

ES38-18DK



KONGSBERG



Compact depth-rated transducer

ES38-18DK

The ES38-18DK is a compact transducer designed mainly for research applications. The transducer is available in two different versions: split-beam with three separate sectors or single-beam. The beamwidth is 18 degrees at a nominal operational frequency of 38 kHz.

The compact size and light weight of the transducer allows it to be mounted on a large variety of platforms. The transducer is provided with two meters cable, and the cable is terminated with an 8- or 4-pin male connector that fits directly into our range of transceivers.

Order information

To order the ES38-18DK transducer contact your local dealer or visit: <https://www.kongsberg.com/discovery/ocean-science/ocean-science-transducers/ES38-18DK/>

Deliverables

- 425594 Split-beam transducer
- 428885 Single-beam transducer
- 2 m cable using a 4- or 8-pin male SubConn
- Test report

KEY FEATURES

- Wide-band split-beam transducer for fishery and fishery research applications
- Nominal frequency: 38 kHz
- Frequency range: 35 to 45 kHz
- Beamwidth: 18°
- Maximum transmit power: 450 W
- Physical dimensions: Diameter: 190 mm
Height: 131 mm
- Depth rating: 1500 m

Performance specifications

Nominal frequency: 38 kHz
Frequency range: 35-45 kHz
Nominal beamwidth: 18°
Nominal figure of merit: -10 dB
Max. source level at 450 W transmit power: 212 dB re μPa @ 1 meter
Transmit sensitivity (Sw): 190 dB re μPa per W @ 1 m
Transmit sensitivity (Su): 174 dB re μPa per V @ 1 m
Receive sensitivity (Mt): -184 dB re 1 V per μPa
Sidelobe level: -16 dB
Back radiation level: -20 dB
Nominal impedance (each sector): 75 Ω

Power specifications

Max. transmit power: 450 W (actual limit may vary due to non-linear effects in some applications)
Max. pulse length: 8 ms
Max. duty cycle: 2 %

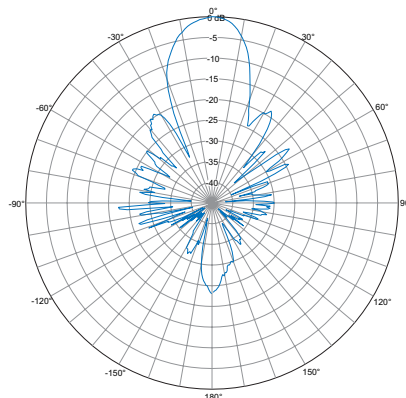
Weight and outline dimensions

Common physical specifications:
Diameter: 190 mm
Height: 131 mm (body)
Total height: 212 mm
Cable length: 2 m
Cable termination: 4-pin male SubConn (MCIL4M) or 8-pin male SubConn (MCIL8M)
Weight in air: 9,2 kg (incl. cable)
Weight in water: 5,5 kg (incl. cable)
4-pin male SubConn (MCIL4M) physical specifications:
Cable diameter: 8.5 ± 0.5 mm
Bending radius - Static: 100 mm (theoretical)
Bending radius - Dynamic: 185 mm (theoretical)
8-pin male SubConn (MCIL8M) physical specifications:
Cable diameter: 10.4 ± 0.5 mm for 8-pin male SubConn
Bending radius: Static: 85 mm (theoretical)
Bending radius: Dynamic: 150 mm (theoretical)

