



The G100 is the solution for general applications because of its high performance sensorless operation, premium quality and high reliability.

Great Reliability

- Meets UL 61800-5-1
- Military (MIL 217Plus) design based methodology
- Enhanced materials and manufacturing processes

High Performance

- Enhanced motor control-sensorless & V/F performance
- User-friendly-easy tuning sensorless control
- Suitable for most applications

User Friendly

- Easy to install, use and maintain
- Various options

Features

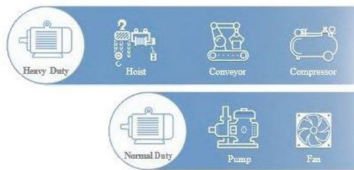
- UL 61800-5-1 Design
- Military Standard Reliability Design
- Embedded C3 EMC filter (400V)
- [Starting torque] Sensorless vector control 200% (0.5Hz)
- [Speed regulation] Sensorless vector control +/- 1%
- Applied auto torque boost and Flux braking function
- KEB (Kinetic Energy Buffering)
- Flying Start
- Side-by-side installation
- Simple cooling fan replacement
- Built-in Potentiometer
- Remote Keypad
- Smart Copier
- QR Code
- Fieldbus Options
 - Dual Port Ethernet/IP
 - Profibus-DP
 - CANopen
- MTTF: 27 years
- DriveView 9 free of charge



Simple fan replacement



DIN rail mount (Side-by-side)



Application Adaptability

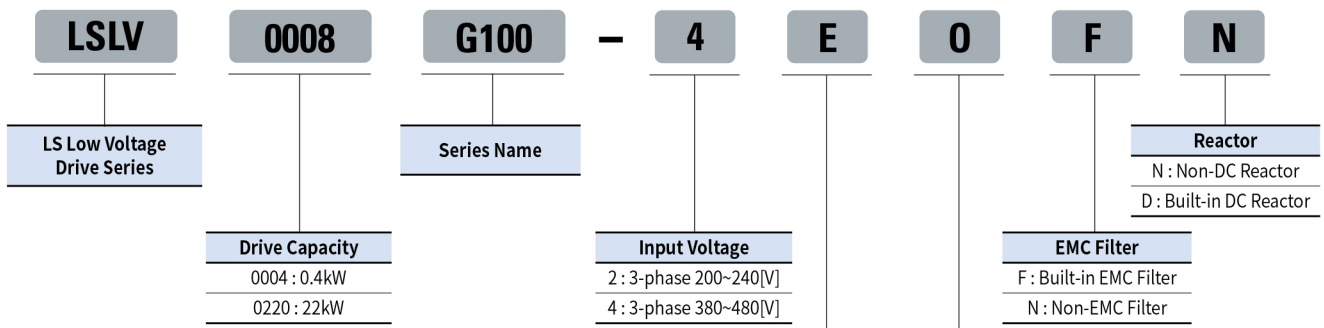
Dual ratings enable use in most applications



Drive Capacity	3-Phase 200V	3-Phase 400V
0.4 kW	LSLV0004G100-2EONN	LSLV0004G100-4EO(F)N
0.75 kW	LSLV0008G100-2EONN	LSLV0008G100-4EO(F)N
1.5 kW	LSLV0015G100-2EONN	LSLV0015G100-4EO(F)N
2.2 kW	LSLV0022G100-2EONN	LSLV0022G100-4EO(F)N
4.0 kW	LSLV0040G100-2EONN	LSLV0040G100-4EO(F)N
5.5 kW	LSLV0055G100-2EONN	LSLV0055G100-4EO(F)N
7.5 kW	LSLV0075G100-2EONN	LSLV0075G100-4EO(F)N
11 kW		
15 kW		
18.5 kW		
22 kW		

※ (F): Built-in EMC or Non-EMC type
 ※ 200V/400V 11~22kW TBA

Model Name



3-Phase 200V Class (0.4~7.5kW)

