

Variable Frequency Drive / Inverter **Starvert iS5**

0.75 - 55kW (1 - 75HP) 3 phase 200 - 230Volts
0.75 - 75kW (1 - 100HP) 3 phase 380 - 460Volts



Drive Solution





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**Sensorless, sensored vector controlled iS5,
keeps your application in more stable,
durable and precise condition.**

Standard features

kW / Voltage Ratings:

- 0.75~55kW, 200-230VAC, 3 phase
- 0.75~75kW, 380-480VAC, 3 phase

Enclosure: IP00 ~ IP20

Inverter Type: PWM with IGBT

Control Method: Sensorless/Sensored Vector

1~15kHz Carrier Frequency (1~8kHz. over 30kW)

0~400Hz Output Frequency

Removable Keypad (Able to read & write parameters)

Intelligent Accel/Decel for Trip-Free Operation

Auto Tuning

8 Multi-Function Inputs

1 Multi-Function Outputs

Failure Relay

Built-in PID Control

Pre-Set Speeds

Wire Operation

Multi-step Programmable Run Patterns

Auto Torque Boost

DC Injection Braking

Stall Prevention

Built-In Braking Circuit for 0.75 ~ 7.5kW units

Options

Communications Board:

- RS-485
- DeviceNet
- F-Net
- ModBus-RTU
- ProfiBus DP
- Extended I/O Module

-Sub-A Board:

- 3 Multi-Function Input
- 3 Multi-Function Output

-Sub-B Board :

- Encoder Plus Input
- Encoder Plus Output

-Sub-C Board :

- 3 Multi-Function Input
- 3 Multi-Function Output

Aux. Analog Reference Frequency (Isolated)

Cable for Remote Keypad Operations

Dynamic Braking Units for 11~75kW Inverters

Dynamic Braking Resistors

Application

Traverse

Draw

MMC (Mult Motor Control)

Converting

Material Handling

Web Processing

Fan/Pump Controls

Conveyors

Industrial Washing machine, etc.

Conformity to global standards

UL and cUL listed for North America

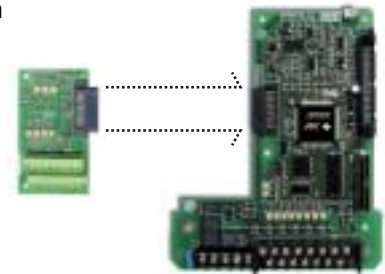
CE marked for Europe

Quality process controlled by ISO9001, ISO14000



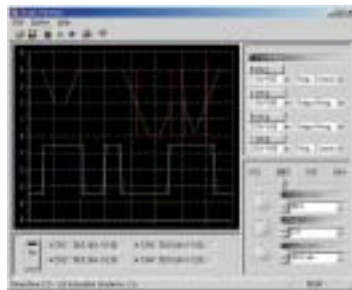
Extended I/O boards

The iS5 has several additional I/O boards that can be easily mounted into the connection terminal on control board. Each I/O board is standardized for a specific I/O requirement. The three main I/O boards are "Sub-board A", "Sub-board B" and "Sub-board C". This helps system engineer to design most adequate and cost effective system using the exactly necessary number of I/Os and functions. It is extendable and changeable in case of system upgrade or change. The control parameters and detailed functions for these boards are not shown until any of them is inserted.



Diversity of communication interfaces

The iS5 provides most popular communication interfaces such as Device Net, Profibus DP, Modbus-RTU, RS485 and F-Net (LS proprietary protocol for LS PLC communication). The "Driveview™" software offers Window® based computer monitoring tool through RS-485 interface with graphic capture, keypad emulator, parameter edit, and text monitor. It is applicable for all LS inverters.



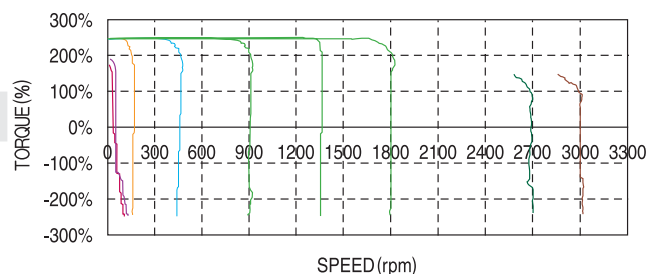
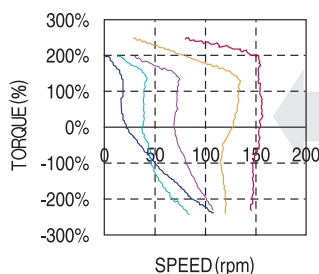
F-Net™
ModBus-RTU™
DeviceNet™
RS-485

Built-in PID control

It is valuable in process control. The built-in PID algorithm controls flow, temperature, pressure, etc. through the proportional, integral and differential calculus between the feedback value and reference value in closed loop. The high speed CPU makes the calculation easy and fast.

Sensorless vector control

The iS5 adopts sensorless vector control algorithm, and it improves not only the torque control characteristics, but the speed controllability in an uncertain condition caused by the load variation as well. The iS5 especially generates strong torque at a low speed range as shown below.

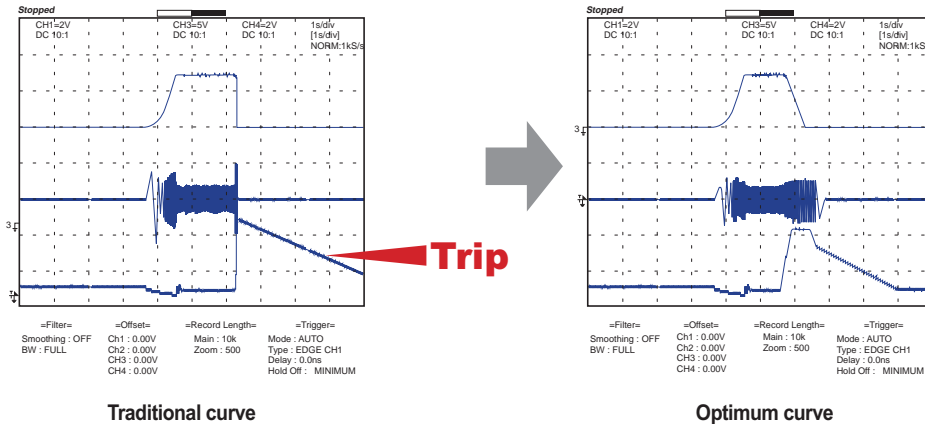


Auto tuning

The auto tuning algorithm in iS5 sets the motor factors automatically. It brings the traditional commissioning difficulties mainly in low speed by the load variation and the low torque generation to a settlement.

Optimum acceleration and deceleration

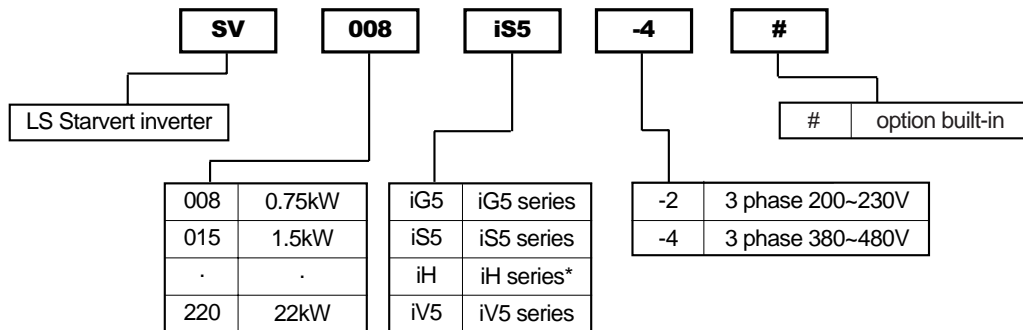
To make a maximum torque during the acceleration and deceleration, so called "trip free" function is acting during acceleration and deceleration. Both of Acceleration and deceleration may cause a trip in case that it is manually programmed. The 32-bit DSP CPU monitors the current transition during the acceleration and deceleration to program an optimum curve that is under the triptrigering level automatically.



Inverter rating selection guide

| Application motor | | 200~230V | 380~460V |
|-------------------|-----|------------|------------|
| KW | HP | | |
| 0.75 | 1 | SV008iS5-2 | SV008iS5-4 |
| 1.5 | 2 | SV015iS5-2 | SV015iS5-4 |
| 2.2 | 3 | SV022iS5-2 | SV022iS5-4 |
| 3.7 | 5 | SV037iS5-2 | SV037iS5-4 |
| 5.5 | 7.5 | SV055iS5-2 | SV055iS5-4 |
| 7.5 | 10 | SV110iS5-2 | SV110iS5-4 |
| 11 | 15 | SV150iS5-2 | SV150iS5-4 |
| 15 | 20 | SV185iS5-2 | SV185iS5-4 |
| 18.5 | 25 | SV220iS5-2 | SV220iS5-4 |
| 22 | 30 | SV300iS5-2 | SV300iS5-4 |
| 30 | 40 | SV370iS5-2 | SV370iS5-4 |
| 37 | 50 | SV450iS5-2 | SV450iS5-4 |
| 45 | 60 | SV550iS5-2 | SV550iS5-4 |
| 55 | 75 | | |
| 75 | 100 | | SV750iS5-4 |

Inverter type nomenclature



* iH inverter has a different designation in kW.

Specifications 200~230V Class (0.75~55kW)

| Inverter Type (SV_ _iS5_) | 008-2 | 015-2 | 022-2 | 037-2 | 055-2 | 075-2 | 110-2 | 150-2 | 185-2 | 220-2 | 300-2 | 370-2 | 450-2 | 550-2 | |
|------------------------------------|------------------------------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| Motor Rating ^{*1)} | [HP] | 1 | 2 | 3 | 5 | 7.5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 |
| | [kW] | 0.75 | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 |
| Output ratings | Capacity[kVA] ^{*2)} | 1.9 | 3 | 4.5 | 6.1 | 9.1 | 12.2 | 17.5 | 22.9 | 28.2 | 33.5 | 46 | 55 | 68 | 84 |
| | FLA[A] | 5 | 8 | 12 | 16 | 24 | 32 | 46 | 60 | 74 | 88 | 122 | 146 | 180 | 220 |
| Input ratings | Frequency | 0 ~ 400 Hz | | | | | | | | | | | | | |
| | Voltage | 200 ~ 230V ^{*3)} | | | | | | | | | | | | | |
| Input ratings | Voltage | 3 phase 200 ~ 230 V (± 10%) | | | | | | | | | | | | | |
| | Frequency | 50 ~ 60 Hz (± 5%) | | | | | | | | | | | | | |
| Weight[kg] | | 4.6 | 4.6 | 4.8 | 4.9 | 7.5 | 7.7 | 13.8 | 14.3 | 19.4 | 20 | | | | |

Specifications 380~480V Class (0.75~75kW)

| Inverter Type (SV_ _iS5_) | 008-4 | 015-4 | 022-4 | 037-4 | 055-4 | 075-4 | 110-4 | 150-4 | 185-4 | 220-4 | 300-4 | 370-4 | 450-4 | 550-4 | 750-4 | |
|------------------------------------|------------------------------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| Motor Rating ^{*1)} | [HP] | 1 | 2 | 3 | 5 | 7.5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 100 |
| | [kW] | 0.75 | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 |
| Output ratings | Capacity[kVA] ^{*2)} | 1.9 | 3 | 4.5 | 6.1 | 9.1 | 12.2 | 18.3 | 22.9 | 29.7 | 34.3 | 45 | 56 | 68 | 82 | 100 |
| | FLA[A] | 2.5 | 4 | 6 | 8 | 12 | 16 | 24 | 30 | 39 | 45 | 61 | 75 | 91 | 110 | 152 |
| Input ratings | Frequency | 0 ~ 400 Hz | | | | | | | | | | | | | | |
| | Voltage | 380 ~ 480V ^{*3)} | | | | | | | | | | | | | | |
| Input ratings | Voltage | 3 phase 380 ~ 480 V (± 10%) | | | | | | | | | | | | | | |
| | Frequency | 50 ~ 60 Hz (± 5%) | | | | | | | | | | | | | | |
| Weight[kg] | | 4.6 | 4.6 | 4.8 | 4.9 | 7.5 | 7.7 | 13.8 | 14.3 | 19.4 | 20 | | | | | |

| | | | | | | | | | | | | | | | | |
|-----------------------|------------------------|-----------|--|--|--|--|-----------|--|--|--|------|-----------------------------------|--|--|--|--|
| Braking Torque | Braking circuit | On board | | | | | | | | | | Optional (Braking unit, resistor) | | | | |
| | Average braking torque | 100% | | | | | 100% | | | | | 100% | | | | |
| | Max.continuous braking | 5seconds | | | | | 5seconds | | | | | 5seconds | | | | |
| | Max. duty | 30 (3)%ED | | | | | 30 (2)%ED | | | | | 30 %ED | | | | |
| Cooling method | Forced air cooling | | | | | | | | | | IP00 | | | | | |

*1) Indicates the maximum applicable capacity when using 4 pole LS standard motor.

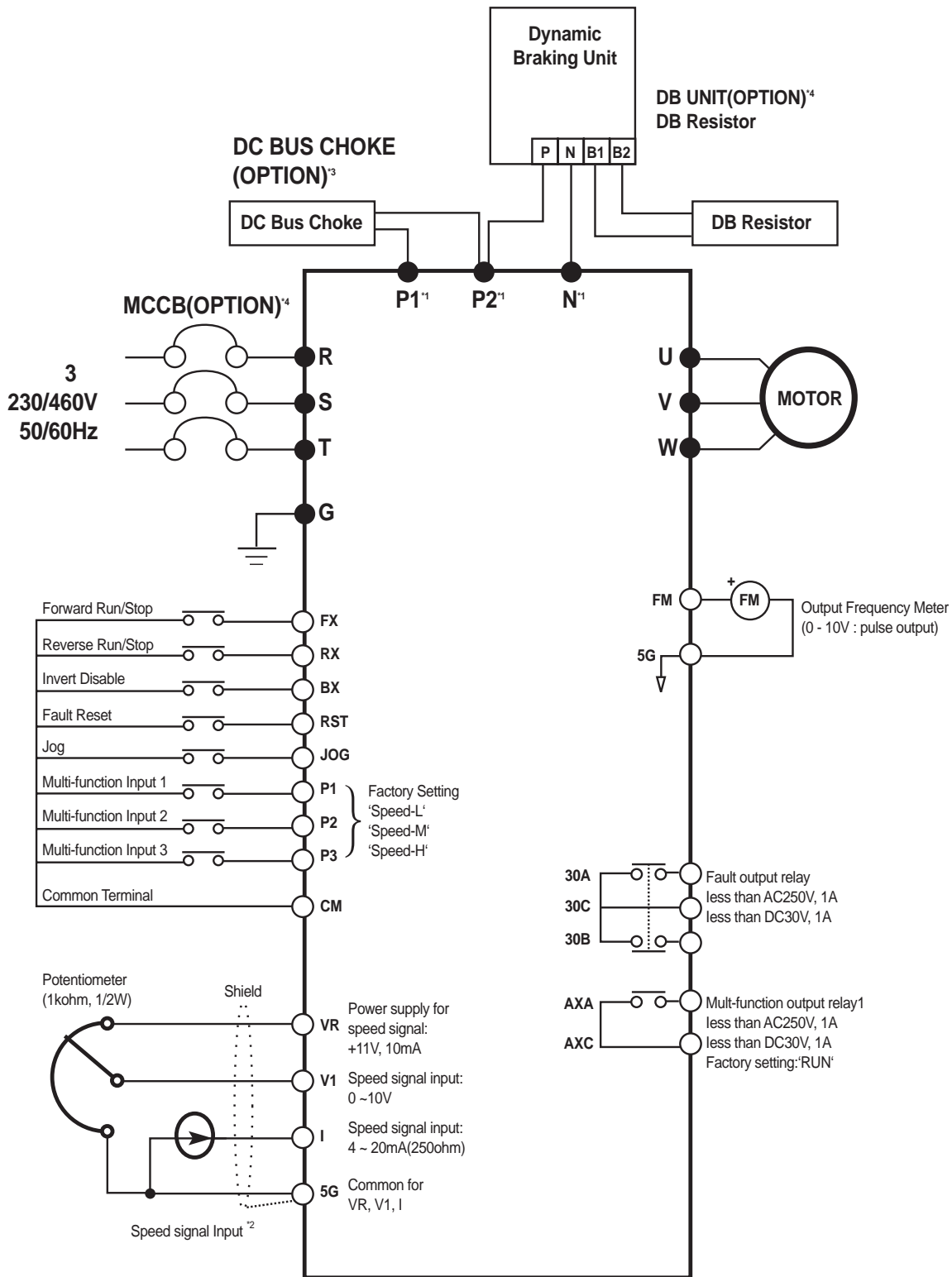
*2) Rated capacity (3*V*1) is based on 220V for 200V class and 440V for 400V class.

