Hydrophone Type 10CA

Product Data and Specifications

Features

- ***Wide usable frequency range***
- ***Omnidirectional in all planes***
- ***Built-in low noise preamplifier***
- ***Long-term stability***
- ***Individually calibrated***

The G.R.A.S. Hydrophone Type 10CA (Fig. 1) is a broad-band spherical hydrophone which offers a very wide usable frequency range with excellent omni-directional characteristics in all planes.

The overall receiving characteristics makes the Type 10CA an ideal transducer for making absolute underwater sound measurements up to 480 kHz.

The wide frequency range also makes the Type 10CA perfect for calibration purposes, particularly at higher frequencies.

The Type 10CA incorporates a low-noise 26 dB preamplifier providing signal conditioning for transmission over long underwater cables. The Type 10CA features an insert calibration facility which allows for a reliable test of the hydrophone.

Fig. 1 The Hydrophone Type 10CA

The Type 10CA features an insert calibration facility, which allows for a reliable test of the hydrophone.

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. 7 shows details of available accessories.

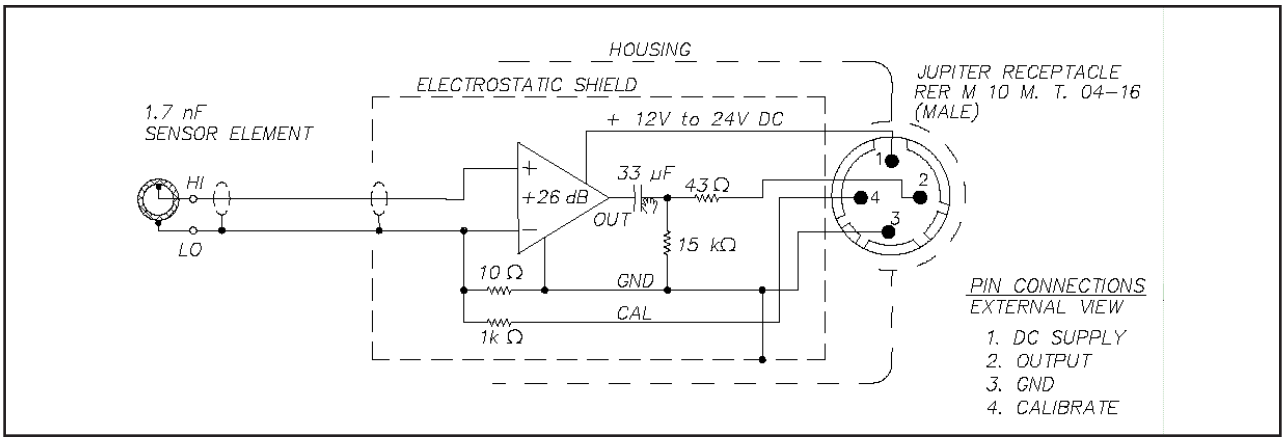

Fig. 2 Simplified circuit diagram of Type 10CA

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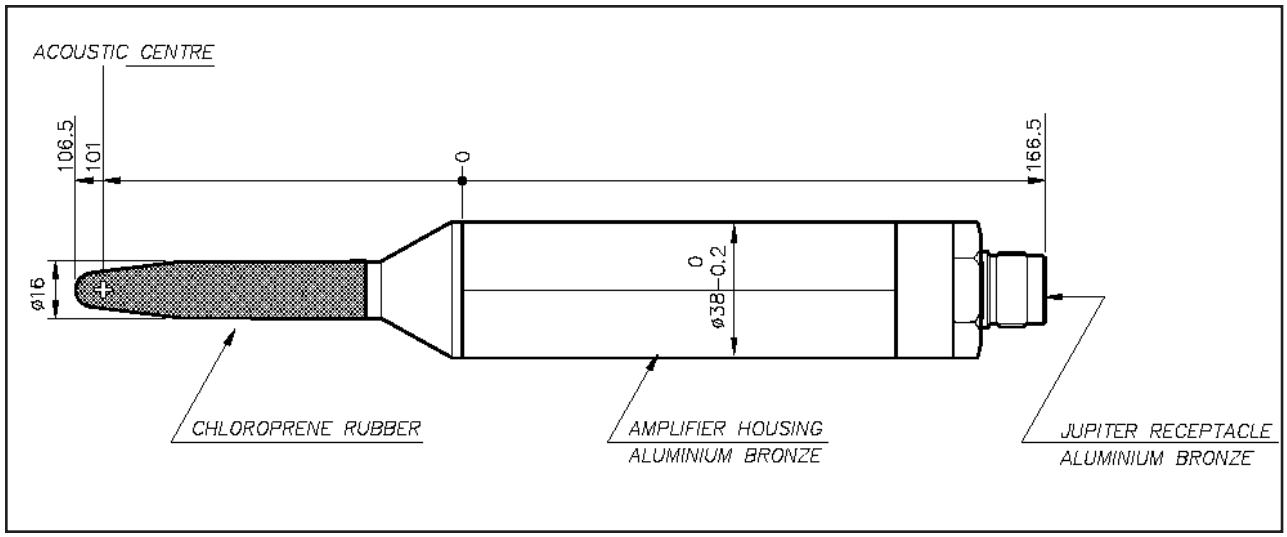

