

操作说明 | Operating Instructions

PB-30 / PB-30L

pH（酸度）计 | pH Meter



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1 关于说明书

1.1 范围

该说明书是设备的一部分，用于以下型号的设备：

设备	型号
pH(酸度)计，带或不带用户 管理、电极序列号、USB-A口 功能	PB-30 PB-30L

1.2 警告/危险符号

危险

表示如不避免则极有可能导致死亡或严重伤害的危险。

警告

表示如不避免则可能导致中度或轻度伤害的危险。

注意

表示可能导致设备损坏的危险。

显示屏上的数字

设备实际操作时，显示屏上的数字可能会与该说明书中的数字不同。

2 安全信息

2.1 指南和基本信息

- 本pH(酸度)计（以下简称酸度计）遵循关于电气安全和电磁兼容性的相关指令和标准。任何不当的使用或处理都可能会导致设备的损坏和/或伤害。任何不当的使用或操作设备，即未与说明书要求的使用或操作保持一致，将会丧失Sartorius保修的所有权利。

- 使用人员需要阅读并理解这些安装说明，包括安全说明。

- 在有着更高安全要求的系统和环境条件下使用时，必须遵守您所在国家/地区的要求和规定。

- 请始终将设备存放到方便使用的地方。

任何未遵循酸度计说明的安装或操作，都将会丧失Sartorius保修的所有权利。

危险

请勿在有爆炸性材料的危险区域使用本设备。

注意

请确保交流适配器上印刷的额定电压与您本地的电源电压一致。

2.2 安全信息

警告

如果外壳或交流适配器受损，请不要操作酸度计。立即拔出插头，以便将受损设备从电源断开。

注意

请勿将酸度计、酸度计的交流适配器或随Sartorius附带的配件暴露在极端气温、腐蚀性化学蒸汽、潮湿、冲击、震动或强电磁场的环境下。请遵守技术规格所述的操作条件。

注意

操作员应自行对设备的任何修改以及任何不是由Sartorius提供的电缆或设备的连接负责。Sartorius将要求提供有关操作质量的信息。您应当只使用由Sartorius提供的外围设备。

请留意酸度计及其交流适配器的IP防护等级。请不要使液体渗入。防护等级说明了设备在各种环境条件（潮湿、异物）下的适应性。

警告

在清洁交流适配器或酸度计之前：请将插头从主电源拔出。

酸度计仅可由 Sartorius 培训的专业人员打开。

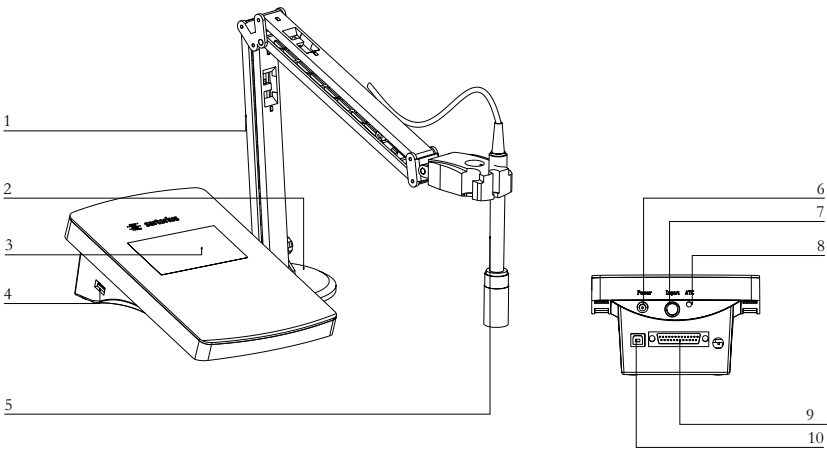
切勿打开交流适配器。

安装和操作期间的风险

注意

铺设电缆时，请注意选择合适的位置，以免将人员绊倒。

3 设备概览



组件	功能与名称	组件	功能与名称
1	电极支架	6	电源接头
2	电极支架底座	7	电极信号接头
3	触摸屏	8	温度补偿接头
4	USB-A口*	9	DB-25
5	电极	10	USB-B口

注：*表示PB-30L不含有此项功能。

4 快速入门

4.1 拆封和设备供应

打开包装，必须小心移动所有部件。

拆封酸度计后，请立即检查其是否存在任何外部损坏。

如发现任何损坏，请按照“13保养防护”章节中的指示操作。

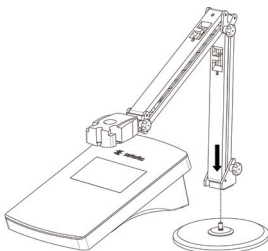
请保存好原始包装的所有部件以供日后运输使用。装运期间，请拔出线缆！

随附的设备中包含以下部件：

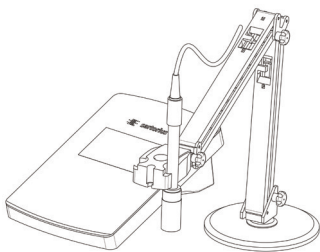
型号	PB-30/PB-30L
主机	1
电极支架底座	1
电极支架	1
电极	1
*成套pH缓冲剂	2 套
带每一个国家特有电源接头的交流适配器	1
说明书	1

注：*表示根据各国运输规定选配

4.2 安装酸度计



将支架安装在底托上。



将电极安装到支架上，酸度计安装完成。

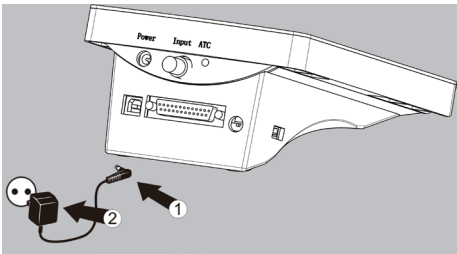
4.3 电源连接

⚠ 警告

使用不正确的电源插头适配器或不正确使用电源插头适配器可能导致致命的电击。

将特定国家/地区的电源插头适配器连接到交流适配器。电源插头适配器必须适合安装位置的壁装电源插座。
不要将电源插头适配器在无交流适配器的情况下插入插座。

将酸度计连接到交流电源。
仅使用Sartorius原装的交流适配器。
限中国境内使用：订货号6971793S。

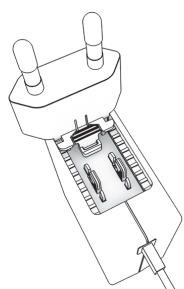


- 1) 首先，将交流适配器插入酸度计背面的Power插口。
- 2) 接下来，将交流适配器连接至壁装插座（主电源）。

电源连接（备用电源）

包装上的商品编号	电源/特定国家的电源插头适配器（包装在印有例如EU等国家代码的聚乙烯袋中）	图示（从左到右）
YEPS01-PS4	带连接电缆的电源	
	中国（CN） 南非（ZA） 澳大利亚（AU）	
	印度（IN） 美国和日本（US+JP） 欧洲（EU）	
	英国（UK）	
YEPS01-PS5	带连接电缆的电源	
	阿根廷（AR） 巴西（BR） 韩国（KR）*	

注：*表示出口韩国产品可使用YEPS01-PS4 欧洲(EU)接头替代。



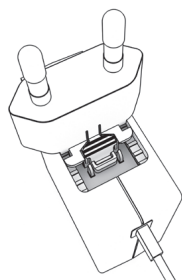
选择特定国家/地区的电源插头适配器。电源插头适配器必须适合安装位置的壁装电源插座。

将电源插头适配器推入交流适配器的固定器。带肋按钮必须朝前。

将电源插头适配器完全推入，直到听见插入声。

检查电源插头适配器是否牢固地锁定到位。为此，请轻轻拉动电源插头适配器。

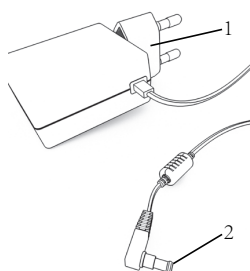
如果电源插头适配器无法移动，则其已锁定到位。



移除电源插头适配器

从上方按下带肋按钮，同时向后滑入电源插头适配器。

将电源插头适配器从交流适配器中推出并移除。



连接交流适配器

检查交流适配器铭牌上的额定电压。确保本机上印有的电压等级符合安装地点的本地电源电压。

如果标定的电源电压不符合本地供电电压或没有适合的交流适配器可用：

请勿使用交流适配器。请联系 Sartorius Service。

仅使用 Sartorius 原装的交流适配器。

将弯插头（2）连接到设备的电源插座（工作电压连接）。

将电源线（1）连接到安装位置的壁装插座（电源电压）。

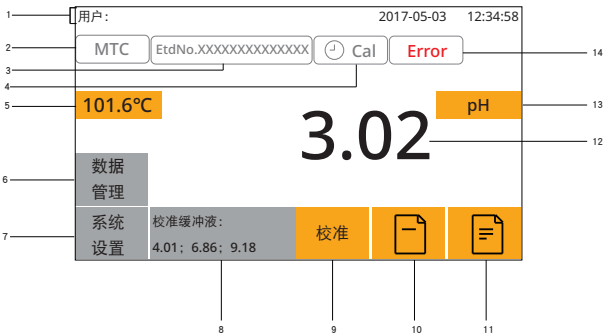
5 酸度计使用

本章节将介绍供您使用的操作选项，帮助您熟悉酸度计。

5.1 主界面操作元素

注意

尖锐物体（比如圆珠笔）会损坏设备！



1	用户时间栏*	8	校准缓冲液（相对毫伏值）
2	温度补偿模式	9	校准
3	电极序列号*	10	GLP页眉，页脚
4	定时校准	11	打印
5	温度显示	12	测量值
6	数据管理	13	测量单位（pH、mV、RmV）
7	系统设置	14	报警

注：* PB-30L不显示用户名及电极序列号。



5.2 温度显示、输入

当设备连接温度传感器时，设备进入自动温度补偿状态，温度补偿模式显示为ATC；

当设备未连接温度传感器时，设备进入手动温度补偿状态，温度补偿模式显示为MTC。此时单击主界面的温度示值显示区，可以进入手动温度补偿页面，输入温度补偿值，确认即可。

5.3 测量单位设置

设备可以显示三种测量单位，pH、mV、RmV（相对mV值）。

单击主界面的测量单位显示区，可以进行测量单位的切换。

可以通过系统设置菜单中的单位设置，开启/关闭任一测量单位。

6 标定和校准

在使用酸度计前，应先进行校准，以确保测量数据的准确性。

6.1 输入电极号

单位为pH值时，点击主界面的“校准”按钮，系统进入电极号输入界面。*

注：*PB-30L不含有此项功能。

用户：

2017-05-03

12:34:58

取消

电极序列号

确定

电极序列号（Etd No.）：

A10001001

6.2 选择校准缓冲液

选择一组校准缓冲液，选择的校准缓冲液应与校准溶液pH值一致，否则会产生校准错误，或校准完成后测量数据错误。

用户：

2017-05-03

12:34:58

取消

选择校准缓冲液

确定

1.68; 4.01; 6.86; 9.18; 12.46

2; 4; 7; 10; 12

1; 3; 6; 8; 10; 13

Etd No.

A10001001

6.3 校准

系统最多进行三点校准。校准时，电极放入校准溶液中，酸度计自动识别当前校准缓冲液数值，数值进行黑白闪烁提示，点击“确认”开始校准，数值不再闪烁，表示校准完成。

至少完成一点校准之后，界面上出现“完成”按钮，点击此按钮，系统进入校准报告界面。

点击测量单位，可以“pH”和“mV”互相切换。如果测量单位为“mV”时，“确认”键将会变成灰色，只有单位为“pH”时，才可以点击“确认”键进行校准。

点击“取消”按钮，系统进入校准报告界面。

用户：

2017-05-03

12:34:58

取消

校准缓冲液

确定

25.0°C

4.01

pH

Slope 1

100%

Etd No.

