LS100 Series LoRaWAN Sensor
LS200 Series LoRaWAN Sensor

Build a Smart IoT Environment with Fabulous LoRaWAN Sensors

PLANET LS100 and LS200 LoRaWAN sensors are intended for environmental monitoring and data collection. Data such as temperature, humidity, illumination, and ingress/egress all impact the status of a facility or a device, whether it is a motor, a refrigeration unit, or even the networking gear itself. Sensors in the LS series mostly have **IP65** and **IP67** ratings, allowing them to be deployed in outdoor and industrial indoor environments. The number of sensors deployed depends on network requirements. The sensor(s) can monitor a wide variety of conditions, including **humidity**, **leak detection**, **room temperature**, **machine** temperature, **product** temperature, ingress and egress, **lighting**, **occupancy** and asset location. These battery-operated sensors with no wiring required are easy to install in any place.

LoRa and LoRaWAN Wireless Technology

LoRa is a low-power, wide area network (LPWAN) RF modulation technology. It standardizes LPWANs and enables extremely long-range data links. With a range of up to three miles (five kilometers) in urban areas and over 10 miles (15 kilometers) in rural areas (line of sight), LoRa is ideal for creating networks that require long-range or deep in-building communication. A key feature is its ultra-low power requirements, enabling the deployment of battery-operated devices that can last up to several

LS100-WL
- Water Leak Sensor
- IP65 rating
- LoRaWAN™ Class A compatible

LS100-PIR
- Indoor Occupancy Sensor (Occupancy/Light/Temperature)
- IP30 rating
- LoRaWAN™ Class A compatible

LS100-DW
- Door and Window Ccontact Sensor
- IP30 rating
- LoRaWAN™ Class A compatible

LS200-TH
- Indoor Temperature and Humidity Sensor (-20~55 degrees C)
- IP65 rating
- LoRaWAN™ Class A compatible

LS200-PT
- Product Temperature Sensor with PT1000 Needle Probe (-70~200 degrees C)
- IP65 rating
- LoRaWAN™ Class A compatible

LS200-TC
- Machine Temperature Sensor with Thermocouple (-40~125 degrees C)
- IP65 rating
- LoRaWAN™ Class A compatible

LS200-RF
- Refrigerator Temperature and Humidity Sensor (-40~55 degrees C)
- IP65 rating
- LoRaWAN™ Class A compatible

LS200-LG
- Light Level Sensor
- IP65 rating
- LoRaWAN™ Class A compatible

LS200-CM3
- 3-phase Current Meter with Clamp-On CT
- Measure 75A current maximum
- IP53 rating
- LoRaWAN™ Class A compatible

years. Using the open LoRaWAN protocol in a star topology, it's suitable for applications with numerous low-power devices collecting small amounts of data. The LS series is ideal for LoRa-enabled devices in the IoT system.

LoRaWAN-based Sensor

PLANET LoRaWAN LS100/LS200 series Sensor is fully compatible with standard LoRaWAN gateways like PLANET LCG-300 series, supporting the LoRaWAN class A. It is ideal for large-scale IoT applications, including building automation, smart metering, HVAC systems, agriculture, and more. The sensor facilitates the seamless integration of multiple sensors, making it a perfect choice for retrofitting legacy assets into IoT-enabled systems.

