



Manufacturer

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Kakogawa, Japan

is approved by LRQA Ltd. to ISO 9001/14001



# Instruction Manual

iTrapSensor Monitoring System  
Repeater

**iT5-ZB-RUN-Z-PT-ZZ-Z-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

	<b>Indicates a DANGER, WARNING or CAUTION item.</b>
	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

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




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 <b>DANGER</b>	<p><b>When installing or working at high elevations, take measures to ensure against dropping the product or parts.</b> Failure to take such measures could result in personal injury if persons passing below are struck by a falling object, or other accidents.</p>
	<p><b>Check to make sure that no wireless instrumentation other than the product is being used.</b> Failure to observe this precaution could lead to interference of important transmissions or accidents.</p>
	<p><b>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.</b></p>
 <b>WARNING</b>	<p><b>As this is an industrial product, it is not to be used on consumer applications nor in residential areas.</b></p>
	<p><b>Do not substitute components, as this may impair the intrinsic safety of the product.</b></p>
	<p><b>Do not install this product on objects exceeding maximum allowable operating temperature.</b> Overheating could result in damage to internal parts, excessive heat generation, rupture or ignition.</p>
	<p><b>Do not subject the unit to strong shocks or throw it against anything.</b> Failure to observe this precaution could result in damage to internal parts, excessive heat generation, rupture, ignition or personal injury.</p>
	<p><b>Do not place device in microwave ovens or high-pressure vessels, or in the vicinity of electromagnetic devices.</b> Such handling could result in excessive heat generation, smoke, damage to circuitry, battery fluid leakage, rupture or ignition.</p>
 <b>CAUTION</b>	<p><b>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.</b> Failure to observe this precaution could result in fire or malfunction.</p>
	<p><b>Do not let the unit become immersed in water.</b> 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.</p>

### Battery Pack Precautions

 <b>DANGER</b>	<p><b>Do not apply heat to the battery pack or throw it into a fire.</b> Failure to observe this precaution could result in leakage of the battery fluid, excessive heat generation, rupture or ignition.</p>
	<p><b>Do not disassemble the battery pack.</b> Failure to observe this precaution could result in leakage of the battery fluid, excessive heat generation, rupture or ignition.</p>
	<p><b>Do not cause the battery pack to become wet by immersing in water, salt water or liquid chemicals.</b> Failure to observe this precaution could result in leakage of the battery fluid, excessive heat generation, rupture or ignition.</p>

