

## 600W, 24V and 48V Input DC-DC Converters

<https://product.tdk.com/en/power/paf>  
[www.emea.lambda.tdk.com/paf](http://www.emea.lambda.tdk.com/paf)



Industrial



COTS



Test



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The PAF600F24 and PAF600F48 series of isolated full brick DC-DC converters operate from a 24V or 48V nominal dc input and are rated at 600W output. Output voltages are 12V or 28V and can be adjusted using the trim terminal by -40% to +10%. All models feature a parallel function for higher power or N+1 redundant systems. Remote sense, remote on/off, inverter good signal and an auxiliary voltage are also included as standard. The power modules can be conduction cooled to a cold plate or fitted with an optional heatsink. These efficient converters are well suited for distributed power architectures and power systems.

### Features

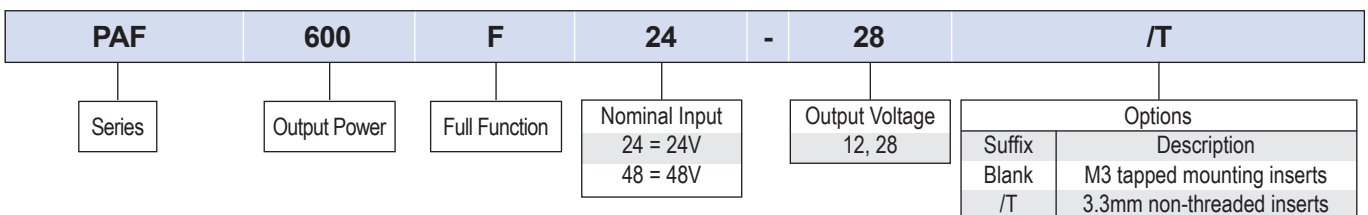
- Wide Range Inputs
- Baseplate Cooled
- -40 to +100°C Baseplate Temperature
- Parallel Function
- Up to 90% Efficient

### Benefits

- Operates From Batteries or DC Power Systems
- Can be Conduction or Convection Cooled with a Heatsink
- Operates in Harsh Environments
- Suitable for Higher Power or N+1 Redundant Systems
- Easier To Cool In the End System

### Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Power (W)	Input Current (A) nominal input, 100% load	Efficiency (%) nominal input, 100% load
PAF600F24-12	20 - 36	12	7.2 - 13.2	50	600	28.9	89
PAF600F24-28	19 - 36	28	16.8 - 30.8	21.5	602.0	28.9	89
PAF600F48-12	36 - 76	12	7.2 - 13.2	50	600	14.2	89
PAF600F48-28	36 - 76	28	16.8 - 30.8	21.5	602.0	14.1	90



Related Products		
	Part Number	Description
DC-DC Converters	<a href="#">PH50A280 to PH600A280</a>	50W to 600W, 200 to 425V Input DC-DC Converters
DC-DC Converters	<a href="#">i7A</a>	500 to 700W, Non-isolated Step Down DC-DC Converters
Heatsink	HAF-10L	Full brick 25mm longitudinal fins
Heatsink	HAF-15L	Full brick 38.1mm longitudinal fins
Heatsink	HAF-15T	Full brick 38.1mm transverse fins

Specifications		
Model	PAF600F24-xx	PAF600F48-xx
<b>Input</b>		
Input Voltage range	-	See model selector
Input Current	-	See model selector
Efficiency	-	See model selector
Conducted & Radiated EMI	-	EN55011/EN55032-A, FCC Class A, VCCI-A (External components are required, consult Evaluation Data on website)
Immunity	-	IEC61000-4-2, -3, -4, -5, -6 (External component are required, consult Immunity Data on website)
Safety Certifications and Markings	-	IEC/UL/CSA/EN62368-1, 60950-1, CE Mark and UKCA Mark

Immunity				
Test	Standard	Test Level	Criteria	Notes
ESD	EN61000-4-2	Air ±10kV and contact ±5kV	A	External component are required (Consult Immunity Data on website)
Radiated Susceptibility	EN61000-4-3	80M -1GHz: 10V/m 1.4 - 2.0GHz: 3V/m 2.0 - 2.7GHz: 1V/m	A	
Electrical Fast Transient Burst	EN61000-4-4	±2.4kV	A	
Surge	EN61000-4-5	Common, Normal ± 600V	A	
Conducted Susceptibility	EN61000-4-6	10Vrms	A	

