QUESTemp° 34
Thermal Environment Monitor

Operator's Manual

Thank you for choosing Quest Technologies for your heat stress and thermal enviroment monitoring device.

The rugged, easy to use QUESTemp° 34 Thermal Environment Monitor quickly and accurately evaluates the potential for individuals to experience heat stress and includes Time history (data logging) measurement results. It combines WGBT index values with Relative Humidity measurements to calculate Heat Index.

The purpose of this manual is to provide the user with the necessary information to operate the QUESTemp° 34 Monitor.

The entire manual should be read to fully understand the many features this instrument offers.This manual is not all inclusive and cannot cover all unique situations.

In addition,no warranties are contained in this manual except as described under the warranty policy section.

Revision C
P/N 056-662

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1. UP AND RUNNING

1. Make sure the wet bulb's wick is clean. Fill the reservoir with distilled water.

2. Place the QUESTemp in the work area in a safe location approximately 3.5 feet off the ground.

3. Turn the unit ON. If the battery voltage displayed during the power-on sequence is less than or equal to 6.4 volts, replace or recharge the batteries. **NOTE: The QUESTemp 34 is pre-programmed in English. Please refer to page 7, "Setup" for language settings, if for example, TGBHi and GLOBO, appear as views on the display.

4. Allow 10 minutes for the sensors to stabilize to the environment.

5. Press the RUN STOP key to begin datalogging.

6. Use the arrow keys to set the display to the desired items.

2. USING THE QUESTEMP

The QUESTemp should be placed at a height of 3.5 feet (1.1m) for standing individuals or 2 feet (.6m) for seated individuals. Tripod mounting is recommended to get the unit away from anything that might block radiant heat or airflow. A 1/4"x20 threaded bushing on the bottom of the instrument allows mounting to a standard photographic tripod. Do not stand close to the unit during sampling.

Make sure that the wet bulb reservoir is filled with distilled water and that the cotton wick is clean and fully wetted. After adding water or placing the unit in a new environment, allow ten minutes for the globe and wet bulb readings to stabilize.

3. MEASUREMENTS

The QUESTemp°34 data logging area heat stress monitor measures four parameters: ambient or dry bulb temperature (DB), natural wet bulb temperature (WB), globe temperature (G), and relative humidity (RH). It computes the Wet Bulb Globe Temperature (WBGT) and the Heat Index (HI) or the Canadian Humidex. Using inputs on the side of the instrument, two additional sensor arrays can monitor up to three locations simultaneously.

WET BULB GLOBE TEMPERATURE

The WBGT is a weighted average of the three temperature sensors using the following formulas:

WBGT (indoor) = 0.7WB + 0.3G

WBGT (outdoor) = 0.7WB + 0.2G + 0.1DB

The resulting WBGT can then be compared to published charts showing the allowable work-rest regimens (stay-times) for given work loads. Appendix A of this manual shows the table published by the ACGIH.

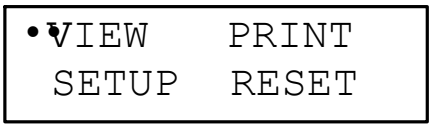
HEAT INDEX / HUMIDEX

The Heat Index is determined using the dry bulb temperature and relative humidity. It is based upon charts available from the U.S. National Weather Service. The Heat Index represents how an average person feels relative to climate conditions. For a given temperature, the higher the humidity, the higher the heat index.

The Heat Index is defined over a temperature range of 70°F - 120°F (21°C - 49°C) and a relative humidity range of 30% - 99%. Outside of this range, the instrument will show dashes in the display for the Heat Index.

The Humidex is used primarily in Canada and is very similar to the Heat Index. The values are slightly different. The Humidex is defined over a temperature range of 70°F - 109°F (21°C - 43°C) and a relative humidity range of 20% - 99%. Outside of this range, the instrument will show dashes in the display for the Humidex.

4. OPERATIONAL MODES



Use the UP ARROW and DOWN ARROW keys to move the marker in the display in front of the desired mode. Pressing the I/O ENTER key will select the mode.

