



Manufacturer

TLV CO., LTD.

Kakogawa, Japan

is approved by LRQA Ltd. to ISO 9001/14001



Instruction Manual

iTrapSensor Monitoring System
Surface Temperature/Ultrasound Sensor

iT5-ZB-SUN-L-PT-ZZ-S-AN

iT5-ZB-SUN-L-PT-ZZ-F-AN

iT5-ZB-SUN-H-PT-ZZ-S-AN

iT5-ZB-SUN-H-PT-ZZ-F-AN

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Introduction

Thank you for purchasing the TLV monitoring system, iT5.

When the product is delivered, before doing anything else, check the specifications and external appearance to make sure nothing is out of the ordinary. Also be sure to read this manual carefully before use and follow the instructions to be sure of using the product properly.

To ensure safe and correct use of this product, be sure to observe the safety precautions listed in this manual as they relate to installation, operation, maintenance and repair of the product. Please keep it in a safe place for future reference.

TLV accepts no responsibility for incorrect use of the product by the customer or any third-party, malfunction occurring during use, other defects and any damage caused by this product, excluding cases in which it is under obligation to pay reparations by law. This product has undergone strict quality management and product inspection before being shipped from the factory. However, in the event of malfunction or defects, please contact your local TLV representative or the TLV customer service center.





This instruction manual and product are subject to modification without notice, for the purpose of improvement.

Unauthorized reprinting or reproduction, in whole or in part, of this instruction manual or contents of the hardware/software of the product is strictly prohibited.


Safety Considerations

- Read this section carefully before use and be sure to follow the instructions.
- Installation, 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 installation, 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


General Precautions

	Do not disassemble or modify. Failure to observe this precaution could result in personal injury, electrocution, ignition or fire.
	Do not open when an explosive atmosphere is present. The cap is not intended to be opened when an explosive atmosphere is present. The cap must be opened when an explosive atmosphere is not present or it must be opened in a non-hazardous location.
	Do not use the battery pack other than that specified. Failure to observe this precaution could result in failure, ignition, or explosions.
	Do not wipe/rub the surfaces of this product with a dry cloth etc. There is the danger of electrostatically charging the unit, which may result in ignition or explosions, especially in hazardous locations.
	Do not use this product in hospitals or airplanes. Failure to observe this precaution could result in malfunction of medical equipment, instrumentation, etc.
	Ensure the specifications for the intrinsically safe structure of this product meet the requirements for installation in hazardous locations. Specifications for the intrinsically safe structure of this product are described in the "Specifications" section.
	Aluminum is used in this product. Do not expose the product to impact or friction. Exposure to impact or friction may result in ignition or accidental explosions.




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 DANGER	When installing or working at high elevations, take measures to ensure against dropping the product or parts. Failure to take such measures could result in personal injury if persons passing below are struck by a falling object, or other accidents.
	Check to make sure that no wireless instrumentation other than the product is being used. Failure to observe this precaution could lead to interference of important transmissions or accidents.
	The equipment contains non-metallic materials and that the user should consider the performance of these materials with respect to chemicals which may be present in the hazardous area. If in doubt, please contact the manufacturer.
 WARNING	As this is an industrial product, it is not to be used on consumer applications nor in residential areas.
	Do not substitute components, as this may impair the intrinsic safety of the product.
	Do not install this product on objects exceeding maximum allowable operating temperature. Overheating could result in damage to internal parts, excessive heat generation, rupture or ignition.
	Do not subject the unit to strong shocks or throw it against anything. Failure to observe this precaution could result in damage to internal parts, excessive heat generation, rupture, ignition or personal injury.
	Do not place device in microwave ovens or high-pressure vessels, or in the vicinity of electromagnetic devices. Such handling could result in excessive heat generation, smoke, damage to circuitry, battery fluid leakage, rupture or ignition.
 CAUTION	Do not allow any foreign matter to enter the unit. In areas with small foreign matter such as metal dust, use the product after taking measures to prevent foreign matter entering the unit. Failure to observe this precaution could result in fire or malfunction.
	Do not let the unit become immersed in water. If liquid gets inside the unit, it may result in excessive heat generation, electrical shock or unit malfunction. Be mindful of the location of use and handling.

