

HiTRON

ON-BOARD DC-DC CONVERTER ENCAPSULATED MODULES 15 WATTS SINGLE & DUAL OUTPUT HDM15-S & HDM15-D SERIES



FEATURES:

- SINGLE & DUAL OUTPUT.
- WIDE 4:1 & 2:1 INPUT RANGE.
- 15W ISOLATED OUTPUT.
- SIX-SIDED METAL SHIELD.

SPECIFICATION

INPUT SPECIFICATION

Input Range: Wide 4:1 & 2:1 DC input range.
See Ratings Chart.
Input Voltage: Nominal 12/24/48Vdc.
Input Current: Various with input range and load.
See Ratings Chart.
Input Fuse: Use external fuse.
Input Filter: Pi-Network.
Overvoltage Shutdown: Optional. Factory set.
Undervoltage Shutdown: 8Vdc.
Isolation Resistance: 1,000 Mega Ohms.
Isolation Voltage: 1,500Vdc.
EMI: Six-sided metal shielding.
Remote On/Off: TTL/CMOS-Compatible Input Control.
Logic input reference to -Input/-Vin.
Logic [1]/Open(or 2.5-7.0Vdc above-Vin)=ON.
Logic [2]/Short(or 0-0.08Vdc above-Vin)=OFF.

OUTPUT SPECIFICATION

Output Voltage: See Ratings Chart.
Output Current: See Ratings Chart.
Voltage Accuracy: Main O/P $\pm 2.0\%$ typ.
Line Regulation: $\pm 0.5\%$ typ.
Load Regulation: Single O/P $\pm 1.0\%$ typ.
Dual O/P $\pm 2.0\%$ typ.
Noise & Ripple: Typ. 100mV for 3.3V/5.0V &
1.0% for others peak to peak.
OVP: Built-in on main output.
Adjustability: Single Output only may optionally be
externally trimmed $\pm 3.0\%$ with
a fixed resistor or trim-pot.
Short Circuit Protection: Power fold back,
Self-recovering.
Overload Protection: About 130% of overrange
foldback type.

GENERAL SPECIFICATION

Efficiency: Typ.80%, various with input.
Switching Frequency: Fixed frequency.100K Hz.
Circuit Topology: 100K Hz. forward circuit.
Transient Response: Full to 1/2 load <200 μ Sec.
Case: Black coated steel with non-conductive
metal base.
Weight: 65.0g (2.4 Oz.).
Power Density: 10 Watts./ Cubic inch.

Operating Temperature: -25°C to +71°C range.
-20°C to +60°C @ full load without derating.
Temperature: -40°C to +105°C.
Temperature Coefficient: 0.02% /°C.
Cooling: Convection cooling up to +60°C @ full load.
At least 100LFM moving air is recommended for F-L
> +60°C in a confined area.
Humidity: Up to 95%RH, Non-condensing.
Commercial 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 to 1/2 Full Load at nominal input.
(4) Correct fuse size by calculating the max. DC current drain at low Line input & Load and then adding 20-25% for the desired fuse size.

