

Dr. Odin®
A-200
Infrared Thermometer
User Manual

System Owner
Thank You for purchasing the A200 infrared Thermometer. Please read this instruction manual first, so you can use this thermometer safely and correctly. Please keep this instruction manual for future reference. This innovative medical device uses advanced infrared (IR) technology to measure temperature instantly and accurately on the forehead or object.

IMPORTANT SAFETY INSTRUCTIONS READ BEFORE USE
The following basic instructions should always be taken

1. Close supervision is necessary when the thermometer is used by, on, or near children, handicapped person or invalids.
2. Use the thermometer only for the intended use described in this manual.
3. Do not use the thermometer if it is not working properly, or if it has suffered any damage. KEEP THESE INSTRUCTIONS AT A SAFE PLACE

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PLEASE NOTE:
THIS MEDICAL INSTRUMENT MUST BE USED ACCORDING TO INSTRUCTIONS TO ENSURE ACCURATE READINGS

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BEFORE YOU BEGIN
Cautions and Warnings

- As with any thermometer, proper technique is crucial to obtaining accurate temperature readings. Please read this manual thoroughly and carefully before using.
- Always operate the thermometer in an operating temperature range 10°C to 40°C (50°F to 104°F), and relative humidity 15 to 93%.
- Always store the thermometer in a cool and dry place -25°C to 55°C (-13°F to 131°F) and relative humidity 15% to 93%.
- The device requires no calibration. The product has been calibrated before the factory inspection.
- The device contains no user serviceable parts.
- The user must check that the equipment functions safely and see that it is in proper working condition before being used.
- The manufacturer does not require such preventive inspections by other persons.
- No modification of this equipment is allowed.
- The device is not suitable for use in the presence of flammable anesthetic mixtures with air or with oxygen or nitrous oxide

- Manufacturer will provide circuit diagrams, component part lists, descriptions, calibration instructions to assist to SERVICE PERSONNEL in parts repair.
- Do not clean or maintenance the device is in use.
- Avoid direct sunlight.
- Avoid dropping the thermometer, if it happens and you think the thermometer may be damaged, please contact customer services immediately.
- Do not touch the lens.
- Do not disassemble the thermometer.
- Basic safety precautions should always be observed, especially when the thermometer is used on or near children and disabled persons.
- This thermometer is not intended to substitute for a consultation with your physician.
- This thermometer and the subject must remain in a stable environment for at least 30 minutes before measuring the temperature.

When the measured temperature falls within the fever temperature range of >38.0°C (100.4°F) and <43.0°C (109.4°F), as indicated by the red LED on display, please consult with your physician immediately.

Restrictions of Use
This thermometer is clinically proven to produce accurate temperature measurements. However, please be advised that the accuracy can not be ensured when the thermometer is not clean. Check that the probe is clean before taking a measurement.

Intended Use
A200 Infrared Thermometer is intended for the intermittent measurement and monitoring of human body temperature from forehead measurement at home, clinics and hospital. A control measurement using a conventional thermometer is recommended in the following cases:

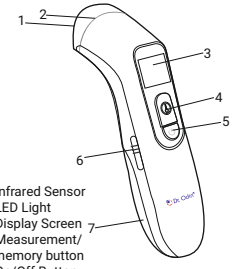
- 1.If the reading is surprisingly low.
- 2.For newborns infants, upto 100days old.
3. For children under 3 years of age who have a weakened immune system or who react unusually in the presence of fever.

How does it work
The thermometer measures the infrared heat generated by the surface of the skin over the vessel and its surrounding tissue. The thermometer then converts it into a temperature value.

NOTE:
The thermometer does not emit any infrared energy.
Highlighted Features

- Measurement that does not require probe cover, thereby saving cost of replacement.
- Automatically power off if left idle for 30 seconds.
- Memory function allows you to recall previous results up to 25 previous results.
- Easy to read LCD with green backlight in a dark environment.
- Color visible of fever (red or yellow) and measurement in progress (green).

