

LSLV Drive Transition Guide

iS7 ► S300

3 Phase 200-240V 0.4kW - 75kW (1/2-100HP)
3 Phase 380V-480V 0.4kW - 220kW (1/2-300HP)



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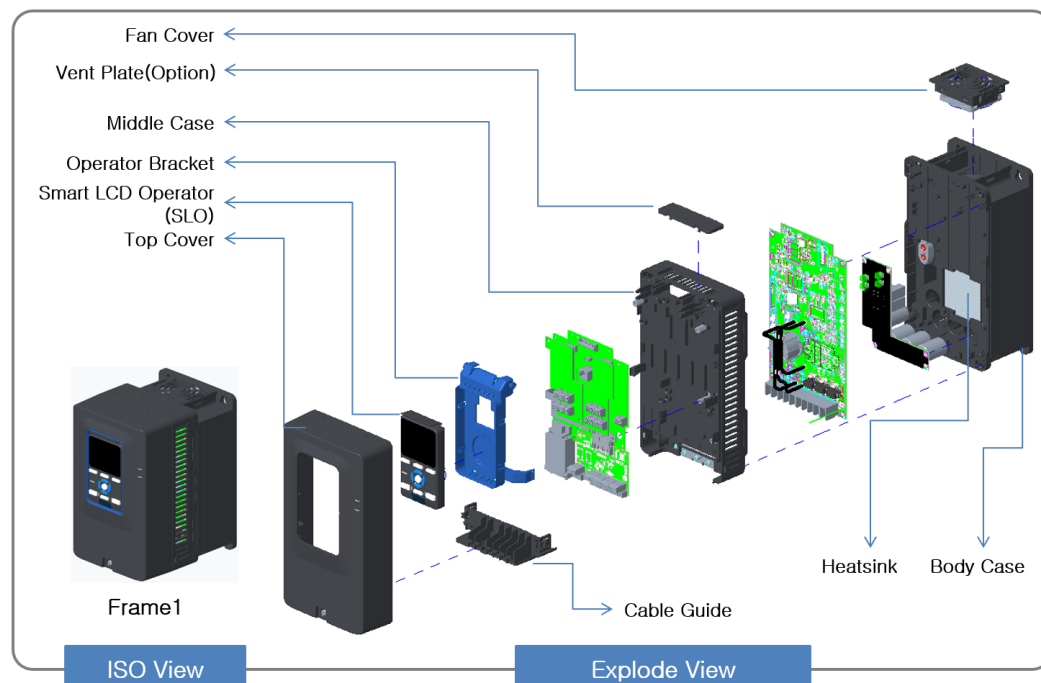
Please refer the manual for more details



1. Features of the S300 (1)

Enhancement of Reliability / Quality

- **C3 Class Built-in EMC filter for all capacities.**
 - CE certified, 2nd Environment (EN61800-3)/Category C3 (Class A)
 - 400V 30~37kW Filter with Integrated EMC Choke,
 - 45~75kW Capacitive Filter
 - 200V 22~45kW Capacitive Filter
- **Smart LCD Operator**
 - High resolution LCD
 - Multilingual (Korean, English, and five other languages)
 - USB port: Ability to copy saved parameters to PC.
- **Enhanced Diagnostic and Predictive Maintenance**
 - Provides state diagnostics for main capacitors, fans, and relays (with warning alarm settings)
- **International Standards Compliance**
 - CE(EN 61800-3:2004/A1:2012)
 - UL(61800-5-1), KC, MISRA-C 2004



Better Performance

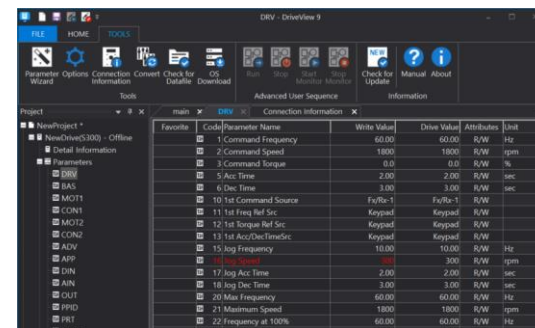
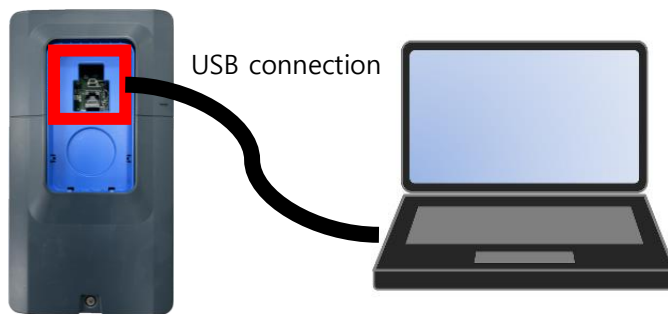
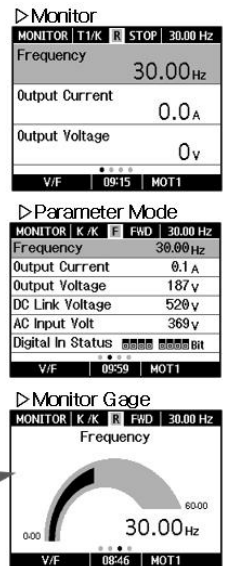
- **Space Efficient Design**
 - Size reduced by up to 40% compared to the iS7.
 - Built-in DC reactor & EMC filter
 - Built-in safety torque off (STO)
 - Built-in 24V control power supply
- **Strong Performance**
 - V/F starting torque performance data
 - Advanced User Sequence
 - Position control is provided
 - Easy Firmware update through USB
- **Improved Motor Control algorithm**
 - PMSM control is supported
 - : Sensorless, V/f control
 - : PMSM KEB function
 - Enhancement of Parameter Estimation Function for Improved Control Performance
 - : Stationary Auto Tuning
 - : Automatic Selection of Tuning Methods Based on Control Mode

1. Features of the S300 (2)

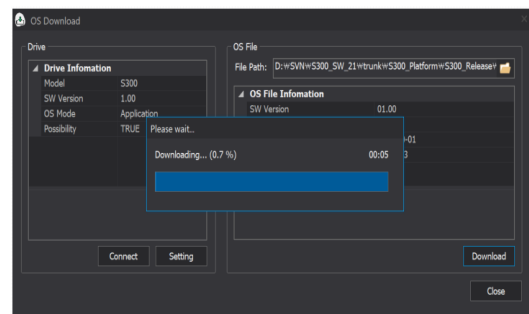
Enhanced Convenience

■ User-friendly Features

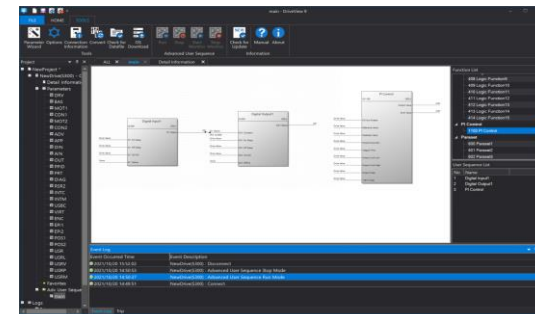
- USB Functionality
- Easy Firmware Update
- Automatic Configuration Based on Control Mode and Motor Type
- Automatic Adjustment of Auto-Tuning Method Based on AC Drive Settings
- Smart LCD Operator Memory Stick Function (Screen Capture, Transfer of Stored Parameter Data)
- Provision of Fault Handling Information Links via QR Code (Under Development)



Drive View 9



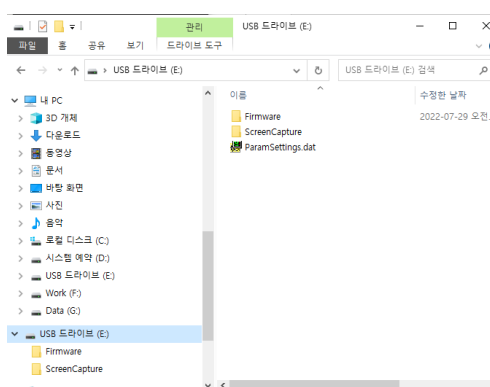
Easy Firmware Update



Advanced User Sequence



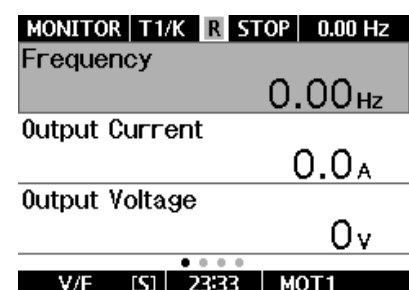
PC screen



ALERT T1/K F TRIP 0.00 Hz
ASHT



QR Code screen



Capture screen

1. Parameters SAVE File can be transferred to PC as shown on the screen.
2. SLO Screen Capture can be transferred to PC as image files.
3. QR Code Screen for Trip Information.

