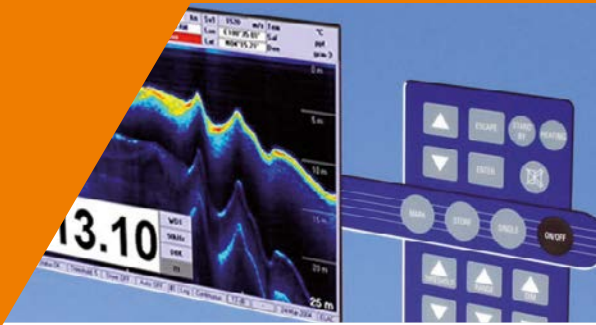


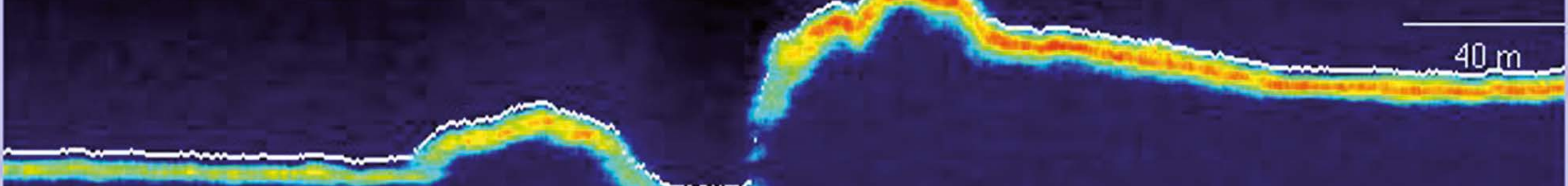
Wärtsilä ELAC VE 5900

Naval echo sounder system
for surface vessels



The high-end naval echo sounder system Wärtsilä ELAC VE 5900 is especially designed to meet the requirements of modern surface combatant. No other system meets such a number of military specifications and offers such outstanding modularity for perfect adaptation into a new or existing design.





Wärtsilä ELAC VE 5900

Naval echo sounder systems for surface vessels

The ELAC VE 5900 is the latest model of the VE series with hundreds of systems sold and in service on surface vessels all around the world. Continuing this good tradition, this latest digital version of the ELAC VE 5900 meets all relevant military specifications in terms of shock, vibration, temperature, humidity, EMI and noise – to name only a few. This distinguishes the ELAC VE 5900 from other available systems that may be designed in accordance with these standards but are not type-tested.

Solid as a rock

Both, control and display, are concentrated in the main unit without any external electronics. Also, data storage is performed within this unit. The large colour display offers intuitive setup and operation as well as recall of recorded data. Economy is an important factor. Therefore, the ELAC VE 5900 is offered for different depth ranges, from 1,000 metres to full ocean depth. The choice of transducers follows these depth ranges and the special installation conditions onboard of the vessel.

In order to fit into any type of new construction or modernisation program, the ELAC VE 5900 is available in numerous configurations. For the main unit, a stand-alone housing with shock mounts is offered. The system may also be installed in an existing 19" rack. Depending on the requirements, the ELAC VE 5900 offers a multitude of equipment to extend the system, like SVT sensors, pressure sensors, digital slave displays and interfaces to ship networks or printers.

System overview

Designed to meet defence standards

Tailored performance

The control and display unit SEB 5900 combines the transceiver electronics, the processor, power supply, interfaces as well as the control and display components. Setup and operation are performed from this unit.

