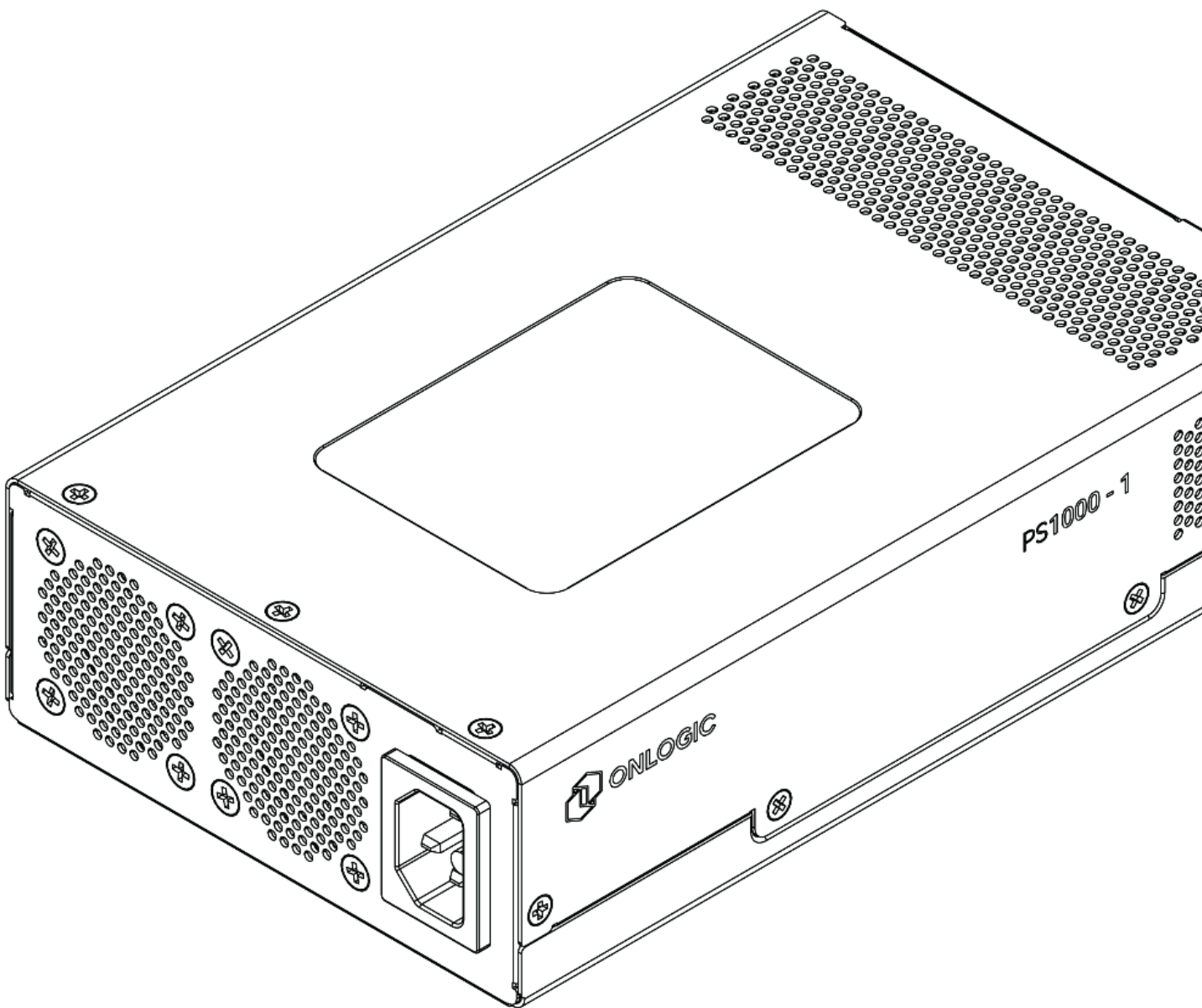


# PS1000-1 Product Manual



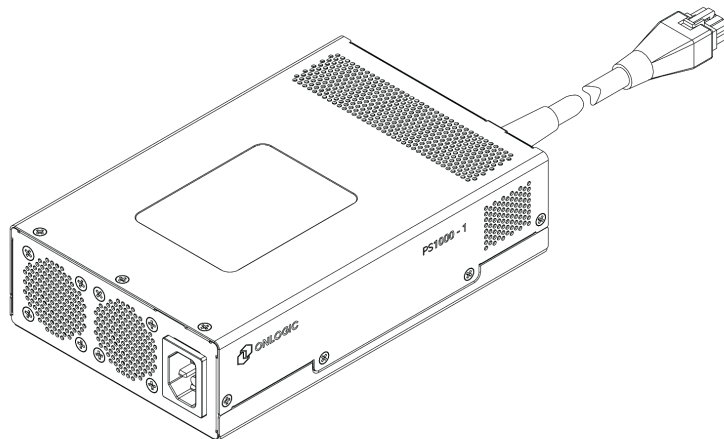
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# 1 - System Overview

## 1.1 System Introduction

The OnLogic PS1000-1 is a ruggedized power supply specifically designed for Information Technology equipment, capable of delivering up to 1000 watts of DC power at 48V. It is UL Listed as a standalone power adapter and uses a removable AC power cord.



The PS1000-1 provides adaptability to users through its unique mounting options and electrical connections. The power supply can rest on a flat surface using rubber feet, wall mount with included brackets, and even DIN mount inside electrical enclosures. There are several options for DC output connections to different types of pin-out configurations. These connections can be achieved through the use of appropriately wired adapter cables.

The power supply meets international EMC and safety requirements for IT equipment. In addition, the PS1000-1 has been tested for Railway Immunity EN 50121-3-2, Medical Immunity 60601-1-2, and Maritime IEC 60945. It has passed shock and vibration requirements specific to EN 50155 and MIL-STD-810G up to 50G shock and 15 hours of random vibration 5 - 500 Hz at ~10 Grams.








Operating temperatures ranges proved 100% rated power up to 50C and derates linearly to 50% power at 70C. Forced air cooling with ball bearing fans assures all components remain cool even in conditions where shock and vibration may be present.



