Instruction manual

KONGSBERG

Remote display RD301
Digital depth repeater

INTRODUCTION

The RD301 remote display is made for use with the EA400/ EA600 and the EN 250 navigation echo sounder. It may also be used with other echo sounders, if they have NMEA0183 output.

The RD301 is a depth repeater with alarm setting. The operator may select alarm depth in the meny.

Maximum depth readings are 9999 m and a resolution of 0.1 m.

Brightness is adjusted on the front panel. Brightness can, *optionally,* also be adjusted from a remote controller.
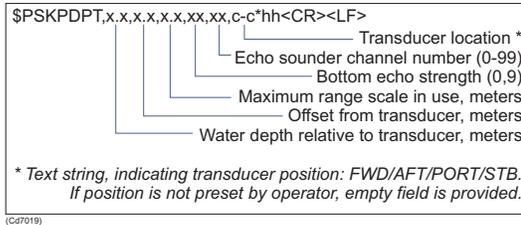
OPERATION

1. **To switch the unit on:** Press any key.
   To switch the unit off: At the same time, press both the **Up** and the **Down** key.

2. **To adjust brigthness:** Press the **Up/Down** keys to find suitable setting.

3. **To select depth alarm:** Press the **S** key once and enter alarm setting mode. The display shows "SetA". Set the wanted depth by using the **Up** and **Down** keys. When wanted alarm depth is set, the unit will go back to normal mode operation after 15 seconds, or press **S** to the depth occur. When depth below transducer become the same, or less, than the alarm depth, the display will indicate "AL" alternating with actual depth. **To set alarm off:** Repeat operation number 3. and set alarm depth to 0 m.

4. **To select readings in feet, meters or fathoms:** Press the **S** key twice and enter alarm setting mode. The display shows "SetU ". Select requested reading by pressing the **Up** or **Down** key. When readings is set, the unit will go back to normal mode operation after 15 sec, or press **S** to the depth occur.

5. **To select transducer position (Only for EN 250):** Press the **S** key three times and enter the transducer selection mode. The display shows "SetP". Press the **Up/Down** keys to select between the four choices: **Unknown**, **Forward**, **Backward** or **Auto**.

   - The Unknown selection decode any NMEA depth message and shows the depth on the display. The position leds will then be off.

   - The other selections decode the NMEA message $PSKPDPT. If Forward is selected, only the readings from the forward transducer is shown, and if Backward is selected, only the readings from the backward transducer is shown.

   - The Auto selection switches between Forward, Backward and Unknown depending on the NMEA messages available. The led for positions will shift automatically and blink every third second, indicating that the Auto selection is active. If the transducer position is unknown, both leds will be on and blinking.
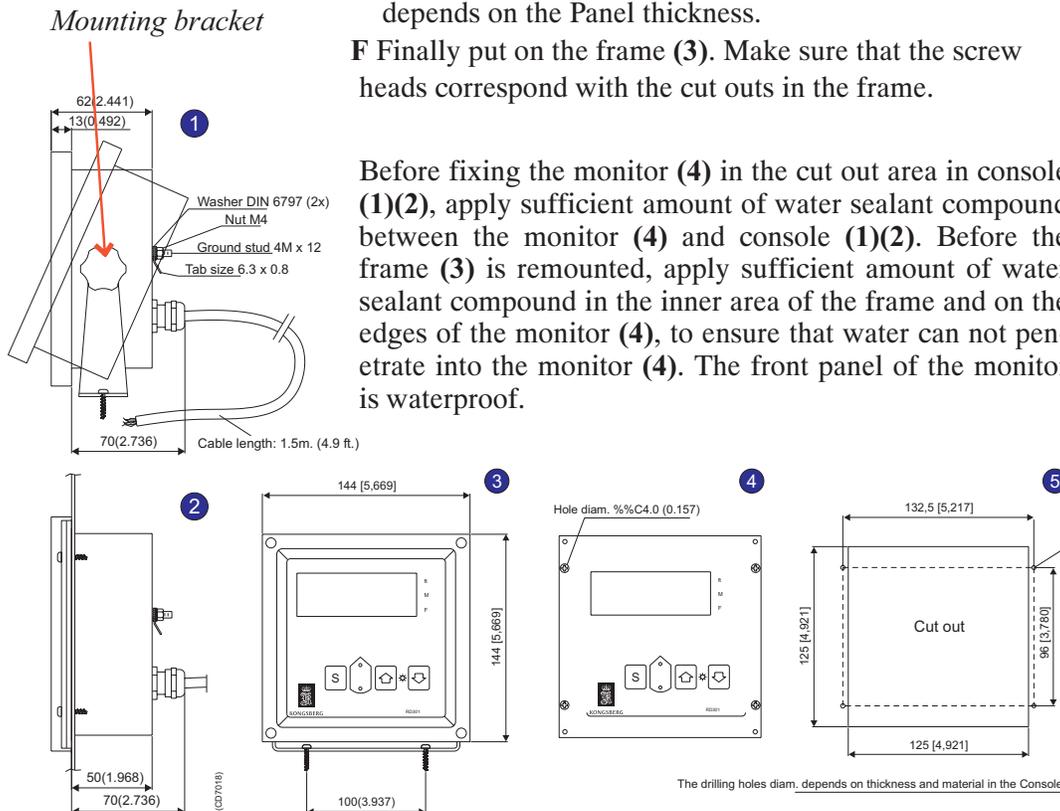
NMEA Input

1. Accepted messages (NMEA0183,version 2.30), talker identifier is not processed:

- Depth &Draught
  SDDPT,xxxx.x,xxxx.x,xxxx.x <Cr><Lf>
  (used by EA400 and EA600)
- Depth below transducer
  SDDBT ,xxxx.x,f,xxxx.x,M,xxx.x,F)
- Depth below transducer by EN 250
  proprietary sentence *shown to the left*
  (only for EN 250)

```
$PSKPDPT,x.x,x.x,x.x,xx,xx,c-c*hh<CR><LF>
```
Transducer location *
Echo sounder channel number (0-99)
Bottom echo strength (0,9)
Maximum range scale in use, meters
Offset from transducer, meters
Water depth relative to transducer, meters

** Text string, indicating transducer position: FWD/AFT/PORT/STB.
If position is not preset by operator, empty field is provided.*

(Cd7019)

PANEL MOUNTING

A Make a cut out in the Panel **(5)**: 125 x 125 mm.

