



4- 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**
(RM4-L covers a wide range of industrial sensors interfaces. Unique design of the interface gives ultimate flexibility of up to 4 sensor interfaces for more flexibility at lower cost)
 - 4 x 4-20mA
 - 4 x Pulse
 - 4 x Pt (100, 1000, 2 wire, 3 wire)
 - 4 x mV
 - 4 x SDI-12
 - 4 x 0-10V_{DC}
(or other customized 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 3.6V Lithium Battery, External Power (option)
- **Rated Voltage to Sensors:** 12 V_{DC}
- **Battery Lifetime:** Typ. 50,000+ readings / 10,000+ transmission
(connected to ellenex platform and standard network quality)

Physical Specification

- **Materials:** ASA
- **Weight:** 450 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

RM4-N Spec-sheet

• 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

RM4-N Spec-sheet

MODEL GUIDE

Model:		Option / Schematic
<p>RM4 with 3m cable</p> 	<p>RM4 with 4 pin connectors</p> 	

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

RM4-N Spec-sheet

ORDERING CODE

RM4-N							
Communication Type							
B: NB-IoT				C: Cat-M1			
Interface Options							
B1: 4 x Pulse (Reed switch)		C1: 4 x mV or MV/V		D1: 4 x Pt100 -Temp 2 wire			
E3: 4 x SDI12		E6: 4 x 4-20mA		E8: 4 x 0-10V			
Other customised options on request							
Electric Connection							
P: pin connector				3m: 3m wire cable			
Others as specified							
Device Activation							
S: on/off switch				X: No switch (always on)			
Antenna							
I: Internal				E: External			
Options							
(On request) ¹							
RM4-N	B	E6	P	S	I		

Sample Product Code:

- **RM4-N-B-E6-P-S-I**

4-channel NB-IoT sensor interface with 4 x 4-20mA sensor connected by pin connection, activated by on-off switch and equipped by internal antenna.

¹⁾ Product Options:

- **EPB:** sensor with external power supply connector for 12V supply with internal battery backup (adaptor is not included)
- **HG:** high-gain external antenna
- **HCB:** high-capacity battery