JENCO®

VisionPlus

台式pH计说明书

MODEL pH 6175

沪制02270148号

pH6175

目录

概述

感谢您选购pH6175/6175-3C。pH6175/6175-3C是一台测量pH、mV及温度的精密仪器，内建的微处理器可用来存储、校正和补偿所有有关的pH测量数据，包括pH电极的校正液种类和电极效率。

本仪器拥有IP54等级的防水外壳，机械式按键提供高可信任度，高触觉及声响告知等功能，可使用9V交流电源适配器为电源，也可使用6节7号（AAA）电池为电源，校正数据永久储存在主机中，下次开机时不需再次校正。

此仪器使用大型带背光的LCD，可同时显示pH/mV，温度及指示目前所在的显示模式，即使在校正或测量程序下，也会提供使用者各种提示。

pH/ORP的测量都具有自动锁定功能（AUTOLOCK），允许仪器自动感测及锁定测量值，也可以使用在不具有自动锁定功能（NON-AUTOLOCK）的模式下操作，自动锁定和使用提示功能会减少许多测量上的人为因素。

pH6175不仅可检测pH/ORP和温度，其他的功能还有单点、双点或三点校正(6175-3C为双点校正)、电极零点确定、电极斜率确定、电极效率百分比显示，内建校正液系数，自动和手动温度补偿以及50/60HZ交流噪声排除能力，此仪器适合实验室使用。

产品检视

小心地打开包装，检视仪器及配件是否有因运输而损坏，如有发现，请立即通知 **JENCO** 的代理。

电源

pH6175/6175-3C可用230V~9V的交流电源适配器也可用6节“AAA”级的碱性电池提供电源。在使用仪器之前，请先检查交流适配器上的标签,以确保电源是正确的。如果发现交流电源适配器有误,请及时通知**JENCO**的代理。

[**注意：**如果没有正常的交流电，请使用电池供电。]

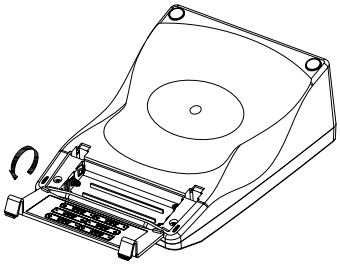
安装电池

pH6715/6175-3C使用6节7号（“AAA”）电池，以下是安装步骤：

1. 用双手掰开电池盖卡扣，取下电池盖。（图1）

2. 取出旧电池并装上新电池，更换时，请注意电池极性放置要正确。

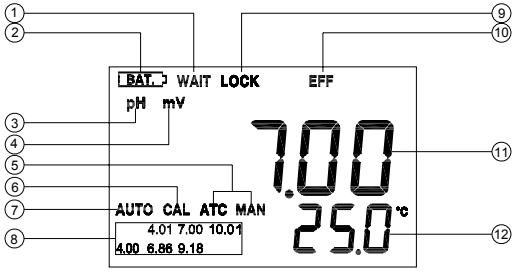
3. 放回电池盖，并确保卡扣卡紧。



图一：电池安装图

显示及按键功能

A. 显示

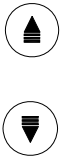


图二： LCD 显示

1. **WAIT-** 表示机器等待锁定。	7. **AUTO-** 表示机器在自动锁定模式。
2. **BAT-** 表示需更换电池。	8.**4.01/7.00/10.01(4.00/6.86/9.18)** 标准溶液指示闪动表示机器等待校正；不闪动表示机器已校正完成。

3. **pH-** 表示所测数据的模式及单位。	9. **LOCK-** 表示在自动锁定模式，所测数值已自动锁定，不再会随输入的改变而改变。.
4. **mV-** 表示所测数据的模式及单位。	10. **EFF(%)-** 表示电极效率百分比。当电极效率低于 75%时，请更换新电极。
5. **ATC/MAN-** ATC 表示机器接了温度探棒。 MAN 表示机器未接温度探棒。	11. **主显示** 显示 pH、ORP 值及电极效率。
6. **CAL-** 表示机器进入校正状态。	12. **次显示** 显示温度及其温度单位。

B. 按键

	**On/Off-** 开关键。按住开关键 5 秒打开或关闭主机。主机开机后，即按开关键，可点亮或关闭背光灯。
	**Mode-** 选择仪器的测量模式。连续按此键，显示的顺序为 pH-AUTOLOCK，mV-AUTOLOCK，pH 和 mV。更换测量模式并不影响校正值。 在校正模式下，按此键退出校正模式。
	**Clear-** 清除键。在测量模式下，除非长按此键 2 秒，机器会删除所有校正值，否则此键不起作用，目的是防止用户由于误触而删除校正值。 当机器显示出错显示时，按此键，机器即可清除记忆体中的校正值。 当按了此键后，机器将显示所有字段，两秒过后，机器自动进入 pH-AUTOLOCK 模式。“AUTO”将显示，“CAL”将闪烁，表示机器需要重新校正。
	**Up/Down-** 上键和下键仅在手动温度补偿模式用来增加、减少手动温度值，在自动温度补偿模式不起作用。

Stand Slope	**Stand/Slope-** Stand 和 Slope 键用于机器进行单点、双点及三点校正。 同时按住 Stand 键和开关键，可以改变机器的测量标准溶液组别。
Mea. Eff.	**Mea. / Eff.-** 测量键/效率键。在 pH-AUTOLOCK 和 mV-AUTOLOCK 模式，按此键可解开所在的模式。 按此键 5 秒，可显示电极效率。

操作步骤

A. 标准溶液组别的选择

pH6175/6175-3C具有两组标准溶液组别：7.00, 4.01, 10.01pH 和 6.86, 4.00, 9.18pH。本机出厂设定组别为 6.86, 4.00,9.18pH.

