ES70-7CD

KONGSBERG

Depth-rated split-beam transducer

ES70-7CD Transducer

The ES70-7CD is a split-beam transducer with a large bandwidth designed for research applications. The nominal beamwidth is 7° at a nominal operational frequency of 70 kHz. The transducer is designed with four separate sectors.

The ES70-7CD transducer has been designed to withstand a large water pressure, and is therefore well-suited for towed bodies or autonomous vehicles. The recommended installation method is through the hull plating using the mounting and clamping rings provided. Alternatively, the transducer is mounted using brackets and M8 screws at the back of the transducer.

Order information

To order the ES70-7CD transducer contact your local dealer or use our website:
www.kongsberg.com/es70-7cd

Deliverables

- ES70-7CD Transducer/w 2 m cable and SubConn connector: 418885

Optional items

- Clamping ring: ES7-203679
- Mounting ring: 350092

KEY FEATURES

- Wide-band split-beam transducer for research applications
- Nominal frequency is 70 kHz
- Frequency range: 55 to 95 kHz
- Nominal beamwidth is 7°
- Maximum transmit power is 1000 W
- Physical dimensions:
  Diameter: 280 mm
  Height: 185 mm
- Depth rate is 1500 m

Performance

Nominal frequency: 70 kHz
Nominal beamwidth: 7°
Frequency range: 55 to 95 kHz
Figure of merit: +5 dB
Max. source level: 225 dB re µPa per V @ 1 m
Transmit sensitivity (Su): 185 dB re 1 µPa per V @ 1 m
Transmit sensitivity (Sw): 198 dB re 1 µPa per W @ 1 m
Receive sensitivity (Mt): -181 dB re 1 V per µPa @ 1 m
Sidelobe level: -21 dB
Back radiation level: -40 dB
Nominal impedance (each sector): 75 Ω

Power specifications

Max. transmit power: 500 W *(This is the maximum allowed input power to the transducer. Due to non-linear effects, this number will be limited in some applications).*
Max. pulse length: 16 ms
Max. duty cycle: 1 %

