

EATON UPS  
ON-LINE 6-20KVA  
使用手冊



*Powering Business Worldwide*



# 安全注意事項

## 操作安全

1. 在使用本產品前，請仔細閱讀“安全注意事項”，以確保正確和安全的使用，**④**請妥善保存此手冊。
2. 操作時，請注意所有警示標記，**④**按要求進行操作。
3. 避免在陽光直接照射、雨淋或在潮濕的環境使用本設備。
4. 請勿安裝在靠近熱源區域，或有電暖爐、熱爐等類似設備的附近。
5. 放置 UPS 時，在其四周要保留安全距離保證通風。安裝時請參照此手冊。
6. 清潔時，請使用乾燥的物品進行擦拭。
7. 若遇火警，請正確使用乾粉滅火器滅火。勿使用液體滅火器，以免觸電。

## 電氣安全

1. 上電前，請確認已正確接地，**④**檢查所有接線和電池極性的連接正確。
2. 當 UPS 需要移動或重新接線時，應將交流輸入電源斷開，**④**保證 UPS 完全停機，否則輸出端仍可能帶電，有電擊的危險。
3. 請使用本公司指定的附加裝置和附件。

## 電池安全

1. 電池的壽命隨環境溫度的升高而縮短。定期更換電池可保證 UPS 工作正常，**④**保證足夠的後備時間。
2. 蓄電池維護必須由具備蓄電池專業知識的人員來進行。
3. 更換蓄電池，其類型、型號與數量均應與原電池保持一致。
4. 蓄電池存在電擊危險和短路電流危險。為避免觸電傷人事故，在更換電池時，請遵守下列警告：
  - A. 請勿佩帶手錶、戒指或類似金屬物體。
  - B. 使用絕緣的工具。
  - C. 穿戴橡膠鞋和絕緣手套。
  - D. 請勿將金屬工具或類似的金屬零件放在電池上。
  - E. 在拆電池連接端子前，必須先斷開連接在電池上的負載。
5. 請勿將蓄電池暴露於火中，以免引起爆炸，危及人身安全。
6. 非專業人士請勿打開或損毀蓄電池，因為電池中的電解液含有強酸等危險物質，會對皮膚和眼睛造成傷害。如果不小心接觸到電解液，應立即用大量的清水進行清洗，**④**去醫院檢查。
7. 請勿將電池正負極短路，會導致電擊或著火。

## 使用保養

1. 使用環境及保存方法對本產品的使用壽命及可靠性有一定影響，因此請注意避免在下列工作環境中使用：

A. 超出產品規格（溫度 0-40℃，相對濕度 20-90%）的高、低溫和潮濕場所。

B. 有振動、易受撞擊的場所。

C. 有金屬性粉塵、腐蝕性物質、鹽份和可燃性氣體的場所。

2. 如果長時間放置不使用，必須將 UPS（不帶電池）存放在乾燥的環境中，儲存溫度範圍：-25℃～ +55℃。UPS 開機之前，必須先讓環境溫度回暖至 0℃ 以上，**④**維持 2 小時以上。

# 目錄

1、簡介 .....	1
1.1 符號說明 .....	1
1.2 前視圖 .....	2
1.3 后視圖 .....	2
1.4 產品規格 .....	4
2、安裝 .....	7
2.1 拆包檢查 .....	7
2.2 配線表 .....	8
2.3 UPS 配線 .....	9
2.4 外接電池箱的安裝 .....	12
2.5 連接到電腦介面 .....	14
2.6 并機卡（選件） .....	15
2.7 智慧卡的安裝 .....	23
2.8 EPO .....	25
2.9 維護開關 .....	25
2.10 防塵網（選件） .....	26
3、LCD 操作 .....	27
3.1 控制面板 .....	27
3.2 開機操作 .....	28
3.3 關機操作 .....	28
3.4 功能表命令 .....	30
3.5 設定 .....	31
3.6 查詢 .....	31
3.7 自檢 .....	31
3.8 面板燈號顯示與工作狀態對應表 .....	33
4、LED 操作 .....	34
4.1 控制面板 .....	34
4.2 開機操作 .....	36
4.3 關機操作 .....	37
4.4 維護 .....	38
4.5 面板燈號顯示與工作狀態對應表 .....	39
5、電池維護與保養 .....	40
附錄一. 一年服務保證 .....	41

# 1、簡介

本系列UPS是一種先進的在線上正弦波不斷電供電系統，帶有手動旁路維護 開關，具有④聯冗餘的功能，可以為您的精密設備提供可靠、優質的交流電源，其適用範圍很廣，從電腦設備、通信系統到工業自動控制設備都可以使用。由於它的在線式設計，不同於後備式UPS，它對輸入電壓不斷調整、濾波，在市電中斷時，會無中斷地從備用電池上提供電源給負載。在超載或逆變失敗情況下，UPS會轉換到旁路狀態，由市電供電。若超載情況消除，UPS會自動轉回到逆變器供電狀態。

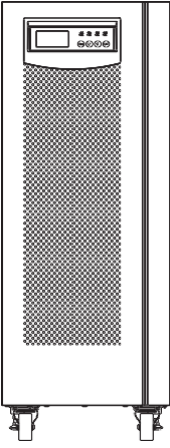
本手冊適用於ON-LINE系列產品，包括：

- C-6000FC： 內置電池的LCD標準機型。
- C-6000FCL： 可外接電池的LCD長延時機型。
- C-6000F： 內置電池的LED標準機型。
- C-6000FL： 可外接電池的LED長延時機型。
- C-10000FC： 內置電池的LCD標準機型。
- C-10000FCL： 可外接電池的LCD長延時機型。
- C-10000F： 內置電池的LED標準機型。
- C-10000FL： 可外接電池的LED長延時機型。
- 3C-10000F： 三相輸入單相輸出，內置電池的LED標準機型。
- 3C-10000FL： 三相輸入單相輸出，可外接電池的LED長延時機型。
- 3C-20000FL： 三相輸入單相輸出，可外接電池的LED長延時機型。

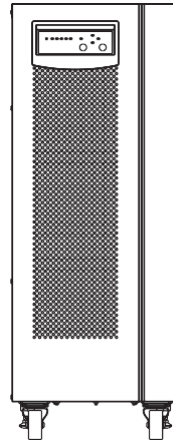
## 1.1 符號說明

符號及含義	
符號	含義
	注意
	高壓危險
	交流電
	直流電
	保護接地
	重復循環
	勿與雜物一同放置

## 1.2 前視圖

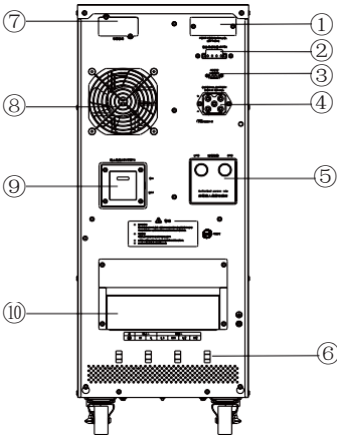


C-6000FC/C-6000FCL  
C-10000FC/C-10000FCL

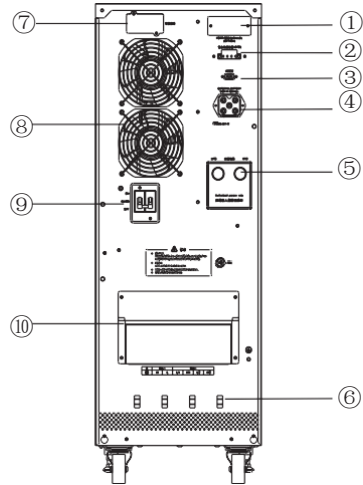


C-6000F/C-6000FL/C-10000F/C-10000FL  
3C-10000F/3C-10000FL/3C-20000FL

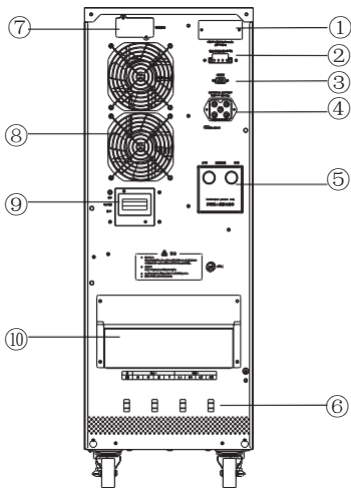
## 1.3 後視圖



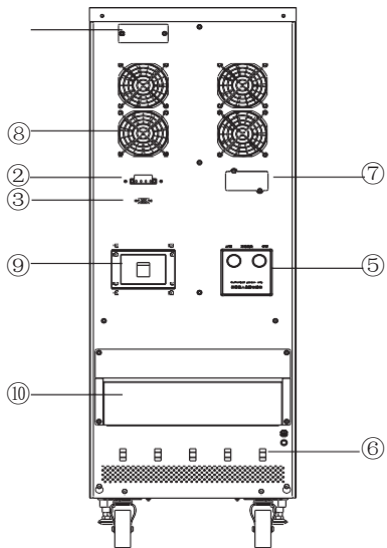
C-6000FC/C-6000FCL  
C-6000F/C-6000FL



C-10000FC/C-10000FCL/  
C-10000F/C-10000FL



3C-10000F/3C-10000FL



3C-20000FL

- ① ④機卡蓋板（④機卡為選配）
- ② EPO(緊急 POWER OFF)
- ③ RS232
- ④ 電池連接插座
- ⑤ 維護開關
- ⑥ 束線架
- ⑦ 智慧插槽
- ⑧ 風扇
- ⑨ 輸入開關
- ⑩ 端子台蓋板



## 1.4 產品規格

機器型號	C-6000FC	C-6000FCL	C-6000F	C-6000FL
尺寸 (深×寬×高)	577×290×755			
淨重 (Kg)	111	59	99	59
功率				
視在功率 (KVA) / 有功功率 (KW)	6KVA/ 4.8KW			
市電				
電壓範圍	220VAC (-15%/+25%)			
電流*	33A.max			
頻率範圍	60Hz(+/-4Hz)			
功率因數	0.99			
輸出				
電壓*	220(可依客戶需求)			
穩定度	±1%			
頻率	56Hz~64Hz(市電模式, 追隨市電), 60Hz±0.05(電池模式)			
功率因數(PF)	0.8			
過載能力	105%~125%, 1分鐘後轉旁路; 125%~135%, 30秒後轉旁路; >135%, 0.1秒後轉旁路			
失真度	THD<2% (線性滿載)			
蓄電池 (電池在高溫下使用, 壽命會急劇下降)				
後備時間	>7min (4200W)		>5min (4200W)	
充電時間	7小時充至 90%		7小時充至 90%	
EMC				
EMI	CNS 14757-2(C3)			
EMS	ESD	IEC61000-4-2 Level 4		
	RS	IEC61000-4-3 Level 3		
	EFT	IEC61000-4-4 Level 4		
	Surge	IEC61000-4-5 Level 4		
⚠ 警語: 熟知本產品的夥伴們, 這是一種限制性銷售的產品, 因此這個產品的安裝可能會被要求做一些限制或須採取其他的手段以防止干擾的發生。				
工作環境溫度	0°C~40°C			
儲存溫度	-25°C~55°C			
環境濕度	20%~90% (無冷凝)			
海拔高度	<1000m			


機器型號	C-10000FC	C-10000FCL	C-10000F	C-10000FL
尺寸 (深×寬×高)	607×300×820			
淨重 (Kg)	135	80	135	80
功率				
視在功率 (KVA) / 有功功率 (KW)	10KVA/ 8KW			
市電				
電壓範圍	220VAC (-15%/+25%)			
電流*	55A.max			
頻率範圍	60Hz(+/-4Hz)			
功率因數	0.99			
輸出				
電壓*	220(可依客戶需求)			
穩定度	±1%			
頻率	56Hz~64Hz(市電模式, 追隨市電), 60Hz±0.05(電池模式)			
功率因數(PF)	0.8			
過載能力	105%~125%, 1分鐘後轉旁路; 125%~135%, 30秒後轉旁路; >135%, 0.1秒後轉旁路			
失真度	THD<2% (線性滿載)			
蓄電池 (電池在高溫下使用, 壽命會急劇下降)				
後備時間	>5min (7000w)		>5min (7000w)	
充電時間	7小時充至 90%		7小時充至 90%	
EMC				
EMI	CNS 14757-2(C3)			
EMS	ESD	IEC61000-4-2 Level 4		
	RS	IEC61000-4-3 Level 3		
	EFT	IEC61000-4-4 Level 4		
	Surge	IEC61000-4-5 Level 4		
⚠ 警語: 熟知本產品的夥伴們, 這是一種限制性銷售的產品, 因此這個產品的安裝可能會被要求做一些限制或須採取其他的手段以防止干擾的發生。				
工作環境溫度	0°C~40°C			
儲存溫度	-25°C~55°C			
環境濕度	20%~90% (無冷凝)			
海拔高度	<1000m			

機器型號	3C-10000F	3C-10000FL	3C-20000FL
尺寸 (深×寬×高)	607×300×820		607×325×936
淨重 (Kg)	136	81	131
功率			
視在功率 (KVA) / 有功功率 (KW)	10KVA/ 8KW		20KVA/ 16KW
市電			
電壓範圍	220VAC (-15%/+25%)		
電流*	55A.max		110A.max
頻率範圍	60Hz(+/-4Hz)		
功率因數	0.99		
輸出			
電壓*	220(可依客戶需求)		
穩定度	±1%		
頻率	56Hz~64Hz(市電模式, 追隨市電), 60Hz±0.05(電池模式)		
功率因數(PF)	0.8		
過載能力	105%~125%, 1分鐘後轉旁路; 125%~135%, 30秒後轉旁路; >135%, 0.1秒後轉旁路		
失真度	THD<2% (線性滿載)		
蓄電池 (電池在高溫下使用, 壽命會急劇下降)			
後備時間	>5min (7000w)		
充電時間	7小時充至90%		
EMC			
EMI	CNS 14757-2(C3)		
EMS	ESD	IEC61000-4-2 Level 4	
	RS	IEC61000-4-3 Level 3	
	EFT	IEC61000-4-4 Level 4	
	Surge	IEC61000-4-5 Level 4	
⚠ 警語: 熟知本產品的夥伴們, 這是一種限制性銷售的產品, 因此這個產品的安裝可能會被要求做一些限制或須採取其他的手段以防止干擾的發生。			
工作環境溫度	0°C~40°C		
儲存溫度	-25°C~55°C		
環境濕度	20%~90% (無冷凝)		
海拔高度	<1000m		


- \* 最大電流是在UPS輸入187V，輸出帶額定滿載的條件下。
- \* 輸出電壓由220V 調整為200V or 208V 時,其輸出額定容量須減額10%。
- \* 輸出電壓可依客戶需求( 200/208/220/230/240VAC) 。


高海拔地區負載量=額定功率×減額係數（與海拔對應的）

海拔（m）	1000	1500	2000	2500	3000	3500	4000	4500	5000
降額係數	100%	95%	91%	86%	82%	78%	74%	70%	67%

 注意：若UPS被使用在海拔1000m以上，必須採用遞減額定值輸出，減額係數參見上表。


## 2、安裝

 危險：為了保證安全，請注意在安裝前切斷市電配電開關，如果是長延時機型，還應斷開電池輸入。

 注意：1. 以下接線必須由專業人員，依當地法規執行。  
2. 建議以落地安裝的方式使用。

### 2.1 拆包檢查

1. 拆開UPS 包裝，目測機器外觀，檢查其是否在運輸中有碰撞損壞。
2. 如發現運輸損壞現象或隨機附件缺少，請立即聯繫經銷商或承運商。  
隨機附件：使用手冊一本

 循環：包裝材料是可重複使用的，請保留包裝材料，以備將來使用。

## 2.2 配線表

⚠ 注意：電纜的直徑和三根導線的橫截面積取決於UPS額定功率。

型號		C-6000F/C-6000FL/ C-6000FC/C-6000FCL	C-10000F/C-10000FL/ C-10000FC/C-10000FCL
輸入	G	12AWG or 14 mm <sup>2</sup> (硬線)	10AWG or 22 mm <sup>2</sup> (硬線)
	N	12AWG or 14 mm <sup>2</sup> (硬線)	10AWG or 22 mm <sup>2</sup> (硬線)
	L	12AWG or 14 mm <sup>2</sup> (硬線)	10AWG or 22 mm <sup>2</sup> (硬線)
電池	+	12AWG or 14 mm <sup>2</sup> (硬線)	10AWG or 22 mm <sup>2</sup> (硬線)
	-	12AWG or 14 mm <sup>2</sup> (硬線)	10AWG or 22 mm <sup>2</sup> (硬線)
	G	12AWG or 14 mm <sup>2</sup> (硬線)	10AWG or 22 mm <sup>2</sup> (硬線)
輸出	L	12AWG or 14 mm <sup>2</sup> (硬線)	10AWG or 22 mm <sup>2</sup> (硬線)
	N	12AWG or 14 mm <sup>2</sup> (硬線)	10AWG or 22 mm <sup>2</sup> (硬線)
	G	12AWG or 14 mm <sup>2</sup> (硬線)	10AWG or 22 mm <sup>2</sup> (硬線)
6KVA:輸出若安裝成110V之電源,線材線徑應使用8AWG 或大於22mm <sup>2</sup> (硬線)			
10KVA:輸出若安裝成110V之電源,線材線徑應使用6AWG 或大於38mm <sup>2</sup> (硬線)			

型號		3C-10000F/3-C10000FL	3C-20000FL
輸入	G	10AWG or 22mm <sup>2</sup> (硬線)	8AWG or 30 mm <sup>2</sup> (硬線)
	N	10AWG or 22mm <sup>2</sup> (硬線)	6AWG or 38 mm <sup>2</sup> (硬線)
	R	10AWG or 22mm <sup>2</sup> (硬線)	6AWG or 38 mm <sup>2</sup> (硬線)
	S	10AWG or 22mm <sup>2</sup> (硬線)	6AWG or 38 mm <sup>2</sup> (硬線)
	T	10AWG or 22mm <sup>2</sup> (硬線)	6AWG or 38 mm <sup>2</sup> (硬線)
電池	+	10AWG or 22mm <sup>2</sup> (硬線)	6AWG or 38 mm <sup>2</sup> (硬線)
	-	10AWG or 22mm <sup>2</sup> (硬線)	6AWG or 38 mm <sup>2</sup> (硬線)
	G	10AWG or 22mm <sup>2</sup> (硬線)	6AWG or 38 mm <sup>2</sup> (硬線)
輸出	L	10AWG or 22mm <sup>2</sup> (硬線)	6AWG or 38 mm <sup>2</sup> (硬線)
	N	10AWG or 22mm <sup>2</sup> (硬線)	6AWG or 38 mm <sup>2</sup> (硬線)
	G	10AWG or 22mm <sup>2</sup> (硬線)	6AWG or 38 mm <sup>2</sup> (硬線)
10KVA:輸出若安裝成110V之電源,線材線徑應使用6AWG 或大於38mm <sup>2</sup> (硬線)			
20KVA:輸出若安裝成110V之電源,線材線徑應使用2AWG 或大於100mm <sup>2</sup> (硬線)			

## 2.3 UPS配線

**⚠ 危險：**市電配電開關所允許的額定輸入電流必須大於UPS輸入電流，否則可能使市電開關燒毀。

1. 請參照配線表選擇輸入輸出線。
2. 打開 UPS 後蓋板上的端子蓋板。
3. 將輸出電纜的導線連接到端子輸出端。  
當輸出為 110V 時，用電纜分別將 L1 和 L2, N1 和 N2 連接，同時從 L1 和 N2 分別接出 UPS 110V 輸出的 L 和 N;  
當輸出為是 220V 時，用電纜線將 N1 和 L2 連接，同時從 L1 和 N2 分別接出 UPS 220V 輸出的 L 和 N;
4. 將輸入電纜的導線連接到端子輸入端，需要接電池的請將電池電纜接電池輸入端。
5. 將綁線穿過束線架。
6. 用綁線將輸入、輸出、電池線捆好，將綁線調節到合適位置，固定好電纜。

配線：輸出配線可選擇單相二線和單相三線。以輸出 220V/110V 為例：  
請注意：客戶只使用 110V 之電壓時，請安裝成單相二線，以使 UPS 在滿載運轉下，不會造成 UPS 內部變壓器燒毀。

