

ES120-7C



KONGSBERG



SPLIT-BEAM TRANSDUCER

Simrad ES120-7C

KEY FEATURES

- Wide-band split-beam transducer for fishery and research applications
- Nominal frequency is 120 kHz
- Frequency range: 90-170 kHz
- Beamwidth is 7°
- Maximum input power is 1000 W
- Physical dimensions:
Diameter: 180 mm
Height: 85 mm

The Simrad ES120-7C is a wide-band split-beam transducer designed for fishery and research applications. The beamwidth is 7 degrees at a nominal operational frequency of 120 kHz. The transducer is designed having four separate sectors and transducers manufactured 2021 and onwards 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 ES120-7C transducer contact your local dealer or use our website

<https://www.kongsberg.com/es120-7c>

Transducer

- KSV-204580 transducer w/20 m open ended cable
- 428873 transducer w/5 m cable SubConn connector
- 496466 transducer w/40 m open ended cable
- Included in delivery: mounting hardware, test report, stuffing tube and cable gland. Washers/

rubber gasket/packing nuts are delivered with the cable.

Optional items

- Optional items can be ordered from Kongsberg maritime or manufactured elsewhere.
- ES1-203672 Clamping ring
- ES1-204719 Mounting ring
- 425089 Arctic tank
- 382189 Transducer cable

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Technical specifications

The technical specifications and requirements provided are those valid when operating at the nominal frequency with all sectors excited simultaneously.

Kongsberg Maritime is continuously working to improve the quality and performance of our products. The technical specifications may be changed without prior notice and the specifications refers to typical figures for the product.

Performance specifications

- Nominal frequency: 120 kHz
- Frequency range: 90-170 kHz
- Beamwidth: 7°
- Figure of merit: +0 dB
- Max. source level: 227 dB re μPa per V @ 1 m
- Transmit sensitivity (Su): 185 dB re μPa per V @ 1 m
- Receive sensitivity (Mt): -185 dB re 1 V per μPa @ 1 m
- Sidelobe level: -23 dB
- Back radiation level: -40 dB
- Impedance (each sector): 75 Ω

