

# HiTRON

## 16.6-160VDC INPUT RANGE DC-DC CONVERTER SINGLE OUTPUT 100 WATTS RAILWAY SWITCHING POWER SUPPLIES HDR100-110J SERIES



### FEATURES:

- 100W METAL BOX FORMAT
- 16.6-160VDC 10:1 WIDE INPUT RANGE
- DESIGN TO MEET EN50155 RAILWAY STANDARD
- WIDE OPERATING TEMPERATURE RANGE OF -40°C TO +85 °C
- FREE AIR CONVECTION
- USING 125°C LONG LIFE SOLID CAP.
- CE MARKING Level 3 COMPLIANCE

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Voltage:** Typ. 16.6-160Vdc, nominal input 110Vdc.  
**Input Connector:** M-T MA412-500M2B.  
**Inrush Current:** Peak 27A at nominal 110Vdc.  
**Input Current:** F-L: 4.65A at 24Vdc, 1.0A at 110Vdc.  
 No-Load: 0.08A at 24Vdc, 0.03A at 110Vdc.  
**Soft Start:** Installed.  
**Under-Voltage Protection (UVP):** Installed.  
**Input Reverse Voltage Protection:** Installed.  
**Dielectric Withstand:** Meet IEC 60950-1 regulation.  
 I/P-O/P: 3000Vac, I/P-GND: 1500Vac, O/P-GND: 1000Vac.  
**EMI:** Meet EN 55022 FCC Class B.  
**Radiated Susceptibility:** EN61000-4-3 Level X (20V/m).  
**Surge:** Meet EN61000-4-5 Level 3, L-L 2KV, L-G 2KV.  
**Conducted Disturbance:** EN61000-4-6 Level X (20V/m)..  
**Thermal Protection (OTP):** By thermostat.

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.  
**Output Current:** See Ratings Chart.  
**Output Wattage:** Typ. 100W(Fanless).  
**Output Connector:** M-T MA412-500M2B.  
**Line Regulation:** Typ. 0.2%.  
**Load Regulation:** Typ. ±1%.  
**Total Regulation:** Typ. 2%.  
**Noise & Ripple:** Typ. 1% Peak.-Peak.  
**OVP:** Built-in at all outputs (Latch).  
**Adjustability:** Factory Set.  
**Output Trim:** Available.  
**Over Current Protection (OCP):** Installed.  
**Overload Protection (OLP):** Fully protected against output overload or short circuit. Typical 130% max. load. Consult the factory for special OLP setting.

#### GENERAL SPECIFICATION

**Efficiency:** Typ. 86.6% at 16.6Vdc  
 Typ. 90.5% at 48Vdc.  
 Typ. 90.6% at 110Vdc  
**Switching Frequency:** 110K Hz at nominal I/P 110Vdc.  
**Circuit Topology:** Resonant ZVS & Fix-Flyback circuit.  
**Transient Response:** Peak transient less than 300mV and recovers within 3mS for 25% load-change.  
**Vibration:** Six degree-of-freedom random, 10Hz-150Hz, 10G. **Safety Standard:** IEC 60950-1 Class I.  
**Operating Temperature:** -40 °C to +85 °C with de-rating. (Please refer to de-rating chart).  
**Storage Temperature:** -45°C to +90 °C.  
**Cooling:** Convection air (Fanless).  
**Power Density:** 3.75Watts/ Cubic Inch.  
**CE Standard:** Meet Level 3 Criteria A.  
**Conformal Coating.**

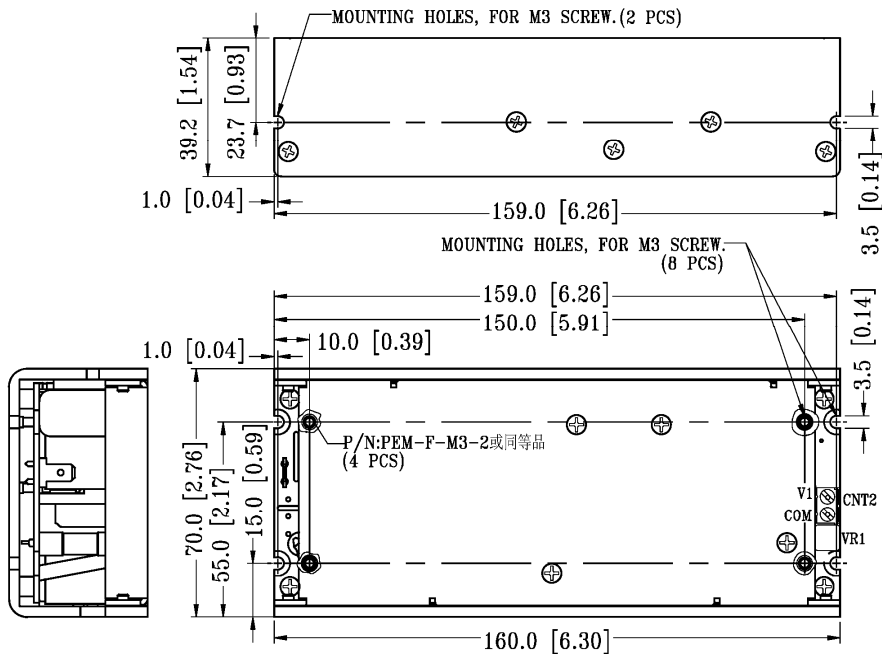
NOTE: (1)All measurement are at nominal input, full load and +25°C unless otherwise specifications.  
 (2)Due to requests in market and advances in technology, specifications subject to change without notification.  
 (3)A warm-up time 10 minutes is required after cold start at temperature from -40 °C to +0°C.  
 (5)125 Degree C OS-Con long life Solid capacitors are installed in the secondary side.

# OUTPUT VOLTAGE / CURRENT RATINGS CHART

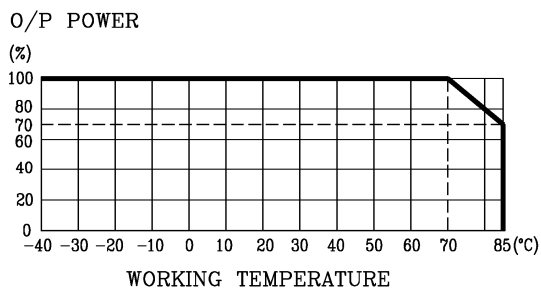
## SINGLE OUTPUT

MODEL NO.	MAIN VO1				
	Min.	Volt.	Typ.	Max.	Peak
HDR100-110J-120083	0A	12Vdc	8.3A	8.3A	10.00A
HDR100-110J-240042	0A	24Vdc	4.2A	4.2A	5.50A
HDR100-110J-480021	0A	48Vdc	2.1A	2.1A	2.75A

## MECHANICAL DIMENSIONS: MM [INCHES]



## DERATING CHART



## IMMUNITY TO ENVIRONMENTAL CONDITIONS

Condition	Standard	EN5015512.2.1 & 12.2.6	EN5015512.2.4
I/P: 16.6-110Vdc O/P: 100W(Fanless)		Pass Class S2 & Class C2	Pass Class TX & Column 3

## INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

Assignment	-Vin	+Vin	GND	V1	DC COM
Pin #	CNT1-1	CNT1-2	GND	CNT2-1	CNT2-2