*3) Maximum output voltage will not be greater than the input voltage. Output voltage less than the input voltage can be set.

*4) 0.75 ~ 3.7kW inverter have internal braking resistor inside. 5.5 ~ 75kW inverters need optional braking resistor.

| | | | | | | | | | | | | | | | | |
|----------------------------|------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Control | Control method | V/F control, sensorless vector control(selectable), sensored vector control | | | | | | | | | | | | | | |
| | Frequency setting resolution | Digital reference : 0.01 Hz (below 100 Hz), 0.1 Hz (over 100 Hz) | | | | | | | | | | Analog reference : 0.03 Hz / 50 Hz | | | | |
| | Frequency accuracy | Digital : 0.01% of max. output frequency | | | | | | | | | | Analog : 0.1% of max. output frequency | | | | |
| | V/F ratio | Linear, Square pattern, User V/F | | | | | | | | | | | | | | |
| | Overload capacity | 150 % of rated current for 1 min., 200% of rated current for 0.5 sec. (characteristic is inversely proportional to time) | | | | | | | | | | | | | | |
| | Torque boost | Manual torque boost (0 ~ 15 %), Auto torque boost | | | | | | | | | | | | | | |
| Operation | Input signal | Operation method | Key / terminal / communication operation | | | | | | | | | | | | | |
| | | Frequency setting | Analog : 0 ~ 10V / 4 ~ 20 mA / Additional port for Sub-board (0 ~10V) | | | | | | | | | | | | | |
| | | Start signal | forward, reverse | | | | | | | | | | | | | |
| | | Multi-step | Up to 8 speeds can be set (use multi-function terminal) | | | | | | | | | | | | | |
| | | Multi-step accel/decel time | 0 ~ 6,000 sec, up to 8 types can be set and selected for each setting (use the multi- function terminal), Accel/Decel pattern : linear pattern, U pattern, S pattern | | | | | | | | | | | | | |
| | Output signal | Emergency stop | Interrupts the output of the inverter | | | | | | | | | | | | | |
| | | Jog | Jog operation | | | | | | | | | | | | | |
| | | Auto operation | Operates from internal sequence by setting the multi-function terminal (5way x 8step) Trip status is removed when protective function is active | | | | | | | | | | | | | |
| | | Fault reset | active | | | | | | | | | | | | | |
| | | Operation status | Frequency level detection, Overload alarm, stalling, overvoltage, undervoltage, inverter overheating, running, stop, constant speed, exchange inverter to commercial line, speed searching, auto operation step, auto operation sequence | | | | | | | | | | | | | |
| Protective function | Fault output | Contact output (30A,30C,30B) - AC250V 1A, DC30V 1A | | | | | | | | | | | | | | |
| | Indicator | Choose 1 from Output frequency, output current, output voltage, DC voltage (Output voltage: 0 ~ 10V) | | | | | | | | | | | | | | |
| | Operation function | DC braking, frequency limit, frequency jump, second function, slip compensation, reverse rotation prevention, auto restart, exchange inverter to commercial line, auto-tuning, PID control | | | | | | | | | | | | | | |
| Display Keypad | Inverter trip | Overvoltage, undervoltage, overcurrent, fuse open, ground fault, inverter overheating, motor overheating, output phase loss, MC fail (over 30kW only), overload protection, external fault 1,2, communication error, loss of speed command, hardware fault, option fault etc. | | | | | | | | | | | | | | |
| | Inverter alarm | Stall prevention, overload alarm | | | | | | | | | | | | | | |
| | Momentary power loss | Less than 15 msec : continuous operation (over 30kW drives excluded), more than 15 msec : auto restart possible | | | | | | | | | | | | | | |
| Environment | Operation information | Output frequency, output current, output voltage, frequency value setting, operating speed, DC voltage | | | | | | | | | | | | | | |
| | Trip information | Indicates the fault when the protection function activates, memorizes up to 5 faults | | | | | | | | | | | | | | |
| | Ambient temperature | -10 °C ~ 40 °C | | | | | | | | | | | | | | |
| Environment | Storage temperature | -20 °C ~ 65 °C | | | | | | | | | | | | | | |
| | Ambient humidity | 90 % RH max.(Non condensing) | | | | | | | | | | | | | | |
| | Altitude . Vibration | Below 1,000 m /below 5.9m/sec ² (=0.6g) | | | | | | | | | | | | | | |
| | Application side | No corrosive gas, combustible gas, oil mist, or dust | | | | | | | | | | | | | | |

Wiring



- Note) " " display main circuit terminals, " " display control circuit terminals.
- The terminal configuration varies depend on the model name.
 'P' terminal is available in 5.5 to 7.5kW inverters. 'P1' and 'P2' are available in 11 to 75kW inverters.
 'B1' and 'B2' terminals are for braking resistor or connection. 'P1' and 'P2' are for braking unit.
 - Analog speed command can be set by voltage, current and both of them.
 - When installing the DC Reactor, the common busbar between P1 and P2 must be removed.
 - 0.75 ~ 7.5kW inverters have on-board braking circuit. Braking resistor is only included for 0.75 ~ 3.7kW inverters.
 11 ~ 75kW inverters need optional braking unit and resistor for dynamic braking.
 - Marked as "CM" for over 30kW drives.

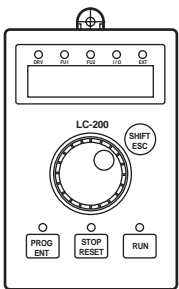
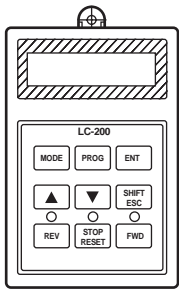
Power terminal configuration

| Symbol | Function |
|--|---|
| R S T U V W | AC Line input (3 phase, 200-230 Vac for "-2" units and 380-480 Vac for "-4" units) 3 phase output terminals to motor |
| P | Positive DC Bus Terminals, DC Bus Choke (reactor)connection terminals. These terminals are available for 5.5 to 7.5kW inverter with optional DB unit when an application need braking torque over 30% ED |
| P1 P2 | Positive DC Bus Terminals, DC Bus Choke (reactor)connection terminals. These terminals are available for 11 to 22kW inverter with optional DB unit. These terminal are shorted when DB unit is not applied. |
| B1 B2 | Dynamic braking resistor connection terminals. These terminals are available for 0.75 to 3.7kW inverters in order to connect an external braking resistor. |
| N | Negative DC Bus terminal |
| G | Chassis ground (The ground terminal ("G") may be located on heat sink instead of terminal strip depend on the model type) |

Control terminal configuration

| Type | Symbol | Name | Description |
|---------------|-------------------------|---|--|
| Input signal | Starting Contact | P1, P2, P3 | Multi function input 1,2,3 Used for multi function input. Factory default is set to step frequency 1, 2, 3. |
| | Function | FX | Forward run command Forward run when closed and stop when open. |
| | Selection | RX | Reverse run command Reverse run when closed and stop when open. |
| | | JOG | Jog frequency reference Runs at jog frequency when the jog signal is ON. The direction is set by the FX (or BX) signal. |
| | | BX | Emergency stop When the BX signal is ON, the output of the inverter is cut off. When the motor uses an electrical brake to stop, BX is used to cut off the output signal. When the BX signal, which does not cut off by latching, is OFF and the FX signal (or the RX signal) is ON, the motor keeps running, so be cautious. |
| | | RST | Fault reset Used to release the protective status when the protective circuit is active. |
| | Analog/Digital | CM | Sequence common Used for the common terminal for contact input terminals. |
| | | NC | - Not used. |
| | | VR | Frequency setting power (+12V) Used as power for the analog frequency setting. Maximum output is +12V, 100mA. |
| | | V1 | Frequency reference (Voltage) Used for frequency reference and uses 0-10V for input. Input resistance is 20 kΩ |
| I | | Frequency reference (Current) Used for frequency reference and uses DC 4-20mA for input. Input resistance is 250Ω | |
| | 5G | Frequency setting common terminal Common terminal for the analog frequency reference signal and the FM (for monitoring). | |
| Output signal | Pulse | FM | Analog/digital output (For external monitoring) Outputs one of the followings: output frequency, output current, output voltage, DC link voltage. Factory default is set to output frequency. Maximum output voltage and output current is 0-12V, 1mA. Output frequency is set to 500Hz. |
| | Contact | 30A,30C,30B | Fault contact output Activates when the protective function is operating. AC250V 1A or less, DC30V 1A or less Fault : 30A-30C short (30B-30C open) Normal : 30B-30C short (30A-30C open) |
| Comm. | RS232 | AXA,AXC CN3 | Multi-function output Communication port Use after defining the multi-function output terminal. AC250V 1A or less, DC30V 1A or less. Use the keypad connector. Use the keypad connector for RS232 communication. Disconnect the keypad and connect the RS232-RS485 converter for RS485 communication. |

Keypad



1. LCD Keypad

| Key/LED | Name | Description |
|-------------------|-------------|--|
| MODE | Mode key | The mode button moves you through the seven program groups : DRV, FUN1, FUN2, I/O, (EXT), (COM) and APP. |
| PROG | Program key | The program button is used to go into programming mode to change data. |
| ENT | Enter key | The enter button is used to enter changed parameters. |
| UP | Up key | The up and down arrows are used to move through and change data. |
| DOWN | Down key | |
| SHIFT/ESC | Shift key | The button is used to move cursor across the display in a programming mode. |
| | Escape key | This button is used to move the program code to DRV00 from any program code. |
| REW | Reverse key | The reverse run button is used to run the motor in reverse direction. |
| STOP/RESET | Stop key | The stop button is used to the drive from running. |
| | Reset key | The reset button is used to reset faults. |
| FWD | Forward key | The forward run button is used to run the motor in forward direction. |
| REV | Reverse run | The LED blinks when th inverter accels or decels. |
| STOP/RESET | Stop/reset | The LED blinks when there is a fault. |
| FWD | Forward run | The LED blinks when the inverter accels or decels. |

2. LED Keypad (7-segment)

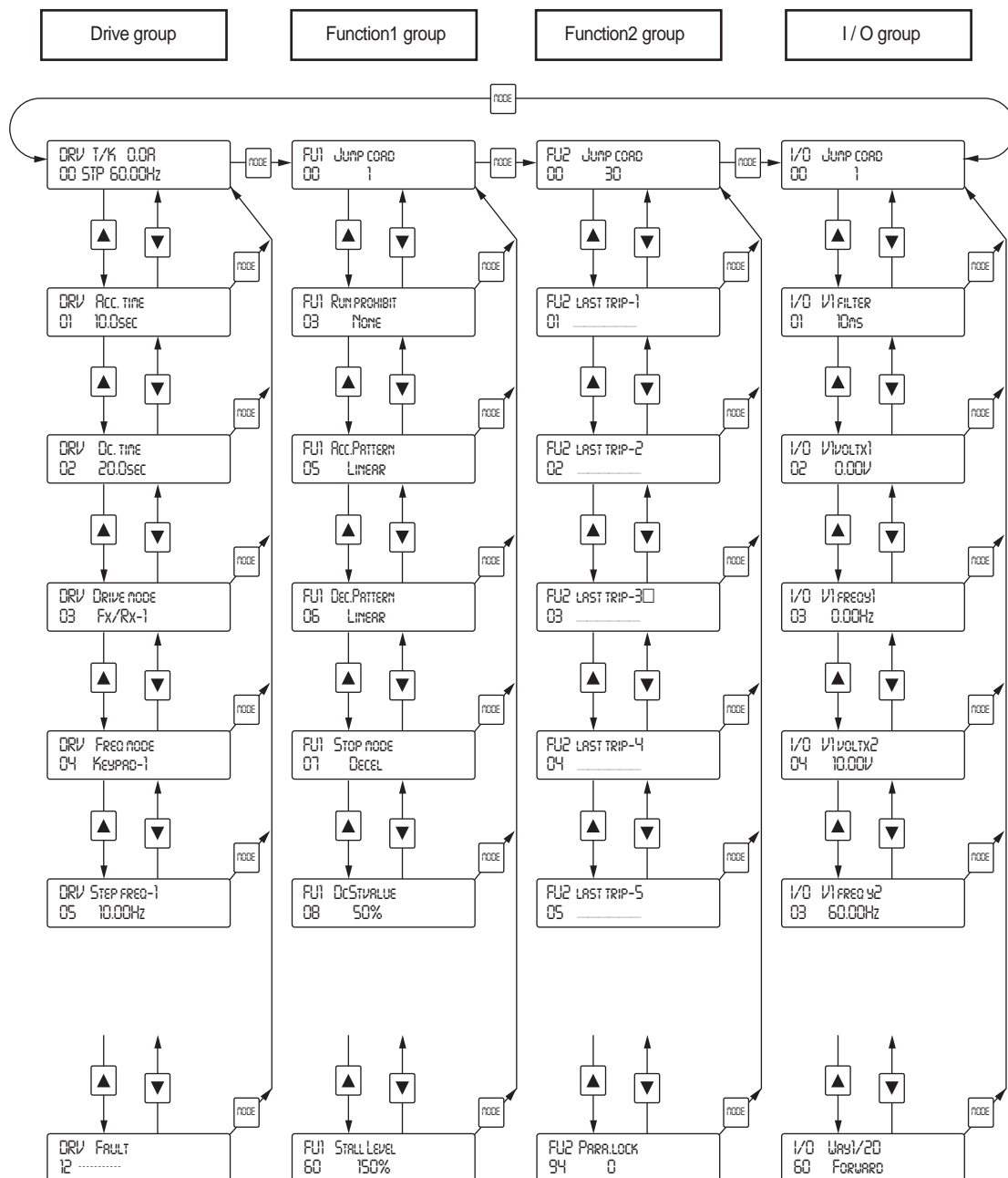
| | | |
|---------------------|--------------------|--|
| Encoder knob | Encoder Knob | This is used to move you through seven parameter groups and parameter codes. Also, used to change data by rotating knob. |
| SET | Set key | This is used to go into program mode to change data and to enter the changed data. |
| SHIFT/ESC | Shift key | This is used to go into program mode to change data and to enter the changed data. |
| | Escape key | This button is used to move cursor across the display in a programming mode. |
| STOP/RESET | Stop key | This is used to stop the inverter from running. The reset button is used to reset faults. |
| | Reset key | This is used to run the inverter. |
| RUN | Run key | The motor direction is set in DRV13. |
| SET | Setting status | It blinks in setting mode. |
| STOP/RESET | Stop/Fault status | The LED is lit in Stop status and blinks in fault status. |
| | Run status | The LED is lit in Run status and blinks in fault status. |
| DRV | Drive group | It blinks in drive group. |
| FU1 | Function1 group | It blinks in Function1 group. |
| FU2 | Function2 group | It blinks in Function2 group. |
| I/O | I/O group | It blinks in I/O group. |
| EXT | Sub-board group | It blinks in Sub-board group. |
| I/O+EXT | Option-board group | It blinks in Option board group. |
| I/O+EXT+FU2 | Application group | It blinks in Application group. |

