

RS1-L Spec-sheet



Single-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

- **Interface Options**
(RS1-L 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) / Digital on/off
(or other customized options on request)

- Electric Connection
- Operation Temperature

1m cable, pin connection (or others on request)

-10 ~ +70 °C

Power

- Power Supply
- Rated Voltage
- Battery Lifetime

Built-in Replaceable Lithium Battery, External Power (option)

3.6

V

Typ. 50,000+ readings / 20,000+ transmission
(connected to ellenex platform and standard network quality)

Physical

- Materials
- Weight
- Protection Rate

ASA or POM

350

g

IP66 or IP68 and UV Protected enclosure

Communication

- LoRaWAN® Version, Class
- LoRaWAN® Frequency Zone

1.0.2revB, Class A (Class C on request)

AS923, EU868, US902-928, AU915-928
(other zones available on request)

- LoRaWAN® Activation Type
- Sampling Type
- Sampling Period
- Transmission Type
- Parameter Configuration

OTA (default), ABP

Periodic (default), Event triggered

Configurable via downlink (default 4 hours)

Per sample (default), Event triggered, Conditional

Over-the-air via LoRaWAN® downlinks
Locally via wireless connectivity

- 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 Tektelic, 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

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MODEL GUIDE

Model	Option / Schematic
C Model 	C model comes with cylindrical shape housing suitable for battery operated applications with IP68 / IP66 rate and clamp mounting. This model has 2 option of 4 wire cable connection and the 4pin connection.
E Model 	E model comes with rectangular shape housing suitable for battery or external power operated applications with IP65 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

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ORDERING CODE

RS1-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									
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									
C: Cylindrical (Material: POM) Available only with cable connection					E: Rectangular (Material: ASA)		X: without housing (only board)		
Device Activation									
S: With On/Off Switch					X: No Switch (Always On)				
Antenna Option									
E: External					I: Internal				
Options									
(On request) ¹									
RS1-L	AS	A	C1	P	C	S	E		

Sample Product Code:

- RS1-L-AS-A-C1-P-C-S-E

Single-channel LoRaWAN[®] sensor interface, frequency of AS923, Over The Air Activated, for 4-20mA output with cylindrical housing, pin connection, with on-off switch and equipped with external antenna.

¹⁾ Product Options:

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

