),3(Free V/f),4(SLV-I),5(SLV-D),6(V2),7(0Hz-V2)	0	×
Information	F212	2nd Motor Control Method	0(VC),1(VP1),2(VP2),3(Free V/f),4(SLV-I),5(SLV-D)	0	×
		Motor Voltage Selection	200/215/220/230/240[V]	220	
	F013	(Motor rated voltage)	380/400/415/440/460/480[V]	(440)	×
	F014	Output Voltage Gain	20~100[%]	100	0
	1014		1.5/2.2/3.7/5.5/7.5/11/15/18.5/22/30/37/45/55/75	100	
	F015	Motor Capacity Selection (Motor rated capacity)	/90/110/132/160[Kw]	Factory setting	×
Motor Setting	F215	2nd Motor Capacity Selection (Second motor rated capacity)	1.5/2.2/3.7/5.5/7.5/11/15/18.5/22/30/37/45/55/75 /90/110/132/160[Kw]	Factory setting	×
	F016	Motor Pole Selection	2/4/6/8/10/12[Pole]	4	×
	F216	2nd Motor Pole Selection	2/4/6/8/10/12[Pole]	4	×
	F017	Motor Rated Current Setting	0.0~999.9[A]	Factory setting	×
	F217	2nd Motor Rated Current	0.0~999.9[A]	Factory setting	×
	F018	Speed/Torque Mode Selection	0(Speed control mode)/1(Torque control mode)	0	×
	F019	SLV Control Method Selection	0(Normal operation mode), 1(0Hz operation mode)	0	×
	A001	Acceleration Pattern	0(Line), 1(S_Curve), 2(U_Curve), 3(RU_Curve)	0	×
	A201	Acceleration Pattern, 2nd Motor	0(Line), 1(S_Curve), 2(U_Curve), 3(RU_Curve)	0	×
Acceleration/	A002	Deceleration Pattern	0(Line), 1(S_Curve), 2(U_Curve), 3(RU_Curve)	0	×
Deceleration		Deceleration Pattern, 2nd Motor	0(Line), 1(S Curve), 2(U Curve), 3(RU Curve)	0	×
Pattern Setting	A003	Acceleration Curvature	1~10	8	×
		Deceleration Curvature	1~10	8	×
		Acceleration Stop Frequency	0.00~Max. Frequency[Hz]		^
Acceleration Stop Setting		Acceleration Stop Time	0~60.00[sec]	0.00	0
Stop detting	A006	Acceleration/Deceleration Selection 2		0.00	×
	A207	Acceleration/Deceleration Selection 2,		0	×
		2nd Motor	0.4.000.0.4000.0000.7. 1	00.5	_
	A008	Acceleration Time 2	0.1~999.9,1000.~3600.[sec]	30.0	0
Acceleration	A208	Acceleration Time 2, 2nd Motor	0.1~999.9,1000.~3600.[sec]	30.0	0
Deceleration	A009	Deceleration Time 2	0.1~999.9,1000.~3600.[sec]	30.0	0
Setting 2	A209	Deceleration Time 2, 2nd Motor	0.1~999.9,1000.~3600.[sec]	30.0	0
	A010	Acceleration Frequency 2	0.00~99.99/100.0~400.0[Hz]	0.00	×
	A210	Acceleration Frequency 2, 2nd Motor	0.00~99.99/100.0~400.0[Hz]	0.00	×
	A011	Deceleration Frequency 2	0.00~99.99/100.0~400.0[Hz]	0.00	×
	A211	Deceleration Frequency 2, 2nd Motor		0.00	×
	A012	Acceleration/Deceleration Selection 3	0(3 Channel), 1(A015/A016)	0	×
Acceleration	A013	Acceleration Time 3	0.1~999.9,1000.~3600.[sec]	30.0	0
Deceleration	A014	Deceleration Time 3	0.1~999.9,1000.~3600.[sec]	30.0	0
Setting 3	A015	Acceleration Frequency 3	0.00~99.99/100.0~400.0 [Hz]	0.00	×

Fundamental and Operating Curve Settings (F&A-group)

Main Function	Code	Function Name	Setting Range	Initial Data	Change Mode On Run
	A027	Multi-speed Frequency 0	F001 same setting value, 0.00~99.99/100.0~400.0[Hz] Start frequency ~ Max, frequency	0.00	0
	A028	Multi-speed Frequency 1	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
	A029	Multi-speed Frequency 2	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
	A030	Multi-speed Frequency 3	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
	A031	Multi-speed Frequency 4	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
	A032	Multi-speed Frequency 5	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
Multi apped	A033	Multi-speed Frequency 6	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
Multi-speed Frequency	A034	Multi-speed Frequency 7	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
Setting	A035	Multi-speed Frequency 8	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
	A036	Multi-speed Frequency 9	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
	A037	Multi-speed Frequency 10	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
A0	A038	Multi-speed Frequency 11	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
	A039	Multi-speed Frequency 12	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
	A040	Multi-speed Frequency 13	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
	A041	Multi-speed Frequency 14	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
	A042	Multi-speed Frequency 15	$0.00\sim99.99/100.0\sim400.0$ [Hz], Start frequency \sim Max. frequency	0.00	0
	A043	Multi-speed 1 Acceleration Time	0.1~999.9/1000.~3600.[sec]	30.0	0
	A044	Multi-speed 1 Deceleration Time	0.1~999.9/1000.~3600.[sec]	30.0	0
	A045	Multi-speed 2 Acceleration Time	0.1~999.9/1000.~3600.[sec]	30.0	0
	A046	Multi-speed 2 Deceleration Time	0.1~999.9/1000.~3600.[sec]	30.0	0
	A047	Multi-speed 3 Acceleration Time	0.1~999.9/1000.~3600.[sec]	30.0	0
	A048	Multi-speed 3 Deceleration Time	0.1~999.9/1000.~3600.[sec]	30.0	0
Multi-speed Acceleration/	A049	Multi-speed 4 Acceleration Time	0.1~999.9/1000.~3600.[sec]	30.0	0
Deceleration	A050	Multi-speed 4 Deceleration Time	0.1~999.9/1000.~3600.[sec]	30.0	0
Time Setting	A051	Multi-speed 5 Acceleration Time		30.0	0
	A052	Multi-speed 5 Deceleration Time		30.0	0
	A053	Multi-speed 6 Acceleration Time	0.1~999.9/1000.~3600.[sec]	30.0	0
	A054	Multi-speed 6 Deceleration Time	0.1~999.9/1000.~3600.[sec]	30.0	0
	A055	Multi-speed 7 Acceleration Time	0.1~999.9/1000.~3600.[sec]	30.0	0
	A056	Multi-speed 7 Deceleration Time	0.1~999.9/1000.~3600.[sec]	30.0	0
	A059	Free V/F Frequency 1	0~99.99/100.0~400.0[Hz]	0.00	×
	A060	Free V/F Voltage 1	0.0~999.9[V]	0.0	×
	A061	Free V/F Frequency 2	0~99.99/100.0~400.0[Hz]	0.00	×
	A062	Free V/F Voltage 2	0.0~999.9[V]	0.0	×
	A063	Free V/F Frequency 3	0~99.99/100.0~400.0[Hz]	0.00	×
	A064	Free V/F Voltage 3	0.0~999.9[V]	0.0	×
Free V/F	A065	Free V/F Frequency 4	0~99.99/100.0~400.0[Hz]	0.00	×
Curve Setting	A066	Free V/F Voltage 4	0.0~999.9[V]	0.0	×
	A067	Free V/F Frequency 5	0~99.99/100.0~400.0[Hz]	0.00	×
	A068	Free V/F Voltage 5	0.0~999.9[V]	0.0	×
	A069	Free V/F Frequency 6	0~99.99/100.0~400.0[Hz]	0.00	×
	A070	Free V/F Voltage 6	0.0~999.9[V]	0.0	×
	A071	Free V/F Frequency 7	0~99.99/100.0~400.0[Hz]	0.00	×
	A072	Free V/F Voltage 7	0.0~999.9[V]	0.0	×
Jogging	A073	Jogging Frequency	0.00~10.00[Hz]	0.00	0
Driving Setting	A074	Jogging Stop Mode	0(FRS), 1(DEC), 2(DCBR)	0	0
	A075	Jump Frequency Min. 1	0.00 ~ 99.99/100.0~400.0	0.00	0
	A076	Jump Frequency Max. 1	0.00 ~ 99.99/100.0~400.0	0.00	0
Jump	A077	Jump Frequency Min. 2	0.00 ~ 99.99/100.0~400.0	0.00	0
Frequency	A078	Jump Frequency Max. 2	0.00 ~ 99.99/100.0~400.0	0.00	0
Setting	A079	Jump Frequency Min. 3	$0.00 \sim 99.99/100.0 \sim 400.0$	0.00	0

Main Function	Code	Function Name	Setting Range	Initial Data	Change Mode On Run
	A081	DC Braking Selection	0(Disable), 1(Enable)	0	0
	A082	DC Braking Frequency	0.00~60.00[Hz]	0.50	0
	A083	DC Braking Waiting Time	0.0~5.0[sec]	0.0	0
DC Braking	A084	DC Braking Force	0~100[%]	0	0
Setting	A085	DC Braking Time	0.00~60.00[sec]	0.00	0
	A086	DC Braking Edge/Level Selection	0(Edge), 1(Level)	1	0
	A087	DC Braking Force for Starting	0~100[%]	0	0
	A088	DC Braking Time for Starting	0.00~60.00[sec]	0.00	0
Acceleration/ Deceleration Reference	A089	Acceleration/Deceleration Time Reference Selection	O(MaxFreq), 1(ComdFreq)	0	×
	A090	Speed Control Loop Gain	1~300	120	×
	A091	Speed Control Loop Constant	1~120	60	×
Coin Catting	A092	Speed Control Proportion Gain Setting	0~1000[%]	100	×
Gain Setting	A093	Speed Control Integration Gain Setting	0~1000[%]	100	×
	A094	Load Selection	0(Normal), 1(Lift), 2(Washing machine), 3(Press), 4~5(Reserved mode)	0	×

User Setting Functions (U-group)

Main Function	Code	Function Name	Setting Range	Initial Data	Change Mode On Run
	U001	User 1 Selection	No/d001~P021	No	0
	U002	User 2 Selection	No/d001~P021	No	0
	U003	User 3 Selection	No/d001~P021	No	0
	U004	User 4 Selection	No/d001~P021	No	0
	U005	User 5 Selection	No/d001~P021	No	0
User Selection	U006	User 6 Selection	No/d001~P021	No	0
Mode	U007	User 7 Selection	No/d001~P021	No	0
	U008	User 8 Selection	No/d001~P021	No	0
	U009	User 9 Selection	No/d001~P021	No	0
	U010	User 10 Selection	No/d001~P021	No	0
	U011	User 11 Selection	No/d001~P021	No	0
	U012	User 12 Selection	No/d001~P021	No	0



