

# **Switch Mode Power Supply** S8FS-G (15/30/50/100/150/300/600-W Models)

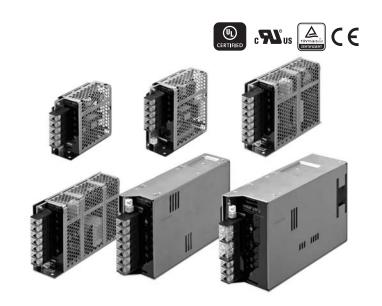
## Superior Performance and Reliability, Meets a Wide Range of Standards, Allowing Great Usability.

- Superior basic performance that ensures reliability Ambient temperatures up to 70°C, greater resistance to rusting with aluminum/stainless steel case, and applications at altitudes up to 3,000 m.
- Certification for Global Standards
   North America: UL 508 (Listing)\*, CSA C22.2
   Europe: Overvoltage Category III (EN 50178)
   EMI: Class B (EN 61204-3)

No need for control circuit transformers for which the Machinery Directive is specified. (IEC 61558-2-16) \*Refer to pages 4 to 10 for certified models.

- Conforms to SEMI F47-0706 (200 VAC input).
- Great Usability

The Terminal Block Cover prevents screws from dropping out and the Front Cover prevents ingress of foreign matter.



Refer to Safety Precautions for All Power Supplies and Safety Precautions on page 26.

### Lineup

Output valtage	Power rating								
Output voltage	15 W	30 W	50 W	100 W	150 W	300 W	600 W		
5 V	Yes	Yes	Yes	Yes	Yes				
12 V	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
15 V	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
24 V	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
48 V					Yes	Yes	Yes		

### **Model Number Structure**

### **Model Number Legend**

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

S8FS-	$G \square \square \square$					
	1	2	3	4	5	6

1. Power Ratings	2. Output voltage
015: 15 W	05: 5 V
030: 30 W	12: 12 V
050: 50 W	15: 15 V
100: 100 W	24: 24 V
150: 150 W	48: 48 V
300: 300 W	
600: 600 W	

### 3. Configuration

C: With cover/Direct mounting
CD: With cover/DIN Rail mounting

### 4. Option (1)

None: Screw terminal block

### 5. Option (2) \*1

None: None
W: Parallel operation

# 6. Option (3) \*2 None: None

R: Remote control

<sup>\*1.</sup> Applicable only for 600 W and 24 V.

<sup>\*2.</sup> Applicable only for 100 W or more and 24 V.

# **Ordering Information**

### **List of Models**

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

### With Cover/Direct Mounting

Power ratings	Input voltage	Output voltage (VDC)	Output current	Built-in fan	Model
		5 V	3 A		S8FS-G01505C
15 W		12 V	1.3 A		S8FS-G01512C
15 W		15 V	1 A		S8FS-G01515C
		24 V	0.65 A		S8FS-G01524C
		5 V	6 A		S8FS-G03005C
30 W		12 V	3 A		S8FS-G03012C
30 W		15 V	2.4 A		S8FS-G03015C
		24 V	1.5 A		S8FS-G03024C
		5 V	8 A		S8FS-G05005C
50 W		12 V	4.3 A		S8FS-G05012C
JU VV		15 V	3.5 A	None	S8FS-G05015C
		24 V	2.2 A		S8FS-G05024C
		5 V	16 A		S8FS-G10005C
100 W		12 V 8.5 A	8.5 A		S8FS-G10012C
100 VV	100 to 240 VAC	15 V	7 A		S8FS-G10015C
		24 V	4.5 A		S8FS-G10024C
		5 V	21 A		S8FS-G15005C
		12 V	13 A		S8FS-G15012C
150 W		15 V	10 A		S8FS-G15015C
		24 V	6.5 A		S8FS-G15024C
		48 V	3.3 A		S8FS-G15048C
		12 V	25 A		S8FS-G30012C
300 W		15 V	20 A		S8FS-G30015C
300 W		24 V	14 A		S8FS-G30024C
		48 V	7 A	Voo	S8FS-G30048C
		12 V	50 A	165	S8FS-G60012C
600 W		15 V	40 A		S8FS-G60015C
000 VV		24 V	27 A		S8FS-G60024C
		48 V	13 A		S8FS-G60048C

**Note: 1.** Ask your OMRON representative for pricing information on optional models.

<sup>2.</sup> Front-mounting is not possible.

To mount a Power Supply from the front, purchase a DIN Rail-mounting Power Supply and a Front-mounting Bracket (sold separately). Refer to page 24.

### With Cover/DIN Rail Mounting

ower ratings	Input voltage	Output voltage (VDC)	Output current	Built-in fan	Model
		5 V	3 A		S8FS-G01505CD
45.147		12 V	1.3 A		S8FS-G01512CD
15 W		15 V	1 A		S8FS-G01515CD
		24 V	0.65 A		S8FS-G01524CE
	-	5 V	6 A		S8FS-G03005CE
30 W		12 V	3 A		S8FS-G03012CE
30 W		15 V	2.4 A		S8FS-G03015CE
		24 V	1.5 A		S8FS-G03024CE
		5 V	8 A		S8FS-G05005CE
50 W		12 V	4.3 A		S8FS-G05012CE
30 W		15 V	3.5 A	None	S8FS-G05015CE
		24 V	2.2 A		S8FS-G05024CE
		5 V	16 A		S8FS-G10005C
100 W		12 V	8.5 A		S8FS-G10012CE
100 VV	100 to 240 VAC	15 V	7 A		S8FS-G10015CE
		24 V	4.5 A		S8FS-G10024CE
		5 V	21 A		S8FS-G15005CE
		12 V	13 A		S8FS-G15012CE
150 W		15 V	10 A		S8FS-G15015CE
		24 V	6.5 A		S8FS-G15024CE
		48 V	3.3 A		S8FS-G15048CE
		12 V	25 A		S8FS-G30012CE
300 W		15 V	20 A		S8FS-G30015CE
300 VV		24 V 14 A		S8FS-G30024CE	
		48 V	7 A	Ves	S8FS-G30048CE
		12 V 50 A	163	S8FS-G60012CE	
600 W		15 V	40 A		S8FS-G60015CE
000 VV		24 V	27 A		S8FS-G60024CD
		48 V	13 A		S8FS-G60048CD

Note: Ask your OMRON representative for pricing information on optional models.

# **Specifications**

		Power rating			15 W		
Item		Output voltage	5 V	12 V	15 V	24 V	
		100 VAC input	80% typ.	84% typ.	84% typ.	85% typ.	
Efficiency *		200 VAC input	80% typ.	84% typ.	84% typ.	86% typ.	
, .		230 VAC input	80% typ.	84% typ.	84% typ.	86% typ.	
	Voltage range *	200 TAO IIIput	Single phase, 85 to 264	1		00 % typ.	
			<b>o</b> , .		,		
	Frequency *	400.1/4.0 1	50/60 Hz (47 to 450 Hz)				
	Current *	100 VAC input	0.32 A typ.				
		200 VAC input	0.2 A typ.				
Input	Power factor						
	Leakage current *	100 VAC input	0.5 mA max.				
	Leakage current *	200 VAC input	1 mA max.				
	Inrush current *	100 VAC input	14 A typ.				
	(for a cold start at	200 VAC input	28 A typ.				
	25°C)	·		1	1	1	
	Rated Output Curre	nt	3 A	1.3 A	1 A	0.65 A	
	Voltage adjustment ra	ange *	-10% to 15% (with V.A	DJ)			
	Ripple & Noise voltage *	<b>100</b> to <b>240</b> VAC input	40 mVp-p max.	40 mVp-p max.	40 mVp-p max.	60 mVp-p max.	
	Input variation influence *		0.5% max.	·	,		
	<u> </u>	Load variation influence *					
Output	Temperature variation influence	100 to 240 VAC input	1.0% max. 0.05%/°C max.				
	variation influence	·	1 000 ma n				
	Startup time *	100 VAC input	1,000 ms max.				
		200 VAC input	1,000 ms max.				
Hold time *	Hold time ★	100 VAC input	15 ms typ.	14 ms typ.	15 ms typ.	15 ms typ.	
		200 VAC input	75 ms typ.	70 ms typ.	75 ms typ.	70 ms typ.	
	Overload protection		Yes, automatic reset				
	Overvoltage protect	ion *		rated output voltage, p	ower shut off (shut off th	e input voltage and turn	
Additional Sunctions			the input again)				
	Overheat protection		No				
	Series operation		Yes (For up to two Pow	er Supplies, external o	liodes are required.)		
	Parallel operation		No (However, backup o	peration is possible, e	xternal diodes are requir	ed.)	
	Remote sensing Remote control		No				
			No				
	Output indicator		Yes (LED: Green)				
			3 kVAC for 1 min. (between all input terminals and output terminals) current cutoff 20 mA				
	Withstand voltage		2 kVAC for 1 min. (between all input terminals and output terminals) current cutoff 20 mA				
Insulation	Withotana Voltago		1 kVAC for 1 min. (between all input terminals and PE terminals) current cutoff 20 mA				
	Inculation registers		1 kVAC for 1 min. (between all output terminals and PE terminals) current cutoff 20 mA 100 MΩ min. (between all output terminals and all input terminals/PE terminals) at 500 VDC				
	Insulation resistanc		`			· · · · · · · · · · · · · · · · · · ·	
	Ambient operating t		, ,	· · · · · · · · · · · · · · · · · · ·	the temperature.) (with	no condensation or icing	
	Storage temperature		-25 to 75°C (with no condensation or icing)				
Environment	Ambient operating h		90% max. (Storage humidity: 90% max.)				
	Vibration resistance		10 to 55 Hz, 4.5 G max., 0.375-mm half amplitude for 2 h each in X, Y, and Z directions				
	Shock resistance		150 m/s², 3 times each in ±X, ±Y, ±Z directions				
Doliok!!!t	MTBF		135,000 hrs min.		<del></del>	<del></del>	
Reliability	Life expectancy *		10 years min.				
	Dimensions (W×H×I	D)	Refer to Dimensions or	page 18.			
	Weight		250 g				
Construction	Cooling fan		No No				
	Degree of protection	n	NO				
	Harmonic current er		Conforms to EN 61000-3-2				
		Conducted Emissions					
	EMI *		,				
	F110	Radiated Emissions			Ciass B		
Standards	Safety Standards	EMS Safety Standards		-3 high severity levels ing models with connern, OVCII [≤ 3,000 m], excluding models with a (excluding models with 000 m], OVCII [> 2,000 3,000 m], Pol2) [558-2-16.	Pol2) connector option)	2)	
	Marine Standards		No				
	SEMI		Conforms to F47-0706	(200 VAC input)			
Defeate Det		and Functions on na					

<sup>\*</sup> Refer to Ratings, Characteristics, and Functions on page 11.

