

Switch Mode Power Supply

S8VK-G (15/30/60/120/240/480-W Models)

Reliable and Easy Operation-Worldwide Power Supply

Resistant in tough environments

Easy and fast installation

The most compact class on the market

- Universal input for worldwide applications:
100 to 240 VAC (85 to 264 VAC)
- DC input can be available: 90 to 350 VDC
- Possible for 2-phase input usage.
- Wide operation temperature range: -40 to 70 °C
- Power Boost function at 120%
- Safety standards:
UL508/62368-1, CSA C22.2 No. 107.1/62368-1
EN 62477-1, EN62368-1.
Lloyd's standards, EN60204-1 PELV
Safety of Power Transformers: EN61558-2-16
- 15-W,30-W, and 60-W models conform to
UL Class 2 output Standards
- EMS: EN 61204-3
EMI: EN 61204-3 Class B
- Three years Warranty *1

*1. Refer to *Period and Terms of Warranty* on page 23.



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

Related Products

Noise Filter
S8V-NF



DC Electronic Circuit Protector
S8V-CP



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

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

S8VK-G

Model Number Structure

Model Number Legend

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

S8VK-

1	2	3	4			

-

1. Input voltage type

G: Single phase

2. Power Ratings

015: 15 W
030: 30 W
060: 60 W
120: 120 W
240: 240 W
480: 480 W

3. Output voltage (VDC)

05: 5 V
12: 12 V
24: 24 V
48: 48 V

4. Option

None: Standard model
400: Coating

Ordering Information

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

Power ratings	Input voltage	Output Voltage (VDC)	Output current	Boost Current	Model number
15 W	Single phase 100 to 240 VAC 90 to 350 VDC	5 V	3 A	3.6 A	S8VK-G01505
		12 V	1.2 A	1.44 A	S8VK-G01512
		24 V	0.65 A	0.78 A	S8VK-G01524
30 W	Single phase 100 to 240 VAC 90 to 350 VDC	5 V	5 A	6 A	S8VK-G03005
		12 V	2.5 A	3 A	S8VK-G03012
		24 V	1.3 A	1.56 A	S8VK-G03024
60 W	Single phase 100 to 240 VAC 90 to 350 VDC	12 V	4.5 A	5.4 A	S8VK-G06012
		24 V	2.5 A	3 A	S8VK-G06024
		24 V	5 A	6 A	S8VK-G12024
120 W	Single phase 100 to 240 VAC 90 to 350 VDC	24 V	10 A	12 A	S8VK-G24024
		48 V	5 A	6 A	S8VK-G24048
		24 V	20 A	24 A	S8VK-G48024
240 W	Single phase 100 to 240 VAC 90 to 350 VDC	48 V	10 A	12 A	S8VK-G48048
480 W					

