飛瑞集團 PHOENIXTEC GROUP	文件類別 File Type	☐機密文件 Confidential File ☐非機密文件 Non-Confidential file	Page 1 of 1
	資料名稱 Data Name	☐初期規格書 Draft Spec. ☐報價規格書 Quote Spec. ☒正式規格書 Formal Spec.	

應用類別 Application Type	☒UPS ☐AVR ☐SMR ☐INVERTER ☐u-UPS ☐硬体模组 Module ☐其他 Others：
品名 Description	USER'S MANUAL 1XX2/1XX3 MULTI.LAN EATON

適用材料 Information for Original Type	料號 Part Number	規格 Specification	備註 Note	料號 Part Number	規格 Specification	備註 Note
	614-06782-00					

最初適用機種 (Application Scope)	

內 容 記 事 (Particular Information)

1	製造商 (Manufacturer)	
2	電氣規格 (Electric Specification)	
3	機械結構 (Mechanism Structure)	
4	標示說明 (Marking)	
5	IQC 檢驗說明 (IQC Checkout)	
6	安全規格 (Safety Specification)	
7	所需文件 (Demands Documents)	

8 其他（Others）
(1) 製造元件皆需經認可手續後方可進料. Material for mass production should be approved formally.
(2) 不論電氣或機械結構上之修改，皆需於進料前再進行認證，方可進料. Material with change in electrical or mechanical should be verified before mass production.

GP 等級 GP Level	☐Non-GP ☒GP2（RoHS） ☐GP3 ☐GP3S ☐其它 others:
	Package Material (610\612\690)：☐GP2P（RoHS） ☐ GP3P ☐GP3SP ☐其它 others:

外观图 Physical Structure :

说明:
1.印刷尺寸：210mm*145mm
2.封面封底材质：157g 铜版纸
内页材质：100g 书写纸
3.中文在前，英文在后
4.装订方式：骑马订

品質保證（Quality Guarantee）:

變更記錄 Change Record	變更事項 （變更說明需含版本：例 00→01。） Change items (Including changing version)	核准 Approved	審核 Checked	Layout	安規 Safety	負責人 Proposer
		陳[illegible]	[illegible]	/	汪[illegible]	[illegible] 11/18'08
		11/19'08	11/18'08		11/19.08.	

飛瑞集團 PHOENIXTEC GROUP	文件類別 File Type	☐機密文件 Confidential File ☐非機密文件 Non-Confidential file	Page 1 of 1
	資料名稱 Data Name	☐初期規格書 Draft Spec. ☐報價規格書 Quote Spec. ☒正式規格書 Formal Spec.	

應用類別 Application Type	☒UPS ☐AVR ☐SMR ☐INVERTER ☐u-UPS ☐硬体模组 Module ☐其他 Others：
品名 Description	USER'S MANUAL 1XX2/1XX3 MULTI.LAN EATON

適用材料 Information for Original Type	料號 Part Number	規格 Specification	備註 Note	料號 Part Number	規格 Specification	備註 Note
	614-06782-00					

最初適用機種 (Application Scope)	

內 容 記 事 （Particular Information）

1	製造商 (Manufacturer)	
2	電氣規格 (Electric Specification)	
3	機械結構 (Mechanism Structure)	
4	標示說明 (Marking)	
5	IQC 檢驗說明 (IQC Checkout)	
6	安全規格 (Safety Specification)	
7	所需文件 (Demands Documents)	

8 其他（Others）
(1) 製造元件皆需經認可手續後方可進料. Material for mass production should be approved formally.
(2) 不論電氣或機械結構上之修改，皆需於進料前再進行認證，方可進料. Material with change in electrical or mechanical should be verified before mass production.

GP 等級 GP Level	☐Non-GP ☒GP2（RoHS） ☐GP3 ☐GP3S ☐其它 others： Package Material (610\612\690)：☐GP2P（RoHS） ☐ GP3P ☐GP3SP ☐其它 others：

外观图 Physical Structure :

说明：
1.印刷尺寸：210mm*145mm
2.封面封底材质：157g 铜版纸
内页材质：100g 书写纸
3.中文在前，英文在后
4.装订方式：骑马订

品質保證（Quality Guarantee）:

變更記錄 Change Record	變更事項 （變更說明需含版本：例 00→01。） Change items (Including changing version)	核准 Approved	審核 Checked	Layout	安規 Safety	負責人 Proposer

變更記錄 Change Record	變更事項 （變更說明需含版本：例 00→01。） Change items (Including changing version)	核准 Approved	審核 Checked	Layout	安規 Safety	負責人 Proposer
	變更記錄位置不夠請自行添加，多出也可刪除					

Eaton DX

1000/2000/3000

用户手册/user manual

Powering Business Worldwide

前言

致用户：

感谢您选用了伊顿 UPS的产品来保护您的电子设备。

Eaton DX 系列UPS的设计最大限度地考虑了各方面的要求。我们建议您仔细阅读本手册，以便充分利用您的UPS诸多特性。

如需进一步了解伊顿的全系列产品的信息，以及可为Eaton DX UPS配置的选件，请您浏览我们的网站
www.eaton.com.cn ，
或与伊顿各地的分支机构联系。

本手册未经伊顿公司许可，不得复制，本公司保留最终解释权。

安全指导

■ Eaton DX备有自己的电力来源(电池)。故此，即使Eaton DX与市电分隔，输出端仍有电压输出(冷起动状态)；

■ **机柜内有危险性电压，需打开机柜时务必请有经验和资格的工程师操作；**

■ Eaton DX一定要接地；

■ 请勿置放Eaton DX于接近液体或环境潮湿的地方；

■ 请勿让液体或外来物体进入Eaton DX;

■ 请勿阻塞在Eaton DX背面及侧面的通风道;

■ 请勿将Eaton DX直接暴露于阳光之下或将它放于靠近热源的地方;

■ 市电输入开关尽可能靠近Eaton DX，断开市电输入开关可以使输入电源断开;

■ Eaton DX含有密封的铅酸电池，这些电池一定要根据适当的规则正确地处理;

■ 若Eaton DX在使用前要贮存，它应存放于干爽的地方。贮存温度范围：0℃到+40℃;

■ 若Eaton DX长期不用，则为了保持电池的储能和防止电池的永久损坏，应在 4 ~ 6 个月内将Eaton DX接驳市电不少于12小时对电池充电。

■ 包装材料请注意按法规正确回收处理。

目录

介绍

在关键的场合，您尽可放心地依靠Eaton UPS的Eaton DX 系列不间断电源。它们能最大限度地保护您的数据不被破坏，在任何时候Eaton DX UPS都保证提供高品质电源：您能在市电掉电时，继续工作。其内部的智能微型处理器能够检测到UPS的各种异常操作状态，并且在需要校正时，触发警报信号。

除此而外，Eaton在世界各地的专业维修工程师能够随时为您提供满意的服务。毫无疑问，Eaton UPS 为世界UPS的领导者。

Eaton DX 介绍

网络服务器及互联设备对电气扰动非常敏感，电气扰动会造成计算机的数据丢失或硬件损坏(电源，硬盘)。这是一个大问题。Eaton DX是专门为多用户系统(有网路的PCs，UNIX系统等等)、大型服务器、服务器群及互联网络上的平台提供集中保护而设计的。Eaton DX以其自动旁路模块，为您的敏感设备提供真正的容错电源系统。Eaton DX为您提供最大的灵活性和各种联接方式。

Eaton DX结构紧密，工作噪声相当小，可以安装于较小空间。

Eaton DX 保证提供稳定的净化电源，市电停电的时候自动供应电源并按照选择的配置提供广泛的信息及控制功能。由于在线式和电气隔离技术的应用，大量设备可以和标准电源插座相联而不必考虑您的电气安装的配置；Eaton DX 保证提供连续的高等级保护，以确保为您的工作站、服务器及网络通讯设备提供可靠的电源。

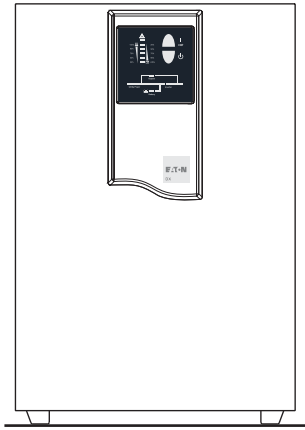
Eaton DX 提供多种功能和特点来简化电源管理

- 故障发生时，LED提供充分地预先警告信号以进行替换蓄电池。
- 前面板的LED能发出各种故障及警告信号。
- 直方图连续指示蓄电池充电水平或所带负载水平。

本手册适用于Eaton DX1-3kVA系列产品，包括Eaton DX 1000(XL)、Eaton DX 2000(XL)及Eaton DX 3000(XL) 标准机型和可外接电池的长延时机型(外箱型号有XL字样)。

