

**NEW!**

## WS SERIES Single, Dual & Triple Output

- Hybrid Control Circuit
- Low Profile 0.91 Inch High
- Wide Input Range 2:1
- Efficiency to 84%
- 5.7 Watts/Cubic Inch
- PC or Chassis Mounting

The WS Series is a family of high power DC/DC converters available with single, dual or triple outputs up to 100 watts for chassis mount. The package size is 3.5" × 5.5" × 0.91"H, producing a power density of 5.7 watts per cubic inch. For printed circuit board applications, a heat sink is provided which increases the height to 1.26". These converters feature a hybrid control circuit and offer efficiencies from 82% to 88% that remain nearly constant down to 30% of full load. The converter uses a dual power stage approach, and switching occurs 180° out of phase to minimize peak currents drawn off the line. This, combined with a Pi-type input filter, reduces the reflected ripple effects of forward converter switching to negligible proportions. Other features include output short circuit protection, overvoltage protection, remote sensing of primary output, input surge protection and remote on/off control. The 2:1 input voltage ranges are 18 to 36 VDC and 36 to 72 VDC.

**STOCKED BY YOUR LOCAL DISTRIBUTOR**  
See list on pages 175 & 176

**COMPUTER PRODUCTS™**  
STEVENS-ARNOLD INC.  
(617) 268-1170

### SPECIFICATIONS

All Specifications Typical at Nominal Line, Full Load, and 25°C Unless Otherwise Noted.

#### OUTPUT SPECIFICATIONS

Voltage Accuracy	
Output 1 & 2 .....	±1.0%, max.
Balance, Output 2 & 3 .....	±2.0%, max.
External Trim Adj. Range <sup>1</sup> .....	±10%
Load Regulation, FL-1/4L .....	1%, max.
FL-NL .....	2%, max.
Output 2 & 3 <sup>2</sup> , 200% FL to NL .....	±5%, max.
175% FL to 25% FL .....	±2%, max.
Line Regulation, LL-HL .....	±0.5%, max.
Current Limit Protection .....	Continuous
Overvoltage Protection, Clamp.	
5V .....	6.8V
12V&15V .....	15V&18V
Ripple and Noise, 20 MHz BW ..	15 mV RMS, max.
	100 mV P-P, max.
Temperature Coefficient .....	±0.02%/°C, max.
Voltage Stability, 24 hrs. ....	±0.05%, max.
Transient Response Time, ±1% Error Band	
25% Step Load Change .....	500 μsec. max.

#### INPUT SPECIFICATIONS

Input Voltage Range .....	See Table
Surge Protection .....	Transient Clamp
Reverse Voltage Protection ....	Internal Shunt Diode
	Use External Fuse

#### GENERAL SPECIFICATIONS

Efficiency .....	82%
Isolation Voltage, Input to Output ...	500 VDC, min.
Input to Case .....	250 VDC, min.
Isolation Resistance, Input to Output .	10 <sup>9</sup> ohms, min.
Input to Case ...	10 <sup>6</sup> ohms, min.
Switching Frequency .....	100 kHz

#### ENVIRONMENTAL SPECIFICATIONS

Operating Temperature Range	
Ambient .....	See Derating Curve
Case .....	-25°C to +85°C
Storage Temperature Range ...	-55°C to +105°C
Cooling .....	Forced Air

#### PHYSICAL SPECIFICATIONS

Weight, including Heatsink .....	25 oz. (710 grams)
Chassis Mount .....	21 oz. (596 grams)

#### REMOTE ON/OFF CONTROL

Terminal 6 Control	
Logic Compatibility .....	CMOS or Open Collector TTL
Control Voltage, ON .....	+5.5V min. or open circuit.
OFF .....	+1.8V max.
Converter Shutdown Idle Current .....	10 mA
Control Common .....	Input Terminal 2

#### NOTES:

1. Single and dual models have provision for output voltage adjustment. See connection table and external output trimming.
2. Combined Power from Output #2 and #3 not to exceed 50 watts.

