

ES120-7C



KONGSBERG



Split-beam transducer

ES120-7C

The ES120-7C is a wide-band split-beam transducer designed for fishery and fishery research applications. It features a 7° beamwidth at a nominal frequency of 120 kHz and consists of four separate sectors. A built-in sensor measures sea temperature.

The transducer is typically mounted flush with the hull plating or the bottom of a blister. It includes an installation flange and is secured using a clamping ring to a mounting ring welded into the hull or blister. It can also be flush-mounted at the bottom of a drop keel. The cable penetrates the hull via a stuffing tube and cable gland.

Order information

To order the ES120-7C transducer contact your local dealer or visit:
www.kongsberg.com/es120-7c-kd

Deliverables

- KSV-204580 transducer with a 20 m open-ended cable
- 496466 transducer with a 40 m open-ended cable
- 428873 transducer with a 5 m cable and SubConn connector

Optional items

- ES1-203672 Clamping ring
- ES1-204719 Mounting ring
- 425089 Arctic tank
- 382189 Transducer cable (only if extension is needed)

KEY FEATURES

- Wide-band split-beam transducer for fishery and fishery research applications
- Nominal frequency: 120 kHz
- Frequency range: 90 to 170 kHz
- Beamwidth: 7°
- Maximum transmit power: 1000 W
- Physical dimensions:
Diameter: 180 mm
Height: 85 mm
- Depth rating: 20 m

Performance specifications

Nominal frequency: 120 kHz
Frequency range: 90-170 kHz
Beamwidth: 7°
Figure of Merit: +0 dB
Max. source level (1000 W): 227 dB re μPa @ 1 m
Transmit sensitivity (Sw): 198 dB re μPa per W @ 1 m
Transmit sensitivity (Su): 185 dB re μPa per V @ 1 m
Receive sensitivity (Mt): -185 dB re 1 V per μPa
Sidelobe level: -23 dB
Back radiation level: -40 dB
Nominal impedance (per sector): 75 Ω

Power specifications

Max. transmit power: 1000 W (Actual limit may vary due to non-linear effects in some applications)
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

Physical specifications for open-ended cable:

Cable length: 20 or 40 meters
Weight in air: 5.0 kg (20 m cable)
Weight in air: 8.6 kg (40 m cable)
Weight in water: 1.0 kg (ex. cable)
Cable diameter: 12.4 ± 0.5 mm
Bending radius - Static: 100 mm (theoretical)
Bending radius - Dynamic: 185 mm (theoretical)

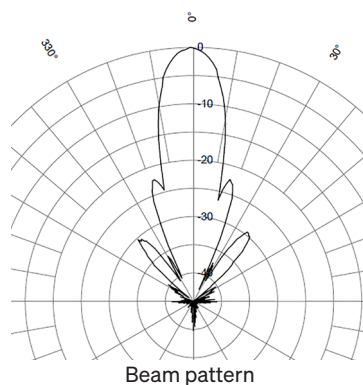
Physical specifications for SubConn cable:

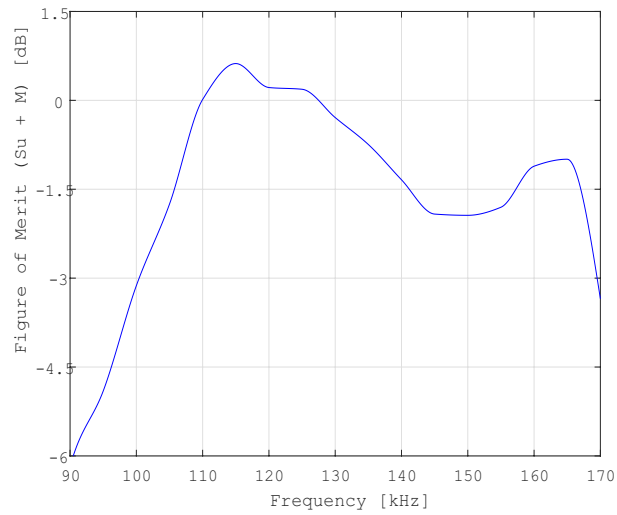
Cable length: 5 meters
Weight in air: 2.3 kg
Cable diameter: 10.4 ± 0.5 mm
Bending radius - Static: 100 mm
Bending radius - Dynamic: 150 mm

