

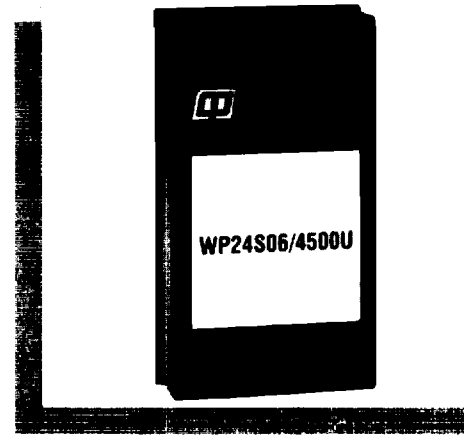
# WP SERIES

## Single Output

### 25 and 30 Watt

### DC/DC Converters

- Ultra-Wide Input 4:1
- Direct Output Paralleling
- Efficiency to 85%
- Remote On/Off Control
- Remote Sensing
- Low Noise
- 2 Year Warranty



The WP Series DC/DC converters offer two unique features. Amp-Reg™ is an innovative design that permits paralleling of outputs. The ultra-wide input voltage range of 9 VDC to 36 VDC or 20 VDC to 72 VDC covers the standard inputs of 12 VDC, 15 VDC, 18 VDC, 24 VDC, 28 VDC, 36 VDC, and 48 VDC with two models. The WP Series DC/DC Converters employ 100 kHz switching

regulator techniques to provide operating efficiencies as high as 85% at full load. Short circuit current limiting and overvoltage protection are standard on all models. The output of all WP Series DC/DC converters may be remotely controlled with a logic compatible signal or relay contact closure. When turned off the idle current is only 5 mA. All models have 500 VDC minimum isolation and no derating is required.

## SPECIFICATIONS

All specifications typical at nominal line, full load, and 25°C unless otherwise noted.

OUTPUT SPECIFICATIONS		
<b>Voltage Accuracy</b>		±1%, max.
<b>External Trim Adj. Range</b>		±10%
<b>Ripple and Noise</b>	20 MHz BW	5 mV RMS, max. 50 mV P-P, max.
<b>Overvoltage Protection Clamp</b>		See Table
<b>Short Circuit Protection</b>	Current Limit	110% I <sub>out</sub>
<b>Current Regulation<sup>(1)</sup></b>	AMP-REG™	5%, max.
<b>Temperature Coefficient</b>		±0.02%/°C
<b>Voltage Stability</b>	24 hrs	±0.05%, max.
<b>Transient Recovery Time</b>	25% Step Load Change	200 μsec., max.
INPUT SPECIFICATIONS		
<b>Input Voltage Nominal</b>		24 VDC or 48 VDC
<b>Input Voltage Range</b>		See Table
<b>Undervoltage Shutdown</b>		See Table
<b>Input Filter</b>		Pi Type
<b>Reverse Voltage Protection</b>		Internal Shunt Diode Use External Fuse

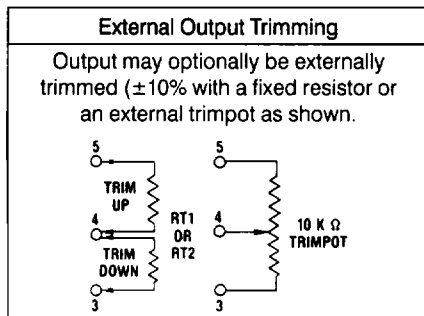
GENERAL SPECIFICATIONS		
<b>Efficiency</b>		See Table
<b>Isolation Voltage</b>		500 VDC, min.
<b>Isolation Resistance</b>		10 <sup>9</sup> ohms, min.
<b>Switching Frequency</b>		100 kHz
ENVIRONMENTAL SPECIFICATIONS		
<b>Operating Temperature Range</b>	Ambient Case	-25°C to +71°C 90°C max.
<b>Derating</b>		None
<b>Storage Temperature Range</b>		-55°C to +105°C
<b>Cooling</b>		Free-Air Convection
<b>EMI/RFI</b>		Six-Sided Continuous Shield
<b>MTBF<sup>(2)</sup></b>		850,000 hours
PHYSICAL SPECIFICATIONS		
<b>Weight</b>		16 oz (454 grams)
<b>Case Material</b>		Black Coated Copper with Non-Conductive Base

Overvoltage Threshold	
Output Voltage	O.V.P.
5 VDC	6.8V
6 VDC	8.2V
12 VDC	15V
15 VDC	18V

