

TLV®

iTrapSensor®

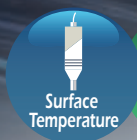
iT5 Series

- 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 (ATEX, IECEX, UL/cUL)



Surface Temperature/
Ultrasound Sensor

Temperature/
Pressure Sensor



Surface
Temperature



Ultrasound



Temperature



Pressure

Intrinsically safe
(ATEX, IECEx, UL/cUL)

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)

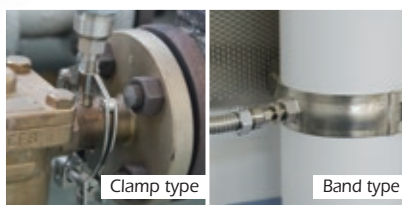
Wireless system sensors and repeaters utilize lithium-thionyl chloride battery packs. TLV's original power-saving technology maximizes product service life.

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.

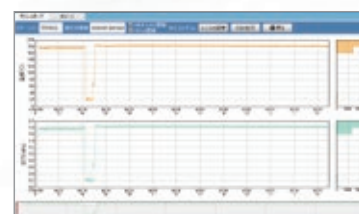


Sensor mounting bracket (option)

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.



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)



Surface Temperature/Ultrasound Sensor

Measurement of surface temperature up to 400 °C and ultrasound can be performed simultaneously.

Features

System configuration example

Wireless communication

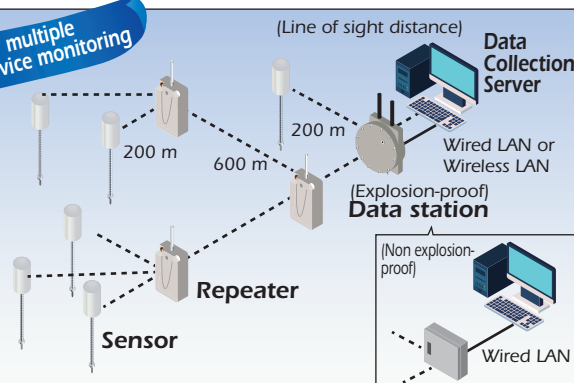


TLV original wireless communication protocol (IEEE802.15.4-based)

Model iT5-ZB Series

- Wireless frequency band: 2.4 GHz
- Measurement cycle: Configurable between 5 m 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

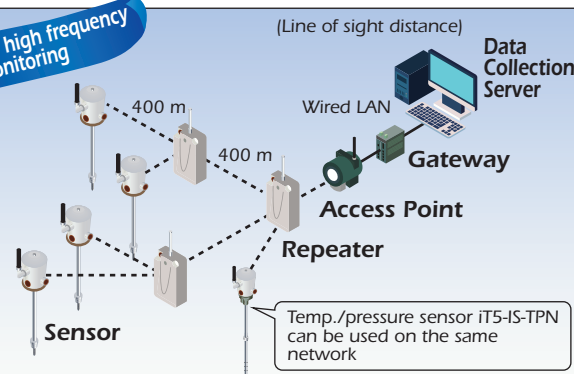


ISA 100 WIRELESS ISA100.11a Industrial wireless communication standard

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



Wireless communication

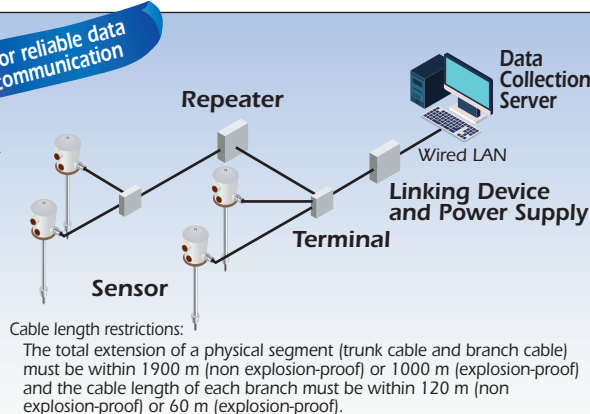


FOUNDATION™ Fieldbus FOUNDATION™ Fieldbus Industrial wired communication standard

Model iT5-FF Series

- Measurement cycle: Configurable between 1 s and 15 s
- Maximum no. of connections: 32 devices
When using TLV-recommended linking device (Softing: FG-200 HSE/FF Modbus)
- Segment extension: Up to 4 repeaters can be arranged in series per segment
- Power source: Supplied by FOUNDATION™ Fieldbus

For reliable data communication



Temperature/Pressure Sensor

Temperatures up to 400 °C and pressures up to 5 MPaG can be measured simultaneously.

