Channel ACTION ALERT!

OMRON AUTOMATION & SAFETY

NO: **SD-076** **PRODUCT:** **S8VS Power Supplies**
DATE: **July 2013** **TYPE:** **Partial Discontinuation**

Selected S8VS Switch Mode Power Supplies will be Discontinued June 2014; Use S8VS or S8VK Models

Effective Date: Last orders due June, 2014

Affected Parts

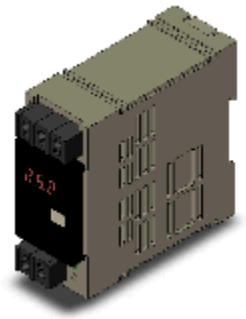
Product discontinuation	Recommended replacement
S8VS-01505	S8VK-G01505
S8VS-01512	S8VK-G01512
S8VS-01524	S8VK-G01524
S8VS-03005	S8VK-G03005
S8VS-03012	S8VK-G03012
S8VS-03024	S8VK-G03024
S8VS-06024	S8VS-06024A
	S8VK-C06024
	S8VK-G06024
S8VS-06024-F	S8VS-06024A-F
S8VS-9024	S8VS-09024A
	S8VK-G12024
S8VS-09024-F	S8VS-09024A-F
S8VS-12024	S8VS-12024A
	S8VK-C12024
	S8VK-G12024
S8VS-12024-F	S8VS-12024A-F
S8VS-18024	S8VS-18024A

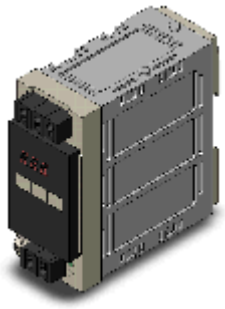
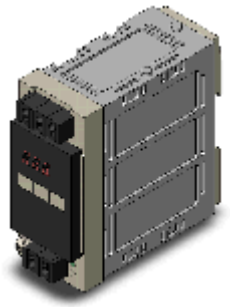
Compare features and specifications on the following pages.

Reference Documentation

Description	Media	Publication number
S8VS Data Sheet	PDF	T026-E1-08
S8VK-G Data Sheet	PDF	T056-E1-01

Appearance

Product discontinuation S8VE series	Recommended replacement S8VS series
S8VS-01505 S8VS-01512 S8VS-01524 	S8VK-G01505 S8VK-G01512 S8VK-G01524 
S8VS-03005 S8VS-03012 S8VS-03024 	S8VK-G03005 S8VK-G03012 S8VK-G03024 
S8VS-06024 	S8VS-06024A S8VK-C06024 S8VK-G06024 
S8VS-06024-F 	S8VS-06024A-F 
S8VS-09024 	S8VS-09024A S8VK-G12024 

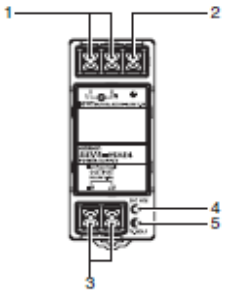
Product discontinuation **S8VE series**	**Recommended replacement** **S8VS series**
S8VS-09024-F 	S8VS-09024A-F 
S8VS-12024 	S8VS-12024A S8VK-C12024 S8VK-G12024 
S8VS-12024-F 	S8VS-12024A-F 
S8VS-18024 	S8VS-18024A 

Wiring Diagram

Product discontinuation
S8VS series

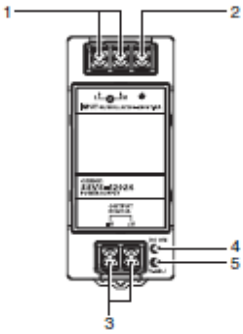
60-W Models

Standard Model
S8VS-06024



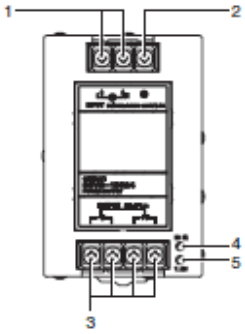
90-W/120-W Models

Standard Models
S8VS-09024/S8VS-0924S/
S8VS-12024



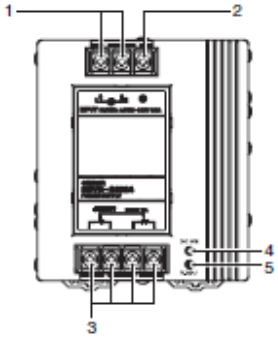
180-W Models

Standard Model
S8VS-18024



240-W Models

Standard Model
S8VS-24024



∗ The terminal arrangement is the same for models with screwless terminal blocks and standard models.

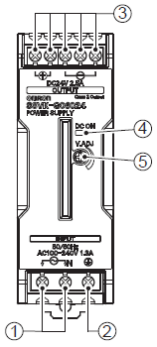
No.	Name	Function
1	Input terminals (L), (N)	Connect the input lines to these terminals. ∗1
2	Protective Earth terminal (PE)	Connect the ground line to this terminal. ∗2
3	DC Output terminals (–V), (+V)	Connect the load lines to these terminals.
4	Output indicator (DC ON: Green)	Lights while a direct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

∗1. The fuse is located on the (L) side. 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.
∗3. The output voltage cannot be adjusted for the S8VS-09024□□□S.

Recommended replacement
S8VK-G series

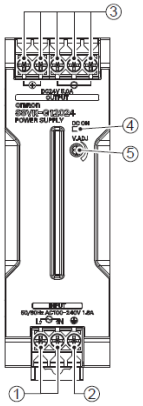
60-W Models

S8VK-G06024



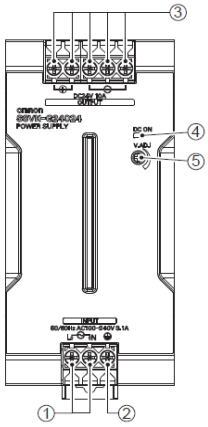
120-W Models

S8VK-G12024



240-W Models

S8VK-G24024



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

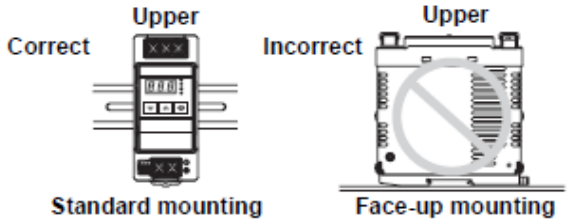
***1.** The fuse is located on the (L) side. It is not user-replaceable. For a DC input, connect the positive voltage to the L terminal.
***2.** This is the protective earth terminal specified in the safety standards. Always ground this terminal.

Mounting Dimensions

Product discontinuation S8VS series	Recommended replacement S8VK-G series

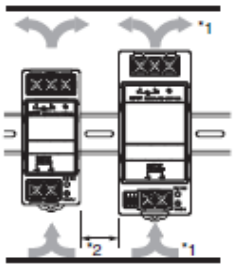
Mounting

60, 90, 120, 180, 240, and 480 W



Note: Improper mounting will interfere with heat dissipation and may occasionally result in deterioration or damage of internal parts. It may also result in failure of the maintenance forecast monitor function. Use the standard mounting method only.

- Take adequate measures to ensure proper heat dissipation to increase the long-term reliability of the Product. Be sure to allow convection in the atmosphere around devices when mounting. Do not use in locations where the ambient temperature exceeds the range of the derating curve.
- When cutting out holes for mounting, make sure that cuttings do not enter the interior of the Products.



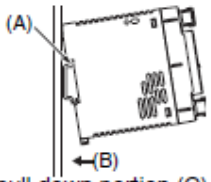
*1. Convection of air
*2. 20 mm min.

60-W, 90-W, 120-W, 180-W, 240-W, and 480-W Models

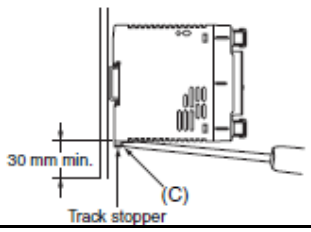
- Improper mounting will interfere with heat dissipation and may occasionally result in deterioration or damage of internal parts. Use the standard mounting method only.
- The internal parts may occasionally deteriorate and be broken due to adverse heat radiation. Do not loosen the screw on the side face of the main body.

DIN Rail Mounting

To mount the Block on a DIN Rail, hook portion (A) of the Block onto the rail and press the Block in direction (B).

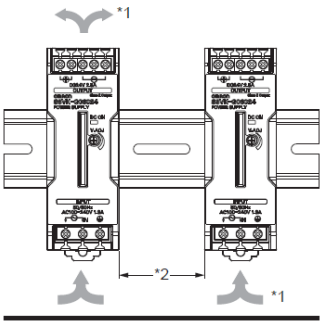


To dismount the Block, pull down portion (C) with a flat-blade screwdriver and pull out the Block.



Mounting

- Take adequate measures to ensure proper heat dissipation to increase the long-term reliability of the Product. Be sure to allow convection in the atmosphere around devices when mounting. Do not use in locations where the ambient temperature exceeds the range of the derating curve.
- When cutting out holes for mounting, make sure that cuttings do not enter the interior of the Products.

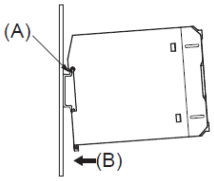


*1. Convection of air
*2. 20 mm min.

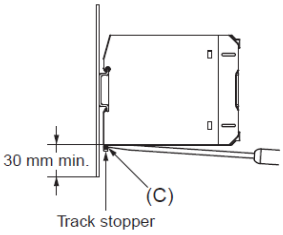
- Improper mounting will interfere with heat dissipation and may occasionally result in deterioration or damage of internal parts. Use the Product within the derating curvefor the mounting direction that is used.
- Use a mounting bracket when the Product is mounted facing horizontally.
- Heat dissipation will be adversely affected. When the Product is mounted facing horizontally, always place the side with the label facing upward.
- Operate the Power Supply within a range that is 5°C less than the values in the derating curve in *Engineering Data* on page 9 if the Power Supply is used with an installation spacing of 10 mm min. (20 mm max.) on the left and right.

DIN Rail Mounting

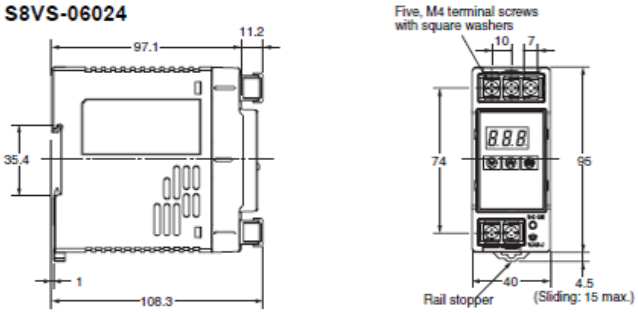
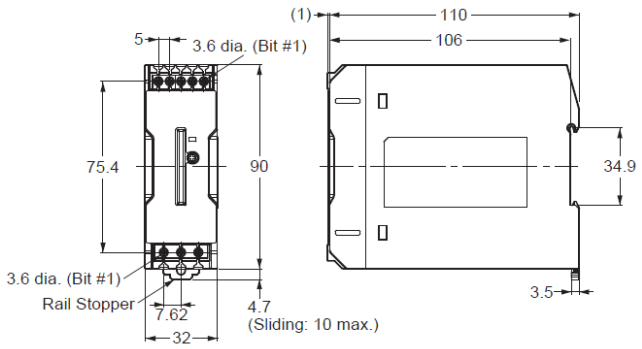
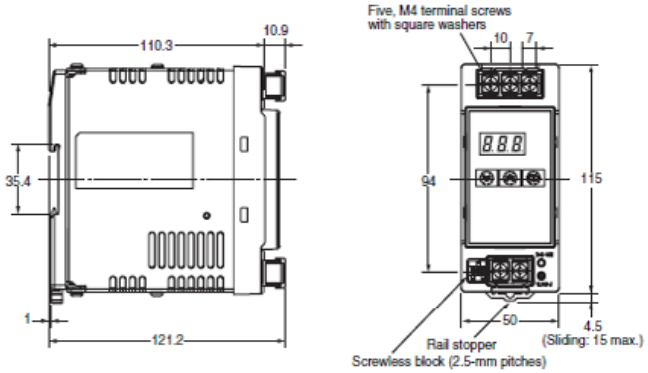
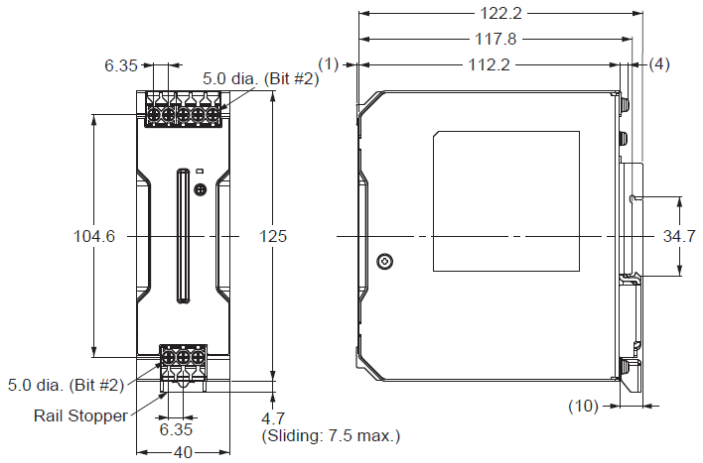
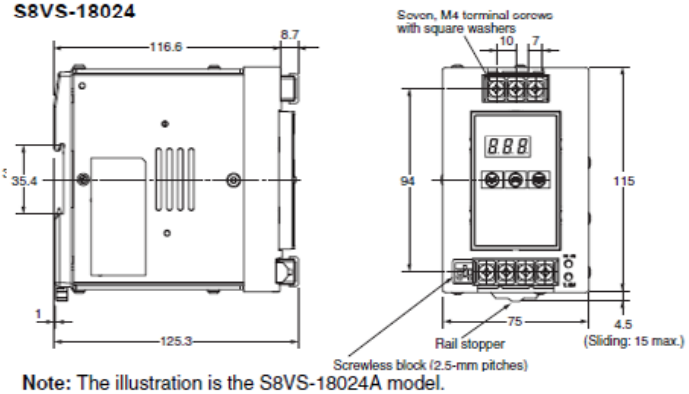
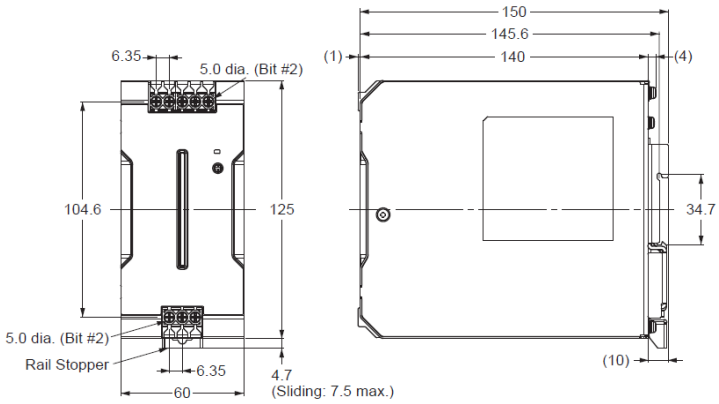
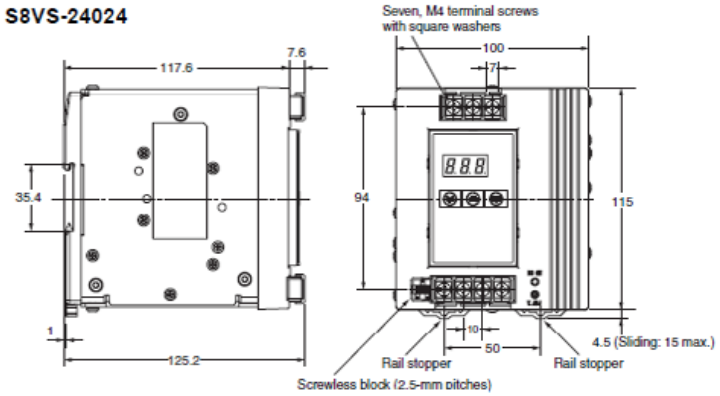
To mount the Block on a DIN Rail, hook portion (A) of the Block onto the rail and press the Block in direction (B).



To dismount the Block, pull down portion (C) with a flat-blade screwdriver and pull out the Block.



Dimensions

Product discontinuation S8VS series	Recommended replacement S8VK-G series
S8VS-06024  **Note:** The illustration is the S8VS-06024A model.	**S8VK-G06024 (60 W)** 
S8VS-09024 **S8VS-12024**  **Note:** The illustration is the S8VS-12024A model.	**S8VK-G12024 (120 W)** 
S8VS-18024  **Note:** The illustration is the S8VS-18024A model.	**S8VK-G24024 (240 W)** 
S8VS-24024  **Note:** The illustration shows the S8VS-24024A model.	

Specifications

Item	Product discontinuation	Recommended replacement	
Model	**Model S8VS series**	**Model S8VK-G series**	**Model S8VK-C series**
Input voltage	100 to 240 VAC (allowable range: 85 to 264 VAC), 80 to 370 VDC	100 to 240 VAC, 90 to 350 VDC, 2-phase input from 3-phase source <240 VAC	
Inrush current	17.5 A max., 14 A typical (for 100 VAC input) 35 A max., 28 A typical (for 200 VAC input) * for a cold start at 25°C	16 A (for 115 VAC input), 32 A (for 230 VAC input) for cold start at 25°C	40 A max (for 230 VAC input)
Start-up time	60 W 620 ms typical (for 100 VAC input) 400 ms typical (for 200 VAC input) 90 W 460 ms typical (for 100 VAC input) 300 ms typical (for 200 VAC input) 120 W 550 ms typical (for 100 VAC input) 400 ms typical (for 200 VAC input)	15 W 520 to 580 ms (for 115 VAC) 400 ms (for 230 VAC), 30W 550 to 600 ms (for 115 VAC) 430 to 490 ms (for 230 VAC), 60 W 570 to 650 ms (115 VAC) 430 to 500 ms (230 VAC), 120 W 790 ms (for 115 VAC) 750 ms (for 230 VAC)	N/A
	180 W 570 ms typical (for 100 VAC input) 470 ms typical (for 200 VAC input) 240 W 540 ms typical (for 100 VAC input) 230 ms typical (for 200 VAC input)	240 W 250 to 290 ms (for 115/230 VAC input); 480 W 290 ms (for 115 VAC input) 260 ms (for 230 VAC input)	N/A
Output hold time	60 W 34 ms typical (for 100 VAC input) 158 ms typical (for 200 VAC input) 90 W 28 ms typical (for 100 VAC input) 132 ms typical (for 200 VAC input) 120 W 52 ms typical (for 100 VAC input) 54 ms typical (for 200 VAC input)	15 W 28 to 32 ms (for 115 VAC) 34 to 138 ms (for 230 VAC), 30 W 23 to 36 ms (for 115 VAC) 154 to 177 ms (230 VAC, 60 W 25 to 26 ms (115 VAC) 129 to 139 ms (230 VAC), 120 W 42 ms (115/230 VAC)	N/A
	180 W 58 ms typical (for 100 VAC input) 62 ms typical (for 200 VAC input) 240 W 64 ms typical (for 100 VAC input) 64 ms typical (for 200 VAC input)	240 W 44 ms (for 115/230 VAC) 480 W 40 ms (115 VAC) 50 ms (230 VAC)	N/A
Overload protection	105% to 160% of rated load current, Inverted L voltage drop, Automatic reset.	121% to 160% of rated load current (130% typical value)	Yes
Parallel operation	No (However, backup operation is possible. An external diode is required.)	Yes	N/A
Operating ambient temperature	-10°C to +60°C	-40°C to +70°C	-25°C to 60°C
EMI (Conducted Emissions)	Conforms to EN6120-3 EN55011 Class B and based on FCC Class A	Conforms to EN61204-3 EN55011 Class B and based on FCC Class A	Conforms to EN61204-3, EN55011 Class A

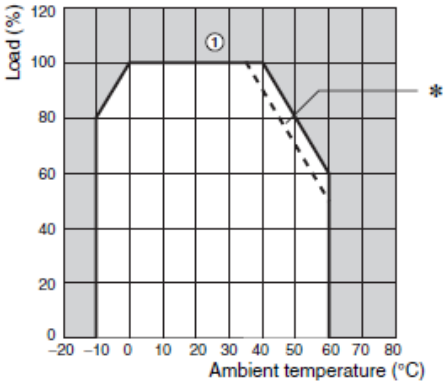
Item	Product discontinuation	Recommended replacement	
Model	**Model S8VS series**	**Model S8VK-G series**	**Model S8VK-C series**
EMI (Radiated Emissions)	Conforms to EN61204-3 EN55011 Class B	Conforms to EN61204-3 EN55011 Class B	Conforms to EN61204-3, EN55011 Class A
Approved standards	UL Listed: UL508 (Listing, Class 2 Output: Per 1310) UL UR: UL60950-1 (Recognition) cUL: CSA C22.2 No.107.1 (Class 2 Output: Per CSA C22.2 No.223) cUR: CSA C22.2 No.60950-1 EN/VDE: EN50178 (=VDE0160), EN60950-1 (=VDE0805 Teil1)	UL Listed: UL508 (Listing) UL UR: UL60950-1 (Recognition) cUL: CSA C22.2 No.107.1 cUR: CSA C22.2 No.60950-1 EN/VDE: EN50178 (=VDE0160), EN60950-1 (=VDE0805) Lloyd's standards	UL: UL508 (Listing), UL60950-1, cUL: CSA C22.2 No.107.1 and No.60950-1, EN/VDE: EN50178 (=VDE0160), EN60950-1 (=VDE0805)

Operation Ratings

Product discontinuation S8VS series	Recommended replacement S8VK-GS series

Derating Curve

60, 90, 120, 180, 240, and 480 W



* Using side mounting bracket for right-side mounting (excluding 240-W models). UL certification conditions do not apply if the side mounting bracket is used.

Note: 1. Internal parts may occasionally deteriorate or be damaged. Do not use the Power Supply in areas outside the derating curve (i.e., the area shown by shading ① in the above graph).

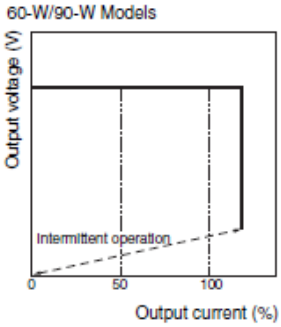
2. If there is a derating problem, use forced air-cooling.

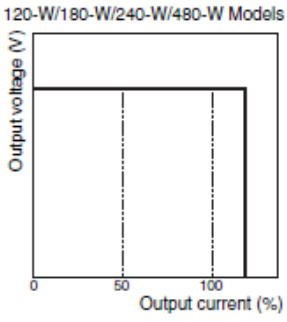
3. When using a 480-W model at an input voltage of 95 VAC or less, derate the load by at least 80%.

4. DC Inputs
If the input voltage is less than 100 VDC, reduce the load given in the above derating curve by at least the following factor.
60-W models: 0.9 max.
90-W models: 0.85 max.
120-W/180-W/240-W models: 0.8 max.

Overload Protection

The load and the power supply are automatically protected from overcurrent damage by this function.
Overload protection is activated if the output current rises above 105% of the rated current.
When the output current returns within the rated range overload protection is automatically cleared.



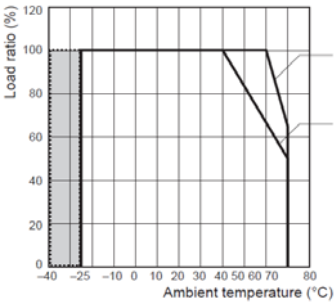


Note: 1. Internal parts may occasionally deteriorate or be damaged if a short-circuited or overcurrent state continues during operation.

2. Internal parts may possibly deteriorate or be damaged if the Power Supply is used for applications with frequent inrush current or overloading at the load end. Do not use the Power Supply for such applications.

Derating Curve

120 W (S8VK-G12024)



Note: 1. At less than 90 VAC, the derating is 2.5%/V

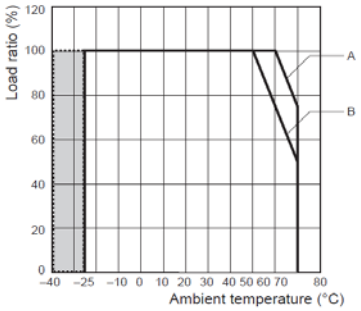
2. For a DC power input, reduce the load given in the above derating curve by multiplying the following coefficients.
S8VK-G12024: 0.9

3. Gray shaded area: See "–40°C Operation Guarantee Condition"

A. Standard mounting
60°C and over: the derating is 3.5%/°C

B. Face-up mounting
40°C and over: the derating is 1.67%/°C

240 W (S8VK-G24024)



Note: 1. At less than 90 VAC, the derating is 2.5%/V

2. For a DC power input, reduce the load given in the above derating curve by multiplying the following coefficients.
S8VK-G240☐☐: 0.8

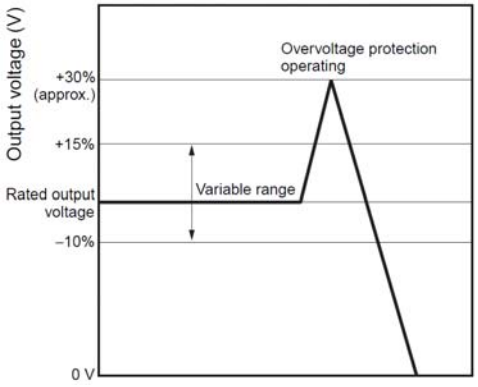
3. Gray shaded area: See "–40°C Operation Guarantee Condition"

A. Standard mounting
60°C and over: the derating is 2.5%/°C

B. Face-up mounting
50°C and over: the derating is 2.5%/°C

Overvoltage Protection

Consider the possibility of an overvoltage and design the system so that the load will not be subjected to an excessive voltage even if the feedback circuit in the Power Supply fails. If an excessive voltage that is approximately 130% of the rated voltage or more is output, the output voltage is shut OFF. Reset the input power by turning it OFF for at least three minutes and then turning it back ON again.



The values shown in the above diagram is for reference only.

Note: Do not turn ON the power again until the cause of the overvoltage has been removed.

New Product

OMRON

Switch Mode Power Supply
S8VK-G (15/30/60/120/240/480-W Models)

Reliable and Easy Operation
Resistant in tough environments
Easy and fast installation
The most compact size on the market

- Universal input for worldwide applications:
  100 to 240 VAC (85 to 264 VAC)
- DC input available: 90 to 350 VDC
- Possible 2 phases input usage.
- Wide operation temperature range: –40 to 70 °C
- Power Boost function at 120%
- Safety standards:
  UL508/60950-1, CSA C22.2 No. 107.1/60950-1
  EN50178 (= VDE0160), EN60950-1 (= VDE0805).
  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: EN61204-3 Class B

* Scheduled to obtain certification in June, 2013.

