

## DOPLER SPEED LOG

### Model DS-50

- ▶ Complies with IMO Resolution MSC.36 (63), MSC.96 (72), A.694 (17), A.824 (19), IEC 61023 and other national regulations
- ▶ Displays ship's fore-aft and port-starboard speeds along with distance run and keel clearance
- ▶ Highly precise and stable measurement by using advanced three-beam transmission technology
- ▶ Compact display unit for ease of installation
- ▶ Auto mode for continuous readout of ship's speed
- ▶ A variety of analog/digital speed indicators are optionally available for monitoring at a remote location
- ▶ Signal outputs of analog/digital speed data and distance run for external equipment



The FURUNO DS-50 is a Doppler Speed Log designed to meet the IMO Resolution, IEC specifications and other national regulations. Its three-beam transmission reduces the effect of pitch and roll for high accuracy and enables the measurement of port-stbd speed as well as fore-aft speed. Keel clearance information is provided to assist with shallow water navigation.

The DS-50 measures and displays the ship's over-the-ground or through-the-water speed based on the Doppler effect. Speed data can be output to

external equipment such as ARPAs, INS and IBS. There are three operation modes: Ground-tracking, Water-tracking and Auto. The Auto mode continuously displays ship's speed, switching between Ground-tracking and Water-tracking automatically.

The DS-50 consists of a display unit, processor and transducer. The compact design of the display unit allows flexible installation on the bridge. For monitoring at remote locations, analog and digital indicators are optionally available.

# SPECIFICATIONS OF DS-50

## DISPLAY UNIT

Two-digit LED for display of port-stbd speed  
 Three-digit LED for display of fore-aft speed  
 Seven-digit LED for display of distance run/keel clearance

## ULTRASONIC FREQUENCY

440 kHz

## NUMBER OF BEAMS

3 beams for dual axis speed indication

## MEASURING RANGE AND ACCURACY

### Ship's speed

Fore-Aft: -10.0 to 40.0 knots  
 Port-Stbd: -9.9 to 9.9 knots

### Measurable depth of ship's speed

Ground tracking: 1 to 200 m below hull bottom  
 Water tracking: 2 to 25 m below hull bottom  
 Total distance run: 0 to 99999.99 nm

### Accuracy

Ship's speed:  $\pm 1\%$  or  $\pm 0.1$  kt, whichever is greater  
 Distance run:  $\pm 1\%$  or  $\pm 0.1$  nm, whichever is greater  
 Keel clearance:  $\pm 1\%$  or  $\pm 0.1$  m, whichever is greater  
 (At 1,500 m/s sound velocity)

## INPUT/OUTPUT SIGNALS

**Input** 2 ports for external keying pulse

### Output

Ship's speed 3 ports\* (Digital)  
 1 port (Analog)  
 Distance signal 1 port\* (400 pulses/nm)  
 6 ports with contact closure signal  
 at 200 pulses/nm

Alarm signal 1 port\*  
 Keying pulse 1 port

**Input/Output** 2 ports for IEC61162 data

\* For those needing more ports, Distribution box DS-370 is optionally available

## ENVIRONMENT (IEC 60945 test method)

Temperature: -15°C to +55°C

## POWER SUPPLY

115/230 VAC

## EQUIPMENT LIST (Specify type of processor unit when ordering)

### Standard for installation with DS-510 (Transceiver unit built in)

1. Main display unit DS-500
2. Processor unit DS-510 (Transceiver built in)
3. Transducer DS-530 with 20 m cable
4. Transducer tank DS-531
5. Installation materials and spare parts

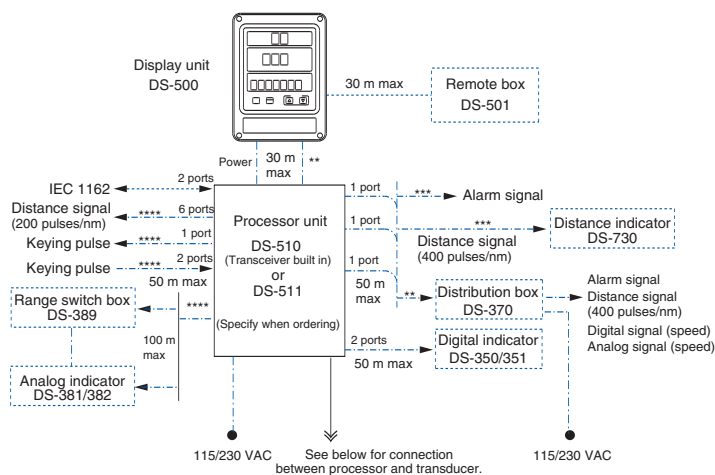
### Standard for installation with DS-511 (Transceiver unit separated)

