



## ON-BOARD DC-DC CONVERTER HALF-BRICK BASE PLATE POWER MODULES INDUSTRIAL GRADE 100-150 WATTS SINGLE & DUAL OUTPUT HDH100-24B OR 48B-S & D SERIES



### FEATURES:

- SINGLE & DAUL 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 18-36Vdc.  
or 36-72Vdc

**Input Voltage:** Nominal 24Vdc.or 48Vdc.

**Input Current:** Typical 6.85A full load and 0.06A no-load  
@ 24Vdc nominal input.  
Typical 2.65A full load and 0.03A no-load  
@ 48Vdc nominal input.

**Input Fuse:** Use external fuse.

**Inrush Current:** 8A @ 24Vdc/4A @ 48Vdc

**Input Filter:** Pi-Network for EMI suppression.

**Under-Voltage Protection (UVP):** Lock-out activated at  
17.8 Vdc input @ 24Vdc nominal input.  
34-35.5Vdc@ 48Vdc nominal input

**Input Reflected Ripple Current:** 28.4mA pk-pk @24 Vdc.

**Isolation Voltage:** 1,500Vdc input-output.

**Remote On/Off:** TTL/CMOS-Compatible input control.

**Positive Logic** version for Standard set up:  
ON(Enable)=Open(or 2.5-5.0Vdc above-Vin)  
OFF(Disable)=Short(or 0-0.8Vdc above-Vin)

**Negative Logic** version option available by adding a  
“N” suffix to the end of Model #.

Remark :Logic input voltage reference to -Vin.

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.

**Output Current:** See Ratings Chart.

**Output Wattage:** 100-150W typical continuous.

**Line Regulation:** Various with input & output voltages.  
± 0.1% typical.

**Load Regulation:** Various with output voltages.  
Single O/P: ±1.0% typical.  
Dual O/P: ±1.0% typical.

**Noise & Ripple:** Typical 120mV, peak to peak. 1% rms.

**OVP:** Built-in.

**Adjustability:** Maybe external trimmed with fixed resistor or  
trimpot.

**Overload Protection (OLP):**  
Fully protected against overload and short circuit.  
OLP set at typical 130% max. load.  
Consult the factory for special OLP setting.

#### GENERAL SPECIFICATION

**Efficiency:** 83.8-87% typical, various with input.

**Switching Frequency:** Fixed frequency 330K Hz.

**Circuit Topology:** Forward Circuit.

**Transient Response:** Peak deviation <220mV and recovers  
within 1mS after 25% load-change.

**Safety Standard:** IEC60950 Class I.

**Case:** Aluminum base plate with metal standoffs.

**Power Density:** 36.0 Watts / Cubic inch.

**Industrial Grade.**

**Operating Temperature:** -40 to +100°C (base plate).  
Power derating details; please refer to the Derating Chart.

**Storage Temperature:** -55 to +125 °C.

**Temperature Coefficient:** ± 0.02%/°C.

**Humidity:** Up to 95% RH, Non-Condensing.

**Cooling:** At least 100LFM moving air is recommended for  
full load > 0°C in a confined area. Air flow vs. power  
derating details please refer to the Derating Chart.

**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.

Due to requests in market and advances in technology, specifications subject to change without notice.

# INPUT/OUTPUT & VOLTAGE/CURRENT RATINGS CHART

## SINGLE OUTPUT

| MODEL NO.          | INPUT Vdc |         | OUTPUT VO1 ★@ # |         |      |
|--------------------|-----------|---------|-----------------|---------|------|
|                    | Range     | Nominal | MIN.            | VOLT.   | TYP. |
| HDH100-24B-S018300 | 18-36Vdc  | 24Vdc   | 0A              | 1.8Vdc  | 30A  |
| HDH100-24B-S025300 | 18-36Vdc  | 24Vdc   | 0A              | 2.5Vdc  | 30A  |
| HDH100-24B-S033300 | 18-36Vdc  | 24Vdc   | 0A              | 3.3Vdc  | 30A  |
| HDH100-24B-S050250 | 18-36Vdc  | 24Vdc   | 0A              | 5.0Vdc  | 25A  |
| HDH100-24B-S120120 | 18-36Vdc  | 24Vdc   | 0A              | 12.0Vdc | 12A  |
| HDH100-24B-S150100 | 18-36Vdc  | 24Vdc   | 0A              | 15.0Vdc | 10A  |
| HDH100-48B-S018300 | 36-72Vdc  | 48Vdc   | 0A              | 1.8Vdc  | 30A  |
| HDH100-48B-S025300 | 36-72Vdc  | 48Vdc   | 0A              | 2.5Vdc  | 30A  |
| HDH100-48B-S033300 | 36-72Vdc  | 48Vdc   | 0A              | 3.3Vdc  | 30A  |
| HDH100-48B-S050250 | 36-72Vdc  | 48Vdc   | 0A              | 5.0Vdc  | 25A  |
| HDH100-48B-S120120 | 36-72Vdc  | 48Vdc   | 0A              | 12.0Vdc | 12A  |
| HDH100-48B-S150100 | 36-72Vdc  | 48Vdc   | 0A              | 15.0Vdc | 10A  |