Power specifications

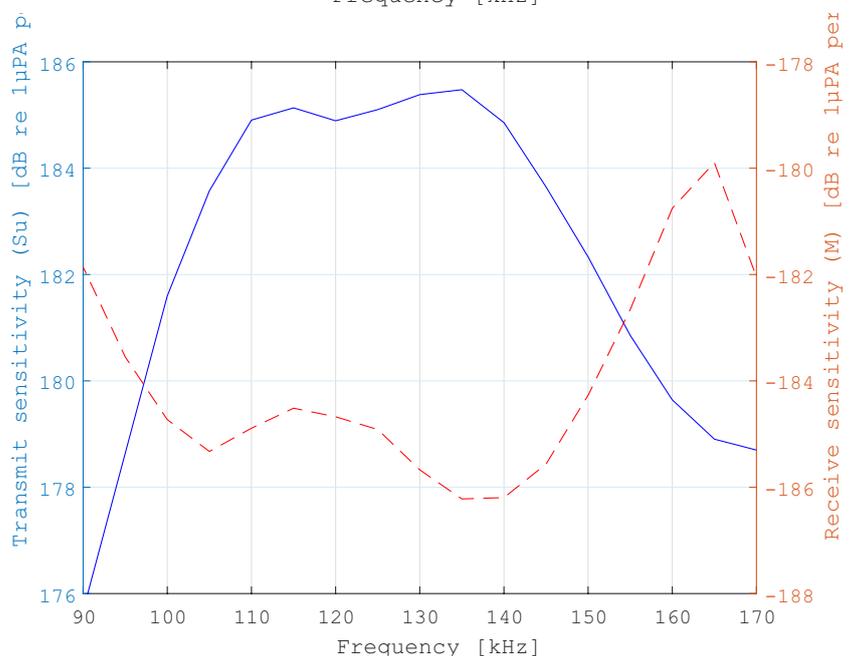
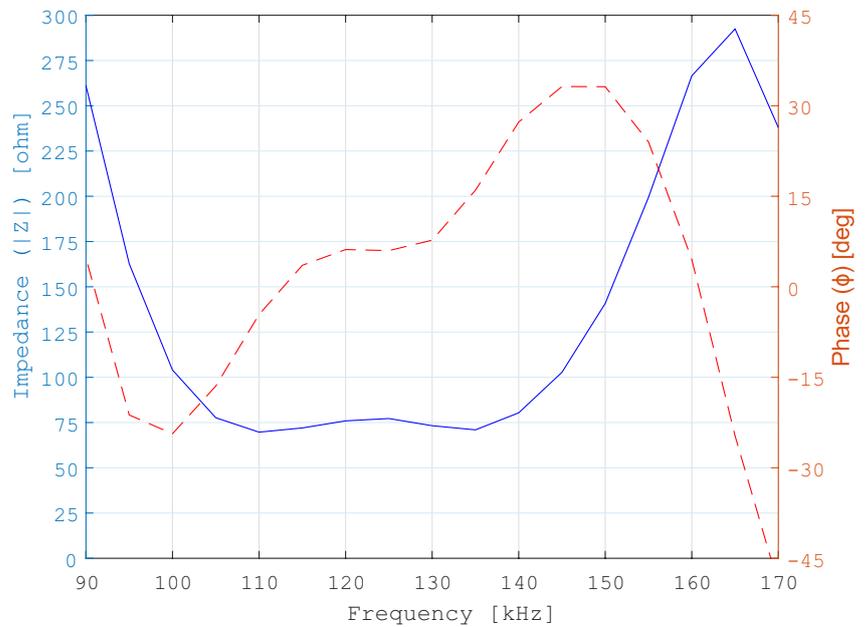
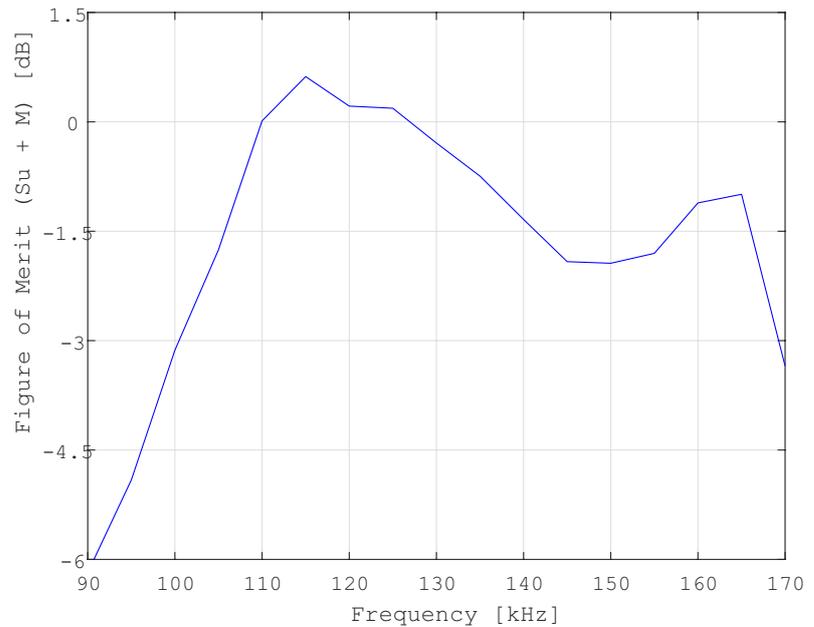
- Max. input power: 1000 W
- Max. pulse length: 16 ms
- Max. duty cycle: 1 %

Weight and outline dimensions

- Physical dimensions:
 - Diameter: 180 mm
 - Height: 85 mm (body)
 - Total height: 155 mm
- Weight
 - In air: 5,0 kg (incl. 20 m cable)
 - In air: 8,6 kg (incl. 40 m cable)
 - In air: 2,3 kg (incl. 5 m cable with SubConn)
 - In water: 1,0 kg (ex. cable)
- Cable length:
 - 20 and 40 m with open-end termination
 - 5 m and SubConn connector
- Cable diameter: 12.4 mm / 10,4 mm
- Bending radius:
 - Static: 100 mm (theoretical)
 - Dynamic: 185 mm (theoretical)