□□□□ G100-2			0004	0008	0015	0022	0040	0055	0075	
Motor Rating	Heavy Duty [HD]	[kW]	0.4	0.75	1.5	2.2	4.0	5.5	7.5	
		[HP]	0.5	1.0	2.0	3.0	5.4	7.5	10	
	Normal Duty [ND]	[kW]	0.75	1.5	2.2	4.0	5.5	7.5	11	
		[HP]	1.0	2.0	3.0	5.4	7.5	10	15	
Output Rating	Capacity [kVA]	Heavy Duty (HD)	1.0	1.9	3.0	4.2	6.5	9.1	12.2	
		Normal Duty (ND)	1.2	2.3	3.8	4.6	6.9	11.4	15.2	
	Rated Current [A]	Heavy Duty (HD)	2.5	5.0	8.0	11.0	17.0	24.0	32.0	
		Normal Duty (ND)	3.1	6.0	9.6	12.0	18.0	30.0	40.0	
	Rated Current [A] (1-Phase Power Input)	Heavy Duty (HD)	1.5	2.8	4.6	6.1	9.3	12.8	17.4	
		Normal Duty (ND)	2.0	3.6	5.9	6.7	9.8	16.3	22.0	
	Frequency [Hz]	0~400Hz (IM sensorless: 0~120Hz)								
	Voltage [V]	3-Phase 200~240V								
Input Rating	Voltage [V]	3-Phase 200~240VAC (-15%~+10%)								
	Frequency [Hz]	50~60Hz (±5%)								
	Rated Current [A]	Heavy Duty [HD]	2.2	4.9	8.4	11.8	18.5	25.8	34.9	
Normal Duty [ND]		3.0	6.3	10.8	13.1	19.4	32.7	44.2		
Weight [kg]			1.04	1.06	1.36	1.4	1.89	3.08	3.21	

3-Phase 400V Class (0.4~7.5kW)

□□□□ G100-4			0004	0008	0015	0022	0040	0055	0075	
Motor Rating	Heavy Duty [HD]	[kW]	0.4	0.75	1.5	2.2	4.0	5.5	7.5	
		[HP]	0.5	1.0	2.0	3.0	5.4	7.5	10	
	Normal Duty [ND]	[kW]	0.75	1.5	2.2	4.0	5.5	7.5	11	
		[HP]	1.0	2.0	3.0	5.4	7.5	10	15	
Output Rating	Capacity [kVA]	Heavy Duty (HD)	1.0	1.9	3.0	4.2	6.5	9.1	12.2	
		Normal Duty (ND)	1.5	2.4	3.9	5.3	7.6	12.2	17.5	
	Rated Current [A]	Heavy Duty (HD)	1.3	2.5	4.0	5.5	9.0	12.0	16.0	
		Normal Duty (ND)	2.0	3.1	5.1	6.9	10.0	16.0	23.0	
	Rated Current [A] (1-Phase Power Input)	Heavy Duty (HD)	0.7	1.4	2.1	2.8	4.9	6.4	8.7	
		Normal Duty (ND)	1.3	1.9	2.8	3.6	5.4	8.7	12.6	
	Frequency [Hz]	0~400Hz (IM sensorless: 0~120Hz)								
	Voltage [V]	3-Phase 380~480V								
Input Rating	Voltage [V]	3-Phase 380~480VAC (-15%~+10%)								
	Frequency [Hz]	50~60Hz (±5%)								
	Rated Current [A]	Heavy Duty [HD]	1.1	2.4	4.2	5.9	9.8	12.9	17.5	
Normal Duty [ND]		2.0	3.3	5.5	7.5	10.8	17.5	25.4		
Weight [kg]			1.02 (1.04)	1.06 (1.08)	1.4 (1.44)	1.42 (1.46)	1.92 (1.98)	3.08 (3.24)	3.12 (3.28)	

- Maximum applicable capacity is indicated in case of using a 4-pole standard motor
- For the rated capacity, 200 and 400V class input capacities are based on 220 and 440V, respectively.
- The rated output current is limited based on the carrier frequency set at Cn.04.
- The output voltage becomes 20-40 % lower during no-load operations to protect the inverter from the impact of the motor closing and opening (0.4-4.0 kW models only).

Control

Control Method	V/F, Slip Compensation, Sensorless Vector
Frequency Setting Resolution	Digital command: 0.01Hz Analog command: 0.06Hz(maximum frequency: 60 Hz)
Frequency Accuracy	1% of the maximum output frequency
V/F Pattern	Linear, squared, user V/F
Overload Capacity	HD: 150% 1 minute, ND: 120% 1minute
Torque Boost	Manual/Automatic torque boost