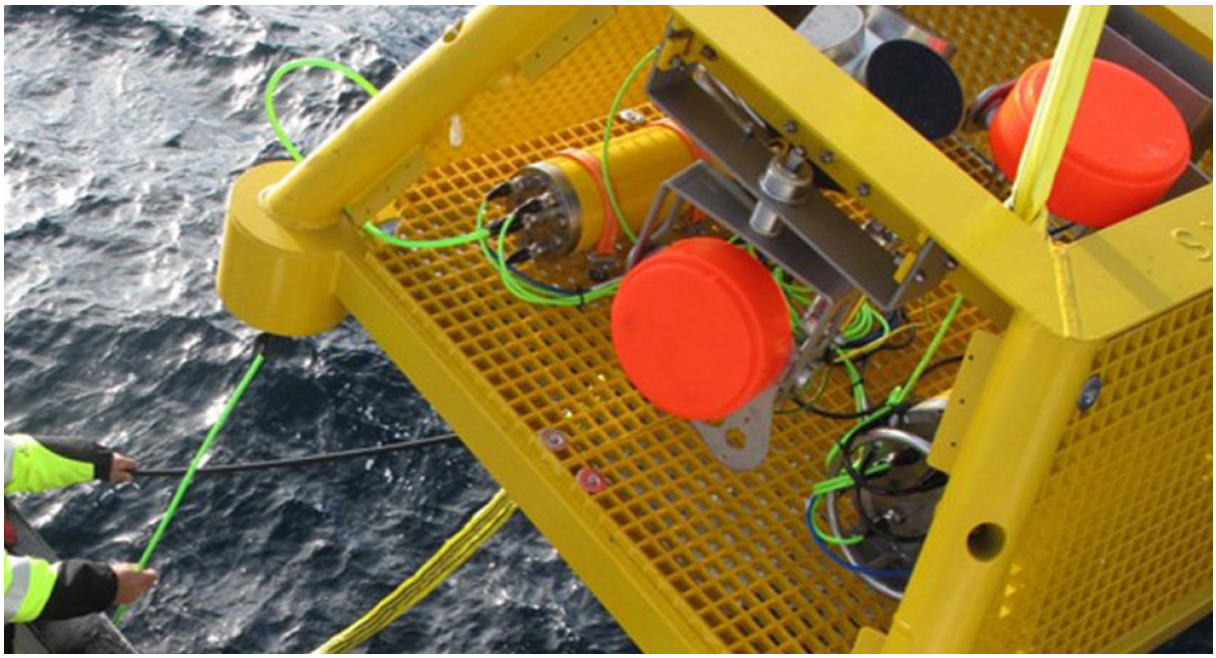
Weight and outline dimensions

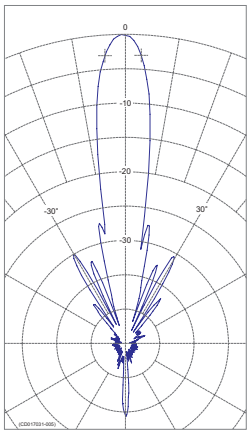
Physical dimensions:
Diameter: 280 mm
Height: 105 mm (body)
Total height: 185 mm
Weight:
In air: 16 kg (incl. 2 m cable with SubConn)
In water: 8.7 kg (ex. cable)
Cable: SubConn MCIL8M with 2 m cable
Cable diameter: 10.4±0.5 mm
Bending radius:
Static: 104 mm (theoretical) / Dynamic: 156 mm

Environmental requirements

Storage temperature: Max. +60°C / Min.: -20°C
Operating temperature: Max.: +40°C / Min.: -5°C
Depth rating: 1500 m

The technical specifications and requirements provided are those valid when operating at the nominal frequency with all sectors excited simultaneously.
We are continuously working to improve the quality and performance of our products. Technical specifications may therefore be changed without prior notice.





Beam pattern

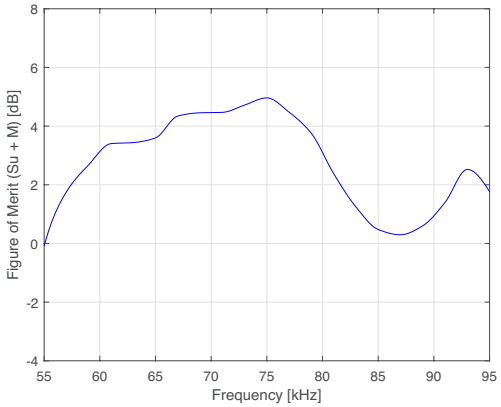
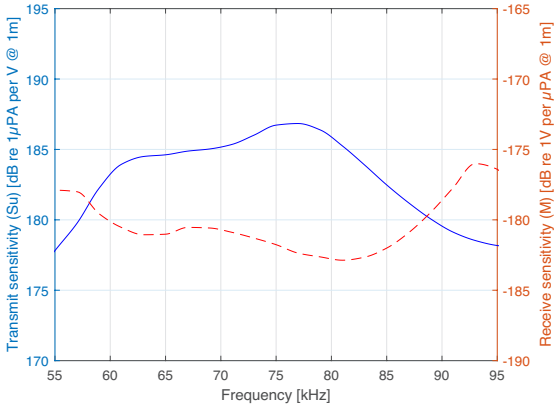
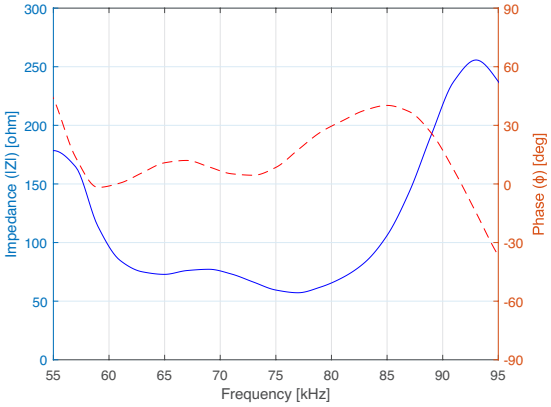


