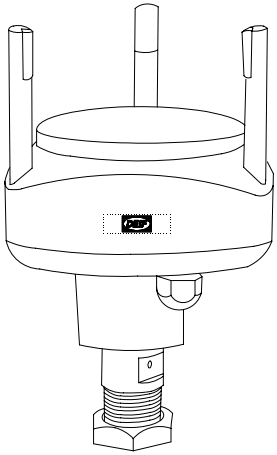
DEIF A/S

Installation Instructions

Ultrasonic wind measuring system WSS-L

4189350029A



- *Unpacking*
- *Selecting location*
- *Mounting*
- *Wiring*
- *Interface box WSI*
- *Display WSDI*
- *Drawings*
- *Replacement of old 879.3c wind sensor*

CE

***DEIF A/S**, Frisenborgvej 33*
DK-7800 Skive, Denmark
Tel.: +45 9614 9614, Fax: +45 9614 9615
E-mail: deif@deif.com, URL: www.deif.com

Unpacking

The ultrasonic wind sensor type WSS-L is delivered in a cardboard box. Be careful when removing the device from the box.

Make sure not to damage any of the ultrasonic transducers located at the top of the three antennas. Do not drop the device, as this may break or damage the ultrasonic transducers.

Selecting location

It is important to find a suitable location for the wind sensor WSS-L in order to get representative measurements of the wind speed and wind direction.

The wind sensor is to be installed at a location that is free from turbulence.

Mounting

The wind sensor is delivered with the mounting tap fastened on the actual sensor house. The tap and the sensor house are not to be separated, as this will damage the IP66 protection (waterproof protection).

The wind sensor can be mounted either onto a vertical pole where the top of the pole is equipped with min. 10mm of inner ¾" thread, or on a horizontal plate equipped with the same thread.

Do not expose the plastic part of the wind sensor to any torque when mounting the sensor; the tools used for fastening are only to be applied on the actual tap.

The lock nut on the tap can be used to fasten the sensor when the correct position is found. To ensure that the display represents the precise wind direction according to the ship, the wind sensor must be adjusted correctly. I.e. when mounting the wind sensor, the arrow printed on the bottom of the sensor must point towards the stem of the ship. On land-based installations the arrow must point towards north.

In order to protect the wind sensor and the personnel in the best possible way from lightning strokes it is recommended that a lightning rod is installed with the tip at least one metre above the wind sensor. The lightning rod must be properly grounded in compliance with all applicable safety regulations.

Wiring

The wind sensor is supplied with 2 metres fixed cable. From factory the cable is connected to the sensor via a waterproof gland, and this must not be replaced by another cable; the cable is extended by using a connecting box (not included).

For further protection of the cable between the wind sensor and the connection box a metal conduit pipe is recommended.

Installation cable: 4 x 0.75mm^2 screened max. 300m, and max. 70nF capacity between the signal conductors.

The wind sensor cable screen and the installation cable screen should be connected in the connection box.

No supply voltage must be present during mounting and installation of the wind sensor, as this will damage the wind sensor.

Interface box

The interface box type WSI is connected between the wind sensor and the display(s). The interface box is supplied from an 18…32V DC supply able to deliver 0.9A at 24V DC (1.25A at 18V DC) and will then supply the ultrasonic transducer and at the same time convert the data signal for wind direction and wind speed into a TTL signal intended for the WSDI display. This is to make it possible to replace an existing wind sensor type 879.3c with our new sensor type WSS-L and to be able to connect the sensor to the existing display type 879.50/879.521. Please note that the new name for the display is WSDI. Besides, the already installed cable between the sensor and the display can still be used.

Display type WSDI

The display is connected to the interface box and is supplied separately from an AC power source of either 110V AC or 220V AC according to information on the label. The display type WSDI has an RS422 NMEA 0183 output version 1.5 or 2.x-3.0 according to information on the label. As regards changing of the NMEA version and reconfiguration of the supply voltage, see the User's Manual, document no. 4189350030.