Operation

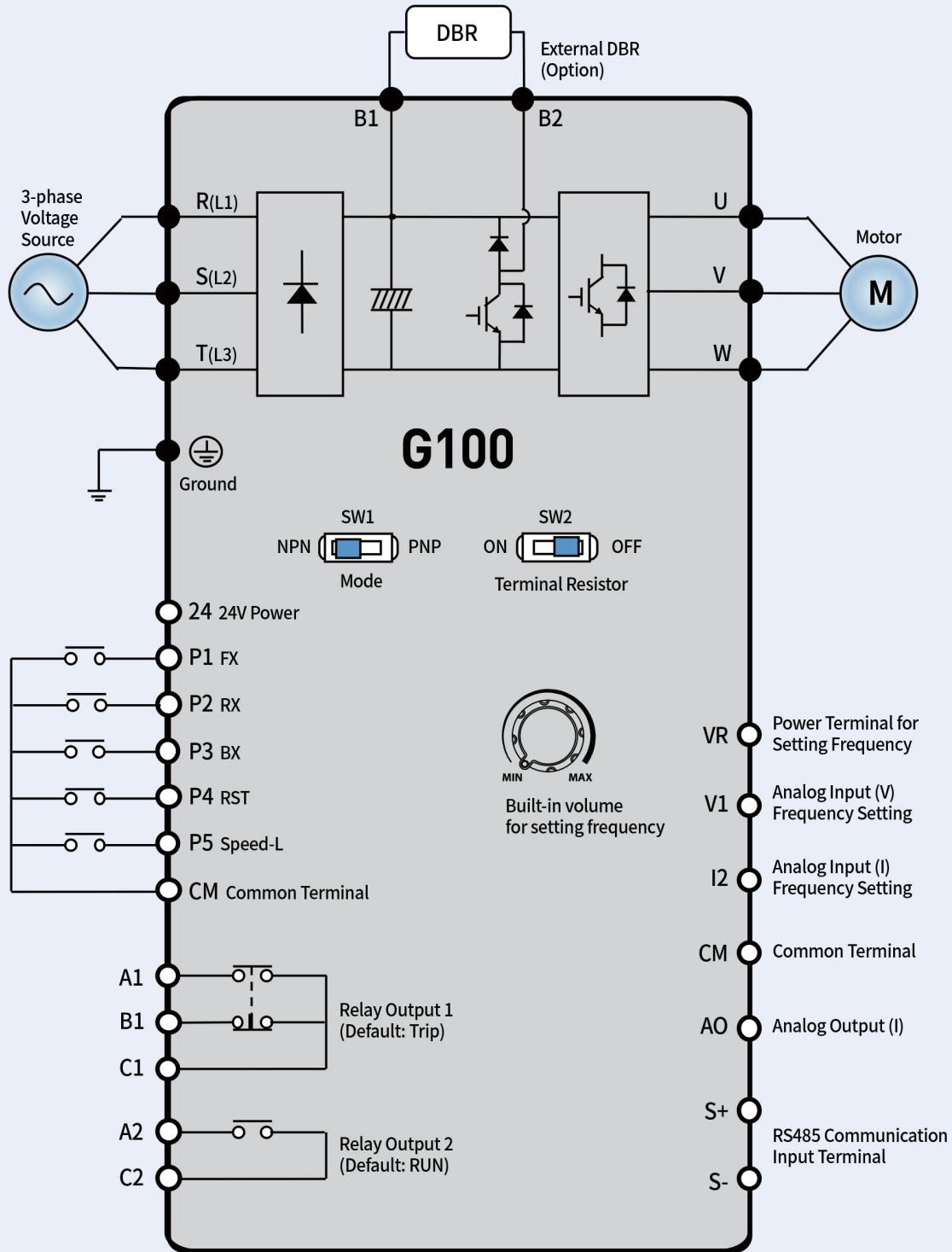
Operation Mode	Select key pad, terminal strip, or communication operation	
Frequency Setting	Analog: -10~10[V], 0~10[V], 4~20[mA] Digital: Keypad	
Operation Function	PID control, 3-wire operation, Frequency limit, Second function, Anti-forward and reverse direction rotation, Commercial transition, Speed search, Power braking, Leakage reduction, Up-down operation, DC braking, Frequency jump, Slip compensation, Automatic restart, Automatic tuning, Energy buffering, Flux braking, Fire mode	
Input	Multi-Function Terminal (5 Points)	NPN (Sink) / PNP (Source) Selectable Function: Forward run, Reverse run, Reset, External trip, Emergency stop, Jog operation, Multi-step frequency-high, middle, low, Multi-step acceleration/ deceleration-high, middle, low, DC braking at stop, 2nd motor select, Frequency up/down, 3-wire operation, Change into normal operation during PID operation, Change into main body operation during option operation, Analog command frequency fixing, Acceleration/deceleration stop etc. Selectable
	Analog Input	VI: -10~10V, I2 4~20mA
Output	Multi-function Relay Terminal	Fault output and drive operation status output (N.O., N.C.) less than AC 250V 1A, less than DC 30V 1A
	Analog Output	0~12Vdc: Frequency, Output current, Output voltage, DC stage voltage etc. selectable