Parameter group

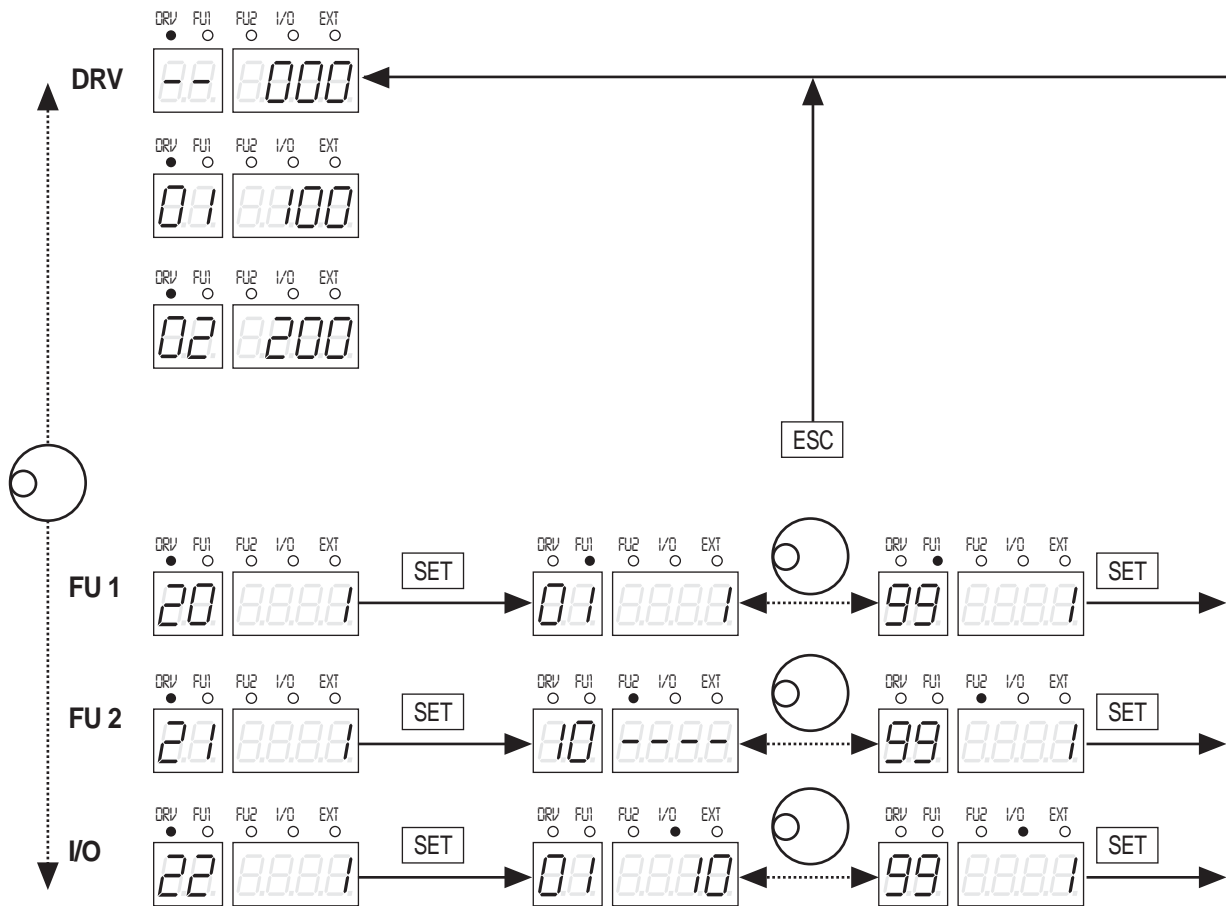
| Parameter group | LCD keypad | 7-segment keypad | Description |
|-----------------|------------|-------------------------|---|
| Drive | DRV | DRV LED is lit | Command frequency, accel/decel time, etc. Basic parameters. |
| Function 1 | FU1 | FU1 is lit | Max. frequency, amount of torque boost, etc. Basic function related parameters. |
| Function 2 | FUN2 | FU2 is lit | Frequency jumps, max./min. limit of frequency etc. Application function related parameters. |
| Input / Output | I/O | I/O is lit | Multi function terminal setting, auto operation etc. Parameter needed for sequence operation. |
| External board | EXT | EXT is lit | Displayed when sub-board is installed. |
| Communication | COM | I/O + EXT are lit | Displayed when option board is installed. |
| Application | APP | I/O + EXT + FU2 are lit | Specific application related parameters. |

Parameter navigation

1. LCD Keypad



2. LED keypad (7-segment)



Operation method

| Operation method | Function | Function setting |
|----------------------------|---|---|
| Keypad | Run/Stop command and frequency are set only through the keypad. Closing FX or RX terminal performs Run/Stop. Frequency reference is set through keypad | DRV 03 : Keypad DRV 04 : Keypad |
| Terminal | Run/Stop command and frequency are set only through the terminal. Closing FX or RX terminal performs Run/Stop. Frequency reference is set through V1 or I or V1+I terminal. | DRV 03 : Fx/Rx-1 or -2 DRV 04 : V1 or I or V1+I DRV 03 : Keypad-1 or -2 DRV 04 : V1 or I or V1+I |
| Keypad and Terminal | Closing Fx or RX terminal performs Run/Stop. Frequency reference is set through keypad. | DRV 03 : Fx/Rx-1 or -2 DRV 04 : Keypad-1 or -2 |
| Option board | Operation using additional sub or option board. Sub board : SUB-A, SUB B, .. SUB-H Option board : Device Net, Synchro, Profibus DP, Digital-in, RS485, Modbus-RTU | |

Program parameter descriptions

1. Drive Group [DRV]

| Code | Description | Keypad Display | | Setting Range | | Units | Factory Default | Adjustable during run |
|---------------|--|----------------|-----------------|---|----------------------------|-------|-----------------|-----------------------|
| | | LCD | 7-segment | LCD | 7-segment | | | |
| DRV-00 | Output Frequency or Reference Frequency. Output Current (LCD) | Cmd.freq | F or r (DRV-13) | 0 to FU1-20 (Max.freq) | | 0.01 | 0.00 [Hz] | Yes |
| DRV-01 | Acceleration Time | Acc.time | 01 | 0 to 6000 | | 0.1 | 10.0 [sec] | Yes |
| DRV-02 | Deceleration Time | Dec.time | 02 | 0 to 6000 | | 0.1 | 20.0 [sec] | Yes |
| DRV-03 | Drive Mode (Run/Stop method) | Drive mode | 03 | Keypad Fx/Rx-1 Fx/Rx-2 | 0 1 2 | 1 | 1 (Fx/Rx-1) | No |
| DRV-04 | Frequency Mode (Freq. setting method) | Freq mode | 04 | Keypad-1 Keypad-2 V1 1 V1+1 | 0 1 2 3 4 | 1 | 0 (keypad-1) | No |
| DRV-05 | Step Frequency 1 | Step freq-1 | 05 | FU1-22 to Fu1-20 | | 0.01 | 10.00 [Hz] | Yes |
| DRV-06 | Step Frequency 2 | Step freq-2 | 06 | (Starting freq to Max. freq) | | - | 20.00 [Hz] | - |
| DRV-07 | Step Frequency 3 | Step freq-3 | 07 | The load current in RMS | | - | 30.00 [Hz] | - |
| DRV-08 | Output Current | Current | 08 | The motor speed in rpm | | - | # [A] | - |
| DRV-09 | Motor Speed | Speed | 09 | The DC link voltage inside inverter | | - | # [rpm] | - |
| DRV-10 | DC link Voltage | DC link Vtg | 10 | Selected in FU-73 (User disp) | | - | # [V] | - |
| DRV-11 | User Display selection | User disp | 11 | - | | - | - | Yes |
| DRV-12 | Fault Display | Fault | 12 | Not available | 0 [Forward] 1 [reverse] | - | None nOn | - |
| DRV-13 | Motor Direction set | Not displayed | 13 | | | - | 0 | - |
| DRV-14 | Command/output frequency | Tar/Out Freq. | 14 | Command/output frequency | | - | # [Hz] | Yes |
| DRV-15 | Command/feedback frequency | Ref/Fdb Freq. | 15 | Command/feedback frequency | | - | # [Hz] | Yes |
| DRV-20 | FU1 Group selection | Not displayed | 20 | Not available | Press | - | 1 | Yes |
| DRV-21 | FU2 Group selection | | 21 | | [Prog/ENT] key | - | 1 | Yes |
| DRV-22 | I/O Group selection | | 22 | | | - | 1 | Yes |
| DRV-23 | EXT Group selection | | 23 | | | - | 1 | Yes |
| DRV-24 | COM Group selection | | 24 | | | - | 1 | Yes |
| DRV-25 | APP Group selection | | 25 | | | - | 1 | Yes |

2. Function 1 Group [FU1]

| | | | | | | | | |
|-------------------|--------------------------------------|--------------|---------------|---|-----------------------|------|------------|-----|
| FU1-00 | aJump to desired code # | Jump code | Not displayed | 1 to 99 | Not available | 1 | 1 | Yes |
| FU1-03 | Run Prevention | Run Prev. | 3 | None Forward Prve Reverse Prve | 0 1 2 | 1 | 0 (None) | No |
| FU1-05 | Acceleration Pattern | Acc.pattern | 5 | Liner S-curve U-curve Minimum Optimum | 0 1 2 3 4 | 1 | 0 (Linear) | No |
| FU1-06 | Deceleration Pattern | Dec.pattern | 6 | Liner S-curve U-curve Minimum Optimum | 0 1 2 3 4 | 1 | 0 (Linear) | No |
| FU1-07 [1] | Stop Mode | Stop mode | 7 | Decel DC-brake Free-run | 0 1 2 | 1 | 0 (Decel) | No |
| FU1-08 | DC Injection Braking Frequency | DCBr freq | 8 | FU1-22 to 60 [Hz] | | 0.01 | 5.00 [Hz] | No |
| FU1-09 | DC Injection Braking On-delay | DCBlk time | 9 | 0 to 60 [sec] | | 0.01 | 0.1 [sec] | No |
| FU1-10 | DC Injection Braking Voltage | Dcbr value | 10 | 0 to 200 [sec] | | 1 | 50 [%] | No |
| FU1-11 | DC Injection Braking Time | DcBr time | 11 | 0 to 60 [sec] | | 0.1 | 1.0 [sec] | No |
| FU1-12 | StartingDC Injection Braking Voltage | DcSt value | 12 | 0 to 200 [sec] | | 1 | 50 [%] | No |
| FU1-13 | StartingDC Injection Braking Time | DcSt time | 13 | 0 to 60 [sec] | | 0.1 | 0.0 [sec] | No |
| FU1-20 | Maximum Frequency | Max freq | 20 | 40 to 400[Hz] | | 0.01 | 60.00 [Hz] | No |
| FU1-21 | Base Frequency | Base freq | 21 | 30 to FU1-20 | | 0.01 | 60.00 [Hz] | No |
| FU1-22 | Starting Frequency | Start freq | 22 | 0.01 to 10[Hz] | | 0.01 | 0.50 [Hz] | No |
| FU123 [2] | Frequency Limit selection | Freq limit | 23 | No Yes | 0 1 | 1 | 0 (No) | No |
| FU1-24 | Low Limit Frequency | F-limit Lo | 24 | FU1-22 to Fu1-25 | | 0.01 | 0.50[Hz] | No |
| FU1-25 | High Limit Frequency | F-limit Hi | 25 | FU1-22 to Fu1-25 | | 0.01 | 60.00[Hz] | No |
| FU1-26 | Manual/Auto Torque Boost selection | Torque booth | 26 | Manual Auto | 0 1 | 1 | 0 (Manual) | No |
| FU1-27 | Torque Boost in Forward Direction | Fwd booth | 27 | 0 to 15 [%] | | 0.01 | 2.0 [%] | No |
| FU1-28 | Torque Boost in Reverse Direction | Rev booth | 28 | 0 to 15 [%] | | 1 | 2.0 [%] | No |
| FU1-29 [3] | Volts/Hz Pattern | V/F pattern | 29 | Linear Square User V/F | 0 1 2 | 0.01 | 0 (Linear) | No |
| FU1-30 | User V/F - Frequency 1 | User freq 1 | 30 | 0 to FU1-20 | | 0.01 | 15 [Hz] | No |
| FU1-31 | User V/F - Voltage 1 | User volt 1 | 31 | 0 to 100 [%] | | 1 | 25 [%] | No |
| FU1-32 | User V/F - Frequency 2 | User freq 2 | 32 | 0 to FU1-20 | | 0.01 | 30.00 [Hz] | No |
| FU1-33 | User V/F - Voltage 2 | User volt 2 | 33 | 0 to 100 [%] | | 1 | 50 [%] | No |
| FU1-34 | User V/F - Frequency 3 | User freq 3 | 34 | 0 to FU1-20 | | | 45 [Hz] | No |
| FU1-35 | User V/F - Voltage 3 | User volt 3 | 35 | 0 to 100 [%] | | | 75 [%] | No |
| FU1-36 | User V/F - Frequency 4 | User freq 4 | 36 | 0 to FU1-20 | | | 60.00 [Hz] | No |
| FU1-37 | User V/F - Voltage 4 | User volt 4 | 37 | 0 to 100 [%] | | | 100 [%] | No |
| FU1-38 | Output Voltage Adjustment | Volt control | 38 | 40 to 110.0 [%] | | | 100.0 [%] | No |
| FU1-39 | Energy Save Level F39 | Energy save | 39 | 0 to 30 [%] | | | 0 [%] | Yes |
| FU150 [4] | Electronic Thermal selection | ETH select | 50 | No Yes | 0 1 | | 0 (No) | Yes |

2. Function 1 Group [FU1]

| Code | Description | Keypad Display | | Setting Range | | Units | Factory Default | Adjustable during run |
|---------------|---|----------------|-----------|----------------------|---------------------------------|-------|-----------------|-----------------------|
| | | LCD | 7-segment | LCD | 7-segment | | | |
| FU1-51 | Electronic Thermal Level for 1 minute | ETH 1min | 5 1 | FU1-52 to 200 [%] | | 1 | 150 [%] | Yes |
| FU1-52 | Electronic Thermal Level for continuous | ETH cont | 52 | 50 to FU1-51 | | 1 | 100 [%] | Yes |
| FU1-53 | Electronic Thermal Characteristic selection | Motor type | 53 | self-cool | 0 | 1 | 0 (self-cool) | Yes |
| FU1-54 | (Motor type) | | | Forced-coo | 1 | | | |
| FU1-55 | Overload Warning Level | OL level | 54 | 30 to 150 [%] | | 1 | 150 [%] | Yes |
| FU1-56 | Overload Warning Hold Time | OL time | 55 | 0 to 30 [sec] | | 0.1 | 10.0 [sec] | Yes |
| | Overload Trip selection | OLT select | 56 | No | 0 | 1 | 1 (Yes) | Yes |
| FU1-57 | | | | Yes | 1 | | | |
| FU1-58 | Overload Trip Level | OLT level | 57 | 30 to 150 [%] | | 1 | 180 [%] | Yes |
| FU1-59 | Overload Trip Delay Time | OLT time | 58 | 0 to 60 [sec] | | 1 | 60.0 [sec] | Yes |
| FU1-60 | Stall Prevention Mode selection | Stall prev. | 59 | 000 to 111 (bit set) | | bit | 000 | No |
| FU1-99 | Stall Prevention Level | Stall level | 60 | 30 to 150 [%] | | 1 | 150 [%] | No |
| | Return Code | Not display | 99 | Not available | [PROG/ENT] or [SHIFT/ESC] | 1 | 1 | Yes |