INPUT/OUTPUT & VOLTAGE/CURRENT RATINGS CHART

SINGLE OUTPUT

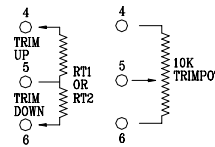
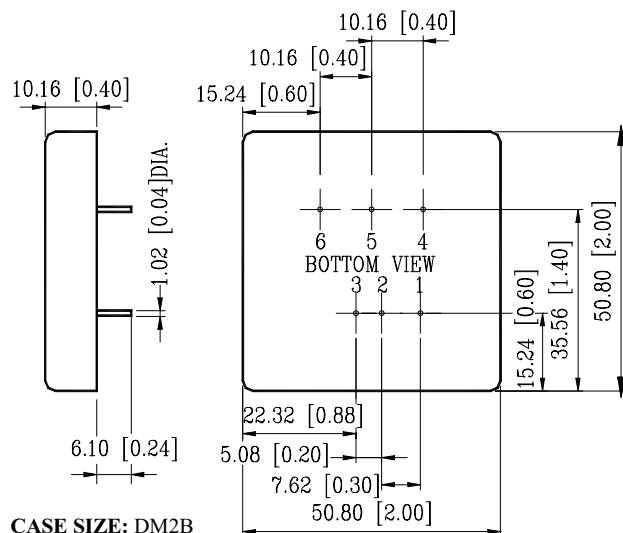
MODEL NO.	INPUT Vdc	INPUT CURRENT		OUTPUT VO1(Vdc)	OUTPUT VO1(A)	CASE SIZE
		N. L. (mA)	F.L.			
HDM15-12B-S03	9.0- 18.0	10	1150	3.3V	3.00A	DM2B
HDM15-12B-S05	9.0- 18.0	10	1550	5.0V	3.00A	DM2B
HDM15-12B-S09	9.0- 18.0	10	1550	9.0V	1.67A	DM2B
HDM15-12B-S12	9.0- 18.0	10	1540	12.0V	1.25A	DM2B
HDM15-12B-S15	9.0- 18.0	10	1540	15.0V	1.00A	DM2B
HDM15-12B-S24	9.0- 18.0	10	1550	24.0V	0.63A	DM2B
HDM15-24B-S03	18.0- 36.0	20	575	3.3V	3.00A	DM2B
HDM15-24B-S05	18.0- 36.0	20	775	5.0V	3.00A	DM2B
HDM15-24B-S09	18.0- 36.0	20	775	9.0V	1.67A	DM2B
HDM15-24B-S12	18.0- 36.0	20	770	12.0V	1.25A	DM2B
HDM15-24B-S15	18.0- 36.0	20	770	15.0V	1.00A	DM2B
HDM15-24B-S24	18.0- 36.0	20	770	24.0V	0.63A	DM2B
HDM15-48B-S03	36.0- 72.0	20	288	3.3V	3.00A	DM2B
HDM15-48B-S05	36.0- 72.0	20	387	5.0V	3.00A	DM2B
HDM15-48B-S09	36.0- 72.0	20	387	9.0V	1.67A	DM2B
HDM15-48B-S12	36.0- 72.0	20	385	12.0V	1.25A	DM2B
HDM15-48B-S15	36.0- 72.0	20	385	15.0V	1.00A	DM2B
HDM15-48B-S24	36.0- 72.0	20	387	24.0V	0.63A	DM2B
HDM15-24D-S03	9.0- 36.0	30	585	3.3V	3.00A	DM2B
HDM15-24D-S05	9.0- 36.0	30	785	5.0V	3.00A	DM2B
HDM15-24D-S09	9.0- 36.0	30	785	9.0V	1.67A	DM2B
HDM15-24D-S12	9.0- 36.0	30	780	12.0V	1.25A	DM2B
HDM15-24D-S15	9.0- 36.0	30	780	15.0V	1.00A	DM2B
HDM15-24D-S24	9.0- 36.0	30	785	24.0V	0.63A	DM2B
HDM15-48D-S03	20.0- 72.0	20	292	3.3V	3.00A	DM2B
HDM15-48D-S05	20.0- 72.0	20	392	5.0V	3.00A	DM2B
HDM15-48D-S09	20.0- 72.0	20	392	9.0V	1.67A	DM2B
HDM15-48D-S12	20.0- 72.0	20	390	12.0V	1.25A	DM2B
HDM15-48D-S15	20.0- 72.0	20	390	15.0V	1.00A	DM2B
HDM15-48D-S24	20.0- 72.0	20	392	24.0V	0.63A	DM2B

