

PST120

120 W, Three Phase Din Rail
Mountable Switching Power Supplies

FEATURES

- Full Range Input selection from 340 to 575 VAC
- Typical efficiency of 89%
- Compact design with a width of only 74.3 mm
- Two years product warranty



ORDERING INFORMATION

CAT. NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
PST120/12/10	3Ø 340~575 VAC	120 WATTS	+ 12 VDC	10 A	85%	87%
PST120/24/5	3Ø 340~575 VAC	120 WATTS	+ 24 VDC	5 A	87%	89%

SPECIFICATIONS

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

GENERAL						
Characteristics	Conditions		min.	typ.	max.	unit
Switching frequency	Vi nom, Io nom			70		KHz
Isolation voltage	Input-Output		3000 / 4242			VAC / VDC
	Input-FG		1500 / 2121			VAC / VDC
Isolation resistance	Input-Output, @ 500VDC		100			MΩ
Ambient temperature	Operating at Vi nom		-40		+ 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	12V model		527000		Hours
		24V model		559000		Hours
Altitude during operation	IEC 60068-2-13				4850	m
Dimension	Screw terminal type		L124 x W74.3 x D118.8			mm
Cooling	Free air convection					
Pollution degree			2			

INPUT SPECIFICATIONS						
Characteristics	Conditions		min.	typ.	max.	unit
Nominal voltage * 1			1Ø or 3Ø 380~480 VAC			VAC
Rated input voltage	Io nom		400		500	VAC
Input voltage range	Ta min ... Ta max,	AC in	340		575	VAC
		DC in	480		820	VDC
Rated input current	Vi : 115 / 230 VAC, Io nom			0.36	0.5	A
Line frequency	Vi nom, Io nom		47		63	Hz
Inrush current	Vi : 115 / 230 VAC , Io nom			10		A
Power dissipation	Vi : 230 VAC, Io nom	12V model		20		W
		24V model		16		W
Leakage current	Input-Output				0.25	mA
	Input-FG				3.5	mA
P.F.C. (Passive)	Vi nom, Io nom			0.55		

*1. Single phase input is permissible, but output load is derated to 75%

OUTPUT SPECIFICATIONS

Characteristics	Conditions		min.	typ.	max.	unit
Output voltage accuracy (Adjusted before shipment)	Vi nom, Io max		0		+ 1	%
Minimum load	Vi nom		0			%
Line regulation	Io nom, Vi min ...Vi max				± 1	%
Load regulation	Vi nom,				± 1	%
Voltage trim range	Vi nom,	24V model	11.4		14.5	VDC
	0.8 Io nom	48V model	22.5		28.5	VDC
Rated continuous loading	Vi nom	24V model	10 A @ 12Vdc / 8.2 A @ 14.5Vdc			
		48V model	5 A @ 24Vdc / 4.2 A @ 28.5Vdc			
Hold up time	Vi : 115 / 230 VAC , Io nom		20			ms
Turn on time	Vi nom, Io nom				1000	ms
	Vi nom, Io nom → 12 V model: with 7000 μ F CAP 24 V model: with 3500 μ F CAP				1500	ms
Rise time	Vi nom, Io nom				150	ms
	Vi nom, Io nom → 12 V model: with 7000 μ F CAP 24 V model: with 3500 μ F CAP				500	ms
Fall time	Vi nom, Io nom				150	ms
Transient recovery time	Vi nom, 1~0.5 Io nom				2	ms
Ripple & noise	Vi nom, Io nom, BW = 20MHz				100	mV
Power back immunity	Vi nom, Io nom	12V model	18			VDC
		24V model	35			VDC
Capacitor load	Vi nom, Io nom	12V model			7000	μ F
		24V model			3500	μ F
DC ON indicator threshold at start up (Green LED)	Vi nom, Io nom	12V model	10		11.2	VDC
		24V model	17.6		19.4	VDC
DC LOW indicator threshold after start up (Red LED)	Vi nom, Io nom	24V model	10		11.2	VDC
		48V model	17.6		19.4	VDC
Efficiency	Vi nom, Io nom, Po / Pi		Up to 89%, See model list and typ efficiency curve			

CONTROL AND PROTECTION

Characteristics	Conditions		min.	typ.	max.	unit
Input fuse			2 A / 600 VAC internal / phase			
Internal surge voltage protection	IEC 61000-4-5		Varistor			
Rated over load protection	Vi nom (see typ current limited curve)		115		135	%
Power Rdy (for 24V model only)	Threshold voltage of contact closed(at start up)		17.6		19.4	VDC
	Electrical isolation		500			VDC
	Contact rating at 60VDC				0.3	A
Over voltage protection	Vi nom, Io nom	12V model	14.5		17.4	VDC
	(Auto Recovery)	24V model	30		33	VDC
Output short circuit				Hiccup mode		
Over temperature	Detect on heat sink, shut down O/P voltage, recovers automatically after temperature goes down.		100		110	°C
Degree of protection				IP20		

STANDARDS USED FOR TESTING

UL 508 Listed
UL 60950-1, Recognized
ISA 12.12.01(Class I, Division 2, Groups A, B, C and D)

EN 60950-1, CB scheme

EN 61558-1, EN 61558-2-17 (meet EN 60204)

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

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)

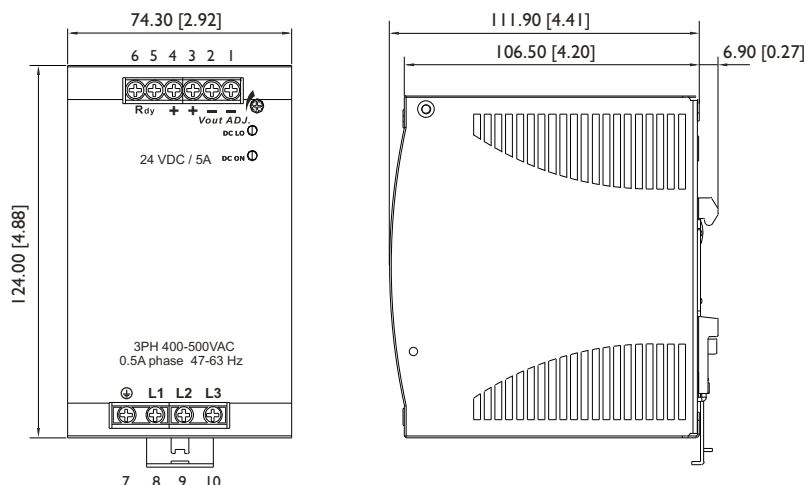
Shock resistance meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 Faces, 3 times for each Face)

PHYSICAL CHARACTERISTICS

Case size	Screw terminal type 124 x 74.3 x 118.8 mm (4.88 x 2.92 x 4.68 inches)
Case material	Metal
Weight	800 g
Packing	0.92 kg ; 20 pcs / 19.5 kg / 2.02 CUFT

DIMENSIONAL DIAGRAM

mm [inch]



CONSTRUCTION

Easy snap-on mounting onto the DIN-Rail (TS35/7.5 or TS35/15), unit sits safely and firmly on the rail.