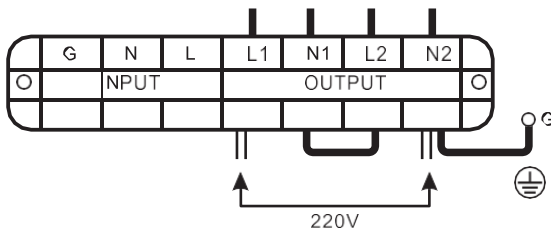


Fig 1. 6K/10K單相輸入,單相二線 220V輸出

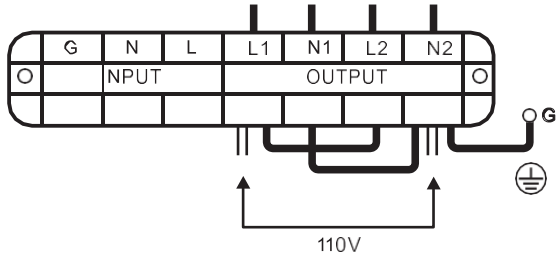


Fig 2. 6K/10K單相輸入,單相二線 110V輸出

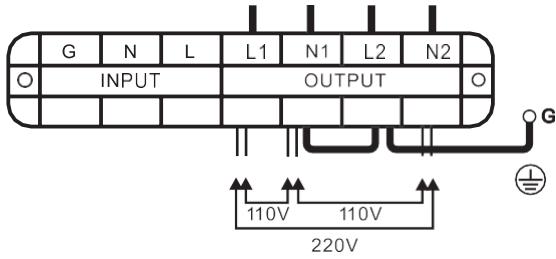


Fig 3. 6K/10K單相輸入,單相三線 220V/110V輸出

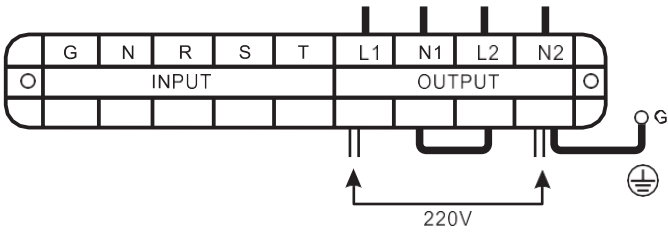


Fig 4. 10K三相輸入,單相二線 220V輸出

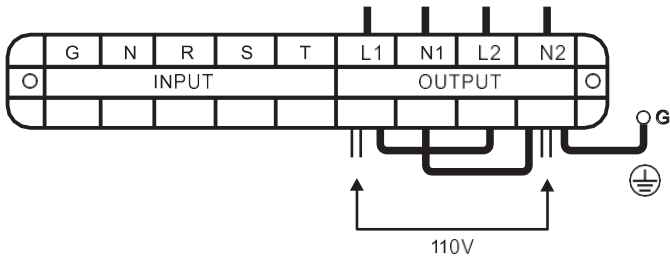


Fig 5. 10K三相輸入,單相二線 110V輸出

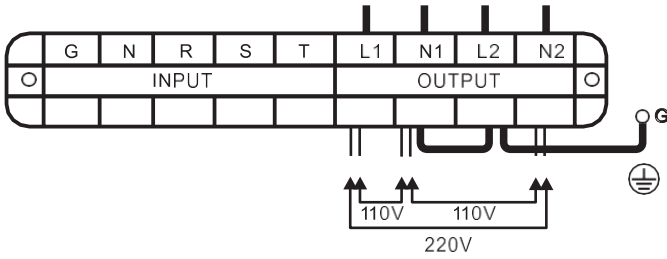


Fig 6. 10K三相輸入,單相三線 220V/110V輸出

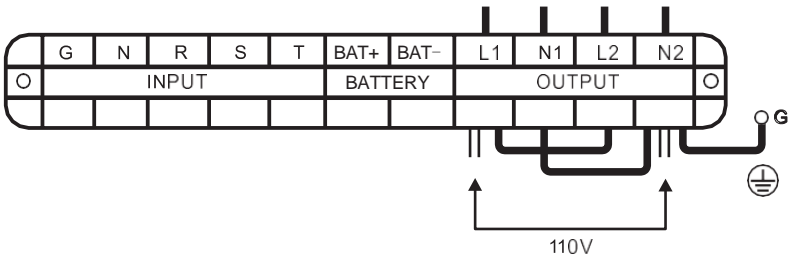


Fig 7. 20K三相輸入,單相二線 110V輸出

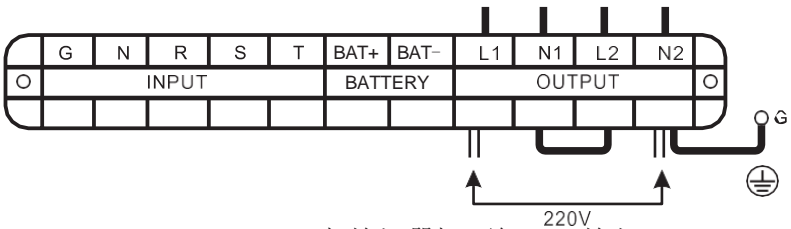


Fig 8. 20K三相輸入,單相二線 220V輸出

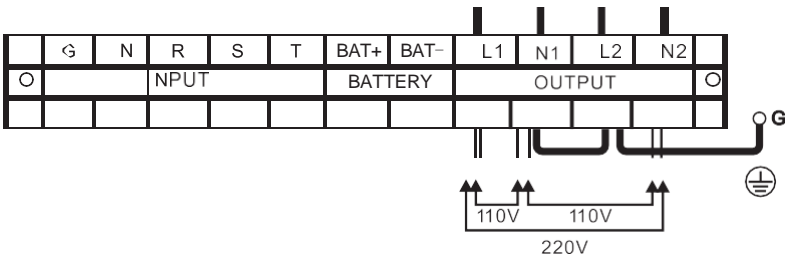


Fig 9. 20K三相輸入,單相三線 220V/110V輸出



## 2.4 外接電池箱的安裝

電池箱連接UPS的步驟

1. 確保UPS輸入輸出端子上均不帶電；
2. 關閉電池箱上的電池開關；
3. 將對應的電池線插入UPS對應端子上；
4. 用電表（直流電壓檔）量測正負電池的電壓以及判斷電池正負是否連接正確。

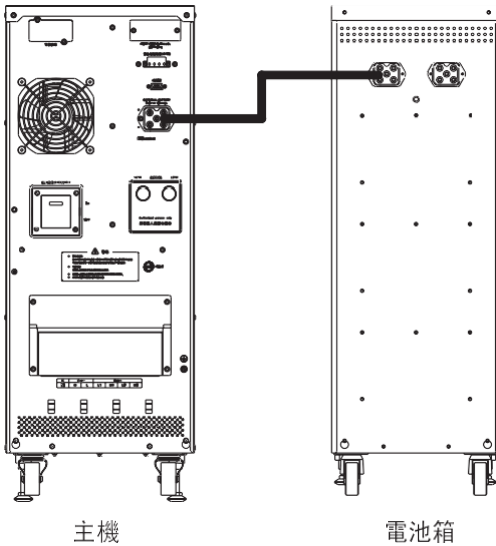
注：非專業人士請勿操作，否則有電擊危險

主機與電池箱搭配

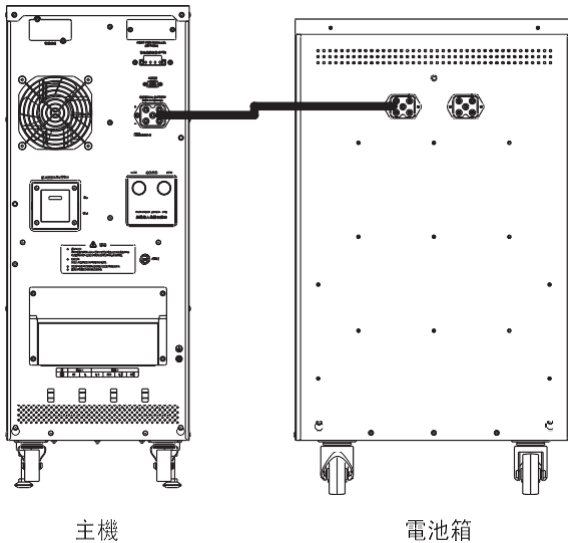
主機	電池箱
C-6000FC C-6000FCL	12V,7AH, 20節兩組
	12V,26AH, 20節單組
	12V,40AH, 20節單組
C-6000F C-6000FL	12V,7AH, 16節兩組
	12V,26AH, 16節單組
	12V,40AH, 16節單組
C-10000F/ C-10000FL C-10000FC/C-10000FCL 3C-10000F/3C-10000FL	12V,7AH, 20節兩組
	12V,26AH, 20節單組
	12V,40AH, 20節單組
3C-20000FL	12V,26AH, 20節單組
	12V,40AH, 20節單組

外接電池之安裝:UPS 主機之外接電池介面位於後蓋板之電池插座上，其安裝分為標準機與長效機兩種，如下所示。

A. 標準機外接一台電池箱 (12V, 7AH 電池 20 顆兩組④聯)



B. 長效機外接一台電池箱 (12V, 26AH 電池 20 顆一組)



## 2.5 連接到電腦介面

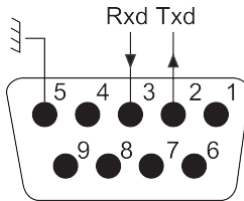
電腦介面：標準的RS232介面，用RS232通訊電纜連線UPS與監控設備。

1. 將RS232通訊電纜連線到電腦的串列口。
2. 將RS232通訊線連接到UPS的電腦介面。

RS232 介面的資料形式設定為：

鮑率： 2400bps  
字元長度： 8bit  
結束碼： 1bit  
同位元： None

UPS 上電腦介面(DB-9)腳位說明如下：



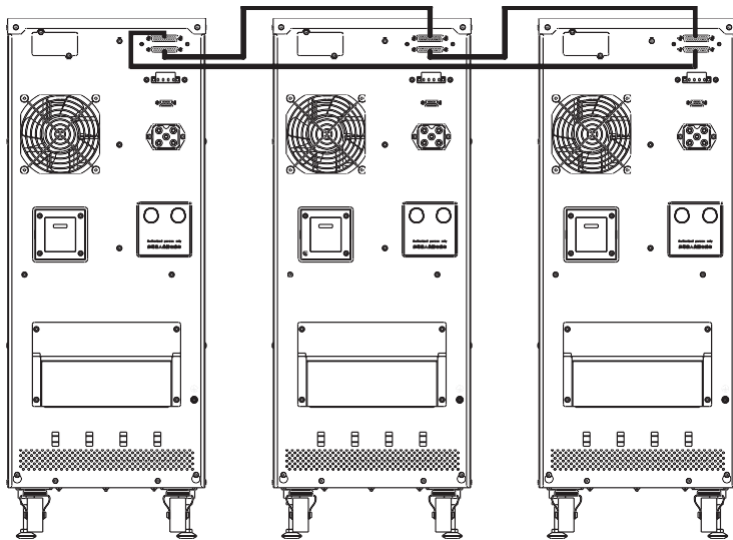
Pin #	功能說明	I/O
2	RS232 Tx	output
3	RS232 Rx	input
5	GND	output

## 2.6 並機卡（選件）

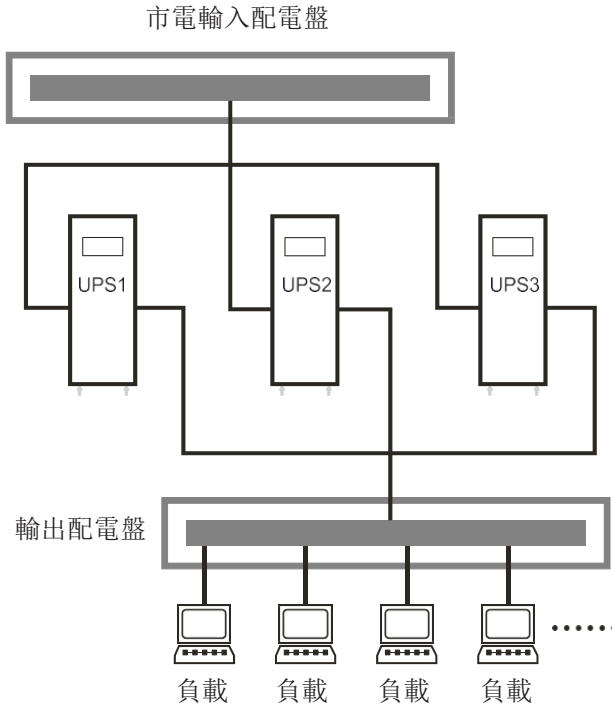
1. 冗餘簡介: N+X 是目前最可靠的供電結構, N 代表總負載所需的最少 UPS 數, X 代表的是冗餘的 UPS 數, 也就是系統可以同時承受的故障 UPS 數。當 X 越大, 系統的可靠度就會越高。對於講究極高可靠度的使用場合, N+X 是最佳方式。只需加裝 4 機線, 即可進行最多 3 台 UPS 4 聯, 來實現功率冗餘 (N+X)。

2. 4 機安裝: 4 機功能是 UPS 的選裝功能, 用戶自行購買 4 機功能部件 (含 4 機線和 4 機卡) 後, 由客服人員為用戶安裝至機器上, 4 機數量最多是三台, 4 機 UPS 必須獨立配置電池。

(A). 拿掉 4 機蓋板, 安裝 4 機線: 4 機卡是 4 機 UPS 間的通訊介面, 通過 4 機卡, 用 4 機線將 UPS 依次相連。



(B). 所有④機的輸出線接至一輸出接線盤，然後由輸出接線盤配線去負載。



注意：輸出配線長度要求：

當負載至④機使用的每台UPS間的距離小於20米時，要求各線長差距小於20%。

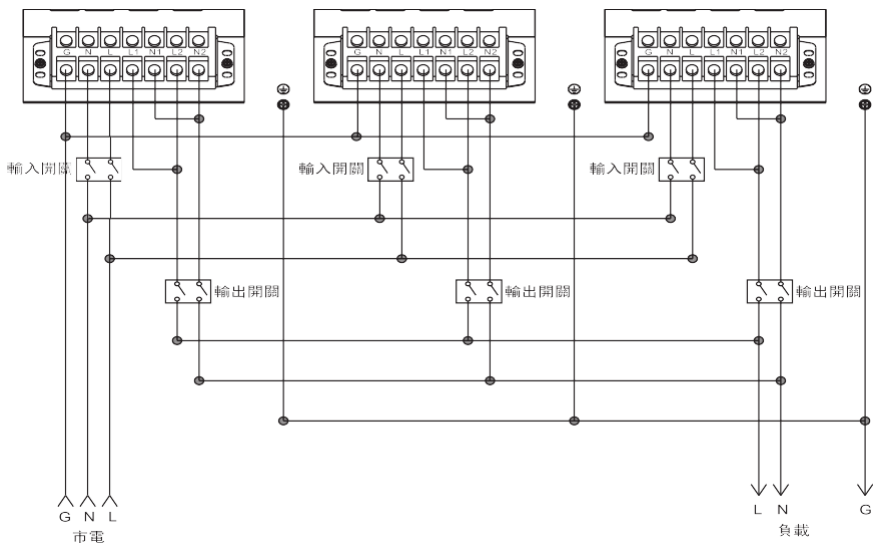
當負載至④機使用的每台UPS間的距離大於20米時，要求各線長差距小於10%。

(C). ④機UPS端子排輸入輸出部分的④機示意圖如下，每台UPS輸入輸出之配線請遵循單機之配線要求。

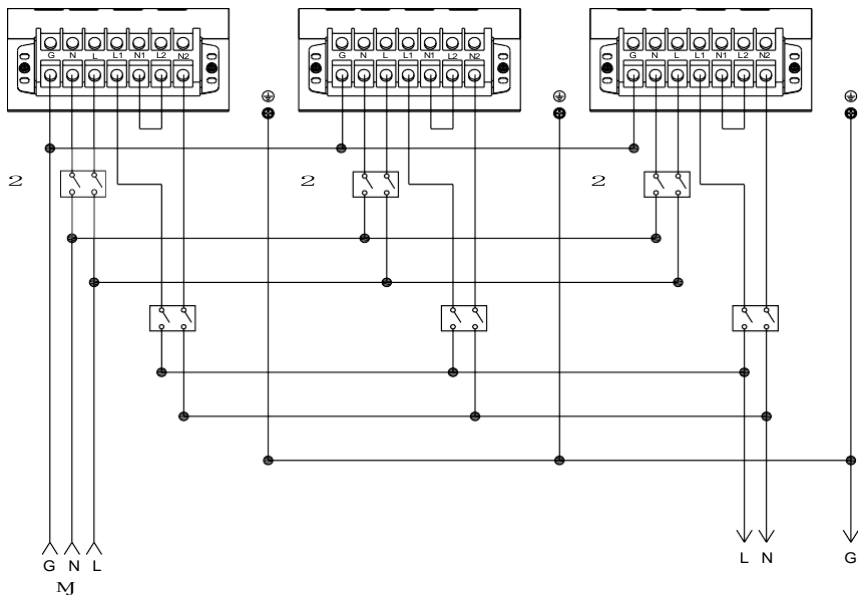
(D). ④機的每台UPS需單獨配備電池。

(E).C-6000 FC、C-6000 FCL、C-6000 F、C-6000 FL、C-10000 FC、C-10000FCL、C-10000F和C-10000FL<sup>④</sup>機配線方式：