DUAL OUTPUT

MODEL NO.	INPUT Vdc	INPUT CURRENT		OUTPUT(Vdc)		OUTPUT(A)		CASE SIZE
		N. L. (mA)	F.L.	+VO1	-VO2	+VO1	-VO2	
HDM15-12B-D05	9.0- 18.0	30	1,560	+5.0V	-5.0V	1.50A	1.50A	DM2B
HDM15-12B-D12	9.0- 18.0	30	1,540	+12.0V	-12.0V	0.62A	0.62A	DM2B
HDM15-12B-D15	9.0- 18.0	30	1,540	+15.0V	-15.0V	0.50A	0.50A	DM2B
HDM15-24B-D05	18.0- 36.0	20	780	+5.0V	-5.0V	1.50A	1.50A	DM2B
HDM15-24B-D12	18.0- 36.0	20	770	+12.0V	-12.0V	0.62A	0.62A	DM2B
HDM15-24B-D15	18.0- 36.0	20	770	+15.0V	-15.0V	0.50A	0.50A	DM2B
HDM15-48B-D05	36.0- 72.0	20	390	+5.0V	-5.0V	1.50A	1.50A	DM2B
HDM15-48B-D12	36.0- 72.0	20	385	+12.0V	-12.0V	0.62A	0.62A	DM2B
HDM15-48B-D15	36.0- 72.0	20	385	+15.0V	-15.0V	0.50A	0.50A	DM2B
HDM15-24D-D05	9.0- 36.0	30	790	+5.0V	-5.0V	1.50A	1.50A	DM2B
HDM15-24D-D12	9.0- 36.0	30	780	+12.0V	-12.0V	0.62A	0.62A	DM2B
HDM15-24D-D15	9.0- 36.0	30	780	+15.0V	-15.0V	0.50A	0.50A	DM2B
HDM15-48D-D05	20.0- 72.0	20	395	+5.0V	-5.0V	1.50A	1.50A	DM2B
HDM15-48D-D12	20.0- 72.0	20	390	+12.0V	-12.0V	0.62A	0.62A	DM2B
HDM15-48D-D15	20.0- 72.0	20	390	+15.0V	-15.0V	0.50A	0.50A	DM2B

MECHANICAL DIMENSIONS: MM [INCHES]

Weight: 65.0g (2.4 Oz.).



PIN ASSIGNMENT

PIN NO.	SINGLE	DUAL
PIN #1.	Remote ON/OFF	Remote ON/OFF
PIN #2.	- INPUT/-Vin	- INPUT/-Vin
PIN #3.	+ INPUT	+ INPUT
PIN #4.	DC-COM	- VO2
PIN #5.	OUTPUT TRIM	DC-COM
PIN #6.	VO1	+ VO1

HiTRON

ON-BOARD DC-DC CONVERTER ENCAPSULATED MODULES 15-WATTS TRIPLE OUTPUT HDM15-T SERIES



FEATURES:

- TRIPLE OUTPUT
- WIDE 4:1 & 2:1 INPUT RANGE
- 15W ISOLATED OUTPUT
- SIX-SIDED METAL SHIELD

SPECIFICATION

INPUT SPECIFICATION

Input Range: Wide 4:1 & 2:1 input DC range.
See Ratings Chart.
Input Voltage: Nominal 12/24/48Vdc.
Input Current: Various with input range and load.
See Ratings Chart.
Input Fuse: Use external fuse.
Input Filter: Pi-Network.
Overvoltage Shutdown: Optional. Factory set.
Undervoltage Shutdown: 8Vdc.
Isolation Resistor: 1,000 Mega Ohms.
Isolation Voltage: 1,500Vdc.
EMI: Six-sided metal shielding.
Remote On/Off: TTL/CMOS-Compatible Input Control.
Logic input reference to -input/-Vin.
Logic [1]/Open (or 2.5-7.0Vdc above-Vin)=ON.
Logic [2]/Short (or 0-0.08Vdc above-Vin)=OFF.

OUTPUT SPECIFICATION

Output Voltage: See Ratings Chart.
Output Current: See Ratings Chart.
Voltage Accuracy: Main O/P $\pm 2.0\%$ typ.
Line Regulation: $\pm 0.5\%$ typ.
Load Regulation: VO1 & VO3 O/P $\pm 2.0\%$ typ.
Aux. VO2 O/P $\pm 5.0\%$ typ.
Noise & Ripple: Typ. 100mV for 3.3V/5.0V &
1.0% for others peak to peak.
OVP: Built-in on main output.
Adjustability: Not available.
Short Circuit Protection: Power fold back,
Self-recovering.
Overload Protection: About 130% of overrange
foldback type.

GENERAL SPECIFICATION

Efficiency: Typ. 80%, various with input.
Switching Frequency: Fixed freq. 100K Hz.
Circuit Topology: 100K Hz. forward circuit.
Transient Response: Full to 1/2 load $< 200 \mu\text{Sec}$.
Case: Black coated steel with non-conductive
metal base.
Weight: 65.0g (2.4 Oz.)
Power Density: 10 Watts. /Cubic inch

Operating Temperature: -25°C to +71°C range.
-20°C to +60°C @ full load without derating.
Temperature: -40°C to +105°C.
Temperature Coefficient: 0.02% /°C.
Cooling: Convection cooling up to +60°C @ full load.
At least 100LFM moving air is recommended for F-L
> +60°C in a confined area.
Humidity: Up to 95%RH, Non-condensing.
Commercial 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 drains at low Line input & Load and then adding 20-25% for the desired fuse size.