Fig. 3 The sensor element is permanently encapsulated in Chloroprene rubber to ensure long term reliability. The rubber has been specially compounded to ensure acoustic impedance close to that of water. The hydrophone and connector housing are made of corrosion-resistant aluminum bronze.

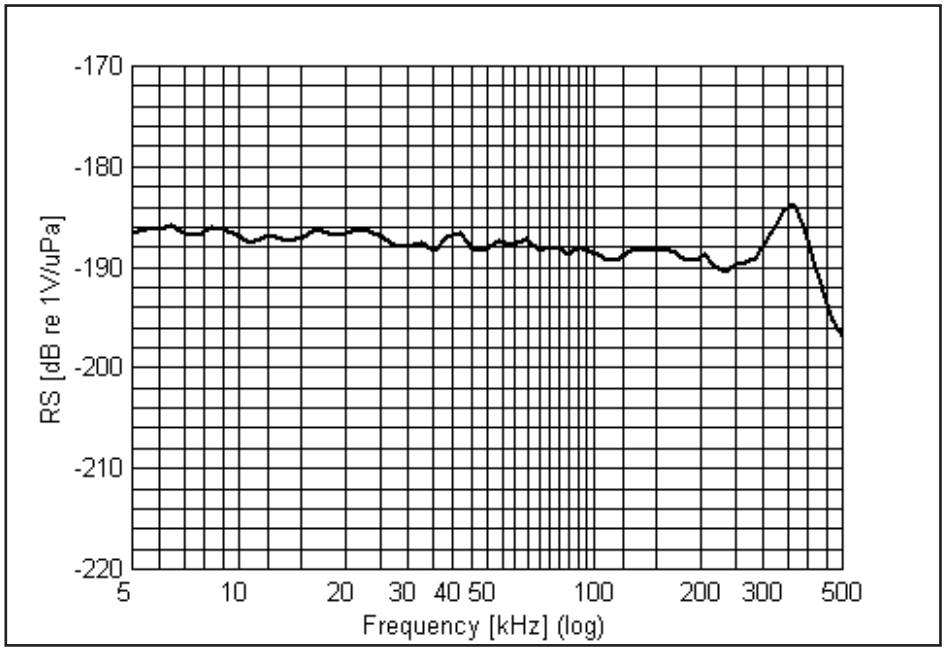

Fig. 4 Receiving sensitivity (decibels re. 1 V/µPa) from 5 kHz to 500 kHz

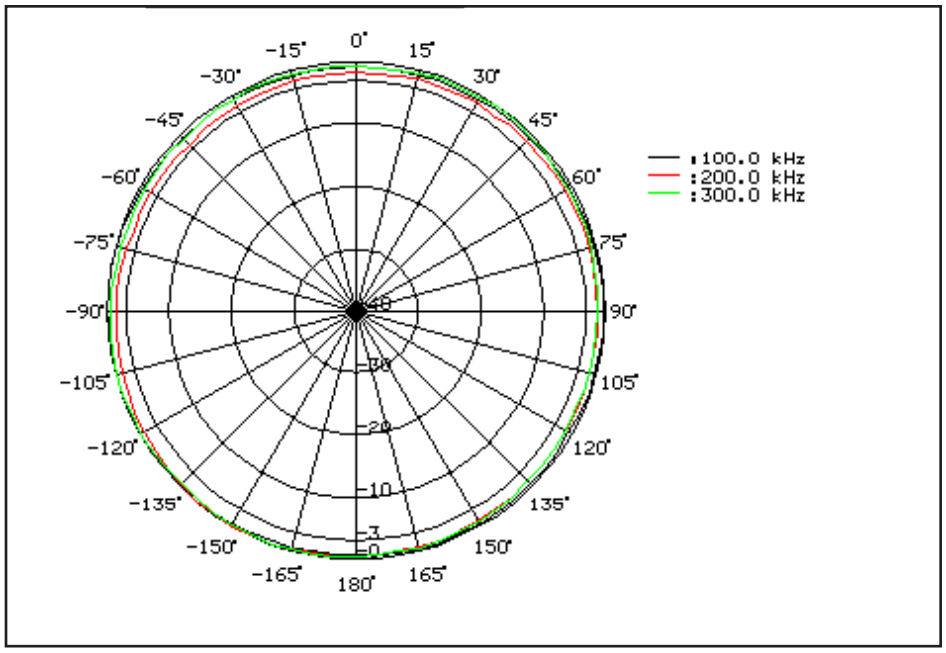

Fig. 5 Horizontal directivity pattern at 100 kHZ, 200 kHZ and 300 kHz

