

Hydrophone Type 10CF

Product Data and Specifications

Features

- Reference hydrophone for high frequencies
- Linear receiving response from 100kHz to 500kHz
- Individually calibrated
- Long-term stable sensitivity
- Individually calibrated
- Calibration as reference hydrophone traceable to national standards established at NPL



Fig. 1 The Hydrophone Type 10CF

The G.R.A.S. Hydrophone Type 10CF (Fig. 1) is a miniature probe hydrophone specifically for use as a standard reference hydrophone over the frequency range 100 kHz to 500 kHz.

It has a built-in 10 dB low-noise preamplifier with an insert-voltage calibration facility, for conveniently checking the hydrophone, and is capable of driving a 25 m cable.

The Type 10CF has a usable frequency range from 10 kHz to 800 kHz and good omnidirectional characteristics in the horizontal and vertical planes for general high-frequency measurements.

It is a high-quality hydrophone for use as a transfer standard hydrophone. The sensor element has excellent stability with time, which ensures reliable sensitivity over long periods.

The Type 10CF is also an ideal hydrophone for acoustic measurements in near fields.

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

Fig. 3 shows the overall physical dimensions.

Figs. 4 to 6 show the graphical data in detail.

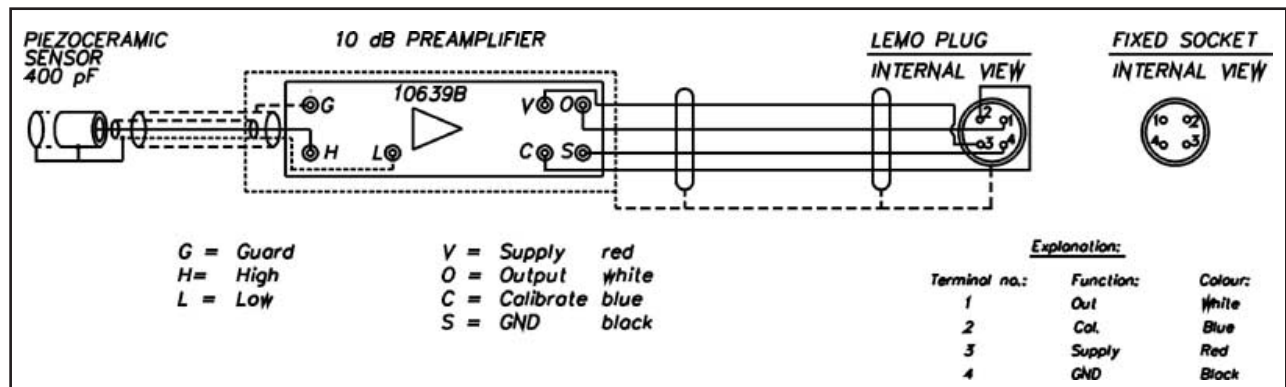


Fig. 2 Simplified circuit diagram of Type 10CF

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Hydrophone Type 10CF

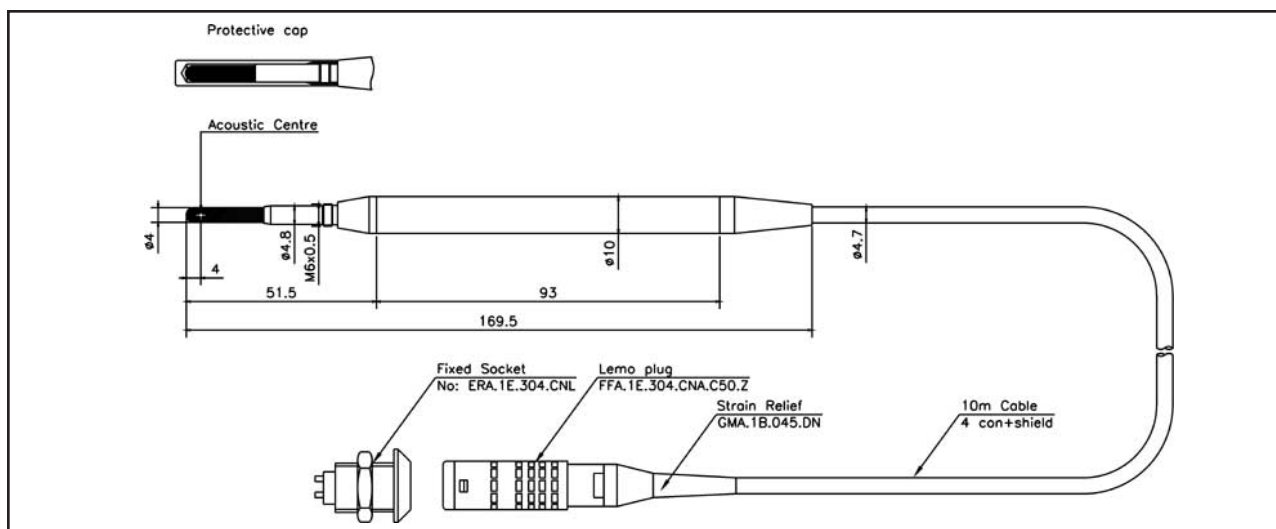


Fig. 3 The overall physical dimensions of the Hydrophone Type 10CF

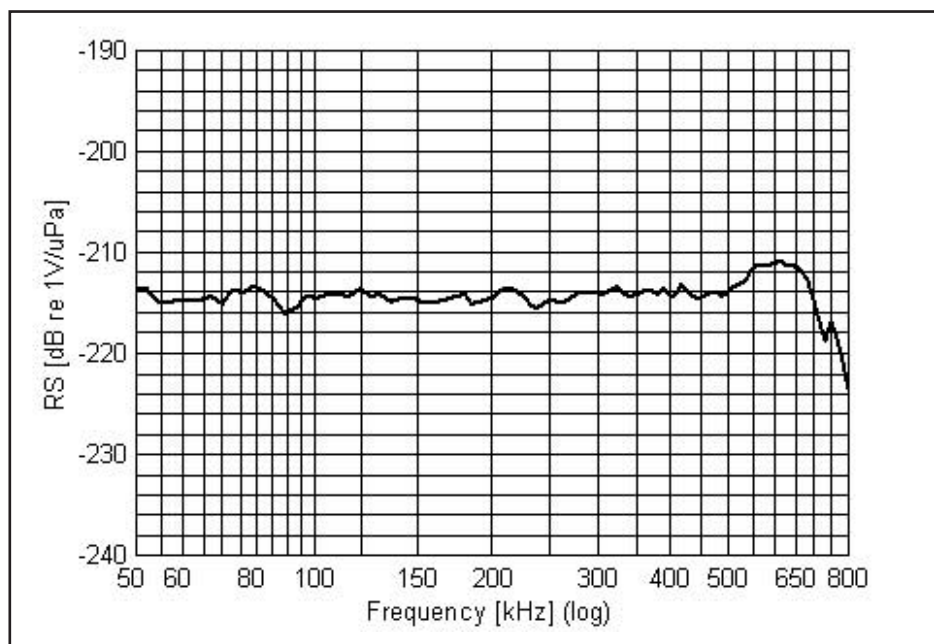


Fig. 4 Receiving sensitivity (decibels re. 1 V/ μ Pa) from 50 kHz to 800 kHz

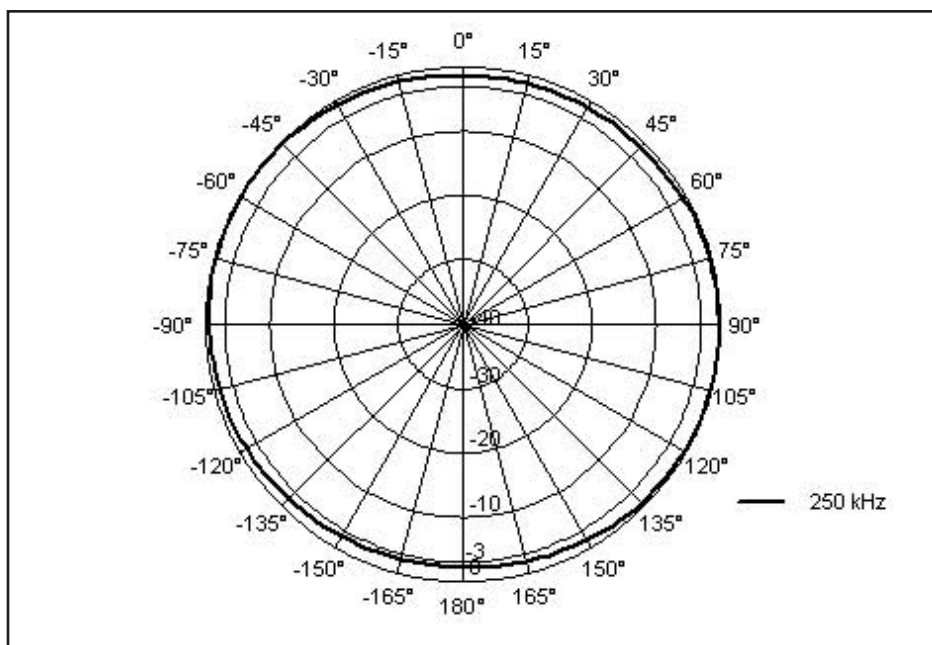


Fig. 5 Horizontal directivity pattern at 250kHz

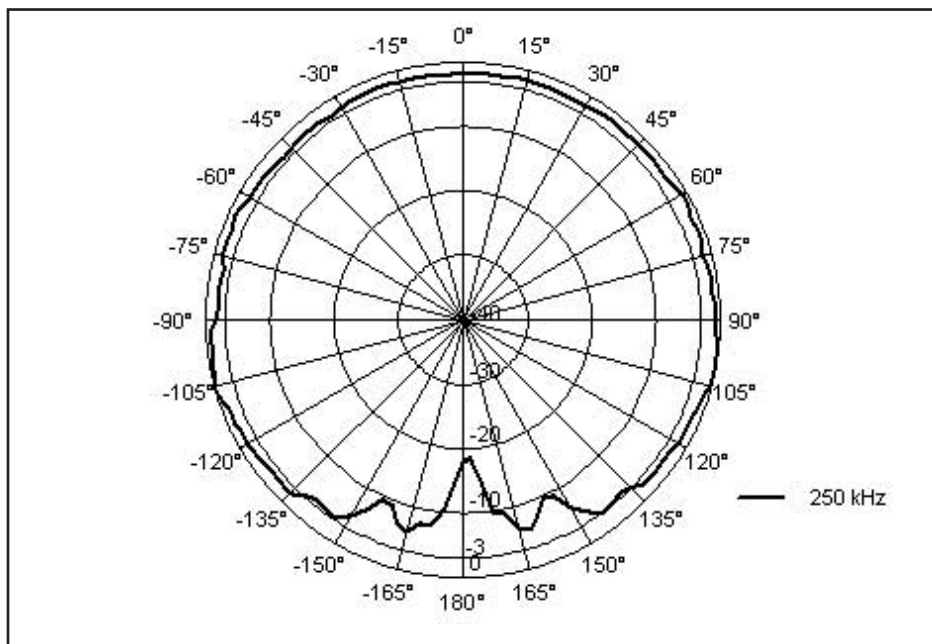


Fig. 6 Vertical directivity pattern at 250kHz

Specifications

Usable frequency range (−10dB):	10 kHz - 800 kHz	Supply voltage:	10 - 24 VDC
Linear frequency range:		Maximum output voltage:	
100 kHz - 500 kHz:	± 3 dB	at 12 VDC supply	1 V RMS
Receiving sensitivity (typical):		at 24 VDC supply	2 V RMS
100 Hz	−214 dB ± 2 dB re. 1 V/μ Pa	Quiescent current:	
Horizontal directivity at 250 Hz:		at 12 VDC supply	15 mA
360°:	± 2 dB	at 18 VDC supply	20.5 mA
Vertical directivity at 250 Hz:		Preamplifier gain:	10 dB
60° - 120°:	± 3 dB	Output drive capability:	25 m cable at 1 MΩ input
Maximum operating pressure:	0.3 MPa = 3 atm (20 m depth)	Insert-calibration attenuation:	30 dB
Maximum sound pressure (distortion level −4 dB):		Housing material:	Stainless steel
at 12 VDC supply	210 dB re. 1 μPa	Cable:	4-core + screen/shield, 10 m cable
Equivalent noise:		Connector:	4-pin LEMO Series E, watertight
at 1 kHz	80 dB re. 1 μPa	Weight in air (including LEMO receptacle):	410 gm
Operating temperature range:	−2 °C to +40 °C		
Storage temperature range:	−30 °C to +50 °C		

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

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