2. Specification Comparison

I/O Specification (220V Class)

iS7	Model: SV□□□□iS7-2□			4	8	15	22	37	55	75	110	150	185		
	Applied Motor	Heavy Duty (CT)	[HP]	N/A	1	2	3	5	7.5	10	15	20	25		
			[kW]		0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5		
		Normal Duty (VT)	[HP]		2	3	5	7.5	10	15	20	25	30		
			[kW]		1.5	2.2	3.7	5.5	7.5	11	15	18.5	22		
	Output Rating	Rated capacity [kVA]			1.9	3	4.5	6.1	9.1	12.2	17.5	22.9	28.2		
		Rated current [A]	CT		5	8	12	16	24	32	46	60	74		
			VT		8	12	16	24	32	46	60	74	88		
		Output frequency [Hz]			0 ~ 400 [Hz] (Sensorless-1: 0 ~ 300Hz, Sensorless-2, Vector: 0 ~ 120Hz)										
		Output voltage [V]			3-phase 200 ~ 230V										
		Input Rating	Input voltage [V]		3-phase 200 ~ 230VAC (-15% ~ +10%)										
	Input frequency [Hz]		50 ~ 60 [Hz] (±5%)												
	Rated current [A]		CT		4.3	6.9	11.2	14.9	22.1	28.6	44.3	55.9	70.8		
			VT		6.8	10.6	14.9	21.3	28.6	41.2	54.7	69.7	82.9		
S300	Model: LSLV□□□□S300-2				4	8	15	22	40	55	75	110	150	185	
	Applied Motor	Heavy Duty (CT)	[HP]	0.5	1	2	3	5	7.5	10	15	20	25		
			[kW]	0.4	0.75	1.5	2.2	4	5.5	7.5	11	15	18.5		
		Normal Duty (VT)	[HP]	1	2	3	5	7.5	10	15	20	25	30		
			[kW]	0.75	1.5	2.2	4	5.5	7.5	11	15	18.5	22		
	Output Rating	Rated capacity [kVA]	HD	1.2	1.9	3	4.2	6.7	9.5	12.6	17.9	22.9	28.6		
			ND	1.9	3	4.6	6.1	8.4	11.4	16	21.3	26.7	31.2		
		Rated current [A]	HD	3.2	5	8	11	17.5	25	33	47	60	75		
			ND	5	8	12	16	22	30	42	56	70	82		
		Output frequency	[Hz]	V/F, V/F-SC: 0.01~590 V/F-PG: 0~400 SLVC-IM, SLVC-PM, SVC-IM, SVC-PM: 0~400											
		Output voltage	[V]	3-phase 200~240											
	Input Rating	Input voltage [V]		3-phase 200~240, -15%~+10%											
		Input frequency [Hz]		50/60 ±5%											
		Rated current [A]	CT	2.5	4	6.8	9.6	15.5	22.1	29.6	42.6	54.8	68.4		
			VT	4	6.8	8.4	14.1	19.5	26.9	38.1	51.1	63.9	75.8		

2. Specification Comparison

I/O Specification (220V Class)

iS7	Model: SV□□□□iS7-2□			220	300	370	450	550	750	
	Applied Motor	Heavy Duty (CT)	[HP]	30	40	50	60	75	100	
			[kW]	22	30	37	45	55	75	
		Normal Duty (VT)	[HP]	40	50	60	75	100	125	
			[kW]	30	37	45	55	75	90	
	Output Rating	Rated capacity [kVA]		33.5	46	57	69	84	116	
		Rated current [A]	CT	88	116	146	180	220	288	
			VT	124	146	180	220	288	345	
		Output frequency [Hz]		0 ~ 400 [Hz] (Sensorless-1: 0 ~ 300Hz, Sensorless-2, Vector: 0 ~ 120Hz)						
		Output voltage [V]		3-phase 200 ~ 230V						
	Input Rating	Input voltage [V]		3-phase 200 ~ 230VAC (-15% ~ +10%)						
		Input frequency [Hz]		50 ~ 60 [Hz] (±5%)						
		Rated current [A]	CT	85.3	121	154	191	233	305	
			VT	116.1	152	190	231	302	362	
S300	Model: LSLV□□□□S300-2			220	300	370	450	550	750	
	Applied Motor	Heavy Duty (CT)	[HP]	30	40	50	60	75	100	
			[kW]	22	30	37	45	55	75	
		Normal Duty (VT)	[HP]	40	50	60	75	100	125	
			[kW]	30	37	45	55	75	90	
	Output Rating	Rated capacity [kVA]	HD [kVA]	33.5	43.8	55.3	68.6	83.8	109.7	
			ND [kVA]	41.9	52.6	64.4	80.4	109.7	131.5	
		Rated current [A]	HD [A]	88	115	145	180	220	288	
			ND [A]	110	138	169	211	288	345	
		Output frequency [Hz]	[Hz]	V/F, V/F-SC: 0.01~590 V/F-PG: 0~400 SLVC-IM, SLVC-PM, SVC-IM, SVC-PM: 0~400						
		Output voltage [V]	[V]	3-phase 200~240						
	Input Rating	Input voltage [V]	[V]	3-phase 200~240, -15%~+10%						
		Input frequency [Hz]	[Hz]	50/60 ±5%						
		Rated current [A]	HD [A]	81.3	106.9	135.6	168.4	212	277.5	
			ND [A]	102.3	129.1	158.1	198.5	277.5	332.5	

2. Specification Comparison

I/O Specification (400V Class)

iS7	Model: SV□□□□iS7-4□			4	8	15	22	37	55	75	110	150	185	220		
	Applied Motor	Heavy Duty (CT)	[HP]	N/A	1	2	3	5	7.5	10	15	20	25	30		
			[kW]		0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22		
		Normal Duty (VT)	[HP]		2	3	5	7.5	10	15	20	25	30	40		
			[kW]		1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30		
	Output Rating	Rated capacity [kVA]			1.9	3	4.5	6.1	9.1	12.2	18.3	22.9	29.7	34.3		
		Rated current [A]	CT		2.5	4	6	8	12	16	24	30	39	45		
			VT		4	6	8	12	16	24	30	39	45	61		
		Output frequency [Hz]			0 ~ 400 [Hz] (Sensorless-1: 0~300Hz, Sensorless-2, Vector: 0~120Hz)											
		Output voltage [V]			3-phase 380 ~ 480V											
		Input Rating	Input voltage [V]		3-phase 380 ~ 480VAC (-15% ~ +10%)											
	Input frequency [Hz]		50 ~ 60 [Hz] (±5%)													
	Output current [A]		CT		2.2	3.6	5.5	7.5	11	14.4	22	26.6	35.6	41.6		
			VT		3.7	5.7	7.7	11.1	14.7	21.9	26.4	35.5	41.1	55.7		
S300	Model: LSLV□□□□S300-4			4	8	15	22	40	55	75	110	150	185	220		
	Applied Motor	Heavy Duty (CT)	[HP]	0.5	1	2	3	5	7.5	10	15	20	25	30		
			[kW]	0.4	0.75	1.5	2.2	4	5.5	7.5	11	15	18.5	22		
		Normal Duty (VT)	[HP]	1	2	3	5	7.5	10	15	20	25	30	40		
			[kW]	0.75	1.5	2.2	4	5.5	7.5	11	15	18.5	22	30		
	Output Rating	Rated capacity [kVA]	HD	1.4	2.6	3.7	4.2	7	11.3	12.6	18.3	23.6	29.7	34.3		
			ND	1.9	3.1	4.6	6.1	9.2	13.3	18.3	23.6	29	34.3	46.5		
		Rated current (380~460V)	HD [A]	1.8	3.4	4.8	5.5	9.2	14.8	16.5	24	31	39	45		
			ND [A]	2.5	4.1	6	8	12.1	17.5	24	31	38	45	61		
		Rated current (460~480V)	HD [A]	1.7	3.1	4.4	5	8.3	13.4	14.9	21.6	27.9	35.1	40.5		
			ND [A]	2.3	3.7	5.4	7.6	11	15.8	21.6	27.9	34.2	40.5	54.9		
		Output frequency		[Hz]	V/F, V/F-SC: 0.01~590 V/F-PG: 0~400 SLVC-IM, SLVC-PM, SVC-IM, SVC-PM: 0~400											
		Output voltage		[V]	3-phase 380~480											
	Input Rating	Input voltage		[V]	3-phase 200~240, -15%~+10%											
		Input frequency		[Hz]	50/60 ±5%											
		Rated current [A]	HD	1.4	2.7	4.1	4.8	8.1	13.1	14.8	21.8	28.3	35.6	41.6		
			ND	2	3.5	5.2	7.1	10.7	15.7	21.8	28.3	34.7	41.6	56.7		

2. Specification Comparison

I/O Specification (400V Class)

iS7	Model: SV□□□□iS7-4□			300	370	450	550	750	900	1100	1320	1600	1850	2200	
	Applied Motor	Heavy Duty (CT)	[HP]	40	50	60	75	100	125	150	200	250	300	350	
			[kW]	30	37	45	55	75	90	110	132	160	185	220	
		Normal Duty (VT)	[HP]	50	60	75	100	125	150	200	250	300	350	400	
			[kW]	37	45	55	75	90	110	132	160	185	220	280	
	Output Rating	Rated capacity [kVA]		46	57	69	84	116	139	170	201	248	286	329	
		Rated current [A]	CT	61	75	91	110	152	183	223	264	325	370	432	
			VT	75	91	110	152	183	223	264	325	370	432	547	
		Output frequency [Hz]		0 ~ 400 [Hz] (Sensorless-1: 0~300Hz, Sensorless-2, Vector: 0~120Hz)											
		Output voltage [V]		3-phase 380 ~ 480V											
	Input Rating	Input voltage [V]		3-phase 380 ~ 480VAC (-15%, +10%)											
		Input frequency [Hz]		50 ~ 60 [Hz] (±5%)											
		Rated current [A]	CT	55.5	67.9	82.4	102.6	143.4	174.7	213.5	255.6	316.3	404	466	
			VT	67.5	81.7	101.8	143.6	173.4	212.9	254.2	315.3	359.3	463	590	

