

ULTRASONIC TRANSDUCER
SPECIFICATION

MODEL NO. T/R40-16

ULTRASONIC TRANSDUCER MODEL NO. : T/R40-16	PAGE 1 / 4	DRAWING NO. 2307042	REV. : A
	• NIPPON CERAMIC CO., LTD.		
APPROVED BY	CHECKED BY	DRAWN BY	

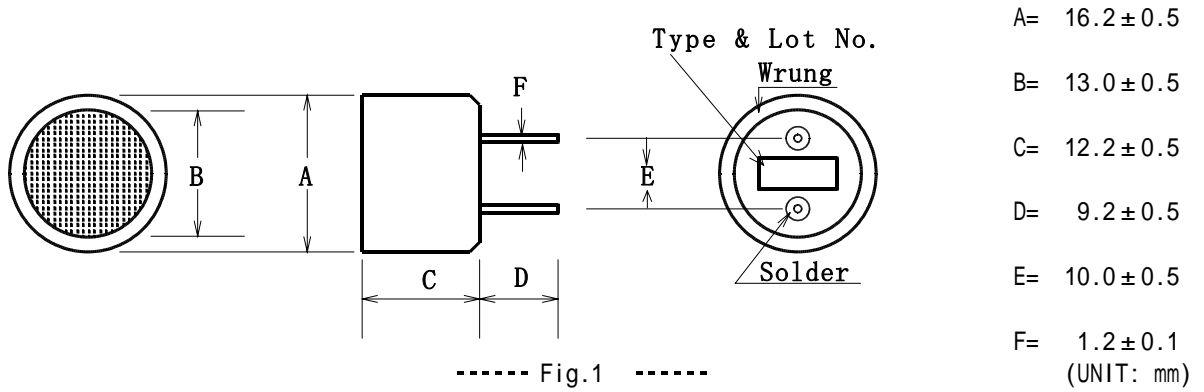
TITLE : TRANSDUCER SPECIFICATION

1. GENERAL

THESE SPECIFICATIONS DESCRIBE THE ULTRASONIC TRANSDUCERS

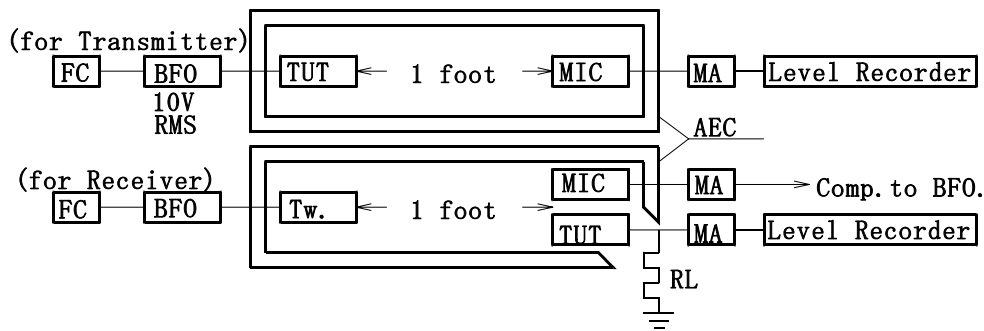
TYPE T40-16 : TRANSMITTER
R40-16 : RECEIVER

2. PACKAGE OUTLINE



----- Fig.1 -----

3. TEST CIRCUIT



FC :Frequency Counter
 BFO:Beat Freq. Os.
 TUT: Transducer Under Test
 MA :Measuring Amplifier
 TW. :Tweeter
 RL :3.9 k
 MIC.:Microphone
 AEC :Anechoic Chamber

----- Fig.2 -----

4. CHARACTERISTICS

TYPE	T40-16	R40-16
Center Frequency	40.0 ± 1.0 kHz	40.0 ± 1.0 kHz
Sound Pressure Level 0 dB=0.0002 μbar	115 dB Min. at 40.0 kHz	*****
Sensitivity at 40.0 kHz	*****	-64.0 dB/V/ μbar Min.
Band Width	6.0 kHz Min./103 dB	6.0 kHz Min./(-71 dB/V/ μbar)
Maximum Input Voltage	60 Vp-p	*****

ULTRASONIC TRANSDUCER

MODEL NO. : T/R40-16

PAGE
2 / 4

DRAWING NO.
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5.ENVIRONMENTAL CHARACTERISTIC

5-1 Sound Pressure Level and Sensitivity shall not change by more than 12 dB in the temperature range of -20° C to 60° C, at a relative humidity of 30%.

5-2 Sound Pressure Level and Sensitivity shall not change by more than 6 dB in the humidity range of 10% to 90% at the temperature of 25° C.

5-3 Stress : All Sensitivity or Sound Pressure Level shall be within 3 dB of the specified values after the device is subjected to any or all of the follows.

5-3-1 Operation at 95% relative humidity and 40° C for 100 hours, followed by a normalization period of 24 hours at 30% and 25° C.

5-3-2 Storage at -40° C to +100° C for 24 hours followed by a normalization period of an hour at 25° C.

5-3-3 Vibration at 10 to 55Hz, 1.5mm amplitude. 1 minute sweep.
X,Y,Z, 3 each axis for 3 hours.

5-3-4 Shock : After impact of 50G is applied following
X,Y,Z, 3 axis/3 cycle/ each direction.

6.MECHANICAL CHARACTERISTICS

LEAD STRENGTH

To pull longitudinally 1.0 kgf min.

To push longitudinally 1.0 kgf min.

ULTRASONIC TRANSDUCER

MODEL NO. : T/R40-16

PAGE
3 / 4

DRAWING NO.
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7.NOTES

7-1 Design restrictions/precautions

This sensor is designed for indoor use. For outdoor applications, be sure to apply suitable supplementary drip-proof and anti-dew construction.

In case where secondary accidents due to operation failure or malfunctions can be anticipated, add a fail safe function to the design.

7-2 Usage restrictions/precautions

To prevent sensor malfunctions, operational failure or any deterioration of its characteristics ,do not use this sensor in the following, or similar, conditions.

- A. In strong shock or vibration.
- B. In high temperature and humidity for a long time.
- C. In corrosive gases or sea breeze.
- D. In dirty and dusty environments that may contaminate the sensor front or where dust may come into the sensor.

Do not solder while adding stress onto the outer leads, also do not apply stress like spin or pressure right after soldering.

In case you form the leads, support the root firmly and form.

7-3 WARRANTY

7-3-1 Period

Warranty period is one year after delivery.

7-3-2 Scope

Defective sensors attributable to manufacturer's responsibility shall be replaced for free, during the warranty period. However, following cases are out of the scope.

- A. Unsuitable handling or mis-use by user.
- B. Modification or repair by user.
- C. Any other cases not responsible for manufacturer such as natural calamity,accident,etc.

This scope covers only replacement. Any loss derived from failure or malfunction of the sensor,or cost to replace is excluded from this warranty scope.

ULTRASONIC TRANSDUCER

MODEL NO. : T/R40-16

PAGE
4 / 4

DRAWING NO.
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