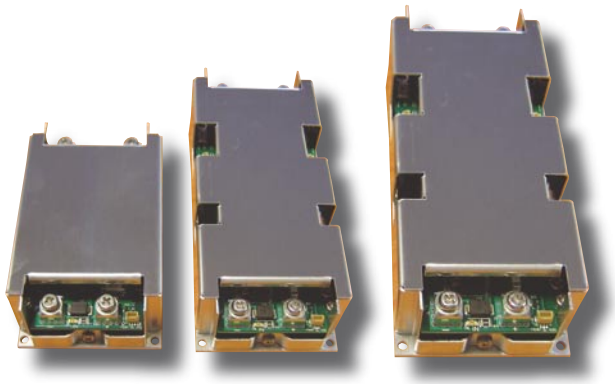


Micro	Mini	Maxi
PST14C 150W	PST14B 250W	PST14A 500W
100 x 61 x 35mm	140 x 61 x 35mm	225 x 61 x 35mm

PST14 Standard product

DC-DC conduction cooled from 150W to several kWs

Features

- 12, 24, 48, 72, 110Vdc IN
- 3 packages 150W, 300W, 500W
- Output from 3V3 to 48Vdc
- Input filtering EN55022 & transient protection
- Reverse polarity protection
- Several outputs, parallel or series operations up to several kWs
- MIL COTS options MIL STD1275, 461, 810, 704

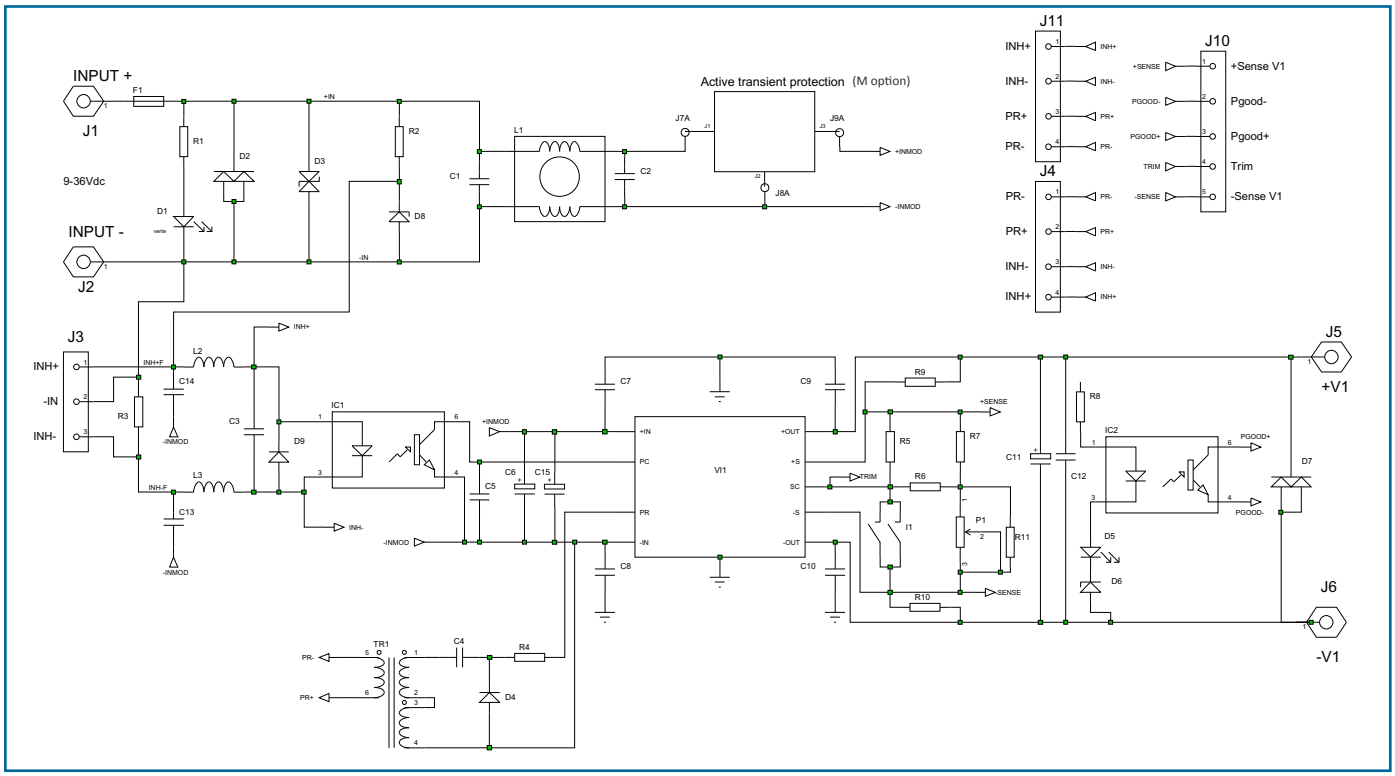
Safety IEC/EN 60950-1, RoHS lead-free-solder compliant

Description

The PST14, very compact DC-DC converter in chassis mount format, incorporates input filtering, input and output protections, very robust mechanical mounting and connection, optional conformal coating, required in most of the severe environment for industrial, railways, defense type of applications. The converter provides high reliability thanks to the integration of Vicor Corp. modules, high efficiency, input-to-output isolation, soft start, overtemperature protection, input over/undervoltage lockout. The converters wide range of inputs are protected against surges and transients and EMI filtered. The outputs are countinuously short-circuit proof .The 100°C baseplate operation allows operation in high temperature environment.

The output can be configured in many different output voltages from 3V3 to 48Vdc, can be put in series and parallel, others possibilities are even possible as semi-standard versions.

Wide range of accessories (see page 16) like input & output Bus bars, N+1 oring diodes, parallel cables are available to simplify multi units assemblies. Military options (M) make it suitable for MIL STD compliance.



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Options Description

Heatsink (H)

The PST14 is built as standard with a aluminum baseplate as described in the mechanical data. The converter can be delivered with a 15mm heatsink. See page 15.

Ruggedized (M)

The PST14 can be ruggedized to meet MIL-STD810E, MIL-STD461E CE102, on Mini & Maxi only.
M option with 12 & 24Vin will comply with MIL STD 1275A.

-40°C operation (T)

The thermal grade of the Vicor the DC/DC converters used and other components are changed to comply with low ambient temperature.

Conformal coating (V)

During manufacturing process, when V option is specified, components and pcb are covered with an acrylic coating to address high level of ambiant humidity application.

Input

Electrical Input Data

Input Characteristics	Conditions	Model	12V min	12V typ.	12V max	24V min	24V typ.	24V max	48V min	48V typ.	48V max	72V min	72V typ.	72V max	110V min	110V typ.	110V max	Units
Operating input voltage			9		36	18		36	36		75	43		110	66		154	V
Input surge	< 100ms				50			50			100			150			250	V
Undervoltage turn-on					8,9		17,5	17,9		35			42			64		V
Undervoltage turn-off				8,5		14,8	15,3			30			36,5			56		V
Overvoltage turn-off			36,2		40	36,3		39,7	75,7		82,5	111		121	155		170	V
Input current	Vin min	PST14A			30			33			16,2			11			7,2	A
		PST14B			21			16,5			8,2			7			3,6	A
		PST14C			15			10			3,7			4,2			1,8	A
No load input power		PST14A		8	17		8	14		8	16		11	17		11	15	W
		PST14B		6	11		6	7,8		6	11		8	11		7	9	W
		PST14C		3	10		3	7		3	5		5	7		3	5	W
Input capacitance	No inrush limiting circuit	PST14A		440			440			44			20			20		uF
		PST14B		270			270			44			10			10		uF
		PST14C		220			220			44			10			10		uF
Start-up time		PST14A		50			50			50			50			50		ms
		PST14B		50			50			50			50			50		ms
		PST14C		50			50			50			50			50		ms

Input Fuse

A fuse mounted inside the converter protects against damages in case of a failure. The fuse is not user-accessible.

Accessories

See page 16 for details.
Accessories are compatible with PST14A, B, C format

Input parallel bus bar with capacitor footprints

The input bus bar simplifies the assembly of 2 or 3 PST14. It includes input extra capacitor footprints for application with long lenght from the source to the PST14.

Output parallel bus bar

Available for 2up & 3up versions, it connects together the differents positive outputs as well as negative output.

Output serial bus bar

It connects the negative of the first unit with the positive of the second to create high voltage configuration.

Output N+1 bus bar including diode

From 1up to 4up, this accessory puts in parallel the outputs with the addition of an oring diode mounted on an aluminium bar.

Inhibition and parallel cable

These 50mm cables allow unit to current share in parallel and allow the user to inhibit all units at the same time.

Input Transient Protection

A VDR (Voltage Dependent Resistor) and a common mode input filter form an effective protection against input transients in severe environments like railways.
When M option is defined for PST14A&B, the unit is incorporating an active protection against high energy transient MIL STD 1275, DO160.

Input Reverse Polarity

A diode placed internally across the input will cause the fuse to blow in case of a reverse polarity of input voltage.

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Output

Electrical Output Data PST14A

General conditions : 25°C ambiant.

1) Recycle input voltage or inhibit to restart (>100ms off) - 2) Output voltage 95 % of nominal - 3) Output voltage < 250mV - 4) Nominal input, full load, 20MHz bandwidth - 5) No load to full load, nominal input

