

# Hydrophone TC4047



## With Wet Mating Connector

The TC4047 miniature hydrophone offers a useable frequency range from 1kHz to 170kHz. The hydrophone incorporates a high-quality 20dB low-noise pre-amplifier which provides optimal conditions for signal transmission.

The high sensitivity provides excellent signal to noise ratio and immunity against induced cable noise. The hydrophone is omnidirectional up to 100kHz and has uniform receiving characteristic from 1kHz to 100kHz.

An insert calibration circuit enables remote testing of the hydrophone condition. The hydrophone comes with a SEACON connector. The sensor element is permanently encapsulated in special formulated NBR to ensure long-term reliability. The rubber has been specially compounded to ensure acoustic impedance close to that of water. The strain relief and outer jacket of the cable is made of high-density polyurethane. TC4047 can be used in sea or fresh water.

## TECHNICAL SPECIFICATIONS

<b>Usable frequency range:</b>	1kHz to 170kHz
<b>Receiving sensitivity:</b>	-191 ±3dB re 1V/μPa (@10kHz)
<b>Horizontal directivity pattern:</b>	Omnidirectional ±3dB at 100kHz
<b>Vertical directivity pattern:</b>	>270° ±3dB at 100kHz
<b>Preamplifier gain:</b>	+20dB ±0.5dB @ 10kHz
<b>Filter characteristic:</b>	6dB / octave (Filter: -3dB BW: 1kHz to 1MHz)
<b>Current consumption:</b>	<15mA @ 12VDC
<b>DC supply:</b>	+12V to +24V
<b>Output impedance:</b>	40 Ohm
<b>Output voltage:</b>	Max. 2Vrms with 24VDC supply
<b>Connector type:</b>	6 pin Seacon connector
<b>Operating depth:</b>	700m
<b>Survival depth:</b>	800m
<b>Operating temperature range:</b>	-2°C to +55°C
<b>Storage temperature range:</b>	-30°C to +80°C



## PRODUCT BENEFITS

- High sensitivity
- Omnidirectional
- Broadband
- Wet mating connector
- Individually calibrated

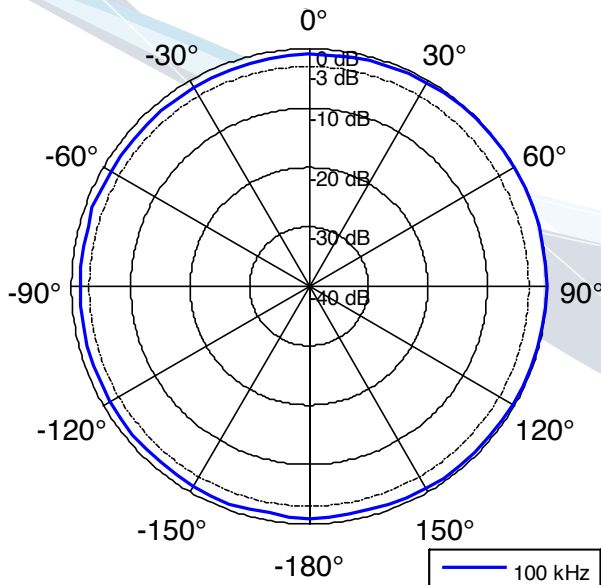


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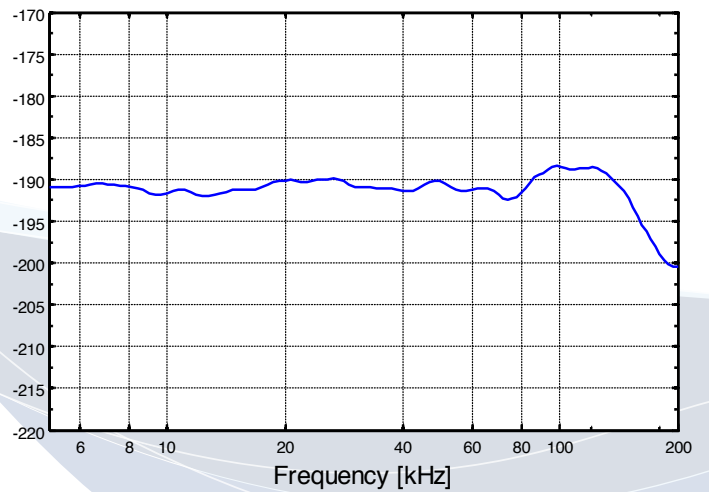
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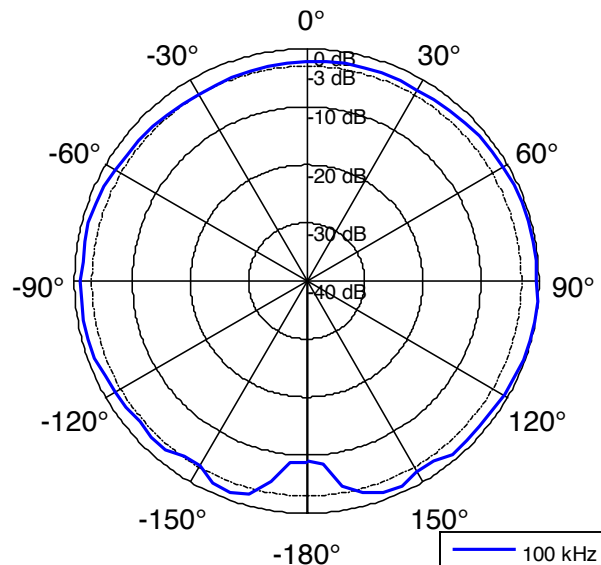
Horizontal Directivity Pattern