		Power rating			30 W			
Item		Output voltage	5 V	12 V	15 V	24 V		
		100 VAC input	81% typ.	84% typ.	86% typ.	86% typ.		
Efficiency *		200 VAC input	81% typ.	86% typ.	88% typ.	88% typ.		
Line chey 4		230 VAC input	81% typ.	86% typ.	88% typ.	89% typ.		
	Voltage range ★	200 TAO IIIput	• • • • • • • • • • • • • • • • • • • •	264 VAC, 120 to 370 VD		00 /0 typ.		
	Frequency *		50/60 Hz (47 to 450					
	Troquency 4	100 VAC input	0.72 A typ.	112)				
	Current *	200 VAC input	0.43 A typ.					
	Power factor	200 TAO IIIput						
Input	1 Ower factor	100 VAC input	0.5 mA max.					
	Leakage current *	200 VAC input	1 mA max.					
	Inrush current *	100 VAC input	14 A typ.					
	(for a cold start at	·						
	25°C)	200 VAC input	28 A typ.					
	Rated Output Curre	nt	6 A	3 A	2.4 A	1.5 A		
	Voltage adjustment ra	ange *	-10% to 15% (with \	'.ADJ)				
	Ripple & Noise	100 to 240 VAC input	50 mVp-p max.	60 mVp-p max.	50 mVp-p max.	60 mVp-p max.		
	voltage *	· ·	0.5% max.	p p mon	p p 111000.	TT P P Max.		
	+	•						
Output	Load variation influ	ence *	1.0% max.					
·	Temperature variation influence	100 to 240 VAC input	0.05%/°C max.					
	variation influence	100 VAC input	1.000 ms max.					
	Startup time *	200 VAC input	1,000 ms max.					
			1,000 His Hax.	10 mg hm	11 mg tựp	10 mg tun		
	Hold time *	100 VAC input	,,	10 ms typ.	11 ms typ.	10 ms typ.		
	0	200 VAC input	60 ms typ.	50 ms typ.	50 ms typ.	55 ms typ.		
	Overload protection		Yes, automatic reset		acuser about off (about off th	a input valtage and tu		
	Overvoltage protect	tion *	the input again)	or rated output voltage,	power shut off (shut off th	ie input voitage and tur		
Additional So	Overheat protection	Overheat protection						
		·	No Yes (For up to two P	ower Supplies, external of	diodes are required )			
			` '		external diodes are require	ed )		
	+		No	p operation to peccipie, e	Atomai alouco aro roquii	ou.,		
	Remote control		No					
			Yes (LED: Green)					
	- Cutput maioator		3 kVAC for 1 min. (between all input terminals and output terminals) current cutoff 20 mA					
	Withstand voltage		,					
Insulation	Withstalia Voltage		2 kVAC for 1 min. (between all input terminals and PE terminals) current cutoff 20 mA  1 kVAC for 1 min. (between all output terminals and PE terminals) current cutoff 20 mA					
	Inculation recistance	-Δ	1 kVAC for 1 min. (between all output terminals and PE terminals) current cutoff 20 mA 100 M $\Omega$ min. (between all output terminals and all input terminals/PE terminals) at 500 VDC					
			,	<u>'</u>	the temperature.) (with			
	+		,	• •	o the temperature.) (with	no condensation or icii		
Environment			=25 to 75°C (with no condensation or icing)  90% max. (Storage humidity: 90% max.)					
Liivii Oliillelli		<u>*</u>	, , ,					
			10 to 55 Hz, 4.5 G max., 0.375-mm half amplitude for 2 h each in X, Y, and Z directions 150 m/s², 3 times each in ±X, ±Y, ±Z directions					
	Overload protection Overvoltage protection Overheat protection Series operation Parallel operation Remote sensing Remote control Output indicator  Withstand voltage  Insulation resistance Ambient operating ten Storage temperature Ambient operating hui Vibration resistance Shock resistance MTBF Life expectancy * Dimensions (WxHxD) Weight Cooling fan Degree of protection Harmonic current emis		· ·	UI III IA, II, IZ OIFECTION	10			
Reliability			135,000 hrs min.					
			10 years min.					
		D)	Defer to Dimensi-	Refer to Dimensions on page 18.				
- January	Dimensions (W×H×I	D)		on page 18.				
	Dimensions (W×H×I Weight	D)	250 g	on page 18.				
	Dimensions (W×H×I Weight Cooling fan	•	250 g No	on page 18.				
	Dimensions (W×H×I Weight Cooling fan Degree of protection	n	250 g No 					
	Dimensions (W×H×I Weight Cooling fan Degree of protection	n missions	250 g No  Conforms to EN 610	00-3-2	Class D			
	Dimensions (WxHxI Weight Cooling fan Degree of protection Harmonic current en	n missions Conducted Emissions	250 g No  Conforms to EN 610 Conforms to EN 612	00-3-2 04-3 Class B, EN 55011				
	Dimensions (W×H×I Weight Cooling fan Degree of protection Harmonic current et	n missions	250 g No Conforms to EN 610 Conforms to EN 612 Conforms to EN 612	00-3-2 04-3 Class B, EN 55011 04-3 Class B, EN 55011				
Construction	Dimensions (W×H×I Weight Cooling fan Degree of protection Harmonic current et	n missions Conducted Emissions	250 g  No Conforms to EN 610 Conforms to EN 612 Conforms to EN 612 Conforms to EN 612 UL 508 (Listing, excl UL 60950-1 (Recogn CSA C22.2 No.107.* CSA C22.2 No.6095 EN 50178 (OVCIII [ EN 60950-1 (OVCII	00-3-2 04-3 Class B, EN 55011 04-3 Class B, EN 55011 04-3 high severity levels uding models with conne iition, OVCII [≤ 3,000 m], (excluding models with 0-1 (excluding models wi 12,000 m], OVCII [> 2,00	Class B  ctor option) Pol2) connector option)	2)		
Construction	Dimensions (W×H×I Weight Cooling fan Degree of protection Harmonic current et EMI *	n missions Conducted Emissions	250 g  No Conforms to EN 610 Conforms to EN 612 Conforms to EN 612 UL 508 (Listing, excl UL 60950-1 (Recogr CSA C22.2 No.107. CSA C22.2 No.6095 EN 50178 (OVCIII [s	00-3-2 04-3 Class B, EN 55011 04-3 Class B, EN 55011 04-3 high severity levels uding models with conne iition, OVCII [≤ 3,000 m], (excluding models with 0-1 (excluding models wi 12,000 m], OVCII [> 2,00	Class B  ctor option) Pol2) connector option) (th connector option)	2)		

<sup>\*</sup> Refer to Ratings, Characteristics, and Functions on page 11.

Voltage range *   Single phase, 85 to 264 VAC, 120 to 370 VDC	86% typ. 89% typ. 89% typ.					
100 VAC input   200 VAC input   220 VAC input   230 VAC input   230 VAC input   230 VAC input   5060 Hz (47 to 450 Hz)   700 VAC input   1.1 A typ.   700 VAC input   1.1 A typ.   700 VAC input   700 VAC i	86% typ. 89% typ. 89% typ. 2.2A  60 mVp-p max.					
Voltage range *   200 VAC input   82% typ.   86% typ.   88% typ.	2.2A  60 mVp-p max.					
Voltage range *   Single phase, 85 to 264 VAC, 120 to 370 VDC	2.2A 60 mVp-p max.					
Voltage range   Single phase, 85 to 264 V/AC, 120 to 370 VDC	2.2A 60 mVp-p max.					
Input	60 mVp-p max.					
Input	60 mVp-p max.					
Input   Power factor	60 mVp-p max.					
Input   Power factor	60 mVp-p max.					
Leakage current * 200 VAC input	60 mVp-p max.					
Leakage current *	60 mVp-p max.					
100 VAC input	60 mVp-p max.					
(for a cold start at 25°C)	60 mVp-p max.					
Rated Output Current   8 A   4.3 A   3.5 A	60 mVp-p max.					
Rated Output Current   8 A   4.3 A   3.5 A	60 mVp-p max.					
Voltage adjustment range * -10% to 15% (with V.ADJ)	60 mVp-p max.					
Ripple & Noise voltage *   100 to 240 VAC input   40 mVp-p max.   40 mVp-p	10 ms typ.					
Notitional functional function	10 ms typ.					
Load variation influence * 1.0% max.						
Temperature variation influence   100 to 240 VAC input   0.05%/°C max.						
Temperature variation influence   100 to 240 VAC input   0.05%°C max.						
Startup time *   100 VAC input   1,000 ms max.						
No   Series operation   No   No   No   No   No   No   No						
Hold time *   100 VAC input   14 ms typ.   11 ms typ.   10 ms typ.						
Additional functions   Coverload protection   Coverload protectio						
Overload protection   Yes, automatic reset	55 ms typ.					
Overvoltage protection *						
Additional functions						
Overheat protection   No	off the input voltage and tur					
Parallel operation   No (However, backup operation is possible, external diodes are in the femote sensing   No	\					
	<u> </u>					
Remote control   No	equired.)					
Vithstand voltage     Yes (LED: Green)       Insulation     3 kVAC for 1 min. (between all input terminals and output terminals)       1 kVAC for 1 min. (between all input terminals and PE terminals)       1 kVAC for 1 min. (between all output terminals and PE terminals)       500 VAC for 1 min. (between all output terminals and RC terminals)       Insulation resistance     100 MΩ min. (between all output terminals and all input terminals)       Ambient operating temperature     -20 to 70°C (Derating is required according to the temperature.)						
Withstand voltage  3 kVAC for 1 min. (between all input terminals and output terminals 2 kVAC for 1 min. (between all input terminals and PE terminals)  1 kVAC for 1 min. (between all output terminals and PE terminals 500 VAC for 1 min. (between all output terminals and RC terminal Insulation resistance  100 MΩ min. (between all output terminals and all input terminals and input termina						
Withstand voltage   2 kVAC for 1 min. (between all input terminals and PE terminals)   1 kVAC for 1 min. (between all output terminals and PE terminals   500 VAC for 1 min. (between all output terminals and RC terminals   100 MΩ min. (between all output terminals and all input terminals   Ambient operating temperature   -20 to 70°C (Derating is required according to the temperature.)						
1 kVAC for 1 min. (between all output terminals and PE terminals 500 VAC for 1 min. (between all output terminals and RC terminals 100 MΩ min. (between all output terminals and all input terminals 100 MΩ min. (between all output terminals and all input terminals 100 MΩ min. (between all output terminals and all input terminals 100 MΩ min. (between all output terminals and all input terminals 100 MΩ min. (between all output terminals and terminals 100 MΩ min. (between all output terminals and PE terminals 100 MΩ min. (between all output terminals and PE terminals 100 MΩ min. (between all output terminals and PE terminals 100 MΩ min. (between all output terminals and PE terminals 100 MΩ min. (between all output terminals and PE terminals 100 MΩ min. (between all output terminals and PE terminals 100 MΩ min. (between all output terminals and PE terminals 100 MΩ min. (between all output terminals and PE terminals 100 MΩ min. (between all output terminals 100 MΩ min. (between all out	3 kVAC for 1 min. (between all input terminals and output terminals) current cutoff 20 mA					
1 kVAC for 1 min. (between all output terminals and PE terminals   500 VAC for 1 min. (between all output terminals and RC terminals   100 MΩ min. (between all output terminals and all input terminals   100 MΩ min. (between all output terminals and all input terminals   100 MΩ min. (between all output terminals and all input terminals   100 MΩ min. (between all output terminals and all input terminals   100 MΩ min. (between all output terminals and RC terminals   100 MΩ min. (between all output terminals and RC terminals   100 MΩ min. (between all output terminals and RC terminals   100 MΩ min. (between all output terminals and RC terminals   100 MΩ min. (between all output terminals and RC terminals   100 MΩ min. (between all output terminals and RC terminals   100 MΩ min. (between all output terminals and RC terminals   100 MΩ min. (between all output terminals and RC terminals   100 MΩ min. (between all output terminals and RC terminals   100 MΩ min. (between all output terminals and RC terminals   100 MΩ min. (between all output terminals and RC terminals   100 MΩ min. (between all output terminals	current cutoff 20 mA					
Insulation resistance       100 M $\Omega$ min. (between all output terminals and all input terminals         Ambient operating temperature       -20 to 70°C (Derating is required according to the temperature.)	1 kVAC for 1 min. (between all output terminals and PE terminals) current cutoff 20 mA					
Ambient operating temperature —20 to 70°C (Derating is required according to the temperature.) (	500 VAC for 1 min. (between all output terminals and RC terminals) current cutoff 20 mA					
Ambient operating temperature —20 to 70°C (Derating is required according to the temperature.) (	$100~\text{M}\Omega$ min. (between all output terminals and all input terminals/PE terminals) at 500 VDC					
	-20 to 70°C (Derating is required according to the temperature.) (with no condensation or icin					
· · · · · · · · · · · · · · · ·						
Environment Ambient operating humidity 90% max. (Storage humidity: 90% max.)	90% max. (Storage humidity: 90% max.)					
	10 to 55 Hz, 4.5 G max., 0.375-mm half amplitude for 2 h each in X, Y, and Z directions					
Shock resistance 150 m/s², 3 times each in ±X, ±Y, ±Z directions	75, 1, una Z un collona					
Reliability						
Life expectancy * 10 years min.						
Dimensions (W×H×D) Refer to Dimensions on page 19.						
Construction Weight 300 g						
Cooling fan No						
Degree of protection						
Harmonic current emissions Conforms to EN 61000-3-2						
Conducted Emissions Conforms to EN 61204-3 Class B, EN 55011 Class B						
Radiated Emissions Conforms to EN 61204-3 Class B, EN 55011 Class B						
EMS Conforms to EN 61204-3 high severity levels						
UL 508 (Listing, excluding models with connector option) UL 60950-1 (Recognition, OVCII [s 3,000 m], Pol2) CSA C22.2 No.107.1 (excluding models with connector option) CSA C22.2 No.60950-1 (excluding models with connector option)	UL 508 (Listing, excluding models with connector option) UL 60950-1 (Recognition, OVCII [≤ 3,000 m], Pol2) CSA C22.2 No.107.1 (excluding models with connector option) CSA C22.2 No.60950-1 (excluding models with connector option) EN 50178 (OVCIII [≤ 2,000 m], OVCII [> 2,000 m and ≤ 3,000 m], Pol2) EN 60950-1 (OVCII [≤ 3,000 m], Pol2)					
Marine Standards No						
SEMI Conforms to F47-0706 (200 VAC input)						