Environment requirements

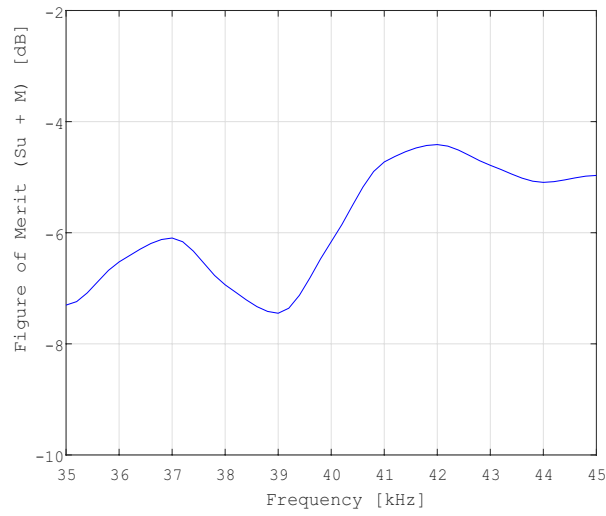
Storage temperature:
Max.: +60 °C
Min.: -20 °C
Operating temperature:
Max.: +40 °C
Min.: -5 °C
Depth rating: 1500 m

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

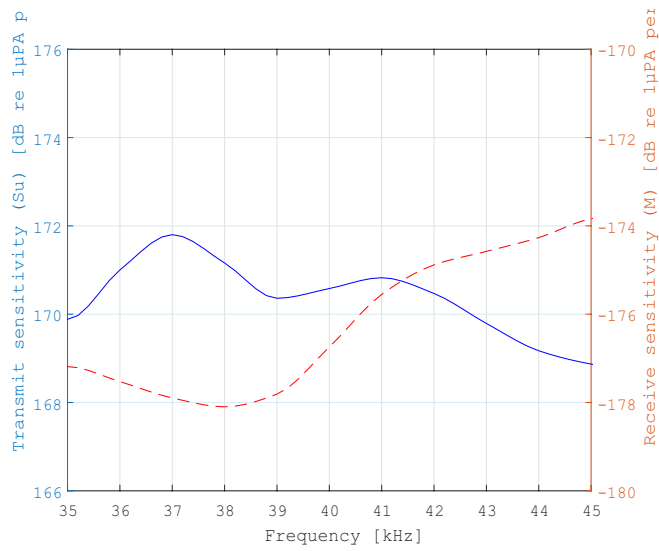


Beam pattern

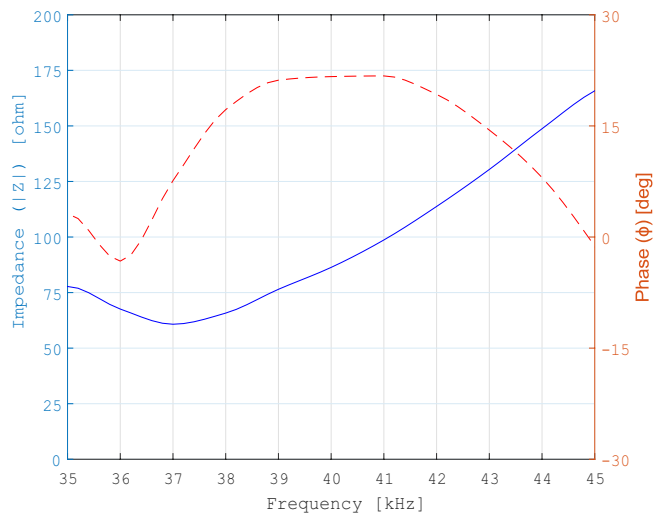
ES38-18DK Single-beam transducer - Typical figures



