ES18-11 MK2

KONGSBERG

Split-beam transducer

ES18-11 MK2

The ES18-11 MK2 transducer is a split-beam transducer featuring large bandwidth and is designed for research application and fishery, providing information about biology as well as physical oceanographic features. The nominal beamwidth is 11° at nominal operational frequency of 18 kHz. The transducer is designed having four separate sectors.The ES18-11 MK2 is mainly designed for use on vessels and larger Unmanned Surface Vessels (USVs). The recommended installation is in a drop keel or a blister below the bubble-flow along the hull. The transducer is available with 20- or 40-meter cable

Order information

To order the ES18-11 MK2 transducer contact your local dealer or use our website:
www.kongsberg.com/es18-11mk2

Deliverables
- 493868 ES18-11 MK2 transducer with 20-meter open-ended cable
- 110-0055354 ES18-11 MK2 transducer 40-meter open-ended cable
- Bushing, cable gland, bolts and washers

Optional items
- 499-088814 Mounting ring
- 499-109506 Arctic tank
- 382189 Transducer cable (only if the cable needs to be extended)

KEY FEATURES

- Wide-band split-beam transducer for research, mapping and fishery applications
- Nominal frequency: 18 kHz
- Frequency range: 14 to 22 kHz
- Nominal beamwidth: 11°
- Maximum transmit power: 2000 W
- Physical dimensions:
  Diameter: 625 mm
  Height: 175 mm
- Depth rating: 20 m

Performance specifications

Nominal frequency: 18 kHz
Frequency range: 14-22 kHz
Nominal beamwidth: 11°
Figure of merit: 10 dB
Max. source level at 2000 W transmit power: 227 dB re 1µPa at 1m
Transmit sensitivity (Sw): 194 dB re 1µPa at 1 W
Transmit sensitivity (Su): 175 dB re 1µPa at 1 V
Receive sensitivity (Mt): -172 dB re 1 V at 1µPa
Sidelobe level: 20 dB
Back radiation level: -35 dB
Nominal impedance (each sector): 75 Ω

Power specifications

Max. transmit power: 2000 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: 20 ms (from 10)
Max. duty cycle: 2 % (from 1)

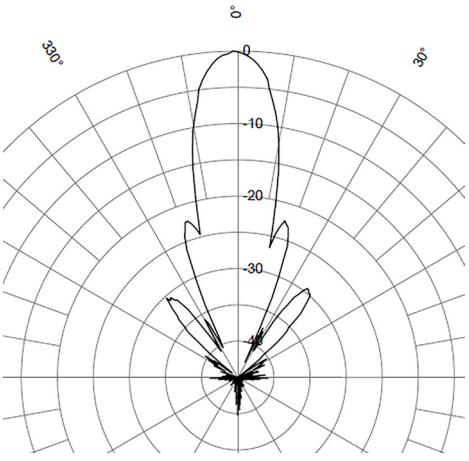
Weight and outline dimensions

Physical dimensions:
Diameter: 622 mm
Height: 175 mm (body)
Total height: 221 mm
Weight:
In air: 85 kg (incl. 20 m cable)
In water: 40 kg (ex. cable)
Cable length: 20 with open-end termination
Cable diameter: 12.1 mm
Bending radius:
Static: 100 mm (theoretical)
Dynamic: 185 mm (theoretical)

Environment requirements

Storage temperature: Max.: +50°C, Min.: -20°C
Operating temperature: Max.: +35°C, Min.: -5 °C
Depth rating: 20 meters

