



Manufacturer

TLV. CO., LTD.

Kakogawa, Japan

is approved by LRQA LTD. to ISO 9001/14001



Instruction Manual

TrapMan®
TM6

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1. TM6 Standard Set





1. Instruction Manual (this manual)
2. TrapMan: TM6
3. Soft Case
4. Earphone
5. Batteries (2 alkali AAA (LR03) or Ni-MH rechargeable batteries)
6. Cap
7. Carrying Strap





2. Safety Considerations



- Read this section carefully before use and be sure to follow the instructions.
- Inspection, maintenance, repairs, disassembly, adjustment and valve opening/closing should be carried out only by trained maintenance personnel.
- The precautions listed in this manual are designed to ensure safety and prevent equipment damage and personal injury. For situations that may occur as a result of erroneous handling, three different types of cautionary items are used to indicate the degree of urgency and the scale of potential damage and danger: DANGER, WARNING and CAUTION.
- The three types of cautionary items above are very important for safety: be sure to observe all of them as they relate to use, maintenance and repair. Furthermore, TLV accepts no responsibility for any accidents or damage occurring as a result of failure to observe these precautions.

Symbols








	Indicates a DANGER, WARNING or CAUTION item.
	Indicates an urgent situation which poses a threat of death or serious injury
	Indicates that there is a potential threat of death or serious injury
	Indicates that there is a possibility of injury or equipment / product damage




	This precautionary symbol indicates an item or action that must not be used or performed		This precautionary symbol indicates an action or precaution that MUST be performed or observed
PROHIBITED		MANDATORY	

2.1 TM6 Precautions







 DANGER	
	Do not use the carrying strap or earphones if there is any possibility of entanglement with rotating machinery. Operating the unit with the strap or earphone cord hanging loosely could lead to accidents resulting in serious injury caused by their becoming caught in rotating machinery.
PROHIBITED	




TM6 Precautions continued on next page.




 WARNING	
 PROHIBITED	Do not disassemble or modify. Failure to observe this precaution could result in injury, electrical shock, ignition or fire.
 PROHIBITED	Do not operate the buttons or stare at the screen while walking. Failure to observe these precautions could lead to accidents such as tripping or collisions.
 MANDATORY	Be attentive to the background noises in the surrounding area. When wearing the earphones, it becomes difficult to hear noises from the surrounding area. Operate the unit together with a person who is not wearing any earphones or take measures during operation to ensure advance awareness of potential dangers in the surrounding area.
 PROHIBITED	Do not turn the power ON while wearing the earphones. A sudden loud sound may be emitted, leading to hearing impairment or injury. After turning the power ON, check to see whether a loud sound is being output before putting on the earphones.
 PROHIBITED	Do not subject the unit to strong impact and do not throw it. Such handling could result in leakage of the battery fluid, excessive heat generation or injury.
 PROHIBITED	Do not place components in microwave ovens or high- pressure vessels, and do not place components in the vicinity of electromagnetic devices. Such handling could result in excessive heat generation, smoke, damage to circuitry, battery leakage, rupture or ignition.

 CAUTION	
 PROHIBITED	Make sure no foreign matter gets inside the unit. Before use in areas with large amounts of metal powder or other fine foreign matter, take measure to prevent this foreign matter from getting inside the unit. The presence of such foreign matter could result in fire or unit failure.
 PROHIBITED	Do not let the unit become wet. If liquid gets inside the unit, it may result in excessive heat generation, electrical shock or unit failure. Be mindful of the location of use and the method of handling.