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

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

1. Input voltage types
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
05: 5 V
12: 12 V
24: 24 V
48: 48 V

Ordering Information

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

Power ratings	Input voltage	Output Voltage	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		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		12 V	4.5 A	5.4 A	**S8VK-G06012**
		24 V	2.5 A	3 A	**S8VK-G06024**
120 W		24 V	5 A	6 A	**S8VK-G12024**
240 W		24 V	10 A	12 A	**S8VK-G24024**
		48 V	5 A	6 A	**S8VK-G24048**
480 W		24 V	20 A	24 A	**S8VK-G48024**
		48 V	10 A	12 A	**S8VK-G48048**

Specifications

Ratings, Characteristics, and Functions

Item		Power ratings / Output voltage	15 W			30 W		
			5 V	12 V	24 V	5 V	12 V	24 V
Efficiency (Typical)		230 VAC input	77%		80%	79%	82%	86%
Input	Voltage *1		100 to 240 VAC, 90 to 350 VDC (allowable range: 85 to 264 VAC) *6					
	Frequency *1		50/60 Hz (47 to 450 Hz)					
	Current (Typical)	115 VAC input	0.32 A	0.3 A	0.31 A	0.5 A	0.57 A	0.58 A
		230 VAC input	0.2 A	0.21 A	0.2 A	0.32 A	0.37 A	0.36 A
	Power factor (Typical)	230 VAC input	0.42			0.43	0.42	0.43
	Harmonic current emissions		Conforms to EN61000-3-2					
	Leakage current (Typical)	115 VAC input	0.14 mA			0.13 mA		
		230 VAC input	0.25 mA			0.24 mA		
	Inrush current (Typical) *2	115 VAC input	16 A					
		230 VAC input	32 A					
Output	Voltage adjustment range *3		–10% to 15% (with V.ADJ) (guaranteed)					
	Ripple *4	at 20 MHz (Typical)	60 mV	50 mV	30 mV	30 mV	30 mV	30 mV
	Input variation influence		0.5% max. (at 85 to 264 VAC input, 100% load)					
	Load variation Influence (Rated Input voltage)		3.0% max. (5 V), 2.0% max. (12 V), 1.5% max. (24 V), at 0% to 100% load					
	Temperature variation influence		0.05%/°C max.					
	Start up time (Typical) *2	115 VAC input	530 ms	520 ms	580 ms	550 ms	550 ms	600 ms
		230 VAC input	330 ms	400 ms	400 ms	430 ms	490 ms	480 ms
	Hold time (Typical) *2	115 VAC input	28 ms	29 ms	32 ms	33 ms	36 ms	23 ms
		230 VAC input	134 ms	138 ms	134 ms	177 ms	170 ms	154 ms
Additional functions	Overload protection *2		121% to 160% of rated load current (130% typ value)					
	Overvoltage protection *2		Yes *5					
	Power Boost		120% of rated current (Refer to Engineering Data)					
	Parallel operation		Yes (Refer to Engineering Data)					
	Series operation		Possible for up to two Power Supplies (with external diode)					
Others	Ambient operating temperature		–40 to 70°C (Refer to Engineering Data)					
	Storage temperature		–40 to 85°C					
	Ambient operating humidity		0% to 95% (Storage humidity: 0% to 95%)					
	Dielectric strength (detection current: 20 mA)		3.0 kVAC for 1 min. (between all inputs and outputs) 2.0 kVAC for 1 min. (between all inputs and PE terminal) 1.0 kVAC for 1 min. (between all outputs and PE terminal)					
	Insulation resistance		100 MΩ min. (between all outputs and all inputs/ PE terminals) at 500 VDC					
	Vibration resistance		10 to 55 Hz, 0.375-mm single amplitude for 2 h each in X, Y, and Z directions					
			10 to 150 Hz, 0.35-mm single amplitude (5 G max.) for 80 min. each in X, Y, and Z directions					
	Shock resistance		150 m/s², 3 times each in ±X, ±Y, and ±Z directions					
	Output indicatior		Yes (color: green), lighting from 80% to 90% or more of rated voltage					
	EMI	Conducted Emission	Conforms to EN61204-3 EN55011 Class B and based on FCC Class A					
		Radiated Emission	Conforms to EN61204-3 EN55011 Class B					
	EMS		Conforms to EN61204-3 high severity levels					
	Approved Standards		UL Listed: UL508 (Listing, Class2 Output: Per UL1310) UL UR: UL60950-1 (Recognition) cUL: CSA C22.2 No.107.1 (Class2 Output: Per CSA C22.2 No.223) cUR: CSA C22.2 No.60950-1 EN/VDE: EN50178 (=VDE0160), EN60950-1 (=VDE0805) Lloyd's standards *7					
	Fulfilled Standards		SELV (EN60950-1/EN50178/UL60950-1), PELV (EN60204-1, EN50178), Safety of Power Transformers (EN61558-2-16) EN50274 for Terminal parts					
	Degree of protection		IP20 by EN / IEC60529					
	SEMI		F47-0706 (200 to 240 VAC)					
	Weight		150 g			195 g		

***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 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.** To reset the protection, turn OFF the input power for three minutes or longer and then turn it back ON.
***6.** 90 to 350 VDC's UL standards are scheduled to obtain certification in June, 2013.
***7.** Scheduled to obtain certification in June, 2013.

Item			Power ratings	60 W		120 W
			Output voltage	12 V	24 V	24 V
Efficiency (Typical)			230 VAC input	85%	88%	89%
Input	Voltage *1			100 to 240 VAC, 90 to 350 VDC (allowable range: 85 to 264 VAC) *6		
	Frequency *1			50/60 Hz (47 to 450 Hz)		50/60 Hz (47 to 63 Hz)
	Current (Typical)		115 VAC input	1.0 A	1.1 A	1.3 A
			230 VAC input	0.6 A	0.7 A	
	Power factor (Typical)		230 VAC input	0.46	0.45	0.94
	Harmonic current emissions			Conforms to EN61000-3-2		
	Leakage current (Typical)		115 VAC input	0.16 mA		0.24 mA
			230 VAC input	0.30 mA		0.38 mA
	Inrush current (Typical) *2		115 VAC input	16 A		
			230 VAC input	32 A		
Output	Voltage adjustment range *3			–10% to 15% (with V.ADJ) (guaranteed)		
	Ripple *4		at 20 MHz (Typical)	150 mV	50 mV	150 mV
	Input variation influence			0.5% max. (at 85 to 264 VAC input, 100% load)		
	Load variation Influence (Rated Input voltage)			2.0% max. (12 V), 1.5% max. (24 V), at 0% to 100% load		
	Temperature variation influence			0.05%/°C max.		
	Start up time (Typical) *2		115 VAC input	570 ms	650 ms	790 ms
			230 VAC input	430 ms	500 ms	750 ms
	Hold time (Typical) *2		115 VAC input	26 ms	25 ms	42 ms
			230 VAC input	139 ms	129 ms	42 ms
Additional functions	Overload protection *2			121% to 160% of rated load current, (130% typ value)		121% to160% of rated load current, (125% typ value)
	Overvoltage protection *2			Yes *5		
	Power Boost			120% of rated current (Refer to Engineering Data)		
	Parallel operation			Yes (Refer to Engineering Data)		
	Series operation			Possible for up to two Power Supplies (with external diode)		
Others	Ambient operating temperature			–40 to 70°C (Refer to Engineering Data)		
	Storage temperature			–40 to 85°C		
	Ambient operating humidity			0% to 95% (Storage humidity: 0% to 95%)		
	Dielectric strength (detection current: 20 mA)			3.0 kVAC for 1 min. (between all inputs and outputs) 2.0 kVAC for 1 min. (between all inputs and PE terminal) 1.0 kVAC for 1 min. (between all outputs and PE terminal)		
	Insulation resistance			100 MΩ min. (between all outputs and all inputs/ PE terminals) at 500 VDC		
	Vibration resistance			10 to 55 Hz, 0.375-mm single amplitude for 2 h each in X, Y, and Z directions		
				10 to 150 Hz, 0.35-mm single amplitude (5 G max.) for 80 min. each in X, Y, and Z directions		
	Shock resistance			150 m/s^2, 3 times each in ±X, ±Y, and ±Z directions		
	Output indicatior			Yes (color: green), lighting from 80% to 90% or more of rated voltage		
	EMI		Conducted Emission	Conforms to EN61204-3 EN55011 Class B and based on FCC Class A		
			Radiated Emission	Conforms to EN61204-3 EN55011 Class B		
	EMS			Conforms to EN61204-3 high severity levels		
	Approved Standards			UL Listed: UL508 (Listing, For 60 W only Class2 Output: Per UL1310) UL UR: UL60950-1 (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.60950-1 EN/VDE: EN50178 (=VDE0160), EN60950-1 (=VDE0805) Lloyd's standards *7		
	Fulfilled Standards			SELV (EN60950-1/EN50178/UL60950-1), PELV(EN60204-1, EN50178), Safety of Power Transformers (EN61558-2-16) EN50274 for Terminal parts		
	Degree of protection			IP20 by EN / IEC60529		
	SEMI			F47-0706 (200 to 240 VAC)		
	Weight			260 g		620 g

***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 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.** To reset the protection, turn OFF the input power for three minutes or longer and then turn it back ON.
***6.** 90 to 350 VDC's UL standards are scheduled to obtain certification in June, 2013.
***7.** Scheduled to obtain certification in June, 2013.

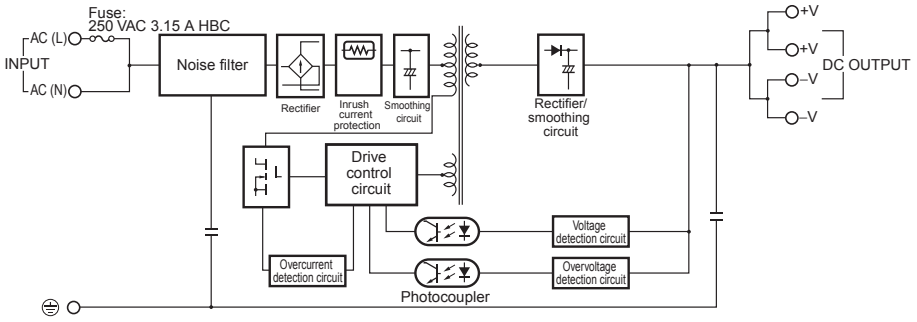
Item			Power ratings	240 W		480 W	
			Output voltage	24 V	48 V	24 V	48 V
Efficiency (Typical)			230 VAC input	92%		93%	
Input	Voltage *1			100 to 240 VAC, 90 to 350 VDC (allowable range: 85 to 264 VAC) *6			
	Frequency *1			50/60 Hz (47 to 63 Hz)			
	Current (Typical)		115 VAC input	2.4 A		4.7 A	
			230 VAC input	1.3 A		2.3 A	
	Power factor (Typical)		230 VAC input	0.9		0.97	
	Harmonic current emissions			Conforms to EN61000-3-2			
	Leakage current (Typical)		115 VAC input	0.23 mA		0.3 mA	
			230 VAC input	0.33 mA		0.49 mA	
	Inrush current (Typical) *2		115 VAC input	16 A			
			230 VAC input	32 A			
Output	Voltage adjustment range *3			–10% to 15% (with V.ADJ) (guaranteed)			
	Ripple *4		at 20 MHz (Typical)	180 mV	350 mV	230 mV	470 mV
	Input variation influence			0.5% max. (at 85 to 264 VAC input, 100% load)			
	Load variation Influence (Rated Input voltage)			1.5% max. (24 V, 48 V), at 0% to 100% load			
	Temperature variation influence			0.05%/°C max.			
	Start up time (Typical) *2		115 VAC input	250 ms	290 ms	380 ms	
			230 VAC input	250 ms	290 ms	260 ms	
	Hold time (Typical) *2		115 VAC input	44 ms	43 ms	40 ms	
			230 VAC input	44 ms		50 ms	
Additional functions	Overload protection *2			121% to 160% of rated load current (130% typ value)			
	Overvoltage protection *2			Yes *5			
	Power Boost			120% of rated current (Refer to Engineering Data)			
	Parallel operation			Yes (Refer to Engineering Data)			
	Series operation			Possible for up to two Power Supplies (with external diode)			
Others	Ambient operating temperature			–40 to 70°C (Refer to Engineering Data)			
	Storage temperature			–40 to 85°C			
	Ambient operating humidity			0% to 95% (Storage humidity: 0% to 95%)			
	Dielectric strength (detection current: 20 mA)			3.0 kVAC for 1 min. (between all inputs and outputs) 2.0 kVAC for 1 min. (between all inputs and PE terminal) 1.0 kVAC for 1 min. (between all outputs and PE terminal)			
	Insulation resistance			100 MΩ min. (between all outputs and all inputs/ PE terminals) at 500 VDC			
	Vibration resistance			10 to 55 Hz, 0.375-mm single amplitude for 2 h each in X, Y, and Z directions			
				10 to 150 Hz, 0.35-mm single amplitude (5 G max for 240 W, 3 G max for 480 W) for 80 min. each in X, Y, and Z directions			
	Shock resistance			150 m/s^2, 3 times each in ±X, ±Y, and ±Z directions			
	Output indicatior			Yes (color: green), lighting from 80% to 90% or more of rated voltage			
	EMI		Conducted Emission	Conforms to EN61204-3 EN55011 Class B and based on FCC Class A			
			Radiated Emission	Conforms to EN61204-3 EN55011 Class B			
	EMS			Conforms to EN61204-3 high severity levels			
	Approved Standards			UL Listed: UL508 (Listing) UL UR: UL60950-1 (Recognition) cUL: CSA C22.2 No.107.1 cUR: CSA C22.2 No.60950-1 EN/VDE: EN50178 (=VDE0160), EN60950-1 (=VDE0805) Lloyd's standards *7			
	Fulfilled Standards			SELV (EN60950-1/EN50178/UL60950-1), PELV(EN60204-1, EN50178), Safety of Power Transformers (EN61558-2-16) EN50274 for Terminal parts			
	Degree of protection			IP20 by EN / IEC60529			
	SEMI			F47-0706 (200 to 240 VAC)			
	Weight			900 g		1,500 g	

***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 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.** To reset the protection, turn OFF the input power for three minutes or longer and then turn it back ON.
***6.** 90 to 350 VDC's UL standards are scheduled to obtain certification in June, 2013.
***7.** Scheduled to obtain certification in June, 2013.

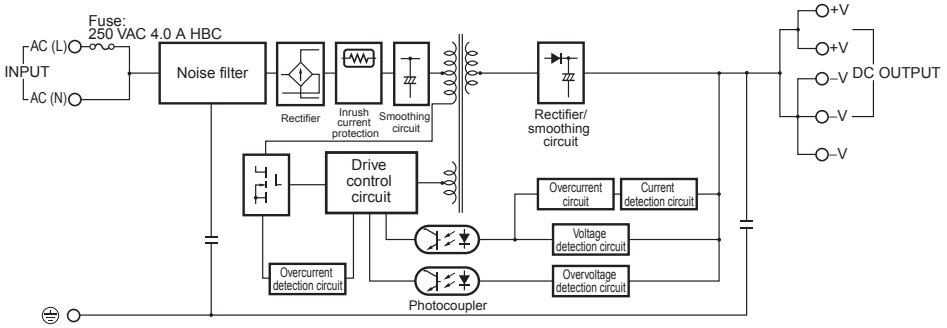
Connections

Block Diagrams

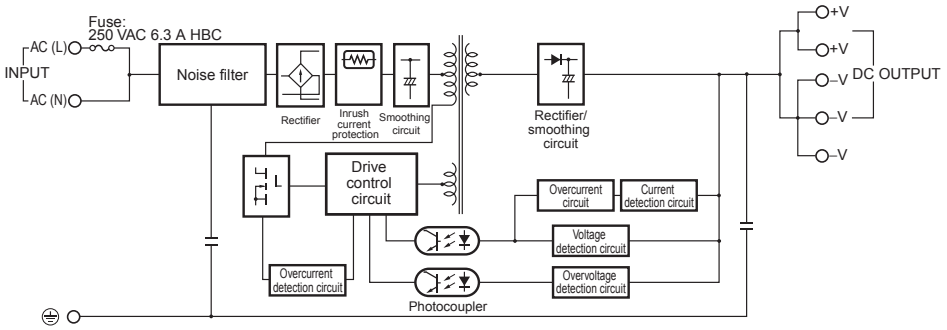
S8VK-G015□□ (15 W)



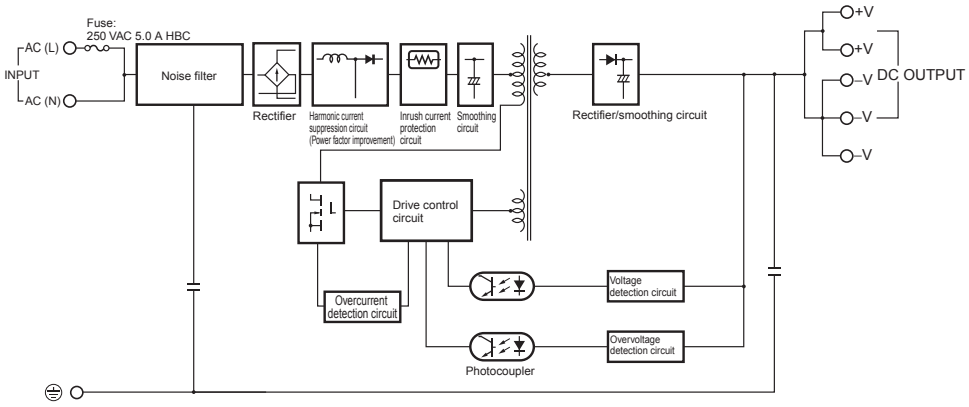
S8VK-G030□□ (30 W)



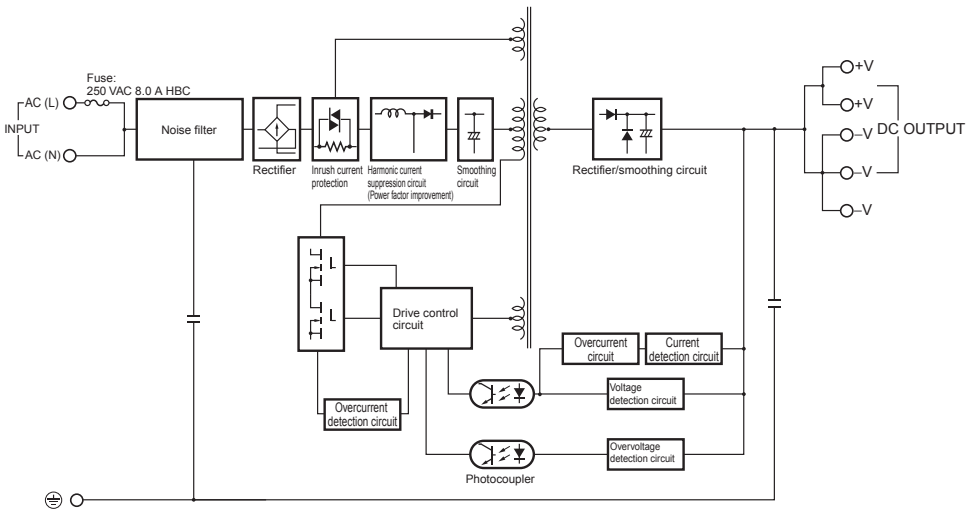
S8VK-G060□□ (60 W)



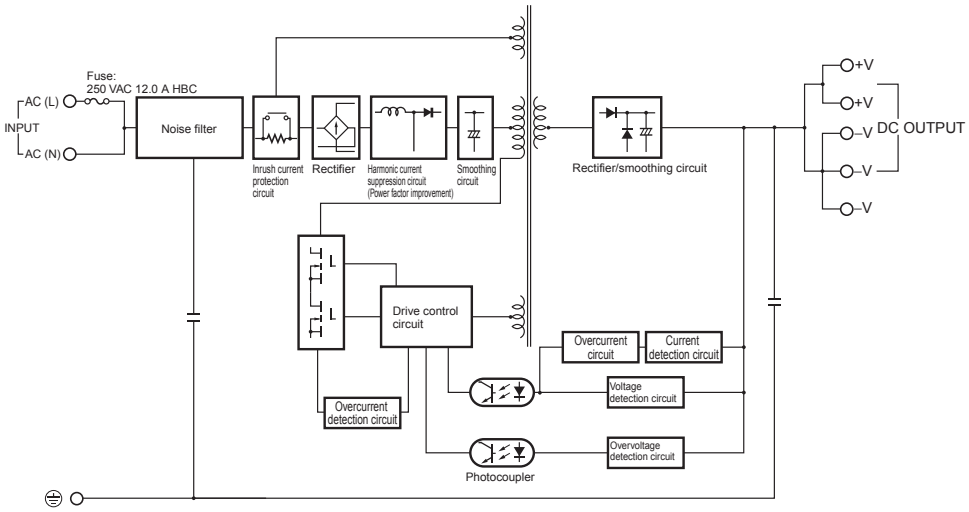
S8VK-G12024 (120 W)



S8VK-G240□□ (240 W)



S8VK-G480□□ (480 W)

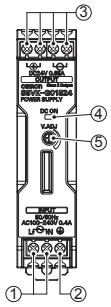


Construction and Nomenclature

Nomenclature

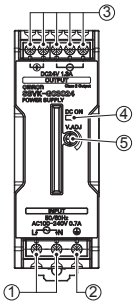
15-W Models

S8VK-G015□□



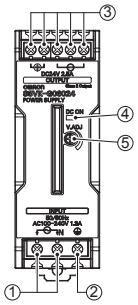
30-W Models

S8VK-G030□□



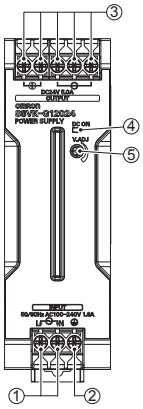
60-W Models

S8VK-G060□□



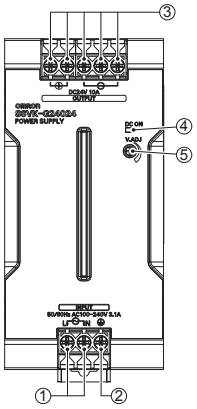
120-W Models

S8VK-G12024



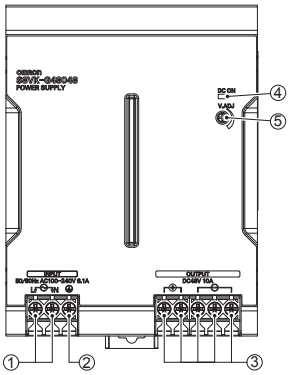
240-W Models

S8VK-G240□□



480-W Models

S8VK-G480□□



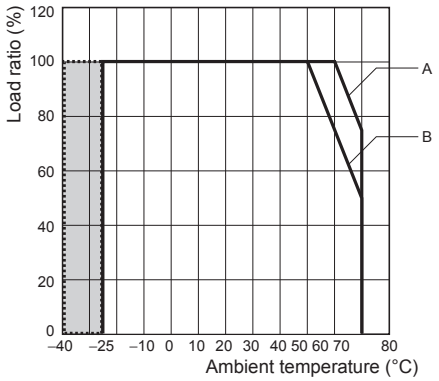
No.	Name	Function
1	Input terminals (L), (N)	Connect the input lines to these terminals. *1
2	Protective Earth terminal (PE)	Connect the ground line to this terminal. *2
3	DC Output terminals (–V), (+V)	Connect the load lines to these terminals.
4	Output indicator (DC ON: Green)	Lights while a direct 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.

Engineering Data

Derating Curve

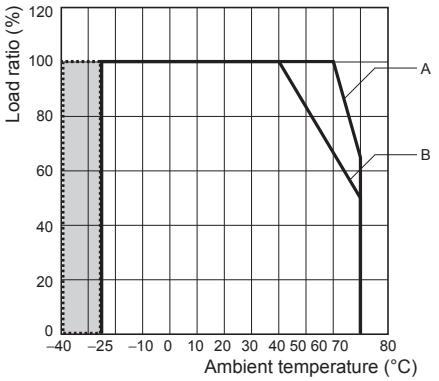
15, 30, 240 W (S8VK-G015□□, S8VK-G030□□, S8VK-G240□□)



Note: 1. At less than 90 VAC, the derating is 2.5%/V
2. For a DC power input, reduce the load given in the above derating curve by multiplying the following coefficients.
S8VK-G015□□: 1.0
S8VK-G030□□: 0.9
S8VK-G240□□: 0.8
3. See "–40°C Operation Guarantee Condition"

A. Standard mounting
60°C and over: the derating is 2.5%/°C
B. Face-up mounting / Side mounting (15W only)
50°C and over: the derating is 2.5%/°C

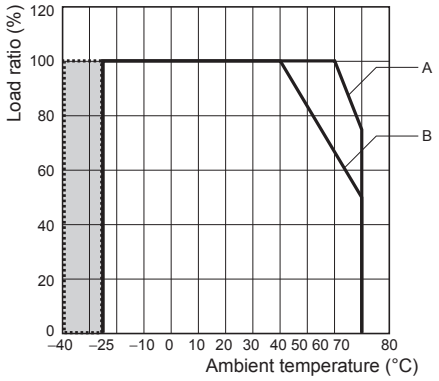
120 W (S8VK-G12024)



Note: 1. At less than 90 VAC, the derating is 2.5%/V
2. For a DC power input, reduce the load given in the above derating curve by multiplying the following coefficients.
S8VK-G12024: 0.9
3. See "–40°C Operation Guarantee Condition"

A. Standard mounting
60°C and over: the derating is 3.5%/°C
B. Face-up mounting
40°C and over: the derating is 1.67%/°C

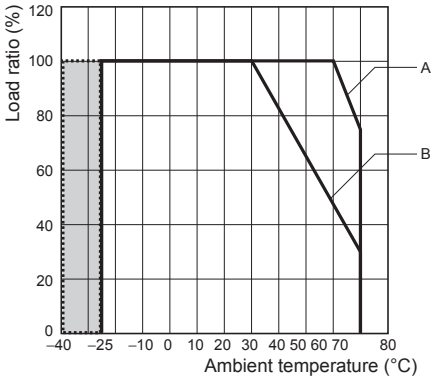
60 W (S8VK-G060□□)



Note: 1. At less than 90 VAC, the derating is 2.5%/V
2. For a DC power input, reduce the load given in the above derating curve by multiplying the following coefficients.
S8VK-G060□□: 0.9
3. See "–40°C Operation Guarantee Condition"

A. Standard mounting
60°C and over: the derating is 2.5%/°C
B. Face-up mounting
40°C and over: the derating is 1.67%/°C

480 W (S8VK-G480□□)



Note: 1. At less than 90 VAC, the derating is 2.5%/V
2. For a DC power input, reduce the load given in the above derating curve by multiplying the following coefficients.
S8VK-G480□□: 0.8
3. See "–40°C Operation Guarantee Condition"

A. Standard mounting
60°C and over: the derating is 2.5%/°C
B. Face-up mounting
30°C and over: the derating is 1.75%/°C

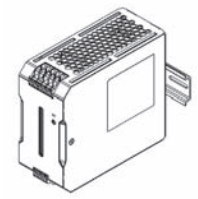
–40°C Operation Guarantee Condition

The unit can start up and operate normally at –40°C, but the following criteria will be inferior to the values of datasheet.
Please consider these influences.

		15 W 5 V	15 W 12 V	15 W 24 V	30 W 5 V	30 W 12 V	30 W 24 V	60 W 12 V	60 W 24 V	120 W 24 V	240 W 24 V	240 W 48 V	480 W 24 V	480 W 48 V
Ripple (Typ.)	**230 VAC input**	280 mV	170 mV	100 mV	110 mV	330 mV	180 mV	200 mV	420 mV	440 mV	840 mV	1220 mV	460 mV	580 mV
Ripple (Max.)	**230 VAC input**	830 mV	450 mV	220 mV	240 mV	630 mV	290 mV	480 mV	430 mV	450 mV	1030 mV	1320 mV	670 mV	870 mV
Start up time (Typ.)	**230 VAC input**	420 ms	440 ms	490 ms	410 ms	440 ms	480 ms	420 ms	490 ms	760 ms	230 ms	280 ms	260 ms	260 ms
Hold time (Typ.)	**230 VAC input**	88 ms	110 ms	109 ms	137 ms	112 ms	114 ms	124 ms	118 ms	20 ms	35 ms	37 ms	39 ms	41 ms

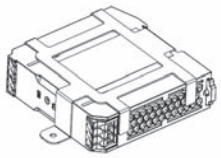
Mounting

(A) Standard (Vertical) mounting



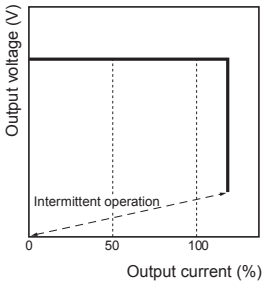
(B) Face-up mounting

(C) Side mountining only for 15 W



Overload Protection

The load and the power supply are automatically protected from overcurrent damage by this function.
Overload protection is activated if the output current rises above 121% of the rated current.
When the output current returns within the rated range overload protection is automatically cleared.



The values shown in the above diagrams are for reference only.