Specifications		
Model	PAF600F24-xx	PAF600F48-xx
<b>Output</b>		
Output Voltage Tolerance	%	±1
Output Voltage Adjustment	-	See model selector
Switching Frequency	kHz	330
Line Regulation	mV	12V: 24, 28V: 56
Load Regulation	mV	12V: 24, 28V: 56
External Load Capacitance	uF	Contact Technical Sales
Ripple & Noise	mV	12V: 200, 28V: 280
Temperature Coefficient	%/°C	0.02
Minimum Load	-	No minimum load required
Overcurrent Protection	%	105 - 140 constant current characteristic with automatic recovery
Oversvoltage Protection	%	115 - 135, cycle input or remote on/off to reset
Overtemperature Protection	°C	105 - 130 base-plate
Remote Sense	-	Yes
Remote On/Off	-	Yes; Low = ON, High = OFF
Module Good Signal	-	Signal is low when converter is operating normally, referenced to - sense terminal
Auxiliary Voltage	-	7 - 10V, 20mA referenced to - sense terminal
Parallel Operation	-	Possible, see instruction manual

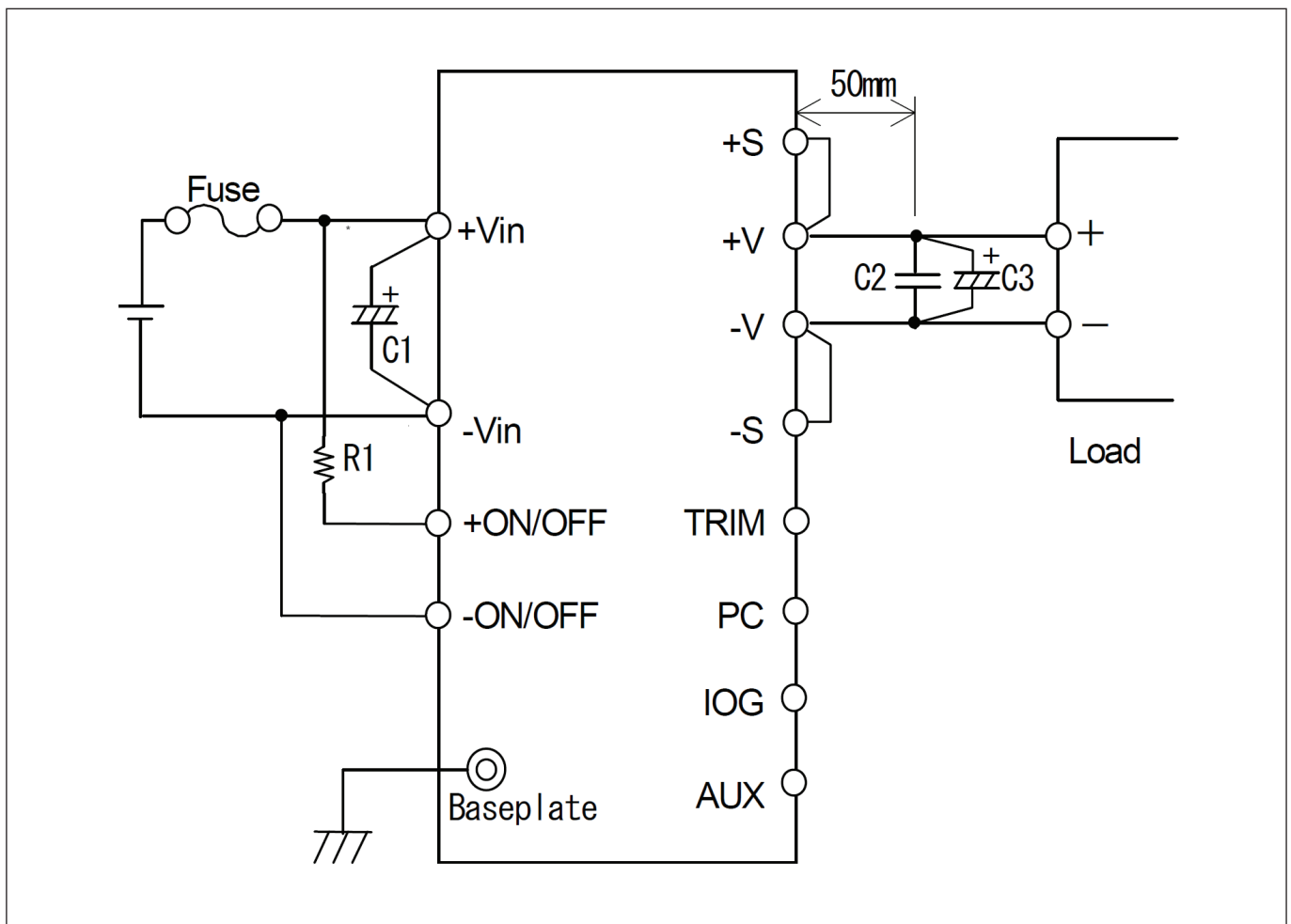
Specifications			
Model		PAF600F24-xx	PAF600F48-xx
<b>Environmental</b>			
Operating Temperature (Baseplate)	°C	-40 to +100, derate linearly to 83% load from +85 to +100	-40 to +100, no derating required
Storage Temperature	°C	-40 to +100	
Humidity (non condensing)	%RH	Operating: 30 - 95, Storage 10 - 95	Operating: 20 - 95, Storage 10 - 95
Cooling	-	Conduction, convection or forced air (See Instruction Manual for heatsink selection)	
Altitude	m	3,000	
Withstand Voltage (For 1 minute)	Vdc	Input to Base-plate: 1,500; Input to Output 1,500; Output to Baseplate: 500	
Isolation Resistance	MΩ	>100 at 25°C, 70%RH & 500Vdc	
Vibration	-	Non Operating, 10-55Hz (sweep for 1 min.) Amplitude 0.825mm constant (Max 49 m/s <sup>2</sup> ) X,Y,Z 1 hour each	
Shock	-	196.1m/s <sup>2</sup>	
<b>Other</b>			
Weight (Typ)	g	250	
Size (LxWxH)	mm	116.8 x 61 x 12.7	
Size (LxWxH)	Inches	4.6 x 2.4 x 0.5	
MTBF - JEITA (RCR-9102B)*	Hours	299,661	297,989
Warranty	Years	2	