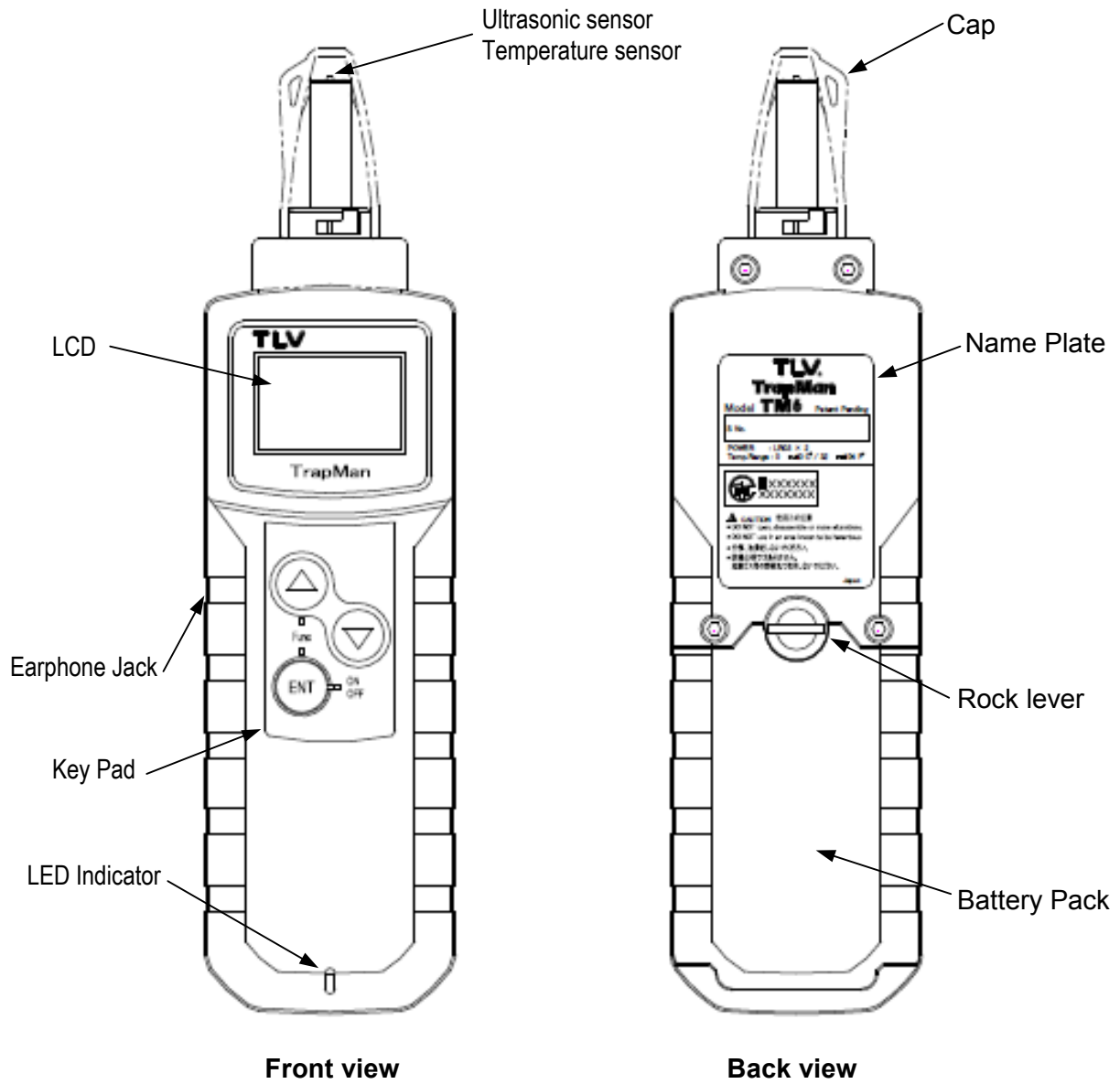
2.2 Battery Precautions

 DANGER			
 PROHIBITED	<p>Do not apply heat to the batteries or throw them into a fire. Failure to observe this precaution could result in leakage of the battery fluid, excessive heat generation, rupture or ignition.</p>	 PROHIBITED	<p>Do not cause the unit to become wet by immersing in water, salt water or liquid chemicals. Failure to observe this precaution could result in leakage of the battery fluid, excessive heat generation, rupture or ignition.</p>
 MANDATORY	<p>If fluid leaks from the battery and gets in the eyes, flush it out. Do not rub the eyes, and after immediately flushing out thoroughly with clean water, see a doctor.</p>	 PROHIBITED	<p>Do not disassemble, modify, solder, etc. Failure to observe this precaution could result in leakage of the battery fluid, excessive heat generation, rupture or ignition.</p>
 PROHIBITED	<p>Do not leave unit where it will be exposed to direct sunlight or in areas that will become very hot, such as interiors of cars, near heating equipment, etc. Failure to observe this precaution could result in leakage of the battery fluid, excessive heat generation, rupture or ignition.</p>		

 WARNING			
 MANDATORY	<p>Cease use of the batteries immediately if the unit exhibits abnormal operation. If irregularities such as fluid leakage, an unusual smell, unusual heat generation, discoloration or deformation are noticed, cease use of the unit immediately. If use is continued under such conditions, excessive heat generation, ignition or rupture may result.</p>		
 MANDATORY	<p>If battery fluid leaks and comes into contact with the body, rinse immediately. There is danger of resultant damage to the skin. Immediately rinse any battery fluid off with clean water.</p>		

