New Product

Switch Mode Power Supply
S8EX (15, 30, 50, 100, and 150-W Models)

Newly released Power Supply, 15-W and 30-W Models in S8EX-series Lineup and Optional Models

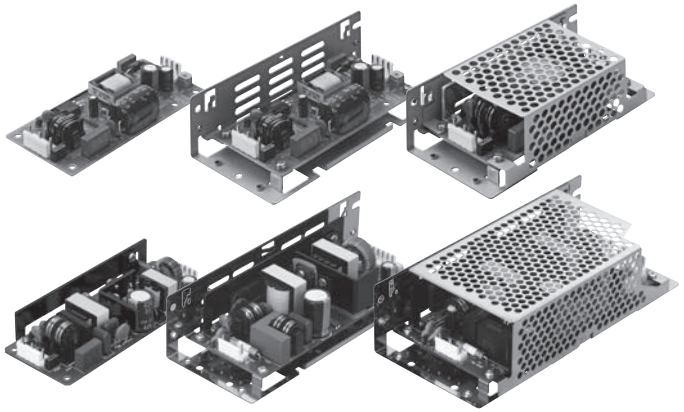
Special Harnesses added to the lineup

New 15-W and 30-W Models

- Lineup of 5, 12, 24, and 48-V models includes open models and models with chassis and covers.
- Compact size with the same connectors for the entire series.
- Wide-range power supply: 100 to 240 VAC

50-W, 100-W, and 150-W Models

- Lineup of 5, 12, 24, and 48-V models includes open models and models with chassis and covers.
- The top class in industry for compact size.
- Wide-range power supply: 100 to 240 VAC
- Complies with harmonic current standard in EN 61000-3-2.



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

All Models

- Approved standards:
  UL 60950-1, cUR CSA C22.2 No. 60950-1, EN 50178, and EN 60950-1

Model Number Structure

Model Number Legend

Note: Not all combinations are possible. Refer to *List of Models* in *Ordering Information* on page 2.

S8EX-□□□□□□□□-□□□-□□
1 2 3 4 5 6 7 8

1. Power Boost Function
Blank: None
B: Power boost for output current

2. Power Factor Improvement Function
N: None
P: Power factor improvement function provided ✻
✻Harmonic current standard: EN 61000-3-2 compliant.

3. Power Ratings
015: 15 W
030: 30 W
050: 50 W
100: 100 W
150: 150 W

4. Output Voltage
05: 5 V
12: 12 V
15: 15 V
24: 24 V
48: 48 V

5. Configuration
None: Open-frame
L: With chassis
LC: With chassis and cover

6. Option 1
None: Standard model
CN1: XH connector (manufactured by J.S.T.) ✻
✻This option is applicable only for 15-W models.

7. Option 2
None: Standard model
R: Remote control ✻
✻This option is applicable only for 50-W, 100-W, and 150-W models.
Note: This option is applicable only for open-frame models.

8. Option 3
None: Standard model
C: Coating (one side)
Note: This option is applicable only for open-frame models.

Ordering Information

List of Models

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

Configuration	Input voltage	Power ratings	Output voltage	Output current	Boost current	Model
Open-frame	100 to 240 VAC	15 W	5 V	3 A	---	**S8EX-N01505**
			12 V	1.3 A		**S8EX-N01512**
			15 V	1 A		**S8EX-N01515**
			24 V	0.7 A		**S8EX-N01524**
			48 V	0.32 A		**S8EX-N01548**
		30 W	5 V	6 A	---	**S8EX-N03005**
			12 V	2.5 A		**S8EX-N03012**
			15 V	2 A		**S8EX-N03015**
			24 V	1.3 A		**S8EX-N03024**
			48 V	0.65 A		**S8EX-N03048**
		50 W	5 V	10 A	15 A	**S8EX-BP05005**
			12 V	4.3 A	6.5 A	**S8EX-BP05012**
			24 V	2.1 A	4.2 A	**S8EX-BP05024**
			48 V	1.1 A	2.2 A	**S8EX-BP05048**
		100 W	5 V	20 A	---	**S8EX-P10005**
			12 V	8.5 A	12.8 A	**S8EX-BP10012**
			24 V	4.3 A	8.6 A	**S8EX-BP10024**
			48 V	2.1 A	4.2 A	**S8EX-BP10048**
		150 W	5 V	30 A	---	**S8EX-P15005**
			12 V	12.5 A	18.8 A	**S8EX-BP15012**
			24 V	6.3 A	12.6 A	**S8EX-BP15024**
			48 V	3.2 A	6.4 A	**S8EX-BP15048**
With chassis	100 to 240 VAC	15 W	5 V	3 A	---	**S8EX-N01505L**
			12 V	1.3 A		**S8EX-N01512L**
			15 V	1 A		**S8EX-N01515L**
			24 V	0.7 A		**S8EX-N01524L**
			48 V	0.32 A		**S8EX-N01548L**
		30 W	5 V	6 A	---	**S8EX-N03005L**
			12 V	2.5 A		**S8EX-N03012L**
			15 V	2 A		**S8EX-N03015L**
			24 V	1.3 A		**S8EX-N03024L**
			48 V	0.65 A		**S8EX-N03048L**
		50 W	5 V	10 A	15 A	**S8EX-BP05005L**
			12 V	4.3 A	6.5 A	**S8EX-BP05012L**
			24 V	2.1 A	4.2 A	**S8EX-BP05024L**
			48 V	1.1 A	2.2 A	**S8EX-BP05048L**
		100 W	5 V	20 A	---	**S8EX-P10005L**
			12 V	8.5 A	12.8 A	**S8EX-BP10012L**
			24 V	4.3 A	8.6 A	**S8EX-BP10024L**
			48 V	2.1 A	4.2 A	**S8EX-BP10048L**
		150 W	5 V	30 A	---	**S8EX-P15005L**
			12 V	12.5 A	18.8 A	**S8EX-BP15012L**
			24 V	6.3 A	12.6 A	**S8EX-BP15024L**
			48 V	3.2 A	6.4 A	**S8EX-BP15048L**
With chassis and cover	100 to 240 VAC	15 W	5 V	3 A	---	**S8EX-N01505LC**
			12 V	1.3 A		**S8EX-N01512LC**
			15 V	1 A		**S8EX-N01515LC**
			24 V	0.7 A		**S8EX-N01524LC**
			48 V	0.32 A		**S8EX-N01548LC**
		30 W	5 V	6 A	---	**S8EX-N03005LC**
			12 V	2.5 A		**S8EX-N03012LC**
			15 V	2 A		**S8EX-N03015LC**
			24 V	1.3 A		**S8EX-N03024LC**
			48 V	0.65 A		**S8EX-N03048LC**
		50 W	5 V	10 A	15 A	**S8EX-BP05005LC**
			12 V	4.3 A	6.5 A	**S8EX-BP05012LC**
			24 V	2.1 A	4.2 A	**S8EX-BP05024LC**
			48 V	1.1 A	2.2 A	**S8EX-BP05048LC**
		100 W	5 V	20 A	---	**S8EX-P10005LC**
			12 V	8.5 A	12.8 A	**S8EX-BP10012LC**
			24 V	4.3 A	8.6 A	**S8EX-BP10024LC**
			48 V	2.1 A	4.2 A	**S8EX-BP10048LC**
		150 W	5 V	30 A	---	**S8EX-P15005LC**
			12 V	12.5 A	18.8 A	**S8EX-BP15012LC**
			24 V	6.3 A	12.6 A	**S8EX-BP15024LC**
			48 V	3.2 A	6.4 A	**S8EX-BP15048LC**

Ratings, Characteristics, and Functions

Item			Power ratings	15 W				
			Output voltage	5 V	12 V	15 V	24 V	48 V
Efficiency (Typ.)			100 VAC input	74%	77%	80%	80%	83%
			200 VAC input	74%	77%	78%	78%	82%
Input	Voltage ✻1			100 to 240 VAC (allowable voltage: 85 to 264 VAC or 120 to 370 VDC ✻6)				
	Frequency ✻1			50/60 Hz (47 to 450 Hz)				
	Current (Typ.)		100 VAC input	0.4 A				
			200 VAC input	0.25 A				
	Leakage current		100 VAC input	0.5 mA max.				
			200 VAC input	1 mA max.				
	Inrush current (Typ.)		100 VAC input	15 A (for a cold start at 25°C)				
			200 VAC input	30 A (for a cold start at 25°C)				
Output	Voltage adjustment range ✻2			±10% (with V. ADJ)				
	Ripple ✻3			150 mV max.	240 mV max.	300 mV max.	480 mV max.	960 mV max.
	Input variation influence			0.5% max. (with 85 to 264 VAC input at 100% load)				
	Load variation influence			2% max. (0 to 100% load, rated input voltage)	1.5% max. (0 to 100% load, rated input voltage)			
	Temperature variation influence			0.05%/°C max.				
	Startup time (Typ.)		100 VAC input	800 ms				
	Hold time (Typ.)		100 VAC input	20 ms				
Additional functions	Overload protection			105% to 160% of rated current, voltage drop, intermittent, and automatic reset				
	Overvoltage protection ✻4			Yes				
	Series operation			Yes (For up to two Power Supplies; external diodes required.)				
	Parallel operation			No (However, backup operation is possible; external diodes required.)				
Other	Ambient operating temperature			–10 to 70°C (Derating is required according to the temperature.) (with no icing or condensation)				
	Storage temperature			–25 to 75°C (with no icing or condensation)				
	Ambient operating 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; detection current: 20 mA) 1.0 kVAC for 1 min. (between all outputs and PE; detection current: 20 mA)				
	Insulation resistance			100 MΩ min. (between all outputs and all inputs/PE)				
	Vibration resistance			10 to 55 Hz, 19.6 m/s^2 (2 G) for 1 h each in X, Y, and Z directions				
	Shock resistance			196.1 m/s^2, 3 times each in ±X, ±Y, ±Z directions				
	EMI		Conducted Emissions	Conforms to EN 55011 Group 1 Class B ✻7				
			Radiated Emissions	Conforms to EN 55011 Group 1 Class B ✻7				
	EMS		Electrostatic Discharge	Conforms to EN61000-4-2				
			Radiated Electromagnetic Field	Conforms to EN61000-4-3				
			Electrical Fast Transient/Burst	Conforms to EN61000-4-4				
			Surge	Conforms to EN61000-4-5				
			Conducted Disturbance	Conforms to EN61000-4-6				
			Voltage Dips/Short Interruptions	Conforms to EN61000-4-11				
	Approved standards			UL UR: UL 60950-1 (Recognition) cUR: CSA C22.2 No. 60950-1 EN: EN50178, EN60950-1				
	SEMI			SEMI F47-0706 (at 200 VAC)				
	Weight ✻5			70 g max. (without chassis and cover)				