VIEW
Displays the measured data but does not log it. If more than one set of sensors is plugged into the unit, they can be displayed by pressing and releasing the I/O ENTER key. The displayed sensor set is shown in the upper right corner. Return to the menu by holding down the I/O ENTER key while a three second countdown is shown in the lower right corner of the display.

SETUP
Allows changing temperature units, language, time, date, logging rate, and selecting between Heat Index and Humidex. Use the ARROW keys to select an item and the I/O ENTER key to change it. Time and date require using the ARROW and I/O ENTER keys to modify each number.

Temperature: Celsius, Fahrenheit.
Language: English, Spanish, French, Italian, German.
Time: 24 hour clock only.
Date: Day-month-year format.
Log Rate: 1, 2, 5, 10, 15, 30, 60 minutes.
Heat Index (United States), Humidex (Canada)

Exit SETUP by pressing the RUN STOP key.

PRINT
Allows printing to a parallel or serial printer or to a computer. The unit will recognize the cable plugged in and configure itself for serial or parallel. If no cable is plugged in it will default to serial. Press I/O ENTER to begin printing. Press RUN STOP to return to the menu.

RESET
Allows clearing the logged data from memory. Press the I/O ENTER key to enter the RESET mode. Clear the memory by holding down the I/O ENTER key while the display counts down from three.

RUN
Begins a session in memory and logs the data. Begin a session by pressing the RUN STOP key from either the menu or VIEW mode. An asterisk in the lower right corner indicates the run mode. End the session by again pressing the RUN STOP key or by holding down the I/O ENTER key while a countdown is displayed in the lower right corner.

If the logging memory is full or if there are no sensors plugged into the unit, attempting to enter the RUN mode will result in an error message. If the memory fills while running, the asterisk in the lower left corner of the display will turn into an "F" and the memory remaining screen will show "0.0".

5. KEYPAD OPERATION

The unit operates using a membrane keypad with 4 keys. The I/O ENTER key responds when the key is released while all other keys respond when the key is pressed.

I/O ENTER
The unit turns on with a single key press. The unit turns off by holding the key down while a countdown of 3-2-1 occurs in the lower right corner of the display. This key is also used to select a mode or enter setup changes.

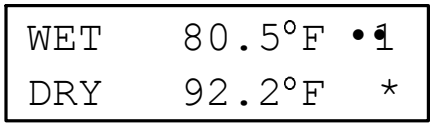
Pressing and releasing the key while viewing temperatures causes the display to view the next available sensor bar (indicated in the upper right corner of the display).

UP ARROW
Changes which items appear in the display. Scrolls up.

DOWN ARROW
Changes which items appear in the display. Scrolls down.

RUN STOP
From the menu or view modes, pressing this key starts or stops the run mode. Pressing this key will exit the setup, print or reset modes.

6. DISPLAYED ITEMS



For the QUESTemp°34, the number in the upper right corner indicates which sensor bar's data is displayed. 1 indicates the sensor bar placed on (or attached to) the top of the instrument. Sensors 2 and 3 are labeled on the side of the unit. W indicates the weighted average which only appears if a WBGT is displayed and all three sensor bars are attached. An asterisk in the lower right corner indicates that the unit is in the run mode and is logging data.

The following measurements can be accessed on the display:

Screen 1: WET (WET BULB)
DRY (DRY BULB)

Screen 2: GLOBE

Screen 3: WBGTi (WBGT INDOORS)
WBGTo (WBGT OUTDOORS)

Screen 4: RH (Relative Humidity)
H.I. or HU (Heat Index or Humidex)

Screen 5: TIME
DATE

Screen 6: BAT (BATTERY VOLTAGE)
MEM (Logging memory available in days)

A series of dashes appear in the display if one of the following occur:

- the Heat Index or Humidex is outside of its allowable range
- the temperature is outside of its allowable range
- a temperature sensor has failed

7. DATA LOGGING

Data from each sensor is recorded at the interval set by the logging rate. Every time RUN STOP is pressed, a session is either started or ended in memory. Each session contains a header with time, date, and summary information.

