



# ULTRA LEVEL TECH CO., LTD.

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

We Supply the Power Customers Need ISO9001

## 125W ~ 300W AC-DC SWITCHING POWER SUPPLY RL0601D DUAL OUTPUT SERIES

### FEATURES:

- ◆ Compact 300W with 1U height Power Density: 8.3 watts/cu in
- ◆ Low Leakage Current 500uA @ 240Vac / 300uA @ 120Vac
- ◆ 5/ 12/ 24/ 48V Dual Output Optional Combinations
- ◆ Power Factor Corrected to EN61000-3-2 class A
- ◆ Variable Fan Speed & Low Acoustical Noise
- ◆ High Quality & Reliable Component Usage
- ◆ Approved to UL CUL TUV CB and CE
- ◆ AC Input Range Auto-Selectable
- ◆ 4 - Mechanical Options



E Type: 7(L) x 4(W) x 1.6(H) inches.



U Type: 6(L) x 4(W) x 1.5(H) inches.



C Type: 6(L) x 4(W) x 1.55(H) inches.



F Type: 6(L) x 4(W) x 2(H) inches.

### PRODUCT SPECIFICATIONS:



**Input Voltage:** 90-132 / 180-264Vac auto-ranging, 47~63Hz.  
**Input Current:** 8/4A at 100-120/200-240Vac.  
**Inrush Current:** Max. 70A@230Vac & 35A@115Vac; cold start.  
**PFC:** Power Factor Correction pass EN61000-3-2 class A.  
**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:** 75% ~ 85% depends on model.  
**Turn On Delay:** 1 second maximum at 230 Vac.  
**Hold Up Time:** 20mS min. at 80% of full load.  
**Adjustability:** Output user adjustable +/-5% minimum.  
**Fan Drive:** 12VDC/400mA offering to drive an external fan.  
**Fan Fail (FF) Alarm:** Designated as FF on pin 3 of CN1, two types of logical signal provided, contact manufacturer.  
**Power Supply On:** Green LED designated as LED1 on the PCB.  
**Power Good:** PG on CN1 goes high 100-500mS after DC regulation and low at least 1mS before loss of regulation (Open collector).  
**Input Fusing Protection:** One T8A/250V fuse inserted in primary.  
**Over-Power Protection:** 110~140% of I-Max; Auto-recovery.  
**Short Circuit Protection:** Trip without damage and auto-recovery.  
**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, and automatic recovery.  
**Switching Frequency:** 23K Hz fixed frequency.  
**Operating Temperature:** 0°C to 70°C ambient, de-rating at 2.5% per degree from 50°C to 70°C.  
**Storage Temperature:** -20 to 85 °C.  
**Storage Humidity:** 5% to 95% RH, Non-condensing.

**Operating Humidity:** 5% to 90% RH, Non-condensing.  
**Vibration:** 5 ~ 50 Hz, acceleration 7.35 m/s\*s on X,Y and Z Axis.  
**EMC:** EN55032 class B conducted / radiated, EN61000-3-2, EN61000-3-3; EN55024 (IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8, IEC61000-4-11).  
**Safety Regulation:** UL60950-1, EN60950-1, IEC60950-1.  
**Leakage Current:** < 1mA @ 264Vac.  
**(optional for 500uA max. at 240Vac / 300uA max. at 120Vac input)**  
**HI-POT Test:** 1500 VAC input line to chassis (10mA DC cut off current); Isolating 3000VAC 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 18CFM airflow or 150W max. convection cooling  
 C Type: U-Chassis with top cover @150W max. convection cooling  
 E Type: Enclosed with side built-in fan @300W max.  
 F Type: Enclosed with top built-in fan @300W max.  
**Burn in:** 45 +/- 5 degree C for 1 hour @230Vac with full load.  
**Enclosure:**  
 U Type: 6(L) x 4(W) x 1.5(H) inches.  
 C Type: 6(L) x 4(W) x 1.55(H) inches.  
 E Type: 7(L) x 4(W) x 1.6(H) inches.  
 F Type: 6(L) x 4(W) x 2(H)inches.  
**Weight:** Maximum weight is 800g.



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

Model Number	Output Voltage	Max. Output Current		Regulation	Ripple & Noise
		Type U (force air) & E & F	Type U, C (Convection)		
RL0601Dx-0512	V1:+5V	30A	15A	+/- 5%	1%
	V2:+12V	16.67A	10.42A	+/- 5%	1%
RL0601Dx-0524	V1:+5V	30A	15A	+/- 5%	1%
	V2:+24V	8.33A	5.2A	+/- 5%	1%
RL0601Dx-0548	V1:+5V	30A	15A	+/- 5%	1%
	V2:+48V	4.16A	2.6A	+/- 5%	1%
RL0601Dx-1224	V1:+12V	16.67A	12.5A	+/- 5%	1%
	V2:+24V	8.33A	6.25A	+/- 5%	1%

### Note:

\* RL0601D series are designated as RL0601Dx-y where x can be **U** (U-Chassis), **C** (U-Chassis with top cover), **E** (Enclosed Type with side built-in Fan) or **F** (Enclosed Type with side built-in Fan); y can be **0512, 0524, 0548, 1224**.