✻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. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by +10% of the allowable voltage range. When adjusting the output voltage, confirm the actual output voltage from the Power Supply and be sure that load is not damaged.
✻3. Rated input voltage: 100 or 200 VAC at 100% load.
The measurement method is based on JEITA standard RC-9131A.
For details, refer to *Ripple Noise Voltage* on page 20.
✻4. To reset the protection, turn OFF the input power for three minutes or longer and then turn it back ON.
✻5. The weight is for an open-frame model.
✻6. The range for compliance with EC Directives and safety standards (UL, EN, etc.) is 100 to 240 VAC (85 to 264 VAC).
✻7. Class B compliance was met with an aluminum plate placed under the Power Supply.

Item			Power ratings / Output voltage	30 W				
				5 V	12 V	15 V	24 V	48 V
Efficiency (Typ.)			100 VAC input	77%	82%	83%	85%	
			200 VAC input	79%	83%	83%	86%	
Input	Voltage ✻1			100 to 240 VAC (allowable voltage: 85 to 264 VAC, 120 to 370 VDC ✻6)				
	Frequency ✻1			50/60 Hz (47 to 450 Hz)				
	Current (Typ.)		100 VAC input	0.7 A				
			200 VAC input	0.4 A				
	Leakage current		100 VAC input	0.5 mA max.				
			200 VAC input	1mA max.				
	Inrush current (Typ.)		100 VAC input	15 A (for a cold start at 25°C)				
			200 VAC input	30 A (for a cold start at 25°C)				
Output	Voltage adjustment range ✻2			±10% (with V. ADJ)				
	Ripple ✻3			150 mV max.	240 mV max.	300 mV max.	480 mV max.	960 mV max.
	Input variation influence			0.5% max. (with 85 to 264 VAC input at 100% load)				
	Load variation influence			2% max. (0 to 100% load, rated input voltage)	1.5% max. (0 to 100% load, rated input voltage)			
	Temperature variation influence			0.05%/°C max.				
	Startup time (Typ.)		100 VAC input	800 ms				
	Hold time (Typ.)		100 VAC input	20 ms				
Additional functions	Overload protection			105% to 160% of rated current, voltage drop, intermittent, automatic reset				
	Overvoltage protection ✻4			Yes				
	Series operation			Yes (For up to two Power Supplies; external diodes required.)				
	Parallel operation			No (However, backup operation is possible; external diodes required.)				
Other	Ambient operating temperature			−10 to 70°C (Derating is required according to the temperature.) (with no icing or condensation)				
	Storage temperature			−25 to 75°C (with no icing or condensation)				
	Ambient operating 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; detection current: 20 mA) 1.0 kVAC for 1 min. (between all outputs and PE; detection current: 20 mA)				
	Insulation resistance			100 MΩ min. (between all outputs and all inputs/PE)				
	Vibration resistance			10 to 55 Hz, 19.6 m/s^2 (2 G) for 1 h each in X, Y, and Z directions				
	Shock resistance			196.1 m/s^2, 3 times each in ±X, ±Y, ±Z directions				
	EMI		Conducted Emissions	Conforms to EN 55011 Group 1 Class B ✻7				
			Radiated Emissions	Conforms to EN 55011 Group 1 Class B ✻7				
	EMS		Electrostatic Discharge	Conforms to EN61000-4-2				
			Radiated Electromagnetic Field	Conforms to EN61000-4-3				
			Electrical Fast Transient/Burst	Conforms to EN61000-4-4				
			Surge	Conforms to EN61000-4-5				
			Conducted Disturbance	Conforms to EN61000-4-6				
			Voltage Dips/Short Interruptions	Conforms to EN61000-4-11				
	Approved standards			UL UR: UL 60950-1 (Recognition) cUR: CSA C22.2 No. 60950-1 EN: EN50178, EN60950-1				
	SEMI			SEMI F47-0706 (at 200 VAC)				
	Weight ✻5			110 g max. (without chassis and cover)				

✻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. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by +10% of the allowable voltage range. When adjusting the output voltage, confirm the actual output voltage from the Power Supply and be sure that load is not damaged.
✻3. Rated input voltage: 100 or 200 VAC at 100% load.
The measurement method is based on JEITA standard RC-9131A.
For details, refer to *Ripple Noise Voltage* on page 20.
✻4. To reset the protection, turn OFF the input power for three minutes or longer and then turn it back ON.
✻5. The weight is for an open-frame model.
✻6. The range for compliance with EC Directives and safety standards (UL, EN, etc.) is 100 to 240 VAC (85 to 264 VAC).
✻7. Class B compliance was met with an aluminum plate placed under the Power Supply.

Item			Power ratings	50 W			
			Output voltage	5 V	12 V	24 V	48 V
Efficiency (Typ.)			100 VAC input	79%	83%	82%	
			200 VAC input	81%	86%	85%	
Input	Voltage ✻1			100 to 240 VAC (allowable voltage: 85 to 264 VAC, 120 to 370 VDC ✻6)			
	Frequency ✻1			50/60 Hz (47 to 63 Hz)			
	Current (Typ.)		100 VAC input	0.65 A			
			200 VAC input	0.35 A			
	Power factor (rate, 100% load)			0.9 min.			
	Harmonic current emissions			Conforms to EN61000-3-2			
	Leakage current		100 VAC input	0.5 mA max.			
			200 VAC input	1 mA max.			
	Inrush current (Typ.)		100 VAC input	14.1 A max. (for a cold start at 25°C)			
			200 VAC input	28.3 A max. (for a cold start at 25°C)			
Output	Voltage adjustment range ✻2			±10% (with V. ADJ)			
	Ripple ✻3			150 mV max.	240 mV max.	480 mV max.	960 mV max.
	Input variation influence			0.5% max. (with 85 to 264 VAC input at 100% load)			
	Load variation influence			2% max. (0 to 100% load, rated input voltage)	1.5% max. (0 to 100% load, rated input voltage)		
	Temperature variation influence			0.05%/°C max.			
	Startup time (Typ.)		100 VAC input	440 ms	460 ms	500 ms	460 ms
	Hold time (Typ.)		100 VAC input	25 ms	20 ms	23 ms	22 ms
Additional functions	Overload protection			100% to 110% of rated load current, voltage drop, intermittent, automatic reset			
	Overvoltage protection ✻4			Yes			
	Series operation			Yes (For up to two Power Supplies.)			
	Parallel operation			No (However, backup operation is possible; external diodes required.)			
Other	Ambient operating temperature			−10 to 70°C (Derating is required according to the temperature.) (with no icing or condensation)			
	Storage temperature			−25 to 75°C (with no icing or condensation)			
	Ambient operating 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; detection current: 20 mA) 1,000 VAC for 1 min. (between all outputs and PE; detection current: 20 mA)			
	Insulation resistance			100 MΩ min. (between all outputs and all inputs/PE)			
	Vibration resistance			10 to 55 Hz, 19.6 m/s^2 (2 G) for 1 h each in X, Y, and Z directions			
	Shock resistance			196.1 m/s^2, 3 times each in ±X, ±Y, ±Z directions			
	EMI		Conducted Emissions	Conforms to EN 55011 Group 1 Class B ✻7			
			Radiated Emissions	Conforms to EN 55011 Group 1 Class B ✻7			
	EMS		Electrostatic Discharge	Conforms to EN61000-4-2			
			Radiated Electromagnetic Field	Conforms to EN61000-4-3			
			Electrical Fast Transient/Burst	Conforms to EN61000-4-4			
			Surge	Conforms to EN61000-4-5			
			Conducted Disturbance	Conforms to EN61000-4-6			
			Voltage Dips/Short Interruptions	Conforms to EN61000-4-11			
	Approved standards			UL UR: UL 60950-1 (Recognition) cUR: CSA C22.2 No. 60950-1 EN: EN50178, EN60950-1			
	SEMI			SEMI F47-0706 (at 200 VAC)			
	Weight ✻5			150 g max. (without chassis and cover)			

✻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. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by +10% of the allowable voltage range. When adjusting the output voltage, confirm the actual output voltage from the Power Supply and be sure that load is not damaged.
✻3. Rated input voltage: 100 or 200 VAC at 100% load.
The measurement method is based on JEITA standard RC-9131A.
For details, refer to *Ripple Noise Voltage* on page 20.
✻4. To reset the protection, turn OFF the input power for three minutes or longer and then turn it back ON.
✻5. The weight is for an open-frame model.
✻6. The range for compliance with EC Directives and safety standards (UL, EN, etc.) is 100 to 240 VAC (85 to 264 VAC).
✻7. Class B compliance was met with an aluminum plate placed under the Power Supply.

