

# TTS3-L



## LoRaWAN® Operated IP68 Low Power Temperature Transmitter for Liquid and Gas Media

- Compatible with all LoRaWAN® frequencies
- Wide range of industrial applications
- High accuracy
- Designed to meet outdoor applications
- Long-term durable performance in harsh environment
- Ultra-low power
- Suitable for liquids and gases compatible with SS

## TECHNICAL SPECIFICATION

### Sensor

• Range (°C)	-50°C to +250°C (or other ranges) -10 ~ +70 (electronic housing)
• Accuracy (°C) IEC 60751	• Class B ( $\pm 0.12\%$ or $\pm 0.3^\circ\text{C}$ at $0^\circ\text{C}$ ) • Class A ( $\pm 0.15^\circ\text{C}$ at $0^\circ\text{C}$ ) • Class 1/3DIN ( $\pm 0.08^\circ\text{C}$ at $0^\circ\text{C}$ ) • Class 1/10DIN ( $\pm 0.03^\circ\text{C}$ at $0^\circ\text{C}$ ) other accuracies available on request
• Sensing Element	Pt100 Pt1000 (or other sensors available on request)
• Long Term Stability (%Span)	$\leq 0.2$ (1 year)

### Power

• Power Supply	Built-in Replaceable Lithium Battery, External Power (option)
• Rated Voltage (V)	3.6
• Battery Lifetime	100,000+ readings and 20,000+ transmission (More than 10 years for most applications)

### Physical

• Materials	Sheath: SS316 (3mm or 6mm OD), Silicone Rubber Cable
• Process connection	G1/4 Male (only for type G)
• Weight (g)	~450
• Protection Rate	IP68, UV Protected (other options available upon request)

### Communication

• LoRaWAN® Version, Class	1.0.2revB, Class A (Class C on request)
• LoRaWAN® Frequency Zone	AS923, EU868, US902-928, AU915-928 (other zones available on request)
• LoRaWAN® Activation Type	OTA (default), ABP
• Sampling Type	Periodic (default), Event triggered
• Sampling Period	Configurable via downlink (default 4 hours)
• Transmission Type	Per sample (default), Event triggered, Conditional
• Parameter Configuration	Over-the-air via LoRaWAN® downlinks Locally via wireless connectivity
• Firmware Update	Locally via Wireless Connectivity, Over The Air



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## NETWORK CONNECTION AND VISUALIZATION

### Network Integration

- Integratable to all main networks (Activity, Alibaba, Cisco, Digita, Everynet, Helium, Kerlink, kpn, Lorient, machine-Q, Objenious, Orange, Orbiwise, Proximus, Senet, Sens, Swisscom, TATA, The Things Network (TTN), TTI and any other network)

### Visualization And Data Management

- 10Sorex white label microservice platform, and Integratable to all main IIoT platforms directly or through the api (AWS, Azure, PTC ThingWorx, Bosch IoT, Cisco Jasper & Kinetic, Sierra Numerex, MathWorks, ThingSpeak, GE Digital Predix, LandisGyr, Siemens MindSphere, Cumulocity, myDevices, Ubidots, TagoIO, ALSO AllThingsTalk, HPE IoT and any other major IoT platform).

### 10Sorex Platform Main Features

- Encrypted ultra-low power communication protocol
- Advanced device inventory
- Integration APIs for enterprise systems
- Multi-tenant role-based access control
- Data export and import
- White-label platform for enterprise runs on private account
- Variable alarm setting for high and low thresholds and multi-channel alerting
- Sampling and transmission interval configuration
- Transmission condition configuration
- Other configurations and customization available on request



Encrypted & ultra-low power



Integratable



Dynamic alerting



Multi-tenant



Scalable


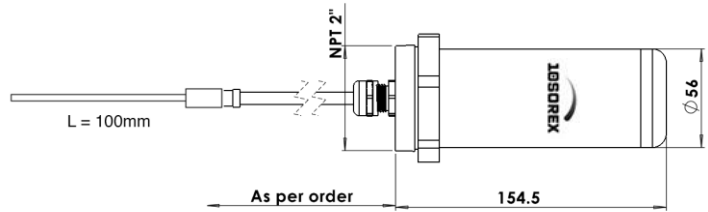

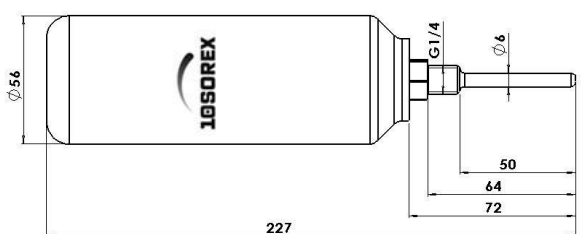


Composable & API first



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## MODEL GUIDE

Model	Option / Schematic
<b>C Model</b> 	 <p>IP68 sensor head and IP68 housing with cable (Length 3m or as per order), Sheath diameter of <math>\phi 6</math> and length of 50mm or as per order</p>
<b>G Model</b> 	 <p>IP68 temperature sensor with Thermowell diameter of <math>\phi 6</math> and length of 50mm mounted on the housing</p>

## INDUSTRIES



Food &  
Beverage



Transport &  
Logistics



Oil & Gas



Marine &  
Oceanography



Mining &  
Construction



Hospitals, Restaurants &  
Smart Buildings



Water &  
Environment



Agriculture &  
Farming



General Industrial  
Applications

## APPLICATIONS

- Food Delivery Systems
- Cold rooms Temperature Monitoring
- Pump Performance Monitoring
- Water Pipeline Temperature Monitoring

- Fridges and Hot Chambers
- Hydraulic and Pneumatic Systems Monitoring
- Water and Liquid Temperature Monitoring
- Chiller and Cooling System Monitoring



# TTS3-L

## ORDERING CODE

TTS3-L									
LoRaWAN Frequency Zone									
AS (AS923)			AUx (AU915-928) (Sub Band x)			EU (EU868)		USx (US902-928) (Sub Band x)	
LoRaWAN Activation									
A (Over The Air Activation - OTAA)					P (Activation By Personalization - ABP)				
Temperature Range									
A: Ambient (-20°C to +85°C)					Other options available on request				
Sensor Type									
C3: φ6x110mm sensor head with 3m cable					G1/2: with 1/2" BSPP male thermowell and process port				
Sensing Element									
H: RTD PT100					K: RTD PT1000 (recommended for extended cable)				
Accuracy Class									
B: Class B					A: Class A				
Other options available on request									
Device Activation									
X: No Switch (always on)									
Antenna Option									
E: External					I: Internal				
Options (On request) <sup>1</sup>									
TTS3-L	AS	A	A	C3	H	B	X	I	

## Sample Product Code:

- TTS3-L-AS-A-A-C3-H-B-X-I**

LoRaWAN® IP68 temperature sensor, frequency of AS923, Over The Air Activated, standard B class RTD PT 100 for ambient temperature range, with 3m cable and cylindrical housing, without on-off switch and equipped with internal antenna.