<sup>\*</sup> Refer to Ratings, Characteristics, and Functions on page 11.

		Power rating			100 W				
Item		Output voltage	5 V	12 V	15 V	24 V			
		<u> </u>	79% typ.		_	87% typ.			
Efficiency *		•	81% typ.	· · ·		89% typ.			
			81% typ.			89% typ.			
	Voltage range *			,		3F			
			50/60 Hz (47 to 45						
	Voltage range * Frequency * Current * Power factor Leakage current * Inrush current * (for a cold start at 25°C) Rated Output Current Voltage adjustment Ripple & Noise voltage * Input variation influction influction influence Startup time * Hold time *  Overload protection Series operation Parallel operation Remote sensing Remote control Output indicator  Withstand voltage  Vironment Ambient operating Vibration resistance Shock resistance Shock resistance Shock resistance Shock resistance Shock resistance Harmonic current of EMI *  EMI *  EMS  Voltage range * Frequency * Current * Power factor Leakage current * Inrush current * Coverload protection Overlage adjustment Influence Startup time *  Overload protection Overvoltage protection Series operation Parallel operation Parallel operation Parallel operation Parallel operation Output indicator  Withstand voltage  Insulation resistance Storage temperature Ambient operating Vibration resistance Shock resistance Shock resistance Shock resistance Influence of protection Harmonic current of EMI *  EMS  Insulation Storage temperature Storage tem	100 VAC input	2.1 A typ.						
	Current *	•	1.2 A typ.	12 V   15 V   84% typ.   85% typ.   86% typ.   87% typ.   86% typ.   87% typ.   264 VAC, 120 to 370 VDC   0 Hz   0 Hz					
	Note								
input		0.5 mA max							
		-	-						
		-							
	25°C)	200 VAC input	28 A typ.						
	Rated Output Curre	nt	16 A	8.5 A	7 A	4.5 A			
	Voltage range * Frequency * Current * Power factor Leakage current * Inrush current * (for a cold start at 25°C) Rated Output Current * Voltage adjustment of Ripple & Noise voltage * Input variation influction influctions Inctions  Additional start protection overvoltage pro	ange *	-10% to 15% (with	V.ADJ)					
		100 to 240 VAC input	70 mVn-n max	90 m\/n-n max	100 mVn-n may	80 mVp-p max.			
		•		oo myp p max.	100 mvp p max.	oo myp p max.			
			0.5% max.						
Output		ence *	1.0% max.						
		100 to 240 VAC input	0.05%/°C max.						
	Chartur Mars 4	100 VAC input	1,000 ms max.		85% typ. 87% typ. 87% typ. C  7 A  100 mVp-p max.  11 ms typ. 55 ms typ.  power shut off (shut off the diodes are required.) external diodes are required.) external diodes are required and PE terminals) currently and PE terminals of the temperature. Refer the diodes are required at and PE terminals of the temperature. Refer the did all input terminals/PE to the temperature. Refer the did all input terminals/PE to the temperature of the temperature. Refer the did all input terminals/PE to the temperature of the temperatur				
	Startup time *	200 VAC input	1,000 ms max.						
		100 VAC input	12 ms typ.	11 ms typ.	11 ms typ.	10 ms typ.			
	Hold time *	200 VAC input	70 ms typ.			55 ms typ.			
	Overload protection	-	Yes, automatic res	et					
					87% typ. 899 87% typ. 899 87% typ. 899 0 VDC  7 A 4.5  . 100 mVp-p max. 80 in the input vision of the inpu	e input voltage and turn			
	Overvoltage prote Overheat protection  Iditional nections Series operation Parallel operation	ion *	the input again)						
	Overheat protection		No						
Additional	Series operation		Yes (For up to two Power Supplies, external diodes are required.)						
unctions Paralle	Parallel operation		No (However, back	cup operation is possible,	external diodes are require	ed.)			
	Remote sensing		No						
	Remote control		Yes (Only for mode	els with remote control opt	ble, external diodes are required.)				
	Output indicator		Yes (LED: Green)						
			3 kVAC for 1 min. (	between all input terminal	s and output terminals) cu	irrent cutoff 20 mA			
			2 kVAC for 1 min. (	between all input terminal	s and PE terminals) curre	nt cutoff 20 mA			
lmalatiam	ditional ctions  Series operation Parallel operation Remote sensing Remote control Output indicator  Withstand voltage		1 kVAC for 1 min. (	between all output termina	als and PE terminals) curr	ent cutoff 20 mA			
insulation			C input	ol .					
			500 VAC for 1 min.	(between all output termi	nals and RC terminals) cu	rrent cutoff 20 mA			
	Insulation resistanc	е	100 M $\Omega$ min. (betw	een all output terminals a	nd all input terminals/PE to	erminals) at 500 VDC			
	Ambient operating t	emperature			the temperature. Refer to	Engineering Data) (with			
		·		0,					
Environment	Voltage range * Frequency * Current * Power factor Leakage current * Inrush current * (for a cold start at 25°C) Rated Output Curr Voltage adjustment Ripple & Noise voltage * Input variation influction influence Startup time * Hold time * Overload protection Overvoltage protection Parallel operation Remote sensing Remote control Output indicator  Withstand voltage  Insulation resistant Ambient operating Vibration resistant Storage temperatu Ambient operating Vibration resistant Shock resistance Heliability  Dimensions (W×H) Weight Cooling fan Degree of protection Harmonic current of EMI * EMS  Landards  Voltage range * Frequency * Insulation influence Storage temperatu Ambient operating Vibration resistant Storage temperatu Ambient operating Vibration resistant Shock resistance Harmonic current of EMI * EMS		-25 to 75°C (with no condensation or icing)						
			` •	90% max. (Storage humidity: 90% max.)					
						and Z directions			
				each in ±X, ±Y, ±Z direction	ns				
Reliability					85% typ. 87% typ. 87% typ. 87% typ. 87% typ.  1100 mVp-p max.  11 ms typ. 55 ms typ.  ower shut off (shut off the odes are required.) ternal diodes are required and PE terminals) currents and PE terminals) currents and PE terminals) currents and RC terminals of the temperature. Refer to all input terminals/PE terminals and RC terminals of the temperature. Refer to all input terminals and RC terminals of the temperature. Refer to all input terminals of the temperature of the temperatu				
	•								
	· .	0)		s on page 20.	11 ms typ. 55 ms typ.  11 ms typ. 55 ms typ.  11 ms typ. 55 ms typ.  12 ternal diodes are required.) 13 and output terminals) curre and PE terminals) curre and PE terminals) curre als and RC terminals) curre als and RC terminals.  13 and PE terminals curre als and RC terminals per terminals per terminals.  14 all input terminals/PE terminals per terminals per terminals per terminals.  15 and PE terminals per terminals per terminals per terminals.  16 and PE terminals per terminals per terminals.  17 and PE terminals per terminals per terminals.  18 and RC terminals per terminals per terminals.  19 and PE terminals per terminals per terminals.  10 and PE terminals per terminals per terminals.  11 and PE terminals per terminals per terminals.  12 and PE terminals per terminals per terminals.  13 and PE terminals per terminals.  14 and PE terminals per terminals.  15 and PE terminals per terminals.  16 and PE terminals per terminals.  16 and PE terminals per terminals.  16 and PE terminals per terminals.  17 and PE terminals per terminals.				
Construction	Weight		400 g						
2			No						
	Degree of protection	1	<u>-</u>						
	Harmonic current er	missions	Conforms to EN 61000-3-2						
	FMI *	Conducted Emissions	Conforms to EN 61204-3 Class B, EN 55011 Class B						
		Radiated Emissions	Conforms to EN 61204-3 Class B, EN 55011 Class B						
	EMS		Conforms to EN 61	204-3 high severity levels					
Standards	Safety Standards		UL 508 (Recognition UL 60950-1 (Recognition CSA C22.2 No.107 CSA C22.2 No.609 EN 50178 (OVCIII	on, models with remote co gnition, OVCII [≤ 3,000 m] .1 (excluding models with 50-1 (excluding models w [≤ 2,000 m], OVCII [> 2,00 I [≤ 3,000 m], PoI2)	ntrol option) , Pol2) connector option or remo ith connector option or rer	te control option) mote control option)			
	Marine Standards				age, power shut off (shut off the inpernal diodes are required.)  all option)  minals and output terminals) current currentals and PE terminals) current currentals and PE terminals) current currentals and PE terminals) current currentals and all input terminals/PE terminals and all input terminals/PE terminals ing to the temperature. Refer to Enging)  )  amplitude for 2 h each in X, Y, and rections  5011 Class B  evels  connector option or remote control of the control option)  10 m], Pol2)  with connector option or remote coels with connector option or remote coels with connector option or remote				
	<b>+</b>			706 (200 \/AC inn+\					
	SCIVII		COINCINS to F47-0	700 (200 VAC Input)					

<sup>\*</sup> Refer to Ratings, Characteristics, and Functions on page 11.