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

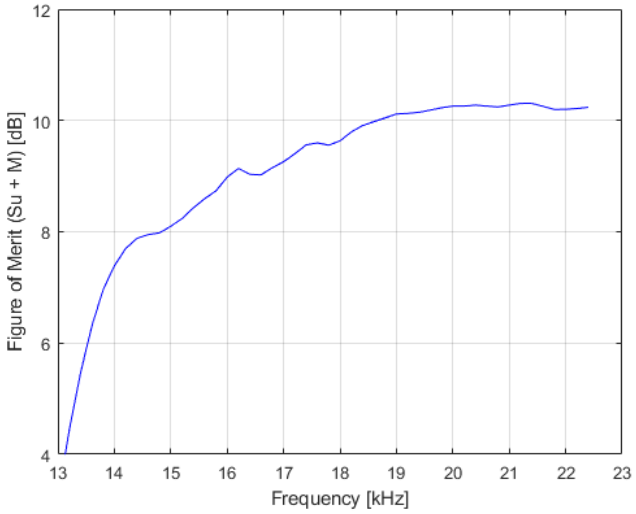
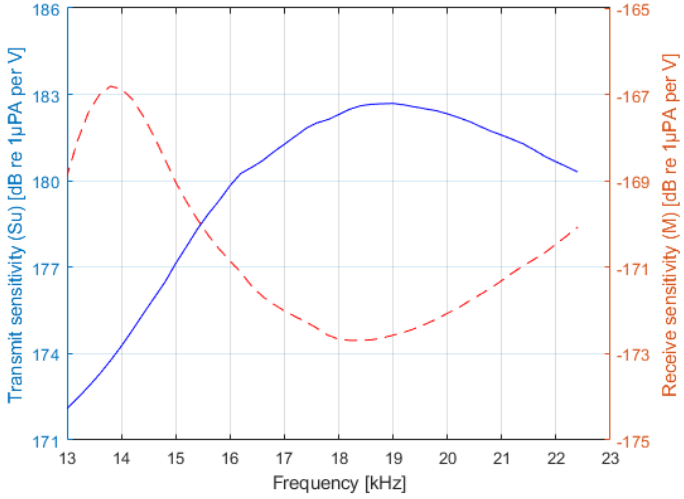
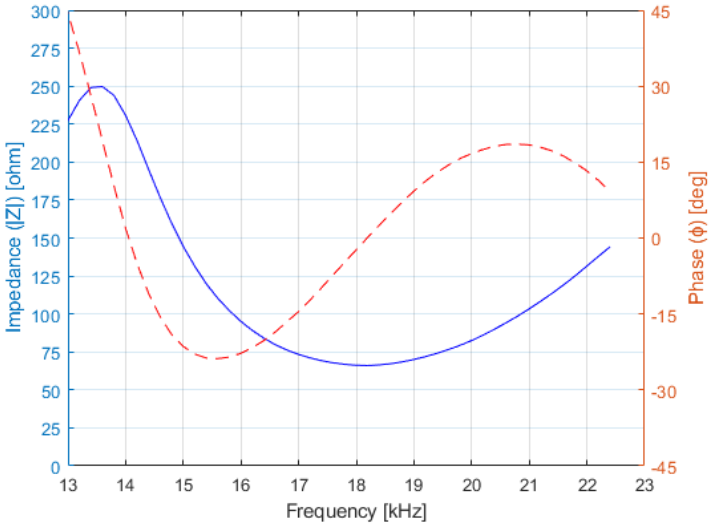