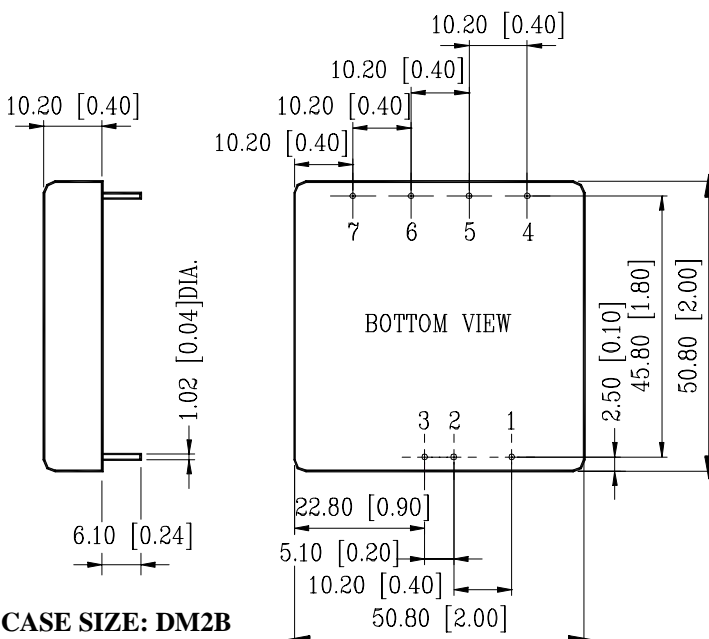
INPUT/OUTPUT & VOLTAGE/CURRENT RATINGS CHART

TRIPLE OUTPUT

MODEL NO.	INPUT Vdc	INPUT CURRENT		OUTPUT (Vdc)			OUTPUT (A)			CASE SIZE
		N.L.	(mA) F.L.	+VO1	+VO2	-VO3	+VO1	+VO2	-VO3	
HDM15-12B-T3/12	9.0- 18.0	20	1,300	+3.3V	+12.0V	-12.0V	1.50A	0.30A	0.30A	DM2B
HDM15-12B-T3/15	9.0- 18.0	20	1,330	+3.3V	+15.0V	-15.0V	1.50A	0.25A	0.25A	DM2B
HDM15-12B-T3/+12,-5	9.0- 18.0	20	1,200	+3.3V	+12.0V	-5.0V	1.50A	0.30A	0.50A	DM2B
HDM15-12B-T5/12	9.0- 18.0	20	1,556	+5.0V	+12.0V	-12.0V	1.50A	0.30A	0.30A	DM2B
HDM15-12B-T5/15	9.0- 18.0	20	1,562	+5.0V	+15.0V	-15.0V	1.50A	0.25A	0.25A	DM2B
HDM15-12B-T5/+12,-5	9.0- 18.0	20	1,415	+5.0V	+12.0V	-5.0V	1.50A	0.30A	0.50A	DM2B
HDM15-24B-T3/12	18.0- 36.0	20	650	+3.3V	+12.0V	-12.0V	1.50A	0.30A	0.30A	DM2B
HDM15-24B-T3/15	18.0- 36.0	20	665	+3.3V	+15.0V	-15.0V	1.50A	0.25A	0.25A	DM2B
HDM15-24B-T3/+12,-5	18.0- 36.0	20	600	+3.3V	+12.0V	-5.0V	1.50A	0.30A	0.50A	DM2B
HDM15-24B-T5/12	18.0- 36.0	20	778	+5.0V	+12.0V	-12.0V	1.50A	0.30A	0.30A	DM2B
HDM15-24B-T5/15	18.0- 36.0	20	781	+5.0V	+15.0V	-15.0V	1.50A	0.25A	0.25A	DM2B
HDM15-24B-T5/+12,-5	18.0- 36.0	20	707	+5.0V	+12.0V	-5.0V	1.50A	0.30A	0.50A	DM2B
HDM15-48B-T3/12	36.0- 72.0	15	325	+3.3V	+12.0V	-12.0V	1.50A	0.30A	0.30A	DM2B
HDM15-48B-T3/15	36.0- 72.0	15	332	+3.3V	+15.0V	-15.0V	1.50A	0.25A	0.25A	DM2B
HDM15-48B-T3/+12,-5	36.0- 72.0	15	300	+3.3V	+12.0V	-5.0V	1.50A	0.30A	0.50A	DM2B
HDM15-48B-T5/12	36.0- 72.0	15	389	+5.0V	+12.0V	-12.0V	1.50A	0.30A	0.30A	DM2B
HDM15-48B-T5/15	36.0- 72.0	15	390	+5.0V	+15.0V	-15.0V	1.50A	0.25A	0.25A	DM2B
HDM15-48B-T5/+12,-5	36.0- 72.0	15	353	+5.0V	+12.0V	-5.0V	1.50A	0.30A	0.50A	DM2B