S300	Model: LSLV□□□□S300-4			300	370	450	550	750	900	1100	1320	1600	1850	2200	
	Applied Motor	Heavy Duty (CT)	[HP]	40	50	60	75	100	125	150	200	250	300	350	
			[kW]	30	37	45	55	75	90	110	132	160	185	220	
		Normal Duty (VT)	[HP]	50	60	75	100	125	150	200	250	300	350	400	
			[kW]	37	45	55	75	90	110	132	160	185	220	250	
	Output Rating	Rated capacity [kVA]	HD	46.5	57.2	69.4	83.8	115.8	139	170	201	248	282	324	
			ND	57.2	69.4	81.5	108.2	128.8	170	201	248	282	329	367	
		Rated current (380~460V)	HD [A]	61	75	91	110	152	183	223	264	325	370	425	
			ND [A]	75	91	107	142	169	223	264	325	370	432	481	
		Rated current (460~480V)	HD [A]	54.9	67.5	81.9	99	136.8	164.7	200.7	237.6	292.5	333	382.5	
			ND [A]	67.5	81.9	96.3	127.8	156	200.7	237.6	292.5	333	388.8	432.9	
		Output frequency		[Hz]	V/F, V/F-SC: 0.01~590 V/F-PG: 0~400 SLVC-IM, SLVC-PM, SVC-IM, SVC-PM: 0~400										
		Output voltage		[V]	3-phase 380~480					3-phase 380~480					
	Input Rating	Input voltage		[V]	3-phase 380~480, -15%~+10%					3-phase 380~480, -15%~+10%					
		Input frequency		[Hz]	56.7 70.1 50/60 ±5% 103.5 146.5					176.3 217.4 50/60 ±5% 362.8 421.6					
		Rated current [A]	HD	56.7	70.1	85.1	103.5	146.5	178.4	217.4	258.9	318.7	367	428.8	
			ND	70.1	85.1	100.7	136.8	162.9	217.4	257.4	318.7	362.8	428.5	485.3	

3. Operator Comparison

iS7



S300

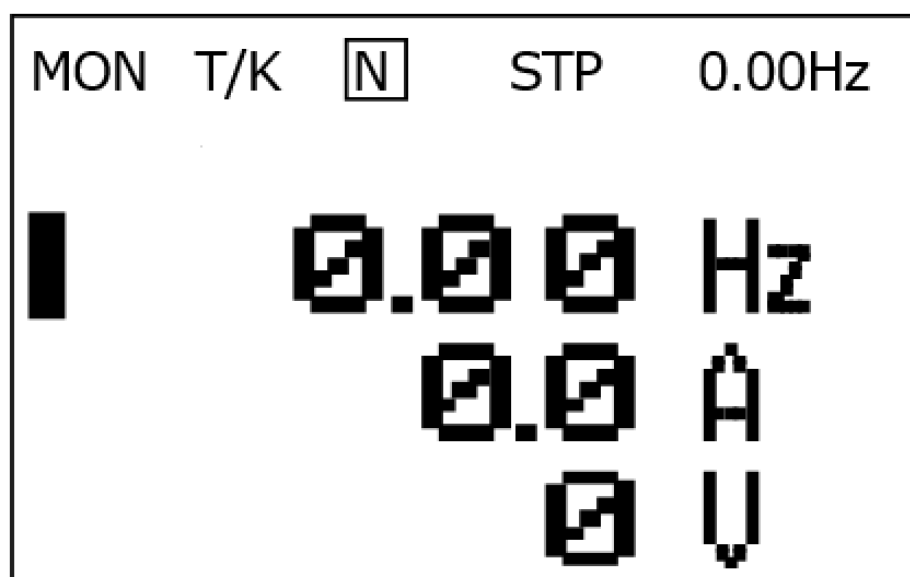


Appearance	Name	Description
	Mode key	Move between each mode group
	Program key	Are used to enter inside each parameter code, and used to save changed data
	Up/Down key	Used when moving codes or editing data values
	Left/Right key	Navigates between groups. Moves the cursor in editing mode.
	Multi key	Used as defined value of CNF42 (JOG, Local/Remote, UserGroup)
	ESC key	1. Is used to escape from changing parameter value 2. Move to code 00 from any other code value 3. Move to the basic monitoring screen
	FWD key	Run on forward direction
	REV key	Run on reverse direction
	Stop/Reset key	1. Stop signal while running 2. Reset fault alarm

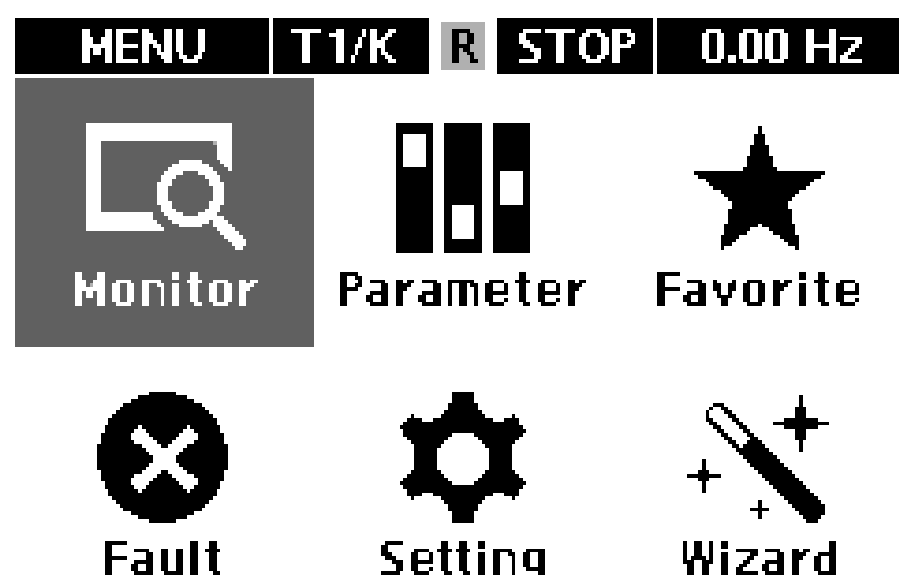
Appearance	Name	Description
	Mode key	Displays the Menu screen.
	Program (Enter) key	By pressing once in the parameter code that can be set, the parameter code enters an editing state, and by pressing again after editing, the modified data will be saved.
	Up/Down key	Used when moving codes or editing data values
	Left/Right key	Navigates between groups. Moves the cursor in editing mode.
	Multi key	Local/Remotes, Keyapd Jog, and Favorite codes can be registered depending on the settings. Refer to the manual (12.1.1 parameter settings for setting mode) for more details.
	Cancel (ESC) key	In editing mode, if you press the Cancel 'ESC' key before pressing the program key, the previously saved data will be retained. Press to navigate to the first code of a group when moving codes within a group.
	FWD key	Operates in the forward direction
	REV key	Operates in the reverse direction
	Stop/Reset key	Operates in the forward direction.

3. Operator Comparison

iS7



S300

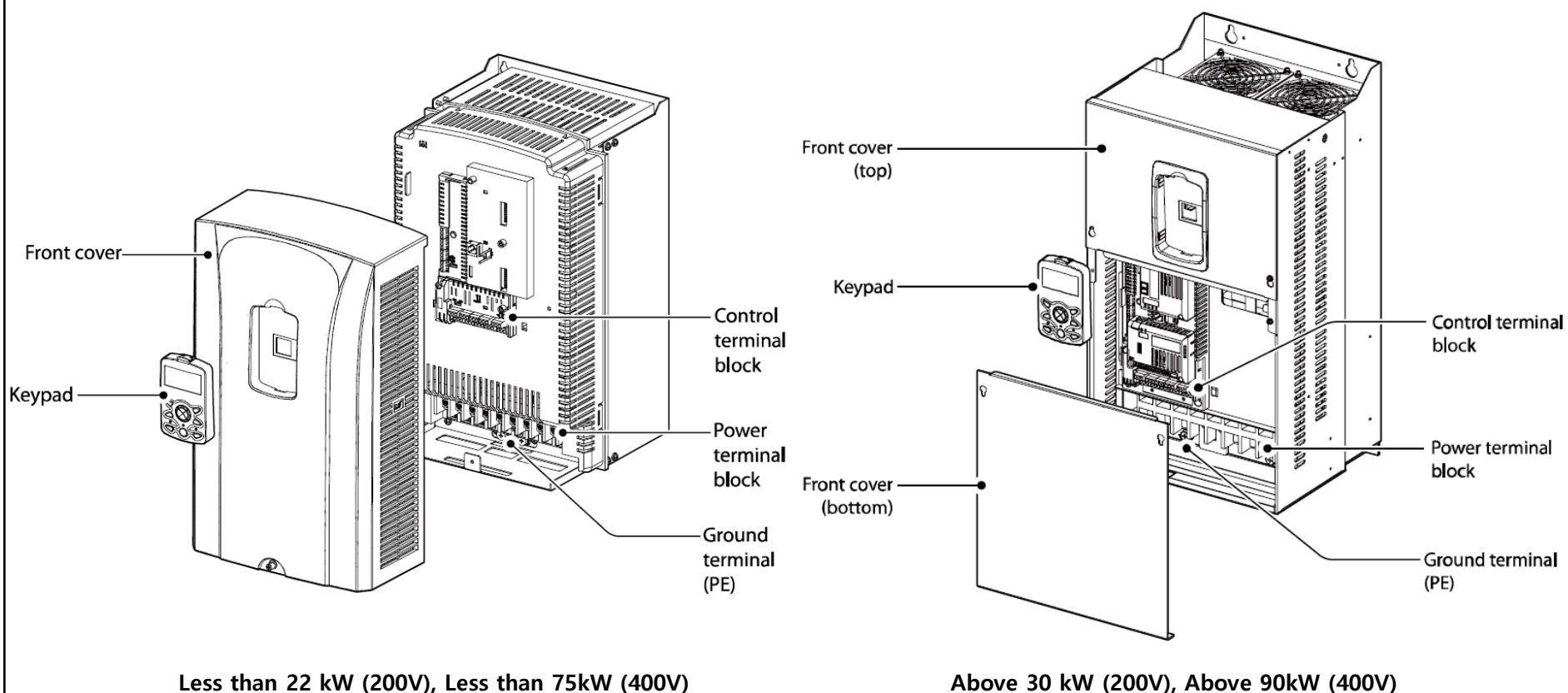


Mode	Screen
Monitor Mode	MON T/K N STP 0.00Hz 0.00 Hz 0.0 A 0 V
Parameter Mode	PAR →DRV N STP 0.00Hz 00 Jump Code 01 Cmd Frequency 02 Cmd Torque
Trip Mode	TRP Last-1 00 Trip Name (1) 01 Output Freq 02 Output Current