Figure of merit

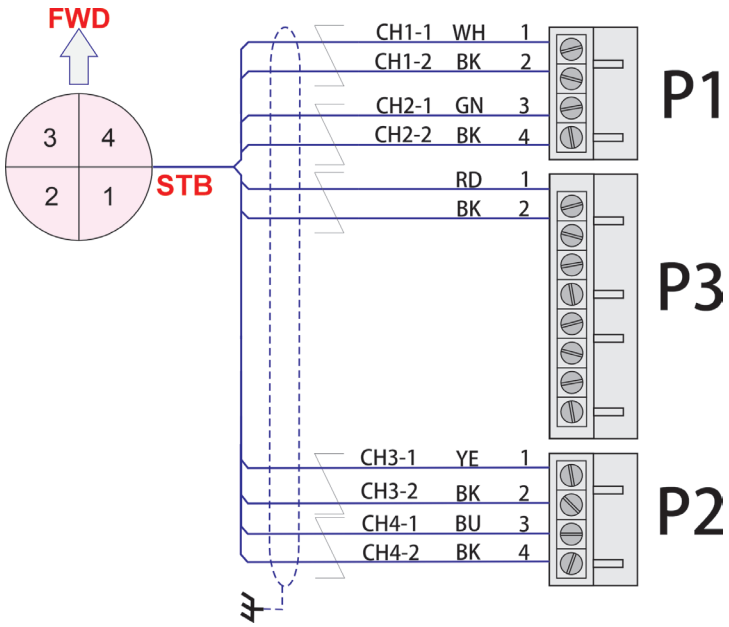


Transmit and receive sensitivity

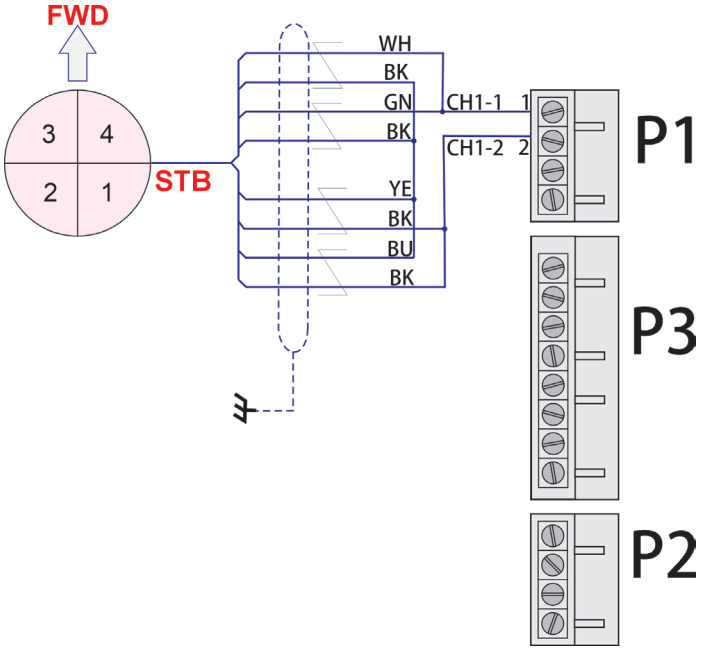


Impedance and phase

Connection to Phoenix connectors

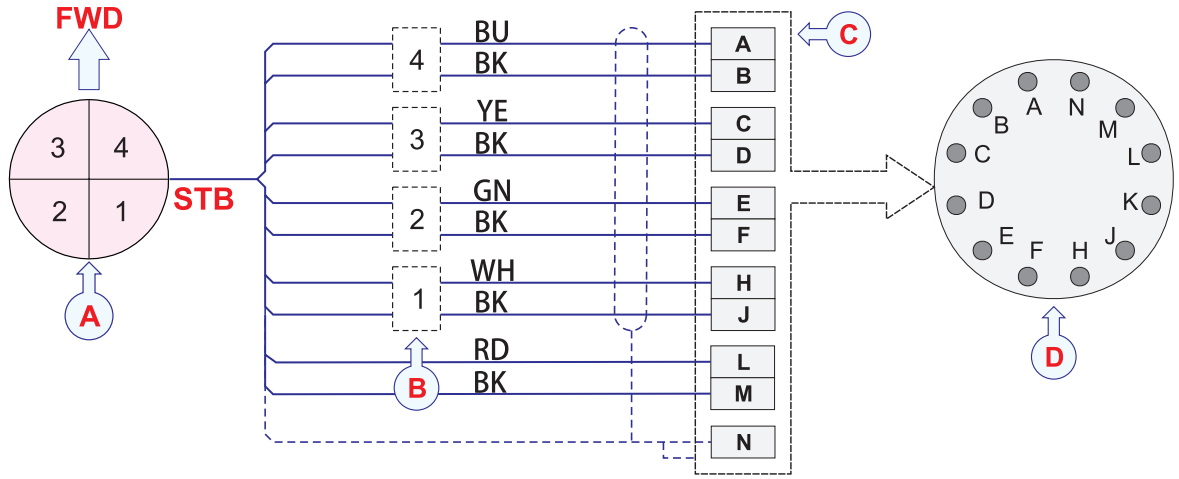


Split-beam transducer wired as single-beam transducer (Phoenix connectors)