## 1.2- In-box Accessories

- Wall Mounting Bracket
- C13 Cable (country specific)
- DIN rail clips

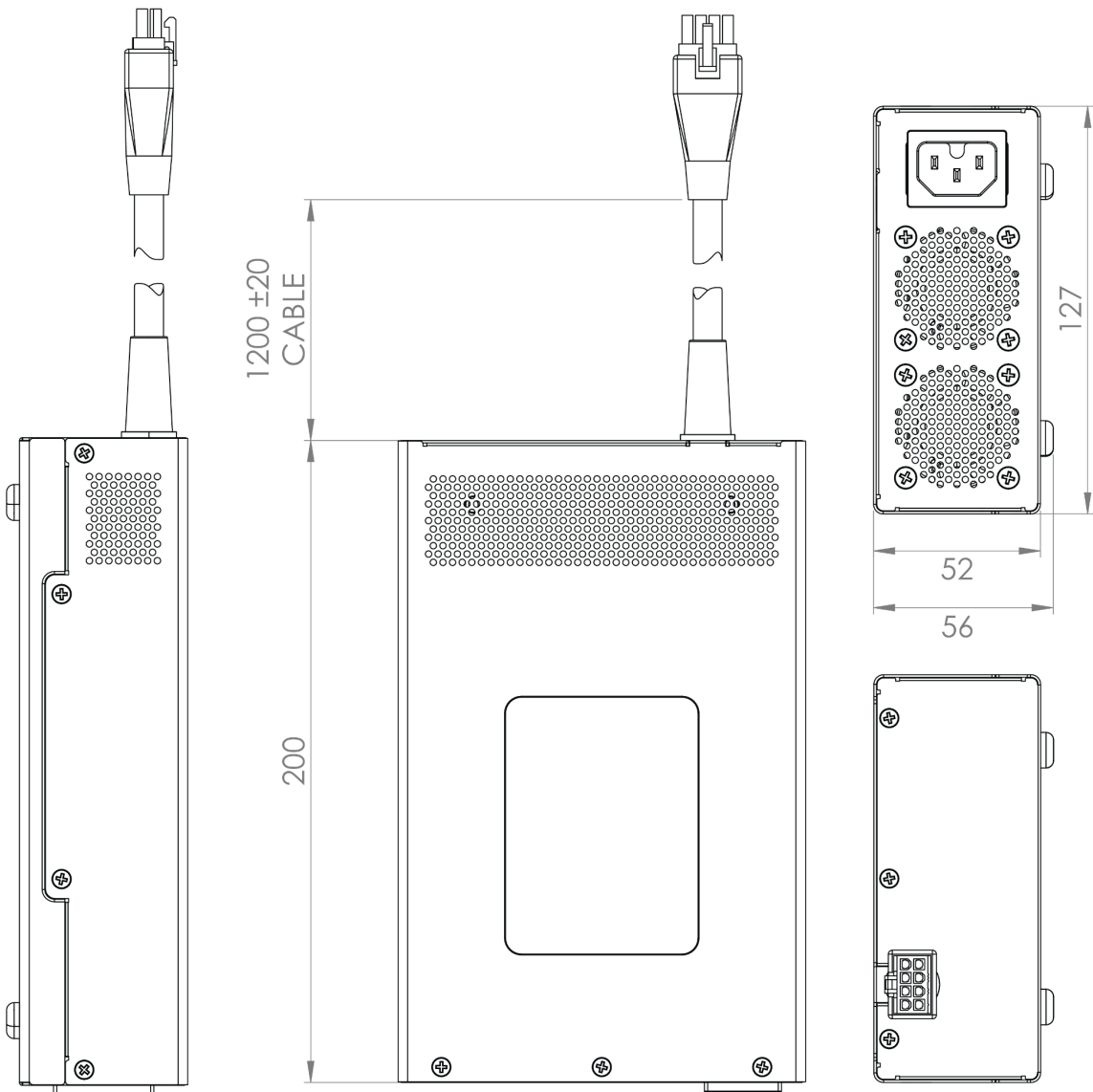
- Molex to terminal block adapter

## 1.3 - Product Specifications

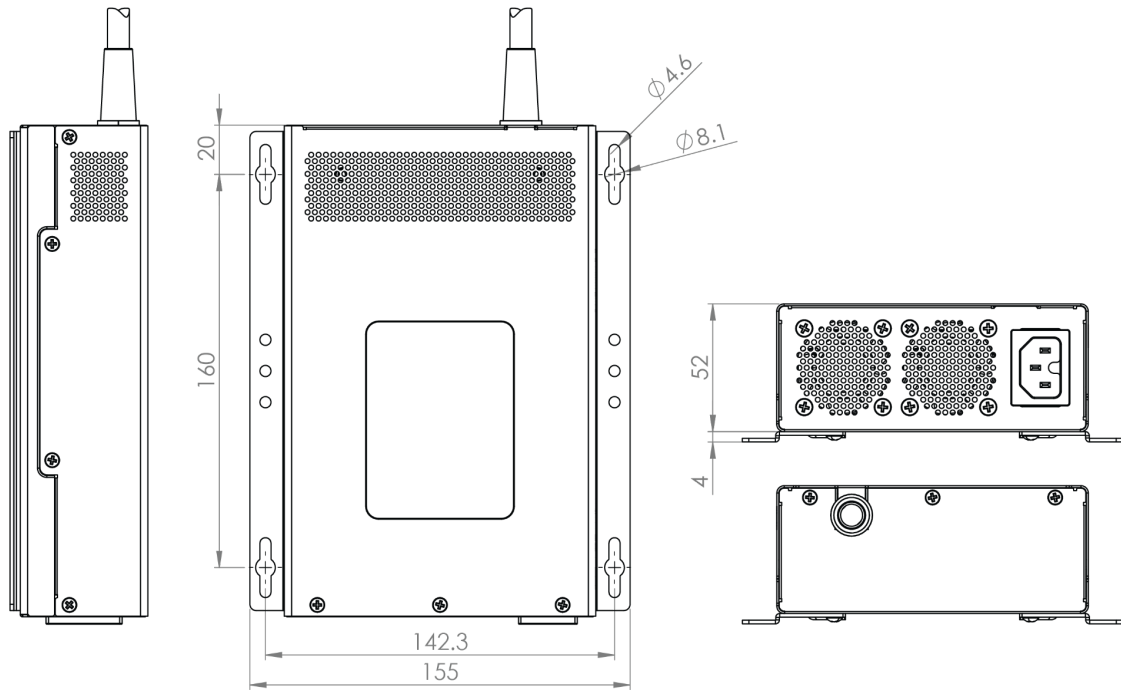
Model	PS1000-1
<b>System Dimensions</b>	7.87" x 5" x 2" 200 x 127 x 52 mm
<b>System Weight</b>	7.7 lbs 3.5 kgs
<b>Operating Environmental Specifications</b>	Operating Temperature: -20-70C *see derating Operating Humidity: 10% - 90% (non-condensing) Operating Altitude: 0 - 10,000 feet
<b>Storage Environmental Specifications</b>	Storage Temperature: -40-80C Storage Humidity: 5% - 95% (non-condensing) Storage Altitude: 0 - 50,000 feet
<b>Extra Chassis Features</b>	Wall Mount DIN Rail Mount Output Power indicator LED
<b>Regulatory Certifications</b>	 FCC 47 CFR Part 15 Subpart B (Class A) ICES-003   EN 60950-1 & EN 63268-1 Safety CISPR 32 / EN 55032 IT emissions & immunity CISPR 11 Industrial / Medical emissions & immunity EN 50121-3-2 Railway Immunity   WEEE Directive (2012/19/EU)   RoHS 3 (2015/863/EU)   IEC 60601-1-2, 4th ed. - EMC emissions & immunity   EN 60945 Maritime EMC - for bridge and deck zones   EN 50121-3-2 Railway Immunity

