

# TOTAL POWER INT'L

TPS70 Open Frame 70 Watt

## KEY FEATURES

- \*Universal input
- \*Built-in EMI filter
- \*Optional  $\pm 12\text{VDC}/\pm 24\text{VDC}/\pm 48\text{VDC}$  input

## APPLICATIONS

- \*Telecommunications/Business machines
- \*Computer peripherals/Medical instruments
- \*Test & industrial equipments
- \*Lan & Hub



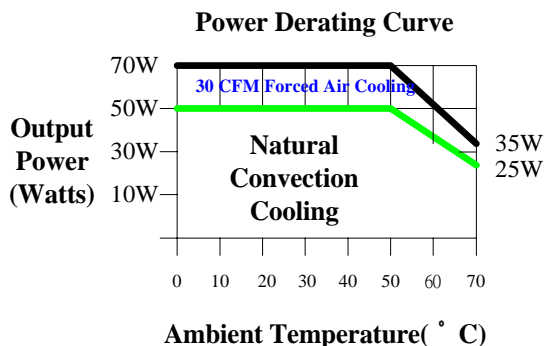
## ELECTRICAL SPECIFICATIONS

### INPUT

- \*Input range-----90~264 VAC, universal
- \*Frequency-----47~63Hz
- \*Inrush current-----35A typical, Cold start @25°C
- \*Efficiency-----65%~80% typical at full load
- \*EMI filter-----FCC Class B conducted, CISPR 22 Class B conducted, EN55022 class B Conducted
- \*Line regulation----- +/- 0.5% typical

### OUTPUT

- \*Maximum power----70W with 30 CFM forced air (Refer next page)
- \*Hold-up time -----10ms typical at full load and 115 VAC nominal line
- \*Overload protection-Short circuit protection
- \*Overvoltage protection -----Main output 20% to 40% above nominal output
- \*Ripple/Noise ----- +/- 1% Max. @full load (Optional +/-0.5 % per inquiry)



## EMI & EMC

- \*FCC part 15, Class B
- \*CISPR 22 / EN55022, Class B
- \*VCCI, Class 2
- \*CE, EN61000-3-2 (Class A) and -3 ; EN61000-4-2, -3, -4, -5, -6 and -11

## SAFETY APPROVAL

- \*UL1950 / c UL
- \*Optional CSA 22.2, LEVEL 3 (COMPLY WITH)
- \*TUV EN60950
- \*Optional UL 2601 (EMI Class A)(COMPLY WITH)

## ENVIRONMENTAL

- \*Operating temperature : 0 to 50°C ambient; derate each output at 2.5% per degree from 50°C to 70°C
- \*Humidity: Operating; non-condensing, 5% to 95%
- \*Vibration : 10~55 Hz at 1G 3 minutes period, 30 minutes along X, Y and Z axis
- \*Storage temperature: -40 to 85°C
- \*Temperature coefficient: +/- 0.05% per degree C
- \*MTBF demonstrated: >100,000 hours at full load and 25°C ambient conditions

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	MAXIMUM OUTPUT CURRENT	PEAK OUTPUT CURRENT(NOTE1)	MINIMUM OUTPUT CURRENT	TOTAL REGULATION(NOTE3)	RIPPLE & NOISE %P-P(NOTE2)	PEAK OUTPUT POWER(NOTE1)
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**SINGLE OUTPUT MODEL SELECTION CHART**

PPS70-10	+5V	±10% Typical	14A	18.2A	0A	±3%	±1%	90W Typical
PPS70-11	+12V	±10% Typical	5.9A	7.6A	0A	±3%	±1%	90W Typical
PPS70-12	+15V	±10% Typical	4.7A	6.1A	0A	±3%	±1%	90W Typical
PPS70-13	+24V	±10% Typical	2.9A	3.7A	0A	±3%	±1%	90W Typical
PPS70-14	+48V	±10% Typical	1.46A	1.8A	0A	±3%	±1%	90W Typical
PPS70-15	+36V	±10% Typical	1.95A	2.5A	0A	±3%	±1%	90W Typical
PPS70-17	+3.3V	±10% Typical	21A	27.3A	2.1A	±5%	±1.5%	90W Typical