INSTALLATION

Ventilation / Cooling

Normal convection

All sides 25mm free space

For cooling recommended

Connector size range

AWG24-10 (0.2~4mm²) flexible / solid cable,

- Input connector can withstand torque at maximum 9 pound-inches.

- Output connector can withstand torque at maximum 5.5 pound-inches.

8 m/m stripping at cable end recommends

Use copper conductors only, 60 / 75 °C

GENERAL TOLERANCE

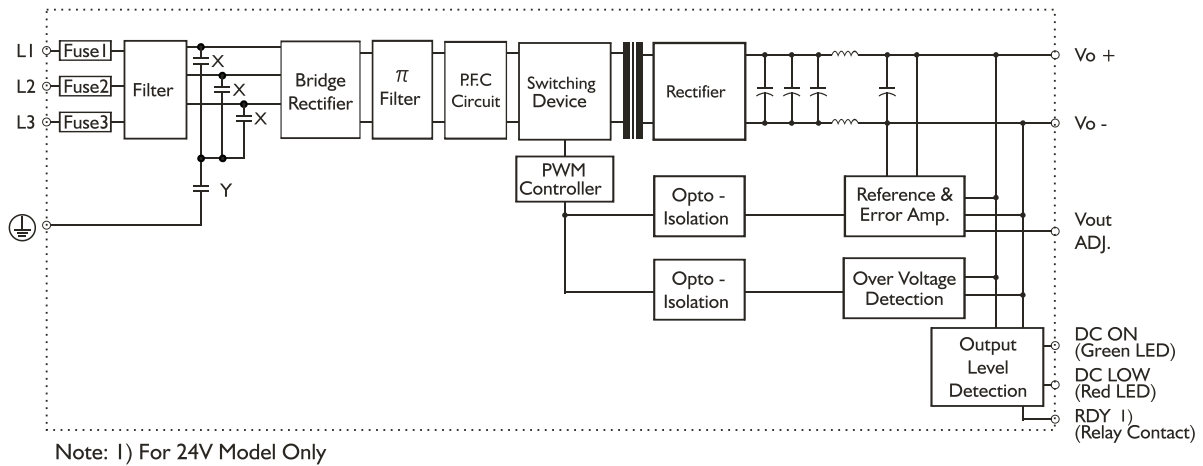
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30.00[1.18] - 120.00[4.72]	±0.50[0.02]
120.00[4.72] - 400.00[15.75]	±0.80[0.03]

PIN CONFIGURATION

PIN NO.		Designation	Description
1, 2	OUT	V -	Negative output terminal
3, 4		V +	Positive output terminal
5		RDY	A normal open relay contact for DC ON level control
6		RDY	(Never connect except 24V model)
7	IN	⊕	Ground this terminal to minimize high-frequency emissions
8		L1	Input terminals
9		L2	Input terminals
10		L3	Input terminals
	OTHER	DC ON	Operation indicator LED
		DC LO	DC LOW voltage indicator LED
		Vout ADJ.	Trimmer-potentiometer for Vout adjustment

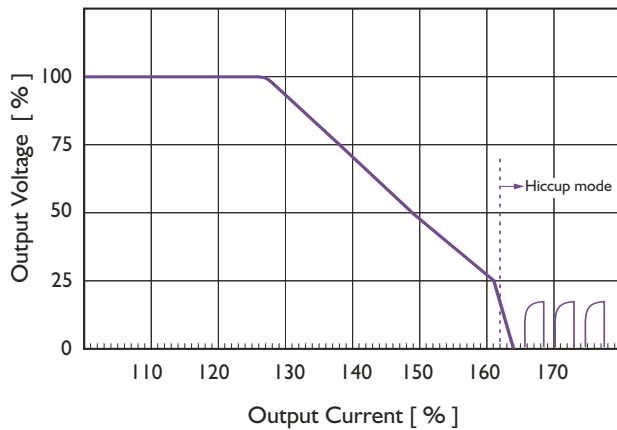
CIRCUIT SCHEMATIC

Block diagram for PST120 series

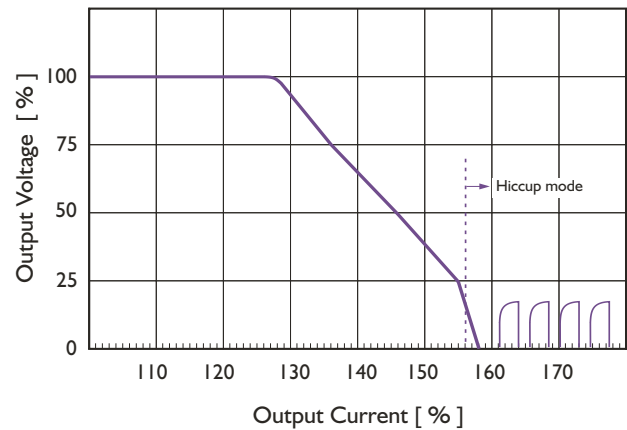


TYP. CURRENT LIMITED CURVE

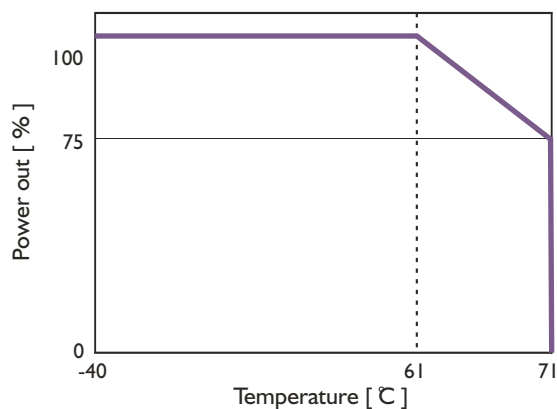
PST120-24 / 400Vac



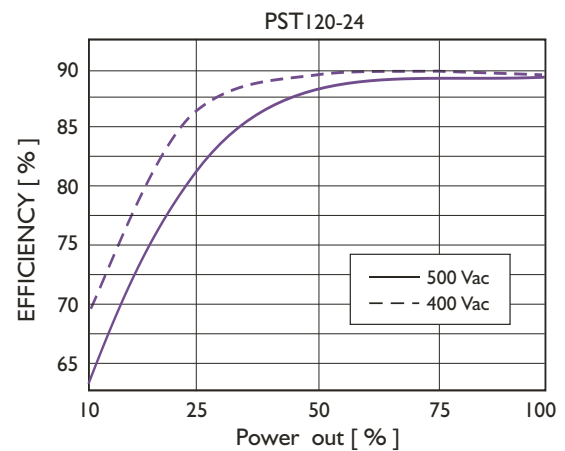
PST120-24 / 500Vac



DERATING CURVE



TYP. EFFICIENCY CURVE



PST240

240 W, Three Phase Din Rail
Mountable Switching Power Supplies

FEATURES

- Full Range Input selection from 340 to 575 VAC
- Typical efficiency of 90%
- Compact design with a width of only 89 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.)
PST240/24/10	3Ø 340~575 VAC	240 WATTS	+ 24 VDC	10 A	88%	90%
PST240/48/5	3Ø 340~575 VAC	240 WATTS	+ 48 VDC	5 A	89%	91%

