

PSS I 20

120 W, Single Phase Din Rail
Mountable Switching Power Supplies

FEATURES

- Full Range Input selection from 115 / 230 VAC Auto select
- Typical efficiency of 86%
- Compact design with a width of only 64 mm
- Parallel function available (Switch)
- Two years product warranty



ORDERING INFORMATION

Cat. No.	Input Voltage	Output Wattage	Output Voltage	Output Current	Eff. (min.)	Eff. (typ.)
PSS120/12/10	115~230 VAC	120 WATTS	+ 12 VDC	10 A	82%	84%
PSS120/24/5	115~230 VAC	120 WATTS	+ 24 VDC	5 A	84%	86%
PSS120/24/3.8-L	115~230 VAC	91.2 WATTS	+ 24 VDC	3.8 A	83%	85%
PSS120/48/2.5	115~230 VAC	120 WATTS	+ 48 VDC	2.5 A	85%	87%

SPECIFICATIONS

All Specifications Typical At Nominal Line, Full Load, 25° C Unless Otherwise Noticed

GENERAL		min.	typ.	max.	unit
Characteristics	Conditions				
Switching Frequency	Vi nom, Io nom		55		KHz
Isolation Voltage	Input-Output	3000 / 4242			VAC / VDC
	Input-FG	1500 / 2121			VAC / VDC
Isolation Resistance	Input-Output, @ 500 VDC	100			MΩ
Ambient Temperature	Operating at Vi nom	-35		+ 71	°C
Derating (see derating curve)	Vi nom, from +61°C to +71°C			2.5	% / °C
Storage Temperature	Non Operational	-40		+ 85	°C
Relative Humidity	Vi nom, Io nom	20		95	% RH
Temperature Coefficient	Vi nom, Io min			± 0.03	% / °C
MTBF	Bellcore Issue 6 @40°C, GB		5V model 440000 12V model 450000 24V/E model 486000 24V model 482000		Hours Hours Hours Hours
Altitude During Operation	IEC 60068-2-13			4850	m
Dimension	Screw Terminal Type	L 124.5 x W 64 x D 123.6			mm
Cooling	Free Air Convection				
Pollution Degree			2		
Connection Wire Range	0.2 - 4 sq.mm / 24 - 10 AWG				
Wire Stripping Length	8 mm				
Tightening Torque	Input - 1 Nm (9 lb.in) Output - 0.6 Nm (5.5 lb.in)				
Housing Material	Metal				
Product Weight	920 g				

INPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Rated Input Voltage	Io nom	115 / 230 (auto select)			VAC
Input Voltage Range	Ta min ... Ta max, AC in	90		132	VAC
	Io nom, AC in	180		264	VAC
	Io nom, DC in	210		375	VDC
Input Current	Vi : 115 / 230 VAC, Io nom		2.2 / 0.83		A
Rated Input Current	Vi : 90 / 180 VAC, Io nom			2.8 / 1.4	A
Line Frequency	Vi nom, Io nom	47		63	Hz
Inrush Current	Vi : 115 / 230 VAC, Io nom			24 / 48	A
Power Dissipation	Vi : 230 VAC		24		W
	12V model		20		W
	24V model		19		W
Leakage Current	Input-Output			0.25	mA
	Input-FG			3.5	mA
P.F.C. (Passive)	Vi : 230 VAC, Io nom		0.7		