Operating Condition Settings (b-group)

Main Function	Code	Function Name	Setting Range	Initial Data	Change Mode On Ru
Operation Direction	b001	Rotational Direction Restriction	O(All enable), 1(FW enable), 2(REV enable)	0	0
Start Selection	b003	Reduced Voltage Start Selection	0(Start reduced voltage, short time) \sim 6(Start reduced voltage, long time)	0	0
Start Selection	b004	Instantaneous Power Failure Under-voltage Retry Time Selection 1)	0(Restart until 16th), 1(Unlimited Restart)	0	0
	b005	Stop Key Enable	0(Valid), 1(Invalid)	0	0
Stop and Restart	b006	Stop Mode Selection	O(Decel. Stop), 1(FRS), 2(DCBR)	0	×
Selection	b007	FRS Selection	0(Zero Hz), 1(Fmat (at FRS function setting)) 2(Speed search (at starting))	0	0
AVR	b008	AVR Selection	0(Always En), 1(Always DIS), 2(Decel. DIS)	0	×
Frequency Conversion	b009	Frequency Scaling Conversion Factor	0.1~99.9	1.0	0
Carrier Frequency	b010	Carrier Frequency	0.5~10.0[kHz]	5.0	×
- · · · ·	b011	Cooling Fan Control	0(Always En), 1(OPR. En)	0	×
Fan Setting	b012	Debugger Mode Selection	0~100	0	×
Ground Fault	b013	Ground Fault	O(Invalid), 1(Valid)	0	×
Initialization	b014	Initialization Mode	O(Trip only), 1(Data only), 2(Trip+Data)	0	×
milianzanufi	b015	Country Code For Initialization	0(Local), 1(EC), 2(USA)	0	×
	b016	Retry Selection	O(Trip), 1(Zero Hz), 2(FREQ MAT), 3(F-D-TRIP)	0	0
	b017	Allow Under-voltage Power Failure Time	0.3~1.0[sec]	1.0	0
	b018	Retry Wait Time	0.3~100.0[sec]	1.0	0
	b019	Instantaneous Power Failure Under-voltage Trip During Stop	0(Invalid), 1(Valid), 2(ST/DEC Dis) 3(Always invalid: P-N DC)	0	0
	b020	Frequency Setting to Match	0~99.99/100.0~400.0[Hz]	0.00	0
D. J. O. W.	b021	Non-stop Function Section at Instantaneous Power Failure	0(Invalid), 1(Valid)	0	×
Retry Setting	b022	Starting Voltage of Non-stop Function at Instantaneous Power Failure	0.0~999.9[V]	0.0	×
	b023	Non-stop Instantaneous Power Failure LADSTOP Level	0.0~999.9[V]	0.0	×
	b024	Non-stop Deceleration Time at Instantaneous Power Failure	0.1~99.99/100.0~999.9/1000~3600[sec]	1.0	×
	b025	Starting Deceleration Width at Instantaneous Power Failure	0.00~10.00[Hz]	0.00	×
	b026	Phase Loss Protection Selection	O(Invalid), 1(Valid)	0	0
	b027	Electronic Thermal Level	0.0~999.9[A]	Irate	0
	b227	Electronic Thermal Level, 2nd Motor	0.0~999.9[A]	Irate	0
Electronic Thermal	b028	Electronic Thermal Characteristic Selection	O(DECEL TORQ.), 1(CONST TOQR.)	1	0
	b011 Cooling Fan Control b012 Debugger Mode Selection b013 Ground Fault b014 Initialization Mode b015 Country Code For Initialization b016 Retry Selection b017 Allow Under-voltage Power Failure Dinder-voltage Trip During Stop b018 Retry Wait Time b019 Instantaneous Power Failure Under-voltage Trip During Stop b020 Frequency Setting to Match b021 Starting Voltage of Non-stop Function at Instantaneous Power Failure b022 Starting Voltage of Non-stop Function at Instantaneous Power Failure b023 Non-stop Instantaneous Power Failure b024 Non-stop Deceleration Time at Instantaneous Power Failure b025 Starting Deceleration Time at Instantaneous Power Failure b026 Phase Loss Protection Selection b027 Electronic Thermal Level b028 Electronic Thermal Characteristic Selection b029 Electronic Thermal Characteristic Selection b029 Electronic Thermal Warning Level b020 Overload Restriction Selection b021 (Disable), 1(ACCEL/CONST), 2(CONST), 3(ACCEL/CST(RE)	1	0		
	b029	Electronic Thermal Warning Level	0~100[%]	80	0
	b030	Overload Restriction Selection		1	0
Overload Limit	b031	Overload Restriction Level	Inverter rated current*0.5 \sim 2.0[times]	1.5	0
	b032	Overload Restriction Limit Constant	0.1~30.0[sec]	3.0	0
	b033	Overload Advance Notice Signal Output Mode	0(Accel/Decel/Const), 1(Const)	0	0
	b034	Thermistor Selection	0(Disable), 1(PTC), 2(NTC)	0	0
Thermistor	b035	Thermistor Error Level	0~9999[Ω]	3000	0
	b036	Thermistor Adjustment	0.0~999.9	105.0	0
	b037	Data Command Selection	0(Operator), 1(RS485), 2(OPT1), 3(OPT2), 4(RS232)	0	×
	b038	Communicating Transmission Speed	0(2400BPS), 1(4800BPS), 2(9600BPS), 3(19200BPS), 4(38400BPS)	2	×
Communication	b039	Communication Code	1~32	1	0
Setting		Communication Bit	7(BIT), 8(BIT)	8	0
	b041	Communication Parity	0(NO Parity), 1(Even Parity), 2(Odd Parity)	0	0
	b042	Communication Stop Bit	1(1Bit), 2(2Bit)	1	0

^{*1)} This function depends on the machine and load conditions, Before using this function, user must perform verification test

Intelligent Input Terminal Settings (I-group)

Main Function	Code	Function Name	Setting Range	Initial Data	Change Mode On Run
Terminal Input F	unctions &	Contacts			
	1001	Intelligent Input 1 Setting		17	0
	1002	Intelligent Input 2 Setting		16	0
	1003	Intelligent Input 3 Setting		6	0
Basic Monitor	1004	Intelligent Input 4 Setting	Intelligent input setting reference	11	0
Dasic Monitor	1005	Intelligent Input 5 Setting	menigent input setting reference	9	0
	1006	Intelligent Input 6 Setting		3	0
	1007	Intelligent Input 7 Setting		2	0
	1008	Intelligent Input 8 Setting		1	0
	1009	Intelligent Input 1 Selection		0	0
	1010	Intelligent Input 2 Selection		0	0
	1011	Intelligent Input 3 Selection		0	0
Intelligent	1012	Intelligent Input 4 Selection	Intelligent input setting(a/b contact setting)	0	0
Input Selection	1013	Intelligent Input 5 Selection	0 (N.O.), 1(N.C.)	0	0
00,00,00	1014	Intelligent Input 6 Selection		0	0
	1015	Intelligent Input 7 Selection		0	0
	1016	Intelligent Input 8 Selection		0	0
FW Setting	1017	FW Input Terminal Selection	0 (N.O.), 1(N.C.)	0	0
Analog Comman	d Setting				
	1018	O Input Span Calibration	0~9999	Factory setting	0
	1019	O Input Zero Calibration	0~9999	Factory setting	0
	1020	O Start Frequency	0~99.99/100.0~400.0[Hz]	0.00	0
Terminal	1021	O End Frequency	0~99.99/100.0~400.0[Hz]	0.00	0
) Setting	1022	O Start Voltage	0~100[%]	0	0
	1023	O End Voltage	0~100[%]	100	0
	1024	O Start Selection	0(EXT. FREQ.), 1(ZERO HZ)	1	0
	1025	Ol Input Span Calibration	0~9999	Factory setting	0
	1026	Ol Input Zero Calibration	0~9999	Factory setting	0
	1027	Ol Start Frequency	0~99,99/100,0~400,0[Hz]	0.00	0
Terminal	1028	Ol End Frequency	0~99.99/100.0~400.0[Hz]	0.00	0
OI Setting	1029	Ol Start Voltage Ratio	0~100[%]	0	0
	1030	Ol End Voltage Ratio	0~100[%]	100	0
	1031	Ol Start Selection	0(EXT. FREQ.), 1(ZERO HZ)	1	0
	1032	O2 Input Span Calibration	0~9999	Factory setting	0
	1033	O2 Input Zero Calibration	0~9999	Factory setting	0
	1034	O2 Start Frequency	0.0~99.9/100~400[Hz]	0.0	0
Terminal	1035	O2 End Frequency	0.0~99.9/100~400[Hz]	0.0	0
02 Setting	1036	O2 Start Voltage Ratio	-100~100[%]	-100	0
	1037	O2 End Voltage Ratio	-100~100[%]	100	0
	1038	O2 Start Selection	0(Single), 1(AUX, NO REV), 2(AUX, REV)	0	×
	1036	Analog Input Filter Factor	1~30	8	0
	1040	Analog input Filter Factor	0(All parameters except I047 are locked when SFT is on)	0	Ü
Other Functions	1047	Software Lock Mode Selection	1(All parameters except I047, F001 are locked when SFT is on) 2(All parameters except I047, F001 and User group are locked when SFT is on) 3(All parameters except I047 are locked) 4(All parameters except I047, F001 are locked)	1	0
			5(All parameters except I047, F001 and User group are locked)		
	1048	Up/Down Selection	0(Data conservation Dis), 1(Data conservation En)	0	0
	1049	AT Terminal Selection	0(0/01), 1(0/02)	0	0
	1050	Reset Selection	O(TRIP (On)), 1(TRIP (Off)), 2(ONLYTRIP (On))	0	×
Reset	1051	Reset Frequency	0(Zero HZ), 1(Frequency matching)	0	0
	1001	Matching Selection	o(2010 1.2), ((rioquono) matoring)	3	0

Intelligent Output Terminal Settings (o-group)

