



Datasheet

ENGLISH

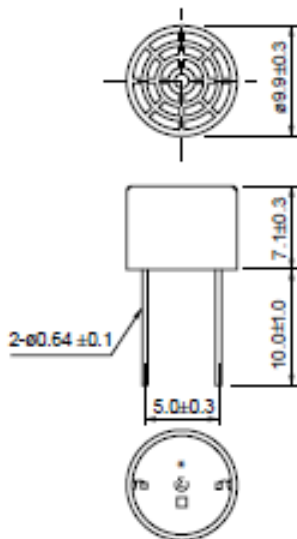
RS PRO Ultrasonic Proximity Sensors

RS Stock Numbers: 166-9496 & 166-9497 = Sold individually
237-0783 & 237-0799 = Sold in boxes

RECEIVER



166-9496 / 237-0783

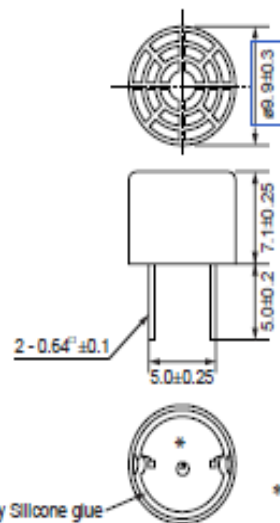


* : EIAJ Code
□ : R or S
In mm

TRANSMITTER



166-9497 / 237-0799



* : EIAJ Code
(In mm)

Datasheet

Specifications

Part Number	Construction	Using Method	Nominal Freq. (kHz)	Overall Sensitivity (mVp-p)	Sensitivity (dB)	S.P.L. (dB)	Directivity (°)	Cap. (pF)	Operating Temp. Range (°C)	Detectable Range (m)	Resolution (mm)	Max. Input Voltage (Vp-p)
166-9496 237-0783	Open struct.	Receiver	40	-	-63 typ. (0dB-10V/Pa)	-	80	2550	-40 to 85	0.2 to 4	9	-
166-9497 237-0799	Open struct.	Transmitter	40	-	-	120 typ. (0dB-0.02mPa)	80	2550	-40 to 85	0.2 to 4	9	20 Continuous signal

Distance:30cm, Overall sensitivity:0dB=10Vp-p, Sensitivity:0dB=1Vrms/ μ bar, Sound pressure level:0dB= 2×10^{-4} μ bar, 1 μ bar=0.1Pa

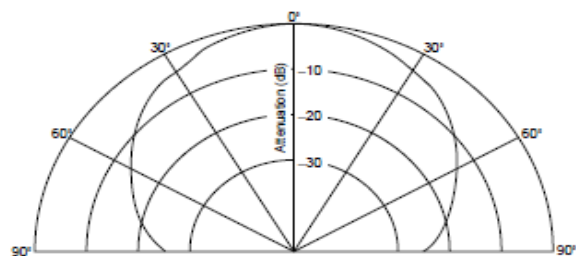
The sensor can be used in the operating temperature range.

Please refer to the individual specification for the temperature drift of Sensitivity/Sound pressure level or environmental characteristics in that temperature range.

Directivity, detectable range and resolution are typical values. They can be changed by application circuit and fixing method of the sensor.

