

# Specifications

## Ratings, Characteristics, and Functions

Item	Power rating		120 W	240 W
	Output voltage		24 V	24 V
Efficiency	3-phase, 400 VAC input *11		89% typ.	89% typ.
Input	Voltage range *1		3-phase, 380 to 480 VAC (allowable range: 320 to 576 VAC) 2-phase, 380 to 480 VAC (allowable range: 340 to 576 VAC) 450 to 600 VDC (allowable range: 450 to 810 VDC) *8	
	Frequency *1		50/60 Hz (47 to 63 Hz)	
	Current	3-phase, 400 VAC input *11	0.38 A typ.	0.69 A typ.
	Power factor		-	
	Leakage current	3-phase, 400 VAC input	3.5 mA max./1.3 mA typ.	
	Inrush current (for a cold start at 25°C) *2	3-phase, 400 VAC input	28 A typ.	29 A typ.
Output	Rated output current		5 A	10 A
	Boost current		6 A	12 A
	Voltage adjustment range *3		22.5 to 29.5 VDC (with V.ADJ) (guaranteed)	
	Ripple & Noise voltage *4	3-phase, 400 VAC input *11	160 mV p-p max. at 20 MHz of bandwidth	190 mV p-p max. at 20 MHz of bandwidth
	Input variation influence *13		0.5% max.	
	Load variation influence *12		1.5% max.	
	Temperature variation influence	3-phase, 400 VAC input	0.05%/°C max.	
	Start up time *2	3-phase, 400 VAC input *11	700 ms typ.	600 ms typ.
Hold time *2	3-phase, 400 VAC input *11	30 ms typ.	20 ms typ.	
Additional functions	Overload protection		Yes, automatic reset	Yes, automatic reset
	Overvoltage protection		Yes, 130% or higher of rated output voltage, power shut off (shut off the input voltage and turn on the input again) *5	
	Series operation		Yes (For up to two Power Supplies, external diodes are required.)	
	Parallel operation		Yes (Refer to Engineering Data) (For up to two Power Supplies)	
	Output indicator		Yes (LED: Green), lighting from 80% to 90% or more of rated voltage	
Insulation	Withstand voltage		3.0 kVAC for 1 min. (between all input terminals and output terminals) cutoff current 20 mA 2.5 kVAC for 1 min. (between all input terminals and PE terminal) cutoff current 20 mA 1.0 kVAC for 1 min. (between all output terminals and PE terminal) cutoff current 30 mA	
	Insulation resistance		100 MΩ min. (between all output terminals and all input terminals / PE terminal) at 500 VDC	
Environment	Ambient operating temperature		-40 to 70°C (However, only startup is guaranteed for between -40°C to -25°C. (3-phase only)) (Derating is required according to the temperature.) (with no condensation or icing)	
	Storage temperature		-40 to 85°C (with no condensation or icing)	
	Ambient operating humidity		0% to 95% (Storage humidity: 0% to 95%)	
	Vibration resistance		10 to 55 Hz, 0.375-mm half amplitude for 2 h each in X, Y, and Z directions	
	Shock resistance		150 m/s <sup>2</sup> , 3 times each in ±X, ±Y, and ±Z directions	
Reliability	MTBF		135,000 hrs min.	
	Life expectancy *10		10 years min.	
Construction	Weight		700 g max.	1,000 g max.
	Cooling fan		No	
	Degree of protection		IP20 by EN / IEC 60529	
Standards	Harmonic current emissions		Conforms to EN 61000-3-2	
	EMI	Conducted Emission	Conforms to EN 61204-3 Class B EN 55011 Class B	
		Radiated Emission	Conforms to EN 61204-3 Class B EN 55011 Class B	
	EMS		Conforms to EN 61204-3 high severity levels	
	Approved Standards *6		UL Listed: UL 508 *7 EN: EN 50178 Lloyd's standards *9 ANSI/ISA 12.12.01 *7	UL Listed: UL 508 *7 UL UR: UL 60950-1 (Recognition) cUR: CSA C22.2 No.60950-1 CSA: CSA C22.2 No.60950-1 EN: EN 50178, EN 60950-1 Lloyd's standards *9 ANSI/ISA 12.12.01 *7
	Conformed Standards		SELV (EN 50178), PELV(EN 60204-1, EN 50178) Safety of Power Transformers (EN 61558-2-16) EN 50274 for Terminal parts	SELV (EN 60950-1/EN 50178/UL 60950-1) PELV (EN 60204-1, EN 50178) Safety of Power Transformers (EN 61558-2-16) EN 50274 for Terminal parts
SEMI		Conforms to F47-0706 (3-phase, 380 to 480 VAC input)		

Note: Refer to page 5 for notes 1 to 13.

