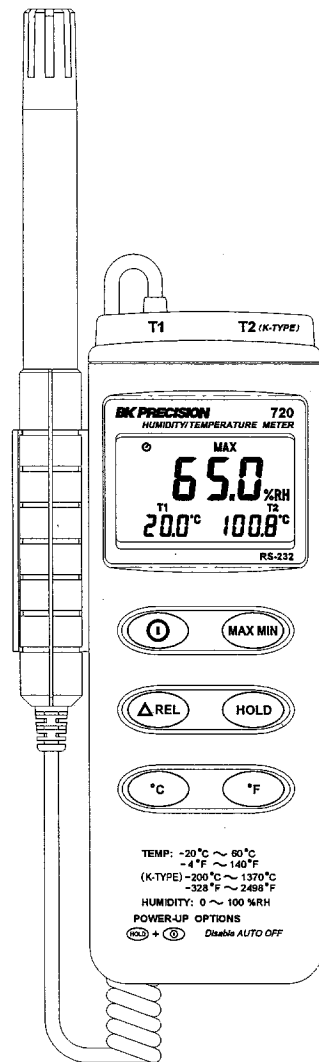


BK PRECISION® 720

Instruction Manual



CE

HUMIDITY TEMPERATURE METER

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I. Safety Information

Read the following safety information carefully before attempting to operate or service the meter. Use the meter only as specified in this manual; otherwise, the protection provided by the meter may be impaired.

Environment conditions

- Altitude up to 2000 meters
- Relatively humidity 90% max.
- Operation Ambient 0 ~ 50°C

Maintenance & Clearing

- Repairs or servicing not covered in this manual should only be performed by qualified personnel.
- Periodically wipe the case with a dry cloth. Do not use abrasives or solvents on this instrument.

Safety symbols

	Comply with EMC
	Read safety Information first.

II. Introduction:

This instrument is a digital Humidity / Temperature meter using a polymer capacitive and semiconductor sensor and K type thermocouple. This operations manual contains general product information and specification.

III. Specifications:

Numerical Display : 4 digital Liquid Crystal Display.

Measurement Range : Humidity: 0%~100%RH

Temperature: T1: -20°C~+60°C , -4°F~+140°F

T2: -200°C~+1370°C , -328°F~+2498°F

Resolution : Humidity: 0.1%RH

Temperature: T1: 0.1°C , 0.1°F

T2: -200°C~200°C 0.1°C ; 200°C~1370°C 1°C

-200°F~200°F 0.1°F ; else 1°F

Accuracy : Humidity:±2.5%RH at 25°C

Temperature: T1: ±0.7°C, ±1.4°F

T2: Please check the following table.

at (23+5°C)

Range	Accuracy
-200°C ~ 200°C	±(0.3% reading + 1°C)
200°C ~ 400°C	±(0.5% reading + 1°C)
400°C~1370°C	±(0.3% reading + 1°C)
-328°F ~ -200°F	±(0.5% reading + 2°F)
-200°F ~ 2498°F	±(0.3% reading + 2°F)

Temperature Coefficient:

For ambient temperatures from 0°C ~ 18°C and 28°C ~ 50°C, for each °C ambient below 18°C or above 28°C add the following tolerance into the accuracy spec.
 0.01% of reading + 0.03°C
 0.01% of reading + 0.06°F

 **Note:**

The basic accuracy Specification does not include the error of the probe. Please refer to the probe accuracy specification for additional details.

