Dual Mode
Digital Forehead & Ear Thermometer

Instruction manual

FDA $C\epsilon_{0482}$ **ISO 13485 TÜV**

Made in China

Version 2.2
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To download the latest manual for the thermometer please visit:

http://paryvara.com/manuals/

If you have any issues with the thermometer, please feel free to contact us via

email at info@paryvara.com

Introduction

Thank you for purchasing the Paryvara TH-1412 Dual Mode Digital forehead and ear Thermometer. TH-1412 has undergone rigorous clinical tests and has proven to be safe, reliable and accurate when used in accordance with the operation manual.

We wanted to make a thermometer that will accompany your child from infancy to adulthood. That is why the TH-1412 Dual mode infrared thermometer was designed to measure the body temperature via the subject's ear and/or forehead. We recommend that you use the forehead measurement mode for your children who are < 1 yr. old and move to the eardrum measurement mode when they are older and more comfortable with a foreign object in their ear.

Please read the instructions carefully before using the product, and put it in a safe and secure place for future reference.

Contents

1. Features of the Dual mode infrared thermometer TH-1412

The TH-1412 is able to take both forehead and ear temperature measurements by detecting the infrared heat given off by the respective areas. Forehead temperature measurements range from 89.6°F - 107.9°F (32 °C – 42.2 °C), and eardrum temperature measurements from 32.0°F - 212.0°F (0 °C- 100 °C).

Convenient and easy to use
- Easy mode of operation – No confusing menus and buttons
- Can be used anytime – even when your child is asleep
- Measures faster than oral thermometer and more comfortable than rectal thermometer
- Ergonomic design
- Color coded display for fever

Accurate and quick
Uses latest infra-red scanning technology – precise and immediate measurements

Safe and hygienic
- Unlike traditional thermometers, there is no glass or mercury that could pose as a potential health hazard. The thermometer is made up of ABS and TPR plastics, a temperature sensor, an Infrared temperature measuring element, a microcomputer controlled circuit and a LCD screen.
- BPA and latex free

Memory Recall
Has a Memory Mode that can recall 20 readings to track changes in temperature.

Convenient Fever warning
When the temperature exceeds 99.5°F/37.5°C, the thermometer will warn the user that he/she may have a fever by 7 rapid short beeps and the LCD will flicker. (For normal body temperature, the signal is a long beep)

Warning!

This product is not intended to substitute advice from a physician, pharmacist, or other licensed health-care professional. You should not use this product for self-diagnosis or for treating a health problem. Contact your health-care provider immediately if you suspect that you have a medical problem.

Operating principle

The infrared temperature sensor collects infrared energy emitted from the eardrum. After being focused by a lens, the energy is converted into a temperature reading by the thermopiles and measurement circuits.
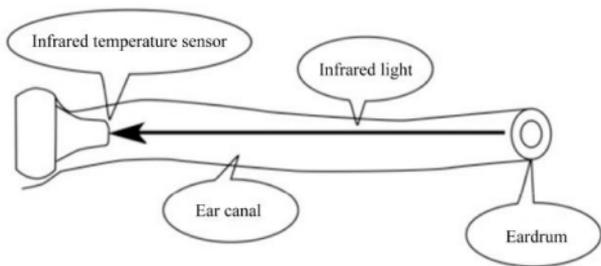
2. Precautions - Care and Maintenance

- Do not use the thermometer for purposes not specified in this User Manual. Follow the instructions stated herein and operate the thermometer carefully when measuring children's temperature.
- The device is not designed to be used for new-born babies.
- The device is not a continuous monitoring device.
- Do not use the thermometer under an ambient temperature higher than 40°C (104°F) or lower than 10°C (50°F), which is beyond the operating temperature range of the thermometer. To ensure accurate readings, keep the thermometer under room temperature for more than 30 minutes before use.
- Wait at least 10 seconds between every two consecutive readings. Start a measurement after the measurement symbol is displayed.
- **Do not touch the tip of the temperature probe, on which a precise temperature sensor resides.**
- **CAUTION! The sensor is extremely sensitive to dirt and oil. Check the sensor regularly. The surface should be reflective and gleaming. If it looks dull and lacklustre, then you need to clean the sensor before use.**

