SILVA 220/225

DIGITAL LOGG • **DIGITAL LOG**
DIGITALES LOG • **LOCH DIGITAL**

2

1 **Monterings & Bruksanvisning**

2 **Installation & Operating description**

3 **Installation & Bedienungsanweisung**

4 **Description d'installation et d'utilisé**

SILVA 220/225 digital log

1. General Description:

The SILVA 220 is a high quality, precision instrument designed to meet the demands of sailors and powerboat owners.

The paddlewheel transducer has been designed for maximum efficiency, and minimum risk of fouling from seaweed or debris.

The installation of the through-hull fitting and the inclusion of a dummy plug, ensure easy installation and maintenance.

The high-contrast LCD display is red-illuminated for optimal readability and night vision enhancement.

The SILVA 220 reads speed up to 40 knots, and can be calibrated to within 1 % accuracy.

The SILVA 225 is a flush mount version of the log for installation in a dash board.

2. Contents list för the SILVA 220/225 digital log

The SILVA 220/225 comes complete with all necessary fittings and attachments for almost all installations. Included in this box are the following items. Check now to become familiar with each part prior to installation.

- 1 Instrument
- 1 Gasket
- 4 Stainless steel screws
- 1 Log transducer
- 1 Dummy plug
- 1 Silicone grease
- 4 O-rings
- 1 Through-hull fitting with nut
- 1 Locking device

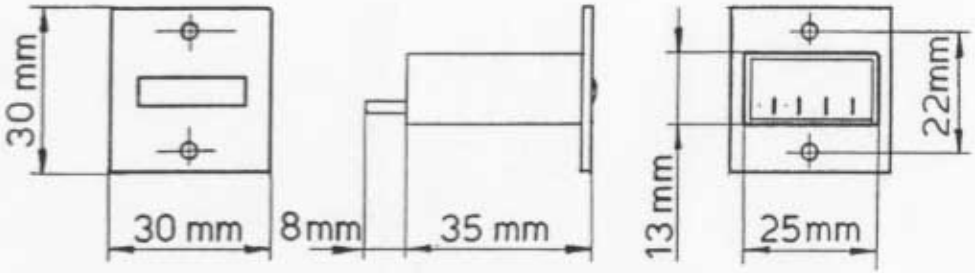
A two-wire cable from the fuse box is also required.

3. Optional accessories

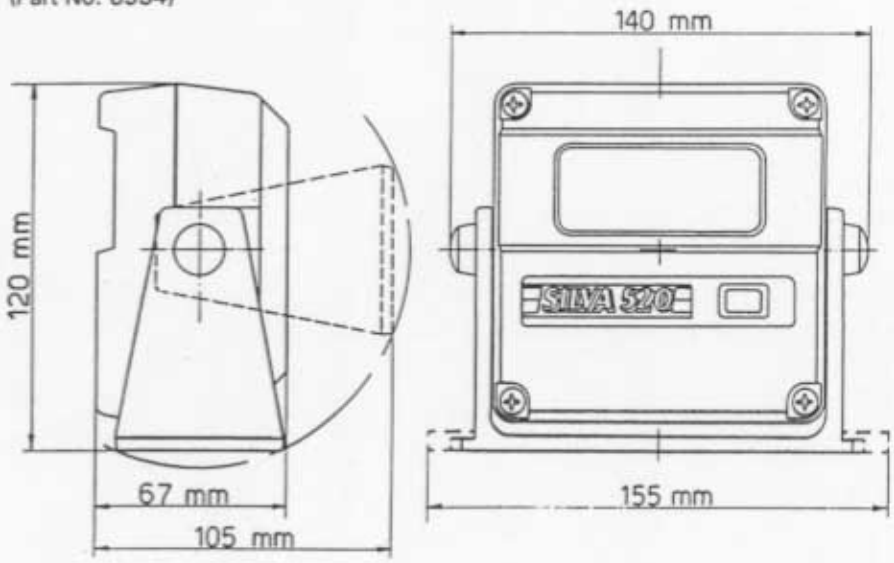
The 220 has an internal log (non-memory type), but two types of external logs can also be added as an option:

a) An external counter that is a re-settable trip log (Part No. 9340)