# S8VK-T

Item	Power rating		480 W	960 W (768 W *18)
	Output voltage		24 V	24 V
Efficiency	3-phase, 400 VAC input *11		91% typ.	92% typ.
Input	Voltage range *1		3-phase, 380 to 480 VAC (allowable range: 320 to 576 VAC) 2-phase, 380 to 480 VAC (allowable range: 340 to 576 VAC) 450 to 600 VDC (allowable range: 450 to 810 VDC) *8	3-phase, 380 to 480 VAC (allowable range: 320 to 576 VAC) 2-phase, 380 to 480 VAC (allowable range: 340 to 576 VAC)
	Frequency *1		50/60 Hz (47 to 63 Hz)	
	Current	3-phase, 400 VAC input *11	1.2 A typ.	2.1 A typ.
	Power factor		-	
	Leakage current	3-phase, 400 VAC input	3.5 mA max./1.0 mA typ.	3.5 mA max./1.2 mA typ.
Inrush current (for a cold start at 25°C) *2	3-phase, 400 VAC input	28 A typ.		
Output	Rated output current		20 A	40 A at 3-phase (32 A at 2-phase)
	Boost current		24 A	48 A at 3-phase (Not possible at 2-phase)
	Voltage adjustment range *3		22.5 to 29.5 VDC (with V.ADJ) (guaranteed)	
	Ripple & Noise voltage *4	3-phase, 400 VAC input *11	130 mV p-p max. at 20 MHz of bandwidth	90 mV p-p max. at 20 MHz of bandwidth
	Input variation influence *13		0.5% max.	
	Load variation influence *12		1.5% max.	
	Temperature variation influence	3-phase, 400 VAC input	0.05%/°C max.	
	Start up time *2	3-phase, 400 VAC input *11	500 ms typ.	700 ms typ.
Hold time *2	3-phase, 400 VAC input *11	20 ms typ.	20 ms typ.	
Additional functions	Overload protection		Yes, automatic reset	
	Overvoltage protection		Yes, 130% or higher of rated output voltage, power shut off (shut off the input voltage and turn on the input again) *5	
	Series operation		Yes (For up to two Power Supplies, external diodes are required.)	
	Parallel operation		Yes (Refer to Engineering Data) (For up to two Power Supplies)	
	Output indicator		Yes (LED: Green), lighting from 80% to 90% or more of rated voltage	
Insulation	Withstand voltage		3.0 kVAC for 1 min. (between all input terminals and output terminals) cutoff current 20 mA 2.5 kVAC for 1 min. (between all input terminals and PE terminal) cutoff current 20 mA 1.0 kVAC for 1 min. (between all output terminals and PE terminal) cutoff current 30 mA	
	Insulation resistance		100 MΩ min. (between all output terminals and all input terminals / PE terminal) at 500 VDC	
Environment	Ambient operating temperature		-40 to 70°C (However, only startup is guaranteed for between -40°C to -25°C. (3-phase only)) (Derating is required according to the temperature.) (with no condensation or icing)	
	Storage temperature		-40 to 85°C (with no condensation or icing)	
	Ambient operating humidity		0% to 95% (Storage humidity: 0% to 95%)	
	Vibration resistance		10 to 55 Hz, 0.375-mm half amplitude for 2 h each in X, Y, and Z directions	
	Shock resistance		150 m/s <sup>2</sup> , 3 times each in ±X, ±Y, and ±Z directions	
Reliability	MTBF		135,000 hrs min.	
	Life expectancy *10		10 years min.	
Construction	Weight		1,600 g max.	2,700 g max.
	Cooling fan		No	
	Degree of protection		IP20 by EN / IEC 60529	
Standards	Harmonic current emissions		Conforms to EN 61000-3-2 *15	
	EMI	Conducted Emission	Conforms to EN 61204-3 Class B EN 55011 Class B *16	
		Radiated Emission	Conforms to EN 61204-3 Class B EN 55011 Class B *16	
	EMS		Conforms to EN 61204-3 high severity levels	
	Approved Standards *6		UL Listed: UL 508 *7 UL UR: UL 60950-1 (Recognition) cUR: CSA C22.2 No.60950-1 CSA: CSA C22.2 No.60950-1 EN: EN 50178, EN 60950-1 Lloyd's standards ANSI/ISA 12.12.01 *7	
	Conformed Standards		SELV (EN 60950-1/EN 50178/UL 60950-1) PELV (EN 60204-1, EN 50178) Safety of Power Transformers (EN 61558-2-16) EN 50274 for Terminal parts	
SEMI		Conforms to F47-0706 (3-phase, 380 to 480 VAC input) *17		

Note: Refer to page 5 for notes 1 to 18.