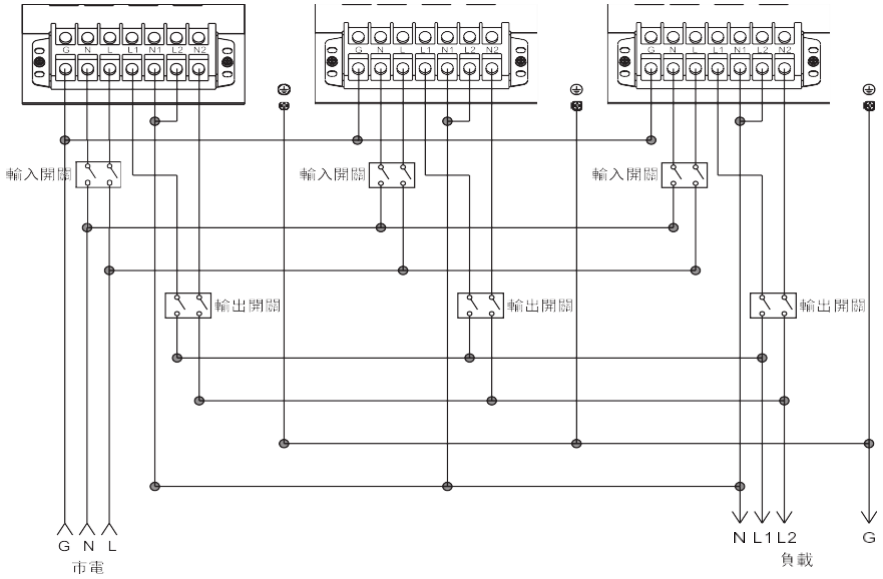
(1). 輸出單相二線:110V



(2). 輸出單相二線:220V

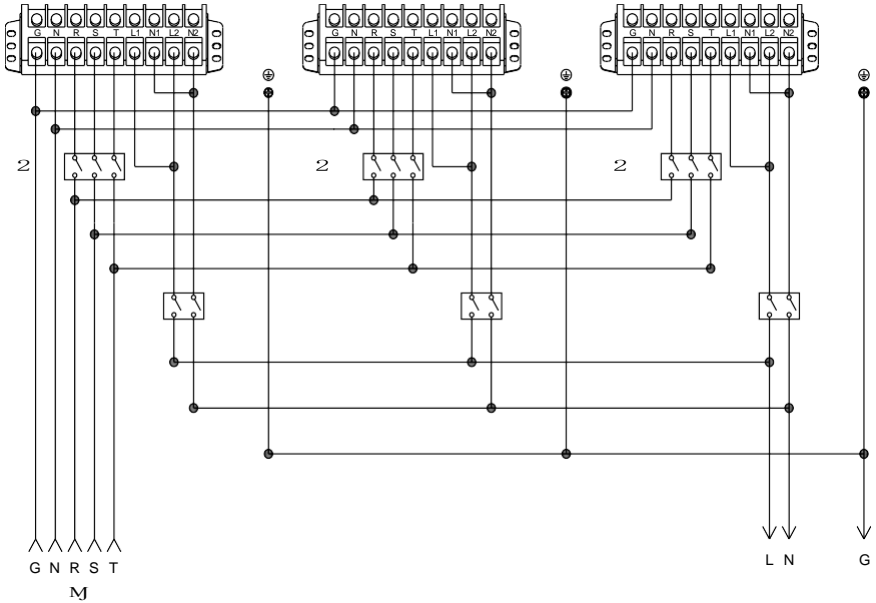


(3). 輸出單相三線:220V/110V

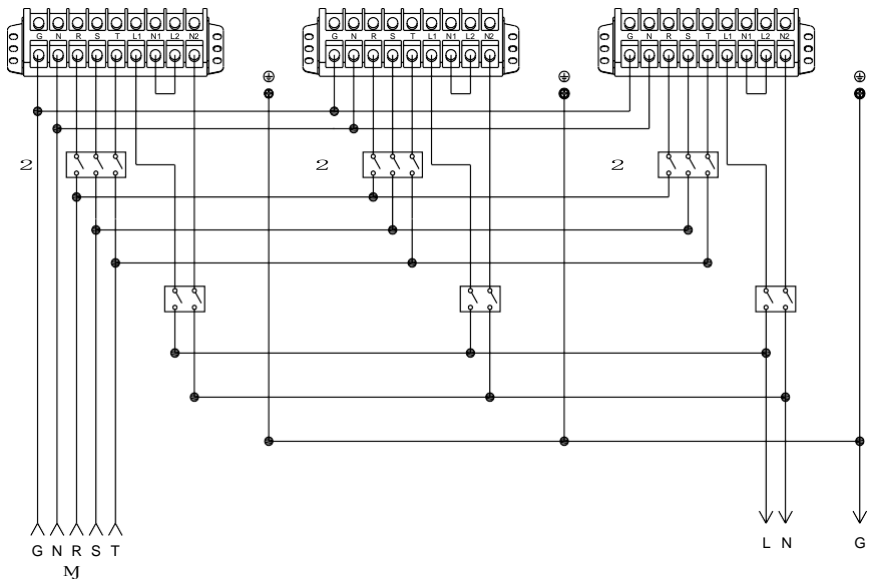


(F).3C-10000F、3C-10000FL④機配線方式：

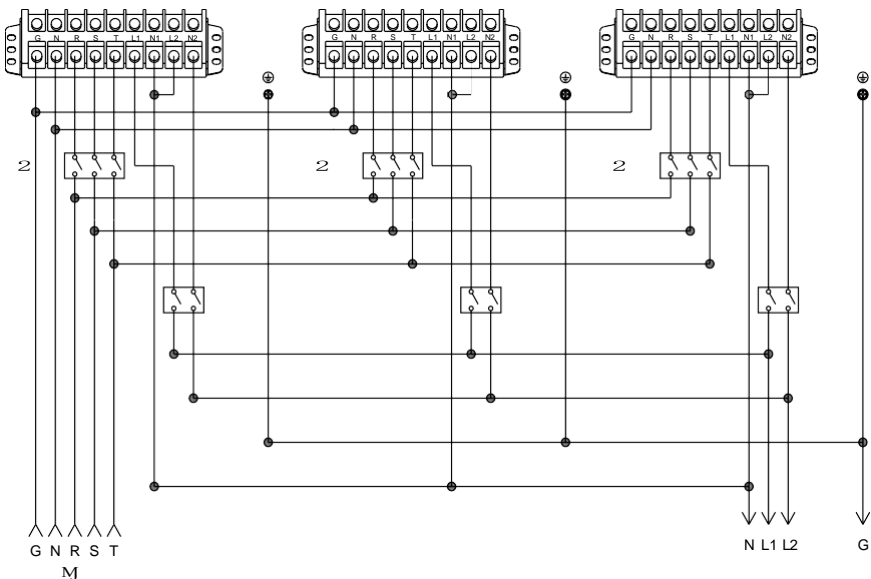
(1). 輸出單相二線:110V



(2). 輸出單相二線:220V



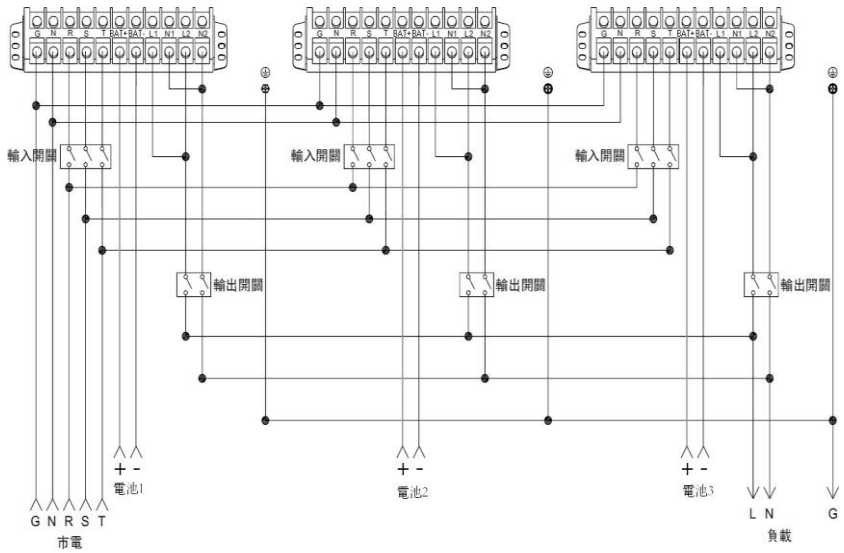
(3). 輸出單相三線:220V/110V



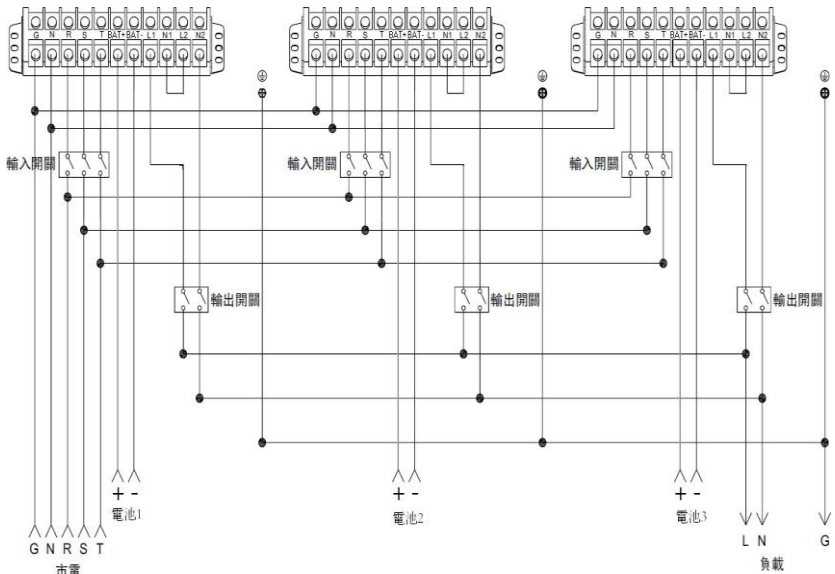


(G).3C-20000FL④機配線方式：

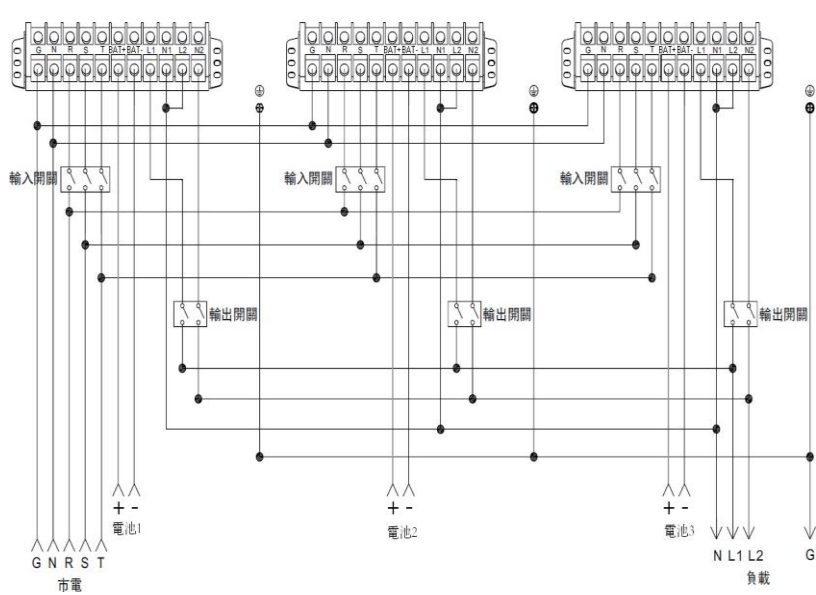
(1). 輸出單相二線:110V



(2). 輸出單相二線:220V



(3). 輸出單相三線:220V/110V



3. UPS ④機優點介紹（主動冗餘式）：這種方式通過冗餘結構提高了供電系統的可靠性。兩台UPS容量相同④平均分配負載，當其中任意一台故障時，另外一台 UPS 可獨立承擔整個負載的運行。因此稱作 1/2 冗餘。故障UPS可進行隔離維修，每台UPS均裝有手動旁路維護開關。

#### 4. 操作說明

1) 一般操作必須遵循單機之操作要求。

2) ④機開機：

市電開機：送市電後，在其中任一台機器 LCD 面板上選擇“開機”，其它機器將同時開機，然後同時跳到逆變狀態。

電池開機：先短按每台 UPS 開機鍵，機器建立工作電源，然後只需在其中任一台機器 LCD 面板上選擇“開機”，其它機器將同時開機，所有機器將工作在電池模式下。

3) ④機關機：在其中任一台機器 LCD 面板上選擇“④機關機”，實現④機關機；在其中任一台機器 LCD 面板上選擇“單機關機”，實現單機關機。

注意：短按小於 0.5 秒。

## 2.7 智慧卡的安裝

智慧卡安裝位置位於機器後蓋板的智慧插槽，安裝智慧卡的過程中不需要停止UPS。

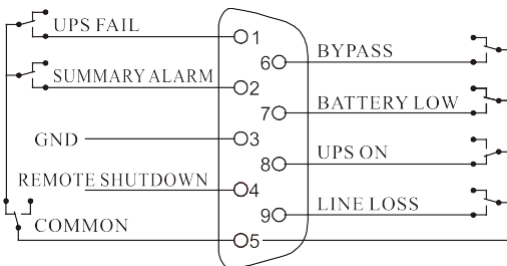
### I. SNMP卡（選配）

位於UPS後面板上的智慧插槽，提供SNMP允許的資料。

### II. AS400卡(選配)

只需在智慧卡插槽處安裝AS400卡，即可實現利用AS400系統的UPS監控功能，作為電源的監控管理。腳位說明如下：

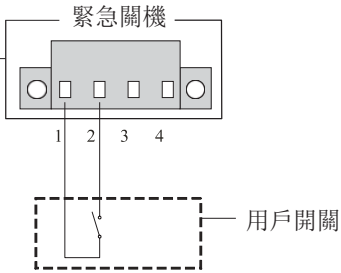
引腳	含義
PIN1	導通：UPS 故障
PIN2	導通：警示聲響
PIN3	接地(Ground)
PIN4	遠程關機
PIN5	公共端 不導通：UPS 工作
PIN6	導通：旁路動作
PIN7	導通：電池電壓低
PIN8	導通：UPS 工作 不導通：旁路工作
PIN9	導通：市電停電



## 2.8 EPO

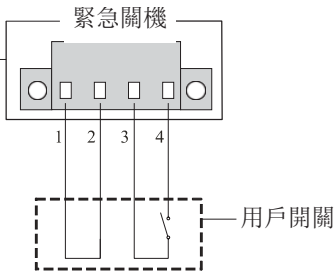
EPO (Emergent Power Off) 即緊急關機功能，EPO位於UPS單元後面板，呈綠色端子，通過EPO可以在緊急情況下關斷UPS電源，關閉UPS。具體使用接線方法有兩種：

①、



1-2閉合時，UPS執行緊急關機。  
3-4開置。

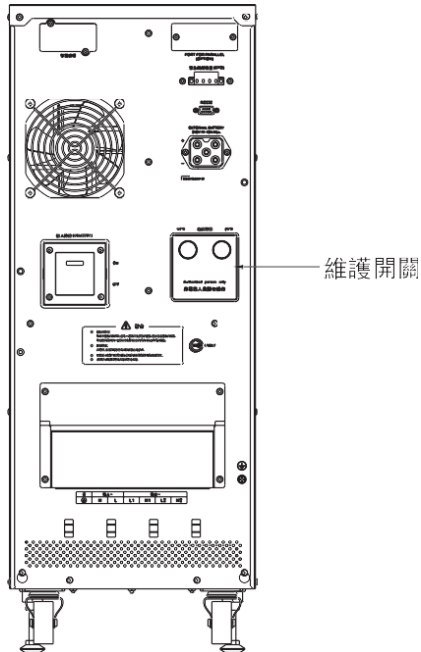
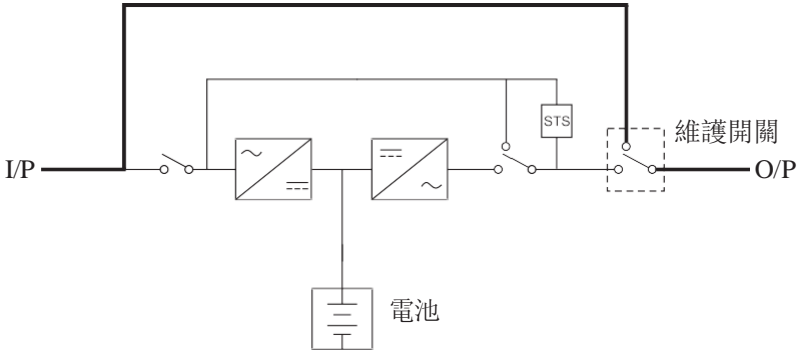
②、



1-2用短線連接，使其一直處於連接狀態。  
3-4打開時，UPS執行緊急關機。

## 2.9 維護開關

維護開關實現 UPS 的在線維護。如下圖所示，不論是市電、電池、旁路模式，UPS 內部主要部分都帶電，通過維護開關可以將 UPS 和市電隔離開來，UPS 的在線維護的安全性得到了保障。



## 2.10 防塵網(選件)

增加防塵網可以避免大量灰塵進入 UPS，更全面的保護機器，在高灰塵、高煙霧地區使用 UPS 防塵網的安裝是非常必要的，可起到很好的防塵效果。防塵網安裝在前面板內側。有加防塵網時，其過溫保護點會往下降10度，且必須透過LCD 或者串口將防塵網功能始能。

### 3、LCD操作

#### 3.1 控制面板



適用機型：

C-6000FC：內置電池的LCD標準機型。

C-6000FCL：可外接電池的LCD長延時機型。

C-10000FC：內置電池的LCD標準機型。

C-10000FCL：可外接電池的LCD長延時機型。

LED指示燈	顏色	說明
正常	綠色	市電經逆變器傳到負載時，此燈會亮
電池	黃色	市電異常時UPS由電池供電，此燈會亮
旁路	黃色	市電經旁路直接供給負載時，此燈會亮
故障	紅色	UPS發生異常狀況，此燈會常亮或閃爍，同時會發出連續或間歇的警報聲

注：LED 指示燈與UPS 狀態對應的詳細資訊可參考第五章。

按鍵名	說明	實現方法
↑	向上	在同一目錄下進行數據切換
↓	向下	在同一目錄下進行數據切換
↶	確認	進入下階目錄
ESC	退出	返回到上一階目錄



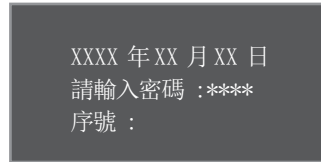
### 3.2 開機操作

開機之前，請確認接線與端子排之間接觸牢靠，否則會有電擊危險。

1. 輸入開關 ON，UPS 進行自檢



2. 約 1S 後自動顯示以下界面，根據日期與序號聯繫客服取得密碼



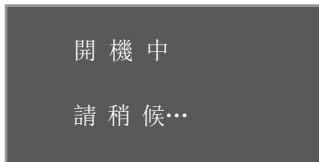
3. 輸入密碼成功後進入開機操作界面



4. 按下確認鍵進行開機



5. 開機進行中



6. 開機成功後進入關機操作界面



### 3.3 關機操作

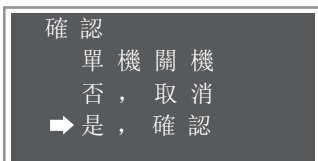
1. 進入關機界面實施關機操作



2. 自檢功能使能狀態下關機界面



3. UPS 設置為單機模式時（默認模式），在單機關機位置按下確認 鍵，選擇 確認後本機關機，LCD 進入狀態界面



並機模式下，分單機關機與並機關機兩種方式。

5. UPS 設置為**④**機模式時，在關機位置按下確認鍵。



6. 在單機關機位置按下確認鍵，選擇確認後本機關機，LCD 進入狀態界面



7. 在**④**機關機位置按下確認鍵，選擇確認後，系統關機，LCD 進入狀態界面



## ECO 模式關機

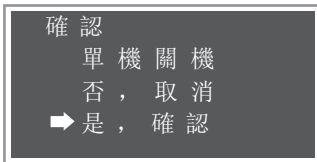
1. 主操作界面（自檢功能關閉）



2. 在關機位置按下確認鍵



3. 在單機關機位置按下確認鍵，選擇確認後本機關機，LCD 進入狀態界面



4. 在 ECO 使能取消位置按下確認鍵，選擇確認後，系統切換到市電模式，不再自動進入 ECO 模式，LCD 進入狀態界面。



### 3.4 功能表命令

正常開機後，按“ESC 鍵”或 1 分鐘內沒有任何鍵被按下則進入狀態界面，再按下翻鍵可以看到以下參數的畫面

1. 進入狀態界面 1，主要顯示負載、輸入電壓和狀態資訊

負載 :100%  
輸入電壓: 220.0V  
電池電壓: 260V  
狀態 :旁路供電

2. 再按“下翻鍵”可以看到以下輸出參數界面

輸出參數  
電壓 : 220.5V  
電流 : 45.5A  
頻率 : 60.0Hz

注：在狀態一欄，每隔 1S 依次顯示UPS 的供電狀態、故障資訊和告警資訊。

3. 再按“下翻鍵”可以看到輸入參數界面

輸入參數  
電壓 : 220.5V  
頻率 : 60.0Hz

4. 再按“下翻鍵”可以看到旁路參數界面

旁路參數  
電壓: 220.5V  
頻率: 60.0Hz

5. 再按“下翻鍵”可以看到功率參數界面

輸出功率參數  
KW : 000.0  
KVA : 000.0  
功因: 0.00

6. 再按“下翻鍵”可以看到電池參數界面

電池參數  
電池電壓: 260.0V  
電池容量: 95%  
後備時間: 0S

7. 再按“下翻鍵”可以看到其它參數，包含型號和版本

其它參數  
型號: C6000FC  
版本: 3.0

注：若再按下翻鍵則會跳轉到狀態界面 1；以上按下翻的操作若換成按上翻鍵，同樣能查看以上 7 個狀態界面，只是頁面顯示的順序會倒轉過來。

### 3.5 設定

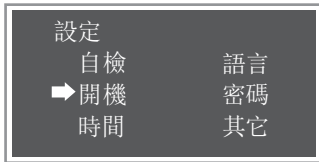
1. 在開機畫面按下翻鍵，進入設定畫面



2. 按下確認鍵輸入密碼後方可設定，用戶密碼初始值：1234



3. 輸入正確的使用者密碼，進入以下界面

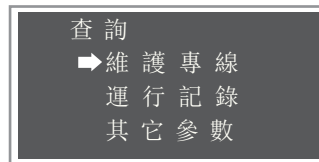


### 3.6 查詢

1. 在開機畫面按下翻鍵，進入查詢界面



2. 在查詢界面下，客戶可查詢到本公司的服務熱線、異常資訊和逆變器溫度



### 3.7 自檢

1. 自檢使能中，UPS 處於市電模式或變頻模式且沒有出現電池電壓低的現象



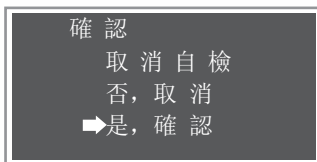
2. 客戶可指定時間自檢或按系統定義 10S 的自檢時間



### 3. 按下確認鍵



### 4. 若 UPS 正在自檢, 則顯示



### 5. 自檢成功後轉至狀態界面



### 6. 若自檢失敗, 則顯示

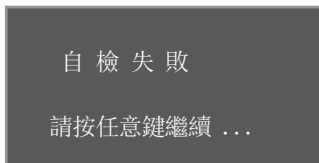


圖	子功能表列表	說明
<p>查 詢 ➡維 護 專 線 運 行 記 錄 其 它 參 數</p>	維護專線	查詢本公司服務熱線電話
	運行記錄	1. 目前異常; 2. 歷史記錄; 3. 清除記錄
	其它參數	查詢逆變器的溫度
<p>設 定 ➡自 檢 語 言 開 機 密 碼 時 間 其 它</p>	自檢	1. 恢復出廠設置; 2. 自檢時間可以設置為 1-99 任意值, 預設值為 1 分鐘; 3. 自檢功能出廠值為開啟 .
	開機	自動開機
	時間	UPS 修正時間的更改
<p>密 碼 其 它 消 音 ECO 模 式</p>	語言	中 / 英文介面的切換
	密碼	使用者密碼的更改
	其它	1. 消音; 2.ECO 模式; 3. 變頻模式; 4. 頻率跟蹤速率; 5. 序列 6. 其它
<p>其 它 設 定 ➡ECO 模 式 消 音 變 頻 模 式 序 列 鎖 相 速 率 其 它</p>	消音	消除 UPS 告警聲
	ECO 模式	只適用於單機
	變頻模式	變頻模式與 ECO 模式兩者中只能有一種模式
<p>鎖 相 速 率 序 列 其 它</p>	鎖相速率	鎖相 slewRate
	序列	設定機器序號
	其它	設定客戶服務熱線