		Power rating			150 W				
Item		Output voltage	5 V	12 V	15 V	24 V	48 V		
		100 VAC input	78% typ.	84% typ.	85% typ.		85% typ.		
Efficiency *1		200 VAC input	81% typ.	87% typ.	88% typ.		88% typ.		
		230 VAC input	81% typ.	87% typ.	88% typ.		88% typ.		
	Voltage range *			264 VAC, 120 to 3	, , , , , , , , , , , , , , , , , , ,				
	Frequency *		50 /60 Hz (47 to 45	50 Hz)		87% typ. 89% typ. 90% typ. 90% typ.  6.5 A  110 mVp-p max.  10 ms typ. 55 ms typ. off (shut off the input v required.) des are required.) t terminals) current cutoff 2 reminals) current cutoff 3 reminals (a) current cutoff 3 reminals (b) current cutoff 5 reminals) current cutoff 5 reminals (current cutoff 5 reminals) current cutoff 6 reminals (current cutoff 6 reminals) current cutoff 6 reminals (current cutoff 7 reminals) current cutoff 7 reminals (current cutoff 7 reminals) current cutoff 8 reminals (current cutoff 9 reminals) current cutoff 9 reminals (current cutoff 9 reminals) cutoff 9 reminals (cutoff 9 reminals) cu			
		100 VAC input	3 A typ.	<u>-</u>					
	Current *	200 VAC input	1.8 A typ.						
Input	Power factor								
	Lookago gurrant *	100 VAC input	0.5 mA max.						
	Leakage Current *	200 VAC input	1 mA max.			87% typ. 89% typ. 90% typ. 90% typ.  6.5 A  110 ms typ. 55 ms typ. ut off (shut off the input vertice are required.) iodes are required.)  aut terminals) current cutoff are terminals) current cutoff are terminals) current cutoff are terminals. The terminals are required. The terminals are required at terminals are required. The terminals are required at terminals are required at terminals. The terminals are required at terminals are required at terminals are required at terminals. The terminals are required at terminals are required at terminals. The terminals are required at terminals are required at terminals. The terminals are required at terminals are required at terminals. The terminals are required at terminals are required at terminals are required at terminals. The terminals are required at terminals are required at terminals are required at terminals. The terminals are required at terminals are required at terminals are required at terminals. The terminals are required at terminals are required at terminals are required at terminals are required at terminals. The terminals are required at terminals are required at terminals. The terminals are required at terminals are required at terminals are required at terminals. The terminals are required at terminals are required at terminals are required at terminals. The terminals are required at the terminals ar			
	Inrush current *	100 VAC input	14 A typ.						
		200 VAC input	28 A typ.			87% typ. 89% typ. 90% typ. 90% typ.  6.5 A  110 mVp-p max.  10 ms typ. 55 ms typ.  off (shut off the input equired.) les are required.)  terminals) current cutoff erminals) current cutoff erminals) current cutoff erminals) current cutoff erminals.  terminals) current cutoff erminals current cutoff erminals current cutoff erminals.  terminals current cutoff erminals ature. Refer to Engin each in X, Y, and Z  the rated load.)			
		nt	21 A	13 A	10 A	6.5 A	3.3 A		
	Voltage range *   Frequency *		-10% to 15% (with	V.ADJ)					
	Voltage range * Frequency * Current * Power factor Leakage current * (for a cold start at 25°C) Rated Output Current Voltage adjustment Ripple & Noise voltage * Input variation influence Startup time * Hold time * Overload protection Overvoltage protection Series operation Parallel operation Remote sensing Remote control Output indicator  Withstand voltage  Insulation resistant Ambient operating Vibration resistant Shock resistance Withstand Withstand Vibration resistant Ambient operating Vibration resistant Shock resistance WTBF Life expectancy * Dimensions (WxHx Weight Cooling fan Degree of protection Harmonic current of EMI * EMS	T	100 m)/n n may	110 m)/n n may	00 m)/n n mov	110 m)/n n may	120 m)/n n may		
	voltage *	<b>100</b> to <b>240</b> VAC input	100 mVp-p max.	110 mVp-p max.	80 mvp-p max.	110 mvp-p max.	120 mVp-p max		
	Input variation influ	ence *	0.5% max.						
Output		ence *	1.0% max.						
		100 to 240 VAC input	0.05%/°C max.						
		100 VAC input	1,000 ms max.						
	Startup time *	200 VAC input	1,000 ms max.						
		100 VAC input	14 ms typ.	10 ms typ.	10 ms typ.	10 ms typ.	11 ms typ.		
	Hold time *	200 VAC input	80 ms typ.	55 ms typ.	55 ms typ.		55 ms typ.		
	Overload protection	· ·	Yes, automatic res	et	, ,,	21	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	Overveltege pretect	ion #	Yes, 120% or higher of rated output voltage, power shut off (shut off the input voltage and turn of						
	Overvoitage protect	.ioii ক	the input again)			15 V 24 V  //p. 87% typ. //p. 89% typ. //p. 90% typ.  10 ms typ. typ. 10 ms typ. typ. 55 ms typ.  Ower shut off (shut off the input vocades are required.)  ternal diodes are required.)  and output terminals) current cutoff and PE terminals) current cutoff and PE terminals) current cutoff all input terminals/PE terminals) as he temperature. Refer to Enginee  and effor 2 h each in X, Y, and Z directions of the temperature and the temperature are selected and the temperature are selected and the temperature. Refer to Enginee and the temperature are to Enginee and the temperature are to Engineerature. The selected are the temperature are to Engineerature are to Engineerature. The selected are the temperature are to Engineerature are to Engineerature are to Engineerature. The selected are the temperature are to Engineerature. The selected are the temperature are to Engineerature are to Engineerature. The selected are the temperature are to Engineerature. The selected are the temperature are to Engineerature. The selected are the temperature are the temper			
	Overheat protection	<u> </u>	No						
Additional functions	Series operation		Yes (For up to two	Power Supplies, ex	ternal diodes are re				
14110110110	Parallel operation		No (However, back	cup operation is pos	sible, external diod				
	Remote sensing		No						
	Remote control			els with remote cont	trol option)				
	Output indicator		Yes (LED: Green)						
			,			,			
	Withstand valtage		,	•					
Insulation	withstand voitage				erminals and PE te	87% typ. 89% typ. 90% typ. 90% typ.  6.5 A  110 mVp-p max.  10 ms typ. 55 ms typ. off (shut off the input vertical cuttoff iterminals) current cutoff iterminals it	f 20 mA		
			Only Remote contr 500 VAC for 1 min		terminals and RC t	erminals) current cut	off 20 mA		
	Insulation resistanc	e							
			`	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	<i>'</i>			
	Ambient operating t	emperature	condensation or ic		3	<b>3</b>	3 14/( 1		
Environment	Storage temperature	е	-25 to 75°C (with r	no condensation or i	icing)				
Environment	Ambient operating h	numidity	90% max. (Storage	e humidity: 90% ma:	x.)				
					•	each in X, Y, and Z of	lirections		
				each in ±X, ±Y, ±Z o	directions				
Reliability			135,000 hrs min.						
			10 years min.						
	`	U)	Refer to Dimension	ns on page 22.					
Construction			500 g			87% typ. 89% typ. 90% typ. 90% typ.  6.5 A  110 mVp-p max.  10 ms typ. 55 ms typ.  off (shut off the input vequired.) les are required.)  terminals) current cutoff terminals) current cutoff terminals) current cutoff terminals/PE terminals) ature. Refer to Engine each in X, Y, and Z description or remote control option o			
			No						
	· · · · · · · · · · · · · · · · · · ·			1000-3-2 (Applicable	a at 80% or loss of t	he rated load \			
	riai monic current el	Conducted Emissions		1000-3-2 (Applicable 1204-3 Class B, EN		ine rateu IUau.)			
	EMI *	Radiated Emissions		1204-3 Class B, EN					
	FMS	. Addiated Elifissions							
Standards			Conforms to EN 61204-3 high severity levels  UL 508 (Listing, excluding models with connector option or remote control option)  UL 508 (Recognition, models with remote control option)  UL 60950-1 (Recognition, OVCII [≤ 3,000 m], Pol2)  CSA C22.2 No.107.1 (excluding models with connector option or remote control option)  CSA C22.2 No.60950-1 (excluding models with connector option or remote control option)  EN 50178 (OVCIII [≤ 2,000 m], OVCII [> 2,000 m and ≤ 3,000 m], Pol2)  EN 60950-1 (OVCII [≤ 3,000 m], Pol2)						
			Conforms to EN/IE	C 61558-2-16.					
	Marine Standards		No						
	SEMI			706 (200 VAC inpu	t)				
leter Defer to	Dotingo Characteri	stics, and Functions of	n nogo 11	·	-		-		

Note: Refer to Ratings, Characteristics, and Functions on page 11.