Note: 1. Internal parts may occasionally deteriorate or be damaged if a short-circuited or overcurrent state continues during operation.
2. Internal parts may possibly deteriorate or be damaged if the Power Supply is used for applications with frequent inrush current or overloading at the load end. Do not use the Power Supply for such applications.

Power Boost Function

For All Models

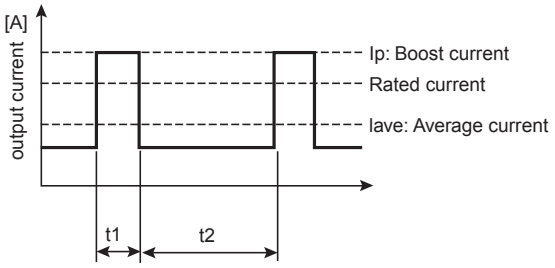
Power Boost is a function that can output the temporary repeated boost current larger than the rated current.
However, it should meet the following four Boost current conditions.

1. Time that the boost current flows: t1
2. The maximum value of the boost current: Ip
3. The average output current: Iave
4. The time ratio of the boost current flow: Duty

Note: Boost current conditions

- t1 ≤ 10 s
- Ip ≤ Rated boost current
- Iave ≤ Rated current

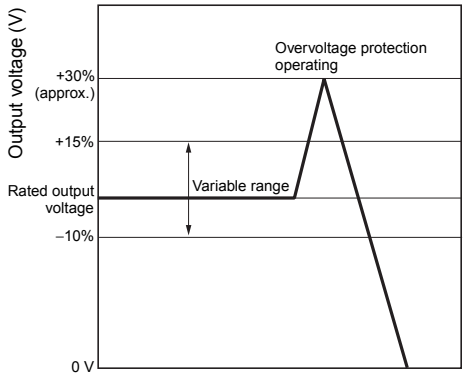
$$\text{Duty} = \frac{t1}{t1 + t2} \times 100\ [\%] \leq 30\%$$



- Do not allow the boost current to continue for more than 10 seconds.
  Also, do not let the duty cycle exceed the boost current conditions. These conditions may damage the Power supply.
- Ensure that the average current of one cycle of the boost current does not exceed the rated output current.
  This may damage the Power Supply.
- Lessen the load of the boost load current by adjusting the ambient temperature and the mounting direction.

Overvoltage Protection

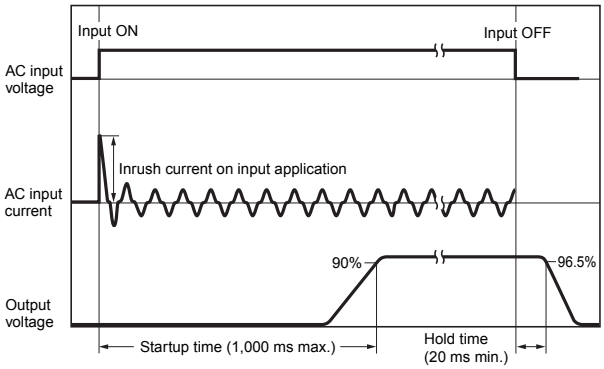
Consider the possibility of an overvoltage and design the system so that the load will not be subjected to an excessive voltage even if the feedback circuit in the Power Supply fails. If an excessive voltage that is approximately 130% of the rated voltage or more is output, the output voltage is shut OFF. Reset the input power by turning it OFF for at least three minutes and then turning it back ON again.



The values shown in the above diagram is for reference only.

Note: Do not turn ON the power again until the cause of the overvoltage has been removed.

Inrush Current, Startup Time, Output Hold Time



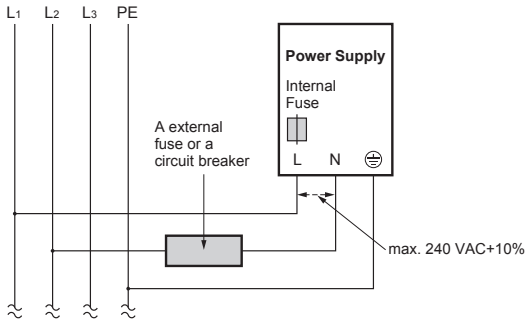
Note: Twice the input current or above will flow during the parallel operation or redundant system.
Therefore, check the fusing characteristics of fuses and operating characteristics of breakers making sure that the external fuses will not burn out and the circuit breakers will not be activated by the inrush current.

Two phases application for Single phase models

For All Single phase Models, S8VK-G

Basically OMRON single phase power supply can be used on two-phases of a 3–phase-system when some of conditions satisfy like below.

1. The supplying voltage is below the maximum rated input.
   OMRON Power supply allows the input voltage equivalent or less than 240 VAC+10%.
   Please confirm the input voltage between two lines if the input voltage satisfies this condition before connecting.
2. The external protector is needed on N input line to secure a safety.
   N line has no protection of a fuse internally.
   An appropriate fuse or circuit breaker should be connected on N input line like the following.

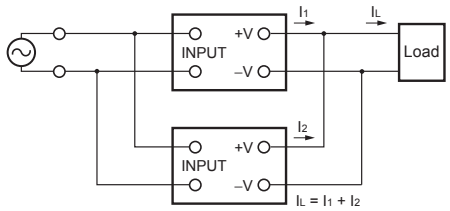


Parallel Operation

The parallel operation of S8VK-G is possible to increase the output power.

However please consider the following notes when the parallel operation must be done.

1. The range of ambient temperature for Parallel operation is –25 to 40°C
2. Up to two of the same model can be connected in parallel.
3. Adjust the output voltage difference of each Power Supply to 50 mV or less, using the output voltage adjuster (V. ADJ).
4. There is no current balancing function for S8VK-G. A high output voltage unit may work at overcurrent state and in this situation, a life of a Power Supply will be extremely short.
   After adjusting the output voltage, confirm the output current of the two Power Supplies balances.
5. Using the parallel operation will not satisfy UL1310 Class2 output.
6. For Parallel Operation, to balance the current of the each unit, the length and thickness of each wire connected to the load and each unit must be same as much as possible.
7. For Parallel Operation with units 120 W or less, connect diodes or S8VK-R to the outputs of each unit if sudden load variation influence occurs in the ambient operation environment.



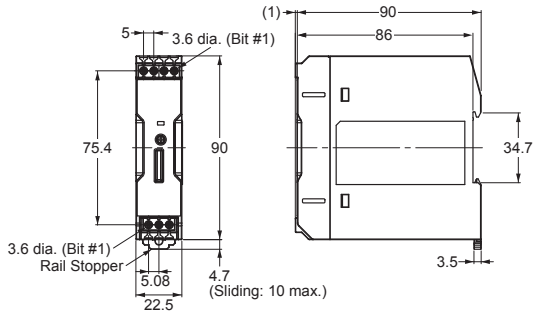
Reference Value

	Value
Reliability (MTBF)	Single phase model 15 W: 600,000 hrs 30 W: 580,000 hrs 60 W: 590,000 hrs 120 W: 450,000 hrs 240 W: 360,000 hrs 480 W: 230,000 hrs
Definition	MTBF stands for Mean Time Between Failures, which is calculated according to the probability of accidental device failures, and indicates reliability of devices. Therefore, it does not necessarily represent a life of the product.
Life expectancy	10 yrs. Min.
Definition	The life expectancy indicates average operating hours under the ambient temperature of 40°C and a load rate of 50%. Normally this is determined by the life expectancy of the built-in aluminum electrolytic capacitor.

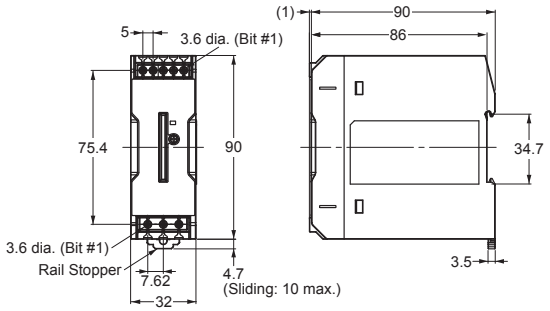
Dimensions

(Unit: mm)

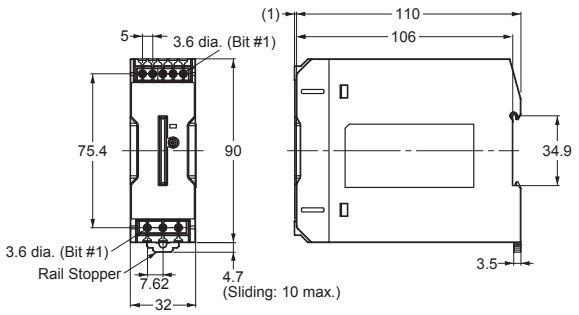
S8VK-G015□□ (15 W)



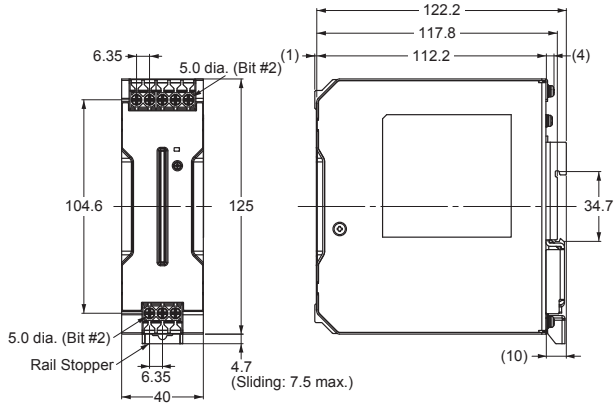
S8VK-G030□□ (30 W)



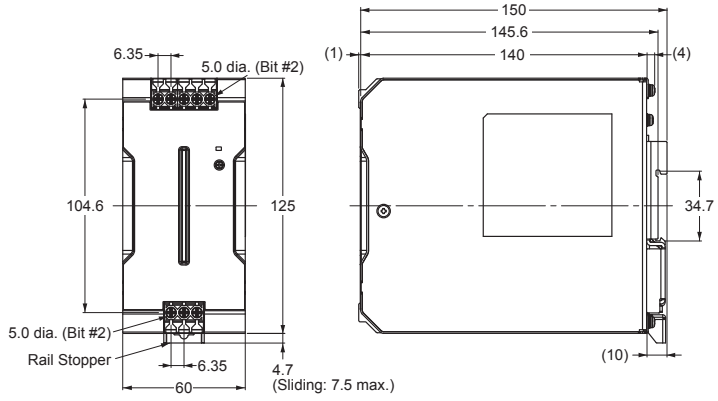
S8VK-G060□□ (60 W)



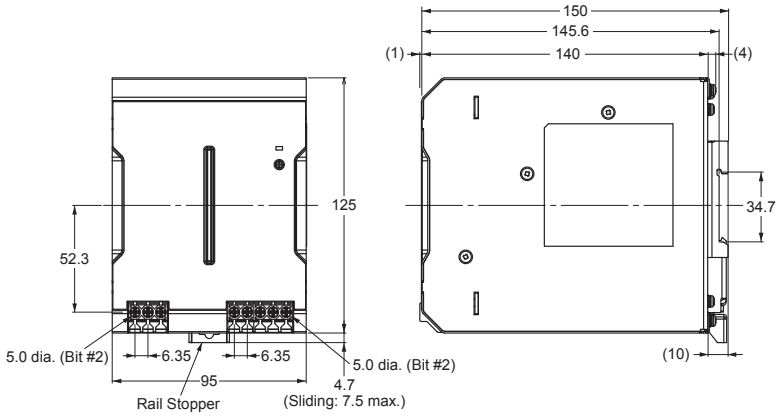
S8VK-G12024 (120 W)



S8VK-G240□□ (240 W)



S8VK-G480□□ (480 W)

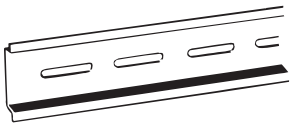


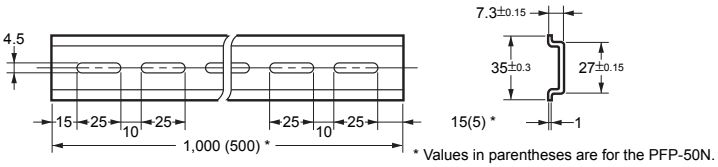
DIN Rail (Order Separately)

Note: All units are in millimeters unless otherwise indicated.

Mounting Rail (Material: Aluminum)

PFP-100N
PFP-50N

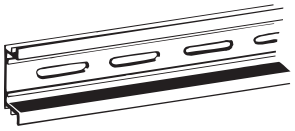


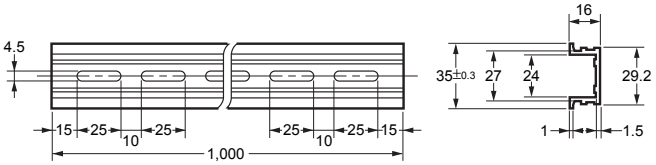


* Values in parentheses are for the PFP-50N.

Mounting Rail (Material: Aluminum)

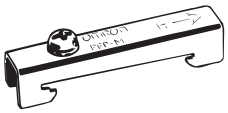
PFP-100N2

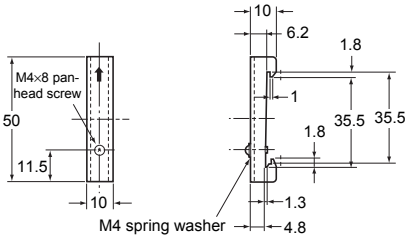




End Plate

PFP-M

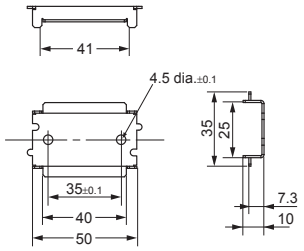
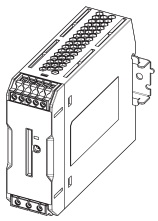
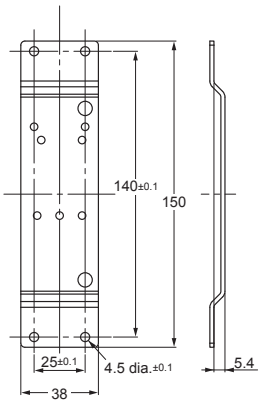
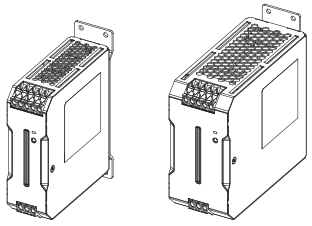
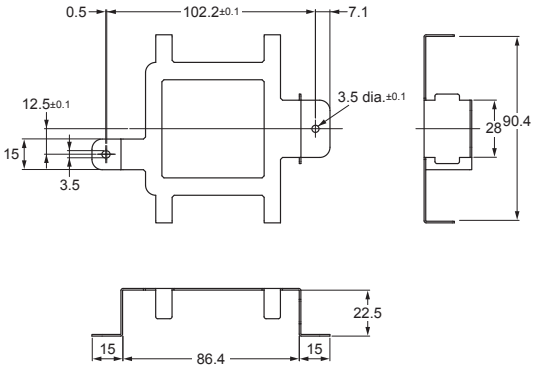
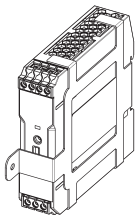


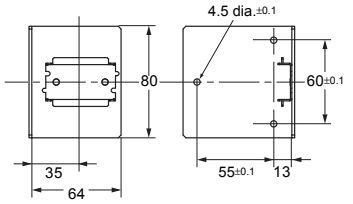
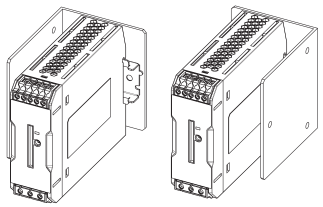
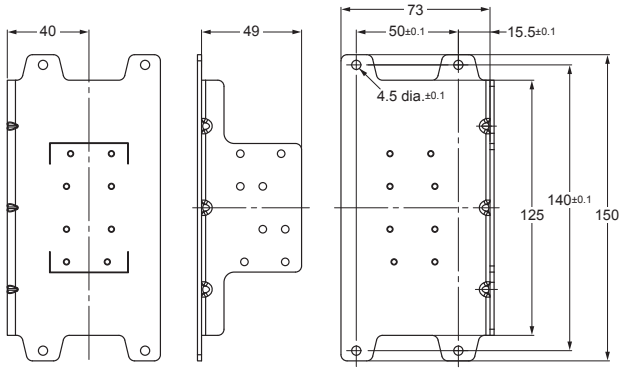
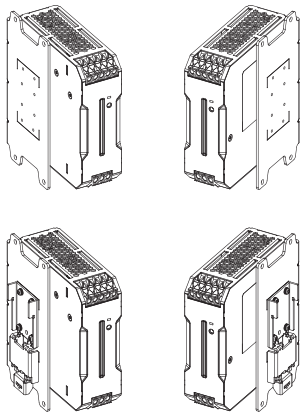
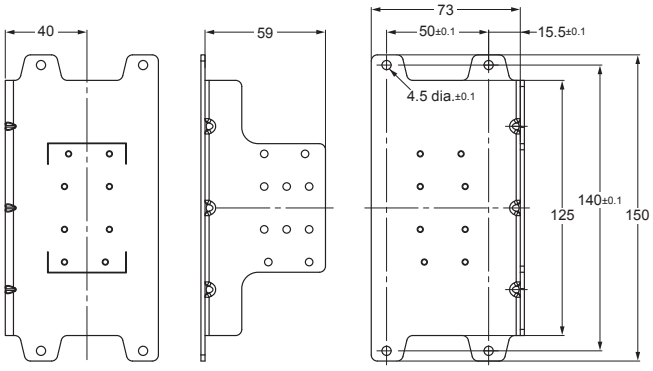
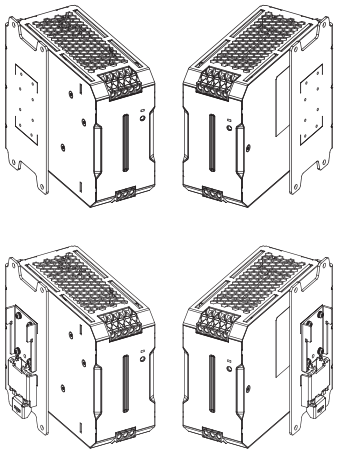


Note: If there is a possibility that the Unit will be subject to vibration or shock, use a steel DIN Rail. Otherwise, metallic filings may result from aluminum abrasion.

Mounting Brackets

Name	Model
Front-mounting bracket (for 15, 30 and 60 W models)	**S82Y-VS10F**
Front-mounting bracket (for 120, 240 and 480 W models)	**S82Y-VK10F**
Side-mounting bracket (for 15 W models)	**S82Y-VK15P**
Side-mounting bracket (for 30 and 60 W models)	**S82Y-VS10S**
Side-mounting bracket (for 120 W models)	**S82Y-VK10S**
Side-mounting bracket (for 240 W models)	**S82Y-VK20S**

Type	Model	Dimensions	Appearance
Front-mounting bracket (For 15, 30 and 60 W models)	**S82Y-VS10F**	 t = 1.0	
Front-mounting bracket (for 120, 240 and 480 W models)	**S82Y-VK10F**	 t = 2.0	(For 120 W types) (For 240 W types) 
Side-mounting bracket (For 15 W Models)	**S82Y-VK15P**	 t = 0.8	Right-side mounting 

Type	Model	Dimensions	Appearance
Side-mounting bracket (For 30 and 60 W models)	**S82Y-VS10S**	 t = 2.0	Left-side mounting Right-side mounting 
Side-mounting bracket (For 120 W models)	**S82Y-VK10S**	 t = 2.0	Left-side mounting Right-side mounting 
Side-mounting bracket (For 240 W models)	**S82Y-VK20S**	 t = 2.0	Left-side mounting Right-side mounting 

Safety Precautions

Warning Indications

CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.
Precautions for Safe Use	Supplementary comments on what to do or avoid doing, to use the product safely.
Precautions for Correct Use	Supplementary comments on what to do or avoid doing, to prevent failure to operate, malfunction or undesirable effect on product performance.

Meaning of Product Safety Symbols

	Used to warn of the risk of electric shock under specific conditions.
	Used to warn of the risk of minor injury caused by high temperatures.
	Used for general mandatory action precautions for which there is no specified symbol.
	Use to indicate prohibition when there is a risk of minor injury from electrical shock or other source if the product is disassembled.

⚠ CAUTION

Minor electric shock, fire, or Product failure may occasionally occur. Do not disassemble, modify, or repair the Product or touch the interior of the Product.

Minor burns may occasionally occur. Do not touch the Product while power is being supplied or immediately after power is turned OFF.

Fire may occasionally occur. Tighten terminal screws to the specified torque (0.5 to 0.6 N·m).

Minor injury due to electric shock may occasionally occur. Do not touch the terminals while power is being supplied. Always close the terminal cover after wiring.

Minor electric shock, fire, or Product failure may occasionally occur. Do not allow any pieces of metal or conductors or any clippings or cuttings resulting from installation work to enter the Product.

Precautions for Safe Use

Wiring

- Connect the ground completely. A protective earthing terminal stipulated in safety standardsis used. Electric shock or malfunction may occur if the ground is not connected completely.
- Minor fire may possibly occur. Ensure that input and output terminals are wired correctly.
- Do not apply more than 75-N force to the terminal block when tightening it.
- Be sure to remove the sheet covering the Product for machining before power-ON so that it does not interfere with heat dissipation.
- Use the following material for the wires to be connected to the S8VK-G to prevent smoking or ignition caused by abnormal loads.

Terminals and Wiring

	INPUT		OUTPUT		PE	
Model	**American Wire Gauge**	**Solid Wire /Stranded Wire**	**American Wire Gauge**	**Solid Wire /Stranded Wire**	**American Wire Gauge**	**Solid Wire /Stranded Wire**
S8VK-G01505	AWG24 to 12	0.25 to 4 mm^2 /0.25 to 2.5 mm^2	AWG20 to 12	0.5 to 4 mm^2 /0.5 to 2.5 mm^2	AWG14 or thicker	2.5 mm^2 or thicker /2.5 mm^2 or thicker
S8VK-G01512			AWG22 to 12	0.35 to 4 mm^2 /0.35 to 2.5 mm^2		
S8VK-G01524			AWG24 to 12	0.25 to 4 mm^2 /0.25 to 2.5 mm^2		
S8VK-G03005	AWG24 to 12	0.25 to 4 mm^2 /0.25 to 2.5 mm^2	AWG18 to 12	0.75 to 4 mm^2 /0.75 to 2.5 mm^2		
S8VK-G03012			AWG20 to 12	0.5 to 4 mm^2 /0.5 to 2.5 mm^2		
S8VK-G03024			AWG22 to 12	0.35 to 4 mm^2 /0.35 to 2.5 mm^2		
S8VK-G06012	AWG22 to 12	0.35 to 4 mm^2 /0.35 to 2.5 mm^2	AWG18 to 12	0.75 to 4 mm^2 /0.75 to 2.5 mm^2		
S8VK-G06024			AWG20 to 12	0.5 to 4 mm^2 /0.5 to 2.5 mm^2		
S8VK-G12024	AWG22 to 10	0.35 to 6 mm^2 /0.35 to 4 mm^2	AWG18 to 10	0.75 to 6 mm^2 /0.75 to 4 mm^2		
S8VK-G24024	AWG20 to 10	0.5 to 6 mm^2 /0.5 to 4 mm^2	AWG14 to 10	2.5 to 6 mm^2 /2.5 to 4 mm^2		
S8VK-G24048			AWG18 to 10	0.75 to 6 mm^2 /0.75 to 4 mm^2		
S8VK-G48024	AWG16 to 10	1.5 to 6 mm^2 /1.5 to 4 mm^2	AWG12 to 10	4 to 6 mm^2 /4 mm^2		
S8VK-G48048			AWG14 to 10	2.5 to 6 mm^2 /2.5 to 4 mm^2		

- Strip I/O wires for 8 mm when using a screwless terminal block.

Note: The rated current for output terminals is 10 A per terminal.
Be sure to use multiple terminals simultaneously for current that exceeds the terminal rating.
When applying a current of 10 A or more, use at least two terminals each for the positive and negative wires.

Installation Environment

- Do not use the Power Supply in locations subject to shocks or vibrations. In particular, install the Power Supply as far away as possible from contactors or other devices that are a vibration source.
- Install the Power Supply well away from any sources of strong, high-frequency noise and surge.

Operating Life

- The life of a Power Supply is determined by the life of the electrolytic capacitors used inside. Here, Arrhenius Law applies, i.e., the life will be cut in half for each rise of 10°C or the life will be doubled for each drop of 10°C. The life of the Power Supply can thus be increased by reducing its internal temperature.

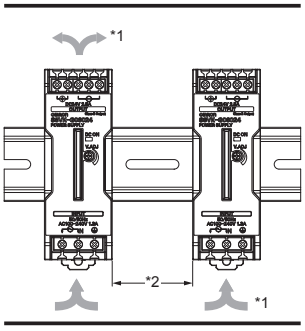
Ambient Operating and Storage Environments

- Store the Power Supply at a temperature of −40 to 85°C and a humidity of 0% to 95%.
- Do not use the Power Supply in areas outside the derating curve otherwise, internal parts may occasionally deteriorate or be damaged.
- Use the Power Supply at a humidity of 0% to 95%.
- Do not use the Power Supply in locations subject to direct sunlight.
- Do not use locations where liquids, foreign matter, or corrosive gases may enter the interior of Products.

Precautions for Correct Use

Mounting

- Take adequate measures to ensure proper heat dissipation to increase the long-term reliability of the Product. Be sure to allow convection in the atmosphere around devices when mounting. Do not use in locations where the ambient temperature exceeds the range of the derating curve.
- When cutting out holes for mounting, make sure that cuttings do not enter the interior of the Products.



*1. Convection of air
*2. 20 mm min.

- Improper mounting will interfere with heat dissipation and may occasionally result in deterioration or damage of internal parts. Use the Product within the derating curvefor the mounting direction that is used.
- Use a mounting bracket when the Product is mounted facing horizontally.
- Heat dissipation will be adversely affected. When the Product is mounted facing horizontally, always place the side with the label facing upward.
- Operate the Power Supply within a range that is 5°C less than the values in the derating curve in *Engineering Data* on page 9 if the Power Supply is used with an installation spacing of 10 mm min. (20 mm max.) on the left and right.

Overcurrent Protection

- Internal parts may possibly deteriorate or be damaged if a short-circuited or overcurrent state continues during operation.
- Internal parts may possibly deteriorate or be damaged if the Power Supply is used for applications with frequent inrush current or overloading at the load end. Do not use the Power Supplyfor such applications.
- The DC ON indicator (green) flashes if the overload protection function operates.

Charging a Battery

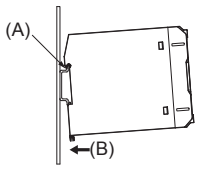
If you connect a battery as the load, install overcurrent control and overvoltage protection circuits.

Output Voltage Adjuster (V.ADJ)

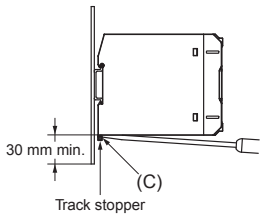
- The output voltage adjuster (V.ADJ) may possibly be damaged if it is turned with unnecessary force. Do not turn the adjuster with excessive force.
- After completing output voltage adjustment, be sure that the output capacity or output current does not exceed the rated output capacity or rated output current.

DIN Rail Mounting

To mount the Block on a DIN Rail, hook portion (A) of the Block onto the rail and press the Block in direction (B).



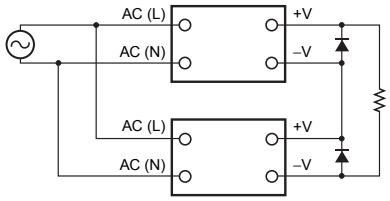
To dismount the Block, pull down portion (C) with a flat-blade screwdriver and pull out the Block.



Series Operation

Two power supplies can be connected in series.

