SIMRAD 603N
NAVIGATION SOUNDER

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TECHNICAL SPECIFICATIONS

Scale Range

Range setting 0: Digital depth indicator 0-999 meters. Recorder Off
Range setting A: 0 - 50 meters
Range setting B1: 0 - 500 meters
Range setting B2: 300 - 800 meters
Range setting B3: 600 - 1100 meters

Transmitter

Frequency: 50 kHz
Output power: 350 Watts
Source level: 107dB/1 u Bar ref. lm
Pulse duration: Range 0 and A -0.6 msec.
               All B ranges -0.3 msec.

Receiver

Frequency: 50 kHz
Bandwidth: 1.5 kHz
TVG function: 20 log R
Gain control: Continuously variable

Recorder

Type: 6 inch belt recorder
Paper speed: Continuously variable
Range A: 6-12 mm/min
Range B: 1.2-2.4 mm/min
Voltage supply

Mains voltage: 24V DC  
Power consumption: 50 Watts

Transducer

Type: Ceramic with 25 m cable in steeltank  
Active face: 70 mm circular

Cabinet

Dimensions:

Height: 350 mm  
Width: 330 mm  
Depth: 150 mm

Weight

Net 12 kg  
Gross 14 kg

Total gross weight of cabinet and transducer with steel tank: 30 kg
**INTERNAL CONTROLS**

**Operation**

- **Push to open cabinet**

- **Digital depth indicator**

**Illumination Control**

Provides continuous regulation of the illumination of the digital depth indicator.

**Illumination control**

The illumination control provides continuous regulation of the illumination of the echogram and the front panel controls.

**Range Selector**

**Recorder On/Off**

This control selects the basic ranges according to the table given under technical specifications. In position 0 the recorder is switched off and the depth will be shown only on the digital depth indicator.

**On/Off**

**Receiver Gain Control**

This control regulates the amplification of the received signals. Correct setting:

Turn the knob clockwise until a stable depth indication is obtained on the digital depth indicator. If the setting is too low the depth indicator will start blinking. Too high setting may result in false depth indication from air bubbles, plankton layers, side lobes etc. By turning the control fully anti clockwise the echosounder is switched off.
INTERNAL CONTROLS

1. Scale illumination lamps
2. Control illumination lamps
3. Paper Speed Control
   All ranges: 1.2-12 mm per minute continuously variable.
4. Marker Control
   A black line is drawn across the echogram when the knob is depressed.
5. Fuse Holder
   Fuse: 24V DC-2A
6. Zero-Line adjuster
   For adjustment of the zero-line to correspond with the scale.
   By moving the zero-line downwards corresponding to the ship's (transducer's) draft true water depth is read on the echogram.
7. Recording stylus
   Contact spring
8. Trigger magnet
1. Switch off the echosounder

2. Rotate the pen belt so that the recording pen is located at the back.

3. Take hold of the top front of the paper cassette, pull it out and let it swing down carefully.

4. Pull out the end disc knob for the magazine and remove the used paper roll.

5. Transfer the empty spool from right to left side and make sure that the end supporting discs enter the spool.

6. Insert a new roll of recording paper and thread the paper as shown of the figure.

7. Thread the end of the paper into the slot in the paper spool and turn the spool to tighten the roll.

8. Lift and lock the paper cassette in the recorder.
Adjusting the recording pen

The recording pen has a magazine of thin steel wire which must be pulled out when the tip is worn down. This is usually done every time a new roll of paper is inserted.

1. Switch off the echosounder, open the cabinet door and rotate the penbelt till the pen is in front.

2. Remove the pen from its beltholder.

3. Hold the pen as shown with a pair of pliers. Pull the wire slowly out from the thin guiding tube. Be careful not to damage the tube. Total length of wire outside the tube should be 10-12 mm (3/8 -1/2 in). If the wire has been pulled out too far, cut to correct length.