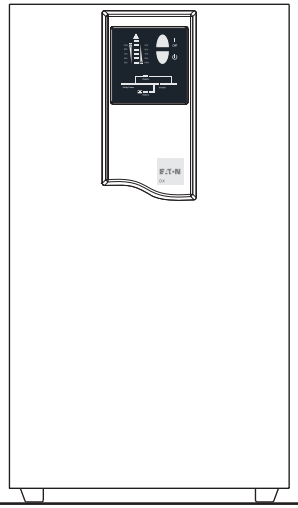
1.1 前视图

Eaton DX 1000(XL)



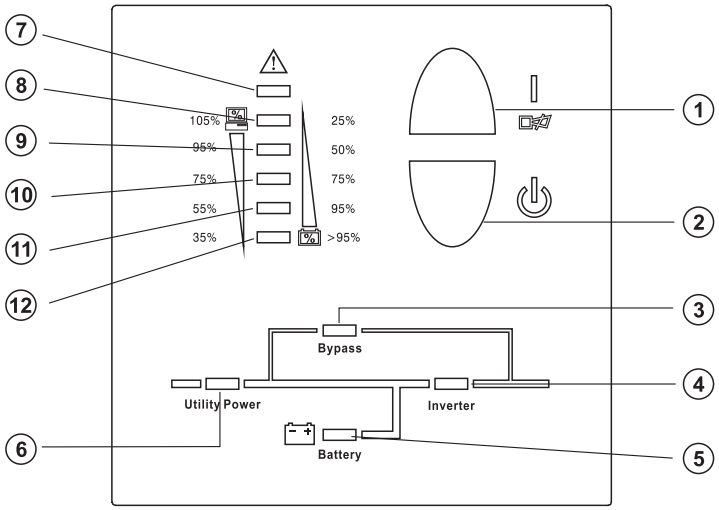
Eaton DX 1KVA UPS

Eaton DX 2000(XL)/3000(XL)



Eaton DX 2 / 3KVA UPS

1.2 控制面板



① 启动与静音

② 关机

③ 旁路运行

④ 在线运行

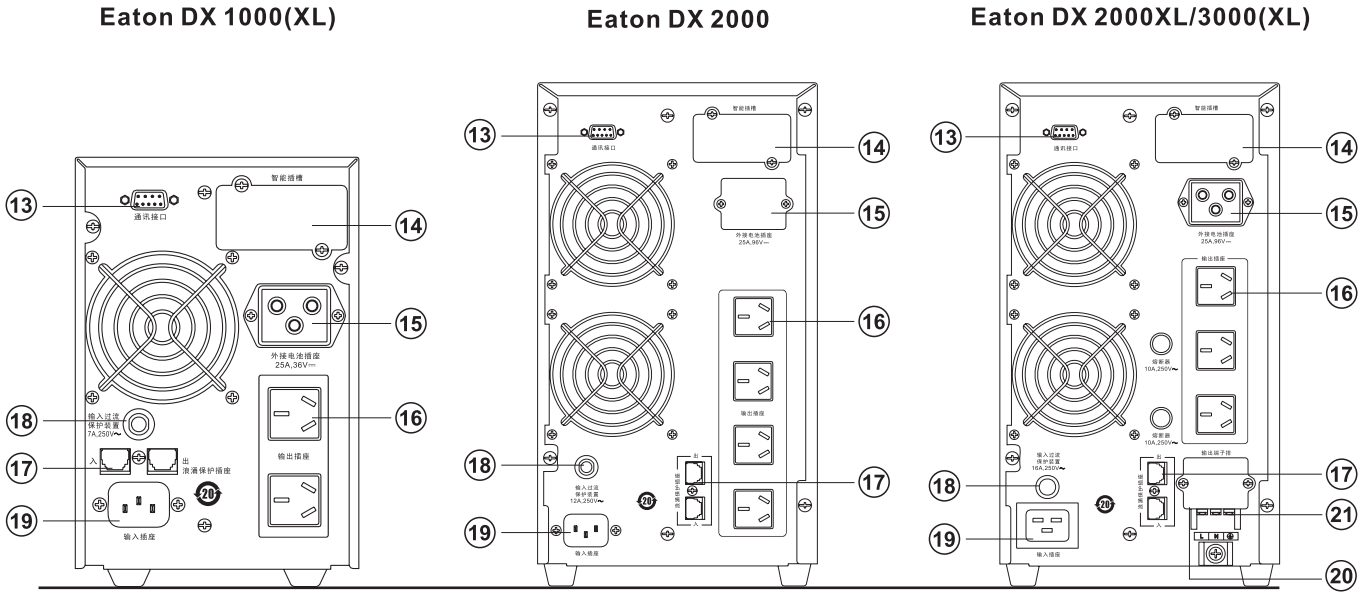
⑤ 电池运行

⑥ 市电状态

⑦ UPS故障

⑧～⑫ 负载／电池

1.3 后视图



图视说明

⑬ RS232通讯口　　⑭ 通讯板选件　　⑮ 电池插座 (仅长延时机型有)

⑯ 输出插座　　⑰ 浪涌保护插座　　⑱ 断路器

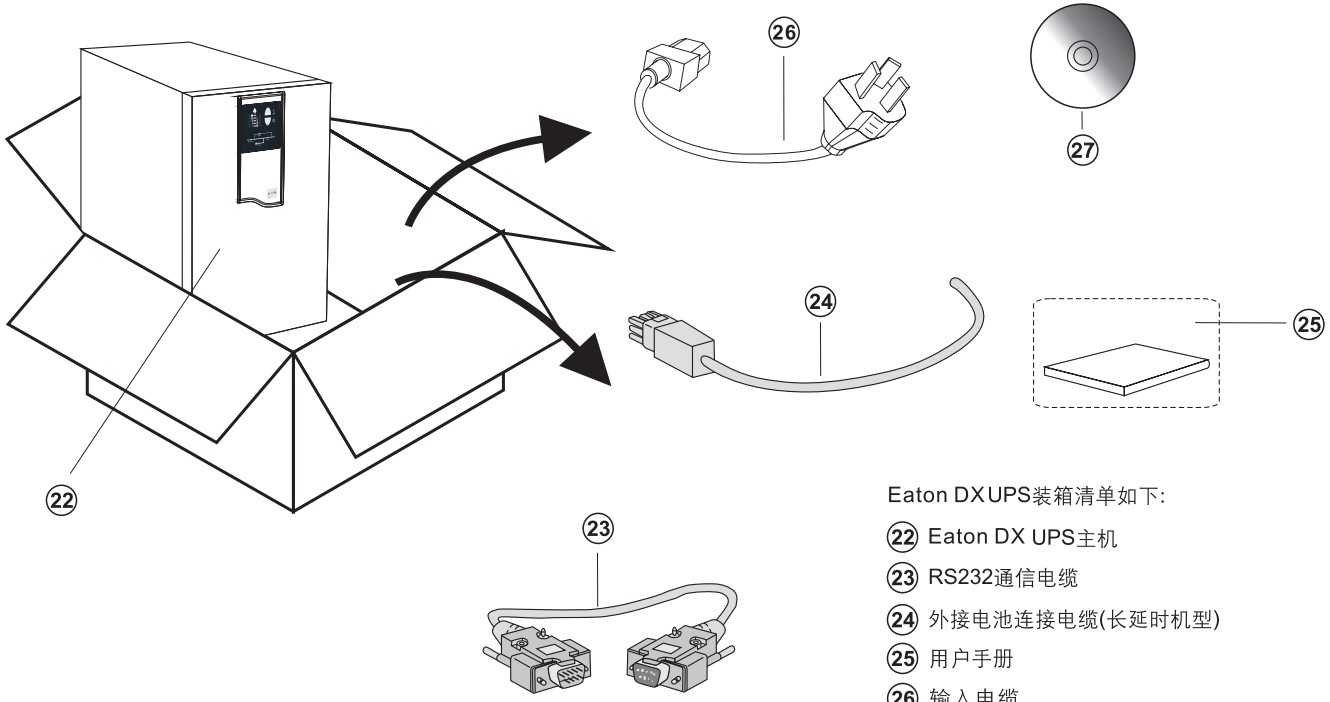
⑲ 输入插座　　⑳ 端子排盖板　　㉑ 端子排

1.4 产品规格

■ Eaton DX输出功率：	Eaton DX 1000(XL)	Eaton DX 2000(XL)	Eaton DX 3000(XL)
□ 视在功率(KVA)-有功功率(KW)	1000VA/700W	2000VA/1400W	3000VA/2100W
■ 市电：			
□ 电压:	115-296V		
□ 频率:	50Hz ± 8%		
□ 功率因数:	≥ 0.95		
■ 输出：			
□ 电压:	220V ± 2%		
□ 频率:	(50± 0.2) Hz		
□ 失真:	THD < 4 %(线性满载)		
□ 过载能力:	110% ~ 150%，30秒； ≥150%，0.3秒		
□ 峰值因数:	3:1		
□ 短路能力:	140ms后UPS断输出		
■ 标准的蓄电池后备时间：	5 - 8分钟（不加外接电池）		
(小心：超过25℃而且每升高10℃，蓄电池寿命会减半)。			
■ 标准效率：	＞ 85%		
■ 环境工作温度：	0℃ ~ 40℃		
■ 储存温度：	0℃ ~ 40℃		
■ 相对湿度：	< 95%		
■ 标准根据：			
□ 安全标准:	YD/T 1095-2000，IEC/EN 62040-1-1		
□ 电磁兼容性:	GB 7260.2，IEC 62040-2		
□ 质量认证:	ISO9001		
■ 噪音水平：	＜ 50dB（距离1米）		
■ Eaton DX 尺寸及重量：			
□ 高(毫米) x 宽(毫米) x 深(毫米)	220 × 146 × 400	340 × 190 × 460	340 × 190 × 460
□ 重量(千克) (不包括电池)	7	14	15