SPECIFICATIONS

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

GENERAL						
Characteristics	Conditions		min.	typ.	max.	unit
Switching frequency	Vi nom, Io nom			25		KHz
Isolation voltage	Input-Output		3000 / 4242			VAC / VDC
	Input-FG		1500 / 2121			VAC / VDC
Isolation resistance	Input-Output, @ 500VDC		100			MΩ
Ambient temperature	Operating at Vi nom		-40		+ 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	12V model		488000		Hours
		24V model		519000		Hours
Altitude during operation	IEC 60068-2-13				4850	m
Dimension	Screw terminal type		L124 x W89 x D118.8			mm
Cooling	Free air convection					
Pollution degree			2			

INPUT SPECIFICATIONS						
Characteristics	Conditions		min.	typ.	max.	unit
Nominal voltage * I			1Ø or 3Ø 380~480 VAC			VAC
Rated input voltage	Io nom		400		500	VAC
Input voltage range	Ta min ... Ta max,	AC in	340		575	VAC
		DC in	480		820	VDC
Rated input current	Vi : 115 / 230 VAC, Io nom			0.65	0.85	A
Line frequency	Vi nom, Io nom		47		63	Hz
Inrush current	Vi : 115 / 230 VAC , Io nom			20		A
Power dissipation	Vi : 230 VAC, Io nom	12V model		30		W
		24V model		24		W
Leakage current	Input-Output				0.25	mA
	Input-FG				3.5	mA
P.F.C. (Passive)	Vi nom, Io nom			0.55		

*1. Single phase input is permissible, but output load is derated to 75%

OUTPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Output voltage accuracy (Adjusted before shipment)	Vi nom, Io max	0		+ 1	%
Minimum load	Vi nom	0			%
Line regulation	Io nom, Vi min ...Vi max			± 1	%
Load regulation	Vi nom, Single mode			± 1	%
	Parallel mode			±5	
Voltage trim range	Vi nom, 24V model	22.5		28.5	VDC
	0.8 Io nom, 48V model	47		56	VDC
Rated continuous loading	Vi nom, 24V model	10 A @ 24Vdc / 8.4 A @ 28.5Vdc			
	48V model	5 A @ 48Vdc / 4.2 A @ 56Vdc			
Hold up time	Vi : 115 / 230 VAC , Io nom	20			ms
Turn on time	Vi nom, Io nom			1000	ms
	Vi nom, Io nom → with 7000 μF CAP			1500	ms
Rise time	Vi nom, Io nom			150	ms
	Vi nom, Io nom → with 7000 μF CAP			500	ms
Fall time	Vi nom, Io nom			150	ms
Transient recovery time	Vi nom, 1~0.5 Io nom			2	ms
Ripple & noise	Vi nom, Io nom, BW = 20MHz			100	mV
Power back immunity	Vi nom, Io nom, 12V model	35			VDC
	24V model	63			VDC
Capacitor load	Vi nom, Io nom, 12V model			7000	μF
DC ON indicator threshold at start up (Green LED)	Vi nom, Io nom, 12V model	17.6		19.4	VDC
	24V model	37		43	VDC
DC LOW indicator threshold after start up (Red LED)	Vi nom, Io nom, 24V model	17.6		19.4	VDC
	48V model	37		43	VDC
Parallel operation	0.1 Io min ~ 0.9 Io max			2	unit
Efficiency	Vi nom, Io nom, Po / Pi	Up to 91%, See model list and typ efficiency curve			

CONTROL AND PROTECTION

Characteristics	Conditions	min.	typ.	max.	unit
Input fuse		2 A / 600 VAC internal / phase			
Internal surge voltage protection	IEC 61000-4-5	Varistor			
Rated over load protection	Vi nom (see typ current limited curve)	120		140	%
Power Rdy (for 24V model only)	Threshold voltage of contact closed(at start up)	17.6		19.4	VDC
	Electrical isolation	500			VDC
	Contact rating at 60VDC			0.3	A
Over voltage protection	Vi nom, Io nom, 24V model	30		33	VDC
	(Auto Recovery) 48V model	60		68	VDC
Output short circuit			Hiccup mode		
Over temperature	Detect on heat sink, shut down O/P voltage, recovers automatically after temperature goes down.	100		110	°C
Degree of protection			IP20		

STANDARDS USED FOR TESTING

UL 508 Listed
UL 60950-1, Recognized
ISA 12.12.01 (Class I, Division 2, Groups A, B, C and D)

EN 60950-1, CB scheme

EN 61558-1, EN 61558-2-17 (meet EN 60204)

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

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)

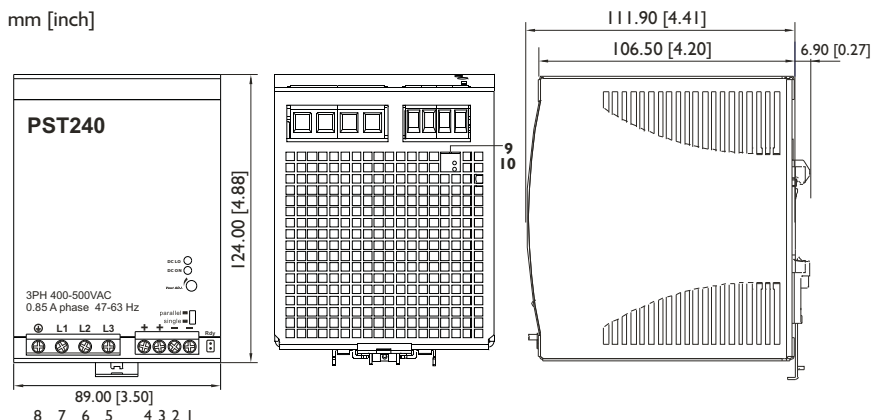
Shock resistance meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 Faces, 3 times for each Face)

PHYSICAL CHARACTERISTICS

Case size	Screw terminal type 124 x 89 x 118.8 mm (4.88 x 3.5 x 4.68 inches)
Case material	Metal
Weight	1100 g
Packing	1.18 kg ; 16 pcs / 20 kg / 2.01 CUFT

DIMENSIONAL DIAGRAM

mm [inch]



CONSTRUCTION

Easy snap-on mounting onto the DIN-Rail (TS35/7.5 or TS35/15), unit sits safely and firmly on the rail.