Main Function	Code	Function Name	Setting Range	Initial Data	Change Mode On Ru
Terminal Output	Function	is & Contacts			
	o001	Intelligent Output 1 Setting		1	0
Intelligent	0002	Intelligent Output 2 Setting		0	0
Output Setting	0003	Intelligent Output 3 Setting	Intelligent output setting reference	3	0
	0004	Intelligent Output 4 Setting		7	0
	0005	Intelligent Output 1 Selection		0	0
Intelligent	0006	Intelligent Output 2 Selection	Intelligent output contact setting	0	0
Output Selection	o007	Intelligent Output 3 Selection	(0 : N.O., 1 : N.C.)	0	0
0010011011	0008	Intelligent Output 4 Selection		0	0
	0009	FM Output Selection	O(FREQ_OUT), 1(CURR_OUT), 2(TORQ_OUT), 3(DFREQ_OUT), 4(VOL_OUT), 5(POW_IN), 6(LOAD RATE), 7(FREQ_LAD)	0	0
M Setting	o010	FM Offset -3.00~10.00		-3.00	0
	o011	FM Adjustment	0.0~255.0	80.0	0
	0012	AM Output Selection	O(FREQ_OUT), 1(CURR_OUT), 2(TORQ_OUT), 3(VOL_OUT), 4(POW_IN), 5(LOAD RATE), 6(FREQ_LAD)	0	0
AM Setting	o013	AM Offset	0.00~10.00	0.96	0
	0014	AM Adjustment	0.0~255.0	100.0	0
	o015	AMI Output Selection	O(FREQ_OUT), 1(CURR_OUT), 2(TORQ_OUT), 3(VOL_OUT), 4(POW_IN), 5(LOAD RATE), 6(FREQ_LAD)	0	0
AMI Setting	o016	AMI Offset	0.00~20.00	4.00	0
	o017	AMI Adjustment	0.0~255.0	100.0	0
	o018	Frequency Arrival Setting for Acceleration	0~99.99/100.0~400.0[Hz]	0.00	0
Frequency	o019	Frequency Arrival Setting for Deceleration	0~99.99/100.0~400.0[Hz]	0.00	0
Arrival Setting	0020	Frequency Arrival Setting for Acceleration 2	0~99.99/100.0~400.0[Hz]	0.00	0
	o021	Frequency Arrival Setting for Deceleration 2	0~99.99/100.0~400.0[Hz]	0.00	0
	0022	Over-torque Level 1	0~200[%]	100	0
Over-torque	0023	Over-torque Level 2	0~200[%]	100	0
Level Setting	0024	Over-torque Level 3	0~200[%]	100	0
	o025	Over-torque Level 4	0~200[%]	100	0
	o026	Overload Advance Notice Level 1	Rated current x 0.0~2.0[times]	1.0	0
0.11	o027	Overload Advance Notice Level 2	Rated current x 0.0~2.0[times]	1.0	0
Other Functions	o028	RUN/ON Time-over Setting	0~9999	0	0
27.00.010	0029	PID Deviation Setting Level	0.0~100.0[%]	3.0	0
	0030	Zero Speed Detection Level Setting	0.00~99.99[Hz]	0.00	0
	o031	AL Relay Output Definition	Refer to the intelligent output setting	5	0
Relay Output	0032	RN Relay Output Definition	Neier to the intelligent output setting	0	0
Setting	o033	AL Relay Output Selection	Intelligent output contactor setting	0	0
	0034	RN Relay Output Selection	0 : N.O, 1: N.C	0	0

Advanced Control Function Setting (C-group)

Main Function	Code	Function Name	Setting Range	Initial Data	Change Mode On Run
	C002	V/f Stability Constant	0.0~300.0[%]	100	0
	C003	Torque Boost Selection	0(Manual), 1(Automatic)	0	×
	C203	Torque Boost Selection, 2nd Motor	0(Manual), 1(Automatic)	0	×
Torque Boost Setting	C004	Manual Torque Boost Value	0.0~20.0[%]	1.0	0
Colling	C204	Manual Torque Boost Value, 2nd Motor	0.0~20.0[%]	1.0	0
	C005	Manual Torque Boost Break Point	0.0~50.0[%]	5.0	0
	C205	Manual Torque Point Boost Frequency, 2nd Motor	0.0~50.0[%]	5.0	0
	C006	Torque Limit Selection	O(User mode), 1(TER. OPR) 2(Analog IN), 3(OPT1), 4(OPT2)	0	0
	C007	Torque Limit 1	0~200[%]	200	0
Torque Limit Setting	C008	Torque Limit 2	0~200[%]	200	0
Setting	C009	Torque Limit 3	0~200[%]	200	O
	C010	Torque Limit 4	0~200[%]	200	0
	C011	Torque LAD Stop Selection	0(Disable), 1(Enable)	0	O
	C012	Braking Control Function Selection	0(Disable), 1(Enable)	0	0
	C013	Waiting Time for Braking Release Confirmation	0.00~5.00[sec]	0.00	0
	C014	Waiting Time for Acceleration	0.00~5.00[sec]	0.00	0
External Brake Setting	C015	Waiting Time for Stop	0.00~5.00[sec]	0.00	0
Setting	C016	Waiting Time for Signal Conformation	0.00~5.00[sec]	0.00	0
	C017	Releasing Frequency	0~99.99/100.0~400.0[Hz]	0.00	0
	C018	Releasing Current	Rated current x (0.0~2.0)[times]	1.0	0
DDD 0 W	C019	BRD Selection	0(Invalid), 1(VAL. Exclude ST), 2(VAL. Include ST)	0	0
BRD Setting	C020	BRD ON Level	330~380/660~760	360(720)	0
	C021	BRD Usage Rate	0.0~100%	0.0	0
	C022	PID Selection	0(Disable), 1(Enable), 2(Reverse Enable)	0	0
	C023	PID-P Gain	0.0~5.0	2.0	O
DID D : :	C024	PID-I Gain	0~3600[sec]	1	0
PID Driving	C025	PID-D Gain	0.0~100.0[sec]	0.0	0
	C026	PID-Feedback Gain	0.00~99.99[times]	1.00	0
	C027	PID Feedback Selection	O(Current), 1(Voltage)	0	O



Motor Constant Settings (H-group)

Main Function	Code	Function Name	Setting Range	Initial Data	Change Mode On Run
A 1. T	H001	Auto Tuning Selection	O(Invalid),1(Valid not ROT.),2(Valid in ROT.)	0	×
Auto Tuning Setting	H002	Motor Constant Selection	O(Motor data),1(AT data),2(At online data)	1	×
2 20	H202	Motor Constant Selection, 2nd Motor	O(Motor data),1(AT data),2(At online data)	1	×
	H003	1st Motor Constant R1	0.000~9.999[Ω]	R1std	×
	H203	2nd Motor Constant R1	0.000~9.999[Ω]	R1std	×
	H004	1st Motor Constant R2	0.000~9.999[Ω]	R2std	×
	H204	2nd Motor Constant R2	0.000~9.999[Ω]	R2std	×
Manual	H005	1st Motor Constant Leakage Inductance(LI)	0.00~99.99[mH]	LIstd	×
Motor	H205	2nd Motor Constant Leakage Inductance(LI)	0.00~99.99[mH]	LIstd	×
Constant	H006	1st Motor Constant lo	0.00~99.99/100.0~999.9[A]	Istd	×
Setting	H206	2nd Motor Constant Io	0.00~99.99/100.0~999.9[A]	Istd	×
	H007	1st Motor Constant J	0.00~99.99/100.0~655.3[kg·m²]	Jstd	×
	H207	2nd Motor Constant J	0.00~99.99/100.0~655.3[kg·m²]	Jstd	×
	H008	1st Motor Constant L	0.00~99.99/100.0~999.9[mH]	Lstd	×
	H208	2nd Motor Constant L	0.00~99.99/100.0~999.9[mH]	Lstd	×
	H009	1st Motor Constant R1 (Autotuning Data)	0.000~9.999[Ω]	R1std	×
	H209	2nd Motor Constant R1 (Autotuning Data)	0.000~9.999[Ω]	R1std	×
	H010	1st Motor Constant R2 (Autotuning Data)	0.000~9.999[Ω]	R2std	×
	H210	2nd Motor Constant R2 (Autotuning Data)	0.000~9.999[Ω]	R2std	×
	H011	1st Motor Constant Leakage Inductance(LI) (Autotuning Data)	0.00~99.99[mH]	LIstd	×
Autotuning	H211	2nd Motor Constant Leakage Inductance(LI) (Autotuning Data)	0.00~99.99[mH]	LIstd	×
Motor Constant	H012	1st Motor Constant Io (Autotuning Data)	0.00~99.99/100.0~999.9[A]	Istd	×
	H212	2nd Motor Constant Io (Autotuning Data)	0.00~99.99/100.0~999.9[A]	Istd	×
	H013	1st Motor Constant J (Autotuning Data)	0.00~99.99/100.0~655.3[kg·m²]	Jstd	×
	H213	2nd Motor Constant J (Autotuning Data)	0.00~99.99/100.0~655.3[kg·m²]	Jstd	×
	H014	1st Motor Constant L (Autotuning Data)	0.00~99.99/100.0~999.9[mH]	Lstd	×
	H214	2nd Motor Constant L (Autotuning Data)	0.00~99.99/100.0~999.9[mH]	Lstd	×

Option Function Setting (P-group)

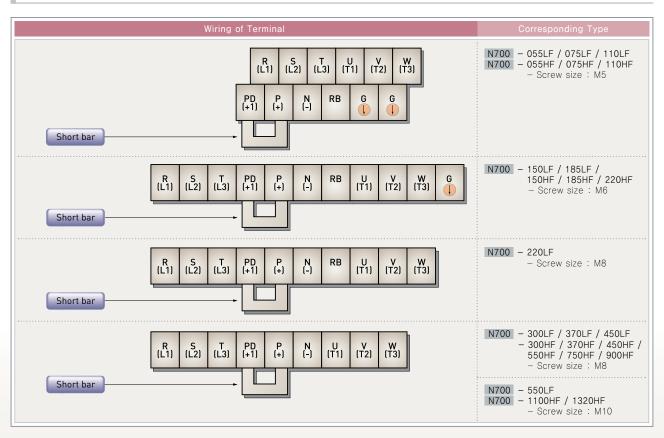
Main Function	Code	Function Name	Setting Range	Initial Data	Change Mode On Run
Option Error	P001	Option 1 Operation Selection on Error	0(Trip), 1(Run)	0	0
Option Error	P002	Option 2 Operation Selection on Error	0(Trip), 1(Run)	0	0
	P003	Feed-back Option Selection	O(Invalid), 1(Valid)	0	×
Encoder	P004	Control Mode Selection	0(ASR), 1(APR)	0	×
Feedback	P005	Encoder Pulse Number Setting	128.~9999./1000~6500(10000~65000) [PPR]	1024	×
	P006	Pulse Train Input Mode Selection	0(Mode 0), 1(Mode 1)	0	×
	P007	Orientation Stop Position Setting	0~4095	0	0
	P008	Orientation Speed Setting	0.00~99.99/100.0~120.0[Hz]	0.00	0
Orientation	P009	Orientation Direction Setting	O(Forward), 1(Reverse)	0	×
	P010	Orientation Completion Range Setting	0~9999	5	0
	P011	Orientation Completion Delay Time Setting	0.00~9.99[sec]	0.00	0
	P012	Electronic Gear Position Selection	0(Feedback), 1(Reference)	0	0
Electronic Gear	P013	Electronic Gear Numerator of Ratio Setting	0~9999	1024	0
dear	P014	Electronic Gear Denominator of Ratio Setting	0~9999	1024	0
Position	P015	Position Control Feed-forward Gain Setting	0.00~99.99/100.0~655.3	0.00	0
Control	P016	Position Control Loop Gain Setting	0.00~99.99	0.50	0
	P017	Compensation of Secondary Resistor Selection	O(Invalid), 1(Valid)	0	0
	P018	Over-speed Detect Level Setting	0.00~99.99/100.0~150.0[%]	135.0	0
Other Functions	P019	Speed-error Over Detect Level Setting	0.00~99.99/100.0~120.0[Hz]	0.00	0
1 0110110113	P020	Digital Input Option Input Mode Selection(Acc/Dec)	0(OPE), 1(OPT1), 2(OPT2)	0	0
	P021	Stop Position Setting for Orientation Input Mode Selection	0(OPE), 1(OPT1), 2(OPT2)	0	×