Part Number	Output Voltage	Output Power	Voltage Adjustment			Overvoltage Protection (1)			Output Current			Output Current Limit (2)			Short Circuit Current (3)			Output Noise (4)			Efficiency			Load regulation (5)
	V	W	V			V			A			A			A			mVpp			%			%
	Nom.	Nom.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Typ.
12Vin																								
PST14A12-3V3150-x	3V3	150	1.65		3.63	4.1	4.3	4.5	0		45	46.4	52	61.5	31.8	52	61.5		75	100		78		0.2
PST14A12-5175-x	5V	175	2.5		5.5	6	6.25	6.5	0		35	35.7	40	49	24	40	49		170	350		76		0.2
PST14A12-6V5200-x	6V5	200	3.5		7.15	7.7	8	8.3	0		30.5	31.4	35	41.6	21	35	41.6		170	1350		78		
PST14A12-8200-x	8V	200	4		8.8	9.3	9.7	10.2	0		25	25.5	29	33.8	17.5	29	33.8		180	400		80		
PST14A12-12200-x	12V	200	6		13.2	13.7	14.3	14.9	0		16.6	17	19.2	22.6	11.6	19.2	22.6		150	350		80		0.2
PST14A12-15200-x	15V	200	7.5		16.5	17	17.8	18.6	0		13.3	13.5	15.3	20.6	9.3	15.3	20.6		150	275		84		0.2
PST14A12-24200-x	24V	200	12		26.4	27	28	29.2	0		8.33	8.4	9.6	11.3	5.8	9.6	11.3		220	400		85		0.2
PST14A12-28200-x	28V	200	14		30.8	31	32.7	34	0		7.1	7.3	8.2	10	5	8.2	10		150	250		84		0.2
PST14A12-36200-x	36V	200	18		39.6	40	42	43.5	0		5.5	5.7	7.7	8.1	3.4	7	8		150	280		82		0.2
PST14A12-48200-x	48V	200	24		52.8	53.5	56	58	0		4.1	4.25	4.4	5.8	2.9	4.8	5.8		180	400		82		0.2
24Vin																								
PST14A24-3V3200-x	3V3	200	1.65		3.63	4.1	4.3	4.5	0		60	61.8	69	82	42	69	82		75	100		79		0.2
PST14A24-3V3264-x	3V3	264	1.65		3.63	4.1	4.3	4.5	0		80	81.6	92	108	56	92	108		75	100		78		0.2
PST14A24-5300-x	5V	300	2.5		5.5	6	6.25	6.5	0		60	61 .2	69	81	42	69	81		100	150		84		0.2
PST14A24-5400-x	5V	400	2.5		5.5	6	6.25	6.5	0		80	81.6	92	104	56	92	104		100	190		84		0.2
PST14A24-6V5400-x	6V5	400	3.5		7.15	7.7	8	8.3	0		61	62.7	71	83	43	71	83		75	125		85		0.2
PST14A24-8300-x	8V	300	4		8.8	9.3	9.7	10.2	0		37.5	38.2	43	51	26	43	51		150	250		86		0.2
PST14A24-12300-x	12V	300	6		13.2	13.7	14.3	14.9	0		25	25.5	29	34	17.5	29	34		150	150		86		0.2
PST14A24-12400-x	12V	400	6		13.2	13.7	14.3	14.9	0		33.3	34	38	44	23	38	44		180	320		86		0.2
PST14A24-12500-x	12V	500	6		13.2	13.7	14.3	14.9	0		41.6	42.5	48	56	29	48	56		150	340		86		0.2
PST14A24-15300-x	15V	300	7.5		16.5	17	17.8	18.6	0		20	20.5	23	27	14	23	27		120	200		86		0.2
PST14A24-15400-x	15V	400	7.5		16.5	17	17.8	18.6	0		26.6	27	31	35	18	31	35		100	150		87		0.2
PST14A24-24300-x	24V	300	12		26.4	27	28	29.2	0		12.5	12.7	14.4	17	8.8	14.4	17		75	100		87.5		0.2
PST14A24-24400-x	24V	400	12		26.4	27	28	29.2	0		16.6	17	19	21.7	2.2	19	21.7		80	100		87.5		0.2
PST14A24-24500-x	24V	500	12		26.4	27	28	29.2	0		20.8	21.3	24	28	14	24	28		150	250		87.5		0.2
PST14A24-28300-x	28V	300	14		30.8	31	32.7	34	0		10.7	10.9	12.3	14.5	3	12.3	14.5		75	125		87		0.2
PST14A24-28400-x	28V	400	14		30.8	31	32.7	34	0		14.2	14.5	16	19.4	10	16.4	19.4		120	200		87		0.2
PST14A24-28500-x	28V	500	14		30.8	31	32.7	34	0		17.9	18.3	20.6	24.2	12.5	20.6	24.2		125	215		87		0.2
PST14A24-36300-x	36V	300	18		39.6	40	42	43.5	0		8.33	8.5	9.6	11.3	5.8	9.6	11.3		75	100		87.5		0.2
PST14A24-36400-x	36V	400	18		39.6	40	42	43.5	0		11.1	11.3	12.8	15	7.8	12.8	15		75	150		87.5		0.2
PST14A24-48300-x	48V	300	24		52.8	53.5	56	58	0		6.25	6.4	7.2	8.5	4.3	7.2	8.5		100	225		86.5		0.2
PST14A24-48400-x	48V	400	24		52.8	53.5	56	58	0		8.33	8.5	9.6	11.3	4.8	9.6	11.3		100	200		86		0.2
48Vin																								
PST14A48-3V3264-x	3V3	264	1.65		3.63	4.1	4.3	4.5	0		80	81.6	94	108	56	92	112		75	100		80		0.2
PST14A48-5400-x	5V	400	2.5		5.5	6	6.25	6.5	0		80	81.6	92	104	8	92	104		75	100		84		0.2
PST14A48-8400-x	8V	400	4		8.8	9.3	9.7	10.2	0		50	51	57	67	35	57	67		150	310		84		
PST14A48-12500-x	12V	500	6		13.2	13.7	14.3	14.9	0		41.6	42.5	48	54	29	48	54		150	250		87		0.2
PST14A48-15500-x	15V	500	7.5		16.5	17	17.8	18.6	0		33.3	34	38	45	3.8	38	45		75	100		88.5		0.2
PST14A48-24500-x	24V	500	12		26.4	27	28	29.2	0		20.8	21.3	23.4	25.5	14.6	23.4	25.1		75	100		87		0.2
PST14A48-28500-x	28V	500	14		30.8	31	32.7	34	0		17.8	18.2	20.6	23.3	12.5	20.6	23.3		75	100		88.5		0.2
PST14A48-36500-x	36V	500	18		39.6	40	42	43.5	0		13.9	14.1	16	19	9.7	16	19		100	150		86		0.2
PST14A48-48500-x	48V	500	24		52.8	53.5	56	58	0		10.4	10.6	12	13.6	6.2	12	14.8		150	175		89		0.2
72Vin																								
PST14A72-3V3264-x	3V3	264	1.65		3.63	4.1	4.3	4.5			80	81.6	92	108	56	92	108		75	120		80		0.2
PST14A72-5300-x	5V	300	2.5		5.5	6	6.25	6.5			60	61.2	69	81	22	69	81		75	120		84		0.2
PST14A72-8300-x	8V	300	4		8.8	9.3	9.7	10.2			37.5	38.2	43	51	26	43	51		150	150		84		0.2
PST14A72-12400-x	12V	400	6		13.2	13.7	14.3	14.9			33.3	33.9	38	45	23	38	45		180	400		86		0.2
PST14A72-15400-x	15V	400	7.5		16.5	17	17.8	18.6			26.7	27.2	30.7	36.2	18	30.7	36.2		200	375		86		0.2
PST14A72-24400-x	24V	400	12		26.4	27	28	29.2			16.6	17	19	23.5	11.5	19	22.6		150	200		87		0.2
PST14A72-28400-x	28V	400	14		30.8	31	32.7	34			14.2	14.5	16.4	19.5	10	16.4	19.4		150	380		88		0.2
PST14A72-36400-x	36V	400	18		39.6	40	42	43.5			11.1	11.3	12.8	15	7.7	12.8	15		120	250		87		0.2
PST14A72-48400-x	48V	400	24		52.8	53.5	56	58			8.33	8.4	9.5	11.3	5.8	9.5	11.3		150	300		87		0.2
110Vin																								
PST14A110-3V3150-x	3V3	150	1.65		3.63	4.1	4.3	4.5			45	46.4	52	61.5	31.8	52	61.5		75	100		81		0.2
PST14A110-3V3200-x	3V3	200	1.65		3.63	4.1	4.3	4.5			60	61.8	69	82	42	69	82		75	110		80		0.2
PST14A110-5200-x	5V	200	2.5		5.5	6	6.25	6.5			40	40.8	46	54	28	46	54		120	200		85		0.2
PST14A110-5300-x	5V	300	2.5		5.5	6	6.25	6.5			60	61.2	69	81	42	69	81		75	120		84		0.2
PST14A110-8200-x	8V	200	4		8.8	9.3	9.7	10.2			25	25.5	29	34	6	29	34		150	275		87		0.2
PST14A110-8300-x	8V	300	4		8.8	9.3	9.7	10.2			37.5	38.2	43	51	26	43	51		150	250		86		0.2
PST14A110-12300-x	12V	300	6		13.2	13.7	14.3	14.9			25	25.5	28.8	33.8	17.5	28.8	33.8		150	300		86		0.2
PST14A110-12400-x	12V	400	6		13.2	13.7	14.3	14.9			33.3	34	38.3	45	23	38	45		150	300		85		0.2
PST14A110-15300-x	15V	300	7.5		16.5	17	17.8	18.6			20	20.4	23	27	14	23	27		150	315		87		0.2
PST14A110-15400-x	15V	400	7.5		16.5	17	17.8	18.6			26.6	27.2	30.7	36.1	10	30.7	36.1		120	230		87		0.2
PST14A110-24300-x	24V	300	12		26.4	27	28	29.2			12.5	12.7	14.4	17	8.7	14.4	17		130	240		88		0.2
PST14A110-24400-x	24V	400	12		26.4	27	28	29.2			16.6	17	19	22.6	11.5	19	22.5		100	175		86		0.2
PST14A110-28300-x	28V	300	14		30.8	31	32.7	34			10.7	10.9	12.3	14.5	7.5	12.3	14.5		150	280		87		0.2
PST14A110-28400-x	28V	400	14		30.8	31	32.7	34			14.2	14.5	16.5	20	10	16.5	20		120	200		87		0.2
PST14A110-36300-x	36V	300	18		39.6	40	42	43.5			8.33	8.5	9.5	11.3	5.8	9.5	11.3		100	175		88		0.2
PST14A110-36400-x	36V	400	18		39.6	40	42	43.5			11.1	11.3	12.8	15	3.2	12.8	15		120	200		88		0.2
PST14A110-48300-x	48V	300	24		52.8	53.5	56	58			6.25	6.4	7.2	8.4	4.3	7.2	8.4		200	175		87		0.2
PST14A110-48400-x	48V	400	24		52.8	53.5	56	58			8.33	8.5	9.6	11.3	5.8	9.6	11.3		100	200		89		0.2

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Output

Electrical Output Data PST14B

General conditions : 25°C ambiant.

1) Recycle input voltage or inhibit to restart (>100ms off) - 2) Output voltage 95 % of nominal - 3) Output voltage < 250mV - 4) Nominal input, full load, 20MHz bandwidth - 5) No load to full load, nominal input