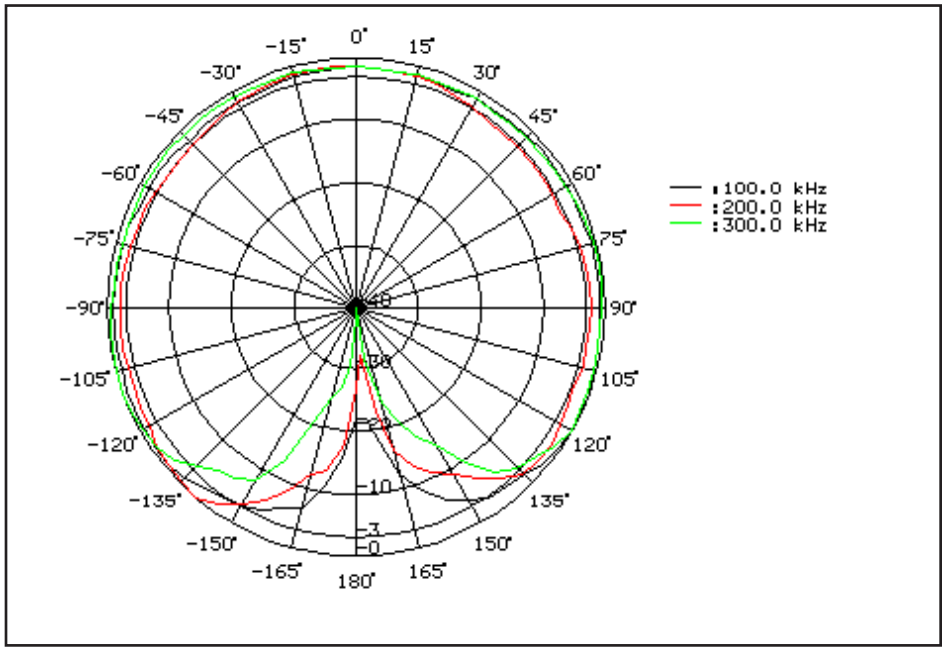

Fig. 6 Vertical directivity pattern at 100 kHZ, 200 kHZ and 300 kHz

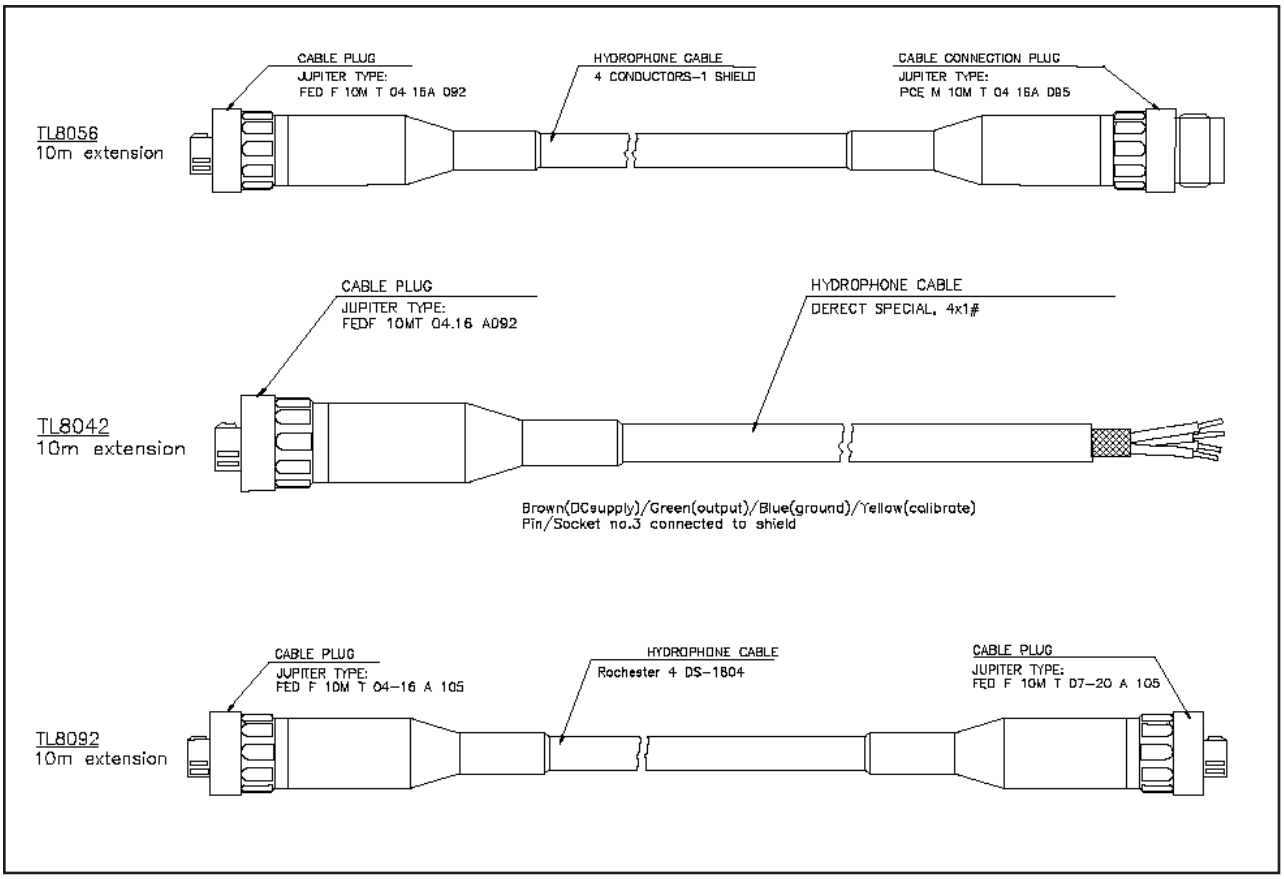

Fig. 7 Available accessories - Cables TL8056, TL8042 and 8092

Specifications

Usable frequency range (–10dB):
15 Hz - 480 kHz

Linear frequency range:
30 Hz - 100 kHz: . . . . . ±2 dB
25 Hz - 250 kHz: . . . . . ±3 dB

Receiving sensitivity:
–186 dB ±3 dB re. 1 V/µ Pa

Horizontal directivity at 100 Hz:
360 °: . . . . . ±2 dB

Vertical directivity at 100 Hz:
270 °: . . . . . ±2 dB

Operating depth:
900 m

Survival depth:
1200 m

Operating temperature range:
–2 °C to +55 °C

Storage temperature range:
–40 °C to +80 °C

Maximum output voltage:
≥3.5 V RMS (at 12 VDC)

Preamplifier gain:
26 dB

Supply voltage:
12 - 24 VDC

High-pass filter:
15 Hz (–3 dB)

Current consumption:
<28 mA at 12 VDC
<34 mA at 24 VDC

Maximum output power:
50 mW

Weight in air:
650 gm without cable

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