Item			Power ratings	100 W			
			Output voltage	5 V	12 V	24 V	48 V
Efficiency (Typ.)			100 VAC input	81%	82%	84%	
			200 VAC input	84%	85%	86%	
Input	Voltage ✻1			100 to 240 VAC (allowable voltage: 85 to 264 VAC, 120 to 370 VDC ✻6)			
	Frequency ✻1			50/60 Hz (47 to 63 Hz)			
	Current (Typ.)		100 VAC input	1.3 A			
			200 VAC input	0.65 A			
	Power factor (rate, 100% load)			0.9 min.			
	Harmonic current emissions			Conforms to EN61000-3-2			
	Leakage current		100 VAC input	0.5 mA max.			
			200 VAC input	1 mA max.			
	Inrush current (Typ.)		100 VAC input	14.1 A max. (for a cold start at 25°C)			
			200 VAC input	28.3 A max. (for a cold start at 25°C)			
Output	Voltage adjustment range ✻2			±10% (with V. ADJ)			
	Ripple ✻3			150 mV max.	240 mV max.	480 mV max.	960 mV max.
	Input variation influence			0.5% max. (with 85 to 264 VAC input at 100% load)			
	Load variation influence			2% max. (0 to 100% load, rated input voltage)	1.5% max. (0 to 100% load, rated input voltage)		
	Temperature variation influence			0.05%/°C max.			
	Startup time (Typ.)		100 VAC input	480 ms	530 ms	540 ms	650 ms
	Hold time (Typ.)		100 VAC input	24 ms	21 ms	22 ms	24 ms
Additional functions	Overload protection			12-V, 24-V, or 48-V model: 100% to 110% of power boost for output current, voltage drop, intermittent, automatic reset 5-V model: 105% to 160% of rated current, voltage drop, intermittent, automatic reset			
	Overvoltage protection ✻4			Yes			
	Series operation			Yes (For up to two Power Supplies.)			
	Parallel operation			No (However, backup operation is possible; external diodes required.)			
Other	Ambient operating temperature			−10 to 70°C (Derating is required according to the temperature.) (with no icing or condensation)			
	Storage temperature			−25 to 75°C (with no icing or condensation)			
	Ambient operating 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; detection current: 20 mA) 1,000 VAC for 1 min. (between all outputs and PE; detection current: 20 mA)			
	Insulation resistance			100 MΩ min. (between all outputs and all inputs/PE)			
	Vibration resistance			10 to 55 Hz, 19.6 m/s^2 (2 G) for 1 h each in X, Y, and Z directions			
	Shock resistance			196.1 m/s^2, 3 times each in ±X, ±Y, ±Z directions			
	EMI		Conducted Emissions	Conforms to EN 55011 Group 1 Class B ✻7			
			Radiated Emissions	Conforms to EN 55011 Group 1 Class B ✻7			
	EMS		Electrostatic Discharge	Conforms to EN61000-4-2			
			Radiated Electromagnetic Field	Conforms to EN61000-4-3			
			Electrical Fast Transient/Burst	Conforms to EN61000-4-4			
			Surge	Conforms to EN61000-4-5			
			Conducted Disturbance	Conforms to EN61000-4-6			
			Voltage Dips/Short Interruptions	Conforms to EN61000-4-11			
	Approved standards			UL UR: UL 60950-1 (Recognition) cUR: CSA C22.2 No. 60950-1 EN: EN50178, EN60950-1			
	SEMI			SEMI F47-0706 (at 200 VAC)			
	Weight ✻5			265 g max. (without chassis and cover)			

✻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. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by +10% of the allowable voltage range. When adjusting the output voltage, confirm the actual output voltage from the Power Supply and be sure that load is not damaged.
✻3. Rated input voltage: 100 or 200 VAC at 100% load.
The measurement method is based on JEITA standard RC-9131A.
For details, refer to *Ripple Noise Voltage* on page 20.
✻4. To reset the protection, turn OFF the input power for three minutes or longer and then turn it back ON.
✻5. The weight is for an open-frame model.
✻6. The range for compliance with EC Directives and safety standards (UL, EN, etc.) is 100 to 240 VAC (85 to 264 VAC).
✻7. Class B compliance was met with an aluminum plate placed under the Power Supply.

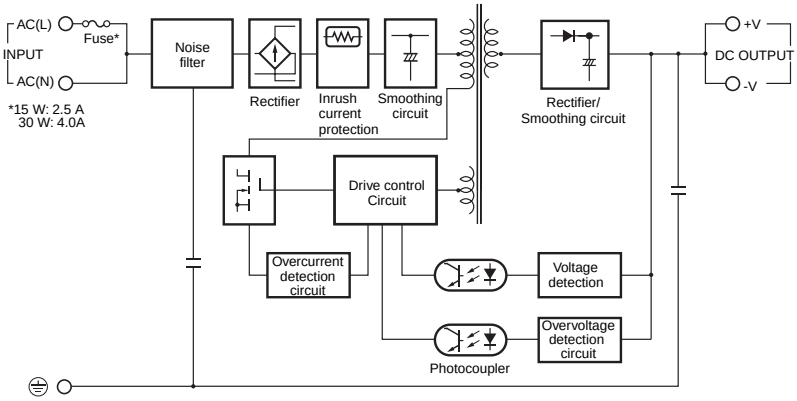
Item			Power ratings	150 W			
			Output voltage	5 V	12 V	24 V	48 V
Efficiency (Typ.)			100 VAC input	84%	83%	84%	85%
			200 VAC input	87%	86%	87%	88%
Input	Voltage ✻1			100 to 240 VAC (allowable voltage: 85 to 264 VAC, 120 to 370 VDC ✻6)			
	Frequency ✻1			50/60 Hz (47 to 63 Hz)			
	Current (Typ.)		100 VAC input	1.9 A			
			200 VAC input	0.95 A			
	Power factor (rate, 100% load)			0.9 min.			
	Harmonic current emissions			Conforms to EN61000-3-2			
	Leakage current		100 VAC input	0.5 mA max.			
			200 VAC input	1 mA max.			
	Inrush current (Typ.)		100 VAC input	14.1 A max. (for a cold start at 25°C)			
			200 VAC input	28.3 A max. (for a cold start at 25°C)			
Output	Voltage adjustment range ✻2			±10% (with V. ADJ)			
	Ripple ✻3			150 mV max.	240 mV max.	480 mV max.	960 mV max.
	Input variation influence			0.5% max. (with 85 to 264 VAC input at 100% load)			
	Load variation influence			2% max. (0 to 100% load, rated input voltage)	1.5% max. (0 to 100% load, rated input voltage)		
	Temperature variation influence			0.05%/°C max.			
	Startup time (Typ.)		100 VAC input	450 ms	660 ms	660 ms	690 ms
	Hold time (Typ.)		100 VAC input	25 ms	20 ms	21 ms	20 ms
Additional functions	Overload protection			12-V, 24-V, or 48-V model: 100% to 110% of power boost for output current, voltage drop, intermittent, automatic reset 5-V model: 105% to 160% of rated current, voltage drop, intermittent, automatic reset			
	Overvoltage protection ✻4			Yes			
	Series operation			Yes (For up to two Power Supplies.)			
	Parallel operation			No (However, backup operation is possible; external diodes required.)			
Other	Ambient operating temperature			−10 to 70°C (Derating is required according to the temperature.) (with no icing or condensation)			
	Storage temperature			−25 to 75°C (with no icing or condensation)			
	Ambient operating 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; detection current: 20 mA) 1,000 VAC for 1 min. (between all outputs and PE; detection current: 20 mA)			
	Insulation resistance			100 MΩ min. (between all outputs and all inputs/PE)			
	Vibration resistance			10 to 55 Hz, 19.6 m/s^2 (2 G) for 1 h each in X, Y, and Z directions			
	Shock resistance			196.1 m/s^2, 3 times each in ±X, ±Y, ±Z directions			
	EMI		Conducted Emissions	Conforms to EN 55011 Group 1 Class B ✻7			
			Radiated Emissions	Conforms to EN 55011 Group 1 Class B ✻7			
	EMS		Electrostatic Discharge	Conforms to EN61000-4-2			
			Radiated Electromagnetic Field	Conforms to EN61000-4-3			
			Electrical Fast Transient/Burst	Conforms to EN61000-4-4			
			Surge	Conforms to EN61000-4-5			
			Conducted Disturbance	Conforms to EN61000-4-6			
			Voltage Dips/Short Interruptions	Conforms to EN61000-4-11			
	Approved standards			UL UR: UL 60950-1 (Recognition) cUR: CSA C22.2 No. 60950-1 EN: EN50178, EN60950-1			
	SEMI			SEMI F47-0706 (at 200 VAC)			
	Weight ✻5			315 g max. (without chassis and cover)			

✻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. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by +10% of the allowable voltage range. When adjusting the output voltage, confirm the actual output voltage from the Power Supply and be sure that load is not damaged.
✻3. Rated input voltage: 100 or 200 VAC at 100% load.
The measurement method is based on JEITA standard RC-9131A.
For details, refer to *Ripple Noise Voltage* on page 20.
✻4. To reset the protection, turn OFF the input power for three minutes or longer and then turn it back ON.
✻5. The weight is for an open-frame model.
✻6. The range for compliance with EC Directives and safety standards (UL, EN, etc.) is 100 to 240 VAC (85 to 264 VAC).
✻7. Class B compliance was met with an aluminum plate placed under the Power Supply.

