

## Single Phase Power Supply



### Benefits

- **Universal AC, DC input range.** SPPC Series can be powered with AC Voltage (85-90 VAC to 264 VAC) or with DC Voltage (120-127 VDC to 370 VDC).
- **Reliable power in very compact dimensions.** High compactness, miniature size, long life and high power density, efficiency and reliability.
- **Reliable critical Protection.** The operation safety is guaranteed by the various output protections: Over Voltage (OVP), Over Load (OLP), Short Circuit (SCP), Over Power (OVP) and Over Temperature (OTP) depending on the model.
- **Built-in active PFC function.** PF >0.95 (for 150W to 800W models).
- **Built-in features.** Built-in Fan Speed Control, remote sense function, DC OK signal depending on the model.
- **Wide operating ambient temp.** The operating temperature range is from -20 / -30°C to +65 / 70°C depending on the model, and a Storage temperature range from -40°C / +85°C.

### Description

Enclosed Switching Power Supply for AC DC and DC DC power requirement. The new SPPC family provides flexible OEM power solutions for industrial control and automation applications. This Series is available with range from 25W to 800W, and from 5V to 24V. All the range carries full certification offering a wide range of universal input and screw terminal connections.


### Applications

This product is suitable for all applications which require single-phase power supply with universal AC or DC voltage input range, high efficiency, and high compactness for panel mounting solution.

### Main functions

- Compact dimensions of up to 28.8 mm height
- High efficiency up to 90%
- Universal AC, DC input voltage range
- 25W, 35W, 50W, 75W, 150W, 200W, 240W, 320W, 480W, 600W, 800W
- Screw terminals


## References

 **Order code**

 **SPPC**   1

Enter the code entering the corresponding option instead of

Code	Option	Description	Notes
S	-	Switching	Device typology
P	-	Power supply	
PC	-	Panel mounted	
<input type="checkbox"/>	5	5 VDC	Rated output voltage
	12	12 VDC	
	15	15 VDC	
	24	24 VDC	
	36	36 VDC	
	48	48 VDC	
<input type="checkbox"/>	25	25W	Rated output power
	35	35W	
	50	50W	
	75	75W	
	150	150W	
	200	200W	
	240	240W	
	320	320W	
	480	480W	
	600	600W	
800	800W		
1	-	Single phase input	Input type
<input type="checkbox"/>	-	Basic model	Optional features
	F	Power factor correction	
<input type="checkbox"/>	-	Standard model	
	C	Compact size	

 **Selection guide**




Output voltage	Output power				
	25W	35W	50W	75W	150W
5 VDC	SPPC5251	SPPC5351	SPPC5501	SPPC5751	SPPC51501F
12VDC	SPPC12251	SPPC12351	SPPC12501	SPPC12751	SPPC121501F / C
15 VDC	SPPC15251	-	SPPC15501	-	SPPC151501F
24 VDC	SPPC2451	SPPC24351	SPPC24501	SPPC24751	SPPC241501F / C
36 VDC	-	-	-	-	-
48 VDC	-	-	SPPC48501	SPPC48751	SPPC481501F

Output voltage	Output power					
	200W	240W	320W	480W	600W	800W
5 VDC	SPPC52001FC	-	-	-	-	-
12VDC	SPPC122001FC	SPPC122401FC	SPPC123201FC	SPPC124801FC	SPPC126001FC	-
15 VDC	-	-	-	-	-	-
24 VDC	SPPC242001FC	SPPC242401FC	SPPC243201FC	SPPC244801FC	SPPC246001FC	SPPC248001FC
36 VDC	-	-	-	SPPC364801FC	SPPC366001FC	-
48 VDC	SPPC482001FC	-	SPPC483201FC	SPPC484801FC	SPPC486001FC	SPPC488001FC

## CARLO GAVAZZI compatible components

Purpose	Component name/code	Notes
Bracket for side mounting	SPPX-DINCLIPA	
Bracket for bottom mounting	SPPX-DINCLIPB	
Small square bracket	SPPX-BKTLA	
Medium square bracket	SPPX-BKTLB	
Large square bracket	SPPX-BKTLD	

## Further reading

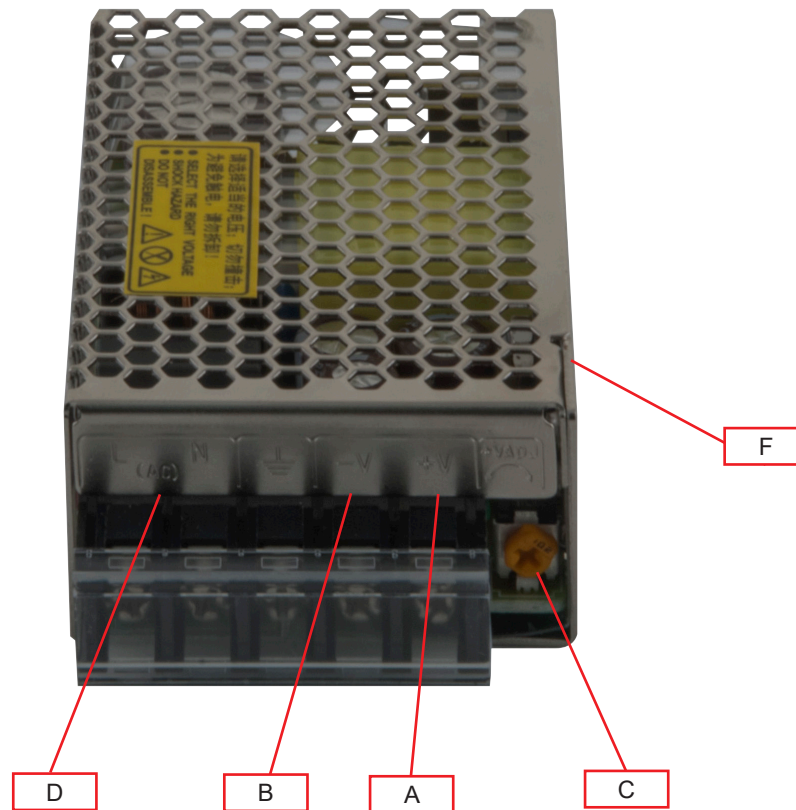
Information	Where to find it	QR
SPPC Data sheet	<a href="http://productselection.net/Pdf/UK/SPPC_DS.PDF">http://productselection.net/Pdf/UK/SPPC_DS.PDF</a>	
SPPC Installation sheet	<a href="http://www.productselection.net/MANUALS/UK/sppc_im.pdf">http://www.productselection.net/MANUALS/UK/sppc_im.pdf</a>	
SPPC CAD drawings	<a href="http://www.productselection.net/DXF/sppc_cad.zip">http://www.productselection.net/DXF/sppc_cad.zip</a>	

# SPPC



## Structure

SPPC 25W

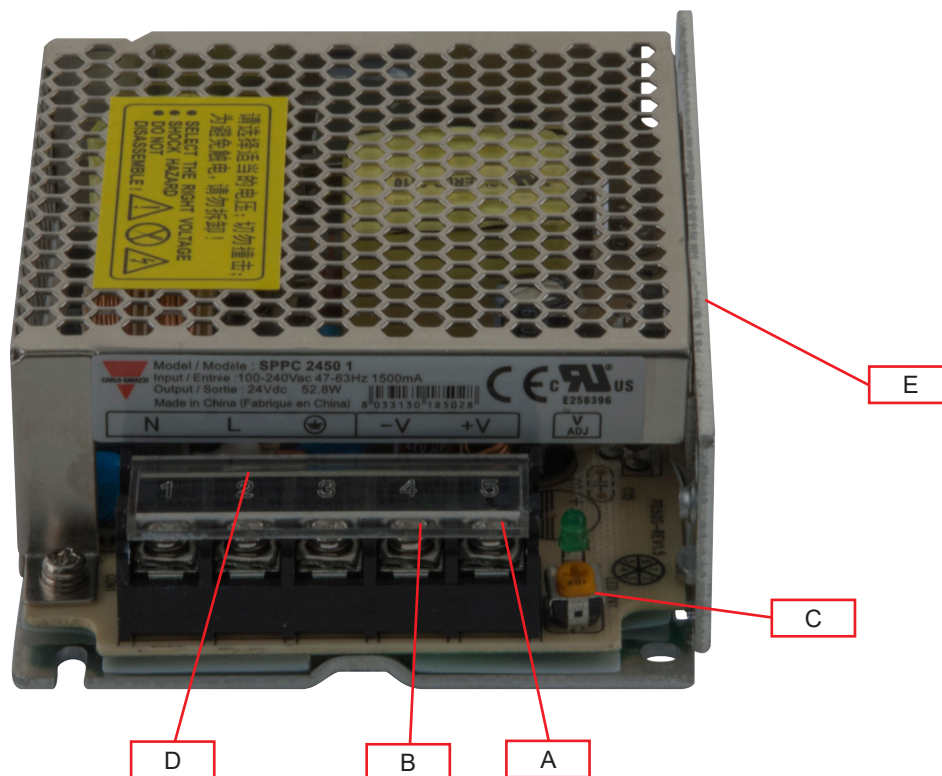


SPPC 25W		
Element	Component	Function
A	+ V terminals	Positive DC output terminals
B	- V terminals	Negative DC output terminals
C	VADJ Trimmer	Output voltage adjustment
D	Power supply terminals	L, N supply terminals + GND
F	Wall Mounting Predisposition	Predispositions present on two sides

# SPPC



## SPPC 35W / 50W / 75W

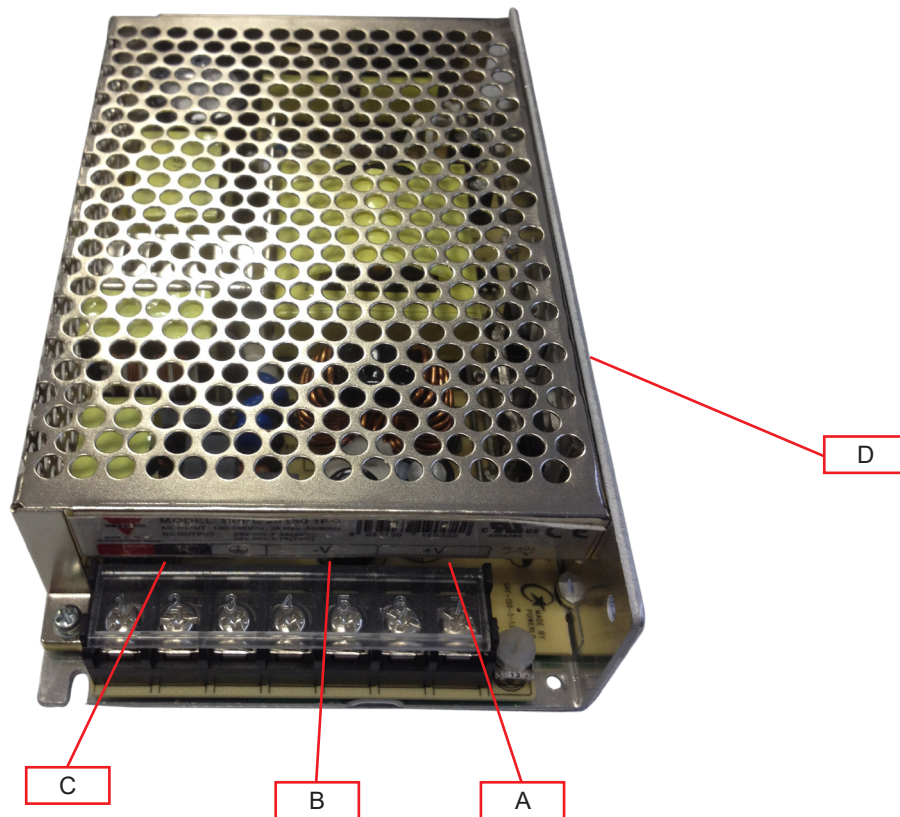


SPPC 35W / 50W / 75W		
Element	Component	Function
A	+ V terminals	Positive DC output terminals
B	- V terminals	Negative DC output terminals
C	VADJ Trimmer	Output voltage adjustment
D	Power supply terminals	L, N supply terminals + GND
E	Wall Mounting Predisposition	Predispositions present on two sides