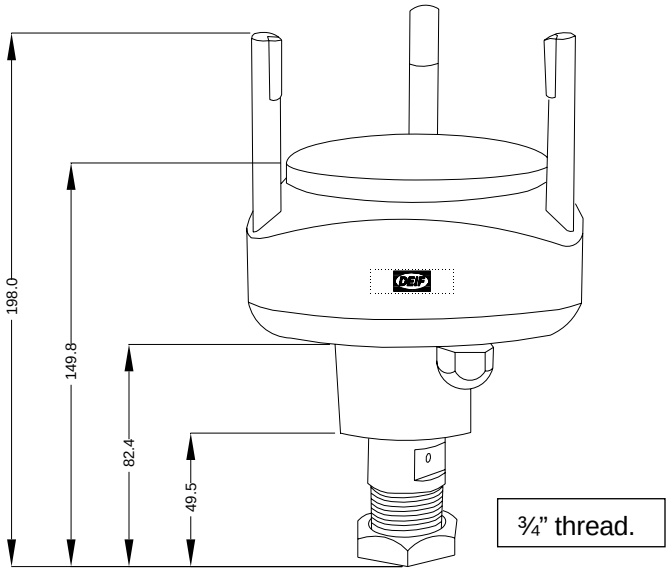
Connection between wind sensor - interface box - display(s)

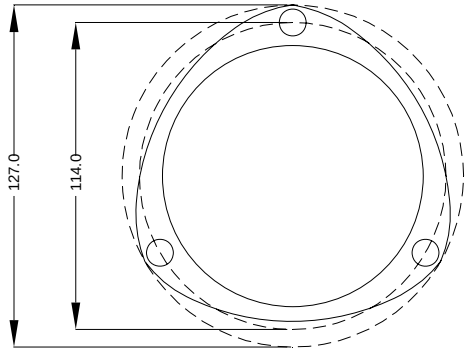
Wind sensor WSS-L Cable colour	**Interface box WSI Terminal no.:**	**Display WSDI Terminal no.:**	**Comments**
Black (-)	9		30V DC supply for the WSS
Red (+)	7		
Orange	4 (A)		RS485 comm. from WSS
Brown	5 (B)		
Screen	6		Cable screen
	1 (-)		Aux. supply 18-32V DC, 1.25A
	2 (+)		
	12 (0V)	2	Wind direction (D) and wind speed (S)
	11 (D)	4	
	10 (S)	3	
		5	Screen
		AC	Aux. supply 110V AC or 220V AC
		AC	
		GND	Ground
		1	+5V DC for external mode shift/dimmer
		A	NMEA output
		B	
		Screen	
		9	External mode shift/dimmer, see document no. 4189350009
		10	
		11	

Schematic drawing, see page 6.

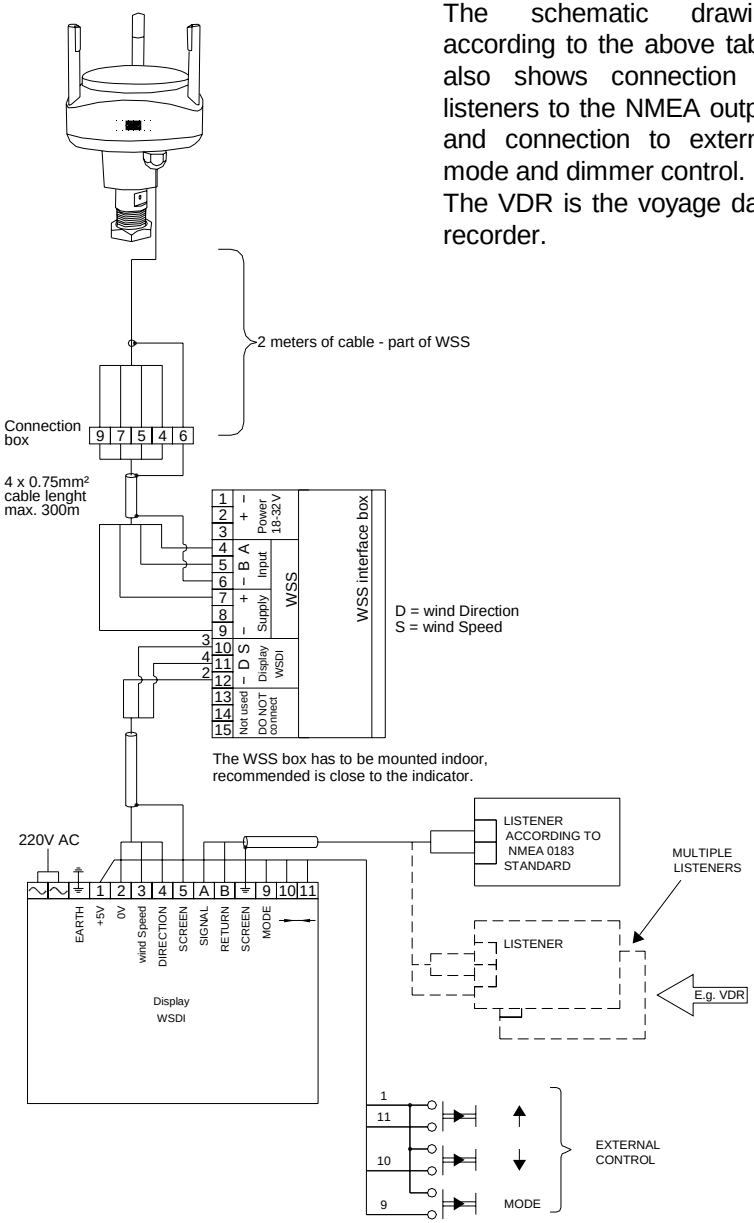
Drawings

Wind sensor type WSS-L.