改变标准溶液组别，首先请关机，然后同时按住“Stand” 键和开关键开机，即可选择另一组校正液组别。

[注意：每次开机你无需每次做此操作，除非你确实需要改变标准溶液组别。]

B. pH 校正

pH6175可做单点、双点或三点校正(6175-3C为双点校正)。如果要做双点或三点校正，第一点校正必须是6.86/7.00。

a. 在pH自动锁定模式下，具有自动温度补偿的校正：

1. 打开主机，按住“Clear”键2秒，液晶显示将全显，机器将删除所有上次储存的校正值。

2. 将pH电极的输入接头与主机的BNC头连接，温度输入接头与主机的温度接口连接：“ATC” 显示将亮起，“pH”和“AUTO”显示也将亮起，标准溶液显示将闪烁。

3. 将电极用蒸馏水洗净并擦干，放入第一杯校正溶液中（7.00或6.86），当温度读值稳定后，请按住“Stand”键5秒，机器进入校正模式，此时“WAIT” 显示将闪烁。当数值稳定，机器将

存储此稳定值作为第一点的校正值，“WAIT” 显示消失，机器完成第一点校正，此时“4.00，9.18或4.01，10.01” 显示将间接闪烁，表示机器已准备第二点的校正。

[**注意：**此刻，按“Mode”键，机器将离开校正模式，单点校正7.00或6.86完成。如果第一杯校正溶液为4.00、4.01、9.18或10.01,机器在校正单点完成后,自动退出校正模式。6175-3C无此单点校正功能。]

4. 将电极用蒸馏水洗净并擦干，放入第二杯校正溶液中（4.00/4.01或9.18/10.01），当温度读值稳定后，请按“Slope”键，机器开始做第二点校正，此时“WAIT” 显示将闪烁。当数值稳定，机器将存储此稳定值作为第二点的校正值，“WAIT” 显示消失，机器完成第二点校正，此时“9.18/10.01或4.00/4.01” 再次显示并闪烁，表示机器已准备第三点的校正。

[**注意：**此刻，按“Mode”键，机器将离开校正模式。两点校正功能完成。]

5. 将电极用蒸馏水洗净并擦干，放入第三杯校正溶液中(9.18/10.01或4.00/4.01)，当温度读值稳定后，再按“Slope”键，机器开始做第三点校正，此时“WAIT” 显示将闪烁。当数值稳定，机器将存储此稳定值作为第三点的校正值，“WAIT”显示消失，机器完成第三点校正，并自动退出校正模式。三点校正功能完成。

6. 主机具有计算和补偿电极斜率偏差的功能，在完成两点或三点校正后，长按“Mea./Eff.”键**5**秒，机器可显示新的电极的电极效率。

b. 在pH自动锁定模式下，具有手动温度补偿的校正：

1. 打开主机，按住“Clear”键2秒，液晶显示将全显，机器将删除所有上次储存的校正值。

2. 将pH电极的输入接头与主机的BNC头连接，“MAN” 显示将亮起，“pH”和“AUTO”显示也将亮起，标准溶液显示将闪烁。

3. 将电极用蒸馏水洗净并擦干，放入第一杯校正溶液中（7.00或6.86），把手动温度通过按上键和下键调到第一杯标准溶液的温度（0 ~ 60.0℃），温度调准后请按住“Stand”键5秒，机器进入校正模式，此时“WAIT” 显示将闪烁。当数值稳定，机器将存储此稳定值作为第一点的校正值，“WAIT” 显示消失，机器

完成第一点校正，此时“4.00/4.01或9.18/10.01”显示将交替闪烁，表示机器已准备第二点的校正。

[**注意：**此刻，按“Mode”键，机器将离开校正模式，单点校正7.00或6.86完成。如果第一杯校正溶液为4.00、4.01、9.18或10.01，机器在校正单点完成后，自动退出校正模式。6175-3C无此单点校正功能。]

4. 请重复操作“**在pH自动锁定模式下，具有自动温度补偿的校正**”中的第**4~**第**6**步骤。

c. 在pH非自动锁定模式下，具有自动温度补偿的校正：

1. 打开主机，按住“Clear”键2秒，液晶显示将全显，机器将删除所有上次储存的校正值。

2. 将pH电极的输入接头与主机的BNC头连接，温度输入接头与主机的温度接口连接：“ATC” 显示将亮起，“pH”显示也将亮起，标准溶液显示将闪烁。

3. 将电极用蒸馏水洗净并擦干，放入第一杯校正溶液中（7.00或6.86），当温度读值稳定后，请按住“Stand”键5秒，机器立即存储此稳定值作为第一点的校正值，完成第一点校正，此时“4.00，9.18或4.01，10.01”显示将交替闪烁，表示机器已准备第二点的校正。
[注意：此刻，按“Mode”键，机器将离开校正模式，单点校正7.00或6.86完成。如果第一杯校正溶液为4.00、4.01、9.18或10.01,机器在校正单点完成后,自动退出校正模式。6175-3C无此单点校正功能。]

4. 将电极用蒸馏水洗净并擦干,放入第二杯校正溶液中(4.00/4.01或9.18/10.01），当温度读值稳定后，请按“Slope”键，机器立即存储此稳定值作为第二点的校正值，完成第二点校正，此时“9.18/10.01或4.00/4.01”再次显示并闪烁，表示机器已准备第三点的校正。

[**注意：**此刻，按“Mode”键，机器将离开校正模式。两点校正功能完成。]