Part Number	Output Voltage	Output Power	Voltage Adjustment			Overvoltage Protection (1)			Output Current			Output Current Limit (2)			Short Circuit Current (3)			Output Noise (4)			Efficiency			Load regulation (5)
	V	W	V			V			A			A			A			mVpp			%			%
	Nom.	Nom.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Typ.
12Vin																								
PST14B12-3V375-x	3V3	75	1.65		3.63	4.1	4.3	4.5	0		22.7	23.1	26	31	15.5	26	31		60	100		77		0.2
PST14B12-575-x	5V	75	2.5		5.5	6	6.25	6.5	0		15	15.3	17.5	20.5	10.5	17.5	20.5		150	300		73		0.2
PST14B12-12125-x	12V	125	6		13.2	13.7	14.3	14.9	0		10.4	10.6	12	14.1	7.3	12	14.1		150	350		80		0.2
PST14B12-15150-x	15V	150	7.5		16.5	17	17.8	18.6	0		10	10.2	11.5	13.5	7	11.5	13.5		200	350		80		0.2
PST14B12-24150-x	24V	150	12		26.4	27	28	29.2	0		6.25	6.4	7.2	9.3	4.4	7.2	9.3		250	400		80		0.2
PST14B12-28150-x	28V	150	14		30.8	31	32.7	34	0		5.3	5.4	6.1	7.3	3.7	6.2	7.3		200	400		80		0.2
PST14B12-36150-x	36V	150	18		39.6	40	42	43.5	0		4.1	4.2	4.8	5.7	2.9	4.8	5.7		200	400		79		0.2
PST14B12-48150-x	48V	150	24		52.8	53.5	56	58	0		3.1	3.2	3.6	4.3	2.2	3.6	4.3		200	400		81		0.2
24Vin																								
PST14B24-3V3100-x	3V3	100	1.65		3.63	4.1	4.3	4.5	0		30	30.9	35	41	21	35	41		75	100		80		0.2
PST14B24-3V3150-x	3V3	150	1.65		3.63	4.1	4.3	4.5	0		45	46.4	52	61	32	52	61		100	200		80		0.2
PST14B24-5150-x	5V	150	2.5		5.5	6	6.25	6.5	0		30	30.6	34	40	5.8	34	40		50	75		84		0.2
PST14B24-5200-x	5V	200	2.5		5.5	6	6.25	6.5	0		40	40.8	52	55	28	52	62		80	125		83		0.2
PST14B24-6V5200-x	6V5	200	3.5		7.15	7.7	8	8.3	0		30.5	31.4	35	41	21	35	41		150	230		84		0.2
PST14B24-8200-x	8V	200	4		8.8	9.3	9.7	10.2	0		25	25.5	29	34	17	29	34		150	250		86		0.2
PST14B24-12150-x	12V	150	6		13.2	13.7	14.3	14.9	0		12.5	12.8	14.4	17	8.5	14.4	17		100	200		87		0.2
PST14B24-12200-x	12V	200	6		13.2	13.7	14.3	14.9	0		16.6	17	19	23	11.5	19	23		250	400		85		0.2
PST14B24-12250-x	12V	250	6		13.2	13.7	14.3	14.9	0		20.8	21.3	24	29	14.5	24	29		150	250		86		0.2
PST14B24-15150-x	15V	150	7.5		16.5	17	17.8	18.6	0		10	10.2	11.5	13.5	7	11.5	13.5		150	250		87		0.2
PST14B24-15200-x	15V	200	7.5		16.5	17	17.8	18.6	0		13.3	13.5	16	17.3	13.5	16	17.3		150	300		86		0.2
PST14B24-24150-x	24V	150	12		26.4	27	28	29.2	0		6.25	6.4	7.2	8.4	3.7	7.2	8.4		120	250		87		0.2
PST14B24-24200-x	24V	200	12		26.4	27	28	29.2	0		8.33	8.5	9.8	11.5	5.9	9.8	11.5		150	250		87		0.2
PST14B24-24250-x	24V	250	12		26.4	27	28	29.2	0		10.4	10.6	12	14.1	7	12	14.1		150	300		86		0.2
PST14B24-28150-x	28V	150	14		30.8	31	32.7	34	0		5.3	5.5	6.1	7.2	3.7	6.1	7.2		150	250		87		0.2
PST14B24-28200-x	28V	200	14		30.8	31	32.7	34	0		7.1	7.3	8.2	9.6	5	8.2	9.6		150	225		86		0.2
PST14B24-28250-x	28V	250	14		30.8	31	32.7	34	0		8.9	9.1	10.3	12.1	6.3	10.3	12.1		100	175		88		0.2
PST14B24-36150-x	36V	150	18		39.6	40	42	43.5	0		4.17	4.25	4.8	5.7	2.9	4.8	5.7		120	250		87		0.2
PST14B24-36200-x	36V	200	18		39.6	40	42	43.5	0		5.5	5.67	6.4	7.5	4	6.4	7.5		120	250		87		0.2
PST14B24-48150-x	48V	150	24		52.8	53.5	56	58	0		3.1	3.2	3.6	4.2	2.2	3.6	4.2		100	150		87		0.2
PST14B24-48200-x	48V	200	24		52.8	53.5	56	58	0		4.1	4.25	4.8	5.7	2.9	4.8	5.7		150	250		87		0.2
PST14B24-48250-x	48V	250	24		52.8	53.5	56	58	0		5.2	5.3	6	7	3.6	6	7		150	250		88		0.2
48Vin																								
PST14B48-3V3150-x	3V3	150	1.65		3.63	4.1	4.3	4.5	0		45	46.4	52	61	32	52	61		75	100		81		0.2
PST14B48-5200-x	5V	200	2.5		5.5	6	6.25	6.5	0		40	41	46	52	28	46	56		75	120		84		0.2
PST14B48-12250-x	12V	250	6		13.2	13.7	14.3	14.9	0		20.8	21.3	24	27.3	14.6	24	26.2		200	400		86		0.2
PST14B48-15250-x	15V	250	7.5		16.5	17	17.8	18.6	0		16.6	17	19	22	11.5	19	22		120	200		88		0.2
PST14B48-24250-x	24V	250	12		26.4	27	28	29.2	0		10.4	10.7	12	13.7	7.3	12	13.7		150	275		88		0.2
PST14B48-28250-x	28V	250	14		30.8	31	32.7	34	0		9	9.1	10.3	12.1	5	10.3	12.1		120	220		88.5		0.2
PST14B48-36250-x	36V	250	18		39.6	40	42	43.5	0		6.9	7.1	7.9	9.4	4.8	8	9.4		150	315		88.5		0.2
PST14B48-48250-x	48V	250	24		52.8	53.5	56	58	0		5.2	5.3	6	7.3	2.1	6	7.3		100	180		89		0.2
PST14B48-48300-x	48V	300	24		52.8	53.5	56	58	0		6.25	6.4	7.2	8.4	4.5	7.2	8.4		80	150		89		0.2
72Vin																								
PST14B72-3V3100-x	3V3	100	1.65		3.63	4.1	4.3	4.5			30.3	30.9	35	41	21	35	41		120	150		81		0.2
PST14B72-5150-x	5V	150	2.5		5.5	6	6.25	6.5			30	30.9	35	41	21	35	41		100	230		84		0.2
PST14B72-8150-x	8V	150	4		8.8	9.3	9.7	10.2			18.7	19.1	21.6	25.5	5	21	25.5		150	220		84.5		0.2
PST14B72-12250-x	12V	250	6		13.2	13.7	14.3	14.9			20.8	21.3	24	28	14.5	24	28		150	350		86		0.2
PST14B72-15250-x	15V	250	7.5		16.5	17	17.8	18.6			16.6	17	19	22.6	11.5	19	22.6		250	400		86		0.2
PST14B72-24250-x	24V	250	12		26.4	27	28	29.2			10.4	10.6	12	14.1	7	12	14.1		150	270		86		0.2
PST14B72-28250-x	28V	250	14		30.8	31	32.7	34			8.9	9.1	10.3	12.1	6.3	10.3	12.1		150	330		88		0.2
PST14B72-36250-x	36V	250	18		39.6	40	42	43.5			6.9	7.1	8.2	9.4	5	8.2	9.4		150	250		87		0.2
PST14B72-48250-x	48V	250	24		52.8	53.5	56	58			5.2	5.3	6	7.1	3.6	6	7.1		150	250		86		0.2
110Vin																								
PST14B110-3V375-x	3V3	75	1.65		3.63	4.1	4.3	4.5			22.7	23.1	26	30.7	16	26	30.7		75	100		81		0.2
PST14B110-3V3100-x	3V3	100	1.65		3.63	4.1	4.3	4.5			30.3	30.9	35	41	21	35	41		75	100		81		0.2
PST14B110-5100-x	5V	100	2.5		5.5	6	6.25	6.5			20	20.4	23	27.3	14	23	27		150	300		80		0.2
PST14B110-5150-x	5V	150	2.5		5.5	6	6.25	6.5			30	30.6	34	41	21	35	41		75	120		84		0.2
PST14B110-8150-x	8V	150	4		8.8	9.3	9.7	10.2			18.7	19.1	21.6	25.5	13.1	21.6	25.5		120	250		85		0.2
PST14B110-12150-x	12V	150	6		13.2	13.7	14.3	14.9			12.5	12.7	14.4	17	8.7	14.4	17		100	190		87		0.2
PST14B110-12200-x	12V	200	6		13.2	13.7	14.3	14.9			16.6	17	19	23	11.5	19	23		120	200		86		0.2
PST14B110-15150-x	15V	150	7.5		16.5	17	17.8	18.6			10	10.2	11.5	13.5	7	11.5	13.5		150	260		88		0.2
PST14B110-15200-x	15V	200	7.5		16.5	17	17.8	18.6			13.3	13.5	15.3	18	6.5	15.3	18		150	300		87		0.2
PST14B110-24150-x	24V	150	12		26.4	27	28	29.2			6.25	6.4	7.2	9.5	4.4	7.2	9.5		100	150		88		0.2
PST14B110-24200-x	24V	200	12		26.4	27	28	29.2			8.33	8.5	9.6	11.5	5.9	9.6	11.5		150	250		86		0.2
PST14B110-28150-x	28V	150	14		30.8	31	32.7	34			5.3	5.5	6.2	7.2	3.7	6.2	7.2		120	225		88		0.2
PST14B110-28200-x	28V	200	14		30.8	31	32.7	34			7.1	7.3	8.2	9.7	5	8.2	9.7		150	300		86.5		0.2
PST14B110-36150-x	36V	150	18		39.6	40	42	43.5			4.1	4.2	4.8	5.7	2.9	4.8	5.7		100	190		86		0.2
PST14B110-36200-x	36V	200	18		39.6	40	42	43.5			5.5	5.7	6.4	7.5	4	6.4	7.5		120	250		88		0.2
PST14B110-48150-x	48V	150	24		52.8	53.5	56	58			3.1	3.2	3.6	4.3	2.1	3.6	4.3		80	150		86		0.2
PST14B110-48200-x	48V	200	24		52.8	53.5	56	58			4.1	4.3	4.8	5.7	2.9	4.8	5.7		75	100		87		0.2

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Output

Electrical Output Data PST14C

General conditions : 25°C ambiant.

1) Recycle input voltage or inhibit to restart (>100ms off) - 2) Output voltage 95 % of nominal - 3) Output voltage < 250mV - 4) Nominal input, full load, 20MHz bandwidth - 5) No load to full load, nominal input