3. Function 2Group [FU2]

| Code | Description | Keypad Display | | Setting Range | | Units | Factory Default | Adjustable during run |
|-------------------|---|-----------------|---------------|------------------------------|---------------|-------|-----------------|-----------------------|
| | | LCD | 7-segment | LCD | 7-segment | | | |
| FU2-00 | Jump to desired code # | Jump code | Not displayed | 1 to 99 | Not available | 1 | 30 | Yes |
| FU2-01 | Previous Fault History 1 | Last trip-1 | 1 | | | | 0 (None) | |
| FU2-02 | Previous Fault History 2 | Last trip-2 | 2 | | | | | |
| FU2-03 | Previous Fault History 3 | Last trip-3 | 3 | | | | | |
| FU2-04 | Previous Fault History 4 | Last trip-4 | 4 | | | | | |
| FU2-05 | Previous Fault History 5 | Last trip-5 | 5 | | | | | |
| FU2-06 | Erase Fault History | Erase trips | 6 | No | 0 | 1 | 0 (No) | Yes |
| | | | | Yes | 1 | | | |
| FU2-07 | Dwell Frequency | Dwell freq | 7 | FU1-22 to FU1-20 | | 0.01 | 5.00 [Hz] | No |
| | | | | (starting freq.to Max.freq.) | | | | |
| FU2-08 | Dwell Time | Dwell time | 8 | 0 to 10 [sec] | | 0.1 | 0.0 [sec] | No |
| FU2-10 [5] | Frequency Jump selection | Jump Freq | 10 | No | 0 | 1 | 0 (No) | No |
| | | | | Yes | 1 | | | |
| FU2-11 | Jump Frequency 1 Low | Jump lo 1 | 1 1 | Fu1-22 to FU2-12 | | 0.01 | 10.00 [Hz] | No |
| FU2-12 | Jump Frequency 1 High | Jump Hi 1 | 1 2 | Fu1-11 to FU2-20 | | 0.01 | 15.00 [Hz] | No |
| FU2-13 | Jump Frequency 2 Low | Jump lo 2 | 1 3 | Fu1-22 to FU2-14 | | 0.01 | 20.00 [Hz] | No |
| FU2-14 | Jump Frequency 2 High | Jump Hi 2 | 1 4 | Fu1-13 to FU2-20 | | 0.01 | 25.00 [Hz] | No |
| FU2-15 | Jump Frequency 3 Low | Jump lo 3 | 1 5 | Fu1-22 to FU2-16 | | 0.01 | 30.00 [Hz] | No |
| FU2-16 | Jump Frequency 3 High | Jump Hi 3 | 1 6 | Fu1-15 to FU2-20 | | 0.01 | 35.00 [Hz] | No |
| FU2-17 | Starting rate of S curve | Start Curve | 1 9 | 0 - 100 [%] | | 1 | 40 [%] | No |
| FU2-18 | Ending rate of curve | End curve | 1 9 | 0 - 100 [%] | | 1 | 40 [%] | No |
| FU2-19 | Input/Output Phase Loss Protection | Trip select | 1 9 | 00 to 11 (bit set) | | - | 00 | Yes |
| FU2-20 | Power ON Start selection | Power-on run | 20 | No | 0 | 1 | 0 (No) | Yes |
| | | | | Yes | 1 | | | |
| FU2-21 | Restart after Fault Reset | RST restart | 2 1 | No | 0 | | 0 (No) | Yes |
| | | | | Yes | 1 | | | |
| FU2-22 | Speed Search selection | Speed Search | 22 | 0000 to 1111 (bit set) | | - | 0000 | No |
| FU2-23 | Current Limit Level during Speed Search | SS Sup-Curr | 23 | 80 to 200 [%] | | 1 | 100 [%] | Yes |
| FU2-24 | P Gain during Speed Search | SS P-gain | 24 | 0 to 30000 | | 1 | 100 | Yes |
| FU2-25 | I Gain during speed search | SS I-gain/Retry | 25 | 0 to 30000 | | 1 | 1000 | Yes |
| FU2-26 | Number of Auto Restart Attempt | number | 26 | 0 to 10 | | 1 | 0 | Yes |
| FU2-27 | Delay Time before Auto Restart | Retry Delay | 27 | 0 to 60 [sec] | | 0.1 | 1.0 [sec] | Yes |
| FU2-30 | Rated Motor selection | Motor select | 30 | 0.75kW | 0 | 1 | [6] | No |
| | | | | 1.5kW | 1 | | | |
| | | | | 2.2kW | 2 | | | |
| | | | | 3.7kW | 3 | | | |
| | | | | 5.5kW | 4 | | | |
| | | | | 7.5kW | 5 | | | |
| | | | | 11.0kW | 6 | | | |
| | | | | 15.0kW | 7 | | | |
| | | | | 18.5kW | 8 | | | |
| | | | | 22.0kW | 9 | | | |
| | | | | 30kW | 10 | | | |
| | | | | 37kW | 11 | | | |
| | | | | 45kW | 12 | | | |
| | | | | 55kW | 13 | | | |
| | | | | 75kW | 14 | | | |
| FU2-31 | Number of Motor Pole | Pole number | 3 1 | 2 to 12 | | 1 | 4 | No |
| FU2-32 | Rated Motor Slip | Rated-Slip | 32 | 0 to 10 [Hz] | | 0.01 | [7] | No |
| FU2-33 | Rated Motor Current in RMS | Rated-Curr | 33 | 1 to 200 [A] | | 1 | | No |
| FU2-34 | No Load Motor Current in RMS | Noload- | 34 | 0.5 to 200 [A] | | 1 | | No |
| FU2-36 | Motor Efficiency | CurrEfficiency | 36 | 70 to 100 [%] | | 1 | | No |
| FU2-37 | Load Inertia | Inertia rate | 37 | 0 to 1 | | 1 | 0 | No |
| FU2-38 | Carrier Frequency | Carrier freq | 38 | [8] 1 to 15 [kHz] | | 1 | 5 [kHz] | Yes |
| FU2-39 | Control Mode selection | Control mode | 40 | V/F | 0 | 1 | 0 [V/F] | No |
| | | | | Slip comp | 1 | | | |
| | | | | PID | 2 | | | |
| | | | | Sensorless | 3 | | | |
| FU2-40 | Auto tuning selection | Auto tuning | 4 1 | No | 0 | 1 | 0 (No) | No |
| | | | | Yes | 1 | | | |

3. Function 2Group [FU2]

| Code | Description | Keypad Display | | Setting Range | | Units | Factory Default | Adjustable during run |
|--------------------|---|----------------|-----------|-------------------------------------|-----------|---------|-------------------------------------|-----------------------|
| | | LCD | 7-segment | LCD | 7-segment | | | |
| FU2-41 | Stator resistance | Rs | 41 | Decided depending on motor capacity | | 0.001 | Decided depending on motor capacity | No |
| FU2-42 | Leakage inductance | Lsigma | 42 | Decided depending on motor capacity | | 0.001 | Decided depending on motor capacity | No |
| FU2-43 | Stator inductance | Ls | 43 | Decided depending on motor capacity | | 0.001 | Decided depending on motor capacity | No |
| FU2-44 | Rotor time constant | Tr | 44 | Decided depending on motor capacity | | 1 | Decided depending on motor capacity | Yes |
| FU2-45 | P gain for sensorless mode | SL P-gain | 45 | 0 to 3276 | | 1 | 1000 | Yes |
| FU2-46 | I gain for sensorless mode | SL I-gain | 46 | 0 to 3276 | | 1 | 1000 | No |
| FU2-47 | PID operation selection | Proc PI mode | 47 | 0 (No) 1 (Yes) | | 1 | 0 | No |
| FU2-48 | PID feed forward gain | PID F- gain | 48 | 0-999.9[%] | | 0.1[%] | 0.0[%] | Yes |
| FU2-49 | PID Reference mode selection | PID Ref | 49 | Freq. Mode | 0 | 1 | 0 (Freq mode) | No |
| | | | | Keypad-1 | 1 | | | |
| | | | | Keypad-2 | 2 | | | |
| | | | | V1 | 3 | | | |
| | | | | I | 4 | | | |
| | | | | V1+I | 5 | | | |
| FU2-50 | PID Output direction selection | PID Ref Mode | 50 | Ramp freq | 0 | 1 | 0 (Ramp freq) | No |
| | | | | Target freq | 1 | 1 | | |
| FU2-51 [10] | PID feedback Signal selection | PID F/B | 51 | I | 0 | 1 | 0 (I) | No |
| | | | | V1 | 1 | | | |
| | | | | V2 | 2 | | | |
| FU2-52 | P Gain for PID Control | PID P-gain | 52 | 0 to 999.9 [%] | | 1 | 300.0 [%] | Yes |
| FU2-53 | I Gain for PID Control | PID I-gain | 53 | 0to 32.0 [sec] | | 1 | 30.0 [sec] | Yes |
| FU2-54 | D Gain for PID Control | PID D-gain | 54 | 0 to 999.9 [msec] | | 0.01 | 0 (No) | Yes |
| FU2-55 | Limit (+) Frequency for PID Control | PID+limit | 55 | 0 to FU1-20 | | 0.01 | 60.00 [Hz] | Yes |
| FU2-56 | Limit (-) Frequency for PID Control | PID-limit | 56 | 0 to FU1-20 | | 1 | 60.00 [Hz] | No |
| FU2-57 | PID Output inverter | PID Out Inv. | 57 | No | 0 | 0.1 [%] | 0 (No) | No |
| | | | | Yes | 1 | | | |
| FU2-58 | PID Output gain scale | PID Out Scale | 58 | 0.1 to 999.9 [%] | | 0.1 [%] | 100.0 [%] | No |
| FU2-59 | PID P2 scale | PID P2-gain | 59 | 0.0 to 999.9 [%] | | 0.1 [%] | 100.0 [%] | No |
| FU2-60 | P gain scale | P-gain Scale | 60 | 0.0 to 100 [%] | | 1 | 100.0 [%] | Yes |
| FU2-69 | Speed Acc/dec turning point | | 69 | | | | | |
| FU2-70 | Reference Frequency for Accel and Decel | Acc/Dec freq | 70 | Max freq | 0 | 1 | 0 (Max.frq) | Yes |
| | | | | Delta freq | 1 | | | |
| FU2-71 | Accel/Decel Time scale | Time scale | 71 | 0.01 [sec] | 0 | 1 | 0 (0.01[sec]) | Yes |
| | | | | 0.1 [sec] | 1 | | | |
| | | | | 1 [sec] | 2 | | | |
| FU2-72 | Power On Display | PowerOn disp | 72 | 0 to 12 | | 1 | 0 | Yes |
| FU2-73 | User Display selection | User disp | 73 | Voltage | 0 | 1 | 0 (Voltage) | |
| | | | | Watt | 1 | | | |
| | | | | Torque | 2 | | | |
| FU2-74 | Gain for Motor Speed Display | RPM factor | 74 | 1 to 1000 [%] | | 1 | 100 [%] | Yes |
| FU2-75 | DB (Dynamic Braking) Resistor Mode selection | DB mode | 75 | None | 0 | 1 | 1 (Int.DB-R) | Yes |
| | | | | Int. DB-R | 1 | | | |
| | | | | Ext. DB-R | 2 | | | |
| FU2-76 [11] | Duty of Dynamic Braking Resistor | DB %ED | 76 | 0 to 30 [%] | | | 10 [%] | - |
| FU2-79 | Software Version | S/W version | 79 | ver.1.05 | | -0.1 | Ver.1.05 | Yes |
| FU2-81 [12] | 2 nd Acceleration Time | 2nd Acc time | 81 | 0 to 6000 [sec] | | 0.1 | 5.0 [sec] | Yes |
| FU2-82 | 2 nd Deceleration Time | 2nd Dec time | 82 | 0 to 6000 [sec] | | 0.01 | 10.0 [sec] | No |
| FU2-83 | 2 nd Base Frequency | 2nd Basefreq | 83 | 30 to FU1-20 | | 1 | 60.0 [Hz] | No |
| FU2-84 | 2 nd Pattern | 2nd V/F | 84 | Liner | 0 | 0.1 | 0 (Liner) | No |
| | | | | Square | 1 | | | |
| | | | | User V/F | 2 | | | |
| FU2-85 | 2 nd Forward Torque Boost | 2nd F-boost | 85 | 0 to 15 [%] | | 0.1 | 2.0 [%] | No |
| FU2-86 | 2 nd Reverse Torque Boost | 2nd R-boost | 86 | 0 to 15 [%] | | 1 | 2.0 [%] | No |
| FU2-87 | 2 nd Stall Prevention Level | 2nd Stall | 87 | 30 to 150 [%] | | 1 | 150 [%] | Yes |
| FU2-88 | 2 nd Electronic Thermal Level for 1 minute | 2nd ETH 1min | 88 | FU2-89 to 200 [%] | | 1 | 150 [%] | Yes |
| FU2-89 | 2 nd Electronic Thermal Level for continuous | 2ndETH cont | 89 | 50 to FU2-88 (maximum150%) | | 0.1 | 100 [%] | No |
| FU2-90 | 2 nd Rated Motor Current | 2nd R-Curr | 90 | 1 to 200 [A] | | 1 | 3.6 [A] | No |
| FU2-91 | Read Parameters into Keypad from inverter | Para. Read | 91 | No | 0 | 1 | 0 (No) | No |
| | | | | Yes | 1 | | | |
| FU2-92 | Write Parameter to inverter from Keypad | Para. Write | 92 | No | 0 | 1 | 0 (No) | No |
| | | | | Yes | 1 | | | |
| FU2-93 | Initialize Parameter | Para. Init | 93 | No | 0 | 1 | 0 (No) | Yes |
| | | | | All group | 1 | | | |
| | | | | DRV | 2 | | | |
| | | | | FU1 | 3 | | | |
| | | | | FU2 | 4 | | | |
| | | | | I/O | 5 | | | |
| | | | | EXT | 6 | | | |
| FU2-94 | Parameter Write Protection | Para. Lock | 94 | 0 to 255 | | 1 | 0 | Yes |
| FU2-99 | Return Code | Not display | 99 | Not available | | - | 1 | Yes |
| | | | | [PROG/ENT] | | | | |
| | | | | or | | | | |
| | | | | [SHIFT/ESC] | | | | |

4. Input / Output [I/O]

| Code | Description | Keypad Display | | Setting Range | | Units | Factory Default | Adjustable during run |
|---------------|---|----------------|---------------|------------------------|---------------|-------|-----------------|-----------------------|
| | | LCD | 7-segment | LCD | 7-segment | | | |
| I/O-00 | Jump to desired code# | Jump | Not Displayed | 1 to 99 | Not available | 1 | 1 | Yes |
| I/O-01 | Filtering Time Constant for V1 Signal Input | V1 Filter | I | 0 to 9999 [ms] | | 1 | 10 [ms] | Yes |
| I/O-02 | V1 Input Minimum Voltage | V1 volt x1 | 2 | 0 to 10 [V] | | 0.01 | 0.00 [V] | Yes |
| I/O-03 | Frequency corresponding to V1 Input Minimum Voltage | V1 freq y1 | 3 | 0 to FU1-20 (Max.freq) | | 0.01 | 0.00 [Hz] | Yes |
| I/O-04 | V1 Input Maximum Voltage | V1 volt x2 | 4 | 0 to 10 [V] | | 0.01 | 10.00 [V] | Yes |
| I/O-05 | Frequency corresponding to V1 Input Minimum Voltage | V1 freq y2 | 5 | 0 to FU1-20 (Max.freq) | | 0.01 | 60.00 [Hz] | Yes |

