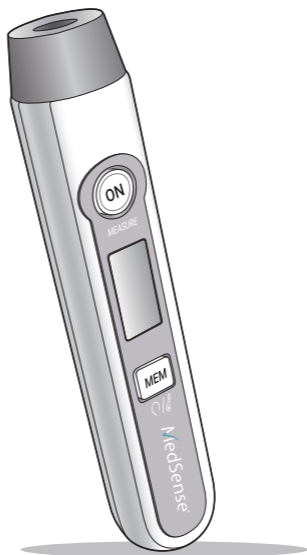




# MedSense® Infrared Forehead Thermometer

MDS-DT-060











## *User Manual*

Version 1.0. Updated July 2020.

## Contents

Symbols used in this manual.....	2
Product introduction.....	3
Statement of intended use.....	3
User precautions.....	4
Body temperature readings.....	5
Product layout.....	6
Battery installation.....	7
Setting thermometer parameters.....	8
Operating instructions.....	9
Cleaning and storage.....	11
Error messages.....	12
Product specifications.....	13
Warranty details.....	14
Appendix 1 - Guidance and Manufacturer Declaration Tables.	

## Symbols Used in this Manual

			
Serial Number	Keep dry	Manufacture Date	Type B applied part
			
CE Marking 2460	User Manual Reference	Manufacturer	Warning, Consult Accompany Documents

## Product Introduction

---

Congratulations on the purchase of your new MedSense DT-060 Infrared Forehead Thermometer. This thermometer is a precision instrument that hygienically and accurately records temperature in a safe and non-invasive manner.

Features:

- Contactless measurement of body temperature
- Precise temperature readings within 2 seconds
- 10 sets of memory values
- Dual mode use for forehead and objects (e.g. water, surfaces, baby bottles)
- Results in °C (default) or °F
- Warning when high body temperature is measured
- Ergonomic and lightweight design (only 39g)
- On/off audible alerts
- Automatic shut-off 20 seconds after reading measurement

## Statement of Intended Use

---

The MedSense IR Forehead Thermometer is intended for the measurement and monitoring of human body temperature. This thermometer has been clinically tested and proven to be accurate and safe to use on all patients, irrespective of age, when used in accordance with this instruction manual. This thermometer is suitable for clinical or home use.

The MedSense IR Forehead Thermometer may also be used for the measurement of objects and surface temperatures within the home. It can measure the temperature of bath water, feeding bottles, air temperature and other applications.

## User Precautions

- Please read and follow the instructions in this user manual carefully before use.
- This thermometer has been clinically tested and found to be accurate and safe, when used in accordance with this instruction manual, for all patients irrespective of age.
- The measurement results of this device at any time should be a reference only and cannot replace the medical diagnosis of a doctor. If you have any questions about the measurement results, please consult a doctor.
- To avoid any harmful situation, this device should not be operated unsupervised by children and used only for the purposes described in this instruction manual.
- This thermometer is unsuitable for use in the presence of flammable anaesthetics or oxygen.
- This thermometer is intended for indoor use and should not be exposed to extreme environmental conditions outside of its operating and storage temperature and humidity conditions, as stated below:

### Operating conditions

15°C~40°C

15%RH~95%RH

### Storage conditions

-20°C~50°C

15%RH~95%RH

- If the device is not used within specified temperature and humidity ranges the technical accuracy cannot be ensured.
- If the thermometer is not stored within the specified ambient temperature range, allow the thermometer 30 minutes to equilibrate with room temperature before use.
- The probe sensor is the most delicate part of this thermometer and must be kept clean and undamaged to ensure accuracy.
- Do not touch the probe's lens with your fingers.
- Never splash or soak this device in any liquid including water.
- Ensure not to drop the device, as it is neither shockproof nor impact resistant.
- Do not use equipment that generate electromagnetic fields near this device.
- Should a fault occur with the thermometer, do not disassemble or attempt to repair the device as this will void the warranty. Please contact Andatech for service.

## Body Temperature Readings

Body temperature refers to the internal temperature of the body (core temperature). Normal human body temperature means that of a healthy person. Body temperature is likely to change depending on when, where, and to whom the measurement is made. There are different factors that have effects on body temperature, including time of the day, temperature of the surrounding place, and level of activity of a person. Different parts of the body (such as mouth, armpit, rectum, ear and forehead) have different temperatures, and improper measurement may cause different body temperature.