Features

System configuration example

Wireless communication

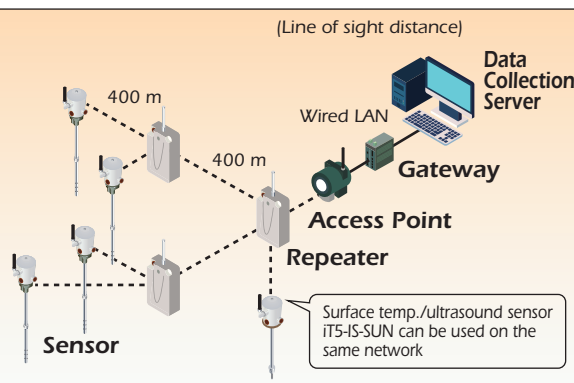


ISA 100 WIRELESS ISA100.11a Industrial wireless communication standard

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 high frequency monitoring



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 m 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 (ATEX, IECEx, UL/cUL) Temp. class: T4					Intrinsically safe (ATEX, IECEx, UL/cUL) Temp. class: T4 (FISCO/ENTITY models)
	Communication distance	Approx. 200 m (with a clear line of sight)	Approx. 400 m (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 m measurement cycle	Approx. 10 years with 60 s measurement cycle				—	
Max. ambient temp. [°C] ²⁾	80, 75, 67, 62			80, 75, 68, 64		80, 75, 67, 62	
Measurable temp. range [°C]	-40 to 250 or -40 to 400 (surface temp.)			-40 to 400 (internal temp.)		-40 to 250 or -40 to 400 (surface temp.)	
Measurable pressure range	—			0 to 2, 0 to 5 MPaG		—	
Protection class	IP67 ³⁾		IP66 and IP67 ³⁾		IP67 ³⁾	IP66 and IP67 ⁴⁾	
Dimensions (mm)	W 63 x H 380 x D 69		W 151 x H 450 x D 94		W 151 x H 663 x D 94 W 151 x H 714 x D 94	W 118 x H 390 x D 94	
Weight	Approx. 560 g ⁴⁾		Approx. 1.1 kg ⁴⁾		Approx. 1.8 kg ⁴⁾ Approx. 6.0 kg ⁴⁾	Approx. 900 g	

Repeater	Model	iT5-ZB-RUN	iT5-IS-RUN
	Communication standards	TLV original wireless communication protocol	ISA100.11a
	Location for use	Hazardous and non-hazardous locations	
	Explosion-proof specifications	Intrinsically safe (ATEX, IECEx, UL/cUL) Temp. class: T4	
	Communication distance	Approx. 600 m (with a clear line of sight)	Approx. 400 m (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 or external power source 13 V DC / 0.2 A	
	Battery life ¹⁾	Approx. 10 years with 30 m measurement cycle	Approx. 10 years with 60 s measurement cycle
	Max. ambient temp. [°C]	80	
	Protection class	IP66 and IP67 ³⁾	
Data Station	Dimensions (mm)	W 130 x H 405 x D 98	
	Weight	Approx. 3 kg 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.

Data Station	Model	iT5-ZB-DSN
	Communication standards	TLV original wireless communication protocol
	Location for use	Hazardous and non-hazardous locations
	Explosion-proof specifications	Explosion-proof (ATEX, IECEx, UL/cUL) Temp. class: T4 Non explosion-proof
	Wireless communication	TLV original wireless communication protocol and LAN
	Communication port	LAN (Ethernet) RJ45 x 1 (100BASE-TX/10BASE-T)
	Power source	External power source AC (100 to 240 V AC 5 W)
	Max. ambient temp. [°C]	60
	Protection class	IP54 IP40
	Installation location	Indoors/outdoors Indoors
Data Station	Dimensions (mm)	W 330 x H 539 x D 120 W 280 x H 300 x D 160
	Weight	Approx. 16.3 kg Approx. 7 kg

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.

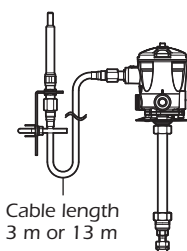
For more information, visit our website at <https://www.tlv.com>.

Options

Antenna extension

Communication stability is secured by installing antenna remotely.

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



Cable length
3 m or 13 m

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is approved by LRQA Ltd. to ISO 9001/14001

ISO 9001
ISO 14001