# SPPC



## SPPC 150W 1F / 150W 1FC



SPPC 150W 1F / 150W 1FC		
Element	Component	Function
A	+ V terminals	Positive DC output terminals
B	- V terminals	Negative DC output terminals
C	Power supply terminals	L, N supply terminals + GND
D	Wall Mounting Predisposition	Predispositions present on two sides

# SPPC



SPPC 200W, 240W, 320W

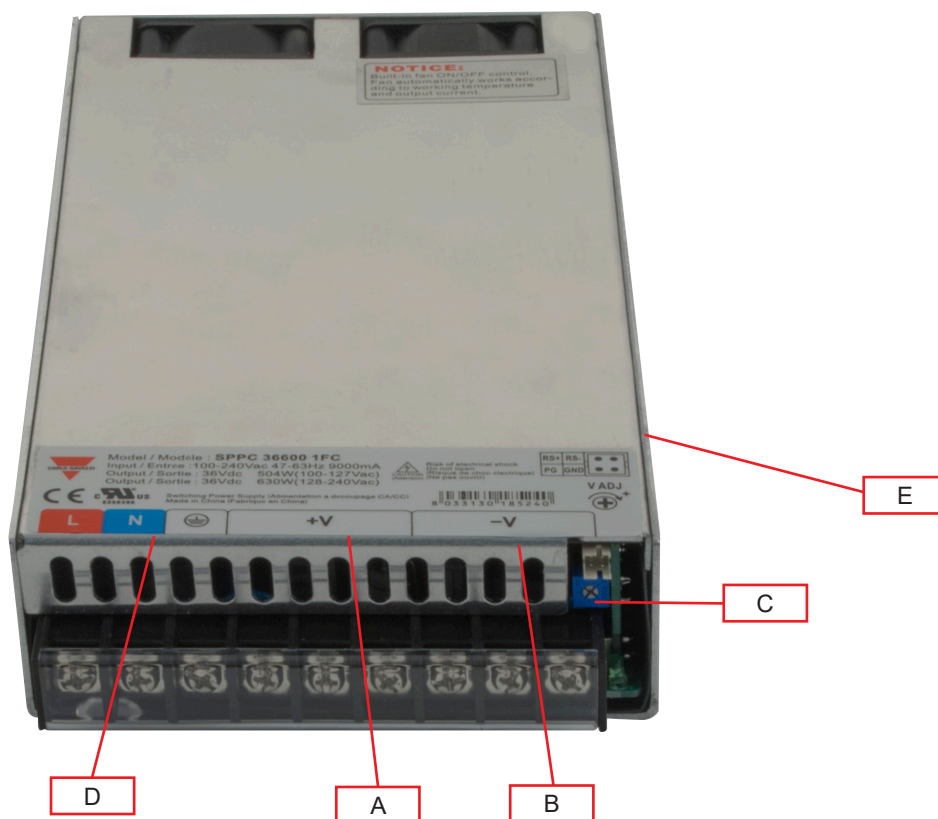


SPPC 200W / 240W / 320W		
Element	Component	Function
A	+ V terminals	Positive DC output terminals
B	- V terminals	Negative DC output terminals
C	VADJ Trimmer	Output voltage adjustment
D	Power supply terminals	L, N supply terminals + GND
E	Wall Mounting Predisposition	Predispositions present on two sides

# SPPC



SPPC 480W / 600W / 800W



SPPC 480W / 600W / 800W		
Element	Component	Function
A	+ V terminals	Positive DC output terminals
B	- V terminals	Negative DC output terminals
C	VADJ Trimmer	Output voltage adjustment
D	Power supply terminals	L, N supply terminals + GND
E	Wall Mounting Predisposition	Predispositions present on two sides



## Features

### General data

SPPC		25W	35W	50W	75W	150W 1F	150W 1FC
Leakage current (input - output)		< 0.25mA					
Earth leakage current (input - PG)		≤ 3.5mA					
Efficiency @115 VAC	output voltage						
	5 VDC	76 %	79 %			80 %	-
	12 VDC	80 %	83 %	84 %		83 %	82.5 %
	15 VDC	-	-	85 %		83 %	-
	24 VDC	84 %	86 %		87 %	84 %	85 %
	48 VDC	-	-	88 %			-
Efficiency @230 VAC	5 VDC	78 %	80 %			82 %	-
	12 VDC	82 %	84 %	85 %		86 %	86 %
	15 VDC	-	-	86 %			-
	24 VDC	85 %	87 %	87 %	88 %		88 %
	36 VDC	-	-	-	-	-	-
	48 VDC	-	-	89 %		87 %	-
Power factor (full load) 110 VAC 230 VAC		-	-	-	-	> 0.98 >0.95	
Ingress protection		IP 20					
MTBF (MIL-HDBK-217F)		> 200.000 hours					
Case material		Metal					
Weights		0.15 Kg (0.33 Lb)	0.19 Kg (0.42 Lb)	0.25 Kg (0.55 Lb)	0.366 Kg (0.8 Lb)	0.65 Kg (1.43 Lb)	0.61 Kg (1.34 Lb)
Switching frequency		65 kHz		-	-	65 kHz	-
Mounting		Panel					
Packing		48 PCS / CTN	60 PCS / CTN	40 PCS / CTN	30 PCS / CTN	10 PCS / CTN	20 PCS / CTN
		G. W: 10.05 kgs (22.1 lb)	G.W: 14.22 kgs (31.3 lb)	G.W: 12.29 kgs (27.1 lb)	G.W: 13.29 kgs (29.2 lb)	G.W: 8.5 kgs (18.7 lb)	G.W: 14.26 kgs (31.4 lb)
		0.03 CBM	0.06 CBM	0.043 CBM	0.044 CBM	0.04 CBM	0.04 CBM

(All specifications are at nominal values, full load, 25°C unless otherwise stated)

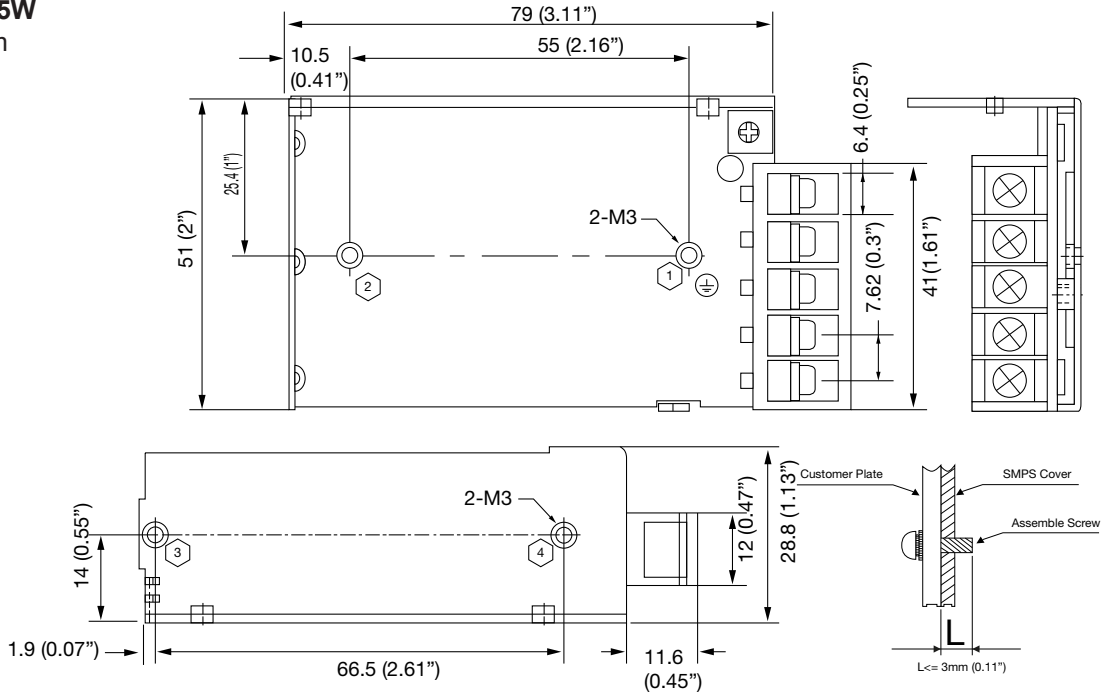
SPPC	200W	240W	320W 1FC	480W	600W	800W	
Leakage current (input - output)	≤ 0.25 mA						
Earth leakage current (input - PG)	≤ 3.5 mA						
Efficiency @115VAC	Output voltage						
	5 VDC	79 %					
	12 VDC	84 %	84 %	84.5 %	88 %	88 %	-
	15 VDC	-	-	-	-	-	-
	24 VDC	86 %	86 %	87 %	89 %	89 %	≥ 88 %
	36 VDC	86 %	-	-	90 %	90 %	-
	48 VDC	87.5 %	-	87.5 %	90 %	90 %	-
Efficiency @230VAC	5 VDC	79 %	-	-	-	-	-
	12 VDC	84 %		84.5 %	88 %		-
	15 VDC	-	-	-	-	-	-
	24 VDC	86 %		87 %	89 %		≥ 88 %
	36 VDC	-	-	-	90 %		-
	48 VDC	87.5 %	-	87.5 %	90 %		≥ 89 %
Power factor (full load) 110 VAC 230 VAC	> 0.98 > 0.95			> 0.98 > 0.96			
Ingress protection	IP 20						
MTBF (MIL-HDBK-217F)	> 200.000 hours						
Case material	Metal						
Weights	780g	810g		1.13Kgs		1.22Kgs	
Switching frequency	83KHz			100KHz			
Mounting	Panel						
Packing	12 PCS / CTN			8 PCS / CTN			
	G.W: 11.4 kgs (25.1 lb)		G.W: 11.6 kgs (25.5 lb)	G.W: 8.7 kgs (19.1 lb)		G.W: 10.97 kgs (24.1 lb)	
	0.04 CBM						

(All specifications are at nominal values, full load, 25°C unless otherwise stated)