INSTALLATION

Ventilation / Cooling

Normal convection

All sides 25mm free space

For cooling recommended

Connector size range

AWG24-14 (0.2~4mm²) flexible / solid cable,

- Input connector can withstand torque at maximum 9 pound-inches.

- Output connector can withstand torque at maximum 5.5 pound-inches.

8 m/m stripping at cable end recommends

Use copper conductors only, 60 / 75 °C

GENERAL TOLERANCE

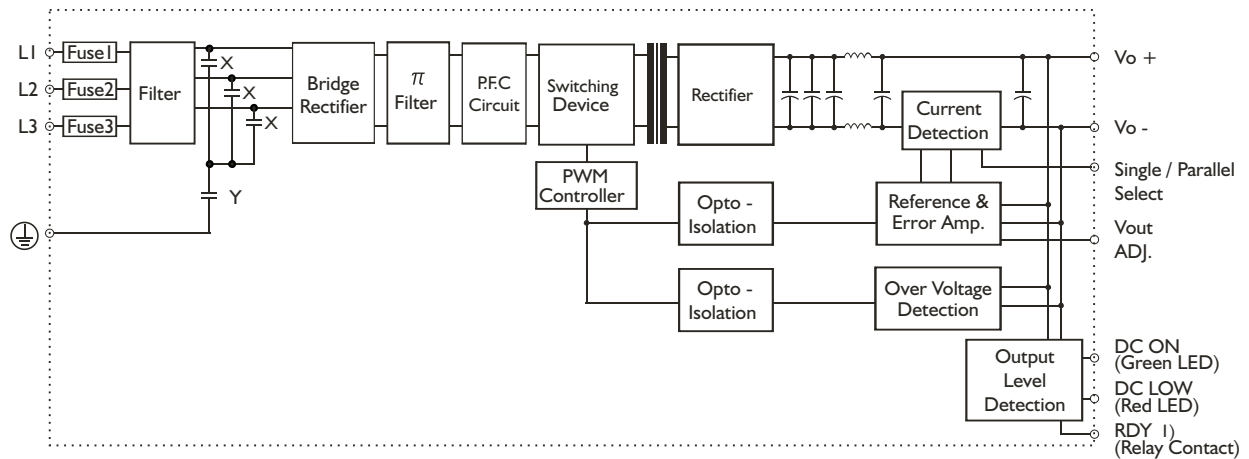
0.00[0.00] - 30.00[1.18]	±0.30[0.01]
30.00[1.18] - 120.00[4.72]	±0.50[0.02]
120.00[4.72] - 400.00[15.75]	±0.80[0.03]

PIN CONFIGURATION

PIN NO.		Designation	Description
1, 2	OUT	V -	Negative output terminal
3, 4		V +	Positive output terminal
5		L3	Input terminals
6	IN	L2	Input terminals
7		L1	Input terminals
8		⊕	Ground this terminal to minimize high-frequency emissions
9	OUT	RDY	A normal open relay contact for DC ON level control
10		RDY	(Never connect except 24V model)
	OTHER	DC ON	Operation indicator LED
		DC LO	DC LOW voltage indicator LED
		Vout ADJ.	Trimmer-potentiometer for Vout adjustment
		S / P	Single / Parallel select switch