Battery Pack Precautions

 DANGER	Do not apply heat to the battery pack 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.
	Do not disassemble the battery pack. Failure to observe this precaution could result in leakage of the battery fluid, excessive heat generation, rupture or ignition.
	Do not cause the battery pack 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.

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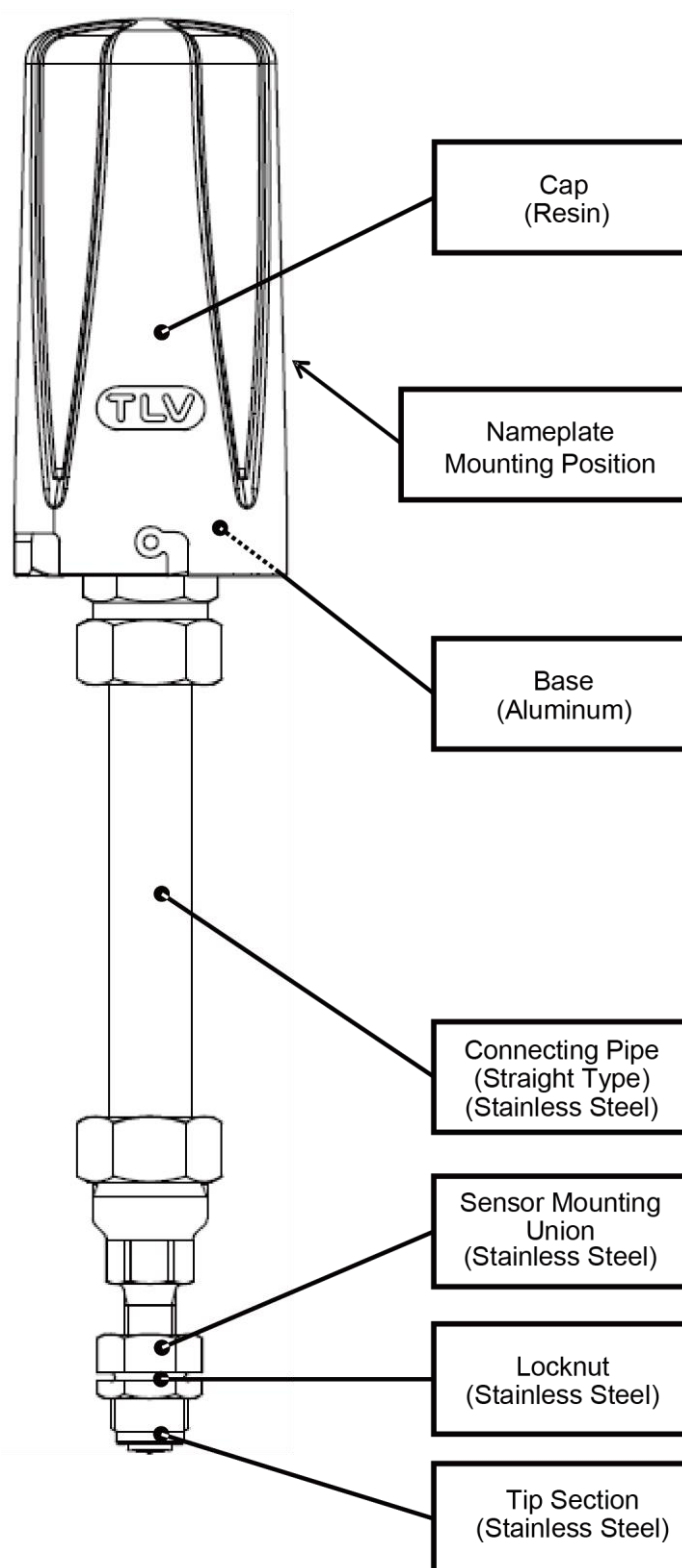
 DANGER	<p>Do not leave unit where it will be exposed to direct sunlight or in areas that will become very hot, such as interiors of cars, near heating equipment, etc. Failure to observe this precaution could result in leakage of the battery fluid, excessive heat generation, rupture or ignition.</p> <p>Do not replace the battery pack when an explosive atmosphere is present. The battery pack is not intended to be replaced when an explosive atmosphere is present. The battery pack must be replaced when an explosive atmosphere is not present or it must be replaced in a non hazardous location.</p> <p>If fluid leaks from the battery pack and gets in the eyes, flush it out. There is a danger of loss of vision. Do not rub the eyes, and after immediately flushing out thoroughly with clean water, see a doctor.</p>
 WARNING	<p>Cease use of the battery pack 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> <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	<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> <p>Do not dispose of the battery pack with normal garbage. If at any time the battery pack becomes 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>