Protective Function

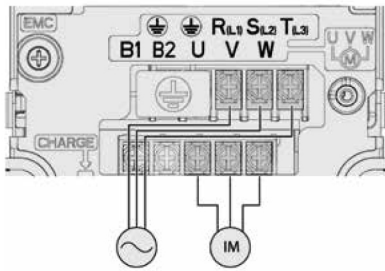
Trip	Over current trip, external signal trip, ARM short current fault trip, over heat trip, input imaging trip, ground trip, motor over heat trip, I/O board link trip, no motor trip, parameter writing trip, emergency stop trip, command loss trip, external memory error, CPU watchdog trip, motor light load trip	Over voltage trip, temperature sensor trip, inverter over heat, option trip, output image trip, inverter overload trip, fan trip, pre-PID operation failure external brake trip, low voltage trip during operation, low voltage trip, analog input error, motor overload trip, over torque trip, under torque trip
Alarm	Command loss trip warning, overload warning, light load warning, inverter overload warning, fan operation warning, braking resistance braking rate warning, rotor time constant tuning error, inverter pre-overheat warning, over torque warning, under torque warning	
Momentary Power Loss	HD below 15ms (ND below 8ms): Continuous operation (To be within rated input voltage, rated output) HD above 15ms (ND above 8ms): Automatic restart operation enable	

Environment

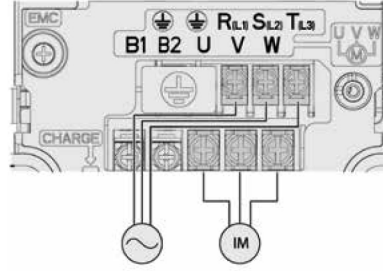
Cooling Type	Forced fan cooling structure
Protection Degree	IP20/UL Open (Default), UL Enclosed type 1 (Option), IP30(Remote Keypad)
Ambient Temperature	Ambient temperature under the condition of no ice or frost. HD: -10~50°C(14~122°F) / ND: -10~40°C(14~104°F) [However, recommended to use load below 80% when using at 50°C under light load]
Humidity	Relative humidity below 95% RH (no dew formation)
Storage Temperature	-20~65°C(-4~149°F)
Surrounding Environment	Environment Level: 3C3(IEC60721-3-3) classifications (for SO2, H2S, CL, NO2) No corrosive gas, flammable gas, oil mist and dust etc., indoors
Altitude, Vibration	Below 1,000m (From 1000 to 4000m, the rated input voltage and rated output current of the drive must be derated by 1% for every 100m.), below 9.8m/sec2 (1G)
Pressure	70~106kPa