A10001001

校准缓冲液：

1.68; 4.01; 6.86; 9.18; 12.46

完成

6.4 校准报告界面

用户：

2017-05-03

12:34:58

校准缓冲液

校准报告3:

日期时间 : 2017-05-03 12:34:58

用户 : User User1

电极序列号 : EtdNo. A1001001

校准缓冲液 : S1 25.0°C

ATC

4.01pH

178.3mV

←

√

📄

用户:

2017-05-03

12:34:58

校准缓冲液

校准报告3:

校准缓冲液

:

S2

25.0℃

ATC

6.86pH

5.0mV

校准缓冲液

:

S3

25.0℃

ATC

9.18pH

-305.0mV

↩

^

v

📄

用户:

2017-05-03

12:34:58

校准缓冲液

校准报告3:

电极斜率

:

Slope1

97.6%

电极斜率

:

Slope2

95.3%

校准状态

:

Calibration OK

↩

^

📄

点击  ，保存校准数据，返回主界面。

7 数据管理

用户:	2017-05-03	12:34:58
数据管理		
历史校准数据	>	
历史测量数据	>	
日志数据	>	

酸度计型号PB-30可以记录30组历史校准数据，400组历史测量数据，50组日志数据。

酸度计型号PB-30L可以记录10组历史校准数据，500组历史测量数据，没有日志数据。

7.1 历史校准数据

用户:	2017-05-03	12:34:58
历史校准数据		
校准报告3:		
日期时间	2017-05-03	12:34:58
用户	User	User1
电极序列号	EtdNo.	A10001001
校准缓冲液	S1	25.0℃
		ATC
		4.01pH
		178.3mV

用户:	2017-05-03	12:34:58
历史校准数据		
校准报告3:		
校准缓冲液	S2	25.0℃
		ATC
		6.86pH
		5.0mV
校准缓冲液	S3	25.0℃
		ATC
		9.18pH
		-305.0mV

点击  和  翻看不同组历史报告信息。

点击  和  翻看本组记录信息。

用户:	2017-05-03	12:34:58
历史校准数据		
校准报告3:		
电极斜率	Slope1	97.6%
电极斜率	Slope2	95.3%
校准状态	Calibration OK	

7.2 历史测量数据

点击“历史测量数据”显示条，页面进入历史测量数据界面。

用户:

2017-05-03

12:34:58

< 数据管理

历史测量数据

序号	日期	时间	温度℃	测量值	单位
001	2016-05-24	11:20:30	24.2	4.32	pH
002	2016-05-24	11:30:38	25.0	7.18	pH
003	2016-05-24	11:32:40	25.0	6.52	pH
004	2016-05-24	11:35:05	25.0	3.13	pH
005	2016-05-24	11:40:09	25.0	8.55	pH



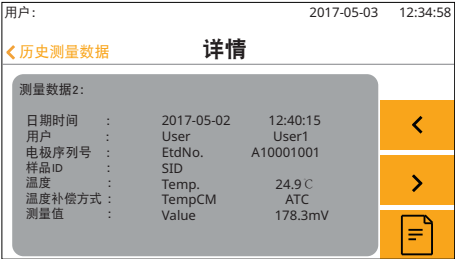






 向上翻50组数据

 向下翻50组数据



点击每一条数据,进入“历史数据详情”页面



7.2.1 打印历史数据范围

按打印键显示此页面。



数据显示框，显示用户输入的打印数据范围，要求“-”后面的数据一定大于前面的数据。

此按键用于表示数据范围从…到…，例如10-100，表示打印从10到100组的历史测量数据。

- 取消打印
- 开始打印



7.3 日志数据

点击 和 翻看不同组历史报告信息。

点击 可一次性将所有的日志报告保存在U盘的一个PDF文件中，再次点击会将所有日志报告保存在一个新的PDF文件中。

8 用户设置

PB-30的用户设置可以设置用户名，用户权限及密码功能等，PB-30L的用户设置只能设置是否启用密码。

最多可设置5名用户，且必须有一名管理员和一名游客，管理员名称固定为Admin，游客名称固定为Guest，不可以修改名称。创建管理员Admin时，自动的创建游客Guest。

Guest用户只能进行测量，不能进行其他操作。

通过主页面“系统设置”，进入用户设置模式。

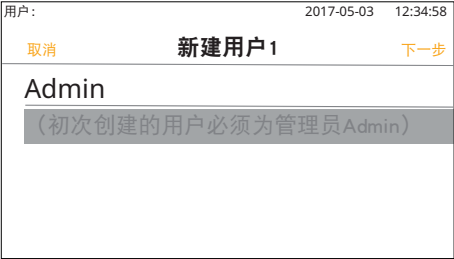
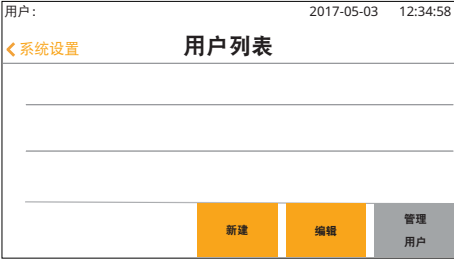
8.1 第一次设置用户

第一次新建用户的时候，用户列表为空。

点击 **新建**，可以新建用户，因为是第一次新建用户，所以必须是管理员。

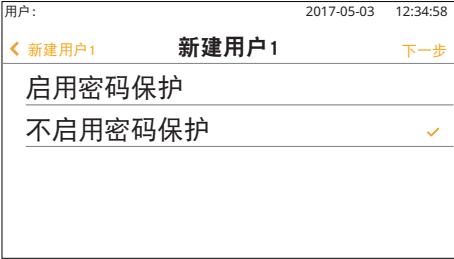
点击 **编辑**，可以编辑自己的相关信息，如：修改用户名，修改密码，删除密码。

管理用户，当没有用户时，不可使用。



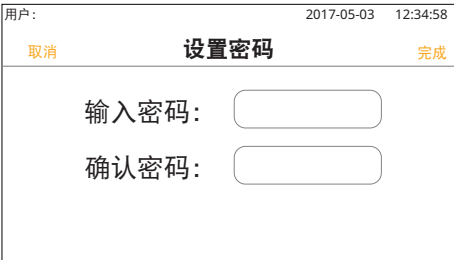
没有用户时，点击新建，只能新建管理员，管理员名称只能为：Admin。

点击“下一步”，进入是否启用密码界面。



不启用密码，点击“下一步”新建用户完成。

启用密码，点击“下一步”进入密码设置界面。

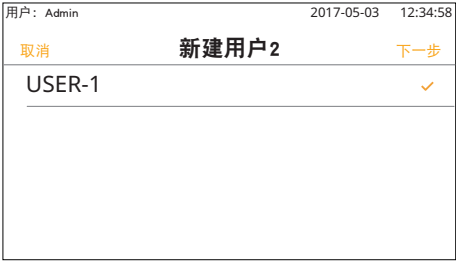


用户密码应小于14位，可以是数字+字母的组合。

8.2 新建用户



只有用户Admin可以新建用户。点击新建，开始新建一个用户。



点击“下一步”，确认使用当前用户名，页面进入是否启用用户密码界面；点击“USER-1”显示条，进入到“输入用户名”界面，进行输入用户名。



用户名只能由字母+数字组成，最多14位。



设置用户权限。



用户: Admin	2017-05-03	12:34:58
< 新建用户	新建用户2	下一步
☒ 启用密码保护		
☐ 不启用密码保护		

点击“新建用户2”，返回输入用户名界面。

不启用密码，点击“下一步”新建用户完成。

启用密码，点击“下一步”进入密码设置界面。

用户: Admin	2017-05-03	12:34:58
取消	设置密码	完成
输入密码:		
确认密码:		