Correct



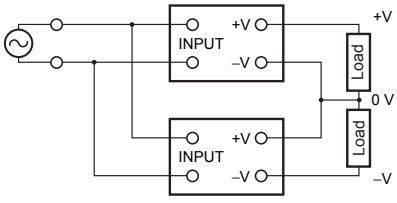
Note: 1. The diode is connected as shown in the figure. If the load is short-circuited, a reverse voltage will be generated inside the Power Supply. If this occurs the Power Supply may possibly deteriorate or be damaged. Always connect a diode as shown in the figure.
Select a diode having the following ratings.

Type	Schottky Barrier diode
Dielectric strength (V_{RRM})	Twice the rated output voltage or above
Forward current (I_F)	Twice the rated output current or above

2. Although Products having different specifications can be connected in series, the current flowing through the load must not exceed the smaller rated output current.

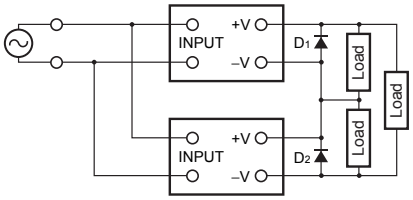
Making Positive/Negative Outputs

- The outputs are floating outputs (i.e., the primary circuits and secondary circuits are separated). You can therefore make positive and negative outputs by using two Power Supplies.
  You can make positive and negative outputs with any of the models.
  If positive and negative outputs are used, connect Power Supplies of the same model as in the following figure. (Combinations with different output capacities or output voltages can be made. However, use the lower of the two maximum rated output currents as the current to the loads.)



- Depending on the model, internal circuits may be damaged due to startup failure when the power is turned ON if loads such as a servomotor or operational amplifier may operate in series.

Therefore, connect bypass diodes (D1, D2) as shown in the following figure.
If the list of models that support series connection of outputs says that an external diode is not required, an external diode is also not required for positive/negative outputs.



- Use the following information as a guide to the diode type, dialectic strength, and current.

- Type: Schottky barrier diode
- Dielectric strength (V_{RRM}): Twice the rated Power Supply output voltage or higher
- Forward current (I_F): Twice the rated Power Supply output current or higher

Backup Operation

Backup operation can be performed with S8VK-R.
Refer to the S8VK-R Datasheet for detail.

In Case There Is No Output Voltage

The possible cause for no output voltage may be that the overcurrent or overvoltage protection has operated. The internal protection may operate if a large amount of surge voltage such as a lightening surge occurs while turning ON the power supply.
In case there is no output voltage, please check the following points before contacting us:

- Checking overload protected status:
  Check whether the load is in overload status or is short-circuited. Remove wires to load when checking.
- Checking overvoltage or internal protection:
  Turn the power supply OFF once, and leave it OFF for at least 3 minutes. Then turn it ON again to see if this clears the condition.

Audible Noise at Power ON

(120-W, 180-W, 240-W, and 480-W Models)

A harmonic current suppression circuit is built into the Power Supply. This circuit can create noise when the input is turned ON, but it will last only until the internal circuits stabilize and does not indicate any problem in the Product.

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Cat. No. 056-E1-01 02/13 Note: Specifications are subject to change. Printed in U.S.A.

New Product

OMRON

Switch Mode Power Supply
S8VS (15/30/60/90/120/180/240/480-W Models)

60/90/120/180/240/480-W Models

New Models with Indication Monitor and Simple Functions for Easy System Commissioning

- New 90-W models with indication monitor that conform to UL Class 2 Output standards.
- New models with screwless terminal blocks and indication monitor.
- Status displayed on 3-digit, 7-segment display.
- Safety standards:
  UL 508/60950-1,
  CSA C22.2 No. 107.1/60950-1
  EN 50178 (= VDE 0160)
  EN 60950-1 (= VDE 0805 Teil 1)
- Input conditions: DC input is also possible from 80 to 370 VDC
  (Not compliant with EC Directives and other safety standards.)

15/30-W Models

Compact, Thin Power Supplies That Mount Just About Anywhere to Contribute to Control Panel Downsizing

- Compact and thin: 22.5 × 85 × 96.5 mm (W × H × D).
- Three mounting directions
  (standard, horizontal, facing horizontal).
- Mounting directly to the panel is possible.
- Safety standards:
  UL 508/60950-1,
  CSA C22.2 No.107.1/60950-1,
  EN 50178 (= VDE 0160),
  EN 60950-1 (= VDE 0805 Teil 1)
- Input conditions: DC input is also possible from 80 to 370 VDC
  (Not compliant with EC Directives and other safety standards.)

Features Common to All Models

- Mount to DIN Rail.
- Complies with SEMI F47-0706 (200-VAC input).
- RoHS-compliant.

⚠ Refer to *Safety Precautions for All Power Supplies* and *Safety Precautions* on page 32.

Model Number Structure

Model Number Legend

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

S8VS- □□□□□□□□-□
1 2 3 4 5 6

1. Power Ratings
015: 15 W
030: 30 W
060: 60 W
090: 90 W
120: 120 W
180: 180 W
240: 240 W
480: 480 W

2. Output voltage
05: 5 V
12: 12 V
24: 24 V

3. Indication monitor
None: Without indication monitor (standard model)
A: With indication monitor (maintenance forecast monitor)
B: With indication monitor (total run time monitor)
BE: With indication monitor but without alarm output (total run time monitor)

4. Alarm output
None: Sinking (Emitter COM) ✻
P: Sourcing (Collector COM)
Note: No alarm output possible with 60-W models.
✻ Both sinking and sourcing outputs are available for 480-W models.

5. UL Class 2 Output Standards (UL 1310)
None: Does not conform. ✻
S: Conforms.
✻ 15-W, 30-W, and 60-W models conform to Class 2 output standards (UL 1310).
Note: The S option is available only for 90-W models.

6. Terminal Block Form
None: Screw terminal block
F: Screwless terminal block

Note: Estimates can be provided for coatings and other specifications that are not given in the datasheet. Ask your OMRON representative for details.

Ordering Information

List of Models

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

Models without Indication Monitor (Standard Models)

Power ratings	Input voltage	Output voltage	Output current	UL Class 2 Output standards	Model number (screw terminal block)	Model number (screwless terminal block)
15 W	100 to 240 VAC (allowable range: 85 to 264 VAC or 80 to 370 VDC ✻3)	5 V	2.0 A	Yes	**S8VS-01505 ✻1**	---
		12 V	1.2 A	Yes	**S8VS-01512**	
		24 V	0.65 A	Yes	**S8VS-01524**	
30 W		5 V	4.0 A	Yes	**S8VS-03005 ✻2**	
		12 V	2.5 A	Yes	**S8VS-03012**	
		24 V	1.3 A	Yes	**S8VS-03024**	
60 W		24 V	2.5 A	Yes	**S8VS-06024**	**S8VS-06024-F**
90 W			3.75 A	---	**S8VS-09024**	**S8VS-09024-F**
				Yes	**S8VS-09024S**	**S8VS-09024S-F**
120 W			5 A	---	**S8VS-12024**	**S8VS-12024-F**
180 W			7.5 A	---	**S8VS-18024**	**S8VS-18024-F**
240 W			10 A	---	**S8VS-24024**	**S8VS-24024-F**
480 W	100 to 240 VAC		20 A Peak current 30 A (200 VAC)	---	**S8VS-48024**	**S8VS-48024-F**

✻1. The output capacity of the S8VS-01505 is 10 W.
✻2. The output capacity of the S8VS-03005 is 20 W.
✻3. The range for compliance with EC Directives and safety standards (UL, EN, etc.) is 100 to 240 VAC (85 to 264 VAC).

Models with Indication Monitor (Maintenance Forecast Monitor)

Power ratings	Input voltage	Output voltage	Output current	Alarm output ✻2	UL Class 2 Output standards	Model number (screw terminal block)	Model number (screwless terminal block)
60 W	100 to 240 VAC (allowable range: 85 to 264 VAC or 80 to 370 VDC ✻1)	24 V	2.5 A	---	Yes	**S8VS-06024A**	**S8VS-06024A-F**
90 W			3.75 A	Sinking	---	**S8VS-09024A**	**S8VS-09024A-F**
				Sinking	Yes	**S8VS-09024AS**	**S8VS-09024AS-F**
				Sourcing	---	**S8VS-09024AP**	**S8VS-09024AP-F**
				Sourcing	Yes	**S8VS-09024APS**	**S8VS-09024APS-F**
120 W			5 A	Sinking	---	**S8VS-12024A**	**S8VS-12024A-F**
				Sourcing	---	**S8VS-12024AP**	**S8VS-12024AP-F**
180 W			7.5 A	Sinking	---	**S8VS-18024A**	**S8VS-18024A-F**
				Sourcing	---	**S8VS-18024AP**	**S8VS-18024AP-F**
240 W			10 A	Sinking	---	**S8VS-24024A**	**S8VS-24024A-F**
				Sourcing	---	**S8VS-24024AP**	**S8VS-24024AP-F**
480 W	100 to 240 VAC		20 A Peak current 30 A (200 VAC)	Sinking/ sourcing	---	**S8VS-48024A**	**S8VS-48024A-F**

✻1. The range for compliance with EC Directives and safety standards (UL, EN, etc.) is 100 to 240 VAC (85 to 264 VAC).
✻2. In the *Alarm output* column, “sinking” indicates an emitter COM and “sourcing” indicates a collector COM.

Models with Indication Monitor (Total Run Time Monitor)

Power ratings	Input voltage	Output voltage	Output current	Alarm output ✻2	UL Class 2 Output standards	Model number (screw terminal block)	Model number (screwless terminal block)
60 W	100 to 240 VAC (allowable range: 85 to 264 VAC or 80 to 370 VDC) ✻1	24 V	2.5 A	---	Yes	**S8VS-06024B**	**S8VS-06024B-F**
90 W			3.75 A	---	---	**S8VS-09024BE**	**S8VS-09024BE-F**
				---	Yes	**S8VS-09024BES**	**S8VS-09024BES-F**
				Sinking	---	**S8VS-09024B**	**S8VS-09024B-F**
				Sinking	Yes	**S8VS-09024BS**	**S8VS-09024BS-F**
				Sourcing	---	**S8VS-09024BP**	**S8VS-09024BP-F**
				Sourcing	Yes	**S8VS-09024BPS**	**S8VS-09024BPS-F**
120 W			5 A	---	---	**S8VS-12024BE**	**S8VS-12024BE-F**
				Sinking	---	**S8VS-12024B**	**S8VS-12024B-F**
				Sourcing	---	**S8VS-12024BP**	**S8VS-12024BP-F**
180 W			7.5 A	---	---	**S8VS-18024BE**	**S8VS-18024BE-F**
				Sinking	---	**S8VS-18024B**	**S8VS-18024B-F**
				Sourcing	---	**S8VS-18024BP**	**S8VS-18024BP-F**
240 W			10 A	---	---	**S8VS-24024BE**	**S8VS-24024BE-F**
				Sinking	---	**S8VS-24024B**	**S8VS-24024B-F**
				Sourcing	---	**S8VS-24024BP**	**S8VS-24024BP-F**
480 W	100 to 240 VAC		20 A Peak current 30 A (200 VAC)	Sinking/ sourcing	---	**S8VS-48024B**	**S8VS-48024B-F**

✻1. The range for compliance with EC Directives and safety standards (UL, EN, etc.) is 100 to 240 VAC (85 to 264 VAC).
✻2. In the *Alarm output* column, “sinking” indicates an emitter COM and “sourcing” indicates a collector COM.
Note: Refer to pages 24 to 25 for the options that available.

S8VS

Specifications

Ratings/Characteristics

Item			Power ratings	15 W			30 W		
			Output voltage	5 V	12 V	24 V	5 V	12 V	24 V
Efficiency			With 100-VAC input	74% typical	79% typical	83% typical	74% typical	81% typical	85% typical
			With 200-VAC input	73% typical	78% typical	80% typical	74% typical	80% typical	86% typical
Input	Voltage ✻1			100 to 240 VAC (allowable range: 85 to 264 VAC, 80 to 370 VDC ✻5)					
	Frequency ✻1			50/60 Hz (47 to 450 Hz)					
	Current		With 100-VAC input	0.45 A max., 0.34 A typical			0.9 A max., 0.66 A typical		
			With 200-VAC input	0.25 A max., 0.22 A typical			0.6 A max., 0.4 A typical		
	Power factor			---					
	Harmonic current regulation			Conforms to EN61000-3-2					
	Leakage current		With 100-VAC input	0.5 mA max.					
			With 200-VAC input	1.0 mA max.					
	Inrush current ✻2		With 100-VAC input	17.5 A max., 14 A typical					
			With 200-VAC input	35 A max., 28 A typical					
Output	Voltage adjustment range ✻3			–10% to 15% (with V.ADJ)					
	Ripple noise voltage (at rated I/O)			60 mV max.	70 mV max.	60 mV max.	60 mV max.	90 mV max.	150 mV max.
	Input variation influence			0.5% max. (at 85- to 264-VAC input, 100% load)					
	Load variation influence (rated input voltage)			2.0% max. (5 V), 1.5% max. (12 V, 24 V), (with rated input, 0 to 100% load)					
	Temperature variation influence			0.05%/°C max.					
	Startup time (at rated I/O) ✻2		With 100-VAC input	580 ms typical	530 ms typical	600 ms typical	500 ms typical	560 ms typical	560 ms typical
			With 200-VAC input	340 ms typical	360 ms typical	400 ms typical	360 ms typical	380 ms typical	400 ms typical
	Output hold time (at rated I/O) ✻2		With 100-VAC input	39 ms typical	27 ms typical	28 ms typical	31 ms typical	22 ms typical	31 ms typical
			With 200-VAC input	187 ms typical	134 ms typical	134 ms typical	174 ms typical	123 ms typical	140 ms typical
Additional functions	Overload protection ✻2			The range for compliance with EC Directives and safety standards (UL, EN, etc.) is 100 to 240 VAC (85 to 264 VAC).					
	Overvoltage protection ✻2			Yes ✻4					
	Output voltage indication			No					
	Output current indication			No					
	Peak-hold current indication			No					
	Maintenance forecast monitor indication			No					
	Maintenance forecast monitor output			No					
	Total run time monitor indication			No					
	Total run time monitor output			No					
	Undervoltage alarm indication			Yes (color: red)					
	Undervoltage alarm output			No					
	Parallel operation			No					
	Series operation			Models with 24-V output: Possible for up to 2 Power Supplies (with external diode) Models with 5- or 12-V output: Not possible					
Other	Operating ambient temperature			Refer to the derating curve in *Engineering Data*. (with no icing or condensation)					
	Storage temperature			–25 to 65°C					
	Operating ambient humidity			25% to 85% (Storage humidity: 25% to 90%)					
	Dielectric strength			3.0 kVAC for 1 min. (between all inputs and outputs; detection current: 20 mA) 2.0 kVAC for 1 min. (between all inputs and PE terminals; detection current: 20 mA) 1.0 kVAC for 1 min. (between all outputs and PE terminals; detection current: 20 mA)					
	Insulation resistance			100 MΩ min. (between all outputs and all inputs/ PE terminals) at 500 VDC					
	Vibration resistance			10 to 55 Hz, 0.375-mm single amplitude for 2 h each in X, Y, and Z directions					
	Shock resistance			150 m/s², 3 times each in ±X, ±Y, and ±Z directions					
	Output indicator			Yes (color: green)					
	EMI		Conducted Emissions	Conforms to EN61204-3 EN55011 Class B and based on FCC Class A					
			Radiated Emissions	Conforms to EN61204-3 EN55011 Class B					
	EMS			Conforms to EN61204-3 high severity levels					
	Approved standards			UL Listed: UL508 (Listing, Class2 Output: Per 1310) UL UR: UL60950-1 (Recognition) cUL: CSA C22.2 No.107.1 (Class2 Output: Per CSA C22.2 No.223) cUR: CSA C22.2 No.60950-1 EN/VDE: EN50178 (=VDE0160), EN60950-1 (=VDE0805 Teil1)					
	SEMI			F47-0706 (With 200-VAC input)					
	Weight			160 g max.			180 g max.		

✻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 18 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. To reset the protection, turn OFF the input power for three minutes or longer and then turn it back ON.
✻5. The range for compliance with EC Directives and safety standards (UL, EN, etc.) is 100 to 240 VAC (85 to 264 VAC).

Item		Power ratings / Type	60 W			90 W		
			Standard	Maintenance forecast monitor	Total run time monitor	Standard	Maintenance forecast monitor	Total run time monitor
Efficiency		With 100-VAC input	84% typical	83% typical		83% typical	83% typical	
		With 200-VAC input	83% typical	85% typical		84% typical	85% typical	
Input	Voltage ✻1		100 to 240 VAC (allowable range: 85 to 264 VAC or 80 to 370 VDC ✻11)					
	Frequency ✻1		50/60 Hz (47 to 450 Hz)					
	Current	With 100-VAC input	1.7 A max., 1.3 A typical	1.7 A max., 1.3 A typical		2.3 A max., 1.9 A typical	2.3 A max., 1.9 A typical	
		With 200-VAC input	1.0 A max., 0.68 A typical	1.0 A max., 0.78 A typical		1.4 A max., 1.0 A typical	1.4 A max., 1.2 A typical	
	Power factor		---					
	Harmonic current regulation		Conforms to EN61000-3-2					
	Leakage current	With 100-VAC input	0.5 mA max.					
		With 200-VAC input	1.0 mA max.					
	Inrush current ✻2	With 100-VAC input	17.5 A max., 14 A typical					
		With 200-VAC input	35 A max., 28 A typical					
Output	Voltage adjustment range ✻3		–10% to 15% (with V. ADJ) (The voltage cannot be adjusted for the S8VS-09024□□□S-□.)					
	Ripple noise voltage (at rated I/O)		70 mV max.	90 mV max.		250 mV max.	150 mV max.	
	Input variation influence		0.5% max. (at 85- to 264-VAC input, 100% load)					
	Load variation influence (rated input voltage)		1.5% max. (with rated input, 0 to 100% load)					
	Temperature variation influence		0.05%/°C max.					
	Startup time (at rated I/O) ✻2	With 100-VAC input	620 ms typical	460 ms typical		460 ms typical	660 ms typical	
		With 200-VAC input	400 ms typical	290 ms typical		300 ms typical	420 ms typical	
	Output hold time (at rated I/O) ✻2	With 100-VAC input	34 ms typical	33 ms typical		28 ms typical	28 ms typical	
		With 200-VAC input	158 ms typical	154 ms typical		132 ms typical	136 ms typical	
Additional functions	Overload protection ✻2		105% to 160% of rated load current (101% to 110% of rated load current for the S8VS-09024□□□S-□), inverted L voltage drop, intermittent, automatic reset					
	Overvoltage protection ✻2, ✻4		Yes					
	Output voltage indication ✻5		No	Yes (selectable) ✻6		No	Yes (selectable) ✻6	
	Output current indication ✻5		No	Yes (selectable) ✻7		No	Yes (selectable) ✻7	
	Peak-hold current indication ✻5		No	Yes (selectable) ✻8		No	Yes (selectable) ✻8	
	Maintenance forecast monitor indication ✻5		No	Yes (selectable)	No	No	Yes (selectable)	No
	Maintenance forecast monitor output		No				Yes (transistor output), 30 VDC max., 50 mA max. ✻9	No
	Total run time monitor indication ✻5		No		Yes (selectable)	No		Yes (selectable)
	Total run time monitor output ✻5		No					Yes (transistor output), 30 VDC max., 50 mA max. ✻9
	Undervoltage alarm indication ✻5		No	Yes (selectable)		No	Yes (selectable)	
	Undervoltage alarm output terminals		No				Yes (transistor output), 30 VDC max., 50 mA max. ✻9	
	Parallel operation		No					
	Series operation		Yes for up to 2 Power Supplies (with external diode)					
Other	Operating ambient temperature		Refer to the derating curve in . (with no icing or condensation)					
	Storage temperature		–25 to 65°C					
	Operating ambient humidity		25% to 85% (Storage humidity: 25% to 90%)					
	Dielectric strength		3.0 kVAC for 1 min. (between all inputs and outputs/ alarm outputs; detection current: 20 mA) 2.0 kVAC for 1 min. (between all inputs and PE terminals; detection current: 20 mA) 1.0 kVAC for 1 min. (between all outputs/ alarm outputs and PE terminals; detection current for standard models: 30 mA, detection current for models with indication monitor: 20 mA) 500 VAC for 1 min. (between all outputs and alarm outputs; detection current: 20 mA)					
	Insulation resistance		100 MΩ min. (between all outputs/ alarm outputs and all inputs/ PE terminals) at 500 VDC					
	Vibration resistance		10 to 55 Hz, 0.375-mm single amplitude for 2 h each in X, Y, and Z directions 10 to 150 Hz, 0.35-mm single amplitude (5 G max.) for 80 min each in X, Y, and Z directions					
	Shock resistance		150 m/s^2, 3 times each in ±X, ±Y, and ±Z directions					
	Output indicator		Yes (color: green)					
	EMI	Conducted Emissions	Models with indication monitor: Conforms to EN61204-3 EN55011 Class A and based on FCC Class A, Conforms to EN61204-3 EN55011 Class B ✻11 Standard models: Conforms to EN61204-3 EN55011 Group 1 Class B and based on FCC Class A					
		Radiated Emissions	Models with indication monitor: Conforms to EN61204-3 EN55011 Class A, Conforms to EN61204-3 EN55011 Class B ✻11 Standard models: Conforms to EN61204-3 EN55011 Group 1 Class B					
	EMS		Conforms to EN61204-3 high severity levels					
	Approved standards ✻11		UL: UL 508 (Listing; Class 2 Output: Per UL1310), UL UR: UL 60950-1 (Recognition), cUL: CSA C22.2 No.107.1 (Class 2 Output: Per CSA C22.2 No. 223), cUR: CSA C22.2 No.60950-1, EN/VDE: EN 50178 (= VDE 0160), EN 60950-1 (= VDE 0805 Teil 1) KOSHA S Mark ✻10			UL: UL 508 (Listing) UL Listed (S8VS-09024□□□S-□ only.): UL 508 (Listing, Class 2 Output: Per UL1310), UL UR: UL 60950-1 (Recognition), cUL: CSA C22.2 No.107.1, cUL (S8VS-09024-□□□S-□ only): CSA C22.2 No.107.1 (Class 2 Output: Per CSA C22.2 No. 223), cUR: CSA C22.2 No.60950-1, EN/VDE: EN 50178 (= VDE 0160), EN 60950-1 (= VDE 0805 Teil 1) KOSHA S Mark ✻10		
	SEMI ✻11		F47-0706 (With 200-VAC input)					
	Weight		330 g max.			490 g max.		

✻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 18 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 (by more than +10% for 240-W models with indication monitor). When adjusting the output voltage, confirm the actual output voltage from the Power Supply and be sure that the load is not damaged.
✻4. To reset the protection, turn OFF the input power for three minutes or longer and then turn it back ON.
✻5. Displayed on 7-segment LED. (character height: 8 mm)
✻6. Resolution of output voltage indication: 0.1 V, Precision of output voltage indication: ±2% (percentage of output voltage value, ±1 digit)
✻7. Resolution of output current indication: 0.1 A; Precision of output current indication: ±5% F.S. ±1 digit max. (specified by rated output voltage)
✻8. Resolution of peak-hold current indication: 0.1 A; Precision of peak-hold current indication: ±5% F.S. ±1 digit max. (specified by rated output voltage); Signal width required for peak-hold current: 20 ms
✻9. A Type and B Type: Sinking, AP Type and BP Type: Sourcing, BE Type: No alarm output.
✻10. S8VS-06024A, S8VS-09024A/AP, S8VS-12024A/AP, S8VS-18024A/AP, and S8VS-24024A/AP only
✻11. The range for compliance with EC Directives and safety standards (UL, EN, etc.) is 100 to 240 VAC (85 to 264 VAC).

Item		Power ratings / Type	120 W			180 W		
			Standard	Maintenance forecast monitor	Total run time monitor	Standard	Maintenance forecast monitor	Total run time monitor
Efficiency		With 100-VAC input	84% typical	83% typical		85% typical	85% typical	
		With 200-VAC input	87% typical	85% typical		88% typical	87% typical	
Input	Voltage ✻1		100 to 240 VAC (allowable range: 85 to 264 VAC or 80 to 370 VDC ✻11)					
	Frequency ✻1		50/60 Hz (47 to 63 Hz)					
	Current	With 100-VAC input	1.9 A max., 1.5 A typical			2.9 A max., 2.2 A typical		
		With 200-VAC input	1.1 A max., 0.71 A typical	1.1 A max., 0.72 A typical		1.6 A max., 1.1 A typical		
	Power factor		0.9 min.					
	Harmonic current regulation		Conforms to EN61000-3-2					
	Leakage current	With 100-VAC input	0.5 mA max.					
		With 200-VAC input	1.0 mA max.					
	Inrush current ✻2	With 100-VAC input	17.5 A max., 14 A typical					
		With 200-VAC input	35 A max., 28 A typical					
Output	Voltage adjustment range ✻3		−10% to 15% (with V.ADJ)					
	Ripple noise voltage (at rated I/O)		60 mV max.	130 mV max.		50 mV max.	180 mV max.	
	Input variation influence		0.5% max. (at 85- to 264-VAC input, 100% load)					
	Load variation influence (rated input voltage)		1.5% max. (with rated input, 0 to 100% load)					
	Temperature variation influence		0.05%/°C max.					
	Startup time (at rated I/O) ✻2	With 100-VAC input	550 ms typical	650 ms typical		570 ms typical	580 ms typical	
		With 200-VAC input	400 ms typical	520 ms typical		470 ms typical	490 ms typical	
	Output hold time (at rated I/O) ✻2	With 100-VAC input	52 ms typical	56 ms typical		58 ms typical	70 ms typical	
		With 200-VAC input	54 ms typical	56 ms typical		62 ms typical	70 ms typical	
Additional functions	Overload protection ✻2		105% to 160% of rated load current, inverted L voltage drop, automatic reset					
	Overvoltage protection ✻2, ✻4		Yes					
	Output voltage indication ✻5		No	Yes (selectable) ✻6		No	Yes (selectable) ✻6	
	Output current indication ✻5		No	Yes (selectable) ✻7		No	Yes (selectable) ✻7	
	Peak-hold current indication ✻5		No	Yes (selectable) ✻8		No	Yes (selectable) ✻8	
	Maintenance forecast monitor indication ✻5		No	Yes (selectable)	No	No	Yes (selectable)	No
	Maintenance forecast monitor output		No	Yes (transistor output), 30 VDC max., 50 mA max. ✻9	No	No	Yes (transistor output), 30 VDC max., 50 mA max. ✻9	No
	Total run time monitor indication ✻5		No		Yes (selectable)	No		Yes (selectable)
	Total run time monitor output ✻5		No		Yes (transistor output), 30 VDC max., 50 mA max. ✻9	No		Yes (transistor output), 30 VDC max., 50 mA max. ✻9
	Undervoltage alarm indication ✻5		No	Yes (selectable)		No	Yes (selectable)	
	Undervoltage alarm output terminals		No	Yes (transistor output), 30 VDC max., 50 mA max. ✻9		No	Yes (transistor output), 30 VDC max., 50 mA max. ✻9	
	Parallel operation		No					
	Series operation		Yes for up to 2 Power Supplies (with external diode)					
Other	Operating ambient temperature		Refer to the derating curve in . (with no icing or condensation)					
	Storage temperature		−25 to 65°C					
	Operating ambient humidity		25% to 85% (Storage humidity: 25% to 90%)					
	Dielectric strength		3.0 kVAC for 1 min. (between all inputs and outputs/ alarm outputs; detection current: 20 mA) 2.0 kVAC for 1 min. (between all inputs and PE terminals; detection current: 20 mA) 1.0 kVAC for 1 min. (between all outputs/ alarm outputs and PE terminals; detection current for standard models: 30 mA, detection current for models with indication monitor: 20 mA 500 VAC for 1 min. (between all outputs and alarm outputs; detection current: 20 mA)					
	Insulation resistance		100 MΩ min. (between all outputs/ alarm outputs and all inputs/ PE terminals) at 500 VDC					
	Vibration resistance		10 to 55 Hz, 0.375-mm single amplitude for 2 h each in X, Y, and Z directions 10 to 150 Hz, 0.35-mm single amplitude (5 G max.) for 80 min each in X, Y, and Z directions					
	Shock resistance		150 m/s^2, 3 times each in ±X, ±Y, and ±Z directions					
	Output indicator		Yes (color: green)					
	EMI	Conducted Emissions	Models with indication monitor: Conforms to EN61204-3 EN55011 Class A and based on FCC Class A, Conforms to EN61204-3 EN55011 Class B ✻11 Standard models: Conforms to EN61204-3 EN55011 Group 1 Class B and based on FCC Class A					
		Radiated Emissions	Models with indication monitor: Conforms to EN61204-3 EN55011 Class A, Conforms to EN61204-3 EN55011 Class B ✻11 Standard models: Conforms to EN61204-3 EN55011 Group 1 Class B					
	EMS		Conforms to EN61204-3 high severity levels					
	Approved standards ✻11		UL Listed: UL 508 (Listing), UL UR: UL 60950-1 (Recognition), cUL: CSA C22.2 No. 107.1, cUR: CSA C22.2 No. 60950-1, EN/VDE: EN 50178 (= VDE 0160), EN 60950-1 (= VDE 0805 Teil 1) KOSHA S Mark ✻10					
	SEMI ✻11		F47-0706 (200-VAC input)					
	Weight		550 g max.			850 g max.		

