

Switch Mode Power Supply

S8VK-S (30/60/120/240/480-W Models)

A Perfect Fit for Small Control Panels
Coated PCBs for Better Resistance to Environment
Connections for Easy Wiring



- Operation possible at ambient temperatures from -40 to 70°C.
- Side-by-side mounting possible (up to 55°C). *1
- DC input supported (90 to 350 VDC).
- Power Boost function at 120% (30/60 and 120 W); Power Boost function at 150% (240 and 480 W).
- Low-voltage detection output (only for 240 and 480 W).
- Certification for 3,000 m altitude (UL/EN/IEC 62368-1 and EN 62477-1).
- Complies with EN/IEC 61558-2-16.
- Lloyd's (Except 30 W)
- Five years Warranty *2



*1. For front, side-by-side mounting, see page 18.
 *2. Refer to *Period and Terms of Warranty* on page 23 for details.

⚠ Refer to Safety Precautions for All Power Supplies and Safety Precautions on page 17.

Related Products

Noise filter
S8V-NF



Note: Refer to the S8V-NF Datasheet (Cat. No. T212) for details.

DC Electronic Circuit Protector
S8V-CP



Note: Refer to the S8V-CP Datasheet (Cat. No. T226-E1) for details.

Model Number Structure

Model Number Legend

Note: Not all combinations are possible. Refer to *List of Models* in *Ordering Information*, below.

S8VK-S □□□□

1 2

1. Power Ratings

030: 30 W
 060: 60 W
 120: 120 W
 240: 240 W
 480: 480 W

2. Output voltage (DC)

24: 24 V

Ordering Information

Note: For details on normal stock models, contact your nearest OMRON representative.

Power ratings	Rated input voltage	Rated output voltage (DC)	Rated output current	Maximum boost current	Model number
30 W	100 to 240 VAC (allowable range: 85 to 264 VAC or 90 to 350 VDC)	24 V	1.3 A	1.56 A	S8VK-S03024
60 W		24 V	2.5 A	3 A	S8VK-S06024
120 W		24 V	5 A	6 A	S8VK-S12024
240 W		24 V	10 A	15 A	S8VK-S24024
480 W		24 V	20 A	30 A	S8VK-S48024

