

➤ UC11-N1 LoRaWAN Sensor Node



LoRaWAN	
Frequency	EU433/CN470/IN865/EU868/AU915/US915/ KR920/AS923
Interface	
Interface 1	2 × GPIO, 1 × RS485, 1 × 3.3 V output, 1 × 5/9/12 V output switchable
Interface 2	2 × Analog input (4-20mA or 0-10V switchable), 1 × 3.3 V output, 1 × 5/9/12 V output switchable
Physical Characteristics	
Operating Temperature	-20°C to +70°C
Ingress Protection	IP67
Dimension	120.1 × 120.1 × 55.4 mm
Power Supply	1. 19000 mAh replaceable Li-SOCL2 battery 2. 5-24 VDC with 5000 mAh battery backup 3. Solar-powered with 5000 mAh battery

*Note: The default power supply of Sensor Node for this starter kit is 19000 mAh replaceable Li-SOCL2 battery.

More info: <https://www.ursalink.com/en/n1-lorawan-sensor-node/>

➤ Soil NPK (Nitrogen, Phosphorus, and Potassium) Sensor



Measurement	
NPK Range	0 to 1999 mg/kg
Accuracy	Max ±2% F.S.
Response Time	< 10s
Interface	
Interface	1 × RS485
Protocol	Modbus RTU
Physical Characteristics	
Operating Temperature	5°C to +45°C
Relative Humidity	0% to 95% (non-condensing)
Ingress Protection	IP68
Dimension	Length: 65 mm, Probe Length: 70mm, Cable Length: 0.5m
Power Supply	12 to 24 VDC; Powered by Sensor Node
Power Consumption	< 0.2W

➤ PAR Sensor



Measurement	
Spectral Range	400 to 700 nm
Accuracy	0 to 50 $\mu\text{v} \cdot \text{mol} \cdot \text{m}^2 \cdot \text{s}$
Measure Range	0 to 4000 $\mu\text{v} \cdot \text{mol} \cdot \text{m}^2 \cdot \text{s}$
Response Time	< 1s
Temperature Dependence	0.05%/°C
Cosine Correction	Up to 80° incident angle
Interface	
Interface	1 × RS485
Protocol	Modbus RTU
Physical Characteristics	
Operating Temperature	-40°C to +65°C
Power Supply	12 to 24 VDC; Powered by Sensor Node
Power Consumption	< 0.3W

➤ Soil Temperature and Moisture Sensor



Measurement	
Soil Temperature Range	-20°C to +80°C
Soil Temperature Accuracy	±1°C at 25°C
Soil Moisture Range	0 to 100%
Soil Moisture Accuracy	±2% at 25°C (0 to 50%)
Interface	
Interface	1 × RS485
Protocol	Modbus RTU
Physical Characteristics	
Ingress Protection	IP68
Dimension	Length: 133 mm, Diameter: 40 mm, Probe Length: 60mm, Cable Length: 3m
Power Supply	12 to 24 VDC; Powered by Sensor Node
Power Consumption	< 0.6W