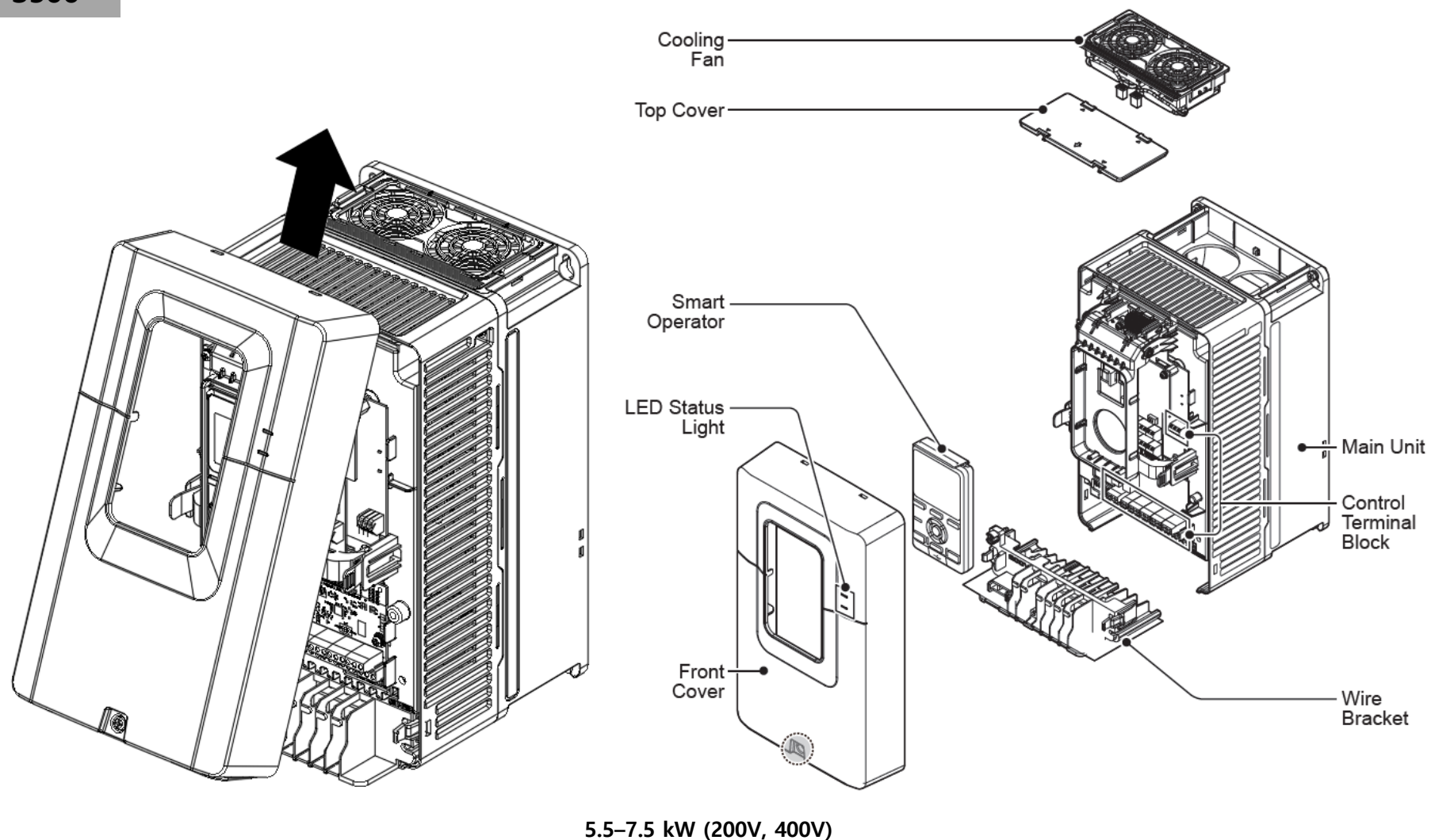
Mode	Screen
Monitor Mode	MONITOR T1/K R STOP 30.00 Hz Frequency 30.00 Hz Output Current 0.0 A Output Voltage 0 V
Parameter Mode	PARAM K/K F STOP 0.00 Hz 01. Command Frequency 05. Acc Time 06. Dec Time 10. 1st Command Source
Trip Mode	HISTORY K/K R TRIP 40.00 Hz 01. Output Frequency 02. Output Current 03. Inverter State

