

SKYENV1

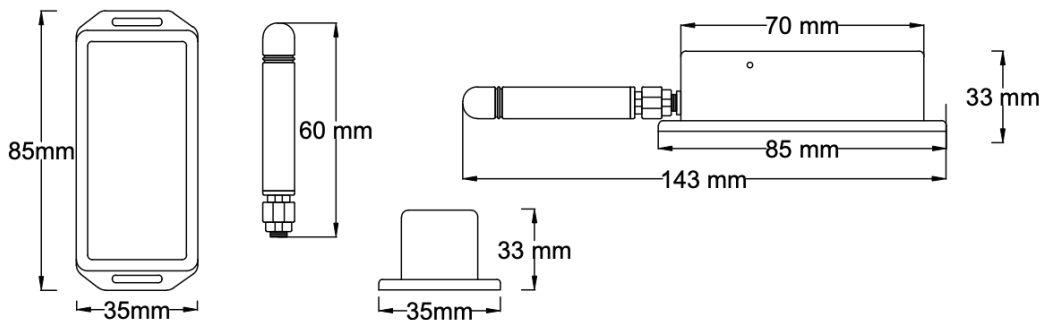


Indoor Environmental Sensor

Skysens SKYENV1 is a LoRaWAN compatible environment sensor which accurately measures ambient temperature, humidity, atmospheric pressure and indoor air quality (IAQ).

- ✓ Up to 10 years of battery life
- ✓ Suitable for various applications
- ✓ Excellent long-term stability
- ✓ Indoor Air Quality Reading
- ✓ Adjustable sensor reading interval from network
- ✓ Ready with end-to-end software application
- ✓ Remote network restart mode
- ✓ LED interface

Application Areas : Restaurants, Warehouses, Supply Chains, Industries, Hospitals, Malls, Smart Cities, etc.



Dimensions	35 x 85 x 33 mm	Available Frequencies	All
Weight	150 gr (apprx)	Temperature Sensitivity	0.01 C between -40 and +85 C
Casing	ABS with RoHS Compliancy	Humidity Sensitivity	0.008% RH between 20% and 80%
Battery	3.6V Lithium AA (Changeable)	Pressure Sensitivity	0.18 hPA
Antenna	+2 dBi or +3 dBi external	IAQ Sensitivity	1 Score Between 10% and 90%
Expected Battery Life	Up to 5 Years with 30 min Interval	Operating Conditions	-40°C to +80°C & 0% RH to 100% RH

SKYENV1

PRODUCT IMAGES, BUTTONS AND PLUG-INS



SKYENV1

PAYLOAD STRUCTURE – Uplink

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5
Temperature XMSB	Temperature XLSB	Temperature MSB	Temperature LSB	Humidity XMSB	Humidity XLSB
Byte 6	Byte 7	Byte 8	Byte 9	Byte 10	Byte 11
Humidity MSB	Humidity LSB	Pressure XMSB	Pressure XLSB	Pressure MSB	Pressure LSB
Byte 12	Byte 13	Byte 14	Byte 15	Byte 16	Byte 17
Resistance XMSB	Resistance XLSB	Resistance MSB	Resistance LSB	Reserved	Battery MSB
Byte 18	Byte 19	Byte 20	Byte 21	Byte 22	Byte 23
Battery LSB	Error Code	Health Score XMSB	Health Score XLSB	Health Score MSB	Health Score LSB
Byte 24	Byte 25	Byte 26	Byte 27		
Adaptive Resistance XLSB	Adaptive Resistance XMSB	Adaptive Resistance MSB	Adaptive Resistance LSB		

- Calculation for Temperature, Humidity and Pressure:** Take 4 bytes of information as table below. Convert this value to decimal and divide by 100. For example consider a message came as 0x0000A05.... Follow the table to calculate temperature value.

Byte 0	Byte 1	Byte 2	Byte 3
Temperature XMSB	Temperature XLSB	Temperature MSB	Temperature LSB
0x00	0x00	0x0A	0x05

0x0000A05 (hex) = 2565 in decimal form. Divide this number by 100, 2565/100 = 25,65C.

SKYENV1

PAYLOAD STRUCTURE – Downlink

Interval Change Downlink

Following message should be sent to the device in order to change message period of the device.

Interval Change Command	
Port	Message
0x0B	0x02T ₀ T ₀ T ₁ T ₁ T ₂ T ₂ T ₃ T ₃

T values at the above table are time values in seconds and hexadecimal form. Must be sent in MSB first form. For example, 0x0200000384 message should be sent to the device in order to set message interval to 900 seconds. (0x384H = 900) These values can take from 1 minute to 6 hours.

Reset Downlink

Following message should be sent to the device in order to reset the device.

Reset Command	
Port	Message
0xFA	0x01

SKYENV1

Reset Operation

Push the reset button and hold, red LED must light for a while and start blinking. When you see the blinking release the button. The device gets reset by this operation and after every reset operation, the device goes into sleep mode automatically by blinking red and green LEDs once.

Wake Up

To exit sleep mode and take the device to the normal operation mode, push the reset button until you see the red LED light. When you see red light release the button and the device will go into normal operation mode by blinking LEDs in a sequence of green-red-green.

OTAA Mode

The device requests OTAA join to the server after the device wakes up and goes into the normal operation mode. OTAA requests are represented by the blinking green LED once per request. When the device successfully joins to OTAA mode green LED lights for a while.

Communication

The device indicates uplink communication by blinking green LED once and downlink communication by blinking red LED once.

ABP

For ABP please contact SKYSENS.

Error Behaviour

The first time device with a hardware problem is energized, it flashes the red led at the intervals of five hundred milliseconds, to indicate there is a hardware problem.