TTS3-N

NB IoT – Cat-M1 Operated IP68
Low Power Temperature Transmitter
for Liquid and Gas Media

- Compatible with most standard communication Protocols (UDP, LwM2M, MQTT, NIDD, etc.)
- 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 (sensing element) -10 ~ +70 (electronic housing)
• Accuracy: (°C)	IEC 60751 • Class B (+ /- 0.12% or +/-0.3°C at 0°C) • Class A (+ /- 0.15°C at 0°C), • Class1/3DIN (+ /- 0.08°C at 0°C) • Class1/10DIN (+ /- 0.03°C at 0°C) Other accuracies available on request
• Sensing Element:	Pt100 Pt1000 (or other sensors available on request)
• Long term stability (1 year): (%Span)	≤ 0.2

Power

• Power Supply:	Built-in Replaceable Lithium Battery, External Power (option)
• Rated Voltage (V)	3.6
• Battery Lifetime:	50,000+ readings and 10,000+ transmission (With UDP protocol/ More than 10 years for most of applications)

Physical Specification

• 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

• SIM Card Type	4FF Nano-SIM, from any Network Provider
• Firmware Update:	Over The Air, Locally via wireless connectivity
• Sampling Period:	Configurable via downlink (default 4 hours)
• Power Consumption:	Power Saving: < 5uA, Transmission: < 220mA
• Communication Standards	Cat-NB1 (NB-IoT)

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	Cat-M1 (option of back support by GPRS)
• Communication Bands	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 and B39
• Data Rates:	Cat-M1: 375Kbps (DL)/375Kbps (UL) NB-IoT: 32Kbps (DL)/70Kbps (UL)
• TX Power:	23dBm
• Min Receiver Sensitivity:	Cat-M1: -107dBm NB-IoT: -113dBm
• Antenna:	Internal (Default)/ External (customised options available)
• Optional Features:	• Attach without PDN (Packet Data Network) • Support for IPV6 • SMS communication • Mobility support (Cat-M1 only)

NETWORK CONNECTION AND VISUALIZATION

Network Integration

Pre-configured or configurable to all main narrow band networks (3, A1, AT&T, China Mobile, DU, Etisalat, KPN, M1 Singapore, Optus, Orange, Proximus, Spark, Sprint, Swisscom, Telefonica, Telstra, T-Mobile, Verizon, Vodafone, 1NCE, Emnify 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, AllThingsTalk Maker, HPE IoT and any other major IoT platform).

10Sorex Platform Main Features

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

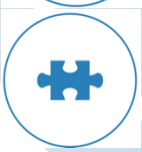
Encrypted & ultra-low power

Integratable

Dynamic alerting

Multi-tenant

Scalable



Composable& API first

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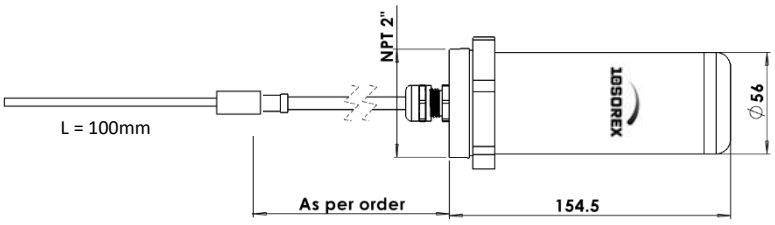
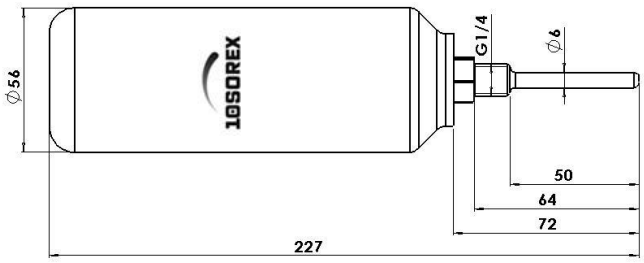
MODEL GUIDE

Model	Options:
C Model:	 IP68 sensor head and IP68 housing with cable (Length 3m or as per order), Sheath diameter of ϕ6 and length of 50mm or as per order
G Model:	 IP68 temperature sensor with Thermowell diameter of ϕ6 and length of 50mm mounted on the housing

INDUSTRIES

- Food & Beverage
- Transport & Logistics
- Oil & Gas
- Marine& Oceanography
- Mining & Construction
- Hospitals, Restaurants &Smart Building
- 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

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ORDERING CODE

TTS3-N								
	Communication Type							
	B: NB-IoT	**C:** Cat-M1						
		Temperature Range						
		A (Ambient: -20°C to +85°C)	**Others** (on request)					
			Sensor Type					
			C3: ϕ6x110mm sensor head with 3m cable	**G1/2**: with 1/2" BSPP male thermowell and process port				
			Others					
				Sensing Element				
				H: RTD PT100	**K:** RTD PT1000 (recommended for extended			
					Accuracy Class			
					B: Class B	**A**: Class A	**Others**	
						Device Activation		
						X: No switch (always on)	**Others**	
							Antenna	
							I: Internal	**E:** External
								Options
								(On request)
TTS3-N	**B**	**A**	**C3**	**H**	**B**	**X**	**I**	

Sample Product Code:

- **TTS3-N-B-A-C3-H-B-X-I**
  NB IoT IP68 temperature sensor, standard B-class RTD PT100 for ambient temperature range, with 3m cable, without on/off switch and with internal antenna.

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