HDM15-12D-T3/12	9.0- 36.0	30	1,320	+3.3V	+12.0V	-12.0V	1.50A	0.30A	0.30A	DM2B
HDM15-12D-T3/15	9.0- 36.0	30	1,350	+3.3V	+15.0V	-15.0V	1.50A	0.25A	0.25A	DM2B
HDM15-12D-T3/+12,-5	9.0- 36.0	30	1,220	+3.3V	+12.0V	-5.0V	1.50A	0.30A	0.50A	DM2B
HDM15-12D-T5/12	9.0- 36.0	30	1,576	+5.0V	+12.0V	-12.0V	1.50A	0.30A	0.30A	DM2B
HDM15-12D-T5/15	9.0- 36.0	30	1,582	+5.0V	+15.0V	-15.0V	1.50A	0.25A	0.25A	DM2B
HDM15-12D-T5/+12,-5	9.0- 36.0	30	1,435	+5.0V	+12.0V	-5.0V	1.50A	0.30A	0.50A	DM2B
HDM15-24D-T3/12	9.0- 36.0	30	660	+3.3V	+12.0V	-12.0V	1.50A	0.30A	0.30A	DM2B
HDM15-24D-T3/15	9.0- 36.0	30	675	+3.3V	+15.0V	-15.0V	1.50A	0.25A	0.25A	DM2B
HDM15-24D-T3/+12,-5	9.0- 36.0	30	610	+3.3V	+12.0V	-5.0V	1.50A	0.30A	0.50A	DM2B
HDM15-24D-T5/12	9.0- 36.0	30	788	+5.0V	+12.0V	-12.0V	1.50A	0.30A	0.30A	DM2B
HDM15-24D-T5/15	9.0- 36.0	30	791	+5.0V	+15.0V	-15.0V	1.50A	0.25A	0.25A	DM2B
HDM15-24D-T5/+12,-5	9.0- 36.0	30	717	+5.0V	+12.0V	-5.0V	1.50A	0.30A	0.50A	DM2B
HDM15-48D-T3/12	20.0- 72.0	15	330	+3.3V	+12.0V	-12.0V	1.50A	0.30A	0.30A	DM2B
HDM15-48D-T3/15	20.0- 72.0	15	337	+3.3V	+15.0V	-15.0V	1.50A	0.25A	0.25A	DM2B
HDM15-48D-T3/+12,-5	20.0- 72.0	15	305	+3.3V	+12.0V	-5.0V	1.50A	0.30A	0.50A	DM2B
HDM15-48D-T5/12	20.0- 72.0	15	394	+5.0V	+12.0V	-12.0V	1.50A	0.30A	0.30A	DM2B
HDM15-48D-T5/15	20.0- 72.0	15	395	+5.0V	+15.0V	-15.0V	1.50A	0.25A	0.25A	DM2B
HDM15-48D-T5/+12,-5	20.0- 72.0	15	358	+5.0V	+12.0V	-5.0V	1.50A	0.30A	0.50A	DM2B

MECHANICAL DIMENSIONS: MM [INCHES]

Weight: 65.0g (2.4 Oz.)



CASE SIZE: DM2B

PIN ASSIGNMENT

PIN NO.	TRIPLE
PIN #1.	Remote ON/OFF
PIN #2.	-INPUT/-Vin
PIN #3.	+INPUT
PIN #4.	-VO3
PIN #5.	DC-COM
PIN #6.	+VO1
PIN #7.	+VO2