 CAUTION			
 MANDATORY	<p>When not intending to use for extended periods of time, remove the battery pack from the unit and store in a dry, cool, dark location. Failure to observe this precaution could result in fluid leakage, rust, deterioration in performance or a reduction in service life.</p>		
 PROHIBITED	<p>Do not dispose batteries with normal garbage. If at any time the batteries become unusable, observe your company regulations for proper disposal in accordance with local laws. If proper disposal is impossible, insulate the contact terminals by covering them with tape and return them to a TLV office.</p>		

3. Components



4. TM6 Preparation

4.1 Inserting Batteries

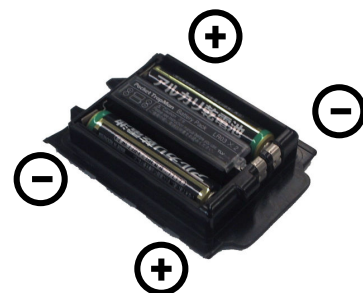
- 1) Turn the battery compartment lock counterclockwise to unlock.
- 2) Open the battery compartment and remove the battery pack (battery compartment cover).
- 3) Insert 2 batteries into the battery pack. Make sure the batteries have the correct orientation (polarity).
- 4) Reattach the battery pack and close the battery compartment.
- 5) Turn the battery compartment lock clockwise to lock.



Locked Position



Unlocked Position



Battery Pack



CAUTION When not intending to use for an extended period of time, remove the batteries from the unit. Failure to do so could result in battery fluid leakage.

4.2 Turning the Power ON/OFF

- 1) Press [ENT] to turn TM6 on. The initial screen will appear on the display after 2 seconds
- 2) Press and hold the [ENT] key for 2 seconds to turn TM6 off.

4.3 Attaching and Removing the Cap

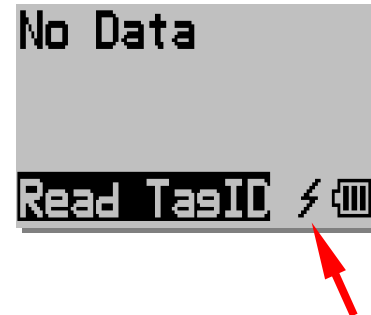
- 1) To remove the cap, twist 45° counterclockwise and take off.
- 2) To attach, place the cap over the probe and twist 45° clockwise to close.



4.4 Connect the Wireless Communication

The TM6 communicates with TrapManager-Pro using wireless communication. Before you inspect the trap, you have to connect with TrapManager-Pro and download the trap data to TM6.

- 1) The wireless communication is connected by operation of TrapManager-Pro.
- 2) When TM6 and TrapManager-Pro are connected, the icon is shown on the TM6 display.



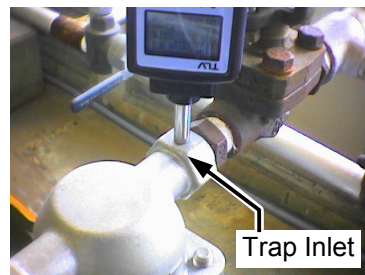
5. Steam Trap Diagnosis

5.1 Receive Trap Data

The Trap Data is downloaded to the TM6 by operating of TrapManager-Pro. After downloading is successful, TM6 displays the Location ID and trap model.

5.2 Take Measurement

- 1) Measurements should be taken from the inlet side of the trap. If the measurement point is at the outlet, measurement accuracy cannot be assured.
- 2) Press the probe against the measurement point. Measurements begin automatically once the probe is applied to the measurement point.
- 3) It takes 15 seconds after placing the probe against the measurement surface for the measurement to be complete. Be sure to hold the probe perpendicular and steady for this entire period.

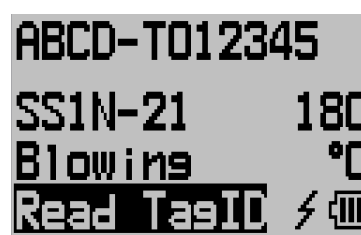
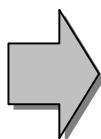


5.3 Automatic Judgment

- 1) After 15 sec measurement, TM6 confirms some parameters. You can change the parameters if needed.
- 2) TM6 displays a test result. You can modify the test result if needed.



5.4 Upload Inspected Data

- 1) After the test result is fixed, the inspected data is transmitted to TrapManager-Pro automatically.
- 2) After transmitting is successful, the display of TM6 returns to the normal.



