



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 customised 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 10,000+ 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

- Integratable to all main networks (Activity, Alibaba, Cisco, Digita, Everynet, Helium, Kerlink, kpn, Lorient, machine-Q, Objenious, Orange, Orbiwise, Proximus, Senet, Sens, Swisscom, TATA, The Things Network(TTN), TTI 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, TagIO, AllThingsTalk, 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

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:

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