Part Number	Output Voltage	Output Power	Voltage Adjustment			Overvoltage Protection (1)			Output Current			Output Current Limit (2)			Short Circuit Current (3)			Output Noise (4)			Efficiency			Load regulation (5)
	V	W	V			V			A			A			A			mVpp			%			%
	Nom.	Nom.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Typ.
12Vin																								
PST14C12-3V350-x	3V3	50	1.65		3.63	4.1	4.3	4.5	0	15.1		15.5	17.5	23.4	10.6	17.5	20.6		100	225		70.5		0.2
PST14C12-550-x	5V	50	2.5		5.5	6	6.25	6.5	0	10		10	11.5	13.5	7	11.5	13.5		100	160		76		0.2
PST14C12-12100-x	12V	100	6		13.2	13.7	14.3	14.9	0	8.3		8.4	9.5	11.3	5.8	9.6	11.3		125	250		79		0.2
PST14C12-15100-x	15V	100	7.5		16.5	17	17.8	18.6	0	6.7		6.8	7.8	9.1	4.6	7.8	9.1		125	250		79.5		0.2
PST14C12-24100-x	24V	100	12		26.4	27	28	29.2	0	4.1		4.2	4.8	5.7	2.9	4.8	5.63		110	225		81.5		0.2
PST14C12-28100-x	28V	100	14		30.8	31	32.7	34	0	3.6		3.6	4.15	5.4	2.5	4.15	5.4		100	200		79.5		0.2
PST14C12-36100-x	36V	100	18		39.6	40	42	43.5	0	2.8		2.85	3.2	3.8	1.9	3.2	3.8		100	225		80		0.2
PST14C12-48100-x	48V	100	24		52.8	53.5	56	58	0	2.1		2.12	2.4	3.4	1.45	2.4	3.4		90	157		79		0.2
24Vin																								
PST14C24-3V350-x	3V3	50	1.65		3.63	4.1	4.3	4.5	0	15.1		15.5	17.5	21	10.5	17.5	20.6		120	300		78		0.2
PST14C24-3V375-x	3V3	75	1.65		3.63	4.1	4.3	4.5	0	22.7		23	26	31	15.9	26	31		100	175		78		0.2
PST14C24-550-x	5V	50	2.5		5.5	6	6.25	6.5	0	10		10.2	11.5	13.5	8	11.5	13.5		90	100		83		0.2
PST14C24-5100-x	5V	100	2.5		5.5	6	6.25	6.5	0	20		20.3	23	27	2.5	23	27		90	125		83		0.2
PST14C24-5125-x	5V	125	2.5		5.5	6	6.25	6.5	0	25		25.5	29	34	17	29	34		100	190		83		0.2
PST14C24-8100-x	8V	100	4		8.8	9.3	9.7	10.2	0	12.5		12.7	14.5	17	8.5	14.5	17		100	185		85		0.2
PST14C24-1250-x	12V	50	6		13.2	13.7	14.3	14.9	0	4.1		4.2	4.8	5.7	2.9	4.8	5.7		80	100		87		0.2
PST14C24-12100-x	12V	100	6		13.2	13.7	14.3	14.9	0	8.3		8.5	9.5	11	1.1	9.5	11		150	260		85		0.2
PST14C24-12150-x	12V	150	6		13.2	13.7	14.3	14.9	0	12.5		12.8	14.4	17	8.5	14.4	17		120	215		87		0.2
PST14C24-1550-x	15V	50	7.5		16.5	17	17.8	18.6	0	3.3		3.4	3.8	4.5	2.33	3.8	4.5		90	200		87		0.2
PST14C24-15100-x	15V	100	7.5		16.5	17	17.8	18.6	0	6.7		6.8	7.7	8.7	4.7	7.7	8.7		75	125		88		0.2
PST14C24-15150-x	15V	150	7.5		16.5	17	17.8	18.6	0	10		10.2	11.5	13.5	7	11.5	13.5		100	190		88		0.2
PST14C24-2450-x	24V	50	12		26.4	27	28	29.2	0	2.1		2.12	2.4	2.8	1.45	2.4	2.8		75	100		88		0.2
PST14C24-24100-x	24V	100	12		26.4	27	28	29.2	0	4.1		4.25	4.8	5.7	2.9	4.8	5.7		75	100		87		0.2
PST14C24-24150-x	24V	150	12		26.4	27	28	29.2	0	6.3		6.4	7.2	8.4	4.4	7.2	8.4		75	100		87		0.2
PST14C24-2850-x	28V	50	14		30.8	31	32.7	34	0	1.78		1.8	2.1	2.4	1.25	2.1	2.4		75	100		88		0.2
PST14C24-28100-x	28V	100	14		30.8	31	32.7	34	0	3.5		3.6	4.15	5	0.5	4.1	5		75	100		88		0.2
PST14C24-28150-x	28V	150	14		30.8	31	32.7	34	0	5.4		5.5	6.2	7.2	3.8	6.2	7.2		75	150		88		0.2
PST14C24-3650-x	36V	50	18		39.6	40	42	43.5	0	1.39		1.42	1.6	1.9	0.9	1.6	1.9		50	75		84		0.2
PST14C24-36100-x	36V	100	18		39.6	40	42	43.5	0	2.8		2.85	3.2	3.8	1.9	3.2	3.8		50	75		86		0.2
PST14C24-4850-x	48V	50	24		52.8	53.5	56	58	0	1.05		1.06	1.2	1.5	0.7	1.2	1.5		80	150		86		0.2
PST14C24-48100-x	48V	100	24		52.8	53.5	56	58	0	2.1		2.15	2.4	2.9	1.45	2.4	2.9		80	150		86		0.2
PST14C24-48150-x	48V	150	24		52.8	53.5	56	58	0	3.1		3.2	3.8	4.2	2.2	3.8	4.2		75	150		88		0.2
48Vin																								
PST14C48-3V350-x	3V3	50	1.65		3.63	4.1	4.3	4.5	0	15.1		15.5	17.5	21	10.5	17.5	21		75	100		79		0.2
PST14C48-3V375-x	3V3	75	1.65		3.63	4.1	4.3	4.5	0	22.7		22.9	26	32	15.9	26	32		75	100		80		0.2
PST14C48-550-x	5V	50	2.5		5.5	6	6.25	6.5	0	10		10.2	11.5	13.5	7	11.5	13.5		75	120		84		0.2
PST14C48-575-x	5V	75	2.5		5.5	6	6.25	6.5	0	15		15.3	17.5	20	10.5	17.5	20.6		75	100		82		0.2
PST14C48-5100-x	5V	100	2.5		5.5	6	6.25	6.5	0	20		20.5	23	26	14	23	26		70	100		84		0.2
PST14C48-8100-x	8V	100	4		8.8	9.3	9.7	10.2	0	12.5		12.7	14.4	17	9.7	14.4	17		100	150		87		0.2
PST14C48-8150-x	8V	150	4		8.8	9.3	9.7	10.2	0	18.7		19.1	21.5	26	13	21	26		100	175		86		0.2
PST14C48-1275-x	12V	75	6		13.2	13.7	14.3	14.9	0	6.25		6.35	7.2	8.4	4.4	7.2	8.4		100	200		85		0.2
PST14C48-12150-x	12V	150	6		13.2	13.7	14.3	14.9	0	12.5		12.7	14.4	17	9.7	14.4	17		100	225		87		0.2
PST14C48-1575-x	15V	75	7.5		16.5	17	17.8	18.6	0	5		5.1	5.7	6.8	3.5	5.7	6.8		70	100		88		0.2
PST14C48-15150-x	15V	150	7.5		16.5	17	17.8	18.6	0	10		10.2	11.5	13.5	7	11.5	13.5		75	150		87		0.2
PST14C48-2475-x	24V	75	12		26.4	27	28	29.2	0	3.1		3.2	3.6	4.3	0.5	3.6	4.3		50	75		87		0.2
PST14C48-24150-x	24V	150	12		26.4	27	28	29.2	0	6.25		6.37	7.2	9.1	4.4	7.2	9.1		120	200		88		0.2
PST14C48-2875-x	28V	75	14		30.8	31	32.7	34	0	2.6		2.7	3.1	3.6	1.9	3.1	3.6		120	200		88		0.2
PST14C48-28150-x	28V	150	14		30.8	31	32.7	34	0	5.3		5.4	6.1	7	3.7	6.2	7		75	140		88		0.2
PST14C48-36150-x	36V	150	18		39.6	40	42	43.5	0	4.1		4.2	4.8	5.7	2.9	4.8	5.7		80	120		87		0.2
PST14C48-4875-x	48V	75	24		52.8	53.5	56	58	0	1.55		1.6	1.8	2.1	1.1	1.8	2.1		100	175		87		0.2
PST14C48-48150-x	48V	150	24		52.8	53.5	56	58	0	3.1		3.2	3.6	4.5	2.2	3.6	4.5		75	120		88		0.2
72Vin																								
PST14C72-3V375-x	3V3	75	1.65		3.63	4.1	4.3	4.5		22.7		23.1	26	31	15.9	26	31		75	130		81		0.2
PST14C72-550-x	5V	100	2.5		5.5	6	6.25	6.5		20		20.4	23	27	14	23	27		75	150		81		0.2
PST14C72-8100-x	8V	100	4		8.8	9.3	9.7	10.2		12.5		12.7	14.4	17	8.7	14.4	17		120	180		82.5		0.2
PST14C72-12150-x	12V	150	6		13.2	13.7	14.3	14.9		12.5		12.7	14.4	17	8.7	14.4	17		120	220		85		0.2
PST14C72-15150-x	15V	150	7.5		16.5	17	17.8	18.6		10		10.2	11.5	13.5	7	11.5	13.5		100	180		85		0.2
PST14C72-24150-x	24V	150	12		26.4	27	28	29.2		6.25		6.35	7.2	8.4	4.4	7.2	8.4		100	150		84		0.2
PST14C72-28150-x	28V	150	14		30.8	31	32.7	34		5.3		5.4	6.1	7.3	3.7	6.2	7.3		75	130		85		0.2
PST14C72-36150-x	36V	150	18		39.6	40	42	43.5		4.1		4.2	4.8	5.7	2.9	4.8	5.7		70	100		87		0.2
PST14C72-48150-x	48V	150	24		52.8	53.5	56	58		3.1		3.2	3.6	4.3	2.2	3.6	4.3		70	100		86		0.2
110Vin																								
PST14C110-3V350-x	3V3	50	1.65		3.63	4.1	4.3	4.5		15		15.5	17.5	21	10.5	17.5	21		120	210		79		0.2
PST14C110-575-x	5V	75	2.5		5.5	6	6.25	6.5		15		15.3	17.5	20.5	10.5	17.5	20.5		80	120		83		0.2
PST14C110-875-x	8V	75	4		8.8	9.3	9.7	10.2		9.3		9.5	10.8	12.7	6.5	10.8	12.7		150	350		84		0.2
PST14C110-12100-x	12V	100	6		13.2	13.7	14.3	14.9		8.3		8.5	9.6	11.3	5.8	9.6	11.3		100	190		86		0.2
PST14C110-15100-x	15V	100	7.5		16.5	17	17.8	18.6		6.7		6.8	7.7	9.1	4.7	7.7	9.1		75	130		83.5		0.2
PST14C110-24100-x	24V	100	12		26.4	27	28	29.2		4.1		4.2	4.8	5.7	2.9	4.8	5.7		75	100		85		0.2
PST14C110-28100-x	28V	100	14		30.8	31	32.7	34		3.57		3.65	4.15	4.8	2.5	4.1	4.8		50	100		85		0.2
PST14C110-36100-x	36V	100	18		39.6	40	42	43.5		2.76		2.85	3.2	3.8	1.9	3.2	3.8		100	190		85		0.2
PST14C110-48100-x	48V	100	24		52.8	53.5	56	58		2.1		2.15	2.4	2.8	0.6	2.4	2.8		80	100		85		0.2
PST14C110-48150-x	48V	150	24		52.8	53.5	56	58		3.1		3.2	3.6	4.2	2.2	3.2	3.6		75	100		86		0.2

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Parallel and Series Connection

A converter output can be connected in series with an output from a separate converter, an internal diode across each output is implemented internally. The maximum output current of a serial-connected outputs is limited by the output with the lowest current limit. Output voltages above 48V (SELV - Safety Extra Low Voltage) require additional safety measures in order to comply with international safety requirements.
Parallel operation is possible with PST14 Mini & Maxi to increase output power (see below parallelling signal).

Redundant Systems Operation

When systems require a very high level of reliability and should work normally in the event of a failure, N+1 redundancy is implemented where N is the number of converter to support power requirement. If one converter fail, the remaining ones still delivers the power to the loads.
Oring diodes are required to ensure proper N+1 operation (included with optional N+1 bus bar).

Hold-up time

The converter provides limited hold-up time. If a hold-up time is required (some railways applications for example), use external input capacitors of adequat size.
Formula for additional external input capacitor : $C = 2*Pout*th*100/(V^2-Vi^2)/n$
whereas :

C	= external input capacitance [mF]
P_{out}	= output power [W]
n	= efficiency [%]
t_h	= hold-up time [ms]
V_i	= minimum input voltage
V	= Input voltage level before interruption

Output Current Limitation

See Electrical output data for value.
The converter output is continously protected against short-circuit by a constant current limitation. The short circuit protection is unlimited, the operating area between nominal power and active protection area working in a constant current mode may lead to power above nominal, then over stress of the internal components.

Thermal Considerations

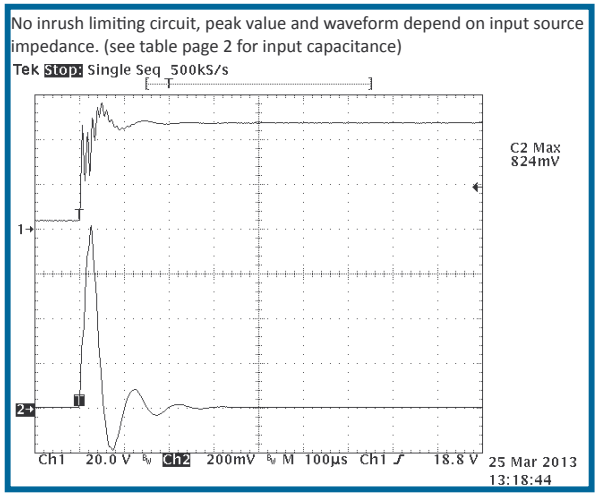
The converter is designed to be mounted on a dissipative area, in conduction cooling mode. The max. operating temperature is the temperature of the baseplate which should not exceed 100°C.
Addition of grease or thermal pad between the converter baseplate and the chassis is mandatory .

Thermal protection

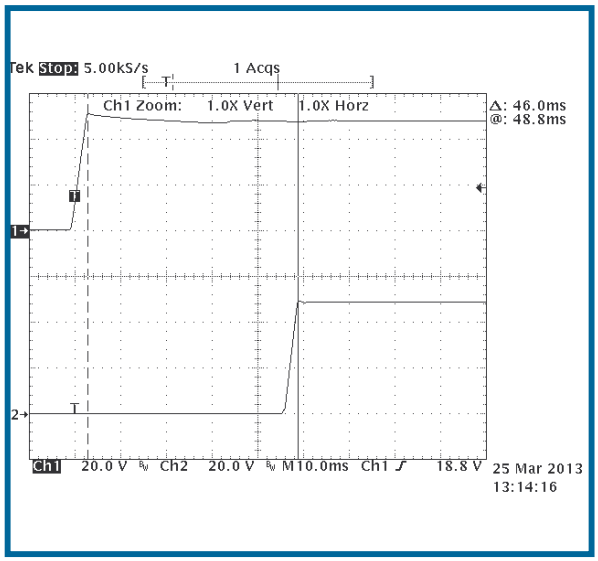
A temperature protection is integrated in each Vicor module, disabling output when heatsink temperature exceeds 105°C. The converter automatically restarts, when the temperature drops below this limit. Nevertheless, exceeding the max operating temperature may cause failures of the converter.