#### TWO-YEAR WARRANTY

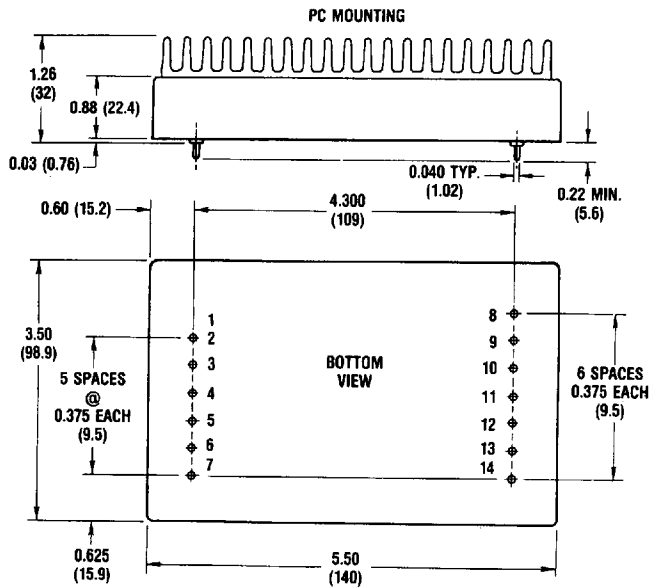


# 100 Watt DC/DC Converters

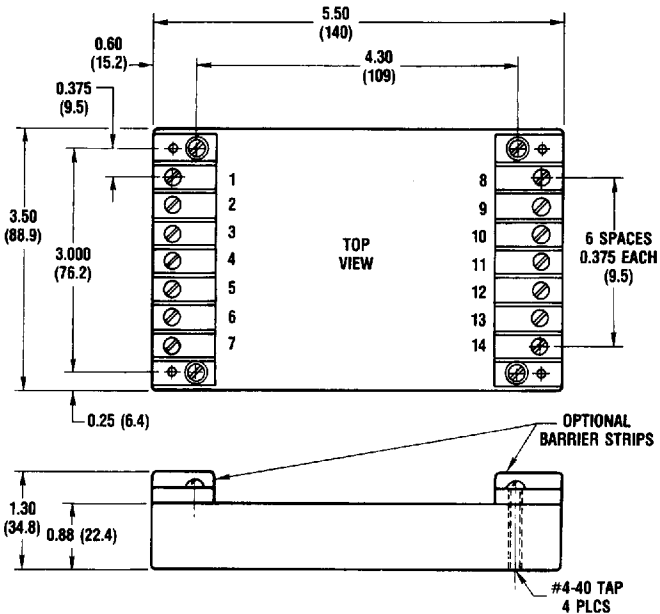
INPUT VOLTAGE	OUTPUT #1 PRIMARY	OUTPUT #2 AUXILIARY	OUTPUT #3 PRIMARY	INPUT CURRENT <sup>1</sup>		% EFF MIN	CASE	MODEL NUMBER
				NO LOAD	FULL LOAD			
18-36 VDC	5V @ 20A			35 mA	5.08A	82	K	WS24S05/100K
18-36 VDC	12V @ 8A			35 mA	4.90A	82	K	WS24S12/100K
18-36 VDC	15V @ 6A			35 mA	4.57A	82	K	WS24S15/100K
18-36 VDC	5V @ 10A	12V @ 4A		35 mA	5.00A	82	K	WS24D05-12/100K
36-72 VDC	5V @ 20A			35 mA	2.54A	82	K	WS48S05/100K
36-72 VDC	12V @ 8A			35 mA	2.44A	82	K	WS48S12/100K
36-72 VDC	15V @ 6A			35 mA	2.29A	82	K	WS48S15/100K
36-72 VDC	5V @ 10A	12V @ 4A		35 mA	2.50A	82	K	WS48D05-12/100K
18-36 VDC	5V @ 10A	12V @ 2A	12V @ 2A	35 mA	4.98A	82	K	WS24T05-12/100K
18-36 VDC	5V @ 10A	15V @ 1.6A	15V @ 1.6A	35 mA	4.98A	82	K	WS24T05-15/100K
36-72 VDC	5V @ 10A	12V @ 2A	12V @ 2A	35 mA	2.49A	82	K	WS48T05-12/100K
36-72 VDC	5V @ 10A	15V @ 1.6A	15V @ 1.6A	35 mA	2.49A	82	K	WS48T05-15/100K

Note: 1. At nominal input voltage 24 or 48 VDC

CASE K1 (STANDARD)

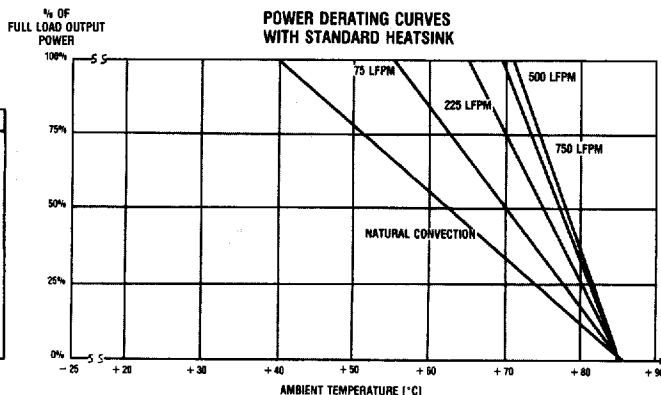
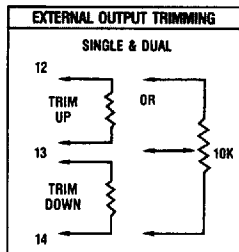


CASE K3 (OPTIONAL)



Pin Connections			
TERM	SINGLE	DUAL	TRIPLE
INPUTS			
1	No Pin	*	*
2	- Input	*	*
3	- Input	*	*
4	+ Input	*	*
5	+ Input	*	*
6	Control	*	*
7	Case	*	*
OUTPUTS			
8	- Output	- Sense 1	- Sense 1
9	- Output	- Output 1	- Output 1
10	+ Output	+ Output 1	+ Output 1
11	+ Output	+ Sense 1	+ Sense 1
12	- Sense	- Output 2	- Output 2
13	Trim	Trim 2	Com 2 & 3
14	+ Sense	+ Output 2	+ Output 3

\*Connection is same as single column



Tolerance .xx = ±0.04  
.xxx = ±0.005

ALL DIMENSIONS IN INCHES (mm)