用户密码应小于14位，可以是数字+字母的组合。

8.3 编辑

用户进入编辑用户前，如果有密码，应先输入密码，正确后可进入编辑用户界面。

用户: User 1	2017-05-03	12:34:58
< 用户列表	编辑用户	
编辑用户名 >		
设置密码 >		
删除密码 >		

编辑用户，可修改自身用户名，设置密码，删除密码。

* Admin不可修改自身用户名。

8.4 管理用户

用户: Admin	2017-05-03	12:34:58
< 用户列表	管理用户	
修改用户权限 >		
删除用户 >		
删除密码 >		

只有用户是Admin才可以对用户进行管理。进入用户管理前，如果Admin有密码，需要先输入密码，才能进入用户管理界面。

选择用户，点击下一步可进行用户权限的修改。

用户: Admin	2017-05-03	12:34:58
取消	用户权限	下一步
☒ User 1		
☐ User 2		
☐ User 3		

用户: Admin

2017-05-03 12:34:58

< 管理用户

用户权限

确定

语言

时间和日期

单位设置

定时校准设置

修改用户权限。

用户: Admin

2017-05-03 12:34:58

< 管理用户

用户权限

确定

打印输出设置

端口设置

校准设置

用户: Admin

2017-05-03 12:34:58

取消

删除用户

确定

Admin

User1

如果删除管理员，则默认将所有用户删除。

用户: Admin

2017-05-03 12:34:58

删除用户

是否删除用户? Admin, User1



选择每一个用户，用户后面都会出现一个对号表示选中该用户，再次点击已选中用户，对勾会消失，表示取消选中该用户。



8.5 PB-30L密码启用功能

PB-30L只有是否启用密码功能，没有其他用户设置相关功能。

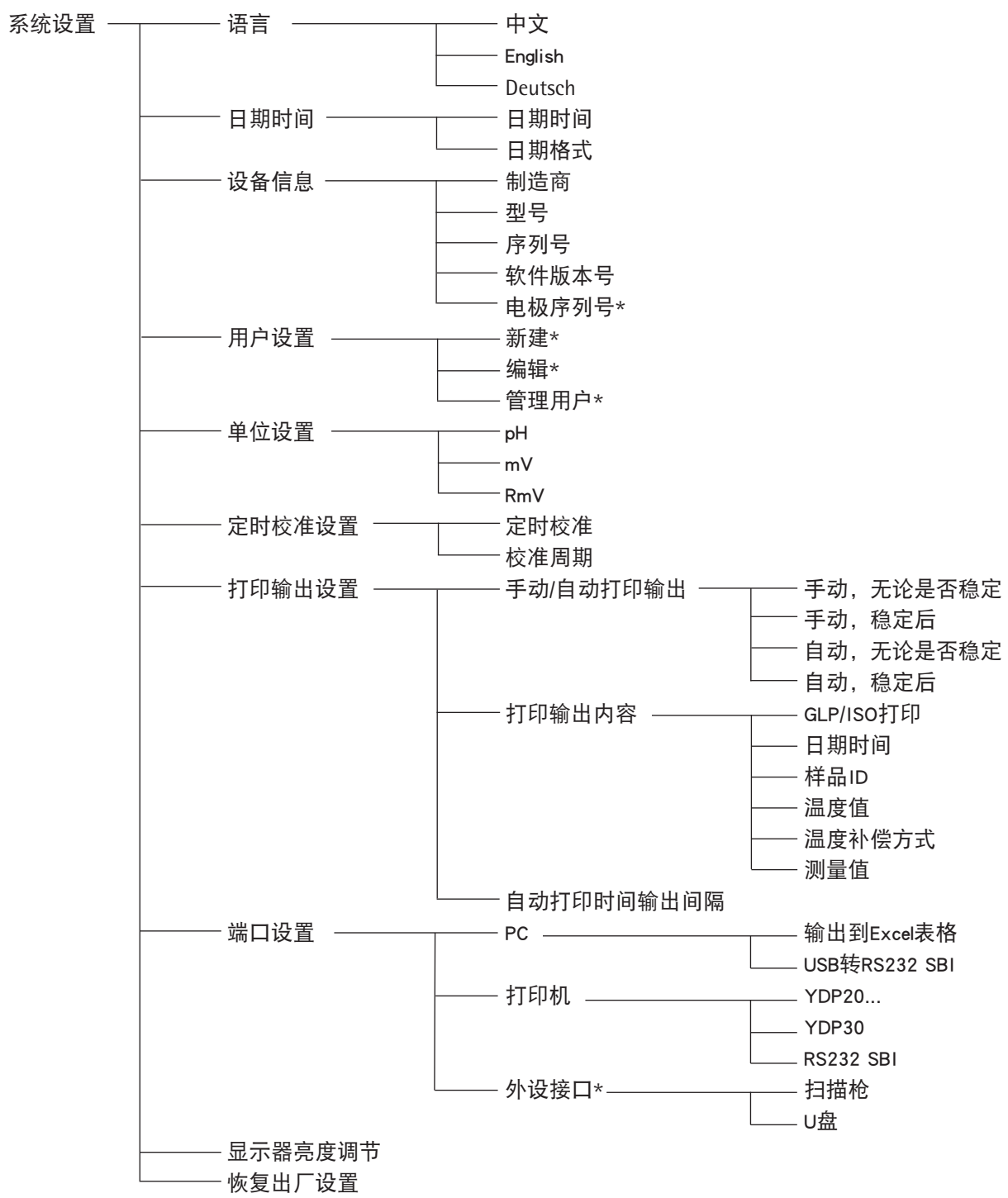


启用密码保护，点击系统设置时需要输入密码。

不启用密码保护，点击系统设置不需要输入密码。

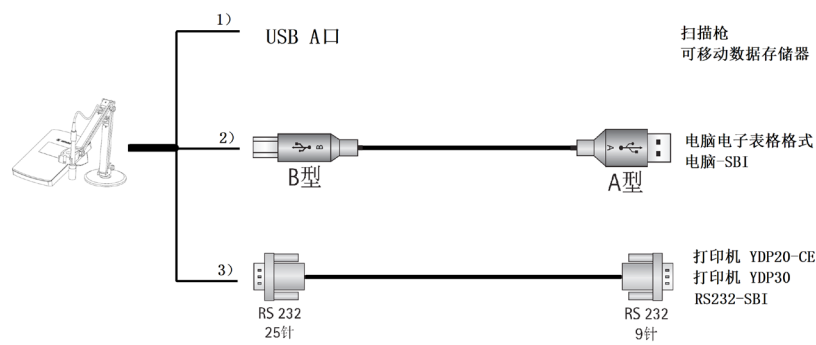


9 系统设置



注：* 表示PB-30L不含有此项功能。

10 通信接口



当设备连接电脑的时候，需要电脑的操作系统为：Windows 7、Vista、Windows XP或2000。

用户:
 2017-05-03
 12:34:58

< 系统设置
 端口设置

PC (USB B 口)	输出到Excel表格	☒
打印机 (COM 口)	YDP20	☐
外设接口 (USB A 口)	扫描枪	☐

默认为开启USB B 端口，数据输出到Excel 表格功能，其他端口默认关闭。
注：PB-30L不含有外设接口(USB A口)。

10.1 USB-A口

用户:
 2017-05-03
 12:34:58

取消
 外部接口
 确定

扫描枪	☒
U盘	☐

USB-A口一次只能连接一种设备。选择相应的功能，设备才能正常使用。如果设备连接，但是未开启端口功能，该设备不能正常工作。

10.1.1 扫描枪

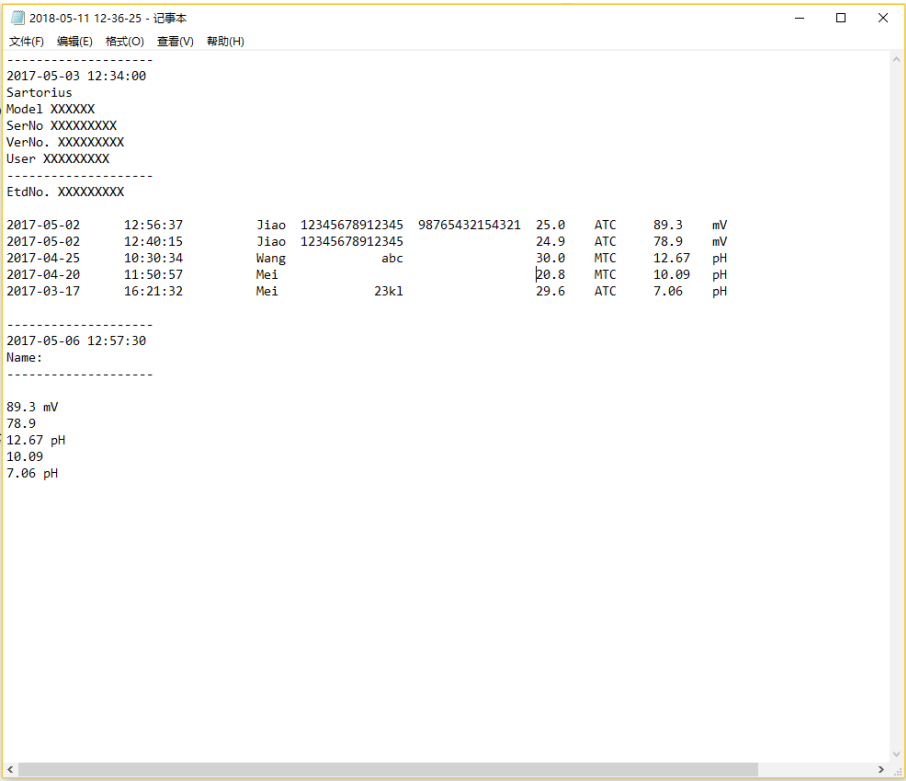
本扫描枪能够识别条形码及二维码，无需驱动，连接设备即可直接使用。扫描枪可以替代键盘输入电极序列号及样品ID号。

10.1.2 U盘

U盘中文件名称是由创建时的年月日时分秒组成的，例如：“2018-06-06 12-13-36.txt”

通过打印功能，数据会按照打印格式要求，自动存储于U盘中。
使用U盘的存储量小于8GB。

示例：



图片中包含GLP打印的页眉和页脚，历史校准数据信息以及测量数据。

10.2 USB-B口

用户:
 2017-05-03 12:34:58

取消
 PC
 确定

输出到Excel表格
 ✓

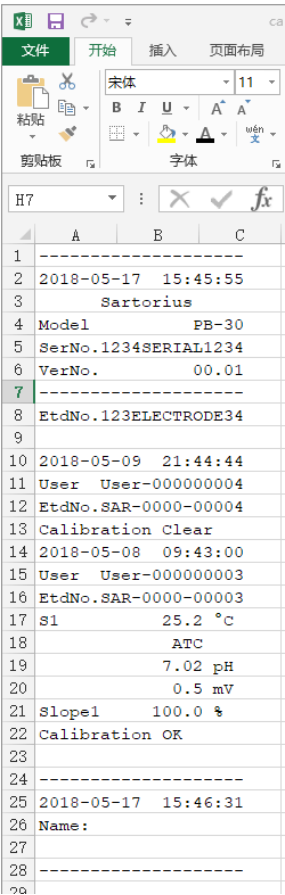
USB转RS232 SBI

USB-B口连接PC，可将数据输出到Excel表格，还可使用SBI协议进行通讯。

10.2.1 数据输出到EXCEL

使用该功能时，设备将虚拟为电脑的键盘外设，向电脑传输数据。设备连接到电脑以后，打开一个EXCEL表格，建议将字体设置为Courier New,这样数据容易对齐，将光标移动到你想要输出的位置，将输入法调成英文，点击屏幕上的打印键，数据就会自动上传到表格中光标所在位置。

示例：



The screenshot shows a Microsoft Word document with a table containing calibration data. The table has three columns labeled A, B, and C. The data includes dates, times, and various calibration parameters for a Sartorius device. The table is formatted with a simple border and the text is left-aligned.

	A	B	C
1	-----		
2	2018-05-17	15:45:55	
3	Sartorius		
4	Model	PB-30	
5	SerNo.	1234SERIAL1234	
6	VerNo.	00.01	
7	-----		
8	EtdNo.	123ELECTRODE34	
9			
10	2018-05-09	21:44:44	
11	User	User-000000004	
12	EtdNo.	SAR-0000-00004	
13	Calibration	Clear	
14	2018-05-08	09:43:00	
15	User	User-000000003	
16	EtdNo.	SAR-0000-00003	
17	S1	25.2 °C	
18		ATC	
19		7.02 pH	
20		0.5 mV	
21	Slope1	100.0 %	
22	Calibration	OK	
23			
24	-----		
25	2018-05-17	15:46:31	
26	Name:		
27			
28	-----		

表格内容为含有GLP页眉和页脚的历史校准信息。

10.2.2 电脑-SBI

使用该功能时，设备将作为RS232接口，并自动匹配RS232接口设置与其他设备进行通信。连接电脑后，电脑会自动搜索驱动并进行安装，用户可以直接使用。

打开串口，进行数据传输。

数据传输内容遵循打印要求，显示酸度计需要打印的信息。

10.3 DB25□

DB25接口可以连接两种不同型号的打印机，打印数据，并且可以作为RS232接口设备与其他RS32接口设备，通过SBI通信协议进行通信。

端口默认设置为：波特率：9600

数据位：7位

停止位：1位

校验位：奇校验

用户:

2017-05-03 12:34:58

取消

打印机

确定

YDP20...

YDP30

RS232 SBI

DB25端连接酸度计，DB9端连接打印机或者电脑。

10.4 SBI通信协议

用户可以根据SBI通信协议，利用上位机软件读取酸度计的设备信息及实时测量数据。

10.4.1 数据输入

接口命令

通过数据端口连接的电脑可向酸度计发送控制命令来控制酸度计的功能。

格式1	Esc	!	CR	LF		
格式2	Esc	!	#	_	CR	LF

Esc	退出
!	命令字符
#	数字
_	下划线（ASCII:95）
CR	回车（可选）
LF	换行（可选）

例如：

读取实时测量数据指令：

ESC P CR LF

常规数据返回格式

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
K	K	K	K	K	K	+	A	A	A	A	A	A	A	A	A	*	E	E	E	CR	LF
K	K	K	K	K	K	*	A	A	A	A	A	A	A	A	A	A	A	A	A	CR	LF
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	CR	LF

K	标志
CR	回车
*	空格
LF	换行
A	显示字符
E	测量单位标记

例如：

1、用户当前测量值：

Value 10.02 pH

2、仪器序列号：

SerNo XXXXXXXXXX

命令格式（字符形式）	功能
ESC x0_ CR LF	读取仪器制造商
ESC x1_ CR LF	读取仪器型号
ESC x2_ CR LF	读取仪器序列号
ESC x3_ CR LF	读取仪器软件版本号
ESC P CR LF	读取实时测量数据
ESC P1 CR LF	读取日期时间数据
ESC P2 CR LF	读取电极ID 号
ESC P3 CR LF	读取样品ID 号
ESC P4 CR LF	读取温度补偿方式
ESC P5 CR LF	读取温度
ESC P6 CR LF	读取pH 值
ESC P7 CR LF	读取mV 值
ESC P8 CR LF	读取RmV 值
ESC P9 CR LF	读取用户ID 号
ESC Q CR LF	读取全部历史测量数据
ESC R CR LF	读取全部历史校准报告

