

**Features:**

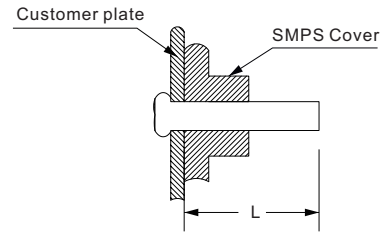
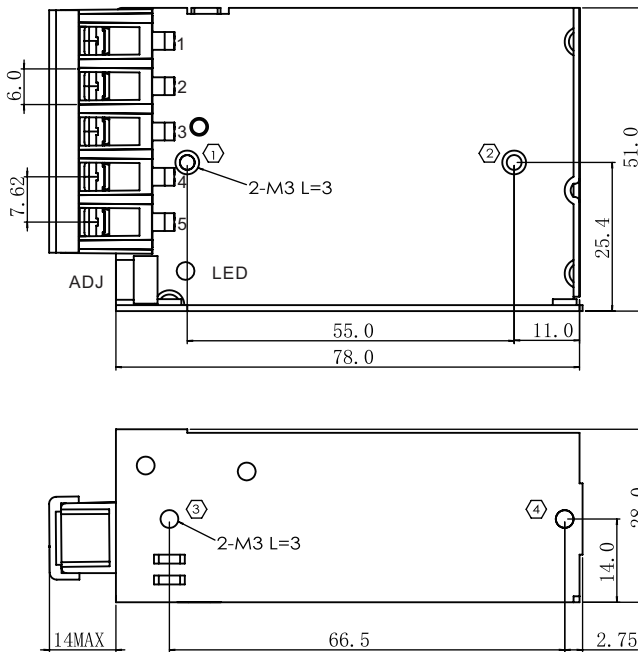
- Universal AC input / Full range
- Withstand 300VAC surge input for 5 second
- No load power consumption < 0.3W
- Miniature size and 1U Low profile
- High operating temperature up to 70 °C
- Protections: Short circuit /Over load /Over voltage
- Cooling by free air convection
- Operating altitude up to 5000 meters
- Withstand 5G vibration test
- High efficiency, long life and high reliability
- LED indicator for power on
- 100% full load burn-in test
- 3 years warranty

**Specification**

MODEL		SM-20-5	SM-20-12	SM-20-15	SM-20-24	SM-20-48
INPUT	VOLTAGE RANGE	85~264Vac 120~370Vdc(refer to ‘static characteristic’)				
	FREQUENCY RANGE	47~63Hz				
	EFFICIENCY(Typ.)	83%	86%	86%	88%	89%
	AC CURRENT(Typ.)	0.5A/115Vac 0.3A/230Vac				
	INRUSH CURRENT(Typ.)	50A/230Vac (cold start)				
	LEAKAGE CURRENT	<0.75mA/240Vac				
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	48V
	RATED CURRENT	4A	1.67A	1.34A	0.84A	0.42A
	CURRENT RANGE	0~4A	0~1.67A	0~1.34A	0~0.84A	0~0.42A
	RATED POWER	20W	20W	20.1W	20.16W	20.16W
	RIPPLE&NOISE(max.)	50mVp-p	100mVp-p	120mVp-p	120mVp-p	150mVp-p
	VOLTAGE ADJ.RANGE	4. 5~5.5V	10.2~13.8V	13.5~18V	21.6~28.8V	43.2~52.8V
	VOLTAGE TOLERANCE	±2%	±1%	±1%	±1%	±1%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1000ms,100ms/230Vac 2000ms,100ms/115Vac at full load				
	HOLD UP TIME(Typ.)	30ms/230Vac 12ms/115Vac at full load				
PROTECTION	OVER LOAD	≥120% rated output power				
		Protection type: Hiccup mode, recovers automatically after fault condition is removed				
	OVER VOLTAGE	5.75-6.9V	13.8~16.2V	18.75~21.75V	28.8~33.6V	55.2~64.8V
		Protection type: Hiccup mode ,recovers automatically after fault condition is removed				
ENVIRONMENT	WORKING TEMP	-30~+70℃ (Refer to ‘derating curve’)				
	WORKING HUMIDITY	20~90% RH non-condensing				
	STORAGE TEMP,HUMIDITY	-40~+85℃, 10~95% RH non-condensing				
	TEMP. COEFFICIENT	±0.03%/℃ (0~50℃)				
	VIBRATION	10~500Hz, 5G 10min./1 cycle, period for 60 min. each along X、Y、Z axes				