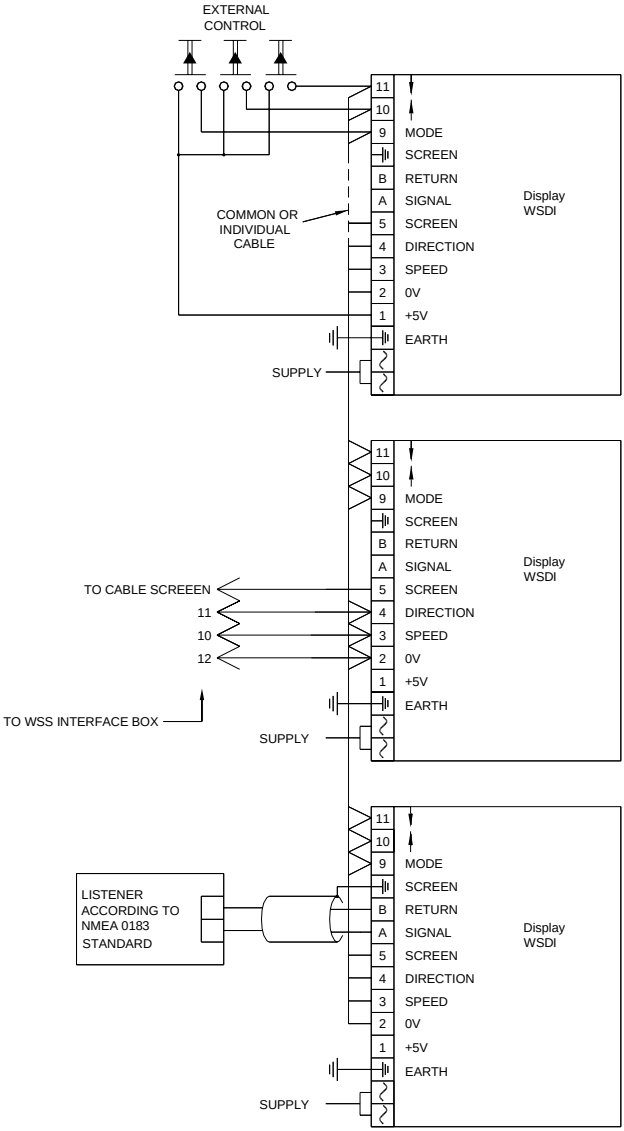




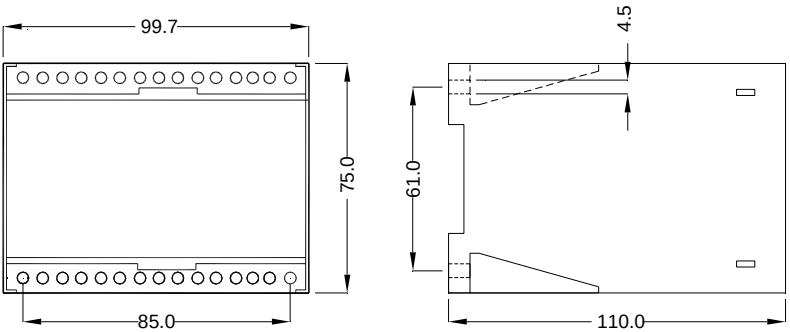
The schematic drawing according to the above table also shows connection of listeners to the NMEA output and connection to external mode and dimmer control.
The VDR is the voyage data recorder.

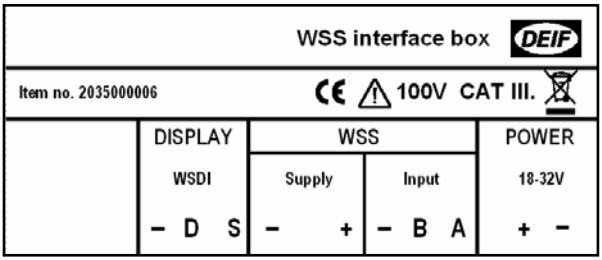


Connection diagram of 3 displays connected to one interface box and with common external mode and dimmer control.

