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-SOCl2 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-SOCl2

### 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.
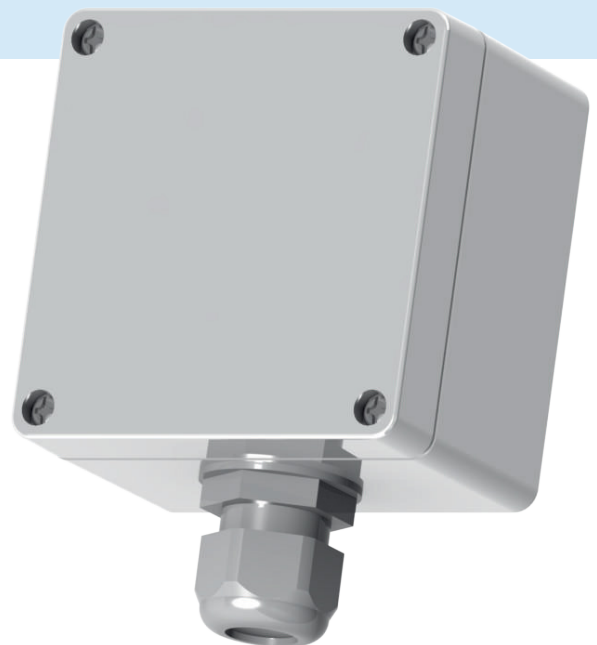
Applications

» Industrial Process Automation

» Precision Agriculture

» Smart Building Control

» Manufacturing

» Smart Meters and Energy Grids

» Automotive

» M2M LoRaWAN Retrofit

KONA Industrial Transceiver and Sensor

LoRaWAN® Battery-Powered Radio Transmitter

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	