Main Circuit Terminals

Explanation of Main Circuit Terminals

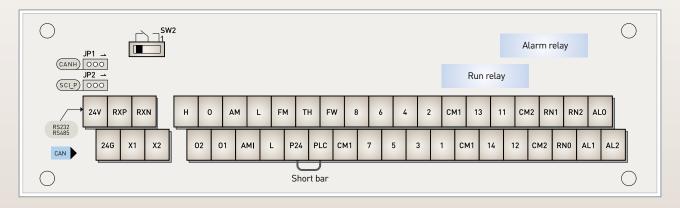
Symbol	Terminal Name	Explanation of Content
R, S, T (L1, L2, L3)	Main Power	Connect alternating power supply. When using regenerative converter and RG series, do not connect.
U, V, W (T1, T2, T3)	Inverter Output	Connect three-phase motor.
PD, P (+1, +)	DC Reactor	Remove the short bar between PD and P, connect optional power factor reactor (DCL-XX).
P, RB (+, RB)	External Braking Resistor	Connect optional external braking resistor. (Please install the optional external braking resistor for 5.5~22Kw model.)
P, N (+, -)	External Regenerative Braking Unit	Connect optional external regenerative braking unit.
G	Inverter Earth Terminals	Grounding terminal.

Main Circuit Terminal Arrangement



Control Terminal Arrangement

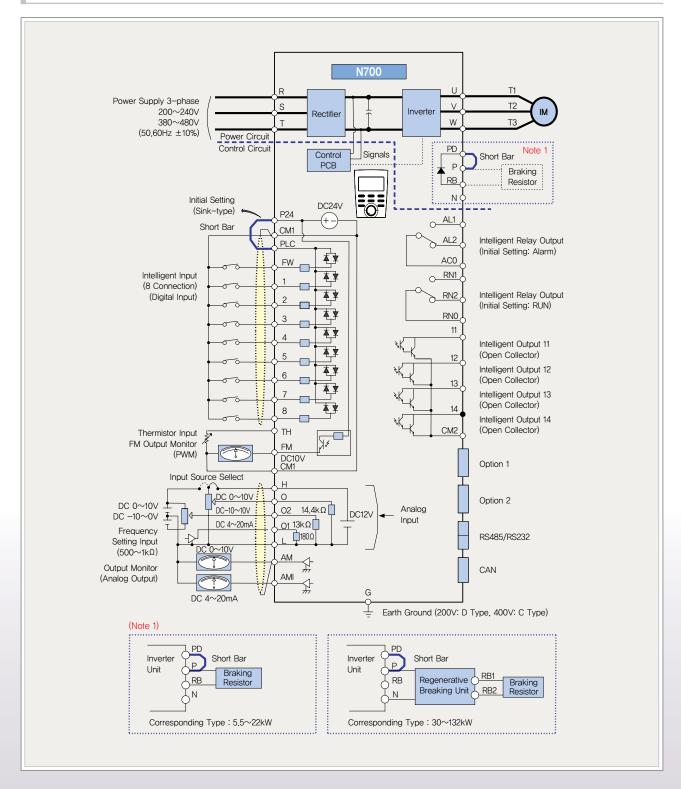
Control Circuit Terminals



Explanation of Control Circuit Terminals

	Туре		Symbol	Terminal Name	Explanation of Content	
			L	Analog Power Common	It is common terminal of frequency command signal (0, 02, 01) Do not connect to ground.	and analogue output(AM, AMI).
	000	50	Н	Frequency Power	It is the DC+10V power for terminals.	Permissible load current 20mA
Analog Digital (connection) Digital (connection)			0	Frequency Command Power Terminal (voltage)	When inputting DC 0~10V, the maximum frequency goes with 10V.	Input Impedance 14.4k ohm Permissible maximum voltage DC -3~+12V
			02	Frequency Command Support (voltage)	When inputting DC 0 \sim \pm 10V, this signal is added to frequency command of 0 or 0l terminal.	Input Impedance 13k ohm Permissible maximum voltage DC $0\sim\pm12V$
			OI	Frequency Command Terminal (current)	When inputting $4\sim$ 20mA, 20mA is maximum frequency. When only 'AT'terminal is ON, this input signal is effective.	Input Impedance 180 ohm Permissible maximum current 24mA
			AM	Analog Monitor (voltage)	DC 0~10V output voltage, 4~20mA output current:	Permissible maximum current 2mA
	Source OP. Input Signal Function Selection etc	nitor	AMI	Analog Monitor (current)	Output one selected from monitor item,output frequency,output current, torque, output vollage,input electric power,electric thermal rate,LAD frequency	Permissible output less than Impedance 250 ohm
	ital nnection) Power Source OP. Input Signal Operation Function Selection		FM	Digital Monitor (voltage)	DC 0 \sim 10 voltage Output(PWM output mode) : Output the output frequency with digital besides above monitor.	Permissible maximum current 1,2mA Maximum frequency 3,6kHz
			P24	Interface Power	It is DC24V power for connection input signal. When selecting source logic, contact input is common.	Permissible maximum output current 100mA
	Power Source OP. Input Signal Function Selection etc		CM1	Interface Power Common	The common terminal is FW terminal, 1–8 terminal, TH terminal. Do not connect to earth ground.	, FM terminal.
		OP.	FW	Forward Command	About FW signal, ON is Forward and OFF is stop command.	
		Selection	1(RS) 2(AT) 3(JOG) 4(FRS) 5(2CH) 6(CF2) 7(CF1) 8(REV)	Input Intelligent	Select 8 functions from 39 functions, and divide between 1 terminal and 8 terminals. REV(Reverse), CF1~CF4(Multi-speed bit 1~4), JOG(jogging), DB(External dc braking), SET2(2nd control), 2CH(2nd acceleration), 3CH(3rd acceleration), FRS(free-run stop), EXT(external trip), USP(USP function), CS(Commercial power source switching), SFT(software lock), AT(analog input change), RS(reset), STA(3wire run), STP(3wire keep), F/R(3wire direction selection), PID(PID selection valid/invalid), PID_C(PID integrating reset), UP(remote control, up function), DOWN(remote control down function), UDC(remote control data clear), OPE(compulsion operation), OLR(Overload restriction change), TL(torque limit exist or no), TRQ1(torque limit change1), TRQ2(torque limit change2), PPI, BOK(brake confirmation), ORT(orientation), LAC(LAD cancel), PCLR(position deviation clear), STAT(90 degrees the phase difference permission), XT1, XT2, XT3 (Multi-step acceleration/deceleration time 1~3)	When use external electric power source: (The voltage between input and PLC) more than DC 18V Input interface: (Between input and PLC) 4.7kQ Permissible maximum voltage: (The voltage between input and PLC) 27V
			PLC	Intelligent Input Common	Change sink type and source type by short bar on control terminals, P24-PLC: Sink type CM1-PLC:Source type	
			11(FA1) 12(RUN) 13(OL) 14(OTQ)	Output Intelligent	Select 5 functions from inverter state s 24functions, and configure them at termial11~14/ RUN(Signal during run), FA1(Frequency arrival type 1 signal), FA2(Frequency arrival type 2 signal), OL(Overload advance notice signal), OD(Output deviation for PID control), ALM(Alarm signal), FA3(Arrival signal for only setting frequency), OTQ(Over torque), IP(Instantaneous stop signal), UV(Under voltage signal), TRQ(Torque limit), RNT(RUN time over), ONT(ON time over), THM(Thermal caution), BRK(Brake opening), BER(Brake error), ZS(Zero speed detect signal), DSE(Speed deviation excessive), POK(Positioning completion), FA4(Arrival signal for over setting frequency2), FA5(Arrival signal for only setting frequency2), OL2(Overload advance notice signal2), IPALM(Instantaneous power failure alarm signal), UVALM(Under voltage alarm signal)	Permissible maximum voltage DC27V Current 50mA(0.2W) Between 11~14teminal and CM2: Under 4V when ON.
			CM2	Output Intelligent Common	Common terminal for intelligent output 11~14 terminal. External electric power source common terminal.	
			AL0 RN0	AL Relay Common RN Relay Common	ALO: AL relay common contact RNO: RN relay common contact	Permissible maximum AL1-AL0, RN1-RN0:
			AL1 AL2/ RN1 RN2	Alarm Relay Output Terminal Run Relay Output Terminal	Assign output function. Output is C-contact.	AC250V, 2A(Resister), 0.2A(Induction) AL2-AL0, RN2-RN0: AC250V, 2A(Resister), 0.2A(Induction)
Analogue	Ser	isor	ТН	Thermistor Input Terminal	When a thermistor is connected to terminals TH and CM1,the inverter checks for over-temperature and will cause trip event and turn off output to motor.	Permissible minimum thermistor power 100mW

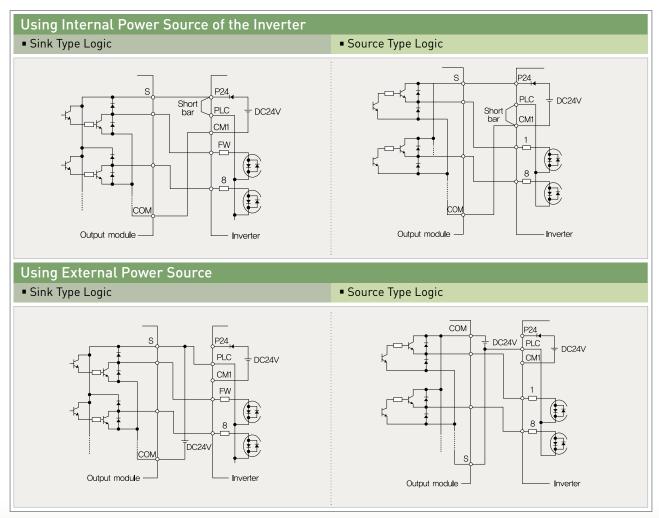
Terminal Connecting Diagram (Sink Type)



Terminal Name	FW, PLC, 8, 7, 6, 5, 4, 3, 2, 1, FM, THM	H, O, O2, OI, AM, AMI	14, 13, 12, 11
Common	CM1	L	CM2

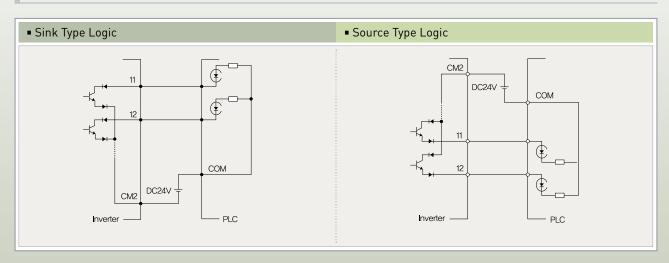
^{*} Common of each terminal is different from each other.