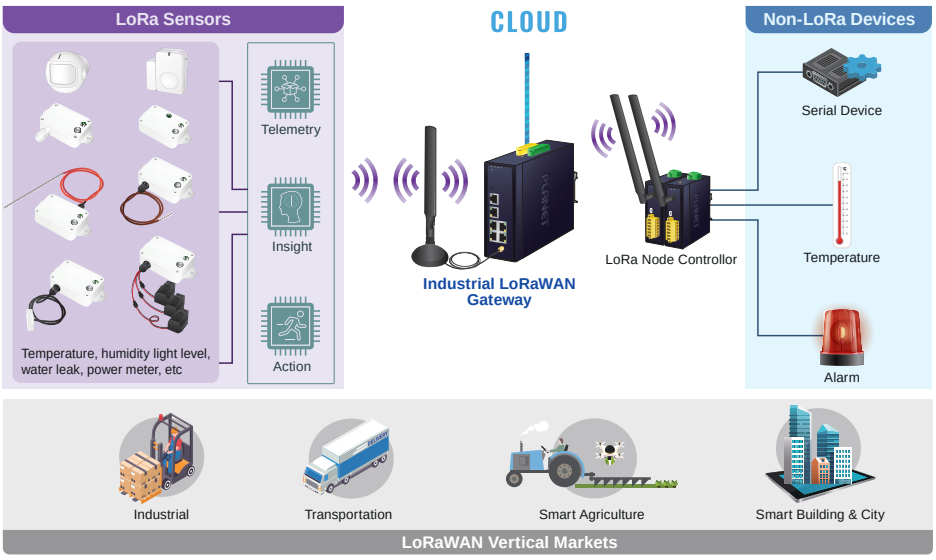
- **LS100-WL**
  IP65 LoRaWAN Water Leak Sensor
- **LS100-PIR**
  IP30 LoRaWAN Indoor Occupancy Sensor
- **LS100-DW**
  IP30 LoRaWAN Door and Window Sensor
- **LS200-TH**
  IP65 LoRaWAN Indoor Temperature and Humidity Sensor
- **LS200-PT**
  IP65 LoRaWAN Product Temperature Sensor
- **LS200-TC**
  IP65 LoRaWAN Machine Temperature Sensor
- **LS200-RF**
  IP65 LoRaWAN Refrigerator Temperature and Humidity Sensor
- **LS200-LG**
  IP65 LoRaWAN Light Level Sensor
- LS200-CM3
  IP53 LoRaWAN 3-phase Current Meter

Applications

LoRa Communication Solution

PLANET LoRaWAN LS100/LS200 series Sensor, fully compatible with standard LoRaWAN gateways like PLANET LCG-300 series, supports the LoRaWAN class A. Beyond compatibility, it offers advanced features enhancing IoT applications. With reliable data transmission and low power consumption, it meets diverse IoT demands. In building automation, the sensor enables real-time monitoring and control, optimizing HVAC systems for energy efficiency. In agriculture, it aids precision farming in monitoring soil conditions and livestock well-being. For smart metering, it excels in accurate data acquisition, facilitating energy consumption monitoring and resource management. Its retrofitting capabilities seamlessly integrate various sensors, transforming the existing infrastructure into smart, connected systems. In summary, PLANET LoRaWAN Sensors enrich IoT applications with advanced features, ensuring compatibility and empowering industries for increased efficiency and sustainability in a concise manner.

LoRa Communication Solution



Specifications

■ LS100 series

Product	LS100-WL	LS100-PIR	LS100-DW
Wireless Transmission			
Technology	LoRaWAN		
Frequency	EU868: 863–870 MHz US915: 902–928 MHz		
TX Power	US915 20dbm AS923 16dbm (optional) AU915 20dbm (optional)	EU868 16dbm KR920 14dbm (optional) IN865 20dbm (optional)	
Rx Sensitivity	-136dBm (LoRa, Spreading Factor = 12, Bitrate = 293bps) -121dBm (FSK, Frequency Deviation = 5kHz, Bitrate = 1.2kbps)		
Work Mode	OTAA/ABP Class A		
Data Interfaces			
Power Supply	2x 3.6V ER14505 AA battery in parallel (Battery not included)		
Operating Voltage	DC 3.1V~3.65V	DC 3.1V~3.65V	DC 2.4V~3V
Battery Life Time	5 years (25C, 15-minute reports, TxPower=20dBm, SF10)		3 years (25C, 15-minute reports, TxPower=20dBm, SF10)
Standby Current	22uA	110uA	12uA
Wake-up Current (Typical value)	7.12mA	9.78mA	120mA/11mA
Low Battery Threshold	3.2V	3.2V	2.4V
Physical Characteristics			
Dimensions	112 x 65 x 28 mm	112 x 88.19 x 32 mm	112 x 88.19 x 32 mm
(L x W x H)	112 x 88.2 x 32 mm	78 x 78.8 x 82.2 mm	57 x 38.05 x 15.2 mm
42.5 x 13 x 12 mm (Magnet)	D: Ø16mm*L: 27mm,	-	-
Weight	141 g	125.8g	43.8g
Operating Temperature	-20°C to 55°C		
Relative Humidity	<90% RH (non condensing)		
Storage Temperature	-40 °C ~ 85 °C		
Standards Conformance			
Regulatory Compliance	CE RED, FCC PART 15B	FCC Part 15B	FCC Part 15B

