



# ULTRA LEVEL TECH CO., LTD.

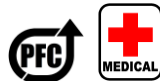
http://www.ultralevel.com.tw Tel:+886-2-29180118 Fax:+886-2-29181465

We Supply the Power Customers Need ISO9001

## 150 ~ 300W AC-DC PFC MEDICAL SWITCHING POWER SUPPLY PRL1103 SINGLE OUTPUT SERIES

### FEATURES:

- ◆ Compact 300W with 1U height Power Density: 12.5 watts/cu in
- ◆ Safety Approvals to IEC/EN/UL60601-1 3rd Edition
- ◆ Power Factor Corrected to EN61000-3-2 class D
- ◆ Peak Power 600W within 500uS Duty Duration
- ◆ Variable Fan Speed & Low Acoustical Noise
- ◆ High Quality & Reliable Component Usage
- ◆ Output Voltages from 12 ~ 52Vdc
- ◆ 3 - Mechanical Options
- ◆ Full Range AC Input



U Type (U-Chassis only):  
3.2(W) x 5(L) x 1.5(H) inches.



E Type (Enclosed with end built-in fan):  
3.2(W) x 6.5(L) x 1.6(H) inches



F Type (U-Chassis with top built-in fan) :  
3.2(W) x 5(L) x 2(H) inches.

### PRODUCT SPECIFICATIONS:

**Input Voltage:** 90-264Vac full range, 47~63Hz.

**Input Current:** 5A at 90Vac.

**Inrush Current:** Max. 70A@230Vac & 35A@115Vac; cold start.

**PFC:** Power Factor Correction pass EN61000-3-2 class D.

**Transient Response:** Returns to within 1% in less than 2.5mS for a 50% load change and the peak transient does not exceed 5%.

**Overshoot:** Turn-on & off overshoot < 5% over nominal voltage.

**Efficiency:** 86% typical @ 230V and full load.

**Turn On Delay:** 1 second maximum at 230 Vac.

**Hold Up Time:** 16mS min @ 120Vac. at 80% of full load.

**Adjustability:** Output user adjustable +/-5% minimum.

**Fan Drive:** 12VDC/300mA offering to drive an external fan.

**Fan Fail (FF) Alarm:** Designated as FF on pin 3 of CN3 is a open collector output rated for 28VDC/5mA sink current maximum, it will go high when a fan failure is detected.

**Remote On-Off:** Designated as INH on pin4 of CN3, requires a low signal to inhibit output.

**Power Supply On:** Green LED designated as LED1 on the PCB.

**Power Good:** PG on CN3 goes high 100-500mS after DC regulation and low at least 1mS before loss of regulation (Open collector).

**Input Fusing Protection:** Dual T5A/250V fuses inserted in primary.

**Over-Power Protection:** 110~140% of I-Max; Auto-recovery.

**Short Circuit Protection:** Trip without damage and auto-recovery.

**Switching Frequency:** PFC 50K~70K Hz; PWM 65K~75K Hz.

**Over Voltage Protection:** Unit latching down when output exceed 130% and recycle AC input to reset.

**Over-Temperature Protection:** Unit protected of excessive operating ambient 110°C±5 °C, and automatic recovery.

**Operating Temperature:** 0 to 70°C ambient, de-rating at 2.5% per degree from 50°C to 70°C.

**Vibration:** 5 ~ 50 Hz, acceleration ±7.35 m/s\*s on X,Y and Z Axis.

**Storage Temperature:** -20 to 85 °C.

**Operating Humidity:** 5% to 90% RH, Non-condensing.

**Storage Humidity:** 5% to 95% RH, Non-condensing.

**EMC:** EN60601-1-2 class B conducted / radiated; EN61000-3-2,3; IEC61000-4-2, 3, 4, 5, 6, 8, 11.

**Safety Regulation:** EN/ IEC/ UL60601-1 3<sup>rd</sup> edition.

**Leakage Current:** < 300uA @ 264Vac.

**HI-POT Test:** 1500 VAC input line to chassis (10mA DC cut off current); Isolating 4000VAC primary to secondary windings; Primary to core 1500VAC. All for 3 sec.

**Grounding Test:** Apply 25 A from ground pin of the three prong plug to the far most earth. Max allowable resistance 0.1 ohm.