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Part Names



Installation

Installing the sensor on iTrap

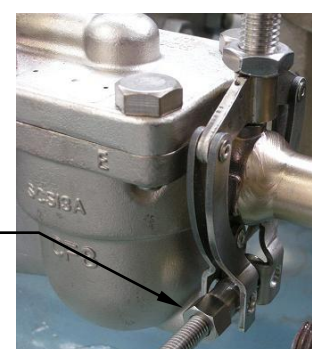
1. Remove the plug from the sensor mounting seat on the iTrap body or sensor mounting socket.
2. Place the sensor mounting union into the sensor mounting seat and tighten it to the proper torque. (Torque: 20 N•m (15 lbf•ft))
 - Check the base of the sensor mounting seat, and remove any dirt or foreign matter if present.
 - Lift the locknut as far as possible while placing the sensor tip into the seat, then tighten the sensor mounting union.

If the locknut is not lifted properly, the tip of the sensor (the sensing part) may not touch the base of the sensor mounting seat.
3. Tighten the locknut making sure it is firmly secured.



Installing the sensor on non-iTraps

1. Temporarily secure the mounting bracket to the inlet side of the trap.
2. Screw the sensor tip into the threaded portion of the mounting bracket and adjust the installation height.
3. Secure the mounting bracket by tightening the clamp nut on the lower part of the mounting bracket. (Torque: 8 N•m (6 lbf•ft))



Replacing the Battery Pack

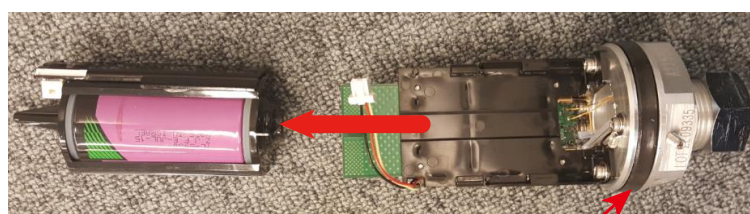
1. Loosen the cap screw with a hex key, then twist and pull the cap upwards.



2. Disconnect the connector.



3. Slide the battery pack upward and pull it out. Make sure the lead does not get caught while removing the battery pack.

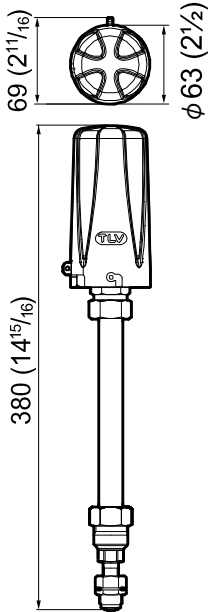


Packing

4. Replace the packing and coat surfaces with grease. Insert a new battery pack from above by sliding it along the grooves. Attach it to the connector. Make sure that both left and right guides on the battery pack are in the grooves. Place the cap back on and tighten the cap screw with a hex key, clockwise as viewed from above.

Refer to the iT5-ZB Battery Replacement Procedure for detailed information including battery disposal methods. Follow local regulations when disposing of used battery packs.