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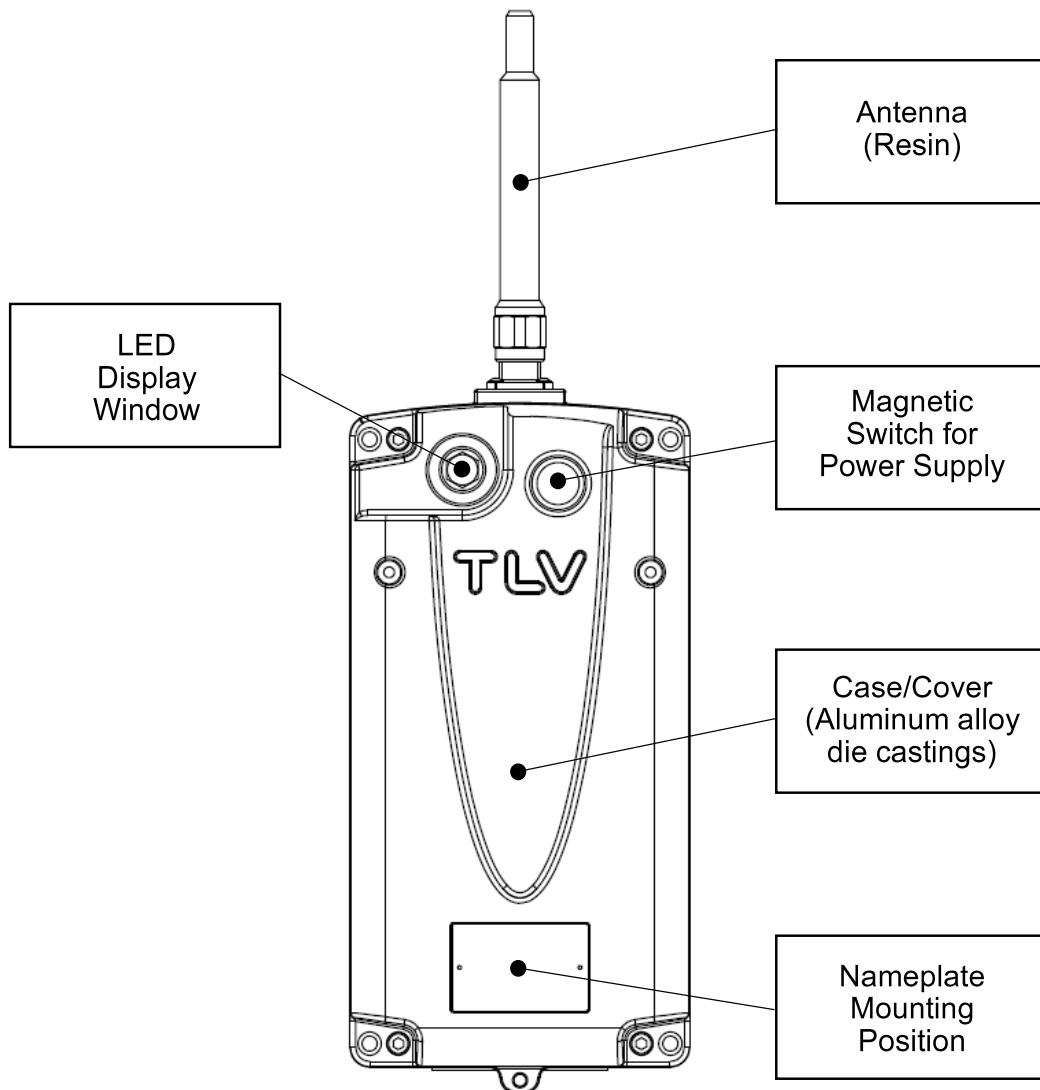
 <b>DANGER</b>	<p><b>Do not leave unit where it will be exposed to direct sunlight or in areas that will become very hot, such as interiors of cars, near heating equipment, etc.</b></p> <p>Failure to observe this precaution could result in leakage of the battery fluid, excessive heat generation, rupture or ignition.</p> <p><b>If fluid leaks from the battery pack and gets in the eyes, flush it out. There is a danger of loss of vision.</b></p> <p>Do not rub the eyes, and after immediately flushing out thoroughly with clean water, see a doctor.</p>
 <b>WARNING</b>	<p><b>Cease use of the battery pack immediately if the unit exhibits abnormal operation.</b></p> <p>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><b>If battery fluid leaks and comes into contact with the body, rinse immediately.</b></p> <p>There is danger of resultant damage to the skin. Immediately rinse any battery fluid off with clean water.</p>
 <b>CAUTION</b>	<p><b>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.</b></p> <p>Failure to observe this precaution could result in fluid leakage, rust, deterioration in performance or a reduction in service life.</p> <p><b>Do not dispose of the battery pack with normal garbage.</b></p> <p>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。

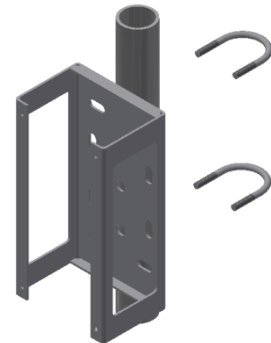
## Part Names



## Installation

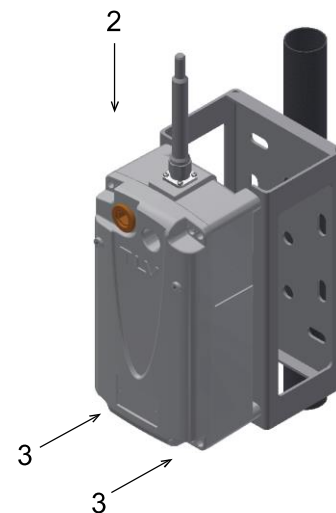
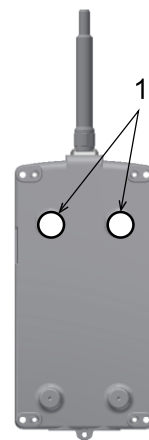
### Repeater Installation

1. Fix the repeater mount to the structure with U bolts.  
The repeater mount can be installed on either vertical / horizontal structures.