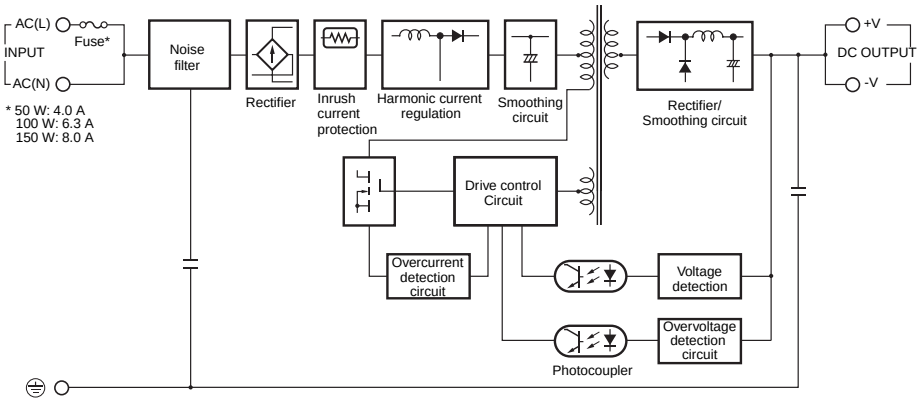
Connections

Block Diagrams

S8EX-N015□□ (15 W)
S8EX-N030□□ (30 W)



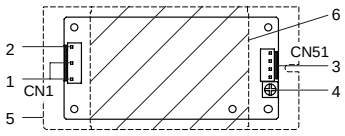
S8EX-BP050□□ (50 W)
S8EX-□P100□□ (100 W)
S8EX-□P150□□ (150 W)



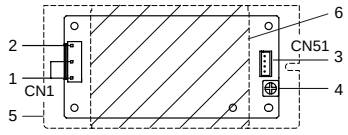
Construction and Nomenclature

Nomenclature

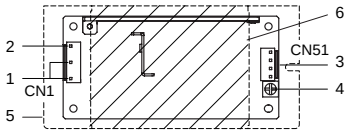
S8EX-N015□□□□



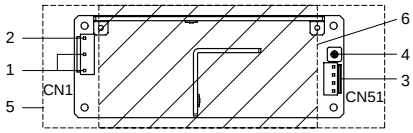
S8EX-N015□□□□-CN1



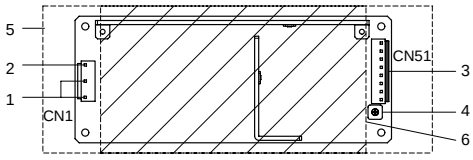
S8EX-N030□□□□



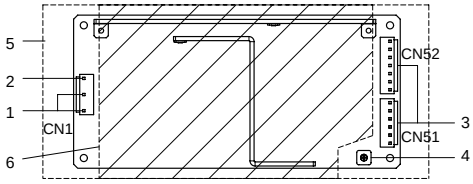
S8EX-BP050□□□



S8EX-□P100□□□



S8EX-□P150□□□



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 these terminals. ✻2
3	DC Output Terminals (–V), (+V)	Connect the load lines to these terminals.
4	Output Voltage Adjuster (V. ADJ)	It is possible to increase or decrease the output voltage.
5	Chassis	
6	Cover	

✻1. The fuse is located on the (L) side. It is NOT user-replaceable. For a DC power input, connect the low side to the positive (+) terminal.

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

Input and Output Connectors

			Applicable connector	Housing	Terminals	Applicable crimp tool
Input side	**All models**	**CN1**	B3P5-VH(LF)(SN)	VHR-5N	Reel: SVH-21T-P1.1 Bulk: BVH-21T-P1.1	YC-160R
Output side	**S8EX-N015□□□□ S8EX-N030□□□□ S8EX-BP050□□□**	**CN51**	B4P-VH(LF)(SN)	VHR-4N		YC-160R
Output side	**S8EX-N015□□□□-CN1**	**CN51**	B4B-XH	XHP-4	Reel: SXH-001T-P0.6 Bulk: BXH-001T-P0.6	YC-111R
Output side	**S8EX-□P100□□□**	**CN51**	B8P-VH(LF)(SN)	VHR-8N	Reel: SVH-21T-P1.1 Bulk: BVH-21T-P1.1	YC-160R
Output side	**S8EX-□P150□□□**	**CN51**	B6P-VH(LF)(SN)	VHR-6N		YC-160R
Output side		**CN52**	B7P-VH(LF)(SN)	VHR-7N		YC-160R
Manufacturer			(J.S.T.)			

Note: The female connectors that are required for wiring are not provided with the Power Supply.

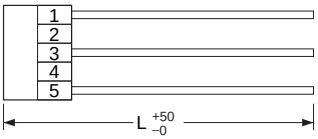
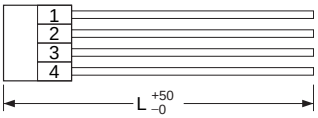
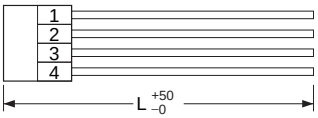
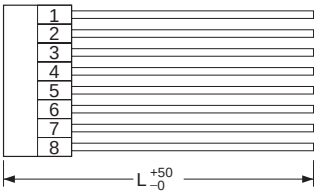
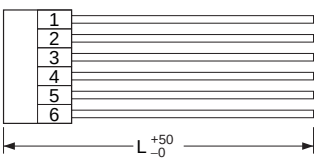
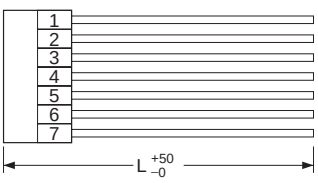
Special Harnesses for S8EX-Series

Applicable Models and Harness Models

Applicable models (S8EX-Series)					Connected to		Model number	Qty
15 W	30 W	50 W	100 W	150 W	Input side and output side	Output (+, –)		
OK	OK	OK	OK	OK	Input side		S82Y-EX01HI-01	1
OK	OK	OK			Output side	Output (±), common	S82Y-EX01HO-01	
OK*					Output side		S82Y-EX02HO-01	
			OK		Output side		S82Y-EX03HO-01	
				OK	Output side	Output side +	S82Y-EX04HO-01	
				OK	Output side	Output side –	S82Y-EX05HO-01	
OK	OK	OK	OK	OK	Input side		S82Y-EX01HI-10	10
OK	OK	OK			Output side	Output (±), common	S82Y-EX01HO-10	
OK*					Output side		S82Y-EX02HO-10	
			OK		Output side		S82Y-EX03HO-10	
				OK	Output side	Output side +	S82Y-EX04HO-10	
				OK	Output side	Output side –	S82Y-EX05HO-10	

✻ Application is possible only to the S8EX-CN1.

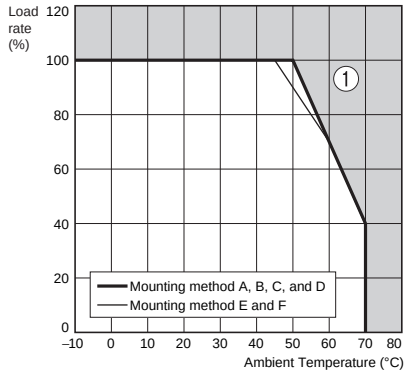
Harness Specifications

Model number	Connector structure	Shape	Applicable wires				
S82Y-EX01HI-□□	Housing Model: VHR-5N Manufacturer: J.S.T. Mfg. Co., Ltd. Pins Model: SVH-21T-P1.1 Manufacturer: J.S.T. Mfg. Co., Ltd.		Pin	Wire	AWG	Color	Length: L (mm)
			1	UL1015	18	Black	500
			2	NC			
			3	UL1015	18	White	500
			4	NC			
			5	UL1015	18	Green	500
S82Y-EX01HO-□□	Housing Model: VHR-4N Manufacturer: J.S.T. Mfg. Co., Ltd. Pins Model: SVH-21T-P1.1 Manufacturer: J.S.T. Mfg. Co., Ltd.		Pin	Wire	AWG	Color	Length: L (mm)
			1	UL1015	18	Black	500
			2	UL1015	18	Black	500
			3	UL1015	18	Red	500
			4	UL1015	18	Red	500
S82Y-EX02HO-□□	Housing Model: XHP-4 Manufacturer: J.S.T. Mfg. Co., Ltd. Pins Model: SXH-001T-P0.6 Manufacturer: J.S.T. Mfg. Co., Ltd.		Pin	Wire	AWG	Color	Length: L (mm)
			1	UL1007	22	Black	500
			2	UL1007	22	Black	500
			3	UL1007	22	Red	500
			4	UL1007	22	Red	500
S82Y-EX03HO-□□	Housing Model: VHR-8N Manufacturer: J.S.T. Mfg. Co., Ltd. Pins Model: SVH-21T-P1.1 Manufacturer: J.S.T. Mfg. Co., Ltd.		Pin	Wire	AWG	Color	Length: L (mm)
			1	UL1015	18	Black	500
			2	UL1015	18	Black	500
			3	UL1015	18	Black	500
			4	UL1015	18	Black	500
			5	UL1015	18	Red	500
			6	UL1015	18	Red	500
			7	UL1015	18	Red	500
			8	UL1015	18	Red	500
S82Y-EX04HO-□□	Housing Model: VHR-6N Manufacturer: J.S.T. Mfg. Co., Ltd. Pins Model: SVH-21T-P1.1 Manufacturer: J.S.T. Mfg. Co., Ltd.		Pin	Wire	AWG	Color	Length: L (mm)
			1	UL1015	18	Red	500
			2	UL1015	18	Red	500
			3	UL1015	18	Red	500
			4	UL1015	18	Red	500
			5	UL1015	18	Red	500
			6	UL1015	18	Red	500
S82Y-EX05HO-□□	Housing Model: VHR-7N Manufacturer: J.S.T. Mfg. Co., Ltd. Pins Model: SVH-21T-P1.1 Manufacturer: J.S.T. Mfg. Co., Ltd.		Pin	Wire	AWG	Color	Length: L (mm)
			1	UL1015	18	Black	500
			2	UL1015	18	Black	500
			3	UL1015	18	Black	500
			4	UL1015	18	Black	500
			5	UL1015	18	Black	500
			6	UL1015	18	Black	500
			7	UL1015	18	Black	500

