Ultrasonic Distance Sensor

Featuring LoRaWAN®

EM500-UDL



EM500-UDL is designed for objects distance or level detection in harsh environments and transmitting data using LoRaWAN® technology. With this low power consumption technology, EM500-UDL can work up to 10 years with 19000 mAh battery. Combining with Milesight LoRaWAN® gateway and Milesight Development Platform solution, users can manage all sensor data remotely.

EM500-UDL is widely used for outdoor applications like liquid level monitoring and water tank level monitoring, etc.

◆ Features

- Object distance or level detection without touch
- Ultra-wide-distance transmission up to line of sight of 10km
- IP67 waterproof enclosure for harsh environment applications
- Built-in 19000 mAh replaceable battery and work for 10 years without replacement
- Store historical records locally and support retransmission
- Equipped with NFC for easy configuration
- Compliant with standard LoRaWAN® gateways and network servers
- Quick and easy management with Milesight IoT Cloud and Milesight Development Platform

◆ Specifications

Wireless Transmission	
Technology	LoRaWAN®, Milesight D2D
Antenna	Internal Antenna
Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
Tx Power	16dBm(868MHz)/20dBm(915MHz)/19dBm(470MHz)
Sensitivity	-137dBm @300bps
Mode	OTAA/ABP Class A
Measurement	
Range & Accuracy	W050: 0.3 - 5 m, ±1% FS W100: 0.5 - 10 m, ±1% FS C050: 0.25 - 5 m, ± (1+0.3%*S) cm, S=distance C100: 0.25 - 10 m, ± (1+0.3%*S) cm, S=distance
Resolution	1 mm
Others	
LED	1 × LED Indicator (Internal)
Button	1 × Power/Reset Button (Internal)
USB	1 × USB Type-C(Internal) for Configuration and Console
Software	
Power On & Off	NFC, Power Button (Internal)
Configuration	Mobile App(via NFC), PC software(via USB Type-C), Downlink
Advanced Feature	Data Storage (1,000 entries), Data Retransmission, Data Retrievability, Threshold Alarm, Change Alarm, Milesight D2D Controller
Physical Characteristics	
Power Supply	1 × 19000 mAh ER34615 Li-$SOCL_2$ Battery
Battery Life*	10 years (10 min interval, 25°C)
Operating Temperature	W050/W100: -30°C to +65°C C050/C100: -15°C to +60°C
Relative Humidity	0% to 80% (non-condensing)
Ingress Protection	IP67
Housing	ABS + PC
Color	Black grey (C050/C100), Grey (W050/W100)
Weight	C050/C100: 362.7g, W050/W100: 370.4g (With Battery and Mounting bracket)

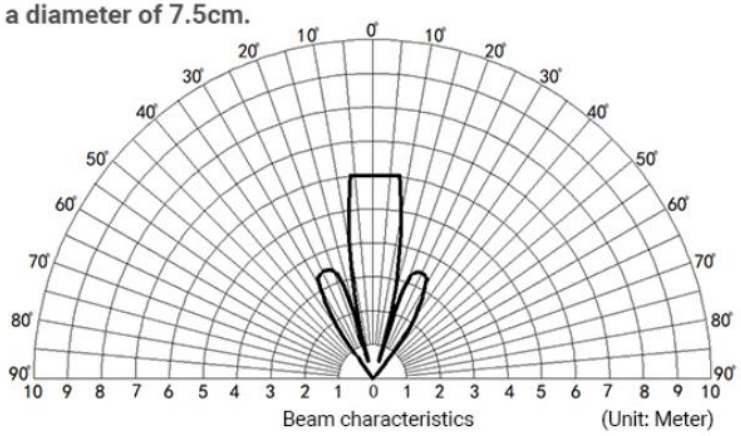
Dimension	156.1 × 71 × 69.5 mm (6.1 × 2.8 × 2.7 in)
Installation	Pole, Wall or DIN Rail Mounting
Approvals	
Regulatory	CE, FCC, ISED, Telec, LoRaWAN® Certified
EMC	EN 55032, EN 55035
EMS	IEC 61000-4-2 Level 3, IEC 61000-4-3 Level 2, IEC 61000-4-8 Level 4
Radio Frequency	FCC Part 15B, FCC Part 15.247, EN 300 330, EN 301 489-1/3, EN 300 220-1/2
Safety	EN62368-1
Environmental	RoHS

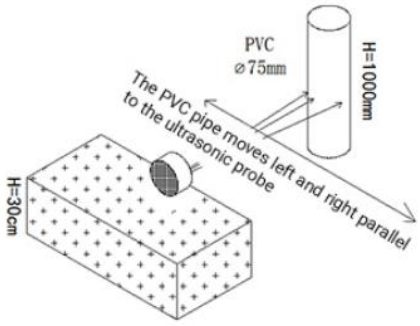
*The battery life is based on test results under laboratory conditions using the standard battery provided by Milesight. Actual performance may vary depending on battery brand, environmental factors.