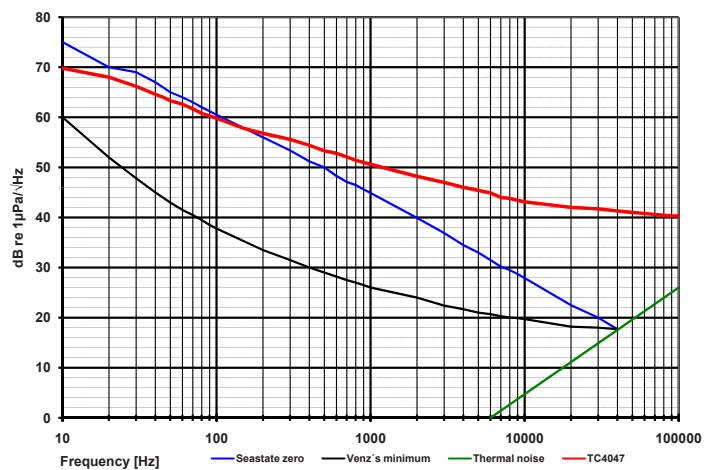
Receiving Sensitivity [dB re 1V/μPa @ 1m]



Vertical Directivity Pattern



Equivalent spectral noise pressure curve



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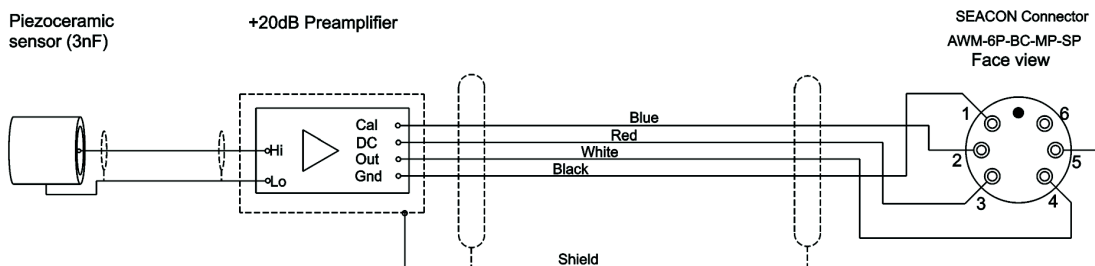
## With Wet Mating Connector



### Other information

#### Wiring:

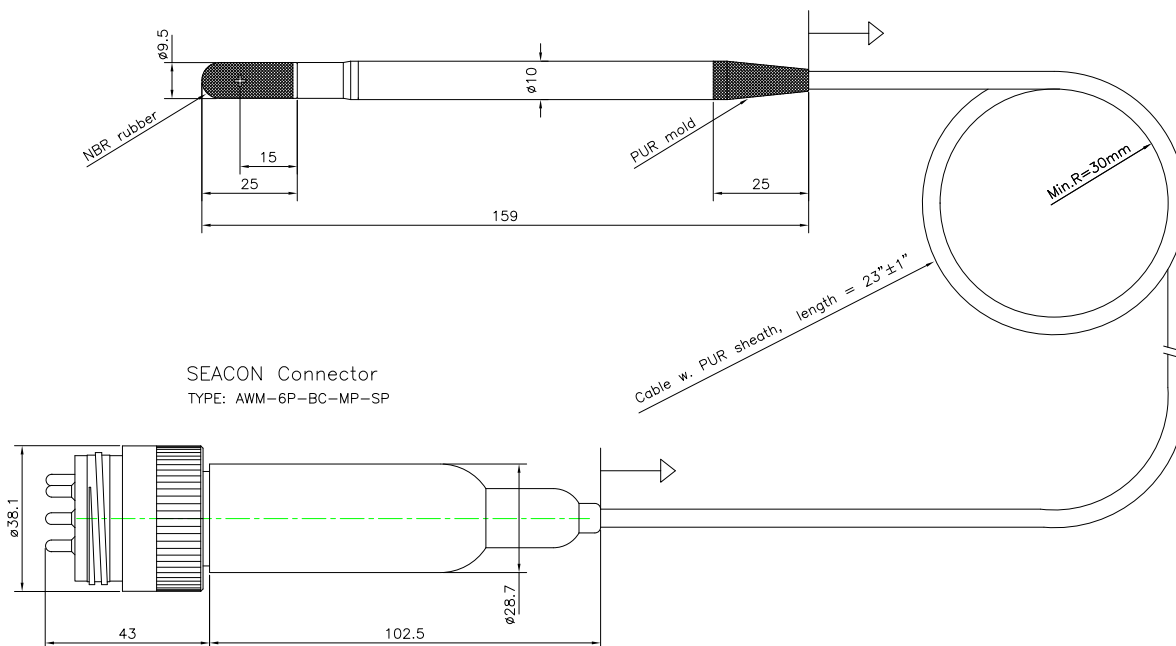
- Pin 1: Gnd. Return
- Pin 2: Insert calibration
- Pin 3: DC supply
- Pin 4: Signal output
- Pin 5: Shield
- Pin 6:



### Insert calibration

The TC4047 preamplifier contains an insert calibration circuit. This allows for electrical calibration of the hydrophone. The calibration method is not an absolute calibration, but it provides a reliable method for testing of the hydrophone, especially for hydrophones in fixed remote installations. The insert sine signal simulates the output signal from the sensor element. To perform an insert calibration, use an appropriate function generator. The applied calibration signal must not exceed 2 Vrms. A higher voltage may damage the calibration resistor. The attenuation of the calibration signal is 20dB for short cables.

### Outline Dimensions



For information on export control regulations on this product, please refer to [www.teledynemarine.com/reson](http://www.teledynemarine.com/reson)



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