SKYSENS

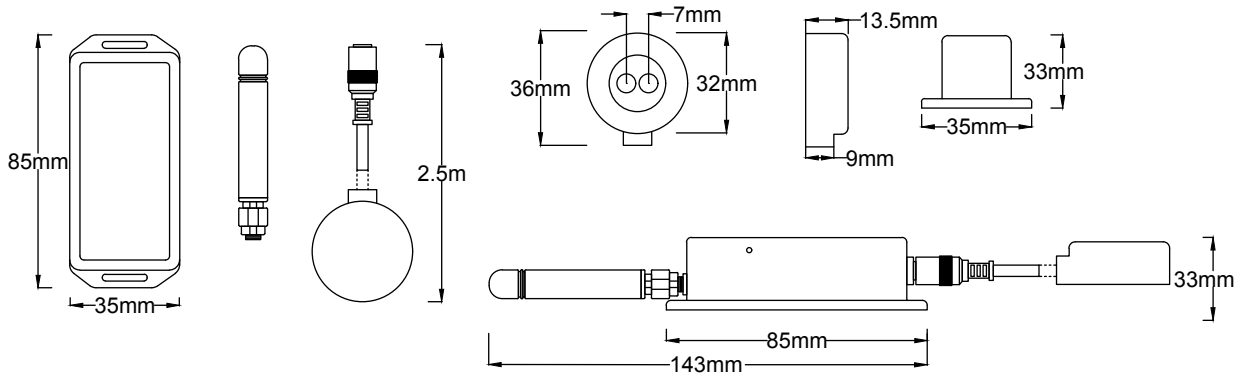
SKYENR1

Energy Metering Module

Skysens SKYENR1 is an energy metering device with an optical port reader compatible with IEC 62056-21 protocol. It provides a cost-effective solution with its long battery life and integration capability with the existing meters.

- Completely programmable interface.
- Excellent long-term stability.
- LED interface.
- Easy attachment with accessories.
- Low power consumption compared with other technologies.
- Adjustable sensor reading interval from network
- Ready with end-to-end software application.
- 2 mode restart pin button.

Application Areas : Buildings, residential areas, campuses, stadiums, factories, etc.



Dimensions	35 x 85 x 33 mm	Available Frequencies	All
Weight	150 gr (apprx)	Temperature Sensitivity	0.5 C between -10 and +85 C
Casing	ABS with RoHS Compliancy	Humidity Sensitivity	1% RH between 20% and 80%
Antenna	+3 dBi external	Operating Conditions	-40ºC to +80ºC & 0% RH to 100% RH
Expected Battery Life	Minimum 5 Years with 30 min Interval	Battery	3.6V Lithium AA

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PRODUCT IMAGES, BUTTONS AND PLUG-INS

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PAYLOAD STRUCTURE – Uplink

Sample Payload: 0x0102030400000AFA000000AA000000BA0E1000

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5
SN XMSB	SN XLSB	SN MSB	SN LSB	API XMSB	API XLSB

Byte 6	Byte 7	Byte 8	Byte 9	Byte 10	Byte 11
API MSB	API LSB	CPI XMSB	CPI XLSB	CPI MSB	CPI LSB

Byte 12	Byte 13	Byte 14	Byte 15	Byte 16	Byte 17
IPI XMSB	IPI XLSB	IPI MSB	IPI LSB	Battery MSB	Battery LSB

Byte 18
Reserved

- SN: Serial Number (H01020304 = 16909060)
- API: Active Power Index (H00000AFA = 2810 kWh)
- CPI: Capacitive Power Index (H000000AA = 170kVarh)
- IPI: Inductive Power Index (H000000BA = 186 kVarh)

Note: All Data are represented as 4 bytes form. Consider all of 4 bytes are 1 number (from XMSB to LSB). Battery information is given in mV form.

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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	$0x02T_0T_0T_1T_1T_2T_2T_3T_3$

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

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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 by blinking red and greed 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.