Environment requirements

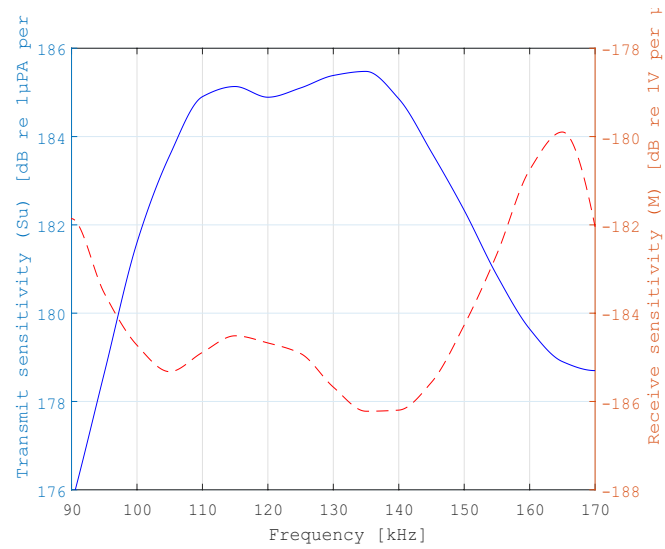
Storage temperature: -20°C to +60°C
Operating temperature: -5°C to 40°C
Depth rating: 20 meters

Specifications apply when operating at nominal frequency with all sectors excited simultaneously. Subject to change without notice.

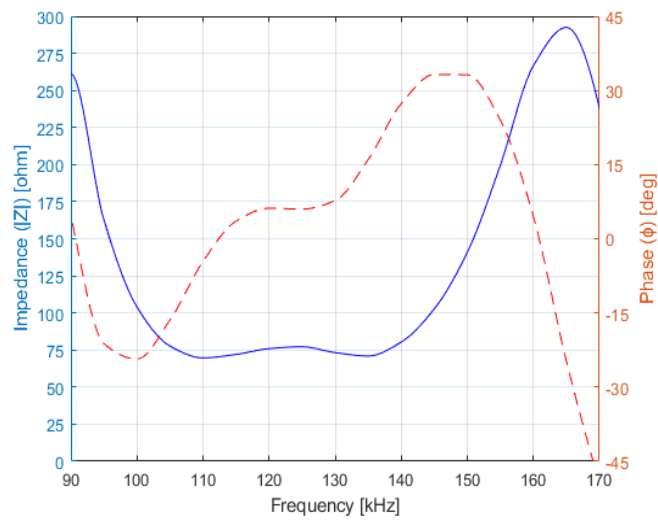




Typical figure of merit

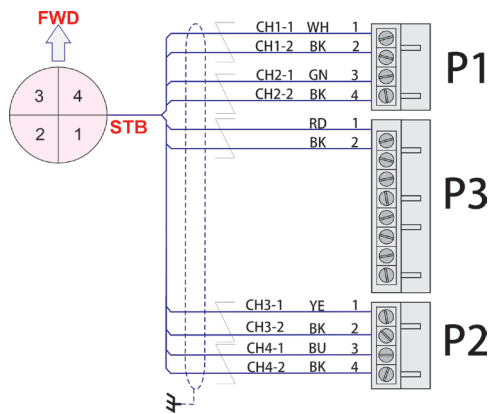


Transmit and receive sensitivity



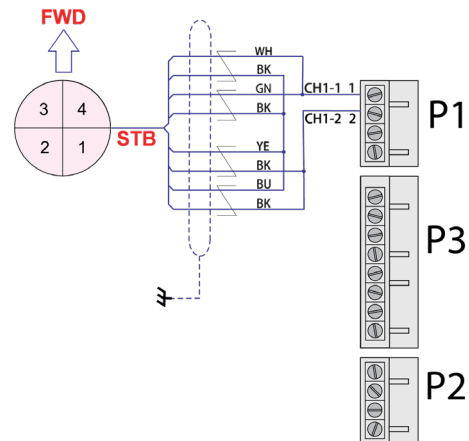
Impedance and phase

Connection to Phoenix connectors



Transducer seen from the above

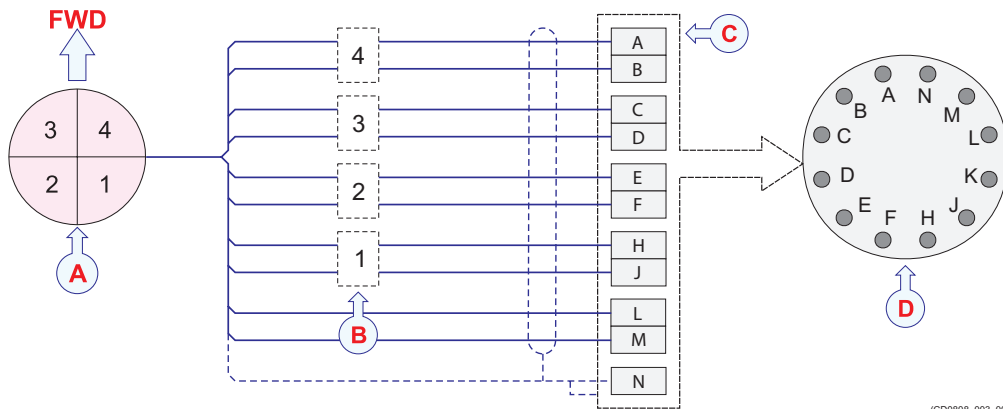
Split-beam transducer wired as single-beam transducer (Phoenix connectors)



Transducer seen from the above

Phoenix Connectors: Single-beam transducer can connect to channels 1–4 (P1-1&2, P1-3&4, P2-1&2, P2-3&4)

Connections to Amphenol socket



(CD0808_003_006)

Amphenol Socket (12-pin, part no. 099-133981): Terminals A–N, Sector orientation relative to forward direction illustrated.