Waveforms

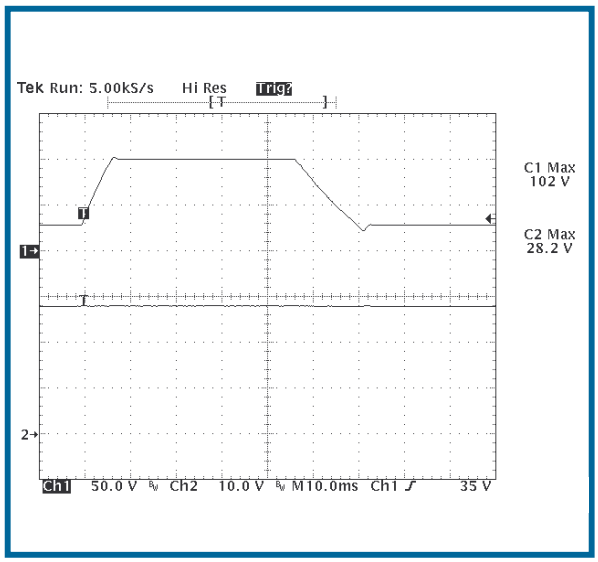
Inrush : PST14B48-48250



Start-up time : PST14B48-48250



100V 50ms Transient protection (M option) : PST14A24-28400-M



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Auxiliary Functions

Primary Inhibit (Remote On/Off)

The inhibit input disables (logic low, pull down or short circuit between INH+ and -IN) or enables (logic high TTL, pull up or open-circuit) the converter. This signal is referenced to the input voltage and will disable/ enable all outputs at the same time when inhibition & parallel cable is used. In systems consisting of several converters, this feature may be used to sequence the activation of the different converters if inhibition is used separately.

Output Voltage Adjustment

The converter outputs can be adjustable by potentiometer or an external voltage between trim and -sense (1,23V for nominal).

Sense Lines

This feature enable compensation of voltage drop accross the connector contacts and the load lines.
The voltage between any sense line and its respective power output pin (as measured on the connector) should not exceed the following values at nominal output voltage.

Output type	Total drop	Negative line drop
V1	< 0.5V	< 0.25V

Powergood

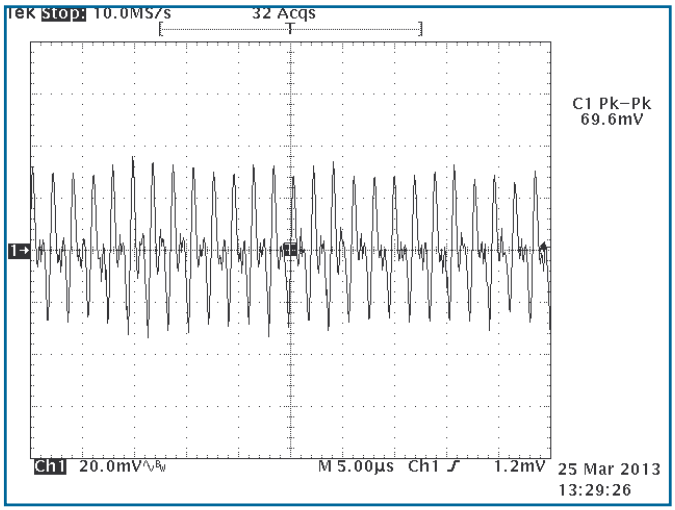
Two green leds at input & output indicate the presence of output voltages .
An open collector PGood signal (J10) is open when output failed or closed when unit operates properly.

Paralleling signal

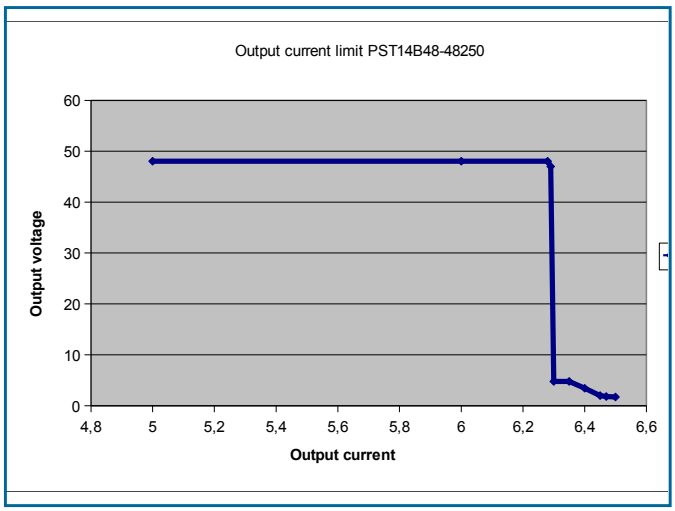
When several units of the same type are used in paralleled or in redundant system, the PR+ PR- of each unit need to be connected together through J4, J11 for accurate current sharing. Accessories cable can be used.

Waveforms

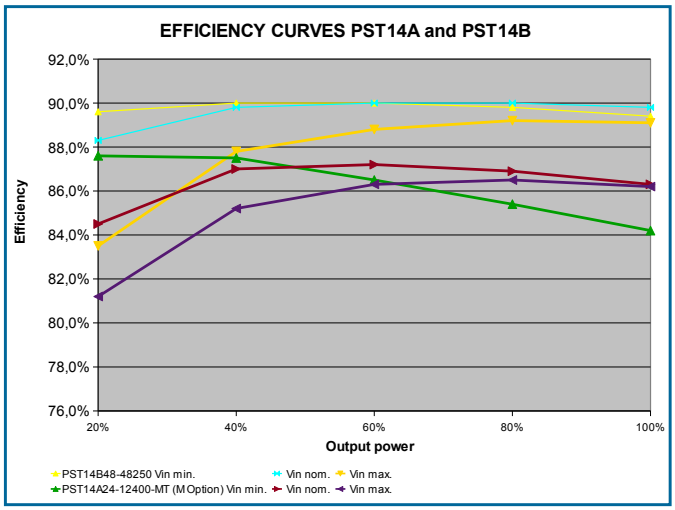
Output Noise (PST14B48-48250)



Current Limitation (PST14B48-48250)



Efficiency vs input & load



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Environmental

Functionalities and compliance table

		Input 12V			Input 24V			Input 48V			Input 72V			Input 110V		
Functionalities	Conditions	PST14A	PST14B	PST14C	PST14A	PST14B	PST14C	PST14A	PST14B	PST14C	PST14A	PST14B	PST14C	PST14A	PST14B	PST14C
Parallel operation	current share with PR connected	√	√		√	√		√	√		√	√		√	√	
Redundant operation	R option or external diode	√	√		√	√		√	√		√	√		√	√	
Series operation		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Remote senses		√	√		√	√		√	√		√	√		√	√	
MIL COTS version	M option	√	√		√	√										
Conformal coating	V option	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
-40°C Operation	T option	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
MIL-STD-704 A,C,D,E,F, 28V Steady State	M option, built to meet	√	√		√	√										
MIL-STD-704 A,C,D,E,F 28V Surges High Transients	M option, built to meet	√	√		√	√										
MIL-STD-704 A,C,D,E,F 28V Surges Low Transients	M option, built to meet	√	√													
MIL-STD-704 C,D,E,F 28V Surges Low Transients	M option, built to meet	√	√		√	√										
MIL-STD-704 A,C,D,E,F 28V Spikes	M option, built to meet	√	√		√	√										
MIL-STD-810E (Shocks, Vibrations, Accelerations, Humidity)	M,V option built to meet	√	√		√	√		√	√		√	√		√	√	
MIL-STD-461 Conducted Emission CE101, CE102	M option built to meet	√	√		√	√										
MIL-STD-461 Conducted Susceptibility CS101, 114, 116	M option built to meet	√	√		√	√										
MIL-STD-1275 A,B,C,D Steady State, Surges and Spikes	100V/50ms, 250V/70uS, M option	√	√		√	√										
RTCA-DO-160E sect.16 cat.Z, Surges	80V/100ms, ***48V/1s not meet***, M option	√	√		√	√										
DEF STAN 61-5, Part 6 28V	100V/50ms, M option	√	√		√	√										
ABD100.1.8 Surge and Normal Transients	M option	√	√		√	√										
EN50155 Environmental	V option	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
EN50155, EN55022A, EN55011A, EN50121-3-2	Conduction Emission, built to meet	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
EN 50155 Input Range and Transient	built to meet	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Electromagnetic Immunity

	Standard	Level	Value	Waveform	Source imped.	Test procedure	Mode
Supply surge	EN50155	B	1,4 * VIN	0,1 / 1 / 0,1 s	1 Ohm	1 positive surge	OP
Direct transients	EN50155	D	1800V	5 / 50 µs	5 Ohms	5 pos., 5 neg.	OP
Surges	EN 61000-4-5	3	2000V	1,2 / 50 µs	12 ohms		OP
Electrostatic discharge (to case)	EN 6100-4-2	4	8000V	1 / 50µs	330 Ohms	10 pos., 10neg.	OP
Electrical fast transients/burst	EN 61000-4-4	4	4000V	5 / 50µs	50 ohms		OP

Immunity to Environmental Conditions

Test method	Standard	Test conditions	Status
Damp Heat	MIL STD 810E Proc. 507-2	Humidity 93 %, 40°C, 56 days	Conformal coating option only, built to meet
Shock	MIL STD 810E Proc.516.3 EN 50155	20g / 11ms 5g / 30ms	Built to meet M option M option
Vibrations	MIL STD 810E Proc. 514-3		Built to meet M option

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Electromagnetic

Electromagnetic Emissions PST14A

Level according to EN55022A, peak detector, average limit, PST14A24-24400, 400W

PST14A24-24400-M EN55022 peak 400W 33nF capot

	Start [MHz]	Stop [MHz]	Step	Detector	Hold Time	RBW	Min Att	Pre Amp	Pre Sel	Prompt start	Ancillary
1	0.15	1	2.5 kHz	P 55022aav Margin 0 dB	Lowest	9 kHz	0	OFF	ON	...	...
2	1	10	3 kHz	P 55022aav Margin 0 dB	Lowest	9 kHz	0	OFF	ON	...	...
3	10	30	3 kHz	P 55022aav Margin 0 dB	Lowest	9 kHz	0	OFF	ON	...	...

Ancillary = General

Factors: RSIL 9331

Limits: 55022aav

MIL STD461 CE102, peak detector, 28V limit, PST14A24-24400-M, 400W

PST14A24-24400-M MILSTD461CE102 400w 33nF capot

	Start [MHz]	Stop [MHz]	Step	Detector	Hold Time	RBW	Min Att	Pre Amp	Pre Sel	Prompt start	Ancillary
1	0.01	0.08	500 Hz	P CE102_28V Margin 0 dB	10 ms	1 kHz Mil	0	OFF	ON	...	...
2	0.08	0.15	500 Hz	P CE102_28V Margin 0 dB	10 ms	1 kHz Mil	0	OFF	ON	...	...
3	0.15	1	5 kHz	P CE102_28V Margin 0 dB	50 ms	10 kHz Mil	0	OFF	ON	...	...
4	1	10	5 kHz	P CE102_28V Margin 0 dB	50 ms	10 kHz Mil	0	OFF	ON	...	...