4. Straighten the wire as an extension of the guiding tube.

The pen should be bent slightly to the left.
1. GENERAL

The SIMRAD 603N Echosounder consists of the following units:

Control recorder cabinet and transducer with 25 meters cable.

SIMRAD 603N is delivered with transducer in steel tank approved by Det Norske Veritas and Lloyd's Register of Shipping.

If more than one cabinet or one transducer is to be installed, a suitable selector unit is available.

Junction box for transducer cable extension is supplied by SIMRAD free of charge.

2. ASSISTANCE

SIMRAD offers free advise for installation planning such as location of transducers, special arrangements etc.

3. POWER SUPPLY

SIMRAD 603N is designed for operation on 24V DC. The power consumption is approximately 50 Watt.

4. LOCATION AND MOUNTING OF THE RECORDER/CONTROL CABINET

The recorder/control cabinet is designed for bulkhead or panel mounting. The position of the cabinet should provide a good view of the echogram, and the digital indicator as well as easy access for operation.

For bulkhead mounting the cabinet is fastened with three bolts supplied by SIMRAD. Hardware for panel mounting is available on special request.

5. LOCATION AND MOUNTING OF THE TRANSDUCER

If only one transducer is to be fitted it is recommended to install it in the foreship. Most larger vessels are fitted with two transducers, one forward and one aft. Installation too close to the propellers should be avoided due to risk of propeller noise.
The transducer should not be installed aft of sea vents, bottom plugs etc.

The shell plating 4-5 meters ahead and 2-3 meters aside of the transducer should be free from protruding obstacles and as smooth as possible. It is recommended to install the transducer as close to the keel plate as possible. The active element of the transducer must be treated carefully and must not be painted.

6. CABLEING

The transducer elements are fitted with 25 meters cable. It is recommended to run this cable in a steel protecting pipe. The cable may be shortened or extended. In the latter case a water tight junction box should be used. The screens of the transducer cables are to be connected, but must not be grounded in the junction box.
ALL DIMENSIONS IN MILLIMETERS
Provide approx. 3/4 m of cable between cable lead in and the transducer element.

Sørg for at kabel lengden mellom kabel-gjennomføringen og svingerelementet er ca. 3/4 m.
WATERTIGHT JUNCTION BOX (SUPPLIED BY SIMRAD) MUST BE SITED FOR EASY ACCESS IN AN EXPLOSION-SAFE PLACE.

VANNTETT KJØPLINGSBOKS (LEVERES AV SIMRAD) PLASSERES PÅ IKKE EKSPLOSJONSFARLIG, LETT TILGJENGELIG STED

STEEL PIPE, MINIMUM 35mm DIAMETER INSIDE. WALL THICKNESS: ON GALVANIZED PIPE 8mm, BLACK PIPE 10mm. QUALITY OF MATERIAL: STATED IN VERITAS CAP. X PARA. 7A TYPE III.

THE PIPE TO BE WELDED BEFORE PULLING THE CABLE. EXPANDING POSSIBILITIES MUST BE ARRANGED.

MAXIMUM DISTANCE BETWEEN PIPE CLAMPS, 25 x PIPE DIAMETER. THE PIPE MUST BE FILLED WITH SAND AFTER CABLE IS PULLED.

STÅLRØR, INNVENDIG DIAMETER MINIMUM 35mm. VEggTYKKELSE: PÅ GALVANISERTE RØR 8mm, PA SORTE RØR 10mm. MATERIALKVALITET: SE VERITAS REGLER KAP. X PARA 7A, TYPE III.

RØRET SVEIES INN MED TILSTREKKELIG EKSPANSJONSMULIGHET, FØR KABELEN TRENKES. MÅKSIMUM KLAMMEAVSTAND PÅ RØRET 25 x RØRDIAMETER. RØRET FILLERSES MED SAND ETTER AT KABELEN ER TRUKKET.

SIMRAD Trading A/s

GASTIGHT CABLE PIPE FOR TRANSDUCER TANK
GASSTETT KABELRØR FOR SVINGERTANK

ARVIK NR.