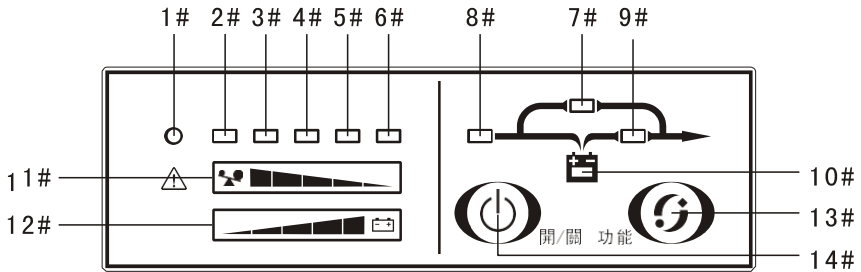
說明：以上子功能表列表和設置僅供參考，如有變更恕不另行通知。

### 3.8 面板燈號顯示與工作狀態對應表

序號	工作狀態	面板燈號顯示				告警聲	面板顯示內容
		逆變 LED	電池 LED	旁路 LED	故障 LED		
1 市電逆變模式							
	市電常壓	●				無	
	告警④	●			★	一秒一鳴	電池未接 / 充電器異常 / 風扇異常 / LN 反接或 E 未接 / 旁路異常
	電池過充①		●		★	一秒一鳴	電池過充
2 旁路模式							
	正常			●	★	兩分一鳴	
	告警				★	四分一鳴	市電異常
	告警⑤			●	★	一秒一鳴	電池未接 / 充電器異常 / 風扇異常 / 電池過充 / LN 反接或 E 未接
	過載②			●	★	一秒兩鳴	輸出過載
3 電池模式							
	正常	●	●		★	四秒一鳴	
	告警	●	●		★	一秒一鳴	風扇異常 / LN 反接或 E 未接
	告警	●	★		★	一秒一鳴	電池電壓低
	過載③	●	●		★	一秒兩鳴	輸出過載
4 電池自檢模式							
	正常	★	★	★	★	無	無
5 故障模式							
	有旁路輸出			●	●	長鳴	故障類型和告警資訊
	無旁路輸出				●	長鳴	
6 待機模式							
	正常					無	
	告警⑥				★	一秒一鳴	旁路異常 / 市電異常 / 中線丟失 / Eeprom 錯誤 / 開機失敗 / ④機錯誤 / 位址錯誤 / 位址重複
備註:							
①當市電模式下的電池過充時，UPS 會自動關閉充電器且告警，當故障超過 5 秒時，蜂鳴器會長鳴；							
②當旁路模式下的過載處於保護動作時，旁路LED 不亮，故障LED 持續亮，④伴有長鳴聲；							
③當電池模式下的過載處於保護動作時，故障 LED 持續亮，④伴有長鳴聲；							
④當市電模式下出現此類告警時，逆變燈亮，故障 LED 閃爍，④伴有一秒一鳴聲；							
⑤當旁路模式下出現此類告警時，故障 LED 閃爍，④伴有一秒一鳴聲；							
⑥當待機模式下出現此類告警時，故障 LED 閃爍，④伴有一秒一鳴聲；							
⑦●：表示持續亮。★：表示閃爍。							

## 4、LED操作

### 4.1 控制面板



適用機型：

C-6000F：內置電池的LED標準機型。

C-6000FL：可外接電池的LED長延時機型。

C-10000F：內置電池的LED標準機型。

C-10000FL：可外接電池的LED長延時機型。

3C-10000F：三相輸入單相輸出，內置電池的LED標準機型。

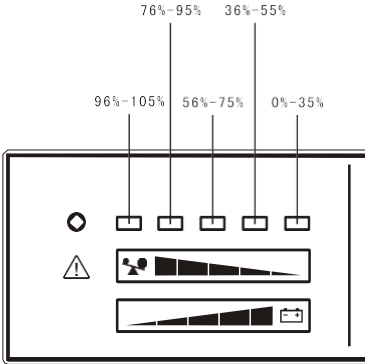
3C-10000FL：三相輸入單相輸出，可外接電池的LED長延時機型。

3C-20000FL：三相輸入單相輸出，可外接電池的LED長延時機型。

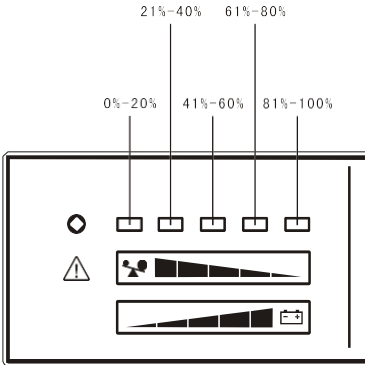
1#~10# LED 指示燈：		
1#	故障指示燈	UPS出現告警或者故障時亮，呈紅色。
2#~6#	負載電池容量指示燈	表示負載容量或電池容量，在市電模式下僅表示負載容量，在電池模式下僅表示電池容量。
7#	旁路指示燈	UPS經旁路為負載供電，旁路指示燈亮，呈橙色。
8#	市電指示燈	UPS接通市電後，市電指示燈亮，呈綠色。
9#	逆變指示燈	市電進入UPS後經逆變處理後為負載供電，逆變指示燈亮，呈綠色。
10#	電池指示燈	市電異常，由電池為負載供電，電池指示燈亮，呈橙色。

11#~12# 負載電池容量指示圖：

11# 負載容量指示圖示，從右到左對應6#→2#指示燈點亮個數增多，負載容量遞增。



12# 電池容量指示圖示，從左到右對應2#→6#指示燈點亮個數增多，電池容量遞增。



按鍵：

13# 功能鍵：靜音（旁路和電池模式下長按2秒以上，10秒以下，消除旁路和電池模式告警聲；市電、旁路、電池、Stanby和Inverter模式下長按10秒以上，消除所有告警聲；重複操作可取消靜音）；電池自檢（市電模式下長按2秒以上，10秒以下）。

14# 開關機：控制UPS的開啟和關斷。



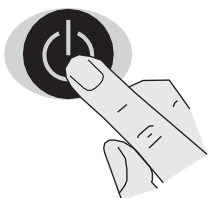
## 4.2 開機操作

注意：雖然電池在出廠時已充滿電，但經過運輸、存儲，電量會有所損失，建議在第一次使用UPS 前應先對電池充電12小時以上，已保證有足夠的備用時間。

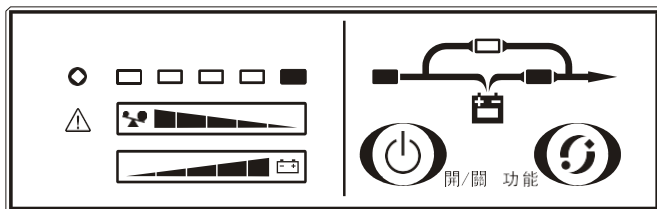
指示燈狀態說明：■亮，□不亮。

### 市電開機

- 長按開機鍵1秒以上，UPS 執行開機。開機時UPS會進行自檢，此時面板上的負載/電池容量指示燈全亮，再從右到左逐一熄滅。



- UPS自檢結束後進入正常工作，指示燈處於如下狀態。



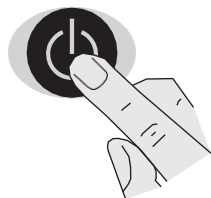
(市電逆變工作模式)

**⚠ 注意：**如果市電異常UPS將工作在電池模式下。

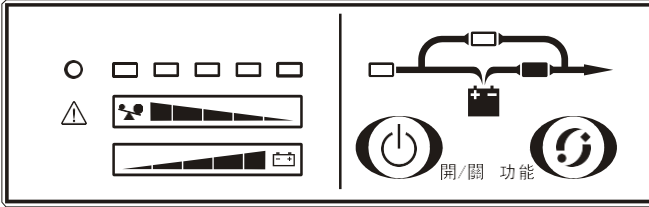
- 負載由UPS供電。

### 無市電直流開機

- 長按開機鍵1秒以上，UPS執行開機，開機過程中的UPS動作與市電下開機相同。



- 開機後電池指示燈亮，市電指示燈滅，UPS所接負載電力由電池提供。

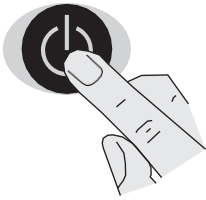


(電池工作模式)

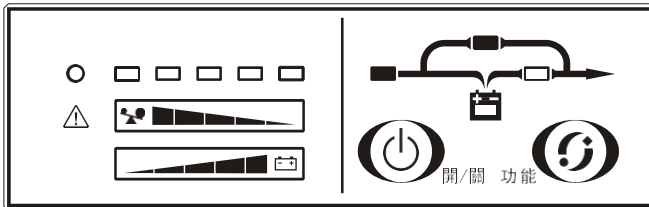
- 電池工作模式下，蜂鳴器4秒1叫，提示用戶UPS工作在電池模式下，靜音請按功能鍵2秒以上。

### 4.3 關機操作

- 長按關機鍵1秒以上，UPS 執行關機。



- 關機後，UPS 仍有旁路輸出，指示燈處於如下狀態。



(旁路工作模式)

- UPS工作在旁路下，旁路指示燈亮，蜂鳴器2分鐘叫1次，靜音請按功能鍵2秒以上。
- 要使UPS無輸出，請將市電斷開。

## 4.4 維護

如果故障指示燈亮，蜂鳴器鳴叫，說明有運行異常或報警。

故障	原因	解決辦法
1# 故障指示燈與6# 燈亮，蜂鳴器長鳴	UPS因內部過熱而告警	確保UPS未過載，通風口沒有堵塞，室內溫度未過高。等待10分鐘後讓UPS冷卻，然後重新啟動，如失敗，請同您的供應商聯繫
1# 故障指示燈與2#、5# 燈亮，蜂鳴器長鳴	UPS輸出短路	關閉UPS，去掉所有負載，確認負載沒有故障。重新開機，如失敗，請同您的供應商聯繫
1# 故障指示燈與4# 燈亮，UPS長鳴	UPS因內部故障告警	請同您的供應商聯繫
1# 故障指示燈與5# 燈亮，UPS長鳴	UPS因內部故障告警	請同您的供應商聯繫
市電指示燈閃爍	市電電壓或頻率超出UPS輸入範圍	此時UPS正工作於電池模式，保存數據④ 關閉應用程序，確保市電處於UPS所允許的輸入電壓或頻率範圍
1# 故障指示燈與2# 燈亮，UPS長鳴	UPS過載或負載設備故障	檢查負載水平④移去非關鍵性設備，重新計算負載功率④減少連接到UPS的負載數量 檢查負載設備有否故障
1# 故障燈亮，電池燈閃爍，蜂鳴器一秒一叫	UPS充電部分故障	請與供應商聯繫維修
電池燈閃爍	電池電壓太低	檢查UPS電池部分，若電池損壞，速更換電池或確認電池開關是否至於“ON”狀態
市電正常，UPS不入市電	輸入開關置於“OFF”狀態	將輸入開關置於“ON”狀態
電池放電時間短	電池充電不足	保持UPS持續連通市電十小時以上，讓電池重新充電
	UPS過載	檢查負載水平④移去非關鍵性設備
	電池老化，容量下降	更換電池，請同供應商聯繫，以獲得電池及其元件
開機鍵按下後，UPS不能啟動	按開機鍵時間太短	按開機鍵持續一秒以上，啟動UPS
	UPS沒有接電池或電池電壓低④帶載開機	連接好UPS電池，若電池電壓低，先行充電後再開機
	UPS內部發生故障	請與供應商聯繫維修

#### 4.5 面板燈號顯示與工作狀態對應表

序號	工作狀態	面板燈號顯示										告警聲
		1#	2#	3#	4#	5#	6#	7#	8#	9#	10#	
1	市電工作模式	0~35%負載量					●		●	●		無
2		36%~55%負載量				●	●		●	●		無
3		56%~75%負載量			●	●	●		●	●		無
4		76%~95%負載量		●	●	●	●		●	●		無
5		96%~105%負載量	●	●	●	●	●		●	●		無
6	電池工作模式	0~20%電池容量	●						●	●		1秒1叫
7		21%~40%電池容量	●	●					●	●		4秒1叫
8		41%~60%電池容量	●	●	●				●	●		4秒1叫
9		61%~80%電池容量	●	●	●	●			●	●		4秒1叫
10		81%~100%電池容量	●	●	●	●	●		●	●		4秒1叫
11	旁路工作模式		↑	↑	↑	↑	●	●	●			2分鐘叫
12	過載報警		●	●	●	●	●	●	●			1秒2叫
13	市電模式過載，未轉旁路		●	●	●	●	●		●	●		1秒2叫
14	市電模式過載，轉旁路		●	●	●	●	●	●	●			1秒2叫
15	市電異常		↑	↑	↑	↑	↑	↑	★	↑	↑	無
16	旁路異常		↑	↑	↑	↑	↑	★	↑	↑	↑	4秒1叫
17	電池模式過載，預警中		●	↑	↑	↑	↑			●	●	1秒2叫
18	電池模式過載，關斷輸出	●	●						↑			長鳴
19	過溫	●					●	↑	↑			長鳴
20	逆變異常	●				●		↑	↑			長鳴
21	輸出短路	●	●			●		↑	↑		↑	長鳴
22	BUS電壓異常	●			●	●		↑	↑			長鳴
23	BUS短路	●			●	●						長鳴
24	充電器或電池損壞	●									★	1秒1叫
25	風扇異常	●	●				●	↑	↑	↑	↑	1秒1叫
26	④機工作異常	●	●	●			●	↑	↑			長鳴
27	ID重複	●	●		●			↑				長鳴
28	電池未接	↑	↑	↑	↑	↑	●				★	1秒2叫 共叫6次
29	電池電壓低	↑	↑	↑	↑	↑	↑	↑	↑	↑	★	1秒1叫
30	電池過充告警	●		●				↑	↑			長鳴
31	L,N反接		↑	↑	↑	↑	↑	↑	★	↑	↑	2分鐘1叫
32	電池故障	●		●	●			↑	↑			長鳴
33	EPO觸發	↑	↑	↑	↑	↑	↑	★	★	★	★	1秒1叫
34	電池自檢測模式	↑	↑	↑	↑	↑	↑	燈循環亮				

35	UPS機型非法	●		●	●	●	●	↑	↑				長鳴
36	變頻模式	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑		1分鐘1叫
37	不滿足開機條件	●		●			●						1秒2叫 共叫3次
38	電池維護時間到		↑	↑	↑	↑	↑	↑	↑	↑	★		1秒1叫
39	ECO模式	↑	↑	↑	↑	↑	↑	★	●				1分鐘1叫
40	Eeprom讀寫錯誤	●	●		●	●		↑	↑				1秒1叫 共叫3次
41	整流器故障 (PFC故障)	●			●	●		↑	↑				長鳴
42	負功故障	●	●	●	●			↑	↑				長鳴
43	不均流故障	●		●	●		●	↑	↑				長鳴
44	工作電源異常	●	●		●	●	●	↑	↑				長鳴
45	逆變RLY粘死	●			●		●	↑	↑				長鳴
46	市電輸入SCR故障	●			●	●	●	↑	↑				長鳴
47	保險絲斷開	●		●		●		↑	↑				長鳴
48	電池過充故障	●		●	●								長鳴
49	頻繁過流故障	●		●		●	●						長鳴
50	NTC異常	●					●						長鳴
51	通訊線未接	●	●	●			●						長鳴
52	CAN 通訊線故障	●	●	●			●						長鳴
53	同步信號線故障	●	●	●			●						長鳴
54	三相輸入中線丟失	↑	↑	↑	↑	↑	↑	★	★	↑	↑		4秒1叫

燈號顯示說明：

●：表示持續亮    ★：表示閃爍    ↑：表示燈號顯示或告警聲取決於其他狀態

## 5、電池維護與保養

電池是 UPS 系統的核心組成部分。電池的使用壽命取決於環境溫度和放電次數。高溫下使用或深度放電都會縮短電池的使用壽命。

1. 電池為密封式免維護鉛酸蓄電池，上電前，請確認已正確接地，④檢查接線和電池極性的連接正確。
2. 電池環境溫度應保持在 15-25℃之間。
3. 若 UPS 長期不使用，建議每隔 3 個月充電一次。
4. 電池更換時應遵守電池供應商的指示，遵循數量一致，型號一致的原則，若客戶未經伊頓飛瑞確認而擅自使用其它廠牌型號之電池，客戶須自行負責。
5. 正常情況下，電池使用壽命為 3 到 5 年，如果發現狀況不佳，則必須提早更換，電池的更換必須由專業人員操作。
6. 我公司已經為您配備了常規條件下的電池容量，如需額外配備，請諮詢當地經銷商或客服。

## 附錄一. 一年服務保證

1. 憑本保固卡，於正常環境使用情況下，因不良原物料或加工而導致之故障，本公司將自購買日起算一年內提供免費維修服務。
2. 購買時請向本公司授權之經銷商(“授權經銷商”)索取本保固卡④請經銷商確實填寫購買日期、產品機號以及加蓋經銷商店章，以享有本公司之免費維修服務。
3. 於免費維修服務期間如因下列狀況，本公司無義務提供維修服務，但本公司得選擇酌收材料以及工本費後提供付費維修服務。
  - 電池等消耗零件。
  - 因運輸、移動、摔落所造成之故障及損壞。
  - 因不可抗拒之天災人禍所導致之損害。
  - 誤用、濫用、蓄意破壞、現場環境不良、未依規定使用電源電壓或供電錯誤所導致之損壞。
  - 非本公司維修人員，自行對產品加以拆修，改裝或附加其它配件因而造成之損壞，且本公司有權拒絕維修。
  - 產品機號被移除或者外觀銷毀。
  - 未出示本保固卡、或遺失保固卡、或保固卡未有本公司授權經銷商之蓋章者。
  - 本產品非在台灣地區。
4. 本產品發生故障時，請以電話或書面通知本公司，本公司將派員至產品所在地進行維修服務。
5. 本保固卡僅負責本產品之維修，其他所產生之費用（包括但不限於電話費、來回運送之運費、稅金、關稅或其他可能產生的相關稅負）由購買者自行負擔。本產品運送過程中之風險亦由購買者負擔。
6. 本公司所更換之零件或本產品之所有權屬於本公司所有。
7. 超過免費服務期限者，仍可憑本保固卡享受本公司完善售後服務，但本公司得酌收材料以及工本費。
8. 請妥善保存本保固卡，若不慎遺失、或未能出示者，則以產品出廠日期為購買日期。

## 9. 法律責任限制

- 本公司最大的法律責任已明示限定為少於購買者購買本產品的金額或少於在正常使用發生故障所支付的維修或更換服務。
- 對於任何伴隨之間接、附帶的損壞，利潤、商業投資及商譽之損失，或因資料遺失所造成之損害，以及本身產品導致其他設備損壞或故障，本公司不負賠償之義務。
- 本保固卡為購買者完整且唯一的保固服務，除本保固卡上所載的條款外，本公司未明示或默示其他保固或條件。

產 品 機 號		授權經銷商蓋章
使 用 者 姓 名		
電 話		
購 買 日 期		

製造廠商：伊頓飛瑞慕品股份有限公司

生產地：台灣

# Safety Instructions

## Operation Safety

1. Prior to the application, please read “Safety Instructions” carefully to ensure correct and safe application. Please keep the user manual properly.
2. During operation, attention should be paid to all warning symbols and operations should be followed strictly as required.
3. Equipment is not supposed to be used in environment that directly exposed to the sunlight or raindrops or in humid environment.
4. The equipment should not be installed close to area of thermal sources or any area where there is presence of devices such as electric heaters and furnaces.
5. Make sure the safety space should be left for proper ventilation and product maintenance when placing UPS. Refer to the instructions during installation.
6. Dry and non-conductive items should be used for cleaning.
7. In case of a fire hazard, dry powder extinguisher should be used properly. Using liquid fire extinguisher may result in electric shock hazard.