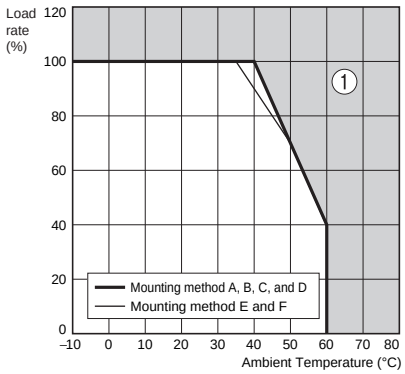
Engineering Data

Derating Curves (Standard Mounting)

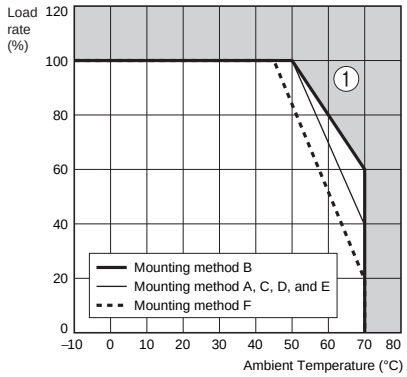
Open-frame Models and Models with Chassis (15 W)



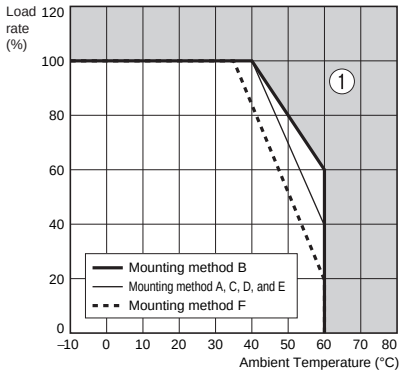
Models with Chassis and Cover (15 W)



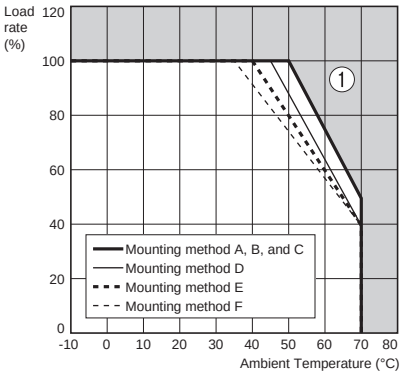
Open-frame Models and Models with Chassis (30 W)



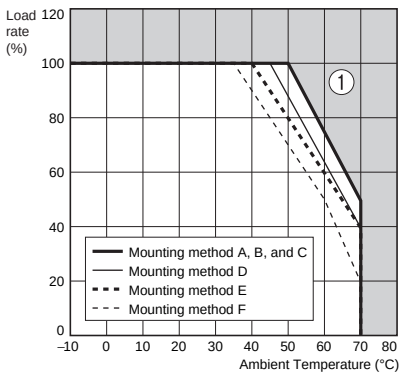
Models with Chassis and Cover (30 W)



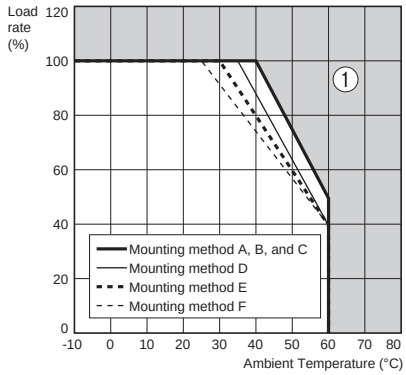
Open-frame Models (50W)



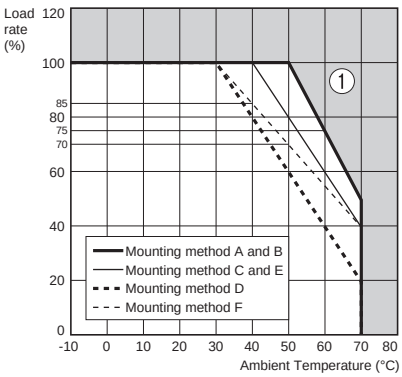
Models with Chassis (50 W)



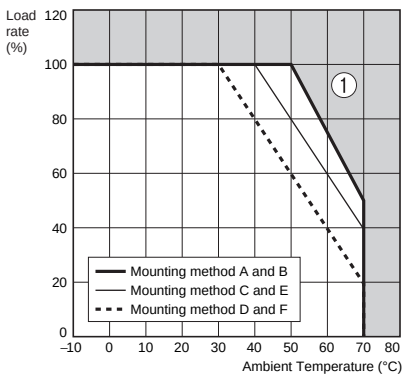
Models with Chassis and Cover (50W)



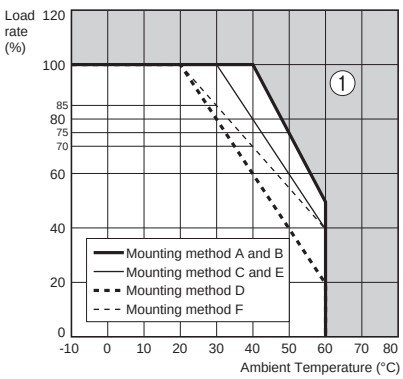
Open-frame Models (100W)



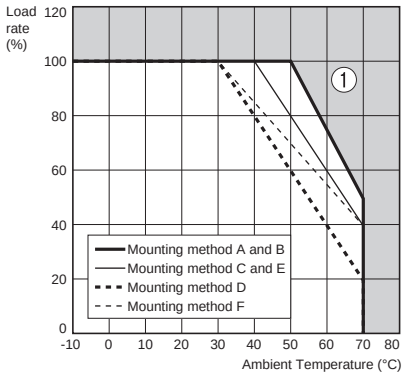
Models with Chassis (100 W)



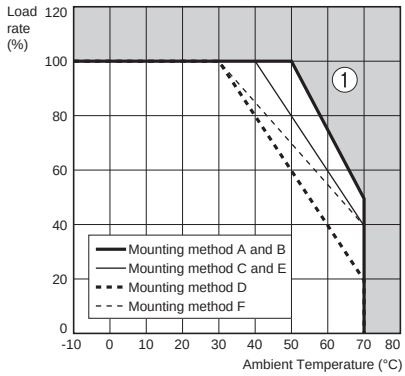
Models with Chassis and Cover (100W)



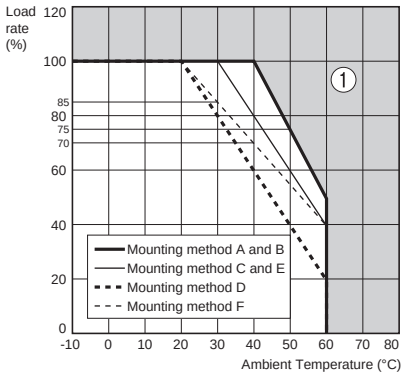
Open-frame Models (150 W)



Models with Chassis (150 W)

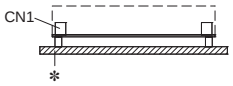


Models with Chassis and Cover (150 W)

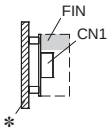


Note: Additional mounting methods are also available. Ask your OMRON representative for details.

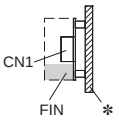
Mounting method A (Standard mounting method)



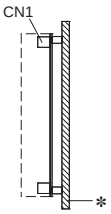
Mounting method B



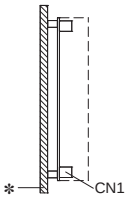
Mounting method C



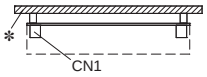
Mounting method D



Mounting method E



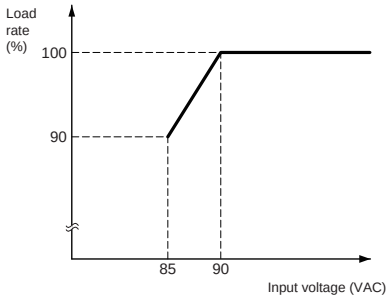
Mounting method F



Note: 1. Use a metal sheet✻ for the mounting surface.
2. 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).
3. A natural convection system is used for derating. Mount the Power Supply so that air convection will occur around it.