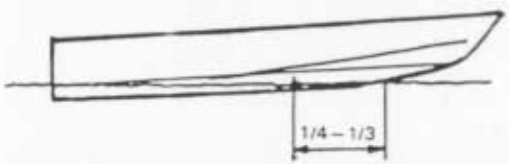
b) An external counter that is a total distance log (Part. No. 2001)

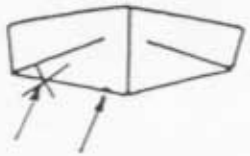


The 220 may be ordered with an optional dash-mount bracket (Part No. 8934)



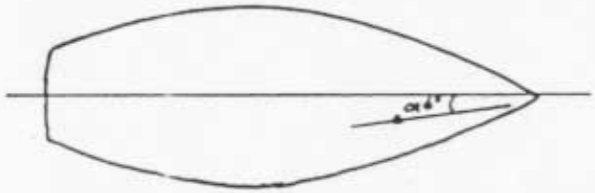
4. Correct location of through-hull fittings

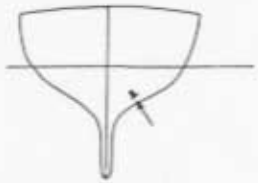




The correct positioning of the paddle wheel transducer is of prime importance for the accuracy of the instrument. Generally, the paddlewheel should be located 25–35 % aft along the waterline as close to the centreline as possible.

Sailboats with a fin keel must have the transducer located at least 10" but not more than 30" in front of the keel. It should be placed no more than 4" off the centreline.





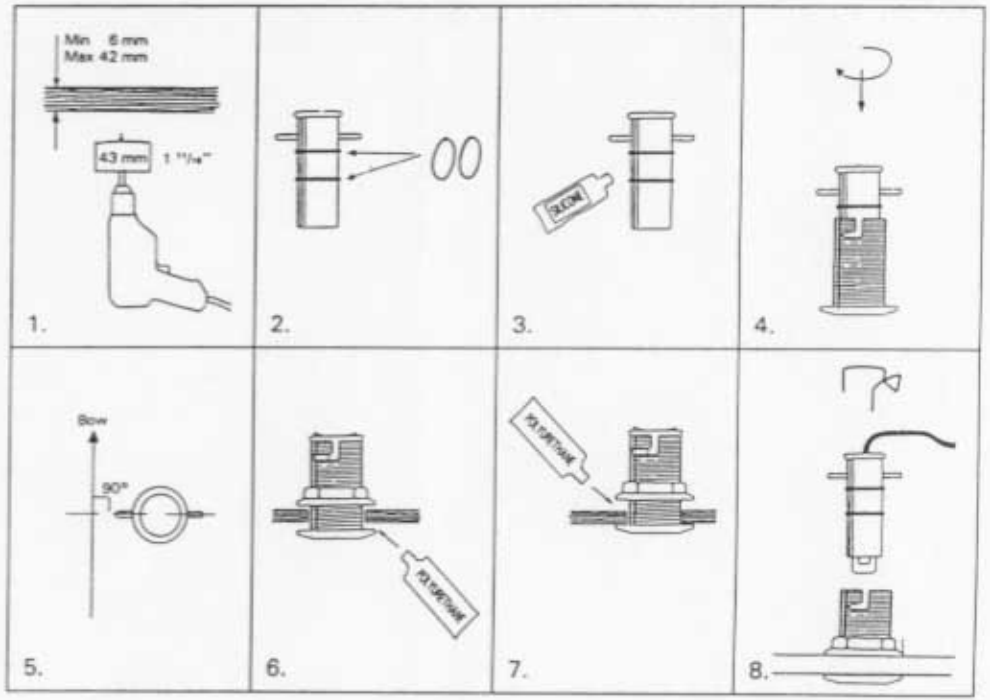
On sailboats with a pronounced 'V' in the hull, such as full-keel yachts, it might be favourable to angle the transducer slightly so that it aims at the bow, rather than directly parallel to the centreline. This will help balance the passing water flow measurement from one tack to another.