Ancillary = General

Factors: RSIL 9331

Limits: CE102_28V

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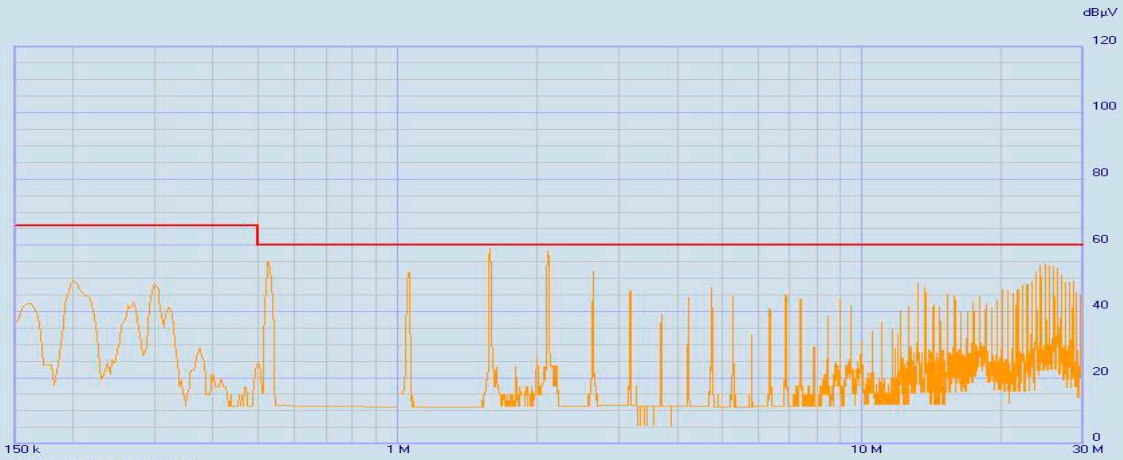
Electromagnetic

Electromagnetic Emissions PST14B

Level according to EN55022A, peak detector, average limit, PST14B28-12200, 200W



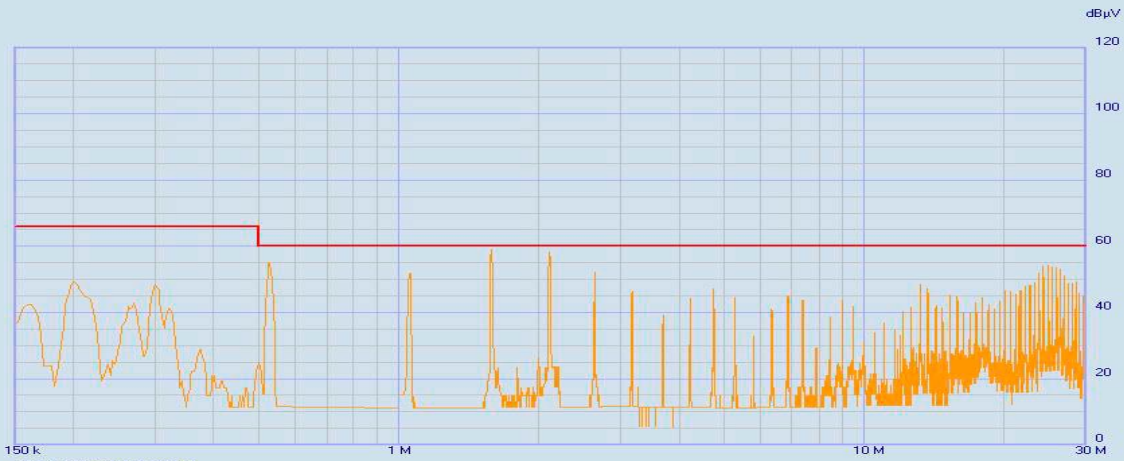
PST14B28-12200 EN55022

	Start [MHz]	Stop [MHz]	Step	Detector	Hold Time	RBW	Min Att	Pre Amp	Pre Sel	Prompt start	Ancillary
1	0.15	1	2.5 kHz	P 55022aqp Margin 0 dB	5 ms	10 kHz	0	OFF	ON	...	...
2	1	10	3 kHz	P 55022aqp Margin 0 dB	5 ms	10 kHz	0	OFF	ON	...	...
3	10	30	3 kHz	P 55022aqp Margin 0 dB	5 ms	10 kHz	0	OFF	ON	...	...

Ancillary = General

Limits:
55022aav

MIL STD461 CE102, peak detector, 28V limit, PST14B28-12200-M, 200W



PST14B28-12200 EN55022

	Start [MHz]	Stop [MHz]	Step	Detector	Hold Time	RBW	Min Att	Pre Amp	Pre Sel	Prompt start	Ancillary
1	0.15	1	2.5 kHz	P 55022aqp Margin 0 dB	5 ms	10 kHz	0	OFF	ON	...	...
2	1	10	3 kHz	P 55022aqp Margin 0 dB	5 ms	10 kHz	0	OFF	ON	...	...
3	10	30	3 kHz	P 55022aqp Margin 0 dB	5 ms	10 kHz	0	OFF	ON	...	...

Ancillary = General

Limits:
55022aav

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Electromagnetic

Electromagnetic Emissions PST14C

Level according to EN55022A, peak detector, average limit, PST14C24-12100, 100W

PST14C28-12100 EN55022

	Start [MHz]	Stop [MHz]	Step	Detector	Hold Time	RBW	Min Att	Pre Amp	Pre Sel	Prompt start	Ancillary
1	0.15	1	2.5 kHz	P 55022aqp Margin 0 dB	5 ms	10 kHz	0	OFF	ON	...	...
2	1	10	3 kHz	P 55022aqp Margin 0 dB	5 ms	10 kHz	0	OFF	ON	...	...
3	10	30	3 kHz	P 55022aqp Margin 0 dB	5 ms	10 kHz	0	OFF	ON	...	...

Ancillary = General

Limits:
55022aav

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Safety and Installations Instructions

Connector Pin Allocation

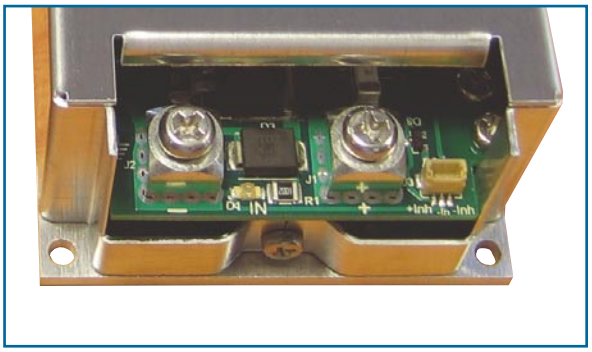
PIN	Description	
Press Fit M4 : Wurth ref. 7461095		
J1	INPUT +	
J2	INPUT -	
J5	+V1	Positive output voltage
J6	-V1	Negative output voltage

J3 : JST 3pts CMS ref. BM03B-SRSS-TB (LFSN)		
J3-1	INH +	See inhibition signal for description
J3-2	INPUT -	
J3-3	INH -	

J4 : JST 4pts CMS ref. BM04B-SRSS-TB (LFSN)		
J4-1	PR-	Parallel signal for multi unit connection
J4-2	PR+	Parallel signal for multi unit connection
J4-3	INH -	Inhibition signal for multi unit connection
J4-4	INH +	Inhibition signal for multi unit connection

J10 : JST 5pts CMS ref. BM05B-SRSS-TB (LFSN)		
J10-1	+ Sense V1	Positive remote sense
J10-2	Pgood -	Power Good emittor
J10-3	Pgood +	Power Good collector
J10-4	Trim	Voltage adjustment
J10-5	-Sense V1	Negative remote sense

J11 :JST 4pts CMS ref. BM04B-SRSS-TB (LFSN)		
J11-1	INH +	Inhibition signal for multi unit connection
J11-2	INH -	Inhibition signal for multi unit connection
J11-3	PR+	Parallel signal for multi unit connection
J11-4	PR-	Parallel signal for multi unit connection



Installations Instructions

These converters are components, intended exclusively for integration into other equipment by an industrial assembly process or by a professionnaly competent person. Installation must strictly follow the safety regulations in respect of the enclosure, mounting, creepage and clearance distances, markings of the end-use application.
Connection to the system shall be made via appropriate connection. The +Vin is internally fused. This fuse is designed to protect the converter against overcurrent caused by a failure, but may not be able to satisfy all requirements. External fuses in the wiring circuit to one or both input pins may be necessary to ensure compliance with local requirements.
Do not open the converters, or the warranty will be invalidated. Make sure that there is sufficient heat dissipation available for conduction cooling. This should be verified by measuring the case of temperature at the specified measuring point, when the converter is operated in the end-use application.

Standards and Approvals

The converters are built to meet the safety standards IEC 60950-1, EN 60950-1.
'Built to meet' mentionned in the different paragraphs of the datasheet means that Power System Technology has designed the product to meet the standard but not certified it in a laboratory.

Cleaning Agents and Process

The converters are not hermetically sealed. In order to avoid possible damage, any penetration of liquids shall be avoided.

Railway Application

The converters have been designed observing the railway standards EN 50155 and EN 50121. All boards can be protected by a conformal coating as an option (-V).

Isolation

The electric strength test is performed in the factory in accordance with IEC/EN 60950.

Electric Strength

Characteristic		Input to Earth	Input to Output	Output to Earth	Output to Output	Unit
Electric strength	Design strength	1500	3000	500		Vrms
	Factory test for production units (>10s)	2000	2000	500		Vdc
Insulation resistance				> 100	>100	Mohms

Temperatures

		Standard			T option			Unit
Conditions		Min.	Typ.	Max.	Min.	Typ.	Max.	
Baseplate or Heatsink	Operating	-20		+100	-40		+100	°C
Storage	Not operating	-40		+125	-40		+125	

Reliability

MIL-HDBK-217F, notice 2	Model	Heatsink Temp.	GB	GF
MTBF (Hours)	PST14A24-24400	40°C	1554000	777000
		70°C	914800	457400
		100°C	574810	287400

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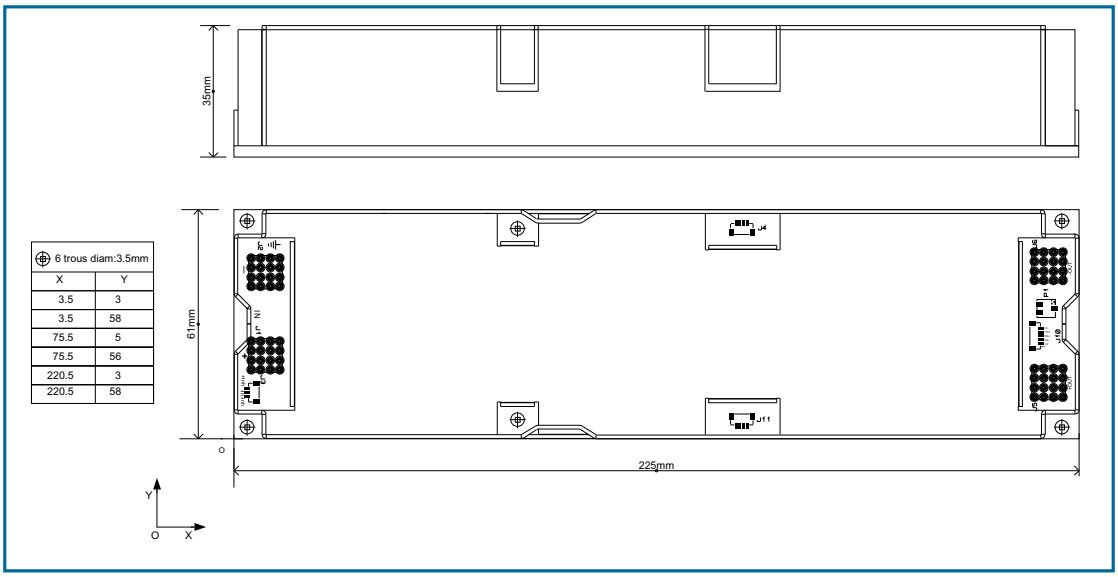
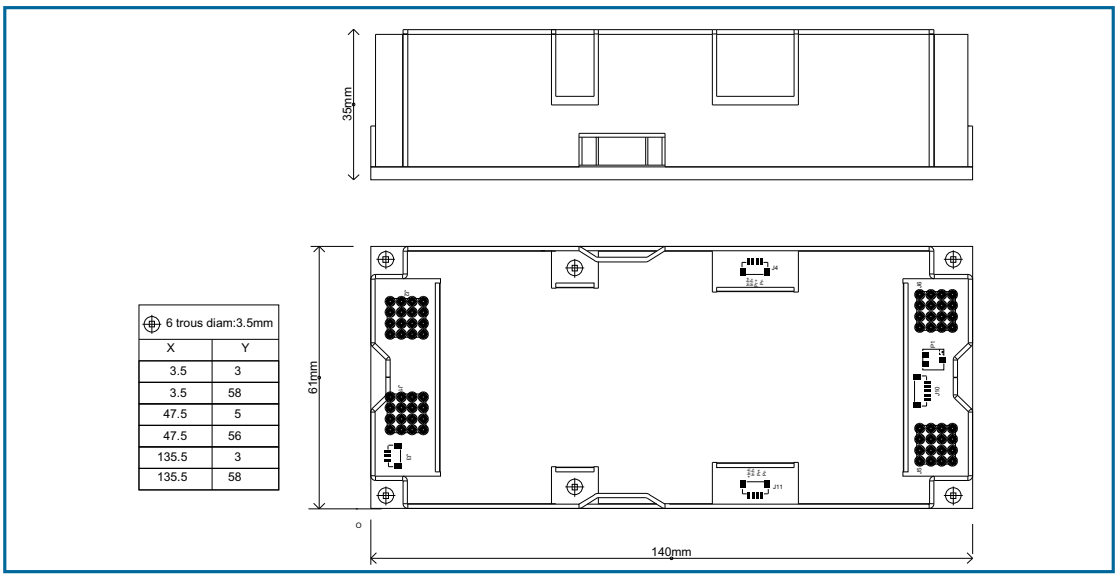
Mechanical data