4. Input / Output [I/O]

| Code | Description | Keypad Display | | Setting Range | | Units | Factory Default | Adjustable during run |
|--------------|---|----------------|-----------|------------------------------------|-----------|------------|-----------------|-----------------------|
| | | LCD | 7-segment | LCD | 7-segment | | | |
| I/O-06 | Filtering Time Constant for V1 Signal Input | I filter | 6 | 0 to 9999 [ms] | | 1 | 10 [ms] | Yes |
| I/O-07 | Input Minimum Current | V1 curr x1 | 7 | 0 to20 [ms] | | 0.01 | 4.00 [mA] | Yes |
| I/O-08 | Frequency corresponding to V1 Input Minimum Voltage | V1 freq y1 | 8 | 0 to FU1-20 (Max.freq) | | 0.01 | 0.00 [Hz] | Yes |
| I/O-09 | I Input Minimum Current | V1 curr x2 | 9 | 0 to20 [ms] | | 0.01 | 20.00 [mA] | Yes |
| I/O-10 | Frequency corresponding to I Input Maximum Current | I freq y2 | 10 | 0 to FU1-20 | | 0.01 | 60.00 [Hz] | Yes |
| I/O-11 | Criteria for Analog Input Signal Loss | Wire broken | 11 | None | 0 | 1 | 0 (None) | Yes |
| I/O-12 | Multi-function Input Terminal `P1`define | P1 define | 12 | below x1 | 1 | 1 | 0 (Speed-L) | Yes |
| | | | | Speed -L | 0 | | | |
| | | | | Speed -M | 1 | | | |
| | | | | Speed -H | 2 | | | |
| | | | | XCEL-L | 3 | | | |
| | | | | XCEL-M | 4 | | | |
| | | | | XCEL-H | 5 | | | |
| | | | | Dc-brake | 6 | | | |
| | | | | 2nd Func | 7 | | | |
| | | | | Exchange | 8 | | | |
| | | | | -Reverse- | 9 | | | |
| | | | | Up | 10 | | | |
| | | | | Down | 11 | | | |
| | | | | 3-Wire | 12 | | | |
| | | | | Ext Trip-A | 13 | | | |
| | | | | Ext Trip-B | 14 | | | |
| -Reverse- | 15 | | | | | | | |
| Open-loop | 16 | | | | | | | |
| Main-Drive | 17 | | | | | | | |
| Analog hold | 18 | | | | | | | |
| XCEL stop | 19 | | | | | | | |
| -Reverse- | 20 | | | | | | | |
| SEQ-L | 21 | | | | | | | |
| SEQ-M | 22 | | | | | | | |
| SEQ-H | 23 | | | | | | | |
| Manual | 24 | | | | | | | |
| Go step | 25 | | | | | | | |
| Hold stepTrv | 26 | | | | | | | |
| Off. Lo | 27 | | | | | | | |
| Trv Off. Hi | 28 | | | | | | | |
| Interlock1 | 29 | | | | | | | |
| Interlock2 | 30 | | | | | | | |
| Interlock3 | 31 | | | | | | | |
| Interlock4 | 32 | | | | | | | |
| I/O-13 | Multi-function Input Terminal `P2`define | P2 define | 13 | Same as above | | 1 | 1 (Speed-M) | Yes |
| I/O-14 | Multi-function Input Terminal `P3`define | P3 define | 14 | Same as above | | 1 | 2 (Speed-H) | Yes |
| I/O-15 | Terminal Input Status | In status | 15 | 000000000 to 11111111 | | - | 000000000 | - |
| I/O-16 | Terminal Output Status | Out status | 16 | 0000 to 1111 | | - | 0000 | - |
| I/O-17 | Filtering Time Constant for Multi-function Input Terminal | Ti Fit Num | 17 | 2 to 50 | | 1 | 15 | Yes |
| I/O-20 | Jog Frequency setting | Jog freq | 20 | FU1-22 to FU1-20 (Starting freq to | 0.01 | 10.00 [Hz] | Yes | |
| I/O-21 | Step Frequency 4 | Step freq-4 | 21 | Max, freq) | | 40.00 [Hz] | Yes | |
| I/O-22 | Step Frequency 5 | Step freq-5 | 22 | | | 50.00 [Hz] | Yes | |
| I/O-23 | Step Frequency 6 | Step freq-6 | 23 | | | 40.00 [Hz] | Yes | |
| I/O-24 | Step Frequency 7 | Step freq-7 | 24 | | | 30.00 [Hz] | Yes | |
| I/O-25 | Acceleration Time 1 for Step Frequency | Acc time-1 | 25 | 0 to 6000 [sec] | 0.1 | 20.0 [sec] | Yes | |
| I/O-26 | Deceleration Time 1 for Step Frequency | Dec time-1 | 26 | 0 to 6000 [sec] | 0.1 | 20.0 [sec] | Yes | |
| I/O-27 | Acceleration Time 2 | Acc time-2 | 27 | 0 to 6000 [sec] | 0.1 | 30.0 [sec] | Yes | |
| I/O-28 | Deceleration Time 2 | Dec time-2 | 28 | 0 to 6000 [sec] | 0.1 | 30.0 [sec] | Yes | |
| I/O-29 | Acceleration Time 3 | Acc time-3 | 29 | 0 to 6000 [sec] | 0.1 | 40.0 [sec] | Yes | |
| I/O-30 | Deceleration Time 3 | Dec time-3 | 30 | 0 to 6000 [sec] | 0.1 | 40.0 [sec] | Yes | |
| I/O-31 | Acceleration Time 4 | Acc time-4 | 31 | 0 to 6000 [sec] | 0.1 | 50.0 [sec] | Yes | |
| I/O-32 | Deceleration Time 4 | Dec time-4 | 32 | 0 to 6000 [sec] | 0.1 | 50.0 [sec] | Yes | |
| I/O-33 | Acceleration Time 5 | Acc time-5 | 33 | 0 to 6000 [sec] | 0.1 | 40.0 [sec] | Yes | |
| I/O-34 | Deceleration Time 5 | Dec time-5 | 34 | 0 to 6000 [sec] | 0.1 | 40.0 [sec] | Yes | |
| I/O-35 | Acceleration Time 6 | Acc time-6 | 35 | 0 to 6000 [sec] | 0.1 | 30.0 [sec] | Yes | |
| I/O-36 | Deceleration Time 6 | Dec time-6 | 36 | 0 to 6000 [sec] | 0.1 | 30.0 [sec] | Yes | |
| I/O-37 | Acceleration Time 7 | Acc time-7 | 37 | 0 to 6000 [sec] | 0.1 | 20.0 [sec] | Yes | |
| I/O-38 | Deceleration Time 7 | Dec time-7 | 38 | 0 to 6000 [sec] | 0.1 | 20.0 [sec] | Yes | |
| I/O-40 | FM (Frequency Meter) Output selection | FM mode | 40 | Frequency | 0 | 1 | 0 (Frequency) | Yes |
| | | | | Current | 1 | | | |
| | | | | Voltage | 2 | | | |
| | | | | DC link voltage | 3 | | | |
| I/O-41 | FM Output Adjustment | FM adjust | 41 | 10 to 200 [%] | | 1 | 100 [%] | Yes |
| I/O-42 | Frequency Detection Level | FDT freq | 42 | 0 to FU1-20 | | 0.01 | 30.00 [Hz] | Yes |
| I/O-43 | Frequency Detection Bandwidth | FDT band | 43 | 0 to FU1-20 | | 0.01 | 10.00 [Hz] | Yes |
| I/O-44 | Multi-function Auxiliary Contact Output define(AXA, AXC) | Aux mode | 44 | FDT-1 | 0 | 1 | 12 (run) | Yes |
| | | | | FDT-2 | 1 | | | |
| | | | | FDT-3 | 2 | | | |
| | | | | FDT-4 | 3 | | | |
| | | | | FDT-5 | 4 | | | |
| | | | | OL | 5 | | | |
| | | | | IOL | 6 | | | |
| | | | | Stall | 7 | | | |
| OV | 8 | | | | | | | |

4. Input / Output [I/O]

| Code | Description | Keypad Display | | Setting Range | | Units | Factory Default | Adjustable during run |
|--------------------|---|----------------|-----------|--|---------------------------------|-------|------------------|-----------------------|
| | | LCD | 7-segment | LCD | 7-segment | | | |
| I/O-44 | | | | LV OH Lost Command Run Stop | 9 10 11 12 13 | | | |
| I/O-45 | Fault Output Relay setting (30A,30B,30C) | Relay mode | 45 | 000 to 111 (bit set) | | - | 010 [bit] | Yes |
| I/O-46 [13] | Inverter Number | Inv No. | 46 | 1 to 32 | | 1 | 1 | Yes |
| I/O-47 | Baud Rate | Baud rate | 47 | 1200bps 2400bps 4800bps 9600bps 19200bps | 0 1 2 3 4 | 1 | 3 (9600bps) | Yes |
| I/O-48 | Operation selection at loss of Freq. Reference | lost command | 48 | None Freerun Stop | 0 1 2 | 1 | 0 (None) | Yes |
| I/O-49 | Waiting Time after Loss of Freq. Reference | Time out | 49 | 0.1 to 120[sec] | | 0.1 | 0.1 [sec] | Yes |
| I/O-50 | Auto (Sequence)Operation selection | Auto mode | 50 | None Auto-A Auto-B | 0 1 2 | 1 | | No |
| I/O-51 | Sequence Number selection | Seq selet | 51 | 1 to 5 | | 1 | 0 (None) | Yes |
| I/O-52 | The Number of steps of Sequence Number# | Step number | 52 | 1 to 8 | | 1 | 1 | Yes |
| I/O-53 [14] | 1 st Step Frequency of Sequence | Seq1/1F | 53 | 0.01 to FU1-20 (Max.freq.) | | 0.01 | 2 | Yes |
| I/O-54 | Transient Time to 1 st Step of Sequence | Seq1/1T | 54 | 0.1 to 6000 [sec] | | 0.1 | 11.00 [Hz] | Yes |
| I/O-55 | Steady Speed Time at 1 st Step of Sequence | Seq1/1S | 55 | 0.1 to 6000 [sec] | | 0.1 | 1.1 [sec] | Yes |
| I/O-56 | Motor Direction of 1 st Step of Sequence 1 | Seq1/1D | 56 | Reverse Forward | 0 1 | - | 1.1 [sec] | Yes |
| I/O-57 | 1 st Step of Frequency of Sequence 2 | Seq1/1F | 57 | 0.01 to FU1-20 (Max.freq.) | | 0.01 | 1 (Forward) | Yes |
| I/O-58 | Transient Time to 1 st Step of Sequence 2 | Seq1/1T | 58 | 0.1 to 6000 [sec] | | 0.1 | 21.00 [Hz] | Yes |
| I/O-59 | Steady Speed Time at 1 st Step of Sequence 2 | Seq1/1S | 59 | 0.1 to 6000 [sec] | | 0.1 | 1.1 [sec] | Yes |
| I/O-60 | Motor Direction of 1 st Step of Sequence 2 | Seq1/1D | 60 | Reverse Forward | 0 1 | 1 | 1.1 [sec] | Yes |
| I/O-99 | Return Code | Not Disp layed | 99 | Not available | [PROG/ENT] or [SHIFT/ESC] | 1 | 1 (Forward) 1 | Yes |

5. External Group [EXT]

EXT group appears only when the corresponding option boards are installed.

| Code | Description | Keypad Display | | Setting Range | | Units | Factory Default | Adjustable during run |
|---------------|---|----------------|---------------|---|---|-------|-----------------|-----------------------|
| | | LCD | 7-segment | LCD | 7-segment | | | |
| EXT-00 | Jump to desired code # | Jump code | Not displayed | 0 to 99 | | 1 | 1 | Yes |
| EXT-01 | Sub board Type display | | 1 | None SUB-A SUB-B SUB-C SUB-D SUB-E | 0 1 2 3 4 5 | 1 | 0 (None) | Automatically set |
| EXT-02 | Multi-function Input Terminal `P4` define | Sub B/C | 2 | SUB-F SUB-G SUB-H Speed -L Speed -M Speed -H XCEL-L XCEL-M XCEL-H Dc-brake 2nd Func Exchange -Reversed- Up Down 3-Wire Ext Trip-A Ext Trip-B -Reversed- Open-loop Main-Drive Analog hold XCEL stop -Reversed- SEQ-L SEQ-M SEQ-H Manual Go step Hold step Trv Off. Lo Trv Off. Hi | 6 7 8 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 | 1 | 3 (XCEL-L) | Yes |

5. External Group [EXT]

EXT group appears only when the corresponding option boards are installed.

| Code | Description | Keypad Display | | Setting Range | | Units | Factory Default | Adjustable during run |
|---------------|---|----------------|-----------|-------------------------|---------------------------------|-------|-----------------|-----------------------|
| | | LCD | 7-segment | LCD | 7-segment | | | |
| EXT-02 | | | | Interlock1 | 29 | | | |
| | | | | Interlock2 | 30 | | | |
| | | | | Interlock3 | 31 | | | |
| | | | | Interlock4 | 32 | | | |
| EXT-03 | Multi-function Input Terminal `P5` define | P5 define | 3 | Same as above | | | 4 (XCEL-M) | Yes |
| EXT-04 | Multi-function Input Terminal `P6` define | P6 define | 4 | Same as above | | | 5 (XCEL-H) | Yes |
| EXT-05 | V2 Mode selection | V2 mode | 5 | None | 0 | | 0 (None) | No |
| | | | | Override | 1 | | | |
| | | | | Reference | 2 | | | |
| EXT-06 | Filtering Time Constant for V2 Signal Input | V2 filter | 6 | 0 to 10000 [ms] | | 1 | 10 [ms] | Yes |
| EXT-07 | V2 Input Minimum Voltage | V2 volt x1 | 7 | 0 to 10 [V] | | 0.01 | 0.00 [V] | Yes |
| EXT-08 | Frequency corresponding to V2 Input Minimum Voltage | V2 freq y2 | 8 | 0 to FU1-20 (Max.freq.) | | 0.01 | 0.00 [Hz] | Yes |
| EXT-09 | V2 Input Maximum Voltage | V2 volt x2 | 9 | 0 to 10 [V] | | 0.01 | 10.00 [V] | Yes |
| EXT-10 | Frequency corresponding to V2 Input Maximum Voltage | V2 freq y2 | 10 | 0 to FU1-20 (Max.freq.) | | 0.01 | 60.00 [Hz] | Yes |
| EXT-14 | Usage of Pulse Input Signal | F mode | 14 | None | 0 | | 0 (None) | No |
| | | | | Fee-back | 1 | | | |
| | | | | Reference | 2 | | | |
| EXT-15 | Pulse Input Signal selection | F pulse set | 15 | A+B | 0 | | 0 (A+B) | Yes |
| | | | | A | 1 | | | |
| EXT-16 | Encoder Pulse Number | F pulse num | 16 | 360 to 4096 | | 1 | 1024 | No |
| EXT-17 | Filtering Time Constant for Pulse Input Signal | F filter | 17 | 0 to 9999 [ms] | | 1 | 10 [ms] | Yes |
| EXT-18 | Pulse Input Minimum Frequency | F pulse x1 | 18 | 0 to 100 [kHz] | | 0.01 | 0.00 [kHz] | Yes |
| EXT-19 | Frequency Output corresponding to Pulse Input Minimum Frequency | F freq y1 | 19 | 0 to FU1-20 (Max.freq.) | | 0.01 | 0.00 [Hz] | Yes |
| EXT-20 | Pulse Input Maximum Frequency | F pulse x2 | 20 | 0 to 100 [kHz] | | 0.01 | 10.00 [kHz] | Yes |
| EXT-21 | Frequency Output corresponding to Pulse Input Maximum Frequency | F freq y2 | 21 | 0 to FU1-20 (Max.freq.) | | 0.01 | 60.00 [Hz] | Yes |
| EXT-22 | P-Gain for `Sub-B` | PG P-gain | 22 | 0 to 9999 | | 1 | 3000 | Yes |
| EXT-23 | I-Gain for `Sub-B` | PG I-gain | 23 | 0 to 9999 | | 1 | 300 | Yes |
| EXT-24 | Slip P-Gain for Frequency `Sub-B` board | PG Slip freq | 24 | 0 to 20[%] | | 1 | 100 [%] | Yes |
| EXT-30 | Multi-function Output Terminal `Q1` define | Q1 define | 30 | FDT-1 | 0 | | 0 (FDT-1) | Yes |
| | | | | FDT-2 | 1 | | | |
| | | | | FDT-3 | 2 | | | |
| | | | | FDT-4 | 3 | | | |
| | | | | FDT-5 | 4 | | | |
| | | | | OL | 5 | | | |
| | | | | IOL | 6 | | | |
| | | | | Stall | 7 | | | |
| | | | | OV | 8 | | | |
| | | | | LV | 9 | | | |
| | | | | OH | 10 | | | |
| | | | | Lost Command | 11 | | | |
| | | | | Run | 12 | | | |
| | | | | Stop | 13 | | | |
| | | | | Steady | 14 | | | |
| | | | | INV line | 15 | | | |
| | | | | COMM line | 16 | | | |
| | | | | Search | 17 | | | |
| | | | | Step pulse | 18 | | | |
| | | | | Seq pulse | 19 | | | |
| | | | | Ready | 20 | | | |
| | | | | Trv. ACC | 21 | | | |
| | | | | Trv. DEC | 22 | | | |
| | | | | MMC | 23 | | | |
| EXT-31 | Multi-function Output Terminal `Q2` define | Q2 define | 31 | Same as above | | | 1 (FDT-2) | Yes |
| EXT-32 | Multi-function Output Terminal `Q3` define | Q3 define | 32 | Same as above | | | 2 (FDT-3) | Yes |
| EXT-34 | LM (Load Meter)Output selection | LM mode | 34 | Frequency | 0 | | 1 (Current) | Yes |
| | | | | Current | 1 | | | |
| | | | | Voltage | 2 | | | |
| | | | | DC link Vtg | 3 | | | |
| EXT-35 | LM (Load Meter) Adjustment | LM adjust | 35 | 100 to 200 [%] | | | 100 [%] | Yes |
| EXT-40 | AM1 (Analog Meter1)Output selection | AM1 mode | 40 | Frequency | 0 | | 0 (Frequency) | Yes |
| | | | | Current | 1 | | | |
| | | | | Voltage | 2 | | | |
| | | | | DC link Vtg | 3 | | | |
| EXT-41 | AM1 (Analog Meter1)Output Adjustment | AM1 adjust | 41 | 100 to 200 [%] | | | 100 [%] | Yes |
| EXT-42 | AM2 (Analog Meter2)Output selection | AM2 mode | 42 | Frequency | 0 | | 3 (DC link Vtg) | Yes |
| | | | | Current | 1 | | | |
| | | | | Voltage | 2 | | | |
| | | | | DC link Vtg | 3 | | | |
| EXT-43 | AM2 (Analog Meter2)Output Adjustment | AM2 adjust | 43 | 100 to 200[%] | | | 100 [%] | Yes |
| EXT-99 | Return Code | Not displayed | 99 | Not available | [PROG/ENT] or [SHIFT/ESC] | | 1 | Yes |