CIRCUIT SCHEMATIC

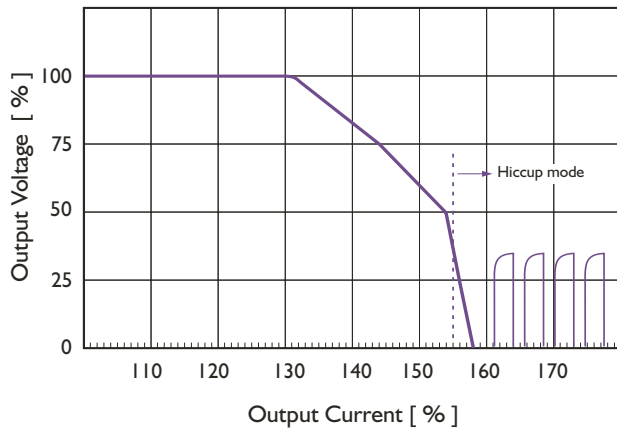
Block diagram for PST240 series



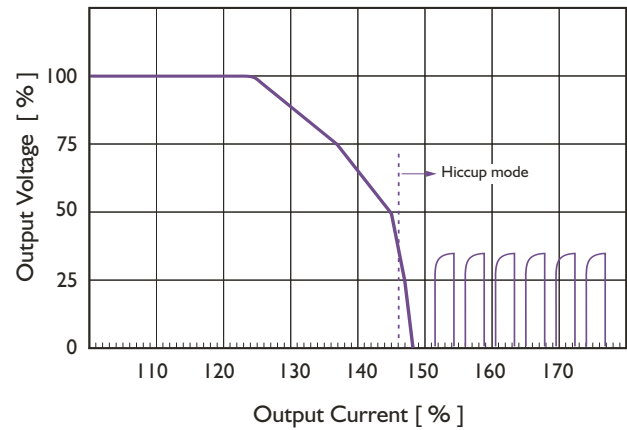
Note: 1) For 24V Model Only

TYP. CURRENT LIMITED CURVE

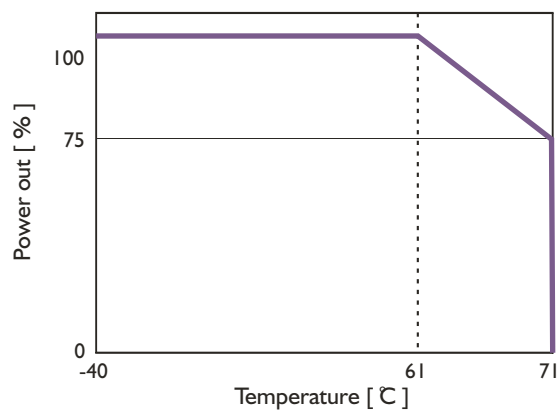
PST240-24 / 400Vac



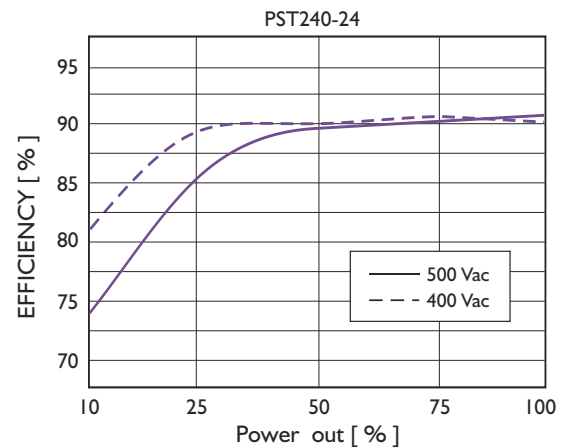
PST240-24 / 500Vac



DERATING CURVE



TYP. EFFICIENCY CURVE



PST480

480 W Three Phase Din Rail
Mountable Switching Power Supplies

FEATURES

- Full Range 3 Phase Input selection from 340 to 575 VAC
- Typical efficiency of 90%
- Compact design with a width of only 150 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.)
PST480/24/20	3Ø 340~575 VAC	480 WATTS	+ 24 VDC	20 A	88%	90%
PST480/48/10	3Ø 340~575 VAC	480 WATTS	+ 48 VDC	10 A	89%	91%

SPECIFICATIONS

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

GENERAL					
Characteristics	Conditions	min.	typ.	max.	unit
Switching frequency	Vi nom, Io nom		80		KHz
Isolation voltage	Input-Output	3000 / 4242			VAC / VDC
	Input-FG	1500 / 2121			VAC / VDC
Isolation resistance	Input-Output, @ 500VDC	100			MΩ
Ambient temperature	Operating at Vi nom	-30		+ 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 24V model		411000		Hours
	48V model		423000		Hours
Altitude during operation	IEC 60068-2-13			4850	m
Dimension		L124 x W150 x D118.8			mm
Cooling	Free air convection				
Pollution degree			2		

INPUT SPECIFICATIONS					
Characteristics	Conditions	min.	typ.	max.	unit
Nominal voltage *1			1Ø or 3Ø 380 / 480		VAC
Rated input voltage	Io nom	400		500	VAC
Input voltage range	Ta min ... Ta max, AC in	340		575	VAC
	Io nom, DC in	480		820	VDC
Rated input current	Vi : 400 VAC, Io nom		1.1	1.4	A
Line frequency	Vi nom, Io nom	47		63	Hz
Inrush current	Vi nom, Io nom		20	25	A
Power dissipation	Vi : 400 VAC, Io nom, 24V model		58		W
	48V model		55		W
Leakage current	Input-Output			0.25	mA
	Input-FG			3.5	mA
P.F.C. (Passive)	Vi nom, Io nom		0.65		

*1. Single phase input is permissible, but output load is derated to 75%

OUTPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Output voltage accuracy (Adjusted before shipment)	Vi nom, Io max	0		+ 1	%
Minimum load	Vi nom	0			%
Line regulation	Io nom, Vi min ...Vi max			± 1	%
Load regulation	Vi nom, Io min ...Io nom			± 1	%
Voltage trim range	Vi nom, 0.8 Io nom	24V model	22.5	28.5	VDC
		48V model	47	56	VDC
Rated continuous loading	Vi nom	24V model	20 A @ 24Vdc / 16.8 A @ 28.5Vdc		
		48V model	10 A @ 48Vdc / 8.5 A @ 56Vdc		
Hold up time	Vi nom , Io nom	20			ms
Turn on time	Vi nom, Io nom			1000	ms
	Vi nom, Io nom → with 7000 μF CAP			1500	ms
Rise time	Vi nom, Io nom			150	ms
	Vi nom, Io nom → with 7000 μF CAP			500	ms
Fall time	Vi nom, Io nom			150	ms
Transient recovery time	Vi nom, 1~0.5 Io nom			2	ms
Ripple & noise	Vi nom, Io nom, BW = 20MHz			100	mV
Power back immunity	Vi nom, Io nom	24V model	35		VDC
		48V model	63		VDC
Capacitor load	Vi nom, Io nom	24V model		7000	μF
DC ON indicator threshold at start up (Green LED)	Vi nom, Io nom	24V model	17.6	19.4	VDC
		48V model	37	43	VDC
DC LOW indicator threshold after start up (Red LED)	Vi nom, Io nom	24V model	17.6	19.4	VDC
		48V model	37	43	VDC
Parallel operation	0.1 Io min ~ 0.9 Io max			2	unit
Efficiency	Vi nom, Io nom, Po / Pi	Up to 91%, See model list and typ efficiency curve			

CONTROL AND PROTECTION

Characteristics	Conditions	min.	typ.	max.	unit
Input fuse		T3.15 A / 500 VAC internal / phase			
Internal surge voltage protection	IEC 61000-4-5	Varistor			
Rated over load protection	Vi nom (see typ current limited curve)	110		135	%
Power Rdy (for 24V model only)	Threshold voltage of contact closed(at start up)	17.6		19.4	VDC
	Electrical isolation	500			VDC
	Contact rating at 60VDC			0.3	A
Over voltage protection	Vi nom, Io nom	24V model	30	33	VDC
	(Auto Recovery)	48V model	60	68	VDC
Output short circuit		Continuous	Fold forward		
		Discontinuous	Delay 3S shut-down. After 30S Auto-restart		
Over temperature	Detect on heat sink, shut down O/P voltage, recovers automatically after temperature goes down.	100		110	°C
Degree of Protection			IP20		

STANDARDS USED FOR TESTING

UL 508 Listed
UL 60950-1 Recognized
ISA 12.12.01(Class I, Division 2, Groups A, B, C and D)

EN 60950-1, CB scheme
EN 61558-1, EN 61558-2-17 (meet EN 60204)

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

GB4943, GB9254, GB17625.1

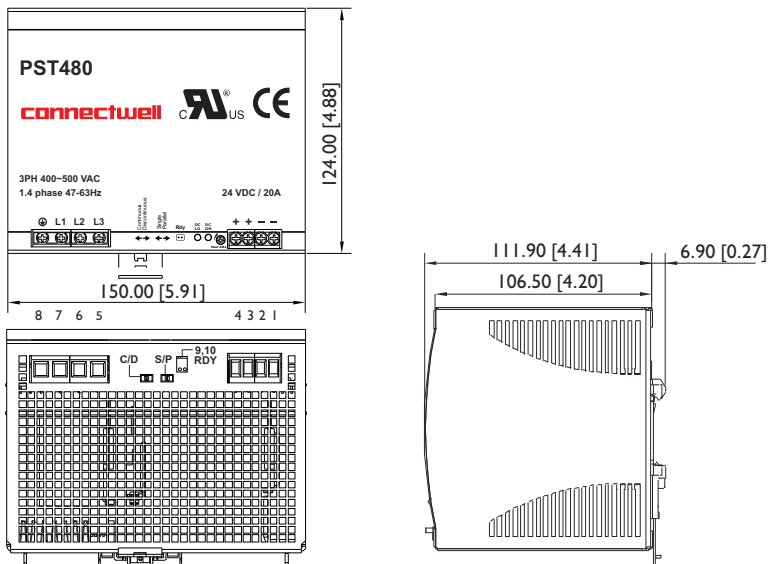
Vibration resistance	meet IEC 60068-2-6 (Mounting by rail : 10-500 Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)
Shock resistance	meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 Faces, 3 times for each Face)