◆ Beam Pattern

C050:

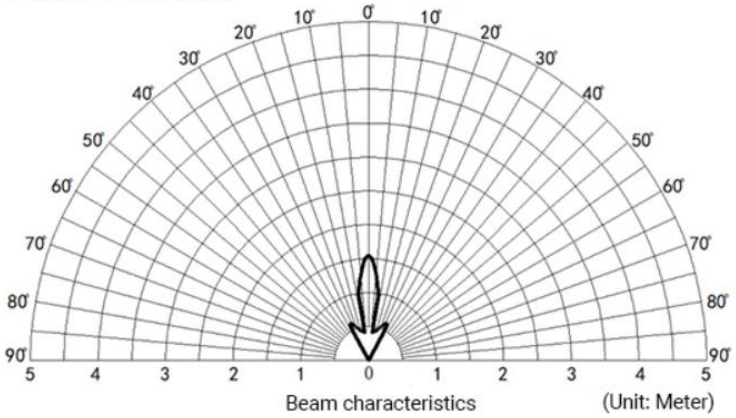
(1) The tested object is a white cylindrical tube made of PVC material, with a height of 100cm and a diameter of 7.5cm.

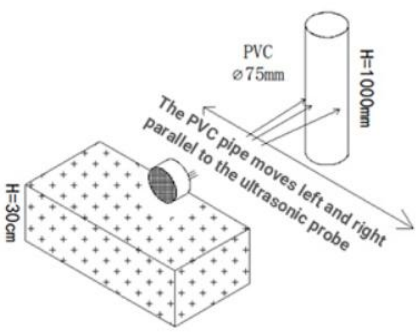




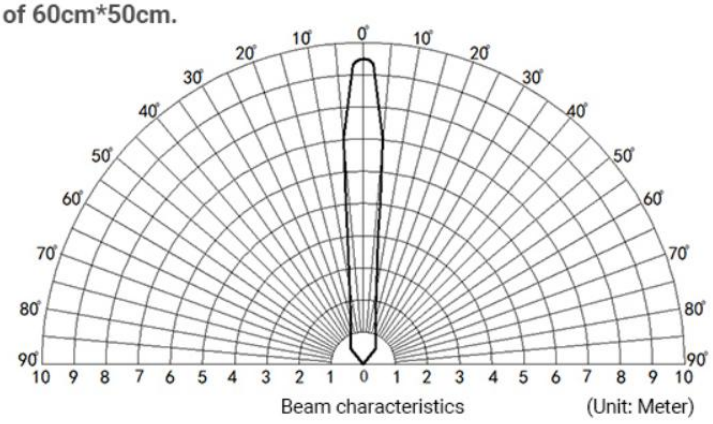
C100:

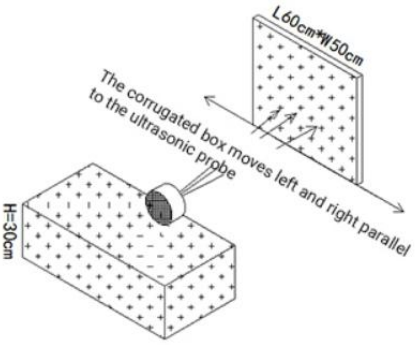
(1) The tested object is a white cylindrical tube made of PVC material, with a height of 100cm and a diameter of 7.5cm.



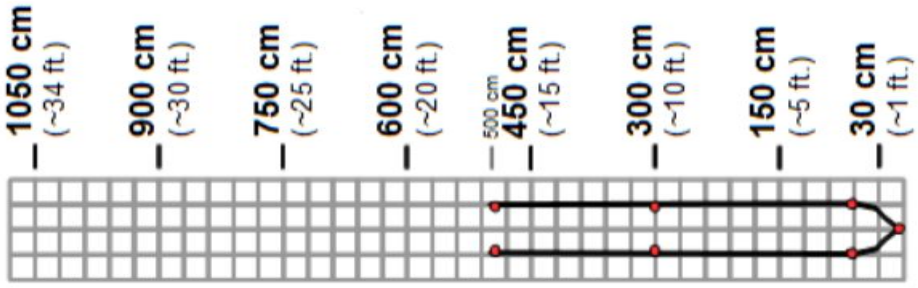


(2) The tested object is a corrugated box perpendicular to the 0° central axis, with a length * width of 60cm*50cm.



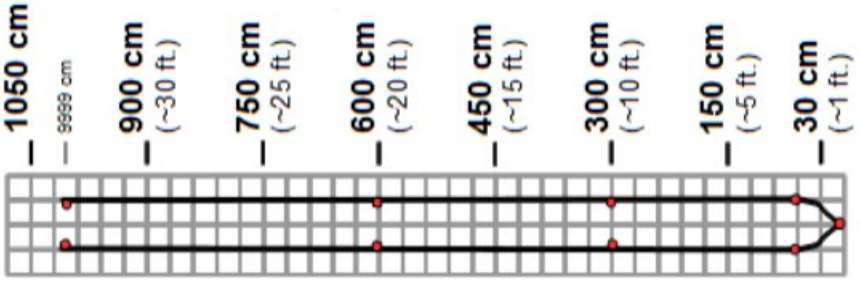


W050:



Typical beam pattern for 30cm target move left and right with the board parallel to the sensor face.

W100:



Typical beam pattern for 30cm target move left and right with the board parallel to the sensor face.

◆ Dimensions(mm)