Avoid placing the transducer near the edge of sharp hull chines. Transverse water flow in these areas can affect the accuracy of measurements.

If you have questions about the location of the through-hull, contact your builder, yacht dealer, or other Silva owners with similar boats for advice. Always remember to account for accessibility from the inside of the yacht when determining the final location!

5. Installing the through-hull fitting

1. Use a 43 mm (1 11/16") hole cutter to cut through the hull. (See section concerning correct location of through-hull fitting).
2. Slide both rubber 'O' rings onto the dummy plug.
3. Generously apply the silicone grease to the exterior of the dummy plug.
4. Install the dummy plug in the through-hull fitting. Use a slow twisting motion, and be sure the plug is properly seated into the fitting.
5. With the dummy plug properly installed in the through-hull, mount the fitting so that the dummy plug handle is exactly perpendicular (90 degrees) to the boat's centreline. (For pronounced "V" hulls, see section 4.)
6. Apply polyurethane sealing compound on the outer flange of the through-hull fitting, and tighten the nut on the inside by hand.
7. When this outer sealant has cured, remove the nut and apply sealant on the inside. Tighten the nut again by hand.
8. Install the wire locking device onto the dummy plug/paddlewheel transducer.



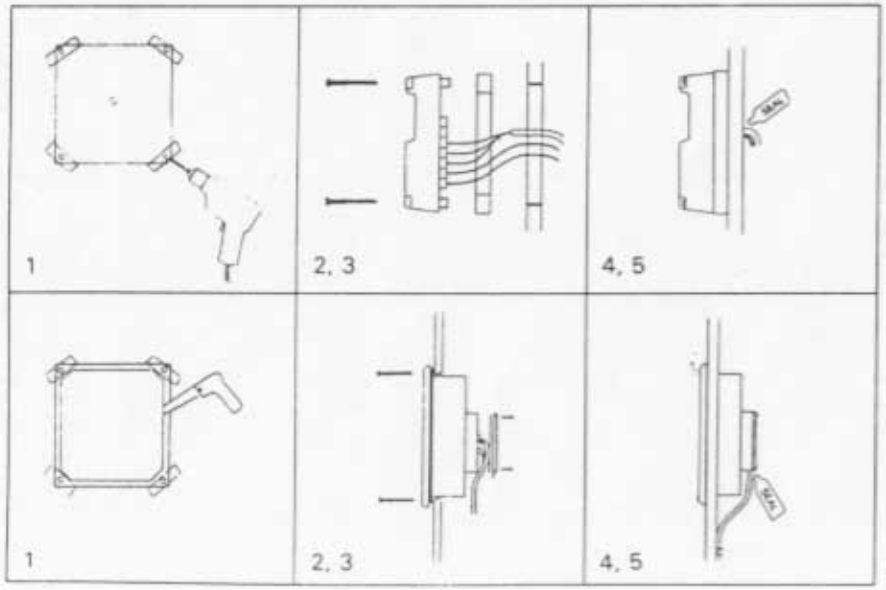
6. Installing the instrument display

Bulkhead mount

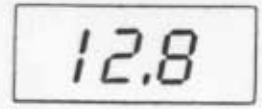
1. Locate the position of the display using the template supplied with this handbook. Drill the holes as indicated, one in each corner, and one for the instrument cables to pass through the bulkhed.
2. Pass the instrument cables through the hole and through the rubber gasket. Attach the cable wires to the terminals as indicated in section 9.
3. Calibrate the instrument in accordance to section 8.
4. Use the screws supplied to attach the instrument and gasket onto the bulkhead.
5. Seal the hole where the instrument cables pass through the inside of the bulkhead. This will prevent warm cabin air from escaping into the instrument case where it may condense on the display glass.