Specifications

Ratings, Characteristics, and Functions

Item	Power rating Output voltage (VDC)	15 W			30 W							
		5 V	12 V	24 V	5 V	12 V	24 V					
Efficiency	230 VAC input *6	77% typ.	77% typ.	80% typ.	79% typ.	82% typ.	86% typ.					
Voltage range *1		Single-phase, 85 to 264 VAC, 90 to 350 VDC *10										
Frequency *1		50/60 Hz (47 to 450 Hz)										
Input	Current	115 VAC input *6	0.32 A typ.	0.3 A typ.	0.31 A typ.	0.5 A typ.	0.57 A typ.	0.58 A typ.				
		230 VAC input *6	0.2 A typ.	0.21 A typ.	0.2 A typ.	0.32 A typ.	0.37 A typ.	0.36 A typ.				
	Power factor *6	230 VAC input, 100% load	0.42 min.			0.43 min.	0.42 min.	0.43 min.				
	Leakage current	115 VAC input	0.14 mA typ.			0.13 mA typ.						
		230 VAC input	0.25 mA typ.			0.24 mA typ.						
	Inrush current *2 (for a cold start at 25°C)	115 VAC input	16 A typ.			16 A typ.						
Output	Rated output current	3 A	1.2 A	0.65 A	5 A	2.5 A	1.3 A					
	Boost current	3.6 A	1.44 A	0.78 A	6 A	3 A	1.56 A					
	Voltage adjustment range *3	-10% to 15% (with V.ADJ) (guaranteed)										
	Ripple & Noise voltage *4	100 to 240 VAC input, 100% load *6	60 mVp-p max. at 20 MHz of bandwidth	50 mVp-p max. at 20 MHz of bandwidth	30 mVp-p max. at 20 MHz of bandwidth	30 mVp-p max. at 20 MHz of bandwidth	30 mVp-p max. at 20 MHz of bandwidth					
	Input variation influence *8	0.4% max.			0.4% max.							
	Load variation influence *7	0.8% max.			0.8% max.							
	Temperature variation influence	115 to 230 VAC input	0.05%/°C max.			0.05%/°C max.						
	Start up time *2	115 VAC input *6	530 ms typ.	520 ms typ.	580 ms typ.	550 ms typ.	550 ms typ.	600 ms typ.				
		230 VAC input *6	330 ms typ.	400 ms typ.	400 ms typ.	430 ms typ.	490 ms typ.	480 ms typ.				
	Hold time *2	115 VAC input *6	28 ms typ.	29 ms typ.	32 ms typ.	33 ms typ.	36 ms typ.	23 ms typ.				
Additional functions	Overload protection	Yes, automatic reset			Yes, automatic reset							
	Oversupply protection *5	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 (Refer to <i>Safety Precautions</i>) (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), current cutoff 20 mA									
			2.0 kVAC for 1 min. (between all input terminals and PE terminals), current cutoff 20 mA									
	Insulation resistance		1.0 kVAC for 1 min. (between all output terminals and PE terminals), current cutoff 20 mA									
Environment	Ambient operating temperature *12		-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		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									
Reliability	Shock resistance		150 m/s ² , 3 times each in ±X, ±Y, and ±Z directions									
	MTBF		135,000 hrs min.									
Construction	Life expectancy *9		10 years min.									
	Weight		150 g max.			195 g max.						
	Cooling fan		No									
Standards	Degree of protection		IP20 by EN/IEC 60529									
	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									
	Approved Standards		UL Listed: UL 508 (Listing, Class2 Output: Per UL 1310) UL UR: UL 62368-1 (Recognition) cUL: CSA C22.2 No.107.1 (Class2 Output: Per CSA C22.2 No.223) cUR: CSA C22.2 No.62368-1 EN: EN 62477-1, EN 62368-1									
	Conformed Standards		PELV (EN 60204-1, EN 62477-1) EN 61558-2-16 EAC (TR CU 004 / 2011, TR CU 020 / 2011) RCM (EN61000-6-4)									
	Marine Standards		Lloyd's register *10 *11									
	SEMI		Conforms to F47-0706 (200 to 240 VAC input)									

- *1. Do not use an inverter output for the Power Supply. Inverters with an output frequency of 50/60 Hz are available, but the rise in the internal temperature of the Power Supply may result in ignition or burning.
- *2. For a cold start at 25°C. Refer to *Engineering Data* on page 9 to 11 for details.
- *3. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by more than +15% of the voltage adjustment range. When adjusting the output voltage, confirm the actual output voltage from the Power Supply and be sure that the load is not damaged.
- *4. A characteristic when the ambient operating temperature is between -25 to 70°C.
- *5. Refer to *Oversupply Protection* on page 10 for the time when input voltage shuts off and input turns on again.
- *6. The value is when both rated output voltage and rated output current are satisfied.
- *7. 100 to 240 VAC input, in the range of 0 A to the rated output current
- *8. This is the maximum variation in the output voltage when the input voltage is gradually changed within the allowable input voltage range at the rated output voltage and rated output current.
- *9. Refer to *Recommended Replacement Periods and Periodic Replacement for Preventive Maintenance* on page 23 for details.
- *10. Safety Standards for a DC Input
 - The following safety standards apply to a DC input: UL 62368-1, cUR (CSA C22.2 No. 62368-1), EN 62477-1, EN 62368-1, and Lloyd's.
 - For a DC input, safety is ensured by an external fuse.
 - Select an external fuse that meets the following conditions.
 - S8VK-G015□□: 350 VDC min, 3 A
 - S8VK-G030□□: 350 VDC min, 4 A
- *11. Clamp filter "ZCAT2035-0930" manufactured by TDK Corporation, or equivalent should be installed in the cable connected to the input - output terminals of S8VK-G series.
- *12. Noise filter "FN2080-10-06" manufactured by SCHAFFNER Corporation, or equivalent should be connected to the Input terminals of S8VK-G series.
- *12. At -40 to -25°C, time will be required before the rated output voltage is output after the input voltage is input.
Also, the ripple noise value may exceed the value shown in the above table.