## Dimensions

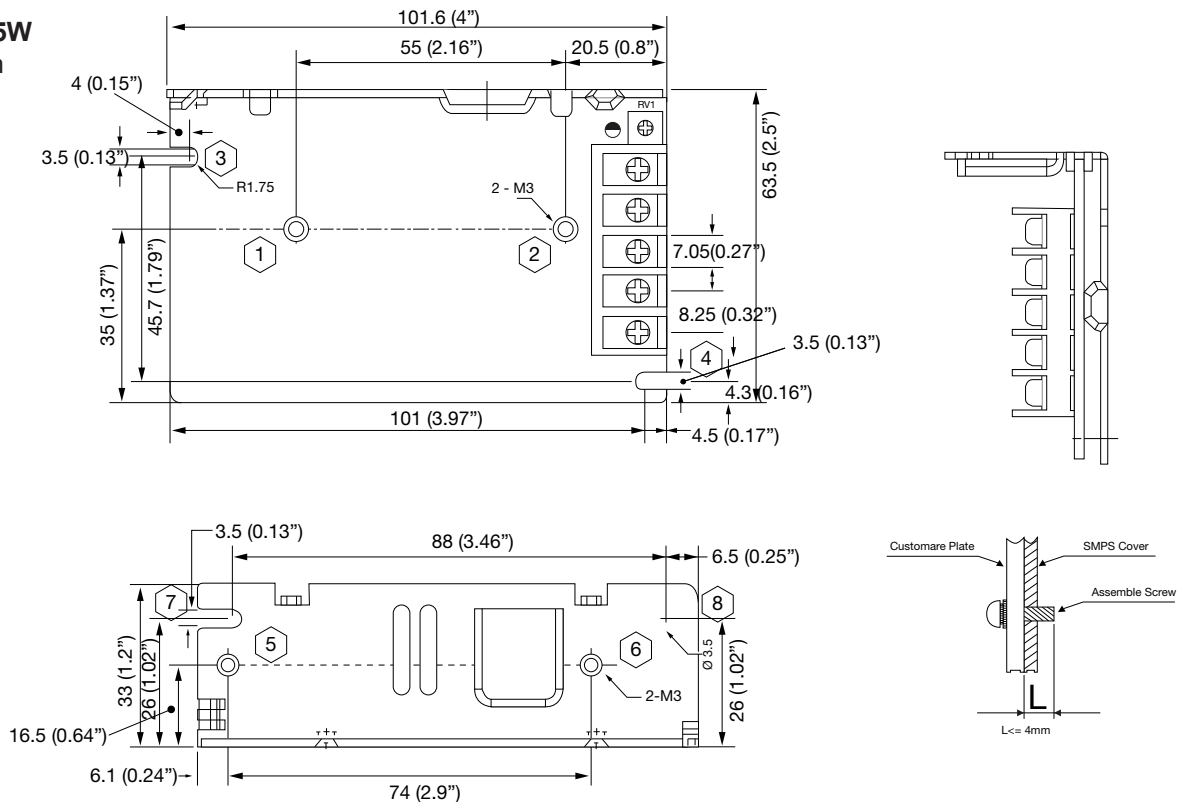
### SPPC 25W

Unit: mm



### SPPC 35W

Unit: mm

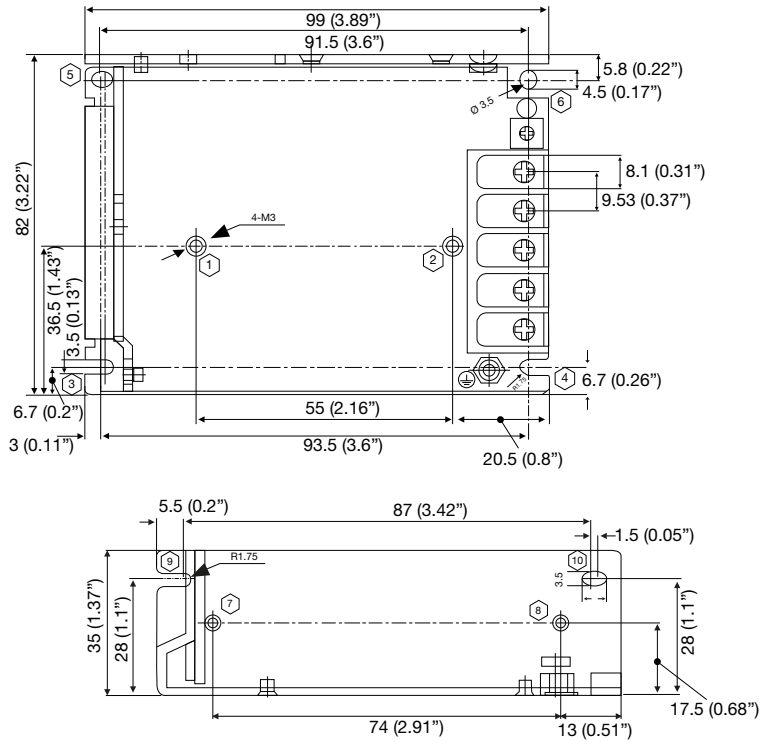


# SPPC



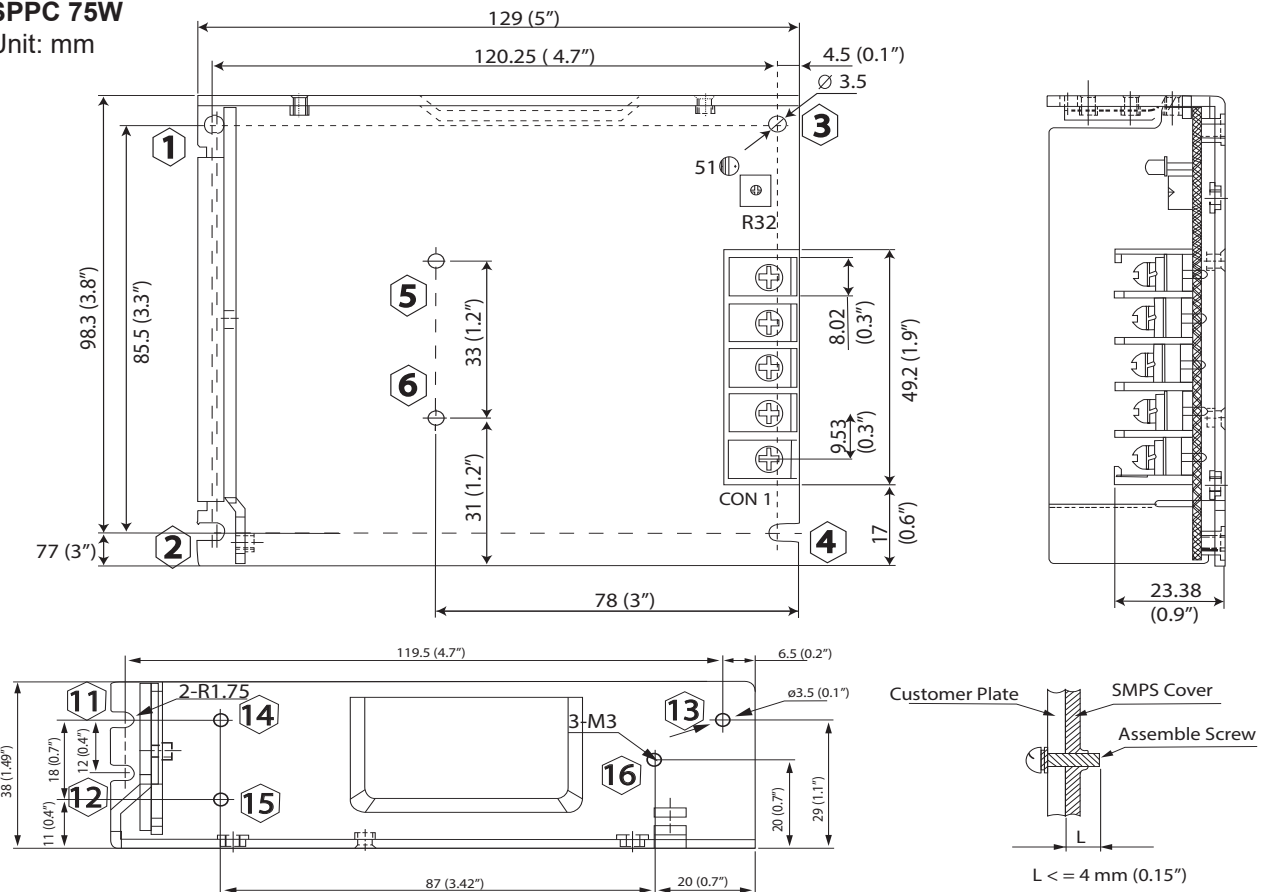
## SPPC 50W

Unit: mm



## SPPC 75W

Unit: mm

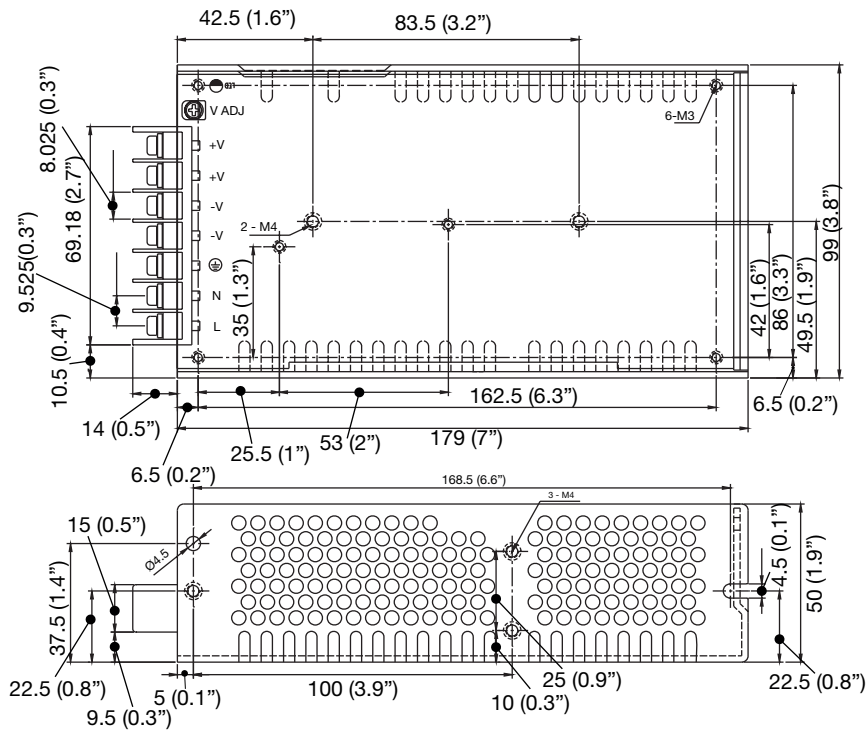


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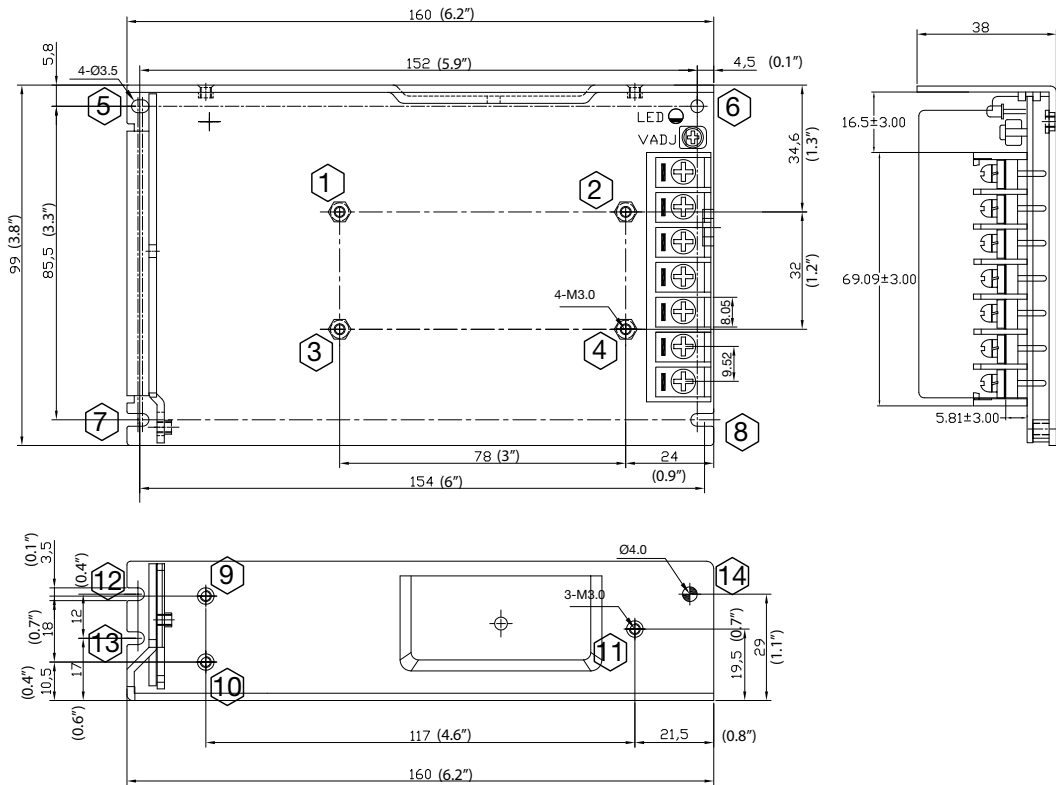
## SPPC 150 1F