1. Main display unit DS-500
2. Processor unit DS-511
3. Transducer DS-530 with 20 m cable
4. Transducer tank DS-531 or Gate valve DS-532 (specify when ordering)
5. Transceiver unit DS-520
6. Installation materials and spare parts

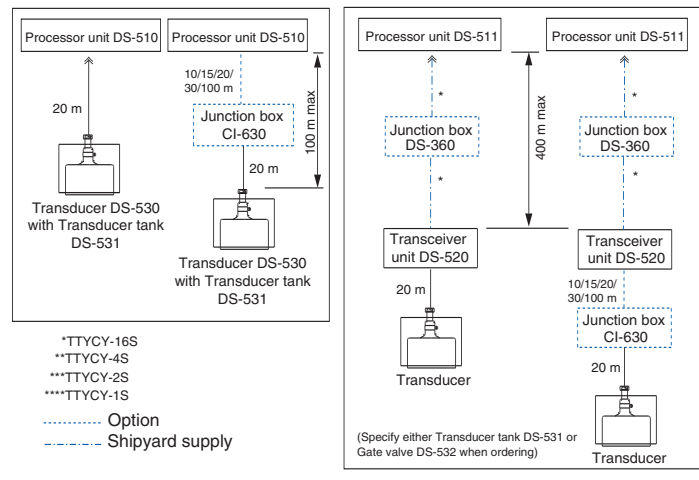
### Optional (Common)

1. Analog indicator DS-381/382
2. Digital indicator DS-350 (LCD display, waterproof)/351 (LED display)
3. Distance indicator DS-730
4. Distribution box DS-370
5. Range switch box DS-389
6. Junction box DS-360
7. Junction box CI-630
8. Extension cable between DS-510-CI-630/DS-520-CI-630  
 66S1067 (10, 15, 20, 30 or 100 m)
9. Remote box DS-501 for Main display

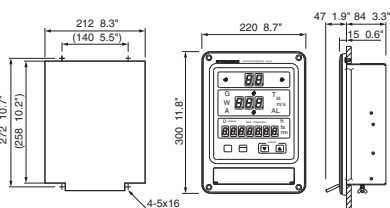
## Interconnection Diagram



### Connection between processor and transducer

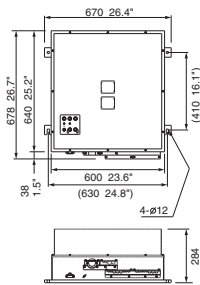


## Display unit DS-500

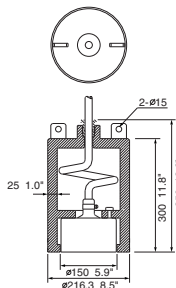


Cutout for flush mount

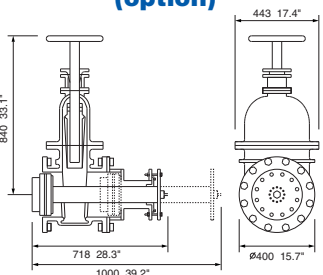
## Processor unit DS-510



## Transducer DS-530 with tank DS-531



## Gate valve DS-532 (option)



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

02045Y Printed in Japan

**FURUNO U.S.A., INC.**  
 Camas, Washington, U.S.A.  
 Phone: +1 360-834-9300  
 Fax: +1 360-834-9400

**FURUNO (UK) LIMITED**  
 Havant, Hampshire, U.K.  
 Phone: +44 2392-441000  
 Fax: +44 2392-484316

**FURUNO FRANCE S.A.**  
 Bordeaux-Mérignac, France  
 Phone: +33 5 56 13 48 00  
 Fax: +33 5 56 13 48 01

**FURUNO ESPAÑA S.A.**  
 Madrid, Spain  
 Phone: +34 91-725-90-88  
 Fax: +34 91-725-98-97

**FURUNO DANMARK AS**  
 Hvidovre, Denmark  
 Phone: +45 36 77 45 00  
 Fax: +45 36 77 45 01

**FURUNO NORGE A/S**  
 Alesund, Norway  
 Phone: +47 70 102950  
 Fax: +47 70 102951

**FURUNO SVERIGE AB**  
 Västra Frölunda, Sweden  
 Phone: +46 31-7098940  
 Fax: +46 31-497093

**FURUNO FINLAND OY**  
 Espoo, Finland  
 Phone: +358 9 4355 670  
 Fax: +358 9 4355 6710

**FURUNO POLSKA Sp. Z o.o.**  
 Gdynia, Poland  
 Phone: +48 58 669 02 20  
 Fax: +48 58 669 02 21

**FURUNO DEUTSCHLAND GmbH**  
 Rellingen, Germany  
 Phone: +49 4101 838 0  
 Fax: +49 4101 838 111

**LLC "FURUNO EURUS"**  
 St. Petersburg, Russian Federation  
 Phone: +7 812 167 15 92  
 Fax: +7 812 766 55 52