5. 将电极用蒸馏水洗净并擦干，放入第三杯校正溶液中(9.18/10.01或4.00/4.01)，当温度读值稳定后，再按“Slope”键，机器立即存储此稳定值作为第三点的校正值，机器完成第三点校正，并自动退出校正模式。三点校正功能完成。

6. 主机具有计算和补偿电极斜率偏差的功能，在完成两点或三点校正后，长按“Mea./Eff.”键5秒，机器可显示新的电极的电极效率。

d. 在pH非自动锁定模式下，具有手动温度补偿的校正：

1. 打开主机，按住“Clear”键2秒，液晶显示将全显，机器将删除所有上次储存的校正值。

2. 将pH电极的输入接头与主机的BNC头连接，“MAN” 显示将亮起，“pH”显示也将亮起，标准溶液显示将闪烁。

3. 将电极用蒸馏水洗净并擦干，放入第一杯校正溶液中（7.00或6.86），把手动温度通过按上键和下键调到第一杯标准溶液的温度（0 ~ 60.0℃），温度调准后请按住“Stand”键5秒，机器立即存储此稳定值作为第一点的校正值，完成第一点校正，此时“4.00/4.01或9.18/10.01”显示将间接闪烁，表示机器已准备第二点的校正。

   [**注意：**此刻，按“Mode”键，机器将离开校正模式，单点校正7.00或6.86完成。如果第一杯校正溶液为4.00、4.01、9.18或10.01，机器在校正单点完成后，自动退出校正模式。6175-3C无此单点校正功能。]

4. 请重复操作**“在pH非自动锁定模式下，具有自动温度补偿的校正”**中的第**4~**第**6**步骤。

   [注意: 如需精确测量，建议每周或更换新电极之后，对整套仪表重新做一次校正。**]**

C. pH 测量

在pH测量模式，标准溶液指示必须显示，表示机器已完成单点、双点或三点校正，为测量数值做好了准备。如果，标准溶液显示闪烁，表示机器未曾校正，请在使用测量模式之前进行校正。

a. 在pH自动锁定模式下，具有自动温度补偿的测量：

1. 将pH电极的输入接头与主机的BNC头连接，温度输入接头与主机的温度接口连接，“ATC”显示将亮起。

2. 按“MODE”键直到“pH”和“AUTO”显示也亮起。

3. 将电极用蒸馏水洗净并擦干，放入被测液中，稍作搅动，赶走空气泡，让电极球泡与被测液充分接触。

4. 按“Mea.”键，“WAIT”显示将闪烁，当数值稳定，“WAIT”显示停止闪烁，机器将显示“LOCK”并将此稳定值存储为此被测溶液的测量值，此时机器读值不再随电极的变动而变动。

[**注意：**对于不稳定的被测溶液，建议使用“pH NON- AUTOLOCK”非自动锁定模式。]

b. 在pH自动锁定模式下，具有手动温度补偿的测量：

1. 将pH电极的输入接头与主机的BNC头连接。不接温度探棒，“MAN”显示将亮起，用上下键调节温度值到被测溶液的温度(0.0 to 100.0℃)。

2. 请重复操作“**在pH自动锁定模式下，具有自动温度补偿的测量**”中的第2~第3步骤。

[**注意：**对于不稳定的被测溶液，建议使用“pH NON- AUTOLOCK”非自动锁定模式。]

c. 在pH非自动锁定模式下，具有自动温度补偿的测量：

1. 将pH电极的输入接头与主机的BNC头连接，温度输入接头与主机的温度接口连接，“ATC”显示将亮起。

2. 按“MODE”键直到“pH”显示也亮起。

3. 将电极用蒸馏水洗净并擦干，放入被测液中，稍作搅动，赶走空气泡，让电极球泡与被测液充分接触。

4. 等待片刻，让被测溶液的读值稳定，此稳定值就是被测溶液的测量值。

d. 在pH非自动锁定模式下，具有手动温度补偿的测量：

1. 将pH电极的输入接头与主机的BNC头连接。不接温度探棒，“MAN”显示将亮起，用上下键调节温度值到被测溶液的温度(0.0 to 100.0℃)。

2. 请重复操作“**在pH非自动锁定模式下，具有自动温度补偿的测量**”中的第2~第3步骤。

D. 温度测量

pH6175/6175-3C在没有pH电极，有温度探棒的情况下，也可作为测量温度的仪表。接上温度探棒，机器就可测量温度。

E. mV 测量

a. 在自动锁定模式下的mV值的测量。

1. 将ORP电极的输入接头与主机的BNC头连接。

2. 按“MODE”键直到“mV”和“AUTO”显示亮起。

3. 将电极用蒸馏水洗净并擦干，放入被测液中，稍作搅动，赶走空气泡，让电极球泡与被测液充分接触。

4. 按“Mea.”键，“WAIT”显示将闪烁，当数值稳定，“WAIT”显示停止闪烁，机器将显示“LOCK”并将此稳定值存储为此被测溶液的测量值，此时机器读值不再随电极的变动而变动。