Unit: mm



## SPPC 150W 1FC

Unit: mm

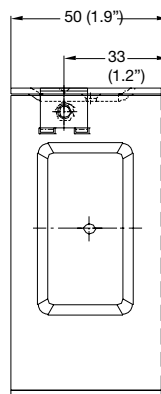
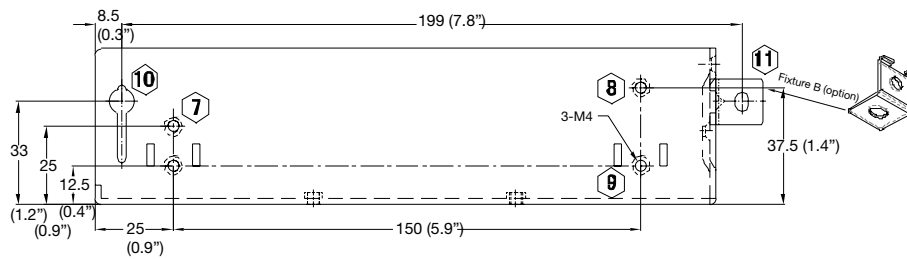
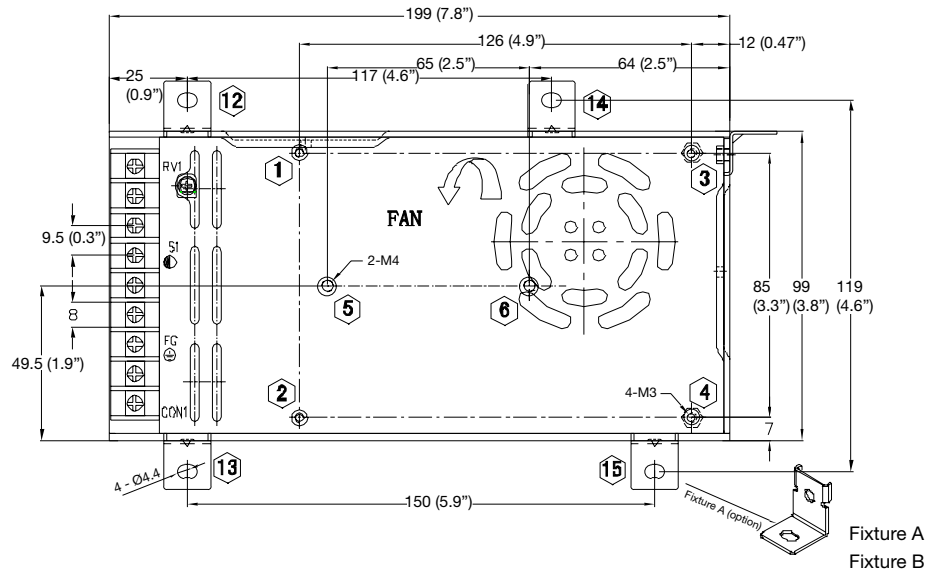


# SPPC



SPPC 200W / 240W / 320W

Unit: mm

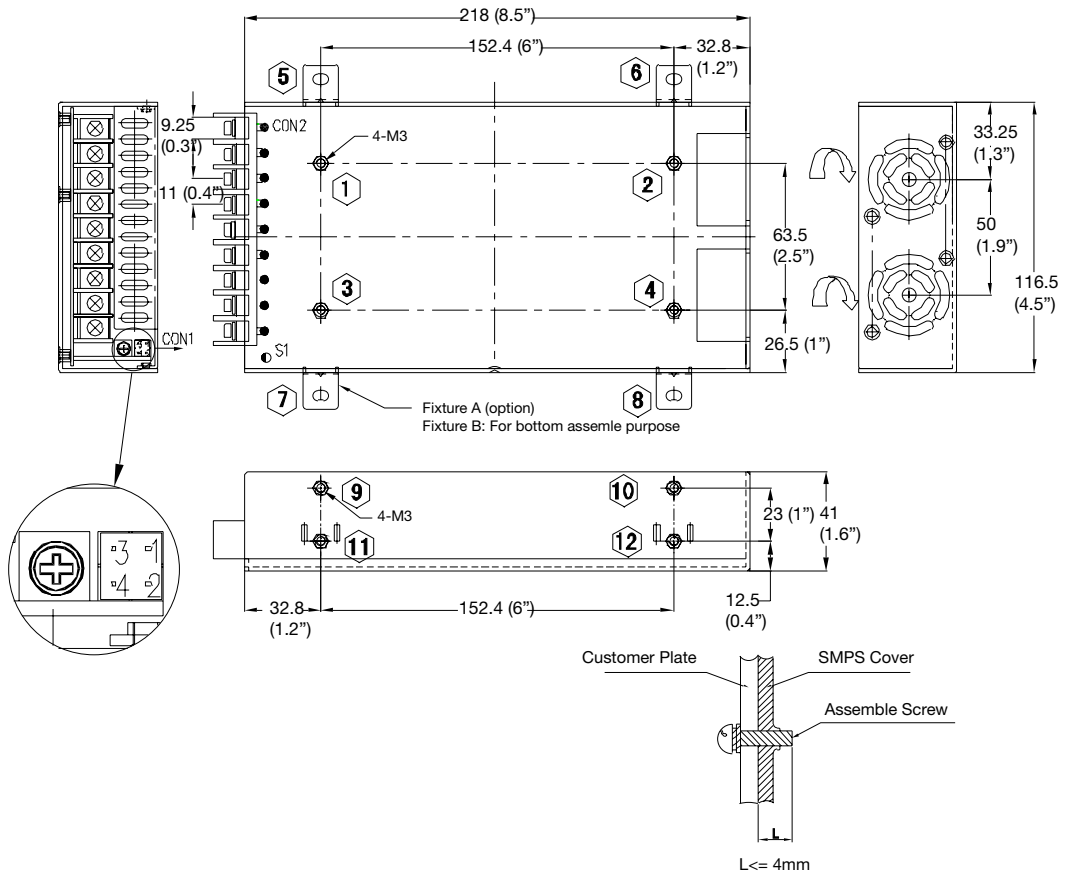


# SPPC



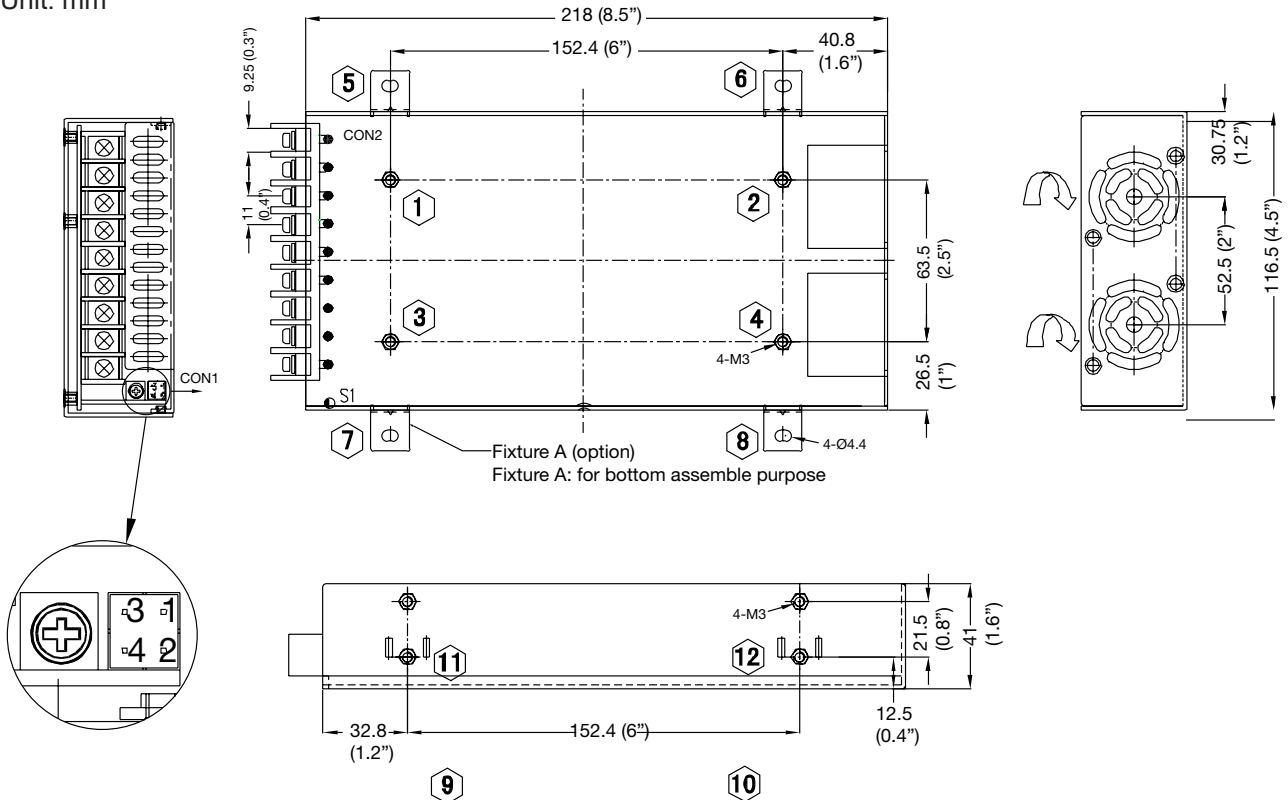
## SPPC 480W

Unit: mm



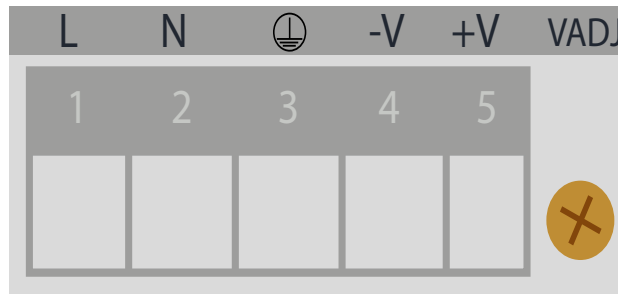
## SPPC 600W / 800W

Unit: mm



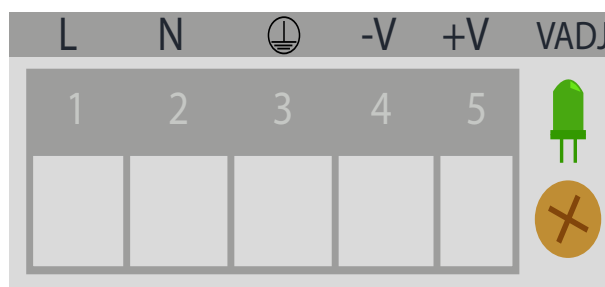
## Connection diagram

### Terminal markings



#### SPPC 25W

Terminal	Designation	Description
1	L	Input terminals (phase conductor, no polarity with DC input)
2	N	Input terminals (neutral conductor, no polarity with DC input)
3	Ground	Ground this terminal to minimize high frequency emissions
4	V-	Negative output terminal
5	V+	Positive output terminal
	Vout ADJ	Potentiometer for output voltage adjustment



#### SPPC 35W

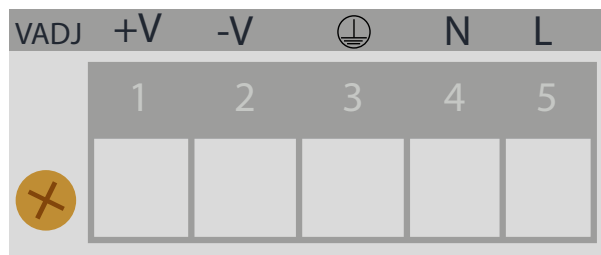
Terminal	Designation	Description
1	L	Input terminals (phase conductor, no polarity with DC input)
2	N	Input terminals (neutral conductor, no polarity with DC input)
3	Ground	Ground this terminal to minimize high frequency emissions
4	V-	Negative output terminal
5	V+	Positive output terminal
	Vout ADJ	Potentiometer for output voltage adjustment
	DC Status	LED indication of power supply output status