Note: Refer to page 5 for notes 1 to 11.

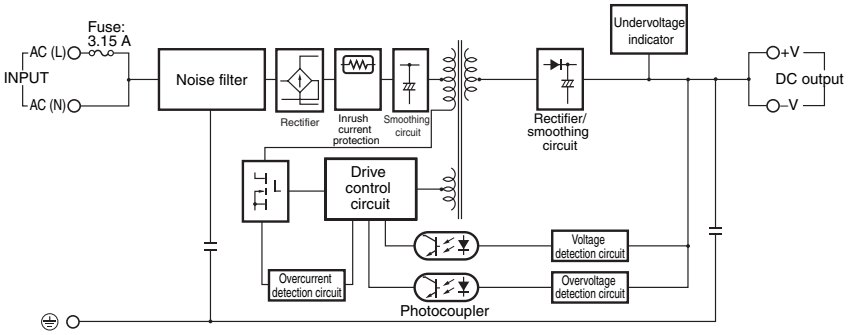
Item		Power ratings / Type	240 W Standard	240 W Maintenance forecast monitor	240 W Total run time monitor	480 W Standard	480 W Maintenance forecast monitor	480 W Total run time monitor
Efficiency		With 100-VAC input	85% typical			85% typical		
		With 200-VAC input	88% typical			89% typical		
Input	Voltage ✻1		100 to 240 VAC (allowable range: 85 to 264 VAC or 80 to 370 VDC ✻11)			100 to 240 VAC (allowable range: 85 to 264 VAC)		
	Frequency ✻1		50/60 Hz (47 to 63 Hz)					
	Current	With 100-VAC input	3.8 A max., 2.9 A typical			7.4 A max., 5.8 A typical		
		With 200-VAC input	2.0 A max., 1.5 A typical			3.9 A max., 2.8 A typical		
	Power factor		0.9 min.			0.95 min.		
	Harmonic current regulation		Conforms to EN61000-3-2					
	Leakage current	With 100-VAC input	0.5 mA max.					
		With 200-VAC input	1.0 mA max.					
	Inrush current ✻2	With 100-VAC input	17.5 A max., 14 A typical					
		With 200-VAC input	35 A max., 28 A typical					
Output	Voltage adjustment range ✻3		−10% to 15% (with V.ADJ)			−10% to 15% (with V.ADJ)		
	Ripple noise voltage (at rated I/O)		140 mV max.	160 mV max.		310 mV max.		
	Input variation influence		0.5% max. (at 85- to 264-VAC input, 100% load)					
	Load variation influence (rated input voltage)		1.5% max. (with rated input, 0 to 100% load)					
	Temperature variation influence		0.05%/°C max.					
	Startup time (at rated I/O) ✻2	With 100-VAC input	540 ms typical	510 ms typical		460 ms typical		
		With 200-VAC input	230 ms typical	510 ms typical		340 ms typical		
	Output hold time (at rated I/O) ✻2	With 100-VAC input	64 ms typical	46 ms typical		37 ms typical		
		With 200-VAC input	64 ms typical	46 ms typical		41 ms typical		
Additional functions	Overload protection ✻2		105% to 160% of rated load current, inverted L voltage drop, automatic reset					
	Overvoltage protection ✻2, ✻4		Yes					
	Output voltage indication ✻5		No	Yes (selectable) ✻6		No	Yes (selectable) ✻6	
	Output current indication ✻5		No	Yes (selectable) ✻7		No	Yes (selectable) ✻7	
	Peak-hold current indication ✻5		No	Yes (selectable) ✻8		No	Yes (selectable) ✻8	
	Maintenance forecast monitor indication ✻5		No	Yes (selectable)	No		Yes (selectable)	No
	Maintenance forecast monitor output		No	Yes (transistor output), 30 VDC max., 50 mA max. ✻9	No		Yes (transistor output), 30 VDC max., 50 mA max.	No
	Total run time monitor indication ✻5		No		Yes (selectable)	No		Yes (selectable)
	Total run time monitor output ✻5		No		Yes (transistor output), 30 VDC max., 50 mA max. ✻9	No		Yes (transistor output), 30 VDC max., 50 mA max. ✻9
	Undervoltage alarm indication ✻5		No	Yes (selectable)		No	Yes (selectable)	
	Undervoltage alarm output terminals		No	Yes (transistor output), 30 VDC max., 50 mA max. ✻9		No	Yes (transistor output), 30 VDC max., 50 mA max. ✻9	
	Parallel operation		No					
	Series operation		Yes for up to 2 Power Supplies (with external diode)					
Other	Operating ambient temperature		Refer to the derating curve in . (with no icing or condensation)					
	Storage temperature		−25 to 65°C					
	Operating ambient humidity		25% to 85% (Storage humidity: 25% to 90%)					
	Dielectric strength		3.0 kVAC for 1 min. (between all inputs and outputs/alarm outputs; detection current: 20 mA) 2.0 kVAC for 1 min. (between all inputs and PE terminals; detection current: 20 mA) 1.0 kVAC for 1 min. (between all outputs/ alarm outputs and PE terminals; detection current for standard 240-W and 480-W models: 30 mA, detection current for 240-W models with indication monitor: 20 mA) 500 VAC for 1 min. (between all outputs and alarm outputs; detection current: 20 mA)					
	Insulation resistance		100 MΩ min. (between all outputs/ alarm outputs and all inputs/ PE terminals) at 500 VDC					
	Vibration resistance		10 to 55 Hz, 0.375-mm single amplitude for 2 h each in X, Y, and Z directions 10 to 150 Hz, 0.35-mm single amplitude (5 G max.) for 80 min each in X, Y, and Z directions: 240 W 10 to 150 Hz, 0.35-mm single amplitude (3 G max.) for 80 min each in X, Y, and Z directions: 480 W					
	Shock resistance		150 m/s², 3 times each in ±X, ±Y, and ±Z directions					
	Output indicator		Yes (color: green)					
	EMI	Conducted Emissions	Models with indication monitor: Conforms to EN61204-3 EN55011 Class A and based on FCC Class A, Conforms to EN61204-3 EN55011 Class B ✻11 Standard models: Conforms to EN61204-3 EN55011 Group 1 Class B and based on FCC Class A			Conforms to EN61204-3 EN55011 Class A and based on FCC Class A Conforms to EN61204-3 EN55011 Class B ✻11		
		Radiated Emissions	Models with indication monitor: Conforms to EN61204-3 EN55011 Class A, Conforms to EN61204-3 EN55011 Class B ✻11 Standard models: Conforms to EN61204-3 EN55011 Group 1 Class B			Conforms to EN61204-3 EN55011 Class A Conforms to EN61204-3 EN55011 Class B ✻11		
	EMS		Conforms to EN61204-3 high severity levels					
	Approved standards ✻11		UL Listed: UL 508 (Listing), UL UR: UL 60950-1 (Recognition), cUL: CSA C22.2 No.107.1, cUR: CSA C22.2 No. 60950-1, EN/VDE: EN 50178 (=VDE 0160), EN 60950-1 (=VDE 0805 Teil 1) KOSHA S Mark ✻10					
	SEMI ✻11		F47-0706 (200-VAC input)					
	Weight		1,150 g max.			1,700 g max.		

Note: Refer to page 5 for notes 1 to 11.

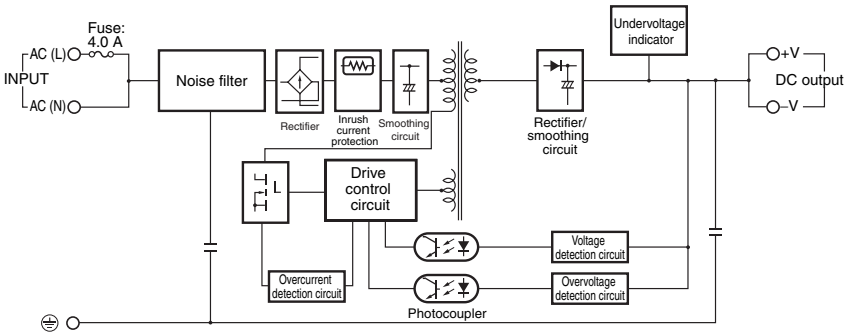
Connections

Block Diagrams

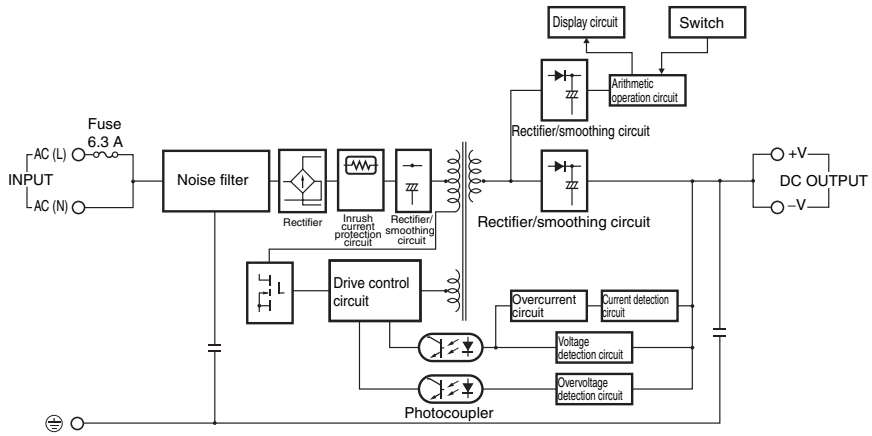
S8VS-015□□ (15 W)



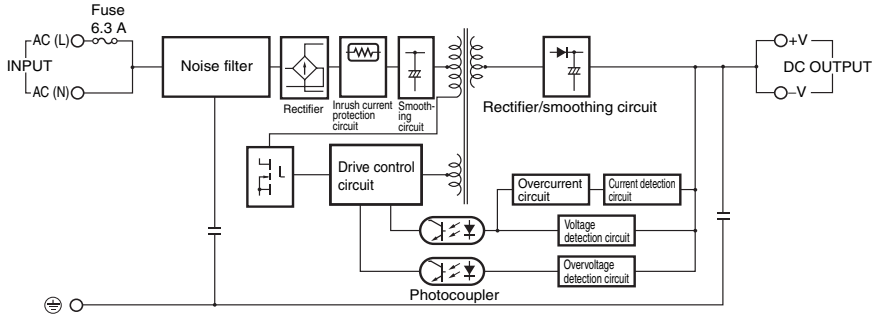
S8VS-030□□ (30 W)



S8VS-06024A-□ (60 W)
S8VS-06024B-□ (60 W)

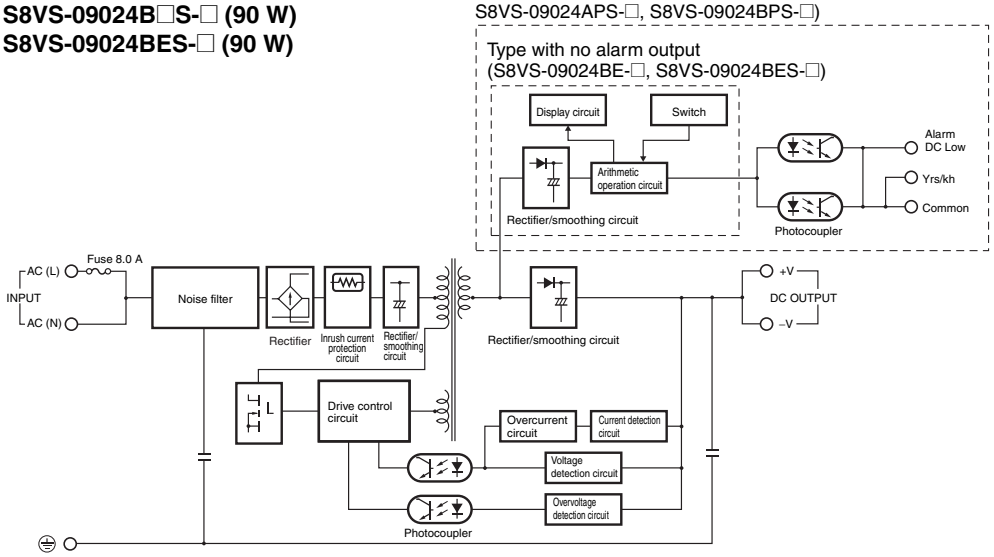


S8VS-06024-□ (60 W)

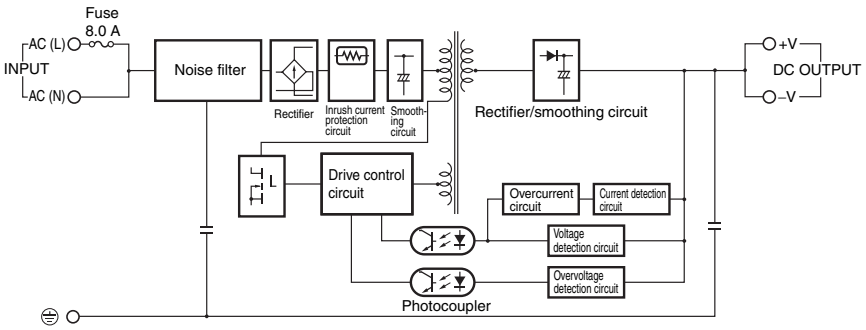


S8VS-09024A□-□ (90 W)
S8VS-09024B□-□ (90 W)
S8VS-09024BE-□ (90 W)
S8VS-09024A□S-□ (90 W)
S8VS-09024B□S-□ (90 W)
S8VS-09024BES-□ (90 W)

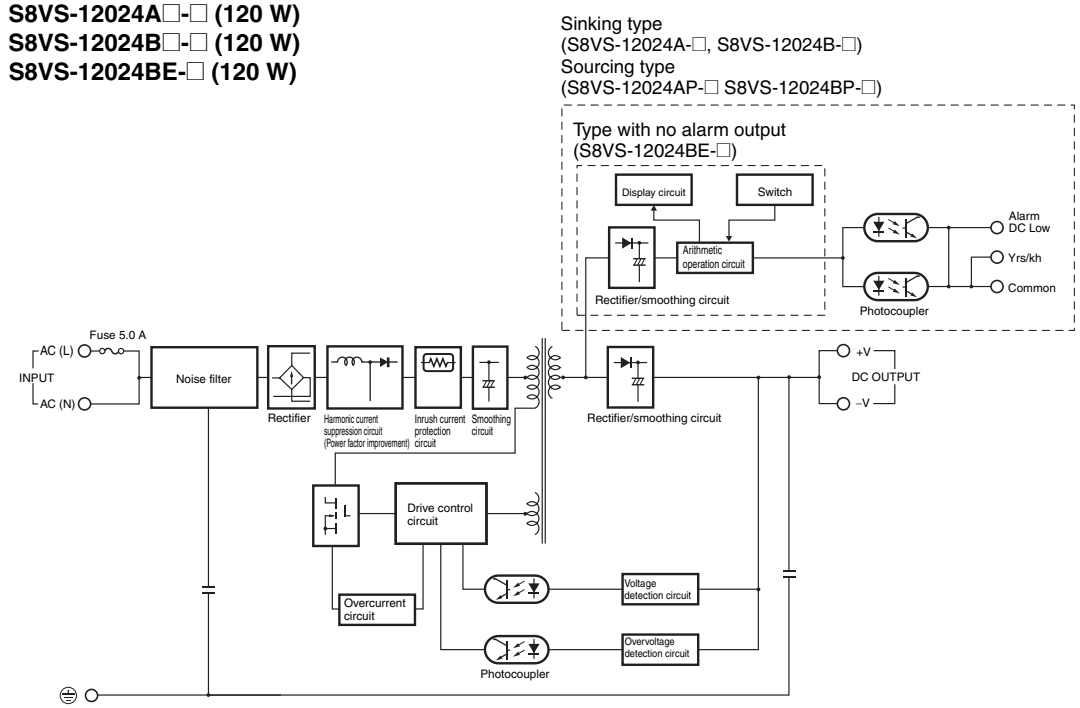
Sinking type
(S8VS-09024A-□, S8VS-09024B-□,
S8VS-09024AS-□, S8VS-09024BS-□)
Sourcing type
(S8VS-09024AP-□, S8VS-09024BP-□,
S8VS-09024APS-□, S8VS-09024BPS-□)



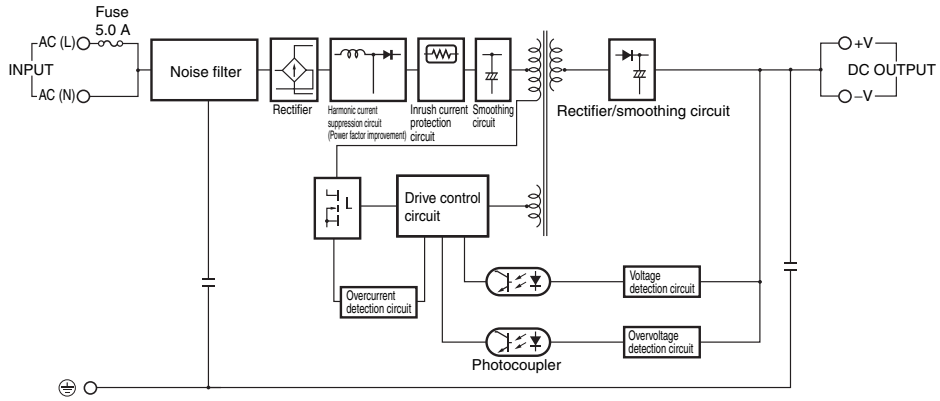
S8VS-09024-□ (90 W)
S8VS-09024S-□ (90 W)



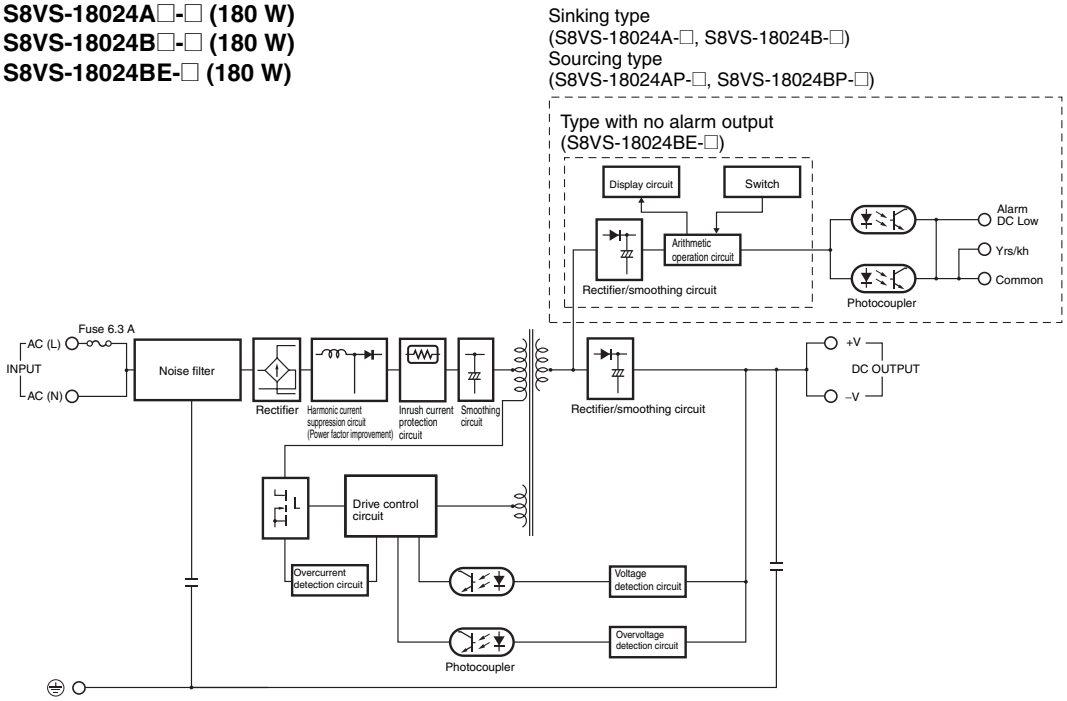
S8VS-12024A□-□ (120 W)
S8VS-12024B□-□ (120 W)
S8VS-12024BE-□ (120 W)



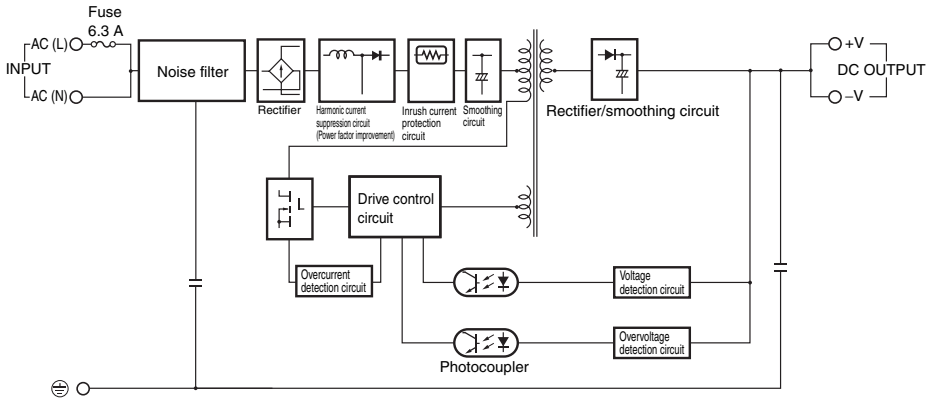
S8VS-12024-□ (120 W)



S8VS-18024A□-□ (180 W)
S8VS-18024B□-□ (180 W)
S8VS-18024BE-□ (180 W)

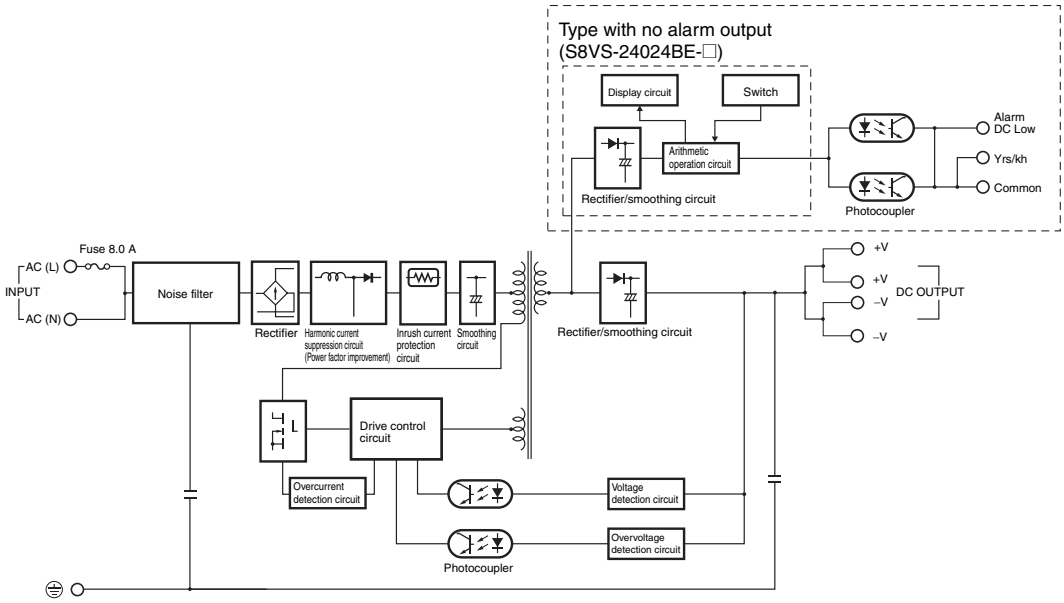


S8VS-18024-□ (180 W)

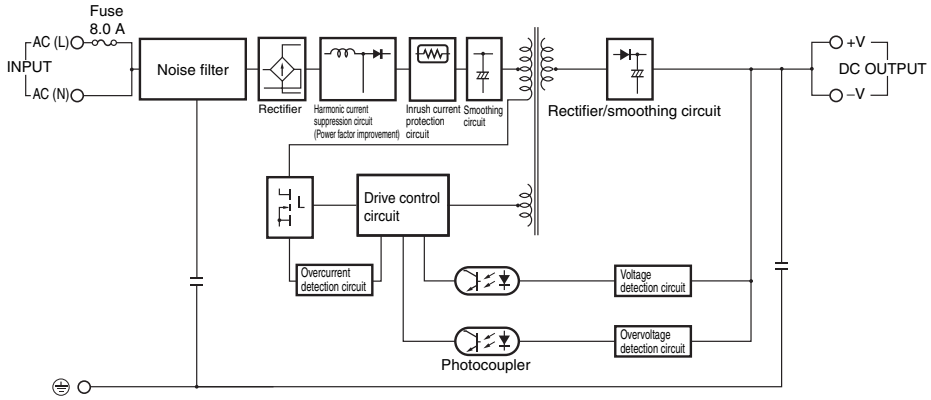


S8VS-24024A□-□ (240 W)
S8VS-24024B□-□ (240 W)
S8VS-24024BE-□ (240 W)

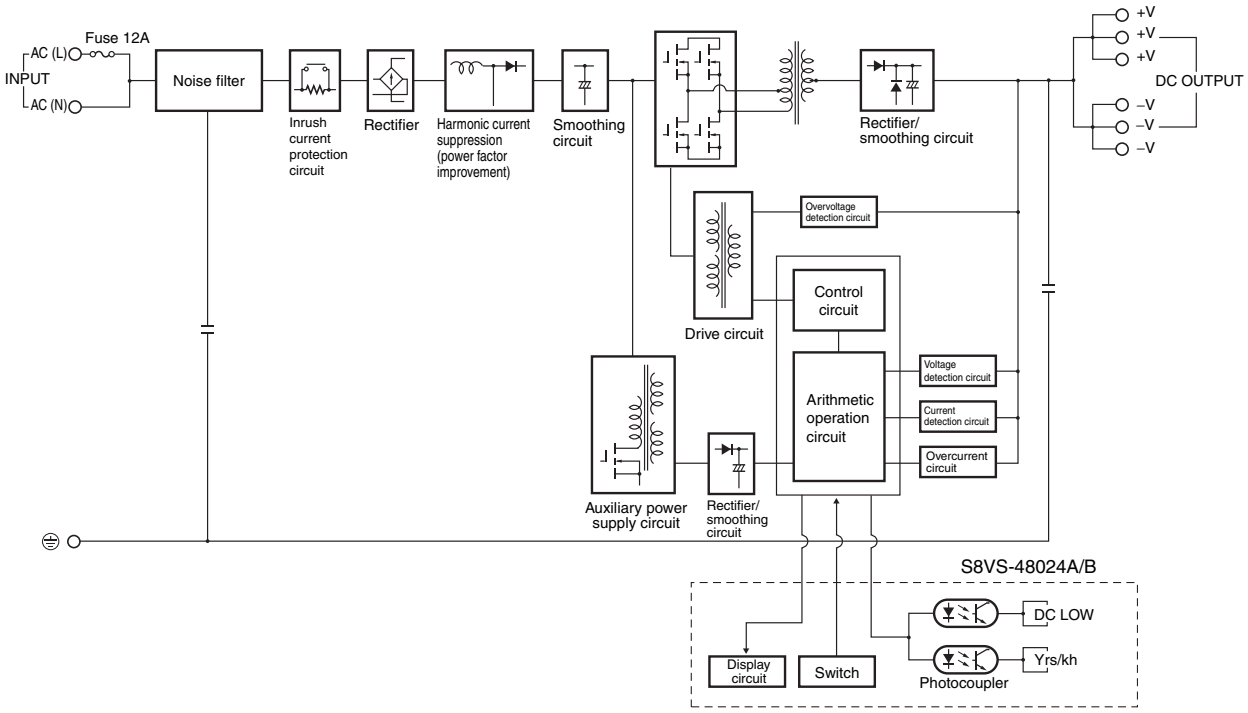
Sinking type
(S8VS-24024A-□, S8VS-24024B-□)
Sourcing type
(S8VS-24024AP-□, S8VS-24024BP-□)



S8VS-24024-□ (240 W)

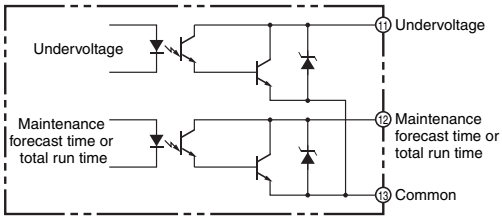


S8VS-48024-□ (480 W)
S8VS-48024A-□ (480 W)
S8VS-48024B-□ (480 W)

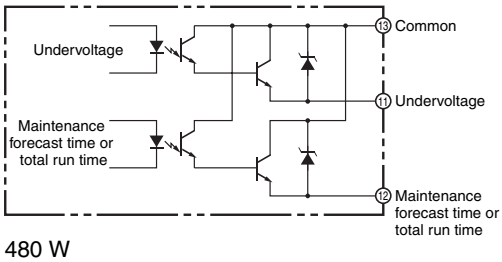


Alarm Output Connections

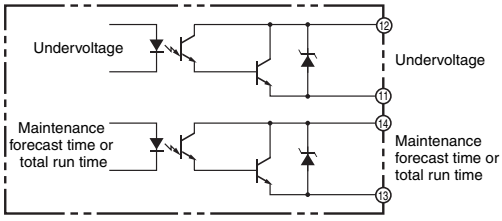
90, 120, 180, and 240 W (Sinking type)



90, 120, 180, and 240 W (Sourcing type)



480 W

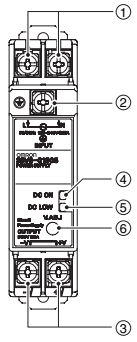


Construction and Nomenclature

Nomenclature

15-W, 30-W Models

S8VS-015□□/S8VS-030□□



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	Undervoltage indicator (DC LOW: Red)	Lights when a drop is detected in the output voltage.
6	Output voltage adjuster (V.ADJ)	Use to adjust the voltage.