   [[注意：对于不稳定的被测溶液，建议使用“mV NON- AUTOLOCK”非自动锁定模式。**]**

b. 在非自动锁定模式下的mV值的测量。

1. 将ORP电极的输入接头与主机的BNC头连接。

2. 按“MODE”键直到“mV”显示亮起。

3. 将电极用蒸馏水洗净并擦干，放入被测液中，稍作搅动，赶走空气泡，让电极球泡与被测液充分接触。

4. 等待片刻，让被测溶液的读值稳定，此稳定值就是被测溶液的测量值。

pH 标准溶液

pH 4.00、4.01、6.86、7.00、9.18和10.01这六种标准溶液的温度系数被存储在机器内部。使用校正液时，必须显示对应温度的pH值（如下表）：

℃	4.00	6.86	9.18	4.01	7.00	10.01
0	4.01	6.98	9.46	4.01	7.11	10.32
5	4.00	6.95	9.39	4.01	7.08	10.25
10	4.00	6.92	9.33	4.00	7.06	10.18
15	4.00	6.90	9.28	4.00	7.03	10.12
20	4.00	6.88	9.23	4.00	7.01	10.06
25	4.00	6.86	9.18	4.01	7.00	10.01
30	4.01	6.85	9.14	4.01	6.98	9.97
35	4.02	6.84	9.10	4.02	6.98	9.93
40	4.03	6.84	9.07	4.03	6.97	9.89
45	4.04	6.83	9.04	4.04	6.97	9.86
50	4.06	6.83	9.02	4.06	6.97	9.83
55	4.07	6.83	8.99	4.08	6.97	9.80
60	4.09	6.84	8.97	4.10	6.98	9.78

[注意：机器的读值与表中的值会有±0.01pH的误差。**]**

错误显示及原因

主显示	可能发生原因	纠正措施
"Er1"	1. 按"Stand"键的时候，零位的标准溶液的数值超出+/-1.0 pH。 2. pH电极OFFSET大于/小于+/-1.0 pH. 3. pH电极损坏。	1. 按“Clear”键，然后稍等片刻，等电极采样数值稳定，再按“Stand”键。 2. 更换标准溶液或pH电极。然后按“Clear”键重新进行校正。 3. 更换电极。
"Er2"	1. 按“Slope”键的时候，斜率的标准溶液的数值超出30%。 2. 4.00, 4.01, 9.18 和10.01标准溶液用的不对。 3. pH电极斜率已超出30% 。	1. 稍等片刻，等电极采样数值稳定，再按“Slope”键。 2. 确认所用标准溶液是否正确。 3. 更换标准溶液或pH电极。然后按“Clear”键重新进行校正。
"Er3"	1. 温度超出0.0~60.0°C的范围	1. 降低标准溶液的温度，使之在此温度范围之内。
"over" / ”undr”	1. 测量的pH值超出0.00~14.00 pH的范围。 2. 测量的mV值超出–1999.9 ~ 1999.9 mV的范围。 3. 测量的温度值超出0.0 ~ 100.0°C的范围。	1. 使被测液的pH值在此范围内。 2. 使被测液的mV值在此范围内。 3. 使被测液的温度值在此范围内。

[注意：如果机器仍然不能正常工作，请联系**Jenco**的服务部门。**]**

规格

显示	测量范围	分辨率	精确度
pH	0.00 to 14.00 pH	0.01 pH	±0.01 pH
mV(6175-3C)	-1999 to 1999 mV	1 mV	±1 mV
mV(pH6175)	-1999.9 to 1999.9 mV	0.1mV	±0.4/±1 mV
温度	0.0 to 100.0 °C	0.1 °C	±0.2°C

[注：pH6175在-1500.0~1500.0mV，精确度为±0.4mV；在-1999.9~-1500.0mV及1500.0~1999.9mV，精确度为±1 mV。]

pH 校正液认知	pH 7.00, 4.01, 10.01 或 pH 6.86, 4.00, 9.18
pH 温度补偿	手动/自动 0.0°C to 100.0 °C
pH 校正液温度范围	0°C ~ 60.0°C
pH 电极零点校正范围	±100 mV在pH 7.00或+108.3/-91.7mV在pH6.86 （6175） ±60 mV在pH 7.00 或 +68.3/-51.7mV在pH6.86 （6175-3C）
pH 电极斜率校正范围	±30%在pH 4.00, 4.01, 9.18 和10.01
输入阻抗	$>10^{12}\Omega$
温度探棒	热敏电阻, 10 kΩ。
电源	6节7号（“AAA”）电池及稳压源
校正存储	EEPROM
音效回馈	所有按键
终点锁定	有
显示（pH /mV : 温度）	22mm : 14.5mm 高 LCD
环境温度	0 ~ 50 °C
相对湿度	90%以下
外壳	IP54
尺寸（长 x 宽 x 高）	150mm x 203mm x 72mm
重量	504g (包含电池)

质量保证

仪器保修一年（以购买日为准）。在保修期内如有质量问题，本公司将无偿代为修复；如有人为因素造成故障或损坏，本公司竭诚代为修复，但需酬收工本费（配件如电极头、标准液等消耗品不在保证范围内）。在将本机退回本公司时，请用包装材料妥为包好，以避免运输途中碰伤。无论何种情况，在退回本机前，请先与本公司联系，并得到本公司认可，方可退回本机。

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CONTENTS

GENERAL INTRODUCTION

Thank you for selecting the pH6175/6175-3C meter. The pH6175/6175-3C is a precision tool that measures pH, mV and temperature. A built-in microprocessor stores, calculates and compensates for all parameters related to pH determinations including pH electrode temperature characteristics, electrode slope deviations and buffer solutions.

This meter has a waterproof IP54 case. The mechanical keys are highly reliable with tactile and audio feedback. It is powered by six AAA-size alkaline batteries or with a UL approved AC adapter (OUTPUT:DC9V). The meter also displays a "BAT" message when the batteries are in need of replacement. Re-calibration is not required when power is restored.

The front of the meter has a large LCD with backlight that displays pH or mV and temperature simultaneously along with user prompts and mode indicators. The unit prompts the user through calibration and measurement procedures.