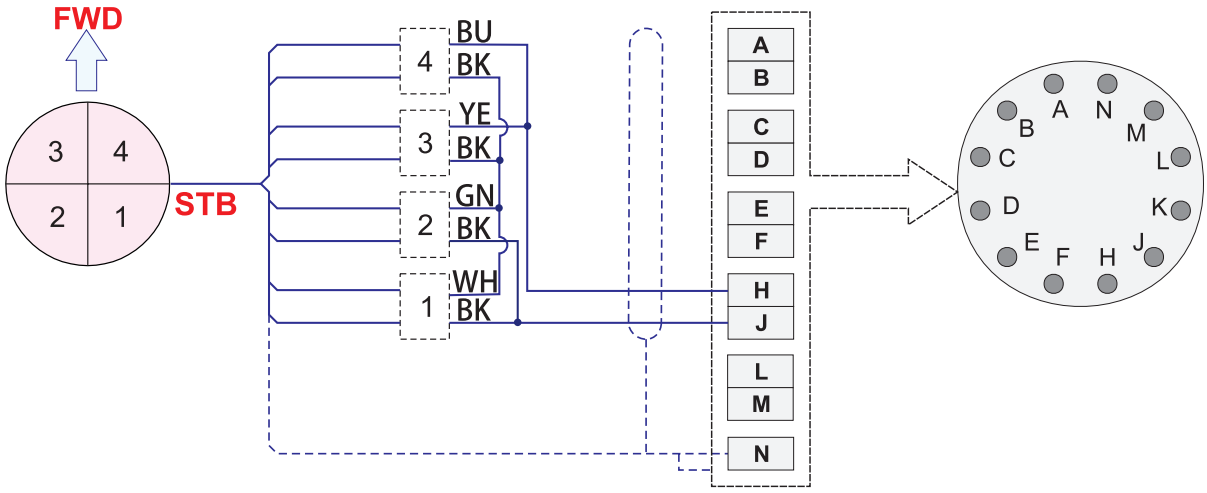
A single-beam transducer can be connected to channel 1 (P1-1&2), channel 2 (P1-3&4), channel 3 (P2-1&2) or channel 4 (P2-3&4).

Connections to Amphenol socket

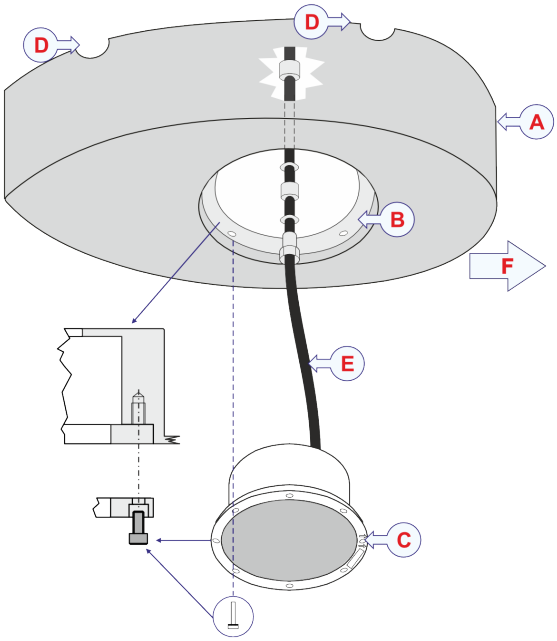


The transducer connects to terminals A through N on a circular 12-pin Amphenol socket (part number 099-133981).
(A) Transducer seen from above - observe the sector locations relative to the forward direction!
(B) Sectors
(C) Terminals
(D) Transducer socket seen from the outside

Split-beam transducer to single-beam output (Amphenol socket)



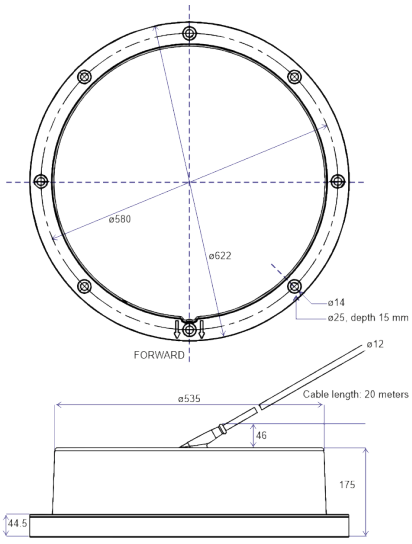
A split-beam transducer can be connected to sockets A&B, C&D; E&F or J&H to enable the transducer to be used as a single-beam transducer.



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

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



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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 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.