Item	Power rating	60 W		120 W		
		12 V	24 V	24 V		
Efficiency	230 VAC input *6	85% typ.	88% typ.	89% typ.		
Voltage range *1		Single-phase, 85 to 264 VAC, 90 to 350 VDC *10				
Input	Frequency *1	50/60 Hz (47 to 450 Hz)		50/60 Hz (47 to 63 Hz)		
	Current	115 VAC input *6	1.0 A typ.	1.1 A typ.		
		230 VAC input *6	0.6 A typ.	0.7 A typ.		
	Power factor *6	230 VAC input, 100% load	0.46 min.	0.45 min.		
	Leakage current	115 VAC input	0.16 mA typ.	0.24 mA typ.		
		230 VAC input	0.30 mA typ.	0.38 mA typ.		
	Inrush current *2 (for a cold start at 25°C)	115 VAC input	16 A typ.	16 A typ.		
		230 VAC input	32 A typ.	32 A typ.		
Output	Rated output current	4.5 A	2.5 A	5 A		
	Boost current	5.4 A	3 A	6 A		
	Voltage adjustment range *3	-10% to 15% (with V. ADJ) (guaranteed)				
	Ripple & Noise voltage *4	100 to 240 VAC input, 100% load *6	150 mVp-p max. at 20 MHz of bandwidth	50 mVp-p max. at 20 MHz of bandwidth		
	Input variation influence *8	0.4% max.		0.4% max.		
	Load variation influence *7	0.8% max.		0.8% max.		
	Temperature variation influence	115 to 230 VAC input	0.05%/°C max.			
	Start up time *2	115 VAC input *6	570 ms typ.	650 ms typ.		
		230 VAC input *6	430 ms typ.	500 ms typ.		
	Hold time *2	115 VAC input *6	26 ms typ.	25 ms typ.		
		230 VAC input *6	139 ms typ.	129 ms typ.		
Additional functions	Overload protection	Yes, automatic reset		Yes, automatic reset		
	Oversupply protection *5	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 (Refer to <i>Safety Precautions</i>) (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), current cutoff 20 mA 2.0 kVAC for 1 min. (between all input terminals and PE terminals), current cutoff 20 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 *12	-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	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				
Reliability	MTBF	135,000 hrs min.				
	Life expectancy *9	10 years min.				
Construction	Weight	260 g max.		620 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				
	Approved Standards		UL Listed: UL 508 (Listing, For 60 W only Class2 Output: Per UL 1310) UL UR: UL 62368-1 (Recognition) cUL: CSA C22.2 No.107.1 (For 60 W only Class2 Output: Per CSA C22.2 No.223) cUR: CSA C22.2 No.62368-1 EN: EN 62477-1, EN 62368-1			
	Conformed Standards		PELV (EN 60204-1, EN 62477-1) EN 61558-2-16			
			EAC (TR CU 004 / 2011, TR CU 020 / 2011) RCM (EN61000-6-4)			
	Marine Standards	Lloyd's register *10 *11				
	SEMI	Conforms to F47-0706 (200 to 240 VAC input)				