OUTPUT SPECIFICATIONS					
Characteristics	Conditions	min.	typ.	max.	unit
Output voltage accuracy (Adjusted before shipment)	Vi nom, lo max	0		+ 1	%
Minimum Load	Vi nom	0			%
Line Regulation	lo nom, Vi min ...Vi max			± 0.5	%
Load Regulation	Vi nom			± 1	%
	lo min ...lo nom			± 5	%
Voltage Trim Range	Vi nom,		11.4	14.5	VDC
	0.8 lo nom		22.5	28.5	VDC
		12V model	22.5	24.5	VDC
		48V model	45	55	VDC
Rated Continuous Loading	Vi nom		10 A @ 12Vdc / 8.2 A @ 14.5 Vdc		
		12V model	5 A @ 24Vdc / 4.2 A @ 28.5 Vdc		
		24V model	3.8 A @ 24Vdc / 3.7 A @ 24.5 Vdc		
		48V model	2.5 A @ 48Vdc / 2.1 A @ 55 Vdc		
Hold Up Time	Vi : 115 / 230 VAC, lo nom	25 / 30			ms
Turn On Time	Vi nom, lo nom			1000	ms
	Vi nom, lo nom → 12V model with 7000 µF CAP			1500	ms
Rise Time	lo nom				ms
	Vi nom, lo nom			150	ms
	Vi nom, lo nom → 12V model with 7000 µF CAP				ms
Fall Time	lo nom			500	ms
	Vi nom, lo nom			150	ms
Transient Recovery Time	Vi nom, 1~0.5 lo nom			2	ms
Ripple & Noise	Vi nom, lo nom, BW = 20MHz			50	mV
Power Back Immunity	Vi nom, lo nom				VDC
		12V model	18		VDC
		24V model	35		VDC
		48V model	63		VDC
Capacitor Load	Vi nom, lo nom			7000	µF
		12V model		3500	µF
DC ON Indicator Threshold at start up (Green LED)	Vi nom, lo nom		10	11.2	VDC
		12V model	17.6	19.4	VDC
		24V model	37	43	VDC
		48V model	10	11.2	VDC
DC LOW Indicator Threshold at start up (Green LED)	Vi nom, lo nom		17.6	19.4	VDC
		12V model	37	43	VDC
Parallel Operation	0.1 lo min ~ 0.9 lo max (Except 24V/E models)			3	unit
Efficiency	Vi nom, lo nom, Po / Pi		Up to 87%, See model list and typ efficiency curve		

CONTROL AND PROTECTION					
Characteristics	Conditions	min.	typ.	max.	unit
Input fuse			T3.15A / 250VAC internal		
Internal surge voltage protection	IEC 61000-4-5		Varistor		
Rated over load protection	Vi nom (see typ current limited curve)	110		145	%
	24 V/E models	102		108	%
Power Rdy (for 24V model only)	Threshold voltage of contact closed (at start up)	17.6		19.4	VDC
	Electrical isolation	500			VDC
Over voltage protection	Contact rating at 60VDC			0.3	A
	Vi nom, lo nom (Auto Recovery)	125		140	%
Output short circuit	24 V/E models	102		106	%
	Degree of protection		Fold forward IP20		

Standards Used For Testing	
UL / cUL	UL 508 Listed UL 60950-1, UL 1310 Class 2 Power (24V/E models only) Recognized ISA 12.12.01(Class I, Division 2, Groups A, B, C and D)
TUV	EN 60950-1, CB scheme, EN 61558-1, EN 61558-2-17 (meet EN 60204)
CE	EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3 EN 61000-6-2, EN 55024, EN 61000-4-2 Level 4, EN 61000-4-3 Level 3 EN 61000-4-4 Level 4, EN 61000-4-5 L-N Level 3, L / N-FG Level 4 EN 61000-4-6 Level 3, EN 61000-4-8 Level 4, EN 61000-4-11 ENV 50204 Level 2, EN 61204-3
CCC	GB4943, GB9254, GB17625.1
Vibration Resistance	Meet IEC 60068-2-6 (Mounting by rail : 10-500 Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)
Shock Resistance	Meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 Faces, 3 times for each Face)

CIRCUIT SCHEMATIC

Block diagram for PSSI20 series

Note: 1) For 24V Model Only
2) 24V/E Models without this function

TYP. CURRENT LIMITED CURVE

PSSI20-24x

DERATING CURVE

PSSI20-24x

TYP. EFFICIENCY CURVE

PSSI20-24x