

SKIPPER

Digital Depth Repeater

IR301

Operation and Installation Manual



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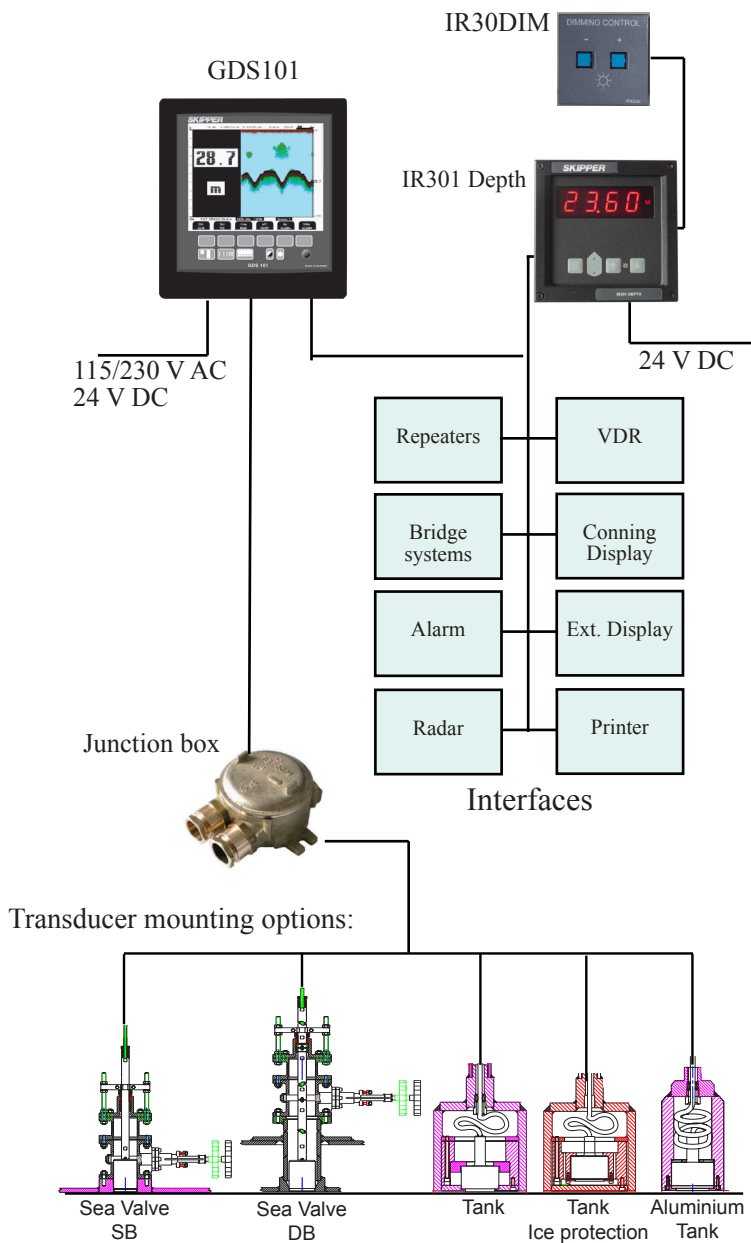
1. Overview

The SKIPPER IR301 is a remote depth indicator for NMEA signals. It gives accurate digital depth indication based on signals from the SKIPPER ED165, GDS101 or GDS102 echo sounder. SKIPPER IR301 can also be used with echo sounders from other manufacturers, when these have an NMEA 0183 output. On the SKIPPER IR301 the operator may indicate the position of the transducer, or select between transducers (GDS102).

