



NORTHERN SOLUTIONS
hydroacoustic navigation systems

EMES60 Configurations








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1. EMES60 series, echosounder and speedlog, IMO (wheel marked)

EMES60 Echosounder and Speedlog Redundant HMI units





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1.1 EMES60-S, echosounder and dual-axis speedlog, single bottom installation



Combined echosounder (Wheel Marked) and speedlog (Wheel Marked) system

Consisting of:

- Single bottom seavalve, 60mm, DNV approved
- EMES60 Sensor with 40m cable
- EMES60 sensor Power supply/junction unit, 110/220VAC
- Dual Interface unit, 110/220VAC
- Two 7" Multifunction operator units with touch screens

1.2 EMES60-D, echosounder and dual-axis speedlog, double bottom installation



Combined echosounder (Wheel Marked) and speedlog (Wheel Marked) system

Consisting of:

- Double bottom seavalve, 60mm, DNV approved
- EMES60 Sensor with 40m cable
- EMES60 sensor Power supply/junction unit, 110/220VAC
- Dual Interface unit, 110/220VAC
- Two 7" Multifunction operator units with touch screens



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2. EMES60ES series, echosounder, IMO (wheel marked)





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2.1 EMES60ES-S, echosounder, single bottom installation



Echosounder (Wheel Marked) system

Consisting of:

- Single bottom seavalve, 60mm, DNV approved
- EMES60ES Sensor with 40m cable
- EMES60ES sensor Power supply/junction unit, 110/220VAC
- Single interface unit, 110/220VAC
- Multifunction operator units with touch screen

2.2 EMES60ES-D, echosounder, double bottom installation



Echosounder (Wheel Marked) system

Consisting of:

- Single bottom seavalve, 60mm, DNV approved
- EMES60ES Sensor with 40m cable
- EMES60ES sensor Power supply/junction unit, 110/220VAC
- Single interface unit, 110/220VAC
- Multifunction operator units with touch screen



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3. EMES60EM series, speedlog, IMO (wheel marked)





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3.1 EMES60EM-S, speedlog, single bottom installation



Speedlog (Wheel Marked) system

Consisting of:

- Single bottom seavalve, 60mm, DNV approved
- EMES60EM Sensor with 40m cable
- EMES60EM sensor Power supply/junction unit, 110/220VAC
- Single interface unit, 110/220VAC
- Multifunction operator units with touch screen

3.2 EMES60EM-D, speedlog, double bottom installation



Speedlog (Wheel Marked) system

Consisting of:

- Single bottom seavalve, 60mm, DNV approved
- EMES60EM Sensor with 40m cable
- EMES60EM sensor Power supply/junction unit, 110/220VAC
- Single interface unit, 110/220VAC
- Multifunction operator units with touch screen



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4. EMES60-mini, echosounder and dual-axis speedlog

EMES60 Echosounder and Speedlog Redundant HMI units



Combined echosounder and speedlog system

Consisting of:

- Single bottom seavalue, 60mm, DNV approved
- EMES60 Sensor with 40m cable
- EMES60 sensor Power supply/junction unit, 110/220VAC
- Two 7" Multifunction operator units with touch screens with 110/220VAC power adapters



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5. EMES60-micro, echosounder and dual-axis speedlog

EMES60 Echosounder and Speedlog HMI unit



Combined echosounder and speedlog system

Consisting of:

- Single bottom seavalve, 60mm, DNV approved
- EMES60 Sensor with 40m cable
- EMES60 sensor Power supply/junction unit, 110/220VAC
- One 7" Multifunction operator units with touch screens with 110/220VAC power adapters.

Note: Combined software on a single display.



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6. EMES60-nano, echosounder and dual-axis speedlog



Combined echosounder and speedlog system

Consisting of:

- Single bottom seavalue, 60mm, DNV approved
- EMES60 Sensor with 40m cable
- EMES60 sensor Power supply/junction unit, 110/220VAC
- Software license (Windows HP+ or Linux) to run on the external PC (Multifunctional display)