Environment requirements

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

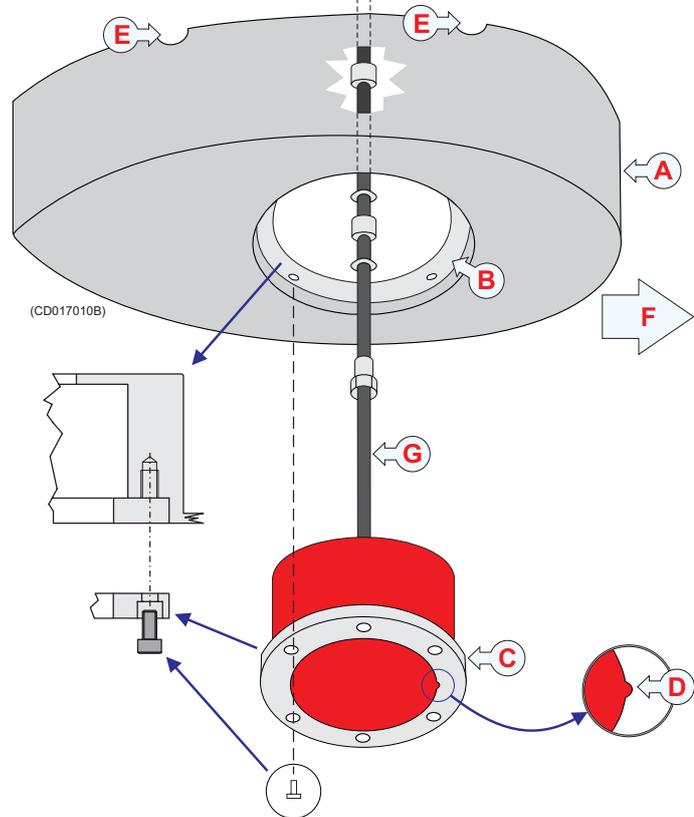
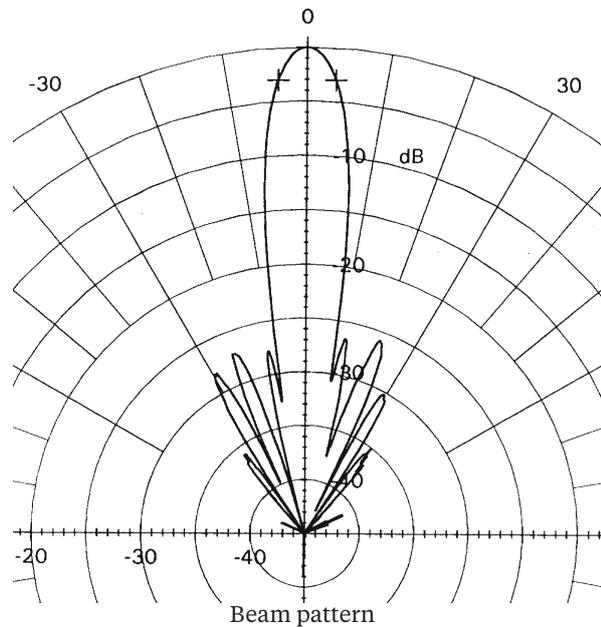


Rules for transducer handling

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

A transducer must always be handled like a delicate item. Wrongful actions may damage the transducer beyond repair. Observe these transducer handling rules:

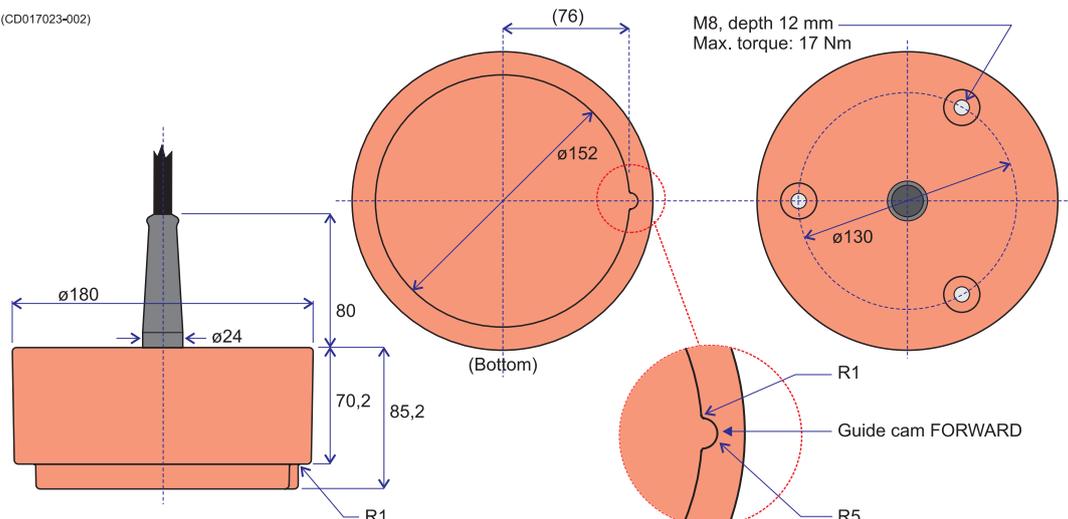
- Do not activate the transducer when it is out of the water.
- Do not handle the transducer roughly, avoid impacts.
- Do not expose the transducer to direct sunlight or excessive heat.
- Do not use high-pressure water, sandblasting, metal tools, or strong solvents to clean the transducer face.
- Do 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.