**Notes**

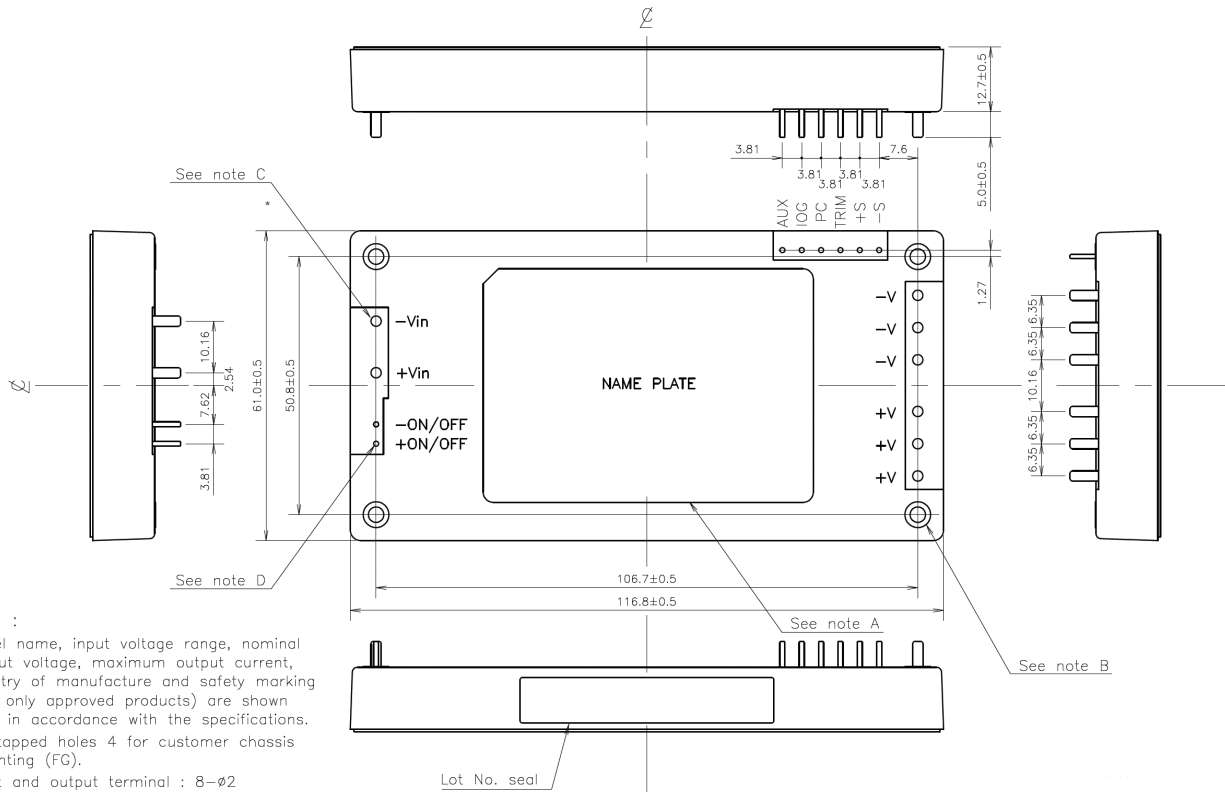
See website for detailed specifications, test methods and installation manual

\*Ground fixed. The JEITA RCR-9102B calculation method produces figures significantly lower than Telcordia.

### Basic Connection Circuit



Outline Drawing





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