

## ◆ Features

- \* Selected AC input voltage by a switch
- \* Withstand 300Vac surge voltage for 5 seconds
- \* Full Protections: Short-circuit/ Over-voltage / Over-current/ Over temperature
- \* Built-in smart FSC (fan speed control) and fan ON/OFF is controlled by output loading
- \* LED indicator for normal output voltage operating.
- \* 1U low profile
- \* IEC/EN 62368-1 design compliance
- \* Up to 5000 meters operating altitude (note#4)
- \* High efficiency and high reliability



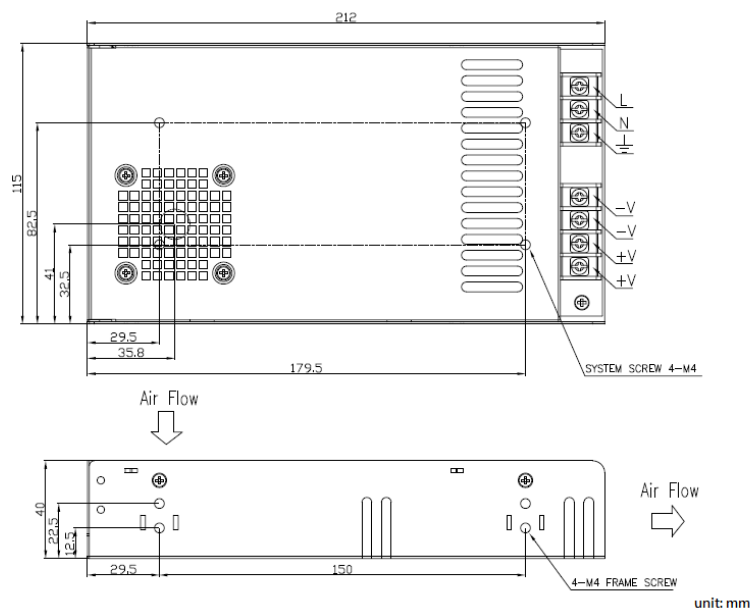
## ◆ Safety Certification



## ◆ Description

This is an AC to DC switching mode power supply which can provide 350 watts continuous power and forced cooling by a smart FSC circuit. 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



unit: mm

Model P/N	HA-1351-24NL	HA-1351-12NL
<b>Output Specification</b>		
● Rated power	350W	
● Rated voltage	24V	12V
● Rated current	14.6A	29.2A
● Ripple & Noise (max.) (note#2)	150mV	
● Line & load regulation	±1%	
● Hold-up time (typ.)	16ms	
● Timing: AC ON delay / rising (max.)	2 sec / 30ms	
<b>Input Specification</b>		
● Rated voltage range	100V~120VAC / 200~240VAC, by select switch	
● Operated voltage range (note#5)	90V~132VAC / 180~264VAC, 300Vac for 5 sec	
● Current range (max.)	6.8A/100Vac; 3.4A/200Vac	
● Inrush current (typ.)	50A/115Vac; 100A/230Vac (cold start)	
● Frequency range	50-60Hz	
● Leakage current (max.)	0.75mA	
● Efficiency (typ.)	87%	83%
<b>Protection Function</b>		
● Over voltage (max.)	140% of rated voltage, hiccup mode protection until fault is removed	
● Over current (max.)	130% 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, hiccup mode protection until temperature is back to normal	
<b>Others</b>		
● Fan ON/OFF (typ.)	Fan ON @ output current >2A; Fan OFF @ output current <1A	
● MTBF (min.) (note#3)	700K hours @ rated load	
<b>Environment</b>		
● Temperature (note#5)	(operating) -20~70°C /(storage) -40~85°C	
● Humidity	(operating) 10~90% RH non-condensing / (storage) 5~95% RH	
● Altitude (max.) (note#4)	5000 meters	
<b>Mechanical</b>		
● Dimension	212(L)*115(W)*40mm(H)	
● Vibration	10~500 Hz, 6G 15min./1cycle, 90min per axis in all axes (X, Y, Z)	
● Weight (typ.)	860g	

## 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°C, 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: ±2KV DM / ±4KV CM
● EN61000-4-6	Conducted RF immunity: 3V/m
● EN61000-4-8	Magnetic field immunity: 1A/m
● EN61000-4-11	Voltage dip immunity

## Note

#1: All specification defined at 230Vac/50Hz, rated power and 25°C 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°C ambient temperature.

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

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