MEMORY TABLE: Gives the number of logging DAYS.

Log Rate	1 min	2 min	5 min	10 min	15 min	30 min	60 min
1 sensor	11.2	22.5	56.2	112.4	168.6	337.3	674.5
2 sensors	5.6	11.2	28.1	56.2	84.3	168.6	337.3
3 sensors	3.7	7.5	18.7	37.5	56.2	112.4	224.8

8. PRINTING

The recorded data can be sent to a computer through the serial RS232 port or to a parallel printer. Serial transmission requires Quest cable #54-715. Parallel transmission requires Quest cable #56-875. With the cable plugged in, select PRINT from the menu and press the I/O ENTER key to enter the PRINT mode. Begin printing by pressing the I/O ENTER key. Press the key again to abort printing.

SERIAL
QuestSuite™ software is recommended for downloading, storing, and graphing your data. Communications programs such as Window's Hyperterminal may also be used to capture the printout into a file. The baud rate is fixed at 9600.

PARALLEL
Data can be sent directly to parallel printers that accept direct ASCII test input without special drivers. Make sure the printer is powered on and is ONLINE, ready to accept data, prior to printing.

SAMPLE PRINTOUT

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                          QUEST TECHNOLOGIES                    Page 1
                          HEAT STRESS REPORT

File Name      _____________________________   Questemp 34  Ver .99
                                               Serial # TJ0010001
Employee       _____________________________

Facility       _____________________________   Session (1)
                                               Start: 07-FEB-00  16:19:07
Department     _____________________________   Stop:  07-FEB-00  17:24:24

Job            _____________________________   Printed: 07-FEB-00  17:24:58

Comments/Notes_____________________________________________________________

_____________________________________________________________________________

_____________________________________________________________________________

Logging Interval:  1 minutes
Degrees Celsius


MAXIMUM LEVELS,  Sensor 1
    WBGT IN       27.2    07-FEB-00  16:19:24
    WBGT OUT      27.3    07-FEB-00  16:19:10
    WET BULB      27.3    07-FEB-00  16:19:23
    DRY BULB      27.4    07-FEB-00  16:19:08
    GLOBE         27.1    07-FEB-00  16:19:11
    HEAT INDEX       0    00-XXX-00  00:00:00
    REL HUMIDITY   20%    07-FEB-00  16:19:08

MAXIMUM LEVELS,  Sensor 2
    WBGT IN       27.5    07-FEB-00  16:37:58
    WBGT OUT      27.3    07-FEB-00  16:19:11
    WET BULB      27.2    07-FEB-00  16:19:11
    DRY BULB      27.6    07-FEB-00  16:19:08
    GLOBE         28.8    07-FEB-00  17:24:18
    HEAT INDEX       0    00-XXX-00  00:00:00
    REL HUMIDITY   19%    07-FEB-00  16:19:08

MAXIMUM LEVELS,  Sensor 3
    WBGT IN       27.6    07-FEB-00  16:19:09
    WBGT OUT      27.7    07-FEB-00  16:19:08
    WET BULB      27.7    07-FEB-00  16:19:08
    DRY BULB      28.3    07-FEB-00  16:19:08
    GLOBE         27.3    07-FEB-00  16:19:09
    HEAT INDEX       0    07-XXX-00  00:00:00
    REL HUMIDITY   20%    07-FEB-00  16:19:08

MAXIMUM LEVELS,  Sensor(WEIGHTED AVERAGE)
    WBGT IN       27.3    07-FEB-00  16:19:09
    WBGT OUT      27.4    07-FEB-00  16:19:10
```

```
Session: 1                                                          Page 2
Sensor: 1
Degrees Celsius

TIME   WBGTi  WBGTo   WET    DRY   GLOBE  RH(%)   H.I.
-----  -----  -----  -----  -----  -----  -----  -----
16:20   27.1   27.2   27.2   27.4   27.1     19      0
16:21   27.1   27.1   27.2   27.3   27.1     19      0
16:22   27.1   27.1   27.2   27.3   27.0     19      0
16:23   27.0   27.0   27.1   27.2   27.0     19      0
    .
    .
    .