Flush mount

1. Locate the position of the display using the template supplied with this handbook. Drill the holes as indicated, one in each corner and use a hacksaw to take up the hole for the instrument box.
2. Attach the cable wires to the terminals as indicated in section 9.
3. Calibrate the instrument in accordance to section 8.
4. Use the screws supplied to attach the instrument and gasket onto the bulkhead.
5. Seal the hole where the cables pass into the instrument. This will prevent warm cabin air from escaping into the instrument case where it may condence on the display glass.



7. Operating instructions for the SILVA 220

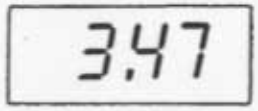


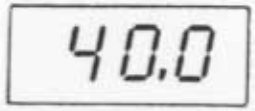
Speed and Distance:

The display will indicate either speed or distance travelled, and can be switched from one function to another by pushing the button.

Speed:

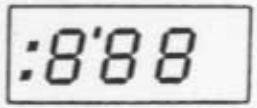
This is indicated in hundredths of a knot (less than 10 knots) or tenths of a knot (10 to 40 knots).

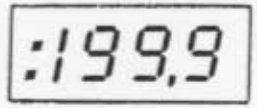




Distance:

This is indicated in hundredths of nautical mile (less than 10 nm) and tenths of nautical mile (10.0—199.9 nm). The maximum distance available is 199.9 nm, after which the log begins at '0.00'. Distance reading is recognized by two dots appearing on the display.



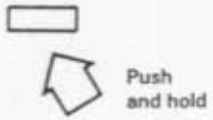


Remember that the log begins counting at the time the power is activated. The log does not retain the distance travelled after the power is shut off.

Adjustable dampening:

The SILVA 220 normally indicates a speed averaged over the past 4 seconds, updated every 1 second. However, in rough seas, this may be too short an averaging period for useful interpretation. Therefore, a longer dampening period of 16 seconds may be selected.

Press the push button, releasing it when the number '16' appears on the display. The speed value will still be updated every 1 second, however, the longer averaging period will result in smoother readings and responses to changes.



8. Calibration of the SILVA 220

To ensure the accuracy of your Silva 220 knotmeter, it is vital that you take the time to calibrate its readings. The waterflow over the hull varies greatly from one design to another, and therefore this must be taken into account on your boat too!

The Silva 220 can be calibrated to within 1 % accuracy quite easily by travelling a known distance and comparing it to the reading given by the log.

The calibration is done with small toggle switches located on the back of the instrument. At the factory the settings are made for a calibration value of 1.000 (all switches in the 'off' position). Be sure that your knotmeter is set that way before starting the calibration procedure. (Refer to the chart for various calibration values and toggle switch settings).

How to determine the calibration value for your boat

Use the following formula for determining the correct calibration of your SILVA 220:

$$\frac{\text{Real distance (from a chart)}}{\text{Measured distance (what the log says)}} = \text{calibration value}$$

For example:

If you travelled a known distance of 1.00 nautical mile, but your log said you had travelled only 0.80 nautical mile, the calibration would be determined like this:

$$\frac{1.00}{0.80} = 1.25$$

Therefore, 1.25 is the calibration value for your boat. Look on the chart to see which of the toggle switches should be set 'on' or 'off'. Once done, your instrument is properly calibrated.

Remember, you can sail any known distance; it is not necessary to sail an exact nautical mile.

Toggle switch located at the back of the instrument.

Note: The instrument voltage shall be shut off when the switches are operated.