\* **RL0601DU** (with min. 18CFM forced air flow) & **RL0601DE & RL0601DF Series:**

Max. 300W total combined power of V1 and V2 for RL0601Dx-1224 and 250W for other models.

\* **RL0601DU and RL0601DC Series** with convection cooling:

Max. 150W total combined power of V1 and V2 for RL0601Dx-1224 and 125W for other models.

\* Ripple and noise is measured from 10KHZ to 20MHz bandwidth at output with parallel 0.1μF ceramic and 22μF electrolytic capacitors.

\* 10% minimum load is required to maintain the ripple and regulation.

\* Output is fully isolated.

## OUTLINE DRAWING:

### Input and Output Connector (CN2):

Terminal block - Howder Part No. HB-95-7P

Molex - Mating JST VH series. Input 5 pin connector (3 pin used, pin 2 & pin 4 removed),

PCB labeling: L = Line; N = Neutral; G = Chassis Ground. Output 10 pin connector.

### Input and Output Connector Pin Assignment:

(See table in right).

### Mounting Inserts:

6 Places 8-32 (M4X0.7 Optional). Maximum Penetration 4mm sees outline drawing for location.

### Logic signal connector (CN1):

Mating JST XHP-3 or equivalent (CHYAO SHIUNN JS-2001-03);

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

### Fan driver connector (FAN2):

Mating connector is JST P/N XHP-2 (2 pins 0.98 pitch) or equivalent (CHYAO SHIUNN JS-2001-02).

Howder	Molex
Pin 1: V1	Pins 1 ~ 3: V1
Pin 2 ~ 3: RTN	Pins 4 ~ 8: RTN
Pin 4: V2	Pins 9 ~ 10: V2
Pin 5: GND	Pin 11: GND
Pin 6: Neutral	Pin 13: Neutral
Pin 7: Line	Pin 15: Line