4. Exploded View of the Product

iS7



S300

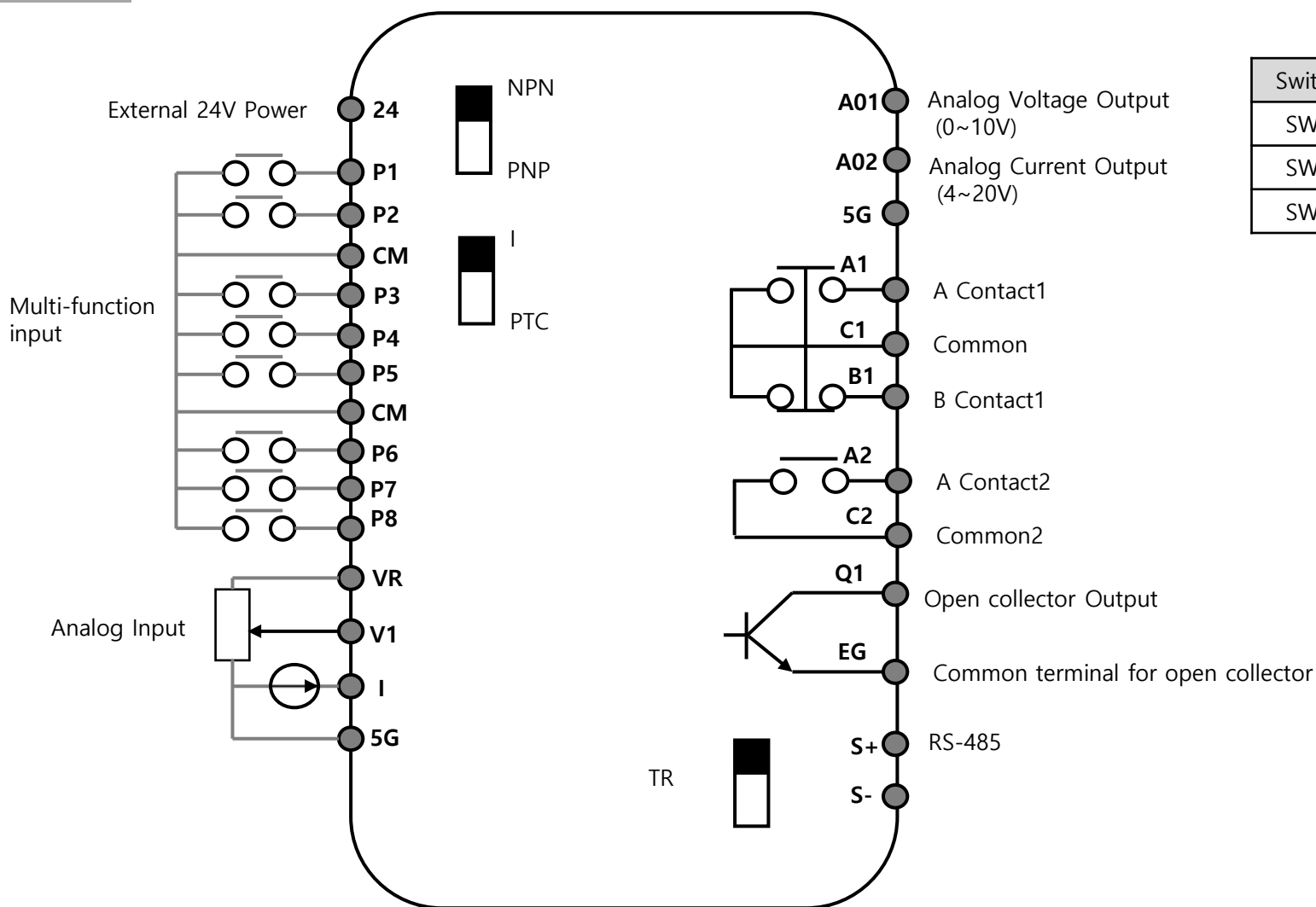


5. Nameplate Comparison

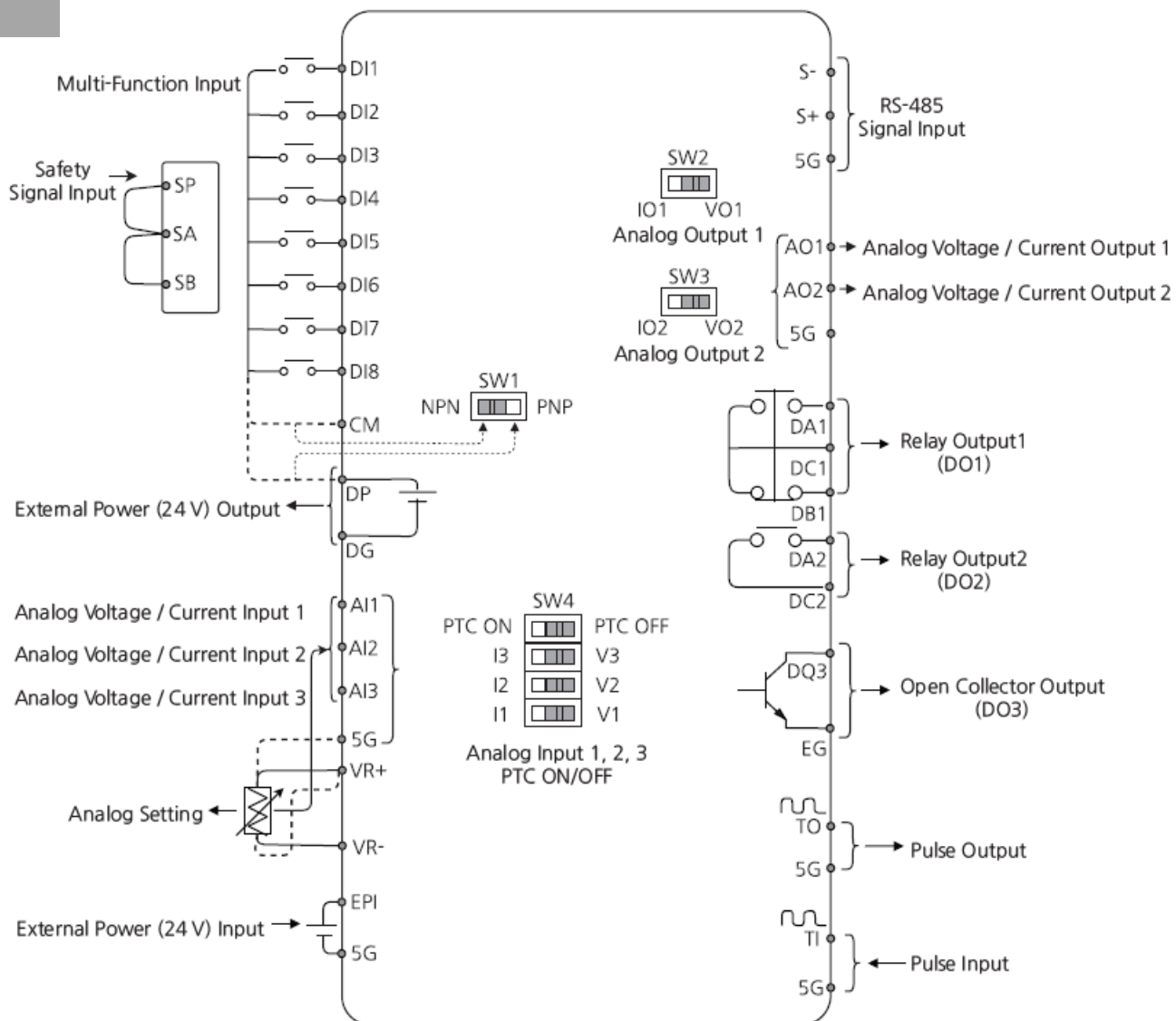
iS7	S300
① → SV0037iS7-2NO ② → INPUT 200-230V 3 Phase 50/60Hz Heavy Duty: 14.9A ③ → OUTPUT 0-Input V 3 Phase 0.01-400Hz Heavy Duty: 16A ④ → 6.1kVA ⑤ → Ser. No 550490600D0 Inspected by K. C. KIM ⑥ → LSIS MADE IN KOREA CE UL LISTED IND. CONT. EQ. 8724	① → LSLV0220S300-2NOFD ② → INPUT 200-240 3Phase 50/60Hz HD:146.5A ND:163A ③ → OUTPUT 0-Input V 3Phase 0.01 - 590Hz (-440V.440V) HD:152/124A ND:169/156A ④ → 116 kVA(D) IP20 ⑤ → QR Code Ser. No 550D130005F Inspected by J.D. PARK ⑥ → LS ELECTRIC MADE IN KOREA
① Model Name	① Model Name
② Input Power Specifications	② Input Power Specifications
③ Output Power Specifications	③ Output Power Specifications
④ Apparent Power	④ Apparent Power
⑤ Barcode and Serial Number	⑤ QR code and Serial Number
⑥ Manufacturer and Country of Origin	⑥ Manufacturer and Country of Origin

6. Terminal Wiring Diagram

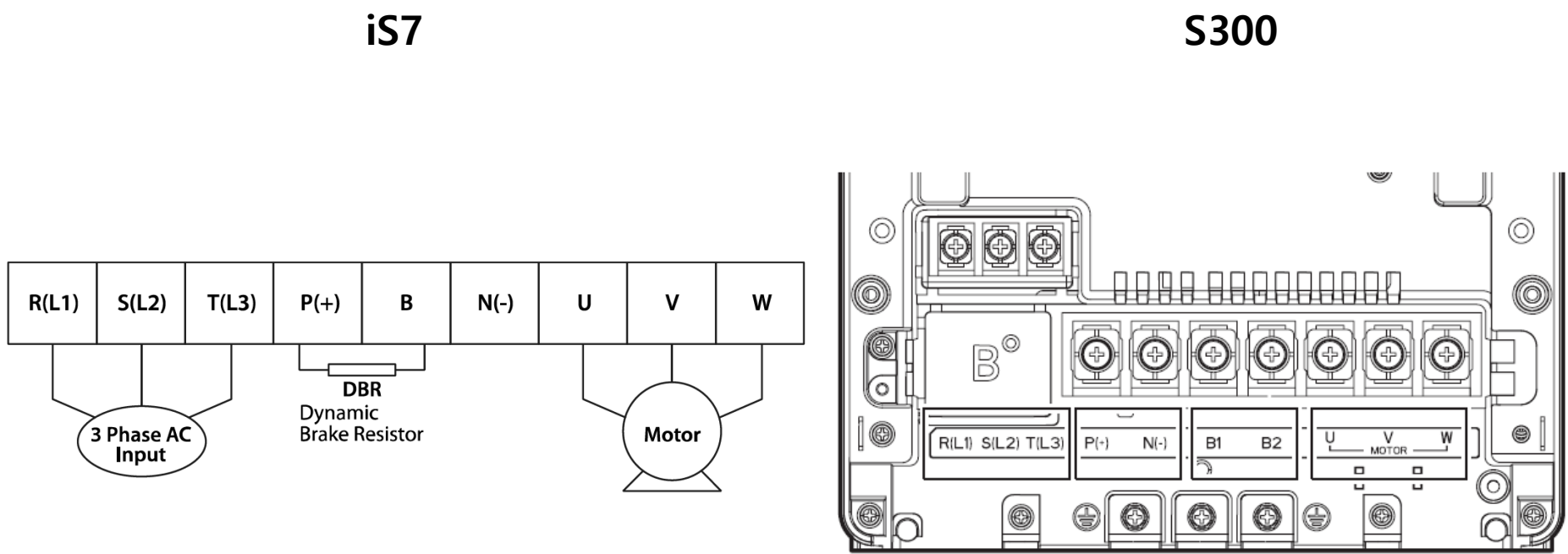
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S300



7-1. Power Terminal Block



iS7	Terminal Labels	Name	Description
	R(L1),S(L2),T(L3)	AC Power input terminal	Mains supply AC power connections
	P(+)	(+) DC link terminal	DC voltage (+) terminal. Connects DC(+) when using DC as inverter power
	N(-)	(-) DC link terminal	DC voltage (-) terminal. Connects DC (-) when using DC as inverter power
	P(+), B	Brake resistor terminal	Connects the brake resistor
	U, V, W	Motor output terminal	Connects a 3-phase motor
S300	Terminal Labels	Name	Description
	R(L1),S(L2),T(L3)	AC Power input terminal	Mains supply AC power connections
	P(+)	(+) DC link terminal	DC voltage (+) terminal. Connects DC(+) when using DC as inverter power
	N(-)	(-) DC link terminal	DC voltage (-) terminal. Connects DC (-) when using DC as inverter power
	B1, B2	Brake resistor terminal	Connects the brake resistor
	U, V, W	Motor output terminal	Connects a 3-phase motor

7-2. Control Terminal Block

Series Name	Terminal Block
iS7	
S300	

Category	iS7	S300
Multi-function Digital input terminals	P1 ~ P8	DI1 ~ DI8
Common terminal	CM	CM
Analog positive (+) voltage reference terminal	VR	VR
Analog voltage input terminal	V1	AI1 ~ AI3(Voltage/Current Selection)
Analog current input terminal	I	AI1 ~ AI3(Voltage/Current Selection)
Multi-function Analog output terminals	AO1,2(1:Voltage, 2:Current)	AO1,2(1, 2 : Voltage/Current Selection)
Multi-function Open collector output	Q1, EG	Q3, EG
다기능 릴레이 출력 Multi-function Relay output	A1/C1/B1, A2/C2	A1/C1/B1, A2/C2
24V Power output	24, CM	DP, DG
Pulse input	Option	TI, 5G
Pulse output	-	TO, 5G
External power input (24V)	Option	EPI, 5G

8-1. Derating (S300)

1. Carrier Frequency Derating by Output frequency	
When Carrier frequency is lower than 2kHz.	When Carrier frequency is higher than 2kHz.
2. Continuous Rated Current Derating by Input Voltage	
200V	400V