Input Voltage Derating Curve

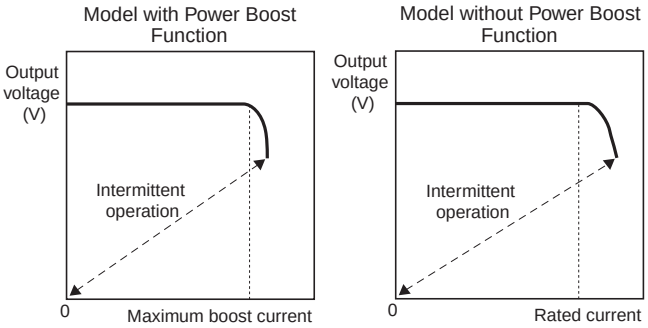
For 50, 100, and 150-W models, check the derating characteristics for the input voltage before using the Power Supply.



Overload Protection

The overload protection circuit will automatically reduce the output voltage for short circuits and overcurrents to protect the Power Supply from short-circuit currents and overcurrents.
When the output current falls within the rated range, the overload protection function is automatically cleared.

(Reference value)



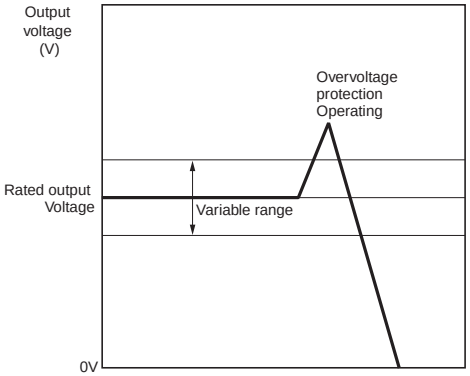
Note: 1. Internal parts may occasionally deteriorate or be damaged if a short-circuited or overcurrent state continues during operation.

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.

Overvoltage Protection

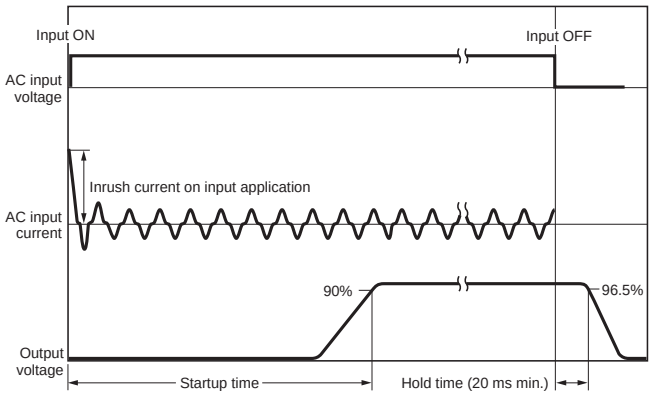
Consider the possibility of an overvoltage and design the system so that the load will not be subjected to an excessive voltage even if the feedback circuit in the power supply fails. When an excessive voltage that is approximately 130% of the rated voltage or more is output, the output voltage is shut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

(Reference value)



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: A maximum startup time of 1,000 ms is required. Construct a system configuration that considers the startup time of other devices.

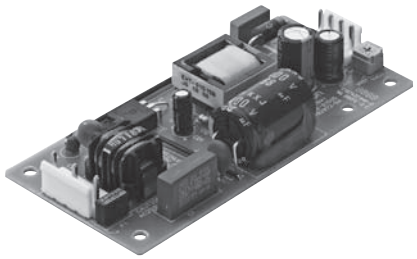
Dimensions

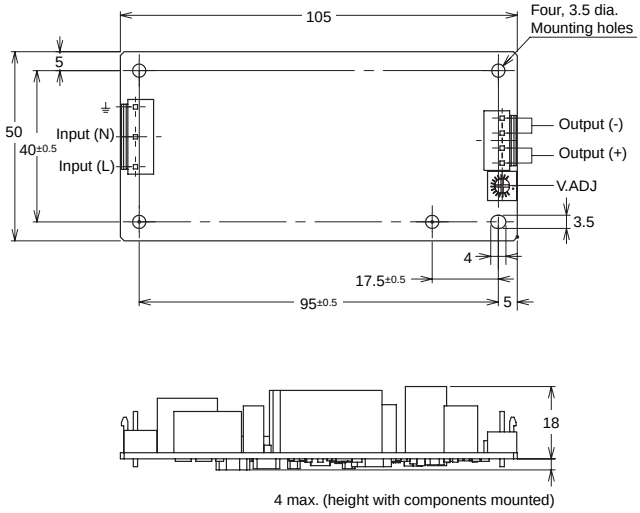
(Unit: mm)

Power Supplies

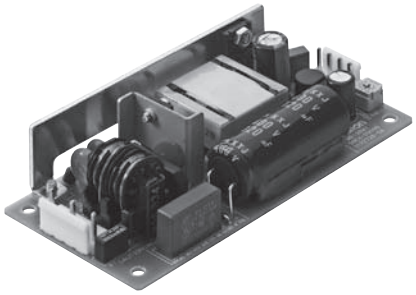
Open-frame Model

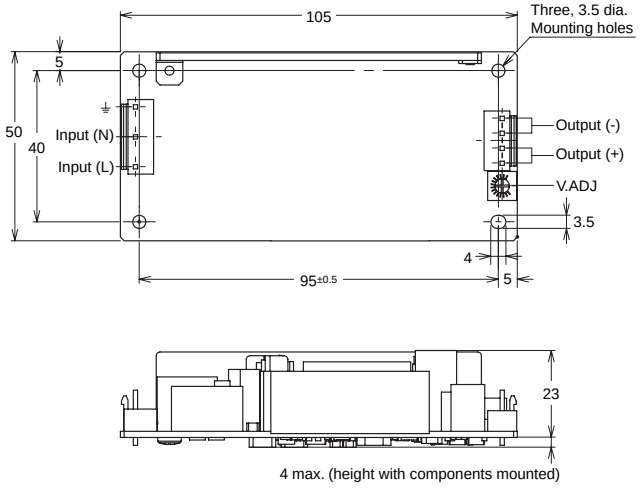
S8EX-N015□ (15 W)



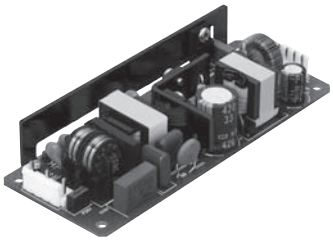


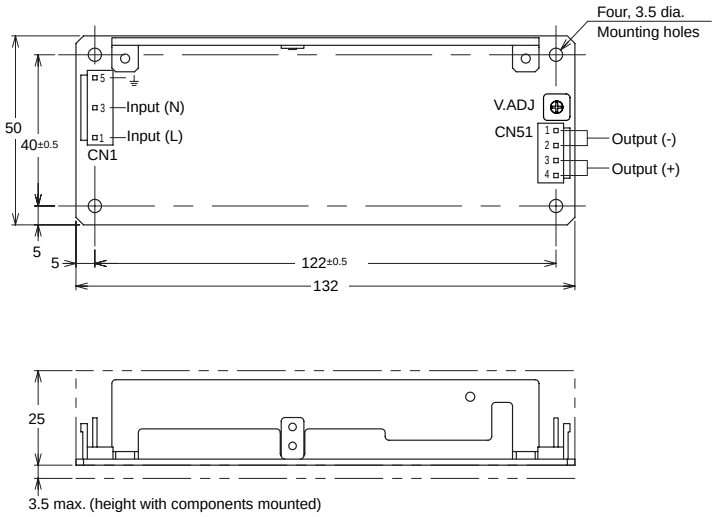
S8EX-N030□ (30 W)



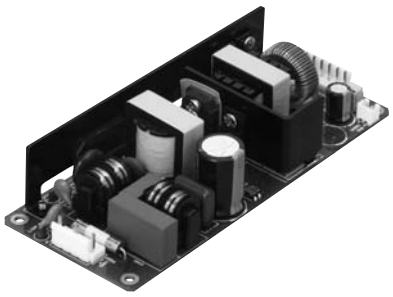


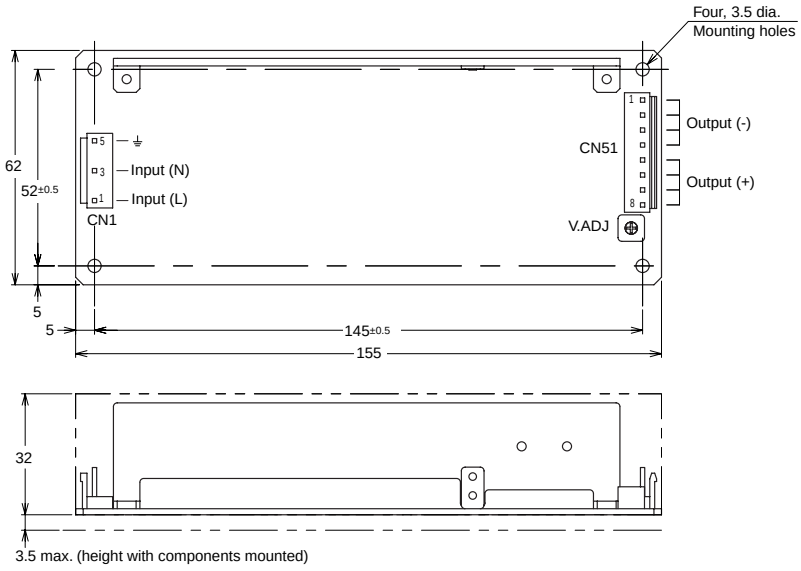
S8EX-BP050□□ (50 W)