**DUAL OUTPUT MODEL SELECTION CHART**

PPS70 -20	+5 V	±10% Typical	7A	9.1A	0.7A	±5%	±1%	90W Typical
	+12V	Fixed	3.5A	4.5A	0.35A	±5%	±1%	
PPS70-21	+5 V	±10% Typical	7A	9.1A	0.7A	±5%	±1%	90W Typical
	+24V	Fixed	1.5A	1.9A	0.15A	±5%	±1%	
PPS70-22	+5 V	±10% Typical	7A	9.1A	0.7A	±5%	±1%	90W Typical
	- 5V	Fixed	7A	9.1A	0.7A	±10%	±1%	
PPS70-23	+12V	±10% Typical	2.9A	3.7A	0.29A	±5%	±1%	90W Typical
	- 12V	Fixed	2.9A	3.7A	0.29A	±10%	±1%	
PPS70-24	+15V	±10% Typical	2.3A	2.9A	0.23A	±5%	±1%	90W Typical
	- 15V	Fixed	2.3A	2.9A	0.23A	±10%	±1%	
PPS70-25	+3.3V	±10% Typical	8.8A	11.4A	0.88A	±5%	±1.5%	90W Typical
	+12V	Fixed	3.5A	4.5A	0.35A	±5%	±1%	
PPS70-26	+12V	±10% Typical	3.5A	4.5A	0.35A	±5%	±1%	90W Typical
	+24V	Fixed	1.2A	1.5A	0.12A	±5%	±1%	
PPS70-27Y	+5V	Fixed	7A	9.1A	0.7A	±5%	±1%	90W Typical
	+15V	Fixed	2.8A	3.5A	0.28A	±5%	±1%	
PPS70-28	+12.5V	Fixed	4.5A	5.8A	0.45A	±5%	±1%	90W Typical
	+16V	Fixed	1A	1.3A	0.1A	±5%	±1%	
PPS70-29	+3.3V	Fixed	14A	18A	1.4A	±5%	±1.5%	90W Typical
	+5V	Fixed	4.7A	6.1A	0.47A	±5%	±1%	

**TRIPLE OUTPUT MODEL SELECTION CHART**

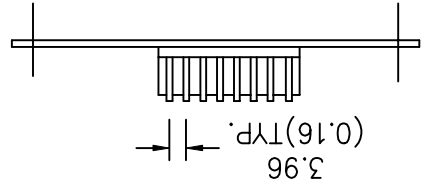
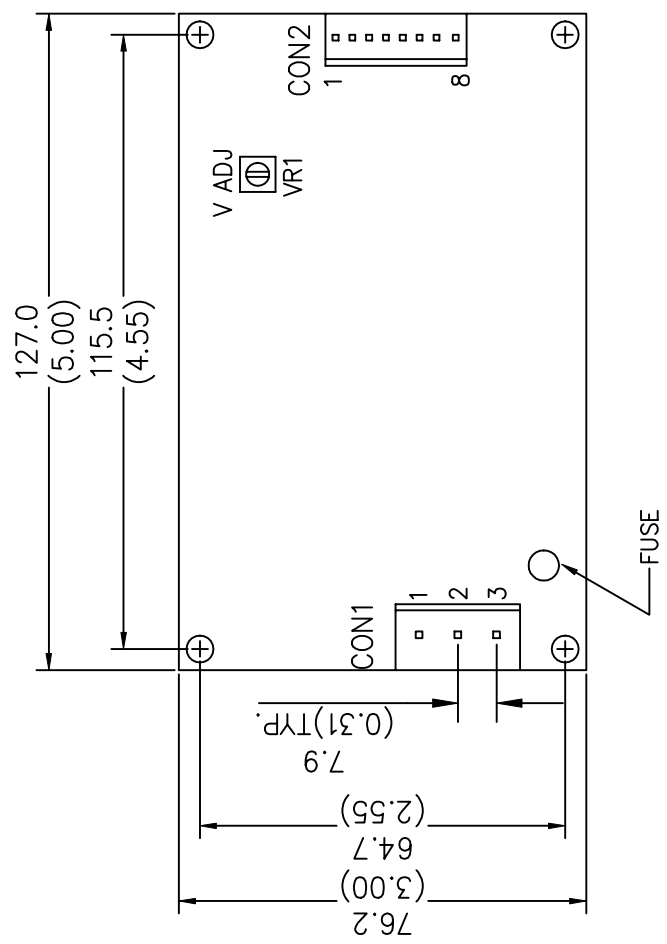
PPS70-30	+ 5V	±10% Typical	7A	9.1A	0.7A	±5%	±1%	90W Typical
	+12V	Fixed	4.4A	5.7A	0.44A	±5%	±1%	
	- 5 V	Fixed	0.9A	1.1A	0.09A	±10%	±1%	
PPS70-31	+ 5V	±10% Typical	7A	9.1A	0.7A	±5%	±1%	90W Typical
	+12V	Fixed	2.5A	3.2A	0.25A	±5%	±1%	
	-12V	Fixed	0.4A	0.5A	0.04A	±10%	±1%	
PPS70-32	+ 5V	±10% Typical	7A	9.1A	0.7A	±5%	±1%	90W Typical
	+15V	Fixed	1.9A	2.4A	0.19A	±5%	±1%	
	-15V	Fixed	0.4A	0.5A	0.04A	±10%	±1%	
PPS70-33	+ 5V	±10% Typical	8.8A	11.4A	0.88A	±5%	±1%	90W Typical
	+15V	Fixed	1.4A	1.8A	0.14A	±5%	±1%	
	- 5 V	Fixed	0.9A	1.1A	0.09A	±10%	±1%	
PPS70-34	+ 5V	±10% Typical	8.8A	11.4A	0.88A	±5%	±1%	90W Typical
	+15V	Fixed	1.4A	1.8A	0.14A	±5%	±1%	
	-12V	Fixed	0.4A	0.5A	0.04A	±10%	±1%	
PPS70-35	+ 5 V	±10% Typical	6.3A	8.1A	0.63A	±5%	±1%	90W Typical
	+24V	Fixed	1.4A	1.8A	0.14A	±5%	±1%	
	-12V	Fixed	0.4A	0.5A	0.04A	±10%	±1%	
PPS70-36	+ 5V	±10% Typical	6.3A	8.1A	0.63A	±5%	±1%	90W Typical
	+12V	Fixed	2.8A	3.6A	0.28A	±5%	±1%	
	-12V	Fixed	0.4A	0.5A	0.04A	±10%	±1%	
PPS70-37	+ 5V	±10% Typical	6A	7.8A	0.6A	±5%	±1%	90W Typical
	+12V	Fixed	2.5A	3.2A	0.25A	±5%	±1%	
	+24 V	Fixed	0.4A	0.5A	0.04A	±10%	±1%	