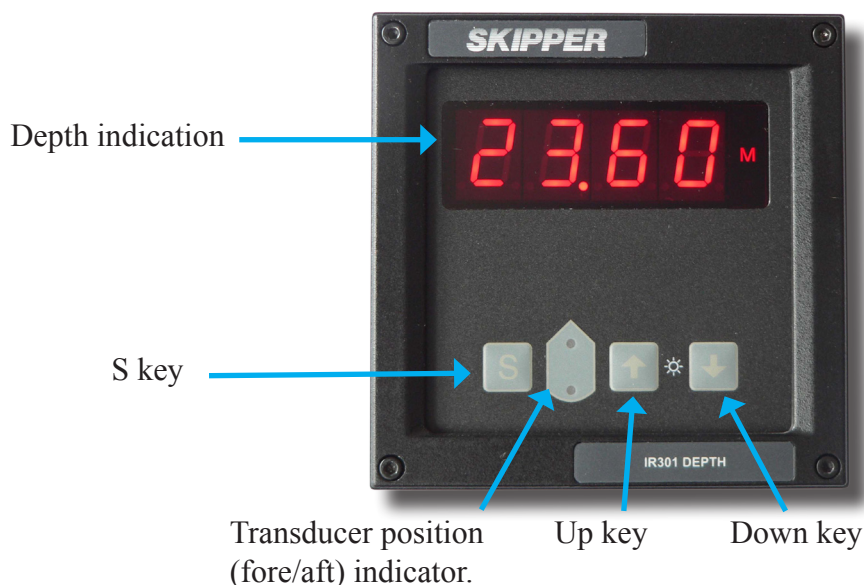
- SKIPPER IR301 is a digital depth repeater with independent alarm indication. The operator may select to indicate depth alarm using the menus.
- SKIPPER IR301 will only indicate depth below transducer.
- Brightness is adjusted on the front panel, via NMEA or from the optional remote controller, IR30DIM.

Features

- Depth indication
- Alarms - depth alarm
- Shows position of transducer in use.
- Bracket or panel mounting.



2. Buttons and display



3. Operation

- To switch on the unit, press any key, to switch off, press both up and down keys at the same time.
- To adjust brightness of LEDs, press up/down arrows to find a suitable setting.
- To select indication depth alarm, press the S key **once** and enter **alarm setting mode**, “SetA “. Set the desired depth by using the up and down keys. When desired alarm depth is set, the unit will go back to normal mode operation after 15 sec or press S key until the depth occur. When depth below transducer becomes same or less than the set alarm depth, the display will indicate “AL “ alternating with actual depth. To disable the alarm, repeat operation no 3, and set alarm depth to 0 m.
- To select readings in feet (ft) meters (M) or fathoms (F), press the S key **twice** and enter **units setting mode** “SetU“. Select wanted readings by using the up or down key. When readings is set, the unit will go back to normal mode operation after 15 sec or press S key until the depth appears.
- To select transducer position, press the S key **three** times and enter the **position setting mode**, “SetP”. Press up or down keys to select between the four choices:
 - Unknown,
 - Forward,
 - Backward
 - Auto.

Mode	Transducer position LEDs
Unknown	Both LEDs off
Forward	Forward LED on
Backward	Backward LED on
Auto	Active transducer position slowly flashing

- The “Unknown” selection decodes NMEA depth message and show 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. The same applies for the “Backward” selection.
- The Auto selection switches between Forward, Backward and Unknown depending on the NMEA

messages available. The LEDs for the position 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.

Note: Repeaters can be remotely dimmed by:

- Using external buttons (IR30DIM) connected to the DIM UP, DIM DN and DIMKEY of each repeater.
- Pressing up down arrows on one repeater, when DIM lines are connected in parallel.
- Using the DDC (NMEA) command as described in section 4.

4. NMEA Input

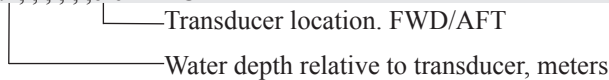
Accepted messages (received and transmitted) (NMEA 0183), talker identifier is not processed:

Name	Description	Example	Comments
DPT	Depth	\$--DPT,xxxx.x,xxxx.x,xxxx.x <CR><LF>	
DBT	Depth below transducer	\$--DBT ,xxxx.x,f,xxxx.x,M,xxx.x,F)	
DDC	Display Dimming Control	\$--DDC,a,xx,*hh<CR><LF>	Brightness percentage has priority over display dimming preset.

