Wide input voltage range with automatic voltage selection.



The SWA series is made up of general-purpose, single-output power supply units for world-wide use. Input voltages from 85 to 264 V may be used with no manual voltage selection required. The series has five advanced-design models ranging from 15 to 150 W. The 100 W and 150 W models are equipped with Power Factor Correction circuits, and take into account the IEC 555 Part 2 regulations on harmonic currents.

FEATURES

- Wide input voltage range
- High power factor of 0.95 achieved using a Power Factor Correction IC (100 W, 150 W)
- New Barrierless Transformer technology for reduced size
- MOSFET-based main switching circuit for high efficiency
- Designed to meet UL, CSA, and VDE safety standards
- The 100 W and 150 W models are equipped with Power Factor Correction circuits.



SWA Series circuit diagram



* No power correction on 15 to 50 W models. +S and + are connected with a short bar, as are -S and -.

	Rating		15W						
	Item		Conditions	- SWA 015-05	SWA 015-12	SWA 015-15	SWA 015-24		
	Rated Input Voltage			100-240V AC					
	Input	t Voltage Range	85 to 264V AC						
	Rate	d Frequency	50/60 Hz						
put	Frequency Range			47 to 440 Hz					
드	Input Current (see Note 1)			0.4/0.23A (typ)					
	Inrus	sh Current (see Note 1, 2)			25/50 A (max)				
	Efficiency (typ) (see Note 1)			72%	75%	75%	77%		
	Rate	d Output Voltage	+5V	+12V	+15V	+24V			
	Adju	stable Output Voltage Range	Rated voltage ±10%						
	Rate	d Output Current		3.0A 1.3A 1.07A 0.7A					
ote 3	Adju	stable Output Current Range		0 to 100%					
see N	Maxi	mum Output Power		15W	15.6W	15W	16.8W		
ut (s	Ripp	le (mVp-p) (see Note 1, 4)		120mVp-p	180mVp-p	180mVp-p	240mVp-p		
Outp	lage	Static Input Range	85 to 264V AC						
	t Vol	Static Load Range	0 to 100%	±3%					
	Accu	Time Driftt	10min. to 8 hours						
	Cor	Ambient Temperature Range	0 to +50°C						
	Outp	ut Holdup Time (see Note 1)		10ms (min)					
her	Start	up Time (see Note 1)		20ms (typ)					
đ	Leak	age Current (see Note 1)		0.5mA (max)					
	Swite	ching Method, Transformer Fre	quency	KCC topology, approx. 70 kHz (under rated input/output conditions)					
	Over	Current Protection		Detec	ction above 105% of r	ated current (output c	utoff)		
ons	Over	Voltage Protection		Detection	above 115% to 145%	of rated voltage (out	put cutoff)		
ditio	Rem	ote Sensing			Not pr	ovided			
Fu	Remote On/Off Control			Not provided					
	Display			LED OPERALION INDICATOR					
ental	Temperature Operating Temperature				0 to 50°C	(no cover)			
um (Storage Temperature	-25 to +85°C					
lvirc	Relative Humidity		Operating Humidity	30 to 90% (no condensation)					
Ш	Les Letter Matthews AAT here		Storage Humidity	30 to 90% (no condensation)					
	(see Note 5)		Between Input and Output	2000 V AC for 1 minute, 2400 V AC for 1 second (Leakage current of 15 mA or			ent of 15 mA or less)		
п			Between Input and Frame				at of 15 mA or loop)		
ulati	Insulation Desistance		Between Output and Output	DUD V AUTOR I MINUTE, DUD V AUTOR I SECOND (LEAKAGE CURRENT OF 15 MA OR les			IL OF TO THA OF TESS)		
lns	Insulation Resistance		Between Input and Erame	- 100 MC (massured with 500 V/DC Masser))		
			Between Autout and Frame	-		ntil 500 v DG wiegger)		
	Vibra	ation Resistance		10 to 55 Hz 2 C 1 hour (in V V and 7 directions)					
al	Cooli	ing Requirements	Natural air cooling						
catio	Evternal Annagrance			Open frame (with ontional cover)					
Struc Specifi	Size	(dimensions in mm)	35 x 99 x 97 (W x D x H) (without cover)						
	Weight			265 g (open frame)					
	Safety Standards			Designed to meet UL 1950					
e s				Designed to meet CSA C22.2 No. 234					
Applicabl Standard				Designed to meet EN 60950					
	EMI Standards			Designed to meet VDE 0871 Class A (200 to 240 V AC)					
				Designed to meet FCC Class B (100 to 120 V AC)					

Note 1: Rated input/output conditions means that the switching power supply is operated under the rated input voltage, rated frequency, rated output voltage, rated output current, and at an ambient temperature of 25°C and 60% humidity.