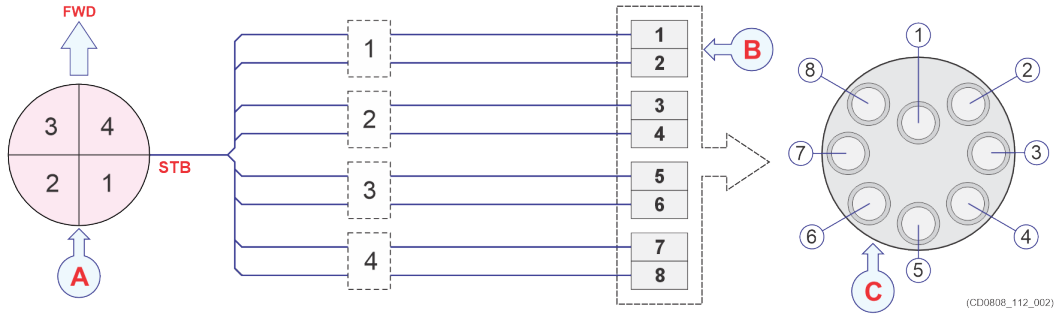
Figure of merit



Transmit and receive sensitivity

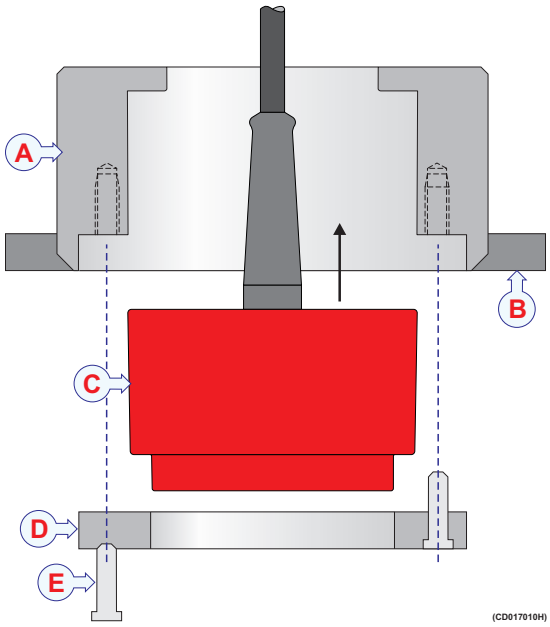


Impedance and phase



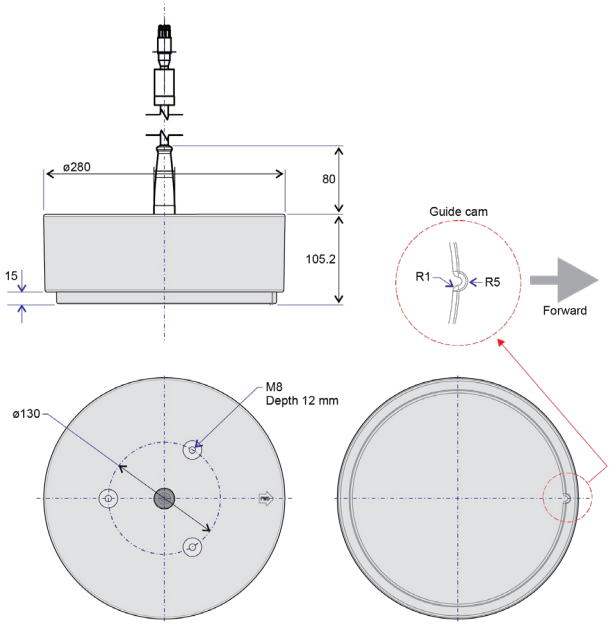
Connections to MacArtney SubConn socket

The transducer connects to terminals 1 through 8 on a circular 8-pin Sub Conn socket. This socket is used for the products WBT Mini, WBT Tube and WBAT.
(A) Transducer seen from above - observe the sector locations relative to the forward direction!
(B) Terminals
(C) Face view of male connector



Installation principle

(A) Mounting ring, can be supplied by Kongsberg Discovery
(B) Towed body's hull plating
(C) Transducer
(D) Clamping ring
(E) Bolts



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Rules for transducer handling

To secure the long life and accurate results, the transducer must be handled correctly.
A transducer must always be handled as a delicate item. Please observe these transducer handling rules to prevent damaging the transducer.

- Do not activate the transducer unless it is fully submerged and there is enough water for the acoustic energy to disperse.
- Do not handle the transducer roughly, avoid impacts.
- Do not expose the transducer to direct sunlight or excessive heat.
- Do not use high-pressure water, sandblasting, metal tools, or strong solvents to clean the transducer face.
- Do not damage the outer protective skin on the transducer face.
- Do not lift the transducer by the cable.
- Do not step on the transducer cable.
- Do not damage the transducer cable, avoid sharp objects.