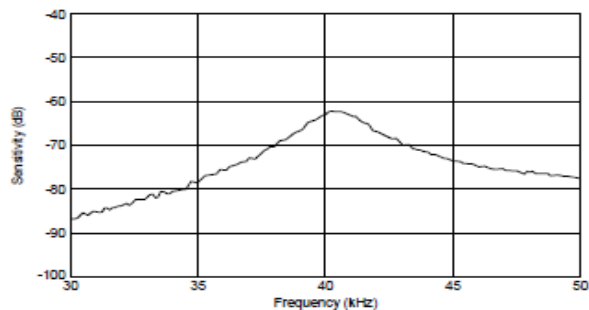
■ Directivity in Sensitivity

166-9496 / 237-0783



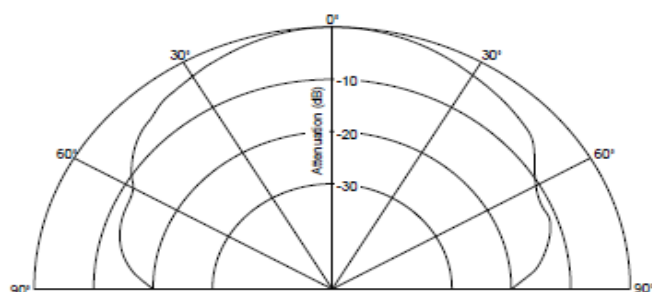
■ S. P. L. -Freq. Characteristics

166-9496 / 237-0783



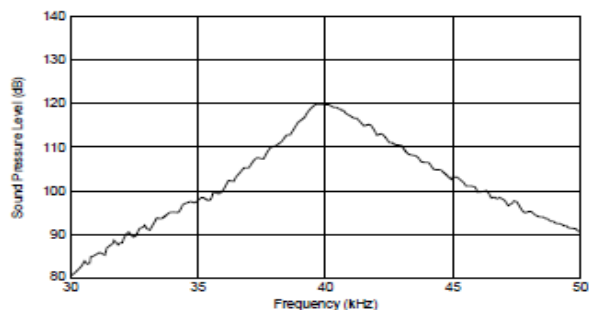
■ Directivity in S. P. L.

166-9497 / 237-0799



■ Sensitivity-Freq. Characteristics

166-9497 / 237-0799

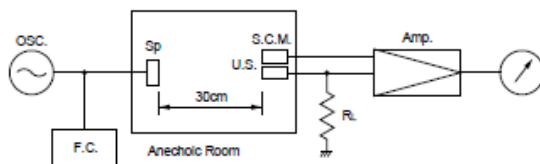


Datasheet

Data/Notice

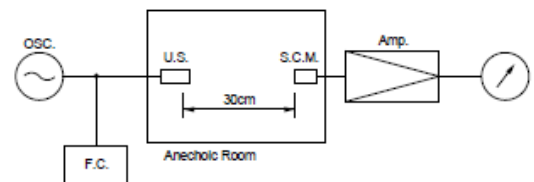
■ Test Circuit

Receiver



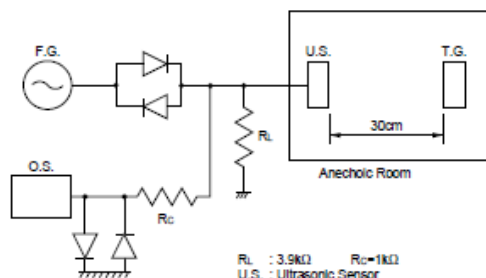
R_L : 3.9k Ω
 U.S. : Ultrasonic Sensor
 S.C.M. : Standard Capacitor Microphone (Brüel&Kjær 4135)
 Amp. : Amplifier (Brüel&Kjær 2610)
 OSC. : Oscillator
 Sp. : Tweeter
 F.C. : Frequency Counter

Transmitter



U.S. : Ultrasonic Sensor (Brüel&Kjær 4135)
 S.C.M. : Standard Capacitor Microphone (Brüel&Kjær 2610)
 Amp. : Amplifier
 Input Voltage : 10 Vrms
 F.C. : Frequency Counter

Dual Use



R_L : 3.9k Ω R_C = 1k Ω
 U.S. : Ultrasonic Sensor
 T.G. : Target
 F.G. : Function Generator
 O.S. : Oscilloscope

■ Notice (Soldering and Mounting)

1. Pay attention to the mounting position as these sensors have directivity.
2. Please avoid applying DC-bias by connecting DC blocking capacitor or some other way because, otherwise, the component may be damaged.
3. Do not use in water.