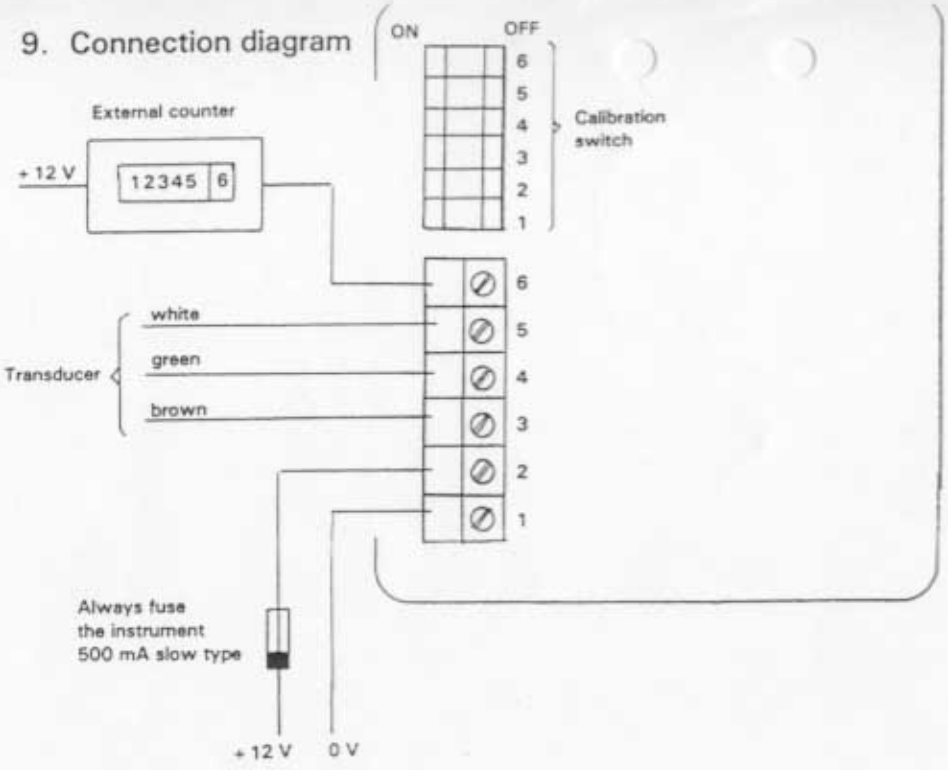
ON = •

OFF = □

	1	2	3	4	5	6
1.000						
1.023	•					
1.039		•				
1.005	•	•				
1.072			•			
1.008	•		•			
1.102		•	•			
1.118	•	•	•			
1.135				•		
1.151	•			•		
1.166		•		•		
1.182	•	•		•		
1.198			•	•		
1.214	•		•	•		
1.229		•	•	•		
1.245	•	•	•	•		
1.260					•	
1.276	•				•	
1.292		•			•	
1.308	•	•			•	
1.324			•		•	
1.338	•		•		•	
1.354		•	•		•	
1.370	•	•	•		•	
1.386				•	•	
1.402	•			•	•	
1.417		•		•	•	
1.434	•	•		•	•	
1.449			•	•	•	
1.464	•		•	•	•	

	1	2	3	4	5	6
1.480	•	•	•	•	•	
1.496	•	•	•	•	•	
1.512						•
1.528	•					•
1.542		•				•
1.558	•	•				•
1.573			•			•
1.590	•		•			•
1.606		•	•			•
1.622	•	•	•			•
1.638				•		•
1.654	•			•		•
1.670		•		•		•
1.686	•	•		•		•
1.700			•	•		•
1.716	•		•	•		•
1.736		•	•	•		•
1.747	•	•	•	•		•
1.763					•	•
1.777	•				•	•
1.794		•			•	•
1.810	•	•			•	•
1.825			•		•	•
1.841	•		•		•	•
1.857		•	•		•	•
1.874	•	•	•		•	•
1.890				•	•	•
1.905	•			•	•	•
1.921		•		•	•	•
1.937	•	•		•	•	•
1.953			•	•	•	•
1.968	•		•	•	•	•
1.985		•	•	•	•	•
2.000	•	•	•	•	•	•