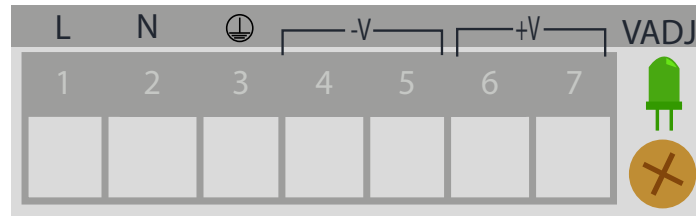
## SPPC 50W / 75W

Terminal	Designation	Description
1	N	Input terminals (neutral conductor, no polarity with DC input)
2	L	Input terminals (phase conductor, no polarity with DC input)
3	Ground	Ground this terminal to minimize high frequency emissions
4	V-	Negative output terminal
5	V+	Positive output terminal
	Vout ADJ	Potentiometer for output voltage adjustment
	DC Status	LED indication of power supply output status



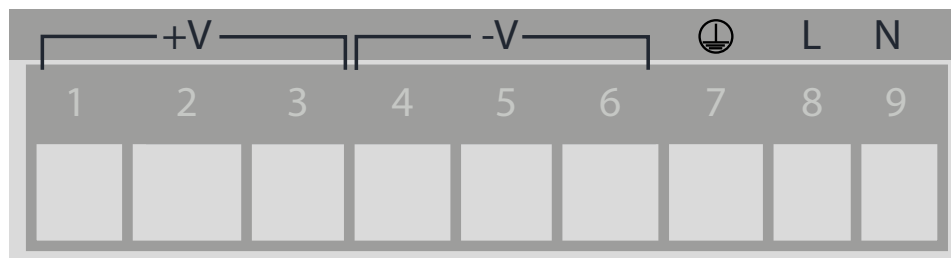
## SPPC 150W 1F

Terminal	Designation	Description
1	V+	Positive output terminal
2	V-	Negative output terminal
3	Ground	Ground this terminal to minimize high frequency emissions
4	N	Input terminals (neutral conductor, no polarity with DC input)
5	L	Input terminals (phase conductor, no polarity with DC input)
	Vout ADJ	Potentiometer for output voltage adjustment



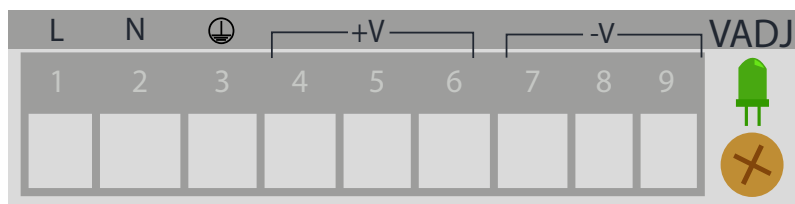
## SPPC 150W 1FC

Terminal	Designation	Description
1	L	Input terminals (phase conductor, no polarity with DC input)
2	N	Input terminals (neutral conductor, no polarity with DC input)
3	Ground	Ground this terminal to minimize high frequency emissions
4, 5	V-	Negative output terminal
6, 7	V+	Positive output terminal
	Vout ADJ	Potentiometer for output voltage adjustment
	DC Status	LED indication of power supply output status



## SPPC 200W / 240W / 320W

Terminal	Designation	Description
1, 2, 3	V+	Positive output terminal
4, 5, 6	V-	Negative output terminal
7	Ground	Ground this terminal to minimize high frequency emissions
8	L	Input terminals (phase conductor, no polarity with DC input)
9	N	Input terminals (neutral conductor, no polarity with DC input)



## SPPC 400W / 600W / 800W

Terminal	Designation	Description
1	L	Input terminals (phase conductor, no polarity with DC input)
2	N	Input terminals (neutral conductor, no polarity with DC input)
3	Ground	Ground this terminal to minimize high frequency emissions
4, 5, 6	V+	Positive output terminal
7, 8, 9	V-	Negative output terminal
	DC Status	LED indication of power supply output status
	Vout ADJ	Potentiometer for output voltage adjustment

## Environmental

SPPC	25W	35W	50W	75W	150W 1F	150W 1FC
Operating temperature range	-20 °C to 70 °C (-4 °F to 158 °F)	-25 °C to 70 °C (-13 °F to 158 °F)			-10 °C to 55 °C (14 °F to 131 °F)	-20 °C to 70 °C (-4 °F to 185 °F)
Storage temperature	-40 °C to 85 °C (-40 °F to 185 °F)					-30 °C to 85 °C (-22 °F to 185 °F)
Humidity	20 % ~ 90 % RH no condensing					
Temperature derating	50 °C (122 °F)					40 °C (104 °F)
Temperature regulation	± 0.03 % / °C ( ± 32.054 % / °F)					

SPPC	200W	240W	320W 1FC	480W	600W	800W
Operating temperature range	-20 °C to 65 °C (-4 °F to 149 °F)			-30 °C to 70 °C (-22 °F to 158 °F)		
Temperature storage	-40 °C to +85 °C (-40 °F to 185 °F)					
Humidity	20 % ~ 90 % RH no condensing					
Temperature derating	50 °C (122 °F)					
Temperature regulation	± 0.03 % / °C ( ± 32.054 % / °F)					

## Compatibility and conformity

SPPC	25W	35W	50W	75W	150W 1F	150W 1FC
Safety standards	UL60950-1 2 <sup>nd</sup> Ed, IEC 60950-1:2005 (2 <sup>nd</sup> Ed); EN60950-1:2006				UL60950-1: EN60950-1:2006	UL60950-1 2 <sup>nd</sup> Ed; IEC 60950-1:2005 (2 <sup>nd</sup> Ed); EN60950-1:2006
EMC Emission: EMI conductor & radiation EMS immunity	Compliance to EN55022, EN55024, FCC PART 15 Class B Compliance to EN61000-4-2,3,4,5,6,8,11					
Harmonic current	Compliance to EN61000-3-2, 3				Compliance to EN61000-3-2, Class D	
EMC immunity	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11; EN55024, EN61000-6-2 Heavy industry level				-	-
CE	CE Approved				EN55024, EN61000-6-2, heavy industry level	CE approved
UL Certification	UL approved					

SPPC	25W	35W	50W	75W	150W 1F	150W 1FC
<b>Vibration resistance</b>	10 ~ 150Hz, 2G 10 min. / 1 cycle, period for 60 min. each along X, Y, Z axes	10~500 Hz, 5G 10 min / 1 cycle, 60 min, each along X, Y, Z axes.				
<b>Shock resistance</b>	20 G, 11 ms, 3 times along X, Y, Z axes					

SPPC	200W	240W	320W 1FC	480W	600W	800W
<b>Safety standards</b>	UL60950-1 2 <sup>nd</sup> Ed; IEC 60950-1:2005 (2 <sup>nd</sup> Ed); EN60950-1:2006					
<b>EMC Emission:</b>						
<b>EMI conduction &amp; radiation</b>	EN55022, EN55024, FCC Part 15 Class B					
<b>EMS immunity</b>	EN61000-4-2, 3, 4, 5, 6, 8, 11					
<b>Harmonic current</b>	Compliance to EN61000-3-2, Class D					
<b>EMC immunity</b>	-	-	-	-	-	-
<b>CE</b>	CE					
<b>UL Certification</b>	UL approved					
<b>Vibration resistance</b>	10 ~ 500 Hz, 2G 10 min. / 1 cycle, period for 60 min. each along X, Y, Z axes			10 ~ 150 Hz, 2G 10 min. / 1 cycle, period for 60 min. each along X, Y, Z axes		10 ~ 500 Hz, 2G 10 min. / 1 cycle, period for 60 min. each along X, Y, Z axes
<b>Shock resistance</b>	20 G / 11 ms pulse, 3 times at each X, Y, Z axes					

## Insulation

SPPC	25W	35W	50W	75W	150W 1F	150W 1FC
<b>Insulation / withstand voltage (I/PE)</b>	Primary - PG: 1.5k VAC / ≤ 10 mA					
<b>Insulation / withstand voltage (I/O)</b>	Primary - Secondary: 3.0k Vac / 10 mA					

SPPC	25W	35W	50W	75W	150W 1F	150W 1FC
Insulation / withstand voltage (O/PE)	Secondary - PG: 0.5k VDC / 10 mA					
Insulation resistance	100 ohms			10M ohms		
Overvoltage category	II					
Pollution degree	2					

SPPC	200W	240W	320W 1FC	480W	600W	800W
Insulation / withstand voltage (I/PE)	Primary - PG: 1.5K VAC/10 mA					
Insulation / withstand voltage (I/O)	Primary - Secondary: 3.0K VAC/10 mA					
Insulation / withstand voltage (O/PE)	Secondary - PG: 0.5k VDC ; ≤ 10 mA	≤ 10 mA Secondary - PG: 0.5k Vac ; ≤10 mA				
Insulation resistance	10M ohms			100M ohms		10M ohms
Overvoltage category	II					
Pollution degree	2					

## Input data

SPPC	25W	35W	50W	75W	150W 1F	150W 1FC
Rated input voltage	100 VAC / 240 VAC					
Input voltage range	88 VAC / 264 VAC					
AC current (max) 115VAC 230VAC	< 0.7 A -	< 1 A -	< 1.3 A -	< 2.5 A -	2.0 A -	
Frequency range	47 Hz ~ 63 Hz					

SPPC	25W	35W	50W	75W	150W 1F	150W 1FC
Inrush current 115 VAC 230 VAC	20 A (120VAC) 40 A	- < 50 A	- 45 A	- <60 A	< 30A < 60 A	< 30 A < 45 A
Internal input fuse	2A / 250 VAC	3.15 / 250 VAC		5 A / 250 VAC	4 A / 250 VAC	5 A / 250 VAC

SPPC	200W	240W	320W 1FC	480W	600W	800W
Rated input voltage	100 VAC / 240 VAC					
Input voltage range	90 VAC ~ 264 VAC, 120 VDC ~ 370 VDC			90 VAC ~ 264 VAC,		
AC current (max) 115 VAC 230 VAC	< 3.5 A -	< 4.5 A -	< 4.5 A -	< 7 A -	≤ 12 A -	
Frequency range	47 Hz ~ 63 Hz					
Inrush current 115 VAC 230 VAC	< 30 A < 50 A			- < 20 A		≤ 20 A (220 VAC)
Internal input fuse	5 A / 250 VAC	6.3 A / 250 VAC		10 A / 250 VAC		15 A / VAC

(All specifications are at nominal values, full load, 25°C unless otherwise stated)

## Output data

SPPC	25W	35W	50W	75W	150W 1F	150W 1FC
Output power	25W	35W	50W	75W	150W	150W
Voltage accuracy	± 2%	± 3%		± 1%		± 2%
Line regulation	± 1%	± 0.5%				
Load regulation	± 2%	± 1%				
Voltage regulation span	-10 % ~ 10 %					

SPPC		25W	35W	50W	75W	150W 1F	150W 1FC
Rated output current at different output voltages	5	5 A	6 A	8 A	12 A	30.0 A	-
	12	2.1 A	3 A	4.2 A	6 A	12.5 A	
	15	1.7 A	2.4 A	3.4 A	5 A	10.0 A	
	24	1.1 A	1.5 A	2.2 A	3.2 A	6.3 A	
	36	-	-	-	-	4.1 A	-
	48	-	0.76 A	1.12 A	1.6 A	3.2 A	
Ripple and noise at different output voltages <small>*Note</small>	5	< 80 mV	< 50 mV (0°C ~ 70°C) < 80 mV (-25 °C ~ 0°C)	< 80 mV (0°C ~ 70 °C) < 80 mV (-25 °C ~ 70°C)	<50mV(0°C ~ 70 °C) <80mV(-25 °C ~ 70°C)	< 100 mV	-
	12	< 120 mV	< 80 mV (0°C ~ 70 °C) < 180 mV(-25 °C ~ 0°C)	< 120 mV (0°C ~ 70 °C) < 200 mV (-25 °C ~ 70°C)	< 80 mV (0°C ~ 70 °C) <200mV(-25 °C ~ 70°C)		≤ 100 mV (0°C ~ 70°C) ≤ 200 mV (-20°C ~ 0°C)
	15	< 150 mV	< 120 mV (0°C ~ 70 °C) < 200 mV (-25 °C ~ 0°C)	< 200 mV (0°C ~ 70 °C) < 300 mV (-25 °C ~ 70°C)			
	24	<240 mV	< 120 mV (0°C ~ 70 °C) < 200 mV(-25 °C ~ 0°C)	< 200 mV (0°C ~ 70 °C) < 300 mV (-25 °C ~ 70°C)	< 240 mV	< 150 mV	
	36	-	-	-	-	< 240 mV	
	48	-	< 180 mV (0°C ~ 70°C) < 240 mV(-25 °C ~ 0°C)	< 200 mV (0°C ~ 70 °C) < 500 mV (-25 °C ~ 70°C)	<120mV (0°C ~ 70 °C) <240mV(-25 °C ~ 70°C)	< 240 mV	≤ 100 mV(0°C ~ 70°C) ≤ 200 mV(-20°C ~ 0°C)
Hold up time 115 VAC 230 VAC	> 10 mS (120VAC) > 20 mS	> 10 mS (120 VAC) > 20 mS	- > 50 mS	> 10 mS (120 VAC) > 20 mS	> 10 mS (220 VAC) -	- > 10 mS	
Set up time 115 VAC 230 VAC	< 2.0 S < 1.0 S	- < 1 S	< 2.0 S < 1.5 S	< 2.0 S < 1.5 S	2.0 S 1.0 S	≤ 3 S ≤ 2 S	
Turn-on overshoot	<+5%						
Overshoot and undershoot	<5%						
Series operation	Support						
Parallel operation	No						
Power boost	No						