- *1. Do not use an inverter output for the Power Supply. Inverters with an output frequency of 50/60 Hz are available, but the rise in the internal temperature of the Power Supply may result in ignition or burning.
- *2. For a cold start at 25°C. Refer to *Engineering Data* on page 9 to 11 for details.
- *3. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by more than +15% of the voltage adjustment range. When adjusting the output voltage, confirm the actual output voltage from the Power Supply and be sure that the load is not damaged.
- *4. A characteristic when the ambient operating temperature is between -25 to 70°C.
- *5. Refer to *Oversupply Protection* on page 10 for the time when input voltage shuts off and input turns on again.
- *6. The value is when both rated output voltage and rated output current are satisfied.
- *7. 100 to 240 VAC input, in the range of 0 A to the rated output current
- *8. This is the maximum variation in the output voltage when the input voltage is gradually changed within the allowable input voltage range at the rated output voltage and rated output current.
- *9. Refer to *Recommended Replacement Periods and Periodic Replacement for Preventive Maintenance* on page 23 for details.
- *10. Safety Standards for a DC Input
 - The following safety standards apply to a DC input: UL 62368-1, cUR (CSA C22.2 No. 62368-1), EN 62477-1, EN 62368-1, and Lloyd's.
 - For a DC input, safety is ensured by an external fuse.
 - Select an external fuse that meets the following conditions.
 - S8VK-G060□□: 350 VDC min, 6 A
 - S8VK-G12024: 350 VDC min, 5 A
- *11. Clamp filter "ZCAT2035-0930" manufactured by TDK Corporation, or equivalent should be installed in the cable connected to the input - output terminals of S8VK-G series.
- *12. At -40 to -25°C, time will be required before the rated output voltage is output after the input voltage is input.
Also, the ripple noise value may exceed the value shown in the above table.

Item	Power rating	240 W		480 W						
		24 V	48 V	24 V	48 V					
Efficiency	230 VAC input *6	92% typ.		93% typ.						
Input	Voltage range *1	Single-phase, 85 to 264 VAC, 90 to 350 VDC *10								
	Frequency *1	50/60 Hz (47 to 63 Hz)								
	Current	115 VAC input *6	2.4 A typ.	4.7 A typ.						
		230 VAC input *6	1.3 A typ.	2.3 A typ.						
	Power factor *6	230 VAC input, 100% load	0.9 min.	0.97 min.						
	Leakage current	115 VAC input	0.23 mA typ.	0.3 mA typ.						
Output	Inrush current *2 (for a cold start at 25°C)	230 VAC input	0.33 mA typ.	0.49 mA typ.						
		115 VAC input	16 A typ.	16 A typ.						
		230 VAC input	32 A typ.	32 A typ.						
	Rated output current	10 A	5 A	20 A	10 A					
	Boost current	12 A	6 A	24 A	12 A					
	Voltage adjustment range *3	-10% to 15% (with V.ADJ) (guaranteed)								
Additional functions	Ripple & Noise voltage *4	100 to 240 VAC input, 100% load *6	180 mVp-p max. at 20 MHz of bandwidth	350 mVp-p max. at 20 MHz of bandwidth	230 mVp-p max. at 20 MHz of bandwidth					
	Input variation influence *8	0.4% max.		0.4% max.						
	Load variation influence *7	0.8% max.		0.8% max.						
	Temperature variation influence	115 to 230 VAC input	0.05%/°C max.	0.05%/°C max.						
	Start up time *2	115 VAC input *6	250 ms typ.	290 ms typ.	380 ms typ.					
		230 VAC input *6	250 ms typ.	290 ms typ.	260 ms typ.					
Insulation	Hold time *2	115 VAC input *6	44 ms typ.	43 ms typ.	40 ms typ.					
		230 VAC input *6	44 ms typ.	50 ms typ.						
	Overload protection	Yes, automatic reset		Yes, automatic reset						
	Overvoltage protection *5	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 (Refer to <i>Safety Precautions</i>) (For up to two Power Supplies)								
Environment	Output indicator	Yes (LED: Green), lighting from 80% to 90% or more of rated voltage								
	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								
		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								
	Ambient operating temperature *12	-40 to 70 °C (Derating is required according to the temperature. Refer to <i>Engineering Data</i> (with no condensation or icing))								
Reliability	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/s², 3 times each in ±X, ±Y, ±Z directions								
	MTBF	135,000 hrs min.								
	Life expectancy *9	10 years min.								
Construction	Weight	900 g max.		1,500 g max.						
	Cooling fan	No								
	Degree of protection	IP20 by EN/IEC 60529								
	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							
Standards	EMS	Conforms to EN 61204-3 high severity levels								
	Approved Standards	UL Listed: UL 508 (Listing) UL UR: UL 62368-1 (Recognition) cUL: CSA C22.2 No.107.1 cUR: CSA C22.2 No.62368-1 EN: EN 62477-1, EN 62368-1								
	Conformed Standards	PELV (EN 60204-1, EN 62477-1) EN 61558-2-16 EAC (TR CU 004 / 2011, TR CU 020 / 2011) RCM (EN61000-6-4)								
	Marine Standards	Lloyd's register *10 *11								
	SEMI	Conforms to F47-0706 (200 to 240 VAC input)								