安装

2.1 拆包检查



Eaton DX UPS装箱清单如下:

㉒ Eaton DX UPS主机

㉓ RS232通信电缆

㉔ 外接电池连接电缆(长延时机型)

㉕ 用户手册

㉖ 输入电缆

㉗ "Winpower"通信软件光碟

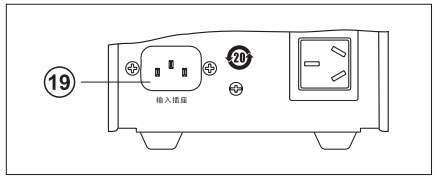
安装

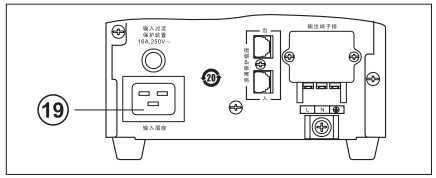
2.2 连接 Eaton DX

1、连接交流电源

使用有过电流保护装置的插座，并注意不可使用额定电流小于UPS最大输入电流的插座。

1)电源线和插座⑲连接来提供交流电源;
2)将电源线另一端与交流电插座相连接。

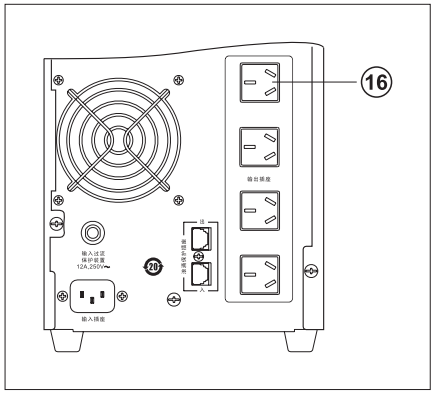




⚠ **在开始连接之前，请确认上线的保护装置（交流电源）是断开的；如果是长延时机，必须断开电池模块。**

2、设备的连接

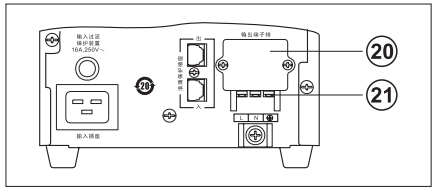
将受保护的设备直接与插座⑯连接即可。



Eaton DX 3000 (XL)还可以通过接线端子排与设备相连。

这种连接必须由有资格的电气人员操作。

1)拆下接线端子排盖板⑳;
2)采用横截面积 1.5 ~ 4 平方毫米的电缆进行配线;
3)将三根导线与输出的接线端子排㉑相连，确保接触牢靠。



⚠ **永远都是先连接地线。**

安装

2.3 Eaton DX长延时XL机型外接电池的安装

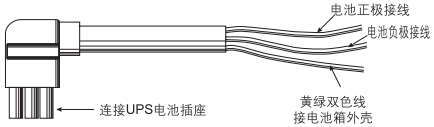
Eaton DX 1000XL采用3节电池串联成36VDC电池组，Eaton DX 2000XL及3000XL采用8节电池串联成96VDC电池组。

电池电缆一端为插头用以连接UPS，另一端为开放式三根线用以连接电池组，电池连接程序非常重要，若未依照程序进行，可能会有电击危险，所以请严格遵照下列步骤进行:

1、串联好电池组，确保合适的电池电压。
2、电池电缆接电池端。

⚠ **不可先接UPS端,否则有电击危险。**

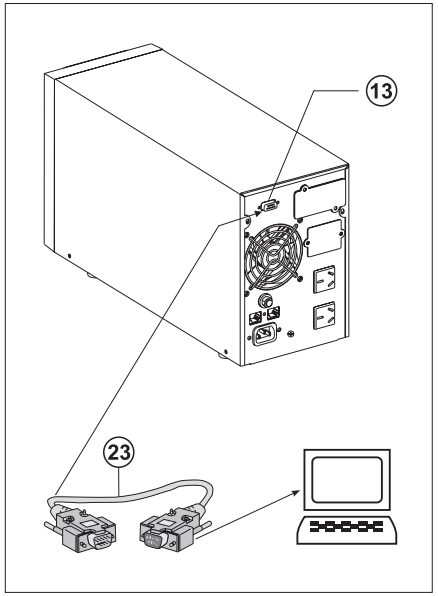
3、将电池线插头接到UPS电池插座即完成连接，UPS先不接任何负载，先将电池组插头接到UPS电池插座即完成连接，UPS 开始对电池组充电。



电池电缆图

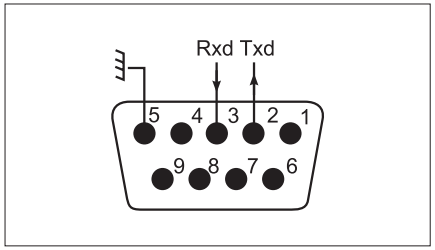
正极	红线
负极	黑线
接地	黄绿双色线

2.4 连接到RS232通讯口(选项)



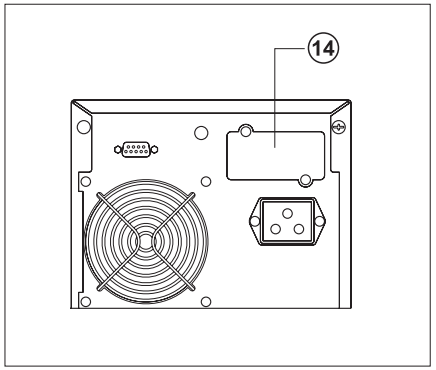
1、将RS232通讯电缆23连接到计算机的串行口;
2、将RS232通讯电缆23连接到UPS的RS232通讯口;

Eaton DX UPS通过RS232通讯电缆与计算机成功连接后，便可以使用Winpower监控软件对UPS进行管理、设置或安全保护。
UPS上的RS232通讯口13的脚位图。



安装

2.5 通讯板选件的安装



通讯板的插槽。

安装通讯板的过程中不需要停止UPS:

1、拆下插槽的盖板⑭;

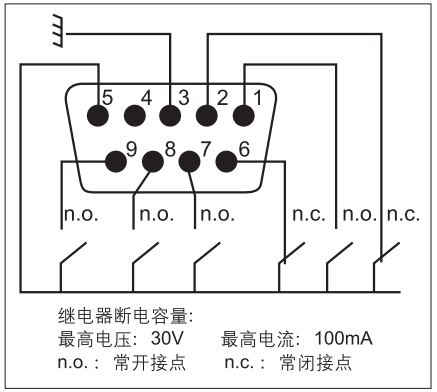
2、在插槽中插入通讯板;

3、用两颗螺丝锁紧通讯板。

1、状态信息卡－AS400 (选件)

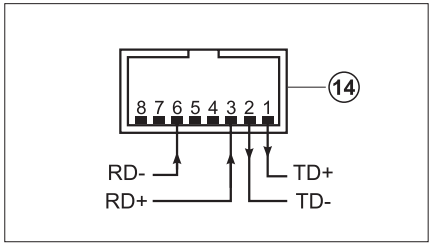
智能插槽通讯口⑭位于Eaton DX背面板上，提供Eaton DX的状态信息。此通讯口包括SUB-D9母座，其输出情况如下:

1 - UPS故障,
2 - 综合报警,
3 - 接地,
4 - 远程关机,
5 - 公共端,
6 - 自动旁路供电,
7 - 电池低电压的关机信号,
8 - 逆变的供电,
9 - 电池供电。



2、SNMP 通讯口 (选件)

位于Eaton DX后面板上的智能插槽通讯口⑭，提供SNMP允许的数据。

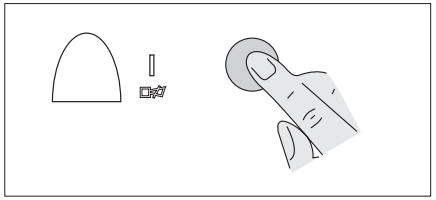


操作

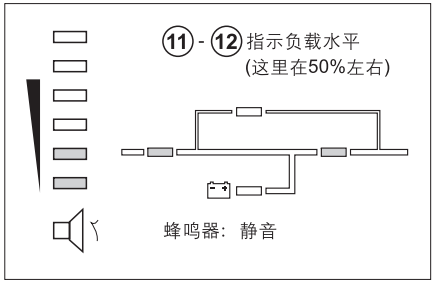
3.1 起动

a) 有市电起动

■ **按下 "启动" 按钮①:**



■ UPS正常工作开始，指示灯处于如下状态:

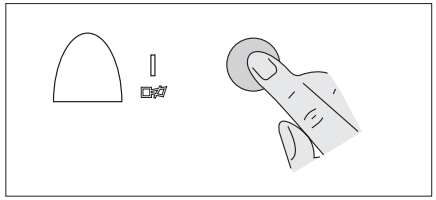


■ **负载由Eaton DX供电。**

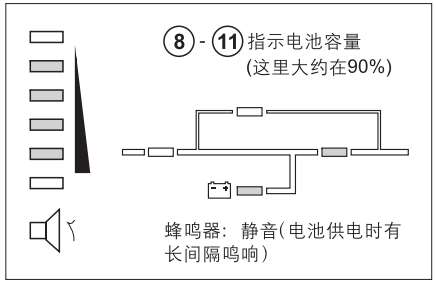
■开机时，UPS 会进行自检，面板上负载 / 电池指示灯会全亮，从下到上逐一熄灭，几秒钟后逆变指示灯亮，UPS已处于在线运行状态。若市电异常，UPS将工作在电池运行状态。

b) 无市电起动

■ **按下 "启动" 按钮①:**



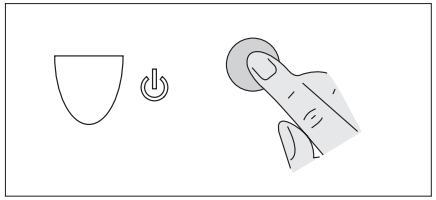
■ 用电池供电的工作开始，指示灯处于如下状态:



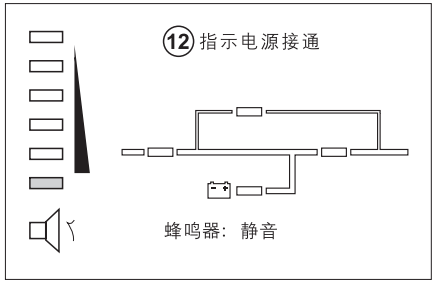
■ **负载由Eaton DX从电池供电。**

3.2 Eaton DX停机

■ **按下 "停机" 按钮②:**



■ Eaton DX会停机，指示灯处于如下状态:



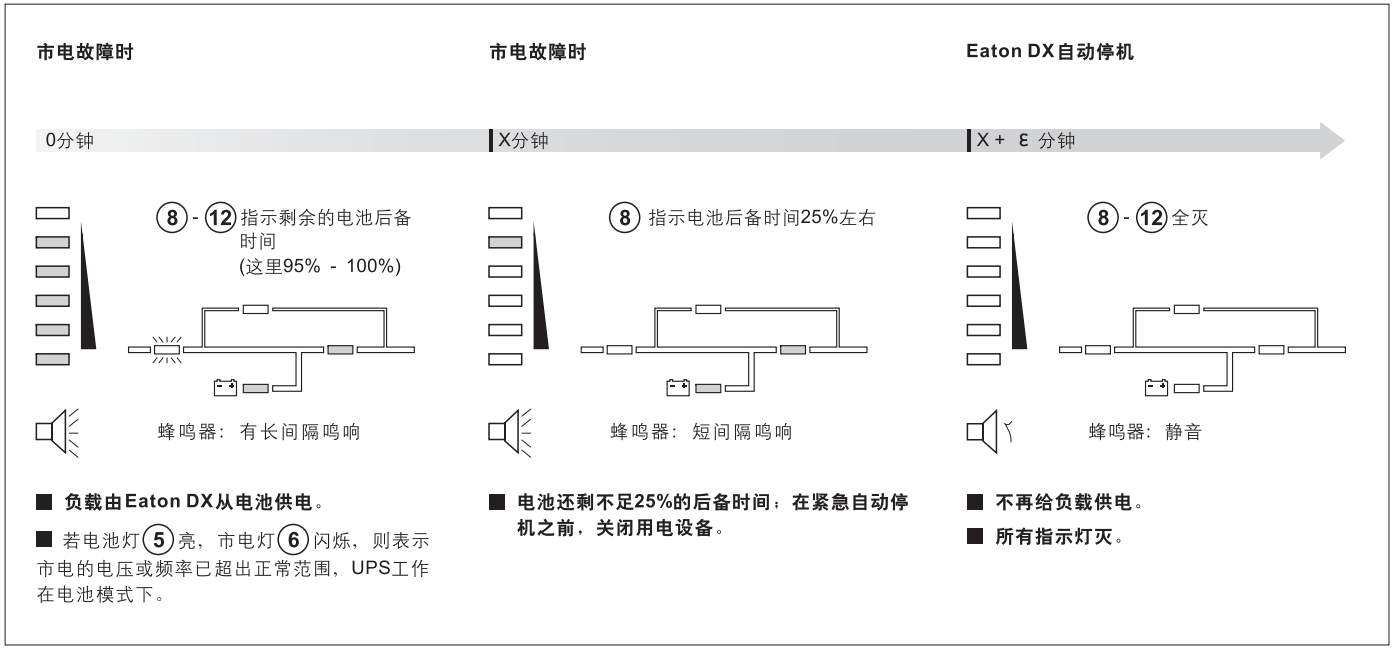
■ **不再供电给负载。如市电存在可为电池充电。**

■关机时，UPS 会先进行自检，负载 / 电池指示灯全亮并逐一熄灭，最后面板无显示，UPS转入旁路状态。

■将市电断开，UPS无输出电压

3.3 电池放电

市电故障时，操作程序如下：



■ **负载由Eaton DX从电池供电。**

■ 若电池灯⑤亮，市电灯⑥闪烁，则表示市电的电压或频率已超出正常范围，UPS工作在电池模式下。

■ **电池还剩不足25%的后备时间：在紧急自动停机之前，关闭用电设备。**

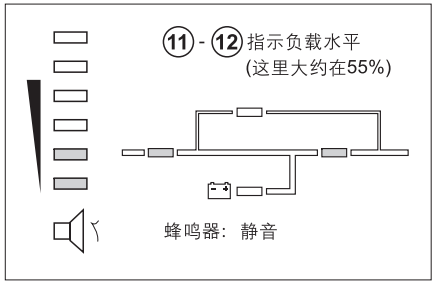
■ **不再给负载供电。**

■ **所有指示灯灭。**

操作

3.4 市电恢复

■ 不论处于上述序列的那一点，市电恢复时，Eaton DX转变到正常操作状态:

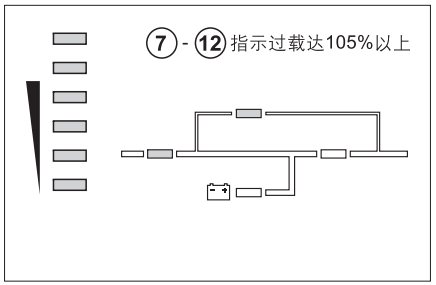


■ **负载由Eaton DX供电**。

■ 市电恢复，UPS会自动测试所有指示灯;

■ 测试完毕后显示目前工作状态。

3.5 过载



有市电

■ 如果过载在额定值 (150%，0.3秒) 以内，则蜂鸣器以每秒二次高速报警，逆变器维持输出;

■ 如果过载超过额定值，则负载切换到旁路由市电供电;

■ 如过载在一分钟内消失，UPS 会自动将负载切换回逆变器在线运行。

无市电

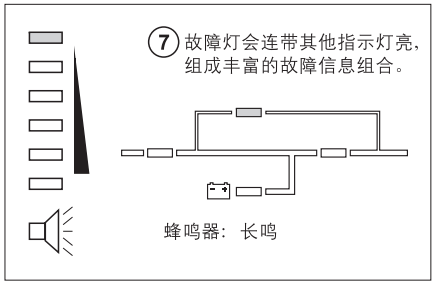
■ UPS会停止供电给负载

■ 按 "关机" 钮，拆除非关键性负载及重新启动Eaton DX。

3.6 操作故障

UPS故障

■ 配有自动旁路模块的UPS:

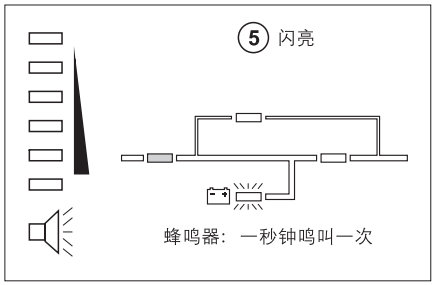


请求技术性的服务。

■由于UPS故障有多种，表现出来的灯号方式各有不同。

电池故障

■电池在首次起动时，要进行测试，首次起动后可自动测试(测试周期可由软件设置)。如果电池失效，则会显示:

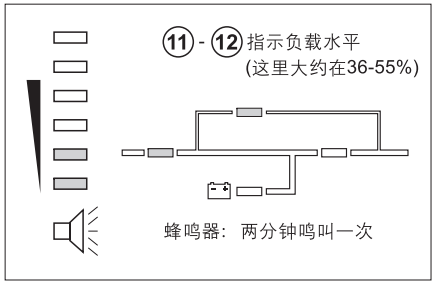


■如为长延时机，检查电池柜上的电池回路断路器是否闭合，否则将其闭合;

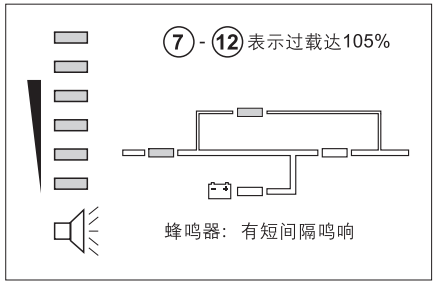
■**请求技术性的服务**

3.7 旁路运行

旁路工作模式



市电过载转旁路



■ 若市电指示灯闪烁，表示市电的电压或频率已超出正常范围或市电零、火线接反。

维护

如果指示灯⑦亮，说明有运行异常或报警。

不需要Eaton售后服务人员支持的故障检修

指 示	含 义	纠 正 措 施
指示灯⑦，⑧亮，蜂鸣器长鸣	UPS过载，过载量太大或持续时间太长，UPS切断给所连接的设备的电源，蜂鸣器连续鸣响。	检查连接到UPS的设备的耗电量，并断开不重要的装置。
指示灯⑦，⑫亮，蜂鸣器长鸣	机器内部温度超高。 ⚠ **在这种情况下，UPS最长运行8小时。**	检查通风口是否阻塞，室内温度是否过高。
指示灯③，⑥，⑫亮，蜂鸣器2分钟鸣叫一次	UPS以旁路方式运行。	按开机键使UPS转回在线运行。
指示灯⑥闪亮	市电超出输入范围或市电输入零火线接反。	负载由电池供电，建议关闭应用程序，保存数据。

需要Eaton售后服务人员支持的故障检修

指 示	含 义	纠 正 措 施
故障灯⑦亮， 蜂鸣器长鸣	UPS的自诊断电路检测到UPS内部发生了故障。 可根据指示灯的不同组合进行判定: 1. 逆变器故障 2. 充电器故障 3. 风扇故障 4. 通讯异常 5. 电池电压异常 6. 输出短路 7.旁路短路 8. 超载 9. 温度过高	通知售后服务部门。
指示灯⑤闪亮， 蜂鸣器一秒钟鸣叫一次	在电池测试过程中检测到电池故障。	确认电池的断电器闭合了。如果是闭合的，请 通知售后服务部门，因为电池的确不良了。

环 保 信 息

本产品为绿色环保型产品，符合国家颁布的《电子信息产品污染控制管理办法》中的各项要求。使用前，请详细阅读《产品使用说明书》，正确使用本产品。在正常情况下，产品中的有毒、有害物质不会产生泄露或挥发，也不会对人体及环境造成危害。

我们一直致力于设计、制造环保型产品，并通过持续的技术研发，进一步降低或消除产品中的有毒、有害物质。以下列出有毒有害物质所在的零件之具体部位，以方便环保部门回收。

附：有毒有害物质和元素表

部件名称	铅（Pb）	汞（Hg）	镉（Cd）	六价铬（Cr^{6+}）	多溴联苯（PBBs）	多溴联苯醚（PBDEs）	物质来源说明
半导体器件类	×	○	○	○	○	○	半导体本体中含有铅
开关/断路器类	○	○	×	○	○	○	铜触点中含有电镀镉
陶瓷电子组件类	×	○	○	○	○	○	陶瓷封装电子零件中陶瓷本身含有铅
电源线和插座之端子	×	○	○	○	○	○	端子中含有铅
保险丝类	×	○	○	○	○	○	保险丝材质铋中含有铅
电池类	×	○	○	○	○	○	铅酸电池中含有铅
箱体五金类	×	○	○	○	○	○	钢材、铝材、铜合金中含有铅
焊锡	×	○	○	○	○	○	焊料中含有铅

备注	
	○：表示该有毒有害物质在该部件所有均质材料中的含量在SJ/T 11363-2006规定的限量要求以下。
	×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006规定的限量要求。
	产品的环保使用期限说明：本产品的环保使用期限，是指在正常使用条件和遵守本产品安全使用注意事项的情况下，从生产日起本产品含有的有毒有害物质或元素不会对环境、人身和财产造成严重影响的期限。因电池需周期性更换，所以20年环保使用期限不包括电池。

Foreword

Thank you for selecting Eaton UPS product to protect your electrical equipment.

The **Eaton DX** range has been designed with the utmost care. We recommend that you take the time to read this manual to take full advantage of the many features of your UPS.

To discover the entire range of Eaton UPS products and the options available for the **Eaton DX** range, we invite you to visit our web site at **www.eaton.com.cn** or contact your Eaton UPS representative.

Safety rules

■ **Eaton DX** contains its own source of power (battery), the load-side power outlets can therefore carry dangerous voltages even when **Eaton DX** is disconnected from the AC input power;

■ dangerous voltages are also present inside the unit. The units should only be opened by a qualified service technician;

■ **Eaton DX** must always be earthed;

■ do not place **Eaton DX** close to liquids or in a very humid environment;

■ do not let liquids or other foreign objects enter **Eaton DX**;

■ do not obstruct the ventilation grates in the back and sides of **Eaton DX**;

■ do not expose **Eaton DX** to direct sunlight or place it near heat sources;

■ the AC outlet from which **Eaton DX** is powered should be near the unit and remain easily accessible. The primary source of power is removed by Disconnecting **Eaton DX** power cord;

■ **Eaton DX** contains sealed lead-acid batteries which must be disposed of properly according to applicable regulations;

■ if **Eaton DX** is put in storage before being used, it should be stored in a dry place. Storage temperature range: 0℃ to +40℃;

■ if **Eaton DX** remains disconnected from AC input power for extended periods, it is recommended to connect the unit once a month for 12 hours to keep the battery charged and to avoid irreversible battery damage;

■ please disposed of the packaging in accordance with the applicable legislation.

Contents

Presentation

In critical situations, it is reassuring to be able to count on Eaton UPS . Eaton DX uninterruptible power supplies (UPS). They maximize protection to keep your data intact and accessible. In doing so, they guarantee virtually total availability.

Eaton DX UPS ensure top quality power around the clock. An intelligent microprocessor control device also detects any operating anomalies of the UPS and triggers an alarm if corrective action is necessary.

In addition to the high-technology aspect of these UPSs, you can count on a team of local specialists, throughout the world. It's no accident that Eaton UPS is the world leader.

Eaton DX presentation

Network servers and interconnection devices are very sensitive to electrical disturbances of all types, including outages, voltage sags, brownouts, spikes, etc.

The origins of the disturbances also vary, ranging from atmospheric phenomena such as lightning and frost, to nearby devices generating interference such as elevators, photocopy machines, and machine tools, not mention human errors, like the accident at pulling out of power cords or tripping of circuit breakers.

The consequences of these disturbances on computer systems range from data losses to hardware damage (power supplies, hard disks) and this always means problems.

Eaton DX UPS was specially designed to provide centralised protection of multi-user systems (networked PCs, UNIX systems, etc.), large servers, server clusters and internetworking bays.

Eaton DX UPS are genuine fault-tolerant power supply systems for your sensitive equipment. **Eaton DX** UPS give you maximum flexibility and various connection possibilities (direct connection to a standard socket to terminal blocks, as required).

Eaton DX UPS guarantee a stable supply of clean power, power supply autonomy in a mains outage and vast according to the configuration selected. With On-Line technology, a large number of devices can be connected to a standard power socket without worrying about the configuration of your electrical installation.

Eaton DX UPS guarantee continuous, top-grade protection and availability for your workstations, servers and network communications equipment.

Presentation

Eaton DX offer many functions and characteristics designed to simplify power management:

■ automatic battery test carried out periodically. In the event of a fault, a LED provides enough advance warning for battery replacement;

■ front panel LEDs signal all types of faults and alarms;

■ bar graph continuously indicates the battery charge level or the computer application load level;

■ Winpower is a CD-ROM which contains all the tools needed to supervise your UPS.

This manual is designed for the Eaton DX series product, including:

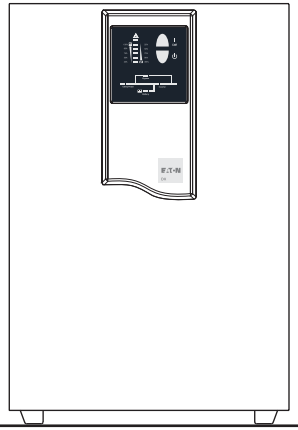
■ Eaton DX 1000(XL)
■ Eaton DX 2000(XL)
■ Eaton DX 3000(XL)

standard model and the long back up time model marked with "XL" model on the carton box.