\*NOTE: Measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF and 10uF parallel capacitor

**(All specifications are at nominal values, full load, 25°C unless otherwise stated)**



SPPC	200W	240W	320WFC	480W	600W	800W	
Output power	200W	240W	320W	480W	600W	800W	
Voltage accuracy	±1%					±2%	
Line regulation	±0.5%						
Load regulation	±1%					±2%	
Voltage regulation span	-10 % ~ 10 %						
Rated output current at different output voltages	5	40 A	48 A	55 A	-	-	-
	12	16.7 A	20 A	25 A	34 A	42 A	-
	24	8.4 A	10 A	13 A	22 A	26.5 A	33 A
	36	-	-	-	14 A	17.5 A	-
	48	4.2 A	5 A	6.7 A	11 A	13.6 A	16.5 A
Ripple and noise at different output voltages <small>*Note</small>	5	-	-	<150mV (0~65°C) <200mV (-20~0°C)	-	-	-
	12	< 150mV (0~65°C) < 200 mV (-20~0°C)	< 200mV (0~65°C) < 250 mV (-20~0°C)	< 200mV (0~65°C) < 250 mV (-20~0°C)	< 120 mV ( 0°C ~ 70°C) < 180 mV (-30 °C)	< 120 mV ( 0°C ~ 70°C) < 180 mV (-30 °C)	-
	24	< 150mV (0~65°C) < 200 mV (-20~0°C)	< 150mV (0~65°C) < 200 mV (-20~0°C)	<150mV (0~65°C) <200mV (-20~0°C)	< 150 mV( 0°C ~ 70°C)	< 150 mV( 0°C ~ 70°C)	≤ 200 mV
	36	< 200 (0~65°C) < 200 mV (-20~0°C)	-	<200mV (0~65°C) < 200 mV (-20~0°C)	< 150 mV (-30 °C)	< 150 mV (-30 °C)	-
	48	< 150mV (0~65°C) < 200 mV (-20~0°C)	-	< 150mV (0~65°C) < 200 mV (-20~0°C)	< 200 mV ( 0°C ~ 70°C) < 200 mV (-30 °C)	< 200 mV( 0°C ~ 70°C) < 200 mV (-30 °C)	≤ 240 mV
Hold up time 115 VAC 230 VAC	-			-		> 8 mS (220 VAC)	
Set-up Time 115VAC 230VAC	< 4S (120 VAC) - ≤ 2S			> 16 mS		≤ 3 S (220 VAC) - -	
Turn-on overshoot	<+5%						
Overshoot and Undershoot	<5%						
Series Operation	Support						
Parallel Operation	No						
Power Boost	No						

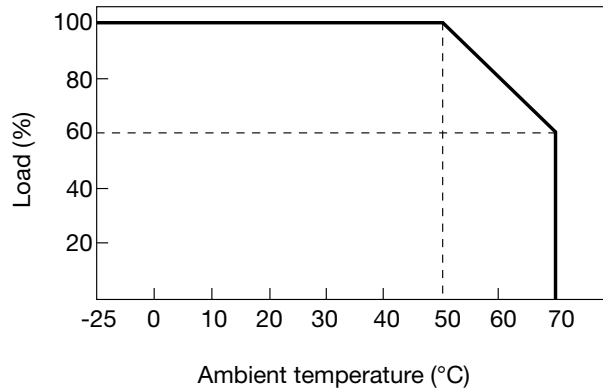
\*NOTE: Measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF and 10uF parallel capacitor