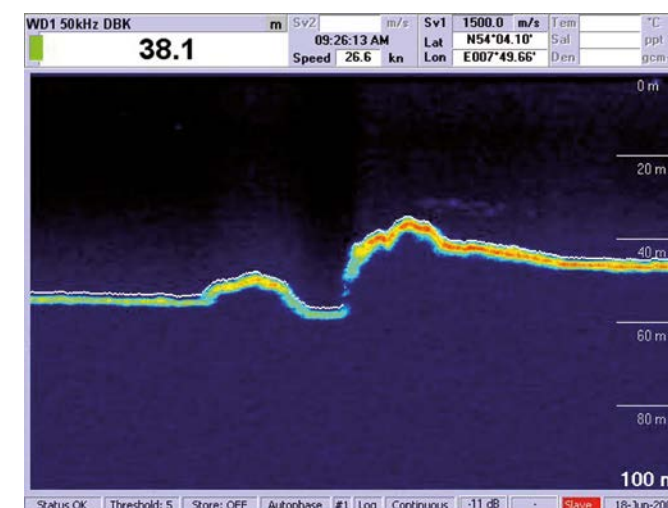
Wärtsilä ELAC Nautik offers a huge variety of transducers for this system. The choice depends on the required depth performance and the type of installation in the surface vessel. The installation design support offered by our engineers guarantees an optimum performance of the chosen setup.

The pre-defined interfaces support the integration of the echo sounder system into the ship's navigation data management system. The blanking interfaces avoid interference with other active or passive systems onboard. Optional components like SVT sensors, pressure sensors, digital slave displays or graphical readouts further enhance the system.

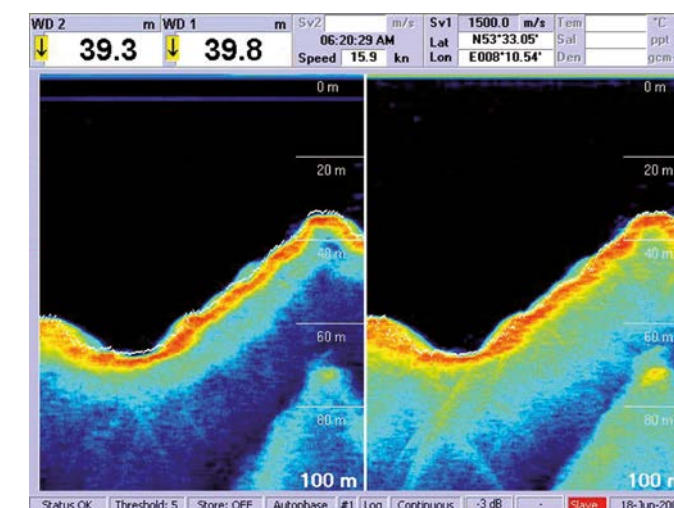


Transducer LSE 136

Key features
Meets all relevant military standards
Single- or dual-frequency version
Measures depth below keel and diving depth
Interfaces for input and output
Blanking interface
Network-printer interface
Single-pulse mode
Data storage for more than 7 days
Integrated online and offline BITE
Compatible with all VE 59 sensors
19" rack compatible



Display of single- and dual-frequency version



Specifications and technical data

Technical data	
Frequencies	12 / 12.5 / 30 / 50 / 200 / 400 / 1,000 kHz (other frequencies available upon request)
Max. scale settings	0 - 500 / - 1,000 / - 3,000 / - 6,000 / - 10,000 m
Units (selectable)	Metres, fathoms, feet
Display	10.4" VGA TFT
Interfaces	NMEA 0183, RS422, Ethernet
Power supply	230 V AC, 50 / 60 Hz 115 V AC, 50 / 60 Hz
Power consumption	≤ 210 VA

Environmental qualifications	
Shock	acc. to. BV 0430
Vibration	acc. to. MIL-STD-167-1A, type I
Temperature	acc. to. MIL-STD-810G, DEF-STAN 00-35
Protection	IP 44 with housing
EMC	acc. to. MIL-STD-461F, BV 0120

Basic system	
Control and display unit	Including transceiver with processor, power supply, interface and integrated control and display components
Low frequency transducer	12 - 200 kHz

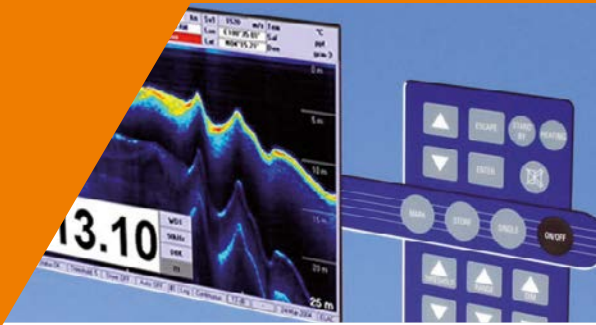
Extended system	
Control and display unit	Capable as master system (on request)
Slave units	Additional display units, other terminal
Optional	Graphical, digital readouts and printer Additional features and functions via software adaption and interfacing with appropriate sensors (on request)

