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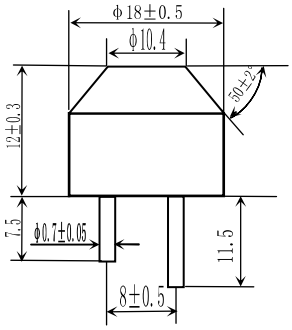
压电陶瓷超声传感器(防水型)

PIEZO-CERAMIC ULTRASONIC SENSOR (WATER-PROOF)

TCF40-18TR1



■ **适用范围**

1. 家用电器和其它电子设备的遥控装置。
2. 超声测距，汽车倒车防撞装置和超声波近接开关。
3. 防盗、防灾设备的超声波发射和接收。

■ **产品特点**

1. 高灵敏度、高可靠性、高稳定性。
2. 耐高、低温度、耐湿度、耐冲击、振动等严酷环境条件。

■ **APPLICATIONS**

· Remote Controller For Home Electric Appliance And Electronic Equipment.
· Ultrasonic Distance Measuring. Vehicle Backing And Collision Equipment, Ultrasonic Approchaching Switch
· Ultrasonic Transmitting And Receiving For Burglar Detection Disaster Detection

■ **Main Features**

· High Sensitivity High Reliability And Stability
· High And Low Temp. –Resistance Humidity-Resistance, Vibration-Resistance, Shock-Resistance

■型号命名法

TC	F	40 ——10	TR	1
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（1）	（2）	（3）	（4）	（5）	（6）

（1）压电陶瓷超声传感器：TC
（2）类别：
T—通用型 F—防水型
U—耐温型 K—宽带型
（3）中心频率：（KHz）
（4）外径：Φ（mm）
（5）使用方法：
TR-收发兼用 T-发射 R-接收
（6）产品顺序号：1、2、3、4、5...

■Part Numbering

TC	F	40 ——10	TR	1
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（1）	（2）	（3）	（4）	（5）	（6）

(1) Piezo-Ceramic Ultrasonic Sensor
(2) Types：
T：General F：Water-Proof
U： Heat-Resistant K：Wide Band-width
(3) Center Frequency：(KHz)
(4) Diameter： Φ (mm)
(5) Using Method：
TR: Dual Use(Receiver-Transmitter)
T: Transmitter R: Receiver
(6) Part-number： 1、2、3、4、5...

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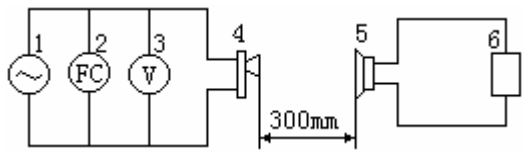
PIEZO-CERAMIC ULTRASONIC SENSOR (WATER-PROOF)

■常温特性 Normal Temperature Characteristics

Part Number	Frequency (KHZ)	Sensitivity at 40KHz (0dB=v/ubar) (min)	S.P.L (at.10V.30cm) (0dB=0.02mPa) (min)	Capacitance (±30%PF)	-6dB direction angle	Detecting Distance
TCF40-18TR1	40+/-1	-65	95	1800	60^0	0.2-3m

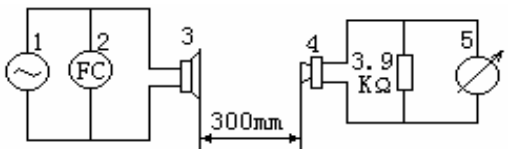
■测试电路 Test Circuit

■输出声压（发射型）测试电路
. Test Circuit For Output Sound Pressure (Transmitter)



