

Features:

- Universal Input 100 – 240 VAC
- AC Input Range Auto-Selectable
- Compact 1U Height
- Low Leakage Current
- 2 VDC – 60 VDC Output
- Over-Current Protection
- Over-Voltage Protection
- 3 Mechanical Options
- RoHS Compliant



Input Voltage: 90-132 / 180-264VAC, 47-63Hz auto selectable.

Input Current: 6/3A at 110-120 / 200-240VAC.

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

PFC: Power factor corrected to EN61000-3-2 class A.

Transient Response: Output voltage returns to within 1% in less than 2.5mS for a 50% load change, peak does not exceed 5%.

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

Efficiency: 70% for 3.3V, 75% for 5V, 80% for 12V and 83% minimum for others output @ 230VAC 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.

Input Fusing Protection: One T6A/250V fuse inserted in primary.

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

Over-Power Protection: Fold back mode 110-140%; Auto-recovery.

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

Over-Temperature Protection: Unit protected of excessive operating ambient 85°C, and automatic recovery.

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

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

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

Storage Temperature: -20 to 85°C.

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

Remote On-Off: Designated as **RMSW** on the CN1, requires a low signal to inhibit output. Hiccup mode.

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

Power Good: Designated as **PG** on the CN1 will go high 100-500mS after regulation and goes low 1mS before loss of regulation.

Fan Drive: 12VDC/300mA is available to drive an external fan.

Switching Frequency: 25KHz fixed frequency.

EMC Standards: CISPR 22 / EN55022 class B, EN61000-3-2,3, EN61000-4-2,3,4,5,6,8,11, EN55024 CE Marked (LVD).

Safety Regulation: Approved to UL60950-1, CSA C22.2 No. 60950-1, TUV EN60950-1 and CB certified.

Leakage Current: Regular Type 1.5mA @ 240VAC. (optional for 500uA max. at 240VAC / 300uA max. at 120VAC input)

HI-POT Withstand Voltage: 1,500 VAC input line to chassis (10mA DC cut off current); Isolating 3,000 VAC primary to secondary windings; Primary to core 1,500 VAC. All for 3 sec.

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

MTBF: 100,000 Hrs (according to MIL-HBK-217F) at 30°C.

Cooling:

SAU & SAC Series: 250/ 135W max. @ forced air flow/ convection.

SAF Series: 250W max. with top built-in fan flow.

Burn in: 45°C +/- 5°C for 1 hour @ 230VAC with full load.

Enclosure:

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

(Option: **SAC Series** – U-Chassis w/ Top Cover)

SAF Series (Top-Fan Type): 5(L) x 3.2(W) x 2(H) inches.

Weight: **SAU Series:** 400g; **SAF Series:** 500g.



SAY250T1 Series

Single Output, Switchmode Power Supply
Passive PFC, RoHS Compliant

Date: 8/04/09

Rev: 032409

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Output Voltage and Current Chart

Model Number**	Preset Voltage	Available Voltages	Max. Output Power/Current		Efficiency	Ripple & Noise
			Type <u>U</u> & <u>C</u> (Forced Air)	Type <u>U</u> & <u>C</u> (Convection)		
SAY250T1XXR	5 VDC	2 - 5 VDC	40 A	20 A	75%	1%
SAY250T1XXR	9 VDC	6 - 10 VDC	25 A	13.5 A	75%	1%
SAY250T1XXR	12 VDC	11 - 13 VDC	250 Watts	135 Watts	80%	1%
SAY250T1XXR	15 VDC	14 - 15 VDC	250 Watts	135 Watts	83%	1%
SAY250T1XXR	18 VDC	16 - 20 VDC	250 Watts	135 Watts	83%	1%
SAY250T1XXR	24 VDC	21 - 26 VDC	250 Watts	135 Watts	83%	1%
SAY250T1XXR	28 VDC	27 - 34 VDC	250 Watts	135 Watts	83%	1%
SAY250T1XXR	36 VDC	35 - 42 VDC	250 Watts	135 Watts	83%	1%
SAY250T1XXR	48 VDC	43 - 50 VDC	250 Watts	135 Watts	83%	1%
SAY250T1XXR	54 VDC	51 - 60 VDC	250 Watts	135 Watts	83%	1%

** To Determine Part Number:

- Replace "Y" with Desired Case Code:

Type U: U-Chassis @ 135 Watts Convection Cooling

Type C: U-Chassis with Cover @ 135 Watts Max. Output with Convection Cooling

Type F: Enclosed with Top Built-In Fan @ 250 Watts Max. Output Power

- Conformal Coating (Optional): Order as SAY250T1XXCR

- Input/Output Connector: Avail. with Crimp Style PCB Header [Input: 5-Pin (3 used), Output: 6-Pin] or 4-Position Barrier Strip.