■ LS200 series (1/2)

Product	LS200-TH	LS200-PT	LS200-TC
Wireless Transmission			
Technology	LoRaWAN		
Frequency	EU868: 863–870 MHz US915: 902–928 MHz		
TX Power	US915 20dbm AS923 16dbm (optional) AU915 20dbm (optional)	EU868 16dbm KR920 14dbm (optional) IN865 20dbm (optional)	
Rx Sensitivity	-136dBm (LoRa, Spreading Factor = 12, Bitrate = 293bps) -121dBm (FSK, Frequency Deviation = 5kHz, Bitrate = 1.2kbps)		
Work Mode	OTAA/ABP Class A		
Data Interfaces			
Power Supply	2x 3.6V ER14505 AA battery in parallel (Battery not included)		
Operating Voltage	DC 3.1V~3.65V	DC 3.1V~3.65V	DC 3.1V~3.65V
Battery Life Time	5 years (25C, 15-minute reports, TxPower=20dBm, SF10)		4.8 Years (25C, 15-minute reports, TxPower=20dBm, SF10)
Standby Current	24uA	25uA	34uA
Wake-up Current (Typical value)	6.99mA	9.94mA	7.33mA
Low Battery Threshold	3.2V	3.2V	3.2V
Physical Characteristics			
Dimensions(L x W x H)	112 x 65 x 28 mm	112 x 88.19 x 32 mm	112 x 88.19 x 32 mm
Weight	141 g	141 g	186g

Sensor Dimensions	D: Ø16mm*L: 27mm,	-	-
Probe Info	-	PT1000 Platinum Thermal	Thermocouple Characteristic
Probe Temperature Detection Range	-	-70°C to 200°C	-40°C to 125°C
Probe Wire Length	-	2m	1m
Probe Dimensions	-	5mm in diameter * 150mm in length, needle probe	-
Ingress Protection	IP65	IP65	IP65
Operating Temperature	-20°C to 55°C		
Relative Humidity	<90% RH (non condensing)		
Storage Temperature	-40°C ~ 85°C		
Standards Conformance			
Regulatory Compliance	CE RED, FCC PART 15B	TELEC, CB, C TUV US	CE RED, FCC PART 15B

■ LS200 series (2/2)

