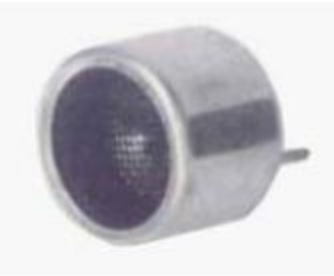
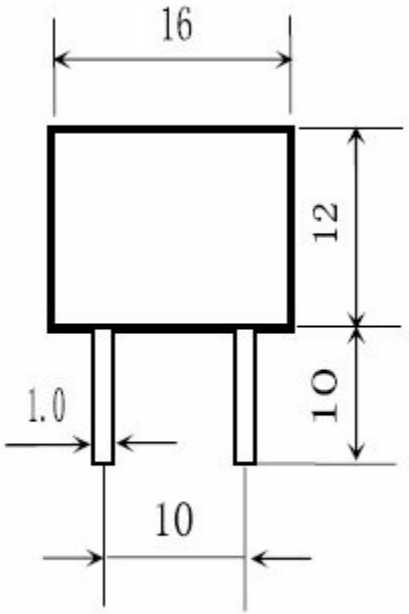
TCT40-16T/R Piezoelectric Ceramic Ultrasonic Sensor

一 Overview:

TCT40-16T/R is a universal open ultrasonic sensor with a diameter of 16mm. It is widely used in ultrasonic ranging, robots, parking space detection, liquid level detection, ultrasonic proximity switches and other ultrasonic transmitting and receiving applications.

二 Appearance and Size:





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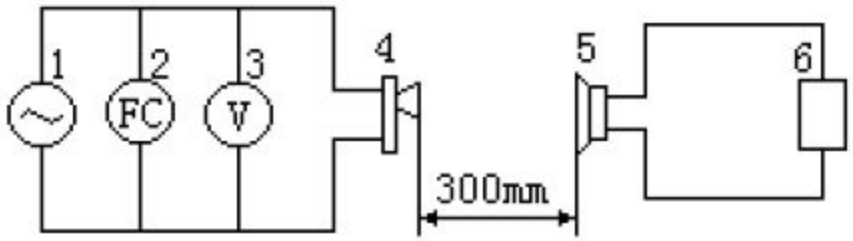
Three emission test circuit:



1 - Oscillator
2 - Frequency Meter
3 - Voltmeter
4 - Emissive sensor
5 - Standard Microphone
6 - Level recorder

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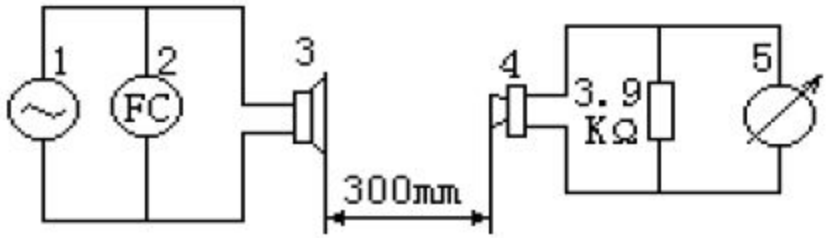
Four Receiving Test Loops:



1 - Oscillator
2 - Frequency Meter
3 - Standard Speakers
4 - Receiving sensor
5 - Oscilloscope

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Name	Launch-T	Receive-R	Unit
Nominal Frequency	40	40	KHz
Frequency Error	±0.5	±1	KHz
Emitted Sound Pressure 40KHz (0dB=0.02mPa)	117min		dB
Receive Sensitivity 40KHz (0dB=1V/Pa)		-65min	dB
Static Capacity:1KHz,<1V	2500	2500	PF
Static Capacity Error	±30	±30	%
Maximum driving voltage	80	80	V
Operating temperature	-20℃ ~ 70℃	-20℃ ~ 70℃	℃
Storage Temperature	-40℃ ~ 80℃	-40℃ ~ 80℃	℃

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Environmental Characteristics:

1 Temperature: In the temperature range of －30℃～＋85℃, the emission sound pressure and sensitivity will not change more than 6dB compared with the initial values.

2 Humidity Test: Temperature：60±2℃，Humidity：RH 90～95%，Time：36 hours. After the test, take it out and recover it under normal atmospheric conditions for 2 hours. The sound pressure and sensitivity (at the center frequency) will not change more than 6dB compared with the initial values.

3 Vibration Test: Amplitude: 0.75mm，Frequency: 10～70Hz，sweep period: 5minutes， 10 periods in each of three directions. After the test, the change in sound pressure and sensitivity (at center frequency) is no more than 3dB compared with the initial values.

4 High Temperature Test:Place it at high temperature of +85℃ for 36 hours. Take it out and restore it for 2 hours under normal atmospheric conditions. the change in sound pressure and sensitivity (at center frequency) is no more than 3dB compared with the initial values.

5 Low Temperature Test:
Place it at lowtemperature of －40℃ for 36 hours. Take it out and restore it for 2 hours under normal atmospheric conditions. the change in sound pressure and sensitivity (at center frequency) is no more than 3dB compared with the initial values.

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Environmental Characteristics:

6 Temperature Cycles:
Temperature: +85℃ high temperature, 1 hour; -43℃ low temperature 1 hour; number of cycles: 10. Restore it for 2 hours under normal atmospheric conditions. the change in sound pressure and sensitivity (at center frequency) is no more than 6dB compared with the initial values.

7 Drop Test:
Height: 1m free fall to concrete floor, 10 times. After testing, the change in sound pressure and sensitivity (at center frequency) is not greater than 6dB.