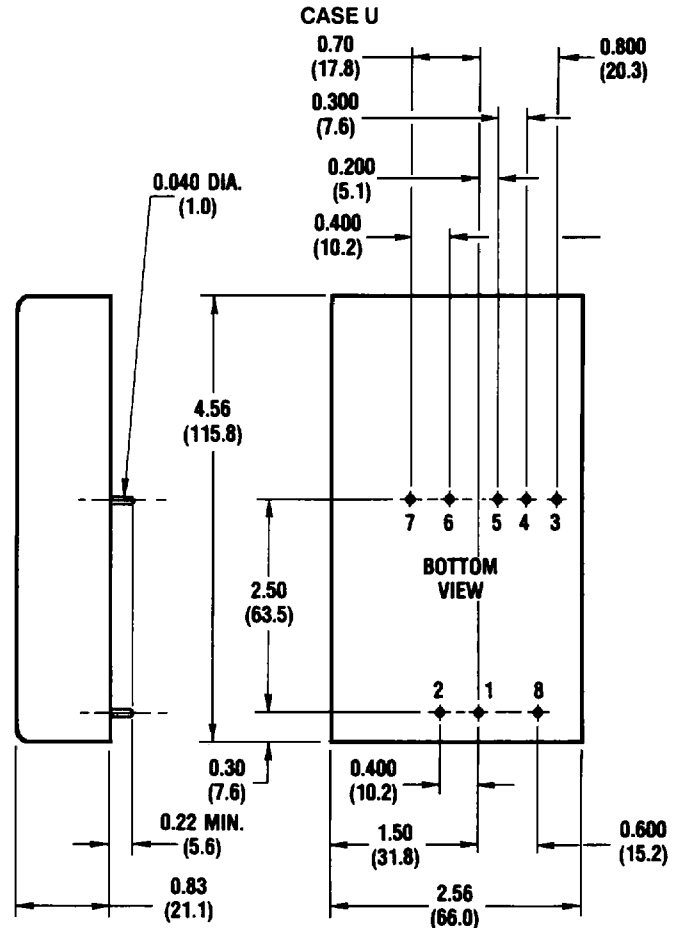
REMOTE ON/OFF CONTROL	
Logic Compatibility	CMOS or Open Collector TTL
E <sub>c</sub> -ON	min 1.8 VDC to 100 VDC max. or Open Circuit
E <sub>c</sub> -OFF	max. 1.2 VDC max.
Control Common	Referenced to Input Minus.

Input Voltage Range	Output Voltage	Output Current	Input Current <sup>(3)</sup>		% EFF	Regulation		Case	Model Number
			No Load	Full Load		Line <sup>(4)</sup> (Max)	Load <sup>(5)</sup> (Max)		
9-36 VDC	5 VDC	5000 mA	20 mA	1360 mA	76	±0.5%	±0.5%	U	WP24S05/5000U
9-36 VDC	6 VDC	4500 mA	20 mA	1480 mA	77	±0.5%	±0.5%	U	WP24S06/4500U
9-36 VDC	12 VDC	2500 mA	20 mA	1500 mA	82	±0.5%	±0.5%	U	WP24S12/2500U
9-36 VDC	15 VDC	2000 mA	20 mA	1500 mA	83	±0.5%	±0.5%	U	WP24S15/2000U
20-72 VDC	5 VDC	5000 mA	20 mA	680 mA	77	±0.5%	±0.5%	U	WP48S05/5000U
20-72 VDC	6 VDC	4500 mA	20 mA	720 mA	78	±0.5%	±0.5%	U	WP48S06/4500U
20-72 VDC	12 VDC	2500 mA	20 mA	750 mA	84	±0.5%	±0.5%	U	WP48S12/2500U
20-72 VDC	15 VDC	2000 mA	20 mA	740 mA	85	±0.5%	±0.5%	U	WP48S15/2000U

Pin Connections <sup>(6,7)</sup>	
Pin	Function
1	+ Input
2	- Input
3	+ Sense/Trim Down
4	Output Trim
5	- Sense/Trim Up
6	+ Output
7	- Output
8	Remote On/Off



Tolerance .xx =  $\pm 0.04$   
 .xxx =  $\pm 0.005$



ALL DIMENSIONS IN INCHES (mm)

**Notes:**

- The WP series includes a special AMP-REG circuit that allows paralleling multiple converters, either directly or with isolation diodes. The circuit is essentially an output current limit set at 105% of stated maximum output. When multiple converters are paralleled, the converter with the highest output voltage will provide all the output current until it reaches current limit. Then its output voltage begins to drop and the converter with the next highest output voltage starts contribute current. The WP series are designed to operate reliably in current limit indefinitely.
- MTBF figures are based on actual product performance. Contact the factory for details.
- Nominal input 24V or 48VDC.
- Measured from low line to high line.
- Measured from 20% to full load.
- Each sense pin must be connected to its respective output, either at the load (when enabling the remote sensing feature) or at the supply.
- To trim the output voltage, connect a resistor from pin 4 to pin 3 (trim down) or pin 4 to pin 5 (trim up). A trim resistor value of zero ohms yields the maximum output change of approximately 10%.
- Fixed frequency design makes input filtering easier and improves noise performance.
- A user-provided input undervoltage sense circuit can start the converter by toggling the remote on/off control when the input voltage is within proper limits.