Specifications

Type	iTrapSensor Monitoring System – Sensor	
Model	iT5-ZB-SUN-L-PT-ZZ-S-AN iT5-ZB-SUN-L-PT-ZZ-F-AN iT5-ZB-SUN-H-PT-ZZ-S-AN iT5-ZB-SUN-H-PT-ZZ-F-AN	
Power Source	Battery Pack	
	Lithium thionyl chloride battery Rated Voltage: 3.6 V Rated Capacity: 19 Ah	
Enclosures	IP67	
Maximum Measurement Temperature	iT5-ZB-SUN-L-PT-ZZ-S-AN/iT5-ZB-SUN-L-PT-ZZ-F-AN: 250 °C (482 °F) iT5-ZB-SUN-H-PT-ZZ-S-AN/iT5-ZB-SUN-H-PT-ZZ-F-AN: 400 °C (752 °F)	
Wireless Module	Frequency Band: 2.405 GHz to 2.480 GHz	
Material	Cap: Heat-resistant Resin (Polyetherimide (PEI)) Tip Section: Stainless Steel (SUS304) Base: Aluminum	
Dimensions	 <p>(Unit: mm (in))</p>	
Weight	Approx. 560 g (1.2 lb) (including battery pack)	

Option

Connecting Pipe	iT5-ZB-SUN-L-PT-ZZ-F-AN iT5-ZB-SUN-H-PT-ZZ-F-AN	Flexible Pipe (Stainless Steel)
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TLV EXPRESS LIMITED WARRANTY

Subject to the limitations set forth below, TLV CO., LTD., a Japanese corporation (“**TLV**”), warrants that products which are sold by it, TLV International Inc. (“**TII**”) or one of its group companies excluding TLV Corporation (a corporation of the United States of America), (hereinafter the “**Products**”) are designed and manufactured by TLV, conform to the specifications published by TLV for the corresponding part numbers (the “**Specifications**”) and are free from defective workmanship and materials. The party from whom the Products were purchased shall be known hereinafter as the “**Seller**”. With regard to products or components manufactured by unrelated third parties (the “**Components**”), TLV provides no warranty other than the warranty from the third party manufacturer(s), if any.

Exceptions to Warranty

This warranty does not cover defects or failures caused by:

1. improper shipping, installation, use, handling, etc., by persons other than TLV, TII or TLV group company personnel, or service representatives authorized by TLV; or
2. dirt, scale or rust, etc.; or
3. improper disassembly and reassembly, or inadequate inspection and maintenance by persons other than TLV or TLV group company personnel, or service representatives authorized by TLV; or
4. disasters or forces of nature or Acts of God; or
5. abuse, abnormal use, accidents or any other cause beyond the control of TLV, TII or TLV group companies; or
6. improper storage, maintenance or repair; or
7. operation of the Products not in accordance with instructions issued with the Products or with accepted industry practices; or
8. use for a purpose or in a manner for which the Products were not intended; or
9. use of the Products in a manner inconsistent with the Specifications; or
10. use of the Products with Hazardous Fluids (fluids other than steam, air, water, nitrogen, carbon dioxide and inert gases (helium, neon, argon, krypton, xenon and radon)); or
11. failure to follow the instructions contained in the TLV Instruction Manual for the Product.

Duration of Warranty

This warranty is effective for a period of one (1) year after delivery of Products to the first end user. Notwithstanding the foregoing, asserting a claim under this warranty must be brought within three (3) years after the date of delivery to the initial buyer if not sold initially to the first end user.

ANY IMPLIED WARRANTIES NOT NEGATED HEREBY WHICH MAY ARISE BY OPERATION OF LAW, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ANY EXPRESS WARRANTIES NOT NEGATED HEREBY, ARE GIVEN SOLELY TO THE INITIAL BUYER AND ARE LIMITED IN DURATION TO ONE (1) YEAR FROM THE DATE OF SHIPMENT BY THE SELLER.

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Exclusion of Other Warranties

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY DISCLAIMED.

Severability

Any provision of this warranty which is invalid, prohibited or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such invalidity, prohibition or unenforceability without invalidating the remaining provisions hereof, and any such invalidity, prohibition or unenforceability in any such jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction.

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