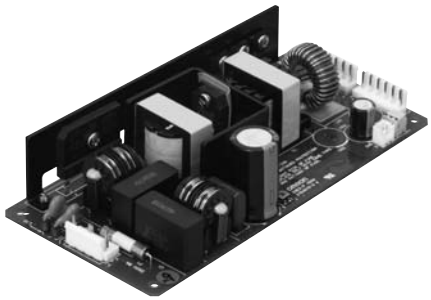


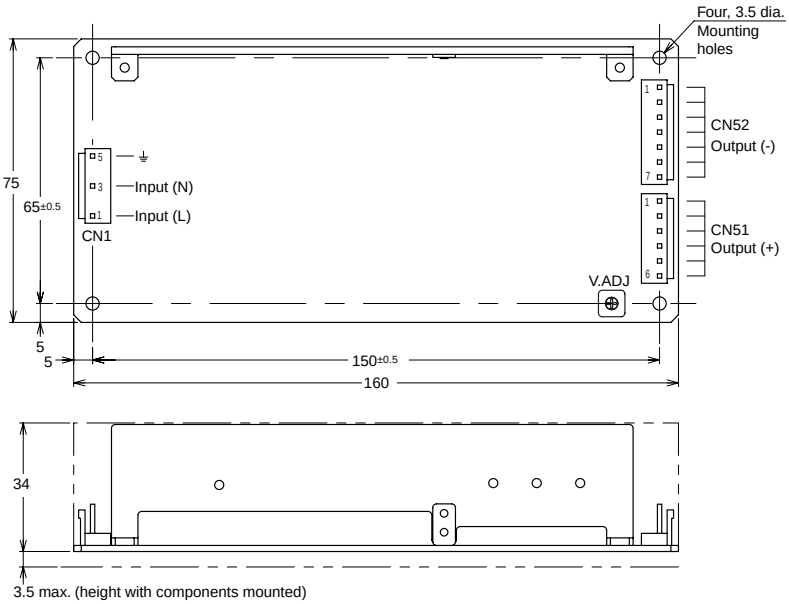
S8EX-□P100□□ (100 W)





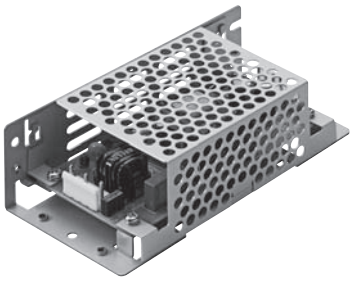
S8EX-□P150□□ (150 W)

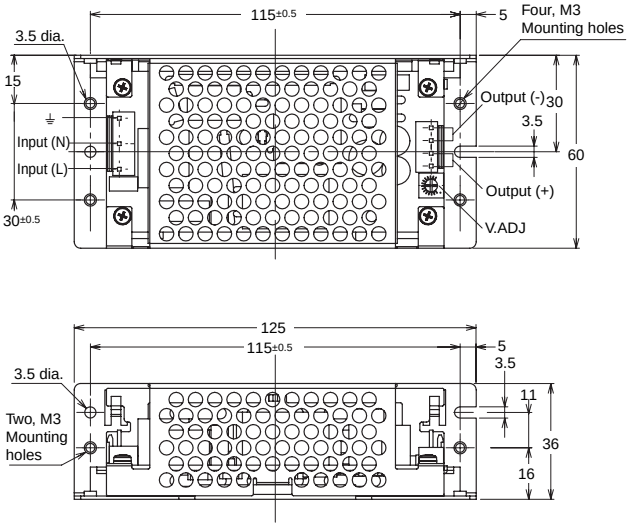




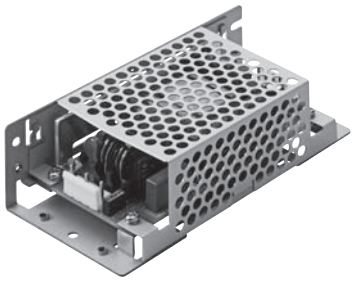
With chassis and cover

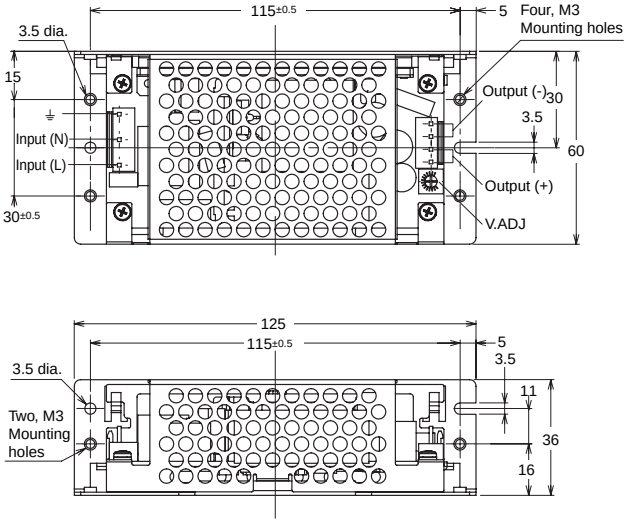
S8EX-N015□L□ (15 W)



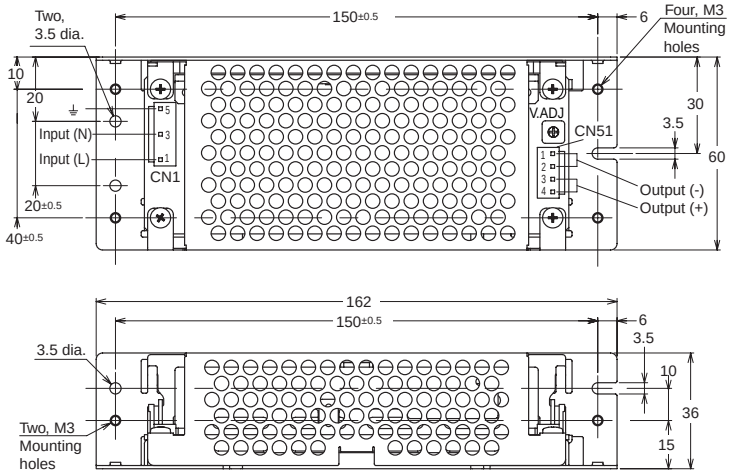


S8EX-N030□L□ (30 W)

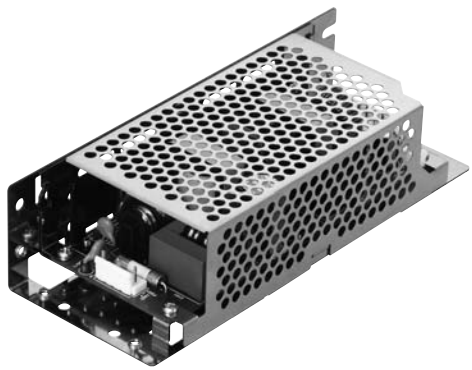


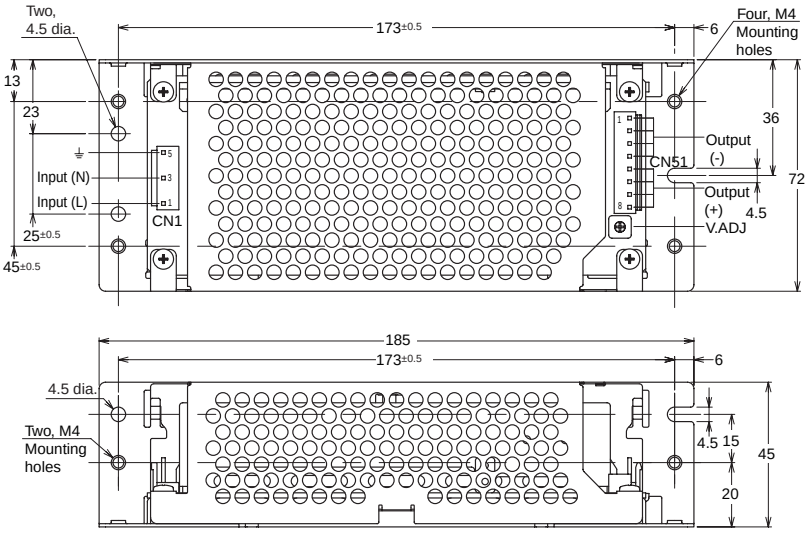


S8EX-BP050□L□ (50 W)

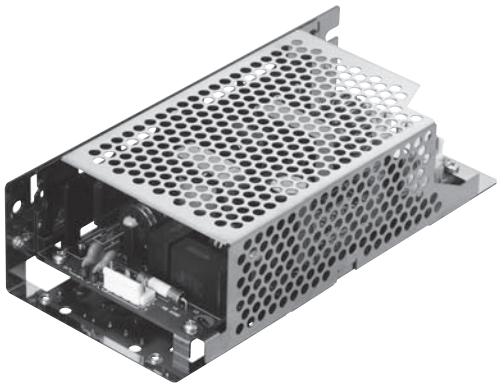


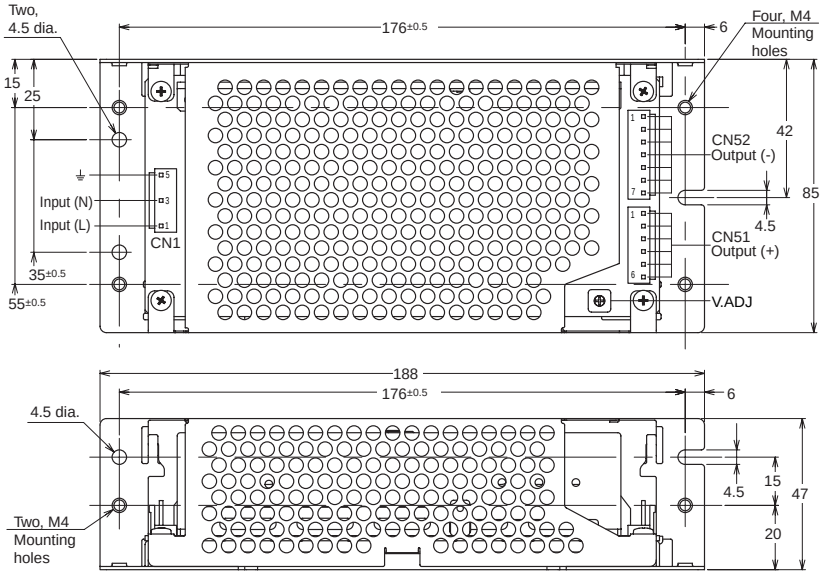
S8EX-□P100□L□ (100 W)





S8EX-□P150□L□ (150 W)





Safety Precautions

Refer to *Safety Precautions for All Power Supplies*.