## Electric Safety

1. Before electricity is switched on, make sure earthing is properly done and wire and battery polarity are correctly connected.
2. When UPS relocation or wire reconnection is necessary, AC and battery should be switched off and UPS should be completely turned off, otherwise there might be a danger of electric shock because output terminal might be still electrified.
3. Please use EATON specified appendix devices and accessories.

## Battery Safety

1. Battery service lifetime will be shortened as ambient temperature rises. Replace batteries periodically to guarantee normal UPS performance and sufficient back-up time.
2. Only personnel with proper expertise can carry out the maintenance of accumulator batteries.
3. Replacement of accumulator batteries requires a match of same type and model with equal quantity.



4. As accumulator batteries may contain potential electric shock and short-circuit current danger, to avoid accidents that might be thus resulted, the following warnings should be observed during battery replacement:
  - A. Do not wear watches, rings or similar metallic items;
  - B. Use insulated tools;
  - C. Put on rubber shoes and gloves;
  - D. Do not place metallic tools or similar metallic parts on the batteries;
  - E. Switch off load connected to the batteries before dismantling battery connection terminals.
5. Do not expose accumulator battery to fire in order to avoid possible explosion that might endanger physical safety.
6. Non-professionals are not allowed to open or destroy accumulator batteries for electrolytes in batteries contain strong acid and other dangerous substances which will cause damages to both human skins and eyes. Should electrolytes come into any contact with human body unintentionally, rinse with clean water and seek medical advice.
7. Do not cause battery positive and negative polarity short circuit, otherwise, electric shock or inflammation may occur.

## Maintenance

1. Working environment and storage means can affect the service term and reliability of this product to some extent. Therefore, the product is not suitable for performance in the following environment:
  - A. Locations where temperature exceeds the maximum or goes below the minimum temperature as required by technical specifications or humidity is improper (temperature range: 0-40°C ; relative humidity range: 20%-90%).
  - B. Locations where vibration and collision are constant;
  - C. Locations where metallic dusts, corrosive substances as well as salts and inflammable gases are present.
2. For long-term inaction, UPS (without batteries) should be kept in dry environment with temperature ranging from -25-55°C . Before start-up, ambient temperature should be brought back to 0 or above for a certain period of time (above 2 hours).

# Contents

Chapter 1 Brief introduction .....	1
1.1 Frequently used symbols .....	1
1.2 Front view .....	2
1.3 Rear view .....	2
1.4 Technical data.....	4
Chapter 2 Installation .....	8
2.1 Unpacking inspection .....	8
2.2 Wiring table.....	8
2.3 Cable Connection.....	9
2.4 Installation of external battery .....	12
2.5 Connecting to computer interface.....	14
2.6 Parallel operation (option).....	15
2.7 Communication card installation .....	22
2.8 EPO.....	23
2.9 Maintenance switch.....	24
2.10 Dustproof net (option).....	24
Chapter 3 LCD Operation.....	25
3.1 Control panel.....	25
3.2 Start up.....	26
3.3 Shut down .....	27
3.4 Function screens.....	28
3.5 Setup .....	29
3.6 Help.....	30
3.7 Self test .....	30
3.8 Display reference table.....	32
Chapter 4 LED Operation.....	33
4.1 Control panel.....	33
4.2 Start up.....	35
4.3 Shut down .....	36
4.4 Maintenance.....	37
4.5 Display reference table.....	38
Chapter 5 Battery maintenance.....	40
Appendix 1 One Year Warranty .....	41









# Chapter 1 Brief introduction

This On-Line-Series is an uninterruptible power supply incorporating double-converter technology. It provides continuous, high-quality AC power to connect strict load, especially for computers, communication equipment and industrial automatic equipment and so on. The double-converter principle eliminates all mains power disturbances. When some overload, inverter fault or rectifier fault occurs, the UPS will transfer to bypass mode; if overload is removed, the UPS will transfer to inverter mode automatically.

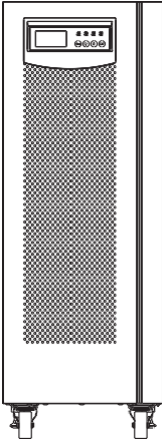
This manual is designed for On-Line series product as follows:

- C-6000FC: the standard model with internal battery and LCD ;
- C-6000FCL: the long back up time model with external battery and LCD ;
- C-6000F: the standard model with internal battery and LED;
- C-6000FL: the long back up time model with external battery and LED;
- C-10000FC: the standard model with internal battery and LCD;
- C-10000FCL: the long back up time model with external battery and LCD;
- C-10000F: the standard model with internal battery and LED;
- C-10000FL: the long back up time model with external battery and LED;
- 3C-10000F: the standard model with internal battery, LED and three phase input and single phase output;
- 3C-10000FL: the long back up time model with external battery, LED and three phase input and single phase output;
- 3C-20000FL: the long back up time model with external battery, LED and three phase input and single phase output;

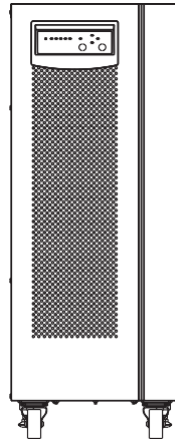
## 1.1 Frequently used symbols

Symbol & Description	
Symbol	Description
	Caution
	Dangerous high voltage
	Alternating Current (AC)
	Direct current (DC)
	Earth protection
	Connection protection
	Recycle
	Do not place with sundries

## 1.2 Front view

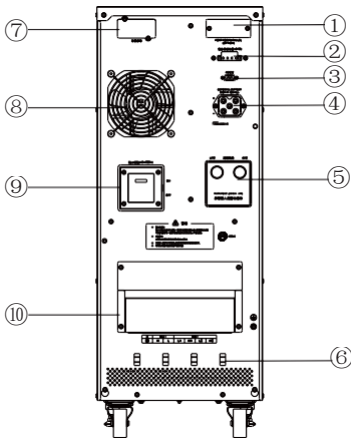


C-6000FC/C-6000FCL  
C-10000FC/C-10000FCL

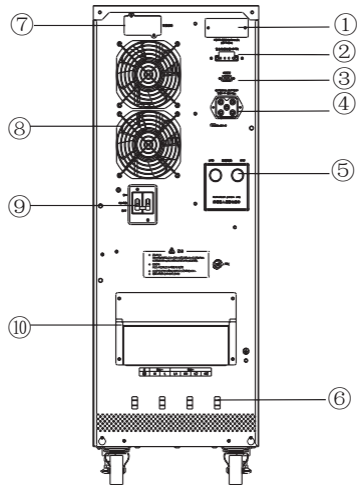


C-6000F/C-6000FL/C-10000F/C-10000FL  
3C-10000F/3C-10000FL/3C-20000FL

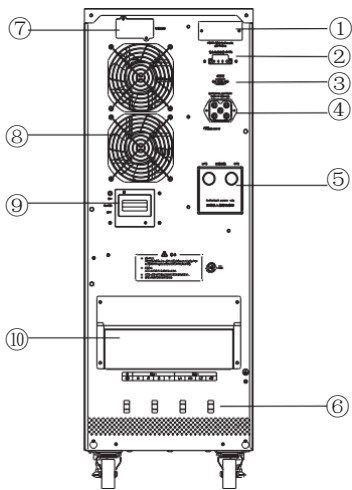
## 1.3 Rear view



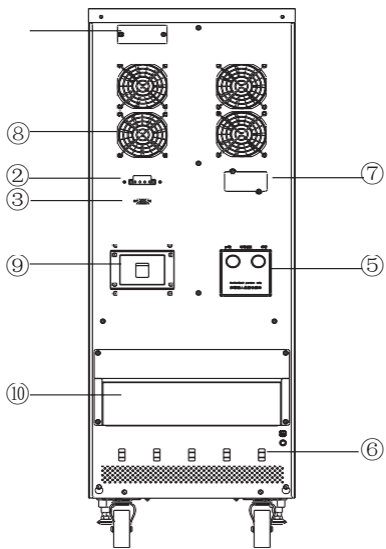
C-6000FC/C-6000FCL  
C-6000F/C-6000FL



C-10000FC/C-10000FCL/  
C-10000F/C-10000FL




3C-10000F/3C-10000FL




3C-20000FL

- ① Parallel card (option) cover
- ② EPO (Emergency Power Off)
- ③ RS232
- ④ Battery connection socket
- ⑤ Maintenance switch
- ⑥ Cable clamp
- ⑦ Intelligent slot
- ⑧ Fan
- ⑨ Input switch
- ⑩ Terminal block cover

## 1.4 Technical data

Model	C-6000FC	C-6000FCL	C-6000F	C-6000FL
Dimensions (W x D x H) (mm)	577×290×755			
Net Weight (Kg)	111	59	99	59
<b>Power Rating</b>				
Apparent power (KVA)/ Active power (KW)	6KVA/ 4.8KW			
<b>Input</b>				
Voltage range	220VAC (-15%/+25%)			
Current*	33A.max			
Frequency range	60Hz(+/-4Hz)			
Power factor	0.99			
<b>Output</b>				
Voltage*	220(adjustable according to customer requirements)			
Stability	±1%			
Frequency	56Hz~64Hz (line mode, synchronize with line) 60Hz±0.05 (battery mode)			
Power factor	0.8			
Overload capacity	105%~125%: transfer to bypass after 1 min; 125%~135%: transfer to bypass after 30 seconds; >135%: transfer to bypass after 0.1 second;			
Distortion	THD<2% (full linear load)			
<b>Battery (the battery life reduce quickly under high temperature)</b>				
Backup time	> 7 mins (4200W)		> 5 mins (4200W)	
Charge time	7 hours to 90%		7 hours to 90%	
<b>EMC</b>				
EMI	CNS 14757-2(C3)			
EMS	ESD	IEC61000-4-2 Level 4		
	RS	IEC61000-4-3 Level 3		
	EFT	IEC61000-4-4 Level 4		
	Surge	IEC61000-4-5 Level 4		
 <b>Caution: This product for commercial and industrial application in the second environment installation restrictions or additional measures may be needed to prevent disturbances.</b>				
Operation temperature	0°C~40°C			
Storage temperature	-25°C~55°C			
Humidity	20%~90% (no condensation)			
Altitude	<1000m			

Model	C-10000FC	C-10000FCL	C-10000F	C-10000FL
Dimensions (W x D x H) (mm)	607× 300× 820			
Net Weight (Kg)	135	80	135	80
<b>Power Rating</b>				
Apparent power (KVA)/ Active power (KW)	10KVA/ 8KW			
<b>Input</b>				
Voltage range	220VAC (-15%/+25%)			
Current*	55A.max			
Frequency range	60Hz(+/-4Hz)			
Power factor	0.99			
<b>Output</b>				
Voltage*	220(adjustable according to customer requirements)			
Stability	±1%			
Frequency	56Hz~64Hz (line mode, synchronize with line) 60Hz±0.05 (battery mode)			
Power factor	0.8			
Overload capacity	105%~125%: transfer to bypass after 1 min; 125%~135%: transfer to bypass after 30 seconds; >135%: transfer to bypass after 0.1 second;			
Distortion	THD<2% (full linear load)			
<b>Battery (the battery life reduce quickly under high temperature)</b>				
Backup time	> 5 mins (7000W)		> 5 mins (7000W)	
Charge time	7 hours to 90%		7 hours to 90%	
<b>EMC</b>				
EMI	CNS 14757-2(C3)			
EMS	ESD	IEC61000-4-2 Level 4		
	RS	IEC61000-4-3 Level 3		
	EFT	IEC61000-4-4 Level 4		
	Surge	IEC61000-4-5 Level 4		
 <b>Caution: This product for commercial and industrial application in the second environment installation restrictions or additional measures may be needed to prevent disturbances.</b>				
Operation temperature	0°C~40°C			
Storage temperature	-25°C~55°C			
Humidity	20%~90% (no condensation)			
Altitude	<1000m			

Model	3C-10000F	3C-10000FL	C-20000FL
Dimensions (W x D x H) (mm)	607× 300× 820		607× 325× 936
Net Weight (Kg)	136	81	131
<b>Power Rating</b>			
Apparent power (KVA)/Active power (KW)	10kVA/ 8kW		20kVA/ 16kW
<b>Input</b>			
Voltage range	220VAC (-15%/+25%)		
Current*	55A.max		110A.max
Frequency range	60Hz(+/-4Hz)		
Power factor	0.99		
<b>Output</b>			
Voltage*	220(adjustable according to customer requirements)		
Stability	±1%		
Frequency	56Hz~64Hz (line mode, synchronize with line) 60Hz±0.05 (battery mode)		
Power factor	0.8		
Overload capacity	105%~125%: transfer to bypass after 1 min; 125%~135%: transfer to bypass after 30 seconds; >135%: transfer to bypass after 0.1 second;		
Distortion	THD<2% (full linear load)		
<b>Battery (the battery life reduce quickly under high temperature)</b>			
Backup time	> 5 mins(7000W)		
Charge time	7 hours to 90%		
<b>EMC</b>			
EMI	CNS 14757-2(C3)		
EMS	ESD	IEC61000-4-2 Level 4	
	RS	IEC61000-4-3 Level 3	
	EFT	IEC61000-4-4 Level 4	
	Surge	IEC61000-4-5 Level 4	
<b>Caution: This product for commercial and industrial application in the second environment installation restrictions or additional measures may be needed to prevent disturbances.</b>			
Operation temperature	0°C~40°C		
Storage temperature	-25°C~55°C		
Humidity	20%~90% (no condensation)		
Altitude	<1000m		




- \*. The maximum current can be obtained when the UPS input is 187V, output is under rated full load, and charger works under full load.
- \*. When output voltage is adjusted from 220V to 200V or 208V, the rated power of output VA and WATT should be decreased by 10%.
- \*. The output voltage is adjustable according to customer requirements (200/208/220/230/240 VAC).

Actual power (all Load capacity) = rated power \* coefficient (correspond to the altitude)


Altitude (m)	1000	1500	2000	2500	3000	3500	4000	4500	5000
Coefficient	100%	95%	91%	86%	82%	78%	74%	70%	67%


---

 CAUTION: It needed to reduce the power of output when the products are used in a high altitude above 1000m, the coefficient for the actual power refer to the foregoing table.

---

# Chapter 2 Installation

 **DANGER:** Cut off the input switch, if it is the long back up time model, disconnect the battery input.

 **CAUTION:** 1. The installation as described in this chapter may only be carried out by qualified technician, comply with the local electric law.  
2. It is recommended to use the floor installation.


## 2.1 Unpacking inspection

1. Open the packing box of the UPS and take it out, check whether the UPS is damaged during the process of transportation or not.


2. Should any damage be observed or parts be found missing, do not start the machine. Contact the forwarder and distributor immediately.

Accessories:

1) User manual (1 PCS)

 **RECYCLE:** Please keep the packaging for future use.

## 2.2 Wiring table

 **CAUTION:** Choice of the diameter and cross section of conductors depend on the rated power of UPS.

Model		C-6000F/C-6000FL/C-6000FC/ C-6000FCL	C-10000F/C-10000FL/C-10000FC/ C-10000FCL
<b>Input</b>	G	12AWG or 14 mm <sup>2</sup> (hard wire)	10AWG or 22 mm <sup>2</sup> (hard wire)
	N	12AWG or 14 mm <sup>2</sup> (hard wire)	10AWG or 22 mm <sup>2</sup> (hard wire)
	L	12AWG or 14 mm <sup>2</sup> (hard wire)	10AWG or 22 mm <sup>2</sup> (hard wire)
<b>Battery</b>	+	12AWG or 14 mm <sup>2</sup> (hard wire)	10AWG or 22 mm <sup>2</sup> (hard wire)
	-	12AWG or 14 mm <sup>2</sup> (hard wire)	10AWG or 22 mm <sup>2</sup> (hard wire)
	G	12AWG or 14 mm <sup>2</sup> (hard wire)	10AWG or 22 mm <sup>2</sup> (hard wire)
<b>Output*</b>	L	12AWG or 14 mm <sup>2</sup> (hard wire)	10AWG or 22 mm <sup>2</sup> (hard wire)
	N	12AWG or 14 mm <sup>2</sup> (hard wire)	10AWG or 22 mm <sup>2</sup> (hard wire)
	G	12AWG or 14 mm <sup>2</sup> (hard wire)	10AWG or 22 mm <sup>2</sup> (hard wire)


\*.6kVA: for 110V output, please use conductor of 8AWG or 22 mm<sup>2</sup> or above ( hard wire).  
10kVA: for 110V output, please use conductor of 6AWG or 38 mm<sup>2</sup> or above ( hard wire).

Model		3C-10000F/3C-10000FL	3C-20000FL
<b>Input</b>	G	10AWG or 22 mm <sup>2</sup> (hard wire)	8AWG or 30 mm <sup>2</sup> (hard wire)
	N	10AWG or 22 mm <sup>2</sup> (hard wire)	6AWG or 38 mm <sup>2</sup> (hard wire)
	L	10AWG or 22 mm <sup>2</sup> (hard wire)	6AWG or 38 mm <sup>2</sup> (hard wire)
<b>Battery</b>	+	10AWG or 22 mm <sup>2</sup> (hard wire)	6AWG or 38 mm <sup>2</sup> (hard wire)
	-	10AWG or 22 mm <sup>2</sup> (hard wire)	6AWG or 38 mm <sup>2</sup> (hard wire)
	G	10AWG or 22 mm <sup>2</sup> (hard wire)	6AWG or 38 mm <sup>2</sup> (hard wire)
<b>Output*</b>	L	10AWG or 22 mm <sup>2</sup> (hard wire)	6AWG or 38 mm <sup>2</sup> (hard wire)
	N	10AWG or 22 mm <sup>2</sup> (hard wire)	6AWG or 38 mm <sup>2</sup> (hard wire)
	G	10AWG or 22 mm <sup>2</sup> (hard wire)	6AWG or 38 mm <sup>2</sup> (hard wire)

\*.10kVA: for 110V output, please use conductor of 6AWG or 38 mm<sup>2</sup> or above ( hard wire).

20kVA: for 110V output, please use conductor of 2AWG or 100 mm<sup>2</sup> or above ( hard wire).

## 2.3 Cable connection

 **DANGER:** the distribution switch must allow the max current of UPS through it, if not, burn may occur.

1. Choose appropriate cables for input and output referring to “wiring table”.
2. Remove the terminal block cover in the rear panel.
3. Connect the load to the output of the terminal block.  
For 110V output, connect L1 and L2, N1 and N2, and then connect L1 as UPS output L and N2 as UPS output N;  
For 220V output, connect N1 and L2, and then connect L1 as UPS output L and N2 as UPS output N;
4. Connect the input power cable to the input of the terminal block. It needed to connect battery cable for long back up time models.
5. Insert the tie cable through the cable clamp.
6. Make the input, output and battery cable colligation with tie cable; adjust the tie cable to the appropriate position.

