Normal Ultrasonic Sensor

Product Information

Model: ZR40-12

Description:

Specification

1. Summary

Ultrasonic sensors are classified into transmitter and receiver according the operating theory. When alternating current signal is input into the transmitter, the oscillator made up of piezoelectric ceramic slice and sheet metal makes resonance and gives out ultrasonic through the cone-shaped radiant plate. When the ultrasonic gets to the receiver via the transmit of air, it is collected by the cone-shaped radiant plate and makes its vibrator resonant. Corresponding alternating current signal is output because of piezoelectric effect. Various kinds of control applications may be realized plus treatment of follow-up circuit. With these features, ultrasonic sensors are widely used in the field of toy, remote control, distance measurement, automatic door, guest information, burglar alarm and automotive detection etc.

2. Model：

Transmitter ZT40-12

Receiver ZR40-12

3. Dimension：

	A=12.6±0.5
	B=10.0±0.5
	C=9.5±0.5
	D=6.2±0.5
	E=8.5±0.5
Fig.1	(Unit: mm)

Fig.2

FC: Frequency Counter	TW: TW	a foot: 1 foot
VFO: Voice Frequency Oscillator	RL: Rated Load, 3.9K	for Receiver: for Receiver
TUT: Testing Ultrasonic Tester	MIC: Microphone	wrung: wrung
MA: Measurement Amplifier	AEC: Audio Frequency Collector	Solder dot: Solder dot
Level Recorder: Level Recorder		
Comp.to VFO: compared to VFO		
for Transmtter: for Transmtter		

4. Parameter of Performance：

Model	ZT40-12	ZR40-12
Center Frequency	40.0±1.0KHz	40.0±1.0KHz
Sound Pressure Level 0dB=0.0002μbar	40.0KHz:112dB (Minimum)	*********
40.0KHz Sensitivity	*********	[-67dB/V/μ bar (Minimum)]
Brandwidth	5.0KHz (Minimum)/100dB	5.0KHz (Minimum)/(-75dB/V/μbar)
Maximum Input Voltage	60Vpp	*********

5.Environmental Characteristics:

5-1 When the relative humidity is 30% and the temperature varies in the range of -30℃ to +80℃, the shift of sond pressure and sensitivity of the sensor would not exceed 10dB.

5-2 When the temperature is 25℃ and the relative humidity varies varies in the range of 10% to 90%, the shift of sond pressure and sensitivity of the sensor would not exceed 6dB.

5-3 After sensor has experienced any one or all of the following conditions, its sond pressure and sensitivity shall have a deviation within 3dB based the rated values.

5-3-1 It operates under the condition of relative humidity as 95% and temperature as 40℃

for 100 hours and then recovers under the condition of relative humidity as 30% and temperature as 25 ℃ for 24 hours.

5-3-2 It is stored at -40℃ to +100℃ for 24 hours and then recovers at 25℃ for 1 hour.

5-3-3 Sensor vibrates in the direction of X, Y, Z for three hours respectively while the vibration frequency is 10~55Hz, the amplitude of vibration is 1.5mm, the frequency sweeps once a minute.

5-3-4 Impact: Sensor makes an impact in the direction of X, Y, Z for three times respectively with the force of 50g.