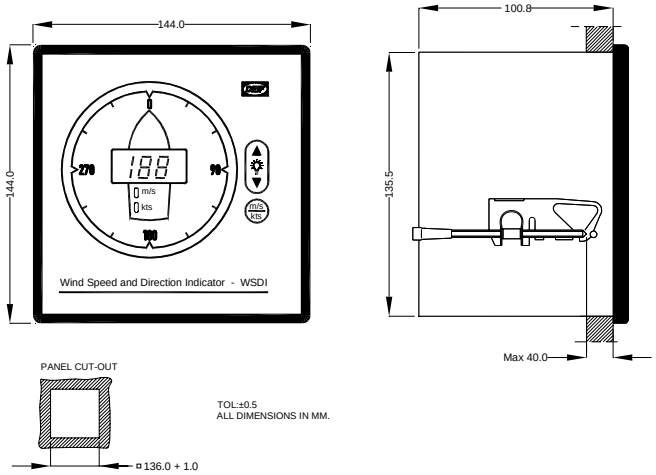


Dimensions and front label of the WSS/WSS-L interface box type WSI.



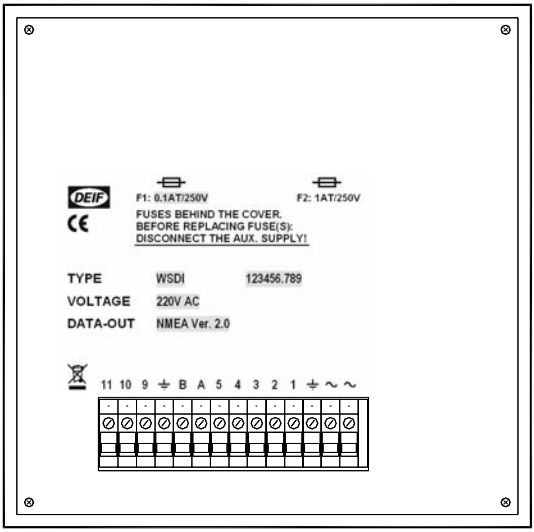


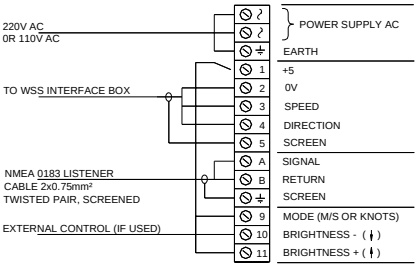
Dimensions and panel cutout of the display, WSDI.



Rear side of the display WSDI.

If the instrument is installed in a metal panel, this panel has to be carefully earthed as well as the instrument itself, connecting the terminal marked EARTH.

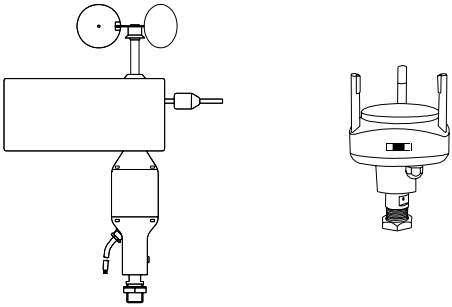




CONNECTION TERMINALS: MAX: 2.5mm² MULTI-STRANDED

4.0mm² SINGLE-STRANDED

Replacement of the old wind sensor type 879.3c by the new WSS-L



Remove the tap for the old sensor 879.3c and mount the new sensor. Notice that the tap is fixed on the new sensor and is not to be removed.

Mount the sensor so the arrow on the bottom of the sensor is pointing towards the stem of the ship.

Do not expose the plastic part of the wind sensor to any torque when mounting the sensor; the tools used for fastening are only to be applied on the actual tap.

The existing cable can be used. Before mounting the sensor with the existing cable, remember to disconnect the cable from the wind display WSDI.

The sensor is equipped with a 2m cable, this cable is connected to the existing cable using a junction box (normally already mounted).

The new sensor WSS cannot be connected directly to the existing display 879.50 or 879.521. An interface box WSI must be mounted in between. The interface box can be mounted anywhere between the sensor and the display(s), but the following must be taken into consideration: The interface box has to be supplied from a 24V DC/1.25A source and mounted indoor, for which reason it is recommended to mount the interface box close to the existing

display(s). Regarding dimensions of the box, see page 8; regarding wiring, see pages 4 and 6. Before the replacement is carried out, it is recommended to carefully read the Installation Instructions (this document).

If further information is needed, see the User's Manual, document no. 4189350030.

For technical specifications, see the Data Sheet, document no. 4921250060.