



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:	-50°C to +250°C (sensing element) -10 ~ +70 (electronic housing)	°C
• Accuracy:	IEC 60751 <ul style="list-style-type: none"> • 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 	°C
• Sensing Element:	Pt100 Pt1000 (or other sensors available on request)	
• Long term stability (1 year):	≤ 0.2	%Span

Power

• Power Supply:	Built-in Replaceable Lithium Battery, External Power (option)	
• Rated Voltage	3.6	V
• Battery Lifetime:	Typ. 50,000+ readings / 10,000+ transmission (connected to ellenex platform and standard network quality)	

Physical Specification

• Materials:	Sheath: SS316 (3mm or 6mm OD), Silicone Rubber Cable	
• Process connection:	G1/4 Male (only for type G)	
• Weight:	~450	g
• 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) Cat-M1 (option of back support by GPRS)

TTS3-N Spec-sheet



• 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:	<ul style="list-style-type: none">• Attach without PDN (Packet Data Network)• Support for IPV6• SMS communication• Mobility support (Cat-M1 only)

NETWORK CONNECTION AND VISUALISATION

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

Ellenex 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, HPE IoT and any other major IoT platform).

Ellenex 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




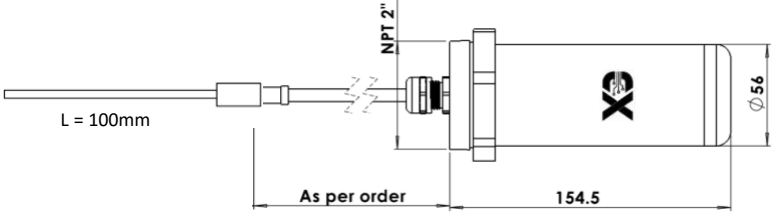

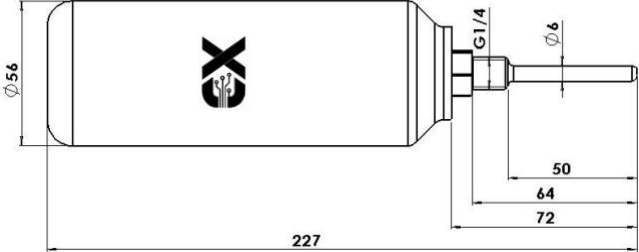
Scalable



Composable & API first

TTS3-N Spec-sheet

MODEL GUIDE

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

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

TTS3-N Spec-sheet



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: $\phi 6 \times 110$ mm sensor head with 3m cable					G1/2: with 1/2" BSP 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.