	 <p>IEC/UL/EN 62368-1 + CB Scheme</p>
	 <p>IEC 60068-2-64 Vibration Test (10grms 5-500Hz)  IEC 60068-2-27 Shock (30G 18ms / 50G 11ms)  MIL-STD-810G Method 514.6 Vibration Test  MIL-STD-810G Method 516.6 Shock Test (40G saw)</p>
	<p>Countries USA, Canada, Mexico, Europe, UK, Australia, New Zealand, China, Taiwan, India, Japan</p>

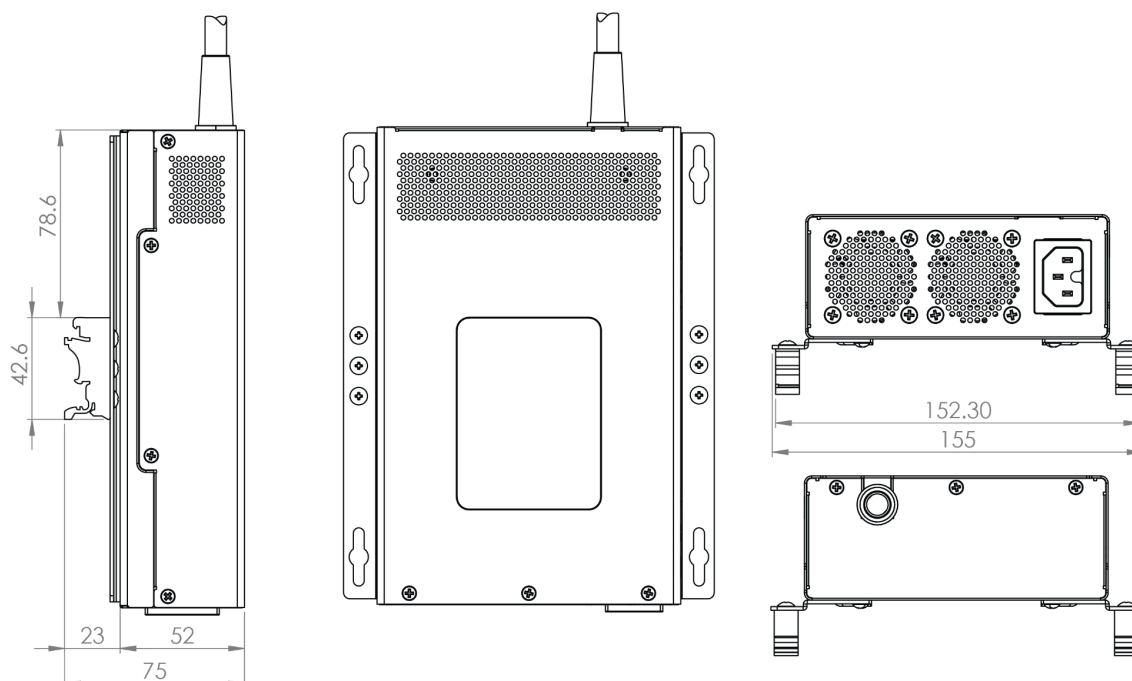
### 1.4 - Exterior Features and Dimensions