11 符合ISO/GLP的打印输出

设备信息、ID和当前信息等可打印在测量系列组件的数值前（GLP页眉）后（GLP页脚）。

GLP 页眉打印包含的内容有：

- 1、当前打印的日期和时间
- 2、Sartorius 标识
- 3、产品型号 “Model ”
- 4、产品序列号 “SerNo.”
- 5、软件版本号 “VerNo.”
- 6、用户名 “User”
- 7、电极序列号 “EtdNo.”

```
-----
2018-05-17  15:45:55
      Sartorius
Model          PB-30
SerNo.1234SERIAL1234
VerNo.         00.01
-----
EtdNo.123ELECTRODE34
```

GLP页脚打印内容包涵：

空行” “

- 1、当前打印的日期和时间
- 2、签名栏 “Name: ”

```
-----
2018-05-17  15:46:31
Name:
-----
```

打印示例：

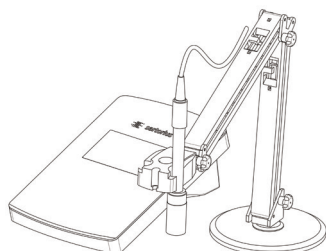
```
-----
2018-05-17  15:45:55
      Sartorius
Model          PB-30
SerNo.1234SERIAL1234
VerNo.         00.01
-----
EtdNo.123ELECTRODE34
```

```
2018-05-06  21:41:00
User  User-0000000001
EtdNo.SAR-0000-00001
S1          25.0 °C
              ATC
              7.00 pH
              0.3 mV
Slope1      100 %
Calibration OK
```

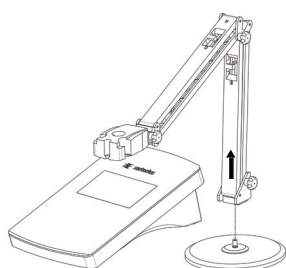
```
-----
2018-05-17  15:46:31
Name:
-----
```

12 运输酸度计

12.1 拆卸酸度计



首先将电极从支架上拆卸下来

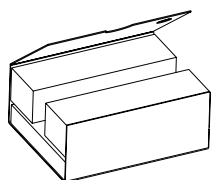


其次将支架从底托上拆卸下来，酸度计就拆卸完成了。

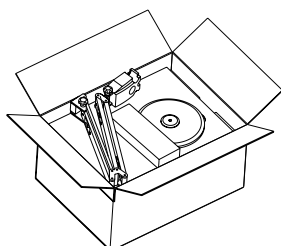
12.2 包装酸度计



第一步：将酸度计主机装进泡沫包装中；



第二步：将左右两边折叠上来，将主机完全包裹；



第三步：将包装好的机芯放入到包装箱中，然后将支架、底托、电极和电源等放入包装箱中，合上箱盖即可。

13 保养防护

13.1 服务

为确保酸度计保持稳定的测量精度，我们建议您最少一年安排一次定期维修。必须请专业电工定期对交流适配器及其连接进行一次安全检查（比如，每2年）。

维修工作只能由受过培训的维修技术人员执行。维修期间，必须拔出设备插头。请将插头从主电源拔出。另外，酸度计的测量精度可能会受到影响，并可能会对使用者构成严重风险。联系 Sartorius 服务或 Sartorius 经销商对酸度计进行适当维修。

13.2 清洁酸度计

警告

受污染的设备：

- 由于产品存有和收集了残留的微生物污染而构成健康风险。
- 由生物或微生物物质构成的健康风险。
- 请遵守清洁技术规范。
- 请仔细检查清洁结果。

警告

- 断开设备的交流电源：从电源拔出交流适配器。
- 断开所有连接至酸度计的数据线缆。

注意

切勿打开酸度计或交流适配器。

这些设备中包含的部件不能由操作员清洁、维修或更换。

- 确保没有液体或灰尘进入酸度计或交流适配器。
- 切勿使用包含溶剂或研磨剂成分的清洁剂，这最终可能会对设备造成损害。

注意

请勿使用丙酮或腐蚀性清洁剂清洗以下部件：

控制面板、电源插头、数据接口、标签以及其它所有塑料部件。

14 弃置



外包装由环保材料制成，可用作次生原料。在德国，可以通过VFW双系统（合同编号D-59101-2009-1129）免费处理不用的包装。在其他国家或地区，请依据适用规定使用当地废弃处置设施处置材料。包括附件和电池在内的设备不得当作一般家庭垃圾处理，必须当作电气和电子设备回收。关于处置或回收，请联系我们的现场服务人员。另外，以下网站所列合作伙伴可在欧盟范围内进行处理：

- 1) 选择<http://www.sartorius.com>。
- 2) 选择“服务”选项卡。
- 3) 然后选择“处置信息”。
- 4) 可在本页面下载PDF文件，其中包含当地Sartorius处置联系地址。



Sartorius不负责回收有污染物质的设备（ABC污染），也不提供维修或处置服务。

处置服务地址：

如需了解更多维修服务地址或设备处置的详情，请浏览我们的网站（www.sartorius.com）或联系Sartorius服务部门。

15 技术规格

15.1 一般数据

规格	单位	数值
交流适配器		
Sartorius交流适配器		6971793S/ YEPS01-PS4/ YEPS01-PS5
交流输入		100 V- 240 V~, -10% / +10%, 50Hz-60 Hz, 0.2 A
直流输出		15 V 直流, ±5%, 530 mA (最大) / 8 W (最大): 0 °C - +40°C 15 V 直流, ±5%, 330 mA (最大) / 5 W (最大): 0 °C - +50°C
其他数据		防护等级 II EN/IEC 60950-1 / 最高海平面上 3000 m; IP40 EN 60529/IEC 60529
酸度计		
输入电压	V直流电	12.0-15.0
功率消耗	W	4.5 (一般)
环境条件		
此规格在以下环境条件下使用		
环境		仅供室内使用
环境温度	°C	+10 - +30
运行范围	°C	在 +5 和 +45 之间, 可得到保障
存储和装运	°C	-10 - +60
高度	海拔高度 m	高达 3000
相对湿度		温度为 31°C 以下时, 为 15-80%, 无凝结, 温度达到 40°C 时, 相对湿度线性下降到 50%, 温度达到 50°C 时, 相对湿度为 20%
电气设备安全		依据 EN 61010-1/IEC 61010-1 测量、控制和实验室用电气设备的安全 - 要求第 1 部分: 一般要求
电磁兼容性		依据 EN 61326-1 / IEC61326-1 测量、控制和实验室用电气设备 EMC 要求 第 1 部分: 一般要求
抗干扰性		适合在工业区使用
瞬态发射		B级 适用于居民区或向住宅楼供电的低电压网络区域。
标准设备		
可选的测量单位		pH、 mV 和 RmV

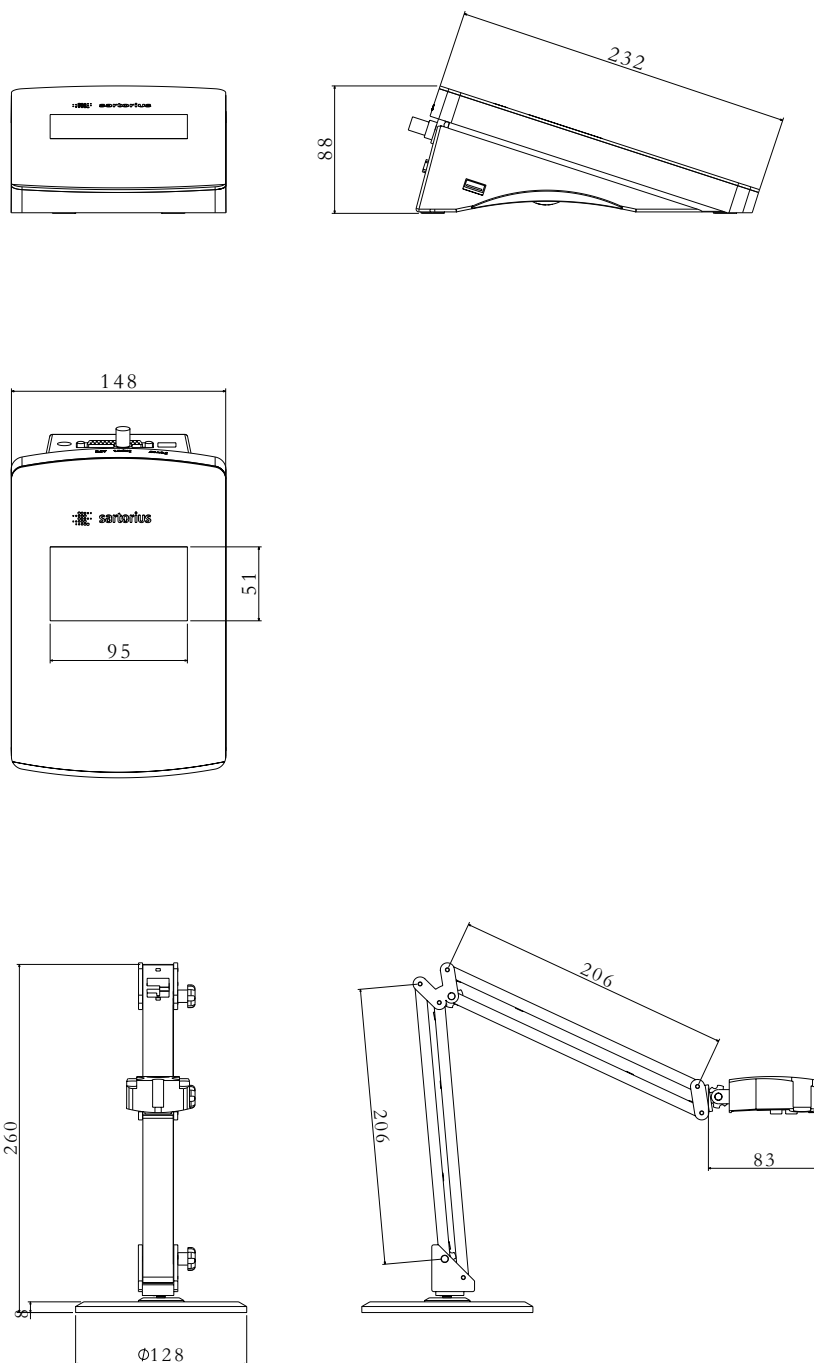
15.2 具体型号参数

测量参数	pH	mV
测量能力	-1.99 pH - 19.99 pH	-1999.9mV - 1999.9 mV
测量精度	± 0.005 pH	± 0.3 mV
可读精度	0.01 pH	0.1 mV

15.3 可选附件

电极	根据需要
校准溶液	根据需要
支架	根据需要
底托	根据需要
打印机	YDP20-0CEV1 针式打印机
打印机	YDP30 热敏/热转印打印机
YDP30打印纸	69Y03285
USB-A口转USB-B口	根据需要
DB25转DB9连接线	YCC03-D25
电源适配器	6971793S/ YEPS01-PS4/ YEPS01-PS5
扫描枪	根据需要

15.4 外形尺寸



所有尺寸单位均为毫米。

附录

Table of Toxic and Hazardous Substances
产品中有害物质的名称和含量

Component Name 部件名称	Toxic or hazardous Substances and Elements 有毒有害物质和元素					
	Pb 铅	Hg 汞	Cd 镉	Cr ⁶⁺ 六价铬	PBB 多溴联苯	PBDE 多溴二苯醚
Mainboard 主板	x	x	0	0	0	0
electrode 电极	x	0	x	0	0	0
Housing 壳体	0	0	0	0	0	0
Power adaptor 电源适配器	x	0	0	0	0	0
Non-electrical components 其他非电气部件	x	0	0	0	0	0
Packaging 包装	0	0	0	0	0	0

This table was developed according to the provisions of SJ/T 11364.
本表依据 SJ/T 11364 的规定编制

X: Indicates that contents of Pb, Hg, Cd, Cr⁶⁺, PBB, PBDE in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T26572.
X: 表示该有毒或有害物质至少在该部件所用的某一均质材料中的含量超出 GB/T26572 标准规定的限量要求。

0: Indicates that contents of Pb, Hg, Cd, Cr⁶⁺, PBB, PBDE in at least one of the homogeneous materials used for this part is below the limit requirement in GB/T26572
O: 表示该有毒或有害物质在该部件所有均质材料中的含量均在 GB/T26572 标准规定的限量要求以下。

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1 About these Instructions

1.1 Scope

These instructions are part of the device. These instructions apply to the device in the following versions:

Device	Model name
pH Meter, with or without User administration, electrode serialNo., USB-A port Function	PB-30 PB-30L

1.2 Symbols Used

DANGER

Denotes an immediate danger with risk that death or severe injury will result if it is **not** avoided.