Presentation

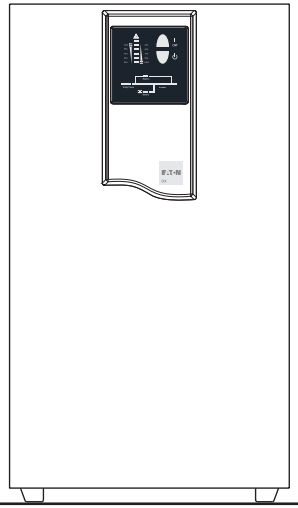
1.1 Front view

Eaton DX 1000(XL)



Eaton DX 1KVA UPS

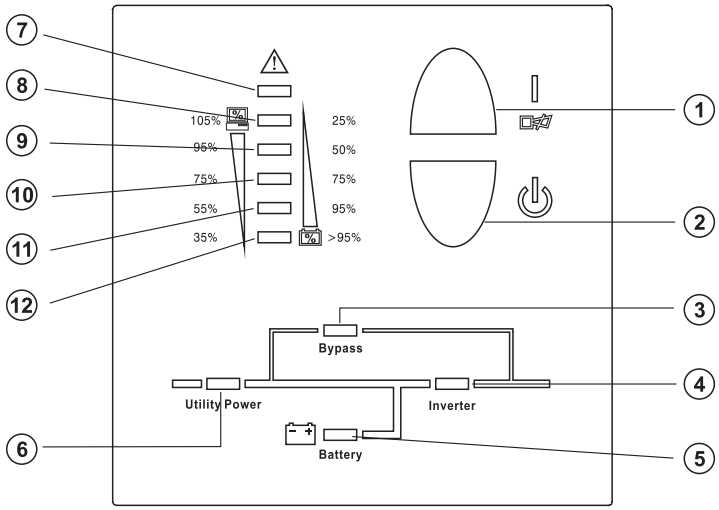
Eaton DX 2000(XL)/3000(XL)



Eaton DX 2 / 3KVA UPS

Presentation

1.2 Control panel

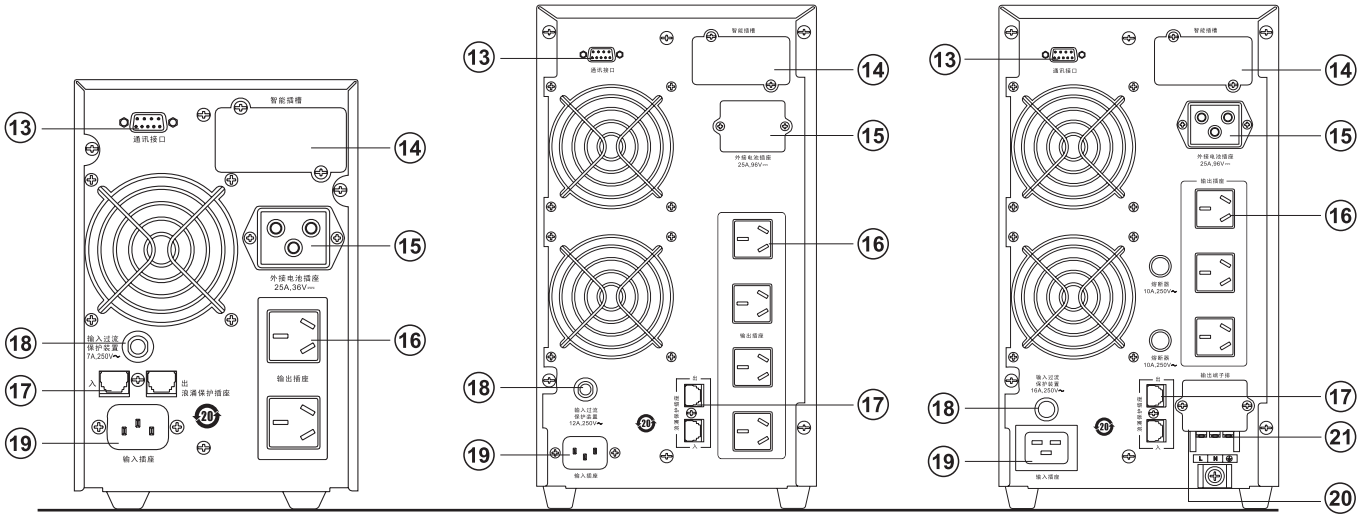


1. ON or buzzer OFF
2. OFF
3. bypass mode
4. inverter mode
5. battery mode
6. utility power
7. UPS fault
8. ~ 12. load/battery indicator

Presentation

1.3 Back view

Eaton DX 1000(XL) **Eaton DX 2000** **Eaton DX 2000XL/3000(XL)**



13 RS232 communication port

14 slot for communication card option

15 battery connector (for XL model only)

16 output socket

17 network/fax/modem surge protection

18 input circuit breaker

19 input socket

20 terminal block cover

21 terminal block

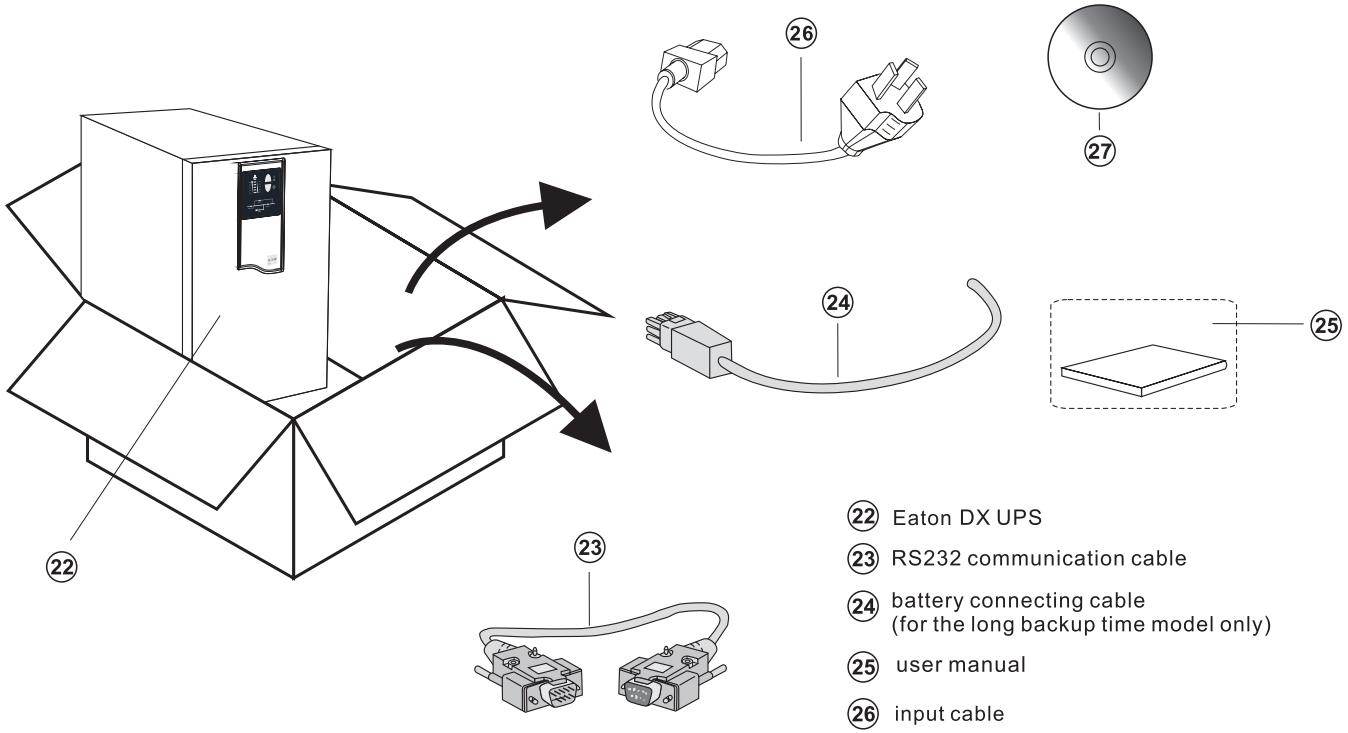
Presentation

1.4 Technical data

■ Eaton DX output power:	Eaton DX 1000(XL)	Eaton DX 2000(XL)	Eaton DX 3000(XL)
☐ apparent(KVA)-active(KW): Pn	1000VA/700W	2000VA/1400W	3000VA/2100W
■ mains supply:			
☐ voltage:	115-296V		
☐ frequency:	50Hz ± 8%		
☐ power factor:	⩾0.95		
■ output specification:			
☐ voltage:	220V ± 2%		
☐ frequency:	(50± 0.2) Hz		
☐ distortion:	THD < 4 % on linear load		
☐ overload capability:	110% ~ 150%, 30sec; ⩾ 150%, 0.3sec		
☐ crest factor:	3:1		
☐ short-circuit protection:	within 140 ms cut off the output		
■ standard battery backup time: **(caution: the battery life is halved every 10℃ above 25℃)**	5 - 8 min		
■ nominal efficiency:	＞ 85%		
■ operating temperature:	0℃ ~ 40℃		
■ storage temperature:	0℃ ~ 40℃		
■ relative humidity:	< 95%		
■ according to standards:			
☐ safety:	YD/T 1095-2000, IEC/EN 62040-1-1		
☐ electromagnetic compability:	GB 7260.2, IEC 62040-2		
☐ quality certification:	ISO 9001		
■ noise level (at 1 meter):	＜ 50dB		
■ dimension and weight of Eaton DX:			
☐ height(mm) x width(mm) x depth(mm):	220 × 146 × 400	340 × 190 × 460	340 × 190 × 460
☐ weight(kg)(w/o batts.):	7	14	15