**(All specifications are at nominal values, full load, 25°C unless otherwise stated)**

## Performance

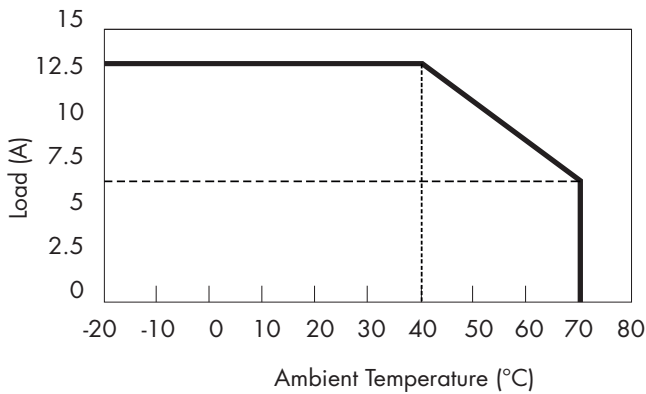
### Current derating

SPPC 25W / 35W / 50W / 75W / 150W 1F / 600W / 800W

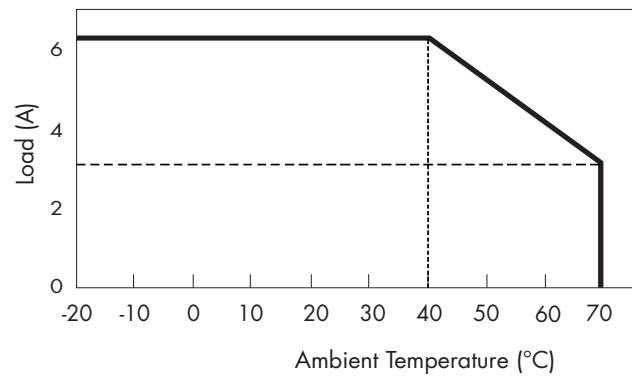


### SPPC 150W 1FC

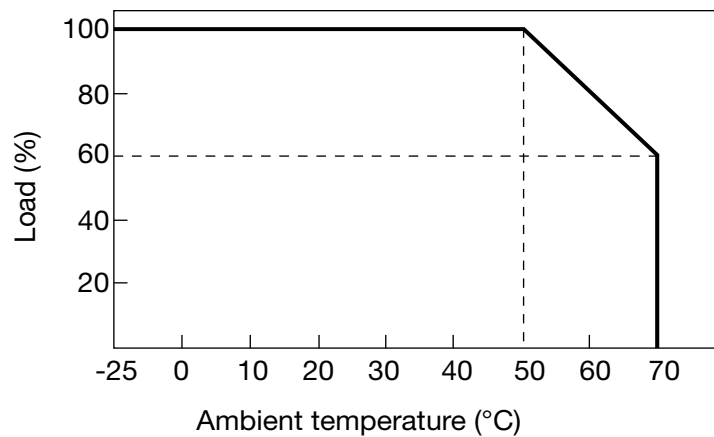
SPPC121501FC



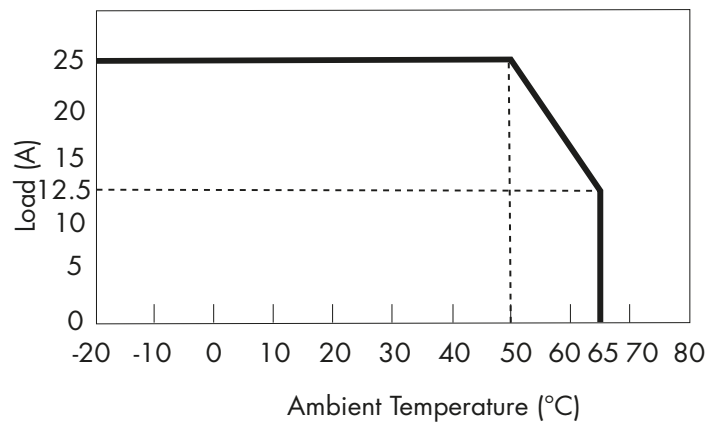
SPPC241501FC



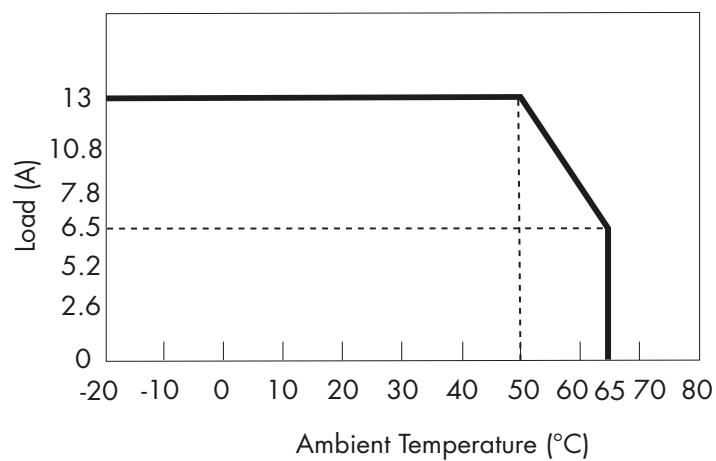
### SPPC 200W / 240W / 480W



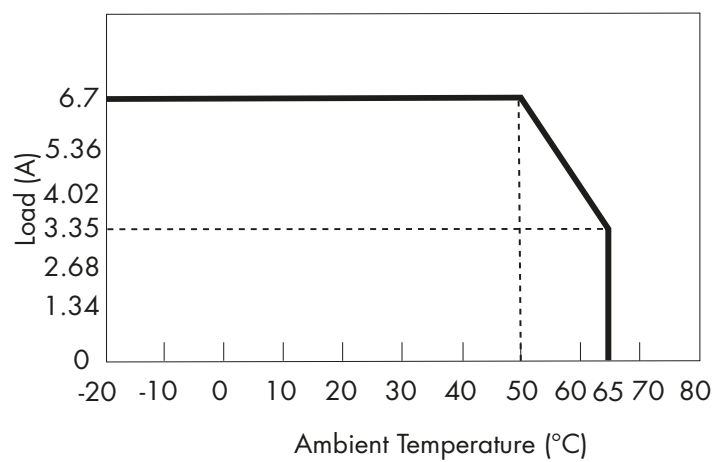
SPPC123201FC



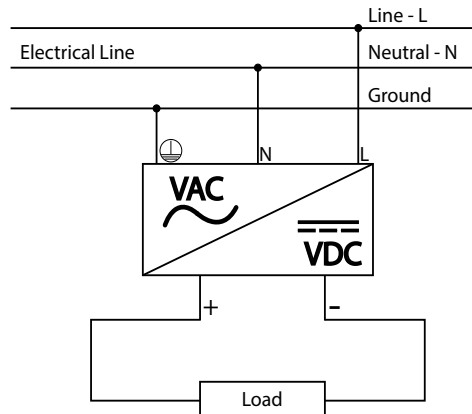
SPPC243201FC



SPPC483201FC



## ▶ Wiring diagram

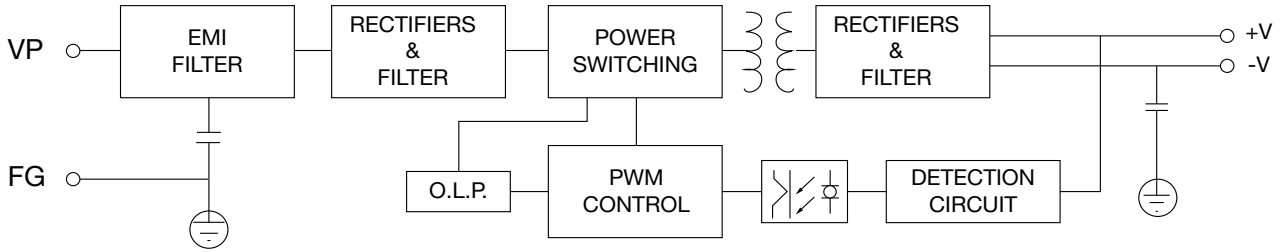


## ▶ Connection specification

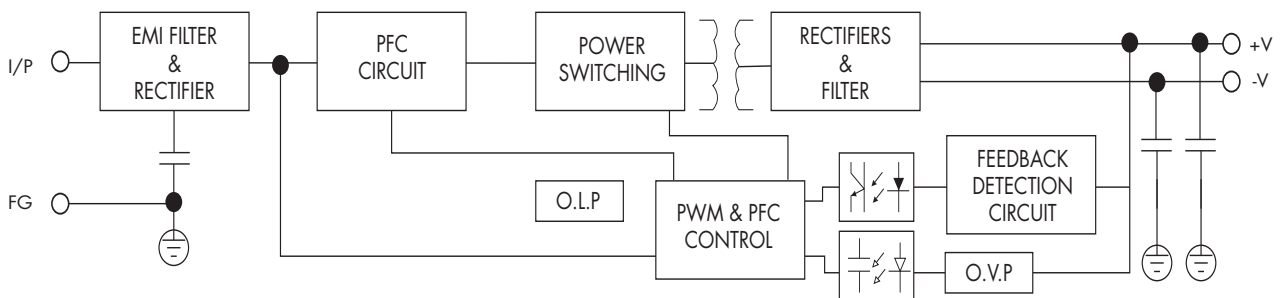
SPPC	25W	35W	50W	75W	150W 1F	150W 1FC
	200W	240W	320W	480W	600W	800W
Terminal type	Input: 6.35 mm 3 PIN screw terminals					
Screw driver blade	3.5 mm slotted or cross screwdriver					
Tightening torque (recommended)	1 Nm					
Flexible conductor cross section max	4 mm <sup>2</sup>					
Flexible conductor cross section min	0.5 mm <sup>2</sup>					
Conductor cross section AWG max	AWG 20 (GND wire >18 AWG)					
Conductor cross section AWG min	AWG 10 (GND wire >18 AWG)					
Rigid conductor cross section min	6 mm <sup>2</sup>					
Rigid conductor cross section max	0.5 mm <sup>2</sup>					
Max wire diameter	2.8 mm <sup>2</sup>					

## Block diagram

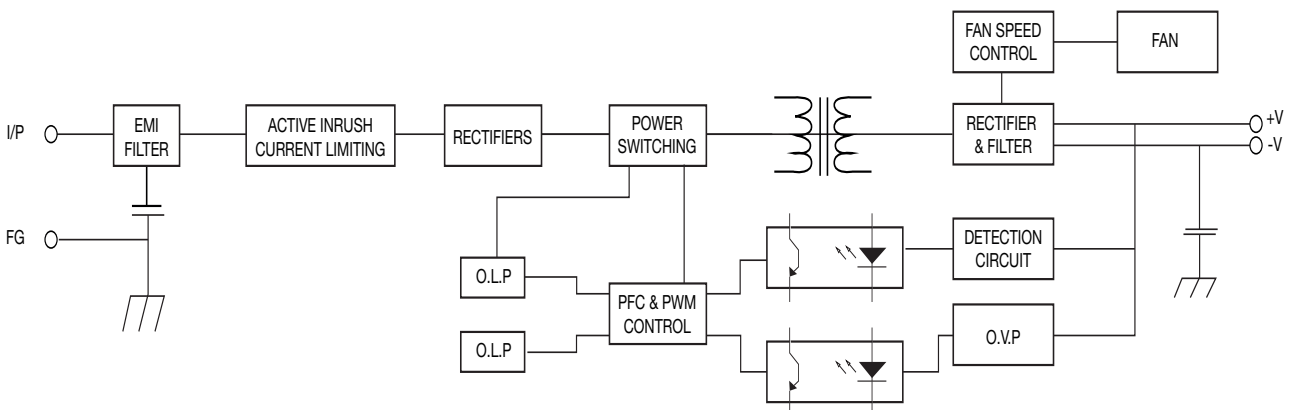
### SPPC 25W / 35W / 50W / 75W



### SPPC 150W 1F / 150W 1FC



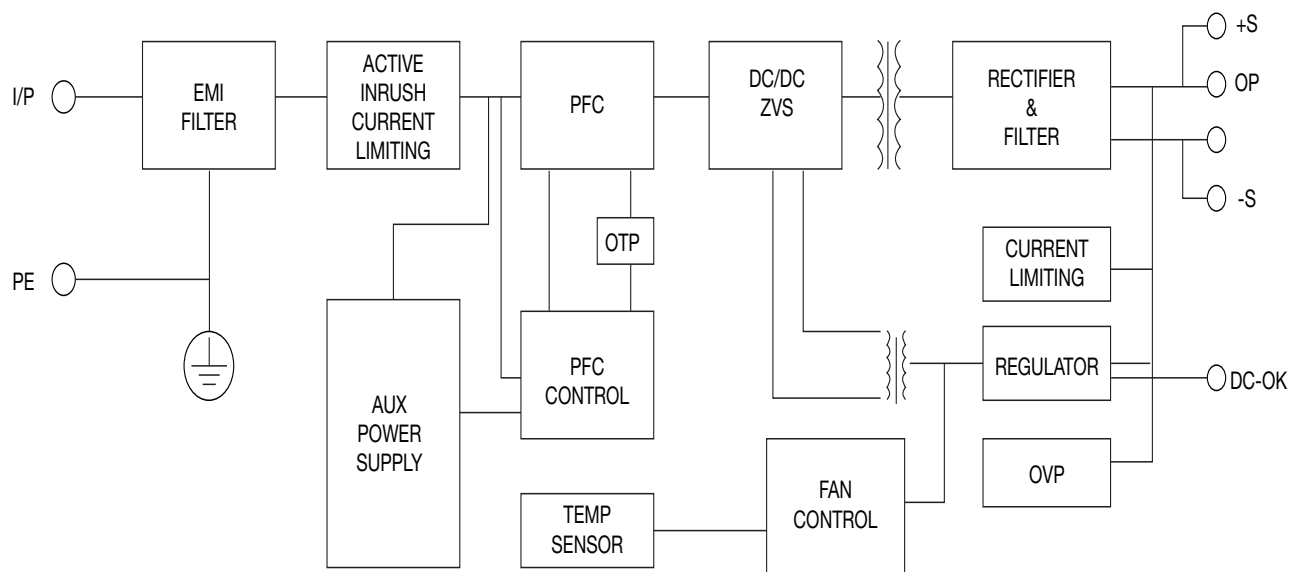
### SPPC 200W / 240W / 320W 1FC



# SPPC



SPPC 480W / 600W / 800W



## Troubleshooting

### ▶ Signalling and controls

SPPC	25W	35W	50W	75W	150W 1F	150W 1FC
	200W	240W	320W 1FC	480W	600W	800W
DC OK LED	Green when output voltage $\geq$ 90% of rated output voltage red when output voltage $\leq$ 80% or rated output voltage or overload					

## Operating description

### ▶ Control and protection

SPPC	25W	35W	50W	75W	150W 1F	150W 1FC
Overvoltage protection	105 % ~ 150 % of rated output current, constant power, auto recovery	105 % ~ 150 % of rated output voltage, Constant voltage	5.75 ~ 7.5V (5VDC) 13.8 ~ 18V (12VDC) 17.25 ~ 22.5V (15VDC) 27.6 ~ 36V (24VDC) 55.2 ~ 72V (48VDC)	5.5 ~ 7.5V (5VDC) 13.2 ~ 18V (12VDC) 16.5 ~ 22.5V (15VDC) 26.4 ~ 36V (24VDC) 52.8 ~ 72V (48VDC)	105 % ~ 150 % of rated output voltage, shut down	14 ~ 18 V (12 VDC) 17.8 ~ 22.5 V (15 VDC) 27 ~ 36 V (24 VDC) 52.5 ~ 72 V (48 VDC)
			Protection type: constant voltage	Protection type: constant voltage, auto recovery		Protection type: Hiccup mode, auto recovery
Overload protection	105 % ~ 150 % of rated output current, constant power, auto recovery		8.4 ~ 12 A (5VDC) 4.41 ~ 6.3 A (12VDC) 3.57 ~ 5.1A (15VDC) 2.31 ~ 3.3A (24VDC) 1.155 ~ 1.65A (48VDC)	12.6 ~ 18A (5VDC) 6.3 ~ 9A (12VDC) 5.25 ~ 7.5A (15VDC) 3.36 ~ 4.8A (24VDC) 1.7 ~ 2.43A (48VDC)	105 % ~ 150 % of rated output current, hiccup mode, auto recovery	13.125 ~ 18.75 A (12 VDC) 10.5 ~ 17 A (15 VDC) 6.93 ~ 9.45 A (24 VDC) 3.36 ~ 4.8 A (48 VDC)
			Protection type: 5V is hiccup mode, rest are constant power, auto recovery	Protection type: 5V is hiccup mode, rest are constant power, auto recovery		Protection type: Hiccup mode, auto recovery
Current limiting	No support					
Short circuit protection	Long - term mode, auto recovery					
Over temperature protection	-	-	-	-	-	105 °C $\pm$ 5 °C (detect on Mosfet temperature); shut down, auto recovery after the temperature goes down to 50 °C

SPPC	200W	240W	320W 1FC	480W	600W	800W
<b>Overvoltage protection</b>	-	-	-	110 % ~ 150 % of rated voltage, constant voltage		110 % ~ 150 % of rated output voltage, constant voltage, auto recovery
<b>Overload protection</b>	18 ~ 30 A (12 VDC) 10 ~ 15 A (24 VDC) 5.88 ~ 8.8 A (36 VDC) 5 ~ 7.56 A (48 VDC)	120 % ~ 170 % of rated output current, Hiccup mode, auto recovery	105 % ~ 150 % of rated output current, hiccup mode, auto recovery	110 % ~ 135 % of rated output current, constant current		
	Protection type: Hiccup mode, auto recovery					
<b>Current limiting</b>	No support					
<b>Short circuit protection</b>	Long - term mode, auto recovery			Long - term mode, constant current, auto recovery		
<b>Over temperature protection</b>	-	-	-	105°C + 5°C (detect on Mosfet temperature); shut down, auto recovery after the temperature goes down to 75°C		105°C + 5°C (detect on Mosfet temperature); shut down, auto recovery after the temperature goes down to 70°C




## Compatible components



### Accessories / power supplies

Power supply	Side mounting	Bottom mounting
SPPC up to 75 W	SPPX - BKTLA + SPPX - DINCLIPA	SPPX - DINCLIPB
SPPC 150 W	SPPX - BKTLB + SPPX - DINCLIPA	NOT AVAILABLE
SPPC 200 W	SPPX - BKTLB + SPPX - DINCLIPA [NOT SUGGESTED*]	SPPX - DINCLIPB [NOT SUGGESTED*]
SPPC 240 W	SPPX - BKTLB + SPPX - DINCLIPA [NOT SUGGESTED*]	SPPX - DINCLIPB [NOT SUGGESTED*]
SPPC 320 W	SPPX - BKTLD + SPPX - DINCLIP [NOT SUGGESTED*]	NOT AVAILABLE
SPPC 480 W and above	NOT AVAILABLE	NOT AVAILABLE
SPPC 150 W 1FC	NOT AVAILABLE	NOT AVAILABLE
SPPA 150 W	SPPX - BKTLB + SPPX - DINCLIPA	NOT AVAILABLE
NOT SUGGESTED*: The mounting is available only with 2 fixing screws		