		Power rating			300 W			
Item		_	12 V	15 V	24 V	48 V		
itein			=======================================	_		82% typ.		
Efficiency *		•	· · · · · · · · · · · · · · · · · · ·		- ''	87% typ.		
Efficiency &		•			- ''	87% typ.		
	Valtage vange te	230 VAC IIIput	7.	· · · · · · · · · · · · · · · · · · ·	- ''	67 % typ.		
			• ' '	81% typ. 82% typ. 87% typ. 85% typ. 86% typ. 87% typ. 86% typ. 87% typ. 87% typ. 86% typ. 87% typ. 87% typ. 86% typ. 87% typ. 97% to 63 Hz)    20 A				
	Frequency *		` '					
	Current *	•						
		200 VAC input	* '					
Input	Power factor	I						
	Leakage current *	•	0.5 mA max.					
		•	_					
	Voltage range * Frequency * Current * Power factor Leakage current * (for a cold start at 25°C) Rated Output Current Voltage adjustment of Ripple & Noise voltage * Input variation influction influct	100 VAC input	14 A typ.					
	Voltage range * Frequency *  Current *  Power factor  Leakage current *  Inrush current * (for a cold start at 25°C)  Rated Output Current  Voltage adjustment range Ripple & Noise voltage *  Input variation influence  Load variation influence  Temperature variation influence  Startup time *  1  Overload protection  Overvoltage protection  Overvoltage protection  Series operation  Parallel operation  Remote sensing  Remote control  Output indicator  Withstand voltage  Insulation resistance  Ambient operating tem  Storage temperature  Ambient operating hur  Vibration resistance  Shock resistance  MTBF  Life expectancy * Dimensions (W×H×D)  Weight  Cooling fan Degree of protection  Harmonic current emis  EMI *  EMS	200 VAC input	28 A typ.					
	· · · · · · · · · · · · · · · · · · ·	100 VAC input   81% typ.		20 A	14 A	7 A		
	+				1171	177		
		inge *	1070 to 1070 (With V.7 to	,,,				
		100 to 240 VAC input	140 mVp-p max.	270 mVp-p max.	150 mVp-p max.	330 mVp-p max.		
		ence *	0.5% max.	I	1	1		
	<u> </u>							
Output	Temperature variation influence  Startup time *  Hold time *  Overload protectio  Overvoltage protectio  Overheat protectio  Series operation							
		100 VAC input	1,000 ms max.					
		-	7					
		•	,	30 ms tvn	30 ms tvn	30 ms typ.		
	Hold time <b>*</b>	•	, , , , , , , , , , , , , , , , , , ,			30 ms typ.		
	Overload protection			20 mo typ.	ou ma typ.	oo ma typ.		
	Overload protection	Yes, 120% or higher of rated output voltage, power shut off (shut off						
	Overvoltage protect	ion *		ated output voltage, p	ower shut on (shut on the	e input voitage and turi		
dditional unctions	Overheat protection		, , ,	it off the input voltage	and turn on the input aga	in)		
			Yes (For up to two Power Supplies, external diodes are required.)					
	-		` '		· · · · · · · · · · · · · · · · · · ·	.d \		
	1		,	beration is possible, e	xterrial diodes are require	·u.)		
	Parallel operation         No (However, backup operation is possible, external diodes are required.)           Remote sensing         No           Remote control         Yes (Only for models with remote control option)							
	Output indicator		, ,					
			,	·				
	Withotond		`	· · · · · · · · · · · · · · · · · · ·				
Insulation	withstand voitage		,	een all output termina	is and PE terminals) curre	ent cutoff 20 mA		
	Parallel operation Remote sensing Remote control Output indicator  Withstand voltage							
	Inculation registers							
			`	•				
	· · ·	•	-20 to 70°C (Derating is required according to the temperature.) (with no condensation or icing					
F	+		-25 to 75°C (with no condensation or icing)					
Environment	-		, ,					
				•	87% typ.  87% typ.  87% typ.  14 A  150 mVp-p max.  30 ms typ.  30 ms typ.  30 ms typ.  wer shut off (shut off the indicate the indicate the indicate the terminals) current and PE terminals) current a	and ∠ directions		
			· ·	n ±X, ±Y, ±Z direction	ns			
Reliability	+		, , , , , , , , , , , , , , , , , , ,					
	• •							
	Dimensions (W×H×E	0)	Refer to Dimensions on	page 24				
Construction	Weight		700 g					
oonstruction	Cooling fan		Yes					
	Degree of protection	1						
	Harmonic current en	nissions	Conforms to EN 61000-3-2					
	EMI de	Conducted Emissions						
	CIVII 4	Radiated Emissions						
	EMS							
Standards			UL 508 (Recognition, m UL 60950-1 (Recognition CSA C22.2 No.107.1 (e CSA C22.2 No.60950-1 EN 50178 (OVCIII [≤ 2,0 EN 60950-1 (OVCII [≤ 3,0	odels with remote con n, OVCII [≤ 3,000 m], xcluding models with (excluding models wi 100 m], OVCII [> 2,000 1,000 m], Pol2)	trol option) Pol2) remote control option) th remote control option)	,		
			Conforms to FN/IFC 61	558-2-16.				
	Marina Ctandanda		Conforms to EN/IEC 61	558-2-16.				
	Marine Standards		No					

<sup>\*</sup> Refer to Ratings, Characteristics, and Functions on page 11.

		Power rating			600 W			
Item		Output voltage	12 V	15 V	24 V	48 V		
		100 VAC input	84% typ.	84% typ.	85% typ.	88% typ.		
Efficiency *		200 VAC input	88% typ.	88% typ.	89% typ.	92% typ.		
Lincichoy 4		230 VAC input	88% typ.	88% typ.	90% typ.	92% typ.		
	Voltago rango *	200 VAC IIIput	· · · · · · · · · · · · · · · · · · ·	264 VAC, 120 to 350 VD	7.	92 /0 typ.		
	<del></del>		•	· · · · · · · · · · · · · · · · · · ·	<i>-</i>			
	rrequency *	400 VAO :t	50 /60 Hz(47 to 63 Hz)					
	Current *	100 VAC input	7.7 A typ.					
		200 VAC input	3.8 A typ.					
Input	Power factor	T	0.9 min.					
	Leakage current *	100 VAC input	0.5 mA max.					
		200 VAC input	1 mA max.					
		100 VAC input	14 A typ.					
	•	200 VAC input	28 A typ.					
	•	nt	50 A	40 A	27 A	13 A		
	<u> </u>		-10% to 15% (with		ZI IX	1071		
		inge &	-1070 to 1370 (with	V.AD0)				
		100 to 240 VAC input	170 mVp-p max.	170 mVp-p max.	280 mVp-p max.	340 mVp-p max.		
		ence *	0.5% max.	1	1			
	<del>                                     </del>		1.0% max.					
Output								
	variation influence	100 to 240 VAC input	0.05%/°C max.					
	Startup time *	100 VAC input	1,000 ms max.					
		200 VAC input	1,000 ms max.					
	Hold time the	100 VAC input	30 ms typ.	25 ms typ.	30 ms typ.	30 ms typ.		
	Voltage range * Frequency *  Current *  Current *  Inoughous factor  Leakage current *  (for a cold start at 25°C)  Rated Output Current  Voltage adjustment range: Ripple & Noise voltage *  Input variation influence  Load variation influence  Temperature variation influence  Startup time *  Overload protection  Overvoltage protection *  Overheat protection  Series operation  Parallel operation  Remote sensing  Remote control  Output indicator  Withstand voltage  Insulation resistance  Ambient operating tempe Storage temperature  Ambient operating humic Vibration resistance  MTBF  Life expectancy *  Dimensions (W×H×D)  Weight  Cooling fan  Degree of protection  Harmonic current emissie  EMI *	200 VAC input	30 ms typ.	25 ms typ.	30 ms typ.	30 ms typ.		
	Overload protection		Yes, automatic rese	et				
	0	! ats	Yes, 120% or higher of rated output voltage, power shut off (shut off the input vol					
	Overvoitage protect	ion *	the input again)		•			
	Overheat protection		Yes, power shut off	(shut off the input voltage	and turn on the input aga	ain)		
unctions Pa	Series operation		Yes (For up to two I	Power Supplies, external of	diodes are required.)			
	Parallel operation		Yes (up to five Pow	er Supplies, S8FS-G6002	4 (models with parallel op	peration option) only).		
	·		No			. , ,,		
			Yes (Only Remote of	control)				
	-		Yes (LED: Green)					
	Output malcutor		` ,	urrent cutoff 20 mA				
				3 kVAC for 1 min. (between all input terminals and output terminals) current cutoff 20 mA 2 kVAC for 1 min. (between all input terminals and PE terminals) current cutoff 20 mA				
	Withstand voltage			1 kVAC for 1 min. (between all output terminals and PE terminals) current cutoff 20 mA				
Insulation	······································							
			Only Remote control 500 VAC for 1 min. (between all output terminals and RC terminals) current cutoff 20 mA					
	Inculation recietance	Δ		een all output terminals an				
			,			•		
		•	<ul> <li>-20 to 70°C (Derating is required according to the temperature.) (with no condensation or icing</li> <li>-25 to 75°C (with no condensation or icing)</li> </ul>					
Environment	<u> </u>							
Livironment	· · · · ·	•	90% max. (Storage humidity: 90% max.)  10 to 55 Hz, 4.5 G max., 0.375-mm half amplitude for 2 h each in X, Y, and Z directions					
Parallel operation Remote sensing Remote control Output indicator  Withstand voltage  Insulation resista Ambient operation Storage temperation Vibration resista Shock resistance MTBF	<b>+</b>					and ∠ directions		
				ach in ±X, ±Y, ±Z direction	ns			
Reliability			135,000 hrs min.					
	•		10 years min.					
	Dimensions (W×H×I	0)	Refer to Dimension	s on page 23.				
Construction	Weight		1,050 g					
Jon Sa delion	Cooling fan		Yes					
	Degree of protection	1						
	Harmonic current er	nissions	Conforms to EN 61	000-3-2				
		Conducted Emissions						
	⊏IVII ¥	Radiated Emissions						
	EMS		Conforms to EN 61204-3 Class B, EN 33011 Class B					
				cluding models with remote	e control option)			
			UL 508 (Recognitio	n, models with remote cor	itrol option)			
Standards				nition, OVCII [≤ 3,000 m],				
	Safety Standards			.1 (excluding models with 50-1 (excluding models wi				
				50-1 (excluding models wi ≤ 2,000 m], OVCII [> 2,00		)		
			EN 60950-1 (OVCII	[≤ 3,000 m], Pol2)		•		
			Conforms to EN/IE0	C 61558-2-16.				
			No					
	Marine Standards		No					

<sup>\*</sup> Refer to Ratings, Characteristics, and Functions on page 11.

### Ratings, Characteristics, and Functions

Efficiency			The value is when both rated output voltage and rated output current are satisfied.	
	Voltag	e range	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	
Input	Currer	<u> </u>	result in ignition or burning.  The value is when both rated output voltage and rated output current are satisfied.	
	Leaka	ge current	The values are determined according to the Act on Power Supply Safety of Electrical Appliances and Materials.	
		current	For a cold start at 25°C. Refer to the following figure.	
	Voltage adjustment range		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.	
	Ripple	& Noise voltage	The value is when both rated output voltage and rated output current are satisfied. A characteristic when the ambient operating temperature is 25°C.	
Output	Input	variation influence	This is the maximum variation in the output voltage when the input voltage is gradually changed within the allowable input voltage range at the rated output voltage and rated output current.	
	Load v	variation influence	This is the value when the output current is changed from 0 A to the rated output current while the input voltage is within the allowable input voltage.	
	Startu	p time	The value is when both rated output voltage and rated output current are satisfied. For a cold start at 25°C. Refer to the following figure.	
	Hold ti	ime	The value is when both rated output voltage and rated output current are satisfied. At 25°C. Refer to the following figure.	
Additional functions	Overvoltage protection		Refer to Overvoltage Protection on page 17 for the time when input voltage shuts off ar input turns on again.	
Reliability	Life expectancy		Refer to Recommended Replacement Periods and Periodic Replacement for Preventive Maintenance on page 32 for details.	
Standards	ЕМІ	Conducted Emissions	The 150-W and higher models conform to Class B when an aluminum plate is set under the	
Stanuarus	EIVII	Radiated Emissions	Power Supply.	