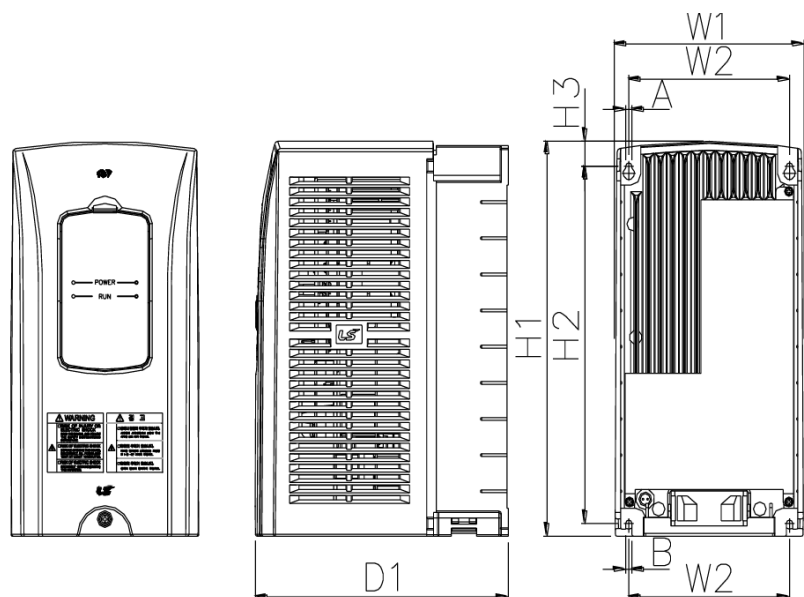
8-2. Current derating for ambient temperature at variable torque (VT) load

Inverter’s continuous rated current is limited depending on ambient temperature, as shown in the graph below.

iS7	S300

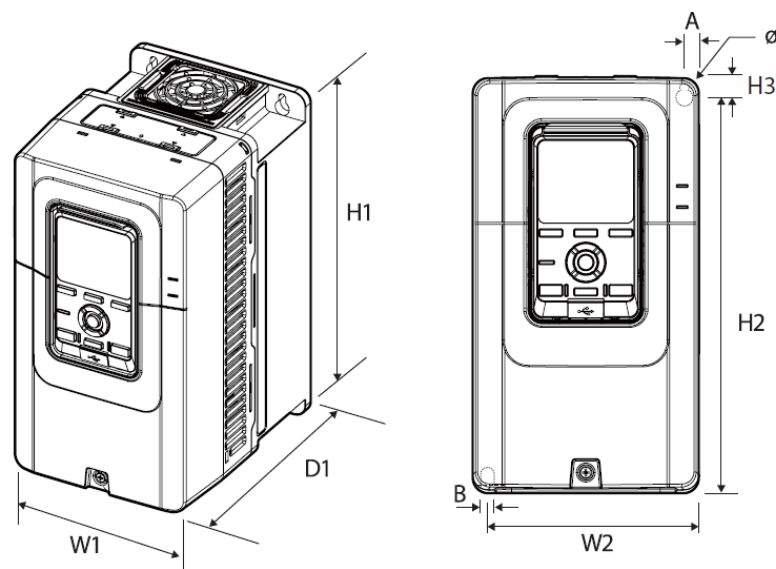
9. External Dimension Comparison

iS7



Model	W1	W2	H1	H2	H3	D1	A	B
SV0008~ 0037iS7-2/4 SV0037/0055iS7-4E	150	127	284	252	18	200	5	5
SV0055/0075iS7-2/4 SV0075/0110iS7-4E	200	176	355	327	19	225	5	5
SV0110/0150iS7-2/4 SV0150/0185iS7-4E	250	214.6	385	355	23.6	284	6.5	6.5
SV0185/0220iS7-2/4 SV0220/0300iS7-4E	280	243.5	461.6	445	10.1	298	6.5	6.5
SV0300 iS7-2	300	190	570	552	10	265.2	10	10
SV0370~ 0450iS7-2	370	270	630	609	11	281.2	10	10
SV300~450iS7-4 SV0370~0550iS7-4E	300.1	242.8	594.1	562	24.1	DCR Type		10
						303.2	161	
						Non DCR Type		
						271.2	129	
SV0550~0750 iS7-2	465	381	750	723.5	15.5	355.6	11	11
SV0055/ 0075iS7-4 SV0750/ 0900iS7-4(E)	370.1	312.8	663.5	631.4	24.1	DCR Type		10
						373.3	211.5	
						Non DCR Type		
						312.4	150.6	
SV0900/ 1100iS7-4 SV1100/ 1320iS7-4E	510	381	350	783.5	759	15.5	422.6	11
SV1320/ 1600iS7-4 SV1600/1850iS7-4E	510	381	350	861	836.5	15.5	422.6	11
SV1850/ 2200iS7-4	690	581	528	1078	1043.5	25.5	450	14
SV2800iS7-4	771	500	500	1138	1110	15	440	13
SV3150/ 3750iS7-4	922	580	580	1302.5	1271.5	15	495	14
SV0008~0037 iS7-2/4	204.2	127	419	257	95.1	208	5	5
SV0055~0075 iS7- 2/4	254	176	460.6	327	88.1	232.3	5	5
SV0110~0150 iS7-2/4	313.1	214.6	590.8	355	101.7	294.4	6.5	6.5
SV0185~0220 iS7-2/4	343.2	243.5	750.8	445	91.6	315.5	6.5	6.5

S300



Model	W1	W2	H1	H2	H3	D1	A	B
LSLV0004S300-4 LSLV0008S300-4 LSLV0015S300-4 LSLV0022S300-4 LSLV0040S300-4 LSLV0004S300-2 LSLV0008S300-2 LSLV0015S300-2 LSLV0022S300-2 LSLV0040S300-2	150	110	276	258	7.6	192	6	6
LSLV0055S300-4 LSLV0075S300-4 LSLV0055S300-2 LSLV0075S300-2	180	158	310	294	8	225	6	6
LSLV0110S300-4 LSLV0150S300-4 LSLV0110S300-2	200	178	355	339	8	225	6	6
LSLV0185S300-4 LSLV0220S300-4 LSLV0150S300-2 LSLV0185S300-2	240	211.6	424	400	10	265	7	7
LSLV0300S300-4 LSLV0370S300-4 LSLV0220S300-2	252	212	500	482.5	10	271	7	7
LSLV0450S300-4 LSLV0300S300-2	300	240	510	488	12.5	298.6	9	9
LSLV0550S300-4 LSLV0750S300-4 LSLV0370S300-2 LSLV0450S300-2	350	290	615	593	12.5	320	9	9
LSLV0900S300-4 LSLV1100S300-4	306.4	240	200	725	688.5	9.5	391	9
LSLV1320S300-4 LSLV1600S300-4 LSLV0550S300-2 LSLV0750S300-2	380	300	724	685.5	9.5	401	9	9
LSLV1850S300-4 LSLV2200S300-4	426	320	920	895.5	15.5	9	438.9	53

10. Comparison of Basic and Application Operation Parameters

Forward/Reverse Rotation Prevention

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
ADV	9	Run Prevent	0	None	ADV	1	Run Prevent Select	0	None
			1	Forward Prev ent				1	Forward Prevent
			2	Reverse Prev ent				2	Reverse Prevent

Power On Run

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
DRV	6	Cmd Source	1	Fx/Rx-1	DRV	10	1st Command Source	1	Fx/Rx-1
			2	Fx/Rx-2				2	Fx/Rx-2
ADV	10	Power-on Run	1	--- yes ----	ADV	2	Power-on Run	0	None
								1	Start Mode
								2	Speed Search

Reset Restart after a trip

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
DRV	6	Cmd Source	1	Fx/Rx-1	DRV	10	1st Command Source	1	Fx/Rx-1
PRT	8	RST Restart	1	--- Yes ----	PRT	5	Reset Restart	0	None
	9	Retry Number	1					1	Start Mode
	10	Retry Delay	1					2	Speed Search
						6	Retry Number	1	
						7	Retry Delay	1	

Acc/Dec time setting based on the maximum frequency

IS7					S300					
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings		
DRV	3	Acc Time	20.0	Below 75k W	DRV	5	Acc Time	20		
			60.0	Above 90k W						
	4	Dec Time	30.0	Below 75k W		6	Dec Time	30		
			90.0	Above 90k W		20	Max Frequency	60		
	20	Max Freq	60.00		BAS	76	Ramp Time Mode	0	Max Frequ ency	
BAS	8	Ramp T Mode	0	Max Freq						
	9	Time scale	1	0.1						

10. Comparison of Basic and Application Operation Parameters

Acc/Dec setting based on the operating frequency

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
DRV	3	Acc Time	-	20	DRV	5	Acc Time	20	
	4	Dec Time	-	30		6	Dec Time	30	
BAS	8	Ramp T Mode	1	Delta Freq	BAS	76	Ramp Time Mode	1	Delta Frequency
						77	Pattern UpdateBand	0.3 Hz	

Multi-stage Acc/Dec time setting with Multifunction terminals

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
DRV	3	Acc Time	20.0	Below 75k W	DRV	5	Acc Time	20	
			60.0	Above 90k W		6	Dec Time	30	
	4	Dec Time	30.0	Below 75k W	BAS	78	Acc Time-1	20	
			90.0	Above 90k W		79	Dec Time-1	20	
BAS	70~82	Acc Time-x	-	x.xx		80	Acc Time-2	30	
	71~83	Dec Time-x	-	x.xx		81	Dec Time-2	30	
IN	65~75	Px Define	11	XCEL-L		82	Acc Time-3	40	
			12	XCEL-M		83	Dec Time-3	40	
			49	XCEL-H		84	Acc Time-4	50	
	89	In Check Time	-	1		85	Dec Time-4	50	
						86	Acc Time-5	60	
						87	Dec Time-5	60	
						88	Acc Time-6	70	
						89	Dec Time-6	70	
						90	Acc Time-7	80	
						91	Dec Time-7	80	
					DIN	01, 03, 05, 07, 09, 11, 13, 15	Dlx Define (Dlx: DI1~DI8)	14	XCEL-L
								15	XCEL-M
								16	XCEL-H
						20	Step DI Check	1	

