RS1-N Spec-sheet

NB-IoT **LTE-M**

Single- Channel NB IoT – Cat-M1 Low Power Transmission Interface for Industrial Applications

- Compatible with most standard communication Protocols (UDP, LwM2M, MQTT, NIDD, etc.)
- Wide range of industrial applications
- Designed to meet outdoor applications
- Long-term durable performance in harsh environment
- Ultra-low power

TECHNICAL SPECIFICATION

Sensor Interface

•	Interface options: (RS1-N covers a wide range of industrial sensors interfaces. Unique design of the interface gives ultimate flexibility of choosing the right sensor interfaces)	• **Analogue:** mV / mV/V / 4-20mA/ 0-5V / 0-10V • **Digital:** I2C / RS232/ RS485/ Modbus/ HART/ SDI12/ TTL UART • **Temperature:** Pt100, 2 or 3 wire; Pt1000, 2 or 3 wire • **Pulse:** Pulse (Reed Switch) (or other customised options on request)
•	Electric Connection:	1m cable, pin connection (or other options on request)
•	Operating temperature range:	-10 ~ + 70 °C

Power

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

Physical Specification

•	Materials:	ASA or POM
•	Weight:	350 g
•	Protection Rate:	IP66 /IP68, UV Protected -

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)
•	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 VISUALISATION
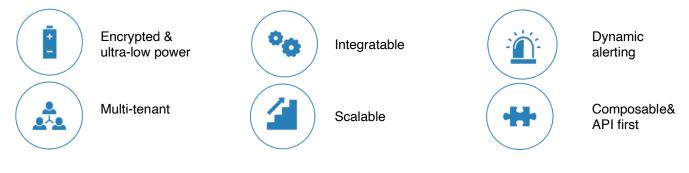
Network Integration

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, TagoIO, 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
- 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 customisation available on request

Encrypted & ultra-low power

Integratable

Dynamic alerting

Multi-tenant

Scalable

Composable& API first

RS1-N Spec-sheet

MODEL GUIDE

C Model:		E Model:	
	C model comes with cylindrical shape housing suitable for battery operated applications with IP68 rate and clamp mounting. This model has 2 option of 4 wire cable connection and the 4pin connection.		**E model** comes with rectangular shape housing suitable for battery or external power operated applications with IP66 rate, and wall mounting. This model has 2 option of 4 wire cable connection and the 4pin connection.

INDUSTRIES

- Water & Environment
- Agriculture & Farming
- Oil & Gas
- Marine & Oceanography
- Mining & Construction
- Smart Building & HVAC
- Transport & Logistics
- Food & Beverage
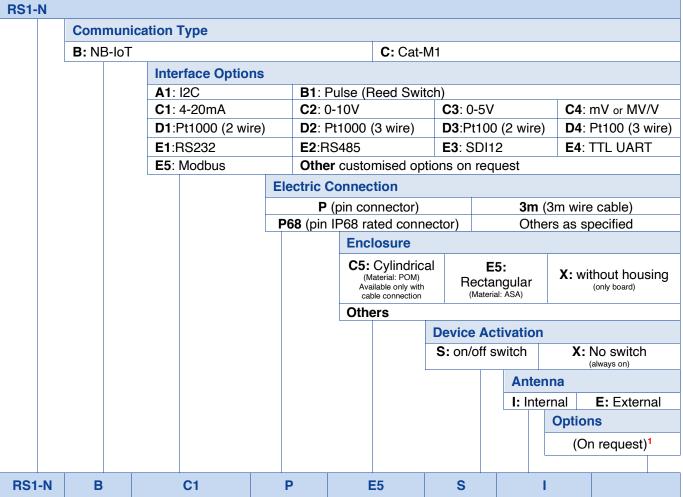- Hydraulics and Compressed Air Systems

APPLICATIONS

- Pump Performance Monitoring
- Water Pipeline Pressure Monitoring
- Pressurised System Monitoring
- Chiller and Cooling System Monitoring
- Hydraulic and Pneumatic Systems Monitoring
- Liquid Storage Level Monitoring
- Spraying System Monitoring
- Air Compressor Monitoring

RS1-N Spec-sheet

ORDERING CODE

RS1-N							
	Communication Type						
	B: NB-IoT		**C:** Cat-M1				
		Interface Options					
		A1: I2C	**B1**: Pulse (Reed Switch)				
		C1: 4-20mA	**C2**: 0-10V	**C3**: 0-5V		**C4**: mV or MV/V	
		D1:Pt1000 (2 wire)	**D2**: Pt1000 (3 wire)	**D3**:Pt100 (2 wire)		**D4**: Pt100 (3 wire)	
		E1:RS232	**E2**:RS485	**E3**: SDI12		**E4**: TTL UART	
		E5: Modbus	**Other** customised options on request				
			Electric Connection				
			P (pin connector)		**3m** (3m wire cable)		
			P68 (pin IP68 rated connector)		Others as specified		
				Enclosure			
				C5: Cylindrical (Material: POM) Available only with cable connection	**E5:** Rectangular (Material: ASA)	**X:** without housing (only board)	
				Others			
					Device Activation		
					S: on/off switch	**X:** No switch (always on)	
						Antenna	
						I: Internal **E:** External	
							Options
							(On request)[1]
RS1-N	**B**	**C1**	**P**	**E5**	**S**	**I**	

Sample Product Code:

- **RS1-N-B-C1-P-E5-S-I**
  Single channel NB-IoT sensor interface for 4-20mA output, with rectangular housing, activated by on-off switch and internal antenna.

[1] Product Options:

- **G:** GPS tracker (only for E type enclosure)
- **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)

Integrated IoT Solutions

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