Installation

2.1 Unpacking and check



㉒ Eaton DX UPS

㉓ RS232 communication cable

㉔ battery connecting cable
(for the long backup time model only)

㉕ user manual

㉖ input cable

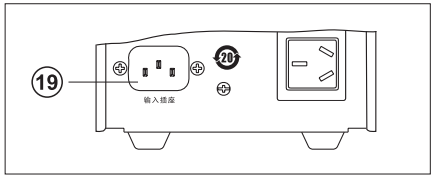
㉗ "Winpower" CD ROM

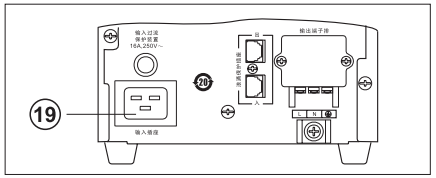
Installation

2.2 Connecting Eaton DX

1. Connect to the AC power

Use the power socket with circuit breaker protection, and ensure that the maximum input current of UPS must be less than the rated current of input power socket.

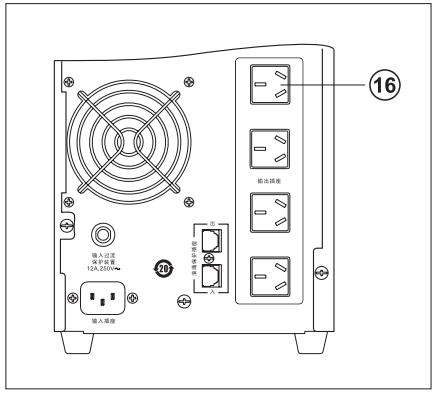




⚠ **Before carrying out any connections, check the battery circuit breaker is OFF and the upstream protection devices (AC-power source) are open (OFF).**

2. Connect to the load

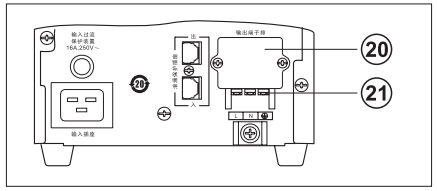
Connect the load to the output socket (16) ;



Eaton DX 2000XL and Eaton DX 3000(XL) can also connect the load to the terminal block.

This type of connection must be carried out by the qualified electrical personnel.

1. remove the terminal-block cover (20) ;
2. prepare a 1.5-4mm^2 cable for power output;
3. connect the three wires of output cable to the output terminal block (21) and ensure that the cable connection is fastened.



⚠ **Always connect the earth wire first!**

2.3 Installation of the external battery cabinet

Eaton DX 1000XL has 3 batteries and Eaton DX 2000XL/3000XL has 8 batteries are connected in series as 36V and 96VDC battery set respectively.

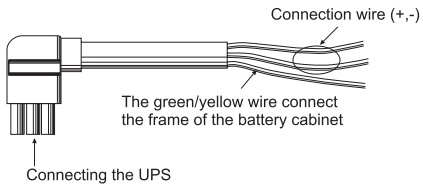
Battery cable connect to Eaton DX by a specific connector and battery cabinet with a 3 core cable.

It is very important to follow the battery connecting procedures. Otherwise, there may have electric shock hazard. Please perform the connecting procedures according to the following step strictly:

1. connect the batteries in series and check the battery voltage.
2. connect the battery cable to the battery and connect the battery cable connector to the battery receptacle of the UPS.

⚠ **Do not connect the battery cable to the UPS first. Otherwise, there may be electric shock hazard.**

3. connect the input power cable to the power source first and then the UPS will begin to charge the battery pack.



Eaton DX battery cable

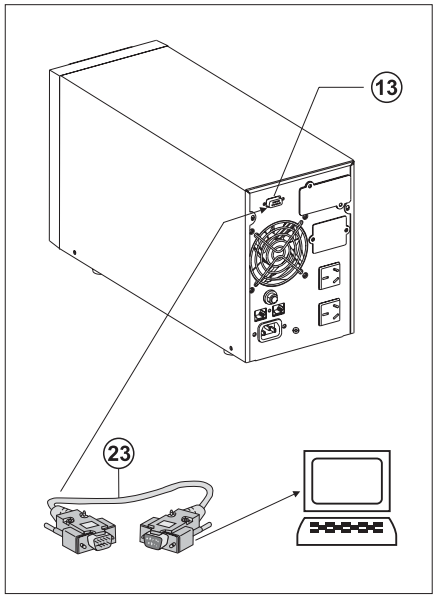
Battery cable:

Pole	Eaton DX 1000XL/2000XL/3000XL
+	red wire
–	black wire
G	yellow/green wire

⚠ **Do not connect any loads to UPS before finishing the external battery connection.**

Installation

2.4 Connecting to the RS232 communication port

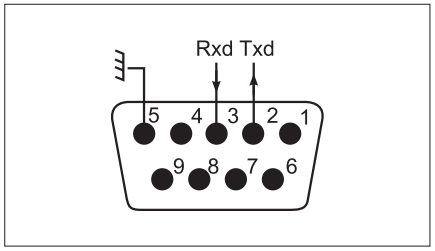


1. connect the RS232 communication cable 23 to the serial port of computer;

2. connect the RS232 cable 23 to the RS232 communication port 13 of Eaton DX.

Now, Eaton DX can communicate with computer by using the Winpower software.

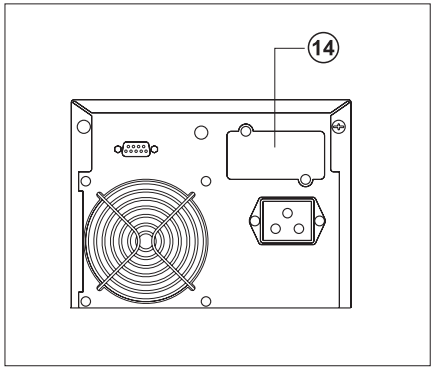
This is the DIN configuration 13 of RS232 interface port on UPS.



Installation

2.5 Installation of the optional communication card

Slot for communication card



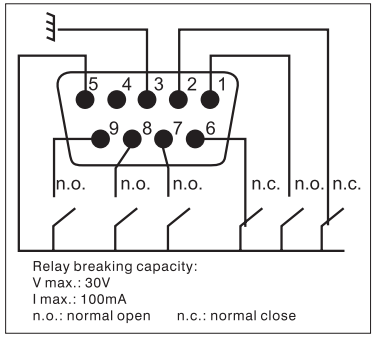
You don't need to stop the UPS during the installation of communication card.

1. remove the cover plate of slot (14);
2. insert the communication card into the slot (14) ;
3. secure the communication card with two screws.

1. Status information - AS400 (optional)

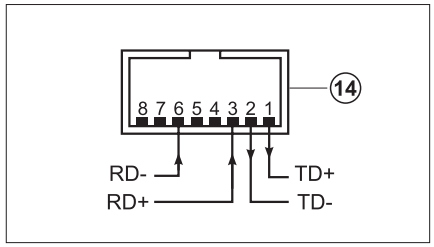
The communication port (14) with the installation of AS400 communication card supplies information on the status of UPS. It consists a SUB-9 female connector with following PIN-outs:

1. UPS fault
2. general alarm
3. earth
4. remote shutdown
5. common
6. operation on bypass
7. low battery shutdown warning
8. operation on UPS
9. operation on battery



2. SNMP communication (optional)

The Communication Port (14) with the installation of SNMP communication card supplies the SNMP compliant data on an RJ45 connector.

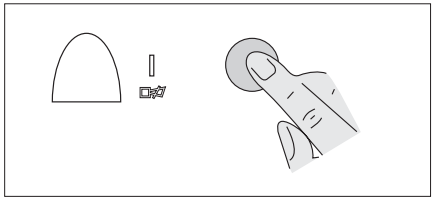


Operation

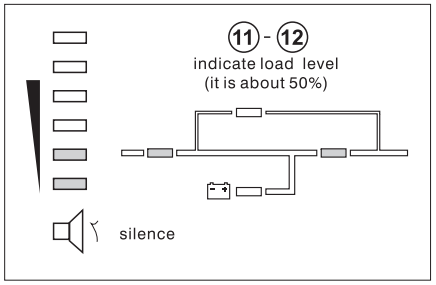
3.1 Start up

a) Startup with the mains

■ **press down the "ON" button ①:**



■ normal operation will begin with indicators in the following state:



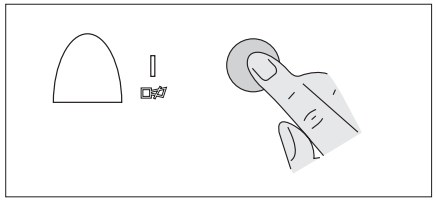
■ **EatonDX supplies power to the load.**

■ once turn "ON", UPS will perform a self-test automatically and all of the load/battery LED on the control panel are on. Then, the indicators will off one by one, from top to bottom.