Connection with Input Terminals



^{*} Be sure to turn on the inverters after turning on the PLC and its external power source to prevent the parameters in the inverter from being modified.

Connection with Output Terminals

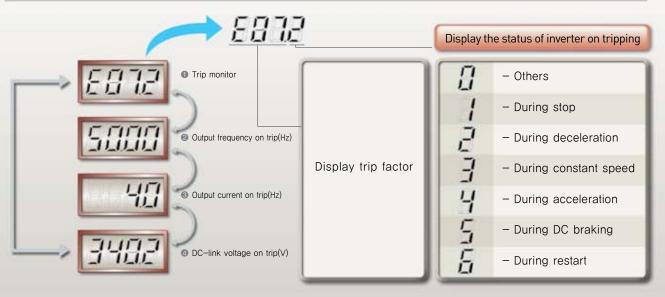


Error Codes

	Description		Display on Digital Operator	Display on Remote Operato
		locked or has a the inverter, so While at constant speed During acceleration During deceleration Others I function, the inverter trips and turns off its age time allowance or an over voltage caused is and turns off its output. When the DC bus the motor, the inverter trips and turns off its diresults in a control circuit fault. This condition he inverter trips and turns off its output. Best he corresponding signed and cut off the output. E12 Best he corresponding signed and cut off the output. E13 Best he corresponding signed and cut off the output. E14 Best he inverter output and the motor during power—up re than 15ms, the inverter trips and turns off its restarts if it is in RUN mode when power is cycled. Best he corresponding signed and cut off the output. E14 Best he corresponding signed and cut off the output. E15 Best he corresponding signed and cut off the output. E16 Best he unattended Start Protection (USP) is enabled. E17 Best he corresponding signed and cut off the output. E17 Best he unattended Start Protection (USP) is enabled. E18 Best he corresponding signed and cut off the output. E17 Best he unattended Start Protection (USP) is enabled. E18 Best he corresponding signed and cut off the output. E19 Best he unattended Start Protection (USP) is enabled. E19 Best he corresponding signed and cut off the output. E19 Best he unattended Start Protection (USP) is enabled. E19 Best he unattended Start Protection (USP) is enabled. E19 Best he unattended Start Protection (USP) is enabled. E19 Best he unattended Start Protection (USP) is enabled. E19 Best he unattended Start Protection (USP) is enabled. E19 Best he unattended Start Protection (USP) is enabled. E19 Best he unattended Start Protection (USP) is enabled. E19 Best he unattended Start Protection (USP) is enabled. E19 Best he unattended Start Protection (USP) is enabled. E19 Best he unattended Start Protection (USP) is enabled. E19 Best he unattended Start Protection (USP) is enabled. E19 Best he unattended Start Protection (USP) is enabled. E19	OC.CON	
Over-current Protection Overload Protection Overload Protection Overload Protection Over-voltage Protection Over-voltage Protection External Trip USP Error Ground Fault Protection Instantaneous Power Failure Protection Inverter Thermal Trip Open-phase Protection Thermistor Error Overtime of Reset Input GBT Protection	The inverter output is short-circuited, or the motor shaft is locked or has a	During acceleration	E02	OC.ACC
Protection	The inverter output is short—circuited, or the motor shaft is locked or has a heavy load. These conditions cause excessive current for the inverter, so the inverter output is turned off. When a motor overload is detected by the electronic thermal function, the inverter trips and turns off output. When the regenerative braking resistor exceeds the usage time allowance or an over voltage caus by the stop of the BRD function is detected, the inverter trips and turns off its output. When the regenerative braking resistor exceeds the usage time allowance or an over voltage caus by the stop of the BRD function is detected, the inverter trips and turns off its output. A decrease of internal DC bus voltage below a threshold results in a control circuit fault. This condition can also generate excessive motor heat or cause low torque. The inverter trips and turns off its output. When the external equipment or unit has an error, the inverter receives the corresponding signed and cut off the outpaneous Power and the protected by the detection of ground faults between the inverter output and the motor during power—up tests. This feature protects the inverter only. When power is cut for more than 15ms, the inverter trips and turns off its output. If power failure continues, the error will be cleared. The inverter restarts if it is in RUN mode when power is cycle the power devices and trips, turning off the inverter output. When S phase is opened, inverter turns off its output. When R phase is opened, inverter turns off its output. When R phase is opened, inverter turns off its output. When T phase is opened, inverter turns off its output. When R phase is opened, inverter turns off its output. When T phase is opened, inverter turns off its output. When T phase is opened, inverter turns off its output. When T phase is opened, inverter turns off its output. When T phase is opened, inverter turns off its output. When T phase is opened, inverter turns off its output. When T phase is opened, inverter trips and turns of	During deceleration	E03	OC.DEC
	the involver dapar is rained on.	Others	E04	OC.ETC
Overload Protection 1)	•	•	E05	OL.MOT
Braking Resistor Overload Protection	while at constant speed During acceleration During acceleration During acceleration During deceleration Others a motor overload is detected by the electronic thermal function, the inverter trips and turns off its When the regenerative braking resistor exceeds the usage time allowance or an over voltage caused stop of the BRD function is detected, the inverter trips and turns off its output. When the DC bus exceeds a threshold, due to regenerative energy from the motor, the inverter trips and turns off its A decrease of internal DC bus voltage below a threshold results in a control circuit fault. This condition of generate excessive motor heat or cause low torque. The inverter trips and turns off its output, when the DC bus exceeds when the power is cycled while the inverter is in RUN mode if the Unattended Start Protection (USP) is enabled, erretr is protected by the detection of ground faults between the inverter output and the motor during power-up is feature protects the inverter only. When power is cut for more than 15ms, the inverter trips and turns off its power failure continues, the error will be cleared. The inverter restarts if it is in RUN mode when power is cycled, the inverter internal temperature is higher than the specified value, the thermal sensor in the inverter detects the higher temperature of the power devices and trips, turning off the inverter output. Rephase is opened, inverter turns off its output, Thas is opened, inverter turns off its output, The phase is opened, inverter turns off its output, The phase is opened, inverter turns off its output, The phase is opened, inverter turns off its output, The phase is opened, inverter turns off its output, The phase is opened, inverter turns off its output, The phase is opened, inverter turns off its output, The phase is opened, inverter turns off its output, The phase is opened, inverter turns off its output, The phase is opened, inverter turns off its output, The phase is opened, inverter turns off its output, The phase is opene	E06	OL.DBR	
Over-voltage Protection	•		E07	OV.DC
Under-voltage Protection	can also generate excessive motor neat or cause low torque. The inverter trips and the can also generate excessive motor neat or cause low torque.	turns off its output,	E09	UV.DC
External Trip			E12	EXT.ERR
USP Error	The inverter trips and does not go into RUN mode until the error is cleared.		E13	USP.ERR
Ground Fault Protection	The inverter is protected by the detection of ground faults between the inverter output and th	E14	GND.FLT	
Instantaneous Power Failure Protection	This feature protects the inverter only. When power is cut for more than 15ms, the inverter trips and turns off its t, If power failure continues, the error will be cleared. The inverter restarts if it is in RUN mode when power is cycled.		E16	IPF.ERR
Inverter Thermal Trip	The state of the s		E17	OT.ERR
	When R phase is opened, inverter turns off its output.		E20	R PH.ERR
	When S phase is opened, inverter turns off its output.		E21	S PH.ERR
FIOLECTION	When T phase is opened, inverter turns off its output.		E22	T PH.ERR
Thermistor Error	, , , , , , , , , , , , , , , , , , , ,	· ·	E24	THMIS.ERR
Braking Error	or OFF within waiting time set at b024 after it has released the brake (When braking	ng is enabled at b120)	E25	BRK.ERR
Communication Error	An error between operator and inverter has been detected.		E26	COMM.ERR
Overtime of Reset Input	An error is displayed when input time of the reset signal exceeds the setting	time 5seconds	E27	RESET.ERR
	When an instantaneous over-current has occurred, the inverter trips and turns off its output to protect the	main devices output phase U.	E28	UIGBT.ERR
IGBT Protection	When an instantaneous over-current has occurred, the inverter trips and turns off its output to protect the	main devices output phase V.	E29	VIGBT.ERR
	When an instantaneous over-current has occurred, the inverter trips and turns off its output to protect the	main devices output phase W.	E30	WIGBT.ERR
Option Error	An error has been detected in an option PCB 1,2. You can refer to the details of option	n PCB's instruction manual		OPT.ERR
Over Speed Error	When the motor rotation speed exceeds the specified value, the inverter occur	r an error.	E32	RESVD

^{*1)} After a trip occurs and 10 seconds pass, restart with reset operation.