- To clean the device, use a q-tip cotton swab moistened with alcohol (70% Isopropyl) to clean the casing and the measuring probe. Please wait 5-10 minutes for the alcohol to completely evaporate before using the thermometer.
- TH-1412 is not waterproof. Please do not immerse it into the water or other liquids.
- Certain parts of the thermometer are fragile and must be lined precisely to perform their functions. Do not drop the thermometer or twist the thermometer sensor. The thermometer is not designed to withstand intense impact or vibration.
- Please do not use the product if the any part of the thermometer, especially the sensor, shows any sign of damage. Do not attempt to repair the product. Please contact your distributor immediately.

Operating Conditions:
Temperature: 50 ° F -104 ° F (10° C - 40° C)
Humidity: ≤80% RH, non-condensing
Atmospheric pressure: 860hPa to 1060hPa

Storage and Shipping Conditions:
Temperature: 14 °F-140 °F (-10°C - 60°C)
Humidity: ≤93% RH, non-condensing
Atmospheric pressure: 860hPa to 1060hPa

Battery Installation:
1. Put two AAA batteries into the battery compartment according to the stated polarities.
2. Push the battery cover horizontally along the arrow to close.

Notes:

☆ If this is the first time you are using the thermometer, please remove the protective plastic sheet
☆ Batteries should be installed according to the stated polarities. Otherwise, damage may be caused to the device.
☆ Please remove the batteries if you are not planning on using the thermometer for a long time.

Warnings
- This is not a toy. Please keep this Dual mode thermometer out of children's reach
- The infrared thermometer is not a replacement for seeking medical advice

3. Taking measurements

Forehead mode (Head):

1. Place the thermometer against one side of the forehead
2. Press the **"Head"** button and move the thermometer slowly across the forehead whilst holding down the button, you will hear several soft clicks
3. Release the **"Head"** button and take the thermometer off the forehead
4. Read the temperature from the screen

If you do not move the thermometer across the forehead but take a fixed point measurement instead, it may result in an incorrect temperature reading

Ear mode (Ear):

1. Remove the sensor cover off the thermometer
2. Insert the probe inside the ear canal; you can pull the ear a little backwards for easier access
3. Press the **"Ear"** button only once, do not hold it down
4. After the beep, take the thermometer out of the ear and read the temperature from the screen

In order to avoid inaccuracy:

1. Please make sure that there is no dirt on the temperature sensor
2. Please use the thermometer indoors or in an environment where there is no strong air draft
3. Try to keep the subject stationary.
4. Make sure there isn't any sweat, water or condensation on the forehead.
5. If TH-1412 is transferred from an environment where the ambient temperature might be different, please wait 10 minutes before using the device
6. Before measuring temperature from an ear canal, remove earwax, if any. Keep the ear canal clean
7. The TH-1412 is not waterproof

4. Changing from Fahrenheit to Celsius

1. To change the temperature from Fahrenheit to Celsius hold onto the **"Ear"** button for 8-12 seconds whilst the thermometer is turned off (if the thermometer is on leave it untouched for 10 seconds for it to shutdown)
2. The display will change to _ _ _**ºF** (notice _ _ _ **M** appears first continue until you see _ _ _ **ºF**)
3. Release the **"Ear"** button as soon as you see _ _ _ **ºF**
4. Within 5 seconds press the **"Ear"** button again, the LCD display will change to _ _ _ **ºC**
5. Wait for the thermometer to shut down automatically

5. Recalling last temperature readings (Up to 20 readings)

1. Press the **"Ear"** button until _ _ _**M** appears
2. Release the button and press **"Ear"** again straight away to view the last reading (1st reading)
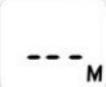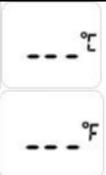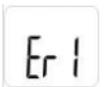3. Cycle through the readings by pressing the **"Ear"** button up to 20 times