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	MAXIMUM OUTPUT CURRENT	PEAK OUTPUT CURRENT(NOTE1)	MINIMUM OUTPUT CURRENT	TOTAL REGULATION(NOTE3)	RIPPLE & NOISE %P-P(NOTE2)	PEAK OUTPUT POWER(NOTE1)
<b>TRIPLE OUTPUT MODEL SELECTION CHART</b>								
PPS70-38	+15V	±10% Typical	1.8A	2.3A	0.18A	±5%	±1%	90W Typical
	-15V	Fixed	1.8A	2.3A	0.18A	±5%	±1%	
	+5V	Fixed	3.3A	4.5A	0.33A	±10%	±1%	
PPS70-39	+12V	±10% Typical	1.3A	1.7A	0.13A	±5%	±1%	90W Typical
	-12V	Fixed	1.3A	1.7A	0.13A	±5%	±1%	
	+28V	Fixed	1.4A	1.8A	0.14A	±10%	±1%	
<b>QUAD OUTPUT MODEL SELECTION CHART</b>								
PPS70-40	+5V	±10% Typical	8A	10.4A	0.8A	±5%	±1%	90W Typical
	+12V	Fixed	2.9A	3.8A	0.29A	±5%	±1%	
	-12V	Fixed	0.5A	0.65A	0.05A	±10%	±1%	
	-5V	Fixed	0.5A	0.65A	0.05A	±10%	±1%	
PPS70-41	+5V	±10% Typical	7A	9.1A	0.7A	±5%	±1%	90W Typical
	+12V	Fixed	2.6A	3.4A	0.26A	±5%	±1%	
	-5V	Fixed	0.7A	0.9A	0.07A	±10%	±1%	
	-12V	Fixed	0.7A	0.9A	0.07A	±10%	±1%	
PPS70-42	+5V	±10% Typical	7A	9.1A	0.7A	±5%	±1%	90W Typical
	+12V	Fixed	1.1A	1.4A	0.11A	±5%	±1%	
	-15V	Fixed	0.7A	0.9A	0.07A	±10%	±1%	
	+15V	Fixed	0.7A	0.9A	0.07A	±10%	±1%	
PPS70-43	+5V	±10% Typical	3.9A	5.1A	0.39A	±5%	±1%	90W Typical
	+12V	Fixed	1.8A	2.3A	0.18A	±5%	±1%	
	-12V	Fixed	0.7A	0.9A	0.07A	±10%	±1%	
	+15V	Fixed	1.4A	1.8A	0.14A	±10%	±1%	
PPS70-44	+5V	±10% Typical	3.9A	5.1A	0.39A	±5%	±1%	90W Typical
	+12V	Fixed	0.7A	0.9A	0.07A	±5%	±1%	
	-12V	Fixed	0.7A	0.9A	0.07A	±10%	±1%	
	+48V	Fixed	0.7A	0.9A	0.07A	±10%	±1%	
PPS70-45Y	+5V	±10% Typical	7A	9.1A	0.7A	±5%	±1%	90W Typical
	+12V	Fixed	0.7A	0.91A	0.07A	±5%	±1%	
	-12V	Fixed	0.7A	0.91A	0.07A	±10%	±1%	
	+24V	Fixed	0.7A	0.91A	0.07A	±10%	±1%	
PPS70-46Y	+5V	±10% Typical	7A	9.1A	0.7A	±5%	±1%	90W Typical
	+15V	Fixed	0.7A	0.91A	0.07A	±5%	±1%	
	-15V	Fixed	0.7A	0.91A	0.07A	±10%	±1%	
	+48V	Fixed	0.7A	0.91A	0.07A	±10%	±1%	
PPS70-47Y	+5V	±10% Typical	3.5A	4.5A	0.35A	±5%	±1%	90W Typical
	+12V	Fixed	1.3A	1.7A	0.13A	±5%	±1%	
	-12V	Fixed	1.3A	1.7A	0.13A	±10%	±1%	
	+36V	Fixed	0.7A	0.91A	0.07A	±10%	±1%	
PPS70-48Y	+5V	±10% Typical	7A	9.1A	0.7A	±5%	±1%	90W Typical
	+15V	Fixed	0.7A	0.91A	0.07A	±5%	±1%	
	-15V	Fixed	0.7A	0.91A	0.07A	±10%	±1%	
	+24V	Fixed	0.7A	0.91A	0.07A	±10%	±1%	
PPS70-49Y	+3.3V	±10% Typical	5A	9.1A	0.5A	±5%	±1.5%	90W Typical
	+5V	Fixed	4.4A	5.7A	0.44A	±5%	±1%	
	+12V	Fixed	2.5A	5.7A	0.25A	±10%	±1%	
	-5V	Fixed	1A	2.8A	0.1A	±10%	±1%	