For Crimp Style PCB Header, Order as: SAY250T1XXR (Unchanged)

For 4-Position Barrier Strip, Order as: SAY250T1XXAR

Example: SAF250T1XXR indicates an Enclosed, Top Fan Case and Crimp Style PCB Header

SAC250T1XXACR indicates a U-Chassis Case with Case Cover, 3-Position Barrier Strip, and Conformal Coating

NOTES:

Input Connector (CN3): Mating Molex Part No. 09-91-0500 or equiv. (5 pin, 3 used) PCB Labeling: L = Line; N = Neutral; G = Chassis Ground; Molex Engineering Series 2478, 2578, 8818 or Howder M3. 3 pin Terminal block 6.35MM Center (HD-6013P).

Output Connector (CN2): Mating Molex Part No. 09-91-0600. Mating Pins: Molex Engineering Series 2478, 2578, 8818, or Howder M3. 4 pin Terminal block 6.35MM Center (HD-601-4P) Mating JST Part No. XHP-2 or equiv. (CHYAO SHIUNN JS-4001-06).

Connector Pin Assignment: (See table to right).

Power Good, Remote On/Off mating connectors (CN1):

Mating JST Part No. XHP-3 or equivalent (CHYAO SHIUNN JS-2001-03).
Mating Pins: JST SXH-002T-P0.6 FOR AWG 30 to 26.

Signal Pin Assignment:

Pins 1 : Power good. | Pins 2 : Remote Switch. | Pins 3 : RTN.

Fan Drive: Mating JST Part No. XHP-2 or equivalent (CHYAO SHIUNN JS-2001-02).

Mounting Inserts: 7 Places M3. Maximum Penetration 3.8mm sees outline drawing for location.

Pin Connection: SAY250T1XXR

Pin	Molex 6-Pin Terminal
1-3	Output
4-6	Return
Pin	Howder: 4-Pin Terminal
1-2	Output 2
3-4	Return



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SAY250T1 Series

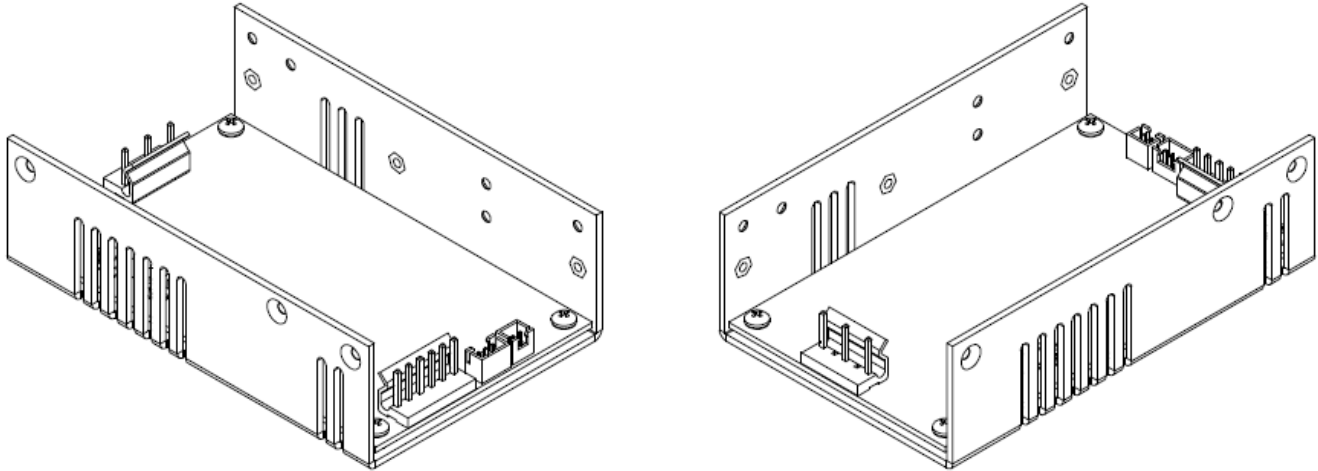
Single Output, Switchmode Power Supply
Passive PFC, RoHS Compliant