S8VK-S

Specifications

Ratings, Characteristics, and Functions

Item	Power rating		30 W	60 W	120 W
	Output voltage (DC)		24 V	24 V	24 V
Efficiency	115 VAC input *1		87% typ.	87% typ.	90% typ.
	230 VAC input *1		86% typ.	89% typ.	92% typ.
Input	Voltage range *2		Single-phase, 85 to 264 VAC, 90 to 350 VDC *12, 265 to 300 VAC (1 second)		
	Frequency *2		50/60 Hz (47 to 450 Hz)		
	Input current	115 VAC input *1	0.58A typ.	1.1 A typ.	1.2 A typ.
		230 VAC input *1	0.36A typ.	0.66 A typ.	0.63 A typ.
	Power factor *1		---		
	Leakage current *3	115 VAC input	0.5 mA max.		
		230 VAC input	1 mA max.		
Inrush current *4 (for a cold start at 25°C)	115 VAC input	16 A typ.			
	230 VAC input	32 A typ.			
Output	Rated output current		1.3 A	2.5 A	5 A
	Rated output electric power		31.2 W	60 W	120 W
	Maximum boost current		1.56 A	3 A	6 A
	Voltage adjustment range *5		21.6 to 28 V (with V.ADJ)		
	Ripple & Noise voltage *6	100 to 240 VAC input *1	190 mVp-p max. at 20 MHz of bandwidth	190 mVp-p max. at 20 MHz of bandwidth	110 mVp-p max. at 20 MHz of bandwidth
	Input variation influence *7		0.5% max.		
	Load variation influence *8		1.5% max.		
	Temperature variation influence	115 to 230 VAC input	0.05%/°C max.		
	Start up time *4	115 VAC input *1	1000 ms max.	1000 ms max.	1000 ms max.
		230 VAC input *1	1000 ms max.	1000 ms max.	1000 ms max.
Hold time *6	115 VAC input *1	30 ms typ.	20 ms typ.	45 ms typ.	
	230 VAC input *1	140 ms typ.	95 ms typ.	45 ms typ.	
Additional functions	Overload protection		Yes, automatic reset		
	Overvoltage protection *9		Yes, 130% or higher of rated output voltage, power shut off (shut off the input voltage and turn on the input again)		
	Series operation		Yes (For up to two Power Supplies, external diodes are required.)		
	Parallel operation		Yes (For up to two Power Supplies), Refer to <i>Parallel Operation</i> on page 21 for details.		
	Output indicator		Yes (LED: Green)		
	Low-voltage detection output		No		
Insulation	Withstand voltage		3.0 kVAC for 1 min. (between all input terminals and output terminals), current cutoff 10 mA 2.0 kVAC for 1 min. (between all input terminals and PE terminals), current cutoff 10 mA 1.0 kVAC for 1 min. (between all output terminals and PE terminals), current cutoff 20 mA		
	Insulation resistance		100 MΩ min. (between all output terminals and all input terminals/PE terminals) at 500 VDC		
Environment	Ambient operating temperature *10		-40 to 70°C (Derating is required according to the temperature. Refer to <i>Engineering Data</i>) (with no condensation or icing)		
	Storage temperature		-40 to 85°C (with no condensation or icing)		
	Ambient operating humidity		95% RH max. (Storage humidity: 95% RH max.)		
	Vibration resistance		10 to 55 Hz, maximum 5G, 0.42 mm half amplitude for 2 h each in X, Y, and Z directions		
	Shock resistance		150 m/s ² , 3 times each in ±X, ±Y, ±Z directions		
Reliability	MTBF		135,000 hrs min. (Refer to page 12 <i>Reference Value</i>)		
	Life expectancy *11		10 years min.		
Construction	Weight		250 g max.	250 g max.	400 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 Emissions	Conforms to EN 61204-3 Class B, EN 55011 Class B		
		Radiated Emissions	Conforms to EN 61204-3 Class B, EN 55011 Class B		
	EMS		Conforms to EN 61204-3 high severity levels		
	Safety standards		UL Listing: UL 508 (For 30 W and 60 W only Class2 Output: Per UL 1310) cUL: CSA C22.2 No107.1 (For 30 W and 60 W only Class2 Output: Per CSA C22.2 No.223) UL UR: UL 62368-1 (Recognition) OVCII (≤ 3000 m) Pol2 cUR: CSA C22.2 No. 62368-1 OVCII (≤ 3000 m) Pol2 EN: EN 62477-1 OVCIII (≤ 2000 m) OVCII (2000 m ≤ and ≤ 3000) Pol2, EN 62368-1 OVCII (≤ 3000 m) Pol2 EAC (TR CU 004/2011, TR CU 020/2011) RCM (EN61000-6-4) PELV (EN/IEC 60204-1) *12 EN/IEC 61558-2-16:2009+A1:2013 *12 BIS: IS 13252 (Part1) *12		
	Marine Standards *12		Lloyd's register (Except 30 W)		
SEMI		Conforms to F47-0706 (200 to 240 VAC input)			

Note: For notes *1 to *12, refer to page 4.