## DUAL OUTPUT

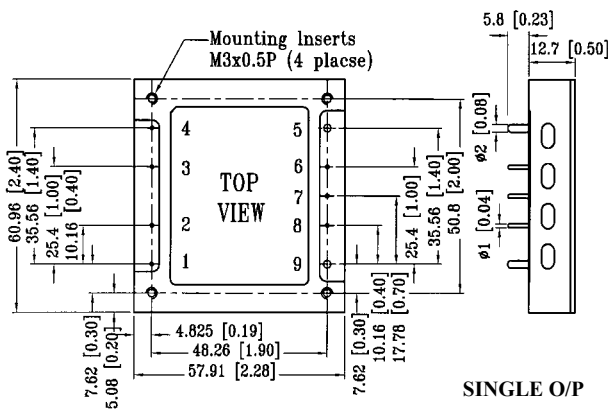
| MODEL NO.        | INPUT Vdc |         | OUTPUT VO1 ★@ |      |        |      | OUTPUT VO2 ★@ |      |        |      |
|------------------|-----------|---------|---------------|------|--------|------|---------------|------|--------|------|
|                  | Range     | Nominal | MIN.          | TYP. | VOLT.  | MAX. | MIN.          | TYP. | VOLT.  | MAX. |
| HDH100-24B-D025B | 18-36Vdc  | 24Vdc   | 2.0A          | 18A  | 2.5Vdc | 25A  | 0A            | 18A  | 1.8Vdc | 25A  |
| HDH100-24B-D033B | 18-36Vdc  | 24Vdc   | 2.0A          | 17A  | 3.3Vdc | 24A  | 0A            | 18A  | 1.8Vdc | 25A  |
| HDH100-24B-D033C | 18-36Vdc  | 24Vdc   | 2.0A          | 17A  | 3.3Vdc | 24A  | 0A            | 15A  | 2.5Vdc | 20A  |
| HDH100-24B-D050C | 18-36Vdc  | 24Vdc   | 2.0A          | 14A  | 5.0Vdc | 20A  | 0A            | 15A  | 2.5Vdc | 20A  |
| HDH100-24B-D050D | 18-36Vdc  | 24Vdc   | 2.0A          | 14A  | 5.0Vdc | 20A  | 0A            | 12A  | 3.3Vdc | 18A  |
| HDH100-48B-D025B | 36-72Vdc  | 48Vdc   | 2.0A          | 18A  | 2.5Vdc | 25A  | 0A            | 18A  | 1.8Vdc | 25A  |
| HDH100-48B-D033B | 36-72Vdc  | 48Vdc   | 2.0A          | 17A  | 3.3Vdc | 24A  | 0A            | 18A  | 1.8Vdc | 25A  |
| HDH100-48B-D033C | 36-72Vdc  | 48Vdc   | 2.0A          | 17A  | 3.3Vdc | 24A  | 0A            | 15A  | 2.5Vdc | 20A  |
| HDH100-48B-D050C | 36-72Vdc  | 48Vdc   | 2.0A          | 14A  | 5.0Vdc | 20A  | 0A            | 15A  | 2.5Vdc | 20A  |
| HDH100-48B-D050D | 36-72Vdc  | 48Vdc   | 2.0A          | 14A  | 5.0Vdc | 20A  | 0A            | 12A  | 3.3Vdc | 18A  |

Symbols: "★" OVP built-in. "#" Remote sensing. "@@" Adjustable.

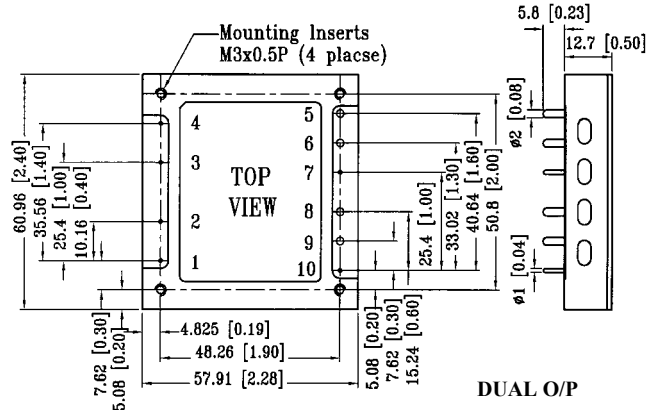
Remarks: Peak output, less than 60Sec. With duty cycle <10%.

## MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: 73.0g (2.6 Oz.)



SINGLE O/P



DUAL O/P

## PIN ASSIGNMENT

| PIN NO.  | SINGLE        | DUAL          |
|----------|---------------|---------------|
| PIN# 1.  | +Vin          | +Vin          |
| PIN# 2.  | Remote ON/OFF | Remote ON/OFF |
| PIN# 3.  | CASE          | CASE          |
| PIN# 4.  | -Vin          | -Vin          |
| PIN# 5.  | DC COM.       | VO2           |
| PIN# 6.  | -SENSE        | DC COM        |
| PIN# 7.  | VO1 ADJ.      | VO2 ADJ.      |
| PIN# 8.  | +SENSE        | VO1           |
| PIN# 9.  | VO1           | DC COM        |
| PIN# 10. | -----         | VO1 ADJ.      |

## DERATING CHART

output power

