iS7

Multi-purpose Inverter for 3-phase motors
0.75 to 375KW; 400V, 3-ph input

- All models dual-rated for CT or VT use
- V/F, open or closed loop vector operation
- Energy saving DC reactor built-in as standard
- EMC filters built-in as standard (to 22kW)
- Brake chopper built-in (to 22kW)
- IP21(IP00>90kW) standard, IP54 option
- Full 50°C operation
- Easy-start, User and macro group support
- Internal PLC option card with RTC
- Auto-torque balancing (droop control)
- Kinetic Energy Buffering at power loss
- 150MIPS (million instructions per second) hi-speed DSP
- Constant Torque (CT) overload rating 150%/60s, 200%/0.5s
- Closed-loop encoder option card (1000:1 speed control range)
- Profi bus-DP, DeviceNet, CANopen, Lon-Works, Modbus-TCP options
- PID control with sleep function as standard
- Multi-function, multi-language backlit LCD keypad loader
- Keypad in English, Italian, Spanish, Turkish or Russian
- Free 'DriveView' drive set-up and monitoring PC software
- Gland plate options
- CE, UL and cUL approved
- Available from stock

Part number information

SV #### iS7 - 4 N O F D

- LS inverter series:
- Capacity code*
- Model type:
- Input voltage: 2: 200V 3-ph; 4: 400V 3-ph
- DC reactor: Blank: No DCR fitted;
- EMC filter: Blank: Unfiltered; F: Filter fitted
- Protection degree: O: IP21; P: IP54
- LCD Loader: N: No keypad fitted; S: Keypad fitted

*Examples: 0022 = 2.2KW
0220 = 22KW
2200 = 220KW

Type: SV □ □ □ □ iS7-4 □			0008	0015	0022	0037	0055	0075	0110	0150	0185	0220
Applied Motor		HP	1	2	3	5	7.5	10	15	20	25	30
		KW	0.75	1.5	2.2	3.7	5.5	7.5	10	15	18.5	22
Output	Rated Capacity (KVA)		1.9	3.0	4.5	6.1	9.1	12.2	18.3	22.9	29.7	34.3
	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
	Frequency (Hz)		0.1 - 400									
	Voltage (V)		3-phase 380 - 480 AC									
Input	Frequency (Hz)		50 - 60Hz (+/- 5%)									
	Voltage (V)		3-phase 380 - 480 AC (-15%, +10%)									
	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	40.1	55.7

** Typical full load input currents are shown for integrated DCR models*

Type: SV □ □ □ □ iS7-4 □			0300	0370	0450	0550	0750	0900	1100	1320	1600	1850	2200	2850	3150	3750
Applied Motor		HP	40	50	60	75	100	120	150	180	225	250	300	375	420	500
		KW	30	37	45	55	75	90	110	132	160	185	220	285	315	3750
Output	Rated Capacity (KVA)		46	57.0	69	84	116	139	170	201	248	286	329	416	467	557
	Current (A)	CT	61	75	91	110	152	183	223	264	325	370	432	547	613	731
		VT	75	91	110	152	183	223	264	325	370	432	547	613	731	877
	Frequency (Hz)		0.1 - 400 (Sensorless 1: 0 - 300) (Sensorless 2: 0 - 120)													
	Voltage (V)		3-phase 0 - V input AC													
Input	Frequency (Hz)		50 - 60Hz (+/- 5%)													
	Voltage (V)		3-phase 380 - 480 AC (-15%, +10%)													
	Current (A)	CT	55.5	67.9	82.4	102.6	143.6	174.7	213.5	255.6	316.3	404	466	605	674	798
		VT	67.5	81.7	101.8	143.6	173.4	212.9	254.2	315.3	359.3	463	590	673	796	948

** Typical full load input currents are shown for integrated DCR models*

LS Industrial Systems
New Name of LG Industrial Systems

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Multi-purpose Inverter for 3-phase motors
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Specification

Operating Method		Selectable among keypad/terminal block/communication operation	
Frequency Setting		Analog: 0 ~ 10[V], -10 ~ 10[V], 0 ~ 20[mA], 4 ~ 20[mA] Digital: keypad	
Operating Function		PID control, up-down operation, 3-wire operation, DC brake, frequency limit, frequency jump, second function, slip compensation, reverse rotation prevention, auto restart, inverter by-pass, auto tune flying start, energy buffering, power braking, flux braking, leakage current reduction, MMC, easy start	
Input	Multi-function terminal (8 points) P1 ~ P8	NPN / PNP selectable	
		Function: forward operation; reverse operation; reset; external trip; emergency stop; jog operation; sequential frequency-high; medium and low; multi-level acceleration and deceleration-high; medium and low; D.C. control during stop; selection of a second motor; frequency increase; frequency decrease; 3-wire operation; change to general operation during PID operation; main body operation during option operation; analog command frequency fixation; acceleration and deceleration stop selectable	
Output	Multi-function open collector terminal	Inverter fault output	Below DC 24V 50mA
	Multi-function relay terminal		Below (N.O., N.C.) AC250V 1A, Below DC 30V 1A
	Analog output	0 ~ 10 Vdc (below 10mA): selectable from frequency, current, voltage, direct current voltage	