Meter Overview
Dt31. Infrared Sensor2. Led Light3. Display Screen 4. Measurement/Memory Button5. ON/OFF Button5



1. Infrared Sensor
2. LED Light
3. Display Screen
4. Measurement/Memory Button
5. On/Off Button
6. Mode Switch
7. Battery Cover

Display Screen

1. Body mode indication
2. Object mode indication
3. Memory Indication
4. Temperature reading
5. Temperature unit
6. Battery indication

Display Mode
Two modes can be selected.

	Body Mode This mode is used to measure the forehead temperature
	Object Mode This mode is used to measure the object temperature

Select the Temperature Unit This meter provides two measurement units used for indicating the body/object temperature, °C or °F, for your preferred selection.

	Be sure the thermometer is OFF before selecting the temperature unit.
	Long-press the Measurement Button for 5 seconds until the signal °C or °F displayed on the LCD panel as figure shown. Re-press the Measurement Button to select °C or °F unit

Turn ON/OFF the Led Light This meter provides Led Light to help users placing the thermometer at the correct position.

	Be sure the thermometer is OFF before turn On/off the LED Light.
	1. Long-press the Measurement Button for seconds until Signal °C or °F displayed on the LCD panel 2. Release the measurement button, then short-press the ON/OFF Button, the signal -Led or OFF will displayed on the LCD panel as figure shown. 3. Quick press the measurement button, and select Led or OFF to turn ON/OFF the Led Light.

Replacing the Battery
The thermometer comes with two 1.5 V AAA alkaline batteries. The meter will display to alert you when the meter power is getting low, please follow the steps below to replace new batteries immediately.

- 1.Remove the battery cover as the arrow direction accordingly.
- 2.Remove the old batteries and replace with two 1.5v AAA size alkaline batteries.Taking care to match the Positive (+) and negative (-) indications

3. Close the battery cover as the arrow direction accordingly

NOTE:
Although the thermometer works when appearing we still recommend that you change the batteries to obtain an accurate result

2. Remove the batteries if stored for a long period of time
3. Thebatteries should be kept away out of childrens reach. they are swallowed, promptly see a doctor for help

DETAILED INFORMATION
About Normal Body Temperature & Fever
The temperature in the forehead and temple area differs from the internal temperature, which is taken orally or rectally. Vasoconstriction, an effect which constricts the blood vessels and cools the skin, can occur during the early stages of a fever. In this case, the temperature measured by the A200 Infrared thermometer may be unusually low. If the measurement therefore does not match the patient's own perception or is unusually low, repeat the measurement every 15 minutes. As a reference, you can also measure the internal body temperature using a conventional oral or rectal thermometer. Body temperature can vary from one individual/person to next. It also varies by location on the body and time of day. Below shows the statistical normal ranges from different sites. Please keep in mind that temperatures measured from different sites, even at the same time, should not be directly compared. Fever indicates that the body temperature is higher than normal. This symptom may be caused by infection, overdressing or immunization. Some people may not experience fever even when they are ill. These include, but are not limited to, infants younger than 3 months old, persons with compromised immune systems, persons taking antibiotics, steroids or antipyretics (aspirin, ibuprofen, acetaminophen)

or persons with certain chronic illnesses. Please consult your physician when you feel ill even if you do not have fever.
Table 1 Normal Temperature Range of various body sites

Oral	0.6° C (1° F) or more above or below 37° C (98.6°F)
Rectal/ ear	0.3° C to 0.6° C (0.5° F to 1° F) higher than oral temperature
Axillary (armpit)	0.3° C to 0.6° C (0.5° F to 1° F) lower than oral temperature

PERFORM THE TEST
As a Body Measurement Thermometer

	Press "ON/OFF" Button to turn on the thermometer first.
	Push the Mode switch to select Body mode. The temperature unit flashes.
	Move the probe close to the forehead and take measurements. Make sure the probe is flat and close to the forehead, not at an angle. Perform a forehead measurement with a distance within 3 cm.
	Read the result. The measurement result will be done in 1 second. The reading is shown together with LED lighting and one long beep informs about the temperature measurement, and after a while another short beep, confirming the saving of the result to the memory and readiness for the next measurement.