Error Status Display



Common Applicable Tools

	Matau		D. 111	External			А	pplicable	e Tools
Class	Motor Output kW(HP)	Inverter Model	Power Lines R,S,T,U,V, W,P,PD,N(mm²)	Resistor Between P and RB(mm²)	Screw Size of Terminal	Torque (N·m)	Circuit Breaker (MCCB)		Magnetic Contactor(MC)
	5.5(7.5)	N700-055LF	More than 6	6	M5	3.0	HBS60N	50A	HiMC32
	7.5(10)	N700-075LF	More than 10	6	M5	3.0	HBS60N	50A	HiMC32
	11(15)	N700-110LF	More than 16	6	M5	3.0	HBS100N	75A	HiMC50
	15(20)	N700-150LF	More than 25	16	M6	4.5	HBS100N	100A	HiMC65
200V	18.5(25)	N700-185LF	More than 30	16	M6	4.5	HBS225N	150A	HiMC80
Class	22(30)	N700-220LF	More than 35	16	M8	6.0	HBS225N	150A	HiMC110
	30(40)	N700-300LF	More than 25x2	_	M8	6.0	HBS225N	200A	HiMC130
	37(50)	N700-370LF	More than 35x2	_	M8	6.0	HBS225N	225A	HiMC150
	45(60)	N700-450LF	More than 35x2	_	M8	6.0	HBS400N	225A	HiMC220
	55(75)	N700-550LF	More than 70x2	-	M10	10.0	HBS400N	300A	HiMC220
	5.5(7.5)	N700-055HF	More than 4	4	M5	3.0	HBS30N	30A	HiMC18
	7.5(10)	N700-075HF	More than 4	4	M5	3.0	HBS30N	30A	HiMC18
	11(15)	N700-110HF	More than 6	6	M5	3.0	HBS60N	50A	HiMC32
	15(20)	N700-150HF	More than 10	10	M6	4.5	HBS100N	50A	HiMC40
	18.5(25)	N700-185HF	More than 16	10	M6	4.5	HBS100N	75A	HiMC40
	22(30)	N700-220HF	More than 25	10	M6	4.5	HBS100N	75A	HiMC50
400V	30(40)	N700-300HF	More than 25	-	M8	6.0	HBS100N	100A	HiMC65
Class	37(50)	N700-370HF	More than 35	-	M8	6.0	HBS225N	100A	HiMC80
	45(60)	N700-450HF	More than 35	-	M8	6.0	HBS225N	150A	HiMC110
	55(75)	N700-550HF	More than 70	-	M8	6.0	HBS225N	175A	HiMC130
	75(100)	N700-750HF	More than 35x2	-	M8	6.0	HBS400	225A	HiMC180
	90(125)	N700-900HF	More than 35x2	-	M8	6.0	HBS400	225A	HiMC220
	110(150)	N700-1100HF	More than 50x2	-	M10	10.0	HBS400	350A	HiMC260
	132(200)	N700-1320HF	More than 80x2	-	M10	10.0	HBS400	350A	HiMC300

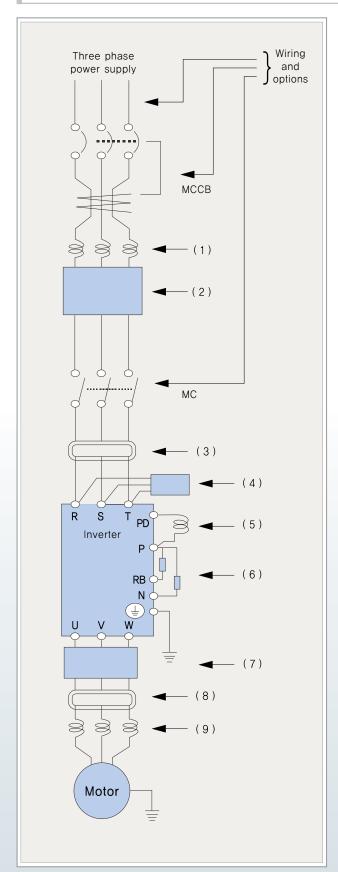
^{* -}Field wiring connection must be made by a UL listed and C-UL certified closed-loop terminal connector sized for the wire guage involved.

Connector must be fixed using the crimp tool specified by the connector manufacturer.

⁻Be sure to use bigger wires for power lines if the distance exceeds 20m.



Wiring and Options



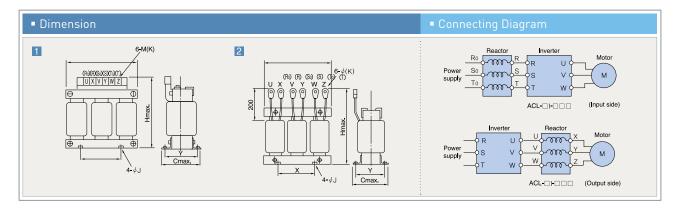
Separate by the sum (wiring distance from inverter to power supply, from inverter to motor) for the sensitive current of leak breaker (ELB).

Wiring Distance	Sensitive Current(mA)
100m and less	30
300m and less	100
600m and less	200

- $\ensuremath{\,\times\,}$ When wiring CV line into the metal tube, leakage current flows.
- ※ IV line is high dielectric constant. So the current increases 8 times.
 Therefore, use the sensitive current 8 times as large as that of the list.
 And if the distance of wire is over 100m, use CV line.

	Name	Function
(1)	Input-side AC Reactor (harmonic control, electrical coordination, power-factor improvement)	As a measure of suppressing harmonics induced on the power supply lines, it is applied when imbalance of the major power voltage exceeds 3% (and power source capacity is more than 500kVA) or when the power voltage is rapidly charged. It also improves the power factor.
(2)	Radio Noise Filter (zero-phase reactor)	Electrical noise interference may occur on nearby equipment such as radio receivers. This magnetic choke filter helps reduce radiated noise (can also be used on output).
(3)	EMI Filter	Reduces the conducted noise on the power supply wiring generated by the inverter. Connect to the inverter input side.
(4)	Radio Noise Filter (capacitive filter)	This capacitive filter reduces radiated noise from the main power wires in the inverter input side.
(5)	DC Link Choke	Suppresses harmonics generated by the inverter.
(6)	Breaking Resistor Regenerative Breaking Unit	This is useful for increasing the inverter's control torque for high duty-cycle (on-off) applications, and improving the decelerating capability.
(7)	Output-side Noise Filter	Reduces radiated noise from wiring in the inverter output side. It reduces wave fault to radio and TV, and it is used for preventing malfunction of sensor and measuring instruments.
(8)	Radio Noise Filter (zero-phase reactor)	Electrical noise interference may occur on nearby equipment such as radio receivers. This magnetic choke filter helps reduce radiated noise (can also be used on input)
(9)	Output-side AC Reactor (To reduce the vibration and to prevent thermal relay misapplication)	This reactor reduces the vibration in the motor caused by the inverter's switching waveforms, by smoothing the waveforms to approximate commercial power quality. When wiring from the inverter to the motor is more than 10m in length, inserting inverter prevents thermal relay's malfunction by harmonic generated by inverter's high switching.
	LCR Filter	Sine-wave shaping filter for the output side.

Input & Output AC Reactor



Dimension of Input-side AC Reactor



- Suppress harmonics
- Improve voltage imbalance
- Power factor correction

Dimension of Output-side AC Reactor



- Reduction of vibration
- Thermal relay
- Prevention of malfunction

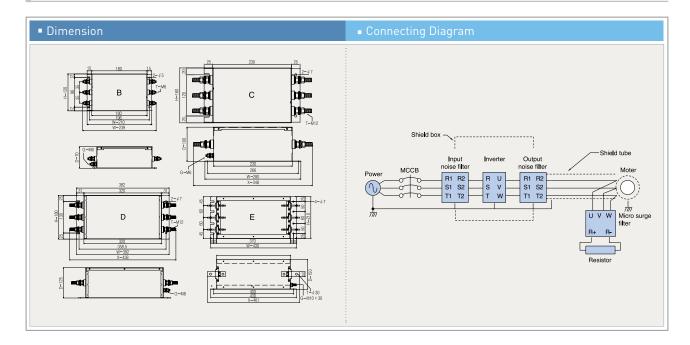
Dimension of Input AC Reactor

\	Madal	Inverter Capacity		Di	mens	ion(m	m)		ĸ	Weight	See
Voltage	Model	(kW)	А	С	Н	Х	Т		(0)	(kg)	366
	ACL-LI-1.5	0.75	110	80	110	40	52	6	4	1.85	1
	ACL-LI-2.5	1.5	130	90	130	50	67	6	4	3.0	1
	ACL-LI-3.5	2.2	130	95	130	50	70	6	4	3.4	1
	ACL-LI-5.5	3.7	130	100	130	50	72	6	4	3.9	1
2	ACL-LI-7.5	5.5	130	115	130	50	90	6	4	5.2	1
0	ACL-LI-11	7.5	180	120	190	60	80	6	5	8.6	1
0	ACL-LI-15	11	180	120	190	100	80	6	6.7	10.0	2
V	ACL-LI-22	15	220	130	200	90	90	6	8	11.0	1
Class	ACL-LI-33	18.5/22	220	130	200	125	90	6	8	15.0	1
	ACL-LI-40	30	270	130	250	100	90	6	8	15.0	2
	ACL-LI-50	37	270	130	250	100	90	`7	8.3	16.0	2
	ACL-LI-60	45	270	135	250	100	95	7	8.3	16.5	2
	ACL-LI-70	55	270	130	250	125	112	7	8.3	24.0	2
	ACL-HI-5.5	3.7	130	90	130	50	75	6	4	3.9	- 1
	ACL-HI-7.5	5.5	130	105	130	50	90	6	4	5.1	1
	ACL-HI-11	7.5	160	110	160	60	95	6	4	8.7	- 1
	ACL-HI-15	11	180	100	190	100	80	6	4	10	2
	ACL-HI-22	15	180	110	190	100	80	6	5	10	- 1
4	ACL-HI-33	18.5/22	180	140	190	100	100	6	5	12	1
0	ACL-HI-40	30	270	120	210	100	100	7	6.7	14	2
0	ACL-HI-50	37	270	120	250	100	90	7	8.3	15.5	2
V	ACL-HI-60	45	270	125	250	100	95	7	8.3	16	2
Class	ACL-HI-70	55	270	130	250	125	112	7	8.3	23.5	2
	ACL-HI-100	75	270	140	250	125	112	7	10.3	26.5	2
	ACL-HI-120	90	320	150	300	125	125	7	10.3	31	2
	ACL-HI-150	110	320	170	300	125	140	7	13	38	2
	ACL-HI-180	132	320	170	300	125	140	7	13	38	2
	ACL-HI-220	160	320	160	300	125	130	7	13	40	2