WARNING

Denotes a danger with risk that death or severe injury may result if it is **not** avoided.

NOTICE

Denotes a danger that can result in property damage if the risk is **not** avoided.

Figures on the Operating Display

The figures on the operating display of the device may differ from those described in these instructions.

2 Safety Instructions

2.1 Guidelines and basic information

- This pH meter complies with the relevant directives and standards regarding electrical safety and electromagnetic compatibility. However, improper use or handling of equipment may result in damage and/or damage. Any improper use or operation of the pH meter, i.e. failure to use or operate in accordance with the manual, will result in the loss of all claims under the manufacturer's warranty.
 - Users need to read and understand these installation instructions, including safety instructions.
 - When used in systems and environments with higher safety requirements, you must comply with the requirements and regulations of your country/region.
 - Always keep your device and pH meter in a place where they are convenient to use.
- Any installation work or pH meter operation that fails to comply with the instructions will result in the loss of all claims under the manufacturer's warranty.

Risk of explosion!

Do not use the equipment in dangerous areas with explosive materials.

NOTICE

Do not use the equipment in dangerous areas with explosive materials.

2.2 Install information

WARNING

If the case or AC adaptor is damaged, do not operate the pH meter. Pull the plug out immediately to disconnect the damaged device from the power supply.

NOTICE

Do not expose the pH meter, AC adaptor of the pH meter or accessories coming with Sartorius to extreme temperature, corrosive chemical vapor, moist, impact, shock, or strong electromagnetic fields. Please observe the operating conditions described in the technical specifications.

NOTICE

The operator shall be responsible for any modification of the equipment and any connection of cables or equipment not provided by the Sartorius. Sartorius will ask for information about operational quality. You should only use peripherals provided by Sartorius.

Please note the IP protection level of the pH meter and its AC adaptor. Please do not allow liquids to penetrate. The level of protection indicates the adaptability of the equipment under various environmental conditions (humidity, foreign matter).

WARNING

If the case or AC adaptor is damaged, do not operate the pH meter. Pull the plug out immediately to disconnect the damaged device from the power supply.

The pH meter can only be opened by trained professionals of Sartorius.

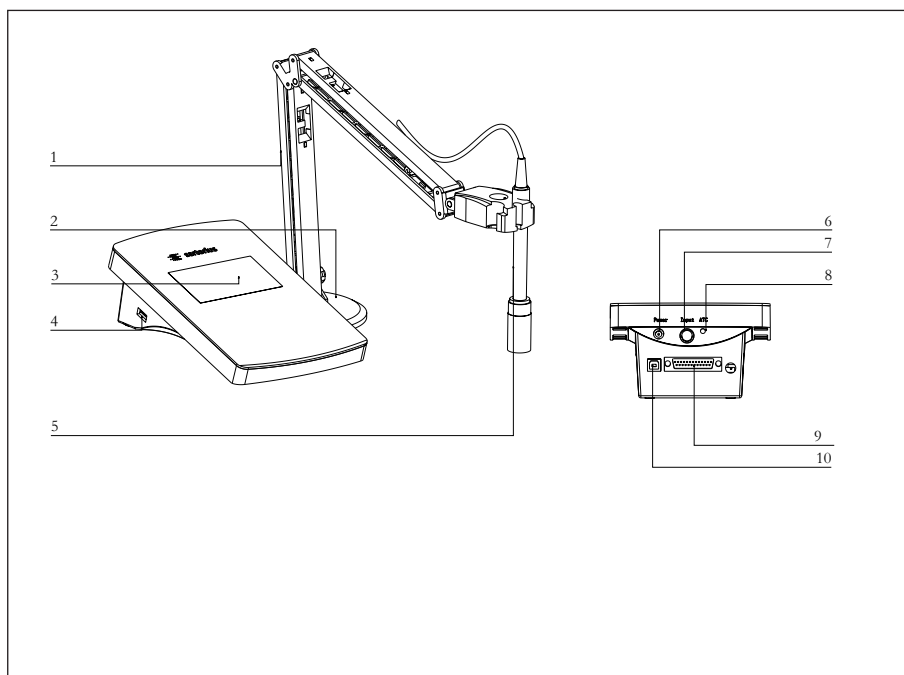
Do not open the AC adaptor.

Risks during installation and operation

NOTICE

When laying the cable, be careful to choose the right position to prevent people tripping over the power line.

3 Device Description



Pos.	Name and Function	Pos.	Name and Function
1	Electrode support	6	Power connector
2	Electrode support base	7	Electrode support base
3	Touch screen	8	Temperature compensation joint
4	USB A port*	9	DB-25
5	Electrode	10	USB B port

Note: * means PB-30L does not contain this function.

4 Getting Started

4.1 Unpacking and Equipment Supplied

Open the packaging, making sure to remove all parts carefully.

After unpacking the device, check it immediately for any external damage.

If you detect any damage, proceed as directed in the chapter entitled "Care and maintenance."

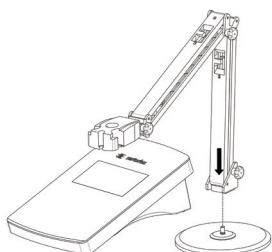
Save the box and all parts of the packaging for any future transport. During shipment, please do not leave cables plugged in!

The following parts are included in the equipment supplied:

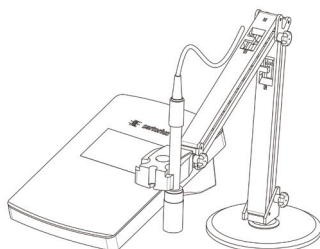
Components	PB-30 PB-30L
Host	1
Electrode support base	1
Electrode support	1
Electrode	1
* Complete set of pH buffering agent	2 set
AC adaptor with power connector specific to each country	1
User manual	1

Note: * Optional according to transportation regulations of different countries.

4.2 Mounting pH meter



Mount the support on the base.



Mount the electrode on the support and the pH meter mounting is finished.

4.3 Power connection

WARNING

Use of an incorrect power plug adaptor or improper use of the power plug adaptor may result in a fatal electrical shock.

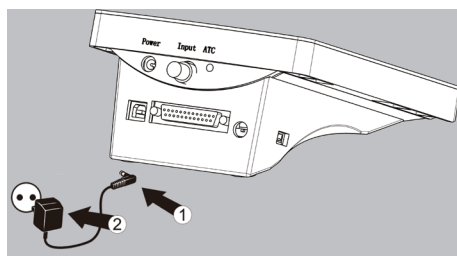
Connect the power plug adaptor to the AC adaptor specific to a country/region. The power plug adaptor must be suitable for wall-mounted power sockets at the installation location.

Do not plug the power adaptor into the socket without the AC adaptor.

Connect the pH meter to the AC power supply

Use only the original Sartorius AC adaptor.

For use within China only: Part No. 6971793S

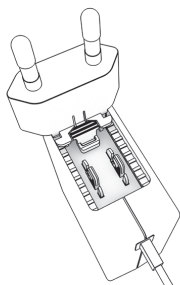


- 1) First, plug the AC adaptor into the power socket on the back of the pH meter.
- 2) Next, connect the AC adaptor to the wall-mounted socket (main power supply).

Power connection (backup power)

Item No. on the package	Power supply/country-specific power plug adaptor (packaged in the polyethylene bag printed with country codes such as EU)	Illustration (from left to right)
YEPS01-PS4	Power supply with connecting cables	
	China (CN) South Africa (ZA) Australia (AU)	
	India (IN) The United States and Japan (US+JP) Europe (EU)	
	The United Kingdom (UK)	
YEPS01-PS5	Power supply with connecting cables	
	Argentina (AR) Brazil (BR) Korea (KR)*	

Note: * means that YEPS01-PS4 European (EU) connector can be used instead of Korean products.



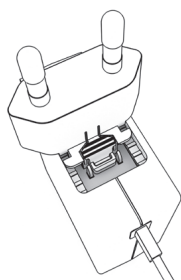
Select power plug adaptors for specific countries / regions. The power plug adaptor must be suitable for wall-mounted power sockets at the installation location.

Push the power plug adaptor into the fixator of the AC adaptor. The ribbed key must be facing forward.

Push the power plug adaptor in completely until you hear the insertion sound.

Check if the power plug adaptor is firmly locked in place. To this end, please gently pull the power plug adaptor.

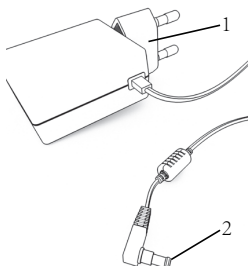
If the power plug adaptor cannot be moved, it indicates that the adaptor has been locked in place.



Remove the power plug adaptor

Press the ribbed key from above and slide back into the power plug adaptor.

Push out and remove the power plug adaptor from the AC adaptor.



Connect the AC adaptor

Check the rated voltage on the nameplate of the AC adaptor. Ensure that the voltage level printed on the device meets the local supply voltage at the installation location.

If the calibrated supply voltage fails to meet the local supply voltage or there is no suitable AC adaptor available:

Do not use the AC adaptor. Please contact Sartorius Service.

Use only the original Sartorius AC adaptor.

Connect the angle plug (2) to the power socket of the device (operating voltage connection).

Connect the power cord (1) to the wall-mounted socket (power voltage) in the mounting position.

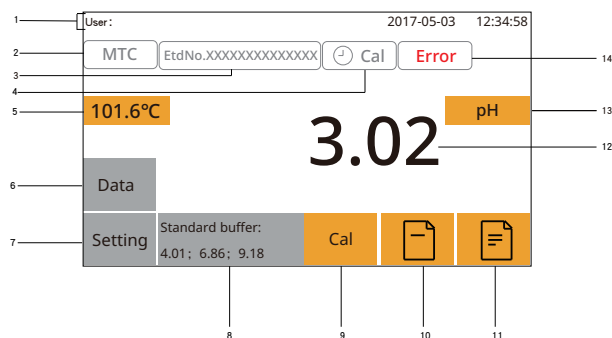
5 Use of pH meter

This section describes the options you can use to familiarize yourself with the pH meter.

5.1 Main interface operation display elements

NOTICE

Sharp objects (such as ballpoint pens) may cause damage to the equipment!



1	User time bar*	8	Standard buffer (relative mv offset)
2	Temperature mode	9	Calibration
3	Electrode serial No.*	10	GLP header and footer
4	Timing calibration	11	Print
5	Temperature display	12	Measured value
6	Data management	13	Units of Measurement (pH, mV, RmV)
7	System setting	14	Alarm

Note: *PB-30L does not display user name or electrode serial number.

5.2 Temperature display and input

The screenshot shows the 'Temp.compensation' screen. At the top, there is a status bar with 'User:', '2017-05-03', and '12:34:58'. Below this, there are buttons for 'Cancel' and 'Enter'. The main display area shows 'TempCM Value:' followed by an input field containing '60.0' and a range indicator '(-5.0°C~105.0°C)'.

