

# KONA Industrial Transceiver and Sensor

## LoRaWAN™ Battery-Powered Radio Transmitter

The KONA Industrial Transceiver and Sensor is an ideal solution for interfacing automation and control instrumentation to LoRaWAN™ networks. The Industrial Transceiver and Sensor supports up to 3 Analog and Digital inputs enabling remote capture of data, 2 Switched Outputs to activate actuators and different control system components and a configurable RS-232, RS-422 or RS-485 interface with numerous protocols. It also measures and reports temperature, humidity, or other custom features.

The Industrial Transceiver and Sensor utilizes a ruggedized IP-67 polycarbonate enclosure. It allows easy access to terminate the control interface at the point of use. An integrated Li-SOCl<sub>2</sub> battery has a lifetime of up to 10 years. The Industrial Transceiver and Sensor supports battery status for easy maintenance via an Application server.

### Technical and Functional System Specifications

#### General System Parameters

Operational Temperature	-40°C to +55°C
Operational Voltage	3.6V Nominal
Ingress Protection	IP67
Size	90 x 90 x 60 mm
Weight	50 g
Battery (up to 10 years)	Li-SOCl <sub>2</sub>

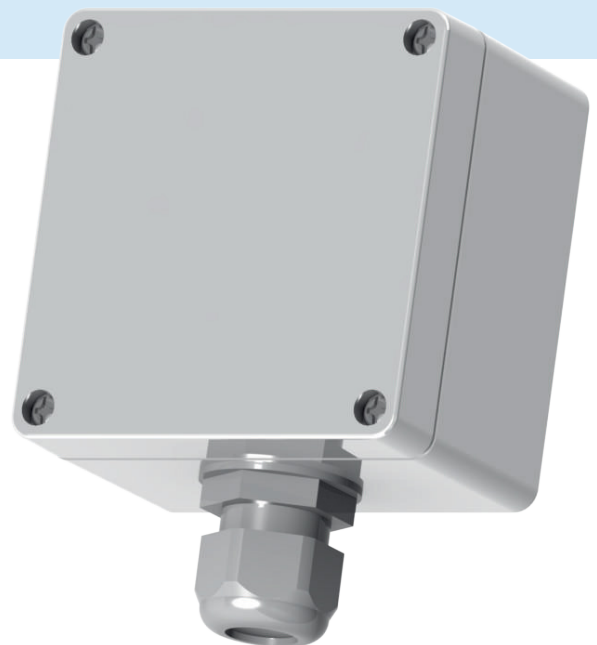
#### LoRa Parameters

RF Power	20 dBm (100mW)
RF Sensitivity	up to -140dBm
ISM Band	NA915, EU868, AS923, JP920, CH779
Antenna	Internal Ceramic, UFL connector for External
LoRa Device Class	Class A, B or C (optional DC power)

#### Regulatory Compliance

Safety	UL 60950-1 (US/C), IEC 60950-1 (CE)
Environmental	ETSI EN 300 019-2-1, 300 019-2-2
	ETSI EN 300 019-2-3, 300 019-2-4
Regulatory	FCC 15.247 RSS-247
	FCC 15.209 RSS-Gen

Specifications subject to change without notice.



### Applications

- » Industrial Process Automation
- » Precision Agriculture
- » Smart Building Control
- » Manufacturing
- » Smart Meters and Energy Grids
- » Automotive
- » M2M LoRaWAN Retrofit

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### Technical and Functional System Specifications

## Battery Test Summary

- » A LoRa transmission with 11 bytes payload takes approximately 300 ms Tx time and 300 ms Rx time.
- » Considering the current draws with SX1262 when transmitting at max power (22 dBm), the result is less than 40 mAs battery usage.
- » The background current, when not transmitting or receiving, is less than 17 uA at cold temperatures.
- » **Estimated Capacity:**

Every 10 minutes transmitting 11 bytes ~ 290,000 transmissions = 5.5 years

Every 15 minutes transmitting 11 bytes ~ 260,000 transmissions = 7.5 years

Battery Voltage = 2 bytes

Temperature = 4 bytes

Relative Humidity = 3 bytes

Input 1 (Digital) = 3 bytes

Input 1 Count = 4 bytes

Input 2 (Analog) = 4 bytes

Input 3 (Analog) = 4 bytes

### Battery Test Parameters

Operational Temperature	20°C
Current Draw	80mA for 1 second
Tx Interval	Every 3 Seconds
Duty Cycle	33%

### Battery Test Results

Number of Tx to Full Drain	900,000
Capacity	20aH

### I/O and Interfaces

Input 1	60VDC binary
Input 2	4-20 mA current loop
Input 3	0-10V analog
Output 1	60VDC
Output 2	60V (isolated)
Serial Interface	RS-232 / 422 / 485
On Board Temperature Sensor	
On Board Humidity Sensor	