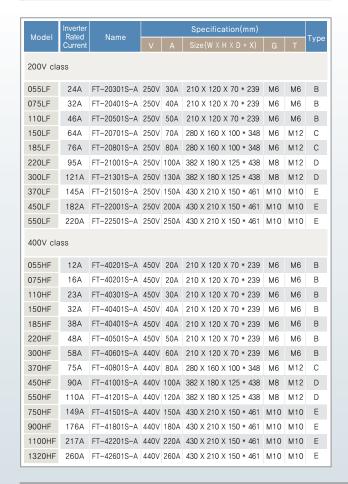
Dimension of Output AC Reactor

\/-!!	Madal	Inverter Capacity		Dii	mensi	on(m	m)		(K)	Weight	500
Voltage	Model	(kW)	А	С	Н	Χ	Т	J		(kg)	See
	ACL-L-0.4	0.4	110	90	110	40	65	6	4	2.7	1
	ACL-L-0.75	0.75	130	105	130	50	80	6	4	4.2	1
	ACL-L-1.5	1.5	160	100	160	80	75	6	4	6.6	1
	ACL-L-2.2	2.2	180	110	190	90	90	6	4	11.5	1
2	ACL-L-3.7	3.7	220	110	210	125	90	6	4	14.8	1
0	ACL-L-5.5	5.5	220	110	220	125	90	6	5.3	15.0	2
0	ACL-L-7.5	7.5	220	130	220	120	112	7	6.7	22.0	2
V	ACL-L-11	11	220	130	220	125	112	7	6.7	24.0	2
Class	ACL-L-15	15	270	155	250	140	125	7	6.7	37.0	2
	ACL-L-18.5	18.5	270	155	250	140	135	7	8.3	40.5	2
	ACL-L-22	22	270	170	250	140	140	7	8.3	43.0	2
	ACL-L-30	30	270	180	250	160	150	10	8.3	60.6	2
	ACL-L-37	37	270	180	250	160	150	10	8.3	62.0	2
	ACL-L-45	45	270	180	250	160	160	10	8.3	73.0	2
	ACL-L-55	55	270	190	250	160	180	10	10.3	76.0	2
	ACL-H-0.4	0.4	110	85	110	40	65	6	4	2.7	1
	ACL-H-0.75	0.75	130	100	130	50	80	6	4	4.2	1
	ACL-H-1.5	1.5	150	105	160	80	75	6	4	6.6	1
	ACL-H-2.2	2.2	180	105	190	90	90	6	4	11	1
	ACL-H-3.7	3.7	180	110	190	125	90	6	4	14.8	1
	ACL-H-5.5	5.5	180	110	190	125	90	6	4	15.5	1
4	ACL-H-7.5	7.5	180	130	190	125	112	7	4	22	1
0	ACL-H-11	11	180	130	200	125	112	7	5.3	24	2
0	ACL-H-15	15	270	150	250	140	125	7	6.7	37	2
V	ACL-H-18.5	18.5	270	165	250	140	135	7	6.7	40	2
Class	ACL-H-22	22	270	175	250	140	140	7	6.7	43	2
	ACL-H-30	30	270	180	250	160	150	10	8.3	60	2
	ACL-H-37	37	270	180	250	160	150	10	8.3	62	2
	ACL-H-45	45	270	190	250	160	160	10	8.3	72	2
	ACL-H-55	55	270	200	250	160	180	10	8.3	75	2
	ACL-H-75	75	270	220	250	160	190	10	8.3	93	2
	ACL-H-90	90	320	240	330	160	200	10	10.3	117	2
	ACL-H-110	110	320	280	330	160	250	10	10.3	140	2
	ACL-H-132	132	320	230	330	160	200	10	10.3	96	2

Noise Filter for Inverter



Input Noise Filter



Output Noise Filter

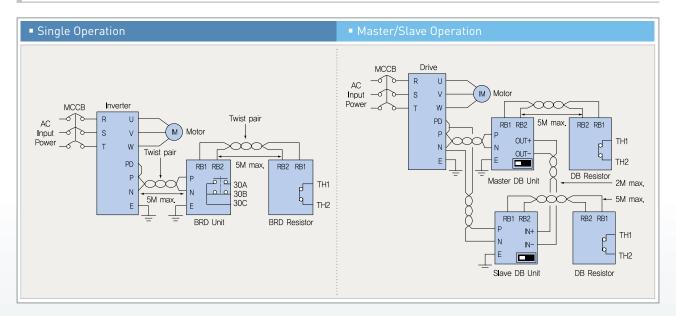
Model	Inverter				Specification(mm)			
Model	Rated Current	Name	V	А	Size(W X H X D * X)	G	Т	Тур
200V cla	ISS							
055LF	24A	FT-20301SO-A	250V	30A	210 X 120 X 70 * 239	М6	M6	В
075LF	32A	FT-20401SO-A	250V	40A	210 X 120 X 70 * 239	М6	М6	В
110LF	46A	FT-20501SO-A	250V	50A	210 X 120 X 70 * 239	М6	М6	В
150LF	64A	FT-20701SO-A	250V	70A	280 X 160 X 100 * 348	М6	M12	С
185LF	76A	FT-20801SO-A	250V	80A	280 X 160 X 100 * 348	М6	M12	С
220LF	95A	FT-21001SO-A	250V	100A	382 X 180 X 125 * 438	M8	M12	D
300LF	121A	FT-21301SO-A	250V	130A	382 X 180 X 125 * 438	M8	M12	D
370LF	145A	FT-21501SO-A	250V	150A	430 X 210 X 150 * 461	M10	M10	Е
450LF	182A	FT-22001SO-A	250V	200A	430 X 210 X 150 * 461	M10	M10	Е
550LF	220A	FT-22501SO-A	250V	250A	430 X 210 X 150 * 461	M10	M10	Е
400V cla	ISS							
055HF	12A	FT-40201SO-A	450V	20A	210 X 120 X 70 * 239	М6	M6	В
075HF	16A	FT-40201SO-A	450V	20A	210 X 120 X 70 * 239	М6	М6	В
110HF	23A	FT-40301SO-A	450V	30A	210 X 120 X 70 * 239	М6	М6	В
150HF	32A	FT-40401SO-A	450V	40A	210 X 120 X 70 * 239	М6	М6	В
185HF	38A	FT-40401SO-A	450V	40A	210 X 120 X 70 * 239	М6	М6	В
220HF	48A	FT-40501SO-A	450V	50A	210 X 120 X 70 * 239	М6	М6	В
300HF	58A	FT-40601SO-A	440V	60A	210 X 120 X 70 * 239	М6	М6	В
370HF	75A	FT-40801SO-A	440V	80A	280 X 160 X 100 * 348	М6	M12	С
450HF	90A	FT-41001SO-A	440V	100A	382 X 180 X 125 * 438	М8	M12	D
550HF	110A	FT-41201S0-A	440V	120A	382 X 180 X 125 * 438	М8	M12	D
750HF	149A	FT-41501S0-A	440V	150A	430 X 210 X 150 * 461	M10	M10	Е
900HF	176A	FT-41801S0-A	440V	180A	430 X 210 X 150 * 461	M10	M10	Е
1100HF	217A	FT-42201SO-A	440V	220A	430 X 210 X 150 * 461	M10	M10	Е
1320HF	260A	FT-42601SO-A	440V	260A	430 X 210 X 150 * 461	M10	M10	Е

Specification

	Voltage	200V Class BRD-K3			400V Class								
Item	Model				BRD-VZ3								
	Type	370L		550L		370H		550H		750H	750H(x2)		
Inverte	Inverter Capacity (kW) ¹⁾		37	45	55	30	37	45	55	75	90	110	132
Max DO	Max DC Voltage (P-N)		DC 400V			DC 800V							
Operati	Operating Voltage (P-N)		362±5V			725±5V							
Average Braking Torque		130%			130%								
Allowable Braking Rate		20~30%			20~30%								

^{*1)} Inverter, up to 22kW, has a built-in BRD.

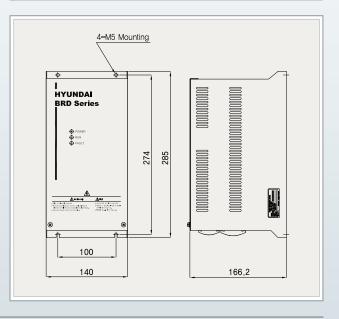
Wiring Diagram



Wiring of Regenerative Braking Unit and Braking Resistor

Inverter Model: N700-055~750LF/HF (200V/400V class) N700-900~1320LF/HF (200V/400V class) Inverter Inverter 4135 400 I HYUNDAI BRD Series HYUNDAI BRD Series Regenerative Regenerative braking unit braking unit braking unit Braking resistor Braking resistor Braking resistor

Outline



Braking Resistor

Voltage	Inverter Model	Low Duty				222 11 11		
voltage		Resistor Model	Resistance(Ω)	Rated Capacity(kW)	Resistor Model	Resistance(Ω)	Rated Capacity(kW)	RBD Unit
	N700-055LF							
	N700-075LF	RB-01P0-17	17.0	1.0	RB-01P2-17	17.0	1.2	
	N700-110LF							Standard
	N700-150LF	RB-02P5-8.7	8.7	2.5	RB-04P5-8.7	8.7	4.5	Built-in
200V	N700-185LF	RB-03P0-6	6.0	3.0	RB-05P6-6	6.0	5.6	
Class	N700-220LF	RB-04P0-6	0.0	4.0	RB-06P6-6	0.0	6.6	
	N700-300LF	RB-05P0-3.5	3.5	5.0	RB-09P0-3.5	3.5	9.0	Option
	N700-370LF	RB-06P0-3.5	3.5	6.0	RB-11P2-3.5	0.0	11.2	
	N700-450LF	RB-07P0-2.4	2.4	7.0	RB-13P5-2.4	2,4	13.5	
	N700-550LF	RB-08P5-2.4	2.4	8.5	RB-16P5-2.4	2.4	16.5	
	N700-055HF	RB-01P2-70	70.0	1,2	RB-01P8-70	70.0 50.0	1.8	Standard
	N700-075HF	RB-01P2-50	50.0	1.2	RB-02P4-50		2.4	
	N700-110HF	RB-02P0-50	30.0	2.0	RB-03P3-50	30.0	3.3	
	N700-150HF	RB-02P5-30	30.0	2.5	RB-04P5-30	30.0	4.5	Built-in
	N700-185HF	RB-03P0-20	20.0	3.0	RB-05P6-20	20.0	5.6	
	N700-220HF	RB-04P0-20	20.0	4.0	RB-06P6-20		6.6	
400V	N700-300HF	RB-05P0-12	12.0	5.0	RB-09P0-12	12.0	9.0	
Class	N700-370HF	RB-06P0-12	12.0	6.0	RB-11P2-12	12.0	11.2	
	N700-450HF	RB-07P0-8	8.0	7.0	RB-13P5-8	8.0	13.5	
	N700-550HF	RB-08P5-8	0.0	8.5	RB-16P5-8	0.0	16.5	0-4:
	N700-750HF	RB-11P2-6	6.0		RB-22P5-6	6.0		Option
	N700-900HF			11.2			22.5	
	N700-1100HF	RB-11P2-6 (x2)	6.0 (x2)	11.2	RB-22P5-6 (x2)	6.0 (x2)	22.5	
	N700-1320HF							

Outline

Dimension

						Ullit. Illilli
A Type	L1 ± 1	L2 ± 1	L3 ± 1	W1 ± 1	W2±1	H±1
RB-01P0	340	325	302			
RB-01P2	400	385	362	70	39	45
RB-01P8~RB-02P0	510	495	472			

В Туре	L1 ± 2	L2 ± 2	L3 ± 2	W1 ± 2	W2±2	H±2
RB-02P4~RB-02P5				180	140	126
RB-03P0	550 530		260	220	126	
RB-04P0~RB-05P0				180	140	182
RB-05P6~RB-06P6		530	503			182
RB-08P0~RB-09P0				260	220	252
RB-11P2∼RB-13P5						322
RB-16P5						392
RB-22P5				340	300	392

For Correct Operation

- * Before use, be sure to read through the Instruction manual to insure proper use of the inverter.
- * Note that the inverter requires electrical wiring; a trained specialist should carry out the wiring.
- * The inverter in this catalogue is designed for general industrial applications. For special applications in fields such as aircraft, nuclear power, transport, vehicles, clinics, and underwater equipment, please consult us in advance.
- * For application in a facility where human life is involved or serious losses may occur, make sure to provide safety devices to avoid a serious accident.
- * The inverter is intended for use with a three-phase AC motor. For use with a load other than this, please consult with us.