6. Communication Group [COM]

| Code | Description | Keypad Display | | Setting Range | | Units | Factory Default | Adjustable during run |
|---------------|---|----------------|---------------|--------------------|---------------------------------|-------|-----------------|-----------------------|
| | | LCD | 7-segment | LCD | 7-segment | | | |
| COM-00 | Jump to desired code # | Jump code | Not Displayed | 0 to 99 | Not available | 1 | 1 | Yes |
| COM-01 | Option board Type display | Opt B/D | 1 | None | 0 | 1 | 0 (None) | Yes |
| | | | | Device Net | 1 | | | |
| | | | | Synchro | 2 | | | |
| | | | | PLC-GF | 3 | | | |
| | | | | Profibus-DP | 4 | | | |
| | | | | Digital-in | 5 | | | |
| | | | | RS485 | 6 | | | |
| | | | | Modbus-RTU | 7 | | | |
| COM-02 | Option mode | Opt Mode | 2 | None | 0 | 1 | 0 (None) | No |
| | | | | Command | 1 | | | |
| | | | | Frequency | 2 | | | |
| | | | | Cmd+Freq | 3 | | | |
| COM-03 | Option version | Opt Version | 3 | Option version | | | | No |
| COM-04 | Digital (Binary)option input mode selection | D-in Mode | 4 | 8bit Bin | 1 | 1 | 0 (8BitBin) | Yes |
| | | | | 8 BCD 1% | 2 | | | |
| | | | | 8 BCD 1Hz | 3 | | | |
| | | | | 12 Bit Bin | 4 | | | |
| | | | | 12 BCD 0.1% | 5 | | | |
| | | | | 12 BCD 0.1Hz | 6 | | | |
| | | | | 12 BCD 1Hz | 7 | | | |
| COM-05 | Digital (Binary)input filter | Digital Ftr | 5 | 0 to 50 | | 1 | 15 | Yes |
| COM-10 | Device Net ID | MAC ID | 10 | 0 to 63 | | 1 | 0 | Yes |
| COM-11 | Device Net baud rate | Baud Rate | 11 | 125kbps | 0 | 1 | 0 (125 bps) | Yes |
| | | | | 250kbps | 1 | | | |
| | | | | 500kbps | 2 | | | |
| COM-12 | Device Net output impedance | Out Instance | 12 | 20 | 0 | 1 | 0 (20) | Yes |
| | | | | 21 | 1 | | | |
| | | | | 100 | 2 | | | |
| | | | | 101 | 3 | | | |
| COM-13 | Device Net input impedance | In Instance | 13 | 70 | 0 | 1 | 0 (70) | Yes |
| | | | | 71 | 1 | | | |
| | | | | 110 | 2 | | | |
| | | | | 111 | 3 | | | |
| COM-17 | PLC station ID | Station ID | 17 | 0 to 63 | | 1 | 1 | Yes |
| COM-20 | Profibus-DP ID | Profi MAC ID | 20 | 0 to 127 | | 1 | 1 | Yes |
| COM-30 | Number of output | Output Num | 30 | 0 to 8 | | 1 | 3 | Yes |
| COM-31 | Output 1 | Output 1 | 31 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-32 | Output 2 | Output 1 | 32 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-33 | Output 3 | Output 1 | 33 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-34 | Output 4 | Output 1 | 34 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-35 | Output 5 | Output 1 | 35 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-36 | Output 6 | Output 1 | 36 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-37 | Output 7 | Output 1 | 37 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-38 | Output 8 | Output 1 | 38 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-40 | Number of input | Input Num | 40 | 0 to 8 | | 1 | 2 | Yes |
| COM-41 | Input 1 | Input 1 | 41 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-42 | Input 2 | Input 2 | 42 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-43 | Input 3 | Input 3 | 43 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-44 | Input 4 | Input 4 | 44 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-45 | Input 5 | Input 5 | 45 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-46 | Input 6 | Input 6 | 46 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-47 | Input 7 | Input 7 | 47 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-48 | Input 8 | Input 8 | 48 | 0000 to 57FF (HEX) | | - | 000A (HEX) | Yes |
| COM-52 | Modbus-RTU mode | ModBus Mode | 52 | Modbus-RTU | | - | ModBus-RTU | Yes |
| COM-99 | Return Code | not displayed | 99 | Not available | [PROG/ENT] or [SHIFT/ESC] | - | 1 | Yes |

7. Application Group [APP]

| Code | Description | Keypad Display | | Setting Range | | Units | Factory Default | Adjustable during run |
|---------------|---------------------------------------|----------------|---------------|------------------------|---------------|-------|-----------------|-----------------------|
| | | LCD | 7-segment | LCD | 7-segment | | | |
| APP-00 | Jump to desired code # | Jump code | Not Displayed | 0 to 99 | Not available | 1 | 1 | Yes |
| APP-01 | Application mode | App Mode | 1 | None | 0 | 1 | 0 (None) | No |
| | | | | Traverse | 1 | | | |
| | | | | MMC | 2 | | | |
| | | | | DRAW | 3 | | | |
| APP-02 | Traverse operation band | Trv. Amp | 2 | 0.0 to 20.0 [%] | | 0.1 | 0.0 [%] | Yes |
| APP-03 | Traverse scramble band | Trv. Scr | 3 | 0.0 to 50.0 [%] | | 0.1 | 0.0 [%] | Yes |
| APP-04 | Traverse acceleration time | Trv Acc Time | 4 | 0.1 to 6000 [sec] | | 0.1 | 2.0 [sec] | Yes |
| APP-05 | Traverse deceleration time | Trv Dec Time | 5 | 0.1 to 6000 [sec] | | 0.1 | 3.0 [sec] | Yes |
| APP-06 | Traverse offset High | Trv Off Hi | 6 | 0.0 to 20.0 [%] | | 0.1 | 0.0 [%] | Yes |
| APP-07 | Traverse offset Low | Trv Off Lo | 7 | 0.0 to 20.0 [%] | | 0.1 | 0.0 [%] | Yes |
| APP-08 | No. of Aux. Motor in running | Aux Mot Run | 8 | # | | - | # | - |
| APP-09 | Start aux. Motor | Start Aux | 9 | 1 to 4 | | 1 | 1 | Yes |
| APP-10 | Operation time display by auto-change | Auto Op Time | 10 | # | | 0.01 | # | - |
| APP-11 | Starting frequency of Aux. Motor 1 | Start freq 1 | 11 | 0 to FU1-20 (Max.freq) | | 0.01 | 49.99 [Hz] | Yes |
| APP-12 | Starting frequency of Aux. Motor 2 | Start freq 2 | 12 | 0 to FU1-20 (Max.freq) | | 0.01 | 49.99 [Hz] | Yes |
| APP-13 | Starting frequency of Aux. Motor 3 | Start freq 3 | 13 | 0 to FU1-20 (Max.freq) | | 0.01 | 49.99 [Hz] | Yes |
| APP-14 | Starting frequency of Aux. Motor 4 | Start freq 4 | 14 | 0 to FU1-20 (Max.freq) | | 0.01 | 49.99 [Hz] | Yes |

7. Application Group [APP]

| Code | Description | Keypad Display | | Setting Range | | Units | Factory Default | Adjustable during run |
|---------------|------------------------------------|-------------------|-----------|------------------------------|-------------|---------|-----------------|-----------------------|
| | | LCD | 7-segment | LCD | 7-segment | | | |
| APP-17 | Starting frequency of Aux. Motor 3 | Stop freq 3 | 17 | 0 to FU1-20 (Max.freq) | | 0.01 | 15.00 [Hz] | Yes |
| APP-18 | Starting frequency of Aux. Motor 4 | Stop freq 4 | 18 | 0 to FU1-20 (Max.freq) | | 0.01 | 15.00 [Hz] | Yes |
| APP-19 | Aux.Motor starting delay time | Aux start DT | 19 | 0.0 to 9999 [sec] | | 0.1 | 60.00 [sec] | Yes |
| APP-20 | Aux.Motor stop delay time | Aux stop DT | 20 | 0.0 to 9999 [sec] | | 0.1 | 60.00 [sec] | Yes |
| APP-21 | Number of Aux. Motor | Nbr Aux` s | 21 | 0 to 4 | | 1 | 4 | Yes |
| APP-22 | Bypass selection | Regul Bypass | 22 | None Yes | 0 1 | 1 | 0 (None) | Yes |
| APP-23 | Sleep delay | Sleep Delay | 23 | 0.0 to 9999 [sec] | | 0.1 | 60.00 [sec] | Yes |
| APP-24 | Sleep frequency | Sleep Freq | 24 | 0 to FU1-20 (Max.freq) | | 0.01 | 19.00 [Hz] | Yes |
| APP-25 | Wakeup level | Wakeup level | 25 | 0.0 to 100.0 [%] | | 0.1 | 35.0 [%] | Yes |
| APP-26 | Auto change mode selection | AutoCh_Mode | 26 | 0 to 2 | | 1 | 1 | Yes |
| APP-27 | Auto change time | AutoCh_intv | 27 | 00:00 to 99:00 | | 00 : 01 | 72:00 | Yes |
| APP-28 | Auto change level | AutoCh_Mode level | 28 | 0.0 to 100.0 [%] | | 0.1 | 20.0 [%] | Yes |
| APP-29 | Interlock selection | Inter-lock | 29 | None Yes | 0 | 1 | 0 (None) | Yes |
| APP-30 | Actual value display | Actal Value | 30 | # | 1 | - | # | - |
| APP-31 | Actual value percentage | Actal Perc | 31 | # | 0 | - | # | - |
| APP-32 | Draw mode selection | Draw Mod | 32 | V1_Draw L_Draw V2_Draw | 1 2 3 | 1 | 0(None) | Yes |
| APP-33 | Draw percentage selection | DrawPerc | 22 | 0.0 to 150.0 [%] | | 0.1 | 00.0 [%] | Yes |

Note)Sub-Board Selection Guide according to its Function

| Code | Function Description | Keypad Display | | Sub-Board Type | | |
|---------------|---|----------------|-----------|----------------|-------------|-------------|
| | | LCD | 7-segment | Sub-A Board | Sub-A Board | Sub-C Board |
| EXT-01 | Sub-board selection | Sub B/D | 1 | | | |
| EXT-02 | Multi-function Input Terminal `P4` | P4 define | 2 | | | |
| EXT-03 | Multi-function Input Terminal `P5` | P5 define | 3 | | | |
| EXT-04 | Multi-function Input Terminal `P6` | P6 define | 4 | | | |
| EXT-05 | V2 Mode selection | V2 mode | 5 | | | |
| EXT-06 | Filtering Time Constant for V2 Input Signal | V2 filter | 6 | | | |
| EXT-07 | V2 Input Minnnum Voltage | V2 volt x1 | 7 | | | |
| EXT-08 | Frequency corresponding to V2 Input Minnnum Voltage | V2 freq y1 | 8 | | | |
| EXT-09 | V2 Input Maximum Voltage | V2 volt x2 | 9 | | | |
| EXT-10 | Frequency corresponding to V2 Input Maximum Voltage | V2 freq y2 | 10 | | | |
| EXT-14 | Usage for Pulse Input Signal | F mode | 14 | | | |
| EXT-15 | Pulse Input Signal selection | F pulse set | 15 | | | |
| EXT-16 | Encoder Pulse selection | F pulse num | 16 | | | |
| EXT-17 | Filtering Time Constant for pulse Input Signal | F filter | 17 | | | |
| EXT-18 | Pulse Input Minimum Frequency | F pulse x1 | 18 | | | |
| EXT-19 | Frequency Output corresponding to Pulse Input Minimum Frequency | f freq y1 | 19 | | | |
| EXT-20 | Pulse Input Maximum Frequency | F pulse x2 | 20 | | | |
| EXT-21 | Frequency Output corresponding to Pulse Input Minimum Frequency | f freq y2 | 21 | | | |
| EXT-22 | P-Gain for PG Option | PG P-gain | 22 | | | |
| EXT-23 | I-Gain for PG Option | PG I-gain | 23 | | | |
| EXT-24 | Slip Frequency for PG Option | PG Slip freq | 24 | | | |
| EXT-30 | Multi-function Output Terminal `Q1` | q1 define | 30 | | | |
| EXT-31 | Multi-function Output Terminal `Q2` | q2 define | 31 | | | |
| EXT-32 | Multi-function Output Terminal `Q3` | q3 define | 32 | | | |
| EXT-34 | LM (Load Meter) Output selection | LM mode | 34 | | | |
| EXT-35 | LM (Load Meter) Output Adjustment | LM adjust | 35 | | | |
| EXT-40 | AM1 (Analog Meter1) Output selection | AM1 mode | 40 | | | |
| EXT-41 | AM1 (Analog Meter1) Output Adjustment | AM1 adjust | 41 | | | |
| EXT-42 | AM2 (Analog Meter2) Output selection | Am2 mode | 42 | | | |
| EXT-43 | AM2Analog Meter2) Output Adjustment | AM2 adjust | 43 | | | |

[1] Code FU1-08 through FU1-11 appears only when FU1-07 is set at 'DC-brake'.

[2] Code FU1-24 through FU1-25 appears only when FU1-23 is set at 'Yes'.

[3] Code FU1-30 through FU1-37 appears only when FU1-29 is set at 'User V/F'.

[4] Code FU1-51 through FU1-53 appears only when FU1-50 is set at 'Yes'.

[5] Code FU2-11 through FU2-16 appears only when FU2-10 is set at 'Yes'.

[6] The rated motor is automatically set according to the inverter model name. If different motor is used, set the rated motor capacity connected.

[7] This value is automatically entered according to the rated motor set in FU2-30. If different, set the correct value as the motor.

[8] The setting range of carrier frequency is decided depending on drives `capacity (over 30kW).

[9] This value is automatically entered according to the rated motor set in FU2-30. If different, set the correct value as the motor.

[10] Code FU2-47 through FU2-60 appears only when FU2-39 is set at 'PID'.

[11] Code FU2-76 appears only when FU2-75 is set at 'Ext.DB-R'.

[12] Code FU2-81 through FU2-90 appears only when one of I/O-12 ~ I/O-14 is set at '2nd function'.

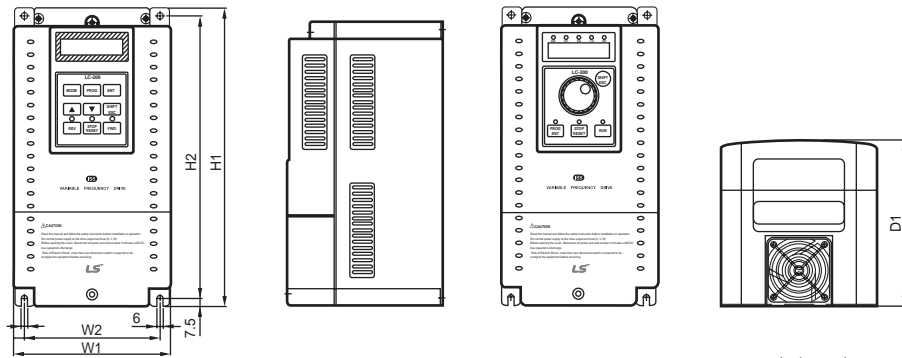
[13] Code/O-46 through I/O-53 are used in Option Board like RS485, Device Net and F-net etc.