Note 2: At cold start. (More current may flow at restart.)

Note 3: All output characteristics are measured at a point 5 cm from the output connector, with a 63 V 47 µF electrolytic capacitor attached at that point.

Note 4: Ripple noise is measured with a 100 MHz oscilloscope, using a 1:1 probe.

Note 5: At room temperature and normal humidity.

	Rating		30W					
ltem			Conditions	SWA 030-05	SWA 030-12	SWA 030-15	SWA 030-24	
	Rated Input Voltage			100-240V AC				
	Input	Voltage Range		85 to 264V AC				
	Ratec	d Frequency	50/60 Hz					
put	Frequ	iency Range	47 to 440 Hz					
Ē	Input Current (see Note 1)			0.7/0.46A (tvn)				
	Inrus	h Current (see Note 1, 2)	25/50 A (max)					
	Efficiency (typ) (see Note 1)			72%	75%	75%	77%	
	Ratec	d Output Voltage	+5V	+12V	+15V	+24V		
	Adius	stable Output Voltage Range		Rated voltage ±10%				
	Ratec	d Output Current		6.0A 2.5A 2.0A 1.3A				
e 3)	Adius	stable Output Current Range			0 to 1	00%		
e Not	Maxir	mum Output Power		30W	30W	30W	31.2W	
it (se	Rippl	e (mVp-p) (see Note 1, 4)		120mVp-p	180mVp-p	180mVp-p	240mVp-p	
utpu	ge .	Static Input Range	85 to 264V AC					
ō	Volta acy	Static Load Range	0 to 100%	±3%				
	tant	Time Driftt	10min. to 8 hours					
	Cons	Ambient Temperature Range	0 to +50°C					
	Output Holdup Time (see Note 1)			10ms (min)				
Ъ	Startı	up Time (see Note 1)		20ms (typ)				
Oth	Leaka	age Current (see Note 1)	0.5mA (max) (Vin=100Vac)/0.75mA (Vin=240Vac)					
	Switc	hing Method, Transformer Free	quency	RCC topology, approx. 70 kHz (under rated input/output conditions)				
	Over Current Protection			Detection above 105% of rated current (output cutoff)				
23 al	Over	Voltage Protection	Over Voltage Prot	ection Detection abov	e approx. 115 to 145	% of rated voltage		
ition	Remo	ote Sensing			Not pr	ovided	_	
Addi	Remo	ote On/Off Control			Not pr	ovided		
	Displa	ay		LED operation indicator				
tal	Temperature Operating Temperature				0 to 50°C	(no cover)		
men			Storage Temperature	-25 to +85°C				
iron	Relati	ive Humidity	Operating Humidity	30 to 90% (no condensation)				
Env	,		Storage Humidity	30 to 90% (no condensation)				
	Insulation Withstand Voltage		Between Input and Output	– 2000 V AC for 1 minute, 2400 V AC for 1 second (Leakage current of 15 mA or I			ant of 15 mA ar loop)	
	(see Note 5)		Between Input and Frame				ent of 15 mA of less)	
ation			Between Output and Frame	500 V AC for 1 minute, 600 V AC for 1 second (Leakage current of 15 mA or le				
Isula	Insulation Resistance		Between Input and Output					
-			Between Input and Frame	· ·	100 M Ω (measured w	ith 500 V DC Megger)	
			Between Output and Frame					
s	Vibra	tion Resistance		10 to 55 Hz, 2 G, 1 hour (in X, Y, and Z directions)				
tion	Cooli	ng Requirements		Natural air cooling				
Structu Specificat	Exter	nal Appearance	Open frame (with optional cover)					
	Size ((dimensions in mm)	35 x 116 x 97 (W x D x H) (without cover)					
	Weight			320 g (open frame)				
Applicable Standards	Safety Standards			Designed to meet UL 1950				
				Designed to meet CSA C22.2 No. 234				
				Designed to meet EN 60950				
	EMI Standards			Designed to meet VDE 0871 Class A (200 to 240 V AC)				
				Designed to meet FCC Class B (100 to 120 V AC)				

Note 1: Rated input/output conditions means that the switching power supply is operated under the rated input voltage, rated output voltage, rated output voltage, rated output voltage, rated output current, and at an ambient temperature of 25°C and 60% humidity.