Session: 1                                                          Page 3
Sensor: 2
Degrees Celsius

TIME   WBGTi  WBGTo   WET    DRY   GLOBE  RH(%)   H.I.
-----  -----  -----  -----  -----  -----  -----  -----
16:20   27.3   27.3   27.2   27.5   27.7     19      0
16:21   27.2   27.2   27.1   27.4   27.7     19      0
16:22   27.3   27.2   27.1   27.4   27.8     19      0
16:23   27.3   27.2   27.1   27.3   27.8     19      0
    .
    .
    .

Session: 1                                                          Page 4
Sensor: 3
Degrees Celsius

TIME   WBGTi  WBGTo   WET    DRY   GLOBE  RH(%)   H.I.
-----  -----  -----  -----  -----  -----  -----  -----
16:20   27.4   27.5   27.6   28.2   27.2     20      0
16:21   27.4   27.5   27.5   28.1   27.2     19      0
16:22   27.3   27.4   27.5   28.0   27.1     19      0
16:23   27.3   27.3   27.4   27.9   27.1     19      0
    .
    .
    .

Session: 1                                                          Page 5
Sensor: WBGT(W-AVG) = .50*WBGT(1) + .25*WBGT(2) + .25*WBGT(3)
Degrees Celsius
       WBGTi  WBGTo
TIME   W-AVG  W-AVG
-----  -----  -----
16:20   27.3   27.3
16:21   27.3   27.3
16:22   27.3   27.3
16:23   27.2   27.2
    .
    .
    .
```

9. PC COMMUNICATIONS

The QUESTemp°34 has the flexibility to be set up and controlled through computer software. The programmable start and stop time feature is only accessible through the computer. The instrument also has the capability of sending live data while measuring. These features are best utilized using QuestSuite™ software. To write custom software for working with the QUESTemp°34, call Quest Technologies for the programming commands.

10. SENSORS

NATURAL WET BULB THERMOMETER

The natural wet bulb thermometer gives an indication of the effects of humidity on an individual. Relative humidity and wind speed are taken into account by measuring the amount of evaporative cooling taking place at a thermometer covered with a moistened wick. The QUESTemp uses a cotton wick immersed into a reservoir containing distilled water. Ordinary tap water should not be used, as the contaminants that are left behind after evaporation will shorten the life of the wick and cause high readings. If the wick is discolored it should be replaced. To replace the wick, slide the old wick off the top of the sensor. Place a new wick over the sensor, making sure that the bottom of the wick is down in the reservoir.

GLOBE THERMOMETER

The globe thermometer gives an indication of the radiant heat exposure on an individual due to either direct light or hot objects in the environment. This is accomplished by placing a temperature sensor inside a blackened copper sphere and measuring the temperature rise. The WBGT index is based on the response of a 6 inch diameter globe. The QUESTemp uses a 2 inch diameter globe for a faster response time. The temperature of the 2 inch globe is correlated to match that of a 6 inch globe.

As an option, a sensor array with a 6 inch diameter globe is available.

DRY BULB THERMOMETER

The dry bulb thermometer measures the ambient air temperature. This measurement is used in the outdoor WBGT calculation when a high solar radiant heat load may be present. The series of white plates surrounding the sensor shield it from radiant heat.

RELATIVE HUMIDITY SENSOR

A relative humidity sensor is located in a compartment inside of the sensor bar housing. Slots in the housing allow air to circulate around the sensor.

11. REMOTE, SENSORS 2 AND 3

The top sensor bar (sensor 1) may be removed from the instrument and used through a remote cable. Shelter the instrument and remote the sensor bar if the measured environment is expecting heavy rain or if temperatures are above 60°C.

