

## 36-72VDC INPUT RANGE DC-DC CONVERTER HALF-BRICK POWER MODULES 165-200 WATTS SINGLE OUTPUT APS165HD-48B-S SERIES



### FEATURES:

- SINGLE OUTPUT
- WIDE 2:1 INPUT RANGE
- 1500VDC ISOLATION
- STANDARD HALF-BRICK PACKAGE
- HIGH-EFFICIENCY POWER MODULE
- UNDER-VOLTAGE LOCKOUT
- DESIGNED TO MEET INTERNATIONAL SAFETY STANDARDS

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Range:** Wide 2:1 Input DC Range 36-72Vdc.  
**Input Voltage:** Nominal 48Vdc.  
**Input Current:** Typ.3.92A full load and 0.1A no-load @ 48Vdc nominal input.  
**Input Fuse:** Use external fuse.  
**Soft-Start:** Installed.  
**Inrush Current:** Typ. 3.8A peak @ 48Vdc.  
**Input Filter:** Pi-Network for EMI suppression.  
**Under-Voltage Protection (UVP):** Lock-out activated at 34-35.5Vdc input.  
**Input OVP:** 74-76Vdc.  
**Input Reflected Ripple Current:** 20mA pk-pk @48 Vdc.  
**Isolation Voltage:** 1,500Vdc input-output.  
**Remote On/Off:** Option #1 Logic[1]=Off ,Logic[0]=On  
 Option #2 Logic [1]=On ,Logic [1]=Off.

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.  
**Output Current:** See Ratings Chart.  
**Output Wattage:** Typ. 165-200W continuous.  
**Line Regulation:** Typ. 0.1%.  
**Load Regulation:** Typ.  $\pm 0.5\%$ .  
**Noise & Ripple:** Typ. 1% rms.  
**OVP:** Built-in (latch).  
**Adjustability:** Factory set. Maybe externally trimmed with fixed resistor or trimpot.  
**Overload Protection (OLP):** Fully protected against overload and short circuit. Typical 120% max. load. Consult the factory for special OLP setting.  
**Over Temperature Protection:**  
 By NTC, thermal shut-down at 105-115°C.

#### GENERAL SPECIFICATION

**Efficiency:** Typ. 87.5-89%, various with input & output.  
**Switching Frequency:** Fixed frequency 330K Hz.  
**Circuit Topology:** 330K Hz. Forward Circuit.  
**Transient Response:** Peak transient 100mV and recovers within 0.2mS after 50% load-change.  
**Safety:** IEC60950 class I.  
**Power Density:** Typ. 60 Watts / Cubic inch.

**Operating Temperature:** -40 to +100°C (baseplate).  
**Storage Temperature:** -55 to +125 °C.  
**Temperature Coefficient:** 0.02%/°C.  
**Humidity:** Up to 95% RH, Non-Condensing.  
**Case:** Aluminum baseplate with metal standoffs.  
**Industrial Grade.**

**NOTE:** (1) All measurements are at nominal input, full load, and +25°C unless otherwise spec.  
 (2) Line Regulation measured from High to Low Lines at full load.  
 (3) Load Regulation measured from Full-Load (F-L) to Half-Load (H-L) at nominal input.  
 (4) Correct fuse size by calculating the max. DC current drain at low Line input & adding 20-25% for desired fuse size.

## INPUT/OUTPUT & VOLTAGE/CURRENT RATINGS CHART

### SINGLE OUTPUT

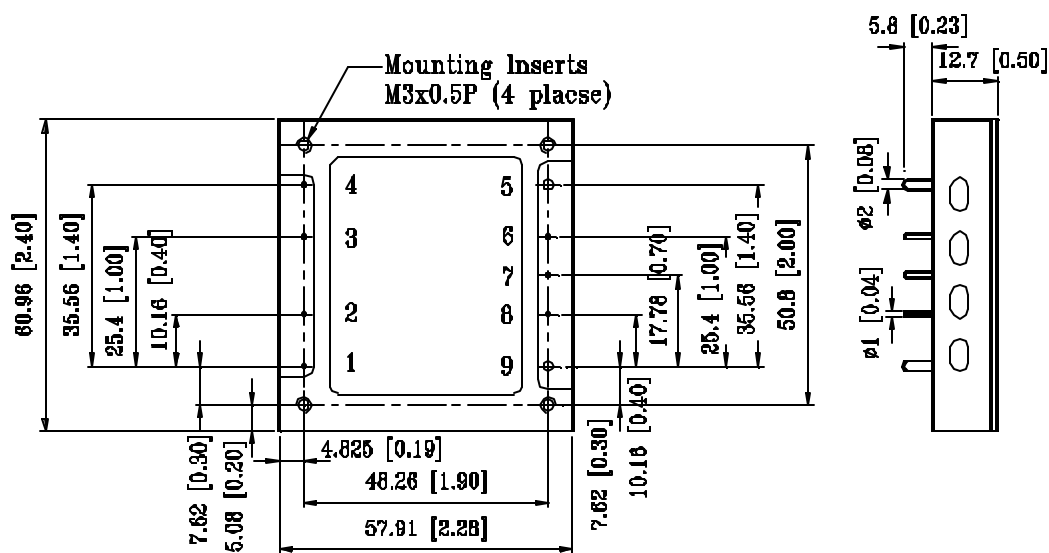
MODEL NO.	INPUT Vdc		OUTPUT VO1 ? # ?			
	Range	Nominal	Typ.	Volt.	Max.	Peak
APS165HD -48B-S018600	36-72Vdc	48Vdc	60A	1.8Vdc	62A	64A
APS165HD -48B-S025600	36-72Vdc	48Vdc	60A	2.5Vdc	62A	64A
APS165HD -48B-S033500	36-72Vdc	48Vdc	50A	3.3Vdc	52A	53A
APS165HD -48B-S050450	36-72Vdc	48Vdc	45A	5.0Vdc	47A	48A

Symbols: "?" "OVP built-in. "# Remote sensing. "?" Synchronous Rectifier.

Remarks: Peak output, less than 60Sec. With duty cycle <10%.

### MECHANICAL DIMENSIONS: MM [INCHES]

**WEIGHT:** 73.0g (2.6 Oz.)



### INPUT & OUTPUT CONNECTOR PIN ASSIGNMENT

ASSIGNMENT	SINGLE OUPUT								
	+VIN	Remote ON/OFF	CASE	-VIN	DC COM	-SENSE	VO1 ADJ.	+SENSE	VO1
CONNECTOR & PIN	PIN#1	PIN#2	PIN#3	PIN#4	PIN#5	PIN#6	PIN#7	PIN#8	PIN#9