An AUTOLOCK feature for both pH and mV measurements enables the unit to automatically sense the end point and "LOCK" the display to indicate the end point value of a measurement. AUTOLOCK and user prompts help eliminate most errors in determining pH and mV values, resulting in precise, repeatable and error-free measurements. The pH6175 can also be used in non-AUTOLOCK mode.

The model pH6175/6175-3C is available with pH, ORP and ATC (Automatic Temperature Compensation) probes. Other features include single or dual or three point calibration (6175-3C include dual or three point calibration), electrode offset recognition, electrode slope recognition, electrode efficiency display, built-in buffer coefficients, automatic or manual temperature compensation, long battery life, and 50/60Hz AC noise rejection. This meter is user-friendly for laboratory application.

INITIAL INSPECTION

Carefully unpack the unit and accessories. Inspect for damages made in shipment. If any damage is found, notify your **Jenco** representative immediately. All packing materials should be saved until satisfactory operation is confirmed.

POWER INPUT

The model pH6175/6175-3C can be powered by an 115V or

230VAC adaptor as well as 6 “AAA” alkaline batteries. Check the label on the AC adaptor supplied with the instrument to make sure that the AC line voltage is correct. If the wrong AC adaptor is supplied, notify your **Jenco** representative immediately.

INSTALLING THE BATTERIES

To insert the batteries into the meter, follow the procedure outlined below.

1. Use two hands to flip the two buckles and battery cover to expose the battery compartment. (Figure 1.)

2. Note the polarity and insert the six AAA batteries into the battery compartment correctly.

3. Replace the battery cover.

4.

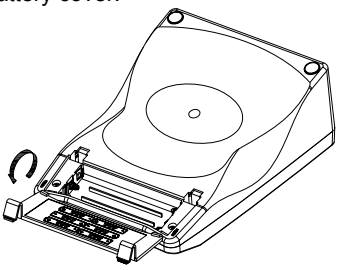


Figure 1: Battery compartment

DISPLAY & KEYS FUNCTIONS

A. Display

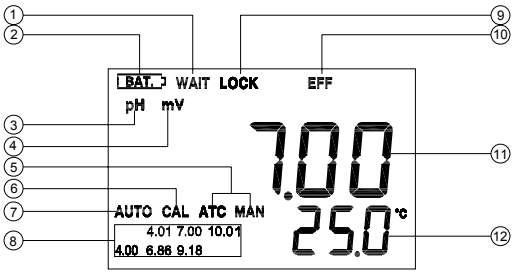
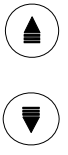


Figure2: Active LCD screen

1. **WAIT-** This will be displayed when the unit is still waiting for a stable reading or end point sensing.	7. **AUTO** AUTOLOCK mode indicator.
2. **BAT-** Low battery indicator.	8. **Buffer selection** This indicator will flash if the unit is not yet calibrated. This indicator will remain lit-up if the unit has been calibrated.
3. **pH** Unit and mode indicators.	9. **LOCK-** This will indicate that the reading is frozen during AUTOLOCK mode.
4. **mV** Unit and mode indicators.	10. **EFF-** This will be displayed if the user is viewing the efficiency of the electrode. It is recommended to use a new electrode when the efficiency value is less over than 75%.
5. **ATC/MAN-** ATC indicator will be displayed if a temperature probe is connected otherwise the MAN indicator will be displayed.	11. **MAIN DISPLAY-** For pH, mV and probe efficiency values
6. **CAL** This will be displayed when the unit enters into the calibration mode.	12. **SECONDARY DISPLAY-** For temperature in ℃ display

B. Keys

	**On/Off-** Press and hold this key for 5 seconds to power on and shut off the meter. Once the unit is power up, press the same key to turn on or off the backlight.
	**Mode-** Selects display mode. Pressing this key changes the display sequentially to display pH-AUTO, mV-AUTO, pH and mV. The calibration values will not be affected by changing the display modes. In "**pH calibration**", press "Mode" key to exit calibration mode.

	**Clear-** It is used to clear the unit when error signal appears. It clears all calibration values stored in the internal memory. Under normal use the key will not be activated unless pressed and held for 2 seconds to prevent accidental erasing stored memory. When the "Clear" key is pressed, all segments of the LCD will be on. After about 2 seconds the unit will enter the pH-AUTO mode. The "AUTO" and "CAL" will be on and one of the buffer in the pre-selected buffer set will start to flash. This means that the unit must be calibrated again before use.
	**Up/Down-** The two keys are used to manually enter the temperature values. They have no effect on the unit when operating in ATC mode.
	**Stand/Slope-** The "Stand" and "Slope" keys are used for pH calibration of the unit. Pressing and holding the **Stand** key while turning on the power, will change the buffer set.
	**Mea. / Eff.-** The key is used to bring the unit out of the AUTO condition when operating in the pH-AUTOLOCK or mV-AUTOLOCK mode. Press and hold this key for 5 seconds, the LCD will display the efficiency of the electrode.

OPERATIONAL PROCEDURES

A. Buffer Set Selection

The pH6715/6175-3C meter has two buffer sets: 7.00, 4.01,10.01pH and 6.86, 4.00, 9.18pH. The meter is factory pre-set at 6.86, 4.00 and 9.18pH.

To change the buffer set, turn off the unit, then press and hold the "Stand" key while turning on the unit again.

[**Note:** There is no need to repeat this procedure every time the unit is power up unless one decides to change the buffer settings.]

B. pH Calibration

The pH6175 uses one, two or three point calibration.
The 6175-3C uses two or three point calibration.