Control

Control Method	V/F control, V/F PG, slip compensation, sensorless vector, vector control
Frequency Setting Resolution	Digital command: 0.01Hz Analogue command: 0.06Hz (at F max = 60Hz)
Frequency Tolerance	Digital command operation: 0.01% of maximum frequency Analogue command operation: 0.1% of maximum frequency
V/F Pattern	Linear, double reduction, user specified V/F
Overload Capacity	CT (heavy duty): 150% x 60 seconds. VT (normal duty): 110% x 60 seconds
Torque Boost	Manual or Automatic (selectable)

Protection Functions

Trip	Over voltage, low voltage, over current, earth current detection, inverter over heat, motor over heat, overload, broken belt detection (light load), encoder error, over speed, tuning error, command loss, hardware failure, I/O phase loss, cooling fan failure, pre-PID failure,
Alarm	Stall prevention, overload, broken belt (light load), encoder error, fan failure, keypad command loss, speed reference loss
Instantaneous interruption	CT operation: < 15mS continuous operation, > 15mS auto-restart VT operation: < 8mS continuous operation, > 8mS auto-restart (at rated input voltage and within rated output current)

Structure & Use Environment

Cooling	0.75 to 22KW (400V): Forced air cooling 30 to 375KW (400V): Forced air with inhalation
Protection	0.75KW to 22KW: IP21 (UL Type 1 with gland box installed) 90KW to 375KW: IP00 0.75KW to 22KW: IP54 optional models (UL Type 12)
Ambient operating temperature	CT operation (Heavy duty): -10°C to +50°C (no ice) VT operation (Normal duty): -10°C to +40°C (no ice) VT operation at 50°C: reccommended maximum load is reduced to 80% IP54 models: -10°C to +40°C (no ice)
Storage temperature	-20°C to +65°C
Humidity	Below 90% RH - no dew formation
Altitude	< 1000m
Vibration	< 9.8 m/sec^2 (1G)
Environment	Pollution Degree 2 No corrosive substances, metallic particles, flammable gas, oil mist or dust
Applied Standards	EN50178 (1997); EN6100-3 (2004); EN55011/A2 (2003); EN61000-4-2/A2 (2001); EN61000-4-3/A2 (2004); EN6100-4-4/A2 (2002); EN61000- 4-5/A1 (2001); EN61000-4-6/A1 (2001); CEI/TR 61000-2-1 (1990); EN61000-2-2 (2003); EN61000-2-4 (1997); EN60146-1-1/A1 (1998)

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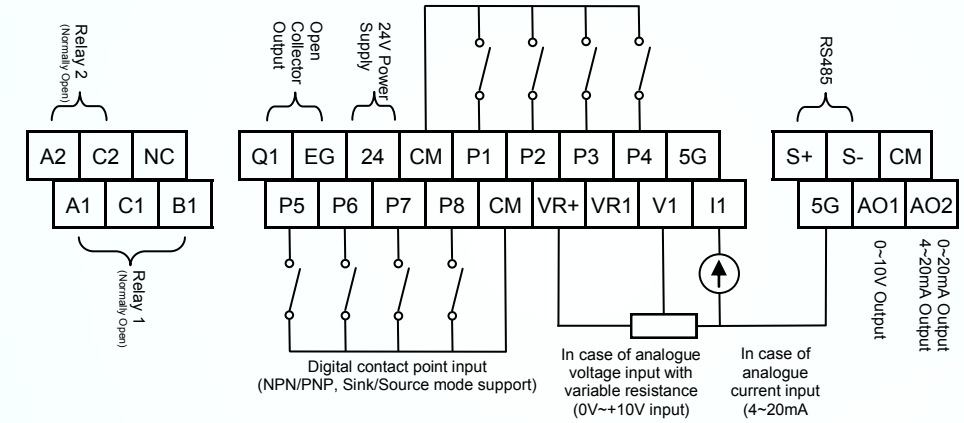
Control terminals & connections



TR terminal is RS485 communication terminal resistor (120Ω)
We recommend $^{1}/_{2}$ watt 1kΩ potentiometer