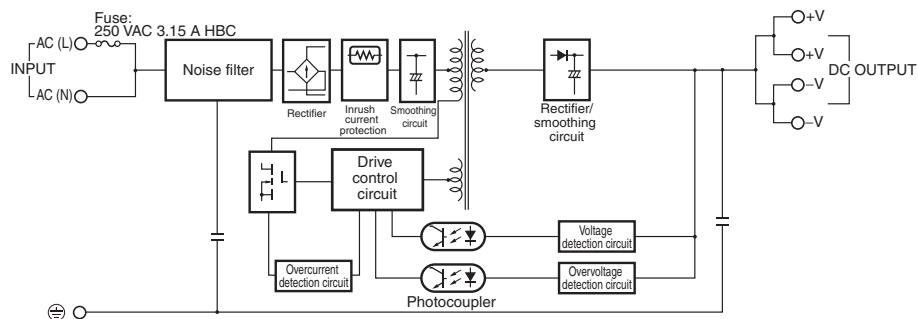
- *1. Do not use an inverter output for the Power Supply. Inverters with an output frequency of 50/60 Hz are available, but the rise in the internal temperature of the Power Supply may result in ignition or burning.
- *2. For a cold start at 25°C. Refer to *Engineering Data* on page 9 to 11 for details.
- *3. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by more than +15% of the voltage adjustment range. When adjusting the output voltage, confirm the actual output voltage from the Power Supply and be sure that the load is not damaged.
- *4. A characteristic when the ambient operating temperature is between -25 to 70°C.
- *5. Refer to *Overvoltage Protection* on page 10 for the time when input voltage shuts off and input turns on again.
- *6. The value is when both rated output voltage and rated output current are satisfied.
- *7. 100 to 240 VAC input, in the range of 0 A to the rated output current
- *8. This is the maximum variation in the output voltage when the input voltage is gradually changed within the allowable input voltage range at the rated output voltage and rated output current.
- *9. Refer to *Recommended Replacement Periods and Periodic Replacement for Preventive Maintenance* on page 23 for details.
- *10. Safety Standards for a DC Input
 - The following safety standards apply to a DC input: UL 62368-1, cUR (CSA C22.2 No. 62368-1), EN 62477-1, EN 62368-1, and Lloyd's.
 - For a DC input, safety is ensured by an external fuse.
 - Select an external fuse that meets the following conditions.
 - S8VK-G240□□: 350 VDC min, 8 A
 - S8VK-G480□□: 350 VDC min, 12 A
- *11. Clamp filter "ZCAT2035-0930" manufactured by TDK Corporation, or equivalent should be installed in the cable connected to the input - output terminals of S8VK-G series.
- Noise filter "FN2080-10-06" manufactured by SCHAFFNER Corporation, or equivalent should be connected to the Input terminals of S8VK-G series.
- *12. At -40 to -25°C, time will be required before the rated output voltage is output after the input voltage is input.
 - Also, the ripple noise value may exceed the value shown in the above table.