10. Comparison of Basic and Application Operation Parameters

Switching Acc/Dec time Frequency settings

IS7				S300			
Group	Code	LCD Display	Settings	Group	Code	LCD Display	Settings
DRV	3	Acc Time	10	DRV	5	Acc Time	20
	4	Dec Time	10		6	Dec Time	30
BAS	70	Acc Time-1	20	ADV	55	Acc Change Freq	0
	71	Dec Time-1	20		56	Acc Change Speed	0
ADV	60	Xcel Change Fr	30		57	Acc Change AccTi me	20
					58	Dec Change Freq	0
					59	Dec Change Speed	0
					60	Dec Change DecTi me	20

Acc/Dec S-curve pattern settings

IS7					S300					
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings		
BAS	8	Ramp T mode	0	Max Freq	BAS	66	Acc Pattern	1	S-curve	
ADV	1	Acc Pattern	0	Linear		67	Acc S-Curve Start	40		
	2	Dec Pattern	0	Linear		68	Acc S-Curve End	40		
	3	Acc S Start	40			69	Dec Pattern	1	S-curve	
	4	Acc S End	40			70	Dec S-Curve Start	40		
	5	Dec S Start	40			71	Dec S-Curve End	40		
	6	Dec S End	40					0	Max Frequency	
							76	Ramp Time Mode	1	Delta Frequency
							77	Pattern UpdateBand	0.3	

Linear V/F pattern operation

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
DRV	9	Cotrol Mode	0	V/F	MOT1, MOT2	5	Control Mode	0	V/F
	18	Base Freq	60			15	Start Frequency	0.5	
	19	Start Freq	0.5			16	Start Speed	15	
BAS	7	V/F Pattern	0	Linear		23	Base Frequency	60	
					VF1, VF2	1	V/F Pattern	Linear	

10. Comparison of Basic and Application Operation Parameters

Square Reduction V/F Pattern Operation (loads such as Fan, Pump)

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
BAS	7	V/F Pattern	1	Square 1	VF1, VF2	1	V/F Pattern	1	Square
			3	Square 2				3	Square 2

Manual Torque Boost (In case of a large starting torque is required, such as for lifting)

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
DRV	15	Torque Boost	0	Manual	VF1, VF2	31	Torque Boost Mode	0	Manual
	16	Fwd Boost	2			32	Forward Boost	2	
	17	Rev Boost	2			33	Reverse Boost	2	

Automatic Torque Boost

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
DRV	15	Torque Boost	2	Advanced Auto	VF1, VF2	31	Torque Boost Mode	1	Auto
	16	Fwd Boost	2			34	ATB Mot-Gain	100	
	17	Rev Boost	2			35	ATB Gen-Gain	100	
	26	Adv ATB Filter	100			36	ATB LPF Gain	3	
	27	Adv ATB M Gain	50						
	28	Adv ATB G Gain	50						

Acceleration Start

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
ADV	7	Start mode	0	Acc	BAS	1	Start Mode	0	Acceleration

Start after DC braking

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
ADV	7	Start Mode	1	Dc-Start	BAS	1	Start Mode	1	DC Start
	12	Dc-Start Time	0			3	DC-Start Time	1	
	13	Dc Inj Level	50			4	DC Start Level ¹⁰	50	

10. Comparison of Basic and Application Operation Parameters

Stop mode settings

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
ADV	8	Stop Mode	0	Dec	BAS	2	Stop Mode	0	Deceleration
					MOT1, MOT2	17	Stop Frequency	0 Hz	
						18	Stop Speed	0 RPM	

Stop after DC braking

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
ADV	8	Stop Mode	1	Dc-Brake	BAS	2	Stop Mode	1	DC Brake
	14	Dc-Block Time	0.1			5	DC Brake BlockTime	0.1	
	15	Dc-Brake Time	1			6	DC Brake Time	1	
	16	Dc-Brake Level	50			7	DC Brake Level	50	
	17	Dc-Brake Freq	5			8	DC Brake Frequency	5	

Free Run Stop

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
ADV	8	Stop mode	2	Free-Run	BAS	2	Stop mode	2	Free-Run

Power Braking

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
ADV	8	Stop Mode	4	Power Braking	BAS	2	Stop mode	4	Power Braking
						11	PwrBrk BandWidth	100%	
						12	PwrBrk FluxBrkGain	100%	

Frequency Limit

IS7				S300			
Group	Code	LCD Display	Settings	Group	Code	LCD Display	Settings
DRV	19	Start Freq	0.5	MOT1, MOT2	15	Start Frequency	0.5
	20	Max Freq	60	DRV	20	Max Frequency	60

10. Comparison of Basic and Application Operation Parameters

Limiting Frequency using upper and lower limit

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
ADV	24	Freq Limit	0	--- No ---	ADV	14	Cmd Freq Limit En	1	Yes
	25	Freq Limit Lo	0.5			15	Cmd Freq Limit Lo	0.5	
	26	Freq Limit Hi	60			16	Cmd Freq Limit Hi	60	
	34	Jog Freq Limit	1	----Yes----		19	Jog Freq Limit En	1	Yes

Frequency Jump (To avoid mechanical resonant frequencies)

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
ADV	27	Jump Freq	0	--- No ----	ADV	20	Jump Cmd Freq En	0	No
	28	Jump Lo 1	10			21	Jump Cmd Freq Lo 1	10	
	29	Jump Hi 1	15			22	Jump Cmd Freq Hi 1	15	
	30	Jump Lo 2	20			23	Jump Cmd Freq Lo 2	20	
	31	Jump Hi 2	25			24	Jump Cmd Freq Hi 2	25	
	32	Jump Lo 3	30			25	Jump Cmd Freq Lo 3	30	
	33	Jump Hi 3	35			26	Jump Cmd Freq Hi 3	35	
				27		Jump Cmd Speed Lo1	300		
				28		Jump Cmd Speed Hi1	450		
				29		Jump Cmd Speed Lo2	600		
				30		Jump Cmd Speed Hi2	750		

Jog Operation by Terminal Block 1- Jog Mode

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
DRV	11	JOG Frequency	10		DRV	15	Jog Frequency	10	
	12	JOG Acc Time	20			16	Jog Speed	300	
	13	JOG Dec Time	30			17	Jog Acc Time	20	
IN	65~75	Px Define	6	JOG		18	Jog Dec Time	30	
					DIN	01, 03, 05, 07, 09, 11, 13, 15	Dlx Define (Dlx: DI1~DI8)	9	JOG

10. Comparison of Basic and Application Operation Parameters

Jog Operation by Terminal Block 2-Forward / Reverse Jog

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
DRV	11	JOG Frequency	10		DRV	15	Jog Frequency	10	
	12	JOG Acc Time	20			16	Jog Speed	300	
	13	JOG Dec Time	30			17	Jog Acc Time	20	
IN	65~75	Px Define	46	FWD JOG		18	Jog Dec Time	30	
	65~75	Px Define	47	REV JOG	DIN	01, 03, 05, 07, 09, 11, 13, 15	Dlx Define (Dlx: DI1~DI8)	35	Forward JOG
								36	Reverse JOG

Jog Operation with Smart Operator

iS7						S300					
Mode	Group	Code	LCD Display	Settings		Mode	Group	Code	LCD Display	Settings	
CNF	-	42	Multi-Key Sel	1	JOG Key	Setting	Operator Set	15	Multi Key Select	1	JOG Key
PAR	DRV	6	Cmd Source	0	Keypad	PAR	DRV	15	Jog Frequency	10	
		11	JOG Frequency	10				16	Jog Speed	300	
		12	JOG Acc Time	20			DRV	17	Jog Acc Time	20	
		13	JOG Dec Time	30				18	Jog Dec Time	30	

3-Wire Operation

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
DRV	6	Cmd Source	1	Fx/Rx - 1	DRV	10	1st Command Source	3	3-WIRE
IN	65~75	Px Define	14	3-Wire	DIN	01, 03, 05, 07, 09, 11, 13, 15	Dlx Define (Dlx: DI1~DI8)	19	3-WIRE

10. Comparison of Basic and Application Operation Parameters

Safe Operation Mode

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
ADV	70	Run En Mode	1	DI Depend ent	ADV	70	Run Enable	1	Yes
	71	Run Dis Stop	0	Free-Run		71	Run Disable Stop	0	Free-Run
	72	Q-Stop Time	-	5		72	Quick Stop Time	5	
IN	65~75	Px Define	13	Run Enable	DIN	01, 03, 05, 07, 09, 11, 13, 15	Dlx Define (Dlx: DI1~DI8)	18	Run Enable

Dwell Operation

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
ADV	20	Acc Dwell Fre q	-	5	ADV	5	AccDwell Frequen cy	5	시작 주파수~ Max Frequen cy
	21	Acc Dwell Tim e	-	0		6	AccDwell Speed	150	0~1800
	22	Dec Dwell Fre q	-	5		7	AccDwell Time	0	0~60.0
	23	Dec Dwell Ti me	-	0		8	DecDwell Frequen cy	5	시작 주파수~ Max Frequen cy
						9	DecDwell Speed	150	0~1800
						10	DecDwell Time	0	0~60.0