In addition, smoking, ovulation, pregnancy and age can also affect body temperature. Therefore, it is recommended that a person keep a record of his or her own normal body temperature after measuring several times at the same condition. Measurement in thick clothes on a warm day or after workout can make body temperature a bit higher. What makes body temperature constant is central nerves in the hypothalamus of the brain. If body temperature rises, central nerves in the hypothalamus inhibit body temperature rise by expanding the skin's blood vessels and making sweat glands sweat more than usual, which cools the body off. On the contrary, at lower body temperature, they block heat loss by contracting blood vessels, which inhibits blood flow, and stops sweating. Human body temperature is always constant due to balancing heat gain between heat loss.

Normal temperature ranges – by point of measurement <sup>1</sup> )	
Axillary	34.7~37.3°C
Oral	35.5~37.5°C
Ear	35.8~38.0°C
Rectal	36.6~38.0°C

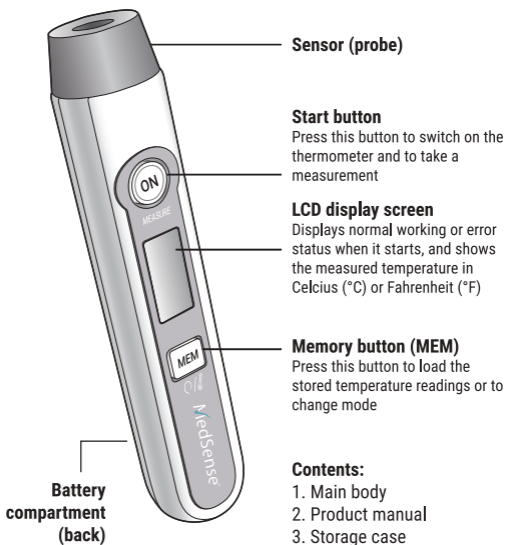
Normal temperature ranges – by age <sup>2</sup> )	
0~2years	36.4~38.0°C
3~10years	36.1~37.8°C
11~65years	35.9~37.6°C
> 65years	35.8~37.5°C

<sup>1</sup> Chamberlain, J.M., MD, and Terndrup, T.E., MD. "New Light on Ear Thermometer Readings". Contemporary Pediatrics; March, 1994.

<sup>2</sup> Chamberlain, J.M., MD, and Terndrup, T.E., MD. "Determination of Normal Ear Temperature with an Infrared Emission Detection Thermometer", Annals of Emergency Medicine; January 1995.

A person's body temperature range shown above is summed up from data in clinical tests, and minimum and maximum body part temperature may be varied from person to person.

## Product Layout




### Contents:


1. Main body
2. Product manual
3. Storage case

## Battery Installation

Each MedSense DT-060 thermometer is supplied with a lithium battery that can operate for more than 5,000 measurements.

**Low battery:** When the battery is low, the LCD display will show the  icon, which signals the need to replace the batteries.

When this happens, replace using a brand new **DC 3.0V CR2032** battery

1. Using a screwdriver, unscrew the battery cover on the back of the thermometer to open up the battery compartment.
2. Remove the battery.
3. Replace with a new battery with the plus (+) sign facing up.
4. Close the battery cover and screw it back into place.
5. Switch on the thermometer to ensure the  icon is no longer displayed.



If the thermometer will not be used for an extended period of time, please remove the battery before storage to avoid any battery corrosion or leakage from damaging the device.



Do not leave the battery or battery cover where children can get to them. Children may swallow them. Should a child swallow the battery or battery cover, contact a doctor immediately.



Used batteries are hazardous waste and should not be disposed of with normal household waste.

## Setting Thermometer Parameters

### Alert sounds

By default, the device will “Beep” to indicate when a measurement is complete or when there is an error.

To enable or disable this sound, press the Start button and MEM button at the same time while the device is switched on.

The LCD screen will flicker twice and the alert sounds will be toggled off or on.

### Setting the measurement unit (°C or °F)

When the device is switched on, press the MEM button and Start button together once.

The LCD screen will toggle between °C or °F.

### Memory recall

The device can store 10 readings in memory.

To recall temperature values from memory, press and release the MEM button while the device is switched on/off. The device will display the most recent stored temperature. Each additional press of the MEM button will recall the next most recent measurement.

A new measurement can be taken even while the device is in memory mode.

### Changing measurement modes

To change between body temperature mode and object mode, press and hold the MEM button for more than 3 seconds while the thermometer is switched on.