[**Note:** If the unit uses two or three point calibration, the first point must be 6.86/7.00, and the second point can either be 4.00/4.01 or 9.18/ 10.01.]

a. Calibration with an ATC/Temp probe in the pH-AUTOLOCK mode.

1. Turn the unit on. Press "**Clear**" key for 2 seconds, all LCD elements will lit up. The meter clears all calibration values stored in internal memory.

2. Connect the pH electrode to the BNC connector and the ATC/Temp probe to the ATC/Temp connector of the unit: "ATC" icon will lit up. "pH" icon and "AUTO" icon will lit up. One of the buffer in the pre-selected buffer set will start to flash.

3. Rinse the pH and ATC/Temp probes in distilled water and immerse them in the first buffer solution. Allow temperature reading to stabilize, then press and hold "**Stand**" key for 5 seconds to calibrate. The "WAIT" icon will flash until the unit detects a stable reading. Once the unit calibrates the first point, the selected buffer remains lit up while the remaining two buffers start to flash. The unit is ready to be sloped at the second buffer.

   [**Note:**
   If the first buffer solution is 7.00 or 6.86, at this moment, press the "**Mode**" key. The unit will exit the calibration mode. Single point calibration is complete. If the first buffer solution is 4.00, 4.01, 9.18 or 10.00, at this moment, the unit will automatically exit the calibration mode. Single point calibration is complete. The 6175-3C has not this single point calibration.]

4. Rinse the pH and ATC/Temp probe in distilled water and immerse them in the second buffer solution (either 4.00/4.01 or 9.18/10.01). Allow temperature reading to stabilize, then press "**Slope**" key to calibrate. The "WAIT" icon will flash until the unit detects a stable reading. Once the unit calibrates the second point, the selected two buffers lit up and the remaining buffer starts to flash. The unit is ready to be sloped at the third buffer.

   [**Note:** At this moment, press the "**Mode**" key, the unit will

exit the calibration mode. Dual point calibration is complete.]

5. Rinse the pH and ATC/Temp probe in distilled water and immerse them in the third buffer solution (either 9.18/10.01 or 4.00/4.01). Allow temperature reading to stabilize, then press "**Slope**" key to calibrate. The "WAIT" icon will flash until the unit detects a stable reading. Once the unit calibrates the third point and the unit will automatically exit the calibration mode. Three point calibration is complete.

6. The unit calculates and compensates for the pH electrode slope deviation corresponding to the values of the three calibration buffers. After calibration, press and hold "**Mea./ Eff.**" key for about 5 seconds to display the new electrode efficiency.

b. Calibration with manual temperature compensation in the pH-AUTOLOCK mode.

1. Turn the unit on. Press "**Clear**" key for 2 seconds, all LCD elements will lit up. The meter clears all calibration values stored in internal memory.

2. Connect the pH electrode to the BNC connector of the unit, "MAN" icon will lit up. "pH" icon and "AUTO" icon will lit up. One of the buffer in the pre-selected buffer set will start to flash.

3. Rinse the pH probes in distilled water and immerse it in the first buffer solution. Adjust the temperature reading to that of the first buffer using the "**up**" or "**down**" keys (0.0 to 60.0℃). Then press and hold "**Stand**" key for 5 seconds to calibrate. The "WAIT" icon will flash until the unit detects a stable reading. Once the unit calibrates the first point, the selected buffer remains lit up while the remaining two buffers start to flash. The unit is ready to be sloped at the second buffer.

   [**Note:**
   If the first buffer solution is 7.00 or 6.86, at this moment, Press the "**Mode**" key, the unit will exit the calibration mode. Single point calibration is complete. If the first buffer solution is 4.00, 4.01, 9.18 or 10.00, at this moment, the unit will automatically exit the calibration mode. Single point calibration is complete. The 6175-3C has not this single point calibration.]

4. Repeat steps 4~6 of "**Calibration with an ATC/Temp probe in the pH-AUTOLOCK mode"** for dual and three point calibration.

c. Calibration with an ATC/Temp probe in the pH NON-AUTOLOCK mode.

1. Turn the unit on. Press "**Clear**" key for 2 seconds, all LCD elements will lit up. The meter clears all calibration values stored in internal memory.

2. Connect the pH electrode to the BNC connector and the ATC/Temp probe to the ATC/Temp connector of the unit: "ATC" icon will lit up. Press "**Mode**" key to select "pH" mode. "pH" icon is on. One of the buffer in the pre-selected buffer set will start to flash.

3. Rinse the pH and ATC/Temp probes in distilled water and immerse them in the first buffer solution. Allow temperature reading to stabilize, then press and hold "**Stand**" key for 5 seconds to calibrate, the unit immediately calibrates the first point, the selected buffer remains lit up while the remaining two buffers start to flash. The unit is ready to be sloped at the second buffer.

   [**Note:**
   If the first buffer solution is 7.00 or 6.86, at this moment, Press the "**Mode**" key, the unit will exit the calibration mode. Single point calibration is complete. If the first buffer solution is 4.00, 4.01, 9.18 or 10.00, at this moment, the unit will automatically exit the calibration mode. Single point calibration is complete. The 6175-3C has not this single point calibration.]

4. Rinse the pH and ATC/Temp probe in distilled water and immerse them in the second buffer solution (either 4.00/4.01 or 9.18/10.01). Allow temperature reading to stabilize, then press "**Slope**" key to calibrate. The unit immediately calibrates the second point, the other buffer solution will flash. The unit is ready to be sloped at the third buffer.

   [**Note:** At this moment, press the "**Mode**" key, the unit will exit the calibration mode. Dual point calibration is complete.]