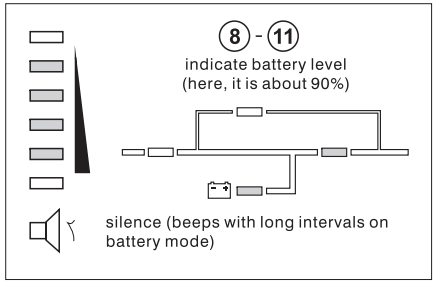
■ The Inverter LED will on after a few seconds and UPS is under online mode. If the mains (utility power) is abnormal, UPS runs in battery mode.

b) Startup without the mains

■ **press down the "ON" button ①:**



■ UPS starts up on battery mode and the indicators in the following state:

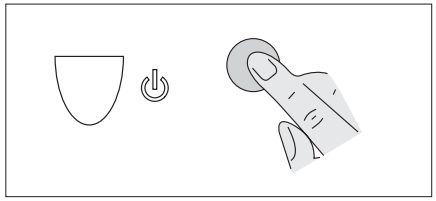


■ **battery of UPS supplies power to the load**

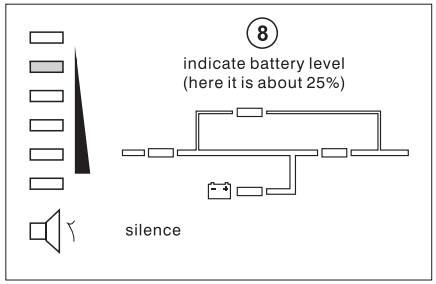
Operation

3.2 Shut down

■ **press down the "OFF" button (2):**



■ EatonDX will be turn off with the indicators in the following state:



■ **UPS does not provide power to the load any more. Battery will be under charging mode if the utility power is available.**

■ UPS performs a self-test automatically before shut down. All load/battery LEDs are on and then off one by one.
Finally, there is no display on the control panel and UPS transfers to bypass mode.

■ disconnect UPS from the utility power and UPS has no output voltage.

Operation

3.3 Operation on battery

When AC power fails, the operating sequence is the following:

AC power failure

0 minute

8 - 12

indicate the remaining backup time (Here, between 95% - 100%)

long beep intervals

- **loads are being supplied by Eaton DX from battery power.**
- if the battery LED 5 is on and the utility power LED 6 flashes, it indicates the mains voltage or frequency is out of the normal range and UPS operates on battery mode.

low battery shutdown warning

X minute

8 indicate the remaining back up time about 25%

short beep intervals

- **here is less than 25% of the back up time left.**
- **shut down your application as automatic shutdown of Eaton DX is imminent.**

automatic shutdown of Eaton DX at the end of backup time

X + ε minute

8 - 12 off

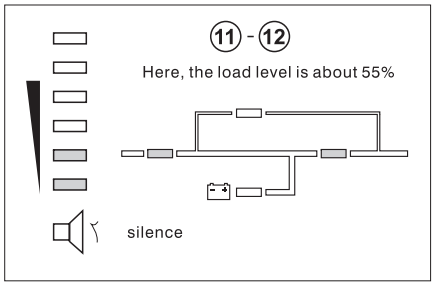
silence

- **loads are no longer being supplied.**
- **all indicators are off.**

Operation

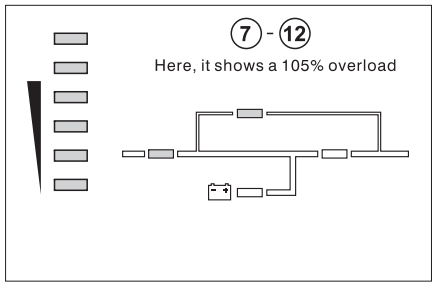
3.4 Return of AC power

- regardless of the point in the above sequence at which AC power is restored. Eaton DX will switch to normal operation:



- **Eaton DX supplies power to the load.**
- UPS performs the lamp test automatically when the mains return.
- finishing the lamp test, UPS will display the present operation status.

3.5 Overload



With mains

- if the overload is within the rated value (130%, 1sec), the buzzer give 2 beeps per second and the inverter supplies power to load.
- if the overload is over the rated value, the load is transfered to bypass and supplied by the mains .
- if the overload disappears within one minute, UPS will transfer the load to Inverter mode.

Without mains

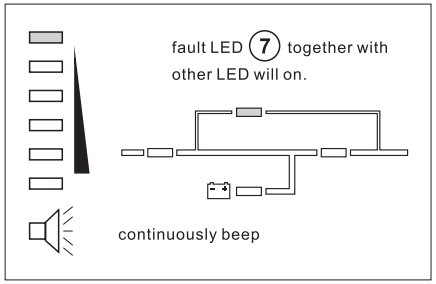
- Eaton DX will shut down and the load will no longer be supplied.
- press the "OFF" button, disconnect nonessential load from UPS and restart .

Operation

3.6 Operating fault

UPS fault

- UPS is equipped with automatic bypass module:



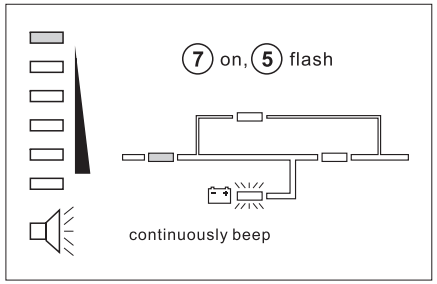
Request technical service

- the fault LED 7 is on with other indicator.
- the different combination with the fault LED 7 and other indicator give the detail information of UPS fault.

Battery fault

- UPS will perform automatic battery-test during start up. This battery test can also carry out during operation by configured via software.

  Failure of the battery may display:

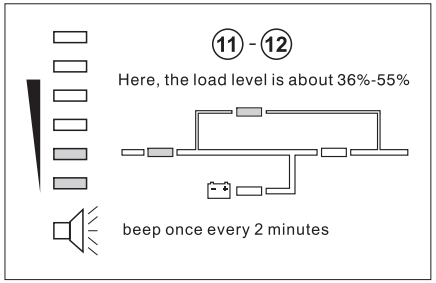


- if UPS is the long backup time model, make sure the battery circuit breaker on battery cabinet is close.
- **request technical service**

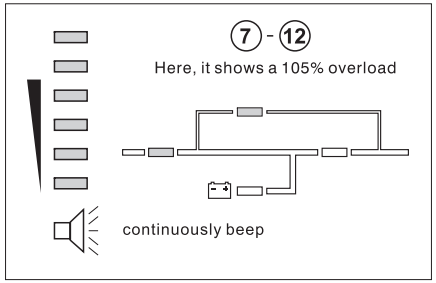
Operation

3.7 Bypass operation

Bypass mode



Automatic bypass caused by overload



■ if the indicator of utility power is flash, it means that the voltage or frequency of the utility power is abnormality or the Neutral and the Line are connected to the wrong place.

Maintenance

If the LED 7 is on, it indicates that the operation is abnormal or having alarm signal.

Troubleshooting not requiring Eaton UPS after-sales support

indication	signification	correction
LED 7 & 8 are on, the buzzer beeps continuously	UPS overload. The power drawn by the connected equipment exceeds UPS capacity.	Disconnect any non-priority devices.
LED 7 & 12 are on, the buzzer beeps continuously	Internal temperature is too high ⚠ **In this condition, the UPS operates for 8 hours at most.**	Check that the air vent is not blocked and if the internal room temperature is normal.
LED 3, 6 & 12 are on, the buzzer beeps once every 2 minutes	Operates on bypass.	Press the "ON" button and return UPS to online mode.
LED 6 flashes	The mains (utility power) is out of the input range of Eaton DX.	UPS supplies power to the load from its batteries. Please turn off the application and save your data.

Maintenance

Troubleshooting requiring Eaton UPS after-sales support

indication	signification	correction
LED 7 goes on, buzzer sounds continuously	Internal UPS fault on below will be given by the different combination with the fault LED and other LED indicators: 1. inverter fault 2. charger fault 3. fan failure 4. communication fault 5. battery fault 6. output short circuit 7. bypass short circuit 8. overload 9. overtemperature	Call afer-sales support department.
LED 5 flashes, buzzer sounds continuously	A battery fault was detected during the automatic battery test.	Check if the battery circuit breaker is closed and call after-sales support department for the battery replacement.

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