

TLV[®]

iTrapSensor[®]

iT5 Series

- Transmits surface temperature and ultrasonic, or temperature and pressure measurement information by wireless or wired communication
- Judges steam trap operation
(Except temperature/pressure sensor)
- Intrinsically safe (UL/cUL, ATEX, IECEx)



Surface Temperature/
Ultrasound Sensor

Temperature/
Pressure Sensor



Surface
Temperature



Ultrasound



Temperature



Pressure

Intrinsically safe
(UL/cUL, ATEX, IECEx)

iT5 Series

iTrapSensor®

Performs surface temperature and ultrasound, or temperature and pressure measurement of steam traps simultaneously and transmits the measured data to monitoring systems, etc.

Continuous monitoring of the large number of valves, piping and equipment installed around plants enables the detection of abnormalities at an early stage, improving the reliability of the facility. In addition, it can also reduce the burden of patrol inspections for equipment installed in elevated, difficult-to-reach locations, in pits or high-temperature environments.

Battery

Approx. 10-year battery life enables long sensor service life

(Varies depending on operating conditions)

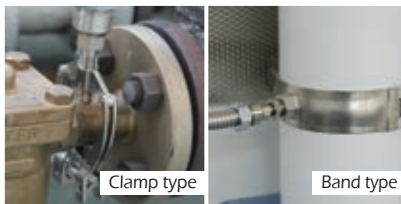
Wireless system sensors and repeaters utilize lithium-thionyl chloride battery packs. TLV's original power-saving technology maximizes product service life.

Installation

Simple sensor mounting or removal with dedicated mounting brackets

(For surface temperature/ultrasound sensor)

Easy installation. No additional machining is required and the bracket fits a wide variety of equipment and piping.



Sensor mounting bracket (option)

Communication standards

Surface Temperature/Ultrasound Sensor

- TLV original wireless communication protocol (IEEE802.15.4-based)
- ISA100.11a (Industrial wireless communication standard)
- FOUNDATION™ Fieldbus (Industrial wired communication standard)

Temperature/Pressure Sensor

- ISA100.11a (Industrial wireless communication standard)

Data

Collected and stored data can be viewed remotely

Data measured at the site is collected and stored on the server and can be viewed remotely. The server can also be connected to commercially available network equipment and existing systems.



Screen image (temperature and pressure measurement)



Data station



Repeater

Full range of peripheral products

Repeaters (intrinsically safe, explosion-proof), data station (explosion-proof structure) and other devices required to configure the monitoring system are also available. Specifications must be discussed in reference to customer facilities. Contact TLV for details.



Surface Temperature/Ultrasound Sensor

Measurement of surface temperature up to 752 °F and ultrasound can be performed simultaneously.

Features

System configuration example Wireless — Wired

Wireless communication

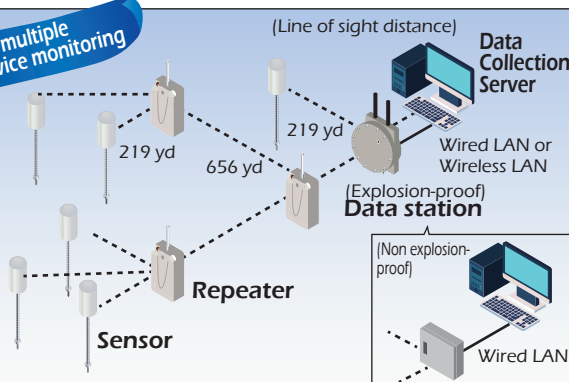


TLV original wireless communication protocol (IEEE802.15.4-based)

Model iT5-ZB Series

- Wireless frequency band: 2.4 GHz
- Measurement cycle: Configurable between 5 min and 24 h
- Maximum no. of connections: 8000 sensors per data station
- Maximum no. of hops: 20 (from sensor to data station)
- Sensor power source: Dedicated battery pack

For multiple device monitoring



Wired communication

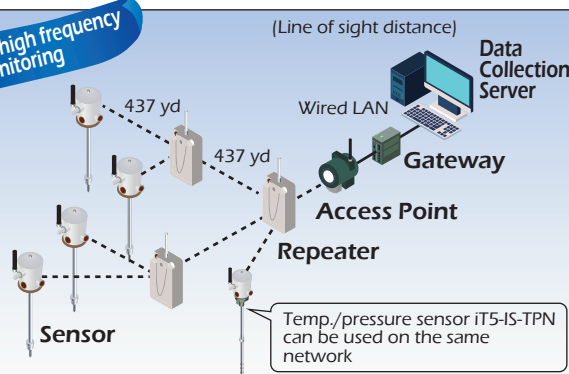


ISA100 Industrial wireless communication standard

Model iT5-IS Series

- Wireless frequency band: 2.4 GHz
- Measurement cycle: Configurable between 1 s and 1 h
- Maximum no. of connections: 500 devices per gateway
When using TLV-recommended system (Yokogawa Electric Corporation: YFGW410)
- Maximum no. of hops: 4 (from access point to sensor)
- Sensor power source: Dedicated battery pack

For high frequency monitoring



Temperature/Pressure Sensor

Temperatures up to 752 °F and pressures up to 725 psig can be measured simultaneously.