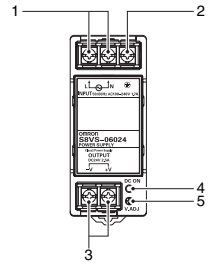
✻1. The fuse is located on the (L) side. For a DC input, connect the positive voltage to the L terminal.
✻2. This is the protective earth terminal specified in the safety standards. Always ground this terminal.

Note: The S8VS-01505 is shown above.

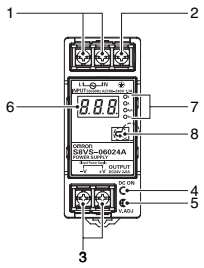
Nomenclature

60-W Models

Standard Model
S8VS-06024



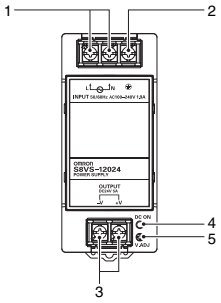
Models with Indication Monitor
S8VS-06024□



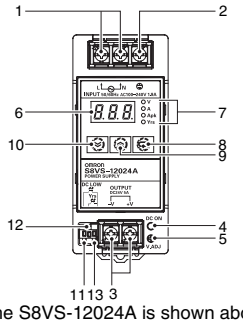
Note: The S8VS-06024A is shown above.

90-W/120-W Models

Standard Models
S8VS-09024/S8VS-0924S/
S8VS-12024



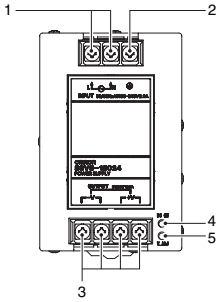
Models with Indication Monitor
S8VS-09024□□□/
S8VS-09024□□□S/S8VS-12024□□□



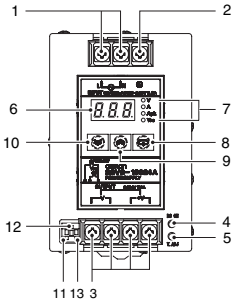
Note: The S8VS-12024A is shown above.

180-W Models

Standard Model
S8VS-18024



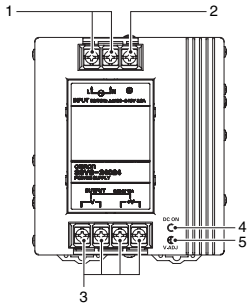
Models with Indication Monitor
S8VS-18024□□□



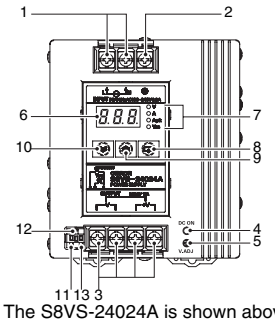
Note: The S8VS-18024A is shown above.

240-W Models

Standard Model
S8VS-24024



Models with Indication Monitor
S8VS-24024□□□



Note: The S8VS-24024A is shown above.

✻ The terminal arrangement is the same for models with screwless terminal blocks and standard models.

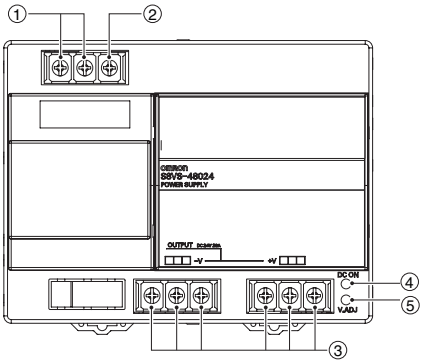
No.	Name		Function
1	Input terminals (L), (N)		Connect the input lines to these terminals. ✻1
2	Protective Earth terminal (PE)		Connect the ground line to this terminal. ✻2
3	DC Output terminals (–V), (+V)		Connect the load lines to these terminals.
4	Output indicator (DC ON: Green)		Lights while a direct current (DC) output is ON.
5	Output voltage adjuster (V.ADJ)		Use to adjust the voltage. ✻3
6	Main display (Red) ✻4		Indicates the measurement or set value.
7	Operation indicator (Orange) ✻4	V	Lights up when the output voltage is indicated. Blinks during setup of undervoltage alarm value.
		A	Lights up during indication of output current.
		Apk	Lights up during indication of peak hold current.
		Yrs	Lights up during indication of maintenance forecast monitor. Blinks during setup of maintenance forecast monitor setting. (S8VS-□□□24A□□)
		kh	Lights up during indication of total run time monitor. Blinks during setup of total run time monitor. (S8VS-□□□24B□□)
8	Mode Key ✻4		Use the Mode Key to change the indicated parameter or reset the peak hold current value.
9	Up Key ✻5		Use the Up Key to change to the setting mode or to increase the set value.
10	Down Key ✻5		Use the Down Key to change to the setting mode or to decrease the set value.
11	Alarm outputs ✻5, ✻6	Undervoltage output terminal (DC Low)	Output when a drop is detected in the output voltage (voltage drop = transistor OFF).
12		Maintenance Forecast output terminal (Yrs) ✻7	Output when the set value for maintenance is reached (transistor OFF).
		Total run time output terminal (kh) ✻8	Output when the set value for total run time is reached (transistor OFF).
13		Common terminal	Common terminal for terminals 11 and 12.

✻1. The fuse is located on the (L) side. 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.
✻3. The output voltage cannot be adjusted for the S8VS-09024□□□S.
✻4. S8VS-□□□24A□□/B□□/BE□ only.
✻5. S8VS-□□□24A□□/B□□ only (except the S8VS-06024□).
✻6. Both sinking and sourcing outputs are available.
✻7. S8VS-□□□24A□□ only (excluding S8VS-06024A).
✻8. S8VS-□□□24B□□ only (excluding S8VS-06024B).

480-W Models

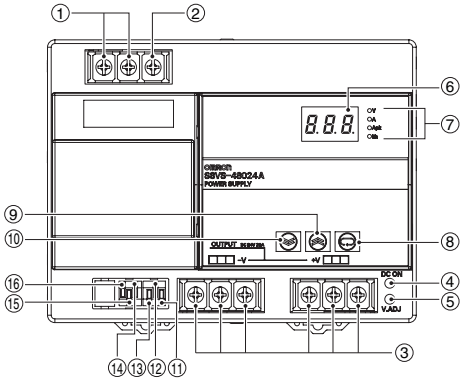
Standard Model

S8VS-48024



Models with Indication Monitor

S8VS-48024□



Note: The illustration shows the S8VS-48024A model.

✻ The terminal arrangement is the same for models with screwless terminal blocks and standard models.

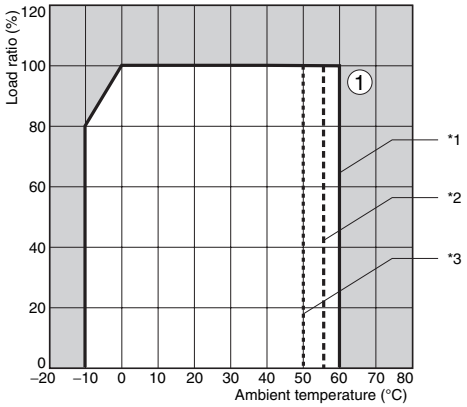
No.	Name		Function
1	AC Input terminals (L), (N)		Connect the input lines to these terminals. ✻1
2	Protective Earth terminal (PE)		Connect the ground line to this terminal. ✻2
3	DC Output terminals (–V), (+V)		Connect the load lines to these terminals.
4	Output indicator (DC ON: Green)		Lights while a direct current (DC) output is ON.
5	Output voltage adjuster (V.ADJ)		Use to adjust the voltage.
6	Main display (Red) ✻3		Indicates the measurement or set value.
7	Operation indicator (Orange) ✻3	V	Lights up when the output voltage is indicated. Blinks during setup of undervoltage alarm value.
		A	Lights up during indication of output current.
		Apk	Lights up during indication of peak hold current.
		Yrs	Lights up during indication of maintenance forecast monitor. Blinks during setup of maintenance forecast monitor setting. (S8VS-48024A)
		kh	Lights up during indication of total run time monitor. Blinks during setup of total run time monitor. (S8VS-48024B)
8	Mode Key ✻3		Use the Mode Key to change the indicated parameter or reset the peak hold current value.
9	Up Key ✻3		Use the Up Key to change to the setting mode or to increase the set value.
10	Down Key ✻3		Use the Down Key to change to the setting mode or to decrease the set value.
11	Alarm outputs ✻3	Undervoltage output terminal (DC Low) (Emitter side)	Output when a drop is detected in the output voltage (voltage drop = transistor OFF).
12		Undervoltage output terminal (DC Low) (Collector side)	
13		Maintenance Forecast output terminal (Yrs) ✻4 (Emitter side)	Output when the set value for maintenance is reached (transistor OFF).
		Total run time output terminal (kh) ✻5 (Emitter side)	Output when the set value for total run time is reached (transistor OFF).
14		Maintenance Forecast output terminal (Yrs) ✻4 (Collector side)	Output when the set value for maintenance is reached (transistor OFF).
		Total run time output terminal (kh) ✻5 (Collector side)	Output when the set value for total run time is reached (transistor OFF).
15, 16	NC (Not connected)		

✻1. The fuse is located on the (L) side. It is NOT user replaceable.
✻2. This is the protective earth terminal specified in the safety standards. Always ground this terminal.
✻3. S8VS-48024A/B only.
✻4. S8VS-48024A only.
✻5. S8VS-48024B only.

Engineering Data

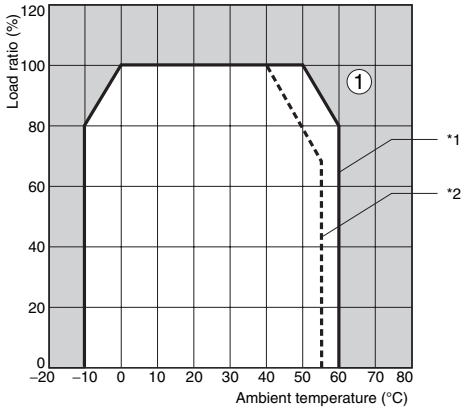
Derating Curve

15 W <S8VS-015□□>



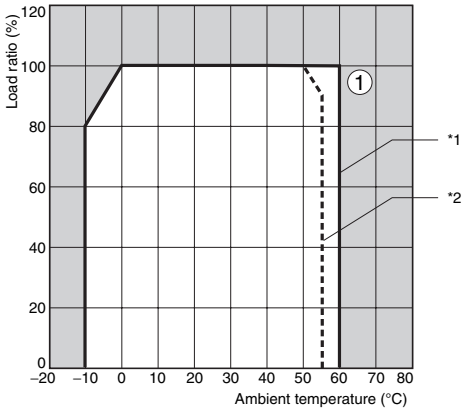
*1 Standard mounting
*2 Face-up mounting
*3 Horizontal mounting

30 W <S8VS-03005/S8VS-03012>



*1 Standard mounting
*2 Face-up mounting/Horizontal mounting

30 W <S8VS-03024>



*1 Standard mounting
*2 Face-up mounting/Horizontal mounting

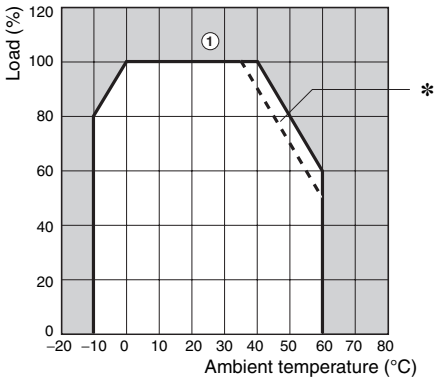
Note: 1. Internal parts may occasionally deteriorate or be damaged. Do not use the Power Supply in areas outside the derating curve (i.e., the area shown by shading ① in the above graph).

2. If there is a derating problem, use forced air-cooling.

3. Provide a space of at least 20 mm when using standard mounting and horizontal mounting. If 20 mm is not available, make sure that the space is at least 10 mm. In this case, reduce the corresponding derating curve by 5°C.

4. DC Inputs
If the input voltage is less than 100 VDC, reduce the load given in the above derating curve by at least the following factor.
S8VS-03005: 0.7 max.
S8VS-03012/03024: 0.85 max.

60, 90, 120, 180, 240, and 480 W



* Using side mounting bracket for right-side mounting (excluding 240-W models). UL certification conditions do not apply if the side mounting bracket is used.

Note: 1. Internal parts may occasionally deteriorate or be damaged. Do not use the Power Supply in areas outside the derating curve (i.e., the area shown by shading ① in the above graph).

2. If there is a derating problem, use forced air-cooling.

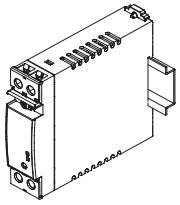
3. When using a 480-W model at an input voltage of 95 VAC or less, derate the load by at least 80%.

4. DC Inputs
If the input voltage is less than 100 VDC, reduce the load given in the above derating curve by at least the following factor.
60-W models: 0.9 max.
90-W models: 0.85 max.
120-W/180-W/240-W models: 0.8 max.

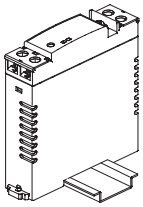
Mounting

15 and 30 W

Standard mounting with DIN rail

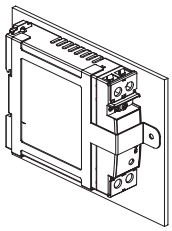


Face-up mounting with DIN rail

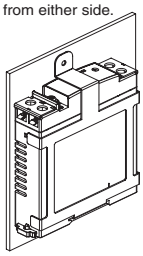


Standard mounting with S82Y-VS30P

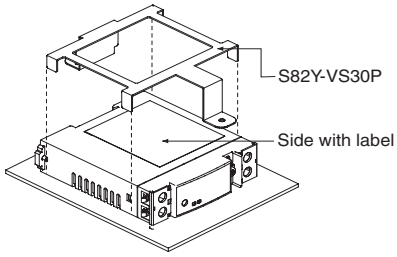
Note: The Side-mounting Bracket can be mounted from either side.



Face-up mounting with S82Y-VS30P



Horizontal mounting with S82Y-VS30P*



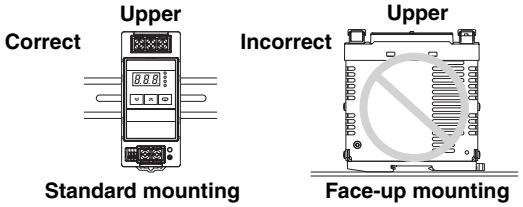
Note: 1. Improper mounting will interfere with heat dissipation and may occasionally result in deterioration or damage of internal parts. Use the Product within the derating curve for the mounting direction that is used. Do not use the Power Supply mounted in any way not shown above.

2. Use a mounting bracket (S82Y-VS30P, sold separately) when the Product is mounted horizontally.

3. Heat dissipation will be adversely affected. When the Product is mounted facing horizontally, always place the side with the label facing horizontally.

4. Use PFP-M End Plates on the top and bottom of the Power Supply when mounting horizontally on a DIN rail.

60, 90, 120, 180, 240, and 480 W



Note: Improper mounting will interfere with heat dissipation and may occasionally result in deterioration or damage of internal parts. It may also result in failure of the maintenance forecast monitor function. Use the standard mounting method only.

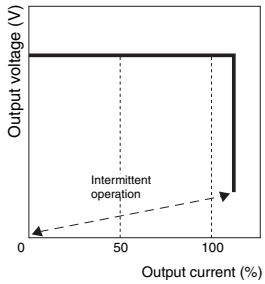
Overload Protection

The load and the power supply are automatically protected from overcurrent damage by this function.

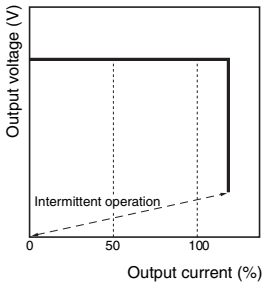
Overload protection is activated if the output current rises above 105% of the rated current.

When the output current returns within the rated range overload protection is automatically cleared.

15-W/30-W Models

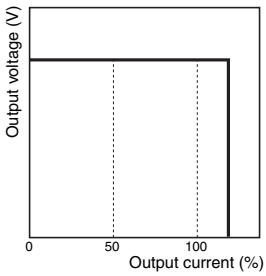


60-W/90-W Models



The values shown in the above diagrams are for reference only.

120-W/180-W/240-W/480-W Models



The values shown in the above diagrams are for reference only.

Note: 1. Internal parts may occasionally deteriorate or be damaged if a short-circuited or overcurrent state continues during operation.

2. Internal parts may possibly deteriorate or be damaged if the Power Supply is used for applications with frequent inrush current or overloading at the load end. Do not use the Power Supply for such applications.

Peak Output Current (S8VS-48024□ only)

The peak current must satisfy the following conditions.

Input voltage range: 200 to 240 VAC

Peak current value: 30 A max.

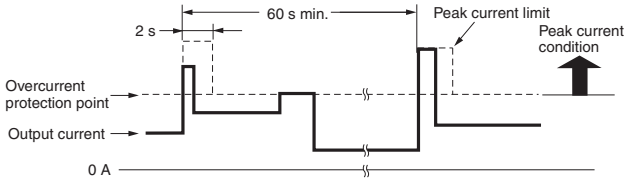
Peak current pulse width: 2 s max.

Cycle: 60 s min.

Note: 1. Two seconds after the peak current is reached, the peak current limiting function operates to stop the peak current flow.

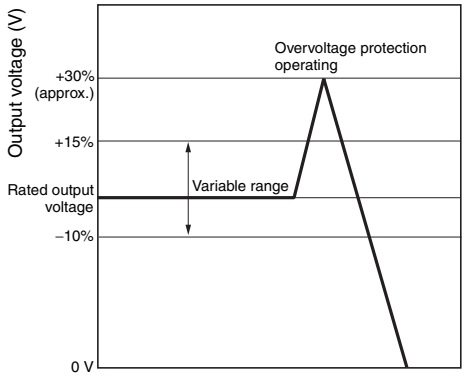
2. It takes 60 seconds for the peak current to be able to flow again.

3. The peak current limiting function prevents the peak current from flowing at 100 to 120 VAC.



Overvoltage Protection

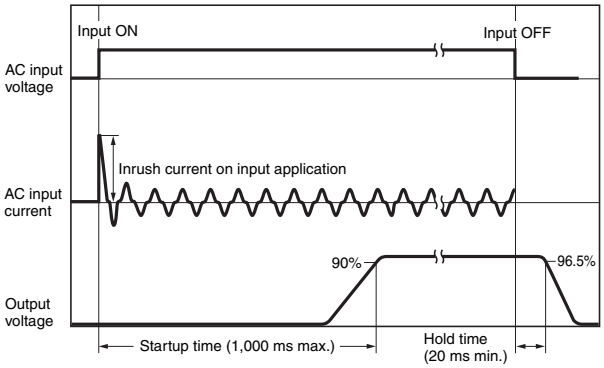
Consider the possibility of an overvoltage and design the system so that the load will not be subjected to an excessive voltage even if the feedback circuit in the Power Supply fails. If an excessive voltage that is approximately 130% of the rated voltage (but approximately 110% of the rated voltage for the S8VS-09024□□□S) or more is output, the output voltage is shut OFF. Reset the input power by turning it OFF for at least three minutes and then turning it back ON again.



The values shown in the above diagram is for reference only.

Note: Do not turn ON the power again until the cause of the overvoltage has been removed.

Inrush Current, Startup Time, Output Hold Time



Undervoltage Alarm Indication

LED (DC LOW: red) lights to warn of output voltage drop.

Detection voltage is set to approx. 80% (75 to 90%) of the rated output voltage.

Note: This function monitors the voltage at the power supply output terminals. To check actual voltage, measure voltage on the load side.

Undervoltage Alarm Function (Indication and Output) (S8VS-□□□24A□□/S8VS-□□□24B□□/ S8VS-□□□24BE□ Only)

When output voltage drop is detected, an alarm (AO 1) and lowest output voltage value are indicated alternately. The preset value of detection voltage can be changed in the setting mode.

(From 18.5 to 27.5 V in 0.1-V steps. The value is fixed at 20.0 V for the S8VS-06024A/S8VS-06024B.)

Further, an output (undervoltage output terminal (DC LOW)) to an external device is given from the transistor to notify of the error (excluding S8VS-06024A/S8VS-06024B/S8VS-□□□24BE□).

(Output voltage drop = OFF, i.e., no continuity at the undervoltage output terminal (DC LOW).)

Example: Outputting an Alarm When the Voltage Output by the S8VS-09024A□□ Drops to the Set Value (19.0 V) or Lower

In the case that the output voltage drops below the set value (19.0 V) and an alarm is issued

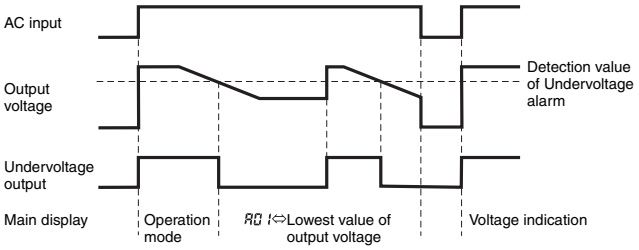
Note: 1. Operation begins after about three seconds since the AC power is supplied.

2. The alarm is not indicated in the setting mode.

3. Press the ↩ (Mode Key (8)) after the output voltage is restored, to reset alarm indication.

4. The undervoltage alarm function may also operate when an interruption in AC input is not restored within 20 ms.

5. The undervoltage alarm function monitors the output terminal voltage of the Power Supply. To check the voltage accurately, measure the voltage at the load end.



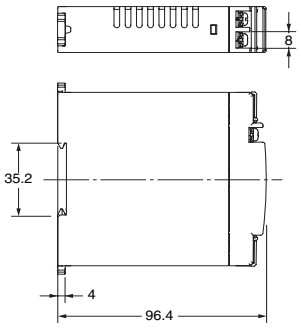
Note: Operation begins after about three seconds since the AC power is supplied.

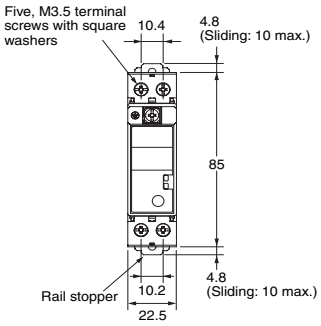
Dimensions

Power Supplies with Screw Terminal Blocks

Note: All units are in millimeters unless otherwise indicated.

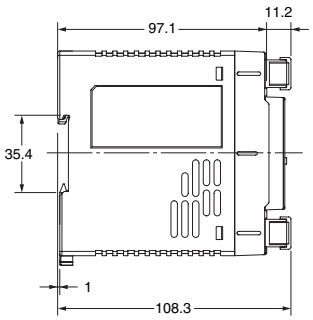
S8VS-015□□ (15 W)
S8VS-030□□ (30 W)

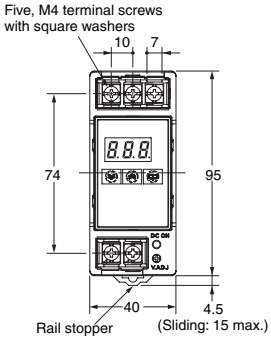




Note: The illustration is the S8VS-03024 model.

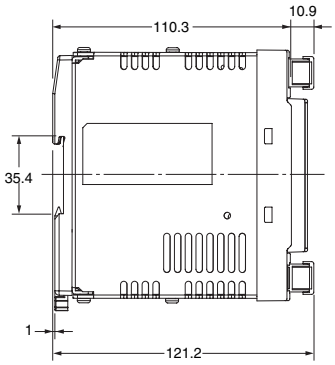
S8VS-06024 (60 W)
S8VS-06024A (60 W)
S8VS-06024B (60 W)

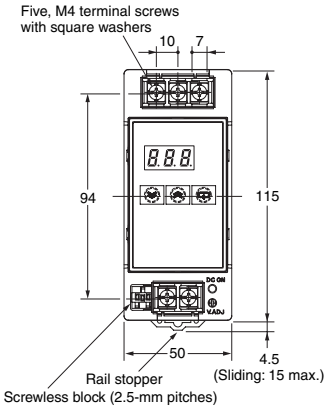




Note: The illustration is the S8VS-06024A model.

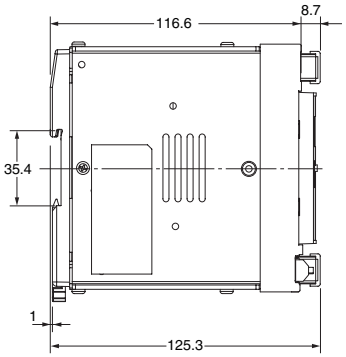
S8VS-09024 (90 W) /S8VS-09024S (90 W) /S8VS-12024 (120 W)
S8VS-09024A□ (90 W) /S8VS-09024A□S (90 W) /S8VS-12024A□ (120 W)
S8VS-09024B□ (90 W) /S8VS-09024B□S (90 W) /S8VS-12024B□ (120 W)
S8VS-09024BE (90 W) /S8VS-09024BES (90 W) /S8VS-12024BE (120 W)

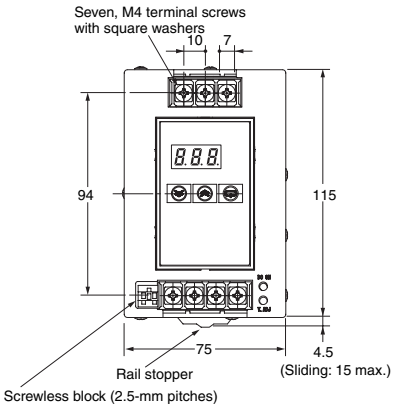




Note: The illustration is the S8VS-12024A model.