Wiring: please choose single phase with 2 wires or single phase with 3 wires for output wiring. Take 220V/110V output as an example:

*Note: please choose single phase with 2 wires for 110V output to avoid burning the internal transformer of UPS under full load.*

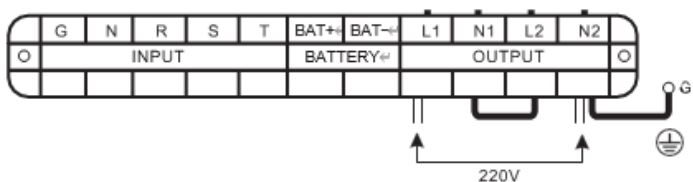


Fig. 1 6K/10K single phase input; single phase+2 wires, 220V output

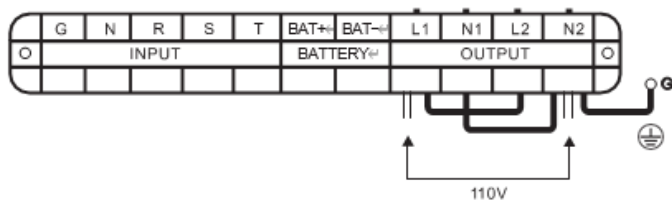


Fig. 2 6K/10K single phase input; single phase+2 wires, 110V output

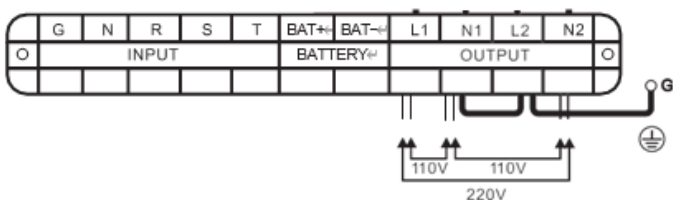


Fig. 3 6K/10K single phase input; single phase+3 wires, 220V/110V output

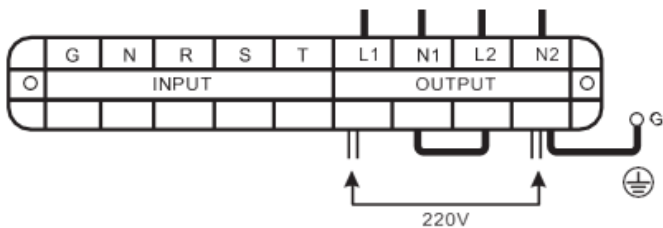


Fig. 4 10K three-phase input; single phase+2 wires, 220V output

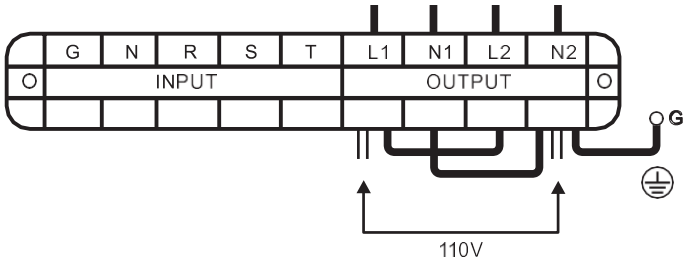


Fig. 5 10K three phase input; single phase+2 wires, 110V output

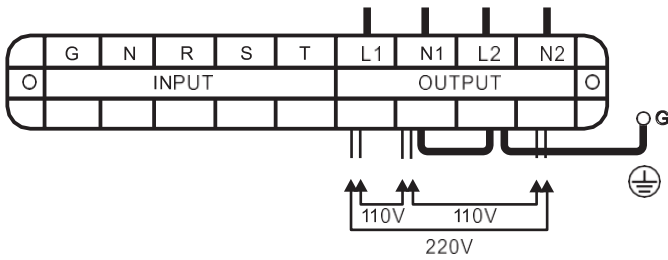


Fig. 6 10K three phase input; single phase+3 wires, 220V/110V output

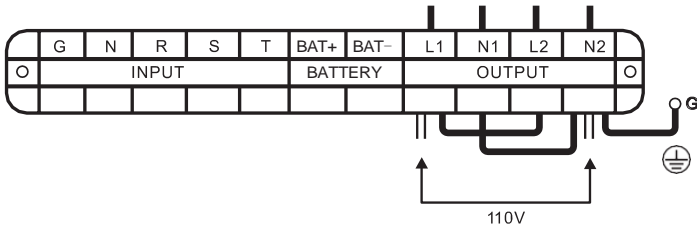


Fig. 7 20K three phase input; single phase+2 wires, 110V output

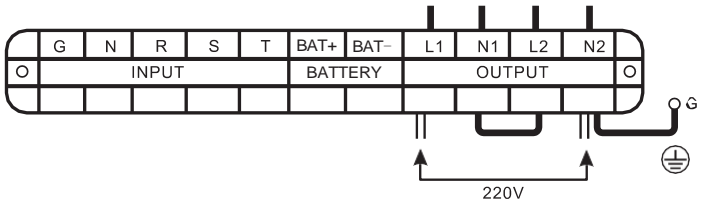


Fig. 8 20K three phase input; single phase+2 wires, 220V output

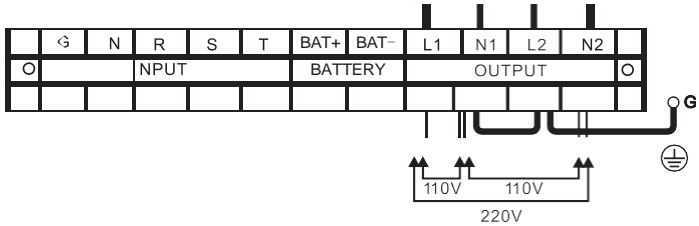


Fig. 9 20K three phase input; single phase+3 wires, 220V/110V output

## 2.4 Installation of external battery

Perform the battery connecting procedure according to the following steps strictly:

1. Make sure the UPS input and output terminals are uncharged;
2. Turn off the battery switch on battery cabinet;
3. Connect "+", "N" and "-" of battery to the corresponding terminal bay of UPS;
4. Use multimeter (DC Voltage) to measure the voltage of positive and negative batteries, and check whether they are connected correctly.

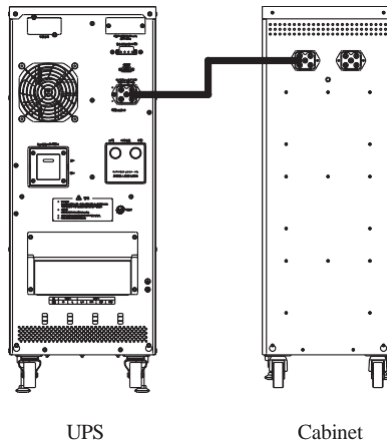
*Note: non-professionals are NOT allowed to operate the steps above, otherwise electric shock may occur.*

UPS and battery configurations are as follows:

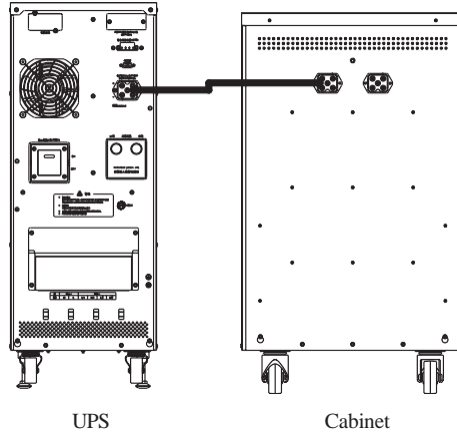
UPS	Cabinet
C-6000FC C-6000FCL	12V, 7AH, 2 groups of 20 batteries
	12V, 26AH, 1 group of 20 batteries
	12V, 40AH, 1 group of 20 batteries
C-6000F C-6000FL	12V, 7AH, 2 groups of 16 batteries
	12V, 26AH, 1 group of 16 batteries
	12V, 40AH, 1 group of 16 batteries
C-10000F/ C-10000FL C-10000FC/C-10000FCL 3C-10000F/3C-10000FL	12V, 7AH, 2 groups of 20 batteries
	12V, 26AH, 1 groups of 20 batteries
	12V, 40AH, 1 groups of 20 batteries
3C-20000FL	12V, 26AH, 1 groups of 20 batteries
	12V, 40AH, 1 groups of 20 batteries

Installation of external battery: the external battery connection socket is located on the rear panel of UPS. Please refer to the following figures for installations of standard models and long backup time models.

A. Standard model with 1 external battery cabinet (parallel connection of 2 groups of 20 batteries, each of 12V, 7AH)



B. Long backup time model with 1 external battery cabinet (1 group of 20 batteries, each of 12V, 26AH)



## 2.5 Connecting to the Computer interface

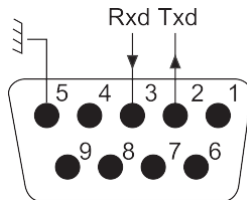
Computer interface: standard RS232 communication port, use a RS232 cable to connect the UPS with the monitor.

1. Connect the RS232 communication cable to the serial port computer.
2. Connect the RS232 cable to the RS232 communication port of the UPS.

RS232 port settings are as follows:

Baud rate:	2400bps
String length:	8bit
End-code:	1bit
Parity bit:	None

The PIN configuration of computer interface port on UPS (DB-9) is as follows:



Pin #	Definition	I/O
2	RS232 Tx	output
3	RS232 Rx	input
5	GND	output



## 2.6 Parallel operation (option)

### 1. Redundancy

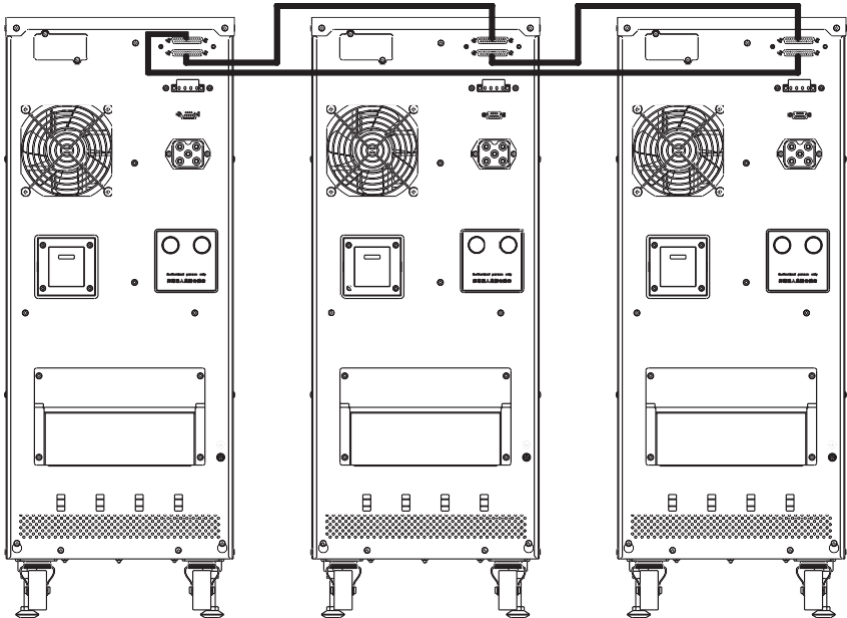
$N+X$  is currently the most reliable structure in power protection.  $N$  represents the minimum number of the UPS blocks of the UPS system that the total load needs;  $X$  represents the number of the redundant UPS blocks of the UPS system, i.e. the number of the fault UPS block that the system can handle simultaneously. The bigger  $X$  is, the higher the system reliability is. For occasions where reliability is highly depended on,  $N+X$  is the optimal mode.

The UPS system can be configured with up to three UPS blocks. Use the parallel cables to connect the parallel UPS with each other to realize power redundancy.

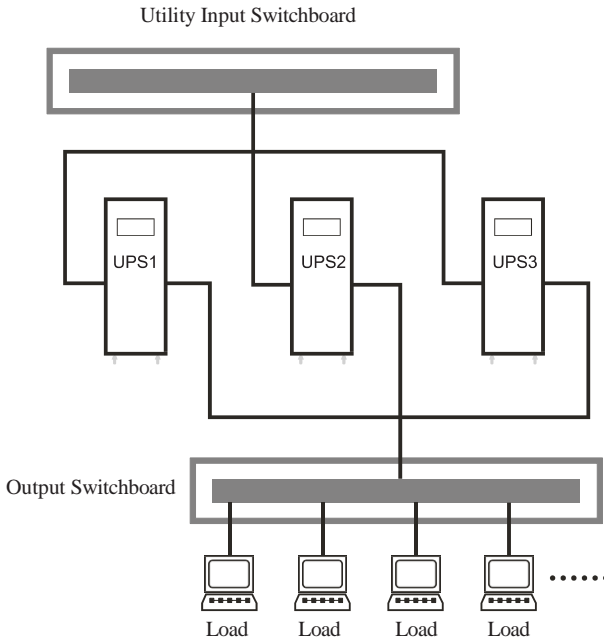
### 2. Connection

The parallel function is optional and customers should purchase the necessary accessories (including the parallel cables and parallel cards), then the customer service engineers will help install them. It is up to three sets of UPS for parallel operation and the UPS operation in parallel have been designed for use with separate batteries.

A). Remove the parallel card cover and connect the UPSs with each other by the cables: connect the parallel cards of the UPSs by the cables and the UPSs can communicate with each other via the cards.



B). Connect each output wire to an output switchboard and then to the loads.



---

⚠ CAUTION: Requirement of output wiring length:

When the lead from the output terminal of each set of UPS to the output patch board is less than 20m, wire difference should be less than 20%;

When the lead from the output terminal of each set of UPS to the output patch board is longer than 20m, wire difference should be less than 10%.

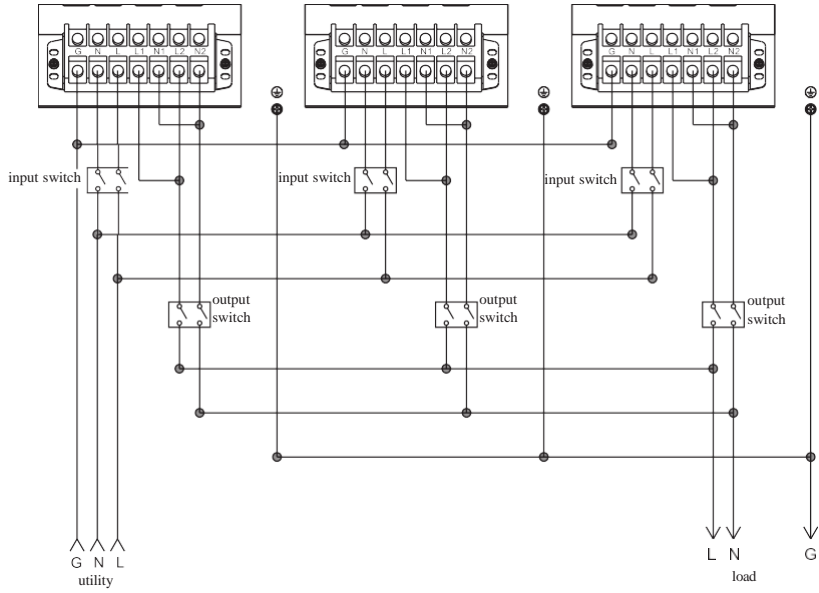
---

C). The wiring connection diagrams are as follows and the wiring requirements follow the requirements of single UPS.

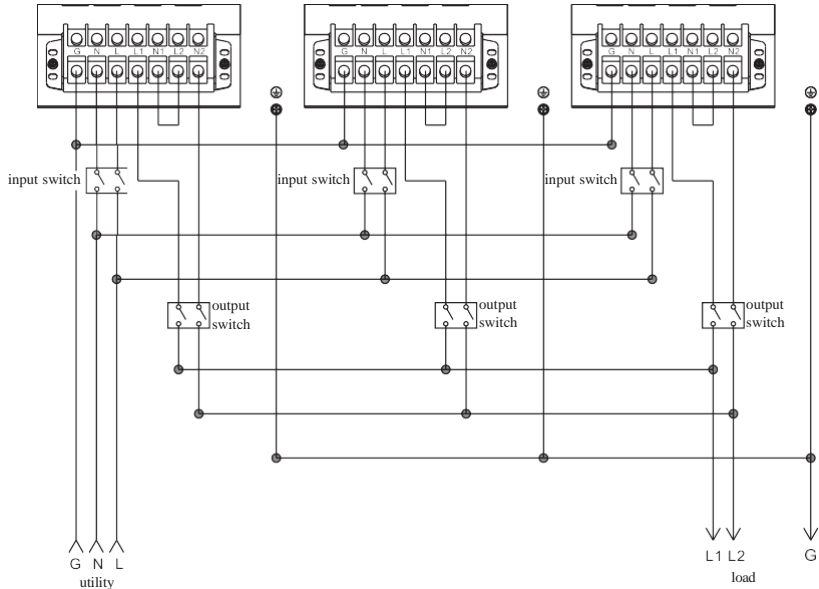
D). The parallel UPSs have been designed for use with separate batteries.

E). Wiring connection diagram of parallel UPSs (for C-6000FC/C-6000FCL/C-6000F/  
C-6000FL/C-10000FC/C-10000FCL/C-10000F/C-10000FL):

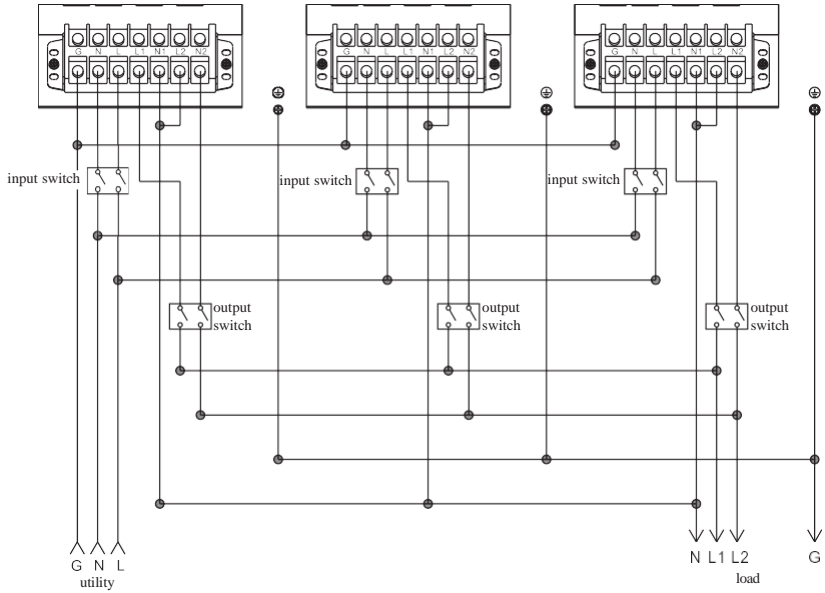
1). Single phase + 2 wires: 110V



2). Single phase + 2 wires: 220V

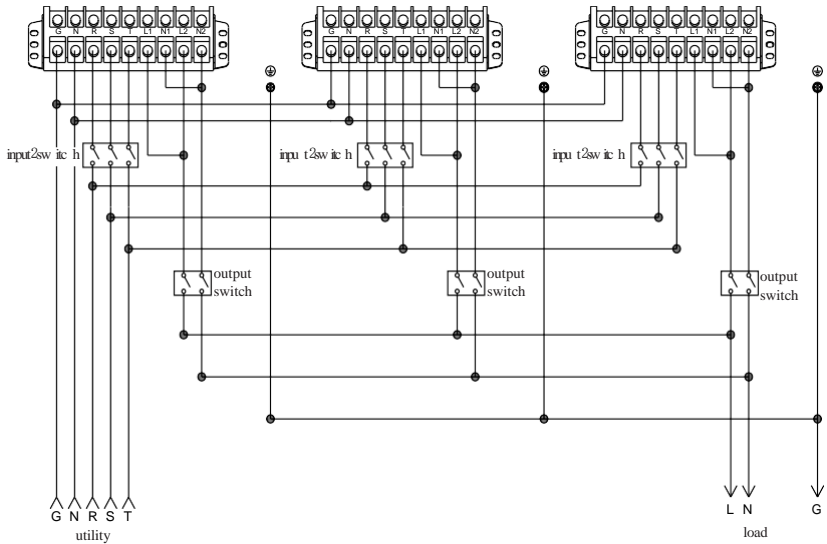


3). Single phase + 3 wires: 220V/110V

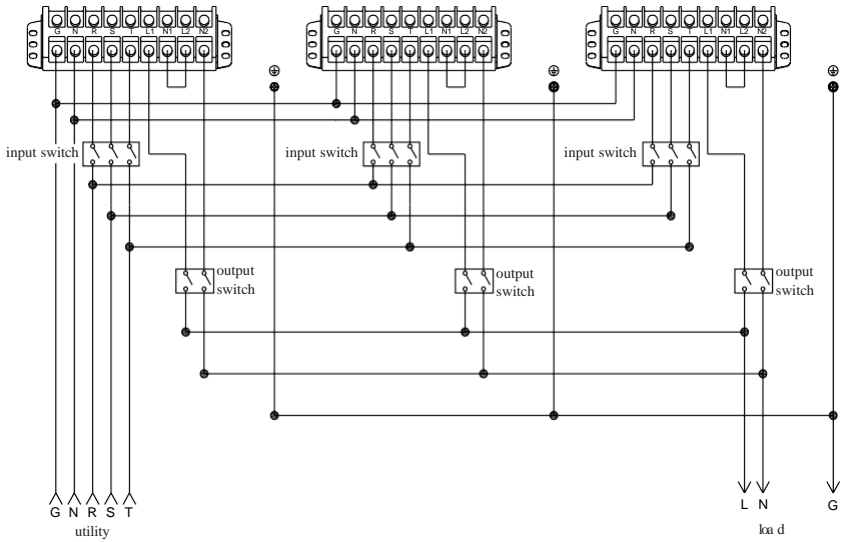


F). Wiring connection diagram of parallel UPSs (for 3C-10000F/3C-10000FL):