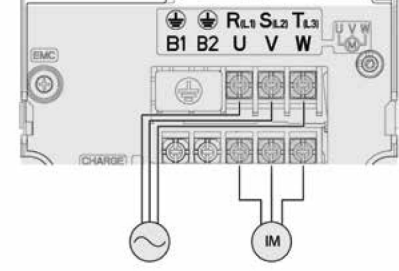
0.4/0.75kW



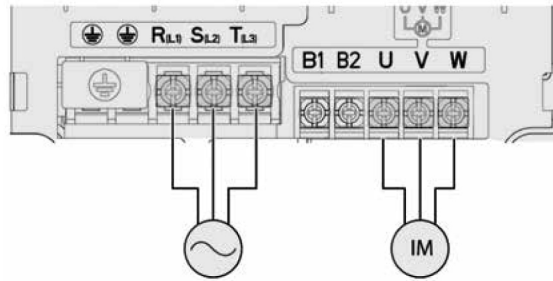
1.5/2.2kW



4kW



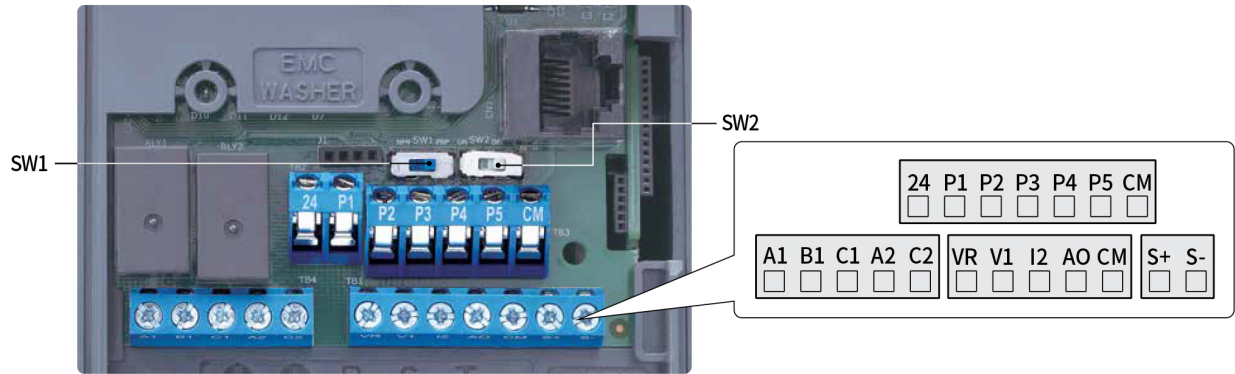
5.5/7.5kW



Terminal Labels	Name	Description
⊕	Ground terminal	Connect earth grounding.
R(L1)/S(L2)/T(L3)	AC power input terminal	Mains supply AC power connections.
B1/B2	Brake resistor terminals	Brake resistor wiring connection.
U/V/W	Motor output terminals	3-phase induction motor wiring connections.

Capacity (kW)	Terminal Screw Size	Rated Screw Torque (Kgf-cm/Nm)	
3-Phase 200V Class	0.4	R/S/T, U/V/W : M3	R/S/T, U/V/W : 5.1/0.5
	0.75		
	1.5	R/S/T, U/V/W : M4	R/S/T, U/V/W : 12.1/1.2
	2.2		
	4	R/S/T, U/V/W : M4	R/S/T : 24.0/2.4 U/V/W : 15.0/1.5
	5.5		
7.5			
3-Phase 400V Class	0.4	R/S/T, U/V/W : M3.5	R/S/T, U/V/W : 10.3/1.0
	0.75		
	1.5		
	2.2	R/S/T, U/V/W : M4	R/S/T, U/V/W : 18.4/1.8
	4		
	5.5	R/S/T, U/V/W : M4	R/S/T : 14.3/1.4 U/V/W : 18.4/1.8
7.5			

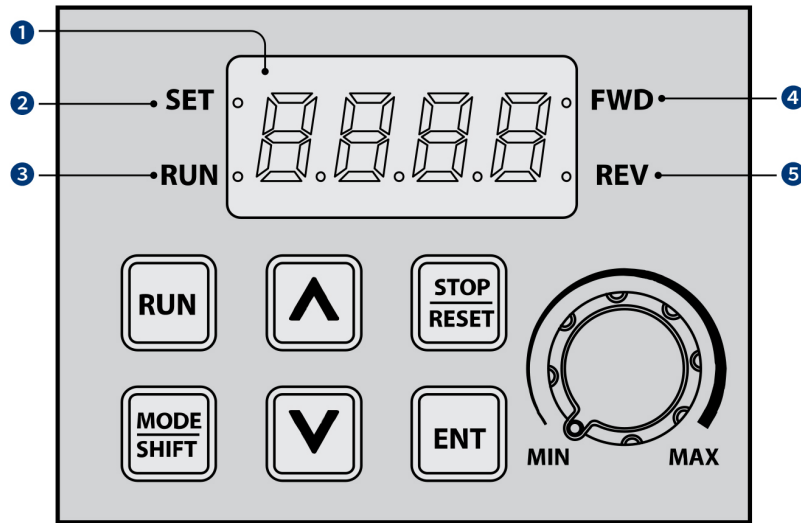
- Only use the specified torque on the screw heads otherwise damage could occur. Loose screws can cause overheating and damage.
- Use copper wires with 600V, 75°C specification.



Terminals	Terminal Screw Size	Screw Torque (Kgf-cm/Nm)
P1-P5/CM/VR/V1/I2/AO/24/S+/S-	M2	2.2-2.5/0.22-0.25
A1/B1/C1, A2/C2	M2.6	4.0/0.4




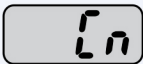


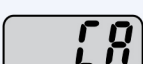



• Only use the specified torque on the screw heads otherwise damage could occur.
Loose screws can cause overheating and damage.

