



# ULTRA LEVEL TECH CO., LTD.

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

We Supply the Power Customers Need ISO9001

## 170W ~ 320W AC-DC SWITCHING POWER SUPPLY RL0601 SINGLE OUTPUT SERIES

### FEATURES:

- ◆ Compact 320W with 1U height Power Density: 8.9 watts/cu in
- ◆ Low Leakage Current 500uA @ 240Vac / 300uA @ 120Vac
- ◆ Power Factor Corrected to EN61000-3-2 class A
- ◆ Peak Power 700W within 500uS Duty Duration
- ◆ Variable Fan Speed & Low Acoustical Noise
- ◆ High Quality & Reliable Component Usage
- ◆ Approved to UL CUL TUV CB and CE.
- ◆ AC Input Range Auto-Selectable
- ◆ Output Voltages from 2 ~ 60Vdc
- ◆ 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** 70% ~ 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 T8AL250V 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.

**Warranty:** 2 years.

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



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

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

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

**EMC:** EN55022 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, IEC61000-4-11).

**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.

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

**Cooling:**

U Type: U-Chassis @320W max. with 22CFM max. forced airflow or 180W convection cooled output.

C Type: U-Chassis with top cover @170W max. convection cooled.

E Type: Enclosed with rear side built-in fan @320W max.

F Type: Enclosed with top built-in fan @320W max.

**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.

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

**Weight:** Maximum weight is 800g.



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

Model	Output Range	Preset Voltage	Max. Output Power or Current			Regulation	Ripple & Noise
			Type U (forced air) & E & F	Type U (Convection)	Type C (Convection)		
RL0601x-05	2 ~ 5.5V	5V	45A	27.28A	25A	+/- 1%	50mV
RL0601x-09	6 ~ 11V	9V	29.1A	16.37A	13.64A	+/- 1%	1%
RL0601x-12	12 ~ 13.5V	12V	320W	180W	170W	+/- 1%	1%
RL0601x-15	13.6 ~ 15V	15V	320W	180W	170W	+/- 1%	1%
RL0601x-18	16 ~ 20V	18V	320W	180W	170W	+/- 1%	1%
RL0601x-24	21 ~ 26V	24V	320W	180W	170W	+/- 1%	1%
RL0601x-28	27 ~ 34V	28V	320W	180W	170W	+/- 1%	1%
RL0601x-36	35 ~ 42V	36V	320W	180W	170W	+/- 1%	1%
RL0601x-48	43 ~ 50V	48V	320W	180W	170W	+/- 1%	1%
RL0601x-54	51 ~ 60V	54V	320W	180W	170W	+/- 1%	1%

### Note:

\* RL0601 series are designated as RL0601x-y where x can be **E** (Enclosed Type with rear side built-in fan) or **F** (Enclosed Type with top side built-in fan) or **U** (U-Chassis Type) or **C** (U-Chassis Type with top cover), y can be **05, 09, 12, 15, 18, 24, 28, 36, 48, 54**.

\* **RL0601U Series:** U-Chassis @320W max. with 22CFM max. forced airflow is required to model RL0601U-05 and 18 CFM for other models or 180W convection cooled output.

\* **RL0601C Series:** U-Chassis @170W max. convection cooled.

\* **RL0601E Series:** Enclosed with rear side built-in fan @320W max.

\* **RL0601F Series:** Enclosed with top built-in fan @320W 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 700W 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 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
Pins 1 ~ 2: V+	Pins 1 ~ 5: V+
Pins 3 ~ 4: V-	Pins 6 ~ 10: V-
Pin 5: GND	Pin 11: GND
Pin 6: Neutral	Pin 13: Neutral
Pin 7: Line	Pin 15: Line



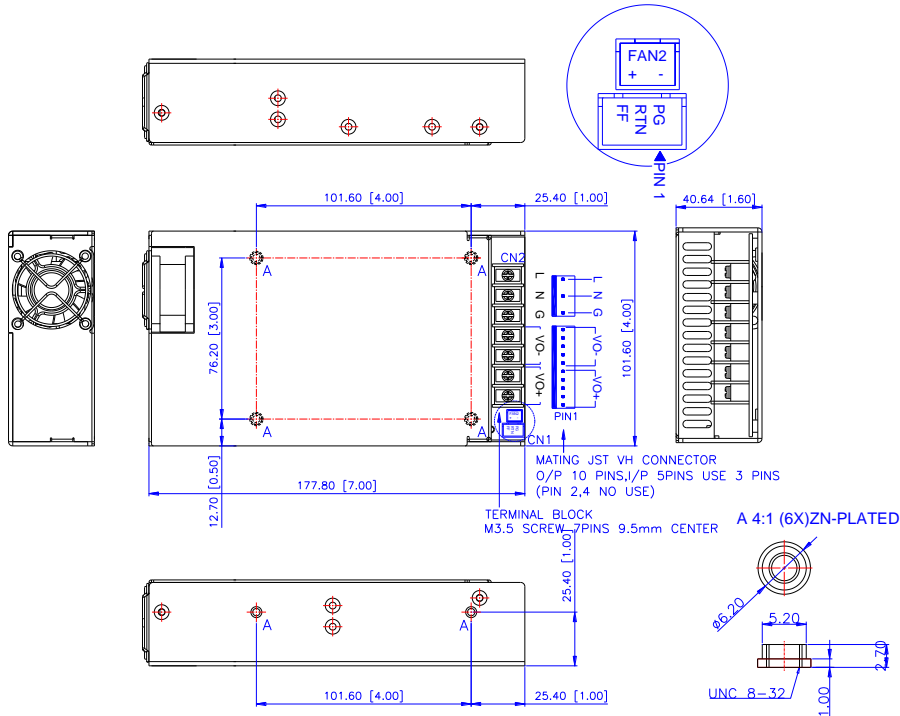


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RL0601E Series (Enclosed with Rear Side built-in Fan Type): 7(L) x 4(W) x 1.6(H)inches; Weight: 750g.



RL0601F Series (Enclosed with Top built-in Fan Type): 6(L) x 4(W) x 2(H)inches; Weight: 800g.