When the device is connected to the temperature sensor, the device enters the automatic temperature compensation state, and the temperature compensation mode is displayed as ATC;

When the device is not connected to the temperature sensor, the device enters the manual temperature compensation state, and the temperature compensation mode is displayed as MTC. At this point, click the temperature indication display area of the main interface, you can enter the manual temperature compensation page, enter the temperature compensation value, and confirm.

5.3 Units of measurement settings

The device can display three measurement units, pH, mV, RmV (relative mV offset).

You can switch the measurement unit by clicking the measurement unit display area on the main interface.

Any measurement unit can be turned on/off through the unit settings in the system setup menu.

6 Standardization and calibration

Before using the pH meter, it shall be calibrated to ensure accurate measurement data.

6.1 Input electrode number

When the Units of Measurement is pH, click the "calibration" key on the home screen and the system enters the electrode No. input interface*.

Note: * means PB-30L carries no such function.

6.2 Select calibration buffer

Select a set of calibration buffers, which should agree with the pH value of the calibration solution, otherwise there will be a calibration error, or there will be measurement data errors after calibration.

6.3 Calibration

The system carries out calibration of up to three points. When to calibrate, put the electrode in the calibration solution and the pH meter will automatically identify the current value of the calibration buffer, which is blinking black and white; click "Confirm" to start the calibration, until the value no longer flashes, indicating that the calibration is finished.

After calibration of one point at least, a key **Finish** will appear on the interface. Click the key and the system will enter the calibration report interface.

Click on the unit of measurement to switch between "pH" and "mV". If the unit of measurement is "mV", the key "Confirm" will turn grey. Only when the unit is pH can the key "Confirm" be clicked for calibration.

Click the key "Cancel" to have the system enter the calibration report interface.

6.4 Calibration report interface

User:

2017-05-03

12:34:58

Calibration report

Calibration report 3:

Std. buffer

:

S2

25.0°C

ATC

6.86pH

5.0mV

Std. buffer

:

S3

25.0°C

ATC

9.18pH

-305.0mV

←

^

v

📄

User:

2017-05-03

12:34:58

Calibration report

Calibration report 3:

Electrode slope

:

Slope1

97.6%

Electrode slope

:

Slope2

95.3%

Calibration status

:

Calibration OK

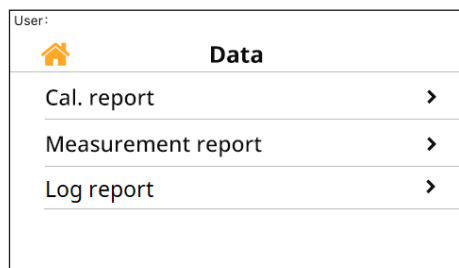
←

^

📄

Click  to save the calibration data and return to the home screen.

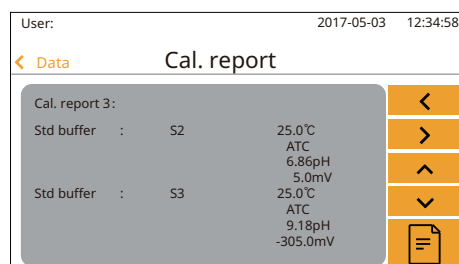
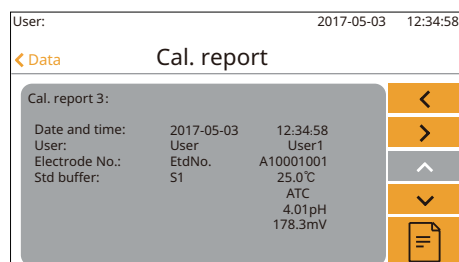
7 Data management



The pH meter model PB-30 can record 30 sets of historical calibration data, 400 sets of historical measurement data, and 50 sets of log data.

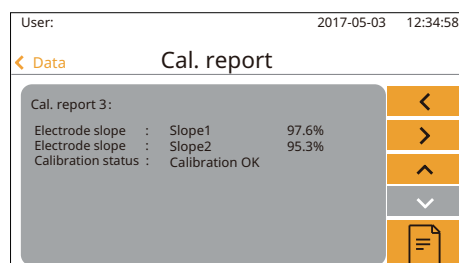
The acidity meter model PB-30L can record 10 sets of historical calibration data, 500 sets of historical measurement data, no log data.

7.1 Historical calibration data



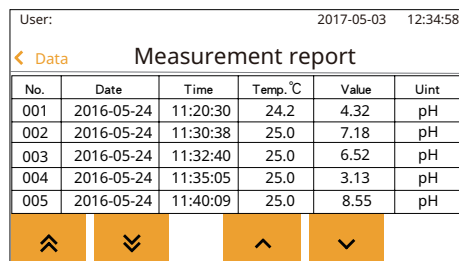
Click and to view different sets of historical reports;

click and to view the current set record information.



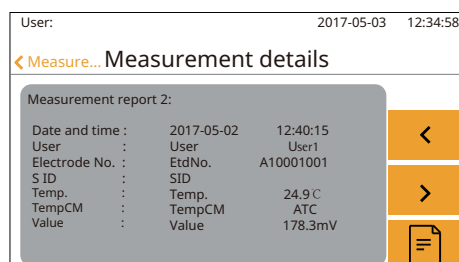
7.2 Historical measurement data

Click the "Historical measurement data" display bar to enter the historical measurement data interface.



Page up 50 sets of data.

Page down 50 sets of data.



Click on each piece of data and enter the "Historical data details" page.

7.2.1 Print historical data range

User: 2017-05-03 12:34:58

< Data Measurement report

Print item range: (eg: 1-10)

1	2	3	←	✕
4	5	6		
7	8	9	C	✓
0	-			

Press the print key to display this page.

Print item range: (eg: 1-10)

The data display box shows the range of printed data input by the user, requiring that the data following "-" must be larger than the previous data.

[-] This key is used to indicate the range of data from ... to ..., for example, 10-100 indicates printing historical measurement data from Set 10 to 100.

✕ Cancel print.

✓ Start print.

7.3 Log report

User: Admin 2017-05-03 12:34:58

< Date Log data

Log report 3:

Date and time : 2017-05-01 08:00:52
 User : Admin
 Content : Change language

< >

📄

Click < and > to scroll through the historical report information for different groups.

Click 📄 to save all log reports in a PDF file on the USB flash drive at one time, and click again to save all log reports in a new PDF file.

8 User settings

PB-30 user settings allow setting user name, user permissions and password functions, etc., PB-30L user settings only allows setting whether password is enabled.

A maximum of 5 users can be set up, and there must be an administrator and a tourist. The administrator name is fixed as Admin and the tourist name is fixed as Guest. You cannot modify the name. When creating an Admin, a guest is automatically created.

Guest users can only perform measurements and cannot perform other operations.

Enter the user setting mode through the main page Setting.

8.1 Set the user for the first time

When setting a user for the first time, the user list is empty

Click **Create** to create a new user. Since it is the first time to create a new user, the user must be an administrator.

Click **Edit** to edit the user information, such as modifying the user name, changing the password, and deleting the password.

Modify cannot be used when there is no user.

When there is no user, click to create, and only the administrator can be created. The administrator's name can only be Admin.

Click "Next" to enter the password enable interface.

With password disabled, click "Next" to complete the user creation.

Enable the password and click "Next" to enter the password setting interface.

The user password shall be less than 14 digits, which can be a combination of numbers and letters.

8.2 Create

Only user Admin can create new users. Click **Create** to create a new user.

Click "Next" to confirm the use of the current user name and enter the user password enter interface;

Click the "USER-1" display bar to enter the "Enter Username" interface and enter the user name.

User name can only be composed of letters + numbers, up to 14 digits.

Set user right.

Click "Create 2" to return to the "Enter Username" interface.

With password disabled, click "Next" to complete the user creation.

Enable the password and click "Next" to enter the password setting interface.

The user password shall be less than 14 digits, which can be a combination of numbers and letters.

8.3 Edit

Before the user enters the user edit interface, if there is a password, the user shall enter the password first correctly before entering the user edit interface.

User edit allows modifying the user name, setting password and deleting password.

* Admin cannot modify its own username.

User: User1	2017-05-03	12:34:58
< User list Edit		
Edit user name >		
Edit user password >		
Delete user password >		

8.4 User administration

Only when the user is an administrator, can Admin manage the users. Before entering user administration and if Admin has a password, it is required to enter the password before entering the user administration interface.

User: Admin	2017-05-03	12:34:58
< User list Modify		
Modify user rights >		
Delete user >		
Delete user password >		

User: Admin	2017-05-03	12:34:58
< Cancel	User rights Next	
User 1	✓	
User 2		
User 3		

Select a user and click Next to modify user permissions.

User: Admin	2017-05-03	12:34:58
< Modify	User rights Enter	
Language	🔘	
Date and Time	⬆	🔘
Units	▼	🔘
Timing Cal.	🔘	

Modify user rights.

User: Admin	2017-05-03	12:34:58
< Modify	User rights Enter	
Printout	🔘	
Interfaces	⬆	🔘
Calibration	⬇	🔘

User: Admin	2017-05-03	12:34:58
Cancel	Delete user	Enter
Admin		✓
User1		✓

If the administrator is deleted, all users will be deleted by default.

User: Admin	2017-05-03	12:34:58
Delete User		
Do you want to delete user? Admin, User1		
✓ ✕		

User: Admin	2017-05-03	12:34:58
Cancel	Delete user password	Enter
Admin		✓
User1		✓

Select each user, and the user will be followed by a checkmark, indicating that the user is selected. Click the selected user again, and the checkmark will disappear, indicating that the user is unselected.

User: Admin	2017-05-03	12:34:58
Delete user password		
Do you want to delete user password ? Admin, User1		
✓ ✕		

8.5 PB-30L password enable function

PB-30L supports no other functions of user settings, other than password enable.