Date: 8/04/09

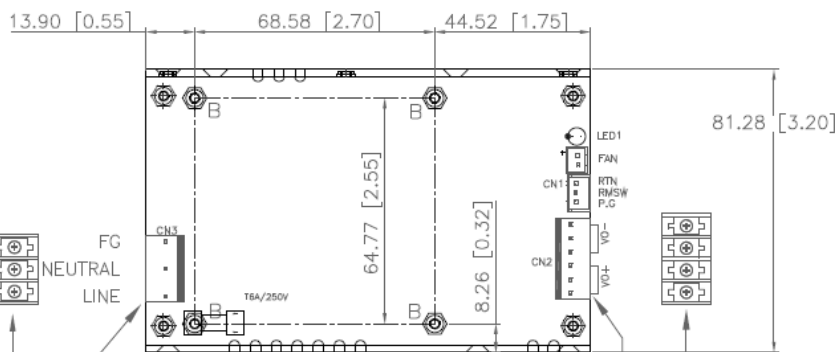
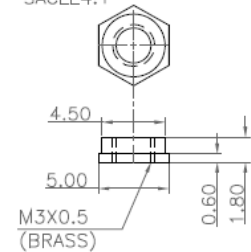
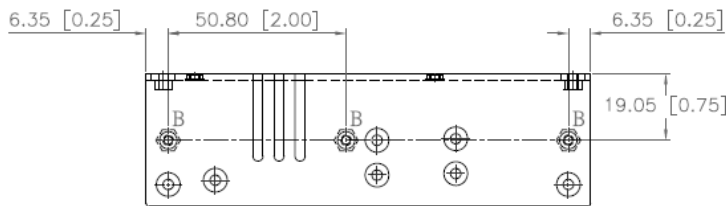
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Type **U**: U-Chassis Case
Order as: SA**U**250T1XXR



B MOUNTING HOLE 7 PLACES
SACLE4:1

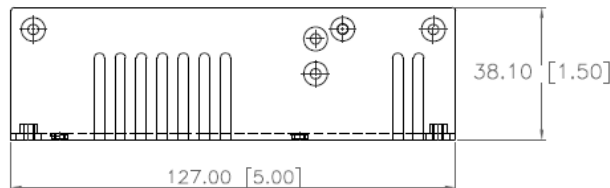


TERMINAL BLOCK
M3 SCREW
3PINS 6.35mm CENTER

Molex Part No. 09-91-0500 or
equivalent (5 pin, 3 used)

TERMINAL BLOCK
M3 SCREW 4PINS 6.35mm CENTER

Molex Part No. 09-91-0600(6 PINS)



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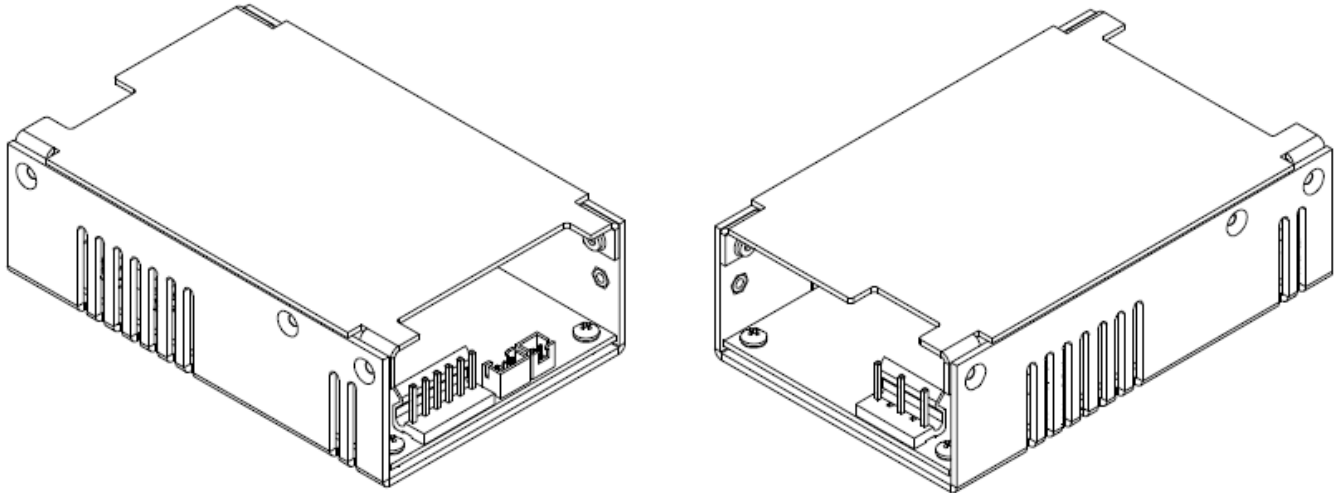
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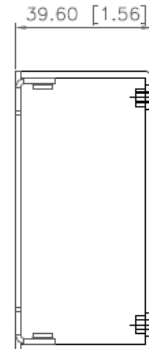
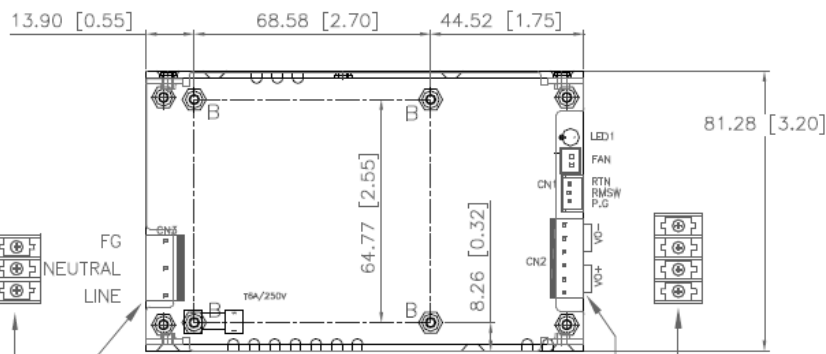
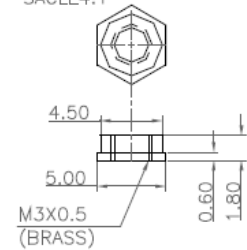
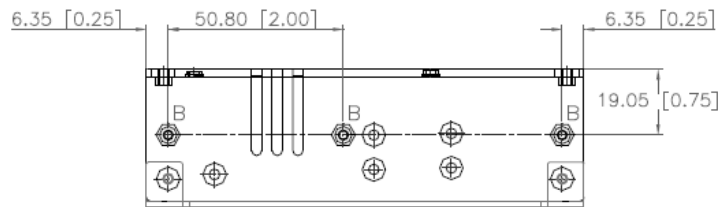
Web: www.apxonline.com
Email: sales@apxonline.com