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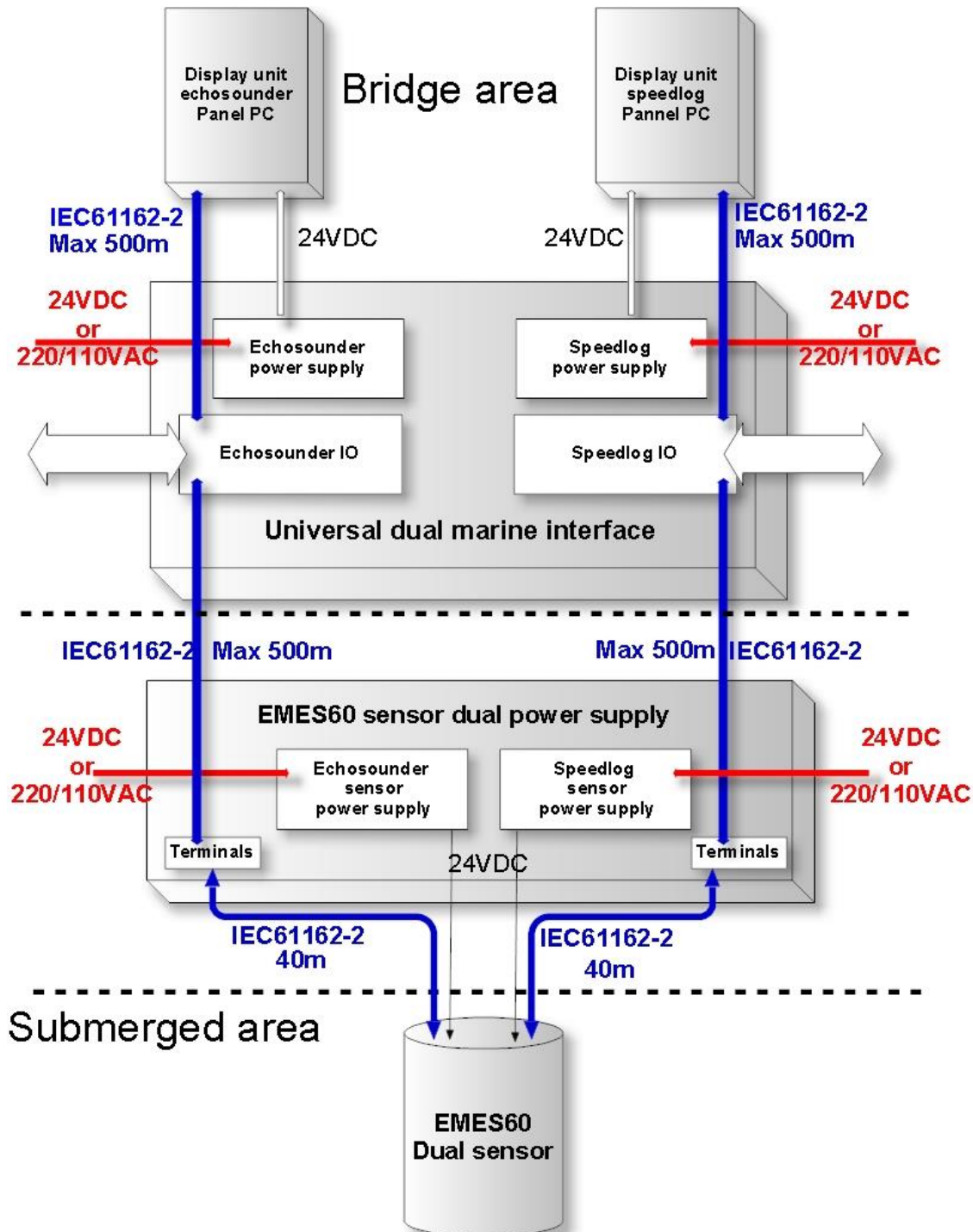
7. 24VDC Power Supply option

7.1 24VDC power supply option for EMES60 Sensor power supply

7.2 24VDC power supply option for Dual interface unit



8. System block diagram and interconnections





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9. System specifications

Performance		
	<i>Echosounder</i>	<i>Speedlog</i>
Accuracy	0.05m or 0.5% of depth, whatever is greater	0.1kn or 1% of speed, whatever is greater
Resolution digital out	0.01m	0.01knots
Resolution screen presentation	Depth < 100m : 0.1m Depth >=100m : 1.0m	0.1knots
Range of measured values	0.7m-500m	+/- 40 knots on all axis
Display Unit (separate unit for each sub-system)		
Resolution	800x480, 7" WVGA	
Operator interface	Touch screen, tap & swipe operation	
Communication line	RS422, Optional RS232	
Day/Night modes	Full range of backlight adjustment day/night color themes selection.	
Software upgrade means	USB line, USB flash device, Ethernet	
Supported languages	English, Norwegian, German, French, Spanish, Russian, Chinese	
Calendar, clock	Real time clock support or GPS time reference.	
Environmental	IP68, front panel only	
Cutout dimensions	137x185mm, depth 36mm	
Operating T°	-15-+60°	
Weight	0.7kg	



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	<i>Echosounder</i>	<i>Speedlog</i>
Range	user adjustable: 0-10m to 0-500m, auto	+/-40 knots
Presentation units	meters, feet, fathoms	knots, mi/h
Alarms	Shallow and deep alarms adjustable limits	Low and high speed alarms
Dual Interface Unit (separate PCB for each sub-system)		
External communication line	NMEA0183 rev4, /IEC 61162-1/ IEC 61162-2 2inputs/3 outputs, IEC 61162-4 (Light Weight Ethernet) 1input/1 output	
Analog	1 output, 10Vpp or 4-20mA, fully programmable	
Alarm relays	2 Mechanical relays, one dedicated system power failure alarm	
General purpose Input	2 digital inputs (for synchronization, slave mode), fully programmable	
General purpose Output	2 optocoupler outputs, fully programmable	
Software upgrade means	USB line, USB flash device, Ethernet	
Environmental	IP55	
Operating T°	-15-+60°	
Dimensions, mm	150x300x120	
Weight	4kg	
Dual Sensor with Cable		
Cable length	30m (optional 40m)	
Communication link	IEC 61162-1/2	
Environmental	IP68, 6 bar continuous immersion in water	
Operating T°	-5-+60°	
Sensor Dimensions	H = 124mm, D = 60.2mm	
Weight (with cable)	7kg	



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Hull fitting unit (ball valve)

Hull type	Single and double
Body material	Stainless steel
Pressure rating	10 bar
Operating T°	-5-+60°
Weight	18kg