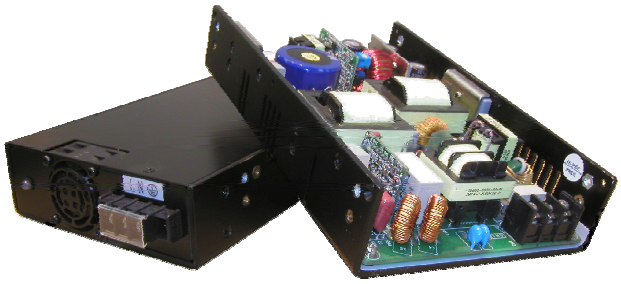
400W AC-DC PFC MEDICAL & ITE DEGREE POWER SUPPLY
RL0402 SINGLE OUTPUT SERIES



RL0402U Series (U-Chassis Type): 8(L) x 5(W) x 1.6(H) inches.
RL0402E Series (Enclosed Type): 9(L) x 5(W) x 1.6(H) inches.

FEATURES:

- Both Medical & ITE Safety Approvals
- Optional N+1 Forced Active Current Sharing
- Power Factor Corrected to EN61000-3-2 class D
- Providing Peak Power 700W within 500uS duty duration
- U-Chassis & Enclosed with built-in fan Mechanical Options
- 1U height size and High power density: 6.25 watts/cu inches
- Current Monitoring and Remote Voltage adjustment (Margin)

c UL us E201808 ITE E257331 MEDICAL CE CB RoHS

PRODUCT SPECIFICATIONS:

Input Voltage: 90-264Vac full range, 47~63Hz.
Input Current: 6.35A at 90VAC full load.
Inrush Current: 35A Max @ 230VAC with full load and cold start.
PFC: Active power factor correction meet EN61000-3-2 class D.
Fan Drive: 12VDC/400mA is available to drive an external fan.
Transient Response: Returns to within 1% in less than 2.5mS for a 50% load change and the peak transient does not excess 5%.
Overshoot: Turn-on/off not exceed 5% over nominal voltage.
Efficiency: 70% for 3.3V, 75% for 5V, 80% for 12V and 83% minimum for others output @ 230V and full load.
Turn On Delay: 1 second maximum at 120 VAC.
Hold Up Time: 20mS min. at 80% of full load.
Adjustability: Output user adjustable +/-5% minimum.
Remote Sense: Designated **RS+** and **RS-** on the CN3.
(Not available for current sharing models)
Remote On-Off: Designated as **RSW** on the CN3, requires a low signal to inhibit output.
Power Supply On: Green LED designated as **LED 1** on the PCB.
LED display: Bi-color green **LED** in front panel (RL0402E only); Any protection occurred or RSW applied low signal will emit orange.
Power Good: Designated as **PG** on the CN3 will go high 100-500mS after regulation and goes low 1mS before loss of regulation.
Current Sharing: Designated as **CSH** on the CN3, optional single wired for forced current sharing function and parallel up to 4 units within 10% accuracy at full load.
Current Monitor: Designated as **CMN** on the CN3 for current sense for a 0.5V to 3VDC to represent 0% to 100% output current.
Margin: Designated as **MAG** on the CN3 providing 50% of output voltage remote adjustment by applying 0.4 ~ 5V signal on **MAG**.
AC Fail (optional): Designated as **ACF** on the CN3 to monitor the input voltage, when input goes under 80 +/- 5VAC the signal will go low (0V) and then go high (+5V) once reappears over 86VAC.
Input Circuit Protection (primary): Two T8A/250V fuses inserted.
Over-Power Protection: C.C. mode 110-140% and auto-recovery.
Input Voltage Protection: Power shut down under 80 +/-5Vac, and recovered over 86Vac.
Over-Voltage Protection: Latching down will occur when output voltage exceed 130% and recycle AC input to reset.
Short Circuit Protection: Trip without damage and auto-recovery.
Over Temperature Protection: Protected in the event of excessive operating ambient 85 degree, and automatic recovery.
Switching Frequency: 30KHZ fixed frequency.
Operating Temperature: O to 70℃ ambient, de-rating at 2.5% per degree from 50℃ to 70℃.
Storage Temperature: -20 to 85 degrees C.
Operating Humidity: 5% to 90% RH, Non-condensing.
Storage Humidity: 5% to 95% RH, Non-condensing.
Vibration: Frequency 5 to 50 Hz, acceleration +/-7.35 M/(SxS) on X,Y and Z Axis.
Emissions: FCC Part 15, CISPR 22 class B, Conducted.
Safety Regulation: Approved to UL60950-1/ 60601-1, CSA C22.2 No. 60950-1-03/ 601.1-M90, TUV EN60950-1/ 60601-1, CE Mark (LVD) EN61204-3/ 60601-1-2/ 61000-3-2,3 & IEC61000-4 Series Regulations and CB.
Leakage Current: Medical degree 300uA; ITE degree 1.5mA;
HI-POT Test: 1500 Vac between input line and chassis (2mA DC cut off current); 4000Vac between primary and secondary windings; Primary to core 1500VAC. All for 3 sec.
Grounding Test: Apply 40 A from ground pin to the earthed connection point. Maximum allowable resistance is 0.1ohm.
Warranty: 2 years.
MTBF: 100000 Hrs (according to MIL-HBK-217F) at 30℃.
Cooling: :RL0402U Series: U-Chassis @400W max. with 23CFM airflow or 250W max. under convection cooling.
RL0402E Series: Enclosed with side built-in fan @400W max.
Burn in: 45 +/- 5 degree C for 1 hour @230Vac with full load.
Enclosure: RL0402U Series: 8(L) x 5(W) x 1.6(H) inches.
RL0402E Series: 9(L) x 5(W) x 1.6(H) inches.
Weight: RL0402U Series: 1.3KG; RL0402E Series: 1.6KG.