6. Product designs
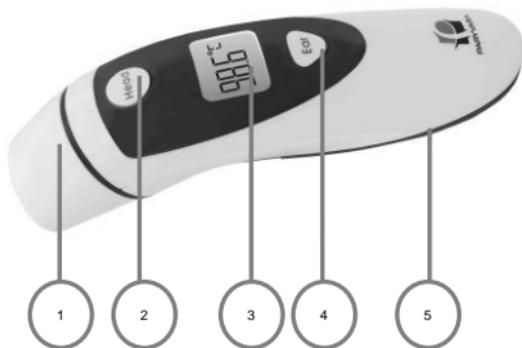
(1) Sensor (Take cover off to measure eardrum temperature)
(2) Head: Button for measuring forehead temperature
(3) LCD display
(4) Ear: Button for measuring ear temperature
(5) Battery cover

7. Instructions for display and operation

LCD display	Operational method and instruction for displays	Sound and backlit
36.8°C	1. Measurement of forehead temperature Hold down the "**Head**" button and scan the sensor across the forehead from left to right. Once the button is released, the maximum temperature will be shown on the LCD display. 2. Measurement of ear temperature Press the "**Ear**" button. Once the button is released, the temperature will be shown on the LCD display. 3. To measure again, simply press either the "**Head**" or "**Ear**" button	When the temperature is between 89.6°F/ 32.0°C and 99.6°F/ 37.6°C, there will be a long beep and a green backlit will be displayed for 3 seconds. When the temperature is between 99.6°F/37.6°C and 107.9°F/42.2°C, there will be 7 short. This indicates that the subject may have a fever. Please consult your doctor if you are not sure.
36.8°C or **36.8°C** or	Forehead measurement mode Ear measurement mode	
H°C	The measured value exceeds 107.9 °F/42.2°C.	7 short beeps and the display
L °C	The measured value falls below 89.6°F/32°C.	7 short beeps and the display

Inquiry for memory data, storing 20 groups of data		
LCD display	Operational method and instruction for displays	Sound and backlit
`- - -` M	Press and hold the "**Ear**" button between 3-6seconds and the LCD will display "- - -" with the M signal blinking.	silence
`6` M `☺` `36.8℃` M `♪` `36.8℃` M `⌂` `18.8℃` M	Press the "**Ear**" button again and the LCD will display the first data group with the M signal blinking. Press the "**Ear**" button and it shall display the second data number group for 1 second before displaying the measured data and mode icon. The thermometer can record 20 groups of data.	silence
`- - -` M	The LCD will display "- - -" with the M signal blinking if there is no test data.	silence
Celsius/Fahrenheit conversion		
LCD display	Operational steps	Sound and backlit
`- - -℃` `- - -℉`	Press and hold the "**Ear**" button for 8-12 seconds whilst the thermometer is turned off. The temperature unit starts blinking. Press the "**Ear**" button within 5 seconds to change the temperature unit to your choice.	silence
Error message		
`Er1`	LCD will display "Er1" when ambient temperature exceeds 104°F/40.0°C or drop below 50.0°F/10.0°C.	3 short tick and green backlit for 3 seconds.

	LCD will display "ErC" if there is EPROM data reading error or the correcting process is not finished. Please contact your supplier.	3 short tick and green backlit for 3 seconds.
ErC		
	Low-voltage signal when the battery voltage is below 2.61V±2%. Please replace battery.	silence

Power Off Mode

The thermometer will power off automatically if no activity is detected for 5 seconds.

Attention:

- Electromagnetic interference: TH-1412 contains sensitive electronic components, and you should not use product in an area with electromagnetic interference (e.g. near mobile phones and microwaves)
- Please dispose the used products and batteries in accordance with local regulation requirements.
- Please remove the battery if you do not plan to use the device for a long time.