5. Rinse the pH and ATC/Temp probe in distilled water and immerse them in the third buffer solution (either 9.18/10.01 or 4.00/4.01). Allow temperature reading to stabilize, then press "**Slope**" key to calibrate. The unit immediately calibrates the third point and the unit will automatically exit the calibration mode. Three points calibration is complete.

6. The unit calculates and compensates for the pH electrode slope deviation corresponding to the values of the three calibration buffers. After calibration, press and hold "**Mea./Eff.**"

key for about 5 seconds to display the new electrode efficiency.

d. Calibration with manual temperature compensation in the pH NON-AUTOLOCK mode.

1. Turn the unit on. Press "**Clear**" key for 2 seconds, all LCD elements will lit up. The meter clears all calibration values stored in internal memory.

2. Connect the pH electrode to the BNC connector of the unit, "MAN" icon will lit up. Press "**Mode**" key to select "pH" mode. "pH" icon is on. One of the buffer in the pre-selected buffer set will start to flash.

3. Rinse the pH probes in distilled water and immerse it in the first buffer solution. Adjust the temperature reading to that of the first buffer using the "**up**" or "**down**" keys (0.0 to 60.0℃) before pressing "Stand" key. Then press and hold "**Stand**" key for 5 seconds to calibrate. The unit immediately calibrates the first point, the selected buffer remains lit up while the remaining two buffers start to flash. The unit is ready to be sloped at the second buffer.

   [**Note:**
   If the first buffer solution is 7.00 or 6.86, at this moment, Press the "**Mode**" key, the unit will exit the calibration mode. Single point calibration is complete. If the first buffer solution is 4.00, 4.01, 9.18 or 10.00, at this moment, the unit will immediately exit the calibration mode. Single point calibration is complete. The 6175-3C has not this single point calibration.]

4. Repeat steps 4~6 of "**Calibration with an ATC/Temp probe in the pH NON- AUTOLOCK mode"** for dual and three point calibration.

C. pH Measurements

To take pH measurements, the pre-selected buffer solution set must lit up, indicating the unit is Single point or dual-point or three-point calibrated and ready for measurements. If buffer solution set flashes, perform a pH calibration before taking measurements.

a. Measurement with an ATC/Temp probe in the pH-AUTOLOCK mode.

1. Connect the pH electrode to the BNC connector and the ATC/Temp probe to the ATC/Temp connector of the unit. The "ATC" icon will lit up.

2. Press “Mode” key until “pH” icon and “AUTO” icon lit up.

3. Rinse the pH electrode and ATC/temp probe with distilled water and immerse in the sample to be measured. Remove any air bubbles trapped around the probe by shaking or stirring the probe.

4. Press the “Mea.” key. The “WAIT” icon will start flashing. The unit is waiting for a stable reading. The display will track the pH value as sensed by the pH electrode and the ATC/Temp probe.

5. When the “WAIT” icon disappears, the reading is then “LOCK” and will not respond to further changes from the sample. The pH value shown is the pH value of the sample at the displayed sample temperature.

   [**Note:** For samples that are inherently unstable, the unit will not AUTOLOCK. In this case, use the pH NON- AUTOLOCK mode for measurements.]

b. Measurement with manual temperature compensation in the pH-AUTOLOCK mode.

1. Connect the pH electrode to the BNC connector of the unit. The “MAN” icon will lit up. Set unit to display the sample temperature by pressing the up and down keys(0.0 to 100.0℃).

2. Repeat steps 2~5 of **“Measurement with an ATC/Temp probe in the pH- AUTOLOCK mode”.**

c. Measurement with an ATC/Temp probe in the pH NON-AUTOLOCK mode.

1. Connect the pH electrode to the BNC connector and the ATC/Temp probe to the ATC/Temp connector of the unit. The “ATC” icon will lit up.

2. Press “Mode” key until “pH” icon lit up.

3. Rinse the pH electrode and ATC/temp probe with distilled water and immerse in the sample to be measured.

4. Allow sufficient time for the display to stabilize. The instrument will display the pH value of the sample at the displayed sample temperature.

d. Measurement with manual temperature compensation in the pH NON-AUTOLOCK mode.

1. Connect the pH electrode to the BNC connector of the unit. The “MAN” icon will lit up. Set unit to display the sample temperature by pressing the up and down keys(0.0 to 100.0℃).

2. Repeat steps 2~4 of **“Measurement with an ATC/Temp probe in the pH NON- AUTOLOCK mode”.**

D. Temperature Measure

The pH6715 can measure temperature independently with the ATC/temp probe without using the pH electrode. Place the ATC/temp probe in the sample. The unit will display the measured temperature.

E. mV Measurements

a. Measurement in the mV-AUTOLOCK mode.

1. Connect the optional combination ORP electrode to the BNC connector of the unit.

2. Press “Mode” key until “mV” icon and “AUTO” icon lit up.

3. Rinse electrode with distilled water and immerse it in sample to be measured.

4. Press the “Mea.” key. The “WAIT” icon will start flashing. The unit is waiting for a stable reading. The display will track the mV value as sensed by the ORP electrode

5. When the “WAIT” icon disappears, the reading is then “LOCK” and will not respond to further changes from the sample. The mV value is the sample reading.

   [**Note:** For samples that are inherently unstable, the unit will not AUTOLOCK. In this case, use the pH NON- AUTOLOCK mode for measurements.]

b. Measurement in the mV NON-AUTOLOCK mode.