9. Connection diagram

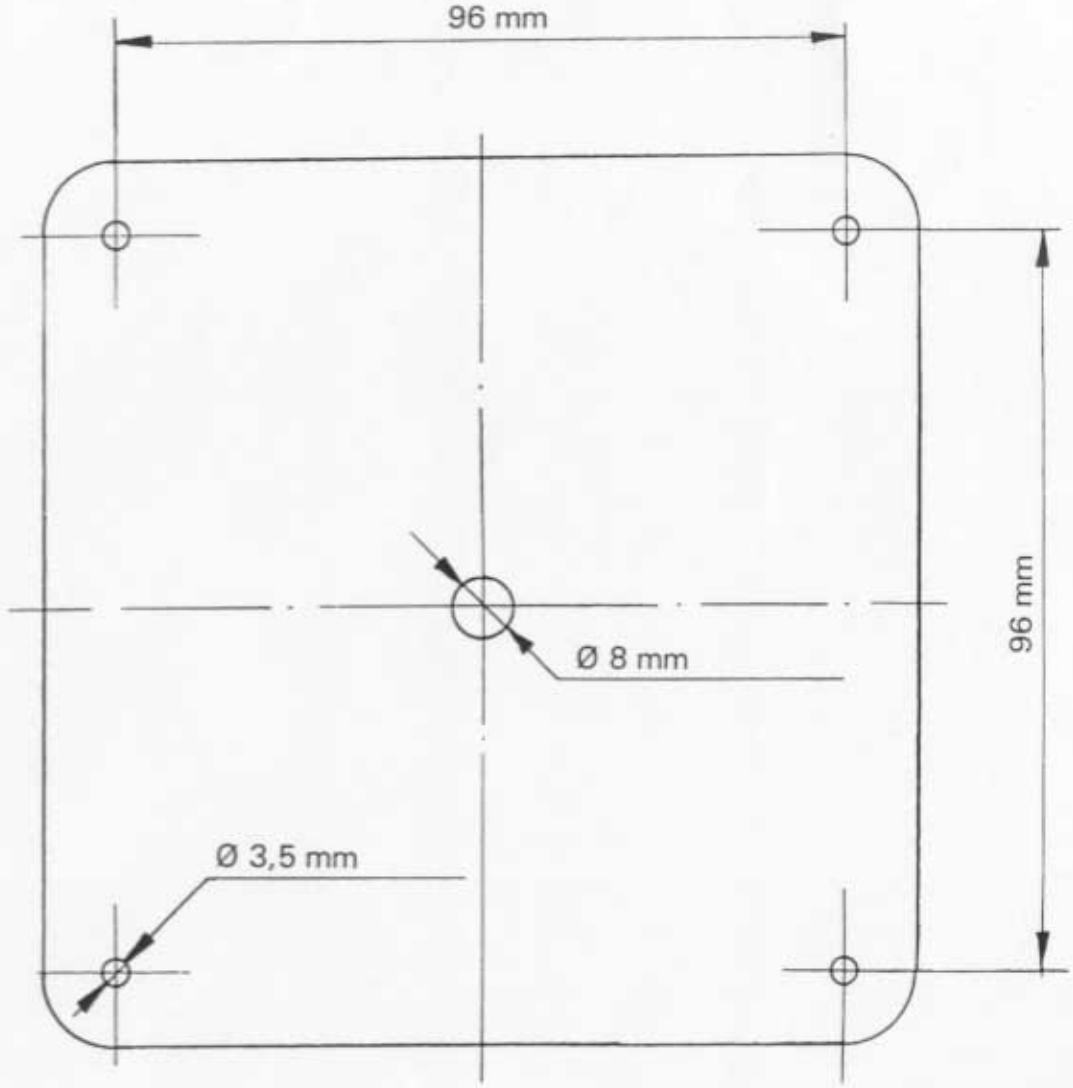


10. Technical data

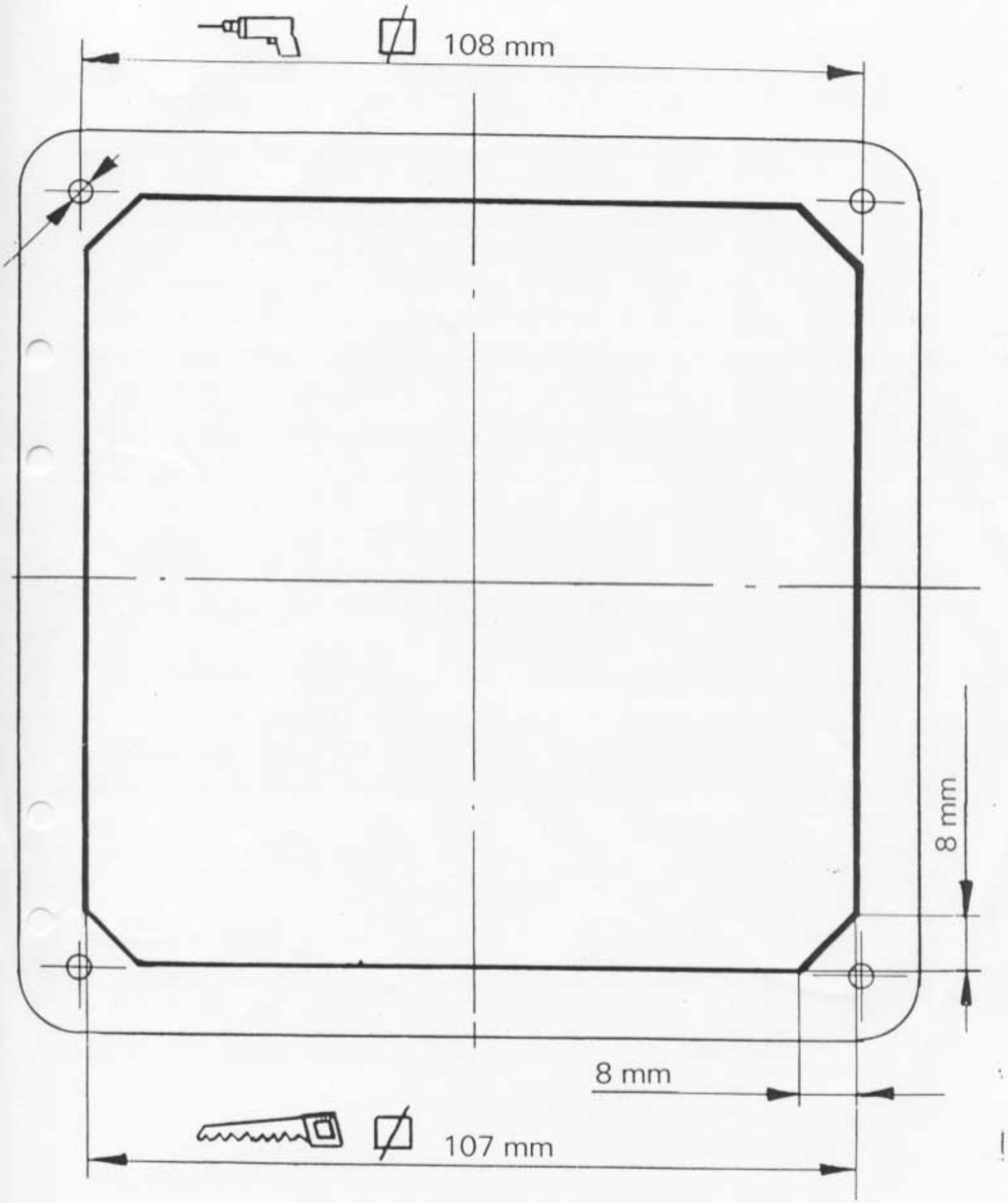
Speed	0.00–40.0 knots
Distance Display Optional external counter	 0.00–199.9 nm 0–99999.9 nm
Min. speed	0.2 knots
Display	LCD 17.5 mm
Temperature range	–5° to +70° C
Voltage Current consumption	9–15 V DC 80 mA

TEMPLATE

Bulkhead mount



TEMPLATE Flush mount



SILVA SWEDEN AB, Kuskvägen 4, S-191 62 Sollentuna, SWEDEN