The sensor 2 and sensor 3 jacks on the side of the instrument allow simultaneous monitoring of up to three sensor arrays using connecting cables.

Cable lengths of up to two hundred feet (61 meters) may be used without a decrease in accuracy provided the environment does not contain strong electromagnetic fields.

The data from these arrays may be viewed separately or combined into a weighted average WBGT reading per ISO 7243. Change the displayed sensor bar by pressing and releasing the enter key. The upper right corner of the display shows the current sensor bar. 1 refers to the top sensor bar, 2 and 3 are labeled on the side of the unit, W indicates the weighted average which only appears if a WBGT is displayed and all three of the sensor bars are attached.

TRI-SENSOR WEIGHTED AVERAGE

Per the recommendations outlined in ISO 7243 : 1989, when the temperature in the space surrounding a worker is not uniform, it is necessary to determine the WBGT index at three heights corresponding to the worker's ankles, abdomen and head and perform a weighted average on those values. It is computed using the formula:

$$WBGT_w = (WBGT_{head} + (2 \times WBGT_{abdomen}) + WBGT_{ankles})/4$$

The QUESTemp°34 always assigns the top sensor bar the double weighting. This calculation is shown if a WBGT display has been selected and if 3 sensor sets are connected.

12. OPERATIONAL CHECK

A verification module, Quest model 053-923, may be used to check the operation of the QUESTemp. Remove the top sensor bar and plug the verification module into the top of the unit. With the QUESTemp set to read in degrees Celsius, verify that the displayed readings match those printed on the module within +/-0.5°C.

If the readings are not within the +/-0.5°C tolerance, then have the unit serviced and calibrated.

13. POWER OPTIONS

There are 3 options for powering the QUESTemp: a 9 volt alkaline battery, a NiMH (Nickel Metal Hydride) rechargeable 6-cell battery pack, and an AC adapter. A door on the back of the unit allows the user access to the 9 volt battery. The rechargeable battery pack is located inside of the unit. If the rechargeable battery pack ever needs to be replaced, it can be accessed by removing the screws from the bottom panel of the unit.

The 2-position switch located in the battery compartment must be set by the user if the power supply method is changed. The up position is for the 9 volt battery. The down position allows for either the AC adapter or the rechargeable batteries. The AC adapter will trickle charge the rechargeable batteries if they are in place or it will simply allow for line power operation of the unit.

9 VOLT ALKALINE BATTERY REPLACEMENT

WARNING: Replace batteries only in a non-hazardous environment.

The 9 volt battery should be replaced or the NiMH battery pack should be recharged when the voltage drops below 6.4 volts. The battery voltage is displayed when the instrument is turned on. While turned on, the battery voltage can be displayed at any time by pressing the up or down arrow keys to move through the display until the battery voltage screen appears. If, while operating, the battery voltage drops below 6.4 volts, the display will

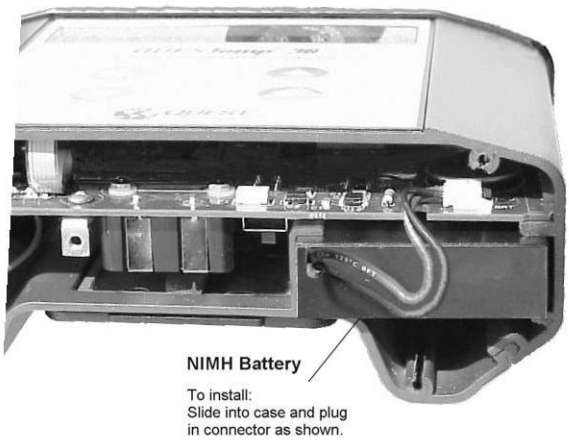
automatically switch to the display showing the battery voltage along with a low battery message. After a low battery occurs, the unit will continue to operate for approximately 8 hours. When the battery voltage falls to 6.2 volts or below, the unit will automatically turn off.

Replace only with an approved 9 volt alkaline battery.

APPROVED 9 VOLT BATTERIES
Eveready: Energizer 522, EN22, 6LR61
Duracell: MN1604
Panasonic: 6LR61, 6AM6X
Rayovac: A1604
UltrLife: U9V

NiMH BATTERY PACK
WARNING: Recharge batteries only in a non-hazardous environment.