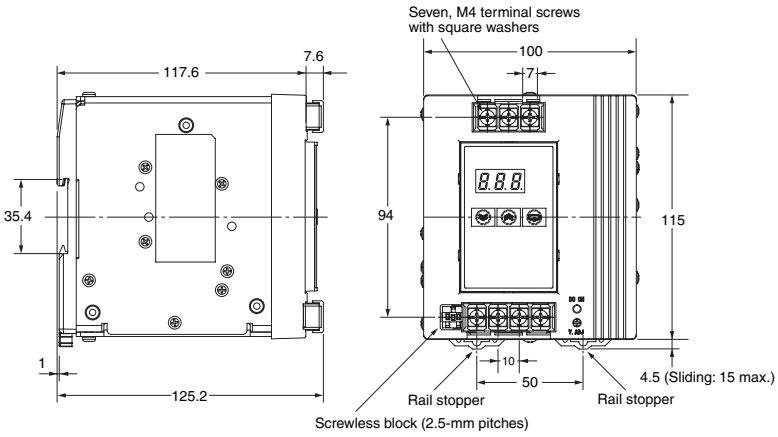
S8VS-18024 (180 W)
S8VS-18024A□ (180 W)
S8VS-18024B□ (180 W)
S8VS-18024BE (180 W)





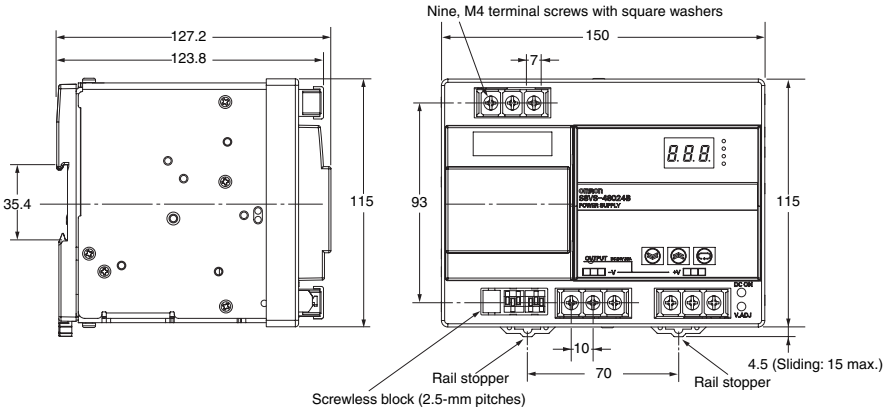
Note: The illustration is the S8VS-18024A model.

S8VS-24024 (240 W)
S8VS-24024A□ (240 W)
S8VS-24024B□ (240 W)
S8VS-24024BE (240 W)



Note: The illustration shows the S8VS-24024A model.

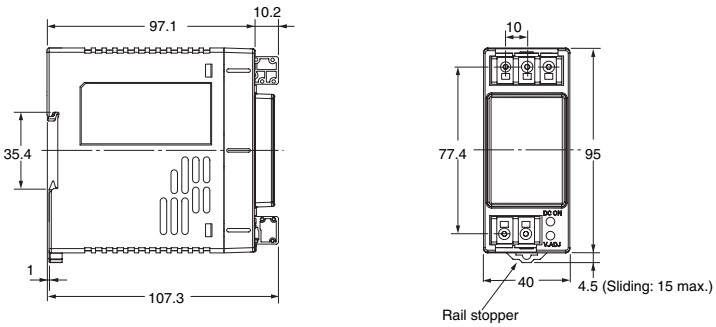
S8VS-48024 (480 W)
S8VS-48024A (480 W)
S8VS-48024B (480 W)



Note: The illustration shows the S8VS-48024A model.

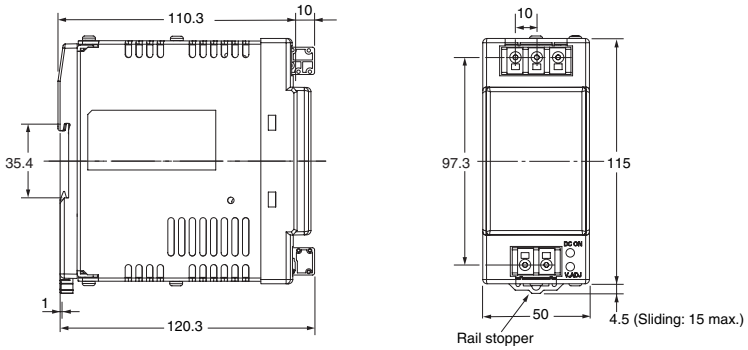
Power Supplies with Screwless Terminal Blocks

S8VS-06024-F (60 W)
S8VS-06024A-F (60 W)
S8VS-06024B-F (60 W)



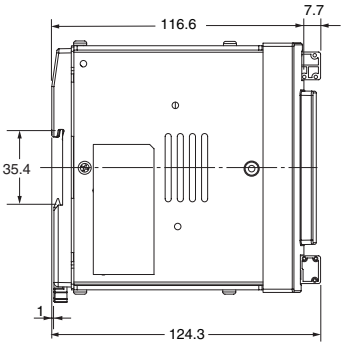
Note: The illustration shows the S8VS-06024-F model.

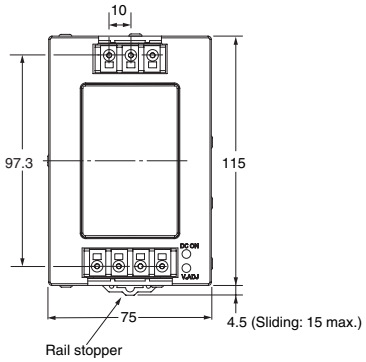
S8VS-09024-F (90 W) /S8VS-09024S-F (90 W) /S8VS-12024-F (120 W)
S8VS-09024A□-F (90 W) /S8VS-09024A□S-F (90 W) /S8VS-12024A□-F (120 W)
S8VS-09024B□-F (90 W) /S8VS-09024B□S-F (90 W) /S8VS-12024B□-F (120 W)
S8VS-09024BE-F (90 W) /S8VS-09024BES-F (90 W) /S8VS-12024BE-F (120 W)



Note: The illustration shows the S8VS-12024-F model.

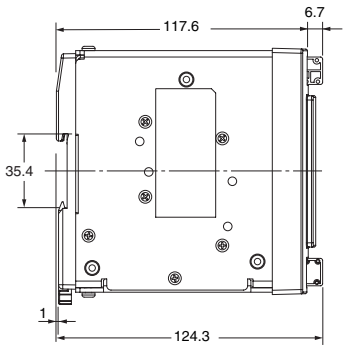
S8VS-18024-F (180 W)
S8VS-18024A□-F (180 W)
S8VS-18024B□-F (180 W)
S8VS-18024BE-F (180 W)

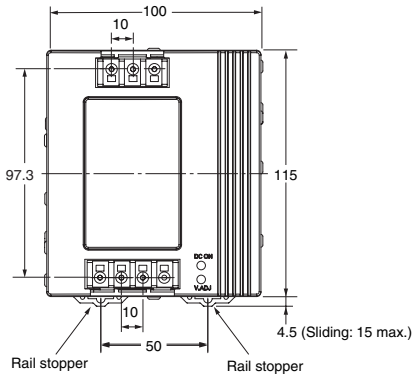




Note: The illustration shows the S8VS-18024-F model.

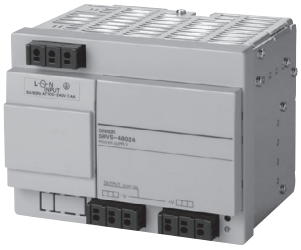
S8VS-24024-F (240 W)
S8VS-24024A□-F (240 W)
S8VS-24024B□-F (240 W)
S8VS-24024BE-F (240 W)

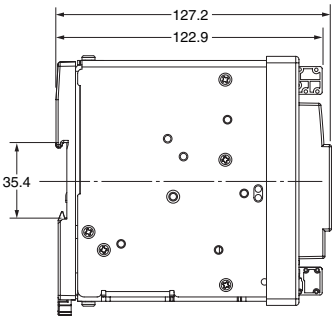


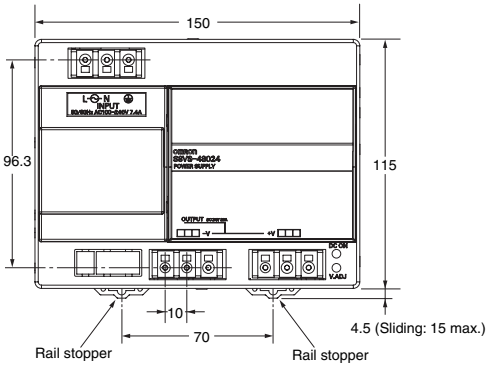


Note: The illustration shows the S8VS-24024-F model.

S8VS-48024-F (480 W)
S8VS-48024A-F (480 W)
S8VS-48024B-F (480 W)







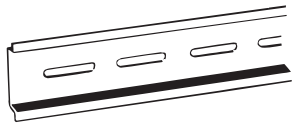
Note: The illustration shows the S8VS-48024-F model.

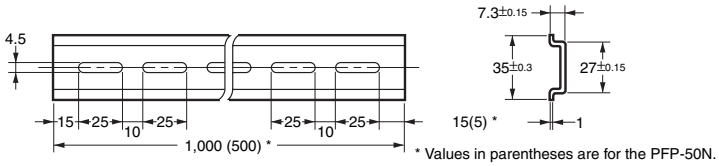
DIN Rail (Order Separately)

Note: All units are in millimeters unless otherwise indicated.

Mounting Rail (Material: Aluminum)

PFP-100N
PFP-50N

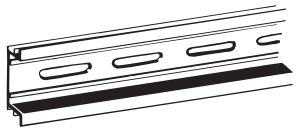


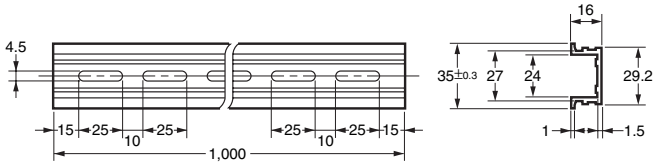


* Values in parentheses are for the PFP-50N.

Mounting Rail (Material: Aluminum)

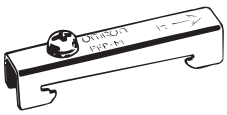
PFP-100N2

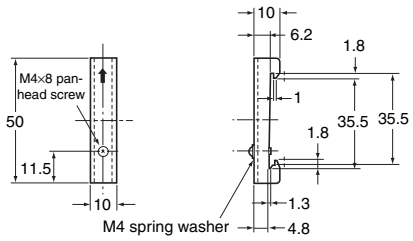




End Plate

PFP-M





Note: If there is a possibility that the Unit will be subject to vibration or shock, use a steel DIN Rail. Otherwise, metallic filings may result from aluminum abrasion.

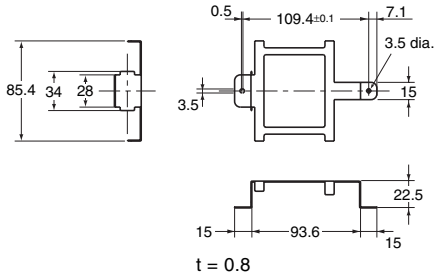
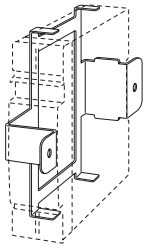
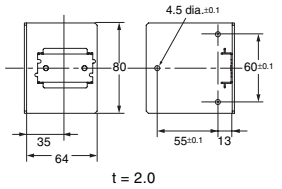
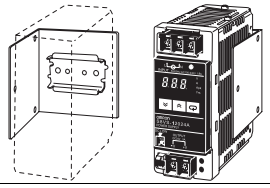
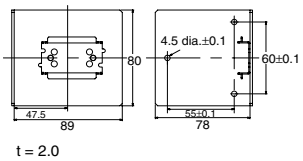
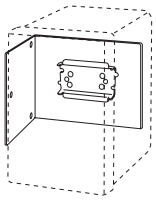
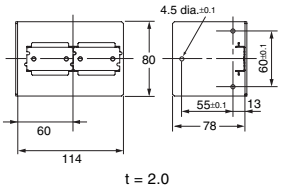
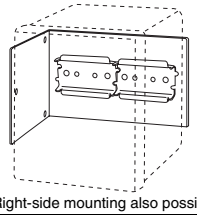
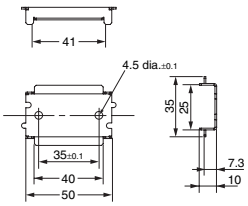
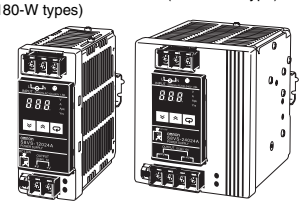
Terminal Block Cover (Order Separately)

Terminal Block Cover model	Applicable models and locations
S82Y-VS-C2P-S	**S8VS-15W** **S8VS-30W**
S82Y-VS-C3P	**S8VS-60W input side** **S8VS-90W input side** **S8VS-120W input side** **S8VS-180W input side** **S8VS-240W input side** **S8VS-480W input/output side**
S82Y-VS-C2P-M	**S8VS-60W output side** **S8VS-90W output side** **S8VS-120W output side**
S82Y-VS-C4P	**S8VS-180W output side** **S8VS-240W output side**

Mounting Brackets

Name	Model
Side-mounting Bracket (for 15- and 30-W models)	**S82Y-VS30P**
Side-mounting Bracket (for 60-, 90-, and 120-W models)	**S82Y-VS10S**
Side-mounting Bracket (for 180-W models)	**S82Y-VS15S**
Side-mounting Bracket (for 240-W models)	**S82Y-VS20S**
Front-mounting Bracket (for 60-, 90-, 120-, 180-, and 240-W models) ✻	**S82Y-VS10F**

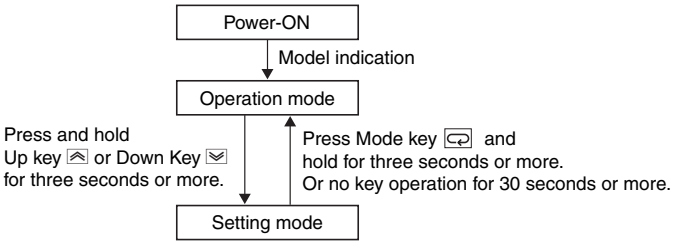
Note: Brackets cannot be used for 480-W models.
✻ Two required to mount a 240-W model.

Type	Model	Dimensions	Appearance
Side-mounting Bracket (For 15-, 30-W models)	**S82Y-VS30P**		
Side-mounting Bracket (For 60-, 90-, 120-W models)	**S82Y-VS10S**		Left-side mounting Right-side mounting 
Side-mounting Bracket (For 180-W models)	**S82Y-VS15S**		Left-side mounting  *Right-side mounting also possible.
Side-mounting Bracket (For 240-W models)	**S82Y-VS20S**		Left-side mounting  *Right-side mounting also possible.
Front-mounting Bracket (For 60-, 90-, 120-, 180-, and 240-W models)	**S82Y-VS10F**		(For 60-, 90-, 120-, 180-W types) (For 240-W type)  *Use two S82Y-VS10F brackets for the 240-W type.

Display and Alarm Output Functions and Operating Procedures

S8VS-□□□24A□□ models (with display monitor) can display the output voltage, output current, peak hold current, or maintenance forecast monitor time. S8VS-□□□24B□□/S8VS-□□□24B**E**□ models (with display monitor) can display the output voltage, output current, peak hold current, or total run time.

Mode Change

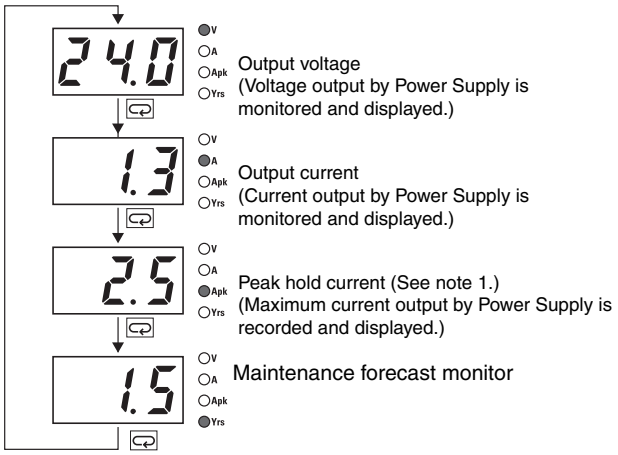


Note: No setting mode is provided for the S8VS-06024□.

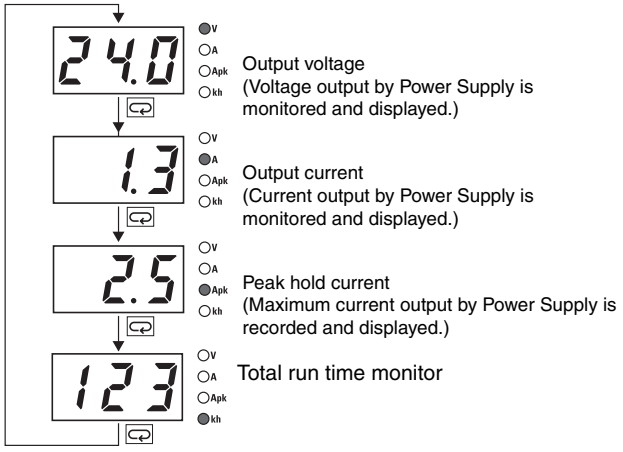
Operation Mode

Various states of the Power Supply are indicated.

Models with Maintenance Forecast Monitor (S8VS-□□□24A□□)



Models with Total Run Time Monitor (S8VS-□□□24B□□/ S8VS-□□□24BE□)

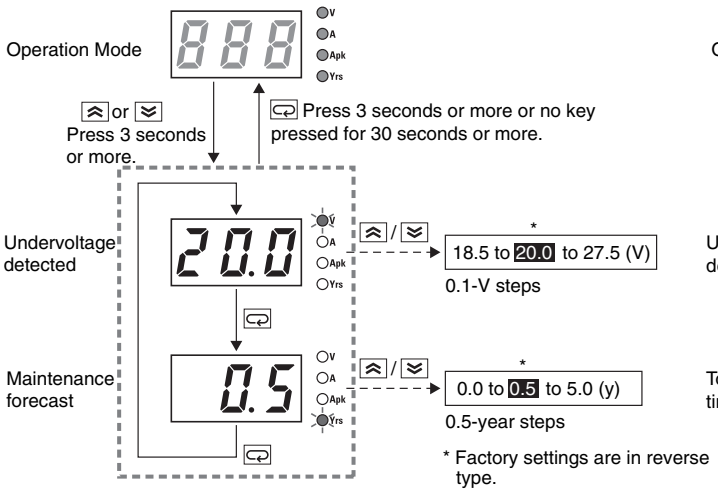


Note: 1. The peak hold current starts measuring the current 3 seconds after the Power Supply is started. Inrush current is thus not measured.
2. For the factory setting, the output voltage will be displayed when the power supply is first turned ON. Thereafter, the output voltage will be indicated in the same display when shutting down.

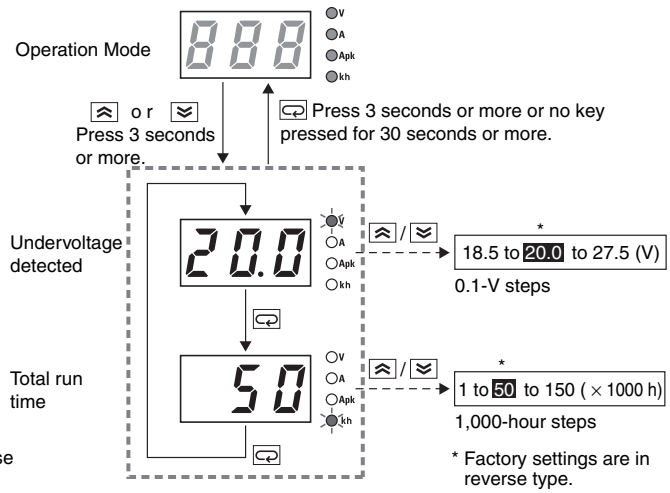
Setting Mode (Except for S8VS-06024□)

Set various parameters of the Power Supply.

Models with Maintenance Forecast Monitor (S8VS-□□□24A□□)



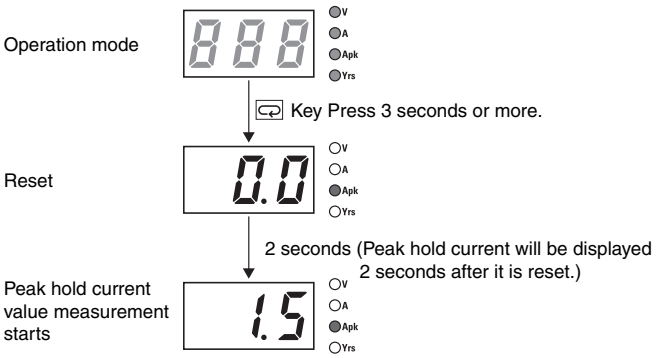
Models with Total Run Time Monitor (S8VS-□□□24B□□/S8VS-□□□24BE□)



Note: 1. Press and hold the (9) Up Key or (10) Down Key for two seconds or more to increase or decrease the value rapidly.
2. The S8VS-06024□ is not provided with the setting mode and its parameters are fixed at the shipment setting.

Peak Hold Current Reset

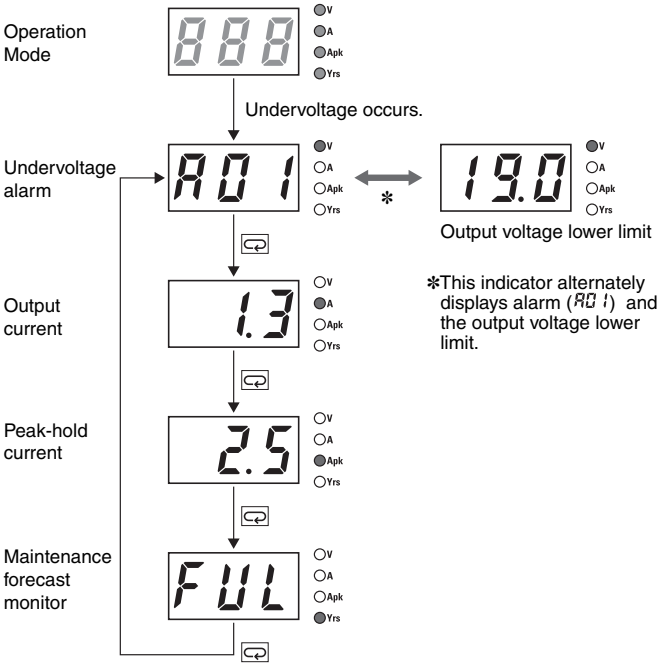
The peak value of the output current (i.e., the peak hold current) can be reset on the display.



Note: The peak hold current value is not reset in the setting mode.

Undervoltage Alarm Indication

This indicator lights when the output voltage lowers.

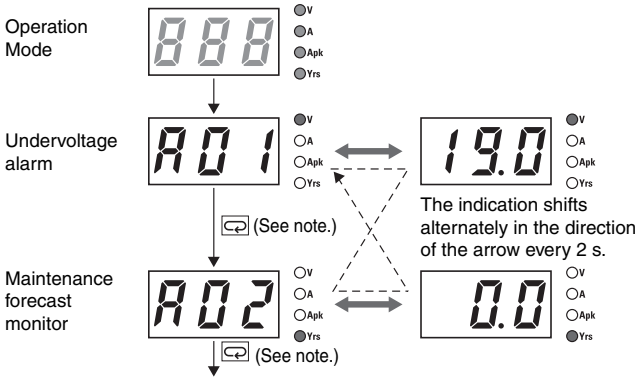


Note: 1. When the voltage is restored to the set value or higher and the Key is pressed at the A01 display to return to the output current display, the A01 alarm will be cleared and the normal output display will return.

2. The above displays are for models with a maintenance forecast monitor (S8VS-□□□24A□□).

Multiple Alarms

When two or more different alarms occur at the same time



✻ When undervoltage alarm is indicated: Press Key → output load indication
When the maintenance forecast monitor or overheat alarm is indicated: Press Key → undervoltage alarm indication

Note: 1. The above displays are for models with a maintenance forecast monitor (S8VS-□□□24A□□).

Self-Diagnostics Function

Numbers in the following table indicate the number used in *Nomenclature* on pages 15 and 17.

(6) Main display	Description	Output status	Restoration method	Setting after restoration
- - -	Noise detected in voltage or current	No change	Automatic reset.	No change
Hot	Overheated	Maintenance forecast output terminal (Yrs) turns OFF.	Automatic reset.	No change
E01	Undervoltage alarm set value memory error	Undervoltage output terminal (DC LOW) turns OFF.	Press and hold the Up Key ⩓ (9) or Down Key ⩔ (10) for three seconds and check the set value of the corresponding point. The set value must return to the shipment setting	Shipment setting or value set in the setting mode again
E02	Memory error of alarm set value of maintenance forecast monitor or total run time monitor	Maintenance forecast output terminal (Yrs) turns OFF or total run time output terminal (kh) turns OFF.		
E03	Other memory error	Undervoltage output terminal (DC LOW) turns OFF. Maintenance forecast output terminal (Yrs) turns OFF or total run time output terminal (kh) turns OFF.	Turn the AC input OFF then ON again. If the Product is not reset, contact the dealer.	No change
E04, E05	Hardware error (S8VS-48024A/B only)	Undervoltage output terminal (DC LOW) turns OFF. Maintenance forecast output terminal (Yrs) turns OFF or total run time output terminal (kh) turns OFF.	Turns the AC input OFF then ON again. If the Product is not reset, contact the dealer.	No change

Note: 1. External noise is probable as a cause of "- - -", "E01", "E02", "E03", "E04", and "E05" errors.

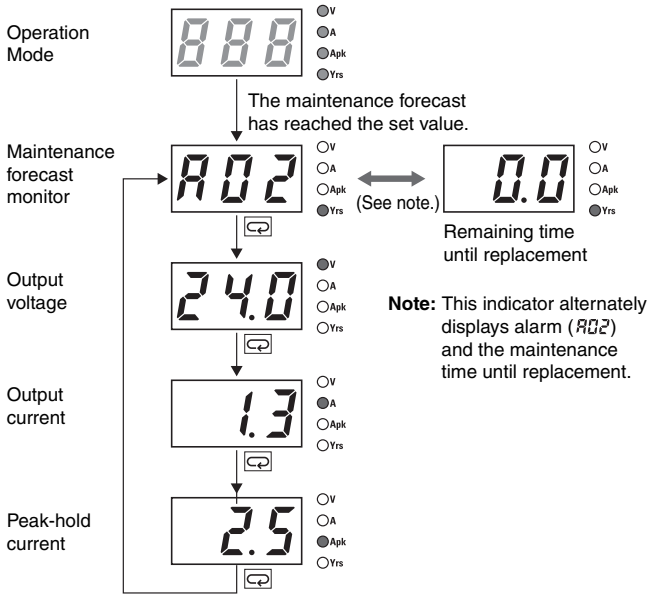
2. Operation out of the derating curve area, ventilation error, and incorrect mounting direction are probable as a cause of "Hot" error.