### 1.4.1 Wall Mounting Exterior Features and Dimension



## 1.4.2 DIN Mounting Exterior Features and Dimension

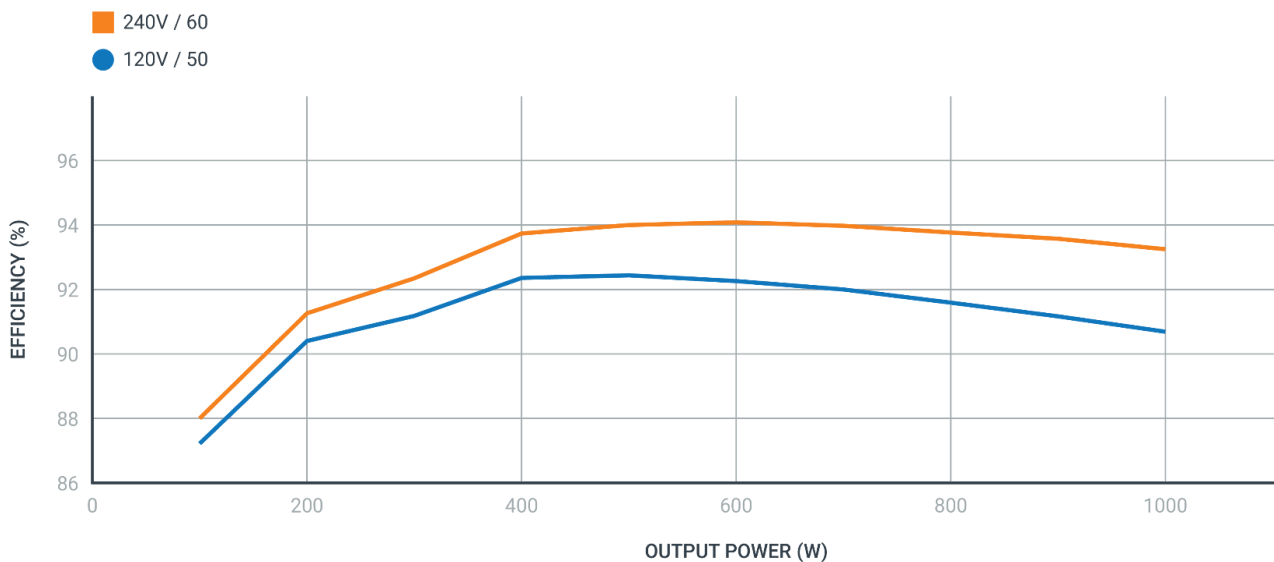


## 1.5 Input Electrical Specifications

Characteristic	Minimum	Typical	Maximum	Units	Notes
Voltage	90	100-240	264	Vrms	
Frequency	47	50-60	63	Hz	
Current			12	Arms	@115 VAC
			6	Arms	@230 VAC
Inrush current			40	A	115Vac @25°C
			80	A	230Vac @25°C
Leakage current			3.5	mA	Measured at 230 VAC
Power factor	>0.95				230Vac @ 1000 W output

## 1.6 Output Electrical Specifications

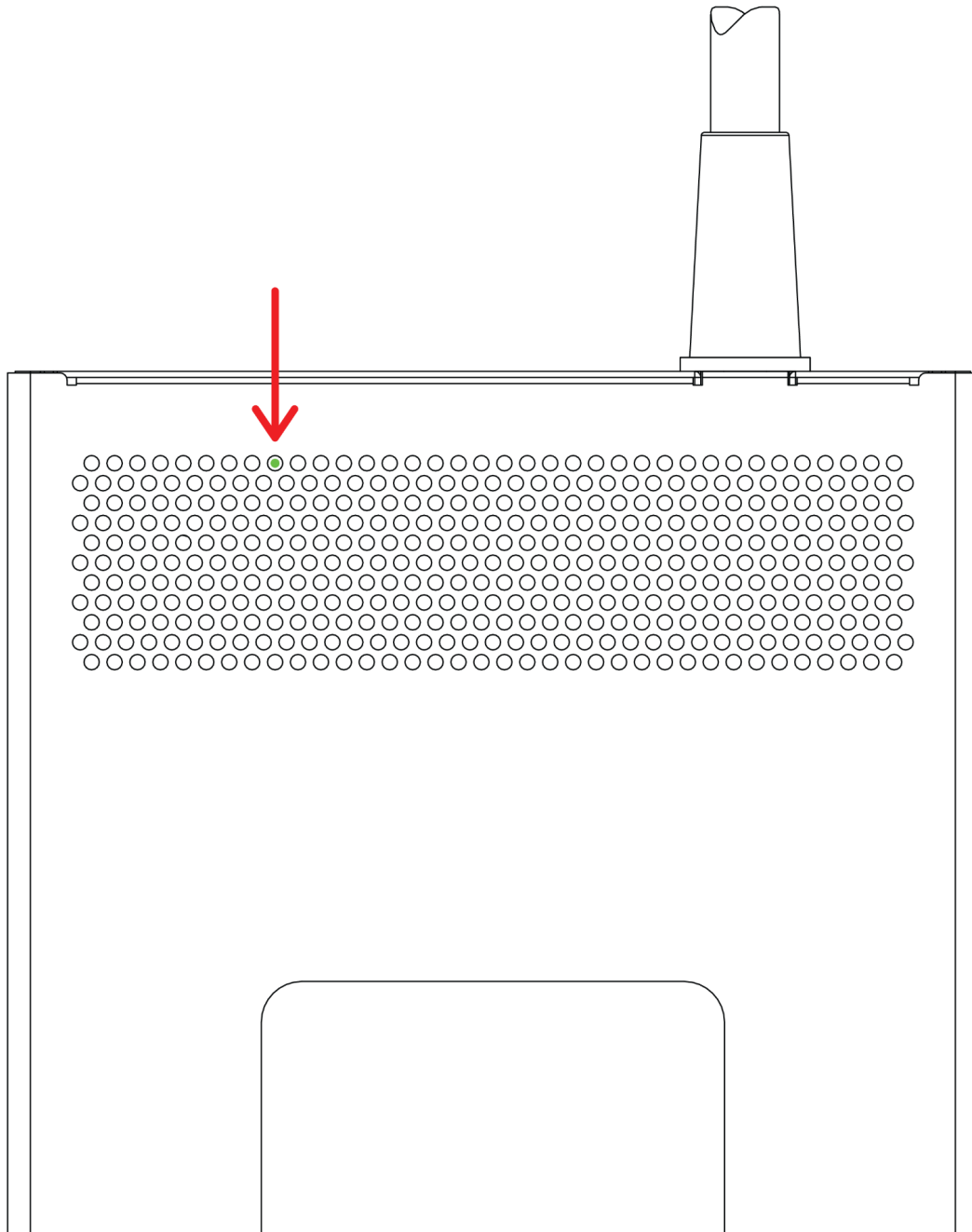
Characteristic	Minimum	Typical	Maximum	Units	Notes
Voltage		48		V	
Load	0		20.83	A	
Power	0		1000	W	Derated to 500 W @ 70°C
Peak Load			26	A	Up to 15ms duration
Regulation		1%			
Line Regulation		1%			
Ripple and Noise			480	mV	With 0.1uF and 10uF across output. 20MHz BWL
Hold up time	16			ms	Output within 5% @ 800 W
Power on time			2000	ms	No load
Overshoot			5%		Max overshoot during turn-on / turn-off
Transient response			5%		Recovers to 1% within 1ms for 25%-75% load step