Product	LS200-RF	LS200-LG	LS200-CM3
Wireless Transmission			
Technology	LoRaWAN		
Frequency	EU868: 863–870 MHz US915: 902–928 MHz		
TX Power	US915 20dbm AS923 16dbm (optional) AU915 20dbm (optional)	EU868 16dbm KR920 14dbm (optional) IN865 20dbm (optional)	
Rx Sensitivity	-136dBm (LoRa, Spreading Factor = 12, Bitrate = 293bps) -121dBm (FSK, Frequency Deviation = 5kHz, Bitrate = 1.2kbps)		
Work Mode	OTAA/ABP Class A		
Data Interfaces			
Power Supply	2x 3.6V ER14505 AA battery in parallel (Battery not included)		
Operating Voltage	DC 3.1V~3.65V	DC 3.1V~3.65V	DC 3.1V~3.65V
Battery Life Time	5 years (25C, 15-minute reports, TxPower=20dBm, SF10)		
Standby Current	20uA	17uA	25uA
Wake-up Current (Typical value)	7.11mA	7.5mA	127mA
Low Battery Threshold	3.2V	3.2V	3.2V
Physical Characteristics			
Dimensions(L x W x H)	112 x 65 x 32 mm	112 x 65 x 32 mm	112 x 88.19 x 32 mm
Weight	141 g	150g	141g
Sensor Dimensions(L x W x H)	-	-	27.5 x 25 x 42.5 mm
Sensor Weight	-	-	49.6 x 3g
Sensor Measurement Info	Temperature Detection Range: -40°C~55°C	Illuminance Range: 0.01 LUX to 157K LUX	Current Measurement Range: 100mA to 75A Operating Temperature: -40°C to 85°C
Ingress Protection	IP65	IP65	IP53
Operating Temperature	-40°C~55°C	-20°C to 55°C	
Relative Humidity	<90% RH (non condensing)		
Storage Temperature	-40 °C ~ 85 °C		
Standards Conformance			
Regulatory Compliance	CE RED, FCC PART 15B	CE RED, FCC PART 15B	CE RED, FCC PART 15B

Ordering Information

LS100-WL-868M	IP65 LoRaWAN Water Leak Sensor (EU868 Sub 1G)
LS100-WL-915M	IP65 LoRaWAN Water Leak Sensor (US915 Sub 1G)
LS100-PIR-868M	IP30 LoRaWAN Indoor Occupancy Sensor (Occupancy/Light/Temperature -20~55 degrees C, EU868 Sub 1G)
LS100-PIR-915M	IP30 LoRaWAN Indoor Occupancy Sensor (Occupancy/Light/Temperature -20~55 degrees C, US915 Sub 1G)
LS100-DW-868M	IP30 LoRaWAN Door and Window Sensor (EU868 Sub 1G)
LS100-DW-915M	IP30 LoRaWAN Door and Window Sensor (US915 Sub 1G)
LS200-TH-868M	IP65 LoRaWAN Indoor Temperature and Humidity Sensor (-20~55 degrees C, EU868 Sub 1G)
LS200-TH-915M	IP65 LoRaWAN Indoor Temperature and Humidity Sensor (-20~55 degrees C, US915 Sub 1G)
LS200-PT-868M	IP65 LoRaWAN Product Temperature Sensor (PT1000 Needle Probe -70~200 degrees C, EU868 Sub 1G)
LS200-PT-915M	IP65 LoRaWAN Product Temperature Sensor (PT1000 Needle Probe -70~200 degrees C, US915 Sub 1G)
LS200-TC-868M	IP65 LoRaWAN Machine Temperature Sensor (Thermocouple -40~125 degrees C, EU868 Sub 1G)
LS200-TC-915M	IP65 LoRaWAN Machine Temperature Sensor (Thermocouple -40~125 degrees C, US915 Sub 1G)
LS200-RF-868M	IP65 LoRaWAN Refrigerator Temperature and Humidity Sensor (-40~55 degrees C, EU868 Sub 1G)
LS200-RF-915M	IP65 LoRaWAN Refrigerator Temperature and Humidity Sensor (-40~55 degrees C, US915 Sub 1G)
LS200-LG-868M	IP65 LoRaWAN Light Level Sensor (EU868 Sub 1G)
LS200-LG-915M	IP65 LoRaWAN Light Level Sensor (US915 Sub 1G)
LS200-CM3-868M	IP53 LoRaWAN 3-phase Current Meter (3 x 75A Clamp-On CT, EU868 Sub 1G)
LS200-CM3-915M	IP53 LoRaWAN 3-phase Current Meter (3 x 75A Clamp-On CT, US915 Sub 1G)

Related Products

LCG-300-NR	Industrial LoRaWAN + 5G NR Cellular Gateway with 5-Port 10/100/1000T
LCG-300W	Industrial LoRaWAN Wireless Gateway with 5-Port 10/100/1000T
LCG-300	Industrial LoRaWAN Gateway with 5-Port 10/100/1000T

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