**Warranty:** 2 years.

**MTBF:** 100000 Hrs (according to MIL-HBK-217F) at 30 °C .

**Cooling:**

U Type: U-Chassis @300W max. with 25CFM forced airflow; 150W convection.

E Type: Enclosed with rear side built-in fan @300W max.

F Type: U-Chassis with top built-in fan @300W max.

**Enclosure:**

U Type: 5(L) x 3.2(W) x 1.5(H) inches.

E Type: 6.5(L) x 3.2(W) x 1.6(H) inches.

F Type: 5(L) x 3.2(W) x 2(H)inches.

**Burn in:** 45 +/- 5 degree C for 1 hour @230Vac with full load.

**Weight:** Maximum U-Type weight is 500g.



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## OUTPUT VOLTAGE / POWER RATING CHART: Measured at output power connector.

Model	Output Range	Preset Voltage	Max. Output Power		Regulation	Ripple & Noise
			Type U & E & F (Forced fan flow)	Type U (Convection)		
PRL1103x-12	12 ~ 13.8V	12 V	300W	150W	+/- 1%	1%
PRL1103x-15	14 ~ 16V	15 V	300W	150W	+/- 1%	1%
PRL1103x-24	23 ~ 28V	24V	300W	150W	+/- 1%	1%
PRL1103x-36	35 ~ 43V	36V	300W	150W	+/- 1%	1%
PRL1103x-48	44 ~ 52V	48V	300W	150W	+/- 1%	1%

### Note:

- \* PRL1103 series are designated as PRL1103x-y where x can be **E** (Enclosed Type with rear side built-in fan) or **F** (U-Chassis Type with top side built-in fan) or **U** (U-Chassis), y can be **12, 15, 24, 36, 48**.
- \* **U Type:** U-Chassis @300W max. with min. 25CFM forced airflow; 150W under convection cooling.
- \* **E Type:** Enclosed with rear side built-in fan @300W max.
- \* **F Type:** U-Chassis with top built-in fan @300W max.
- \* All output range are covered in agencies certification and the preset voltage will be set as standard models if any request is not preset output then should contact us in advance.
- \* Ripple and noise is measured from 10KHZ to 20MHZ bandwidth at output with parallel 0.1μF ceramic and 22μF electrolytic capacitors.
- \* Providing peak power to 600W within 500uS for all models, longer duty duration need contact manufacture.
- \* 1% minimum load is required to maintain the ripple and regulation.
- \* Output is fully isolated.

## OUTLINE DRAWING:

### Input Connector (CN1):

U and F Type: Mating JST Part No. VHR-5N or equivalent (5pin, 3 used), or Terminal Block: Howder M3 screws 3 pin 6.35mm center Part No. HD-601-3P; PCB Labeling: L=Line; N=Neutral; G=Chassis Ground .

E Type: IEC320 snap-in mounting type or Terminal Block: Howder HD-602-3P.

### Output Connector (CN2):

Mating JST Part No. VHR-6N

Terminal block-Dinkle P830N, M5 screws.

### Output Pin Assignment:

(See table in right).

### Mounting Inserts:

6Paces M3. Maximum Penetration 3.8mm sees outline drawing for location.

### Logic signal connector (CN3):

Mating JST XHP-4 or equivalent (CHYAO SHIUNN JS-2001-04);

Mating Pins: JST SXH-002T-P0.6 FOR AWG 30 to 26.

### Fan driver connector (FAN1):

Mating connector is JST P/N XHP-3 (3 pins 0.98 pitch) or equivalent (CHYAO SHIUNN JS-2001-03).

