



4-Channel LoRaWAN® Low Power Transmission Interface for Industrial Applications

- Compatible with all LoRaWAN® frequencies
- Wide range of industrial applications
- Designed to meet outdoor applications
- Long-term durable performance in harsh environment
- Ultra-low power



TECHNICAL SPECIFICATION

Sensor

<ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • 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)
<ul style="list-style-type: none"> • Electric Connection 	1m cable, pin connection (or others on request)
<ul style="list-style-type: none"> • Operation Temperature 	-10 ~ +70 °C

Power

<ul style="list-style-type: none"> • Power Supply 	Built-in Replaceable 3.6V Lithium Battery, External Power (option)
<ul style="list-style-type: none"> • Rated Voltage to Sensors 	12 V _{DC}
<ul style="list-style-type: none"> • Battery Lifetime 	Typ. 50,000+ readings and 20,000+ transmission (More than 10 years for most applications)

Physical

<ul style="list-style-type: none"> • Materials 	ASA
<ul style="list-style-type: none"> • Weight 	450 g
<ul style="list-style-type: none"> • Protection Rate 	IP66 or IP68 and UV Protected enclosure

Communication

<ul style="list-style-type: none"> • LoRaWAN® Version, Class 	1.0.2revB, Class A (Class C on request)
<ul style="list-style-type: none"> • LoRaWAN® Frequency Zone 	AS923, EU868, US902-928, AU915-928 (other zones available on request)
<ul style="list-style-type: none"> • LoRaWAN® Activation Type 	OTA (default), ABP
<ul style="list-style-type: none"> • Sampling Type 	Periodic (default), Event triggered
<ul style="list-style-type: none"> • Sampling Period 	Configurable via downlink (default 4 hours)
<ul style="list-style-type: none"> • Transmission Type 	Per sample (default), Event triggered, Conditional
<ul style="list-style-type: none"> • Parameter Configuration 	Over-the-air via LoRaWAN® downlinks Locally via wireless connectivity
<ul style="list-style-type: none"> • Firmware Update 	Locally via Wireless Connectivity, Over The Air

NETWORK CONNECTION AND VISUALISATION

Network Integration

- Pre-configured to ellenex LNS or configurable to all main network servers (AWS, Netmore, ChirpStack, Helium, Kerlink, Kona Tectelic, Lorient, machine-Q, Orange, Orbiwise, Proximus, Swisscom, TATA, The Things Network (TTN), TTI 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-L Spec-sheet

MODEL GUIDE

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

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
- Pressurized System Monitoring
- Chiller and Cooling System Monitoring
- Hydraulic and Pneumatic Systems Monitoring
- Liquid Storage Level Monitoring
- Spraying System Monitoring
- Air Compressor Monitoring

ORDERING CODE

RM4-L							
LoRaWAN Frequency Zone							
AS (AS923)		AUx (AU915-928) (Sub Band x)		EU (EU868)		USx (US902-928) (Sub Band x)	
LoRaWAN Activation							
A (Over The Air Activation - OTAA)				P (Activation By Personalization - ABP)			
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 options available on request							
Electric Connection							
P: Pin Connector				3m: 3m wire cable			
Other options available on request							
Device Activation							
S: With On/Off Switch				X: No Switch (Always On)			
Antenna Option							
E: External				I: Internal			
Options (On request) ¹							
RM4-L	AS	A	E6	P	S	E	

Sample Product Code:

- **RM4-L-AS-A-E6-P-S-E**

4-channel LoRaWAN[®] sensor interface, frequency of AS923, Over The Air Activated, with 4 x 4-20mA sensor interface with the pin connection activated by on-off switch and equipped with external 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