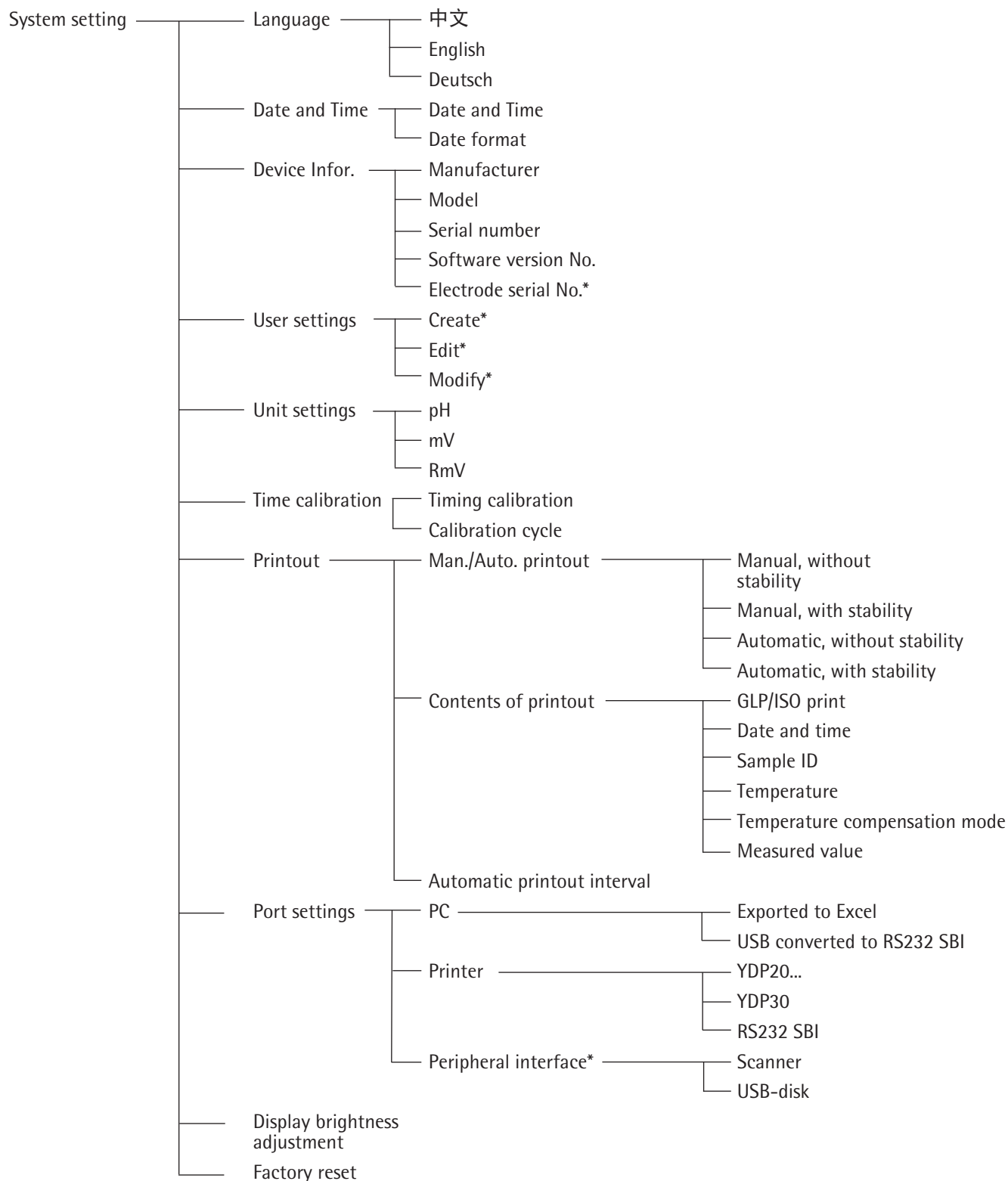
User:		
< Setting	Password	Next
Yes, enable password		✓
No, disable password		

To enable password protection, you need to enter the password when you click System Settings.

User:		
< Setting	Password	Enter
Yes, enable password		
No, disable password		✓

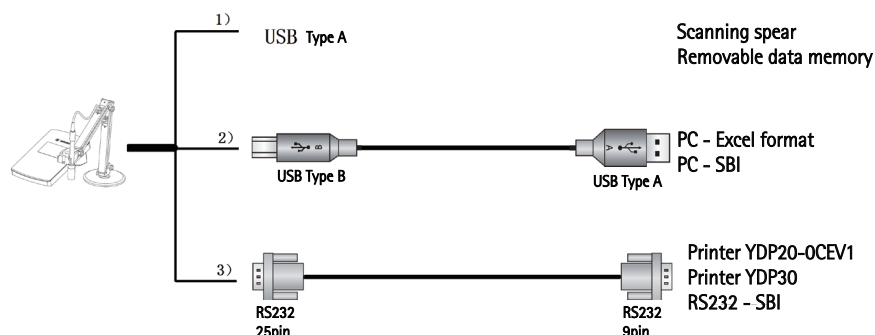
Password protection is not enabled. You do not need to enter a password to click system settings.

9 System setting



Note: *PB-30L carries no such function.

10 Communication interface



When the equipment is connected to a computer, the operating systems that are required include Windows 7, Vista, Windows XP, or 2000.

User:	2017-05-03	12:34:58
< Setting Interfaces		
PC (USB B)	output to Excel	☒
Printer (COM)	YDP20	☐
Peripheral interface (USB A)	Scanner	☐

The default is that the USB B port is enabled to have the data exported to Excel, and the other ports are disabled by default.

Note: PB-30L carries no peripheral interface (USB A port).

User:	2017-05-03	12:34:58
Cancel Peripheral... Enter		
Scanner		☒
U-disk		☐

10.1 USB-A port

USB-A can only be connected to one device at a time. The device can be used only if an appropriate function is selected. If the device is connected, but the port function is not enabled, the device cannot function properly.

10.1.1 Scanner

The scanner can identify barcode and QR code, and it can be directly used by being connected to the device with no need of driver.

The scanner can replace the keyboard for entering electrode serial number and sample ID.

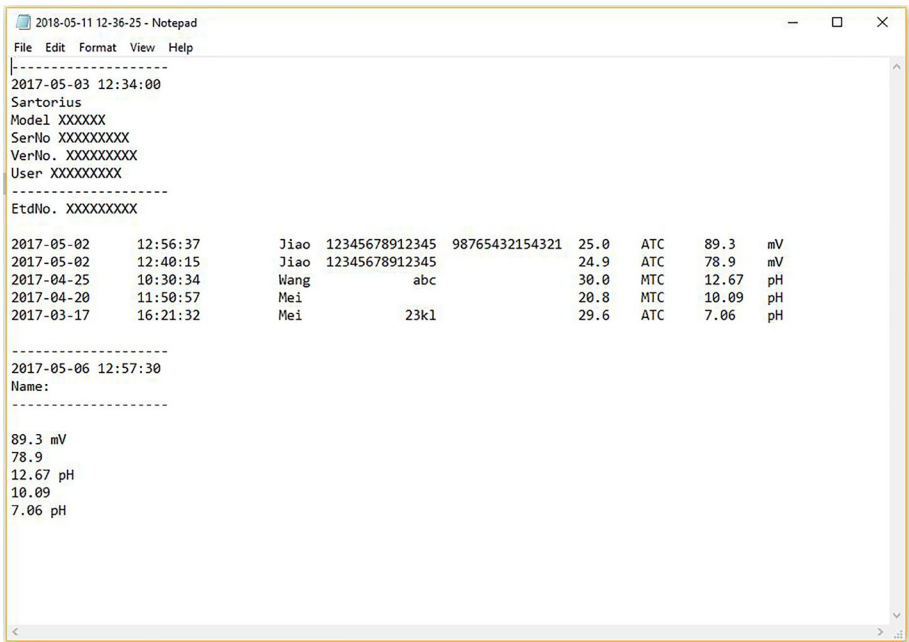
10.1.2 U-disk

The name of the file in the USB-disk is made up of the date and time of creation, for example: "2018-06-06 12-13-36.txt".

Through the print function, the data will be automatically stored on the USB-disk in the printing format as required.

The USB flash drive used is less than 8GB in storage capacity.

Example:



The figure contains GLP-printing header and footer, as well as historical calibration data, and measurement data.

10.2 USB-B port

The USB-B port connects to the PC and can output data to an Excel spreadsheet. It can also communicate using the SBI protocol.

10.2.1 Date output to Excel

With this feature, the device will be virtual to the computer's keyboard peripheral to transfer data to the computer. After the device is connected to the computer, open an Excel table, and it is recommended to set the font to Courier New to facilitate data alignment; move the cursor to the location you want to output, switch the input method into English, and click on the print key on the screen, the data will be automatically uploaded to the location where the cursor is in the table.

User:	2017-05-03	12:34:58
Candle	PC	Enter
Output to Excel		✓
USB to RS232 SBI		

Example:

	A	B	C
1	-----		
2	2018-05-17	15:45:55	
3	Sartorius		
4	Model	PB-30	
5	SerNo.	1234SERIAL1234	
6	VerNo.	00.01	
7	-----		
8	EtdNo.	123ELECTRODE34	
9			
10	2018-05-09	21:44:44	
11	User	User-000000004	
12	EtdNo.	SAR-0000-00004	
13	Calibration Clear		
14	2018-05-08	09:43:00	
15	User	User-000000003	
16	EtdNo.	SAR-0000-00003	
17	S1	25.2 °C	
18	ATC		
19	7.02 pH		
20	0.5 mV		
21	Slope1	100.0 %	
22	Calibration OK		
23			
24	-----		
25	2018-05-17	15:46:31	
26	Name:		
27			
28	-----		

The table shows the history calibration information with GLP header and footer.

10.2.2 PC-SBI

With this function, the device will act as the RS232 interface and automatically match the RS232 interface settings to communicate with other devices. After the device is connected to the computer, the computer will automatically search for the driver and install it, so that the user can use it directly. If the driver installation fails, please go to the website ... to download the driver and install it on the computer.

Open the serial port for data transmission.

The data transmission content complies with the printing requirements and displays the information that the pH meter needs to print.

10.3 DB25 port

DB25 port allows connecting to two different types of printers for data print. And it can be used as an RS232 interface device to communicate with other RS32 interface devices through the SBI communication protocol.

The port is set to by default: Baud rate: 9600

Data bits: 7

Stop bits: 1

Check bits: odd

User:	2017-05-03	12:34:58
Cancel	Printer	Enter
YDP20...		✓
YDP30		
RS232 SBI		

The terminal DB25 is connected to the pH meter; the terminal DB9 is connected to the printer or the computer.

10.4 SBI communication protocol

Users can read the equipment information and real-time measurement data of the pH meter by upper computer software according to the SBI communication protocol.

10.4.1 Data input

Interface command

The computer connected through the data port sends control commands to the pH meter to control its function.

Format 1	Esc	!	CR	LF		
Format 2	Esc	!	#	_	CR	LF

Esc	Exit
!	Command character
#	Figure
_	Underline (ASCII:95)
CR	Enter (optional)
LF	Line feed (optional)

Example:

Real-time measurement data read command:

ESC P CR LF

Regular data return format

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
K	K	K	K	K	K	+	A	A	A	A	A	A	A	A	A	*	E	E	E	CR	LF
K	K	K	K	K	K	*	A	A	A	A	A	A	A	A	A	A	A	A	A	CR	LF
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	CR	LF

K	Mark
CR	Carriage return
*	Space
LF	Line feed

A Display character
E Measurement unit mark

Example:

1. Currently measured value by user:

Value 10.02 pH

2. Instrument serial number:

SerNo XXXXXXXXX

Command format (character form)	Function
ESC x0_ CR LF	Read the instrument manufacturer
ESC x1_ CR LF	Read the instrument model
ESC x2_ CR LF	Read the instrument serial number
ESC x3_ CR LF	Read the instrument software version number
ESC P CR LF	Read real time measurement data
ESC P1 CR LF	Read date and time data
ESC P2 CR LF	Read electrode ID
ESC P3 CR LF	Read sample ID
ESC P4 CR LF	Read the temperature compensation mode
ESC P5 CR LF	Read the temperature
ESC P6 CR LF	Read the pH value
ESC P7 CR LF	Read the mV value
ESC P8 CR LF	Read the RmV value
ESC P9 CR LF	Read the user ID
ESC Q CR LF	Read all historical measurement data
ESC R CR LF	Read all historical calibration data

11 ISO/GLP compliant printout

The device data, ID and current information can be printed before (GLP header) and after (GLP footer) the value of the measurement series component.

GLP header printing contains:

1. The current printed date and time
2. Sartorius logo
3. Product model
4. Product SerNo.
5. Software VerNo.
6. User name
7. Electrode No.