Range	Transducer					
	LSE 313	LSE 136	LSE 180	LEG 40	LEG 50	LSE 179
[m]						
0 - 10	×	×	×	-	-	-
0 - 25	×	×	×	+	+	+
0 - 50	×	×	×	+	+	+
0 - 100	×	×	×	+	+	+
0 - 50	×	×	×	+	+	+
0 - 500	×	×	×	+	+	+
0 - 1,000	-	×	×	+	+	+
0 - 3,000	-	-	×	+	+	+
0 - 6,000	-	-	-	+	+	+
0 - 10,000	-	-	-	-	+	+

× for water depth and diving depth
 + for water depth only
 - not available

Wärtsilä ELAC VE 5900

Naval echo sounder system
for submarines



The high-end naval echo sounder system Wärtsilä ELAC VE 5900 has been especially designed to meet the requirements of modern submarines. No other system meets such a number of military specifications and offers such outstanding modularity for perfect adaptation into a new or existing design.





Wärtsilä ELAC VE 5900

Naval echo sounder system for submarines

The ELAC VE 5900 is the latest model of the VE series with hundreds of systems sold and in service on submarines all around the world. Continuing this good tradition, this latest digital version of the ELAC VE 5900 meets all relevant military specifications in terms of shock, vibration, temperature, humidity, EMI and noise – to name only a few. This distinguishes the ELAC VE 5900 from other available systems that may be designed in accordance with these standards but are not type-tested.

One system, many advantages

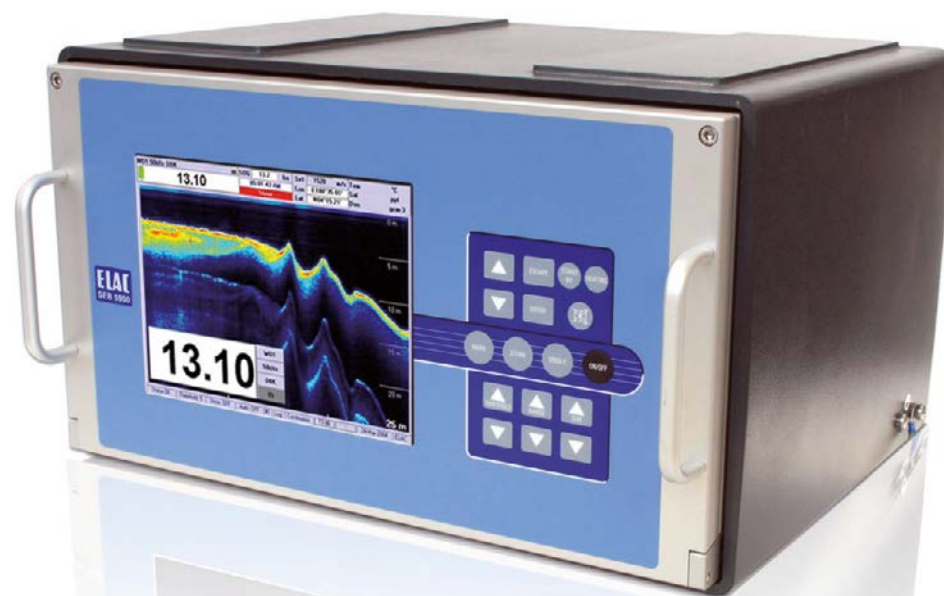
The major advantage of the ELAC VE 5900 submarine version is the ability to sound up and down. As a result, not only the depth below keel but also the diving depth is measured and displayed, giving much clearer navigation data. Control and display are concentrated in the main unit without any external electronics. Also, data storage is performed in this unit. The large colour display offers an intuitive setup and operation as well as recall of recorded data.