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

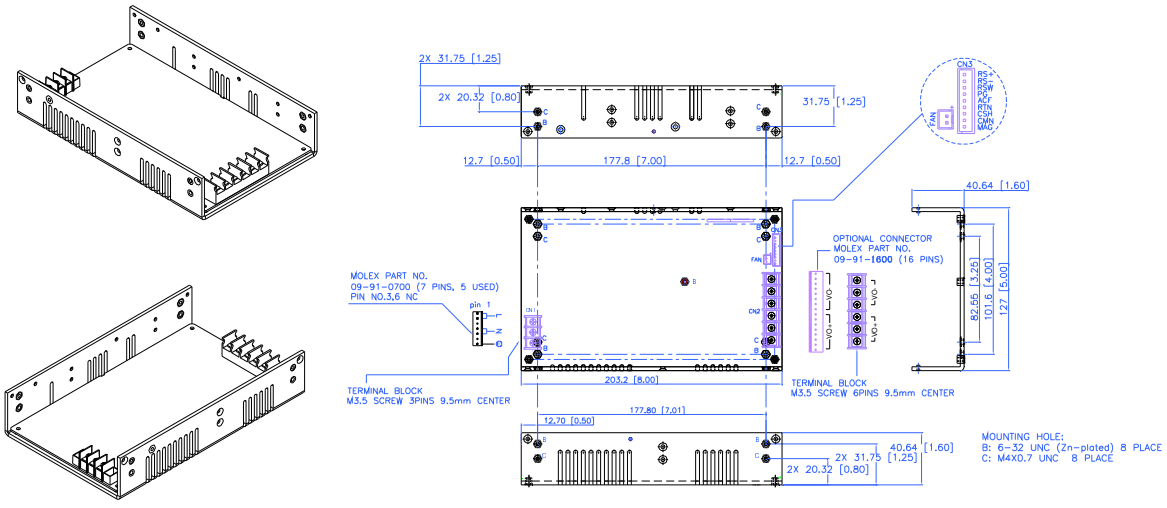
Model	Output Range	Preset Voltage	Max. Output Power or Current		Total Regulation	Ripple & Noise
			Type U (Convection)	Type U (with forced air) & E		
RL0402x-03(I)	2 ~ 3.3V	3.3V	45A	60A	+/- 1%	+/-1%
RL0402x-05(I)	5 ~ 6V	5V	45A	60A	+/- 1%	+/-1%
RL0402x-12(I)	12 ~ 15V	12V	250W	400W	+/- 1%	+/-1%
RL0402x-18(I)	16 ~ 21V	18V	250W	400W	+/- 1%	+/-1%
RL0402x-24(I)	22 ~ 30V	24V	250W	400W	+/- 1%	+/-1%
RL0402x-36(I)	31 ~ 41V	36V	250W	400W	+/- 1%	+/-1%
RL0402x-48(I)	42 ~ 58V	48V	250W	400W	+/- 1%	+/-1%