Installation principle

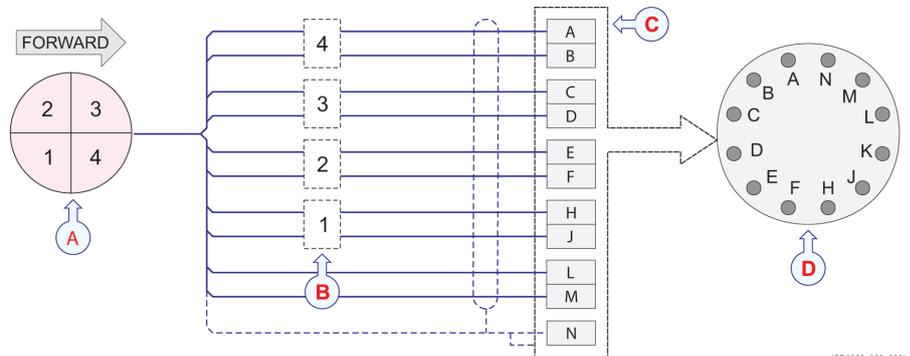
- (A) Steel blister, must be manufactured by the shipyard
- (B) Mounting ring, can be supplied by Kongsberg Maritime
- (C) Clamping ring, can be supplied by Kongsberg Maritime
- (D) Guide to indicate "Forward"
- (E) Air outlet
- (F) Forward
- (G) Transducer cable

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Connections

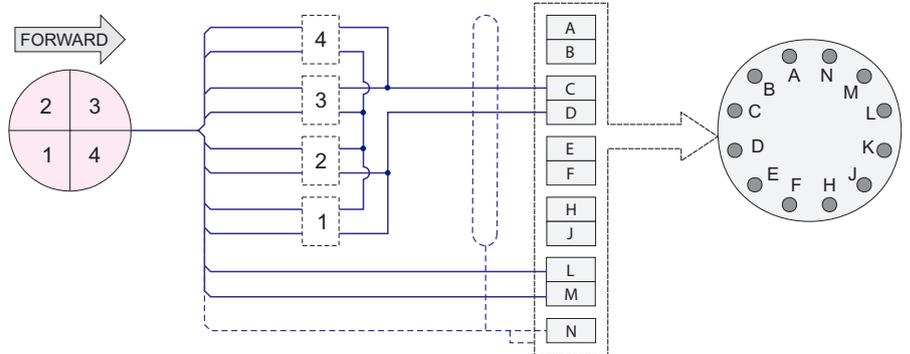
- Sector 1
Black cable to terminal J
White cable to terminal H
- Sector 2
Black cable to terminal F
Green cable to terminal E
- Sector 3
Black cable to terminal D
Yellow cable to terminal C
- Sector 4
Black cable to terminal B
Blue cable to terminal A
- Digital output: Red cable to terminal L
- Digital ground: Black cable to terminal M
- Screen: Screen to terminal N and plug housing



Connections to Amphenol (WBT/GPT) socket

The transducer connects to terminals A through N on a circular 12-pin Amphenol socket (part number 099-133981). This socket is used on the General Purpose Transceiver (GPT), and on some versions of the Wide Band Transceiver (WBT).

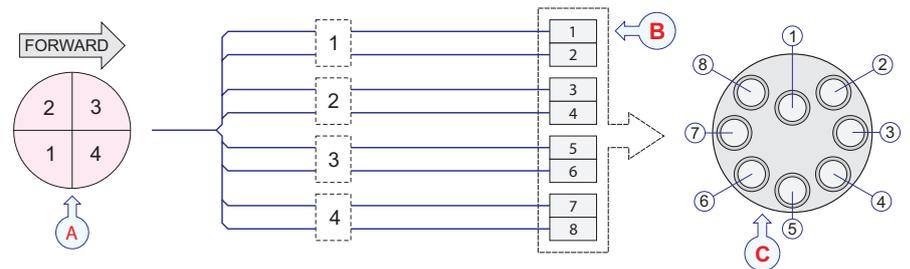
- (A) Transducer seen from above - observe the sector locations relative to the forward direction!
- (B) Sectors
- (C) Terminals
- (D) Transducer socket seen from the outside



Split-beam transducer to single-beam output

A split-beam transducer can be connected to sockets A&B, C&D; E&F or J&H to enable the transducer to be used as a single-beam transducer.

The cable screen must be connected to the housing on the transducer plug and to terminal N.



Connections to MacArtney/SubConn® socket

The transducer is delivered with a MacArtney MCIL8M connector. Pinout looking into the plug is shown at the right in the figure. This connector is used for the WBAT, WBT Mini and WBT Tube (WideBand Transceiver).

- (A) Transducer seen from above - observe the sector locations relative to the forward direction!
- (B) Terminals
- (C) Transducer socket seen from outside

