

Hydrophone Type 10CD

Product Data and Specifications

Features

- **Omnidirectional throughout its full-frequency range**
- **Wide frequency range**
- **Durable construction**
- **Long-term stability**
- **Individually calibrated**

The G.R.A.S. Hydrophone Type 10CD (Fig. 1) offers uniform omnidirectional characteristics throughout its full frequency range of 1 Hz to 140 kHz.

It has a typical sensitivity of -203 dB re. $1 \text{ V}/\mu\text{Pa}$ and a capacitance of 7.9 nF which ensure an excellent signal to noise ratio, thereby, allowing it to be used with extension cables with only a limited reduction in sensitivity.

The Type 10CD has excellent acoustic characteristics and durability which make it ideal for a wide range of applications including calibration purposes.

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



Fig. 1 The Hydrophone Type 10CD

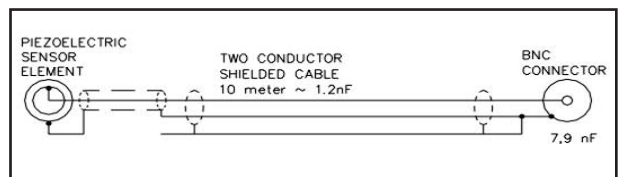


Fig. 2 Simplified circuit diagram of Type 10CD

Fig. 3 shows the overall physical dimensions.

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

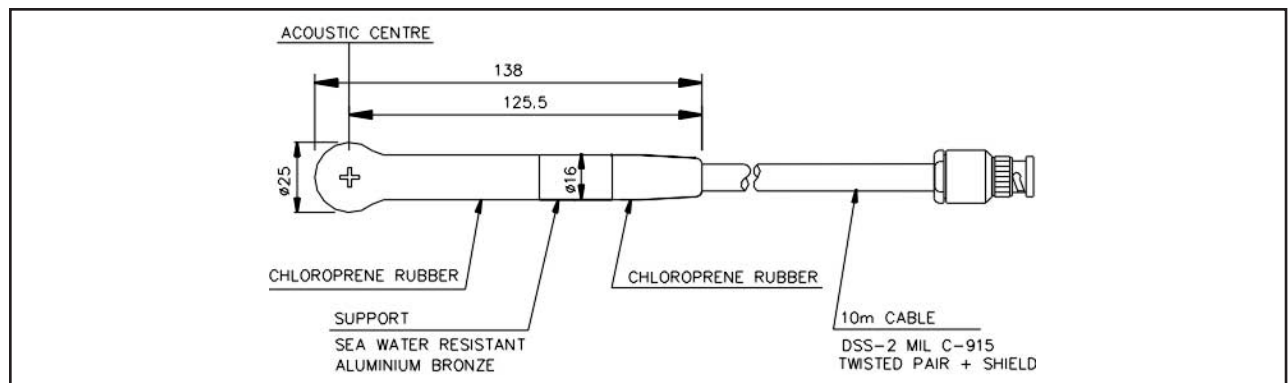


Fig. 3 The acoustic sensor element is permanently encapsulated in Chloroprene rubber which has been specially compounded to ensure an acoustic impedance very close to that of water and excellent low water permeability for long-term reliability