S8VK-G

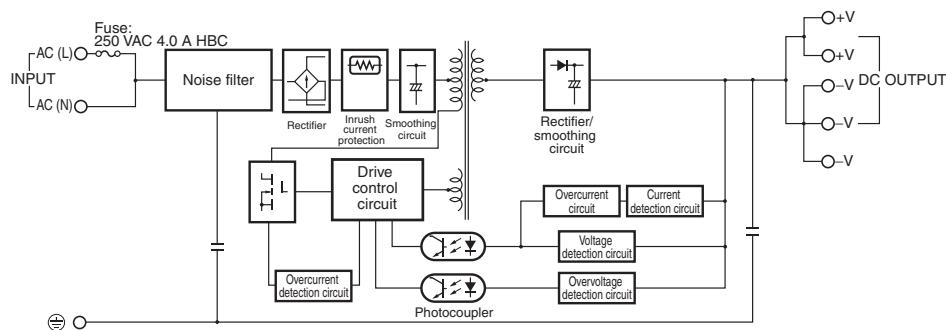
Connections

Block Diagrams

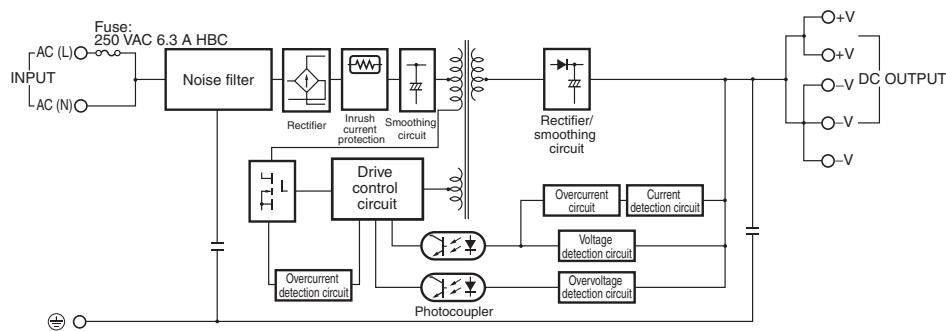
S8VK-G015□□ (15 W)

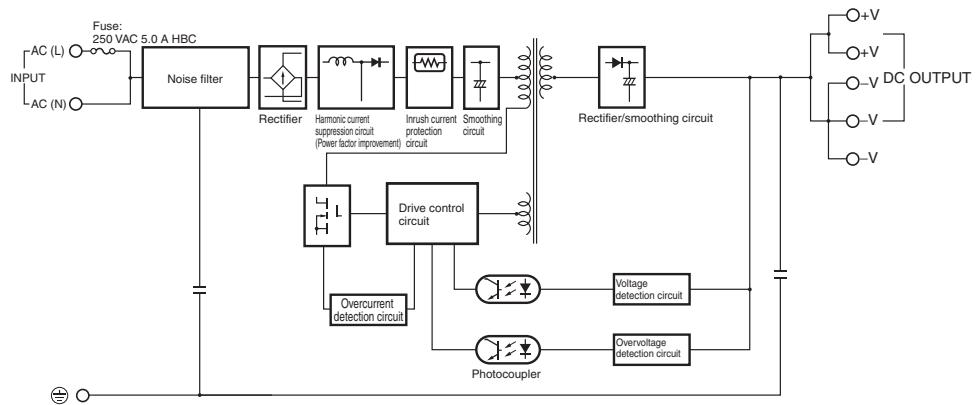
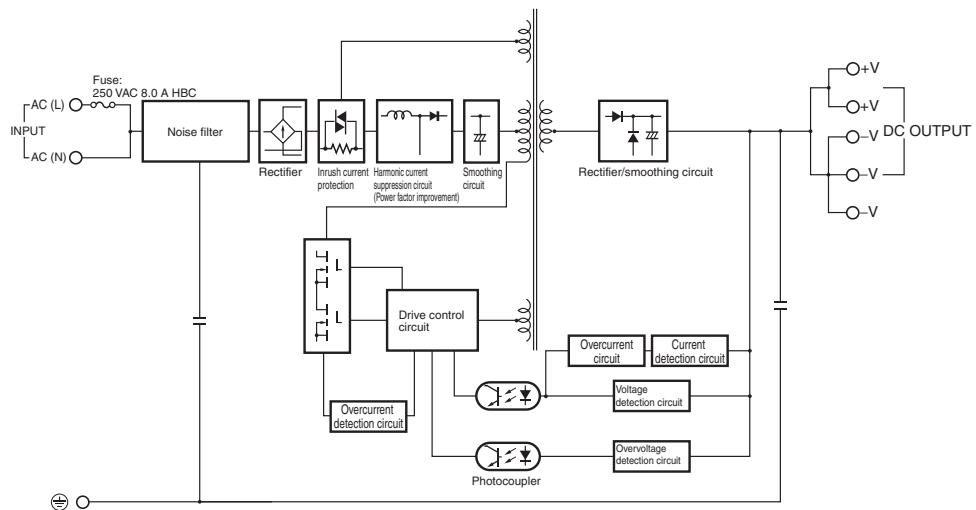
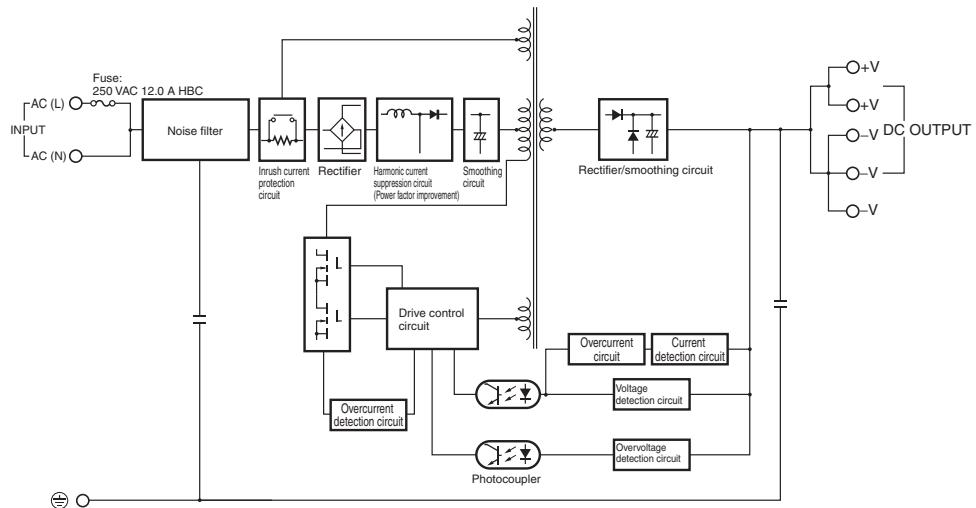