Application to Motors | Application to General-purpose Motors |

Operating Frequency	The overspeed endurance of a general-purpose motor is 120% of the rated speed for 2minutes (JIS C4004). For operation at higher than 60Hz, it is required to examine the allowable torque of the motor, useful life of bearings, noise, vibration, etc. In this case, be sure to consult the motor manufacturer as the maximum allowable rpm differs depending on the motor capacity, etc.
Torque Characteristics	The torque characteristics of driving a general-purpose motor with an inverter differ from those of driving it using commercial power (starting torque decreases in particular). Carefully check the load torque characteristic of a connected machine and the driving torque characteristic of the motor.
Motor Loss and Temperature Increase	An inverter-driven general-purpose motor heats up quickly at lower speeds. Consequently, the continuous torque level (output) will decrease at lower motor speeds. Carefully check the torque characteristics vs speed range requirements.
Noise	When run by an inverter, a general-purpose motor generates noise slightly greater than with commercial power.
Vibration	When run by an inverter at variable speeds, the motor may generate vibrations, especially because of (a) unbalance of the rotor including a connected machine, or (b) resonance caused by the natural vibration frequency of a mechanical system. Particularly, be careful of (b) when a machine previously fitted with a constant speed is operated at variable speed. Vibration can be minimized by (1) avoiding resonance points by using the frequency jump function of the inverter, (2) using a tire-shaped coupling, or (3) placing a rubber shock absorber under the motor base.
Power Transmission Mechanism	Under continued, low-speed operation, oil lubrication can deteriorate in a power transmission mechanism with an oil type gear box (gear motor) or transmission. Check with the motor manufacturer for the permissible range of continuous speed. To operate at more than 60Hz, confirm the machine's ability to withstand the centrifugal force generated.

Application to Motors | Application to Special Motors |

Gear Motor	The allowable rotation range of continuous drive varies depending on the lubrication method or motor manufacturer. (Particularly in case of oil lubrication, pay attention to the low frequency range.) Grease lubrication has no degradation of lubrication ability even when the number of rotation decreases. (Allowable frequency range: 6-120Hz)
Brake-equipped Motor	For use of a brake-equipped motor, power supply for braking operation should be separately prepared. Connect the braking power supply to the primary side power of the inverter. Use brake operation (inverter stop) and free run stop (FRS) terminal to turn off inverter power.
Pole-change Motor	There are different kinds of pole-change motors (constant output characteristic type, constant torque characteristic type, etc.), with different rated current values. In motor selection, check the maximum allowable current for each motor of a different pole count. At the time of pole change, be sure to stop the motor.
Submersible Motor	The rated current of a submersible motor is significantly larger than that of the general-purpose motor. In inverter selection, be sure to check the rated current of the motor.
Explosion-proof Motor	Inverter drive is not suitable for a safety-enhanced explosion-proof type motor. The inverter should be used in combination with a pressure-proof and explosion-proof type of motor. ** Explosion-proof verification is not available for N700 series.
Synchronous (MS) Motor /High-speed(HFM) Motor	In most cases, the synchronous (MS) motor and the high-speed (HFM) motor are designed and manufactured to meet the specifications suitable for a connected machine. As to proper inverter selection, consult the manufacturer.
Single-phase Motor	A single-phase motor is not suitable for variable-speed operation by an inverter drive. Therefore, use a three-phase motor.

Application to Motors | Application to the 400V-class Motor |

A system applying a voltage-type PWM inverter with IGBT may have surge voltage at the motor terminals resulting from the cable constants including the cable length and the cable laying method. Depending on the surge current magnification, the motor coil insulation may be degraded. In particular, when a 400V class motor is used, a longer cable is used, and critical loss can occur. Take the following countermeasures:(1) install the LCR filter between the inverter and the motor,(2) install the AC reactor between the inverter and the motor, or (3) enhance the insulation of the motor coil.

Notes on use | Drive |

Run/Stop	Run or stop of the inverter must be done with the keys on the operator panel or through the control circuit terminal. Installing an electromagnetic contactor(Mg) should not be used as a switch of run/stop.
Emergency Motor Stop	When the protective function is operating or the power supply stops, the motor enters the free run stop state. When emergency stop or protection of motor is required, use of a mechanical brake should be considered.
High-frequency Run	N700 series can be set up to 400Hz. However it is extremely dangerous for rotational speed of two-pole motor to reach up to approx 24,000rpm. Therefore, carefully make selection and settings after checking the mechanical strength of the motor and connected machines. Consult the motor manufacturer when it is necessary to drive a standard (general-purpose) motor above 60Hz.

Notes on use | Installation Location and Operating Environment |

Avoid installation in areas of high temperature, excessive humidity, or condensation of dew, as well as areas that are dusty, subject to corrosive gases, residual of grinding solution, or salt. Install the inverter away from direct sunlight in a well-ventilated room that is free of vibration. The inverter can be operated in the ambient temperature range from -10°C to 50°C

Notes on Use | Main Power Supply |

Installation of an AC reactor on the Input Side	In the following examples involving a general-purpose inverter, a large peak current flows on the main power supply side, and could destroy the converter module. When such situations are predictable or connected crucial device is required to meet high reliability, install an AC reactor between the power supply and the inverter. Also, when influence of indirect lightning strike is possible, install a lightning arrester. A) The unbalance factor of the power supply is 3% or higher1.¹¹ B) The power supply capacity is at least 10 times greater than the inverter capacity (the power supply capacity is 500kVA or more). C) Abrupt power supply changes are expected. Examples) ① Several inverters are interconnected with a short bus. ② A thyristor converter and an inverter are interconnected with a short bus. ③ Junction and disjunction of installed phase advance capacitor. In cases (A), (B) and (C), it is recommended to install an AC reactor on the main power supply side. 1) Example of how to calculate voltage unbalanced ratio. (voltage between lines on Rs: VRS=205V, voltage between lines on ST: VST=201V, voltage between lines on TR: VTR=200V), max voltage between lines-average between lines=VRS-[VRS+VST+VTR]/3 = 205-202 Voltage unbalanced ratio = Max. voltage between lines - Average voltage between lines Y00 = VRS-[VRS+VST+VTR]/3 VRS+VST+VTR]/3 VRS-VST+VTR]/3 Y100 = VRS-[VRS+VST+VTR]/3 VRS-VST+VTR]/3 VRS-VST+VTR]/3 NO = VRS-VST+VTR]/3 VRS-VST+VTR]/3 VRS-VST+VTR]/3 VRS-VST+VTR]/3 Y100 = VRS-VST+VTR]/3 Y100 = VRS-VST+VTR]/3 VRS-VST+VTR]/3 Y100 = VRS-VST+VTR]/3 Y1
Using an Independent Electric Power Plant	If an inverter is run by an independent electric power plant, harmonic current can cause overheating of the generator or distort output voltage waves of the generator. Generally, the generator capacity should be five times that of the inverter (kVA) in a PWM control system, or six times greater in a PAM control system.

• Notes on Peripheral Equipment Selection

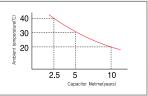
Wiring (Connections	(1) Be sure to connect main power wires with R(L1), S(L2), and T(L3) (input) terminals and motor wires to U(T1), V(T2), and W(T3) terminals (output). (Incorrect connection will cause an immediate failure.) (2) Be sure to provide a grounding connection with the ground terminal (\(\preceq \).
Wiring between Inverter and Motor	Electromagnetic Contactor	When an electromagnetic contactor is installed between the inverter and the motor, do not perform on-off switching during running.
	Thermal Relay	When used with standard output motors (standard three-phase squirrel cage four pole motors), the N700 series does not need a thermal relay for motor protection due to the internal electronic protective circuit. A thermal relay, however, should be used: during continuous running out of a range of 30Hz to 60Hz for motors exceeding the range of electronic thermal adjustment (rated current). When several motors are driven by the same inverter, install a thermal relay for each motor. The RC value of the thermal relay should be more than 1.1times the rated current of the motor. Where the wiring length is 10m or more, the thermal relay tends to turn off readily. In this case, provide an AC reactor on the output side or use a current sensor.
Installing a Circuit Breaker		Install a circuit breaker on the main power input side to protect inverter wiring and ensure personal safety. Choose a circuit breaker compatible with inverter.
Wiring Distance		The wiring distance between the inverter and the remote operator panel should be 20meters or less. When this distance is exceeded, use CVD-E (current-voltage converter) or RCD-E (remote control device). Shielded cable should be used on the wiring. Beware of voltage drops on main circuit wires. (A large voltage drop reduces torque.)
Earth Leakage Relay		If the earth leakage relay (or earth leakage breaker) is used, it should have a sensitivity level of 15mA or more (per inverter). Leakage current is depending on the length of the cable.
Phase Advance Capacitor		Do not use a capacitor for improvement of power factor between the inverter and the motor because the high-frequency components of the inverter output may overheat or damage the capacitor

High-frequency Noise and Leakage Current

- [1] High-frequency components are included in the input/output of the inverter main circuit, and they may cause interference in a transmitter, radio, or sensor if used near the inverter. The interference can be minimized by attaching noise filters(option) in the inverter.
- (2) The switching of an inverter causes an increase of leakage current. Be sure to ground the inverter and the motor.

Lifetime of Primary Parts

Because a DC bus capacitor deteriorates as it undergoes internal chemical reaction, it should normally be replaced every five years. Be aware, however, that its life expectancy is considerably shorter when the inverter is subjected to such adverse factors as high temperatures or heavy loads exceeding the rated current of the inverter. The figure at the right shows the approximate lifetime of the capacitor when it is used 24hours. Also, such moving parts as a cooling fan should be replaced. Maintenance, inspection and replacing parts must be performed by only specified professional engineers.





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