



iTrapSensor[®]

MONITORING SENSOR

MODEL iT5-IS-TPN

TEMPERATURE AND PRESSURE MEASUREMENT BASED ON ISA 100.11A


Features

Sensor with wireless communication for high frequency monitoring of crucial steam-using equipment such as heat exchangers, pumps and turbines and equipment with the possibility of air present in steam piping.

1. Simultaneous temperature and pressure measurement.
2. High frequency monitoring: measurement cycles configurable between 1 second and 1 hour.
3. Line-of-sight communication distance of 400 m between sensor and repeater or between repeaters.
4. Powered by a long-life battery pack, replaceable in hazardous locations.
5. Temperature measurement up to 400 °C.
6. Intrinsically safe construction for use in hazardous and non-hazardous locations.
7. Optional extended antenna type for remote antenna mounting.



Specifications

Model			iT5-IS-TPN		
Maximum Measurement Temperature (°C)			400		
Measurable Temperature Range (°C)			-40 to +400		
Measurable Temperature Accuracy (°C)			±1		
Minimum Ambient Temperature (°C)			-40		
Maximum Ambient Temperature (°C)	Maximum Measurement Temperature	-40 to < 125	80		
		125 to < 200	75		
		200 to < 300	68		
		300 to < 400	64		
Measurable Pressure Range			0 to 2 MPaG, 0 to 5 MPaG		
Measurable Pressure Accuracy			±0.5% of full-scale		
Maximum Allowable Pressure			Rated pressure × 2		
Applicable Fluids			Steam, water, air, nitrogen		
Wireless Frequency Band			2.4 GHz		
Maximum No. of Connections			500 devices per gateway ¹⁾		
Maximum No. of Hops			4 (from access point to sensor)		
Measurement Cycle ²⁾			1 second to 1 hour		
Power Source			Non-rechargeable lithium-thionyl chloride battery pack ³⁾ (Rated Voltage: 3.6 V, Rated Capacity: 38 Ah)		
Battery Life ⁴⁾			10 years for regular operation (60 s measurement cycle)		
Intrinsic Safety Specifications			ATEX:  II 1G Ex ia op is IIC T4 Ga UL/cUL: Class I, Division 1, Groups ABCD IECEx: Ex ia op is IIC T4 Ga Class I, Zone 0, AEx ia op is IIC T4, Ex ia op is IIC T4 UKEX: Ex ia op is IIC T4 Ga		
Connection Type			Compression Fitting: Screwed Rc(PT) 15 mm; Thermowell: Flanged 25 mm		
Wireless Module	Communication Protocol		ISA 100.11a, based on IEEE 802.15.4		
	Regulatory Compliance		FCC, IC, CE compliant		
	Frequency Bandwidth		2.405 to 2.480 GHz		
	Transmitter Power Output		7.0 mW/MHz		
	Communication Distance		Approx. 400 m ⁵⁾ (with a clear line of sight)		
Protection Class			IP66 and IP67 (evaluation for intrinsic safety is performed at IP20)		
Material	Body, Cover		Aluminium Alloy Die Castings (ADC3, SG100A)		
	Sensor Tip		Stainless Steel (SUS304)		
	Thermowell		Stainless Steel (A182 F316)		
Options			Extended antenna type: Sensor with 150 mm antenna and 3 m or 13 m cable (intrinsically safe)		

¹⁾ When using TLV-recommended system (Yokogawa Electric Corporation: YFGW410) ²⁾ Measurement cycle can be configured per sensor.

Configurable cycle varies depending on gateway used. ³⁾ Battery pack can be replaced in hazardous locations.

⁴⁾ Battery life is given for an ambient temperature of 25 °C and may vary depending on environmental conditions such as gateway used, transmission status and ambient temperature.

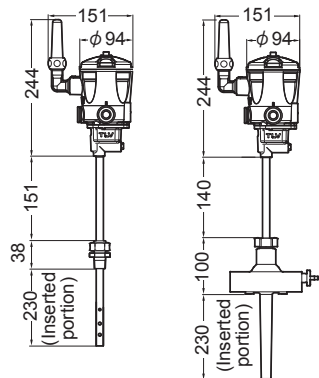
⁵⁾ Depends on environmental conditions and installation location.



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.

Dimensions

• iT5-IS-TPN



Units: mm

iT5-IS-TPN Screwed* (Compression Fitting) (mm)

Size	Weight (kg)
15	2.0

* Rc(PT), other standards available

iT5-IS-TPN Flanged (Thermowell) (mm)

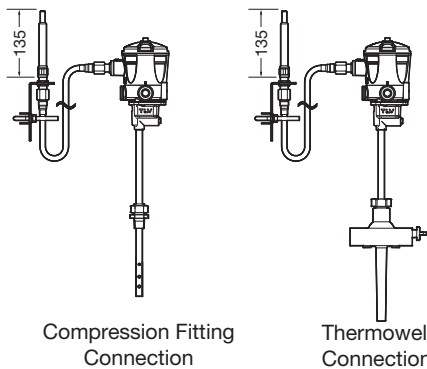
Size	Connect to ASME Class	Weight (kg)
25	300RF 600RF	6.0 [6.2]

Other standards available. Contact TLV for details.

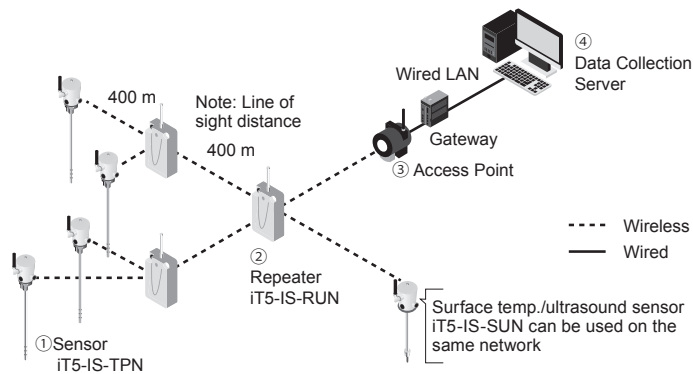
[] 600RF

Options

Antenna Extension



System Configuration Example



No.	Model	Function
①	Sensor: iT5-IS-TPN	Measurement of temperature and pressure, wireless transmission of information
②	Repeater: iT5-IS-RUN	Wireless relay of information
③	Access Point/Gateway	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