Press the "ON/OFF" button to turn off the unit, or leave it idle for 30 seconds the unit will switch off automatically

NOTE:

- As the forehead measurement temperature is likely to be affected by sweat, oil and the surroundings, the reading shall be taken as a reference only.
- If the probe is placed at an angle close to the forehead measurement, the reading will be affected by surrounding temperature. Babies' skin reacts very quickly to the ambient temperature. Therefore, do not take their temperature with the A200 Infrared thermometer during or after breastfeeding, because the skin temperature may then be lower than the internal body temperature.
- If the measured temperature is < 32°C (89.6°F), the display will show with LO symbol.
- If the reading is ≥ 38.0°C (100.4°F) and < 43.0°C (109.4°F), the display will show together with red LED and six short beeps.
- The thermometer will automatically turn off if left idle for 30 seconds.



As an Object Measurement Thermometer

	Press "ON/OFF" Button to turn on the thermometer first.
	Push the Mode switch to select Body mode. The temperature unit flashes.
	Move the probe close to the object and take measurements. Make sure the probe is flat and close to the object, not at an angle. Perform measurement with a distance within 3 cm. When ready push on/off button to be take measurement
	Read the result. The measurement result will be done in 1 second. The reading is shown together with LED lighting and one long beep informs about the temperature measurement, and after a while another short beep, confirming the saving of the result to the memory and readiness for the next measurement.

Press the "ON/OFF" button to turn off the unit, or leave it idle for 30 seconds the unit will switch off automatically

MEMORY
Recalling the Memory
This thermometer stores 25 most recent readings

	Be sure the thermometer is OFF before recalling this memory
	Press to enter the memory mode
	Each time you press the Memory Button, a result will be displayed in the order of dates (latest result shown first), together with "MEM" and number (from 1 to 25). LED in green orange or red will appear according to the memory reading. When the memory is full, the oldest result is deleted as the new one added. When the last record displayed in the display, press Memory Button again to return the first record.
	Exit the memory. Press ON/OFF Button to exit the memory or keep the meter in idle for 30 seconds to switch off automatically.
	Be sure the thermometer is OFF before recalling this memory
	Press to enter the memory mode.



	Long-press the ON/OFF Button for 3 seconds, release the button after the signal-dell displayed on the LCD panel as figure shown. Then long-press the ON/OFF Button for 3 seconds, release the button after the signal-Cir displayed on the LCD panel as figure shown. All the memories would be deleted after that.
	

MAINTENANCE Care & Cleaning









- The probe is not waterproof. Please wipe with a clean and dry cotton swab to clean the probe on the inside.
- The body of the thermometer is not water-resistant. Never put the thermometer under a running tap or submerge it into water. Use a soft and dry cloth to clean it. Do not use abrasive cleaners.
- Store the thermometer in a cool and dry location. Free from dust and away from direct sunlight

FAULT INDICATION

FAULT OR FAULT SYMBOL	FAULT DESCRIPTION	CORRECTIVE MEASURER
No display On the LCD panel	The battery has run out. Incorrect battery polarity.	Replace the battery. Please note: The (+) side of the battery must face upwards.
Measurement not possible (or an abnormal value is displayed)	The thermometer is not ready.	Wait until the °C symbol is displayed
An abnormal temperature value is displayed	The probe tip is dirty or damaged. Did you hear the beep after pressing the ON button?	Clean the probe tip or get it repaired. Wait until you hear the beep before removing the thermometer from the ear or forehead

FAULT OR FAULT SYMBOL	FAULT DESCRIPTION	CORRECTIVE MEASURER
LO or HI symbol is displayed	The temperature measured is outside the measuring range (low temp. <32°C (89.6°F), Hi temp. >43°C (109.4°F)	Check the probe tip is clean and that the thermometer is properly placed on the forehead
 symbol is displayed	The battery has run out.	Replace the battery
 Symbol is displayed	The ambient temperature is outside the operating temperature range or is changing too fast.	To ensure accurate measurement. let the thermometer rest at operating temp. for 30min. prior to use.