Response Time : Humidity: 75 sec. In slowly moving air
 Temperature: 40 sec. in slowly moving air (T1)

Signal Output : RS-232 Data Output

Operating Environment : 0°C~50°C, 32°F~122°F 0 to 90%RH non-condensing

Storage Environment : -10°C~60°C, 14°F~140°F 0 to 80%RH non-condensing

Power Requirements : Battery: One 9V battery
 AC adapter: 9Vdc / 10mA minimum

Plug Diameter: 3.5 mmx1.35mm

Battery Life : Approx. 100hrs with alkaline battery

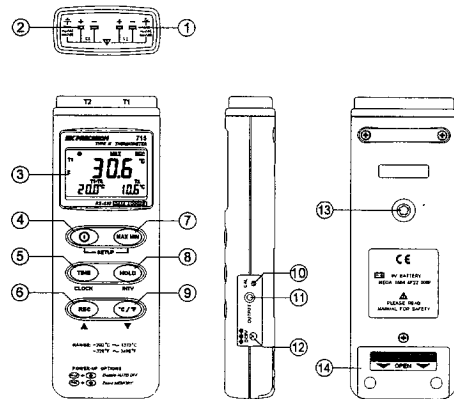
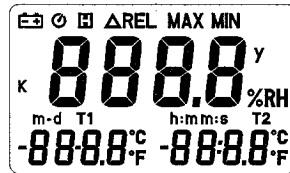
Weight : Approx.320g

Dimension : Meter = 186(L)x64(W)x30(H)mm ; 10.8(L)x2.5(W)x1.2(H)inch
 Probe = 190(L)x15(D)mm ; 7.5(L)x0.6(D)inch

Accessories : Instruction Manual, 9V Battery, Carrying Case, Probe Holder, K type bead thermocouple probe.

IV. Symbol Definition and Button Location:

- °C/F : Centigrade and Fahrenheit indication.
- %RH : Relative Humidity indication.
- MAX : The Maximum value is now being displayed
- MIN : The Minimum value is now being displayed
- ⏻ : This indicates auto power off is enabled.
- 🔒 : This indicates that the display data is being held.
- m-d : month and day
- h:m : hour and minute
- m:s : minute and second
- Y : year
- 🔋 : The Battery is not sufficient for proper operation.
- K : Thermocouple type indication.
- ΔREL : The reading is now under relative mode.



Button Location:

- ① Dust mask
- ② Sensor probe
- ③ T2 channel, "K" type thermocouple probe input
- ④ LCD display
- ⑤ ON/OFF button
- ⑥ REL button
- ⑦ °C control button
- ⑧ MAX MIN function control button
- ⑨ HOLD button
- ⑩ °F control button
- ⑪ K type offset calibration screw
- ⑫ Digital output connector (RS-232)
- ⑬ AC power adapter connector
- ⑭ Tripod connector
- ⑮ Battery cabinet cover

V. Operation Instructions:

4.1 Power-Up

Press the power button to turn the Humidity Temperature Meter ON or OFF.

4.2 Humidity and Temperature Measurement

For measurement, place the sensor probe in the tested environment.

4.3 Connection of the Thermocouples (T2 channel)

For measurement, plug the thermocouple probe into the input connector.

4.4 Selecting the Temperature Scale

When the meter is first powered on, the default scale setting is set at Celsius (°C) scale. The user may change it to Fahrenheit (°F) by pressing " °F " button and vice versa to Celsius by pressing " °C " button.

4.5 Data-Hold Operation

The user may hold the present reading and keep it on the display by pressing the "HOLD" button. When the held data is no longer needed, one may release the data-hold operation by pressing "HOLD" button again.

When the meter is under Data Hold operation, the "MAX MIN" and " °C " " °F " " ΔREL " button are disabled. (when you press " °C " " °F " " ΔREL " and "MAX MIN" button in HOLD mode, there will be two continuous beeps)

To exit the MAX/MIN mode, one may press and hold "MAX MIN" button for two seconds.

4.6 MAX/MIN Operation:

When pressing the "MAX MIN" button, the meter will enter the MAX/MIN mode. Under this mode the maximum value, minimum value is kept in the memory simultaneously and updated with every new data.

When the MAX symbol is display, the Maximum is shown on the display.

Press "MAX MIN" again, then the MIN symbol is on the display and also the minimum reading.

Press "MAX MIN" again, MAX, and MIN will blink together. This means that all this data is updated in the memory and the reading is the present temperature.