NOTE:

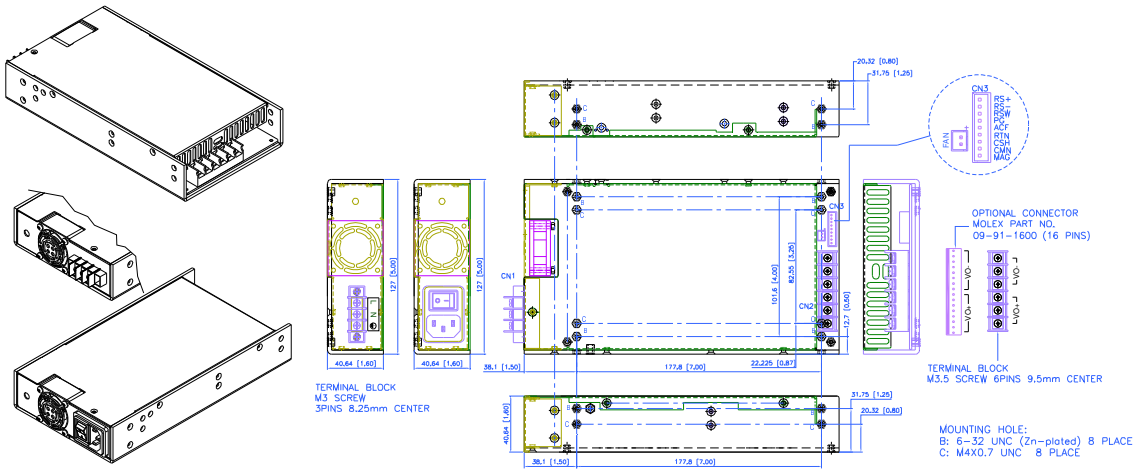
* RL0402x-yz. x = **U** (U-Chassis Type) or **E** (Enclosed with built-in Fan Type). or y = **03, 05, 12, 18, 24, 36 or 48**. z = blank or **I** where **I** denote forced current sharing option (OR-ring diode).
* RL0402U Series: 400W max. with 23CFM airflow or 250W max. under convection cooling; (Option: Top Cover)
* RL0402E Series: 400W max. with built-in fan flow.
* All output ranges are covered in agency certifications and preset output voltage for each model as above listings.
* 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:

RL0402U Series (U-Chassis Type): 8(L) x 5(W) x 1.6(H)inches; Weight: 1.3kg; Option: Top Cover.



RL0402E Series (Enclosed with built-in Fan Type): 9(L) x 5(W) x 1.6(H)inches; Weight: 1.6kg.



I/O Connector pin assignment:

Input Connector(CN1):
RL0402U Series: mating Molex Part No. 09-91-0700 equivalent(7 pin, 5 used), or Howder Terminal block Part No. HD-121-3P.
RL0402E Series: IEC320 or equivalent Snap-in mounting type or DINKLE Terminal block Part No. DT-35-A02W-03 (3 pin).

Output Connector (CN2): Mating Molex 16 pins (09-91-1600), or Howder (HD-121-6P) M3.5, 8 pins terminal block, 9.5MM Center.

Output Pin Assignment: (See right table).

	Molex	Howder
VO+	(Pins 1-8)	(Pins 1-3)
VO-	(Pins 9-16)	(Pins 4-6)

Logic signal connectors (CN3):
Mating JST XHP-9 or equivalent (CHYAO SHIUNN JS-2001-09) Mating Pins: JST SXH-002T-P0.6 for AWG 30 to 26.

Mounting Inserts: 6-32, M4 4 Places individually with maximum penetration 0.15 inches on bottom side and 0.25 inch on both side.