SYMBOL INFORMATION

SYMBOL	REFERENT
	Serial number
	Lot No.
	Caution Read the instruction manual
	Manufacture
	Date of Manufacturing
	Keep dry
	For use follow instruction
	Type BF applied for

SPECIFICATIONS

Model	A200
Measurement range	Body/Forehead: 32-43.0°C (89.6°F-109.4°F) Object: 0.0°C to 100.0°C (32°F to 212.0°F)
Display Resolution	0.1°C/0.1°F
Accuracy	For body mode: +10.2°C (±0.4°F) from 36.0°C (96.8°F) to 39.0°C (102.2°F) 10.3°C (±0.5°F) from 32.0°C (89.6°F) to 35.9°C (96.6°F) and from 39.1°C (102.4°F) to 43.0°C (109.4°F)
	For object mode: 4.9°C (40.8°F) ±1°C (±2°F) from 5°F (41 T) to Green light for temperature lower than 14°C (17.2°F) from 0°C (32 F) to 60°C (140.0°F) +4°C (±7.2°F) from 60.1°C (140.1°F) to 100°C (212°F)
Forehead Indicator Light	37.5°C(99.5°F) Yellow light for temperature > 37.5°C (99.5°F) and <38.0°C (100.4°F) Red light for temperature equal or higher than 38.0°C(100.4°F)
Voice	Power on and ready for working: a short beep.
	Measurement finished: 1 long beep lower than 38.0°C(100.4°F) 6 short beeps equal or higher than 38.0°C(100.4°F)

Silent mode	1. Be sure the infrared thermometer is off 2. Hold the measurement button for about 7 seconds after 'ON/OFF' shows on the LCD panel. (Note: keep holding the button when 'C/F' is displayed on the LCD panel). 3. Press the Measurement button again to turn ON/OFF the beep
Memory	25 groups
Operating conditions	10°C to 40 °C (50 °F to 104 °F), Humidity: 15 to 93 % R.H.
Air pressure	86Kpa-106Kpa
Storage and transport environment	Temperature: -25°C to 55°C (-13°F to 131°F) Storage humidity: 15% to 93% RH
Auto shut-off	About 30 seconds after no using
Battery	2pcs 1.5V AAA Alkaline Battery
Size	170 x 47 x 53 mm
Weight	75g

DISPOSAL OF DEVICE

Adhere to the applicable regulations when disposing of the device.



This product must not be disposed of together with domestic waste. All users are obliged to hand in all electrical or electronic devices, regardless of whether or not they contain toxic substances, at a municipal or commercial collection point so that they can be disposed of in an environmentally acceptable manner. Please remove the batteries before disposing of the device/unit. Do not dispose of old batteries with your household waste, but at a battery collection station at a recycling site or in a shop.

REFERENCE OF STANDARDS

Device Standards:

Device Corresponds to the requirements of the standard for infrared thermometers
IEC 60601-1-2: 2014
IEC 60601-1:2012
ISO 80601-2-56: 2009

Classification:

Anti-electric Shock Type: Internally powered equipment
Applied part: Type BF
Mode of operation: Continuous Operation
EMC: type B class I
Enclosure Degree of ingress protection: Ip22
P22 means shell of this product can withstand the water drooping to the surface when the shell deviate 15 degree from horizontal surface.

Electromagnetic Compatibility:

Device fulfills the stipulations of the standard IEC60601-1-2
The stipulations of EU-Directive 93/42/EEC for Medical Devices Class II a have been fulfilled.
*Technical alterations reserved!
Software identify no.: A200 V1.1.0