Category	Terminal Labels	Name	Description
Multi-function Terminal Configuration	P1-P5	Multi-function Input 1-5	Configurable for multi-function input terminals. Factory default terminals and setup are as follows. <ul style="list-style-type: none"> • P1: Fx • P2: Rx • P3: BX • P4: RST • P5: Speed-L
	CM	Sequence common terminal	Common terminal for analog terminal inputs and outputs.
Analog Input	VR	Potentiometer frequency reference input	Used to setup or modify a frequency reference via analog voltage or current input. <ul style="list-style-type: none"> • Maximum voltage output: 12 V • Maximum current output: 100mA • Potentiometer: 1/5 kΩ
	V1	Voltage input for frequency reference input	Used to setup or modify a frequency reference via analog voltage input terminal. <ul style="list-style-type: none"> • Unipolar: 0-10V (12V Max.) • Bipolar: -10-10V (±12V Max.)
	I2	Current input for frequency reference input terminal	Used to setup or modify a frequency reference via current input terminal. <ul style="list-style-type: none"> • Input current: 4-20 mA • Maximum Input current: 24mA • Input resistance: 249 Ω
Analog Output	AO	Voltage output terminal	Used to send inverter output information to external devices: Output frequency, output current, output voltage, or a DC voltage. <ul style="list-style-type: none"> • Output voltage: 0-10 V • Maximum output voltage/Current: 12 V, 10 mA • Factory default output: Frequency
	24	External 24V power source	Maximum current output: 100mA
	A1/C1/B1	Fault signal output 1	Sends out alarm signals when the inverter's safety features are activated (AC 250V 1A, DC 30V 1A). <ul style="list-style-type: none"> • Fault condition: A1 and C1 contacts are connected (B1 and C1 open connection) • Normal operation: B1 and C1 contacts are connected (A1 and C1 open connection)
	A2/C2	Fault signal output 2	Sends out alarm signals when the inverter's safety features are activated (AC 250V 1A, DC 30V 1A). <ul style="list-style-type: none"> • Fault condition: A2 and C2 contacts are open connection • Normal operation: A2 and C2 contacts are connected
RS-485 Communication	S+/S-	RS-485 signal line	Used to send or receive RS-485 signals.



No.	Name	Function
①	7-Segment Display	Displays current operational status and parameter information.
②	SET Indicator	LED flashes during parameter configuration and when the ESC key operates as the multi-function key.
③	RUN Indicator	LED turns on (Steady) during an operation, and flashes during acceleration or deceleration.
④	FWD Indicator	LED turns on (Steady) during forward operation.
⑤	REV Indicator	LED turns on (Steady) during reverse operation.

Key	Name	Function
	[RUN] Key	Used to run the inverter (Inputs a RUN command).
	[STOP/RESET] Key	STOP: Stops the inverter. RESET: Resets the inverter if a fault or failure occurs.
	[▲] Key, [▼] Key	Switches between codes, or increases or decreases parameter values.
	[MODE/SHIFT] Key	Moves between groups or moves to the digit on the left when setting the parameter. Press the MODE/SHIFT key once again on the maximum number of digits to move to the minimum number of digits.
	[ENTER] Key	Switches from the selected state of parameter to the input state. Edits parameter and apply change. Accesses the operation information screen during failure on the failure screen.
	[ESC]	ESC to the initial display.
	[VOLUME]	Used to set the operation frequency.

Group	Keypad Display	Description
Operation	-	Configures basic parameters for inverter operation.
Drive		Configures parameters for basic operations. These include jog operation, motor capacity evaluation, torque boost, and other keypad related parameters.
Basic		Configures basic operation parameters. These parameters include motor parameters and multi-step frequency parameters.
Advanced		Configures acceleration or deceleration patterns, frequency limits, etc.
Control		Configures sensorless vector-related features.
Input Terminal		Configures input terminal-related features, including digital multi-functional inputs and analog inputs.
Output Terminal		Configures output terminal-related features such as relays and analog outputs.
Communication		Configures communication features for RS-485 or other communication options.
Application		Configures functions related to PID control.
Protection		Configures motor and inverter protection features
Motor 2 (Secondary Motor)		Configures secondary motor related features. The secondary motor (M2) group appears on the keypad only when one of the multi-function input terminals (In.65-In.69) has been set to 26 (Secondary motor).