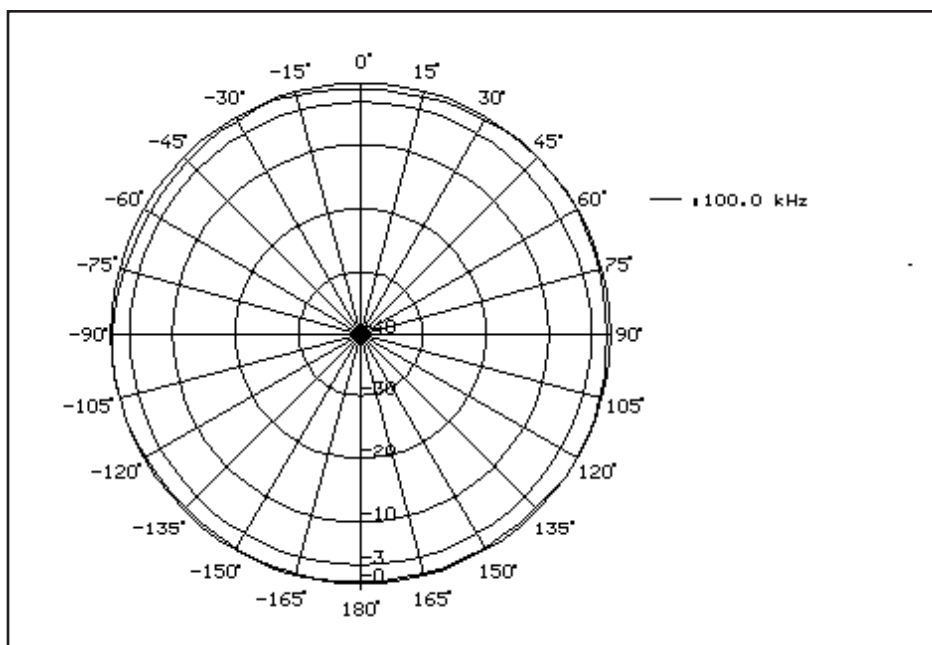


Fig. 4 Vertical directivity pattern at 100 kHz

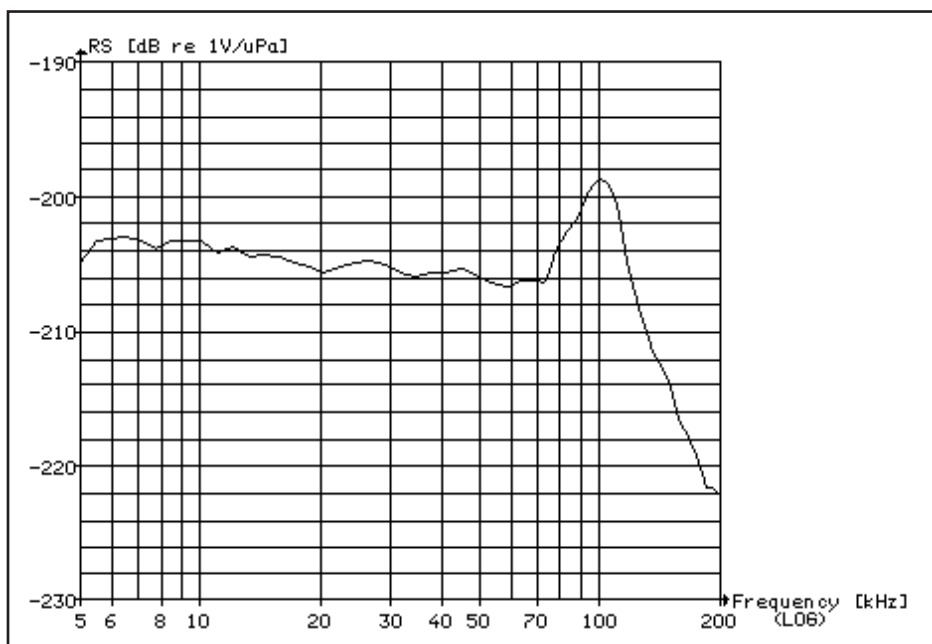


Fig. 5 Receiving sensitivity (decibels re. 1 V/μPa) from 5 kHz to 200 kHz

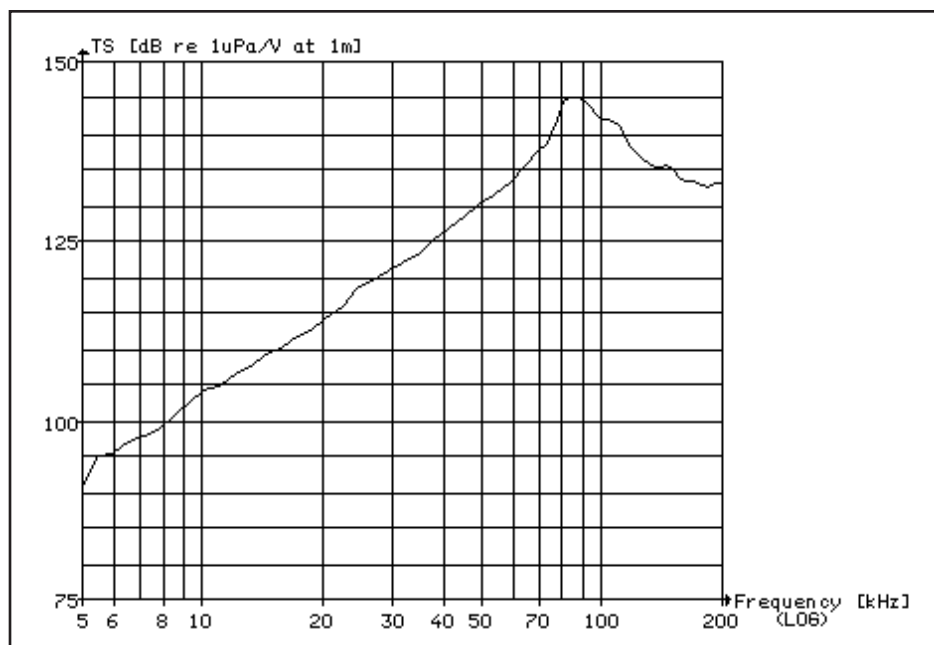


Fig. 6 Transmitting sensitivity (decibels re. 1 $\mu\text{Pa/V}$) from 5 kHz to 200 kHz

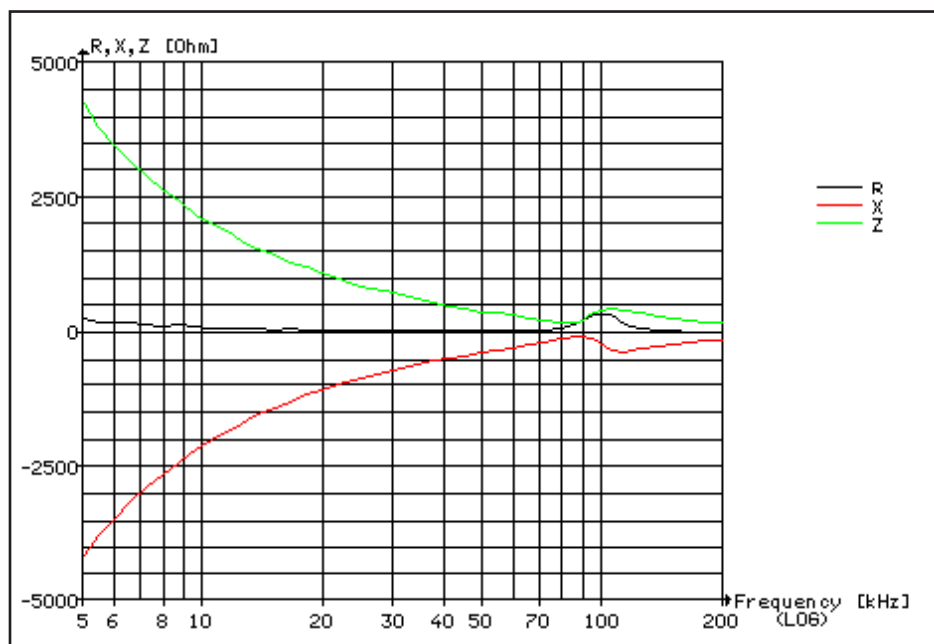


Fig. 7 Impedance components from 5 kHz to 200 kHz
 R = resistance, X = reactance and Z = resultant
 (top down: Z, R, X)

Specifications

Usable frequency range:	1 Hz - 140 kHz	Operating depth:	900 m
Linear frequency range:	1 Hz - 80 kHz	Operating temperature range:	-2 °C to +80 °C
Nominal capacitance, cable included:	7.8 nF	Storage temperature range:	-40 °C to +80 °C
Horizontal directional response:		Weight in air (including cable):	1.5 kg
360°:	±2 dB at 100 kHz	Cable:	
Vertical directional response:		Length:	10 m
270°:	±2 dB at 100 kHz	Type	shielded pair DSS-2MIL-C915
Sensitivity:		Connector:	BNC
Voltage (250 Hz):	-203 dB ±2 dB re. 1 V/μPa (typical with a 10 m cable)	Encapsulating material:	Chloroprene
Charge (nominal):	0.55 pC/Pa	Metal body:	Aluminium bronze
Transmitting (100 kHz):	144 dB ±2 dB 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

G.R.A.S.
Sound & Vibration

Skovlytoften 33
2840 Holte, Denmark
Tel +45 45 66 40 46 Fax +45 45 66 40 47
e-mail: gras@gras.dk www.gras.dk