Note 2: At cold start. (More current may flow at restart.)

Note 3: All output characteristics are measured at a point 5 cm from the output connector, with a 63 V 47 µF electrolytic capacitor attached at that point.

Note 4: Ripple noise is measured with a 100 MHz oscilloscope, using a 1:1 probe. Note 5: At room temperature and normal humidity.

	50	W		100W					
SWA 050-05	SWA 050-12	SWA 050-15	SWA 050-24	SWA 100-05	SWA 100-12	SWA 100-15	SWA 100-24		
	100-24	IOV AC		100-240V AC					
	85 to 2	64V AC		85 to 264V AC					
	50/6	0 Hz		50/60 Hz					
	47 to 4	140 Hz			47 to 4	140 Hz			
	1.2/0.7	A (typ)			1.6/0.7	A (typ)			
700/	25/50 4	(max)	770/	20/40 A (max)					
/2%	/5%	/5%	11%	11%	/8%	80%	80%		
+5V	+12V Bated volt	+10%	+24V	+51	+ I Z V Bated volt	+10%	+24 V		
10 0A	4 2A	3 4A	214	20.0A	8.5A	7 0A	4 5A		
10.0/1	0 to 1	00%	2.07	0 to 100%					
50.0W	50.4W	51.0W	50.4W	100.0W	102.0W	105.0W	108.0W		
120mVp-p	180mVp-p	180mVp-p	240mVp-p	120mVp-p	180mVp-p	180mVp-p	240mVp-p		
	±3	%		±3%					
	10ms	(min)		20ms (min)					
0.5r	2011S mA (max) (Vin=100V/	(lyp) (lyp) (lyp) (lyp) (lyp) (lyp) (lyp) (lyp) (lyp)	Mac)	0.5mA (max) (Vin=100V/Δc)/0.75mΔ (Vin=240V/Δc)					
BCC topology	(11A (111aX) (111=1000)	der rated input/outp		FCC topology approx. 150 kHz (under rated input/output conditions)					
Detect	ion above 105% of ra	ated current (output	cutoff)	Detect	on above 120% of r	ated current (output	cutoff)		
Over Voltage Prote	ction Detection abov	e approx. 115 to 14	5% of rated voltage	Over Voltage Prote	ction Detection abov	e approx. 115 to 145	5% of rated voltage		
	Not pr	ovided			Prov	rided			
	Not pr	ovided			Not pr	ovided			
	LED operati	on indicator		LED operation indicator					
	0 to 50°C	(no cover)		0 to 50°C (no cover)					
	-25 to	+85°C		-25 to +85°C					
	30 to 90% (no	condensation)		30 to 90% (no condensation)					
	30 to 90% (no	condensation)			30 to 90% (no	condensation)			
	2	000 V AC for 1 minu	te, 2400 V AC for 1 s	second (Leakage cur	rent of 15 mA or less	5)			
		500 V AC for 1 minu	te, 600 V AG for 1 se	econd (Leakage curre	ent of 15 mA or less)				
100 M Ω (measured with 500 V DC Megger)									
	10 to 55 Hz, 2 G, 1 hour (in X, Y, and Z directions)								
Natural air cooling									
Open frame (with optional cover)									
	380 g (open frame)								
300 g (open frame) /00 g (open frame)									
Designed to meet CSA C22 2 No. 234									
	Designed to meet EN 60950								
		Design	ed to meet VDE 087	1 Class A (200 to 24	0 V AC)				
		Desigr	ed to meet FCC Clas	s B (100 to 120 V A	C)				