1. Connect the optional combination ORP electrode to the BNC connector of the unit.

2. Press “Mode” key until “mV” icon lit up.

3. Rinse electrode with distilled water and immerse it in sample to be measured.

4. Allow sufficient time for the display to stabilize. The instrument will display the mV value of the sample.

pH BUFFERS

The temperature coefficient of pH calibration buffers 4.01, 6.86, 7.00,9.18 and 10.01 are stored inside the instrument. The buffers used to calibrate the instrument must exhibit the same temperature characteristics as the stored values.

Temperature coefficient of the pH buffers

℃	4.00	6.86	9.18	4.01	7.00	10.01
0	4.01	6.98	9.46	4.01	7.11	10.32
5	4.00	6.95	9.39	4.01	7.08	10.25
10	4.00	6.92	9.33	4.00	7.06	10.18
15	4.00	6.90	9.28	4.00	7.03	10.12
20	4.00	6.88	9.23	4.00	7.01	10.06
25	4.00	6.86	9.18	4.01	7.00	10.01
30	4.01	6.85	9.14	4.01	6.98	9.97
35	4.02	6.84	9.10	4.02	6.98	9.93
40	4.03	6.84	9.07	4.03	6.97	9.89
45	4.04	6.83	9.04	4.04	6.97	9.86
50	4.06	6.83	9.02	4.06	6.97	9.83
55	4.07	6.83	8.99	4.08	6.97	9.80
60	4.09	6.84	8.97	4.10	6.98	9.78

[Note: The actual reading of the instrument can differ from the values shown by ±0.01pH.**]**

ERROR DISPLAYS AND TROUBLESHOOTING

Main Display	Possible cause(s)	Corrective Action(s)
"Er1"	1. "Stand" was pressed before the electrode and ATC/Temp probe settled to within +/-1.0 pH of the buffer value.	1. Press "Clear" key, allow sufficient time for the electrode and ATC/Temp probe to stabilize, re-press "Stand" key to start the calibration procedure.
	2. pH electrode offset is greater / less than +/-1.0 pH.	2. Replace the buffer and /or the pH electrode. Press "Clear" key to recalibrate meter.
	3. pH electrode is faulty.	3. Replace electrode.
"Er2"	1. "Slope" was pressed before the electrode and ATC/Temp probe settled to within 30% of the buffer value.	1. Allow sufficient time for the electrode and ATC/Temp probe to stabilize, re-press "Slope" key to continue the calibration procedure.
	2. Buffer 4.00, 4.01, 9.18 and 10.01 is not correct.	2. Check if the correct buffer is used.
	3. pH electrode slope is off by more than 30% of ideal slope.	3. Replace the buffer and /or the pH electrode. Press "Clear" key to recalibrate meter.
"Er3"	1. Temperature is out of the 0.0 to 60.0°C range.	1. Bring the buffer temperature within range.
"over" / "undr"	1. Measured pH is out of the 0.00 to 14.00 pH range.	1. Bring sample pH into the correct measuring range.
	2. Measured mV is out of the –1999.9 to 1999.9 mV range.	2. Bring sample ORP into the correct measuring range.
	3. Measured temperature is out of the 0.0 to 100.0°C range.	3. Bring sample temperature into the correct measuring range.

[Note: If the meter still does not perform normally after the above

measures are taken, call **Jenco** representative.**]**

SPECIFICATIONS

Display	Range	Resolution	Accuracy
pH	0.00 to 14.00 pH	0.01 pH	±0.01 pH
mV(6175-3C)	-1999 to 1999 mV	1 mV	±1 mV
mV(pH6175)	-1999.9 to 1999.9 mV	0.1mV	±0.4/±1 mV
Temperature	0.0 to 100.0 °C	0.1 °C	±0.2°C

pH buffer recognition	pH 7.00, 4.01, 10.01 or pH 6.86, 4.00, 9.18
pH Temperature compensation	AUTO/MAN 0.0°C to 100.0 °C
pH Buffer Temperature range	0°C to 60.0°C
pH Electrode Offset recognition	±100 mV at pH 7.00 or +108.3/-91.7mV at pH6.86（6175） ±60 mV at pH 7.00 or +68.3/-51.7mV at pH6.86（6175-3C）
pH Electrode Slope recognition	±30% at pH 4.00, 4.01, 9.18 and 10.01
Input impedance	$>10^{12}\Omega$
Temperature sensor	Thermistor, 10 kΩ at 25°C
Power	Six “AAA” Batteries
Calibration Back-up	EEPROM
Audio Feedback	All Touch Keys
End Point Sensing & Hold	Yes
Display (pH /mV : Temp)	22mm : 14.5mm high LCD
Ambient Temperature Range	0 to 50 °C
Relative Humidity	up to 90%
Case	IP54
Dimensions (W x D x H)	150mm x 203mm x 72mm
Weight	504 grams(Batteries included)

WARRANTY

Jenco warrants this product to be free from significant deviations in material and workmanship for a period of 1 year from date of purchase. If repair or adjustment is necessary and has not been the result of abuse or misuse, within the year period, please return-freight-prepaid and the correction of the defect will be made free of charge. If you purchased the item from our **Jenco** distributors and it is under warranty, please contact them to notify us of the situation. **Jenco** Service Department alone will determine if the product problem is due to deviations or customer misuse.

Out-of-warranty products will be repaired on a charge basis.

RETURN OF ITEMS

Authorization must be obtained from one of our representatives before returning items for any reason. When applying for authorization, have the model and serial number handy, including data regarding the reason for return. For your protection, items must be carefully packed to prevent damage in shipment and insured against possible damage or loss. **Jenco** will not be responsible for damage resulting from careless or insufficient packing. A fee will be charged on all authorized returns.

NOTE: Jenco reserves the right to make improvements in design, construction and appearance of our products without notice.

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