B Remove the mounting bracket **(1)**.

C Unscrew the 4 screws in the frame **(3)** (one in each corner) and remove the frame.

D Put the Monitor **(4)** in the cut out and mark the 4 center-points for the drill in the Panel **(1)(2)**. (The drilling holes diam. depends on thickness and material in the Panel).

E Use appropriate bolts with diameter 2.9 mm. Length depends on the Panel thickness.

F Finally put on the frame **(3)**. Make sure that the screw heads correspond with the cut outs in the frame.
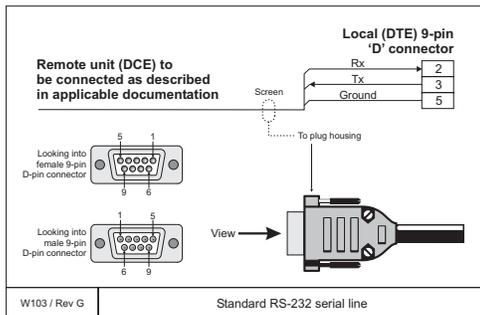
Before fixing the monitor **(4)** in the cut out area in console **(1)(2)**, apply sufficient amount of water sealant compound between the monitor **(4)** and console **(1)(2)**. Before the frame **(3)** is remounted, apply sufficient amount of water sealant compound in the inner area of the frame and on the edges of the monitor **(4)**, to ensure that water can not penetrate into the monitor **(4)**. The front panel of the monitor is waterproof.

Mounting bracket

62 (2.441)
13(0.492)
①
Washer DIN 6797 (2x)
Nut M4
Ground stud 4M x 12
Tab size 6.3 x 0.8
70(2.736)
Cable length: 1.5m. (4.9 ft.)

②
50(1.968)
70(2.736)
(Cd7018)

144 [5,669] ③
144 [5,669]
S
KONGSBERG   RD301
100(3.937)

Hole diam. %%C4.0 (0.157) ④
S
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⑤
132,5 [5,217]
125 [4,921]
Cut out
96 [3,780]
125 [4,921]

The drilling holes diam. depends on thickness and material in the Console.

Some remote displays may have the text "REMOTE DISPLAY" instead of "RD301" on the front.

Environmental conditions according to IEC60945

Supply voltage: 24 Vdc (20-32 V)
Power consumption: 3 W at 24 V
Display area, size: 20 x 11 mm
Operating temperature:
-15 to +55 degree C, according to IEC60945. To increase service ability and life-time, we suggest the working temperature to be held at 0 to +40 degrees C.
Storage temperature: -20 to +70 degree C
Humidity: 10 - 90% relative, no condensation
Protection: IP 56

Generic RS-232 Serial line

Remote unit (DCE) to be connected as described in applicable documentation

Local (DTE) 9-pin 'D' connector
Rx — 2
Tx — 3
Ground — 5
Screen
To plug housing

Looking into female 9-pin D-pin connector
5   1
9   6

Looking into male 9-pin D-pin connector
1   5
6   9

View →

W103 / Rev G   Standard RS-232 serial line

This cable comprises a multi-purpose serial line. It provides interface with any peripheral unit. One end of the cable connects to the local unit (DTE) with a 9-pin 'D' connector, while the other connects to the peripheral (DCE) as described in the peripheral unit's documentation.

Note that this cable does not support all the signals in the standard RS-232 specification.

Note about wiring

A wrong type of cable has been used in the production of the first series of RD301 repeaters. This applies to repeaters with serial no. 030031 through 030050.

WIRING CONNECTING			
COLOUR	SIGNAL	COLOUR	SIGNAL
RED	+ 24V	GREEN	DIM+
BLACK	- 24V	YELLOW	DIM-
BLUE	NMEA IN+	GREY	DIMKEY
WHITE	NMEA IN/OUT-	DIM+	
ORANGE	NMEA OUT+	DIM-	REMOTE DIMMER
		DIMKEY	
GROUND WITH GROUND STUD			

Two of the wires in the cable have a different colour coding from the original:
- NMEA IN/OUT Brown wire (originally white)
- DIMKEY Violet wire (originally grey)

Other cables as marked on the rear wall of the repeater.

About this manual

Kongsberg Simrad AS makes every effort to ensure that the information contained within this document is correct. However, our equipment is continuously being improved and updated, so we cannot assume liability for any errors which may occur.

Warning

The equipment to which this manual applies must only be used for the purpose for which it was designed. Improper use or maintenance may cause damage to the equipment or injury to personnel. The user must be familiar with the contents of the appropriate manuals before attempting to install, operate or maintain the equipment.
Kongsberg Simrad AS disclaims any responsibility for damage or injury caused by improper installation, use or maintenance of the equipment.

Service

All service requests should be made to the local Kongsberg Simrad representative. Adjustments and repairs should only be performed by qualified service engineers, and unqualified repair attempts will void the warranty.

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