tem Conditions SWA 150-05 SWA 150-12 SWA 150-15 SWA 150-24 Tight Voltage Range 100-240V AC 100-240V AC 100-240V AC Rated Input Voltage Range 85 to 284V AC 55 to 284V AC Rated Input Voltage Range 47 to 63 Hz 100-240V AC Imput Current (see Net 1.7) 24/12A (typ) 110-240V AC Inside Current (see Net 1.7) 24/12A (typ) 83% Rated (nput Voltage Range 45V 43% Rated (nput Voltage Range 55V 12V Rated (nput Voltage Range 55V 12V Rated (nput Voltage Range 0.00 A 10.0A 6.5A Rated (nput Voltage Range 0.00 A 10.0A 10.0A 6.5A Rated (nput Voltage Range 0.0100% 150.0W 150.0W <td< th=""><th></th><th colspan="2">Rating</th><th colspan="4">150W</th></td<>		Rating		150W					
Tead Topological and the second				Conditions	SWA 150-05	SWA 150-12	SWA 150-15	SWA 150-24	
Input Voltage Range 100 - 200 -		Rater	t Input Voltage	Conultions		100-2/			
Image Control Image 0.00000000000000000000000000000000000		Innut	Voltage Bange		85 to 264V/ΔC				
Instrume Job 10/2 Frequency Range 4710 63 Hz Instruct Generation (section 1) 24412A (typ) Instruct Generation (section 1) 29% Bit do Luput Voltage 100 M2 Efficiency (typ) (section 1) 79% Adjustable Output Voltage Range 150.0W Adjustable Output Current 30.0A Adjustable Output Current 30.0A Adjustable Output Current 150.0W Bit (the current 1) 100 % Adjustable Output Current 150.0W Bit (the current 1) 1000% provide 1) Bit (the current 1) 0.5mA (max) (tw=100/xx)0.7mA (tw=240/xc) Startup Time (section 1) 0		Rater		00 U 204V AU 50/60 Uz					
Imput Circuit avial is	t	Frogu		50/60 HZ					
Import Current (ser Non 1) C.M.(L.V) Imrush Current (ser Non 1, 2) 79% 81% 82% 83% Rated Output Voltage Range	lnp	Input	Current (and Note 1)	4/ 10 63 HZ					
Initial Culture (see west 1, 2) C204 View (max) Efficiency (Vp) (see kise 1) 79% 61% 45V 412V 415V 424V Adjustable Output Voltage Range - Rated Output Voltage Range 0 to 100% - Rated Output Current Range 0 to 100% - - 0 to 100% - Maximum Output Power 150.0W 150.0W 150.0W 150.0W 150.0W Right Culture Current Range 0 to 100% - - - - Maximum Output Power 150.0W 150.0W 150.0W 150.0W 150.0W Static Input Range 0 to 100% -		Input	b Current (see Note 1)	2.4/1.2A (typ)					
Control <		Effici		70%	20/40 /	(111ax)	020/		
Note Note Note Note Note Note Adjustable Output Current Adjustable Output Adjust Adjustable Output Adjust Adjust Adjustable Output Adjust Adju		Pater	A Output Voltage	19%	121/	02 /0	03 /0 + 24V		
Markadie Unique Current Action Unique Current Adjustable Output Corrent Adjustable Output Carrent Adjustable Output Current Adjustable Output Carrent Adjustable Output Current Adjustable Output Current Adjustable Output Carrent Adjustable Output Adjust Adjustable Output Adjustable Adjustable Output Carrent Adjustable Output Carrent Adjustable Output Carrent Adjustable Output Carrent Adjustable Output Adjust Adjustable Output Adjust Adjust Adjustable Output Adjust Adjustable Output Adjust Adju		Adiuc	table Output Voltage Pange	+31	+ 12 V Rated volt	200 +10%	+24V		
Majustability 0.00A 1.00A 0.00A		Rater	A Output Current						
Note Output Output<	3)	Adiuc	table Output Current Pange		30.0A	13.0A	10.0A	0.5A	
The status Toolvin	Note	Mavi			150 OW	156 OW	150 OW	156 OW	
Normalized Control p	(see	Rinnl			120m\/n-n	180m\/n-n	180m\/n-n	2/0m\/n-n	
Bit of the transformer frequency Data transformer frequency 23% 1000000000000000000000000000000000000	tput	a Tribbi	Static Input Bange	85 to 26/1/ AC	12011vp-p	120111vp-p 180111vp-p 180011vp-p 24000vp			
Image: Solution Load Handing: Solution Handing: Solutis Handing: Solution Handing: Solution Handing: Solution Handin	no	oltag	Static Load Bange	0 to 100%	±3%				