The NiMH rechargeable battery pack is charged in the instrument using Quest's AC adapter #015-910. A discharged battery pack requires an "overnight" charge of 16 hours. Leaving the AC adapter plugged in for extended lengths of time or when operating the instrument will not harm the rechargeable batteries.



14. SPECIFICATIONS

Measurements:

Globe, dry bulb, wet bulb, WBGTin, WBGTout, WBGT weighted average (if 3 sensor sets), relative humidity, and Heat Index / Humidex.

Temperatures given in Celsius or Fahrenheit.

Data Logging:

Records and prints all measurements at user selected interval of 1, 2, 5, 10, 15, 30, or 60 minutes. 128K bytes of data memory.

Languages:

English, French, Spanish, Italian, German

Housing:

Designed water resistant to a light rain or mist. If rain is frequent, best practice would be to remote the sensor bar and keep the instrument sheltered.

Size:

Height 9.2in (23.5cm); Width 7.2in (18.3mm); Depth 3.0in (7.5mm)
Dimensions include mounted sensor assembly

Weight:

2.6 lbs. (1.2 kg) with mounted sensor assembly

Sensor Types:

Temperature: 1000 ohm platinum RTD
Humidity: Integrated circuit with capacitive polymer sensor

Accuracy:

Temperature: +/-0.5°C between 0°C and 100°C
Relative Humidity: +/-5% between 20% and 95% non-condensing

Operating Temperature Range:

Sensor Assembly: -5°C to +100°C
Electronics: -5°C to 60°C

Operating Relative Humidity Range:

0 to 100% (extended exposure to humidity > 90% can cause a reversible shift of 3%)

Remote Sensor Bars:

2 x 15pin D-sub jacks are located on the side of the unit for plugging in 1 or 2 additional sensor bars by using remote cables up to 200 feet (61m). The top sensor bar can also be remote with a cable.

Power Options:

9V alkaline, 7.2V NiMH rechargeable pack (charged in the unit), or AC adapter wall power cube (AC adaptor will operate the unit or recharge the NiMH battery pack)

Battery Life:

9V alkaline: 140 hours
Rechargeable Nickel Metal Hydride: 300 hours
(Adding additional sensor bars to the QUESTemp°34 reduces battery life.)

Charge Time (NiMH Battery Pack):

16 hours (charge in the unit)

Safety Approvals:

ETL, cETL: Class I,II,III Groups A,B,C,D,E,F,G, Temperature code T3
KEMA 04ATEX1072 X <Ex> II 2 G EEx ia IIC T3
CE mark

15. PRODUCT MARKINGS AND SPECIAL CONDITIONS

KEMA 04ATEX1072 X
<Ex> II 2 G EEx ia IIC T3

Compliance with Essential Health and Safety Requirements has been assured by compliance with: EN 50014 : 1997 and EN 50020 : 2002

The year of manufacture is determined by the third character in the instrument's serial number. "A" was manufactured in 2001, "B" in 2002, "C" in 2003, "D" in 2004 and so forth.

Special conditions for safe use:

1. Only the following battery types may be used:
   Non-rechargeable battery:

Type	Manufacturer
U9V	Ultralife
MN1604	Duracell
522 or EN22 or 6LR61	Energizer
A1604 or BR232	Rayovac
6LR61 or 6AM6	Panasonic

   Rechargeable battery:
   Integral NiMH battery pack type DC2121.

2. The batteries may not be replaced or charged within the hazardous area.

3. The rechargeable battery may only be recharged with class 2 charger, rated 9Vdc, 1 A max.

4. The plugs or sockets market "SENSOR 2", "SENSOR 3" and "DATA" may not be used within the hazardous area.

16. APPENDIX A : HEAT EXPOSURE TABLES

ACGIH

Screening Criteria for Heat Stress Exposure. WBGT values in °C (°F).

Acclimatized

Work Demands	Light	Moderate	Heavy	Very Heavy
100% Work	29.5 (85.1)	27.5 (81.5)	26.0 (78.8)	
75% Work; 25% Rest	30.5 (86.9)	28.5 (83.3)	27.5 (81.5)	
50% Work; 50% Rest	31.5 (88.7)	29.5 (85.1)	28.5 (83.3)	27.5 (81.5)
25% Work; 75% Rest	32.5 (90.5)	31.0 (87.8)	30.0 (86.0)	29.5 (85.1)

Unacclimatized

Work Demands	Light	Moderate	Heavy	Very Heavy