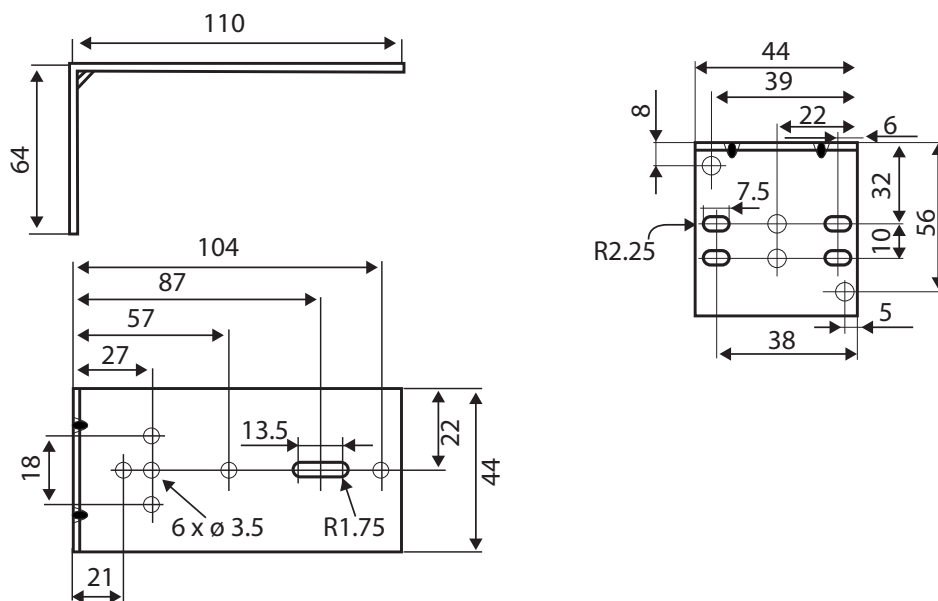
## Structure

Items		
Order number	Description	Image
SPPX - BKTLA	small square	
SPPX - BKTLB	Medium square	
SPPX - BKTLD	Large square	

Items		
Order number	Description	Image
SPPX - DINCLIPA	Bracket for side mounting	
SPPX - DINCLIPB	Bracket for bottom mounting	

## Dimensions

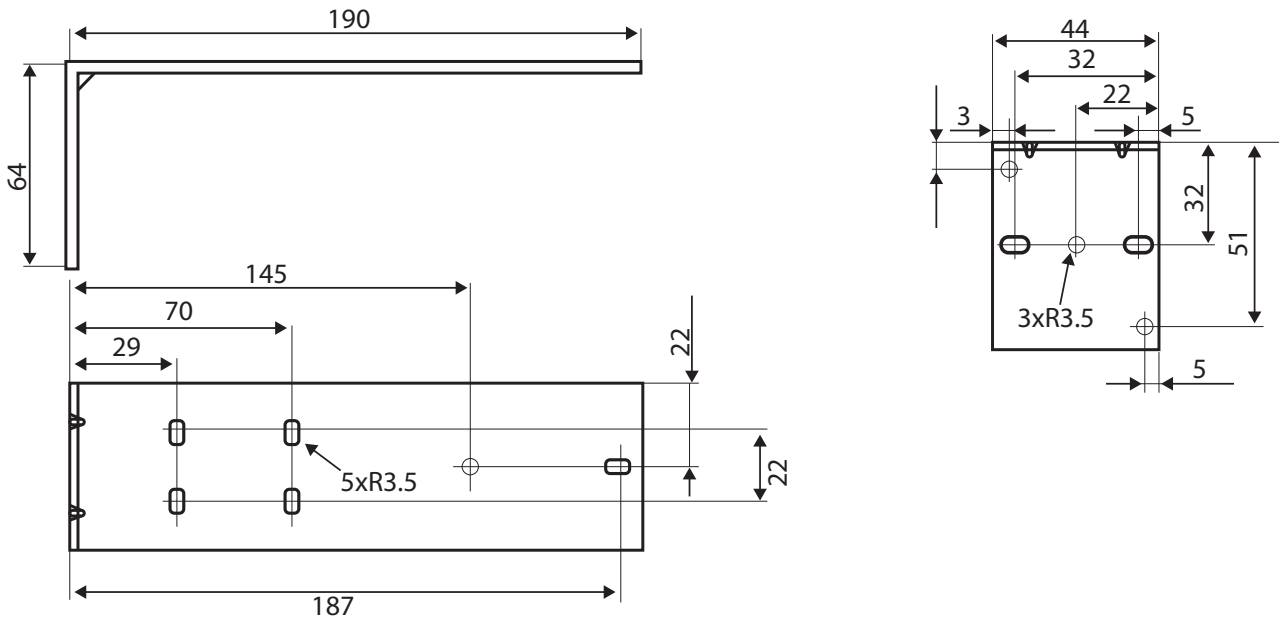
### SPPX - BKTLA bracket



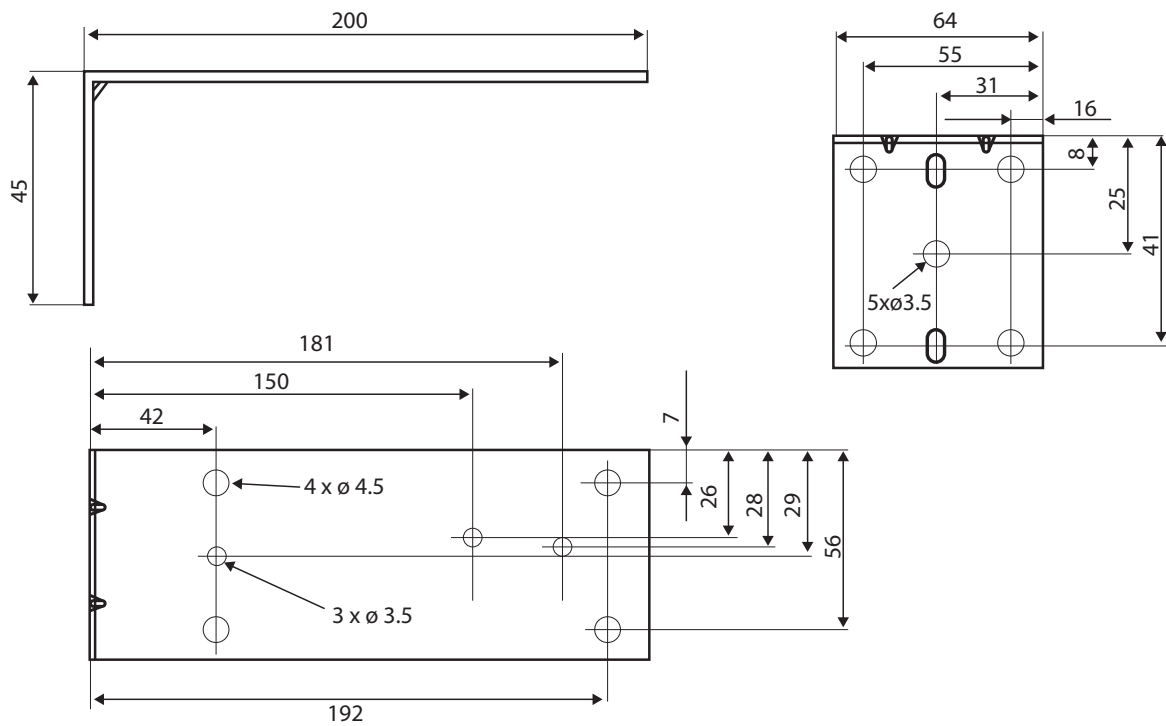
# SPPC



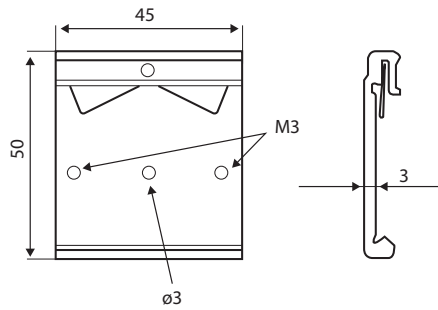
## SPPX - BKTLB bracket



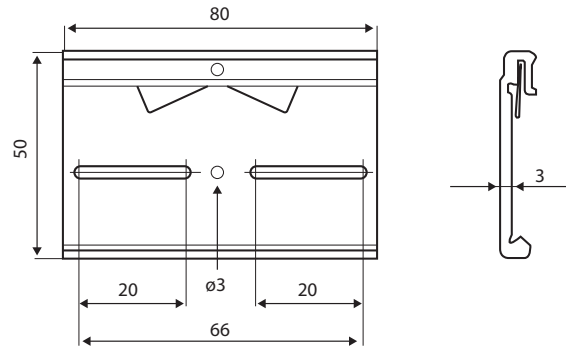
## SPPX - BKTLD bracket



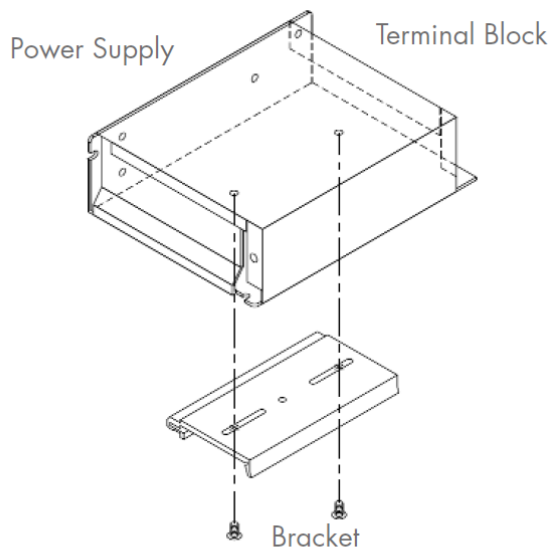
## SPPX - DINCLIP A



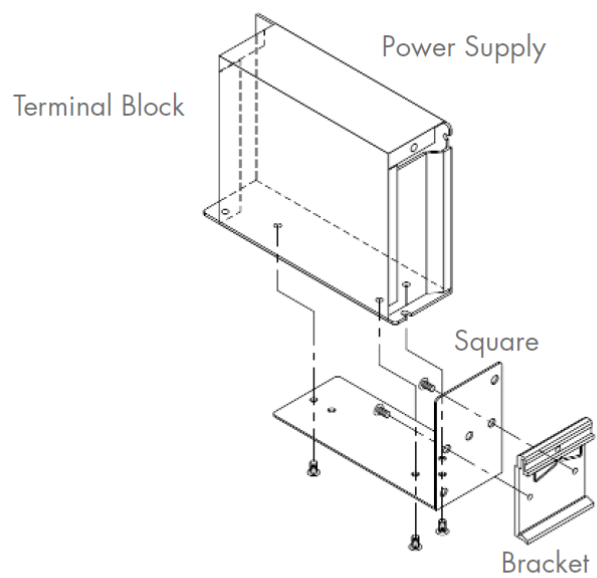
## SPPX - DINCLIP B



### ▶ Mounting Drawings



**Bottom Mounting**



**Side Mounting**

## Glossary



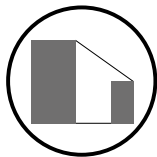
**CE:** "Conformité Européene" or "European Conformity"; Indicates the manufacturer declaration of conformity that the product meets the relevant health, safety and environmental protection requirements of the applicable EC directives.



**cRUUs:** This certification mark is based on the UL60950-1; Information Technology Equipment - Safety - Part 1. The UL60950-1 is applicable to mains-powered or battery-powered information technology equipment, including electrical business equipment and associated equipment, with a rated voltage not exceeding 600 V.



**Economical:** The SPDM is the most economical power supply, offering features and space saving while lowering the cost.



**Reduced dimension:** The footprint is reduced with the SPDM, saving up to 30% space when compared to others.