LANBAO

Ultrasonic sensor UR30-CM3 series Operation manual

NPN/PNP

CE

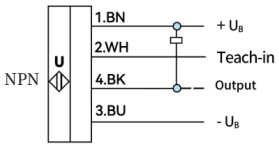
RoHs

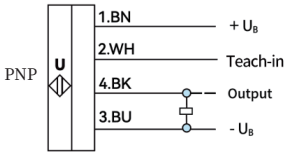
www.lanbaosensor.com

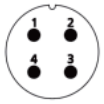
Precautions

- Please do not supply voltages other than the normal operating voltage to avoid burnout of the proximity switch.
- Please avoid pulling on the lead wires to prevent damage to the electrical connections of the proximity switch.
- 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





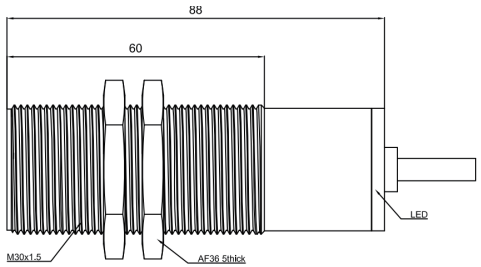
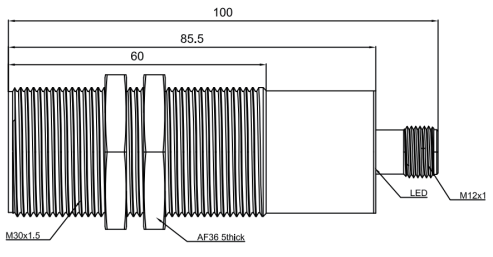
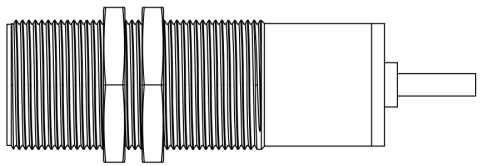
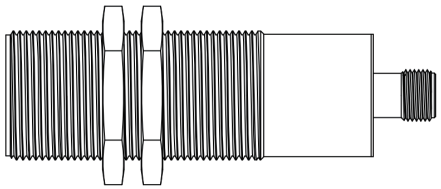


For connector verion only

Technical specifications

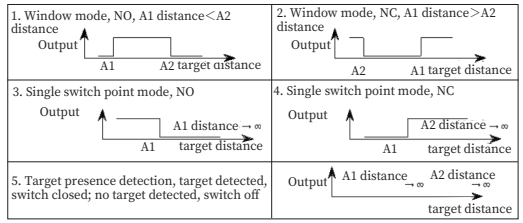
Model			
	NPN	UR30-CM3DNB	UR30-CM3DNB-E2
	PNP	UR30-CM3DPB	UR30-CM3DPB-E2
Sensing range		180-3000mm	
Blind area		0-180mm	
Resolution ratio		1mm	
Repeat accuracy		±0.15% of full scale value	
Absolute accuracy		±1% (temperature drift compensation)	
Response time		110ms	
Switch hysteresis		2mm	
Switching frequency		10Hz	
Power on delay		＜500ms	
Working voltage		15...30VDC	
No-load current		≤25mA	
Input type		With teach-in function	
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℃（248-343K）	
Storage temperature		-40℃...85℃（233-358K）	
Output characteristics		Support serial port upgrade and change the output type	
Material		Copper nickel plating, glass bead filled epoxy resin	
Protection degree		IP67	
Connection		2m PVC cable	4 pin M12 connector

Dimensions

Cable	Connector
	
	

Set the detection range

Factory setting: default window mode, A1=180mm; A2=3000mm
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:



Note: A1 or A2 distance → ∞, when learning, no target detected (red light on)

First, the sensor is powered on, the green light at the back of the sensor will light up.

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 the brown wire (positive pole) together. During this period, if the measured object is captured, the blue light will keep blinking, and this state lasts for two to three seconds, then take away the white wire, the A2 setup is successful. The red light will be lit up if the target is not detected during the setup period.

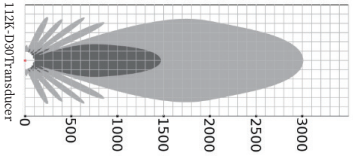
Set the A1 point:
1) Put a measured object at the place where the distance is to be set.
2) Connect the white wire (learning wire) to the blue wire (negative pole) and repeat the above steps.

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
Light color: 300mm*300mm flat plate **Note:** There may be deviations, for reference only

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