



ON-BOARD DC-DC CONVERTER BASE PLATE POWER MODULE INDUSTRIAL GRADE 40 WATTS SINGLE & MULTIPLE OUTPUT HDH40-24D OR 48D-S, D, T SERIES



FEATURES:

- SINGLE, DUAL & TRIPLE OUTPUT
- 4:1 ULTRA-WIDE INPUT VOLTAGE
- 1,500VDC ISOLATION
- HEATSINK MOUNT FORMAT
- INDUSTRIAL STANDARD PIN-OUT
- UNDER-VOLTAGE LOCKOUT

SPECIFICATION

INPUT SPECIFICATION

Input Range/Voltage: Ultra-wide 4:1 Range. 9-36Vdc for 24Vdc nominal input.

Range 18-72Vdc for 48Vdc nominal input.

Input Current: Various with input range & load.
See Ratings Chart.

Input Fuse: Use external fuse.

Input Filter: Pi-Network.

Undervoltage Drop Out: 12Vdc typical.

Isolation Resistor: 1,000 Mega Ohms.

Isolation Voltage: 1,500Vdc for input to output.
1,500Vdc for input to case and output to case.

Shielding: Five-sided.

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: [Voltage refer to -Input (-Vin)]

OUTPUT SPECIFICATION

Output Voltage: See Ratings Chart.

Output Current: See Ratings Chart.

Voltage Accuracy: Typ. main O/P $\pm 1.0\%$, Aux. O/P $\pm 2.0\%$.

Line Regulation: Various with input & output voltage.
 $\pm 0.5\%$ typical.

Load Regulation: Various with output voltages

Single O/P: VO1 $\pm 1.0\%$ typical.

Dual O/P: VO1 $\pm 1.0\%$ & VO2 $\pm 2.0\%$ typical.

Triple O/P: VO1 & VO3 $\pm 2.0\%$, VO2 $\pm 5.0\%$ typical.

Noise & Ripple: 100mV for 3.3V/5.0V & 1.0% typical
for others output peak to peak.

OVP: Built-in on main output.

Adjustability: VO1 O/P may optionally be external trimmed
 $\pm 3.0\%$ with a fixed resistors or trim-pot.

Overload Protection (OLP):

Fully protected against overload and short circuit.

OLP set at about 125-150% max. load.

Consult factory for special OLP setting.

GENERAL SPECIFICATION

Efficiency: 75-79% typical, various with input & output voltages.

Switching Frequency: Fixed frequency 250K Hz.

Circuit Topology: Forward Circuit.

Transient Response: Peak deviation 200mV,
Recovery time $< 3\text{mSec.}$ @ 25% step load change.

Case: Aluminum base plate.

Power Density: 7.5 Watts / Cubic inch.

MTBF: 1,000,000 hours, Mil.Std.271, 25°C.

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: $\pm 0.02\%/^{\circ}\text{C}$.

Cooling: At least 100LFM moving air is recommended for full load $> +25^{\circ}\text{C}$ room temperature in a confined area.

Air flow vs. Power derating details, please refer to the Derating Chart.

Industrial Grade only.

NOTE: (1) All measurements are at nominal input, full load, and +25°C unless otherwise specified.

(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		VO1 ★@#	
	Range	Nom.	TYP.	VOLT.
HDH40-24D-S033076	9-36Vdc	24Vdc	7.6A	3.3V
HDH40-24D-S050080	9-36Vdc	24Vdc	8.0A	5.0V
HDH40-24D-S120034	9-36Vdc	24Vdc	3.4A	12.0V
HDH40-24D-S150027	9-36Vdc	24Vdc	2.7A	15.0V
HDH40-24D-S180023	9-36Vdc	24Vdc	2.3A	18.0V
HDH40-48D-S033076	18-72Vdc	48Vdc	7.6A	3.3V
HDH40-48D-S050080	18-72Vdc	48Vdc	8.0A	5.0V
HDH40-48D-S120034	18-72Vdc	48Vdc	3.4A	12.0V
HDH40-48D-S150027	18-72Vdc	48Vdc	2.7A	15.0V
HDH40-48D-S180023	18-72Vdc	48Vdc	2.3A	18.0V

DUAL OUTPUT

MODEL NO.	INPUT Vdc		MAIN VO1 ★@		AUX. VO2	
	Range	Nom.	TYP.	VOLT.	TYP.	VOLT.
HDH40-24D-D120I	9-36Vdc	24Vdc	1.67A	+12.0V	1.67A	-12.0V
HDH40-24D-D150K	9-36Vdc	24Vdc	1.35A	+15.0V	1.35A	-15.0V
HDH40-48D-D120I	18-72Vdc	48Vdc	1.67A	+12.0V	1.67A	-12.0V
HDH40-48D-D150K	18-72Vdc	48Vdc	1.35A	+15.0V	1.35A	-15.0V

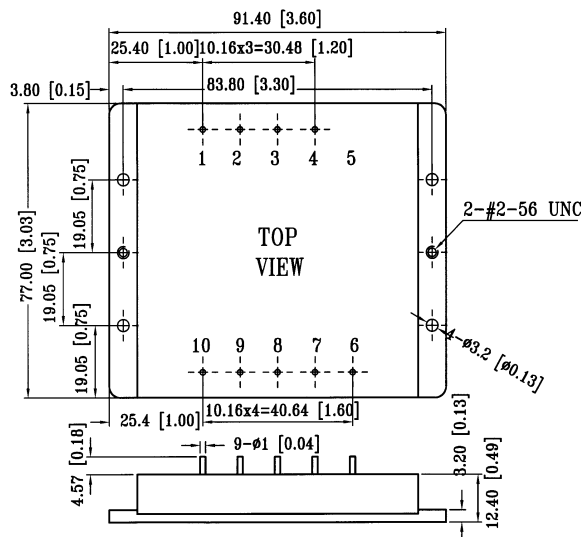
TRIPLE OUTPUT

MODEL NO.	INPUT Vdc		MAIN VO1 ★@		AUX. VO2		AUX. VO3	
	Range	Nom.	TYP.	VOLT.	TYP.	VOLT.	TYP.	VOLT.
HDH40-24D-T050II	9-36Vdc	24Vdc	4.0A	5.0V	0.84A	+12.0V	0.84A	-12.0V
HDH40-24D-T050KK	9-36Vdc	24Vdc	4.0A	5.0V	0.67A	+15.0V	0.67A	-15.0V
HDH40-48D-T050II	18-72Vdc	48Vdc	4.0A	5.0V	0.84A	+12.0V	0.84A	-12.0V
HDH40-48D-T050KK	18-72Vdc	48Vdc	4.0A	5.0V	0.67A	+15.0V	0.67A	-15.0V

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

MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: 145.8g (5.13 Oz.)



PIN ASSIGNMENT

PIN NO.	SINGLE	DUAL	TRIPLE
PIN# 1.	REMOTE ON/OFF	REMOTE ON/OFF	REMOTE ON/OFF
PIN# 2.	CASE	CASE	CASE
PIN# 3.	+Vin	+Vin	+Vin
PIN# 4.	-Vin	-Vin	-Vin
PIN# 5.	No Pin	No Pin	No Pin
PIN# 6.	DC COM	N/C	-VO3
PIN# 7.	DC COM	-VO2	+VO2
PIN# 8.	+VO1	DC COM	DC COM
PIN# 9.	+VO1	+VO1	+VO1
PIN# 10.	Trim	Trim	TRIM

DERATING CHART

