

HygroPalm 0

Portable Humidity Temperature Indicator

Instruction Manual

v 3



Contents

Overview.....	3
General Description.....	3
Power Source.....	3
Optional Docking Station (PD1-ACA).....	3
Unit System.....	4
Display.....	4
Keypad.....	5
HOLD function.....	5
Function Menu.....	5
CALCULATE.....	6
DISPLAY.....	6
ADJUST 1PT.....	7
PROBE.....	8
SETTINGS.....	8
SYS STATUS.....	8
Errors and Status Messages.....	9
Environmental Limits.....	9
Specifications.....	9

About the version number: this manual is valid for all instruments that display version number 3.x ,where 3.x can be 3.0, 3.1, etc. (see MENU, SYS STATUS). Changes in the last digit of the version number reflect minor changes in the internal software of the instrument that do not affect the manner in which the instrument should be operated.

Overview

The HygroPalm 0 is a portable humidity temperature indicator that displays relative humidity and temperature. Using the keypad, either the dew point or the wet-bulb temperature can be displayed instead of relative humidity or temperature. The HygroPalm 0 has an integral, non-removable probe and is suitable for measurement of ambient conditions. The HygroPalm 0 operates with a regular 9V alkaline battery or with a rechargeable 9V battery.

Main functions:

- indication of relative humidity, temperature, dew point or wet bulb temperature
- 1-point software-based probe calibration

General Description

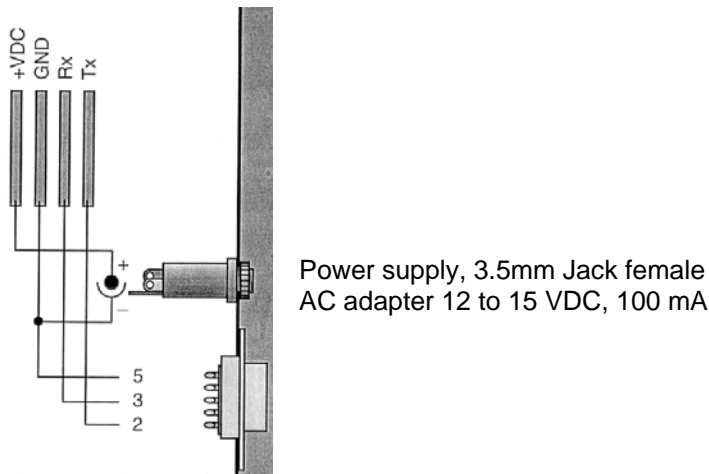
Power Source

The HygroPalm 0 operates with a regular 9V alkaline battery or with a 9V rechargeable battery.

Important: the HygroPalm 0 is shipped with a regular 9V battery and is factory preset with the battery charge function turned off. If you plan on using a rechargeable battery (requires docking station), you should turn on the battery charge function (see Function Menu – Settings). Before using a regular battery again, be sure to turn off the battery charge function. Trying to charge a regular battery may cause the battery to burst and may damage the instrument.

Optional Docking Station

The HygroPalm 0 is available with an optional docking station model PD1-ACA. The docking station is shipped with an external AC adapter and is used either for recharging the battery or for conserving battery power.

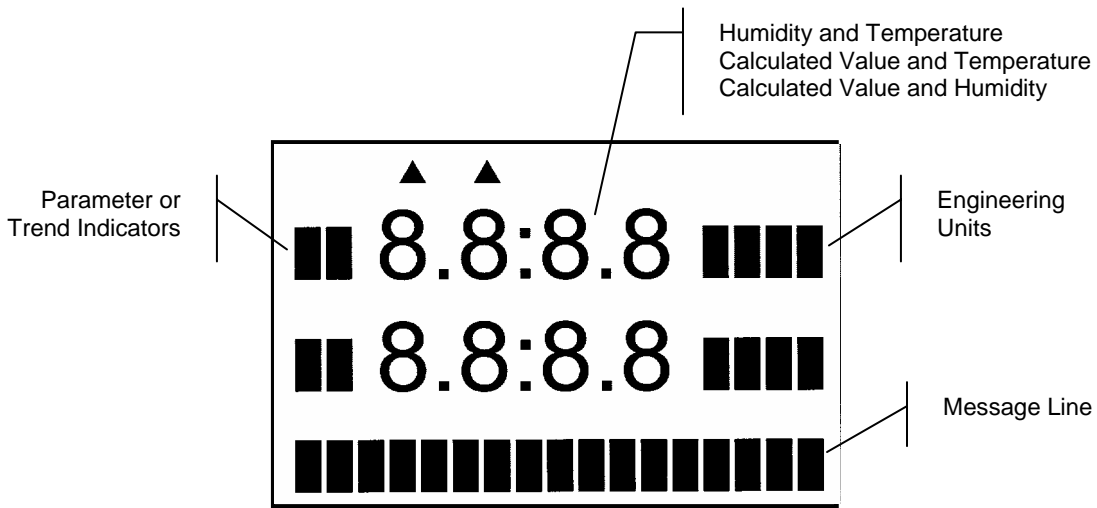


Unit System

The temperature unit of the HygroPalm 0 (Metric or English) is factory programmed as specified when the instrument was ordered. The unit system is easily changed by the user directly from the keypad (Menu, Settings).