Typical figure of merit

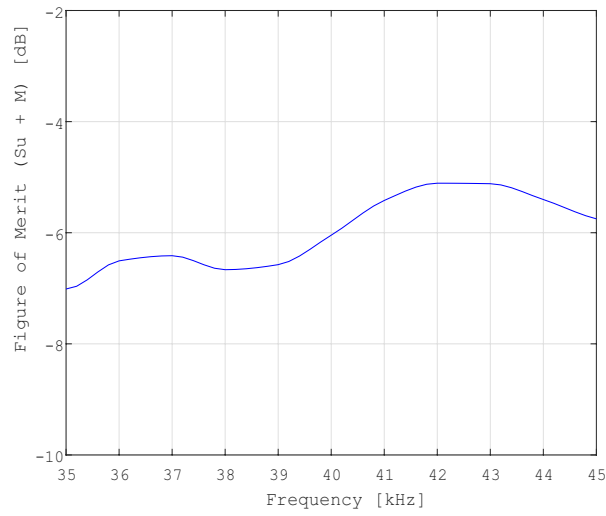


Transmit and receive sensitivity

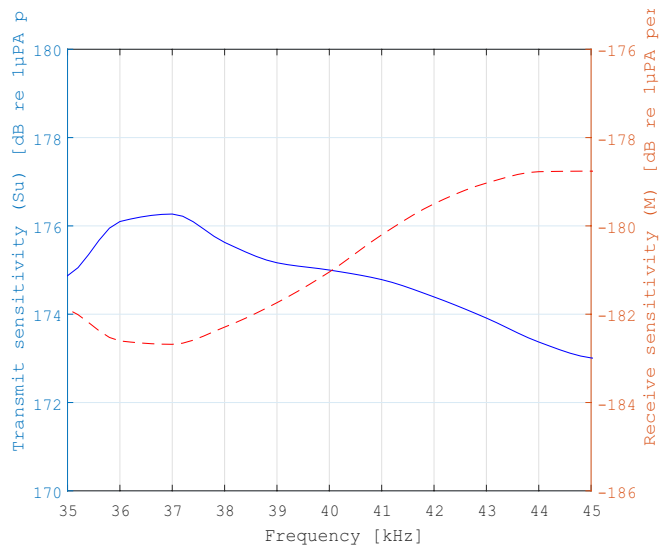


Impedance and phase

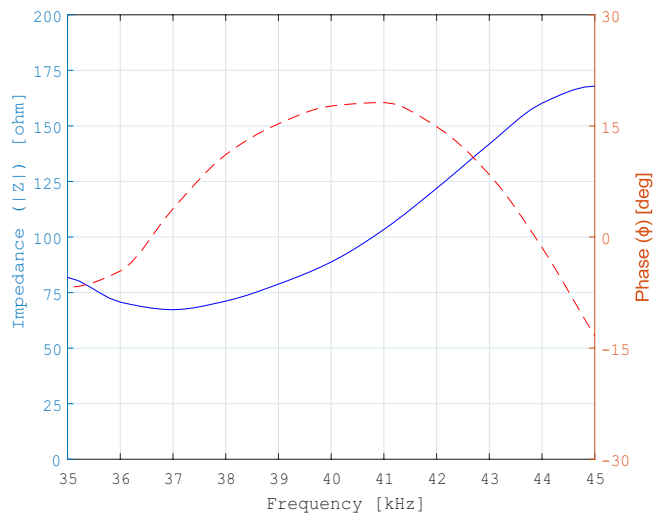
ES38-18DK Split-beam transducer - Typical figures



