

# Hydrophone Type 10CT

## Product Data and Specifications

### Features

- **High sensitivity**
- **Omnidirectional up to high frequencies**
- **Broad band frequency response**
- **Q-ring sealed mounting**
- **Individually calibrated**

The G.R.A.S. Hydrophone Type 10CT (Fig. 1) offers a usable frequency range from 1 Hz to 170 kHz and a high sensitivity for its size. Furthermore, it provides uniform omnidirectional responses up to high frequencies in both horizontal and vertical planes.

The Type 10CT is an excellent transducer for making absolute sound measurements and calibrations within a broad frequency range. It can also be applied as an omnidirectional reference projector.

Its overall characteristics make the Type 10CT extremely applicable to laboratory as well as industrial uses.

Fig. 2 shows the pin connections and a simplified circuit diagram.



Fig. 1 The Hydrophone Type 10CT

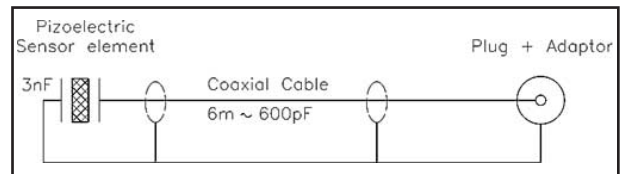


Fig. 2 Simplified circuit diagram of Type 10CT

Fig. 3 shows the overall physical dimensions.

Figs. 4 to 7 show the graphical data in detail.

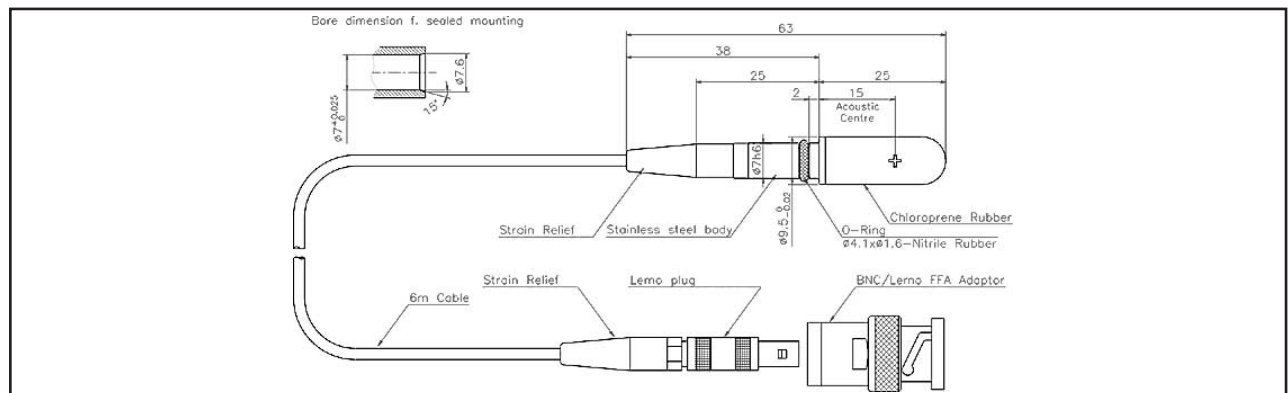


Fig. 3 The acoustic sensor element is permanently encapsulated in Chloroprene rubber which has been specially compounded to ensure an acoustic impedance very close to that of water and excellent low water permeability for long-term reliability. The metal body is made of corrosion-resistant, stainless steel

