iTrapSensor®
MONITORING SENSOR
MODEL iT5-ZB-SUN

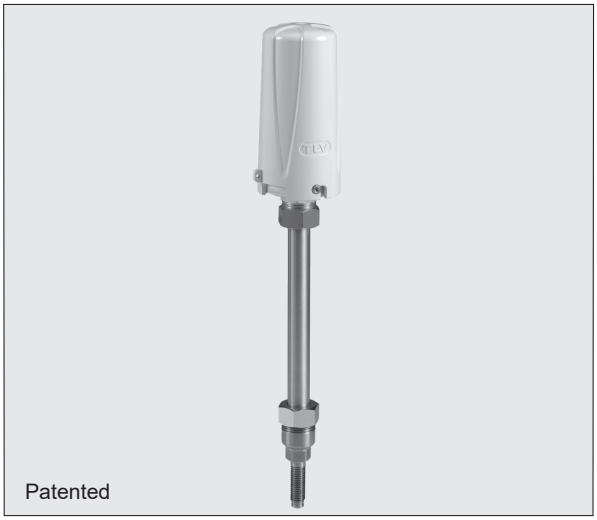
WIRELESS SURFACE TEMPERATURE AND ULTRASONIC MEASUREMENT VIA TLV'S IEEE 802.15.4-BASED PROTOCOL

Features

Sensor with wireless communication for monitoring a large quantity of crucial steam-using equipment such as heat exchangers, presses and turbines, equipment in difficult to reach locations, or steam traps*.

1. Suitable for monitoring of many devices: up to 8000 sensors can be connected to one data station.
2. Measurement cycles configurable between 5 minutes and 24 hours.
3. Low power consuming device powered by a long-life battery pack.
4. Surface temperature measurement up to 400 °C.
5. Intrinsically safe construction for use in hazardous and non-hazardous locations.

* Steam trap diagnostic software required separately. Contact TLV for details.



Specifications

Model			iT5-ZB-SUN	
Type			Low Temperature	High Temperature
Maximum Measurement Temperature (°C)			250	400
Measurable Temperature Range (°C)			-40 to +250	-40 to +400
Minimum Ambient Temperature (°C)			-40	
Maximum Ambient Temperature (°C)	Maximum Measurement Temperature	-40 to < 135	80	80
		135 to < 200	75	75
		200 to < 250	67	—
		200 to < 300	—	67
		300 to < 400	—	62
Wireless Frequency Band			2.4 GHz	
Maximum No. of Connections			100 repeaters and 8000 sensors[1] per data station	
Maximum No. of Hops			20 (from sensor to data station)	
Measurement Cycle[2]			5 minutes to 24 hours	
Power Source	Type		Non-rechargeable lithium-thionyl chloride battery pack[3]	
	Rated Voltage		3.6 V	
	Rated Capacity		19 Ah	
Battery Life[4]			10 years for regular operation (30 min measurement cycle), or 5 years (15 min measurement cycle)	
Intrinsic Safety Specifications			ATEX: ⟨Ex⟩ II 1G Ex ia IIC T4 Ga IECEx: Ex ia IIC T4 Ga UKEX: Ex ia IIC T4 Ga	UL/cUL: Class I, Division 1, Groups ABCD Class I, Zone 0, AEx ia IIC T4, Ex ia IIC T4
Connecting Pipe			Straight Pipe (Option: intrinsically safe flexible pipe[5])	
Wireless Module	Regulatory Compliance		FCC, IC, CE compliant	
	Frequency Bandwidth		2.405 to 2.480 GHz	
	Transmitter Power Output		3.5 mW/MHz	
	Communication Distance[6]		Approx. 200 m (with a clear line of sight)	
Protection Class			IP67 (evaluation for intrinsic safety is performed at IP20)	
Material	Base		Aluminium	
	Cap		Polyetherimide (PEI)	
	Sensor Tip		Stainless Steel (SUS304)	
Option			Sensor mounting method: Clamp or band type	

[1] When measurement and communication cycles are set to 1 hour. Up to 250 sensors can be connected to 1 repeater.
[2] Measurement cycle can be configured per sensor. Measurement cycle will be a multiple of the communication cycle.
[3] Confirm location is non-hazardous before performing battery replacement.
[4] Battery life is given for an ambient temperature of 25 °C and may vary depending on environmental conditions such as network configuration, transmission status and ambient temperature. [5] Product failure due to the flexible pipe (vibrations etc.) is not covered by the warranty.
[6] Wireless module power output is set to conform to the applicable regulations per country. As a result, the communication distance depends on environmental conditions and installation location, and may be shorter than expected. Contact TLV for further information.

⚠ CAUTION To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.

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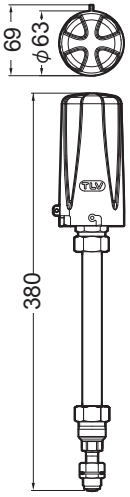
Dimensions

● **iT5-ZB-SUN**

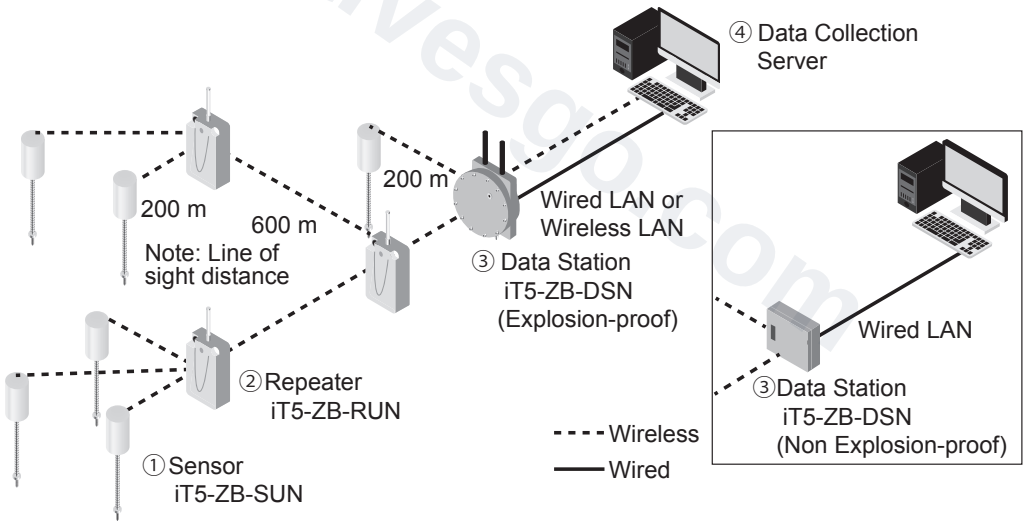


Units: mm
Weight: 560 g
(incl. battery pack)

Option

Flexible Pipe

System Configuration Example



No.	Model	Function
①	Sensor: iT5-ZB-SUN	Measurement of ultrasound and surface temperature, wireless transmission of information
②	Repeater: iT5-ZB-RUN	Wireless relay of information
③	Data Station: iT5-ZB-DSN	Relay of information via intranet
④	Data Collection Server	Importing collected data

Refer to individual specification data sheets (SDS) for full details.

Manufacturer
TLV CO., LTD.
Kakogawa, Japan
is approved by LRQA Ltd. to ISO 9001/14001

ISO 9001
ISO 14001

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