[14] The 'Seq#' of code I/O-53 through I/O-60 varies according to the sequence number selected in I/O-51.

The parameter code may be extended to I/O-84 dependon the number of steps set in I/O-52 because the steps can be set up to 8.

Dimension (mm)

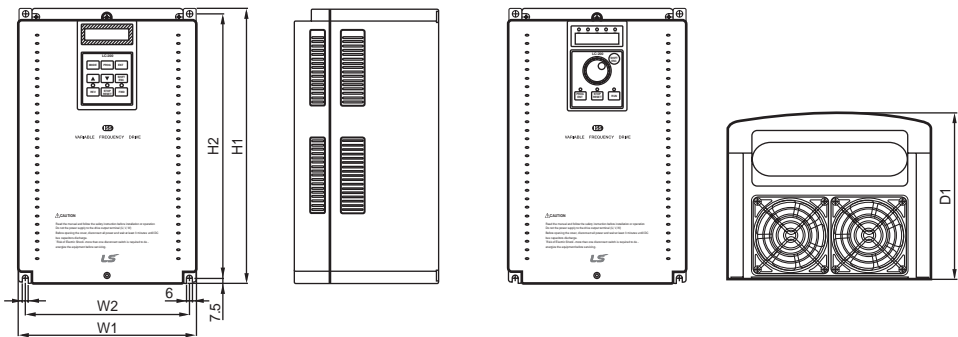
- 1. SV008iS5-2
- SV015iS5-2
- SV022iS5-2
- SV037iS5-2
- SV055iS5-2
- SV075iS5-2
- SV008iS5-4
- SV015iS5-4
- SV022iS5-4
- SV037iS5-4
- SV055iS5-4
- SV075iS5-4



(unit : mm)

| Inverter | W1 | W2 | H1 | H2 | D2 |
|--------------|-----|-----|-----|-----|-------|
| SV008iS5-2/4 | 150 | 130 | 284 | 269 | 156.5 |
| SV015iS5-2/4 | 150 | 130 | 284 | 269 | 156.5 |
| SV022iS5-2/4 | 150 | 130 | 284 | 269 | 156.5 |
| SV037iS5-2/4 | 150 | 130 | 284 | 269 | 156.5 |
| SV055iS5-2/4 | 200 | 180 | 355 | 340 | 182.5 |
| SV075iS5-2/4 | 200 | 180 | 355 | 340 | 182.5 |

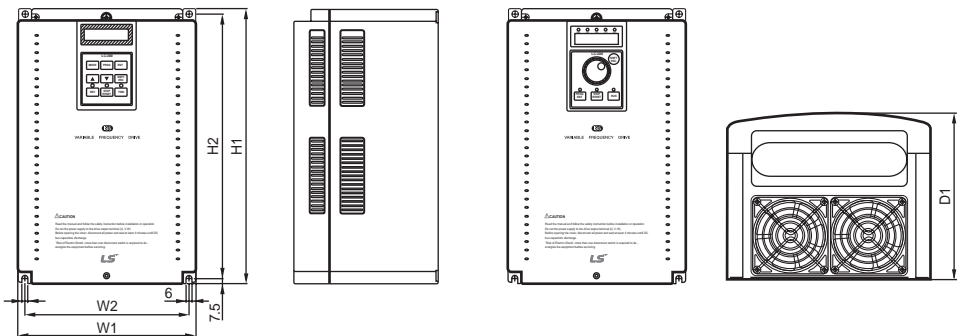
- 2. SV110iS5-2
- SV150iS5-2
- SV185iS5-2
- SV220iS5-2
- SV110iS5-4
- SV150iS5-4
- SV185iS5-4
- SV220iS5-4



(unit : mm)

| Inverter | W1 | W2 | H1 | H2 | D2 |
|--------------|-----|-----|-----|-----|-----|
| SV110iS5-2/4 | 250 | 230 | 385 | 370 | 201 |
| SV150iS5-2/4 | 250 | 230 | 385 | 370 | 201 |
| SV185iS5-2/4 | 304 | 284 | 460 | 445 | 234 |
| SV220iS5-2/4 | 304 | 284 | 460 | 445 | 234 |

- 3. SV300iS5-2
- SV370iS5-2
- SV450iS5-2
- SV550iS5-2
- SV300iS5-4
- SV370iS5-4
- SV450iS5-4
- SV550iS5-4
- SV750iS5-4

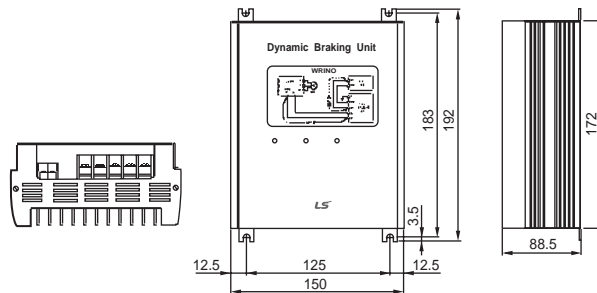


(unit : mm)

| Class | Type | W1 | W2 | W3 | H1 | H2 | D1 | D2 |
|----------|------------|-----|-------|-----|-----|-------|-------|-------|
| 200-230V | SV300iS5-2 | 375 | 360 | 275 | 615 | 593.5 | 277.5 | 230.5 |
| | SV370iS5-2 | 375 | 360 | 275 | 615 | 593.5 | 277.5 | 230.5 |
| | SV450iS5-2 | 375 | 360 | 275 | 780 | 758.5 | 300.7 | 230.5 |
| | SV550iS5-2 | 375 | 360 | 275 | 780 | 758.5 | 300.7 | 230.5 |
| 380-480V | SV300iS5-4 | 350 | 319.2 | 270 | 680 | 662 | 311.2 | 256.6 |
| | SV370iS5-4 | 350 | 319.2 | 270 | 680 | 662 | 311.2 | 256.6 |
| | SV450iS5-4 | 375 | 359.6 | 275 | 780 | 760.5 | 329 | 259 |
| | SV550iS5-4 | 375 | 359.6 | 275 | 780 | 760.5 | 329 | 259 |
| | SV750iS5-4 | 375 | 359.6 | 275 | 780 | 760.5 | 329 | 259 |

Options

| Option | Name | Description | | |
|-----------------------|-----------------------|------------------------------|--|---|
| Internal Installation | Sub Board | Sub-A Board (Extended I/O) | Extended I/O module 3 multi-function inputs (P4, P5, P6) 3 multi-function outputs (Q1, Q2, Q3) Auxiliary analog frequency reference (V2) Lm (Load meter) Output (0 – 10V) | |
| | | Sub-B Board (speed Feedback) | Encoder pulse input-Speed feedback (AOC, BOC /A+, A-, B+ B-) Encoder pulse output (FBA, FBB) | |
| | | Sub-C Board (Extended I/O) | Extended I/O module 3 multi-function inputs (P4, P5, P6) 1 multi-function outputs (Q1) Isolated auxiliary analog frequency reference (V2) 2 Isolated analog meter output (AM1.AM2) | |
| | Option Board | Device Net | Embedded DeviceNet protocol Can Control Inverter Connection : Max.64 Input Voltage : DC 11 ~25V Baud Rate : 125, 250, 500k bps CSMA/CD-NBA method | |
| | | PLC Communication (F-Net) | Connection with Fnet communication module of GLOFA PLC Inverter Connection : Max.64 Baud Rate : Max. 1M bps Token method | |
| | | RS-485 | RS-485 Communication Inverter Connection : Max.32 Baud Rate : Max. 19200 bps | |
| | | Profi-Bus | Connection to Profibus network Device Type : Profibus Dp Slave Inverter Connection : Max. 64 Baud Rate : Max. 12M bps | |
| | | ModBus-RTU | ModBus-RTU Communication Inverter Connection : Max. 32 Baud Rate : Max.19200bps | |
| | External Installation | Keypad | LCD | 32 Character display Download and Upload from the keypad |
| | | | LED (7-segment) | 6 digit 7-segment display |
| Remote Cable | | Remote Cable | 2m, 3m, 5m long keypad cables for separate keypad installation. | |
| Dynamic Braking | | DB Resistor | Enables inverter to decelerate rapidly | |
| | | DB Unit | DB units are provided as an option for 15~75kW inverters | |



Dynamic braking (DB)unit

| Model Name | SV150DBU-2 | SV220DBU-2 | SV370DBU-2 | SV550DBU-4 | SV150DBU-4 | SV220DBU-4 | SV370DBU-4 | SV550DBU-4 | SV750DBU-4 |
|---------------------------|---|-------------|----------------------|----------------------|-----------------------|----------------------|----------------------|----------------------|----------------------|
| Max. DC Input Voltage | DC400V | DC400V | DC400V | DC400V | DC800V | DC800V | DC800V | DC800V | DC800V |
| Application Motor [kW] | 15 20 25 30 | 30 37 45 55 | 15 20 25 30 37 45 55 | 15 20 25 30 37 45 55 | 22.4 3.6 6.4 9.6 12.8 | 15 20 25 30 37 45 55 | 15 20 25 30 37 45 55 | 15 20 25 30 37 45 55 | 15 20 25 30 37 45 55 |
| DB Resistor | Wattage [kW]* | | 2.4 2.4 3.6 | 6.4 6.4 9.6 9.6 | 22.4 | 3.6 | 6.4 | 9.6 | 12.8 |
| | Resistor Value [Ω] | | 15 10 5 | 4.2 2.8 | 4030 | 20 | 16.9 | 11.4 | 8.4 |
| Average Braking Torque | 150% | 150% | 100% | 100% | 150% | 150% | 150% | 100% | 100% |
| Enable Duty (ED) | 50% | 50% | | 10% | 10% | 10% | 10% | 10% | 10% |
| Output Signal | Heat sink over-heat signal output | | | | | | | | |
| Protection | Heat sink over-heat output cut-off | | | | | | | | |
| Environment Ambient Temp. | -10°C ~ 40°C | | | | | | | | |
| Humidity | Below 90% Relative Humidity (Non Condensing) | | | | | | | | |
| Altitude | Less than 3,300ft (1,000m) without derating | | | | | | | | |
| Cooling Method | Self-cooling | | | | | | | | |
| Installation | Avoid corrosive gas, oil mist, flammable gas and dust | | | | | | | | |

*This resistor wattage is based on 150% braking torque and 5% ED. Double the wattage in case of using with 10% ED application.

Dynamic braking (DB) unit

1. Internal (built-in) resistors

The DB resistors are built-in for 0.75 ~ 3.7kW models.

| Model Name | kW | Internal DB Resistor | ED / Continuous Braking time |
|------------|------|----------------------|------------------------------|
| SV008iS5-2 | 0.75 | 200 Ω, 100Watt | 3% / 5seconds |
| SV015iS5-2 | 1.5 | 100 Ω, 100Watt | 3% / 5seconds |
| SV022iS5-2 | 2.2 | 60 Ω, 100Watt | 2% / 5seconds |
| SV037iS5-2 | 3.7 | 40 Ω, 100Watt | 2% / 5seconds |
| SV008iS5-2 | 0.75 | 900 Ω, 100Watt | 3% / 5seconds |
| SV015iS5-2 | 1.5 | 450 Ω, 100Watt | 3% / 5seconds |
| SV022iS5-2 | 2.2 | 300 Ω, 100Watt | 2% / 5seconds |
| SV037iS5-2 | 3.7 | 200 Ω, 100Watt | 2% / 5seconds |

*Above table is based on 100% braking torque

2. External (optional) resistors

| Model Name | kW | DB Resistor (100% Braking Torque) | DB Resistor (150% Braking Torque) |
|------------|------|-----------------------------------|-----------------------------------|
| SV008iS5-2 | 0.75 | 200 Ω, 100Watt | 150 Ω, 150Watt |
| SV015iS5-2 | 1.5 | 100 Ω, 200Watt | 60 Ω, 300Watt |
| SV022iS5-2 | 2.2 | 60 Ω, 300Watt | 50 Ω, 400Watt |
| SV037iS5-2 | 3.7 | 40 Ω, 500Watt | 33 Ω, 600Watt |
| SV055iS5-2 | 5.5 | 3 Ω, 700Watt | 20 Ω, 800Watt |
| SV075iS5-2 | 7.5 | 20 Ω, 1000Watt | 15 Ω, 1200Watt |
| SV110iS5-2 | 11 | 15 Ω, 1400Watt | 10 Ω, 2400Watt |
| SV150iS5-2 | 15 | 11 Ω, 2000Watt | 8 Ω, 2400Watt |
| SV185iS5-2 | 18.5 | 9 Ω, 2400Watt | 5Ω, 3600Watt |
| SV220iS5-2 | 22 | 8 Ω, 2800Watt | 5Ω, 3600Watt |
| SV300iS5-2 | 30 | 4.2 Ω, 6400Watt | - |
| SV370iS5-2 | 37 | 4.2 Ω, 6400Watt | - |
| SV450iS5-2 | 45 | 2.8 Ω, 9600Watt | - |
| SV550iS5-2 | 55 | 2.8 Ω, 9600Watt | - |
| SV008iS5-4 | 0.75 | 900 Ω, 100Watt | 600 Ω, 150Watt |
| SV015iS5-4 | 1.5 | 450 Ω, 200Watt | 300 Ω, 300Watt |
| SV022iS5-4 | 2.2 | 300 Ω, 300Watt | 200 Ω, 400Watt |
| SV037iS5-4 | 3.7 | 200 Ω, 500Watt | 130 Ω, 600Watt |
| SV055iS5-4 | 5.5 | 120 Ω, 700Watt | 85 Ω, 1000Watt |
| SV075iS5-4 | 7.5 | 90 Ω, 1000Watt | 60 Ω, 1200Watt |
| SV110iS5-4 | 11 | 60 Ω, 1400Watt | 40 Ω, 2000Watt |
| SV150iS5-4 | 15 | 45 Ω, 2000Watt | 30 Ω, 2400Watt |
| SV185iS5-4 | 18.5 | 35 Ω, 2400Watt | 20 Ω, 3600Watt |
| SV220iS5-4 | 22 | 30 Ω, 2800Watt | 20 Ω, 3600Watt |
| SV300iS5-4 | 30 | 16.9 Ω, 6400Watt | - |
| SV370iS5-4 | 37 | 16.9 Ω, 6400Watt | - |
| SV450iS5-4 | 45 | 11.4 Ω, 9600Watt | - |
| SV550iS5-4 | 55 | 11.4 Ω, 9600Watt | - |
| SV750iS5-4 | 75 | 8.4 Ω, 12800Watt | - |