One may press "MAX MIN" to circulate the display mode among these options.

When the meter is under "MAX MIN" operation, " °C " " °F " " ΔREL " button are disabled.(when you press " °C " " °F " " ΔREL " button in "MAX MIN" mode, there will be two continuous beep)

To exit the MAX/MIN mode, one may press and hold "MAX MIN" for two seconds.

4.7 Relative Operation:

When pressing the " ΔREL " button, the meter will memorize the present reading and the difference between the new reading and the memorized data will be shown on the display, Press the " ΔREL " button again to exit the Relative operation. When the meter is under relative operation, " °C/°F " button is disabled. (when you press " °C " " °F " button in relative mode , there will be two continuous beep)


4.8 Auto Power Off:

By default, when the meter is powered on, it is under auto power off mode. The meter will power itself off after 30 minutes if no key operation and no RS232 communication.

Combination at power on can disable auto power off.

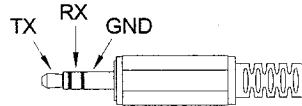
One may press and hold "HOLD" button and then power on the meter and there will be two successive beeps to indicate that auto power off is disabled and the ⏻ will not show up.

4.9 Low Battery Condition

When the battery voltage is under proper operation requirements, the  symbol will show on the LCD and the battery needs to be replaced with a new one.

4.10 Digital Output:

The Digital Output is a 9600bps N 81 serial interface.



WARNING!

1. Don't touch or manipulate the sensor.
2. Don't expose the sensor to direct light, this causes a false reading.
3. Don't expose the sensor to static electricity.

Appendix: Thermo couple probe specification

Model	Range	Tolerances	Description
TP-K01	-50°C to 200°C	±2.2°C or ±0.75%	with Teflon tape insulation Maximum insulating temperature : 260°C
Bead probe	-58°F to 392°F	(±3.6°F or ±0.75%)	

TP-K01:
probe for general condition measurements, especially for complex and hard to reach places.

A diagram of a thermo couple probe. It consists of a long, thin cable that is coiled into a large loop. At the end of the cable is a small, cylindrical probe tip.

Service Information

Warranty Service: Please return the product in the original packaging with proof of purchase to the below address. Clearly state in writing the performance problem and return any leads, connectors and accessories that you are using with the device.

Non-Warranty Service: Return the product in the original packaging to the below address. Clearly state in writing the performance problem and return any leads, connectors and accessories that you are using with the device. Customers not on open account must include payment in the form of a money order or credit card. For the most current repair charges contact the factory before shipping the product.

Return all merchandise to B&K Precision Corp. with pre-paid shipping. The flat-rate repair charge includes return shipping to locations in North America. For overnight shipments and non-North America shipping fees contact B&K Precision Corp..

B&K Precision Corp.
1031 Segovia Circle
Placentia, CA 92870
Phone: 714- 237-9220
Facsimile: 714-237-9214
Email: service@bkprecision.com

Include with the instrument your complete return shipping address, contact name, phone number and description of problem.

Limited one-Year Warranty

B&K Precision Corp. warrants to the original purchaser that its product and the component parts thereof, will be free from defects in workmanship and materials for a period of one years from the data of purchase.

B&K Precision Corp. will, without charge, repair or replace, at its' option, defective product or component parts. Returned product must be accompanied by proof of the purchase date in the form a sales receipt.

To obtain warranty coverage in the U.S.A., this product must be registered by completing and mailing the enclosed warranty card to B&K Precision Corp., 1031 Segovia Circle, Placentia, CA 92870 within fifteen (15) days from proof of purchase.

Exclusions:

This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized alternations or repairs. It is void if the serial number is alternated, defaced or removed.

B&K Precision Corp. shall not be liable for any consequential damages, including without limitation damages resulting from loss of use. Some states do not allow limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific rights and you may have other rights, which vary from state-to-state.

Model Number: _____

Date Purchased: _____