Moment Instruct Total Total Market Ambient Temperature Range 0 to +50°C Output Holdup Time (see Note 1) 20ms (min) Startup Time (see Note 1) 0.55mA (max) (Vi=00Xx0c)0.75mA (Vi=240Vac) Switching Method, Transformer Frequency FCC topology, approx. 150 MHz (under rated input/output conditions) Over Ourrent Protection Detection above 120% of rated current (output cutoff) Over Voltage Protection Detection above approx. 115 to 145% of rated voltage Remote On/Off Control Not provided Remote Sensing Operating Temperature Operating Temperature -25 to 485°C Remote On/Off Control Operating Humidity Storage Temperature -25 to 485°C Retative Humidity Operating Humidity Storage Temperature -25 to 485°C Insulation Withstand Voltage Between Input and Output Between Output and Frame Between Input and Output Between Output and Frame 100 MΩ (measured with 500 V DC Megger) Vibration Resistance Open frame (with optional cover) Size (dimensions in mm) 65 × 200 × 93 (W × D × H) (without cover) <td rowspan="2"></td> <td>ant V cura</td> <td>Time Driftt</td> <td>10min to 8 hours</td>		ant V cura	Time Driftt	10min to 8 hours					
Construction Output Holdup Time (see Note 1) 20ms (min) Startup Time (see Note 1) 1000/500 ms (typ) 1000/500 ms (typ) Leakage Current (see Note 1) 0.5mA (max) (Vm=100Vxc)/0.75mA (Vm=240Vxc) Switching Method, Transformer Frequency FCC topology, approx. 150 kHz (under rated input/output conditions) Over Current Protection Over Voltage Protection above 120% of rated current (output cutoff) Over Voltage Protection above 120% of rated voltage Remote Sensing Provided Remote Sensing Provided Remote On/Off Control Not provided Not provided Display User Voltage Protection indicator EtED operation indicator Remote Sensing Operating Temperature 0 to 50°C (no cover) Storage Temperature 0 to 50°C (no condensation) Storage Humidity 30 to 90% (no condensation) Storage Humidity Between Input and Output Between Input and Output 2000 V AC for 1 minute, 2400 V AC for 1 second (Leakage current of 15 mA or less) Insulation Resistance Between Input and Output Between Input and Output 100 MΩ (measured with 500 V DC Megger) Vibration Resistance Between Input and Output Between Input and Output 10 to 55 Hz, 2 G, 1 hour (in		onst	Ambient Temperature Bange						
Bit Startup Time (see Note 1) 1000/500 ms (typ) Leakage Current (see Note 1) 0.5mA (max) (Vm=100VAc)/0.75mA (Vm=240VAc) Switching Method, Transformer Frequency FCC topology, approx. 150 kHz (under rated input/output conditions) Over Current Protection 0 betection above 120% of rated current (output cutoff) Over Current Protection 0 ver Voltage Protection Detection above approx. 115 to 145% of rated voltage Remote Sensing Provided Remote On/Off Control Not provided Display 0 per ating Temperature Storage Temperature -25 to +85°C Relative Humidity Operating Temperature Insulation Withstand Voltage Between Input and Grame Between Input and Frame Between Output and Fram					20ms (min)				
Deates The constraint of the second s	_	Start	Un Time (see Note 1)		1000/500 ms (tvn)				
Biology of the strate of the stra	Othe	Leaka	ane Current (see Note 1)		0.5mA (max) (Vin=100Vac)/0.75mA (Vin=240Vac)				
Owner many motion, main motion,		Swite	hing Method Transformer Free	nuency	FCC topology, approx. 150 kHz (under rated input/output conditions)				
Over Voltage Protection Dever Voltage Protection Detection above approx. 115 to 145% of rated voltage Remote Sensing Provided Remote Sensing Provided Remote Sensing Over Voltage Protection Detection above approx. 115 to 145% of rated voltage Remote Sensing Provided Between Ontrol Not provided Display Operating Temperature Provided Storage Temperature Relative Humidity Operating Humidity Storage Temperature Concordensation) Storage Temperature 2000 V AC for 1 minute, 2400 V AC for 1 second (Leakage current of 15 mA or less) Storage Temperature 2000 V AC for 1 minute, 2400 V AC for 1 second (Leakage current of 15 mA or less) Storage Temperature 100 M2 (measured with 500 V DC Megger) Insulation Resistance Between Input and Frame Between Output and Frame Between Input and Frame 100 to 55 Hz, 2 G, 1 hour (in X, Y, and Z directions) Cooling Requirements Natural air cooling Vibration Resistance Open frame (with optional cover) Star (dimensions in mm) 65 x 200 x 93 (W x D x H) (without cover) Weight 900 g (open frame)		Over Current Protection			Detection above 120% of rated current (output cutoff)				