PHYSICAL SPECIFICATIONS

Case size	124 x 150 x 118.8 mm (4.88 x 5.91 x 4.68 inches)
Case material	Metal
Weight	1720g
Packing	2kg ; 8 pcs / 17.5kg / 2.17CUFT

DIMENSIONAL DIAGRAM

mm [inch]



CONSTRUCTION

Easy snap-on mounting onto the DIN-Rail (TS35/7.5 or TS35/15), unit sits safely and firmly on the rail.

INSTALLATION

Ventilation / Cooling

Normal convection

All sides 25mm free space

For cooling recommended

Connector size range

Spring terminal:

AWG24-10 (0.2~4mm²) flexible / solid cable,
- Input connector can withstand torque at maximum 9 pound-inches.

- Output connector can withstand torque at maximum 5.5 pound-inches.

8 m/m stripping at cable end recommends

Use copper conductors only, 60 / 75 °C

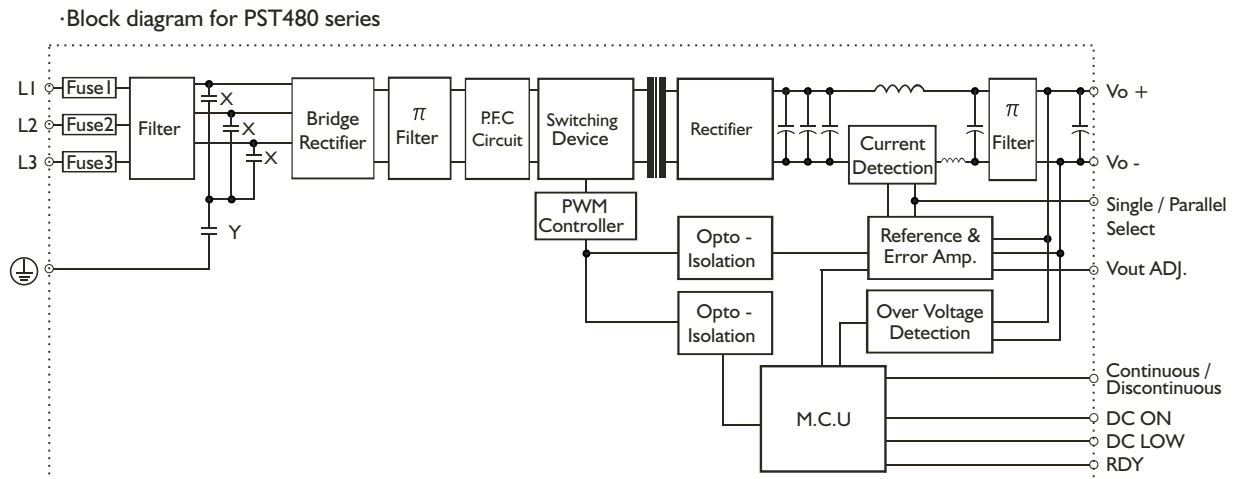
GENERAL TOLERANCE

0.00[0.00] - 30.00[1.18]	±0.30[0.01]
30.00[1.18] - 120.00[4.72]	±0.50[0.02]
120.00[4.72] - 400.00[15.75]	±0.80[0.03]

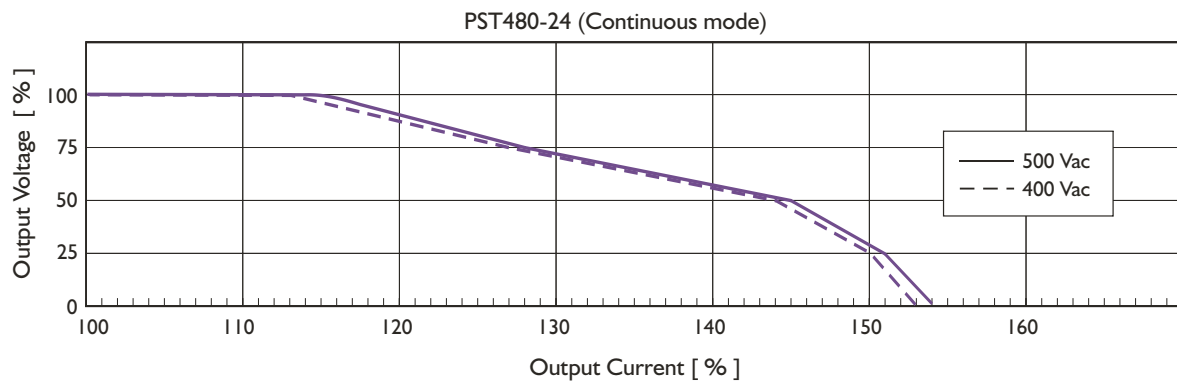
PIN CONFIGURATION

PIN NO.		Designation	Description
1, 2	OUT	V -	Negative output terminal
3, 4		V +	Positive output terminal
5	IN	L3	Input terminals
6		L2	Input terminals
7		L1	Input terminals
8		⊥	Ground this terminal to minimize high-frequency emissions
9	OUT	RDY	A normal open relay contact for DC ON level control
10		RDY	(Never connect except 24V model)
	OTHER	DC ON	Operation indicator LED
		DC LO	DC LOW voltage indicator LED
		Vout ADJ.	Trimmer-potentiometer for Vout adjustment
		S / P	Single / Parallel select switch
		C / D	Continuous / Discontinuous