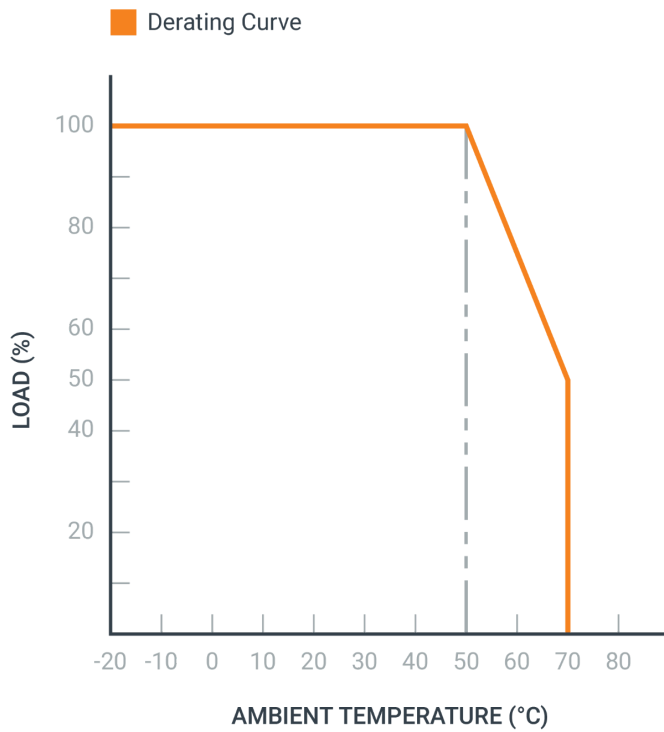


## 1.7 Output Indicator light

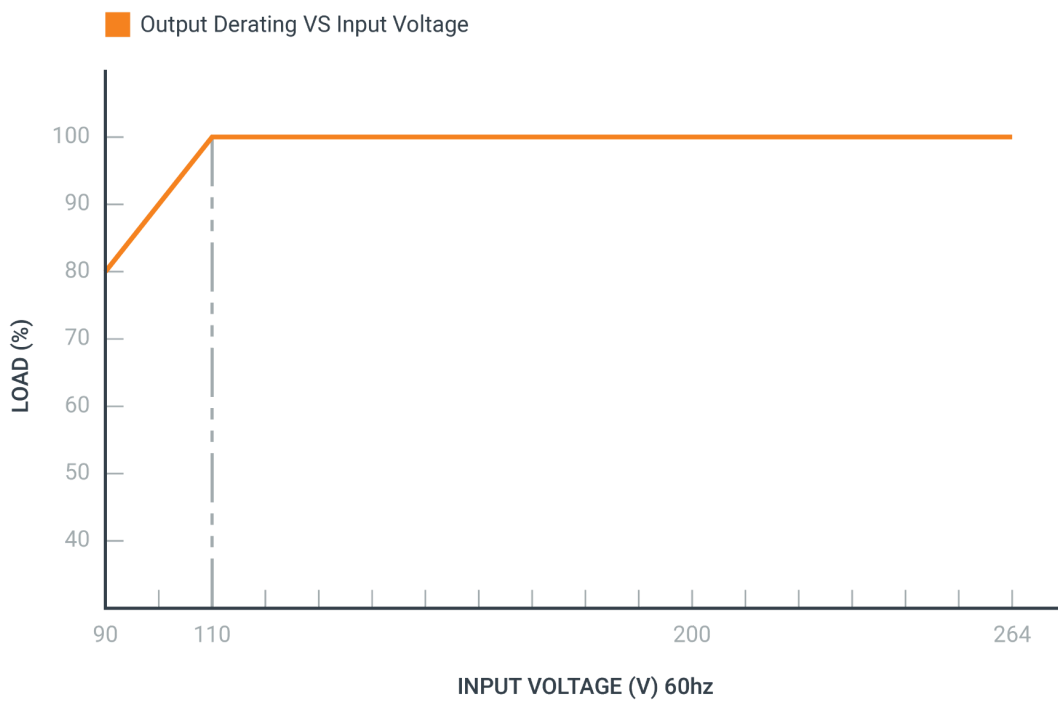
The PS1000-1 has a LED indicator which indicates the status of the 48V DC output. The LED should be strongly lit. A dim or flickering LED indicates a potential problem on the output.