Features

System configuration example Wireless — Wired

Wireless communication

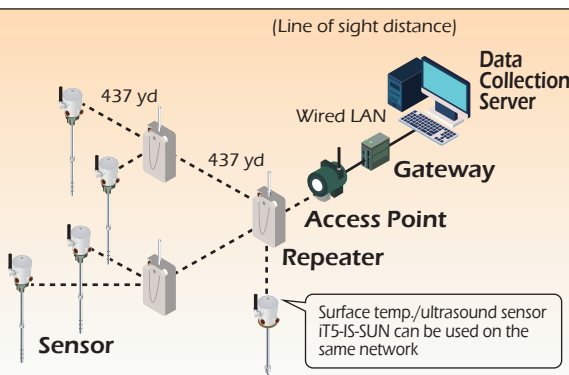


ISA100 Industrial wireless communication standard

Model iT5-IS-TP Series

- Wireless frequency band: 2.4 GHz
- Measurement cycle: Configurable between 1 s and 1 h
- Maximum no. of connections: 500 devices per gateway
When using TLV-recommended system (Yokogawa Electric Corporation: YFGW410)
- Maximum no. of hops: 4 (from access point to sensor)
- Sensor power source: Dedicated battery pack

For reliable data communication



Main Specifications

		iT5-ZB Series	iT5-IS Series	iT5-IS-TP Series		iT5-FF Series	
Sensor	Model	iT5-ZB-SUN	iT5-IS-SUN	iT5-IS-TPN		iT5-FF-SUN	
				Without thermowell	With thermowell		
	Measurable properties	Surface temperature, ultrasound			Temperature, pressure		Surface temperature, ultrasound
	Measurement cycle	Configurable between 5 min and 24 h	Configurable between 1 s and 1 h			Configurable between 1 s and 15 s	
	Communication standards	Wireless communication			Wired communication		
		TLV original wireless communication protocol	ISA100.11a			FOUNDATION™ Fieldbus	
	Location for use	Hazardous and non-hazardous locations					Hazardous and non-hazardous locations
	Explosion-proof specifications	Intrinsically safe (UL/cUL, ATEX, IECEx) Temp. class: T4					Intrinsically safe (UL/cUL, ATEX, IECEx) Temp. class: T4 (FISCO/ENTITY models)
	Communication distance	Approx. 219 yd (with a clear line of sight)	Approx. 437 yd (with a clear line of sight)				—
	Wireless module	Frequency bandwidth: 2.405 to 2.480 GHz					—
Power source	Non-rechargeable lithium-thionyl chloride battery pack					Supplied by FOUNDATION™ Fieldbus	
Battery life ¹⁾	Approx. 10 years with 30 min measurement cycle	Approx. 10 years with 60 s measurement cycle				—	
Max. ambient temp. (°F) ²⁾	176, 167, 152, 143			176, 167, 154, 147		176, 167, 152, 143	
Measurable temp. range (°F)	-40 to 482 or -40 to 752 (surface temp.)			-40 to 752 (internal temp.)		-40 to 482 or -40 to 752 (surface temp.)	
Measurable pressure range	—			0 to 290 psig, 0 to 725 psig		—	
Protection class	IP67 ³⁾		IP66 and IP67 ³⁾		IP66 and IP67 ⁴⁾		
Dimensions (in)	W 2 1⁄2 x H 14 15⁄16 x D 2 11⁄16		W 5 15⁄16 x H 17 11⁄16 x D 3 11⁄16		W 5 15⁄16 x H 28 1⁄8 x D 3 11⁄16		
Weight (lb)	Approx. 1.2 ⁴⁾		Approx. 2.4 ⁴⁾		Approx. 13.2 ⁴⁾		

¹⁾ Varies depending on operating conditions

²⁾ Varies depending on the temperature of the measured object

³⁾ evaluation for intrinsic safety is performed at IP20

⁴⁾ Including battery pack

Contact TLV for information regarding access point, gateway, repeater Linking Device and Power Supply or terminal.

Applications

Continuous monitoring

■ Important steam-using equipment for production

• Heat exchangers • Presses • Turbines, etc.

■ Equipment installed in difficult-to-reach locations

• Elevated locations • In pits • High temperature environments, etc.

■ Steam traps, etc.*

* Steam trap diagnostic software required separately. Contact TLV for details. Temperature/pressure sensor not included.



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.

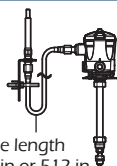
For more information, visit our website at <https://www.tlv.com>.

Options

Antenna extension

Communication stability is secured by installing antenna remotely.

(iT5-IS Series and iT5-IS-TP Series)



Cable length
118 in or 512 in

All brands, company names and product names are registered trademarks or trademarks of their respective owners.

TLV CORPORATION

13901 South Lakes Drive, Charlotte, NC 28273-6790

Tel: 704-597-9070 Fax: 704-583-1610

E-mail: tlv@tlvengineering.com <https://www.tlv.com>

For Technical Service 1-800 "TLV TRAP"



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

ISO 9001
ISO 14001