TA 3004

PROJ. METODE
102.06 KM.

TOLERANSER FOR IKKE SPEISIELT TOLERANSESATTE MÅL: MIDDELS NØ 1430

GASSTETT CABLE PIPE FOR TRANSDUCER TANK
GASSTETT KABELRØR FOR SVINGERTANK

TA 3004

ARVIK NR.
Weld the tank according to procedure as shown. Use low hydrogen electrodes, e.g. OK4800. In order to avoid contraction strain, hammer each welding seam before applying the next. Allow the tank to cool down during welding.

Do not hammer the last welding seam!

Grind flush all weldings within 5 m in front of, and 3 m to the side of transducer.

Finally, paint the transducer tank inside and outside with a non-corrosive coating.

Material thickness: Top and sides 20mm. Godstykke: Topp og sider 20mm.
BOLT HOLES FOR MOUNTING ON BULKHEAD

PANEL OPENING 322 x 302, R4

DIMENSIONS IN MILLIMETERS
LYSÅPNING FOR MONTASJE, 80 X 40 MM I PANEL ELLER SKOTT.
CLEAR WIDTH IN PANEL OR BULKHEAD, 3 1/8" X 1 1/2".

FROM CAB.
FROM TRANSD. FORE
FROM TRANSD. AFT
1 KABINETT, 2 SVINGERE.
1 CABINET, 2 TRANSDUCERS.

UTVENDIGE DIMENSIJONER:
OUTWARD DIMENSIONS:
HØYDE (HEIGHT) 160 mm (6.3”)
BREDDE (WIDTH) 98 mm (3.86”)
DYBDE (DEPTH) 84 mm (3.31”)

KABELTILKOPLING 1
VENDERBOKS TYPE 517-24
CABLE CONNECTIONS TO
TRANSDUCER SELECTOR 517-24
1. MAINS CABLE, 2 x 1.5 mm² WITH SCREEN. 
POWER CONSUMPTION 50 WATTS.
2. TRANSDUCER CABLE, 2 x 1.5 mm² WITH SCREEN.
3. JUNCTION BOX, SUPPLIED BY SIMRAD. 
SCREENS OF TRANSDUCER CABLE TO BE 
CONNECTED - MUST NOT BE GROUNDED.
4. TRANSDUCER CABLE, 25 meter SUPPLIED 
WITH TRANSDUCER, SHOULD BE RUN IN A 
STEEL PROTECTING PIPE.
SIMRAD 603N
PB603N-235
DIGITAL DEPTH READOUT BOARD
TO ISOLATED GROUND LINE
BLK

TO COLLECTORS OF TR204-TR207 THROUGH R210 & T203
DC 50Y OUT RED

TO 11V LINE
REGULATED OUT ORG.

TO SWITCH ON GAIN CONTROL TR103
+ INPUT POWER RED
TO TERMINAL BLOCK -1
- INPUT POWER BLK

SIMRAD 603N
PB603N-301
AVR BOARD
TO 115V LINE
TO ISOLATED GROUND LINE

TO D103 ON PB603N-101
GRY BOTTOM SIGNAL IN

TO TERMINAL BLOCK-9 & D916 ON PB603N-235
WHT SHAPED BOTTOM PULSE OUT

TO TERMINAL BLOCK-8
GRN TRIGGER OUT FOR EXTERNAL UNITS

TO TERMINAL BLOCK-7 & TR201 BASE THROUGH R202
BLU TRANSMITTER TRIGGER
TO 3801-B THROUGH R631 OR R632 ON PB603N-125
YEL PULSE LENGTH CONTROL

TO 3801-F COMMON
WHT TRIGGER INPUT FROM TRIGGER BOARD PB603-201
OR DIGITAL BOARD PB603N-235

TO Q101 ON PB603N-101
YL T.V.G CONTROL SIGNAL OUT

SIMRAD 603N
PB603N-401
MAIN CONTROL BOARD