S8VK-G030□□ (30 W)



S8VK-G060□□ (60 W)



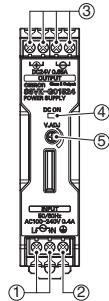
S8VK-G12024 (120 W)**S8VK-G240□□ (240 W)****S8VK-G480□□ (480 W)**

Construction and Nomenclature

Nomenclature

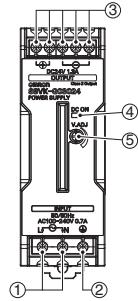
15-W Models

S8VK-G015□□



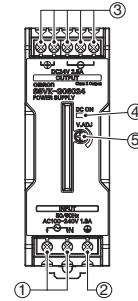
30-W Models

S8VK-G030□□



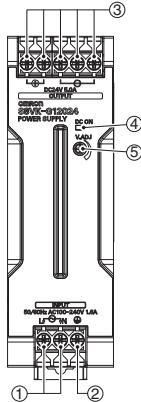
60-W Models

S8VK-G060□□



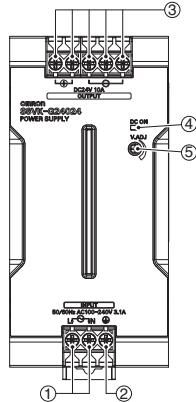
120-W Models

S8VK-G12024



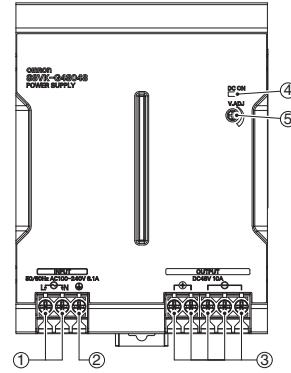
240-W Models

S8VK-G240□□



480-W Models

S8VK-G480□□



No.	Name	Function
1	Input terminals (L, N)	Connect the input lines to these terminals. *1
2	Protective Earth terminal (PE)	Connect the ground line to this terminal. *2
3	DC Output terminals (-V, +V)	Connect the load lines to these terminals.
4	Output indicator (DC ON: Green)	Lights while a direct current (DC) output is ON.
5	Output voltage adjuster (V.ADJ)	Use to adjust the voltage.