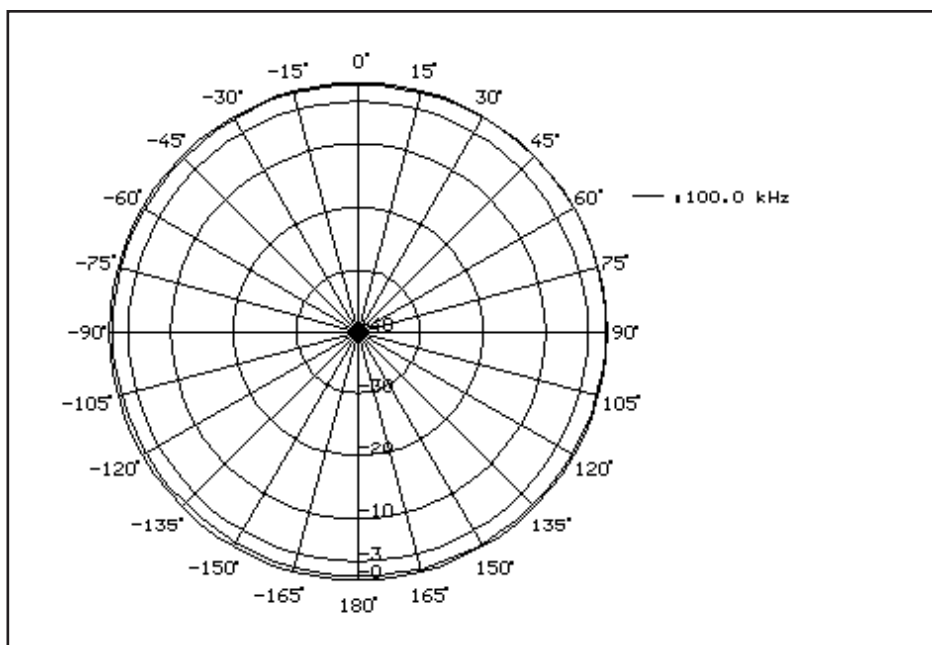


Fig. 4 Horizontal directivity pattern at 100 kHz

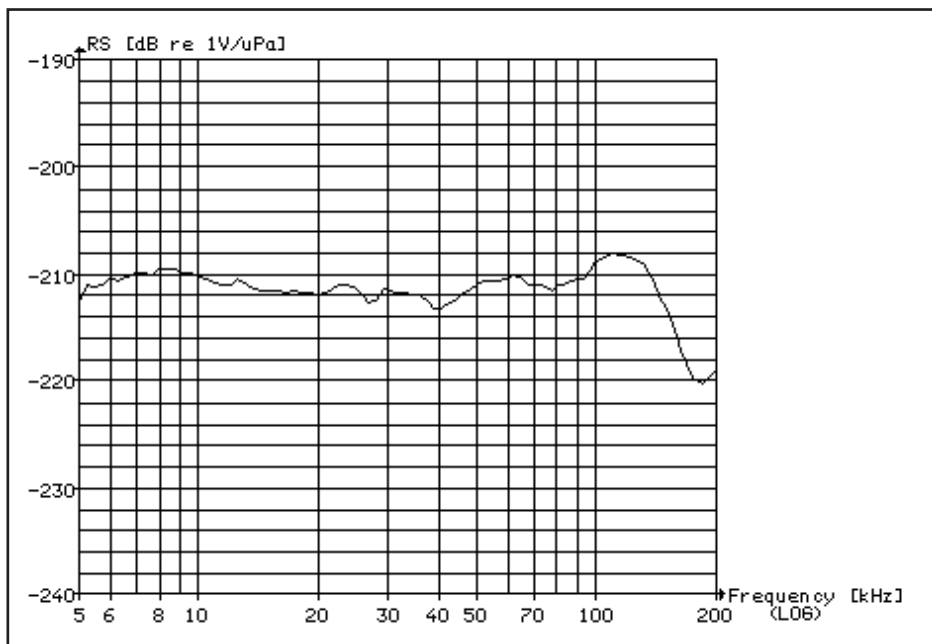


Fig. 5 Receiving sensitivity (decibels re. 1 V/μPa) from 5 kHz to 200 kHz

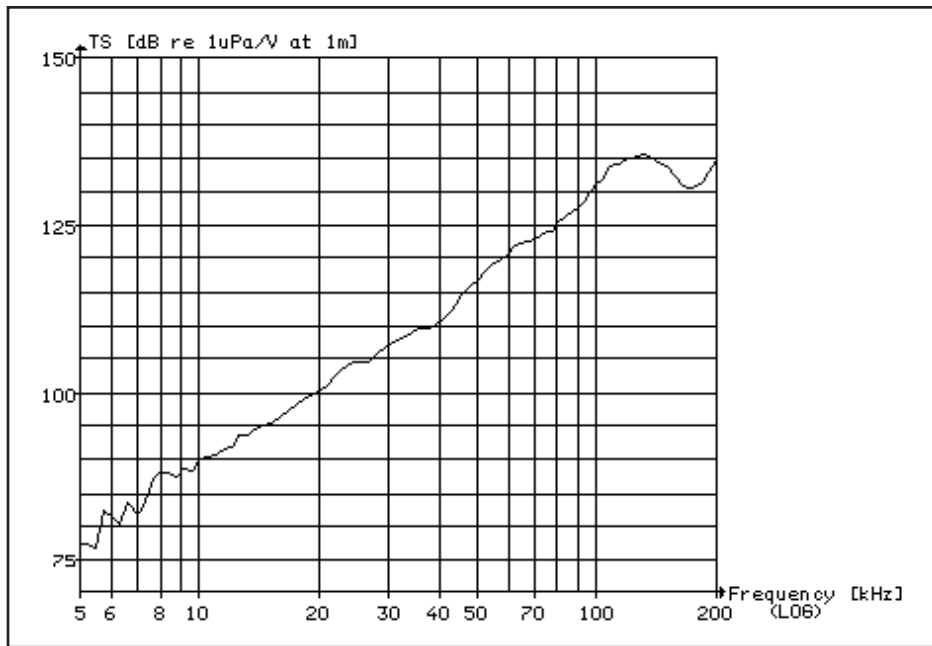


Fig. 6 Transmitting sensitivity (decibels re. 1  $\mu\text{Pa/V}$ ) from 5 kHz to 200 kHz

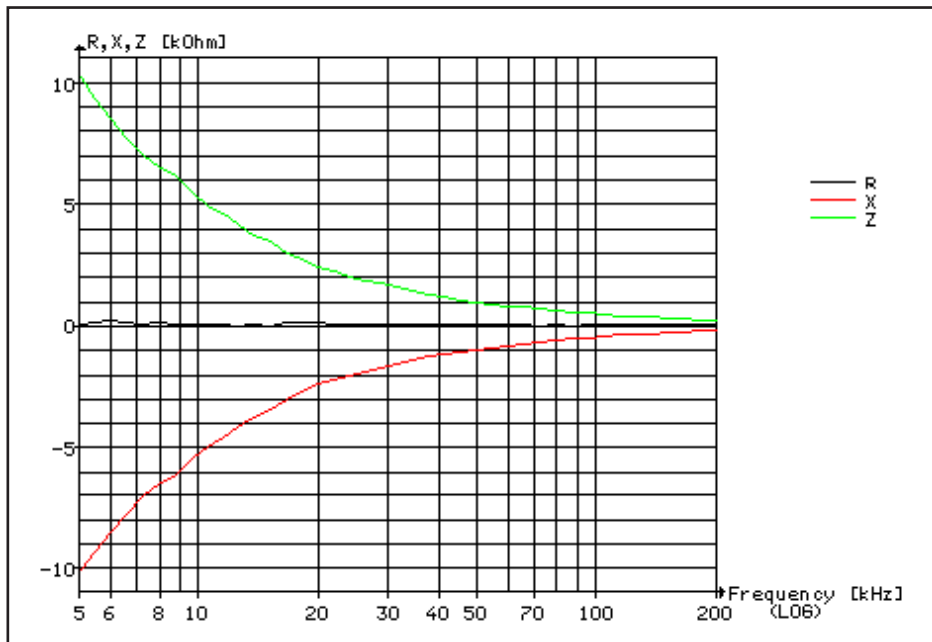


Fig. 7 Impedance components from 5 kHz to 200 kHz  
 R = resistance, X = reactance and Z = resultant  
 (top down: Z, R, X)

### Specifications

<b>Usable frequency range (-10dB):</b>	1 Hz - 170 kHz	<b>Operating depth:</b>	700 m
<b>Horizontal directional response:</b>		<b>Survival depth:</b>	1000 m
360°: .....	±2 dB at 100 kHz	<b>Operating temperature range:</b>	-2 °C to +80 °C
<b>Vertical directional response:</b>		<b>Storage temperature range:</b>	-40 °C to +80 °C
270°: .....	±3 dB at 100 kHz	<b>Weight in air:</b>	75 g
<b>Nominal capacitance:</b>	3.4 nF		
<b>Sensitivity:</b>			
Voltage (nominal):	-211 dB ± 3 dB re. 1 V/μ Pa		
Charge (nominal):	..... 0.1 pC/Pa		
Transmitting (100 kHz):	..... 132 dB ± 3 dB at 1 m (re 1 μPa/V)		
Effect of temperature:	..... 0 to -0.03 dB/°C for voltage		
Effect of static pressure:	..... 0 to 0.03 dB/atm or 0 to 0.3 dB /100 m		

G.R.A.S. Sound & Vibration reserves the right to change specifications and accessories without notice

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