PST14A



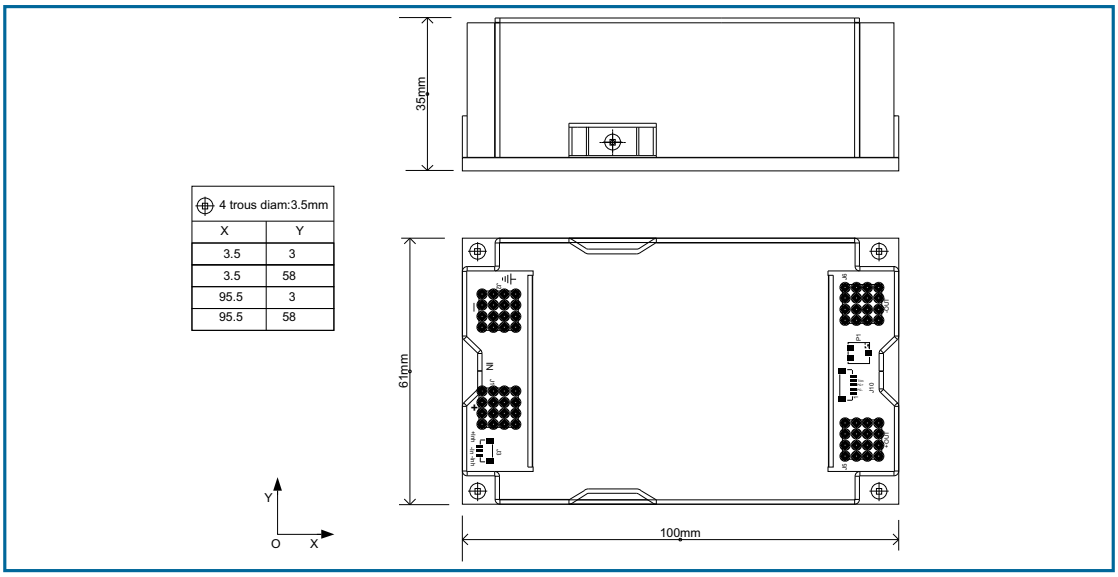
6 trous diam:3.5mm	
X	Y
3.5	3
3.5	58
75.5	5
75.5	56
220.5	3
220.5	58

PST14B



6 trous diam:3.5mm	
X	Y
3.5	3
3.5	58
47.5	5
47.5	56
135.5	3
135.5	58

PST14C



4 trous diam:3.5mm	
X	Y
3.5	3
3.5	58
95.5	3
95.5	58

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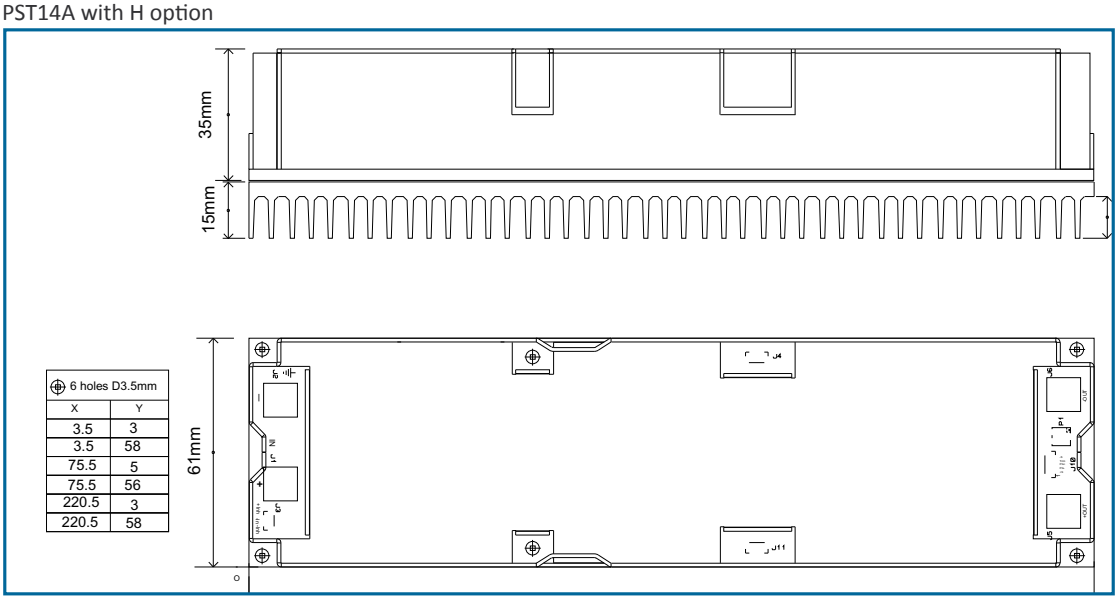
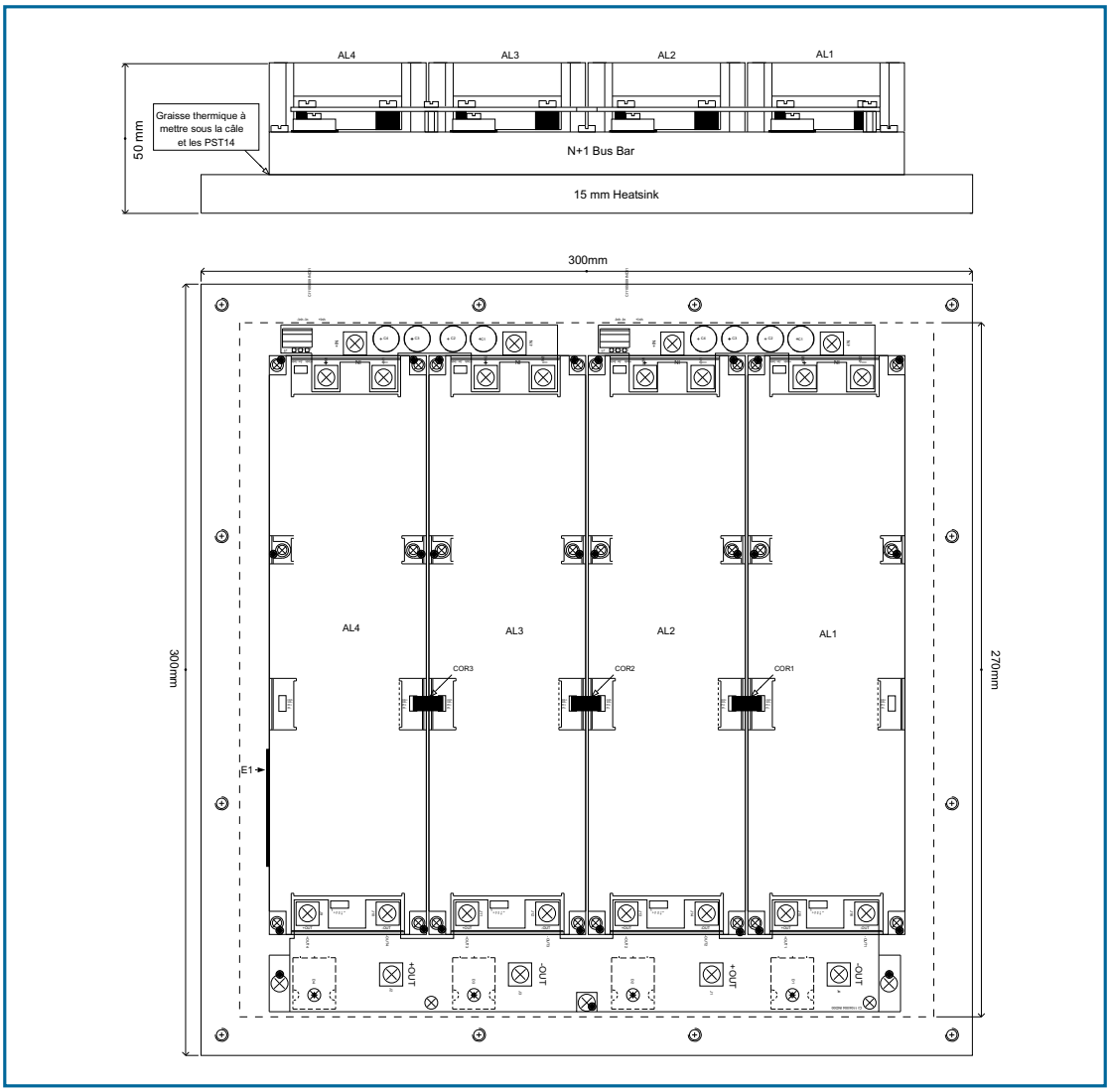
H option + assembly example

PST14A with H option



Example of PST14 assembly, 1500W, redundancy 3+1 mounted on heatsink for cabinet integration



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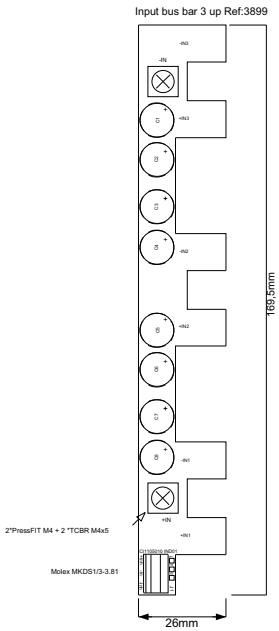
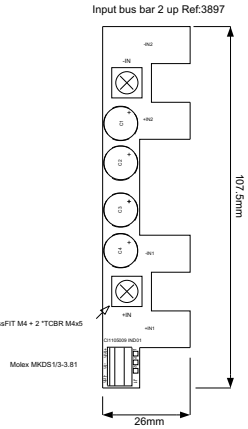
Accessories data

Input bus bar 2up & 3up (footprint only for capacitors & screw connector)

