

# DOPPLER SPEED LOG

Model: DS-85

## Attain Highly Accurate & Stable Speed Measurement



### Highly Accurate Measurements

When a vessel moves through the water, acoustic noise is created and is known as a boundary layer. This noise layer can cause errors with acoustic devices. By measuring speed through water (STW) farther away from the keel, the DS-85 penetrates through this noise and boundary layer resulting in a more stable and accurate speed measurement compared to an electromagnetic speed log.



Boundary Layer

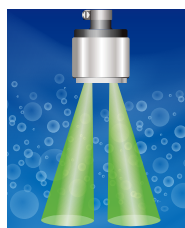
Ship Speed Measurement Water Depth :  
3m or deeper under the keel

### Better Stability

With the new transducer and newly designed process algorithm, the impact of foam is reduced, enabling highly accurate and stable ship speed information.

### Improved Interference Immunity

- ▶ Development of a transducer equipped with the latest technology
  - ① Usage of a high frequency with a strong foam resistance
  - ② Achievement of an optimal ultrasonic width and angle
- ▶ Significant improvement of the signal processing capability

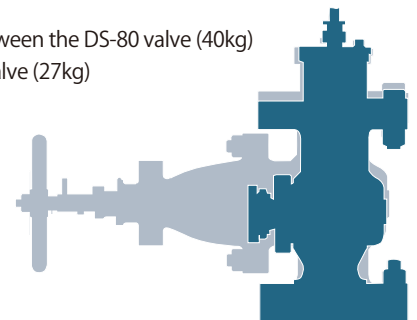


Measurement Image

### Compact Gate Valve (Option)

The new compact and lightweight ball-type gate valve is 30% lighter than the traditional valve. When replacing the previous model (DS-80), the same tank or valve can be used, reducing the cost of a retrofit.

Comparison between the DS-80 valve (40kg) and the DS-85 valve (27kg)



Complies with the latest IMO, IEC Standards

IMO A.694(17)	IEC61023 Ed.3.0
IMO A.824(19)	IEC61162-1 Ed.5.0
IMO MSC.36(63)	IEC61162-2 Ed.1.0
IMO MSC.97(73)	IEC61162-450 Ed.2.0
IMO MSC.191(79)	IEC62288 Ed.2.0
IMO MSC.302(87)	IEC60945 Ed.4.0
	IEC62923-1/-2 Ed.1.0

### Easy-to-Read Display

Easy-to-read display screen even from a distance, thanks to large characters and clear, bright tones



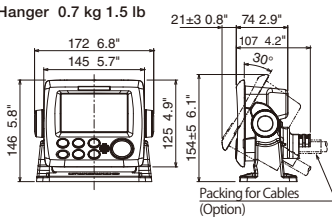
## Specifications

Product Name	Doppler Speed Log			
Number of Transceiver Beams	2 Beams			
Transmission Frequency	2 MHz			
Measurement Speed Range	-10.0 to +40.0kn (Longitudinal Direction)			
Distance Measurement Range	0.00 to 999999.99NM			
Ship Speed Measurable Water Depth	3m or deeper below Ship Bottom			
Output Ship Speed	1-axis to Water Speed			
Ship Speed Measurement Accuracy	±1% or ±0.1kn (larger of the two)			
Distance Measurement Accuracy	±1% or ±0.1NM (larger of the two)			
Power Supply	100-115 VAC:0.6 A / 200-220 VAC:0.4 A			
Display Unit	LCD	4.3 inch Color LDC WQVGA		
	Minimum Brightness	under 0.1 cd/m <sup>2</sup>		
	Maximum Brightness	over 600cd/m <sup>2</sup>		
	Brightness Adjustment	18 Levels		
	Display Mode	Ship Speed and Distance Screen, Ship Speed Screen, Distance Screen, Analog Meter Screen		
	Display Language	English, Japanese		
	Interface	No. of Ports	Serial Input	2 Ports (IEC 61162-1/2x1, IEC 61162-1x1)
			Serial Output	8 Ports (IEC 61162-1/2x1, IEC 61162-1x7)
			Ethernet	1 Port (IEC 61162-450)
			External KP Input	1 Port
		Sub Display	2 Ports	
		Dimmer	1 Port	
		POWER FAIL Output	1 Port	
		SYSTEM FAIL Output (Option)	1 Port	
		Analog Output (Option)	4 Ports	
		Log Pulse Output (Option)	1 Port	
Environment	Temperature Range	Display Unit		
		Distribution Unit	-15°C to +55°C	
		Transceiver Unit		
	Relative Humidity	Display Unit		
		Distribution Unit	93 % (+40°C)	
	Protection Rating	Display Unit	IP22 (IP35 with Waterproog Kit Installed)	
		Distribution Unit	IP22 (IP20 with Tabletop Mount)	
	Vibration	Transceiver Unit	IP44	
		Transducer	IPX8	
			IEC 60945 Ed.4.0	