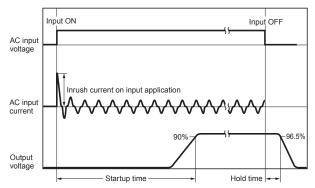
### **Standard Compliance**

- The input voltage range for compliance with EC Directives and other safety standards (UL, EN, etc.) is 90 to 264 VAC.
- EN/IEC 61558-2-16

To comply with EN/IEC 60204-1 (Machine Safety), a transformer is required in the control circuit. If, however, a Power Supply that has a built-in transformer that complies with EN/IEC 6155-8-2-16 is used, an external transformer is not required.

Power supplies with a DC input are beyond the range of applicability of the EC Directives and other safety standards (e.g., UL and EN).

### **Inrush Current, Startup Time, Output Hold Time**

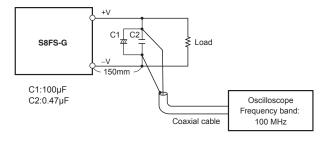


Note: The total inrush current of all of the Power Supplies will flow for parallel operation or backup operation.

Sufficiently check the fusing characteristics of fuses and the operating characteristics of breakers and select fuses and breakers so that external fuses will not burn out or breakers will not operate due to inrush current.

### **Ripple Noise Voltage**

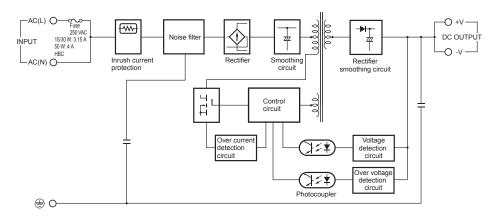
The specified standard for the ripple voltage noise was measured with a measurement circuit that is based on JEITA standard RC-9131A.



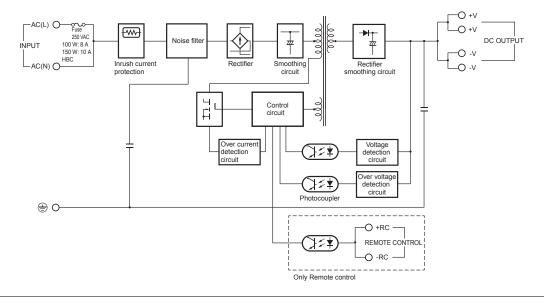
### **Connections**

### **Block Diagrams**

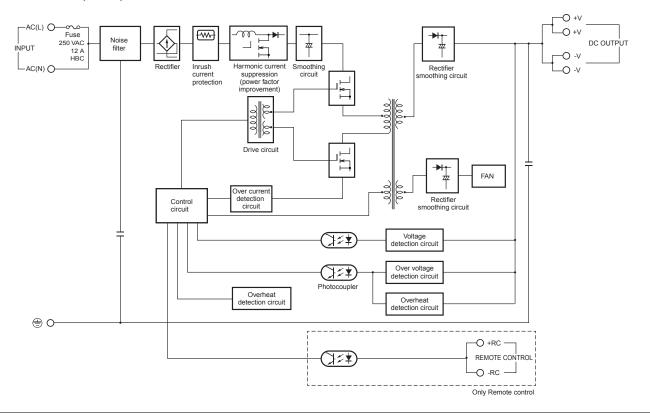
S8FS-G015□□□ (15 W) S8FS-G030□□□ (30 W) S8FS-G050□□□ (50 W)



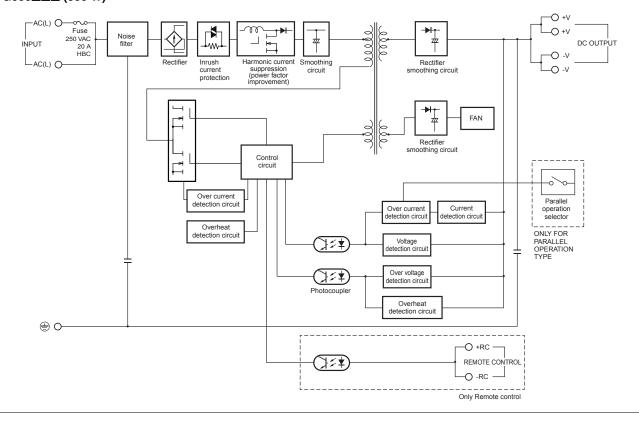
### S8FS-G100□□□ (100 W) S8FS-G150□□□ (150 W)



### S8FS-G300□□□ (300 W)



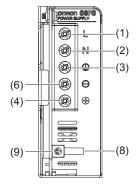
### S8FS-G600□□□ (600 W)



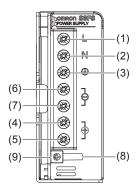
### **Construction and Nomenclature**

### **Nomenclature**

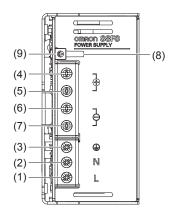
\$8FS-G015□□□ \$8FS-G030□□□ \$8FS-G050□□□



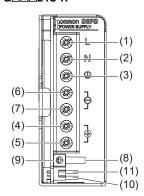
\$8FS-G100□□□ \$8FS-G150□□□



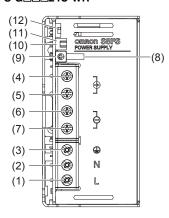
S8FS-G300□□□
S8FS-G600□□□



S8FS-G□□□24C-R



#### S8FS-G□□□24C-WR



No.	Terminal name	Name	Function	
(1)	L	Input terminals	Connect the input lines to those terminals and	
(2)	N	Input terminais	Connect the input lines to these terminals. *1	
(3)	PE	Protective Earth terminal (⊕)	Connect the ground line to this terminal. *2	
(4)	+V1			
(5)	+V2	DC output terminals	Connect the load lines to these terminals.	
(6)	-V1			
(7)	-V2			
(8)		Output indicator (DC ON: green)	Lights while a direct current (DC) output is ON.	
(9)		Output voltage adjuster (V.ADJ)	Use to adjust the voltage.	
(10)	+RC	Remote control terminals	Wire for remote control.	
(11)	-RC	Remote control terminals	while for remote control.	
(12)		Parallel operation switch	To operate in parallel, set the switch to the "PARALLEL" side.	

<sup>\*1.</sup> 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.

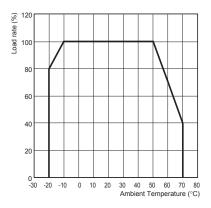
<sup>\*2.</sup> This is the protective earth terminal specified in the safety standards. Always ground this terminal.

# **Engineering Data**

### **Derating Curves**

### **Output Derating**

15 W, 30 W, 50 W, 300 W, and 600 W



Note: At less than 100 VAC, derate the load at 1.3%/V.

# 

30 40 50 60 70 80 Ambient Temperature (°C)

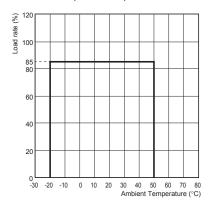
100 W and 150 W

Note: At less than 100 VAC, derate the load at 1.3%/V.

0 10 20

### **Parallel Operation**

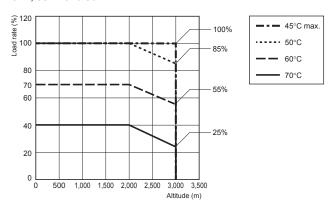
For Models with Parallel Operation Option



Note: At less than 100 VAC, derate the load at 1.3%/V.

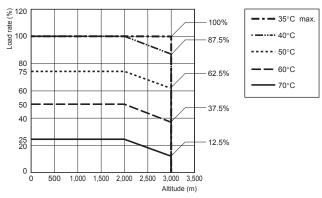
This Power Supply can be used at an altitude of 3,000 m. Between 2,000 and 3,000 m, derate the load according to the following derating curve.

### 15 W, 30 W and 50 W



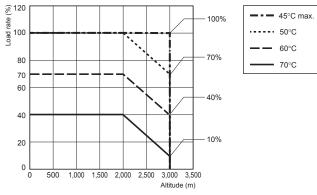
Note: At less than 100 VAC, derate the load at 1.3%/V.

### 100 W and 150 W



Note: At less than 100 VAC, derate the load at 1.3%/V.

### 300 W and 600 W

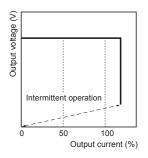


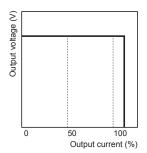
Note: At less than 100 VAC, derate the load at 1.3%/V.

### **Engineering Data**

### **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 to 160% 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

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.

If an excessive voltage that is 120% 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.

### Overheating Protection (300 W and 600 W)

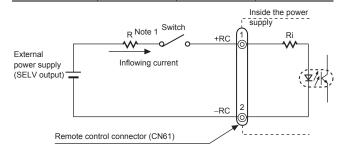
If the internal temperature of the Power Supply rises excessively as a result of fan failure or any other reason, the overheat protection circuit will be triggered to shut OFF the output voltage.

To restore operation, turn OFF the input power supply long enough for the Power Supply to cool sufficiently and then turn it ON again.

### Remote Control Function (Only Remote control)

This function is to turn ON/OFF the output by applying a voltage to the remote control connector from a DC power Supply (external power supply) other than this Power Supply.

Built-in	Voltage between	Inrush current	
resistance Ri (Ω)	Output ON	Output OFF	(mA)
780	4.5 to 12.5	0 to 0.5	20 max.



Usage example of the remote control

#### Connectors used:

	CN61	Applicable connector	Applicable contact
Model	B2B-XH-AM	XHP-2	SXH-001T-P0.6 or SXH-002T-P0.6
Manufacturer	Manufacturer J.S.T. Mfg. Co., Ltd.		

# Applicable crimp tool: YC-110R (J.S.T. Mfg. Co., Ltd.) or YRS-110 (J.S.T. Mfg. Co., Ltd.)

- Note: 1. When the external power supply is 4.5 to 12.5 V, the current limiting resistor R is not required. When it is 12.5 to 24.5 V, insert 1.5 k $\Omega$  as the current limiting resistor R.
  - 2. Reverse connection of the connector may cause damage on the internal parts.
  - 3. The +RC and -RC terminals are the secondary circuit of the Power Supply. Use an SELV output power supply for an external power supply. The remote control circuit is insulated from the secondary output of the Power Supply (functional insulation).

### Reference Value

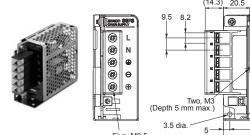
	Value	
Reliability (MTBF)	Single phase model 15W: 970,000 30W: 970,000 50W: 880,000 100W: 730,000 150W: 620,000 300W: 200,000 600W: 190,000	
Definition	MTBF stands for Mean Time Between Failures, which is calculated according to the probability of accidental device failures, and indicates reliability 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.	