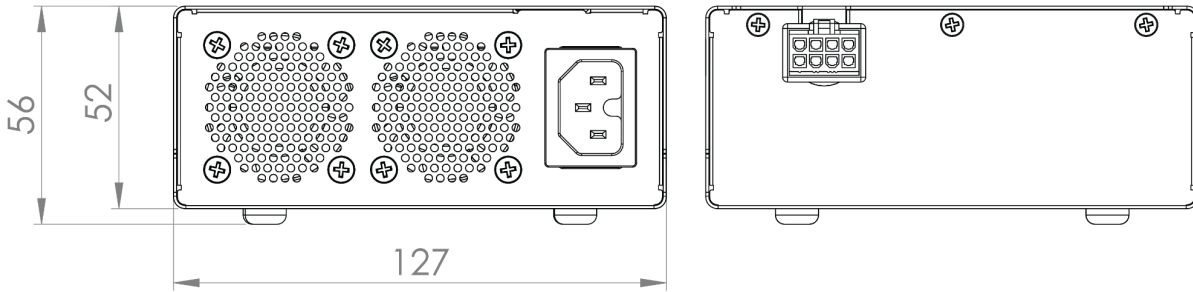
## 1.8 Thermal Derating



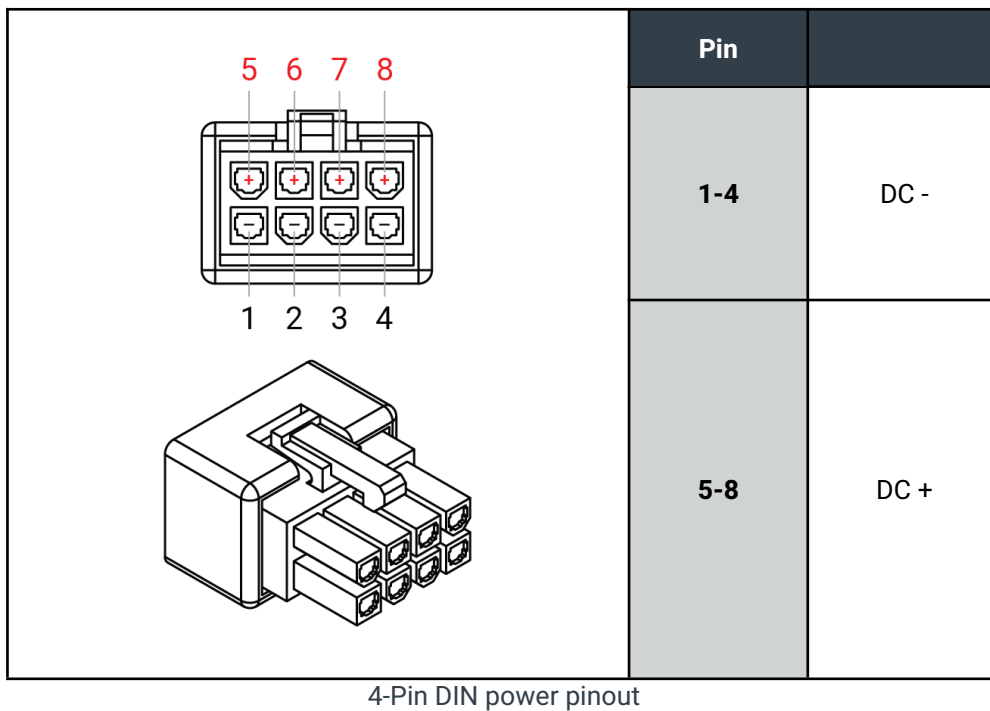
## 1.9 Input Voltage Derating



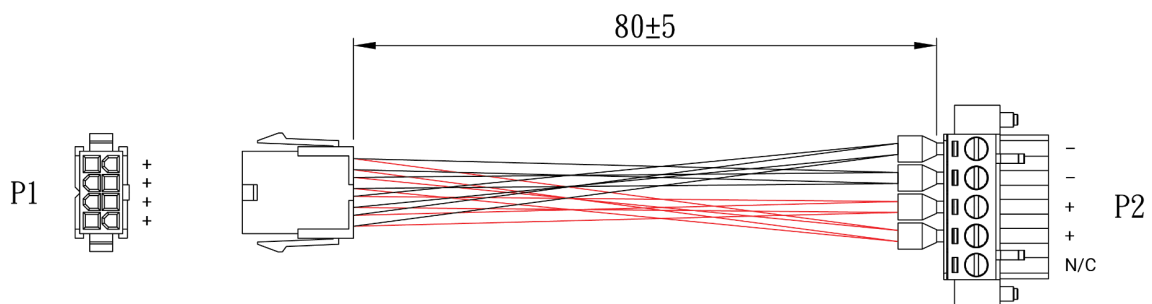
## 2 - Connectors



The attached DC output cable is terminated with an eight pin Molex connector (Molex 39-01-2085). The pinout is provided below. Mate with Molex 39-01-3089 or connector from a similar series.

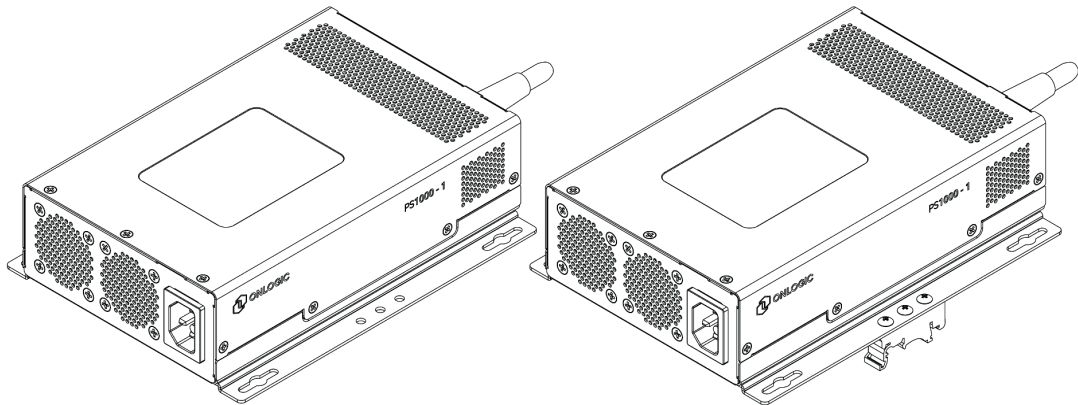


The adapter pictured below is included with the power supply. This adapter may be used to wire the power supply to a 5mm pitch terminal block. The pinout of the adapter is provided below.



## 3 - Mounting Instructions

### 3.1 - Wall Mount & DIN Rail Mounting



The PS1000-1 has optional Wall Mount brackets (included) and DIN Rail mounting brackets (SKU : MTD102) available for purchase

#### **For Wall Mounting, follow steps below :**

**Step 1:** Remove rubber mounting feet. Retain the screws and discard rubber washers.

**Step 2:** Align the four screw holes on the bottom of the system with the respective holes on the mounting brackets.

**Step 3:** Attach wall mounting brackets to the system using the retained M3 screws (M3X0.5 Phillips Screw, 4mm Long). **Caution! Using screws longer than 4mm may damage the power supply.**

**Step 4 :** Install system to surface using keyhole slots on wall mount brackets and appropriate hardware for the surface (not provided).