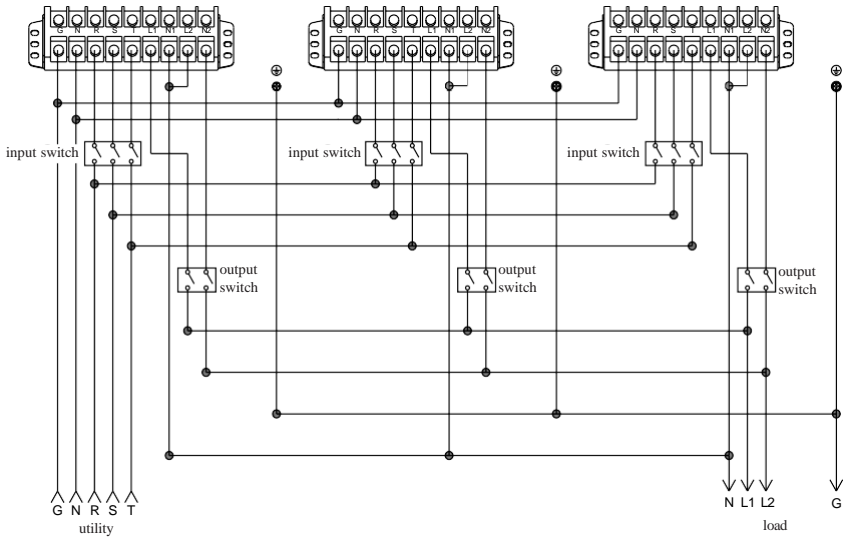
1). Single phase + 2 wires: 110V



2). Single phase + 2 wires: 220V

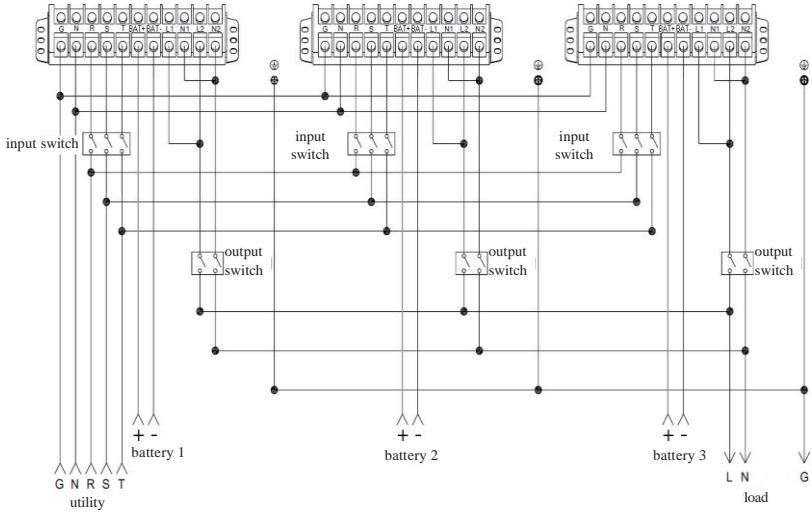


3). Single phase + 3 wires: 220V/110V

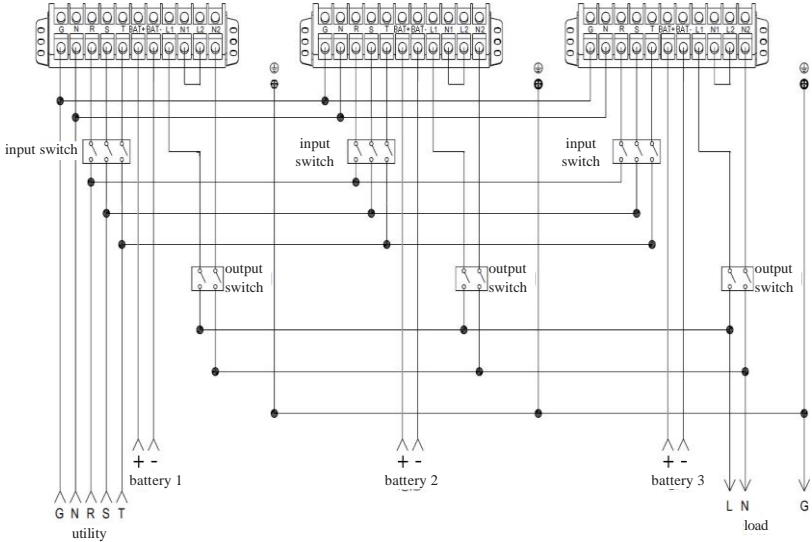


G). Wiring connection diagram of parallel UPSs (for 3C-20000FL):

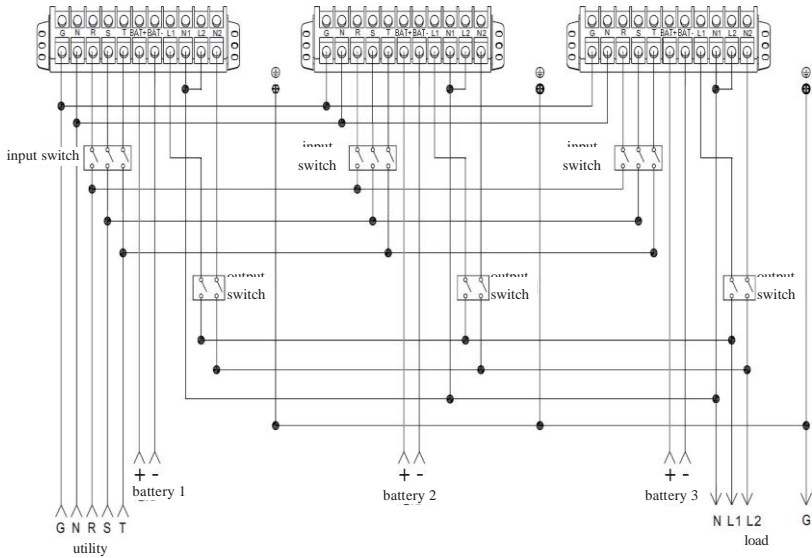
1). Single phase + 2 wires: 110V



2). Single phase + 2 wires: 220V



### 3). Single phase + 3 wires: 220V/110V



### 3. Advantages of parallel configuration

This configuration improves the reliability of the power supply system through the redundancy frame structure. Two UPSs equally share the load, when one UPS fails, the other will take up full load itself, so it is called 1/2 redundancy system.

It is designed to isolate the UPS from the AC source for maintenance, each UPS has a manual maintenance bypass switch.

### 4. Operation

1) Please follow the single UPS operating guide to perform general operation.

2) Power on

Power on under main: electrify the UPSs and then select “COMMAND” and confirm on the LCD of any set of UPS, others are powered on at the same time, and then all units transfer to INV mode simultaneously.

Power on under battery: Short press the "ON" button of each UPS to get power sources, then select “COMMAND” and confirm on the LCD of any set of UPS, others are powered on at the same time, and all the units work under battery mode simultaneously.

### 3) Power off

Select “LOAD OFF ALL” and confirm on the LCD of any set of UPS to shut down all the units;

Select “LOAD OFF ALONE” and confirm on the LCD of any set of UPS to shut down one UPS alone.



CAUTION: short-press should be less than 0.5 second.

## 2.7 Communication card installation

Intelligent slot is designed for the communication card. You don't need to stop the UPS during the installation of communication card.

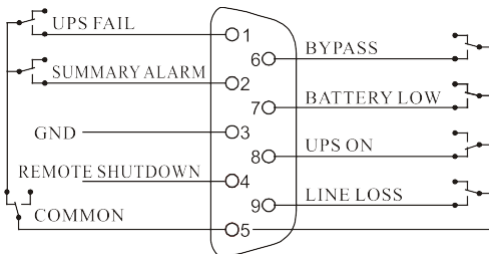
### I. SNMP card (option)

The intelligent slot with installation of SNMP card supplies the SNMP compliant data on an RJ45 connector.

### II. AS400 card (option)

This series UPS support AS400 card (an optional accessory) for intelligent slot. The following is the pin assignment and description of DB-9 connector in AS400 card.

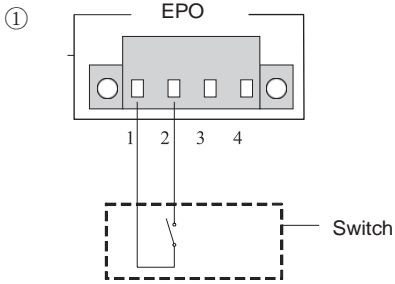
PIN	Description
PIN1	UPS Fail
PIN2	Summary alarm
PIN3	GND (Ground)
PIN4	Remote shutdown
PIN5	Common
PIN6	Bypass
PIN7	Battery low
PIN8	UPS on
PIN9	Line loss



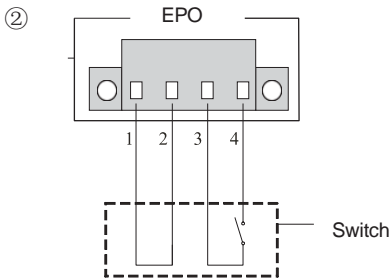


## 2.8 EPO

EPO (Emergency Power Off) is a green connector and located on the rear panel of the UPS. It can perform emergent power off when the UPS is under emergent condition. Two methods to carry out cable connection as followed.



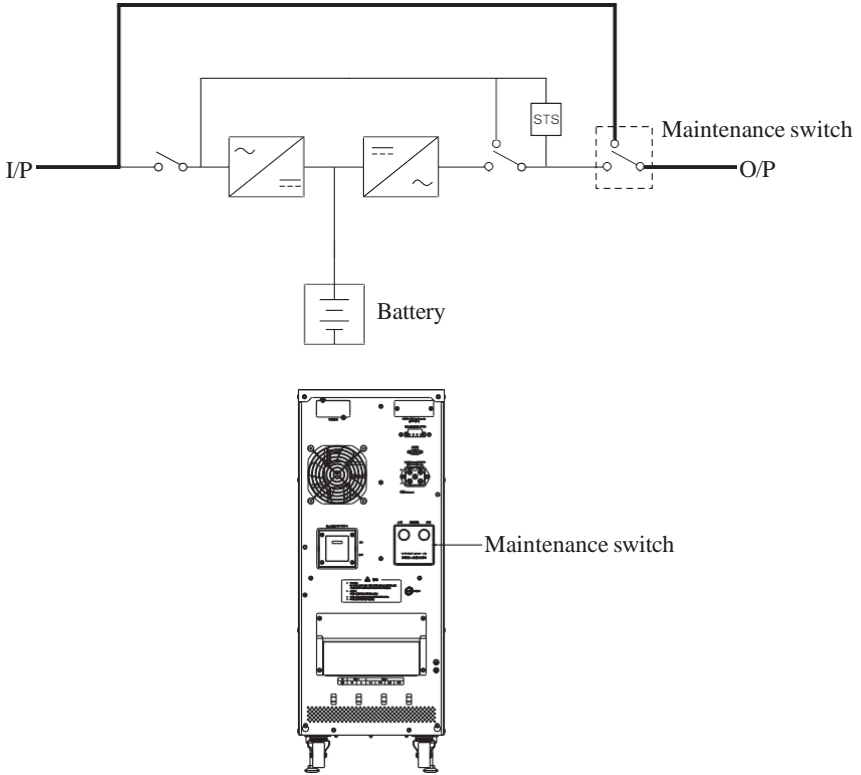
1-2 close- UPS perform Emergency power off  
3-4 unused



1-2 connect with short wire, keep the connective state always  
3-4 open- UPS perform Emergency power off

## 2.9 Maintenance switch

There are voltages present inside the UPS when it works under line mode, battery mode or bypass mode, so you can make the UPS separate with the utility via closing the Maintenance switch and thus ensure safe on-line maintenance.



## 2.10 Dustproof net (option)

Dustproof net is used to protect the UPS from dust and it is necessary to install a dustproof net for the device at an environment with heavy dust or smog. Dustproof net should be installed inside the UPS and at the back of the front panel. Please refer to the dustproof net quick installation guide for details.

## Chapter 3 LCD Operation

### 3.1 Control Panel



It is applicable for the following models:

C-6000FC: the standard model with internal battery and LCD ;

C-6000FCL: the long back up time model with external battery and LCD ;

C-10000FC: the standard model with internal battery and LCD;

C-10000FCL: the long back up time model with external battery and LCD;

LED Indicator	Color	Instruction
Normal indicator	Green	The LED is lit when load is powered by the utility via inverter.
Battery indicator	Yellow	The LED is lit when UPS is powered by battery.
Bypass indicator	Yellow	The LED is lit when load is powered by the utility via bypass.
Fault indicator	Red	The LED is solid on or flashes in case of UPS fault; and there are continuous or periodic beeps.

*Note: please refer to Chapter 5 for more details of light display reference.*

Keys	Definition	Description
↑	UP	Scroll through lists on the same screen
↓	Down	Scroll through lists on the same screen
←	Confirm	Enter next screen
<b>ESC</b>	Exit	Return to last screen

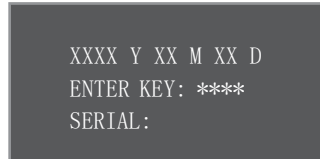
## 3.2 Start up

Prior to UPS startup, make sure the cables and terminal blocks are connected properly, otherwise, electric shock may occur.

1. Switch on "input breaker", the UPS implements selftest.



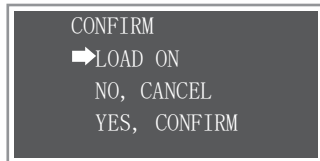
2. The following screen appears automatically within about 1s, contact customer service to get the enter key by providing date and serial No..



3. Then the startup screen appears.



4. Press Enter to start up the UPS.



5. UPS is switching on.



6. Then the Switch-off screen appears.



### 3.3 Shut down

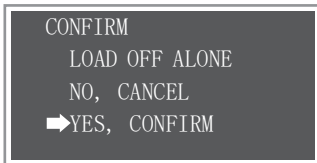
1. Switch-off screen (1)



2. Switch-off screen (2) (selftest is enabled)



3. If it is in single machine mode (default), the following screen will appear, then press Enter to confirm.

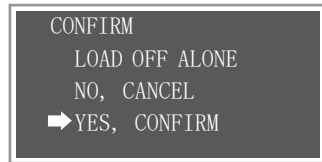


In parallel mode, you can select to load off single UPS alone or load off all units.

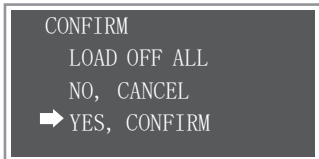
5. If it is in parallel mode, the following screen will appear.



6. Select "LOAD OFF ALONE" to enter the following screen. Then press Enter to confirm.



7. Select "LOAD OFF ALL" to enter the following screen. Then press Enter to confirm.



## Shut down in ECO mode

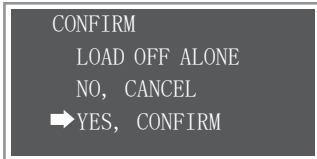
1. Switch-off screen (selftest is disabled)



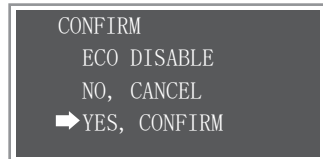
2. Press Enter and the following screen will appear.



3. Select "LOAD OFF ALONE" and press Enter, the following screen will appear. Then press Enter to confirm.



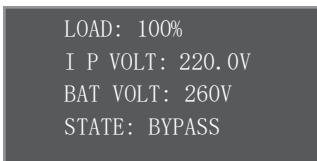
4. Select "ECO DISABLE" and press Enter, the system will transfer to line mode and not enter ECO mode automatically.



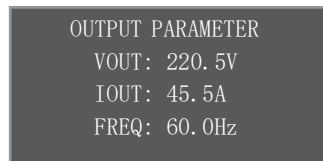
## 3.4 Function screens

Power on the UPS, then press "ESC" or do not press any key within 1 min to automatically enter the state screen. And Press ▼ to obtain the below screens.

1. The state screen (1), which displays load, input voltage and state information and so on.

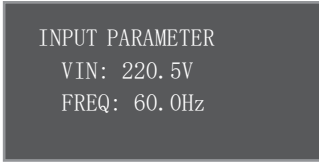


2. Press ▼ to obtain the below information.



Note: the item STATE will display UPS power supply, fault and alarm information by turns every 1S.

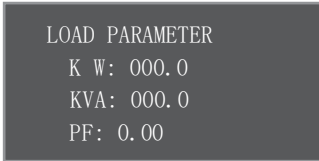
3. Press ▼ again to obtain the below information.



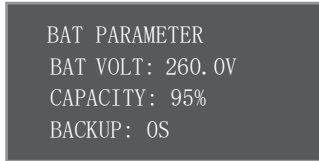
4. Press ▼ again to obtain the below information.



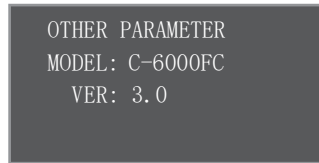
5. Press ▼ again to obtain the below information.



6. Press ▼ again to obtain the below information.



7. Press ▼ again to obtain the below information.



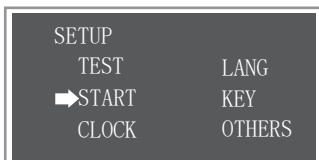
Note: if you press ▼ now, it will return to the state screen (1); you may also press ▲ instead of ▼ to view the above screens in reversed order.

### 3.5 Setup

1. Select "CONFIGURATION" and press Enter.      2. Input the Password (default: 1234).



3. Then the setup screen can be obtained.

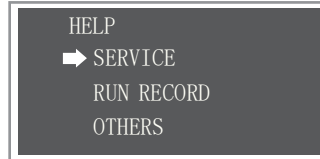


### 3.6 Help

1. Select "Help" and press Enter.



2. Select the following items and press Enter to obtain the information of service hotline, run record or inverter temperature.



### 3.7 Self test

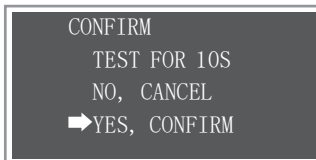
1. The following screen can be obtained when selftest is enabled (UPS works in line mode or conversion mode and there is no "battery voltage low" issue).



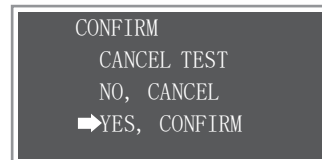
2. Users can define the testing time or choose 10S.



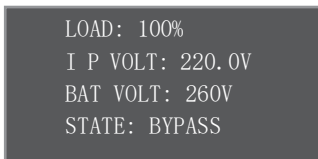
3. Press Enter.



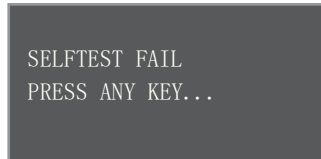
4. The following screen can be obtained when UPS is self-testing.



5. It switches to state screen as follows when selftest is completed.



6. The following screen can be obtained if selftest fails.





Submenu	Item list	Instruction
HELP → SERVICE RUN RECORD OTHERS	SERVICE	To inquiry the service hotline
	RUN RECORD	1. Current fault; 2. history record 3. clear record
	OTHERS	To inquiry the temperature of inverter
SETUP TEST            LANG → START        KEY CLOCK        OTHER	TEST	1. Load Fail-Safe Defaults; 2. the testing time can be set from 1 to 99, and the default value is 1min; 3. the default setting of selftest is disabled.
	START	UPS start up automatically
	CLOCK	To change UPS time
	LANG	To change language between Chinese and English
	KEY	To change user password
	OTHER	1. BUZZER; 2.ECO; 3. CONVER; 4. PHASELOCK RATE; 5. SERIAL 6. OTHER
	BUZZER	To eliminate buzzer
OTHERS → ECO    BUZZER CONVER SERIAL PHASELOCK RATE OTHER	ECO	Only applicable for single UPS
	CONVER	Either ECO mode or conversion mode can be enabled at one time.
	PHASELOCK RATE	Phase lock slewRate
	SERIAL	To set UPS serial number
	OTHER	To set customer service hotline
Note: the above submenu displays and settings are only for reference and subject to change without notice.		