3 up : PIN 3897

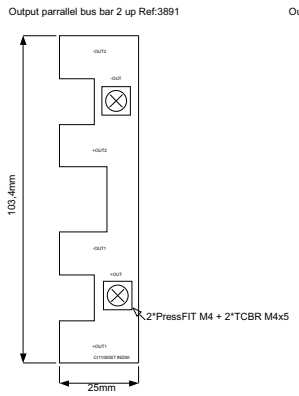


2 up : PIN 3899

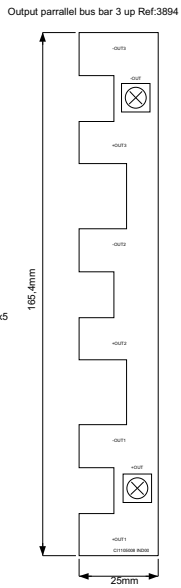


Output parallel bus bar

2up : PIN 3891

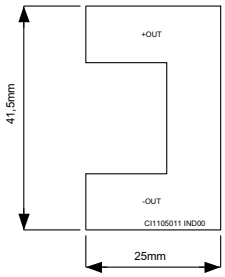


3up : PIN 3894



Output serial bus bar

PIN 3904



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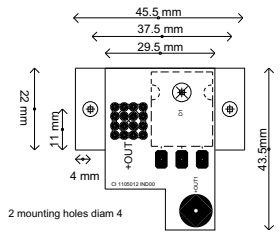
Accessories data

Output N+1 bus bar

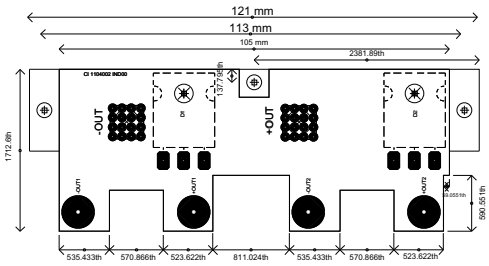
1up : PIN 3943 : from 3V3 to 12V/80A
1 up : PIN 3939 from 15V to 48V/40A

2up : PIN 3938

Outpu N+1 bus bar 1 up Ref:3939 3943



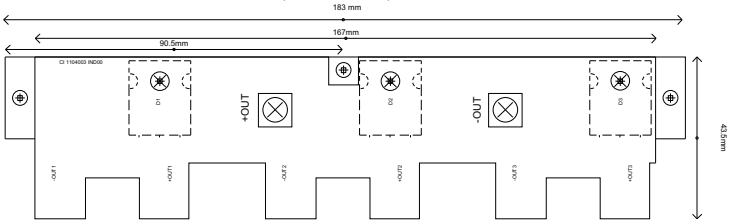
Outpu N+1 bus bar 2 up Ref:3938



Output N+1 bus bar

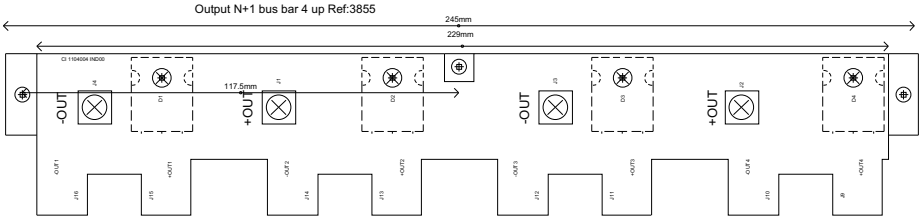
3up : PIN 3812

Output N+1 bus bar 3 up Ref:3912



4up : PIN 3855

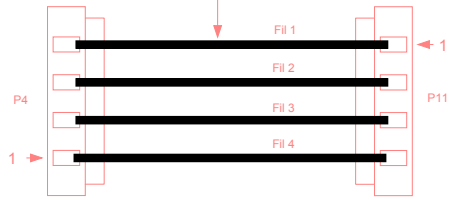
Output N+1 bus bar 4 up Ref:3855



Cables

Inhibition & parallel connexion cable for multi unit integration

4 Fils noir multibrun Gauje 28AWG longueur:50mm

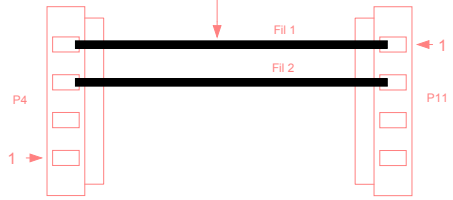


2 x Fiche JST réf: SHR-04V-S-B avec 8 contacts femelles réf:SSH-003T-P0.2

PIN 3704

Inhibition connection cable for multi unit integration

2 Fils noir multibrun Gauje 28AWG longueur:50mm



2 x Fiche JST réf: SHR-04V-S-B avec 4 contacts femelles réf:SSH-003T-P0.2

PIN 3879

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Options and configurations

PST14A : MAXI

For single configurations see page 3.

V1

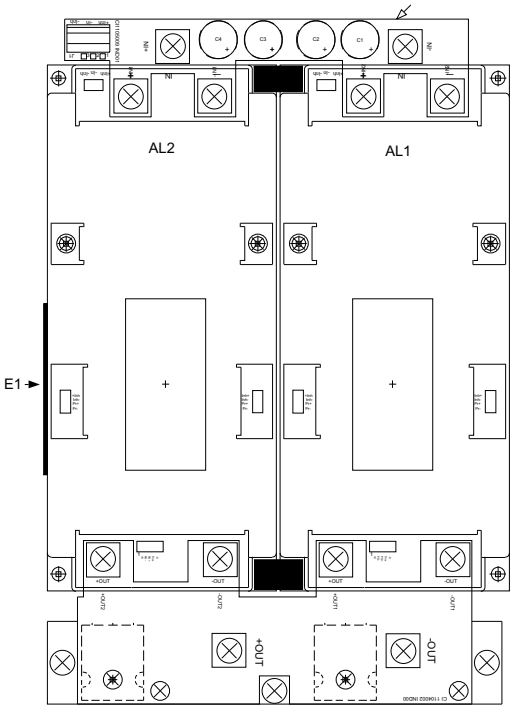
PST14A [**Vin**] — [**Vout**] [**Pout**] — [**Option**]

H	**H : Heatsink**
M	**M : Ruggedized**
R	**R : N+1 for all outputs**
T	**T : -40°C**
V	**V : Conformal coating**

For multiple combination of the **same package**, use P/N as follows.
Units will be delivered with accessories mounted (Bus bar for parallel & serial , N+1).

Example :

2up 2 outputs (see page 3 for V1P1 & V2P2)	**PST14A Vin -V1P1-V2P2-O**	
2up 1 output	**PST14A Vin -V1P-O**	1 output of P1+P2 where P1=P2 (do not put in parallel 2 different power)
3up 3 outputs	**PST14A Vin -V1P1-V2P2-V3P3-O**	
3up 2 outputs	**PST14A Vin -V1P-V2P2-O** **PST14A Vin -V1P1-V2P2-O**	(P = 2 x P1)



Option

H : Heatsink
M : Ruggedized
P1 : Parallel V1 & V2
P2 : Parallel V2 & V3
R : N+1
R1 : N+1 V1 & V2
R2 : N+1 V2 & V3
S1 : Serialized V1 & V2
S2 : Serialized V2 & V3
T : -40°C
V : Conformal coating

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PST14B : MINI

For single configurations see page 4.

V1

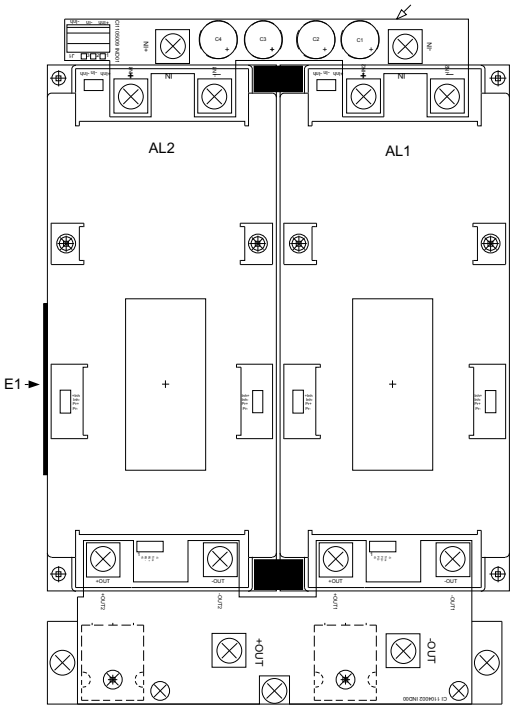
PST14B [**Vin**] — [**Vout**] [**Pout**] — [**Option**]

H	**H : Heatsink**
M	**M : Ruggedized**
R	**R : N+1 for all outputs**
T	**T : -40°C**
V	**V : Conformal coating**

For multiple combination of the **same package**, use P/N as follows.
Units will be delivered with accessories mounted (Bus bar for parallel & serial , N+1).

Example :

2up 2 outputs (see page 3 for V1P1 & V2P2)	**PST14B Vin -V1P1-V2P2-O**	
2up 1 output	**PST14B Vin -V1P-O**	1 output of P1+P2 where P1=P2 (do not put in parallel 2 different power)
3up 3 outputs	**PST14B Vin -V1P1-V2P2-V3P3-O**	
3up 2 outputs	**PST14B Vin -V1P-V2P2-O** **PST14B Vin -V1P1-V2P2-O**	(P = 2 x P1)



Option

H : Heatsink
M : Ruggedized
P1 : Parallel V1 & V2
P2 : Parallel V2 & V3
R : N+1
R1 : N+1 V1 & V2
R2 : N+1 V2 & V3
S1 : Serialized V1 & V2
S2 : Serialized V2 & V3
T : -40°C
V : Conformal coating

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PST14C : MICRO

For single configurations see page 5.

V1

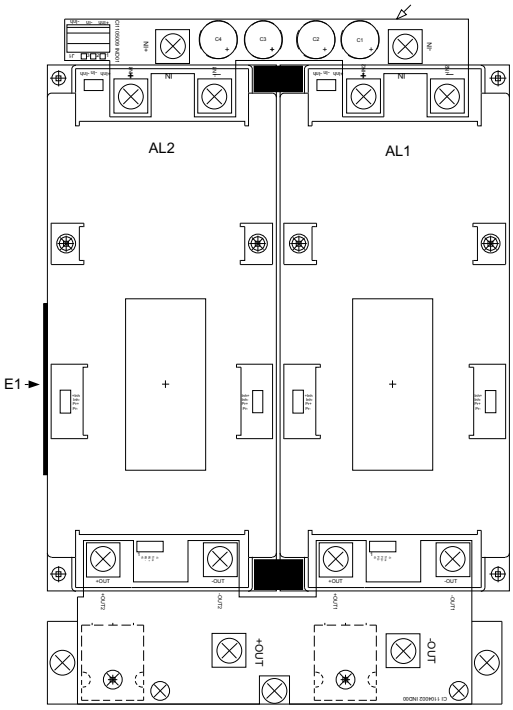
PST14C [**Vin**] — [**Vout**] [**Pout**] — [**Option**]

H	**H : Heatsink**
M	**M : Ruggedized**
R	**R : N+1 for all outputs**
T	**T : -40°C**
V	**V : Conformal coating**

For multiple combination of the **same package**, use P/N as follows.
Units will be delivered with accessories mounted (Bus bar for parallel & serial , N+1).

Example :

2up 2 outputs (see page 3 for V1P1 & V2P2)	**PST14C Vin -V1P1-V2P2-O**	
2up 1 output	**PST14C Vin -V1P-O**	1 output of P1+P2 where P1=P2 (do not put in parallel 2 different power)
3up 3 outputs	**PST14C Vin -V1P1-V2P2-V3P3-O**	
3up 2 outputs	**PST14C Vin -V1P-V2P2-O** **PST14C Vin -V1P1-V2P2-O**	(P = 2 x P1)



Option

H : Heatsink
M : Ruggedized
P1 : Parallel V1 & V2
P2 : Parallel V2 & V3
R : N+1
R1 : N+1 V1 & V2
R2 : N+1 V2 & V3
S1 : Serialized V1 & V2
S2 : Serialized V2 & V3
T : -40°C
V : Conformal coating

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