#### **For DIN Rail Mounting, follow the below steps:**

**Step 1:** Follow steps 1-4 from the Wall Mounting section.

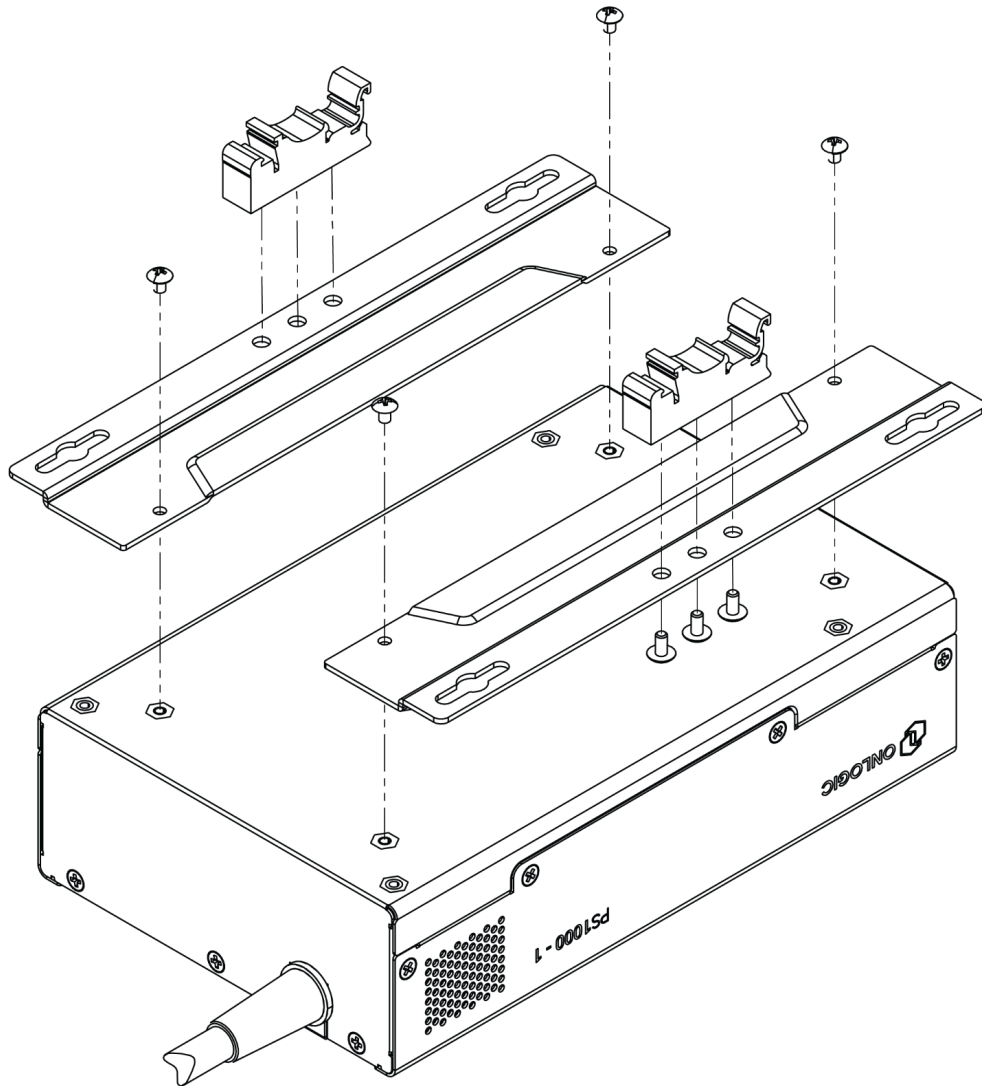
**Step 2:** Align the mounting holes of the din clip bracket to the three mounting holes on the wall mount bracket.

**Step 3:** Install the din clips to the wall mount brackets using supplied screws and a Phillips head screwdriver.

**Step 6:** Mount system onto the DIN rail.

*Note: The mounting brackets are required to support 3x the hanging weight of the system. The mating surface and hardware must be capable of supporting the same load.*

### ADD MOUNTING BRACKETS:



## 4 - Protection features

### 4.1 Over Voltage Protection

+48V output: Over voltage protection >115% (no lower than 115% and no higher than 140%)

Protection type: latch-mode over voltage protection

### 4.2 Over Current Protection

Overcurrent protection >130% of nominal current (no lower than 130% and no higher than 160%)

Protection type: recovers automatically after fault condition is removed

### 4.3 Over Temperature Protection

Environment temperature 55°C~70°C at full load.

Protection type: recovers automatically after fault condition is removed

### 4.4 Short Protection

Output to GND.

Protection type: recovers automatically after fault condition is removed

## 5. Appendices

### 5.1 Appendix A: Regulatory Compliance

#### 5.1.1 CE Statement

The power supply complies with the relevant IT equipment directives for the CE mark. Modification of the power supply may void the certifications. The product was tested as a Class A device intended for industrial / commercial settings.

#### 5.1.2 FCC Statement

This device complies with part 15 of the FCC rules as a Class A device. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning: Operation of this equipment in a residential environment could cause radio interference.

#### 5.1.3 ISCED

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

**CAN ICES-003(A) / NMB-003(A)**

### 5.1.4 UKCA

The computer system was evaluated for EMC standards as a class A device. The computer complies with the relevant IT equipment directives for the UKCA mark.

### 5.1.5 VCCI

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI). If this equipment is used in a domestic environment, radio interference may occur, in which case the user may be required to take corrective actions.

<p>この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。</p> <p>VCCI-A</p>
---

### 5.1.6 BSMI

Warning: To avoid electromagnetic interference, this product should not be installed or used in a residential environment.