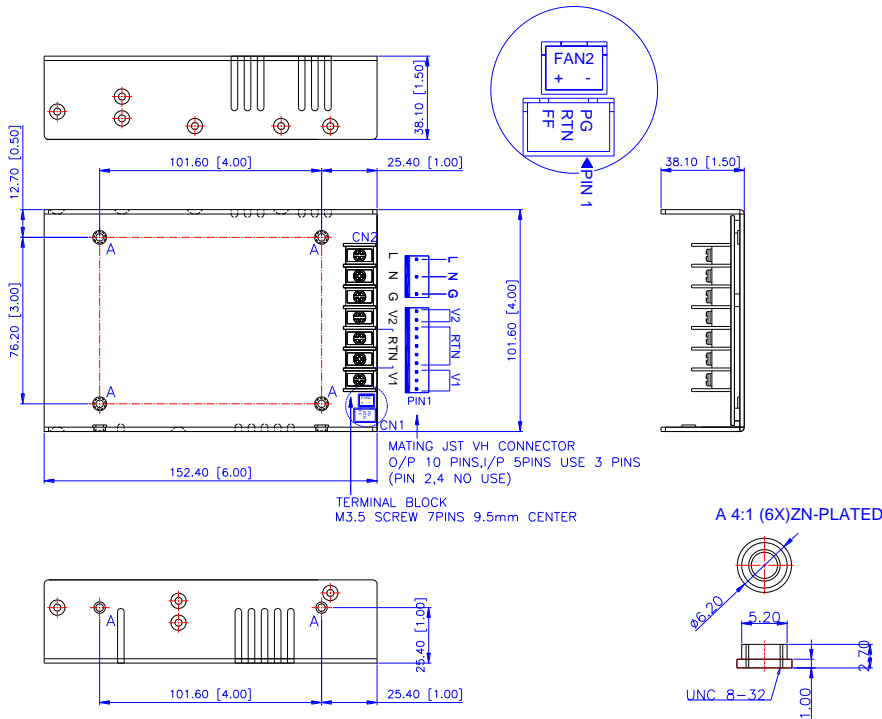


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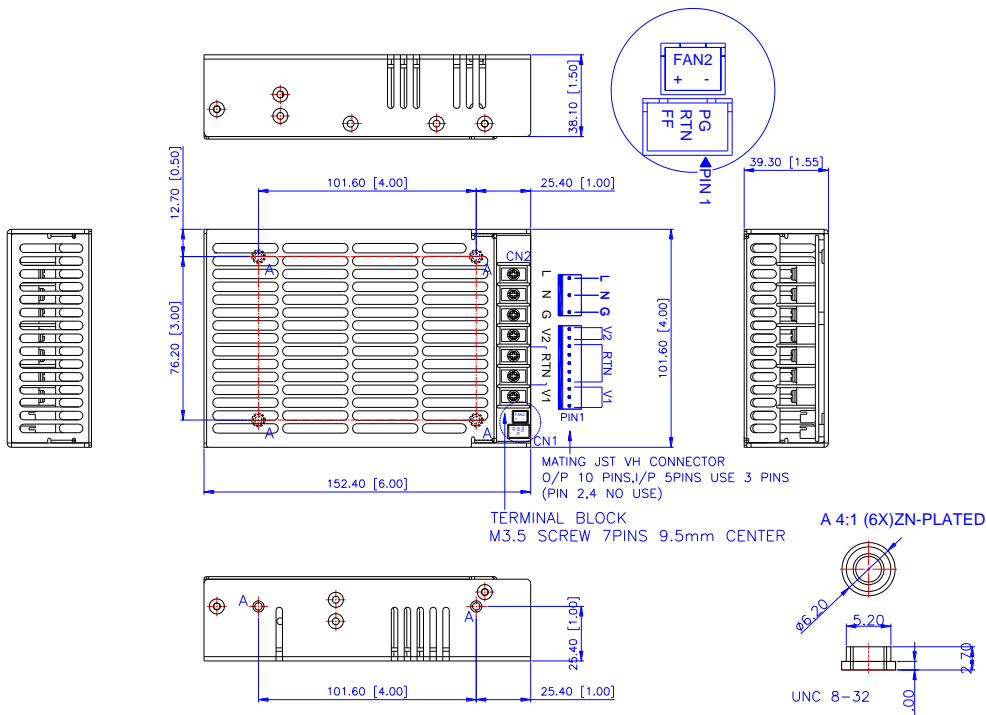
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## RL0601DU Series (U-Chassis Type): 6(L) x 4(W) x 1.5(H) inches; Weight: 600g.



## RL0601DC Series (U-Chassis with Top Cover Type): 6(L) x 4(W) x 1.55(H) inches; Weight: 650g.



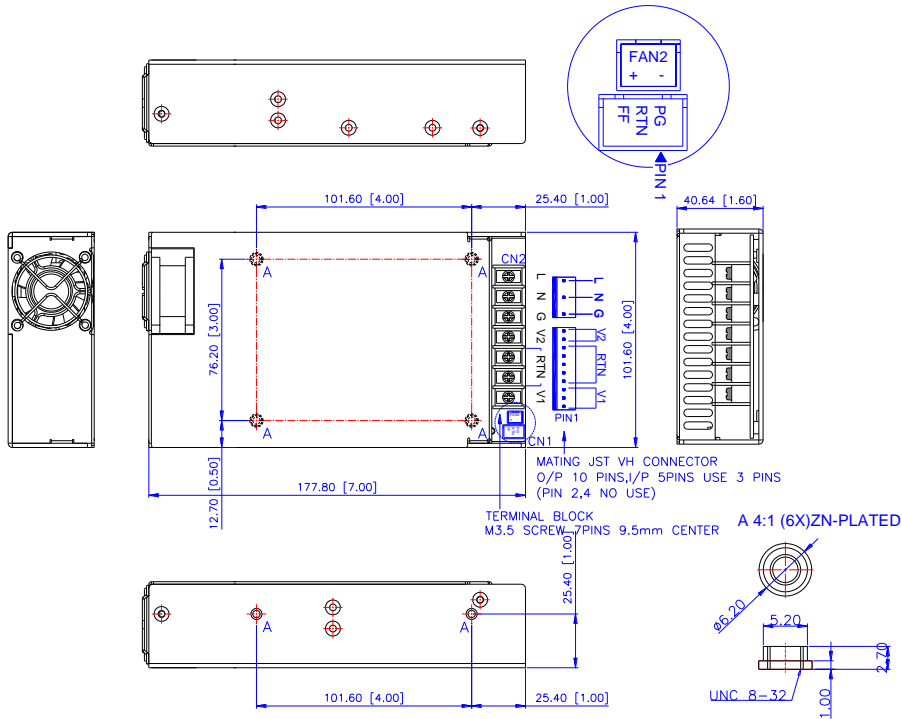


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RL0601DE Series (Enclosed with Side built-in Fan Type): 7(L) x 4(W) x 1.6(H) inches; Weight: 750g.



RL0601DF Series (Enclosed with Top built-in Fan Type): 6(L) x 4(W) x 2(H) inches; Weight: 800g.