Typical figure of merit

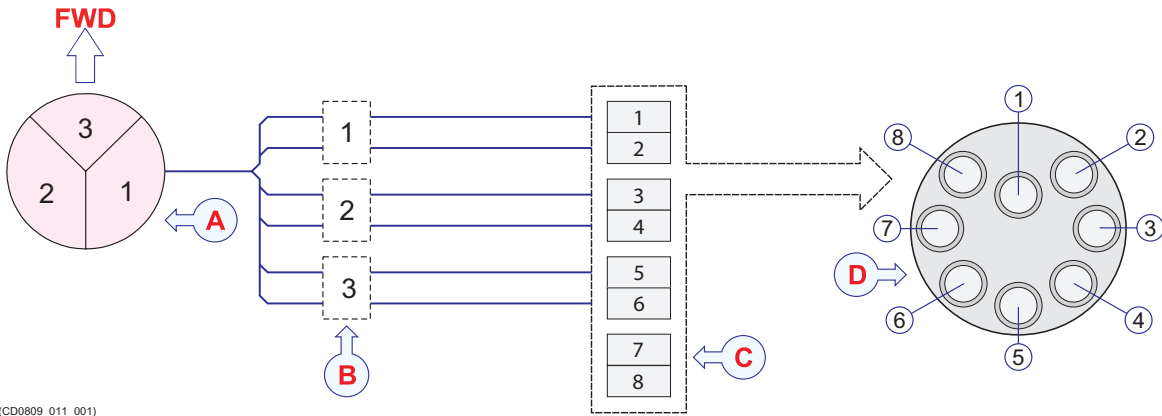


Transmit and receive sensitivity



Impedance and phase

Connections for split-beam configuration



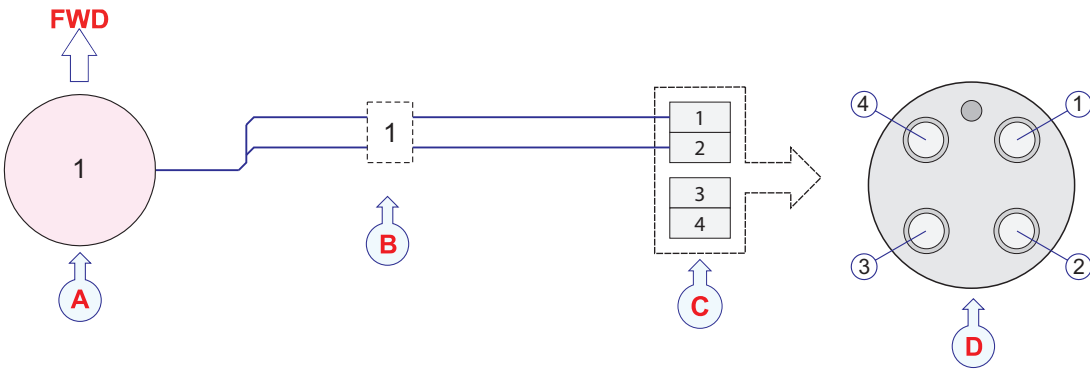
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Transducer seen from the above

The transducer comes with a MacArtney MCIL8M connector. The figure on the right shows the pinout when you look into the plug. 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) Sectors
- (C) Terminals
- (D) Transducer plug face view

Connections for single-beam configuration

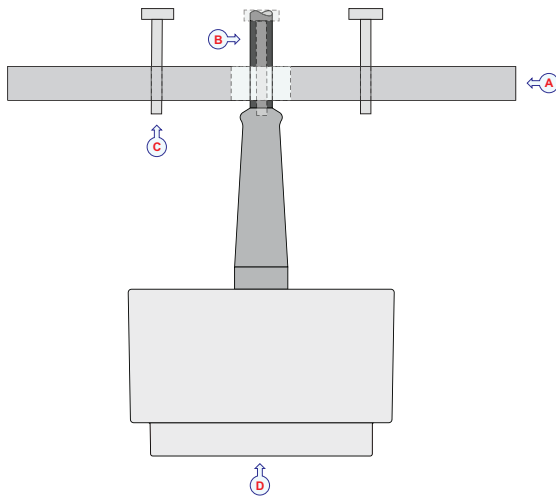


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Transducer seen from the above

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

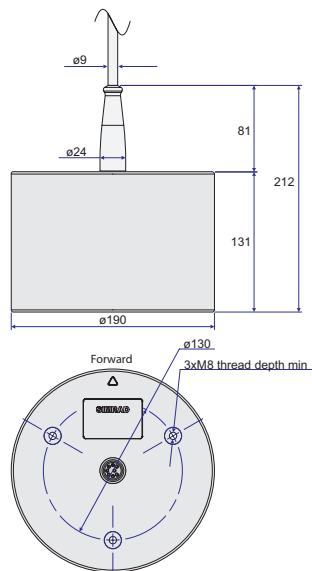
(A) Rig

(B) Transducer cable

(C) M8 Bolts

(D) Transducer

Full information on how to install the transducer is available on our website.



Rules for transducer handling

To ensure long life and accurate performance:

- Activate the transducer only when fully submerged and there is enough water for the acoustic energy to disperse.
- 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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