Type		Terminal Symbol	Terminal Name	Terminal Description
Inputs	Digital	P1 - P8		User programmable inputs, logic selectable as SINK or SOURCE type.
		CM	0V Digital Common terminals	Common terminals for use with multi-function inputs P1 - P8 above.
	Analogue	VR(+)	Frequency setting power	+10VDC (nom) power supply for potentiometer, etc. Max load = 100mA
		VR(-)	Frequency setting power	-10VDC (nom) power supply for Bi-polar operation, etc. Max load = 100mA
		V1	Frequency setting input	Connect potentiometer wiper or 0 - +10V speed reference from external source. Input Z = 20KΩ
		I1	Frequency setting input	Connect analogue current input 0(4)-20mA signal from external source. Input Z = 249Ω
		5G	Frequency setting common terminal	0V Common terminal for use with 0 - 10VDC or 0(4)-20mA analogue speed reference inputs
Outputs	Digital	AO1	Multi-function voltage output	0-10VDC selectable to represent frequency, motor current or voltage, etc. Max load = 10mA
		AO2	Multi-function current output	0-20mA / 4 -20mA DC selectable to represent frequency, motor current or voltage, etc. Max load = 20mA
		Q1	Multi-function transistor output	Open Collector 26VDC max. Max load = 100mA.
		EG	Common terminal for Q1	Common terminal for open collector output.
		24	I/O power supply	+24VDC (nom) power for supplying digital input and output circuits etc. Max load = 150mA
		A1 B1 C1	Multi-function c/o relay 1 output	Programmable for fault general event output. Max load = 1A at 250VAC or 1A at 30VDC. Normal state is B1 to C1 closed with power ON
		A2 C2	Multi-function s/t relay 2 output	User defined output relay. Max load = 5A at 250VAC or 5A at 30VDC
		S+, S-, CM	RS-485	Connections for RS-485 communications

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Dimensions and Weights - IP21 type

Inverter model	W [mm]	H [mm]	D [mm]	EMC & DCL Weight [Kg]	EMC Only Weight [Kg]	DCL Only Weight [Kg]	Non-EMC & DCL Weight [Kg]
SV0008iS7-4	150	284	200	5.5	4.5	5.0	4.5
SV0015iS7-4	150	284	200	5.5	4.5	5.0	4.5
SV0022iS7-4	150	284	200	5.5	4.5	5.0	4.5
SV0037iS7-4	150	284	200	5.5	4.5	5.0	4.5
SV0055iS7-4	200	355	225	10.0	8.4	9.3	7.7
SV0075iS7-4	200	355	225	10.0	8.4	9.3	7.7
SV0110iS7-4	250	385	284	20.0	17.2	16.8	14.0
SV0150iS7-4	250	385	284	20.0	17.2	16.8	14.0
SV0185iS7-4	280	461.6	298	27.4	23.5	23.3	19.7
SV0220iS7-4	280	461.6	298	27.4	23.5	23.5	20.1
SV0300iS7-4	300	594.1	303.2	-	-	41	28
SV0370iS7-4	300	594.1	303.2	-	-	41	28
SV0450iS7-4	300	594.1	303.2	-	-	41	28
SV0550iS7-4	370	663.5	373.3	-	-	63	45
SV0750iS7-4	370	663.5	373.3	-	-	63	45
SV0900iS7-4	510	784	422.6	-	-	101	-
SV1100iS7-4	510	784	422.6	-	-	101	-
SV1320iS7-4	510	784	422.6	-	-	101	-
SV1600iS7-4	510	784	422.6	-	-	114	-
SV1850iS7-4	690	1078	450	-	-	200	-
SV2200iS7-4	690	1078	450	-	-	200	-
SV2800iS7-4	771	1138	440	-	-	-	252
SV3150iS7-4	922	1302.5	495	-	-	-	352
SV3750iS7-4	922	1302.5	495	-	-	-	352

Dimensions and Weights - IP54 type

Inverter model	W [mm]	H [mm]	D [mm]	EMC & DCL Weight [Kg]	EMC Only Weight [Kg]	DCL Only Weight [Kg]	Non-EMC & DCL Weight [Kg]
SV0008iS7-4	204.2	419	208	-	7.2	-	6.7
SV0015iS7-4	204.2	419	208	-	7.2	-	6.7
SV0022iS7-4	204.2	419	208	-	7.2	-	6.7
SV0037iS7-4	204.2	419	208	-	7.2	-	6.7
SV0055iS7-4	254	460.6	232.3	-	10.2	-	9.5
SV0075iS7-4	254	460.6	232.3	-	10.3	-	9.6
SV0110iS7-4	313.1	590.8	294.4	-	22.8	-	19.6
SV0150iS7-4	313.1	590.8	294.4	-	23.1	-	19.9
SV0185iS7-4	343.2	750.8	315.5	-	31	-	27.1
SV0220iS7-4	343.2	750.8	315.5	-	31	-	27.1

Note: All weights and dimensions exclude packaging