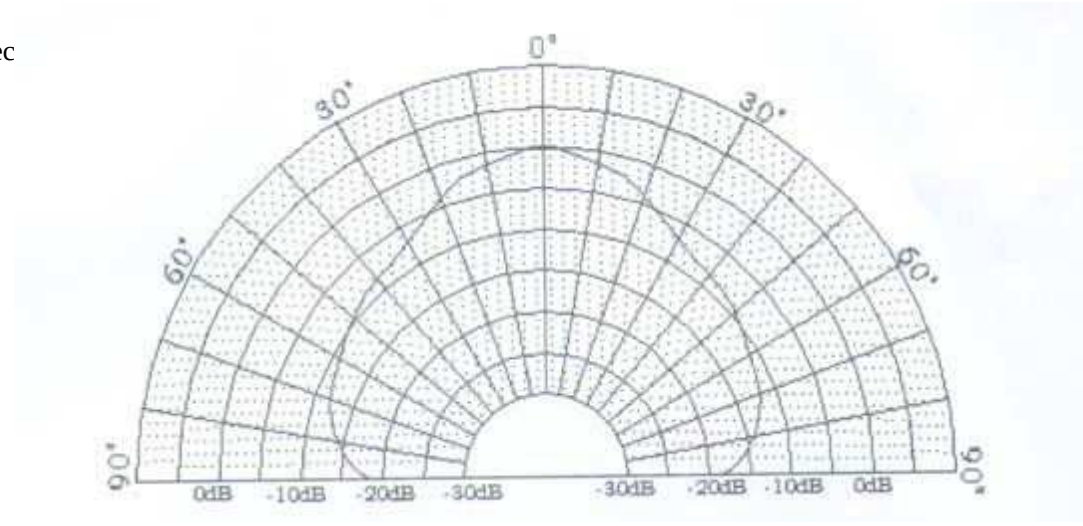
1．振荡器 1.Oscillator
2．频率计 2.Frequency Meter
3．电压表 3.Voltage Meter
4．发射型传感器 4.Transmitting Sensor
5．标准接收头 5.Standard Receiving Unit
6．传声放大器 6.Sound Amplifier

■ 灵敏度（接收型）测试电路
. Test Circuit For Sensitivity (Receiver)



1．振荡器 1.Oscillator
2．频率计 2.Frequency Meter
3．标准发射头 3.Standard Transmitting Unit
4．接收型传感器 4.Receiving Sensor
5．毫伏表 5.Millivolt Meter

Direc



ENVIRONMENTAL CHARACTERISTIC

1.Temperature characteristic

The variation of the S.P.L and Sensitivity at center frequency are within 6dB compared with initial figures in the temperature range at -30 to +85℃.

2. Humidity test

The variation of the S.P.L and Sensitivity at center frequency are within 6dB compared with initial figures after being placed in natural condition for 2 hours with following test conditions.

Temperature : 60±2℃
Humidity : RH90 to 95%
Times: 36 hours

3. Shock test

The variation of the S.P. L and Sensitivity at center frequency are within 3dB compared with initial figures with following test conditions.

Acceleration: sine 100G
Direction: 3 directions
Shock times: 3 times/each direction

4. Vibration test

The variation of the S.P. L and Sensitivity at center frequency are within 3dB compared with initial figures with following test conditions.

Amplitude/frequency: 1.5mm/10 to 70 Hz
Direction: 3 directions
Times: 3 hours/each direction
Sweep period: 5 min

5. High temperature test

The variation of the S.P.L and Sensitivity at center frequency are within 3dB compared with initial figures after being placed in natural condition for 2 hours with following test conditions.

Temperature/times: 100℃/36 hours

6. Low temperature test

The variation of the S.P.L and Sensitivity at center frequency are within 3dB compared with initial figures after being placed in natural condition for 2 hours with following test conditions.

Temperature/times: -40℃/36 hours

7. Heat cycle

The variation of the S.P.L and Sensitivity at center frequency are within 6dB compared with initial figures after being placed in natural condition for 2 hours with following test conditions.

Temperature/times/times: +85±3℃/1 hour
-40±3℃/1 hour
cycles: 10 cycle

8. Drop test

The variation of the S.P.L and Sensitivity at center frequency are within 6dB compared with initial figures with following test conditions.

Height : 1 meter onto concrete floor
Times: 10 times