The LCD will display the forehead icon  for body temperature mode, or the thermometer icon  for object mode.



## Operating Instructions

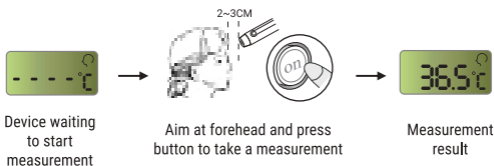
### Before operating

1. Read the guidelines in the user manual.
2. Check the LCD screen and press each button to ensure that they are functioning properly.
3. Check the sensor (probe) to ensure that it is not contaminated. If required, clean the probe following the cleaning instructions.
4. Ensure that the surrounding temperature is between 15 to 40°C to allow the thermometer to function properly.

### Measuring body temperature

1. Press the Start button to switch on the device and enter body temperature measurement mode. The forehead mode icon (👤) will display on the LCD screen.
2. Aim the device probe at the center of the forehead from a distance of 2 to 3 cm from the skin, then press the Start button to take a measurement.

Note: Maintain this distance until the measurement completion sound (one beep) is heard. If the device is in silent mode, maintain this distance for approximately 2 seconds.





3. The measurement result will display on the screen.  
Note: If body temperature is between 38.1 to 38.9°C, the device will beep three times (if not in silent mode). If body temperature is above 39°C, device will beep continuously for 3 to 4 seconds.
4. To take another measurement, wait until the device screen displays --- (device waiting to start measurement) and then repeat from step 2.
5. The device will automatically switch off after 20 seconds of inactivity.



- If there is perspiration on the forehead, wipe the area dry before taking a measurement.
- Do not take temperature readings on areas where scars or skin disorders (eczema, dermatitis, etc) are evident.
- Remove obstructions between the thermometer and forehead (or skin) such as hair etc. as it may lead to inaccurate results.
- Avoid taking a measurement in close proximity with an air conditioner or heater, or immediately after a swim, shower or bath, as measurement results may be inaccurate.
- It is important that patients remain still when a measurement is being taken as any movements could result in an inaccurate reading.
- Temperature measurements vary according to the measurement site. Try to measure temperature at the same area on the forehead each time.
- Ensure that the device maintains a 2 to 3cm distance from the forehead during measurement to ensure accurate readings.

### Measuring object temperature

1. Press the Start button to switch on the device and enter body temperature measurement mode. The forehead mode icon  will display on the LCD screen.
2. Change to object mode by holding down the MEM button for more than 3 seconds. The thermometer icon  will display on the LCD screen.
3. Aim the device probe at the object from a distance of 2 to 3 cm away, then press the Start button to take a measurement.  
Note: Maintain this distance until the measurement completion sound (one beep) is heard. If the device is in silent mode, maintain this distance for approximately 2 seconds.



Device waiting  
to start  
measurement



Aim device at object from  
2-3cm away and press button  
to take a measurement



Measurement  
result

4. The measurement result will display on the screen.
5. To take another measurement, wait until the device screen displays ---- (device waiting to start measurement) and then repeat from step 3.
6. The device will automatically switch off after 20 seconds of inactivity.

### **Recommendations of suitable temperature ranges for babies:**

- Milk bottles: 36 ~ 40°C
- General indoor temperature: 24 ~ 26°C
- Bath water: 38 ~ 40°C
- Indoor temperature when bathing a baby: 24 ~ 27°C

## **Cleaning and Storage Instruction**

It is recommended to clean the device before and/or after each use to ensure precise measurements.

1. Check the device probe before each use. Use a clean soft cloth or cotton swab dipped in 75% alcohol to gently wipe it clean.
2. The other parts of the device can be wiped with a soft and dry cloth.
3. Ensure there is no visible dirt or residue on the device after cleaning.
4. Wait 10 minutes before using the device to take a measurement.







- Do not clean the device with organic solvents (e.g. thinners, acetone) or abrasive cleaners.
- Never splash or soak this device in any liquid, including water.
- Ensure no liquid enters the interior of the device.

When storing the device:


- Store the device inside the plastic case at all times when not in use.
- Store in a safe place away from direct sunlight, dust, pollutants, salinity, vibrations and shock.
- Avoid storing the device in extreme heat (over 50°C), cold (under -20°C) or humidity (over 95%RH).
- If the device will not be used for an extended period of time, please remove the batteries before storage to avoid any battery leakage from damaging the device.