8. Troubleshooting

Symptom	Possible Cause	Solution
The thermometer fails to power on.	The battery level is extremely low.	Use new batteries of the same model or specifications.
	Polarities of the batteries are reversed.	Ensure that the batteries are correctly installed according to the polarity symbols in the battery compartment.
	The thermometer is faulty.	If the warranty period does not expire, contact Paryvara
Only the battery symbol is displayed	The battery level is low.	Use new batteries of the same model or

Symptom	Possible Cause	Solution
after the thermometer powers on.		specifications.
"Er1" is displayed.	The ambient temperature is lower than 10°C (50.0°F) or higher than 40°C (104°F).	Take a measurement under an ambient temperature between 10°C (50.0°F) and 40°C (104°F).
The temperature reading is lower than the typical body temperature range.	The lens of the temperature probe is dirty.	Clean the lens using a cotton swab.
	The thermometer probe is not aligned with the eardrum	Reposition the thermometer probe so that it is aligned to the eardrum.
	The thermometer is not used within 30 minutes after being taken from a cold environment.	Wait for more than 30 minutes after the thermometer is moved into the measurement environment.
The temperature reading is higher than the typical body temperature range.	The temperature probe is faulty.	Contact Paryvara.

9. Technical specifications

Items	Standards
Models	Dual mode infrared thermometer TH-1412
1.Applicable regulations and laws	ASTM 1965/EN12470-5/GB/T 19146-2010
2.Temperature units	°F/°C, adjustable
3.Measurement range	Forehead temperature mode: 89.6°F – 107.9 °F/32.0°C-42.2°C ear temperature mode:/32.0°F – 212.0 °F/0°C-100.0°C
4.Precision	±0.4°F/±0.2°C
5.Display resolution	0.1°F/0.1°C
6.Latency Time	1 second
7.Abnormal state display	LCD displays "L °C" if the measured temperature is below the minimum of measurement range. LCD displays "H °C" if the measured temperature is below the minimum of measurement range. LCD displays "Er1"if the temperature measurement circuit is abnormal (fault of SENSOR or the temperature measurement circuit), or the ambient temperature exceed 50°F-104°F (10°C~40°C). There shall be "ErC" if the calibration process is not completed or EEPROM is abnormal.
8.Sound	Volume≧50 dB (the perpendicular distance from dB Volume sensor to thermometer is 10cm)
9.Automatic shutdown function	10s±1s
10.Low-voltage display function	The product shall display low-voltage signal if the voltage is below 2.51V±0.15V.
11.Memory function	Memorize 20 groups of measured temperature.
12.Current consumption	$I_{stand-by}$<2μA; $I_{working}$<0.5mA; $I_{Buzzer on}$<2mA; $I_{banklight}$<15mA
13.LED backlit specifications	≧1.2cd/m^2
15.Operational conditions	ASTM (50°F-104°F)10°C-40°C /15-95%RH
16.Type of measuring	Applicable for forehead temperature and ear temperature

17.battery	Changeable for two 1.5V triple AAA batteries
18.Battery life	More than 3000 times
19.Accuracy for clinical test	The maximum allowable error for clinical test is specified in the formula below: $$Terror = \frac{|T1-Tref| + |T2-Tref|}{2}$$ $\leq 0.3℃/0.6℉$ (for 95%) Among which: T1 and T2 represent temperature value for thermometer under test respectively, Tref represents the constant reference temperature

10. Symbols

Symbol	Description
立	Type BF applied part.
⚠	Attention must be paid.
◣◢	Information about a manufacturer, such as name and address.
📖	Please read the instructions carefully.
🗑	Waste electrical materials should be sent to a dedicated collection point for recycling.
⚠ Warning	A personal injury or thermometer damage may occur if the thermometer is not correctly used.
⚠ Attention	Inaccurate reading or thermometer damage may occur if the thermometer is not correctly used.

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