LANBAO

Ultrasonic sensor UR30-CM6 series operation manual

Switch value、analog

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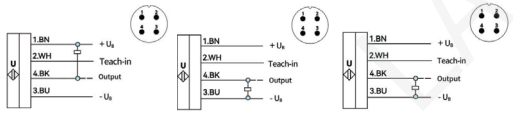
Precautions

- Please do not supply voltages other than the normal operating voltage to avoid burnout of the sensor.
- Please avoid pulling on the lead wires to prevent damage to the electrical connections of the sensor.
- Do not cover the surface of the sensor probe to avoid affecting the detection range of the sensor.
- Please use the supplied mounting nut to secure the sensor in place and avoid using other non-standard clamping devices to ensure good sensitivity.
- Strong mechanical vibration should be avoided when the sensor is used, and the working environment should not have strong electromagnetic interference and rapid air circulation.
- Please do not disassemble the sensor without permission. If the sensor does not work properly, please contact the after-sales service in time to solve. The company will not bear all the consequences caused by the disassembly without permission.

Wiring diagram



NPN Output　　PNP Output　　Analog Output

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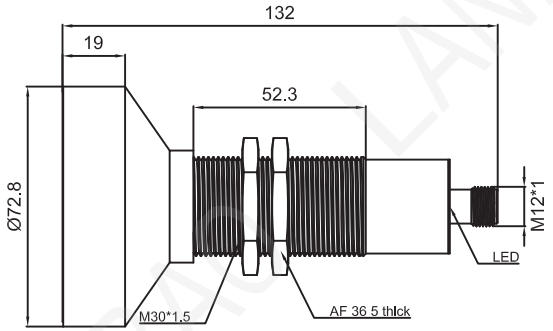
Technical specifications

Output type	Switch value output		Analog output		
	NPN NO/NC	PNP NO/NC	0-5V	0-10V	4-20mA
Model	UR30-CM6DNB-E2	UR30-CM6DPB-E2	UR30-CM6DU5-E2	UR30-CM6DU10-E2	UR30-CM6DI-E2
Sensing range	350-6000mm				
Blind area	0-350mm				
Resolution ratio	4mm				
Repeat accuracy	±0.15% full scale				
Temperature drift	⩽2% full scale (Built-in temperature drift compensation)				
Linearity	＜1%				
Response time	300ms				
Standard target	300×300mm				
Oscillator frequency	About 65KHz				
Rated operational current	⩽200mA				
Supply voltage	10…30VDC			15…30VDC	12…30VDC
No-load current	⩽25mA				
Angle	±10°				
Circuit protection	Reverse protection, instantaneous over voltage protection, short circuit protection, overload protection				
Output indication	Red LED: No target detected in teach-in state, always on; Yellow LED: In normal working mode, the switch status; Blue LED: Target detected in teach-in state, flashing; Green LED: Power indicator light, always on				
Ambient temperature	-25℃…70℃ (253-343K)				
Storage temperature	-40℃…85℃ (233-358K)				
Material	Nickel plated copper, glass beads mixed with epoxy resin				
Protection degree	IP67				
Connection	M12 4-pin connection				

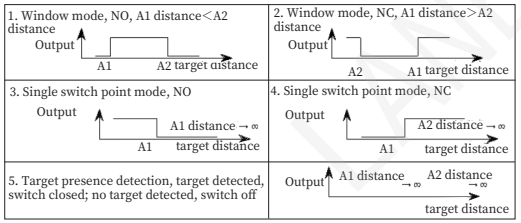
Dimensions

Connector



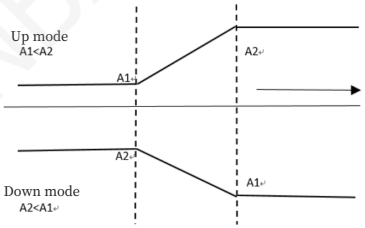
Set the detection range(Switch value)

Factory setting:default window mode,NO,A1=350mm;A2=6000mm
A1:Target distance from near to far,through the A1 point,the switch from open to closed
A2:Target distance from near to far,through the A2 point,the switch from closed to open
Working Mode:A1 and A2 can be learned individually,and the working mode can be selected by setting the position of A1 point and A2 point.There are 5 kinds of working modes as below:



Set the detection range(Analog)

Factory setting: Default rise mode, A1=350mm； A2=6000mm
A1: Minimum output corresponds to distance point
A2: Maximum output corresponds to distance point
Working Mode: A1 and A2 can be learned individually, and the working mode can be selected by setting the position of A1 point and A2 point. There are 2 kinds of working modes as below:



First, the sensor is powered on.
Set the A2 point:
1) Put a measured object at the place where the distance is to be set.
2) Connect the white wire (learning wire) and brown wire (positive pole) together. During this period, if the measured object is captured, the blue light has been blinking. This state lasts for two to three seconds, take the white wire away, then A2 setup is successful. If the setup period does not detect the target then the red light is on.

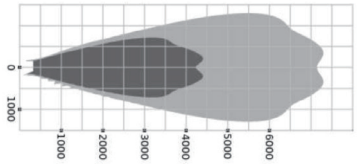
Set the A1 point:
1) Put a measured object at the place where the distance is to be set.
2) Connect the white wire (learning wire) to the blue wire (negative pole) and repeat the above steps.

Note: To ensure the best accuracy and system stability, please try not to set the A1 and A2 points within 20mm from the blind zone. Learning mode is effective within 5 minutes of power on, more than 5 minutes need to re-power on to learn.

Mounting

Since ultrasonic sensors are directional, the mounting position needs to be taken care of. It is recommended that the mounting position be perpendicular to the measured object to obtain better relative accuracy.

Response characteristic curve



Dark color: 75mm diameter PVC pipe　**Unit:** mm
Conditions: 24V power supply, room temperature
Light color: 300mm*300mm flat plate
Note: There may be deviations, for reference only