警告: 为避免電磁干擾, 本產品不應安裝或使用於住宅環境。

### 5.1.7 CCC

---

警告: 在居住环境中, 运行此设备可能会造成无线电干扰。

- | 本产品适用于信息技术及音视频设备使用。
- | 本产品适用于热带气候条件使用。
- | 本产品允许最大工作环境温度是70℃。
- | 本产品适用于海拔5000m及以下地区使用。
- | 警告: 在居住环境中, 运行此设备可能会造成无线电干扰。



l 本產品適用於熱帶氣候條件使用。

l 本產品允許最大工作環境溫度是70°C。

l 警告：為避免電磁干擾，本產品不應安裝或使用於住宅環境。

設備名稱： 電源供應器，型號（型式）：PS1000-1						
Equipment name	Type designation (Type)					
單元Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr <sup>+6</sup> )	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
外殼/ case	-	○	○	○	○	○
線材/ wire	-	○	○	○	○	○
主電路板/ The main circuit board	○	○	○	○	○	○
副電路板 (PFC 卡)/ Vice board	○	○	○	○	○	○
電阻/Resistor	○	○	○	○	○	○
電容/ Capacitance	○	○	○	○	○	○
二極體/Diode	-	○	○	○	○	○
貼片二極體/SMD DIODE	-	○	○	○	○	○
集成電路/IC	-	○	○	○	○	○
變壓器/線圈/ Transformer/coil	○	○	○	○	○	○
保險絲/FUSE	○	○	○	○	○	○
散熱片/ Heat sinks	○	○	○	○	○	○
麥拉絕緣片/ Mylar insulation slices	○	○	○	○	○	○
AC開關和插座/Switch and socket	○	○	○	○	○	○
風扇/Fan	○	○	○	○	○	○
塑膠零件/ Plastic parts	○	○	○	○	○	○
包裝材料/ Packaging materials	○	○	○	○	○	○

備考1. “超出0.1 wt %” 及 “超出0.01 wt %” 係指限用物質之百分比含量超出百分比含量基準值。  
 Note 1: "Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.

備考2. “○” 係指該項限用物質之百分比含量未超出百分比含量基準值。  
 Note 2: "○" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考3. “-” 係指該項限用物質為排除項目。  
 Note 3: The "-" indicates that the restricted substance corresponds to the exemption.

Symbols used:



Indoor use only



The appliance shall not be disposed together with the normal waste. It must be recycled.

## 5.2 Appendix B: Safety Precautions, Safeguards & Information

Do not open and modify the device! The device complies with various national and international Safety, EMC and Environmental requirements per various standards.

Modification of the device may void certifications, warranty and/or cause possible injury to the user.

### 5.2.1 Safe use and installation instructions

1. Read the entire manual before using the product.
2. Install the device securely per users manual instructions.
3. Care must be taken handling the device to prevent injury to self or possibility of damaging the unit.
4. The appliance is suitable for use together with ITE equipment only.
5. The appliance is suitable for moderate climates only.
6. The maximum ambient temperature during use of the appliance must not exceed 70°C.
7. Naked flame sources, such as candles, must not be placed on the appliance.
8. The appliance and the mains-socket must all times be easily accessible.
9. In case of broken cords or plugs the appliance must be disposed of.
10. The appliance does not require regular maintenance. If you want to clean it, please use only a dry cloth or brush. Do not clean the device with liquids. To prevent injury to self and/or damage to the device the unit must be powered down and all connecting power and other peripherals shall be disconnected prior to cleaning.
11. This product is suitable for altitudes less than 5000m.
12. Wall or ceiling mounting device requires use of a mounting plate or bracket. The plate or bracket must be of metal construction and have a minimum thickness of 1mm.
13. Use M3x0.5mm screws to attach mounting plate or mounting brackets to threaded holes on bottom or rear of chassis. Screws should be a minimum length of 4mm. Add 1mm of screw length for every mm of additional thickness of plate or bracket beyond 1.5mm.
14. Ambient operating temperature must be between -20 °C to 70 °C with a non-condensing relative humidity of 10-90%.
15. The device can be stored at temperatures between -40 °C to 80 °C.
16. Keep the device away from liquids and flammable materials. Not to be installed in a hazardous environment.
17. Allow adequate space around all sides of the device for proper cooling and to not exceed its maximum operating temperature limit. Keep air vents unobstructed.



18. This device is intended for indoor operation only.

## 5.2.2 Précautions et guide d'installation

1. Lisez l'intégralité du manuel avant d'utiliser le produit.
2. Installez l'appareil en toute sécurité selon les instructions du manuel de l'utilisateur.
3. Des précautions doivent être prises lors de la manipulation de l'appareil pour éviter de se blesser ou d'endommager l'appareil.
4. L'appareil ne peut être utilisé qu'avec un équipement ITE.
5. L'appareil convient uniquement aux climats tempérés.
6. La température ambiante maximale pendant l'utilisation de l'appareil ne doit pas dépasser 70°C.
7. Les sources de flammes nues, telles que les bougies, ne doivent pas être placées sur l'appareil.
8. L'appareil et la prise de courant doivent toujours être facilement accessibles.
9. En cas de cordons ou de prises cassés, l'appareil doit être jeté.
10. L'appareil ne nécessite pas d'entretien régulier. Si vous souhaitez le nettoyer, veuillez utiliser uniquement un chiffon sec ou une brosse. Ne nettoyez pas l'appareil avec des liquides. Pour éviter de se blesser et/ou d'endommager l'appareil, l'appareil doit être éteint et toutes les alimentations et autres périphériques doivent être déconnectés avant le nettoyage.
11. Ce produit convient aux altitudes inférieures à 5000 m.
12. Le dispositif de montage mural ou au plafond nécessite l'utilisation d'une plaque ou d'un support de montage. La plaque ou le support doit être en métal et avoir une épaisseur minimale de 1 mm.
13. Utilisez des vis à tête bombée M3x0,5 mm pour fixer la plaque de montage ou les supports de montage aux trous filetés au bas ou à l'arrière du châssis. Les vis doivent avoir une longueur minimale de 4 mm. Ajoutez 1 mm de longueur de vis pour chaque mm d'épaisseur supplémentaire de plaque ou de support au-delà de 1,5 mm.
14. La température ambiante de fonctionnement doit être comprise entre -20 °C et 70 °C avec une humidité relative sans condensation de 10 à 90 %.
15. L'appareil peut être stocké à des températures comprises entre -40 °C et 80 °C.
16. Gardez l'appareil à l'écart des liquides et des matériaux inflammables. Ne pas installer dans un environnement dangereux.
17. Prévoyez un espace suffisant autour de tous les côtés de l'appareil pour un refroidissement correct et pour ne pas dépasser sa limite de température de fonctionnement maximale. Maintenez les bouches d'aération dégagées.
18. Cet appareil est destiné à une utilisation en intérieur uniquement.