Group & Code selection

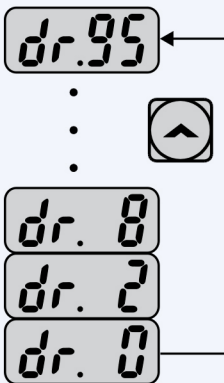
Step	Instruction	Keypad Display
1	Move to the group you want using the [MODE] keys. Press the [MODE] key for longer than 1 second to move in the opposite direction.	
2	Move up and down through the codes using the [▲] and [▼] keys until you locate the code that you require.	
3	Press the [ENT] key to save the change.	-

When moving up and down through the codes using the [▲] and [▼] keys in each group, there are cases where the code number does not increase or decrease. This is because the number was left blank in the inverter program by expecting additional features or the program was set up to not display the unused features.

Navigating Directly to Different Codes

The following example details navigating to code dr. 95, from the initial code in the drive group (dr.0). This example applies to all groups whenever you would like to navigate to a specific code number.

Step	Instruction	Keypad Display
1	Ensure that you are currently at the first code of the drive group (dr.0).	dr.0
2	Press the [ENT] key. Number "9" will flash.	9
3	Press the [▼] key and change the ones' place of the code "95" to "5."	5
4	Press the [MODE] to move to the tens' place. The cursor will move to the left and "05" will be displayed. At this time, the number "0" will be flashing.	05
5	Press the [▲] key to change the tens' place number from "0" to "9," so the designated code is "95."	95
6	Press the [ENT] key. Code dr.95 is displayed.	dr.95



Fault Trips

Protection functions for output current and input voltage

Keypad Display	Name	Type	Description
	Over Load	Latch	Displayed when the motor overload trip is activated and the actual load level exceeds the set level. Operates when Pr.20 is set to a value other than 0.
	Under Load	Latch	Displayed when the motor underload trip is activated and the actual load level is less than the set level. Operates when Pr.27 is set to a value other than 0.
	Over Current 1	Latch	Displayed when inverter output current exceeds 200% of the rated current.
	Over Voltage	Latch	Displayed when internal DC circuit voltage exceeds the specified value.
	Low Voltage	Level	Displayed when internal DC circuit voltage is less than the specified value.
	Low Voltage 2	Latch	Displayed when internal DC circuit voltage is less than the specified value during inverter operation. Operates when Pr.82 is set to 1.
	Ground Trip*	Latch	Displayed when a ground fault trip occurs on the output side of the inverter and causes the current to exceed the specified value. The specified value varies depending on inverter capacity.
	E-Thermal	Latch	Displayed based on inverse time-limit thermal characteristics to prevent motor overheating. Operates when Pr.40 is set to a value other than 0.
	Out Phase Open	Latch	Displayed when a 3-phase inverter output has one or more phases in an open circuit condition. Operates when bit 1 of Pr.05 is set to 1.
	In Phase Open	Latch	Displayed when a 3-phase inverter input has one or more phases in an open circuit condition. Operates only when bit 2 of Pr.05 is set to 1.
	Inverter OLT	Latch	Displayed when the inverter has been protected from overload and resultant overheating, based on inverse time-limit thermal characteristics. Allowable overload rates for the inverter are 150% for 1 min and 200% for 4 sec. Protection is based on inverter rated capacity, and may vary depending on the device's capacity.
	No Motor Trip	Latch	Displayed when the motor is not connected during inverter operation. Operates when Pr.31 is set to 1.
	Relay Open Trip	Latch	Occurs when the DC voltage relay is not operating when power the is input. The Pr-90 code must be set to 1 to operate.
	Over Torque Trip 1	Latch	Occurs when the output current is higher than the level set in Ou-68. Operates when OU-67 is set to 3, 4.
	Over Torque Trip 2	Latch	Occurs when the output current is higher than the level set in OU-71. Operates when OU-70 is set to 3, 4.
	Under Torque Trip 1	Latch	Occurs when the output current is lower than the level set in OU-68. Operates when OU-67 is set to 7, 8.
	Under Torque Trip 2	Latch	Occurs when the output current is lower than the level set in OU-71. Operates when OU-70 is set to 7, 8.

* Ground Trip (GFT) feature is not provided in the products under 4.0 kW. Over current trip (OCT) or over voltage trip (OVT) may occur during low resistance grounding.