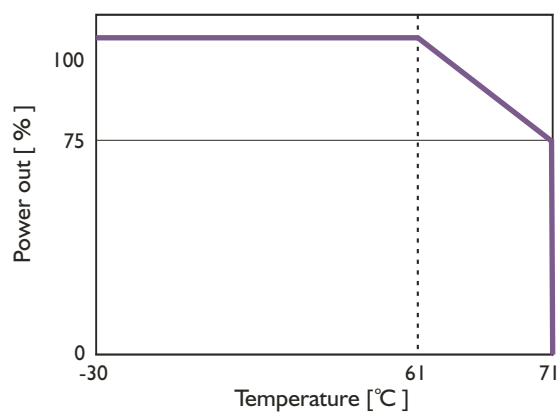
CIRCUIT SCHEMATIC



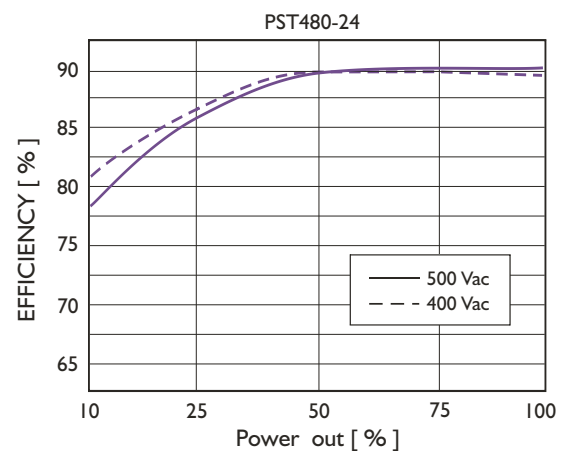
TYP. CURRENT LIMITED CURVE



DERATING CURVE



TYP. EFFICIENCY CURVE



PST960

960 W, Three Phase Din Rail
Mountable Switching Power Supplies

FEATURES

- Full Range Input selection from 340 to 575 VAC
- Typical efficiency of 92%
- Compact design with a width of only 275.8 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.)
PST960/24/40	3Ø 340~575 VAC	960 WATTS	+ 24 VDC	40 A	90%	92%
PST960/24/40/E	3Ø 340~575 VAC	960 WATTS	+ 24 VDC	40 A	90%	92%
PST960/48/20	3Ø 340~575 VAC	960 WATTS	+ 48 VDC	20 A	91%	93%

SPECIFICATIONS

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

GENERAL					
Characteristics	Conditions	min.	typ.	max.	unit
Switching frequency	Vi nom, Io nom		52		KHz
Isolation voltage	Input-Output	3000 / 4242			VAC / VDC
	Input-FG	1500 / 2121			VAC / VDC
Isolation resistance	Input-Output, @ 500VDC	100			MΩ
Ambient temperature	Operating at Vi nom	-40		+ 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	24V model	352000		Hours
		24V/E model	381000		Hours
		24V model	390000		Hours
Altitude during operation	IEC 60068-2-13			4850	m
Dimension	Screw terminal type	L126.2 x W275.8 x D118.8			mm
Cooling	Free air convection				
Pollution degree		2			

INPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Nominal voltage * I		1Ø or 3Ø 380~480 VAC			
Rated input voltage	Io nom	400		500	VAC
Input voltage range	Ta min ... Ta max, AC in	340		575	VAC
	Io nom DC in	480		820	VDC
Rated input current	Vi : 115 / 230 VAC, Io nom		1.72	2.4	A
Line frequency	Vi nom, Io nom	47		63	Hz
Inrush current	Vi nom, Io nom 24V, 48V model		30		A
	cold start 24V/E model		50		A
Power dissipation	Vi nom, Io nom 24V, 48V model		98		W
	24V/E model		90		W
Leakage current	Input-Output			0.25	mA
	Input-FG			3.5	mA
P.F.C. (Passive)	Vi : 230VAC, Io nom		0.8		

*1. Single phase input is permissible, but output load is derated to 75%

OUTPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Output voltage accuracy (Adjusted before shipment)	Vi nom, Io max	0		+ 1	%
Minimum load	Vi nom	0			%
Line regulation	Io nom, Vi min ... Vi max			± 1	%
Load regulation	Vi nom, Io min ... Io nom single mode			± 1	%
	parallel mode			± 5	%
Voltage trim range	Vi nom, 0.8 Io nom 24V/E model	22.5		28.5	VDC
	48V model	47		56	VDC
Rated continuous loading	Vi nom 24V/E model	40 A @ 24Vdc / 33.5 A @ 28.5Vdc			
	48V model	20 A @ 48Vdc / 17 A @ 56Vdc			
Hold up time	Vi nom, Io nom	15			ms
Turn on time	Vi nom, Io nom			1000	ms
	Vi nom, Io nom → with 7000 µF CAP			1500	ms
Rise time	Vi nom, Io nom			150	ms
	Vi nom, Io nom → with 7000 µF CAP			500	ms
Fall time	Vi nom, Io nom			150	ms
Transient recovery time	Vi nom, 1~0.5 Io nom			2	ms
Ripple & noise	Vi nom, Io nom, BW = 20MHz			80	mV
Power back immunity	Vi nom, Io nom 24V model	35			VDC
	48V model	63			VDC
Capacitor load	Vi nom, Io nom			7000	µF
DC ON indicator threshold at start up (Green LED)	Vi nom, Io nom 24V model	17.6		19.4	VDC
	48V model	37		43	VDC
DC LOW indicator threshold after start up (Red LED)	Vi nom, Io nom 24V model	17.6		19.4	VDC
	48V model	37		43	VDC
Parallel operation	0.1 Io min ~ 0.9 Io max			2	unit
Efficiency	Vi nom, Io nom, Po / Pi	Up to 93%, See model list and typ efficiency curve			

CONTROL AND PROTECTION

Characteristics	Conditions	min.	typ.	max.	unit
Input fuse		T5 A / 500 VAC internal / phase			
Internal surge voltage protection	IEC 61000-4-5	Varistor			
Rated over load protection	Vi nom (see typ current limited curve)	110		140	%
Power Rdy (for 24V model only)	Threshold voltage of contact closed(at start up)	17.6		19.4	VDC
	Electrical isolation	500			VDC
	Contact rating at 60VDC			0.3	A
Over voltage protection	Vi nom, Io nom 24V model	30		33	VDC
	(Auto Recovery) 48V model	60		68	VDC
Output short circuit		Fold forward			
Over temperature	Detect on heat sink, shut down O/P voltage, recovers automatically after temperature goes down.	100		110	°C
Degree of Protection		IP20			

STANDARDS USED FOR TESTING

UL 508 Listed
 UL 60950-1 Recognized
 ISA 12.12.01 (Class I, Division 2, Groups A, B, C and D)

EN 60950-1, CB scheme

EN 61558-1, EN 61558-2-17 (meet EN 60204)