Speed Search Operation

IS7					S300				
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings	
CON	70	SS Mode	0	Flying Start-1	APP	5	SpeedSearch Mo de	0	Current Dete ct
	71	Speed Search	-	0		6	SS Block Time	1	
	72	SS Sup-Curre nt	-	Below 75kW Above 90kW		7	SS Sup-Current	90%	
	73	SS P-Gain	-	100		9	SS Bandwidth	100%	
	74	SS I-Gain	-	200		10	PM SS Curr Peak	15%	
Out	31~32	Relay 1, 2	19	Speed Search	OUT	50, 52, 54	DOx Define (DOx: DO1~DO3)	19	Speed Searc h
	33	Q1 Define							

10. Comparison of Basic and Application Operation Parameters

Slip Compensation

IS7					S300					
Group	Code	LCD Display	Settings		Group	Code	LCD Display	Settings		
DRV	9	Control Mode	2	Slip Compen	MOT1, MOT2	4	Motor Type	0	Induction Motor	
	14	Motor Capacity	2	0.75 (Based on 0.75kW)		5	Control Mode	1	Slip Comp.	
BAS	11	Pole Number	4		VF1, VF2	21	Slip Comp Mode	0	Basic Comp.	
	12	Rated Slip	90 (Based on 0.75kW)					1	Advanced Comp.	
	13	Rated Curr	3.6 (Based on 0.75kW)			22	SlipGain Mot-Low	100		
	14	Noload Curr	1.6 (Based on 0.75kW)			23	SlipGain Mot-High	100		
	16	Efficiency	72 (Based on 0.75kW)			24	SlipGain Gen-Low	100		
	17	Inertia Rate	0 (Based on 0.75kW)			25	SlipGain Gen-High	100		
ADV	92	SlipGain Mot-H	50			26	SlipComp LPF Gain	300		
	93	SlipGain Gen-H	50			27	SlipGain SwOv Freq	9		
	94	SlipGain Mot-L	50							
	95	SlipGain Gen-L	50							
	96	Slip Filter	300							
	97	Slip Comp Freq	5							
	98	Slip Gain Freq	9							

11-1. I/O Wiring Specification (1)

Comparison of Wire Gauge and Bolt Size (200V)

iS7	Wire				
	mm ²		AWG or kcmil		Bolt
	R,S,T	U,V,W	R,S,T	U,V,W	R,S,T U,V,W
0.75 kW	2.5	2.5	14	14	M4
1.5 kW	2.5	2.5	14	14	
2.2 kW	2.5	2.5	14	14	
3.7 kW	4	4	12	12	
5.5 kW	6	6	10	10	
7.5 kW	10	10	8	8	
11 kW	16	16	6	6	M6
15 kW	25	25	4	4	
18.5 kW	35	35	2	2	M8
22 kW	50	50	1	1	
30 kW	70	70	1/0	1/0	M8
37 kW	95	95	2/0	2/0	M8
45 kW	95	95	2/0	2/0	M8
55 kW	120	120	3/0	3/0	M10
75 kW	150	150	4/0	4/0	M10

S300	Wire					
	mm ² (AWG)		AWG		Bolt	
	R/S/T	U/V/W	R/S/T	U/V/W	R/S/T	U/V/W
0.4 Kw	1.5	1.5	20	18	M3.5	M3.5
0.8 Kw	1.5	1.5	16	14	M3.5	M3.5
1.5 Kw	1.5	1.5	14	12	M3.5	M3.5
2.2 Kw	1.5	2.5	12	10	M3.5	M3.5
4.0 Kw	2.5	4	10	10	M3.5	M3.5
5.5 Kw	4	6	8	8	M4	M4
7.5 Kw	10	10	8	6	M4	M4
11 Kw	16	16	6	4	M5	M5
15 Kw	25	25	4	3	M5	M5
18 Kw	25	35	3	2	M5	M5
22 Kw	50	50	1	1/0	M6	M6
30 Kw	70	70	2/0	2/0	M8	M8
37 Kw	95	95	3/0	4/0	M8	M8
45 Kw	120	150	250	300	M8	M8
55 kW	95x2	95x2	3/0x2	4/0x2	M12	M12
75 Kw	120x2	120x2	250x2	250x2	M12	M12

11-1. I/O Wiring Specification (2)

Comparison of Wire Gauge and Bolt Size (400V)

iS7	Wire				
	mm ²		AWG or kcmil		Bolt
	R,S,T	U,V,W	R,S,T	U,V,W	R,S,T U,V,W
0.75~1.5kW	2.5	2.5	14	14	M4
2.2 kW	2.5	2.5	14	14	
3.7 kW	2.5	2.5	14	14	
5.5 kW	4	2.5	12	14	
7.5 kW	4	4	12	12	
11 kW	6	6	10	10	M5
15 kW	10	10	8	8	
18.5 kW	16	10	6	8	M6
22 kW	25	16	4	6	
30 kW	25	25	4	4	M8
37 kW	25	35	4	2	
45 kW	50	50	1	1	
55 kW	70	70	1/0	1/0	
75 kW	95	95	2/0	2/0	
90 kW	100	100	4/0	4/0	M12
110 kW	100	100	4/0	4/0	
132 kW	150	150	300	300	
160 kW	200	200	400	400	
185 kW	200	200	400	400	M12
220 kW	250	250	500	500	M12
280 kW	325	325	650	650	M12
315 kW	2x200	2x200	2x400	2x400	M12
375 kW	2x250	2x250	2x500	2x500	M12

S300	Wire					
	mm ² (AWG)		AWG		Bolt	
	R/S/T	U/V/W	R/S/T	U/V/W	R/S/T	U/V/W
0.4 Kw	1.5	1.5	22	20	M3.5	M3.5
0.8 Kw	1.5	1.5	20	18	M3.5	M3.5
1.5 Kw	1.5	1.5	18	14	M3.5	M3.5
2.2 Kw	1.5	1.5	16	14	M3.5	M3.5
4 Kw	1.5	1.5	14	12	M3.5	M3.5
5.5 Kw	2.5	2.5	12	10	M4	M4
7.5 Kw	4	4	10	8	M4	M4
11 Kw	6	6	8	8	M4	M4
15 Kw	10	10	8	8	M4	M4
18 Kw	10	10	6	6	M5	M5
22 Kw	16	16	4	4	M5	M5
30 Kw	25	25	3	3	M5	M6
37 Kw	35	35	2	2	M5	M6
45 Kw	50	50	1	1/0	M8	M8
55 Kw	70	70	2/0	3/0	M8	M8
75 Kw	95	95	4/0	4/0	M8	M8
90 Kw	70x2	70x2	2/0x2	2/0x2	M8	M8
110 Kw	95x2	95x2	3/0x2	3/0x2	M8	M8
132 Kw	120x2	120x2	4/0x2	250x2	M12	M12
160 Kw	150x2	150x2	300x2	300x2	M12	M12
185 Kw	185x2	185x2	350x2	400x2	M12	M12
220 Kw	185x2	185x2	350x2	400x2	M12	M12

11-2. Control Terminal Block Wiring Specification

iS7 Terminals		Wire Gauge
Terminal Label	Name	mm ² (AWG)
P1~P8	Digital input terminals 1~8	0.33~1.25mm ² (16~22 AWG)
CM	Common terminal	
VR+	Analog positive (+) voltage reference terminal	
VR-	Analog positive (-) voltage reference terminal	
V1	Analog voltage input terminal	
I1	Analog current input terminal	
AO1	Analog voltage output terminal	0.33~2.0mm ² (14~22 AWG)
AO2	Analog current output terminal	
5G	Analog common terminal	
Q1	Multi-function terminal (Open collector)	
EG	Common terminal for open collector	
24	24V Power source	0.33~1.25mm ² (16~22 AWG)
CM	24V common	
A1	Multi-function relay output 1 (NO contact)	0.33~2.0mm ² (14~22 AWG)
B1	Multi-function relay output 1 (NC contact)	
C1	Common for fault signal output 1	
A2	Multi-function relay output 2 (NO contact)	
C2	Common for Multi-function relay output 2	
S+,S-	RS485 signal line	0.75mm ² (18AWG),
CM	RS485 common	

S300 Terminals		Wire Gauge
Terminal Label	Name	mm ² (AWG)
DI1~DI8	Digital input terminals 1~8	0.33~2.0mm ² (14~22 AWG)
CM	Common terminal	
VR+	Analog positive (+) voltage reference terminal	0.33~1.25mm ² (16~22 AWG)
VR-	Analog positive (-) voltage reference terminal	
AI1, AI2, AI3	Analog voltage input terminal	
	Analog current input terminal	
AO1, AO2,	Analog voltage output terminal	
	Analog current output terminal	
5G	Analog common terminal	0.75mm ² (18AWG)
EPI	24V Power source	0.33~1.25mm ² (16~22 AWG)
5G	24V common	0.75mm ² (18AWG)
DA1, DB1, DC1	Multi-function relay output 1 (NO, NC contact)	0.33~2.0mm ² (14~22 AWG)
DA2, DC2,	Multi-function relay output 2 (NO contact)	
DQ3, EG	Multi-function terminal (Open collector)	
S+,S-	RS485 signal line	0.75mm ² (18AWG)
5G	RS485 common	
DP	Digital power output terminal	0.33~2.0mm ² (14~22 AWG)
DG	Digital ground terminal	
SP	Safety power output terminal	0.33~2.0mm ² (14~22 AWG)
SA	Safety input terminal (NO contact)	
SB	Safety input terminal (NC contact)	
PTI	Pulse input	0.33~1.25mm ² (16~22 AWG)
PTO	Pulse output	