⚠ CAUTION

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

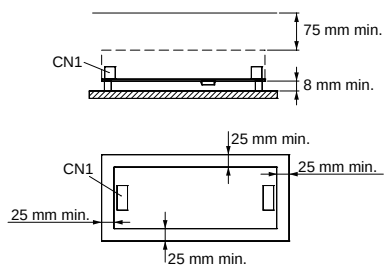
Minor injury due to electric shock may occasionally occur. Do not touch the terminals while power is being supplied. Working voltage can be 370V max. inside. This voltage can be also available 30s after the switch off.

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.

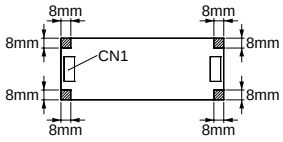
Precautions for Safe Use

Mounting

Mounting interval



Mounting hole position



- Take adequate measures to ensure proper heat dissipation to increase the long-term reliability of the Product.
- The S8EX-series are designed to radiate heat by means of natural air-flow. Be sure to allow convection in the atmosphere around devices when mounting. Mount with a clearance of 75 mm at the top and bottom, and a clearance of 25 mm on the left and right sides.
- The shaded portions indicate the allowable range of the metal mounting parts.
- When mounting, use the mounting holes in the board and spacers to mount at least 8 mm off the board. This space is necessary to satisfy the insulation and withstand voltage standards.
- Metal plate is strongly recommended as the mounting panel.

Note: 1. Do not subject the board to stress such as twisting, bending, or shock. This may cause failure or deterioration.

2. During assembly, do not subject the lead feet or surface mounted parts to stress. This may cause failure or deterioration.

- Do not allow cuttings to enter the Power Supply during installation.
- Depending on how the Power Supply is mounted, the heat dissipating capacity may be reduced and cause deterioration to or damage internal components.
- The internal parts may occasionally deteriorate and be broken due to adverse heat radiation. Do not loosen the screws on the Power Supply.

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.
- Be sure to remove the sheet covering the Product for machining before power-ON so that it does not interfere with heat dissipation.
- Use a wire diameter of at least 1.6 times the diameter that is required for the rated current to prevent heating and ignition of wire materials due to load abnormalities. Refer to the recommended allowable current, voltage drop, and other specifications from the manufacturer of the wires to select suitable wiring materials.
  - The current rating of each output terminal is 2 A for -CN1 models and it is 5 A for all other models. If more than the terminal current rating will flow, use two or more terminals together.
  - Use wiring materials with a UL recognized temperature of 60°C min. or 60°C/75°C min.
  - Use wiring materials with copper conductors.
- Refer to *Input and Output Connectors* on page 9 for the model numbers of the input and output connectors. Do not insert and remove any connector more than 20 times.

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.

Ambient Operating and Storage Environments

- Store the Power Supply at a temperature of -25 to 75°C and a humidity of 25% to 90%.
- The Internal parts may occasionally deteriorate or be damaged. Do not use the Power Supply beyond the operating temperature range for the installation direction.
- The Internal parts may occasionally deteriorate or be damaged. Do not use the Power Supply outside the derating range (i.e., the area shown by shading ① in the derating curve diagram.)
- 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 the Product.

Output Voltage Adjuster (V.ADJ)

Default Setting: Set at the rated voltage

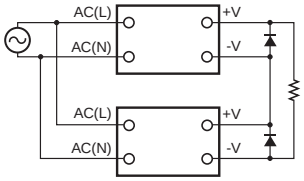
Adjustment Range : The output voltage can be adjusted to ±10% of the rated voltage with the voltage output adjuster (V.ADJ) on the front panel. Turning clockwise increases the output voltage, and turning counterclockwise decreases the output voltage.

- 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.
- Adjusting the output voltage adjuster (V.ADJ) may cause the output voltage to exceed the voltage range. When adjusting the output voltage, check the output voltage of the Power Supply and be sure that the load is not destroyed.

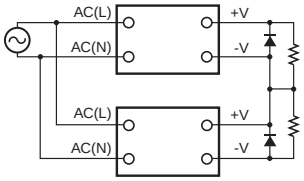
Series Operation

Two power supplies can be connected in series. The (±) voltage output can be accomplished with two Power Supplies.

Series Operation
Correct



Output Voltage (±)
Correct



Note: 1. 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.

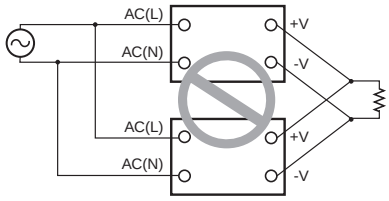
Type	Schottky Barrier diode
Dielectric strength (V_{RRM})	Twice the rated output voltage or above
Forward current (I_F)	Twice the rated output current or above

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.

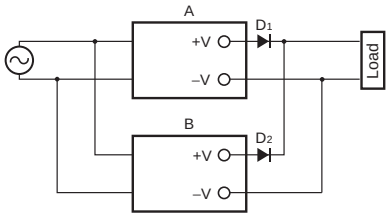
Parallel Operation

The Product is not designed for parallel operation.

Parallel Operation
Incorrect



However, the following backup operation is possible. (External diodes are required.)



Use the same model for Power Supplies A and B.

- Type: Schottky barrier diode
- Dielectric strength (VRRM): Rated output voltage of the Power Supply or higher
- Forward current (IF): Twice the rated output current of the Power Supply or higher

- Set the output voltages of Power Supplies A and B higher to compensate for the decrease of the forward voltages (V_F) of diodes D1 and D2. Also, there will be a power loss equivalent to the output current (I_{out}) of the Power Supply multiplied by the forward voltage (V_F) of the diode. Therefore, cooling will be required to keep the temperature of the diodes lower than the catalog value.
- There will be a power loss caused by load power and diodes. Be sure not to exceed the rated power (rated output voltage times rated output current) of each Power Supply.

Overload Protection

- Internal parts may possibly deteriorate or be damaged if a shortcircuited, overload or boost load 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.

Charging a Battery

When connecting a battery at the load, connect an overcurrent limiting circuit and overvoltage protection circuit.

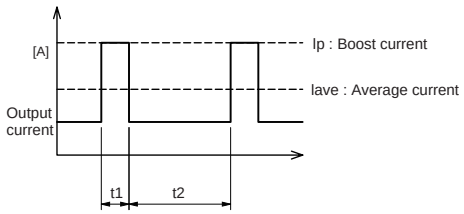
In Case There Is No Output Voltage

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 overcurrent protected status:
  Check whether the load is in overcurrent 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 for S8JX-P series. Then turn it ON again to see if this clears the condition.

Power Boost Function

- Do not allow the boost current to continue for more than 10 seconds. Also, do not let the duty cycle exceed the following conditions. This may damage the power supply.
- Lessen the load of the boost load current by adjusting the ambient temperature and the mounting orientation.
- Ensure that the average current of one cycle of the boost current does not exceed the specified value. This may damage the power supply.

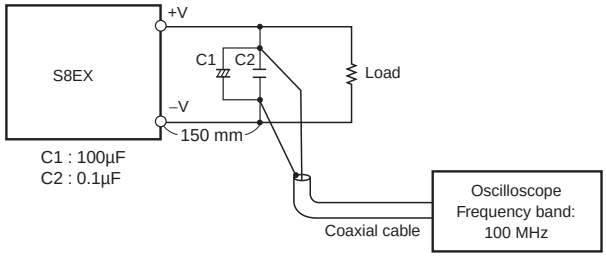


Models	Boost current conditions
S8EX-BP050□□□ (50W) S8EX-BP100□□□ (100W)	• t1 ≤ 10s • Ip ≤ Rated boost current • Iave ≤ Rated current • Duty = $\frac{t1}{t1+t2}$ x 100[%] ≤ 20% (90 to 170 VAC) 30% (170 to 264 VAC)
S8EX-BP150□□□ (150W)	• t1 ≤ 10s • Ip ≤ Rated boost current • Iave ≤ Rated current × 70% (90 to 170 VAC) Rated current (170 to 264 VAC) • Duty = $\frac{t1}{t1+t2}$ x 100[%] ≤ 10% (90 to 170 VAC) 20% (170 to 264 VAC)

Note: Make sure that the boost current meets the above conditions. Consult with your OMRON representative if any other conditions are required.

Ripple Noise Voltage

The specified standard for the ripple voltage noise was measured with a measurement circuit that is based on JEITA standard RC-9131A.



Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

Application Considerations

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

ERRORS AND OMISSIONS

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

Note: Do not use this document to operate the Unit.

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