ES70-7C



Split-beam transducer **ES70-7C**

The ES70-C is a wide-band split-beam transducer designed for fishery and fishery research applications. The beamwidth is 7 degrees at a nominal operational frequency of 70 kHz. The transducer is designed having four separate sectors and includes a sensor to measure the sea temperature.

The transducer is normally mounted flush with the hull plating or the bottom of a blister. It is provided with an installation flange, and by means of a clamping ring, it is secured to a mounting ring welded into the hull plating or the bottom of a blister. The transducer can also be flush mounted at the bottom of a drop keel. The transducer cable penetrates the hull using a stuffing tube and a cable gland.

Order information

To order the ES70-7C transducer contact your local dealer or use our website:

www.kongsberg.com/es70-7c-kd

Deliverables

- KSV-203678 transducer with a 20 m open ended cable
- 482927 transducer with a 40 m open ended cable
- + 428874 transducer with a 5 m cable fitted with a SubConn MCIL8M

Optional items

- ES7-203679 Clamping ring
- ES7-203680 Mounting ring
- 425347 Arctic tank
- 382189 Transducer cable (only if the cable needs to be extended)

KEY FEATURES

- Wide-band split-beam transducer for fishery and fishery research applications
- Nominal frequency: 70 kHz
- Frequency range: 45 to 95 kHz
- Beamwidth: 7°
- Maximum transmit power: 1000 W
- Physical dimensions: Diameter: 250 mm Height: 86 mm
- Depth rating: 20 m

| Performance specifications | Nominal frequency: 70 kHz Frequency range: 45-95 kHz Nominal beamwidth: 7° Nominal Figure of Merit: +5 dB Max. source level at 1000 W transmit power: 228 dB re μ Pa @ 1 meter Transmit sensitivity (Sw): 198 dB re μ Pa per W @ 1 m Transmit sensitivity (Su): 185 dB re μ Pa per V @ 1 m Receive sensitivity (Mt): -180 dB re 1 V per μ Pa Sidelobe level: -21 dB Back radiation level: -40 dB Nominal impedance (each sector): 78 Ω |
|----------------------------------|---|
| Power specifications | Max. transmit power: 1000 W (This is the max. allowed transmit 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 mmHeight: 85 mm (body)Total height: 165 mmWeight:In air: 9,4 kg (incl. 20 m cable)In air: 6,5 kg (including 5 m cable SubConn)In water: 1,3 kg (ex. cable)Cable length:5 meters with SubConn connector cable20 with open ended cable40 with open ended cableCable diameter: 10.4 ± 0.5 mm for 5m SubConn 12.4 ± 0.5 mm for open ended cablesBending radius:For open ended cablesStatic: 100 mm (theoretical)Dynamic: 185 mm (theoretical)For 5m SubConnStatic: 100 mmChaire: 150 mm |
| Environment requirements | Storage temperature: Max.: +60°C, Min.: -20°C Operating temperature: Max.: +40°C, Min.: -5°C |

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



Connection to Phoenix connectors

Split-beam transducer wired as singlebeam transducer (Phoenix connectors)





• A single-beam transducer can be connected to channel 1 (P1-1&2), channel 2 (P1-3&4), channel 3 (P2-1&2) or channel 4 (P2-3&4).



Connections to Amphenol socket

The transducer connects to terminals A through N on a circular 12-pin Amphenol socket (part number 099-133981). (A) Transducer seen from above - observe the sector locations relative to the forward direction!

- (B) Sectors
- (C) Terminals

(D) Transducer socket seen from the outside

Split-beam transducer with SubCon connector



The transducer connects to terminal 1 through 8 on a circular 8-pin SubConn socket.

(A) Transducer seen from above - observe the sector locations relative to the forward direction.

- (B) Sectors
- (C) Terminals
- (D) Face view (male connector)



Installation principles

- (A) Steel blister, must be manufactured by the shipyard
- (B) Mounting ring, can be supplied by Kongsberg Discovery
- (C) Guide to indicate "Forward"
- (D) Air outlet
- (E) Transducer cable
- (F) Forward



Kongsberg Discovery P.O. Box 111 N-3183 Horten, Norway www.kongsberg.com/discovery Switchboard: +47 815 73 700 Global support 24/7: +47 33 03 24 07 support.science@kd.kongsberg.com Sales: kd.sales@kd.kongsberg.com



Rules for transducer handling

To secure the long life and accurate results, the transducer must be handled correctly. A transducer must always be handled like 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.