Item	Power rating		240 W	480 W	
	Output voltage (DC)		24 V	24 V	
Efficiency	115 VAC input *1		91% typ.	91% typ.	
	230 VAC input *1		93% typ.	93% typ.	
Input	Voltage range *2		Single-phase, 85 to 264 VAC, 90 to 350 VDC *12, 265 to 300 VAC (1 second)		
	Frequency *2		50/60 Hz (47 to 63 Hz)		
	Input current	115 VAC input *1		2.4 A typ.	4.6 A typ.
		230 VAC input *1		1.3 A typ.	2.3 A typ.
	Power factor *1			0.9 min.	0.9 min.
	Leakage current *3	115 VAC input		0.5 mA max.	
		230 VAC input		1 mA max.	
Inrush current *4 (for a cold start at 25°C)	115 VAC input		16 A typ.		
	230 VAC input		32 A typ.		
Output	Rated output current		10 A	20 A	
	Rated output electric power		240 W	480 W	
	Maximum boost current		15 A	30 A	
	Voltage adjustment range *5		21.6 to 28 V (with V.ADJ)		
	Ripple & Noise voltage *6	100 to 240 VAC input *1		100 mVp-p max. at 20 MHz of bandwidth	130 mVp-p max. at 20 MHz of bandwidth
	Input variation influence *7		0.5% max.		
	Load variation influence *8		1.5% max.		
	Temperature variation influence	115 to 230 VAC input		0.05%/°C max.	
Start up time *4	115 VAC input *1		1000 ms max.	1000 ms max.	
	230 VAC input *1		1000 ms max.	1000 ms max.	
Hold time *6	115 VAC input *1		35 ms typ.	30 ms typ.	
	230 VAC input *1		35 ms typ.	30 ms typ.	
Additional functions	Overload protection		Yes, automatic reset		
	Overvoltage protection *9		Yes, 130% or higher of rated output voltage, power shut off (shut off the input voltage and turn on the input again)		
	Series operation		Yes (For up to two Power Supplies, external diodes are required.)		
	Parallel operation		Yes (For up to two Power Supplies), Refer to <i>Parallel Operation</i> on page 21 for details.		
	Output indicator		Yes (LED: Green)		
	Low-voltage detection output		Yes (Photoswitch output: 30 VDC max., 50 mA max.)		
Insulation	Withstand voltage		3.0 kVAC for 1 min. (between all input terminals and output terminals), current cutoff 20 mA		
			2.0 kVAC for 1 min. (between all input terminals and PE terminals), current cutoff 20 mA		
Insulation	Insulation resistance		1.0 kVAC for 1 min. (between all output terminals and PE terminals), current cutoff 20 mA		
			500 VAC for 1 min (between all output terminals and all low-voltage detection output terminals), current cutoff 10 mA		
Insulation			100 MΩ min. (between all output terminals/all low-voltage detection output terminals and all input terminals/PE terminals) at 500 VDC		
Environment	Ambient operating temperature *10		-40 to 70°C (Derating is required according to the temperature. Refer to <i>Engineering Data</i>) (with no condensation or icing)		
	Storage temperature		-40 to 85°C (with no condensation or icing)		
	Ambient operating humidity		95% RH max. (Storage humidity: 95% RH max.)		
	Vibration resistance		10 to 55 Hz, maximum 5G, 0.42 mm half amplitude for 2 h each in X, Y, and Z directions		
	Shock resistance		150 m/s ² , 3 times each in ±X, ±Y, ±Z directions		
Reliability	MTBF		135,000 hrs min. (Refer to page 12 <i>Reference Value</i>)		
	Life expectancy *11		10 years min.		
Construction	Weight		700 g max.	1150 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 Emissions	Conforms to EN 61204-3 Class B, EN 55011 Class B		
		Radiated Emissions	Conforms to EN 61204-3 Class B, EN 55011 Class B		
	EMS		Conforms to EN 61204-3 high severity levels		
	Safety standards		UL Listing: UL 508 cUL: CSA C22.2 No107.1 UL UR: UL 62368-1 (Recognition) OVCII (≤ 3000 m) Pol2 cUR: CSA C22.2 No.62368-1 OVCII (≤ 3000 m) Pol2 EN: EN 62477-1 OVCIII (≤ 2000 m) OVCII (2000 m ≤ and ≤ 3000) Pol2, EN 62368-1 OVCII (≤ 3000 m) Pol2 PELV (EN/IEC 60204-1) *12 EN/IEC 61558-2-16:2009+A1:2013 *12 BIS: IS 13252 (Part1) *12		
	Marine Standards *12		Lloyd's register		
SEMI		Conforms to F47-0706 (200 to 240 VAC input)			

Note: For notes *1 to *12, refer to page 4.