Economic efficiency is an important factor. Therefore, the ELAC VE 5900 is offered for different depth ranges, from 1,000 m to full ocean depth. The choice of transducers is made according to these depth ranges and the special installation conditions onboard the vessel. Especially for the submarine version, a high-frequency transducer is offered for precise measurements and a low intercept probability.

In order to fit into any type of new construction or modernisation program, the ELAC VE 5900 is available in numerous configurations. For the main unit, a stand-alone housing with shock mounts is offered, but the system can also be installed in an existing 19" rack. Additionally, a special ELAC VE 5900 replacement version is available as an option. Depending on the given requirements, the ELAC VE 5900 offers a large equipment to extend the system, e.g. sensors for sound, velocity, temperature and pressure, digital slave displays, and interfaces to ship's networks or printers.

Key features

- Meets all relevant military standards
- Single- or dual-frequency version
- Measures depth below keel and diving depth
- Interfaces for input and output
- Blanking interface
- Network-printer interface
- Single-pulse mode
- Data storage for more than 7 days
- Integrated online and offline BITE
- Compatible with all VE 59 sensors
- 19" rack compatible



System overview

Designed to meet defence standards

Configured for your needs

The control and display unit SEB 5900 combines transceiver electronics, processor, power supply, interfaces as well as control and display components. Setup and operation are performed from this unit.

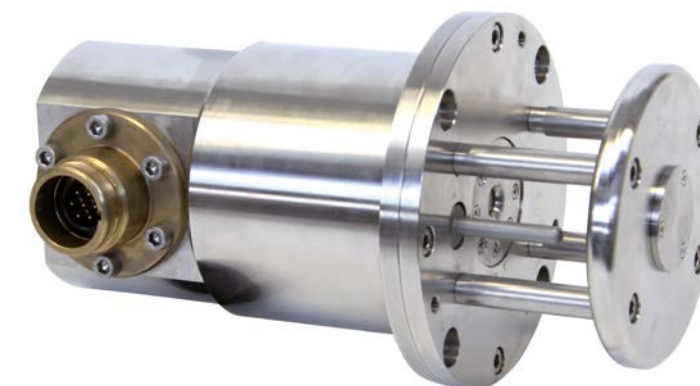
Wärtsilä ELAC Nautik offers a huge transducer variety for the system. The choice depends on the required depth performance and the installation in the submarine. The installation design support offered by our engineers guarantees an optimum performance of the chosen setup.

The pre-defined interfaces support the integration of the echo sounder system into the ship's navigation data management system. The blanking interfaces avoid interference with other active or passive systems onboard. Optional components like SVT sensors, pressure sensors, digital slave displays or graphical readouts further enhance the system.

Wärtsilä ELAC Nautik also provides a wide range of special tools and test equipment (STTE), adapted to different requirements, ranging from onboard maintenance to depot level maintenance or training facilities.



Transducer LSE 136 and SVT sensor LEG 23



Water depth and diving depth at a glance



Specifications and technical data

Wärtsilä ELAC VE 5900 at a glance

Technical data	
Frequencies	12 / 12.5 / 30 / 50 / 200 / 400 / 1,000 kHz (other frequencies available upon request)
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Temperature	acc. to. MIL-STD-810G, DEF-STAN 00-35
Protection	IP 44 with housing
EMC	acc. to. MIL-STD-461F, BV 0120

Range	Transducer					
	LSE1 84	LSE 141	LSE 136	LSE 180	LEG 50	LEG 28
[m]						
0 - 10	✘	✘	✘	✘	-	-
0 - 25	✘	✘	✘	✘	+	○
0 - 50	✘	✘	✘	✘	+	○
0 - 100	✘	✘	✘	✘	+	○
0 - 250	-	✘	✘	✘	+	○
0 - 500	-	-	✘	✘	+	○
0 - 1,000	-	-	✘	✘	+	○
0 - 3,000	-	-	-	✘	+	-
0 - 6,000	-	-	-	-	+	-
0 - 10,000	-	-	-	-	+	-

✘ for water depth and diving depth
 ○ for diving depth only
 + for water depth only
 - not available