Fault Trips







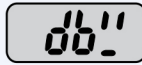
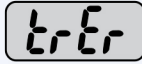

Protection functions using abnormal internal circuit conditions and external signals

Keypad Display	Name	Type	Description
	Over Heat	Latch	Displayed when the temperature of the inverter heat sink exceeds the specified value.
	Over Current 2	Latch	Displayed when the DC circuit in the inverter detects a specified level of excessive, short circuit current.
	External Trip	Latch	Displayed when an external fault signal is provided by the multi-function terminal. Set one of the multi-function input terminals at In.65-69 to 4 (External trip) to enable external trip.
	BX	Level	Displayed when the inverter output is blocked by a signal provided from the multi-function terminal. Set one of the multi-function input terminals at In. 65-69 to 5 (BX) to enable input block function.
	H/W-Diag	Fatal	Displayed when an error is detected in the memory (EEPROM), analog-digital converter output (ADC Off Set), or CPU watchdog (Watch Dog-1, Watch Dog-2). <ul style="list-style-type: none"> • EEP Err: An error in reading/Writing parameters due to keypad or memory (EEPROM) fault. • ADC Off Set: An error in the current sensing circuit (U/V/W terminal, current sensor, etc.).
	NTC Open	Latch	Displayed when an error is detected in the temperature sensor of the insulated Gate Bipolar Transistor (IGBT).
	Fan Trip	Latch	Displayed when an error is detected in the cooling fan. Set Pr.79 to 0 to activate fan trip (for models below 22kW capacity).
	Pre-PID Fail	Latch	Displayed when pre-PID is operating with functions set at AP.34-AP.36. A fault trip occurs when a controlled variable (PID feedback) is measured below the set value and the low feedback continues, as it is treated as a load fault.
	Ext-Brake	Latch	Operates when the external brake signal is provided by the multi-function terminal. Occurs when the inverter output starting current remains below the set value at Ad.41. Set either OU.31 or OU.32 to 35 (BR Control).
	Overheat Pre Alarm	Latch	When the user has set Pr-78 to 2: Free-Run or 3: Dec, pre-overheating warning trip of inverter occurs if the inverter temperature exceeds the temperature set by the user in Pr-77.

Protection functions for communication options

Keypad Display	Name	Type	Description
	Lost Command	Level	Displayed when a frequency or operation command error is detected during inverter operation by controllers other than the keypad (e.g., using a terminal block and a communication mode). Operates when Pr.12 is set to a value other than 0.
 	IO Board Trip	Latch	Displayed when the I/O board or external communication card is not connected to the inverter or there is a bad connection.
			Displayed when the error code continues for more than 5 sec. (‘Errc’ -> ‘-rrc’ -> ‘E-rc’ -> ‘Er-c’ -> ‘Err-’ -> ‘-rc’ -> ‘Er-’ -> ‘- - -’ -> ‘Errc’ -> ...)
	Option Trip -1	Latch	Displayed when a communication error is detected between the inverter and the communication board. Occurs when the communication option card is installed.

Warning Messages

Keypad Display	Name	Description
	Over Load	Displayed when the motor is overloaded. Operates when Pr.17 is set to 1. To operate, select 5. Set the digital output terminal or relay (OU.31 or OU.33) to 5 (Over load) to receive overload warning output signals.
	Under Load	Displayed when the motor is underloaded. Operates when Pr.25 is set to 1. Set the digital output terminal or relay (OU.31 or OU.33) to 7 (Under load) to receive underload warning output signals.
	INV Over Load	Displayed when the overload time equivalent to 60 % of the inverter overheat protection (inverter IOLT) level, is accumulated. Set the digital output terminal or relay (OU.31 or OU.33) to 6 (IOL) to receive inverter overload warning output signals.
	Lost Command	Lost command warning alarm occurs even with Pr.12 set to 0. The warning alarm occurs based on the condition set at Pr.13- 15. Set the digital output terminal or relay (OU.31 or OU.33) to 13 (Lost command) to receive lost command warning output signals. If the communication settings and status are not suitable for P2P, a lost command alarm occurs.
	Fan Exchange	An alarm occurs when the value set at PRT-86 is less than the value set at PRT-87. To receive fan exchange output signals, set the digital output terminal or relay (OUT-31 or OUT-33) to 38 (Fan exchange).
	Fan Warning	Displayed when an error is detected from the cooling fan while Pr.79 is set to 1. Set the digital output terminal or relay (OU.31 or OU.33) to 8 (Fan warning) to receive fan warning output signals.
	DB Warn %ED	Displayed when the DB resistor usage rate exceeds the set value. Set the detection level at Pr.66.
	Retry Tr Tune	Operates when dr.9 is set to 4. The warning alarm occurs when the motor's rotor time constant (Tr) is either too low or too high.
	Overheat Pre Alarm	When the user has set Pr-78 to 1: Warning, pre-overheating warning of inverter occurs if the inverter temperature exceeds the temperature set by the user in Pr-77.