Safety and electromagnetic compatibility	Safety standards	Refer to UL62368-1,TUV EN62368-1,CCC GB4943.1		
	Withstand voltage and isolation resistance	I/P-O/P: 3KVac; 100MΩ / 500Vdc / 25℃ / 70%RH		
		I/P-FG: 2KVac; 100MΩ / 500Vdc / 25℃ / 70%RH		
		O/P-FG: 0.5KVac; 100MΩ / 500Vdc / 25℃ / 70%RH		
	Electromagnetic	Parameter	Standard	Test Level / Note
		Conducted emission	BS EN/EN55032(CISPR32),FCC PART 15 / CISPR22 ,GB9254.1	Class B
		Radiated emission	BS EN/EN55032(CISPR32),FCC PART 15 / CISPR22 ,GB9254.1	Class B
		Harmonic current	BS EN/EN61000-3-2,GB17625.1	Class A
		Voltage flicker	BS EN/EN61000-3-3	-----
	Electromagnetic compatibility immunity	BS EN/EN55035		
		Parameter	Standard	Test Level /Note
		ESD	BS EN/EN61000-4-2	Level 4, 8KV air, Level 2, 4KV contact, criteria A
		RF field susceptibility	BS EN/EN61000-4-3	Level 3, criteria A
		EFT bursts	BS EN/EN61000-4-4	Level 3, criteria A
		Surge susceptibility	BS EN/EN61000-4-5	Level 3, 1KV/L-N, 2KV/L/N-FG criteria A
Conducted susceptibility		BS EN/EN61000-4-6	Level 3, criteria A	
Magnetic field immunity		BS EN/EN61000-4-8	Level 4, criteria A	
Voltage dips and interruptions		BS EN/EN61000-4-11	>95% dip 0.5 periods, 30% dip 25 periods , >95% interruptions 250 periods	
OTHERS	MTBF	≥760Khrs MIL-HDBK-217F(25℃)		
	DIMENSION	78*51*28mm(L*W*H)		
	PACKING	0.18Kg; 60pcs/ 11.8Kg/ 0.58 CUFT		
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12” twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor. 3. Tolerance: includes set up tolerance, line regulation and load regulation. 4. Line regulation is measured from low line to high line at rated load. 5. Load regulation is measured from 0% to 100% rated load 6. Length of set up time is measured at cold first start, Turning ON/OFF the power supply very quickly may lead to increase of the set up time. 7. The ambient temperature derating of 5℃/1000m is needed for operating altitude great than 2000m(6500ft). 8. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives.			

## Mechanical specification



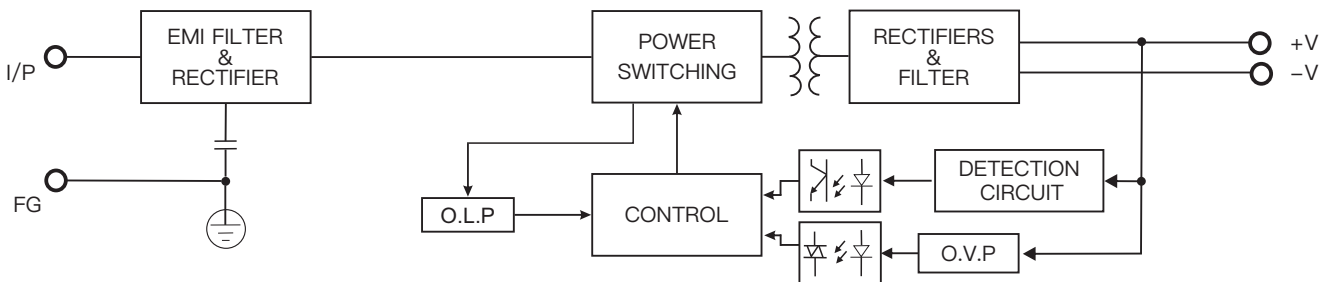
NOTE:  
Unit: mm  
ADJ: Output adjustable resistor  
Torque: M3, 0.5N · m Max  
TOL: ±1.00

Position No.	Screw Size	L max	Torque max
1-2	M3	3mm	0.4N · m
3-4			

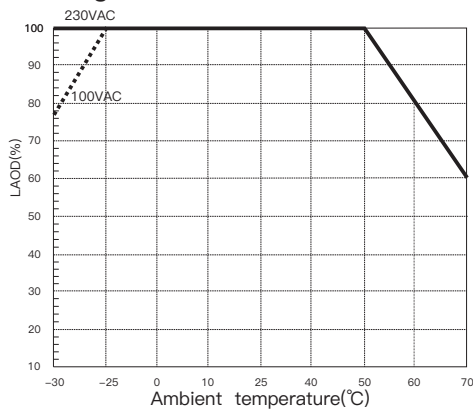
### Screw Terminal

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT -
2	AC/N	5	DC OUTPUT +
3	FG		

## Block diagram



### Derating curve



### Static characteristics