### 3.8 Display reference table

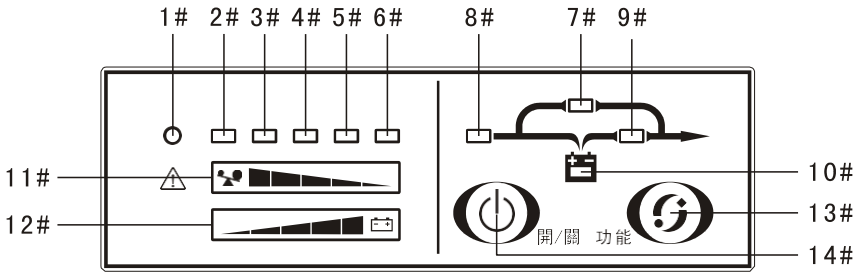
N O.	Working condition	Indicator				BUZZER	LCD display
		Inverter LED	Battery LED	Bypass LED	Fault LED		
1 Line mode							
	Normal	●				none	
	Alarm ④	●			★	one beep every 1 second	Battery not connected/Charger fault/Fan fault/LN connection reversed or E not connected/Bypass fault
	Battery overcharged ①		●		★	one beep every 1 second	Battery overcharged
2 Bypass mode							
	Normal			●	★	one beep every 2 mins	
	Alarm				★	one beep every 4 mins	Line fault
	Alarm ⑤			●	★	one beep every 1 second	Battery not connected/Charger fault/Fan fault/Battery overcharged/LN connection reversed or E not connected
	Overload ②			●	★	two beeps every 1 second	Output overload
3 Battery mode							
	Normal	●	●		★	one beep every 4 seconds	
	Alarm	●	●		★	one beep every 1 second	Fan fault/LN connection reversed or E not connected
	Alarm	●	★		★	one beep every 1 second	Low battery voltage
	Overload ③	●	●		★	two beeps every 1 second	Output overload
4 Battery selftest mode							
	Normal	★	★	★	★	none	None
5 Fault mode							
	With bypass output			●	●	continuous beep	Fault type and alarm
	Without bypass output				●	continuous beep	
6 Standby mode							
	Normal					none	
	Alarm ⑥				★	one beep every 1 second	Bypass fault/Line fault/Neutral loss/Eeprom fault/Startup fail/Parallel error/Address error/Address conflict

Note:

- ① UPS will shut down the charger and make an alarm, and the buzzer will beep continuously after 5 seconds.
- ② The bypass LED will not be lit, and fault LED will be solid on with continuous beep;
- ③ The fault LED will be solid on with continuous beep;
- ④ The inverter LED will be lit, fault LED will flash with one beep every 1 second;
- ⑤ The fault LED will flash with one beep every 1 second;
- ⑥ The fault LED will flash with one beep every 1 second;
- ⑦ ● : Indicator light is on    ★ : Indicator light flashes

# Chapter 4 LED Operation

## 4.1 Control panel



It is applicable for the following models:

C-6000F: the standard model with internal battery and LED;

C-6000FL: the long back up time model with external battery and LED;

C-10000F: the standard model with internal battery and LED;

C-10000FL: the long back up time model with external battery and LED;

3C-10000F: the standard model with internal battery, LED and three phase input and single phase output;

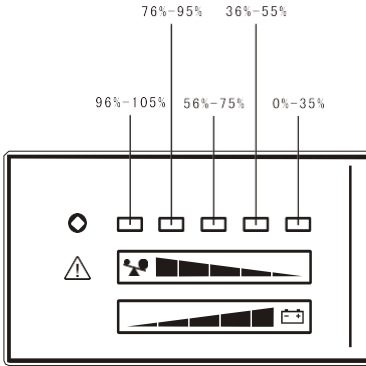
3C-10000FL: the long back up time model with external battery, LED and three phase input and single phase output;

3C-20000FL: the long back up time model with external battery, LED and three phase input and single phase output;

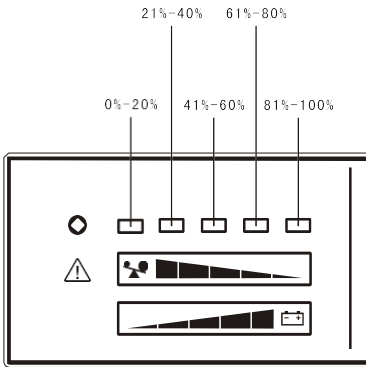
1#~10# LED indicators:		
1#	Fault LED	The red fault LED is lit when there is an alarm or UPS fault.
2#~6#	Load/Battery capacity LED	These LEDs indicate the percentage of the load capacity in line mode or battery capacity level in battery mode.
7#	Bypass LED	Whenever the orange bypass LED is lit, it shows that the load is powered by UPS via bypass.
8#	Line LED	Whenever the green line LED is lit, it shows that the main is normal.
9#	Inverter LED	Whenever the green inverter LED is lit, it shows that the load is powered by UPS via inverter.
10#	Battery LED	Whenever the orange battery LED is lit, it shows that the load is powered by batteries.

11#~12# Load/Battery capacity icons:

11# Load capacity icon: the load capacity increases by degrees as the indicators are lit one by one from 6# to 2#.



12# Battery capacity icon: the battery capacity increases by degrees as the indicators are lit one by one from 2# to 6#.



Buttons:

13# Function button: silence (press the button more than 2 seconds but less than 10 seconds to eliminate audible alarm in bypass mode and line mode; press the button more than 10 seconds to eliminate all audible alarms in line mode, bypass mode, battery mode, standby mode and inverter mode; press again to resume); Battery self test (press the button more than 2 seconds but less than 10 seconds under line mode).

14# ON/OFF button: it is used to turn on and turn off the UPS.

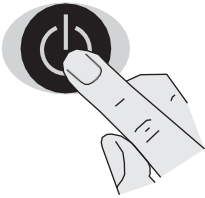
## 4.2 Start up

*Note: the battery is fully charged before delivery. However, storage and transportation will inevitably cause some charge loss. Therefore, it is advisable to charge the battery for 12 hours before using it, so as to ensure adequate battery autonomy.*

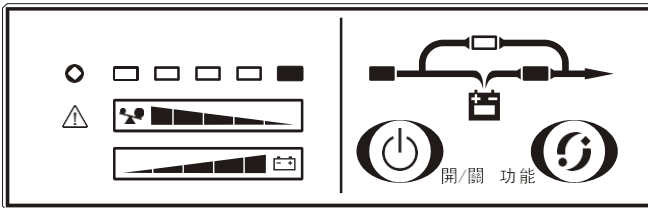
Indicator:    on     off

### Turning on the UPS with AC

- Press "ON" button more than 1 second to start the UPS. During the UPS performing self test, all the Load/Battery capacity LED indicators are lit and then turned off one by one from right to left.



- Then UPS is working in line mode, and the LED status is as follows.



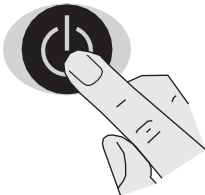
(Line mode)

 Caution: if the utility is abnormal, the UPS will transfer to battery mode.

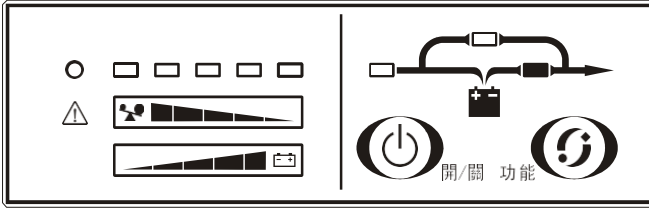
- UPS supplies power to load.

### Turning on the UPS without AC

- Press "ON" button more than 1 second to start the UPS. The UPS operations are the same as in line mode.



- The battery LED indicators are turned on and the line LED is turned off. Battery supplies power to the load.

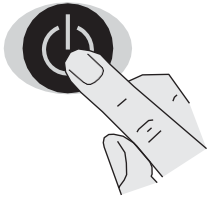


(Battery mode)

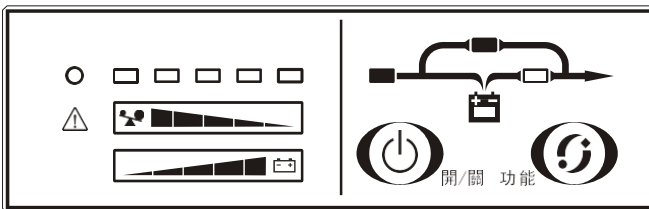
- In battery mode, the buzzer beeps once every 4 seconds, press the function button more than 2 seconds to silence the audible alarm.

#### 4.3 Shut down

- Press the “OFF” button more than 1 second to shut down the UPS.



- The terminal still have live voltage via bypass, and LED status is as follows.



(Bypass mode)

- In bypass mode, the bypass LED indicator is lit and the buzzer beeps once every 2 minutes, press the function button more than 2 seconds to silence the audible alarm.
- To completely power down the UPS, disconnect the line input of the UPS.

## 4.4 Maintenance

If fault LED is lit or buzzer beeps, it indicates UPS fault or alarm.

Problem	Possible cause	Solution
The #1 and #6 LEDs are lit, the buzzer beeps continuously.	UPS internal temperature high.	Ensure that the UPS is not overloaded, the ventilation opening is not blocked and ambient temperature is not too high. Wait for 10 minutes for the UPS to cool down before restart it. If it does not work, please contact the distributor or service center.
The #1, #2 and #5 LEDs are lit, the buzzer beeps continuously	UPS output is short circuited.	Turn off the UPS, remove all loads, and ensure that the loads are not failed. If failed to restart the UPS, please contact the distributor or service center
The #1 and #4 LEDs are lit, the buzzer beeps continuously	Internal fault	Please contact the distributor or service center.
The #1 and #5 LEDs are lit, the buzzer beeps continuously	Internal fault	Please contact the distributor or service center.
The line LED flashes	The voltage or frequency of the utility power is out of the UPS input range	The UPS works in battery mode; save data and shut down the programs. Make sure the line input voltage and frequency are within UPS Spec. range.
The #1 and #2 LEDs are lit, the buzzer beeps continuously	UPS overloaded or load fault	Check the loads and remove non-Critical loads. Recalculate the load power and reduce the member of loads connected to the UPS. Check whether the load is fault
The #1 Fault LED is lit, battery LED flashes, and the buzzer beeps once every 1 second.	The charge of the UPS is defective	Please contact the distributor or service center.
The battery LED flashes	Battery voltage is too low.	Check the batteries, replace them immediately if they are damaged or whether the battery switches are in "ON" position.
The utility power is normal, but the UPS cannot run in normal mode	AC input breaker in "OFF" position.	Switch the input breaker to "ON" position.
The battery discharge time diminishes	Battery undercharged	Keep the UPS connected to utility power persistently for more than 10 hours to charge the battery again
	UPS overloaded	Check the load status and remove non-critical load
	Battery aged	Replace the batteries. Please contact the distributor to obtain the replacement components for battery.
The UPS cannot power on by pressing the ON/OFF button	The "ON/OFF" button is pressed too briefly	Press the button persistently for more than 1 second
	The UPS is not connected to the battery or the battery pack voltage is too low	Check the connection of the battery. Charge the battery if the battery voltage is low.
	UPS internal fault	Please contact the distributor or Service center

## 4.5 Display reference table

NO	Status	LED										Alarm	
		1#	2#	3#	4#	5#	6#	7#	8#	9#	10#		
1	Line mode	0~35% load capacity						●		●	●		None
2		36%~55% load capacity					●	●		●	●		None
3		56%~75% load capacity				●	●	●		●	●		None
4		76%~95% load capacity			●	●	●	●		●	●		None
5		96%~105% load capacity		●	●	●	●	●		●	●		None
6	Battery mode	0~20% battery capacity		●							●	●	Once every 1s
7		21%~40% battery capacity		●	●						●	●	Once every 4s
8		41%~60% battery capacity		●	●	●					●	●	Once every 4s
9		61%~80% battery capacity		●	●	●	●				●	●	Once every 4s
10		81%~100% battery capacity		●	●	●	●	●			●	●	Once every 4s
11	Bypass mode			↑	↑	↑	↑	●	●	●			Once every 2 mins
12	Overload alarm			●	●	●	●	●	●	●			Twice every 1s
13	Overload in line mode, not transfer to bypass mode			●	●	●	●	●		●	●		Twice every 1s
14	Overload in line mode, transfer to bypass mode			●	●	●	●	●	●	●			Twice every 1s
15	Line abnormal			↑	↑	↑	↑	↑	↑	★	↑	↑	None
16	Bypass abnormal			↑	↑	↑	↑	↑	↑	★	↑	↑	Once every 4s
17	Overload in battery mode, per-alarm			●	↑	↑	↑	↑			●	●	Twice every 1s
18	Overload in battery mode, cut off the output		●	●						↑			Continuous beep
19	Over temperature		●					●	↑	↑			Continuous beep
20	Inverter fault		●				●		↑	↑			Continuous beep
21	Output short circuit fault		●	●			●		↑	↑		↑	Continuous beep
22	BUS voltage abnormal		●			●			↑	↑			Continuous beep
23	BUS short circuit		●			●	●						Continuous beep
24	Charger and battery damaged		●									★	Once every 1s
25	Fans failure		●	●				●	↑	↑	↑	↑	Once every 1s
26	Parallel operation fault		●	●	●			●	↑	↑			Continuous beep
27	ID repeat		●	●		●			↑				Continuous beep
28	No battery		↑	↑	↑	↑	↑	●				★	Twice every 1s, totally 6 times
29	Battery voltage low		↑	↑	↑	↑	↑	↑	↑	↑	↑	★	Once every 1s
30	Battery over-charged		●		●				↑	↑			Continuous beep
31	Reverse of Line and Neutral			↑	↑	↑	↑	↑	↑	★	↑	↑	Once every 2 mins
32	Battery fault		●		●	●			↑	↑			Continuous beep



NO	Status	LED										Alarm
		1#	2#	3#	4#	5#	6#	7#	8#	9#	10#	
33	EPO triggered	↑	↑	↑	↑	↑	↑	★	★	★	★	Once every 1s
34	Battery self-test	↑	↑	↑	↑	↑	↑	LEDs light by turns				
35	Fail to identify model	●		●	●	●	●	↑	↑			Continuous beep
36	Converter mode	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	Once every 1 min
37	Fail to meet UPS-on requirements	●		●			●					Twice every 1s, totally 3 times
38	Battery maintenance notice		↑	↑	↑	↑	↑	↑	↑	↑	★	Once every 1s
39	ECO mode	↑	↑	↑	↑	↑	↑	★	●			Once every 1 min
40	Eeprom read & write error	●	●		●	●		↑	↑			Once every 1s, totally 3 times
41	Rectifier fault (PFC fault)	●			●	●		↑	↑			Continuous beep
42	Negative power fault	●	●	●	●			↑	↑			Continuous beep
43	Current unbalance	●		●	●		●	↑	↑			Continuous beep
44	System power supply abnormal	●	●		●	●	●	↑	↑			Continuous beep
45	Inverter RLY stick	●			●		●	↑	↑			Continuous beep
46	Line input SCR fault	●			●	●	●	↑	↑			Continuous beep
47	Fuse open	●		●		●		↑	↑			Continuous beep
48	Battery over-charged	●		●	●							Continuous beep
49	Frequent over-current fault	●		●		●	●					Continuous beep
50	NTC abnormal	●					●					Continuous beep
51	Communication wire disconnected	●	●	●			●					Continuous beep
52	CAN communication wire fault	●	●	●			●					Continuous beep
53	Synchronizing signal wire fault	●	●	●			●					Continuous beep
54	Neutral loss	↑	↑	↑	↑	↑	↑	★	★	↑	↑	Once every 4s

Note:

● : Indicator light is on   ★ : Indicator light flashes   ↑ : Depend on other conditions

## Chapter 5 Battery Maintenance

The battery is key component of the UPS. The battery life depends on the ambient temperature, charge and discharge times. High ambient temperature and deep discharge will shorten the battery life.

1. Sealed maintenance-free lead acid batteries are used in the UPS. Before electricity is switched on, make sure earthing is properly done and wire and battery polarity are correctly connected.
2. Keep the ambient temperature between 15°C and 25°C.
3. If the UPS has not been used for a long period, charging is recommended at the interval of 3 months.
4. Replacement of accumulator batteries requires a match of same type and model with equal quantity and should follow the instructions given by battery suppliers. Users shall take all the consequences by using unauthorized batteries.
5. Under normal conditions, the battery life lasts 3 to 5 years. Should batteries be found in poor performance, replacement should be done as soon as possible only by qualified personnel with proper training. Users are not allowed to replace without authorization.
6. The battery capacities in the UPS are configured according to normal application environment, for other special configuration requirements, please contact with local distributor or customer service.

## Appendix 1 One year warranty

1. This Warranty Card warrants the Product against defects in materials and workmanship under normal use for a period of one year from the date of purchase by the original end-user purchaser. During the warranty period, should the Product fail due to improper workmanship or materials, our company will repair the Product at free of charge.
2. Please ask for this Warranty Card of Product from authorized distributor of our company ("Authorized Distributor) for the validity of the warranty period. The purchase date and serial no shall be proved and stated by Authorized Distributor with his signature and/or his company's chop.
3. This warranty does not apply to product failure due to the following:
  - To consumable parts, such as batteries.
  - To damage caused by improper transportation, move and drop of Product.
  - To damage caused by natural disasters or force majeure.
  - To damage caused by misuse, abuse, vandalism, improper environment, operating the Product failing to meet the requirement of power supply voltage or errors of power supply.
  - To damage caused by service (including but not limited to movement, overhauling, repair, modification and addition to other accessories) performed by anyone who is not our company or Authorized Distributor.
  - If any our company serial number has been removed or defaced.
  - The purchaser can not furnish this Warranty Card or lost this Warranty Card or this Warranty Card without Authorized Distributor's company chop.
  - The product is not located in Taiwan.
  - Our company has no obligation but at our option to repair the Product under above terms at Purchaser's cost and expenses.
4. Please call or send the written letter to our company for this warranty service. Our company will assign authorized person to provide this warranty service at the Product located site.
5. This Warranty Card only for repair service. Purchaser shall be responsible for shipping and other costs or expenses (including but not limited to phone cost, shipping cost, all custom duties, V.A.T. and other associated taxes and charges. Our company is not responsible for the Product that were lost or damaged during the shipping process.
6. When the Product or part is exchanged, any replaced party or the Product becomes

our company's property.

7. During outside of warranty, our company at its option will provide after-service against this Warranty Card at charge Purchaser for labor, materials and other related costs.
8. Proof of date of purchase is required. If Purchaser can not furnish this Warranty Card, the manufacture date will deem to be the date of purchase.

#### EXCLUSIONS AND LIMITATIONS

- THE LIABILITY AND RESPONSIBILITY OF OUR COMPANY FOR THE PRODUCT IS LIMITED TO LESS THAN THE PURCHASE PRICE AND REPAIR OR REPLACE COSTS UNDER NORMAL CONDITIONS.
- OUR COMPANY SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL, INDIRECT, OR INCIDENTAL DAMAGES, LOST PROFITS, LOST BUSINESS INVESTMENTS, LOST GOODWILL, OR LOST DATA, OR DAMAGE OR FAILURE TO ANY OTHER EQUIPMENT.
- THIS WARRANTY CARD SHALL CONSTITUTE OUR COMPANY'S SOLE LIMIALBE AND PURCHASER'S EXCLUSIVE REMEDY FOR THE PRODUCT. THERE IS NO OTHER WARRANTIES, IMPLIED OR STATUTORY WARRANTIES OTHER THAN THIS WARRANTY CARD.

SERIAL NO.		The distributor stamps
User Name		
Telephone		
The date of purchase		

Manufacturer: Eaton Phoenixtec MMPL CO.,LTD.  
Made in Taiwan



伊頓飛瑞慕品股份有限公司

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