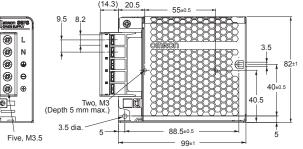
**Dimensions** (Unit: mm)

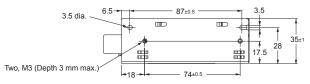
### **Power Supplies**

15 W and 30 W

S8FS-G015□□C S8FS-G030□□C

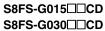




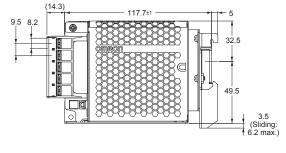


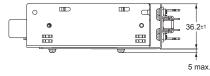
#### Panel mounting holes dimensions

5				
	Using the mounting holes in the Power Supply	Using the screw holes in the Power Supply		
Side Mounting	Two, M3 40±0.5	Two, 3.5 dia.		
Bottom Mounting	Two, M3	Two, 3.5 dia.		



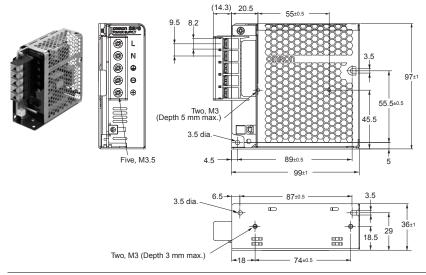






### 50W

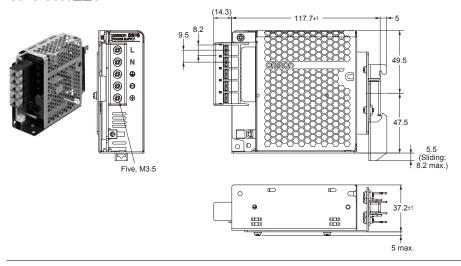
### S8FS-G050□□C



### Panel mounting holes dimensions

	Using the mounting holes in the Power Supply	Using the screw holes in the Power Supply
Side Mounting	55.5±0.5 Two, M3	Two, 3.5 dia. 55±0.5 →
Bottom Mounting	Two, M3	Two, 3.5 dia.

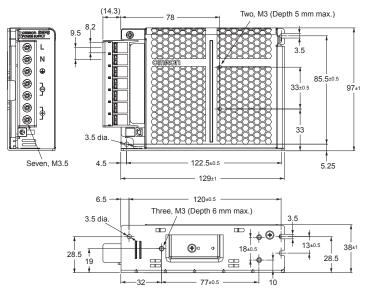
### S8FS-G050□□CD



### 100W

### S8FS-G100□□C





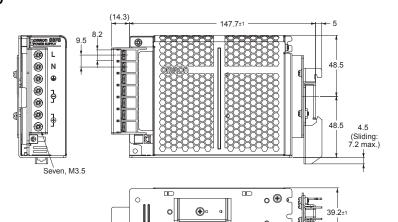
#### Panel mounting holes dimensions

5 max.

	Using the mounting holes in the Power Supply	Using the screw holes in the Power Supply
Side Mounting	Two, M3	Two, 3.5 dia.
Bottom Mounting	Three, M3 13±0.5	Three, 3.5 dia.

### S8FS-G100□□CD

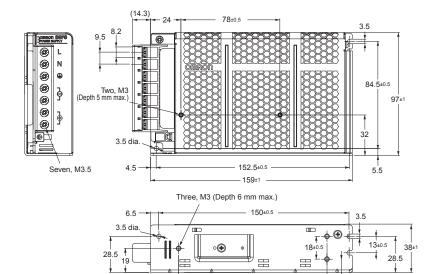




### 150W

### S8FS-G150□□C





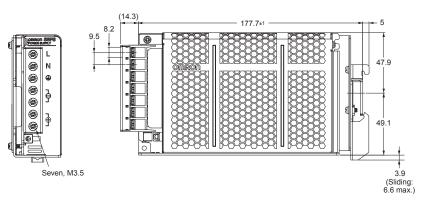
#### Panel mounting holes dimensions

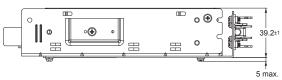
117±0.5

	Using the mounting holes in the Power Supply	Using the screw holes in the Power Supply	
Side Mounting	Two, M3	Two, 3.5 dia.	
Bottom Mounting	Three, M3 13±0.5	Three, 3.5 dia.  9.5±0.5  117±0.5  18±0.5	

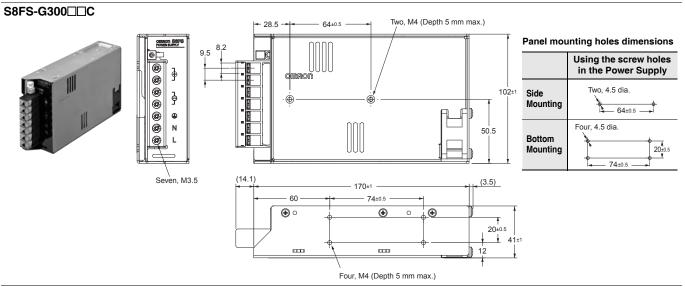
### S8FS-G150□□CD

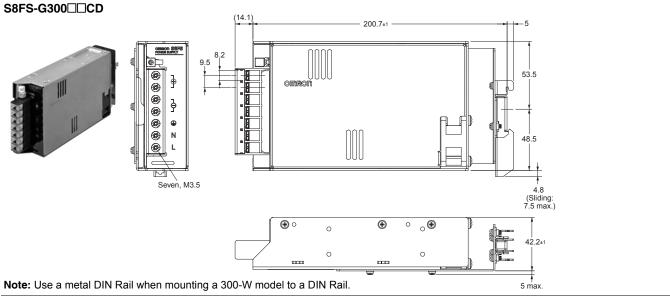






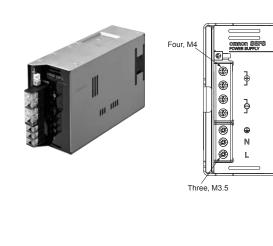
### 300W

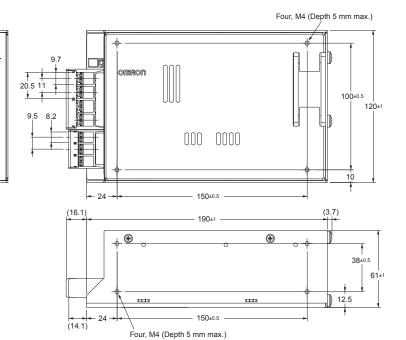




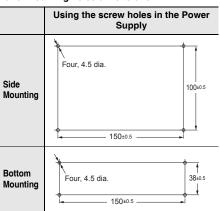
### 600W

### S8FS-G600□□C



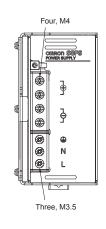


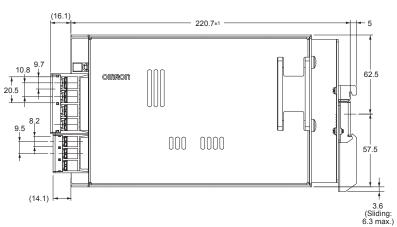
### Panel mounting holes dimensions

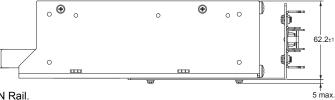


### S8FS-G600□□CD









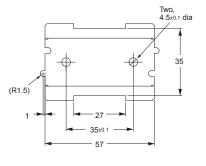
Note: Use a metal DIN Rail when mounting a 600-W model to a DIN Rail.

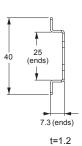
### **Mounting Brackets (Order Separately)**

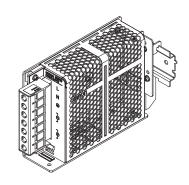
Use the Front-mounting Brackets together with DIN Rail-mounting Power Supplies (S8FS-G CD).

Power rating	Mounting direction	Model
15 W, 30 W, 50 W 100 W, 150 W and 300 W	Front-mounting	S82Y-FSG-30F
600 W	Front-mounting	S82Y-FSG-60F

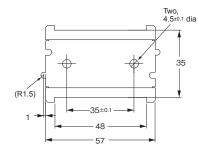
### S82Y-FSG-30F

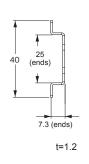


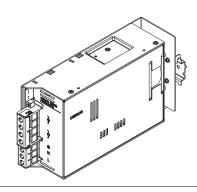




### S82Y-FSG-60F







### **Terminal cover (Order Separately)**

Power rating	Applicable models	Terminal Cover model number
15 W	S8FS-G015□□□	
30 W	S8FS-G030□□□	S82Y-FSG-C5P
50 W	S8FS-G050□□□	
100 W	S8FS-G100□□□	
150 W	S8FS-G150□□□	S82Y-FSG-C7P
300 W	S8FS-G300□□□	
600 W	S8FS-G600□□□	S82Y-FSG-C7P-L (Input Output)

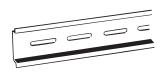
Note: A Terminal Block Cover is provided with the Power Supply as a standard accessory. You can purchase another one if your Cover is damaged or lost.

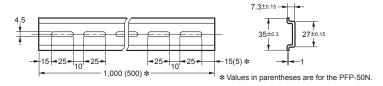
### **DIN Rail (Order Separately)**

(Unit: mm)

### **Mounting Rail (Material: Aluminum)**

PFP-100N PFP-50N

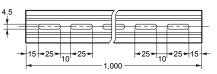


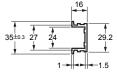


### **Mounting Rail (Material: Aluminum)**

PFP-100N2

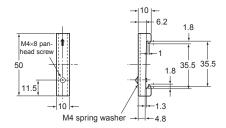






# End Plate PFP-M



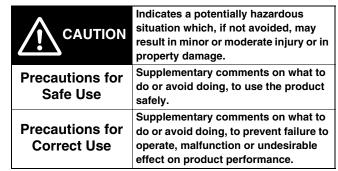


Note: If there is a possibility that the Unit will be subject to vibration or shock, use a steel DIN Rail. Otherwise, metallic filings may result from aluminum abrasion.

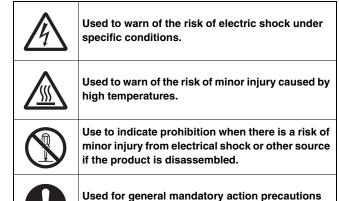
### **Safety Precautions**

Refer to Safety Precautions for All Power Supplies.

### **Warning Indications**



### **Meaning of Product Safety Symbols**



### /!\CAUTION

for which there is no specified symbol.

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.

M3.5: 0.74 to 1.13N·m M4: 1.08 to 1.32N·m



Minor injury due to electric shock may occasionally occur. Do not touch the terminals while power is being supplied.



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**

### **Ambient Operating and Storage Environments**

- Store the Power Supply at a temperature of –25 to 75°C and a humidity of 90% max.
- The internal parts may occasionally deteriorate or be damaged.
   Use the Power Supply within the derating curve.
- Use the Power Supply at a humidity of 90% max.
- Do not use locations where liquids, foreign matter, or corrosive gases may enter the interior of the Power supplies.

### **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 contractors or other devices that are a vibration source.
- Install the Power Supply well away from any sources of strong, high-frequency noise and surge.

### Mounting

 Take adequate measures to ensure proper heat dissipation to increase the long-term reliability of the Power Supply.
 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.