Dinkle	Molex
V+: Pin 2	V+: Pin 4 ~ 6
V-: Pin 1	V-: Pin 1 ~ 3

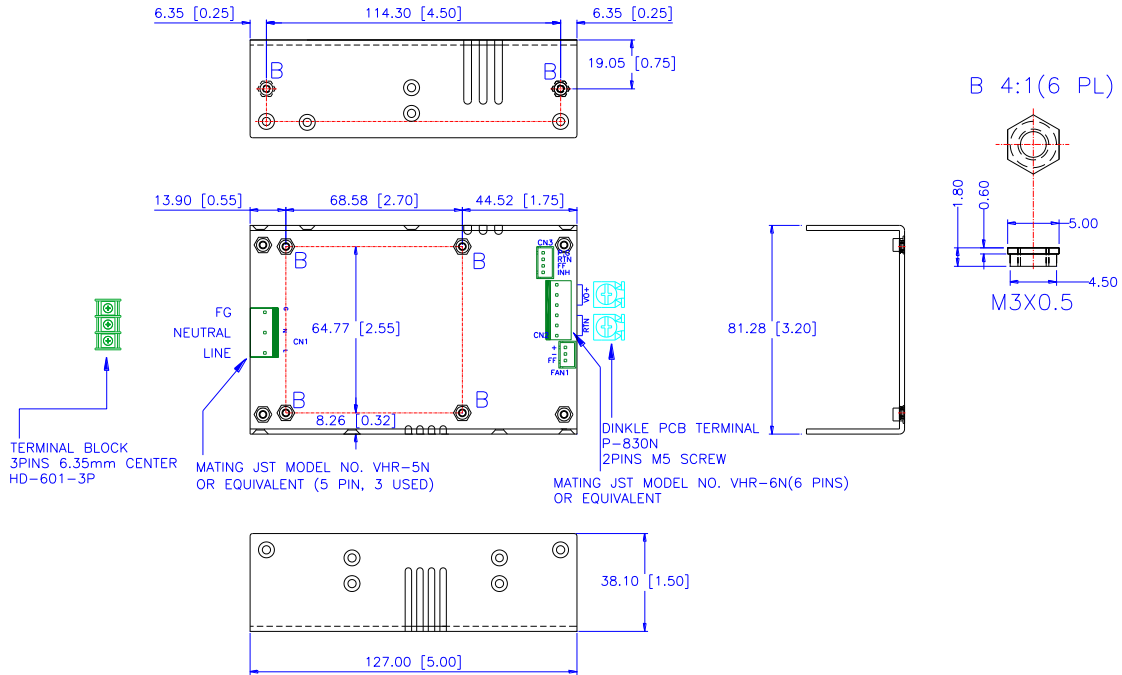


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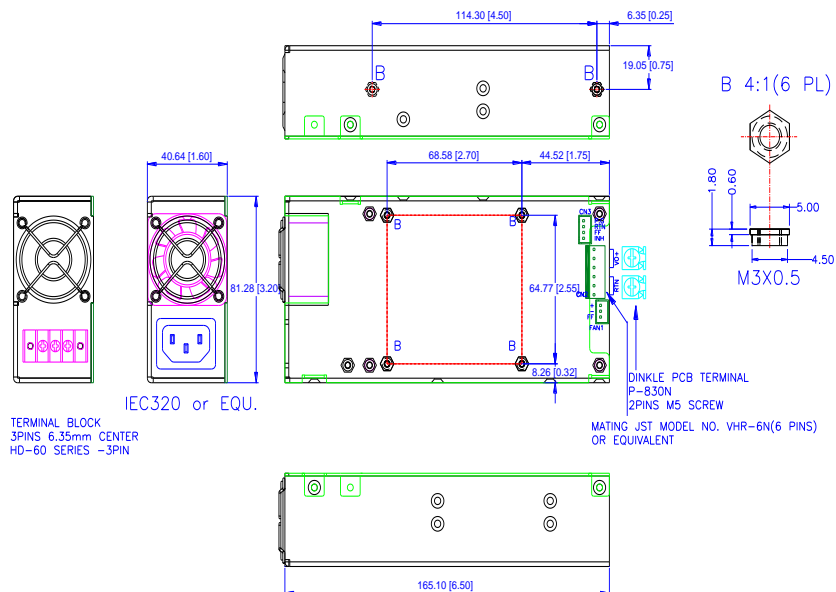
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U Type (U-Chassis only): 5(L) x 3.2(W) x 1.5(H) inches; Weight: 500g.



E Type (Enclosed with Rear Side built-in Fan): 6.5(L) x 3.2(W) x 1.6(H) inches; Weight: 650g.





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F Type (U-Chassis with Top built-in Fan): 5(L) x 3.2(W) x 2(H) inches; Weight: 600g.