Note: Baud rate fixed to 4800 baud.

SKIPPER Proprietary sentence

\$--PSKPDPT,x.x, , , , ,c-c*hh<CR><LF>



5. Diagnostic information

- If the IR301 does not receive any signal from the external source for more than 3 seconds, “Error” (“Err”) message is indicated on the LEDs. This may happen, for example if an external talker is not connected or connection polarity is not correct.
- If input messages do not contain sentences required for indication of selected data, “_” (underline symbol) is indicated on the corresponding LEDs. As an example: if there is no DBT message available on the input, IR301 will indicate “_____” instead of depth.
- If fields in the received message is empty (not valid data), dots are indicated on the corresponding LEDs. As an example: if the depth field is empty in the \$PSKPDPT sentence, “...” will be indicated instead of the depth value.

NOTE: IR301 will always only indicate depth below transducer. I.e. draught is not processed.

6. Service

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

7. Environmental according to IEC60945

Power supply	DC: 10 - 32 V.
Power consumption	3 W.
Operating temperature	-15 - 55 degrees C. To increase serviceability and life-time, we suggest the working temperature to be held at 0 - 40 degrees C.
Storage temperature	-20 - 70 degrees C.
Humidity	10 - 90 % relative, no condensation.
Display	7 segment. 20 x 11 mm digital readout.
Mounting dimensions	124 x 124 mm. Bracket or panel mounting.
Front plate	144 x 144 mm to DIN standard.
Depth	59 mm.
Weight cabinet	1 kg.
Resolution	0.1 kn
Outputs	1 x NMEA 0183. (Fixed to 4800 baud).
Inputs	NMEA 0183. (Fixed to 4800 baud).
	Remote dimmer input.
Protection	IP 56.
Service	Available in most major harbours, world-wide through extensive dealer network.

Note: The IR301 is classed IP 56 and may be mounted externally, but should be covered when not in use.

8. IR301 Connections

1	RevNo	Revision note	2	3	4
				Date	Signature
					Checked

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

Power consumption: 24 VDC/ 3W
Protection code: IP56

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

DIM+

DIM-

DIMKEY

REMOTE DIMMER

GROUND WITH GROUND STUD

Console mounting order:

- A. Make a cut out in the Console (1) 125 x 125 (4.921 x 4.921)
- B. Remove the mountingbracket (2)
- 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 centerpoints for the Drill in the Console(1) (The drilling holes diam. depends on thickness and material in the Console.)
- E. Use Panh. screws DIN 7981 Diam. 2.9 (0.114). Length depends on the Console thickness.
- F. Finally put on the frame (3). Make sure that the screwheads correspond with the cut outs in the frame.

Itemref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference
Designed by AM	Checked by VF	Approved by - date VF-020815	File name TB3009
			Date 020815
			Scale 1:1

SKIPPER Electronics AS

IR301 DEPTH INDICATOR

TB3009-01

Edition
0

Sheet
1/1

9. IR30DIM

1		2	3	4
RevNo	Revision note		Date	Signature
				Checked

96 [3,780]

DIMMING CONTROL

- +

96 [3,780]

IR30DIM

Turned 180°

24 [0,945]

Grounding Label

14 [0,551]

Stud M4 x 12

Tab size 6.3 x 0.8

Washer DIN 6797 (2x) Form A

Nut M4

46 [1,811]

60,9 [2,398]

82 [3,228]

60 [2,362]

70 [2,756]

Drilling holes Ø 4.5 (0.177)

Itemref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference		
Designed by AM	Checked by VF	Approved by - date VF-020815	File name TB3010	Date 020815	Scale 1:1
SKIPPER Electronics AS			IR30DIM		
			TB3010	Edition 0	Sheet 1/1