◆ Features

* Selected AC input voltage by a switch.
* Withstand 300Vac surge voltage for 5 second.
* Full Protections: Short-circuit/ Over-voltage / Over-current/ Over temperature.
* LED indicator for normal output voltage operating
* 30mm ultra low profile.
* IEC/EN 62368-1 design compliance
* Up to 5000 meters operating altitude
* High efficiency and high reliability

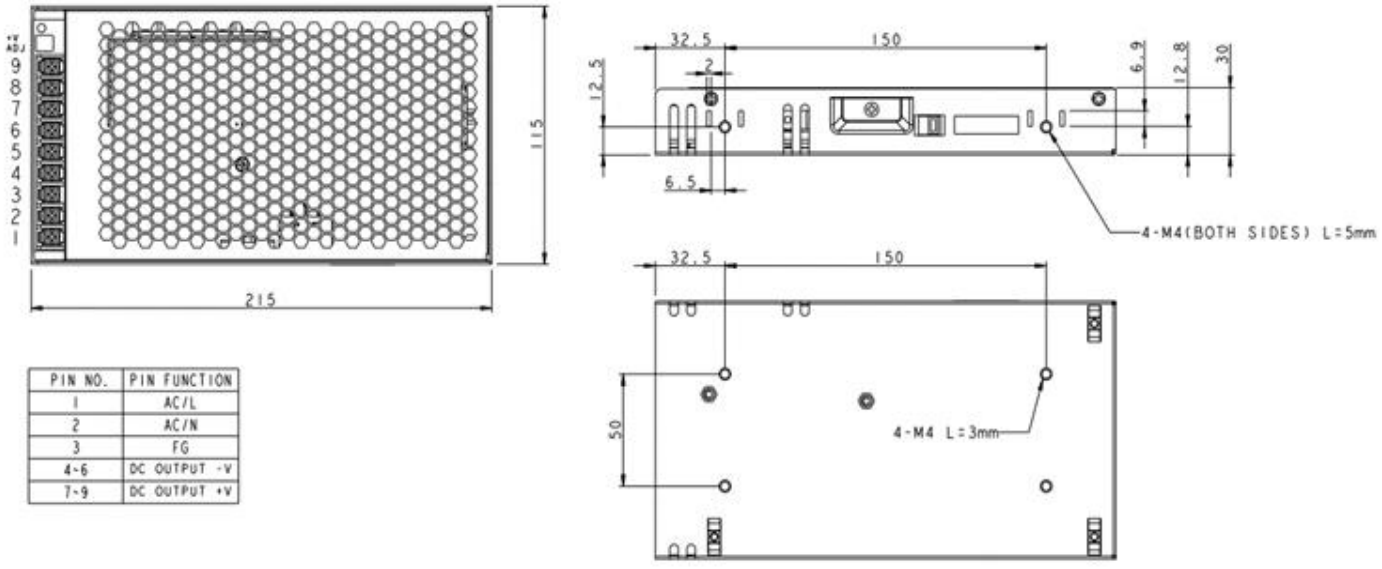
◆ Safety Certification

R33275
RoHS

◆ Description

This is an AC to DC switching mode power supply which can provide 200 watts continuous power with convection cooling. It complies with world-wide Safety and EMC regulations (refer to details below). This PSU is high c/p (capability/price) value for various industrial applications.

◆ Mechanical Specification



PIN NO.	PIN FUNCTION
1	AC/L
2	AC/N
3	FG
4~6	DC OUTPUT -V
7~9	DC OUTPUT +V

Model P/N	HA-1201-24NL	HA-1201-12NL
Output Specification		
● Rated power	---------- 200W ----------	
● Rated voltage	24V	12V
● Rated current	8.8A	17A
● Ripple & Noise (max.) (note#2)	---------- 150mV ----------	
● Load & AC line regulation	---------- ±1% ----------	
● Hold-up time(typ.)	---------- 16ms ----------	
● Timing: AC ON delay / rising (max.)	---------- 1.5 sec / 50ms ----------	
Input Specification		
● Rated voltage range	---------- 100V~120VAC(L) / 200~240VAC(H), by select switch ----------	
● Operated voltage range (note#5)	---------- 90V~132VAC(L) / 180~264VAC(H), 300Vac for 5 sec ----------	
● Current range (max.)	---------- 4.5A/100Vac; 2.6A/200Vac ----------	
● Inrush current (typ.)	---------- 60A (cold start) ----------	
● Frequency range	---------- 50-60Hz ----------	
● Leakage current (max.)	---------- 2mA ----------	
● Efficiency (typ.)	89.5%	87.5%
Protection Function		
● Over voltage (max.)	--- 140% of rated voltage, hiccup mode protection until fault is removed ---	
● Over current (max.)	--- 140% of rated current, hiccup mode protection until fault is removed ---	
● Short circuit at O/P	----- No damage, hiccup mode protection until fault is removed -----	
● Over temperature	----- No damage, O/P shut down until temperature is back to normal -----	
Others		
● MTBF (min.) (note#3)	---------- 700K hours @ rated load ----------	
Environment		
● Temperature (note#5)	---------- (operating) -20~70℃ /(storage) -40~85℃ ----------	
● Humidity	(operating) 10~90% RH non-condensing / (storage) 5~95% RH	
● Altitude (max.) (note#4)	---------- 5000 meters ----------	
Mechanical		
● Dimension	----------215*115*30mm ----------	
● Vibration	----- 10~500 Hz, 5G 20min./1cycle, 60min per axis in all axes (X, Y, Z) -----	
● Weight (typ.)	490g	

Safety	
● Standard	---------- IEC/EN 60950-1, K60950-1, IEC/EN 62368-1, CNS14336-1 ----------
● Withstand voltage	----- Input-Output: 4242VDC / Input-FG: 2150VDC / Output-FG: 700VDC -----
● Isolation resistance (min.)	---------- Input-Output: 100Mohm @ 500VDC, 25℃, 70%RH ----------
EMC	
● EN55032	---------- Conducted EMI: class A / Radiated EMI: class A ----------
● FCC	---------- Conducted EMI: class A / Radiated EMI: class A ----------
● EN61000-3-2	---------- Harmonic distortion: Not applicable ----------
● EN61000-4-2	---------- ESD: ±8KV contact discharge / ±15KV contact discharge ----------
● EN61000-4-3	---------- Radiated RF immunity: 3V/m ----------
● EN61000-4-4	---------- EFT: ±1KV (AC port) ----------
● EN61000-4-5	---------- Surge: ±1KV DM / ±2KV CM ----------
● EN61000-4-6	---------- Conducted RF immunity: 3V/m ----------
● EN61000-4-8	---------- Magnetic field immunity: 1A/m ----------
● EN61000-4-11	---------- Voltage dip immunity ---------- 30%, 0.5 periods 60%, 50 periods >95%, 250periods

Note

#1: All specification defined at 230Vac/50Hz, rated power and 25℃ ambient temperature if no mentioned specially.

#2: Ripple noise is measured by a 30cm length, twisted wires with 0.47uF MLCC+22uF low ESR capacitor.

#3: Calculated by Telcordia SR332 at 25℃ ambient temperature.

#4: When operating altitude is higher than 2000m, the environment temperature derating factor is 0.5℃/100m.

#5: De-rating curve of AC input voltage and ambient temperature: