



### NB IoT – Cat-M1 Operated Low Power Temperature Transmitter With Built-in GPS 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:	<ul> <li>IEC 60751</li> <li>Class B (+ /- 0.12% or +/-0.3°C at 0°C)</li> <li>Class A (+ /- 0.15°C at 0°C),</li> <li>Class1/3DIN (+ /- 0.08°C at 0°C)</li> <li>Class1/10DIN (+ /- 0.03°C at 0°C)</li> <li>Other accuracies available on request</li> </ul>	°C		
Sensing Element:	Pt100 Pt1000 (or other sensors available on request)			
<ul><li>Long term stability (1 year):</li></ul>	≤ 0.2	%Span		
Power				
Power Supply:	Built-in Replaceable Lithium Battery, Exteri	nal Power (option)		
<ul> <li>Rated Voltage</li> </ul>	3.6	V		
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			
<ul><li>Process connection:</li></ul>	G1/4 Male (only for type G)			
<ul><li>Weight:</li></ul>	~450	g		
Protection rate:	IP66 /IP68, UV protected - (other options available upon request)			
Geo-location/ GNSS Performance	(autonomous at open sky)			
<ul><li>Features</li></ul>	GPS, GLONASS, BeiDou/ Compass, Galile	eo, QZSS		
Sensitivity:	<ul><li>Cold start: -146</li><li>Reacquisition: -157</li><li>Tracking: -157</li></ul>	dBm		
<ul> <li>Time to First Fix (TTFF):</li> </ul>	<ul><li>Cold start at open sky: 31</li><li>Warm start: 21</li><li>Hot start: 2.7</li></ul>	<ul><li>Cold start at open sky: 31 s</li><li>Warm start: 21</li></ul>		
<ul> <li>GNSS Accuracy:</li> </ul>	< 5 (typ.)	m		



_						
$\mathbf{c}$	m	mi	IID	00	tio	10

<ul> <li>SIM Card Type</li> </ul>	4FF Nano-SIM, from any Network Provider		
<ul><li>Firmware Update:</li></ul>	Over The Air, Locally via wireless connectivity		
<ul> <li>Sampling Period:</li> </ul>	Configurable via downlink (default 4 hours)		
<ul> <li>Power Consumption:</li> </ul>	Power Saving: < 5uA, Transmission: < 220mA		
<ul> <li>Communication Standards</li> </ul>	Cat-NB1 (NB-IoT) Cat-M1 (option of back support by GPRS)		
<ul> <li>Communication Bands</li> </ul>	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 and B39		
<ul><li>Data Rates:</li></ul>	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> <li>Attach without PDN (Packet Data Network)</li> <li>Support for IPV6</li> <li>SMS communication</li> <li>Mobility support (Cat-M1 only)</li> </ul>		

### **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)

#### **Visualisation 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, TagolO, AllThingsTalk Maker, 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
- 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 customisation available on request



Encrypted & ultra-low power



Integratable



Dynamic alerting



Multi-tenant



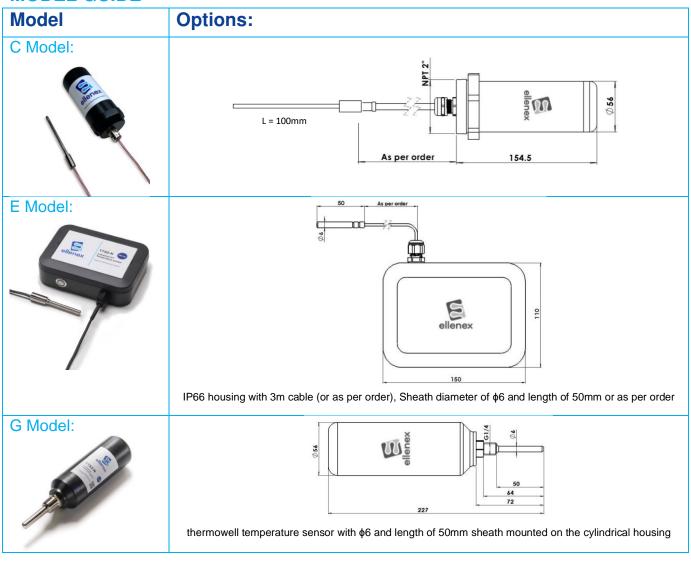
Scalable



Composable & API first



### **MODEL GUIDE**



### **INDUSTRIES**



Food & Beverage



Marine& Oceanography



Water & Environment



Transport & Logistics



Mining & Construction



Agriculture & Farming



Oil & Gas



Hospitals, Restaurants &Smart Building



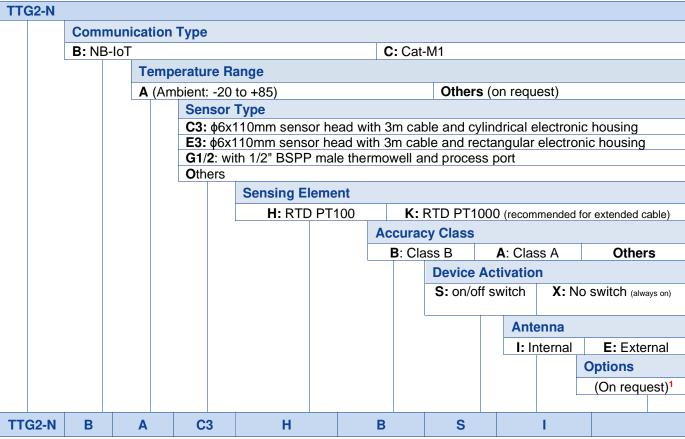
General Industrial Applications



#### **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

### **ORDERING CODE**



#### **Sample Product Code:**

• TTG2-N-B-A-C3-H-B-S-I

NB IoT temperature sensor, standard B-class RTD PT100 for ambient temperature range, with 3m cable and cylindrical housing, with on/off switch and with internal antenna and built-in GPS.

### 1) Product Options:

- EP: sensor with external power supply connector for 12V supply (only for E type enclosure, adaptor is not included)
- EPB: connector for 12V supply with internal battery backup (only for E type enclosure)
- HG: high-gain external antenna
- **WF**: Active WiFi module on device for communication/ firmware update through Mobile phone NFC module (only for E type enclosure)
- HCB: high-capacity battery (only for E type enclosure)