6. Settings

6.1 Access Setting Selection

- 1) With the power on, simultaneously press [▲]+[ENT].  + 
- 2) Perform the following actions for each setting:
 - a) Press [▲] or [▼] to highlight the desired mode or setting.
 - b) Press [ENT] to select highlighted mode and proceed to next setting option.
 - c) Press and hold [ENT] to exit settings and return to normal operation.

6.1 Backlight

Turn the backlight on or off.

Note: The operating the PT1 with the backlight on consumes more power, shortening the lifespan of the batteries.



6.2 Data Com.

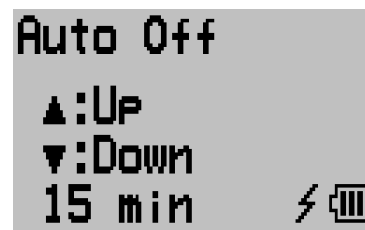
Select how to perform the communication with PC. To communicate with TrapManager-Pro, you must select "RF Com."



6.3 Auto Off

This feature automatically turns the TM6 power OFF, after the prescribed length of time has elapsed in which the TM6 has not been operated.

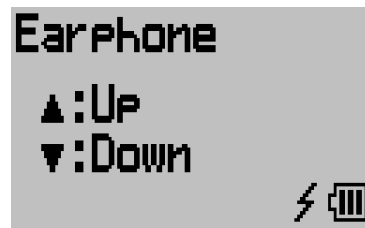
- a) Press the [▲] and [▼] buttons to raise or lower the power OFF time delay from 0 to 15 minutes.
- b) If the time delay is set to 0 minutes, the automatic power OFF feature is disabled.
- c) Once volume is as desired, press [ENT] once to proceed to the next setting.



6.4 Earphone Volume

Increase or decrease the earphone volume.

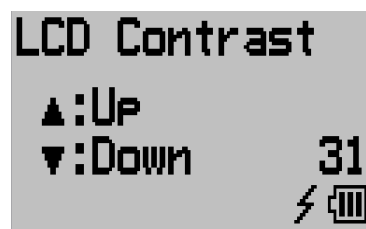
- a) Pressing once increases/decreases the volume by 1 step.
- b) Holding [▲] / [▼] for more than 1 second increases/ decreases the volume more rapidly.
- c) Once volume is as desired, press [ENT] once to proceed to the next setting.



6.5 LCD Contrast

Increase or decrease the LCD display contrast level (between 0 and 31).

- Pressing [▲] / [▼] once increases/decreases the contrast level by 1.
- Holding [▲] / [▼] for more than 1 second increases/ decreases the contrast level more rapidly.
- Once contrast is as desired, press [ENT] once to proceed to the next setting.



6.6 Language

Select the language desired for displaying text.



6.7 Date & Time

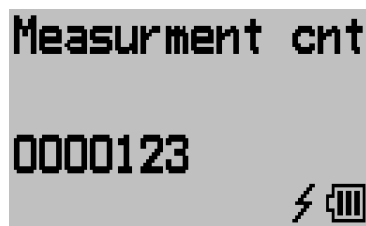
Adjust to the current date and time.

- Pressing [▲] / [▼] once increases/decreases the year, month, date, hour and minute.
- Pressing [ENT] once to proceed to the next setting.



6.8 Measurement Count

This information is used for the maintenance timing.



7. Specifications

Product Name:	TrapMan
Model Name:	TM6
Measurement Specifications:	
Items Measured:	Ultrasonic sound Surface temperature
Temperature Measurements:	
Measurement Temp. Range:	0 – 350 °C (32 – 662 °F)
Response:	97% within 15 seconds (ideal conditions)
Accuracy:	± 2 °C (± 4 °F) after 1 minute (ideal conditions)
Power	
Power Source:	2 AAA (LR03) batteries
Suitable Battery Types:	Manganese batteries, Alkali Batteries, Ni-Cd rechargeable, Ni-MH rechargeable
RF Communication	
Frequency Range:	2.4 - 2.4835 GHz
The transmission scheme	Frequency-Hopping Spread-Spectrum (FHSS)
TX Power	4dBm Max.
Earphone Output:	
Output Connection:	3.5 stereo output
Output Sound	Tone beat
Operating Temp. Conditions (ambient):	
In Use:	0 – 40 °C (32 – 104 °F)
In Storage:	-5 – 50 °C (23 – 122 °F)
Unit Dimensions	
Length:	188 mm (7 ³ / ₈ ")
Width:	49 mm (2")
Thickness:	31 mm (1 ¹ / ₄ ") (max. thickness)
Weight:	165 g (5.8 oz) (including batteries)

8. Regulatory Compliance

This equipment complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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