## Error messages

Please refer to the table below for the possible causes and solutions for errors that may occur on the device:

Error Message	Cause	Solution
 or the LCD display is blank	The battery has run out Battery was inserted wrongly (incorrect polarity)	Replace with a new battery Please ensure the battery is inserted correctly following the polarity (+ side should be facing up)
	Target body temperature is outside of its measurement range of 34 ~ 43°C HI: Too high LO: Too low	Make sure the device probe is clean. Make sure the device is within 2-3cm distance and aimed at the forehead. Then, take a new temperature.
	The battery power is too low or has run out	Replace with a new battery Please ensure the battery is inserted correctly following the polarity (+ side should be facing up)
	Current ambient temperature is outside of the device's operating temperature range (15 ~ 40°C)	Operate the device only in an environment with ambient temperature of 15 ~ 40°C. Allow the thermometer 30 minutes to equilibrate with room temperature before use.

## Product Specifications

Product name	Infrared Forehead Thermometer	
Model number	MDS-DT-060	
Product dimensions	131.5 x 26.0 x 22.5 mm	
Product weight	39g	
Measurement method	Detection by Thermopile sensor of ultrared light released by forehead	
Measurement range	Body temperature	34 ~ 43°C (93.2 ~ 109.4°F)
	Object temperature	10 ~ 60°C (50 ~ 140°F)
Resolution ratio	0.1°C/°F	
Measurement location	Laboratory	
Accuracy	36~39°C: ±0.2°C, other range: ±0.3°C	
Operating conditions	Temperature	15 ~ 40°C (59 ~ 104°F)
	Relative humidity	15%RH~95%RH
	Atmospheric pressure	70kPa~106kPa
Transportation / storage conditions	Temperature	-20 ~ 50°C (-4 ~ 122°F)
	Relative humidity	15%RH~95%RH
	Atmospheric pressure	70kPa~106kPa
Memory	10 tests	
Automatic shut down	After 20 seconds of inactivity	
Safety function	Displays low battery warning 	
Buzzer sound	Can be disabled by pressing the Start button and Memory button at the same time	
Battery	DC 3V (Li. CR2032)	
Life expectancy	5 years	

For the purposes of improvement, the product specifications are subject to change without notice.

## Warranty Details

Register your warranty online now at [my.andatech.com.au](http://my.andatech.com.au)

Congratulations on your purchase! It is our aim to provide you with quality products that you can trust. Our products come with guarantees that cannot be excluded under the Australian Consumer Law.

You are entitled to a replacement or a refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

### The Guarantee

The product is guaranteed to be free from defects in workmanship and parts for a period of 2 years from the date of purchase. Defects that occur within this warranty period, under normal use and care, will be repaired, replaced or refunded at our discretion, solely at our option with no charge for parts and labour. The benefits conferred by this warranty are in addition to all rights and remedies in respect of the product that the consumer has under the Trade Practices Act and similar state laws.

### Proof of Purchase

This warranty is valid for the original purchase and is not transferable. Please keep your purchase docket or receipt as proof of purchase and as proof of date on which the purchase was made. The purchase docket (or a copy) or receipt must be presented with the warranty when making a claim under this warranty.

### Service during the Warranty Period

To claim for warranty, contact us on 1300 800 200 or [support@andatech.com.au](mailto:support@andatech.com.au) to get an RA# (Return Authorisation Number). Ensure that the RA# is clearly stated on the outside of the packaging and that the product is properly packaged so that no damage occurs to the product during transit. Shipping of the product back to us for warranty will be at our cost. A product return without the RA# or proof of purchase will not be accepted.

### Extent of Warranty

This warranty is limited to defects in workmanship or parts. All defective products or parts will be repaired or replaced. This warranty does not cover manuals and packaging.

### Normal Wear and Tear

This warranty does not cover normal wear and tear to the product or parts.

## Exclusions

This warranty does not cover:

- Any defect caused by an accident, misuse, abuse, improper operation, lack of reasonable care, unauthorised modification, loss of parts, tampering or attempted repair by a person not authorised by the distributor.
- Any product that has been damaged by a lightning strike either directly or indirectly or a main power surge or liquid ingress.
- The product if it is located outside of Australia.
- Any damage caused by improper power input or improper cable connection.



---

Andatech Pty. Ltd.

PO Box 3038, Nunawading VIC 3131, Australia.