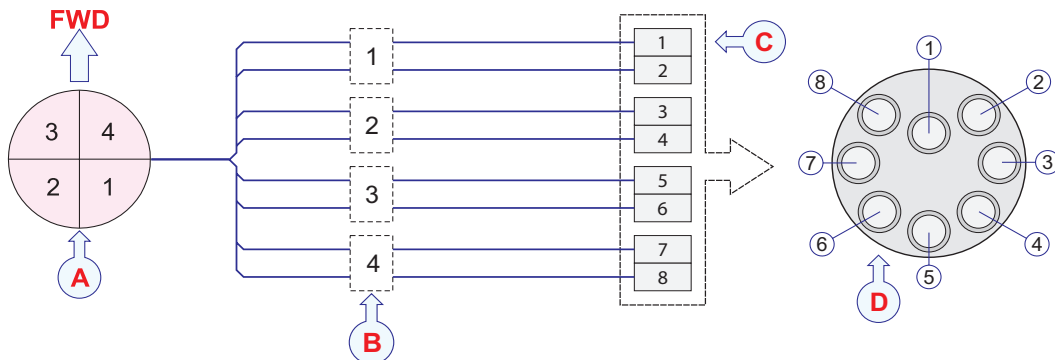
(A) Transducer seen from above - observe the sector locations relative to the forward direction!

(B) Sectors

(C) Terminals

(D) Transducer socket seen from the outside

Split-beam transducer with SubCon connector



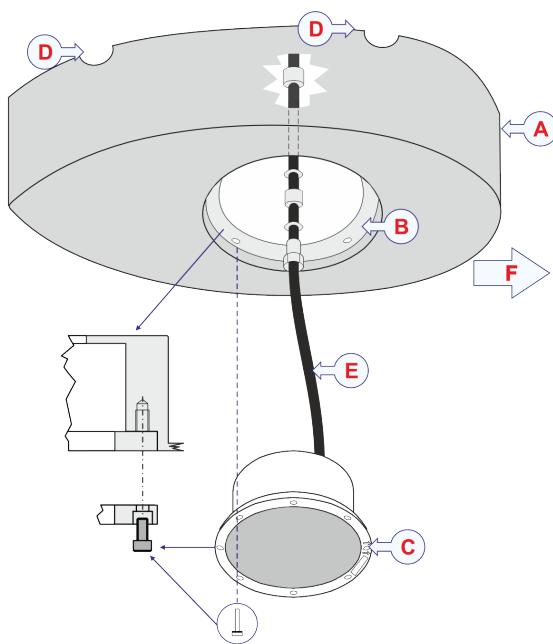
SubConn Socket (8-pin): Terminals 1–8, Sector orientation and face view illustrated.

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

(B) Sectors

(C) Terminals

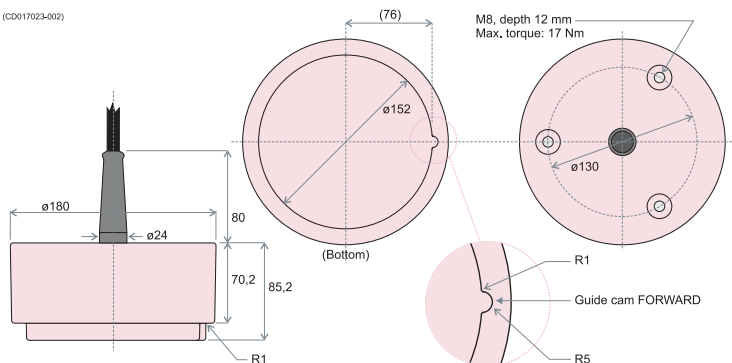
(D) Face view (male connector)



Installation principles

- (A) Steel blister (shipyard manufactured)
- (B) Mounting ring (available from Kongsberg Discovery)
- (C) Forward direction guide
- (D) Air outlet
- (E) Transducer cable
- (F) Forward

(CD017023-002)



Rules for transducer handling

To ensure long life and accurate performance:

- Only activate when fully submerged.
- Avoid impacts and rough handling.
- Protect from direct sunlight and excessive heat.
- Do not clean with high-pressure water, metal tools, or strong solvents.
- Avoid damaging the transducer face or cable.
- Never lift by the cable or step on it.

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