2. Fix the repeater to the repeater mount.
  - 1) Screw two bolts with spacers to the top of the rear side of the repeater.
  - 2) Insert the repeater into the repeater mount using the two bolts.
  - 3) Fix the repeater to the repeater mount by the two bolts.  
Tighten the two bolts from the bottom of the front side of the repeater.

NOTE: Use bolts and spacers supplied by TLV.



## Replacing the Battery Pack

1. Loosen four screws on the repeater to remove the cover.

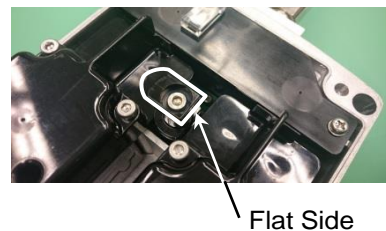
Hexagon socket head cap screws



2. The repeater is equipped with two battery packs, however they should be replaced one by one. First remove the screws from each corner of the battery pack to be replaced.



3. Twist the knob by hand, so that the flat side of the knob faces the battery pack to be replaced.



4. Pull the battery pack out from the body.

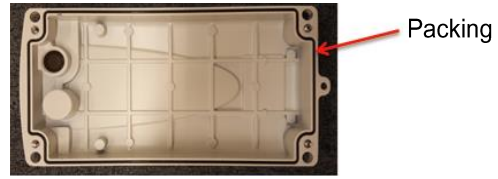


5. Insert a new battery pack and mount it by following the removal procedure in reverse.
  - a) Insert the battery pack and press until a click is felt.
  - b) Twist the knob back to the original position so that the flat side faces the opposite direction from the antenna.
  - c) Secure the battery pack with four screws.
6. Remove four screws from the other battery pack. Twist the knob by hand so the flat side of the knob faces the battery pack to be replaced. Perform steps 4 and 5.





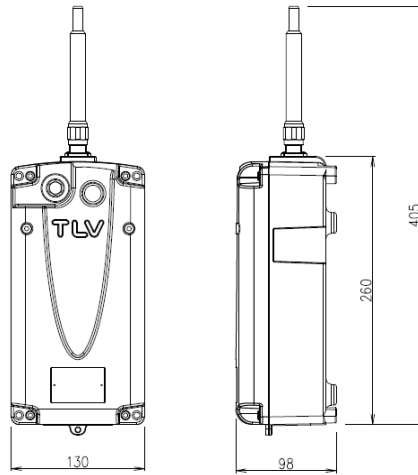
7. Replace the packing on the cover and coat surfaces with grease.



8. Make sure that both of the battery packs are securely mounted, then place the cover back on the repeater and secure it with four screws. (Torque: 1.5 N·m (1.1 lbf·ft))

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	<b>iTrapSensor Monitoring System – Repeater</b>
Model	<b>iT5-ZB-RUN-Z-PT-ZZ-Z-AN</b>
Power Source	Battery Pack
	Lithium thionyl chloride battery Rated Voltage: 3.6 V Rated Capacity: 76 Ah × 2
Enclosures	IP67
Ambient Temperature Range	-20 to 80 °C (-4 to 176 °F)
Wireless Module	Frequency Band: 2.405 GHz to 2.480 GHz
Material	Case/Cover: Aluminum alloy die castings (ADC3, SG100A) Antenna: Resin
Dimensions	 <p>(Unit: mm)</p>
Weight	Approx. 3 kg (6.6 lb) (including battery packs)

## 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.

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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.

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