100% Work	27.5 (81.5)	25.0 (77.0)	22.5 (72.5)	
75% Work; 25% Rest	29.0 (84.2)	26.5 (79.7)	24.5 (76.1)	
50% Work; 50% Rest	30.0 (86.0)	28.0 (82.4)	26.5 (79.7)	25.0 (77.0)
25% Work; 75% Rest	31.0 (87.8)	29.0 (84.2)	28.0 (82.4)	26.5 (79.7)

from "American Conference of Governmental Industrial Hygienists - Threshold Limit Values and Biological Exposure Indices for 2001"
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17. APPENDIX B : ACCESSORIES

Sensor array with 2 inch globe	56-795
Sensor array with 6 inch globe	56-780
6 Foot shielded remote sensor cable	53-924
25 Foot shielded remote sensor cable	53-925
100 Foot shielded remote sensor cable	53-926
200 Foot shielded remote sensor cable	53-927
Serial computer cable	54-715
Parallel printer cable	56-875
120VAC to 9VDC adapter	15-910
220VAC to 9VDC adapter	15-680
Verification module	53-923
Tripod	59-045
Replacement wicks	56-679
Water bottle 2 oz.	56-068
User's manual	56-662

18. QUEST SERVICE AND WARRANTY POLICY

Service Information
Congratulations! You have purchased one of the finest instruments available, manufactured by one of the most respected names in safety & industrial hygiene instrumentation. Your instrument is backed by a limited warranty that seeks complete customer satisfaction. Should your instrument require service for any reason, you can expect prompt and courteous attention.

You must obtain a return authorization prior to shipment. We reserve the right to refuse any shipments forwarded without prior authorization. **The following information will expedite the service process and is required when obtaining return authorization:**

1. Model and serial number of each instrument.
2. Description of work required and symptoms of any failures for each instrument.
3. VISA, MasterCard or American Express credit card -- or -- company purchase order number (non-warranty service only).
4. Billing and/or return shipping addresses.

Use one of the methods below to obtain return authorization, service pricing and shipping instructions.

International Customers
Contact your local, factory-authorized distributor from whom the product was purchased. To obtain the name of the local factory-authorized distributor, contact us via email at service@quest-technologies.com, via telephone at +(1)-262-567-9157 or via fax at +(1) 262-567-4047.

U.S Customers Only

- Go to the service section of our web site at www.quest-technologies.com.
- Contact us via email at service@quest-technologies.com
- Contact us at (800) 245-0779. Office hours are 8:00 AM to 5:00 PM U.S. Central Time.

Warranty Policy

Quest Technologies warrants our instruments to be free from defects in materials and workmanship for one year under normal conditions of use and service. For U.S.A. customers, we will replace or repair (our option) defective instruments at no charge, excluding batteries, abuse, misuse, alterations, physical damage, or instruments previously repaired by other than Quest Technologies. Microphones, sensors, printers, and chart recorders may have shorter warranty periods. This warranty states our total obligation in place of any other warranties expressed or implied. Our warranty does not include any liability or obligation directly resulting from any defective instrument or product or any associated damages, injuries, or property loss, including loss of use or measurement data.

For warranty outside the U.S.A., a minimum of one year warranty applies subject to the same limitation and exceptions as above with service provided or arranged through the authorized Quest sales agent or our Quest European Service Laboratory. Foreign purchasers should contact the local Quest authorized sales agent for details.

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