The S8FS-G015 to S8FS-G150 are cooled by natural convection. Mount them so that air convection will occur around them

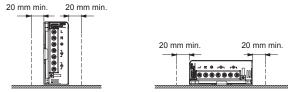
The S8FS-G300 and S8FS-G600 are cooled by forced airflow. Do not allow the ventilation holes to be blocked. The effectiveness of cooling would be reduced.

- When cutting out holes for mounting, make sure that cuttings do not enter the interior of the Power supplies.
- The internal parts may occasionally deteriorate and be broken due to adverse heat radiation. Do not loosen the screws on the Power Supply
- If you mount the Power Supply with the holes provided on the chassis, do not exceed the depth given in the dimensional diagrams.

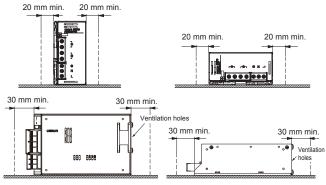
Use the following tightening torques. M3 screws: 0.48 to 0.59 N·m M4 screws: 1.08 to 1.32 N·m

### Mounting

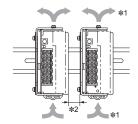
#### S8FS-G015□□□ to 150□□□



#### S8FS-G300□□□ and S8FS-G600□□□



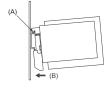
Note: Use a metal plate as the mounting surface.



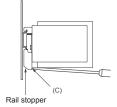
- \*1. Convection of air.
- \*2. 2.20 mm min.

### <DIN Rail Mounting>

To mount the Power Supply to a DIN Rail, hook portion (A) of the Power Supply onto the DIN Rail and press the Power Supply in direction (B) until you hear it lock into place.



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



### 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 150-N force to the terminal block when tightening it.
- Be sure to remove the sheet covering the Power Supply 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 S8FS-G to prevent smoking or ignition caused by abnormal loads.

### Terminals and Wiring (Screw terminal block type)

Terminals	Model	Recommendes Wire Gauges
	S8FS-G015□□□	AWG12-22
Input	S8FS-G030 to 100 to	AWG12-20
	S8FS-G150 to 600 to	AWG12-16
	S8FS-G01512□ to 01524□	AWG12-22
	S8FS-G03024□	AVVG12-22
	S8FS-G01505□	
	S8FS-G03012□, 03015□	AWG12-20
	S8FS-G05015□, 05024□	AVVG12-20
	S8FS-G15048□	
	S8FS-G05012□	AVA/C40 40
	S8FS-G10024□	AWG12-18
	S8FS-G03005□	AWG12-16
O. 14m. 14	S8FS-G10015□	
Output	S8FS-G15024□	AVVG12-16
	S8FS-G30048□	
	S8FS-G05005□	
	S8FS-G10012□	AWG12-14
	S8FS-G15015□	
	S8FS-G10005□	
	S8FS-G15005□, 15012□	AWG12
	S8FS-G30012□ to 30024□	
	S8FS-G60015□ to 60048□	AWG10-12
	S8FS-G60012□	AWG10
Protective earth terminal	S8FS-G015 to 600 c	AWG12-14

Note: The current capacity per output terminal is given in the following table.

S8FS-G015□□□ to S8FS-G300□□□: 20 A

S8FS-G600□□: 30 A

Use two terminals together if the current flow is higher than the rated terminal current.

### **Overcurrent Protection**

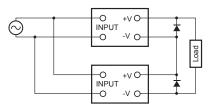
- Internal parts may possibly deteriorate or be damaged if a shortcircuited, overload, or boost load state continues during operation.
- Internal parts may possibly deteriorate or be damaged if the Power Supply is used for applications with frequent inrush current or overloading at the load end. Do not use the Power Supply for such applications.

### **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.

### **Series Operation**

Two Power Supplies can be connected in series operation.



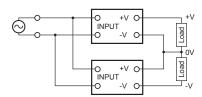
Note: 1. The diode is connected as shown in the figure. If the load is short-circuited, a reverse voltage will be generated inside the Power Supply. If this occurs the Power Supply may possibly deteriorate or be damaged. Always connect a diode as shown in the figure. Select a diode having the following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

Туре	Schottky Barrier diode
Dielectric strength (VRRM)	Twice the output voltage or above
Forward current (I <sub>F</sub> )	Twice the rated output current or above

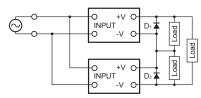
Although Power Supply having different specifications can be connected in series, the current flowing through connected in series, the current flowing through the load must not exceed the smaller rated output current.

### <Making Positive/Negative Outputs>

• The outputs are floating outputs (i.e., the primary circuits and secondary circuits are separated). You can therefore make positive/negative outputs by using two Power Supplies. You can make positive/negative outputs with any of the models. If you use positive/negative outputs, connect two Power Supplies of the same model as shown below. You can combine models with different output capacities and output voltages. However, use the lower of the two rated 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.

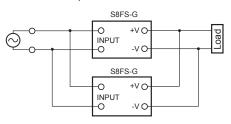


 Use the following information as a guide to the diode type, dialectic strength, and current.

Туре	Schottky Barrier diode
Dielectric strength (VRRM)	Twice the output voltage or above
Forward current (I <sub>F</sub> )	Twice the rated output current or above

### **Parallel Operation**

Parallel operation is used when the output current from one Power Supply is insufficient for the load. Power Supplies are connected in parallel to increase the output current.



#### **Power Supplies without the Parallel Operation Option**

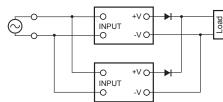
Parallel operation is not possible.

#### S8FS-G60024□-W□ (Models with the Parallel Operation Option)

Up to five Power Supplies can be connected in parallel operation. You must meet the following conditions to use parallel operation.

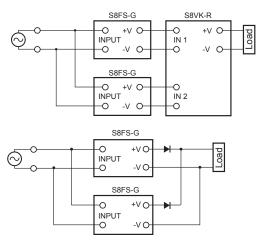
- The internal parts may occasionally deteriorate or be damaged. To operate in parallel, set the switch to the "PARALLEL" side.
- For parallel operation, always use Power Supplies with the same model number
- Use the output voltage adjusters (V. ADJ) to adjust the difference in the output voltages to 50 mV or less between Power Supplies that are used in parallel operation.
- The length and thickness of each wire connected to the load must be the same so that there is no difference in the voltage drop value between the load and the output terminals of each Power Supply.
- Drastic fluctuations in the load (including fluctuations that occur when starting and starting the load) may reduce the output voltage.
   If fluctuations in the output voltage that result from drastic fluctuations in the load would be a problem, connect external diodes as shown in the following diagram.
- Use the following information as a guide to the diode type, dialectic strength, and current.

Туре	Schottky Barrier diode
Dielectric strength (VRRM)	Twice the output voltage or above
Forward current (I <sub>F</sub> )	Twice the rated output current or above



### **Backup Operation**

Backup operation is possible if you use two Power Supplies of the same model. Even if one Power Supplies fails, operation can be continued with the other Power Supply. Make sure that the maximum load does not exceed the capacity of one Power Supply. Connect the S8VK-R or external diodes as shown in the following figure for backup operation. Refer to the S8VK-R datasheet (Cat. No.: T059) for information on using the S8VK-R.



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

Туре	Schottky Barrier diode
Dielectric strength (V <sub>RRM</sub> )	Twice the output voltage or above
Forward current (I <sub>F</sub> )	Twice the rated output current or above

### In Case There Is No Output Voltage

There is a possibility that overload protection, overvoltage protection, or overheating protection are functioning. The internal protection may operate if a large amount of surge voltage, such as a lightning inrush, is applied to the input. In addition, other possible causes for some models include stoppage of the built-in fan and the remote control function (OFF). Check the following five points. If there is still no output voltage, contact your OMRON representative.

- Checking Overload Protection: Remove the load wires and check whether the load is in an overload state or is short-circuited.
- Checking Overvoltage or Internal Protection:
   Turn the power supply OFF, leave it OFF for at least three minutes, and then turn it ON again to see if this clears the condition.
- Checking Overheating Protection (300 W/600 W): Turn OFF the input power supply long enough for the Power Supply to cool sufficiently and then turn it ON again.
- Checking for Built-in Fan Stoppage (300 W/600 W): Check whether or not the built-in fan has stopped.
- Confirming Remote Control Operation (Power Supplies with Remote Control):

Check whether or not the +RC and -RC terminals are open. Connect the terminals as specified.

### **Charging a Battery**

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

### **Built-in Fan Replacement**

The built-in fan cannot be replaced.

### **Audible Noise at Power ON**

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 Power Supply.

### **Period and Terms of Warranty**

### **Warranty Period**

The Power Supply warranty is valid for a period of three years from the date of shipment from the factory.

### **Terms of Warranty**

The warranty is valid only for the following operating conditions.

- 1. Average ambient operating temperature of the Power Supply: 40°C max. (See note.)
- 2. Average load rate of 80% max. (See note.)
- 3. Mounting method: Standard mounting
- 4. Rated input voltage

Note: The maximum ratings must be within the derating curve.

If the Power Supply fails for reasons attributable to OMRON within the above warranty period, OMRON will repair or replace the faulty part of the Power Supply at the place of purchase or the place where the Power Supply delivered without charge. This warranty does not cover the following types of failures.

- (1) Failures that result from handling or operation of the Power Supply under conditions or in environments that are not given in this document and not given in any other specifications exchanged between OMRON and the customer
- (2) Failures that originate in causes other than the delivered product itself
- (3) Failures caused by disassembly, modification, or repair of the Power Supply by anyone other than OMRON
- (4) Failures caused by applications or uses for which the Power Supply was not originally intended
- (5) Failures caused by factors that could not be anticipated with the scientific or technical knowledge available when the Power Supply was shipped
- (6) Failures caused by other causes for which OMRON is not responsible, such as natural disasters and other acts of God

This warranty is limited to the individual Power Supply that was delivered and does not cover any secondary, subsequent, or related damages.

# Recommended Replacement Periods and Periodic Replacement for Preventive Maintenance

The recommended replacement period for preventive maintenance is greatly influenced by the application environment of the Power Supply. As a guideline, the recommended replacement period is 7 to 10 years.\*

To prevent failures or accidents that can be caused by using a Power Supply beyond its service live, we recommend that you replace the Power Supply as early as possible within the recommended replacement period.

However, bear in mind that the recommended replacement period is for reference only and does not guarantee the life of the Power Supply.

Many electronic components are used in the Power Supply and the Power Supply depends on the correct operation of these components to achieve the original Power Supply functions and performance.

However, the influence of the ambient temperature on aluminum electrolytic capacitors is large, and the service life is reduced by half for each 10°C rise in temperature (Arrhenius law).

When the capacity reduction life of the electrolytic capacitor is reached, the Power Supply failures or accidents may occur.

We therefore recommend that you replace the Power Supply periodically to minimize product failures or accidents in advance.

\*The recommended replacement period applies under the following conditions: rated input voltage, load rate of 50% max., ambient temperature of 40°C max., and the standard mounting method.

This Power Supply model is designed with a service life of 10 years minimum under the above conditions.

# **Terms and Conditions Agreement**

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### 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 part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

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