*1. The fuse is located on the (L) side. It is not user-replaceable. For a DC input, connect the positive voltage to the L terminal.

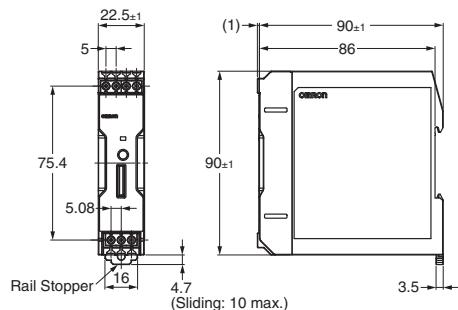
*2. This is the protective earth terminal specified in the safety standards. Always ground this terminal.

S8VK-G

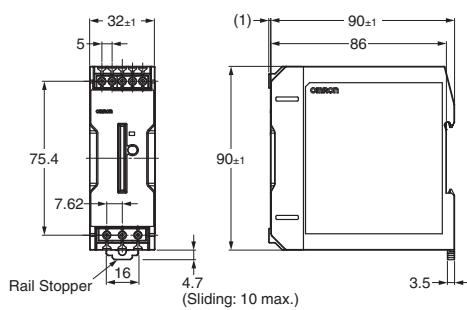
Dimensions

(Unit: mm)

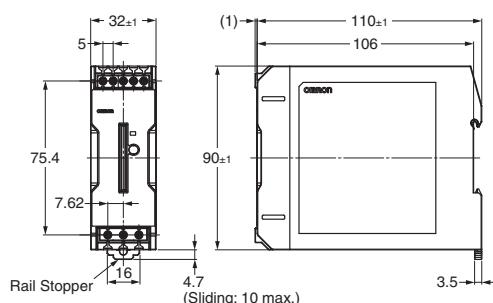
S8VK-G015□□ (15 W)

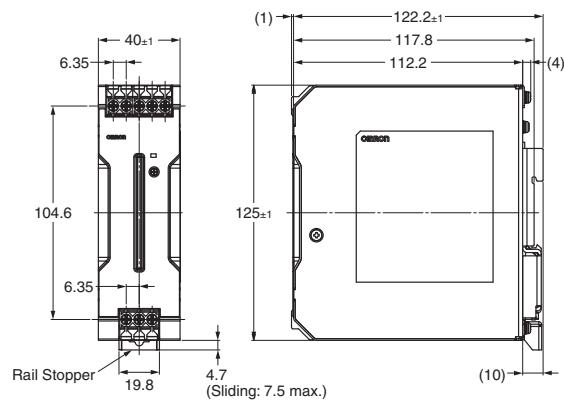
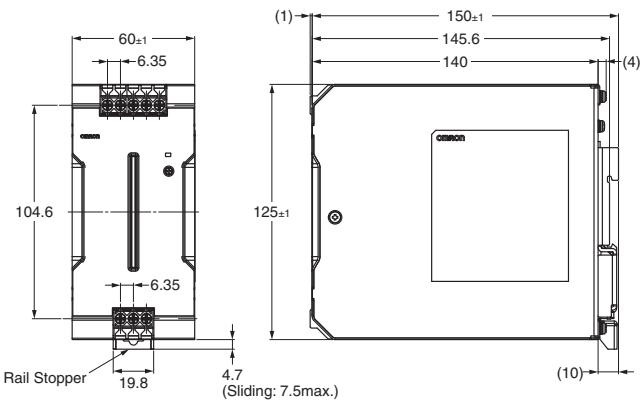


S8VK-G030□□ (30 W)



S8VK-G060□□ (60 W)



S8VK-G12024 (120 W)**S8VK-G240□□ (240 W)****S8VK-G480□□ (480 W)**