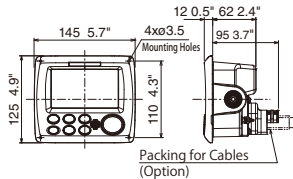
## Dimensions

### Display Unit DS-8500

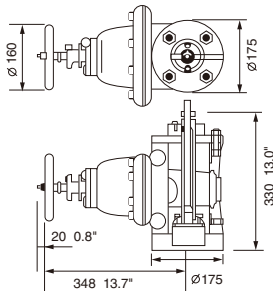
Hanger 0.7 kg 1.5 lb



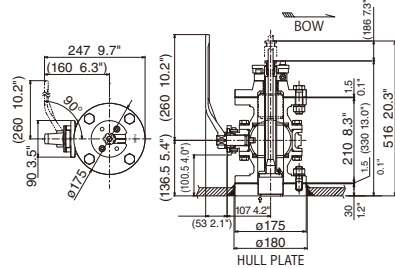
Flushmount (Option) 0.6 kg 1.3 lb



Gate Valve DS-786 40 kg 88.2 lb



Ball Type Gate Valve DS-854 27 kg 59.5 lb



## Equipment

### Standard

Display Unit	DS-8500
Distribution Unit	DS-8510
Transceiver Unit	DS-8520
Transducer	DS-8530
Installation Material, Accessories, Spares	

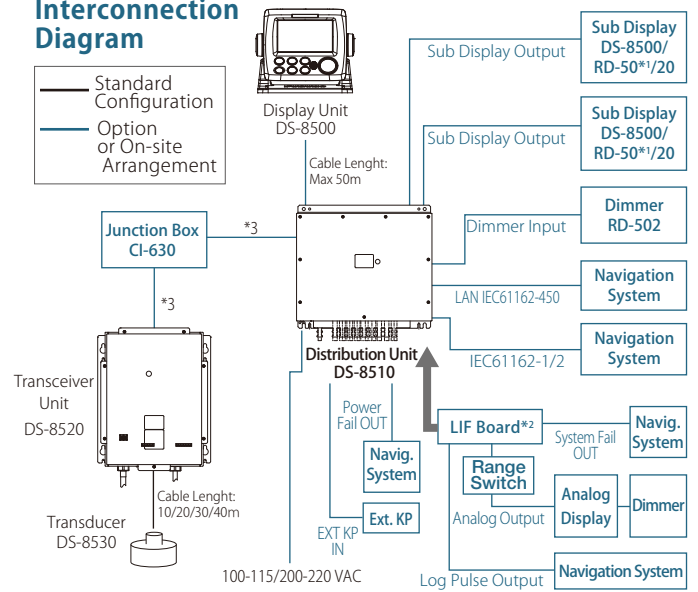
### Options

Sub Display	DS-8500
	RD-50
	RD-20
	RD-502
Analog Display	SL-200
	FL-200S
Range Switch for Analog Display	DS-389
	MF-22R
Dimmer for Analog Display	DS-F25
	DS-FE25
	DS-S25
	DS-SE25
Dimmer	RD-502

Remote Control Unit	RD-501*
	* for RD-50/20
Junction Box	CI-630
Ship Bottom Tank : Protrusion Type	DS-781
Ship Bottom Tank : Buried Type	DS-784
Ball Type Gate Valve	DS-854
Gate Valve	DS-786
LIF Board Kit	OP65-3
Front Fastening Panel	OP24-35
F Mount Sponge Kit	OP05-141
Waterproof Kit	OP05-139
Replacement Kit	OP05-140
SC Lock	OP65-4
Cable Assembly	OP05-146
Cable Protection Kit	OP05-147
Installation Material	

\* The Specifications are when the LIF board is mounted. When using the Analog Output, the Log Panel Output or the System Fail, the LIF board is necessary.

## Interconnection Diagram



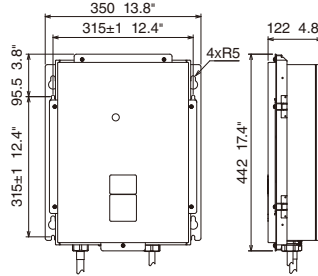
\*1 When connecting two RD-50, use the power supply onboard.

The Distribution Box can only supply power to one device.

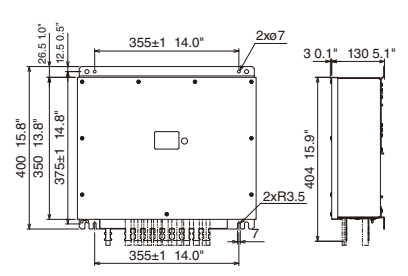
\*2 For the DS-8510-LIF, the LIF board configuration is standard.

\*3 The cable length (Distribution Box to Transceiver Box) is up to 400m. If necessary, use the Junction Box.

Transceiver Unit DS-8520 6 kg 13.2 lb



Distribution Unit DS-8510 13 kg 28.7 lb



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