- NOTES:** 1) Peak loads for lasting <30 seconds with a maximum 10% duty cycle are acceptable. Please contact us if need special peak load.  
2) Maximum peak to peak noise expressed as a percentage of output voltage, 20MHz bandwidth, input not less nominal line, 0.1 μ F and 47 μ F Cap. on outputs.  
3) Loading test conditions are set for all outputs at minimum, middle and maximum of loads. Special cross loading requirement is welcomed.  
4) Detailed engineering specification of each model is available for inquiry.  
5) Special output voltage/current inquiry is welcomed.  
6) Specifications subject to change without notice.  
7) 25% derated if 24 VDC input version; 50% derated if 12 VDC input version.

$$\text{MAXIMUM COMPONENT HEIGHT} = \frac{25.4 \begin{matrix} +2.54 \\ -0 \end{matrix}}{1.00 \begin{matrix} +.10 \\ -0 \end{matrix}}$$

CON1=CONNECTOR,MOLEX#09-65-2058(OR EQUIVALENT)  
 (MATING CONECT.=MOLEX#09-50-3051)  
 CON2=CONNECTOR,MOLEX#09-65-2088(OR EQUIVALENT)  
 (MATING CONECT.=MOLEX#09-50-3081)  
 ALL MATING TERMINAL=MOLEX#08-50-0106(OR EQUIVALENT)



CON1 ( CONNECTORS ) CONFIGURATION

1	2	3
FG	NEUT(-)	LINE(+)

CON2 ( CONNECTORS ) CONFIGURATION FOR V4 ISOLATED

Multiple Output	1	2-3	4-5	6	7	8
	V2	V1	RET	V3	V4	V4RET

CON2 ( CONNECTORS ) CONFIGURATION FOR V4 POSITIVE

Multiple Output	1	2-3	4-5	6	7	8
	V2	V1	RET	V3	V4(+)	RET

CON2 ( CONNECTORS ) CONFIGURATION FOR V4 NEGATIVE

Multiple Output	1	2-3	4-5	6	7	8
	V2	V1	RET	V3	RET	V4(-)

CON2 ( CONNECTORS ) CONFIGURATION

Single Output	1-3	4-6	7-8
	V1(+)	RET(-)	NC

TOLERANCE :  $\frac{\text{mm} \pm 0.5}{(\text{inch}) \pm 0.02}$

UNIT:  $\frac{\text{mm}}{(\text{inch})}$