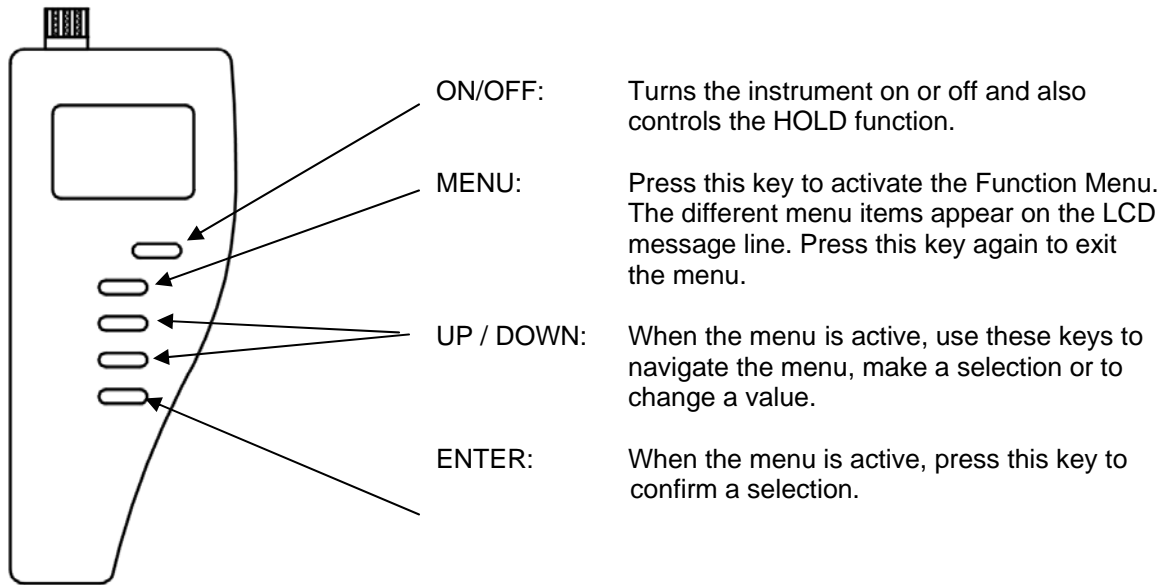
Display

The LC display shows 2 parameters, with the associated engineering unit. When relevant, the message line provides additional information.



The display provides information regarding the battery status. When the message Low Batt appears, the instrument can typically be used for another 10 to 15 minutes.

Keypad



HOLD function

To freeze the measurements, press the ON/OFF key briefly. -HOLD- will be indicated on the display. Press the ON/OFF key briefly again to return to normal operation.

Function Menu

To access the HygroPalm 0 function menu, press the MENU key. The first menu item appears on the message line of the LC display. Use the UP or the DOWN key to navigate the menu. When the desired menu item appears on the message line of the LC display, press the ENTER key to select. Some menu items have sub-items. These can be selected with the UP, DOWN and ENTER keys. To exit the menu and return to the normal display mode, press the MENU key. The instrument also returns automatically to the normal display mode when no key has been pressed for some time (main menu: 10 sec., submenu: 30 sec.).

CALCULATE

Definition

This function is used to select or view the humidity parameter that is calculated by the instrument.

The unit system (**M**etric or **E**nglish) is factory programmed according to what was specified when the instrument was ordered. The unit system can be changed by the user from the keypad (see MENU, SETTINGS).

Selections

Parameter	M	E
Dew Point / Frost Point ¹⁾	°C	°F
Wet Bulb Temperature ²⁾	°C	°F

1) The standard factory setting is frost point for values below freezing.

2) Calculation of this parameter requires barometric pressure as an input. The factory setting is the standard barometric pressure at sea level.

DISPLAY

Definition

This function is used to select which parameters are displayed by the instrument.

Selections

- **Measurement**
Relative humidity and temperature.
- **Calculated + Temperature**
Calculated parameter (as selected under CALCULATE) and temperature.
- **Calculated + Humidity**
Calculated parameter (as selected under CALCULATE) and relative humidity.

ADJUST 1PT

Definition

The Adjust 1PT function permits you to do a 1-point adjustment (temperature or humidity) of the HygroPalm 0 digital probe against a known reference environment. This function is limited to a simple offset adjustment that is applied across the entire measuring range.