GLP footer printing contains:

Blank line " "

1. The current printed date and time
2. Signature block "Name:"

Print example:

```
-----
2018-05-17  15:45:55
      Sartorius
Model          PB-30
SerNo.1234SERIAL1234
VerNo.          00.01
-----
EtdNo.123ELECTRODE34
```

```
-----
2018-05-17  15:46:31
Name:
```

```
-----
```

```
-----
2018-05-17  15:45:55
      Sartorius
Model          PB-30
SerNo.1234SERIAL1234
VerNo.          00.01
-----
EtdNo.123ELECTRODE34
```

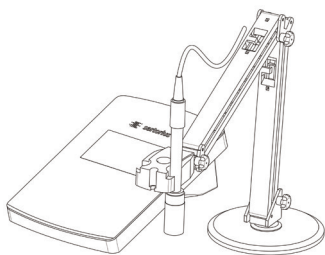
```
2018-05-06  21:41:00
User  User-000000001
EtdNo.SAR-0000-00001
S1          25.0 °C
           ATC
           7.00 pH
           0.3 mV
Slope1      100 %
Calibration OK
```

```
-----
2018-05-17  15:46:31
Name:
```

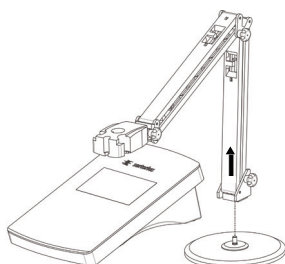
```
-----
```

12 Transport pH Meter

12.1 Remove pH Meter



First remove the electrode from the support

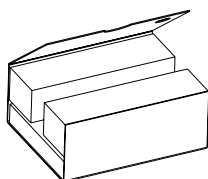


Next, remove the support from the base in the end.

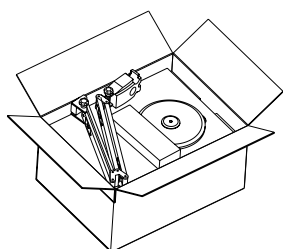
12.2 Package pH meter



Step 1: put the pH meter into the foam package;



Step 2: fold the left and right sides up and wrap the host completely;



Step 3: put the packaged motor core into the packing box, then put the support, base, electrode and power supply into the packaging box, and close the box cover.

13 Maintenance and protection

13.1 Service

To ensure a stable measurement accuracy of the pH Meter, we recommend that you arrange regular maintenance at least once a year. The AC adaptor and its connection must be checked regularly by a professional electrician (for example, every 2 years).

Maintenance work can only be performed by trained maintenance technicians. The plug of equipment must be pulled out during maintenance and it is required to pull the plug out of the main power supply. Besides, the accuracy of the pH Meter is likely to be affected and may pose a serious risk to users. Please contact the Sartorius service or the Sartorius dealer for proper maintenance of the pH Meter.

13.2 Clean pH Meter

WARNING

Contaminated equipment:

- Health risks posed by the existence and collection of residual microbial contamination in the product.
- Health risks posed by biological or microbial substances.
- Please observe the cleaning technical specifications.
- Please check the cleaning results carefully.

WARNING

- Disconnect the AC power from the device: unplug the AC adaptor from the power supply.
- Disconnect all data cables connected to the pH meter.

NOTICE

- Do not open the pH meter or AC adaptor.

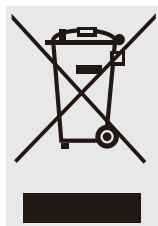
The parts contained in these devices cannot be cleaned, maintained or replaced by the operator.

- Make sure no liquid or dust enters the pH meter or AC adaptor.
- Do not use detergents containing solvents or abrasive ingredients, which may eventually cause damage to the equipment.

NOTICE

Do not use acetone or corrosive cleaning agents to clean the following parts:
Control panel, power plug, data interface, label, and all other plastic parts.

14 Discard



The outer packaging is made from environmentally friendly materials and be used as secondary raw materials. In Germany, the packaging out of use can be handled for free through the VFW dual system (contract No. D-59101-2009-1129). In other countries or regions, please use local waste disposal facilities to dispose of materials in accordance with applicable regulations. Equipment including accessories and batteries shall not be treated as general household waste and they shall be recycled as electrical and electronic equipment. For disposal or recycling, please contact our field service personnel. Besides, in addition, the partners listed in the following websites can deal with the waste within the EU:

- 1) Select <http://www.sartorius.com>.
- 2) Select the "Service" tab.
- 3) Then select "Disposal information".
- 4) Download the PDF file on this page, which contains the information of local Sartorius addresses for disposal.



Sartorius does not recover equipment contaminated by hazardous substances (ABC pollution), nor provides maintenance or disposal services.

Disposal service address

For more information about the service address or equipment disposal, please visit our website (www.sartorius.com) or contact the Sartorius service department.

15 Technical specifications

15.1 General data

Specification	Unit	Value
AC adaptor		
Sartorius AC adaptor		
AC input		100-240 V ~ , -10%/+10% , 50-60 Hz , 0.2 A.
DC output		15 V DC , ±5%, 530 mA (max) / 8 W (max): 0 to +40 °C ; 15 V DC , ±5%, 330 mA (max) / 5 W (max): 0 to +50 °C .
Other Data		Protection level II EN/IEC 60950-1 / over sea level 3000m at most ; IP40 EN 60529/IEC 60529.
pH meter		
Input voltage	V DC	12.0-15.0
Power consumption	W	4.5 (general)
Environmental conditions		
This specification is used under the following environmental conditions:		
Environment		For indoor use only.
Ambient temperature	°C	+10 - +30
Run range	°C	Guaranteed between +5 and +45.
Storage and shipping	°C	-10 - +60
Height	Altitude (m)	Up to 3000
Relative humidity		When the temperature is below 31°C, the relative humidity is 15-80%, without condensation; when the temperature reaches 40°C, the relative humidity decreases linearly to 50%; when the temperature reaches 50°C, the relative humidity is 20%.
Safety of electrical apparatus		In accordance with EN 61010-1/IEC 61010-1 Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use Part 1: General Requirements.
Electromagnetic Compatibility		In accordance with EN 61326-1 / IEC61326-1 Electrical Equipment for Measurement, Control and Laboratory Use - EMC Requirements - Part 1: General Requirements.
Anti-interference		Applicable to industrial areas.
Transient emission		Level B, suitable for residential areas or areas of low voltage network for residential buildings.
Standard equipment		
Measurement units optional		pH, mV and RmV

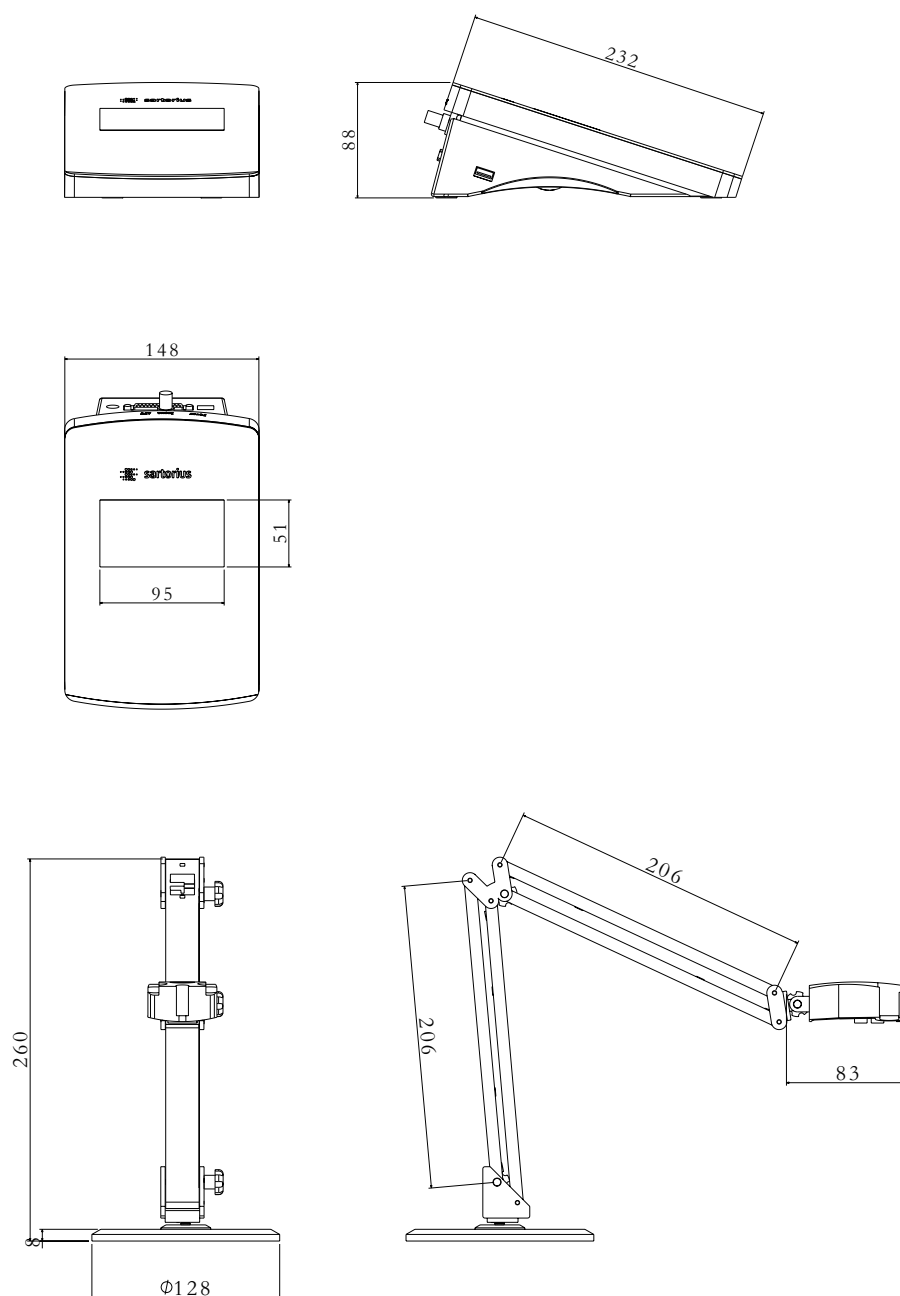
15.2 Specific model parameters

Measurement parameters	pH	mV
Measurement capability	-1.99 - 19.99 pH	-1999.9 - 1999.9 mV
Measurement accuracy	± 0.005 pH	± 0.3 mV
Read accuracy	0.01pH	0.1mV

15.3 Optional list of accessories

Electrode	As need
Calibration solution	As need
Support	As need
Base	As need
Printer	YDP20-OCEV1 Dot matrix printer
Printer	YDP30 Thermal/thermal transfer printer
YDP30 printing paper	69Y03285
USA - A port concerted to USB - B port	As need
DB25 converted to DB9 cable	YCC03 - D25
Power adaptor	6971793S / YEPS01 - PS4 / YEPS01 - PS5
Scanner	As needed

15.4 Dimensions



All dimensions are given in millimeters.

16 Declaration of Conformity



EU-Konformitätserklärung EU Declaration of Conformity

Hersteller
Manufacturer

Sartorius Scientific Instruments (Beijing) Co., Limited
Beijing, China

erklärt in alleiniger Verantwortung, dass das Betriebsmittel
declares under sole responsibility that the equipment

Geräteart
Device type

PH-Meter
ph meter

Modell
Model

PB-30, PB-30L

in der von uns in Verkehr gebrachten Ausführung allen einschlägigen Bestimmungen der folgenden Europäischen Richtlinien – einschließlich deren zum Zeitpunkt der Erklärung geltenden Änderungen – entspricht und die anwendbaren Anforderungen folgender harmonisierter Europäischer Normen – einschließlich deren zum Zeitpunkt der Erklärung geltenden Änderungen – erfüllt:

in the form as delivered fulfils all the relevant provisions of the following European Directives – including any amendments valid at the time this declaration was signed – and meets the applicable requirements of the harmonized European Standards including any amendments valid at the time this declaration was signed – listed below:

2014/30/EU

Elektromagnetische Verträglichkeit / *Electromagnetic compatibility*
EN 61326-1:2013

2011/65/EU

Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten (RoHS)
Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)
EN 50581:2012

Die Person, die bevollmächtigt ist, die technischen Unterlagen zusammenzustellen:

The person authorised to compile the technical file:

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The information and figures contained in these instructions correspond to the version date specified below.

Sartorius reserves the right to make changes to the technology, features, specifications and design of the equipment without notice.

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