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Type **C**: U-Chassis Case w/ Cover
Order as: SAC250T1XXR



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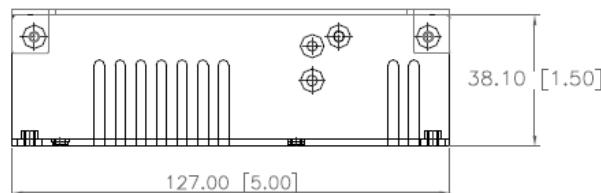


TERMINAL BLOCK
M3 SCREW
3PINS 6.35mm CENTER

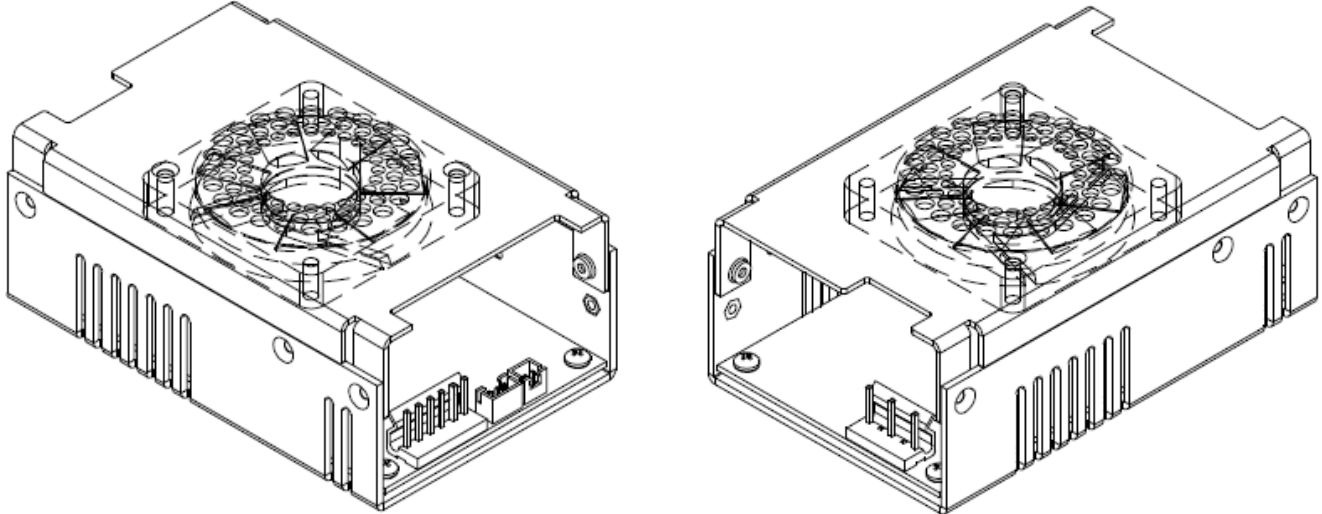
Molex Part No. 09-91-0500 or
equivalent (5 pin, 3 used)

TERMINAL BLOCK
M3 SCREW 4PINS 6.35mm CENTER

Molex Part No. 09-91-0600(6 PINS)



Type **F**: Enclosed Case w/ Top Fan
Order as: SA**F**250T1XXR



B MOUNTING HOLE 7 PLACES
SACLE4:1