Provide Provided Remote Sensing Provided Remote On/Off Control Not provided Display LED operation indicator Temperature Operating Temperature Relative Humidity Operating Temperature Relative Humidity Operating Temperature Insulation Withstand Voltage Between Input and Output Between Input and Frame Between Input and Output Between Output and Frame 500 V AC for 1 minute, 600 V AC for 1 second (Leakage current of 15 mA or less) 500 Vibration Resistance Between Input and Output Between Output and Frame 500 V AC for 1 minute, 600 V AC for 1 second (Leakage current of 15 mA or less) 500 Vibration Resistance Between Input and Frame Between Output and Frame 100 MΩ (measured with 500 V DC Megger) Vibration Resistance Between Output and Frame Between Output and Frame 100 to 55 Hz, 2 G, 1 hour (in X, Y, and Z directions) Cooling Requirements Natural air cooling Stateral Appearance Open frame (with optional cover) Weight 900 g (open frame) Safety Standards Designed to meet IN 60950 <td>s S S</td> <td>Over</td> <td>Voltage Protection</td> <td colspan="4">Over Voltage Protection Detection above approx. 115 to 145% of rated voltage</td>	s S S	Over	Voltage Protection	Over Voltage Protection Detection above approx. 115 to 145% of rated voltage					
Temporal Temporal Temporal Remote On/Off Control Operating Temperature 0 to 50°C (no cover) Display Emote On/Off Control Operating Temperature 0 to 50°C (no cover) Relative Humidity Operating Humidity 30 to 90% (no condensation) 30 to 90% (no condensation) Insulation Withstand Voltage Between Input and Output Between Input and Output 2000 V AC for 1 minute, 2400 V AC for 1 second (Leakage current of 15 mA or less) Insulation Withstand Voltage Between Input and Output 2000 V AC for 1 minute, 600 V AC for 1 second (Leakage current of 15 mA or less) Insulation Resistance Between Input and Output 500 V AC for 1 minute, 600 V AC for 1 second (Leakage current of 15 mA or less) Vibration Resistance Between Input and Output Between Input and Frame 100 MΩ (measured with 500 V DC Megger) Vibration Resistance Between Output and Frame 100 MΩ (measured with 500 V DC Megger) Second (Leakage current of 15 mA or less) Vibration Resistance Between Output and Frame 100 MΩ (measured with 500 V DC Megger) Second (Leakage current of 15 mA or less) Vibration Resistance Between Input and Output Second (Leakage current of 15 mA or less) Second (Leakage current of 15 mA or le	tion	Remo	nte Sensing		over voltager for	Prov	ided	of fatoa voltago	
Temperature Operating Temperature CED operation indicator Temperature Operating Temperature 0 to 50°C (no cover) Relative Humidity Operating Temperature -25 to +85°C Relative Humidity Operating Temperature -25 to +85°C Insulation Withstand Voltage (see Note 5) Between Input and Output Between Input and Frame Between Output and Frame Between Input and Frame 2000 V AC for 1 minute, 2400 V AC for 1 second (Leakage current of 15 mA or less) Insulation Resistance Between Input and Output Between Output and Frame Between Output and Frame 100 MΩ (measured with 500 V DC Megger) Vibration Resistance Between Output and Frame Between Output and Frame 100 MΩ (measured with 500 V DC Megger) Vibration Resistance Open frame 100 MΩ (measured with 500 V DC Megger) Vibration Resistance 0 to 55 Hz, 2 G, 1 hour (in X, Y, and Z directions) Cooling Requirements Natural air cooling External Appearance Open frame (with optional cover) Size (dimensions in mm) 65 x 200 x 93 (W x D x H) (without cover) Weight Designed to meet UL 1950 Safety Standards Designed to meet US 60950 Besigned to meet CSA (222 No. 234 Designed to meet CSA (220 t	unc	Remo	nte On/Off Control			Not pr	nvided		
Temperature Operating Temperature O to 50°C (no cover) Temperature 0 to 50°C (no cover) 25 to +85°C Relative Humidity Operating Humidity 30 to 90% (no condensation) Insulation Withstand Voltage (see Note 5) Between Input and Output Between Input and Frame Between Output and Frame Between Input and Frame Between Input and Frame 2000 V AC for 1 minute, 2400 V AC for 1 second (Leakage current of 15 mA or less) Insulation Resistance Between Input and Output Between Input and Frame Between Output and Frame Between Output and Frame 100 MΩ (measured with 500 V DC Megger) Vibration Resistance Between Input and Frame Between Output and Frame 100 to 55 Hz, 2 G, 1 hour (in X, Y, and Z directions) Cooling Requirements Natural air cooling Natural air cooling External Appearance Open frame (with optional cover) Size (dimensions in mm) Weight 900 g (open frame) 900 g (open frame) Safety Standards Designed to meet UL 1950 Designed to meet EN 60950 EMI Standards Designed to meet VDE 0871 Class A (200 to 240 V AC) Designed to meet VDE 0871 Class A (200 to 240 V AC)	a III	Displ	av		LED operation indicator				