3. If the "Hot" error state continues for more than three hours, the maintenance forecast monitor function becomes invalid. The Yrs output (Maintenance forecast output terminal (Yrs)) will remain OFF (no continuity).
Replace the power supply if this condition occurs even if the output is correct, as internal parts may be deteriorated.

4. The "Hot" error detection function is only for the S8VS-□□□24A□□.

Maintenance Forecast (S8VS-□□□24A□□)

Displays when the maintenance forecast has reached the set value.



Note: This indicator alternately displays alarm (A02) and the maintenance time until replacement.

Indication and Output

When the Product is purchased, "FUL" will be indicated. As electrolytic capacitors deteriorate, indication changes to "HLF" (Refer to page 30). "FUL" will be indicated for the maintenance forecast display for approximately one month after the Power Supply is first turned ON. The accumulated value will then be displayed depending on the ambient conditions thereafter. (However, the "HLF" indication may not appear, depending on the usage environment and the set value for maintenance forecast.)

S8VS-06024A:

After the remaining time to maintenance is reduced to less than two years, indication automatically changes to a value, which decreases from " 1.5" to " 1.0" to "0.5" to "0.0" (year) as the running hours increase. If the remaining time becomes less than 0.5 year, an alarm (A02) and "0.0" are indicated alternately.

S8VS-09024A□□/S8VS-12024A□, S8VS-18024A□/S8VS-24024A□/S8VS-48024A:

If the maintenance forecast setting L (which can be set arbitrarily from 0.0 to 5.0 years in 0.5-year steps) is set to a value larger than two years, the indication automatically changes to a value (L - 0.5) after the remaining time to maintenance is reduced to the set years, and an alarm (A02) and the remaining time are indicated alternately.

If the setting is less than 2.0 years, the indication changes to a value (1.5) after the remaining time becomes less than two years, and after the remaining time becomes less than the set time, an alarm (A02) and the remaining time (L - 0.5) are indicated alternately.

If the alarm (A02) and a numeric value are indicated alternately, a transistor (maintenance forecast output terminal (Yrs)) will turn OFF to indicate the need for maintenance. (The transistor turns OFF when the maintenance forecast time is reached, i.e., there will be no continuity at the maintenance forecast output terminal.)

In the case that the remaining time is reduced to smaller than 0.5 year and an alarm is issued.

Note: 1. The remaining time to maintenance is based on continuous operation, not including the time when the power supply is turned OFF.

2. "FUL" will be indicated until approximately one month of time is accumulated to estimate the speed of deterioration and the output will remain ON (continuity at the maintenance forecast output terminal (Yrs)).

3. For details on the display, refer to *Relationship between Indicated Values and Output of Set Values* under *Maintenance Forecast Monitor Function* on page 30.

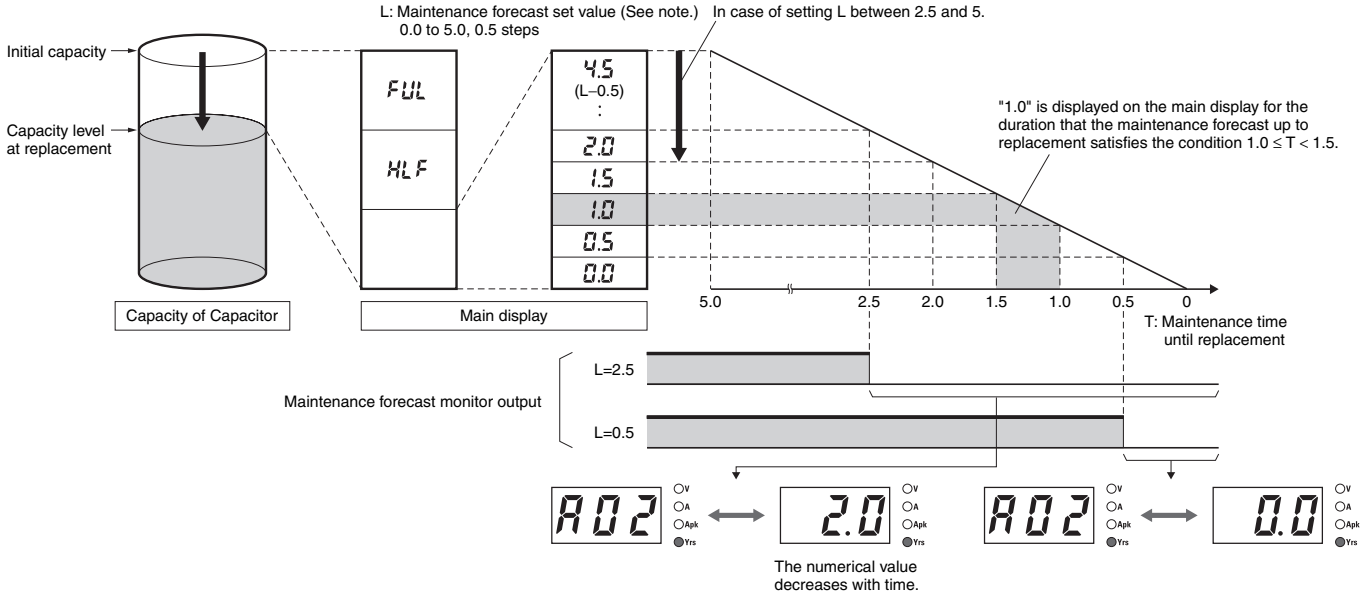
Maintenance Forecast Monitor Function

The Power Supply is equipped with electrolytic capacitors.
The electrolyte inside the electrolytic capacitor penetrates the sealing rubber and evaporates as time passes since it is manufactured, which causes deterioration of characteristics such as decreasing the capacitance, etc.
Due to this deterioration of the characteristics of the electrolytic capacitor, the Power Supply decreases its performance as time passes.

The maintenance forecast monitor function shows an approximate period left for maintenance of the Power Supply due to deterioration of electrolytic capacitors. When the period left for maintenance that the power supply forecasts reaches the set value, an alarm is indicated and an output signal is triggered.
Use this function to know the approximate replacement timing of the Power Supply.

Note: The maintenance forecast monitor function indicates an approximate period left for maintenance, based on deterioration of the electrolytic capacitor. It does not predict failures caused by other reasons.

Relationship between Indicated Values and Output of Set Values



Note: This function can be set only on the S8VS-09024A□□, S8VS-12024A□, S8VS-18024A□, S8VS-24024A□, and S8VS-48024A.

Principle of Operation

The deterioration speed of the electrolytic capacitor varies considerably according to the ambient temperature. (Generally the speed follows “Rule of Two for every 10°C”; for every 10°C increase in temperature the rate of degradation doubles according to Arrhenius’s equation.) The S8VS-□□□24A□□ monitors the temperature inside the power supply, and calculates the amount of deterioration according to the running hours and inside temperature. Judging by this amount of deterioration, the power supply will give the alarm indication and output when the period left for maintenance reaches the set value.

Note: 1. Due to degradation of internal electronic parts, replace the power supply approximately 15 years after purchase even if indication and output of maintenance forecast monitor are not issued.
2. The maintenance forecast is accelerated or decelerated according to operating conditions. Periodically check indication.
3. Acceleration or deceleration of the maintenance forecast may cause the output to repeatedly go ON/OFF. Only the S8VS-09024A□□, S8VS-12024A□, S8VS-18024A□, S8VS-24024A□, and S8VS-48024A are equipped with output.
4. The accuracy of the maintenance forecast function may be adversely affected by applications in which the AC input is frequently turned ON/OFF.

Reference Values (15-W to 480-W Models)

Item	Value	Definition
Reliability (MTBF)	15 W to 240 W: 135,000 hr min. 480 W: 60,000 hr min.	MTBF stands for Mean Time Between Failures, which is calculated according to the probability of accidental device failures, and indicates reliability of devices. Therefore, it does not necessarily represent the life of the Product.
Life expectancy	10 yr min.	The life expectancy indicates average operating hours under the ambient temperature of 40°C and a load rate of 50%. Normally this is determined by the life expectancy of the built-in aluminum electrolytic capacitor.

Note: The maintenance forecast is the service life (the power supply’s internal temperature is monitored at all times) of the internal electrolytic capacitor in actual operating conditions, and varies according to the customer’s operating conditions. 15 years is taken as the maximum period of the maintenance forecast.

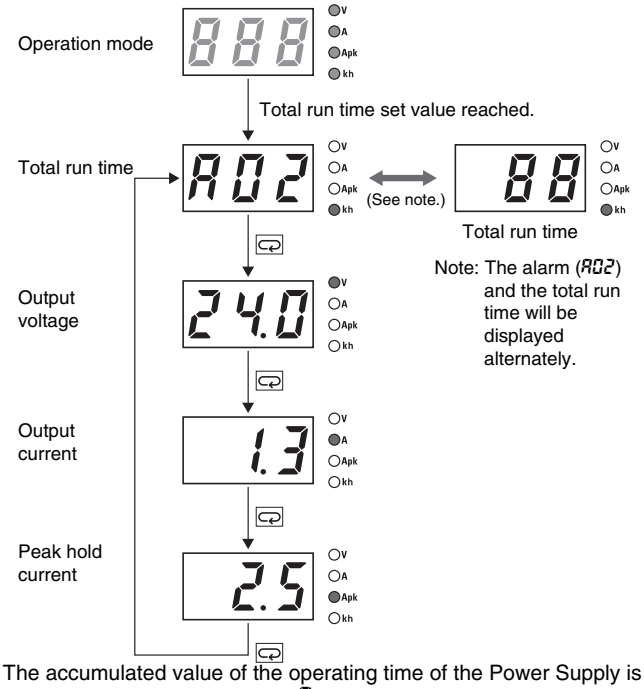
Models with Total Run Time Monitor (S8VS-□□□24B□□/S8VS-□□□24BE□)

S8VS-06024B

The accumulated value of the operating time of the Power Supply is displayed as the total run time. 0 (kh) will be displayed initially after purchase and then the display will advance in 1-kh steps as the operating time accumulates. The S8VS-06024B, however, does not have an alarm function (setting, display, or output).

S8VS-09024B□□/S8VS-09024BE□/ S8VS-12024B□/S8VS-12024BE/ S8VS-18024B□/S8VS-18024BE/ S8VS-24024B□/S8VS-24024BE/S8VS-48024B

The display will appear when the set value for the total run time has been reached.

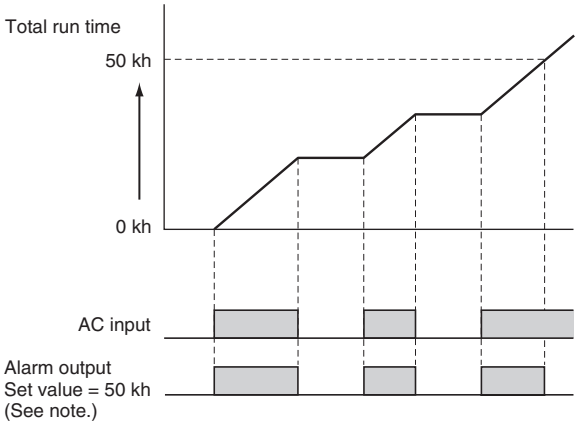


The accumulated value of the operating time of the Power Supply is displayed as the total run time. 0 (kh) will be displayed initially after purchase and then the display will advance in 1-kh steps as the operating time accumulates. When the total run time reaches the alarm set value, the alarm (A02) and the total run time will be displayed alternately and a transistor (total run time output terminal (kh)) will output the status externally.
(Alarm set value reached = OFF, i.e., no continuity at the total run time output terminal (kh))
The alarm set value can be changed in the setting mode.
The S8VS-09024BE□, S8VS-12024BE, S8VS-18024BE, and S8VS-24024BE do not have an alarm output.

Example: Alarm Displays When a Total Run Time Set Value of 88 kh Is Reached

Note: The total run time cannot be reset. To clear the alarm, change the alarm set value to a value higher than the value displayed for the total run time.

Time Chart



✻ Setting is possible for the following models only:
S8VS-09024B□□, S8VS-09024BE□, S8VS-12024B□, S8VS-12024BE, S8VS-18024B□, S8VS-18024BE, S8VS-24024B□, S8VS-24024BE, S8VS-48024B

Note: 1. The total run time does not include the time that the Power Supply is OFF.

2. The total run time measures the total time that power is being supplied and is not related in any way to deterioration in the electrolytic capacitor built into the Power Supply or to the effects of the ambient temperature.

Safety Precautions

⚠ CAUTION

Minor electric shock, fire, or Product failure may occasionally occur. Do not disassemble, modify, or repair the Product or touch the interior of the Product.

Minor burns may occasionally occur. Do not touch the Product while power is being supplied or immediately after power is turned OFF.

Fire may occasionally occur. Tighten terminal screws to the specified torque (15- and 30-W models: 0.8 to 1.0 N·m/60-, 90-,120-, 180-, 240-, and 480-W models: 1.08 N·m).

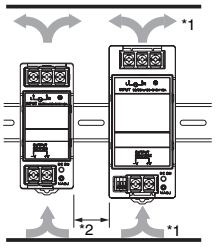
Minor injury due to electric shock may occasionally occur. Do not touch the terminals while power is being supplied. Always close the terminal cover after wiring.

Minor electric shock, fire, or Product failure may occasionally occur. Do not allow any pieces of metal or conductors or any clippings or cuttings resulting from installation work to enter the Product.

Precautions for Safe Use

Mounting

- Take adequate measures to ensure proper heat dissipation to increase the long-term reliability of the Product. Be sure to allow convection in the atmosphere around devices when mounting. Do not use in locations where the ambient temperature exceeds the range of the derating curve.
- When cutting out holes for mounting, make sure that cuttings do not enter the interior of the Products.



*1. Convection of air
*2. 20 mm min.

15-W and 30-W Models

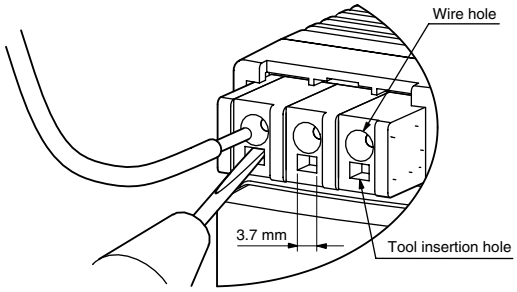
- Improper mounting will interfere with heat dissipation and may occasionally result in deterioration or damage of internal parts. Use the Product within the derating curve for the mounting direction that is used.
- Use a mounting bracket when the Product is mounted facing horizontally.
- Heat dissipation will be adversely affected. When the Product is mounted facing horizontally, always place the side with the label facing upward.
- Operate the Power Supply within a range that is 5°C less than the values in the derating curve in *Engineering Data* on page 18 if the Power Supply is used with an installation spacing of 10 mm min. (20 mm max.) on the left and right.

60-W, 90-W, 120-W, 180-W, 240-W, and 480-W Models

- Improper mounting will interfere with heat dissipation and may occasionally result in deterioration or damage of internal parts. Use the standard mounting method only.
- The internal parts may occasionally deteriorate and be broken due to adverse heat radiation. Do not loosen the screw on the side face of the main body.

Wiring

- Connect the ground completely. A protective earthing terminal stipulated in safety standards is used. Electric shock or malfunction may occur if the ground is not connected completely.
- Minor fire may possibly occur. Ensure that input and output terminals are wired correctly.
- Do not apply more than 100-N force to the terminal block when tightening it.
- Be sure to remove the sheet covering the Product for machining before power-ON so that it does not interfere with heat dissipation.
- When wiring a screwless terminal block, do not insert more than one wire into a single terminal.
- When using a screwless terminal block, connect or disconnect the I/O wire to each terminal while inserting an appropriate tool, such as a flat-blade screwdriver, into the tool insertion hole. Make sure that the wire is securely connected to the terminal after wiring. Do not insert wires into the tool insertion holes.
  If a wire is not inserted far enough or if it is loose, electric shock, fire, or equipment failure may occur. Strip the wires according to specifications. Insert an appropriate tool, such as a flat-blade screwdriver, into the tool insertion hole, insert the wire until the stripped portion is no longer visible, and then remove the tool. Make sure that the wires are securely connected to the terminal block after wiring. Never insert wires into the tool insertion holes.



- Use the following material for the wires to be connected to the S8VS to prevent smoking or ignition caused by abnormal loads.

Recommended Wire Type
15-W and 30-W Models

Model	Stranded wire	Solid wire
S8VS-03005	AWG18 to 14 (0.9 to 2.0 mm^2)	AWG18 to 16 (0.9 to 1.1 mm^2)
Other models	AWG20 to 14 (0.5 to 2.0 mm^2)	AWG20 to 16 (0.5 to 1.1 mm^2)

60-W, 90-W, 120-W, 180-W, 240-W, and 480-W Models

Model	Recommended wire size		
	Input terminals	Output terminals	Alarm output terminals
S8VS-06024□	AWG14 to 20 (Cross section: 0.517 to 2.081 mm^2)	AWG14 to 20 (Cross section: 0.517 to 2.081 mm^2)	---
S8VS-09024□□□□			AWG18 to 28 (Cross section: 0.081 to 0.823 mm^2) (Wires to be stripped: 9 to 10 mm)
S8VS-12024□□□		AWG14 to 18 (Cross section: 0.823 to 2.081 mm^2)	
S8VS-18024□□□		AWG14 to 16 (Cross section: 1.309 to 2.081 mm^2)	
S8VS-24024□□□		AWG14 (Cross section: 2.081 mm^2)	
S8VS-48024□	AWG 14 to 16 (Cross section: 1,309 to 2,081 mm^2)		

- Strip I/O wires for 11 mm when using a screwless terminal block.

✻ The rated current for output terminals is 10 A per terminal. Be sure to use multiple terminals simultaneously for current that exceeds the terminal rating. When applying a current of 10 A or more, use at least two terminals each for the positive and negative wires.

Installation Environment

- Do not use the Power Supply in locations subject to shocks or vibrations. In particular, install the Power Supply as far away as possible from contactors or other devices that are a vibration source.
- Install the Power Supply well away from any sources of strong, high-frequency noise and surge.

Operating Life

- The life of a Power Supply is determined by the life of the electrolytic capacitors used inside. Here, Arrhenius Law applies, i.e., the life will be cut in half for each rise of 10°C or the life will be doubled for each drop of 10°C. The life of the Power Supply can thus be increased by reducing its internal temperature.

Ambient Operating and Storage Environments

- Store the Power Supply at a temperature of –25 to 65°C and a humidity of 25% to 90%.
- Do not use the Power Supply in areas outside the derating curve otherwise, internal parts may occasionally deteriorate or be damaged.
- Use the Power Supply at a humidity of 25% to 85%.
- Do not use the Power Supply in locations subject to direct sunlight.
- Do not use locations where liquids, foreign matter, or corrosive gases may enter the interior of Products.

S8VS-□□□24A□□ Models only

Satisfy the following conditions when storing the Power Supply for long periods of time to maintain its remaining service life function. When storing for more than three months, store within an ambient temperature range of –25 to +30°C and the humidity range of 25% to 70%.

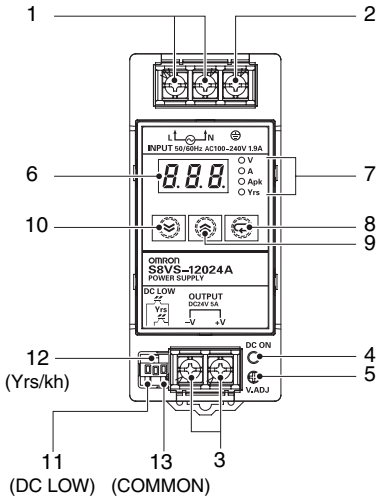
Periodic Check for Models with Indication Monitor Except 60-W Models

It may take from several years to more than 10 years under general operating conditions for the power supply to output the maintenance forecast monitor alarm (S8VS-□□□24A□□). The total run time monitor (S8VS-□□□24B□□/S8VS-□□□24BE□) may be a similar number of years as the maintenance forecast monitor according to some settings. During operation over an extended period of time, periodically check if the maintenance forecast monitor output (Yrs) or total run time monitor output (kh) is correctly functioning by the following procedure.

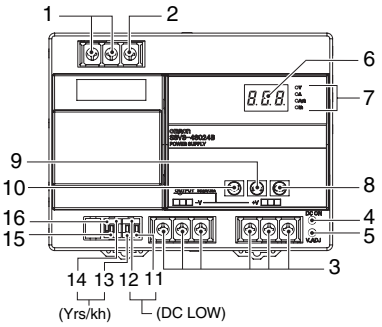
1. Select the operation mode.
2. Check that the output (Yrs/kh) is turned ON (with continuity).
3. In the operation mode, press and hold the Down Key ▽ (10) and the Mode Key ⏎ (8) simultaneously for at least three seconds. The main display (6) changes to "A02."
   An inactive output (Yrs/kh) (no continuity) in the "A02" indication indicates the correct function.
4. Release keys to return to the regular state.

Note: DC output stays ON during the periodical check.

60-, 90-, 120-, 180-, 240-W Models



480-W Models



Overcurrent Protection

- Internal parts may possibly deteriorate or be damaged if a short-circuited or overcurrent state continues during operation.
- Internal parts may possibly deteriorate or be damaged if the Power Supply is used for applications with frequent inrush current or overloading at the load end. Do not use the Power Supply for such applications.
- The DC ON indicator (green) flashes if the overload protection function operates.

Alarm Output for Models with Indication Monitor Except 60-W and BE Models

When using the alarm output, sufficiently consider the maximum ratings, residual voltage, and leakage current.

Transistor output: Sinking for S8VS-24A□/□□□24B□ models
Sourcing for S8VS-□□□24AP□/□□□24BP□ models
Sinking/Sourcing for S8VS-48024A/B models

30 VDC max., 50 mA max.
ON residually voltage: 2 V max.
OFF leakage current: 0.1 mA max.

Charging a Battery

If you connect a battery as the load, install overcurrent control and overvoltage protection circuits.

Output Voltage Adjuster (V.ADJ)

- The output voltage adjuster (V.ADJ) may possibly be damaged if it is turned with unnecessary force. Do not turn the adjuster with excessive force.
- After completing output voltage adjustment, be sure that the output capacity or output current does not exceed the rated output capacity or rated output current.

15-W, 30-W Models

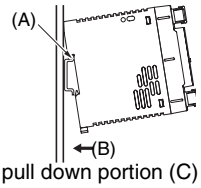
- If the output voltage is set to a value less than −10%, the undervoltage alarm function may operate.

60-W, 90-W, 120-W, 180-W, 240-W, and 480-W Models

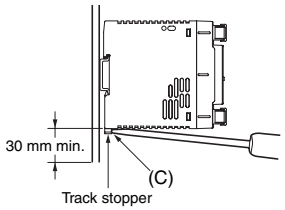
- If the detection voltage of the undervoltage alarm function is at the factory setting and the output voltage is set to a value of 20 V or less, the undervoltage alarm function may operate.

DIN Rail Mounting

To mount the Block on a DIN Rail, hook portion (A) of the Block onto the rail and press the Block in direction (B).



To dismount the Block, pull down portion (C) with a flat-blade screwdriver and pull out the Block.

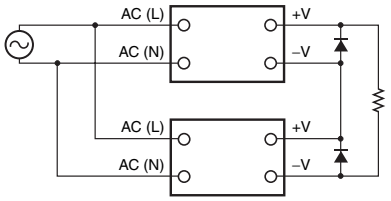


Series Operation

(24-V Model)

Two power supplies can be connected in series.

Correct



Note: 1. The diode is connected as shown in the figure. If the load is short-circuited, a reverse voltage will be generated inside the Power Supply. If this occurs the Power Supply may possibly deteriorate or be damaged. Always connect a diode as shown in the figure.
Select a diode having the following ratings.

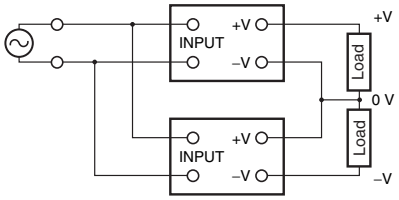
Type	Schottky Barrier diode
Dielectric strength (V_{RRM})	Twice the rated output voltage or above
Forward current (I_F)	Twice the rated output current or above

2. Although Products having different specifications can be connected in series, the current flowing through the load must not exceed the smaller rated output current.

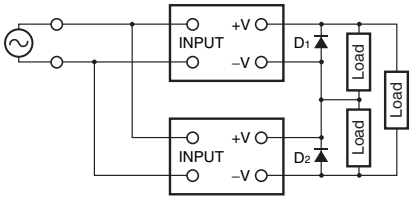
3. Serial operation is not possible with 5-V and 12-V models.

Making Positive/Negative Outputs

- The outputs are floating outputs (i.e., the primary circuits and secondary circuits are separated). You can therefore make positive and negative outputs by using two Power Supplies. You can make positive and negative outputs with any of the models.
  If positive and negative outputs are used, connect Power Supplies of the same model as in the following figure. (Combinations with different output capacities or output voltages can be made. However, use the lower of the two maximum rated output currents as the current to the loads.)



- Depending on the model, internal circuits may be damaged due to startup failure when the power is turned ON if loads such as a servomotor or operational amplifier may operate in series. Therefore, connect bypass diodes (D1, D2) as shown in the following figure.
  If the list of models that support series connection of outputs says that an external diode is not required, an external diode is also not required for positive/negative outputs.



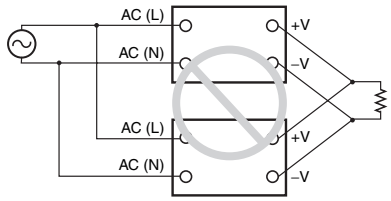
- Use the following information as a guide to the diode type, dielectric strength, and current.

- Type: Schottky barrier diode
- Dielectric strength (V_{RRM}): Twice the rated Power Supply output voltage or higher
- Forward current (I_F): Twice the rated Power Supply output current or higher

Parallel Operation

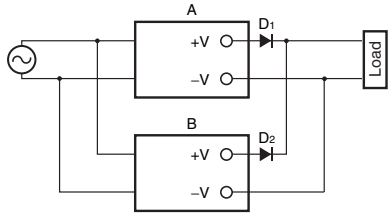
The Product is not designed for parallel operation.

Incorrect



Backup Operation

- Backup operation can be performed. Backup operation provides protection by using an extra Power Supply even if the output current is sufficient with one Power Supply. If one of the Power Supplies fails, the second Power Supply still provides sufficient power.



Use the same model for Power Supplies A and B.

- Use a load capacity that can be supplied by either Power Supply A or Power Supply B alone.
- If backup operation is used, be sure to connect a diode to both Power Supply A and Power Supply B as shown in the above figure so that the backup Power Supply is not affected by a failed Power Supply.
  Use the following information as a guide to the diode type, dielectric strength, and current.

- Type: Schottky barrier diode
- Dielectric strength (V_{RRM}): Rated Power Supply output voltage or higher
- Forward current (I_F): Twice the rated Power Supply output current or higher

- Increase the output voltage setting of Power Supply A and Power Supply B by the drop in the forward voltage (V_F) of diodes D1 and D2.
  Also, the diodes will cause a power loss equivalent to the Power Supply output current (I_{OUT}) times the diode forward voltage (V_F). Therefore, cooling measures must be implemented so that the temperature of the diodes decreases to the catalog value or lower.
- Because of the load power and power loss due to the diodes, do not exceed the rated power of one Power Supply (rated output voltage x rated output current).

In Case There Is No Output Voltage

The possible cause for no output voltage may be that the overcurrent or overvoltage protection has operated. The internal protection may operate if a large amount of surge voltage such as a lightening surge occurs while turning ON the power supply.
In case there is no output voltage, please check the following points before contacting us:

- Checking overload protected status:
  Check whether the load is in overload status or is short-circuited. Remove wires to load when checking.
- Checking overvoltage or internal protection:
  Turn the power supply OFF once, and leave it OFF for at least 3 minutes. Then turn it ON again to see if this clears the condition.

Audible Noise at Power ON

(120-W, 180-W, 240-W, and 480-W Models)

A harmonic current suppression circuit is built into the Power Supply. This circuit can create noise when the input is turned ON, but it will last only until the internal circuits stabilize and does not indicate any problem in the Product.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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