WARRANTY

- This thermometer is guaranteed for 18 months from the date of purchase against any manufacturing defect. conditional upon normal household use.
- The intended service life of the product is 24 months.
- This product to be free of defects in workmanship and materials for a period on 18 months from the date of purchase.
- During the warranty period, if this product is found to be defective, you may bring it together with the purchase receipt and Warranty Certificate on a carry-in basis to manufacturer's office during normal business hours for warranty service.
- We will then repair or replace defective parts or exchange the whole product as we select, at no charge to the original owner. After such repair, replacement or exchange, the product will be warranted from the date of purchase.
- This warranty is valid only if the Warranty Certificate and Warranty Registration Card are duly complete with date of purchase, serial number and dealer's stamp, and if the Warranty Registration Card is sent to local distributor office not later than 14 days from the date of purchase.
- This warranty is void if this product has been repaired or serviced by unauthorized person. This warranty does not cover defects caused by misuse, abuse, accident, tampering, poor maintenance, fire or any other acts beyond human control.
- Except as stated in the above paragraphs, A200 Infrared Thermometer disclaims all other warranties, implied or expressed, including the warranties of merchantability of fitness for a particular purpose with respect to the use of this product. Manufacturer shall not be liable for any direct, consequential or incidental damages arising out of the use or inability to use product.

Manufacturer's Declaration of the EMC
1. All necessary instructions for maintaining BASIC SAFETY and ESSENTIAL PERFORMANCE with regard to electromagnetic disturbances for the excepted service life.
2. Guidance and manufacturer's declaration - electromagnetic emissions and Immunity.

Table 1- Guidance and manufacturer's declaration electromagnetic emissions		
Emissions test	Compliance	
RF emissions CISPR 11	Group 1	
RF emissions CISPR 11	Class B	
Harmonic emissions IEC 61000-3-2	Not application	
Voltage fluctuations /flicker emissions IEC 61000-3-3	Not application	

Table 2- Guidance and manufacturer's declaration electromagnetic immunity

Immunity Test	IEC 60601-1-2 test level	Compliance level
Electrostatic discharge (ESD) IEC 61000-4-2	+8 kV contact +2 kV, ±4 kV, ±8 kV, +15 kV air	+8 kV contact +2 kV, ±4 kV, 18 kV, ±15 kV air
Electrical Fast transient/burst IEC 61000-4-4	Power supply lines: ±2 kV input/output lines: ±1 kV	Not application
Surge IEC 61000-4-5	line(s) to line(s): ±1 kV. line(s) to earth: ±2 kV. 100 kHz repetition frequency	Not application

Voltage dips, short interruptions, and voltage variations on power supply input lines IEC 61000-4-11	0% 0.5 cycle at 0° 45°, 90°, 135°, 180°, 225°, 270° and 315° 0% 1 cycle And 70% 25/30 cycles Single phase: at 0 0% 300 cycle	Not application
Power frequency magnetic field IEC 61000-4-8	30 A/m 50Hz/60Hz	30 A/m 50Hz/60Hz
Conducted RF IEC61000-4-6	50KHz to 80MHZ : 3Vrms 6Vrms (in ISM and amateur radio bands) 80% Am at 1kHz	Not application
Radiated RF IEC61000-4-3	10 V/m 80 MHz-2.7 GHz 80% AM at 1 kHz	10 V/m 80 MHz - 2.7 GHz 80% AM at 1 kHz
NOTE: UT is the a.c. mains voltage prior to application of the test level		

Table -3- Guidance and manufacturer's declaration - electromagnetic immunity

Test Frequency (MHZ)	Band (MHZ)	Service	Modulation	Modulation (W)	Distance	Immunity test levels (V/m)
385	380-390	TETRA 400	Pulse Modulation 18HZ	1.8	0.3	27
450	430-470	GMRS 460, FRS460	FM±_5kHz deviation 1kHz sine	2	0.3	28
710 745 780	704-787	LTE Band 13,17	Pulse Modulation 217HZ	0.2	0.3	9
810 870 930	800-960	TGSM 800/900, TETRA 800, DEN 820, CDMA 350, LTE band -5	Pulse Modulation 18HZ	2	0.3	28
1720 1845 1970	1700-1900	GSM 1800, CDMA 1900, Gsm 1900, DECT: LTE Band 1,3,4,25:UTMS	Pulse Modulation 217HZ	2	0.3	28
2450	2400-2570	Bluetooth, WLAN, 802.11b/g/n, RFID 2450, LTE band 7	Pulse Modulation 217HZ	2	0.3	28
5240 5240 5785	5100-5800	WLAN 802.11 a/n	Pulse Modulation 217HZ	0.2	0.3	9

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