Torage Temperature -25 to +85°C Relative Humidity Operating Humidity 30 to 90% (no condensation) Storage Humidity 30 to 90% (no condensation) Storage Humidity 30 to 90% (no condensation) Insulation Withstand Voltage (see Note 5) Between Input and Output Between Output and Frame Between Output and Frame Between Output and Frame 2000 V AC for 1 minute, 2400 V AC for 1 second (Leakage current of 15 mA or less) Insulation Resistance Between Input and Output Between Output and Frame Between Output and Frame 100 MΩ (measured with 500 V DC Megger) Vibration Resistance Between Input and Output Between Output and Frame 100 to 55 Hz, 2 G, 1 hour (in X, Y, and Z directions) Cooling Requirements Natural air cooling External Appearance Open frame (with optional cover) Size (dimensions in mm) 65 x 200 x 93 (W x D x H) (without cover) Weight 900 g (open frame) Safety Standards Designed to meet UL 1950 Designed to meet EN 60950 Designed to meet FCC Class B (100 to 120 V AC)	al	Temperature Operating Temperature			0 to 50°C (no cover)				
Note Operating Humidity 30 to 90% (no condensation) Insulation Withstand Voltage (see Note 5) Between Input and Output Between Input and Frame Between Output an	nent			Storage Temperature	-25 to +85°C				
Number Name Storage Humidity 30 to 90% (no condensation) Insulation Withstand Voltage (see Note 5) Between Input and Output Between Input and Frame Between Output and Frame Between Output and Frame Between Input and Output Between Input and Output Between Input and Output Between Input and Frame Between Output and Frame Between Output and Frame Between Output and Frame Between Output and Frame 2000 V AC for 1 minute, 2400 V AC for 1 second (Leakage current of 15 mA or less) 500 V AC for 1 minute, 600 V AC for 1 second (Leakage current of 15 mA or less) Vibration Resistance Between Input and Output Between Output and Frame Between Output and Frame 100 MΩ (measured with 500 V DC Megger) Vibration Resistance Detween Output and Frame Between Output and Frame 10 to 55 Hz, 2 G, 1 hour (in X, Y, and Z directions) Cooling Requirements Vibration Resistance 00 pen frame (with optional cover) Size (dimensions in mm) 65 x 200 x 93 (W x D x H) (without cover) Weight 900 g (open frame) Safety Standards Designed to meet UL 1950 Designed to meet UL 1950 EMI Standards Designed to meet VDE 0871 Class A (200 to 240 V AC) Designed to meet VDE 0871 Class A (200 to 240 V AC)	ronr	Relat	ive Humidity	Operating Humidity	30 to 90% (no condensation)				
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Designed to meet FCC Class B (100 to 120 V AC)		EMI Standards			Designed to meet VDE 0871 Class A (200 to 240 V AC)				
				Designed to meet FCC Class B (100 to 120 V AC)					

Note 1: Rated input/output conditions means that the switching power supply is operated under the rated input voltage, rated output voltage, rated output voltage, rated output voltage, rated output current, and at an ambient temperature of 25°C and 60% humidity.

Note 2: At cold start. (More current may flow at restart.)

Note 3: All output characteristics are measured at a point 5 cm from the output connector, with a 63 V 47 µF electrolytic capacitor attached at that point.

Note 4: Ripple noise is measured with a 100 MHz oscilloscope, using a 1:1 probe. Note 5: At room temperature and normal humidity.



Chassis : SPCC MFZnPII-a3, t1.0.

P.C.B. : CEM-3, t1.6 single-sided (UL94V-0).

- (For connector type terminal model only).
- 3. Tolerance of dimensions : ±0.5mm if not indicated



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P.C.B. : CEM-3, t1.6 single-sided (UL94V-0).

3. Tolerance of dimensions : ±0.5mm if not indicated