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

GB4943, GB9254, GB17625.1

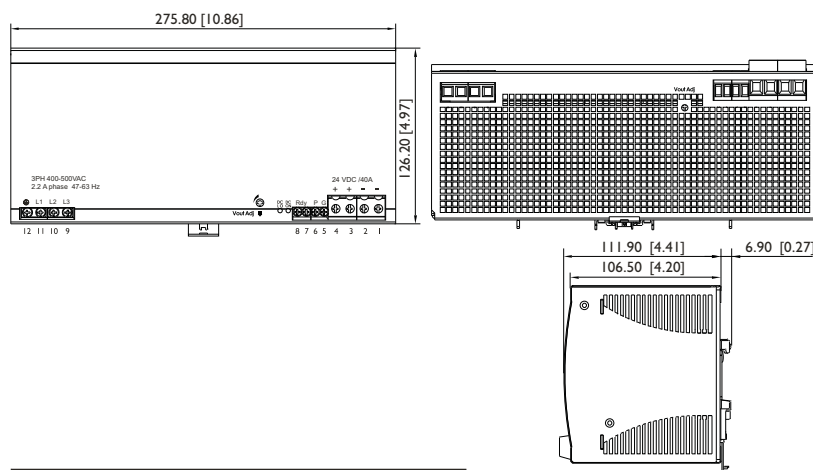
Vibration resistance	meet IEC 60068-2-6 (Mounting by rail : 10-500 Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)
Shock resistance	meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 Faces, 3 times for each Face)

PHYSICAL SPECIFICATIONS

Case size	Screw terminal type 126.2 x 275.8 x 118.8 mm (4.97 x 10.86 x 4.68 inches)
Case material	Metal
Weight	3400 g
Packing	3.68 kg ; 6 pcs / 23 kg / 2.41 CUFT

DIMENSIONAL DIAGRAM

mm [inch]



GENERAL TOLERANCE

0.00[0.00] - 30.00[1.18]	±0.30[0.01]
30.00[1.18] - 120.00[4.72]	±0.50[0.02]
120.00[4.72] - 400.00[15.75]	±0.80[0.03]

CONSTRUCTION

Easy snap-on mounting onto the DIN-Rail (TS35/7.5 or TS35/15), unit sits safely and firmly on the rail.

INSTALLATION

Ventilation / Cooling

Normal convection

All sides 25mm free space

For cooling recommended

Connector size range

Input and Rdy, P, G Control : AWG24 - 10

(0.2~4mm²) flexible / solid cable,

Output: AWG20-6 (0.5~10mm²) flexible / solid cable

- Input connector can withstand torque at maximum 9 pound-inches.

- Output connector can withstand torque at maximum 5.5 pound-inches.

8 m/m stripping at cable end recommends

- Output connector can withstand torque at maximum 15.6 pound-inches

10m/m stripping at cable end recommends

Use copper conductors only, 60 / 75 °C

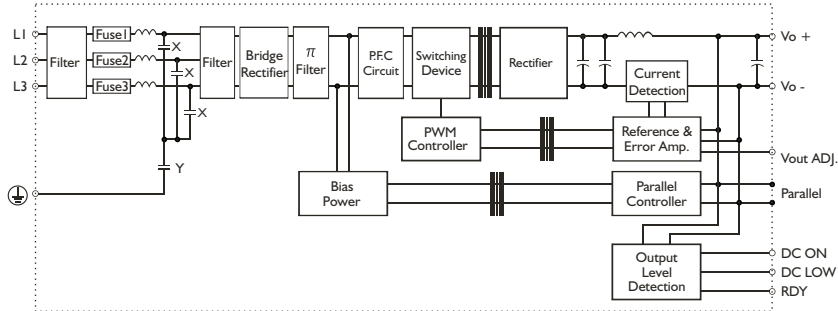
PIN CONFIGURATION

PIN NO.	Designation	Description
1, 2	V -	Negative output terminal
3, 4	V +	Positive output terminal
5	G	Parallel GND PIN for current share
6	P	Parallel PIN for current share
7	RDY	A normal open relay contact for DC ON level control
8	RDY	(Never connect except 24V model)
9	L3	Input terminals
10	L2	Input terminals
11	L1	Input terminals
12	⊕	Ground this terminal to minimize high-frequency emissions
	DC ON	Operation indicator LED
	DC LO	DC LOW voltage indicator LED
	Vout ADJ.	Trimmer-potentiometer for Vout adjustment

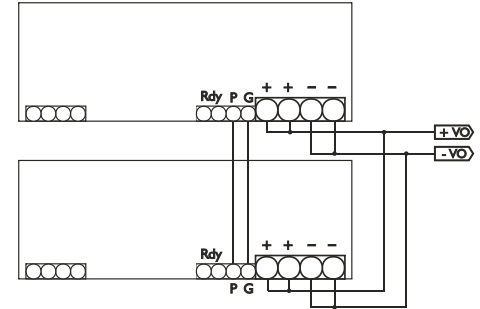
* PST960-24L without PIN5~ PIN8

CIRCUIT SCHEMATIC

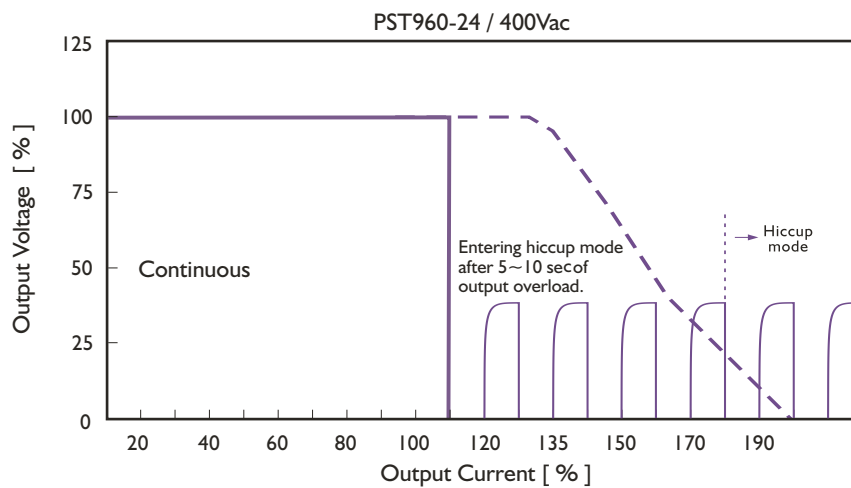
Block diagram for PST960 series



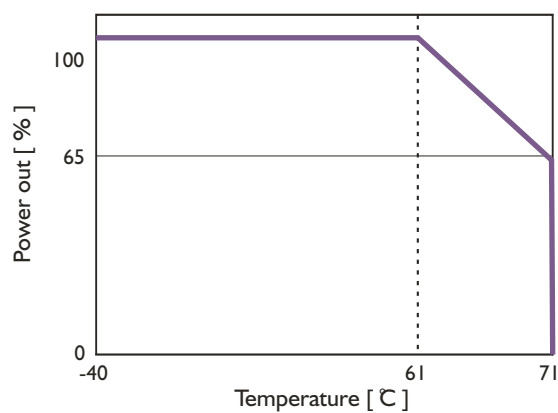
Parallel connection



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