Phone: 1300 800 200 Fax: 1300 883 802 Email: [support@andatech.com.au](mailto:support@andatech.com.au)

## ELECTROMAGNETIC COMPATIBILITY(EMC) TABLES


- (1) This part lists the tests and compliance levels that make the DT-060 suitable for use in the specified electromagnetic environment according to IEC 60601-1-2:2014.
- (2) Radio frequency (RF) interference from nearby transmitting devices can degrade performance of the product. Electromagnetic compatibility with surrounding devices should be assessed prior to using the product.
- (3) Fixed, portable, and mobile radio frequency communications equipment can also affect the performance of DT-060.

The DT-060 is intended for use in the electromagnetic environment specified in the following tables. The customer or the user of the product should assure that it is used in such an environment.

Electromagnetic emissions		
Emission test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR11	Group 1	The DT-060 uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR11	Class B	The DT-060 is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.

Guidance and manufacturer's declaration - electromagnetic immunity			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment- guidance
Electrostatic discharge (ESD) IEC61000-4-4	±8kV contact ±2,4,8,15kV air	±8kV contact ±2,4,8,15kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity of at least 30% is recommended.
Power frequency(50/60Hz) magnetic field IEC61000-4-8	30 A/m	30A/m	Power frequency magnetic fields should be at levels characteristic of a typical commercial or hospital environment



<p>Radiated RF IEC 61000-4-3</p>	<p>10 V/m 80 MHz to 2,7 GHz</p>	<p>10 V/m</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the DT-060, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance:  <math>d = 1.2 \sqrt{P}</math> 80 MHz to 800 MHz  <math>d = 2.3 \sqrt{P}</math> 800 MHz to 2,7 GHz</p> <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,<sup>1</sup> should be less than the compliance level in each frequency range.<sup>2</sup></p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
<p><sup>1</sup> Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the DT-060 is used exceeds the applicable RF compliance level above, the DT-060 should be observed to verify normal operation. If abnormal performance is observed, additional measures are necessary, such as re-orienting or relocating the DT-060.</p> <p><sup>2</sup> Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 10 V/m.</p>			

**Recommended separation distance between  
portable and mobile RF communications equipment and the DT-060**

The DT-060 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the DT-060 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the DT-060 as recommended below, according to the maximum output power of the communications equipment.

Rated a maximum output power of transmitter [W]	Separation distance according to frequency of transmitter [m]	
	150 kHz to 80 MHz $1.2\sqrt{P}$	80 kHz to 2.7GHz $2.3\sqrt{P}$
0.01	0.12	0.20
0.1	0.38	0.63
1	1.2	2.0
10	3.8	6.3
100	12	20

### Guidance and manufacturer's declaration - electromagnetic immunity

The DT-060 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. Portable RF communications equipment should be used no closer than 30cm (12 inches) to any part of the DT-060. Otherwise, degradation of the performance of this equipment could result.

Immunity test	Band a	Service a	Modulation	IEC60601 test level	Compliance level
Proximity fields from RF wireless Communications IEC61000-4-3	380 – 390 MHz	TETRA 400	Pulse modulation 18Hz	27 V/m	27 V/m
	430 – 470 MHz	GMRS 460 FRS 460	FM ±5 kHz deviation 1 kHz sine	28 V/m	28 V/m
	704 – 787 MHz	LTE Band13, 17	Pulse modulation 217 Hz	9 V/m	9 V/m
	800 – 960 MHz	GSM800:900 TETRA 800 iDEN 820	Pulse modulation 18 Hz	28 V/m	28V/m
		CDMA 850 LTE Band 5			
	1700 – 1990 MHz	GSM 1800 CDMA 1900 GSM 1900 DECT LTE Band 1,2,4,25 UMTS	Pulse modulation 217 Hz	28 V/m	28V/m
	2400 – 2570 MHz	Bluetooth WLAN 802.11b/g/n RFID 2450 LTE Band 7	Pulse modulation 217 Hz	28V/m	28V/m
	5100 – 5800 MHz	WLAN 802.11a/n	Pulse modulation 217 Hz	9 V/m	9 V/m



**Andatech Pty Ltd**

9 Trade Place, Vermont VIC 3133 Australia

[andatech.com.au](http://andatech.com.au)

1300 800 200

Andatech Medical is a division of Andatech Pty Ltd.

MedSense is a registered trademark of Andatech Pty Ltd.

Andatech Pty Ltd's management system has been certified to ISO 9001.



EASYTEM Co., Ltd.

3F, 11-5, Siheung-daero 1074beon-gil, Siheung-si, Gyeonggi-do, 14971, Korea.