*Above table is based on 100% braking torque

Peripheral Devices

| Inverter Models | HP | MCCB, ELB | Magnetic Contactor | Wire, mm2 (AWG) | | | AC Input Fuse | AC Reactor | DC Reactor |
|-----------------|-----|-----------------|--------------------|-----------------|----------|----------|---------------|----------------|----------------|
| | | | | R,S,T | U,V,W | Ground | | | |
| SV008iS5-2 | 1 | ABS33a, EBS33 | SMC-10P | 2 (14) | 2 (14) | 3.5 (12) | 10A | 2.13mH, 5.7A | 7.00mH, 5.7A |
| SV015iS5-2 | 2 | ABS33a, EBS33 | SMC-10P | 2 (14) | 2 (14) | 3.5 (12) | 15A | 1.20mH, 10A | 4.05mH, 9.2A |
| SV022iS5-2 | 3 | ABS33a, EBS33 | SMC-15P | 2 (14) | 2 (14) | 3.5 (12) | 25A | 0.88mH, 14A | 2.92mH, 13A |
| SV037iS5-2 | 5 | ABS33a, EBS33 | SMC-20P | 3.5 (12) | 3.5 (12) | 3.5 (12) | 40A | 0.56mH, 20A | 1.98mH, 19A |
| SV055iS5-2 | 7.5 | ABS53a, EBS53 | SMC-25P | 5.5 (10) | 5.5 (10) | 5.5 (10) | 40A | 0.39mH, 30A | 1.37mH, 29A |
| SV075iS5-2 | 10 | ABS63a, EBS63 | SMC-35P | 8 (8) | 8 (8) | 5.5 (10) | 50A | 0.28mH, 40A | 1.05mH, 38A |
| SV110iS5-2 | 15 | ABS103a, EBS103 | SMC-50P | 14 (6) | 14 (6) | 14 (6) | 70A | 0.20mH, 59A | 0.74mH, 56A |
| SV150iS5-2 | 20 | ABS103a, EBS103 | SMC-65P | 22 (4) | 22 (4) | 14 (6) | 100A | 0.15mH, 75A | 0.57mH, 71A |
| SV185iS5-2 | 25 | ABS203a, EBS203 | SMC-80P | 30 (3) | 30 (3) | 22 (4) | 100A | 0.12mH, 96A | 0.49mH, 91A |
| SV220iS5-2 | 30 | ABS203a, EBS203 | SMC-100P | 38 (2) | 30 (3) | 22 (4) | 125A | 0.10mH, 112A | 0.42mH, 107A |
| SV300iS5-2 | 40 | ABS203a, EBS225 | GMC-150 | 60 | 60 | 22 | 150A | 0.08mH, 134.2A | 0.35mH, 152.0A |
| SV370iS5-2 | 50 | ABS203a, EBS225 | GMC-180 | 60 | 60 | 22 | 200A | 0.07mH, 160.6A | 0.3mH, 180.0A |
| SV450iS5-2 | 60 | ABS403a, EBS300 | GMC-220 | 100 | 100 | 38 | 250A | 0.06mH, 198.0A | 0.28mH, 221.0A |
| SV550iS5-2 | 75 | ABS403a, EBS350 | GMC-300 | 100 | 100 | 38 | 300A | 0.05mH, 242.0A | 0.25mH, 270.0A |
| SV008iS5-4 | 1 | ABS33a, EBS33 | SMC-10P | 2 (14) | 2 (14) | 2 (14) | 6A | 8.63mH, 2.8A | 28.62mH, 2.7A |
| SV015iS5-4 | 2 | ABS33a, EBS33 | SMC-10P | 2 (14) | 2 (14) | 2 (14) | 10A | 4.81mH, 4.8A | 16.14mH, 4.6A |
| SV022iS5-4 | 3 | ABS33a, EBS33 | SMC-20P | 2 (14) | 2 (14) | 2 (14) | 10A | 3.23mH, 7.5A | 11.66mH, 7.1A |
| SV037iS5-4 | 5 | ABS33a, EBS33 | SMC-20P | 3.5 (12) | 2 (14) | 2 (14) | 20A | 2.34mH, 10A | 7.83mH, 10A |
| SV055iS5-4 | 7.5 | ABS33a, EBS33 | SMC-20P | 3.5 (12) | 2 (14) | 3.5 (12) | 20A | 1.22mH, 15A | 5.34mH, 14A |
| SV075iS5-4 | 10 | ABS33a, EBS33 | SMC-20P | 5.5 (10) | 3.5 (12) | 3.5 (12) | 30A | 1.14mH, 20A | 4.04mH, 19A |

Peripheral Devices

| Inverter Models | kW | MCCB, ELB | Magnetic Contactor | Wire, mm2 (AWG) | | | AC Input Fuse | AC Reactor | DC Reactor |
|-------------------|-----|-----------------|--------------------|-----------------|----------|--------|---------------|----------------|----------------|
| | | | | R,S,T | U,V,W | Ground | | | |
| SV110iS5-4 | 15 | ABS53a, EBS53 | SMC-20P | 8 (8) | 5.5 (10) | 8 (8) | 35A | 0.81mH, 30A | 2.76mH, 29A |
| SV150iS5-4 | 20 | ABS63a, EBS63 | SMC-25P | 14 (6) | 8 (8) | 8 (8) | 45A | 0.61mH, 38A | 2.18mH, 36A |
| SV185iS5-4 | 25 | ABS103a, EBS103 | SMC-35P | 14 (6) | 8 (8) | 14 (6) | 60A | 0.45mH, 50A | 1.79mH, 48A |
| SV220iS5-4 | 30 | ABS103a, EBS103 | SMC-50P | 22 (4) | 14 (6) | 14 (6) | 70A | 0.39mH, 58A | 1.54mH, 55A |
| SV300iS5-4 | 40 | ABS203a, EBS125 | GMC-85 | 22 | 22 | 14 | 100A | 0.33mH, 67.1A | 1.19mH, 76.0A |
| SV370iS5-4 | 50 | ABS203a, EBS150 | GMC-100 | 22 | 22 | 14 | 100A | 0.27mH, 82.5A | 0.98mH, 93.0A |
| SV450iS5-4 | 60 | ABS203a, EBS175 | GMC-125 | 38 | 38 | 22 | 100A | 0.22mH, 100.1A | 0.89mH, 112.0A |
| SV550iS5-4 | 75 | ABS203a, EBS225 | GMC-150 | 38 | 38 | 22 | 150A | 0.18mH, 121.0A | 0.75mH, 135.0A |
| SV750iS5-4 | 100 | ABS203a, EBS225 | GMC-180 | 60 | 60 | 22 | 200A | 0.13mH, 167.2A | 0.44mH, 187.0A |

RFI Filter

| IS5 Series | | | Footprinting Filter | | | | | | | |
|--------------------|--------|----------------------|---------------------|-----------------|-----------------|------------------|------------------|-----------|-------|---------------|
| Inverter | Power | Code | Current | Tension Voltage | Leakage Current | Dimensions L W H | Mounting Y X | Weight | Mount | Output Chokes |
| THREE PHASE | | | NOM. | MAX. | | | | | | |
| SV008iS5-2 | 0.75kW | FFS5-T012-(X) | 12A | 250VA | 0.3A 18A | 329 X 149.5 X 50 | 315 X 120 | | M5 | FS-2 |
| SV015iS5-2 | 1.5kW | | | | | | | | | |
| SV022iS5-2 | 2.2kW | FFS5-T020-(X) | 20A | 250VA | 0.3A 18A | 329 X 149.5 X 50 | 315 X 120 | | M5 | FS-2 |
| SV037iS5-2 | 3.7kW | | | | | | | | | |
| SV055iS5-2 | 5.5kW | FFS5-T030-(X) | 30A | 250VA | 0.3A 18A | 415 X 199.5 X 60 | 410 X 160 | | M5 | FS-2 |
| SV075iS5-2 | 7.5kW | | | 50A | 250VA | 0.3A 18A | 415 X 199.5 X 60 | 410 X 160 | | M5 |
| SV110iS5-2 | 11kW | | 100A | 250VA | 0.3A 18A | | | | | FS-3 |
| SV150iS5-2 | 15kW | | | | | | | | | |
| SV185iS5-2 | 18kW | | 120A | 250VA | 0.3A 18A | | | | | FS-3 |
| SV220iS5-2 | 22kW | | | | | | | | | |
| SV008iS5-4 | 0.75kW | FFS5-T006-(X) | 6A | 380VA | 0.5A 27A | 329 X 149.5 X 50 | 315 X 120 | | M5 | FS-1 |
| SV015iS5-4 | 1.5kW | | | | | | | | | |
| SV022iS5-4 | 2.2kW | FFS5-T012-(X) | 12A | 380VA | 0.5A 27A | 329 X 149.5 X 50 | 315 X 120 | | M5 | FS-2 |
| SV037iS5-4 | 3.7kW | | | | | | | | | |
| SV055iS5-4 | 5.5kW | FFS5-T030-(X) | 30A | 380VA | 0.5A 27A | 415 X 199.5 X 60 | 401 X 160 | | M5 | FS-2 |
| SV075iS5-4 | 7.5kW | | | | | | | | | |
| SV110iS5-4 | 11kW | FFS5-T051-(X) | 51A | 380VA | 0.5A 27A | 466 X 258 X 65 | 515.5 X 255 | | M8 | FS-2 |
| SV150iS5-4 | 15kW | | | | | | | | | |
| SV185iS5-4 | 18kW | FFS5-T060-(X) | 60A | 380VA | 0.5A 27A | 541 X 332 X 65 | 515.5 X 255 | | M8 | FS-2 |
| SV220iS5-4 | 22kW | | | 70A | 380VA | 0.5A 27A | 541 X 332 X 65 | | M8 | FS-2 |

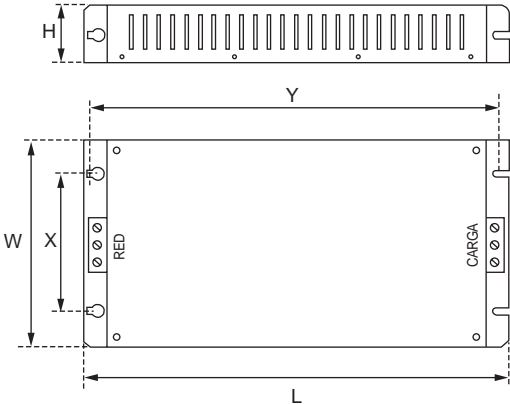
| IS5 Series | | | Standard Filter | | | | | | | |
|--------------------|--------|--------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------|-------|---------------|
| Inverter | Power | Code | Current | Tension Voltage | Leakage Current | Dimensions L W H | Mounting Y X | Weight | Mount | Output Chokes |
| THREE PHASE | | | NOM. | MAX. | | | | | | |
| SV008iS5-2 | 0.75kW | FE-T012-(X) | 12A | 250VA | 0.3A 18A | 250 X 110 X 60 | 238 X 76 | | -- | FS-2 |
| SV015iS5-2 | 1.5kW | | | | | | | | | |
| SV022iS5-2 | 2.2kW | FE-T020-(X) | 20A | 250VA | 0.3A 18A | 270 X 140 X 60 | 258 X 106 | | -- | FS-2 |
| SV037iS5-2 | 3.7kW | | | | | | | | | |
| SV055iS5-2 | 5.5kW | FE-T030-(X) | 30A | 250VA | 0.3A 18A | 270 X 140 X 60 | 258 X 106 | | -- | FS-2 |
| SV075iS5-2 | 7.5kW | | | 50A | 250VA | 0.3A 18A | 270 X 140 X 60 | 258 X 106 | | -- |
| SV110iS5-2 | 11kW | FE-T100-(x) | 100A | 250VA | 0.3A 18A | 420 X 200 X 130 | 408 X 166 | | -- | FS-3 |
| SV150iS5-2 | 15kW | | | | | | | | | |
| SV185iS5-2 | 18kW | FE-T120-(x) | 120A | 250VAC | 1.3A 180A | 420 X 200 X 130 | 408 X 106 | | -- | FS-3 |
| SV220iS5-2 | 22kW | | | | | | | | | |
| SV300iS5-2 | 30kW | FE-T150-2 | 150A | 250VAC | 1.3A 150A | 480 X 200 X 160 | 468 X 166 | | -- | FS-3 |
| SV370iS5-2 | 37kW | | | 170A | 250VAC | 1.3A 150A | 480 X 200 X 160 | 468 X 166 | | -- |
| SV450iS5-2 | 45kW | FE-T230-2 | 230A | 250VAC | 1.3A 150A | 580 X 250 X 205 | 560 X 170 | | -- | FS-4 |
| SV550iS5-2 | 55kW | | | 280A | 250VAC | 1.3A 150A | 580 X 250 X 205 | 560 X 170 | | -- |
| SV008iS5-4 | 0.75kW | FE-T006-(X) | 6A | 380VAC | 0.5A 27A | 250 X 110 X 60 | 238 X 76 | | -- | FS-2 |
| SV015iS5-4 | 1.5kW | | | | | | | | | |
| SV022iS5-4 | 2.2kW | FE-T012-(X) | 12A | 380VAC | 0.5A 27A | 250 X 110 X 60 | 238 X 76 | | -- | FS-2 |
| SV037iS5-4 | 3.7kW | | | | | | | | | |
| SV055iS5-4 | 5.5kW | FE-T030-(X) | 30A | 380VAC | 0.5A 27A | 270 X 140 X 60 | 258 X 106 | | -- | FS-2 |
| SV075iS5-4 | 7.5kW | | | | | | | | | |
| SV110iS5-4 | 11kW | FE-T050-(X) | 50A | 380VAC | 0.5A 27A | 270 X 140 X 90 | 258 X 106 | | | FS-2 |
| SV150iS5-4 | 15kW | | | | | | | | | |
| SV185iS5-4 | 18kW | FE-T060-(X) | 60A | 380VAC | 0.5A 27A | 270 X 140 X 90 | 258 X 106 | | | FS-2 |
| SV220iS5-4 | 22kW | | | 70A | 380VAC | 0.5A 27A | 350 X 180 X 90 | 338 X 146 | | |
| SV300iS5-4 | 30kW | FE-T070-2 | 70A | 380VAC | 1.3A 150A | 350 X 180 X 90 | 338 X 146 | | | FS-3 |
| SV370iS5-4 | 37kW | | | 100A | 38VAC | 1.3A 150A | 425 X 200 X 130 | 408 X 166 | | |
| SV450iS5-4 | 45kW | FE-T120-2 | 120A | 38VAC | 1.3A 150A | 425 X 200 X 130 | 408 X 166 | | | FS-3 |
| SV550iS5-4 | 55kW | | | 120A | 38VAC | 1.3A 150A | 425 X 200 X 130 | 408 X 166 | | |
| SV750iS5-4 | 75kW | FE-T170-2 | 170A | 38VAC | 1.3A 150A | 480 X 200 X 160 | 468 X 166 | | | FS-3 |

(X) (1) Industrial environment EN 50081-1 (A class)

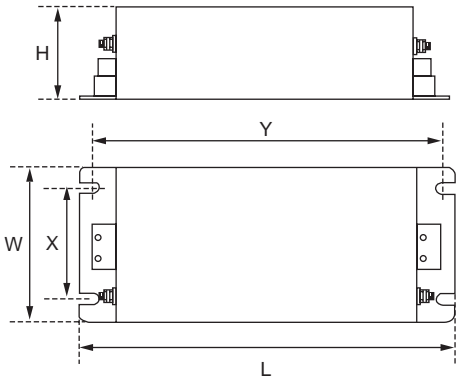
(2) Domestic and industrial environment EN 50081-1 (B class)

Dimensions

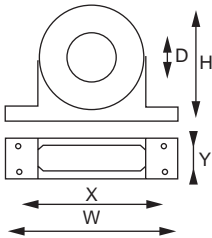
FF Series (Footprint)



FE Series (Standard)



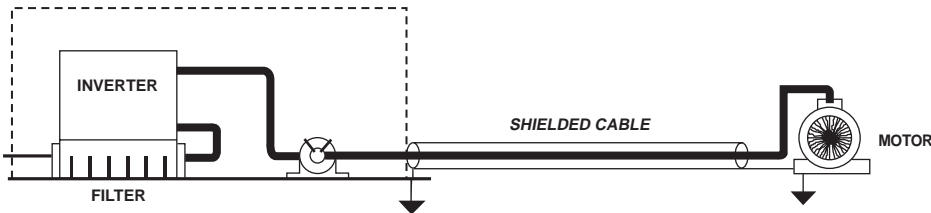
FS Series (output chokes)



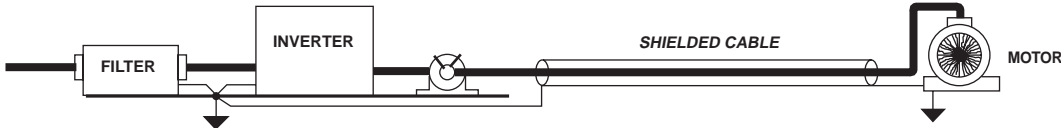
| Type | D | W | H | X | O |
|------|------|-----|-----|----------|---|
| FS-1 | 21 | 85 | 46 | 70 | 5 |
| FS-2 | 28.5 | 105 | 62 | 90 | 5 |
| FS-3 | 48 | 150 | 110 | 125 x 30 | 5 |
| FS-4 | 58 | 200 | 170 | 180 x 45 | 5 |

RFI Filter

FF Series (Footprint)



FE Series (Standard)





Safety Instructions

- For your safety, please read user's manual thoroughly before operating.
- Contact the nearest authorized service facility for examination, repair, or adjustment.
- Please contact qualified service technician when you need maintenance. Do not disassemble or repair by yourself!
- Any maintenance and inspection shall be performed by the personnel having expertise concerned.

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