Selections

The Adjust 1PT function offers the following choices (use the UP and DOWN keys):

RHS: Humidity calibration using the ROTRONIC Humidity Standards ¹⁾
Humidity: Humidity calibration using any suitable reference environment
Temperature: Temperature calibration using any suitable reference environment

1) For humidity calibration, use calibration device model ER-15 and any of the ROTRONIC certified humidity standards.

Procedure

When the probe is at equilibrium, activate the Adjust 1PT function and make the appropriate selections:

- a) **RHS:** press the ENTER key to select this item. The LC display shows the value read by the probe at the time the ENTER key was pressed. The letters "RHS" are displayed on the message line. Use the UP or the DOWN key to change the humidity value to match the mean value (at 23°C) written on the certificate supplied with the standard. For a faster change, keep the key pressed down. Press the ENTER key when done.

Note: in the RHS mode, the software automatically compensates for the effect of temperature on the humidity standard. No additional correction is required.

- b) **Humidity or Temperature:** press the ENTER key to select. The LC display shows the value read by the probe at the time the ENTER key was pressed. The word "Humidity" or "Temperature" is shown on the message line. Use the UP or the DOWN key to change the humidity or temperature value to the value of the reference environment. For a faster change, keep the key pressed down. Press the ENTER key when done.

After pressing the ENTER key, the message "sure?" should appear on the LC display. Press ENTER to confirm. Next, the LC display will confirm that the probe adjustment has been successfully completed. At that time, press ENTER to exit.

Note: you can exit the function at any time (without calibrating the probe) by pressing the MENU key.

PROBE

Definition

This function displays the version number and serial number of the integral ROTRONIC HygroClip digital probe used by the HygroPalm 0.

SETTINGS

Definition

This function is used to do the following:

- turn the trend indicators on or off
- change the symbol used for relative humidity
- turn the battery charge function on or off (do not set to “on” with standard batteries)
- select between the Metric or English unit system

Procedure

Trend: use the UP or the DOWN key to enable or disable the trend indicators.

The trend of humidity and temperature is shown on the display by an arrow (up or down) to the left of the measured value. Both arrows are shown to indicate stable conditions. Stable conditions are defined as rate of change of less than 0.02 %RH / min or °C / min.

Signal stability is first evaluated after 60 seconds into the measurement and is updated every 30 seconds.

Note: when the trend indicator is enabled, the symbol for the calculated parameter (e.g. Dp for dew point) is no longer displayed to the left of the numerical value.

Humi Unit: use the UP or the DOWN key to change the symbol used for relative humidity (depends on country and language).

Accu Charge: the battery charge function should always be turned off when the instrument is powered with a standard battery. To enable or disable the battery charge function: select Accu Charge and press ENTER. Select Off or On. Press ENTER to effect the change.

Units: use the UP or the DOWN arrow key to toggle between Metric and English.

SYS STATUS

Definition

This function displays the software version of the instrument and the serial number of the instrument.

Procedure

When entering the function, the software version number is displayed first. Use the UP or the DOWN key to display the other data.

Errors and Status Messages

The following is a list of coded messages (101, etc.) that the HygroPalm 0 may show on the bottom line of the LC display.

Errors:		
106	HygroClip communication error	the HygroClip probe does not answer
107	calibration error	the difference between the probe reading and the calibration point is larger than the maximum allowed.
108	calibration error (overflow)	internal probe error (or the difference between the probe reading and the calibration value is too large)
111	Temperature error	During humidity calibration, temperature should be within the limits of 0 and 80°C (32 and 176°F)

Environmental Limits

The probe of the HygroPalm 0 can operate in the temperature range of -10..60°C (14...140°F).

Specifications

Operation		9 V alkaline battery 12...15V AC adapter (100 mA) C(+) Tip 9 V rechargeable battery 110 mAh
Max. current consumption		30 mA
Operating limits at electronics		0...99 %RH (non condensing) -10...50°C (14...122°F)
Measured parameters ¹⁾		
relative humidity	indication range	0.0...100.0 %RH
temperature	indication range	-99.9...999.9 °C or °F
Calculated parameters ¹⁾		
dew / frost point ²⁾	indication range	-99.9...999.9 °C / °F
wet bulb temperature ³⁾	indication range	0.0...100.0 °C / 32.0...212.0 °F
System accuracy at 23°C/73°F		± 2 %RH ± 0.3°C / 0.5°F
Probe type		ROTRONIC HygroClip digital probe
Display		Alphanumerical LC display
Battery status		Automatic Indication
HOLD function		Briefly push the ON/OFF Button
Housing material		ABS
Housing dimensions (w/o probe)		230 x 80 x 30 mm (9.05 x 3.15 x 1.18")
Weight		280 g (9.9 oz)

1) Specify engineering units when ordering (can be changed directly from the keypad).

2) The standard factory setting is frost point for values below freezing.

3) A fixed barometric pressure value is used for calculating this parameter. The factory setting is the standard barometric pressure at sea level.