MANUAL

SIMRAD IS15

Instrument as NMEA repeater

20220984E Sw. V1R6 English

This manual is intended as a reference guide for operating and correctly installing one or more Simrad IS15 instrument(s) as NMEA repeater(s).

Please take time to read the manual to get a thorough understanding of the operation and installation.

Other documentation material that is provided with your system includes a ‘bridge card’.

Document revisions

Rev	Date	Written by	Checked by	Approved by
A	231001	NG		ThH
B	030402	NG	ThH	ThH
C	060204	NG	IK	ThH
D	080605	NG		ThH
E	140806	NG		IK

Document history

Rev. A First edition

Rev. B Updated to software version V1R5

Rev. C NMEA sentences included on page 5

Rev. D Figure 2-3 corrected.

Rev. E Minor corrections in text

Contents

1 INTRODUCTION

The IS15 instruments can be used as NMEA repeaters. Depth, speed, temperature, heading and GPS information can be displayed when connected to a Simrad XX33/34/44/54 Chart plotter/Echo sounder/ NavStation or 'X' series autopilot. Any preferred combination of instruments can be used. Even non-Simrad equipment may be used as source for the displayed information.

NMEA input sentences:

APA, APB, BOD, BWC, BWR, BWW, DBK, DBT, DPT, GGA, GLL, HDG, HDM, HDT, HSC, MTW, MWV, RMA, RMB, RMC, RSA, VHW, VTG, VWR, XTE, XTR, ZTG, ZDA.

2 INSTALLATION

2.1 Mounting of Instrument head

Caution ***Do not install the instrument where moisture at the rear could be present. It can cause damage by entering the breathing hole or by coming into contact with the electrical connectors.***

The instrument head is fully waterproof from the front and can be installed on deck or below.

The selected surface for the instrument head must be flat and even to within 0.5 mm.

Before installation, note the Serial Number of the unit and keep it in a safe place.

1. Do not remove the protection film on the display before the installation and set-up is completed.
2. Carefully position the self-adhesive template provided on the surface where the display head is to be mounted. Allow sufficient space for the protection cover as shown on the template when instruments are installed adjacent to each other.
3. Drill a small pilot hole first, and then check the location on the other side of the panel or bulkhead to confirm suitability. Open out the pilot hole to 85 mm (3.4”) using a cutter, or an electric drill saw (86 mm or 3 3/8”).
4. Drill the four screw holes using a 2.5 mm (0.1”) drill.
5. Ensure that the sealing gasket is correctly located and secure the instrument using the four self-tapping screws provided. Apply the front panel corners.

Note ! *Ensure that all sockets without cable connections have the supplied bungs inserted. It is also recommended, to secure the connectors to the instrument, using the enclosed self-tapping screws.*

Caution ***Do not over-tighten fixing screws.***

Do not use sealing compound on the instrument back.

Do not use WD40 or any solvent on any part of the instrument.

2.2 Cabling

Single stand alone NMEA repeater

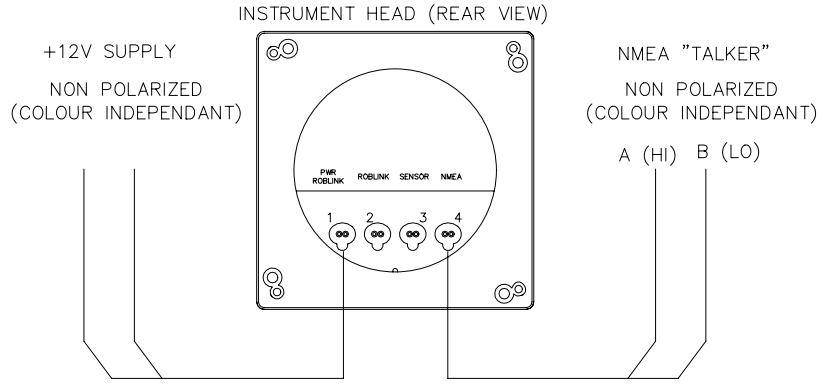


Figure 2-1

If only a single instrument is installed, cut the 0,3 m (1') cable that comes with the instrument in two and extend the halves to the 12V supply and the NMEA source respectively using twisted pair cable.

RFC35N (NMEA) and RC37 (RFC35R) (Rate) Compass connection

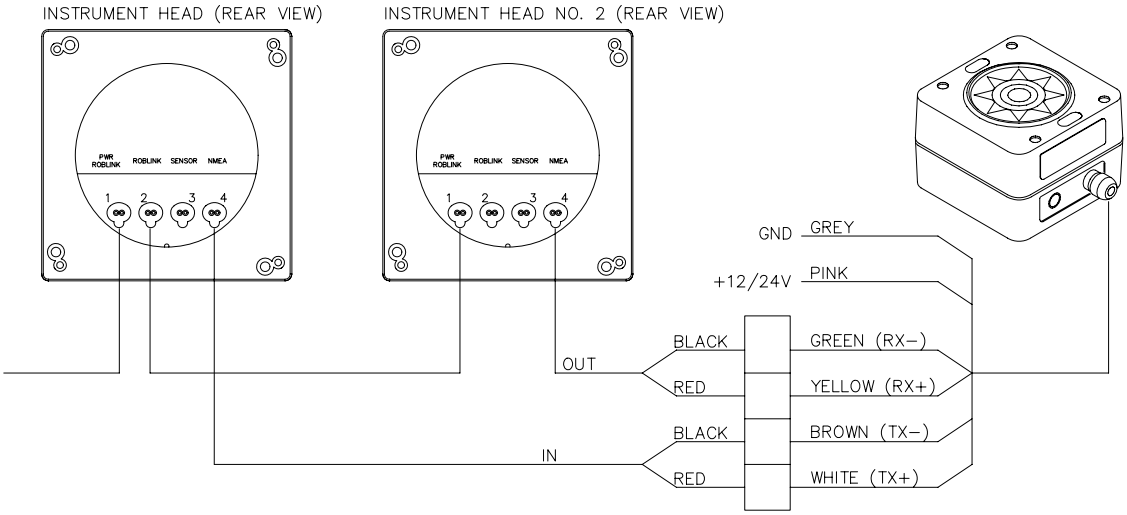


Figure 2-2 RFC35N and RC37 Compass connection

Notes

1. *Read the wiring instructions that comes with the Compass.*
2. *In order for calibration message to be received, two heads are required.*

NMEA in: 'Heading' and 'Calibration Completed' from compass

NMEA out: 'Start Calibration' to compass.

Interconnecting 2-3 instrument heads

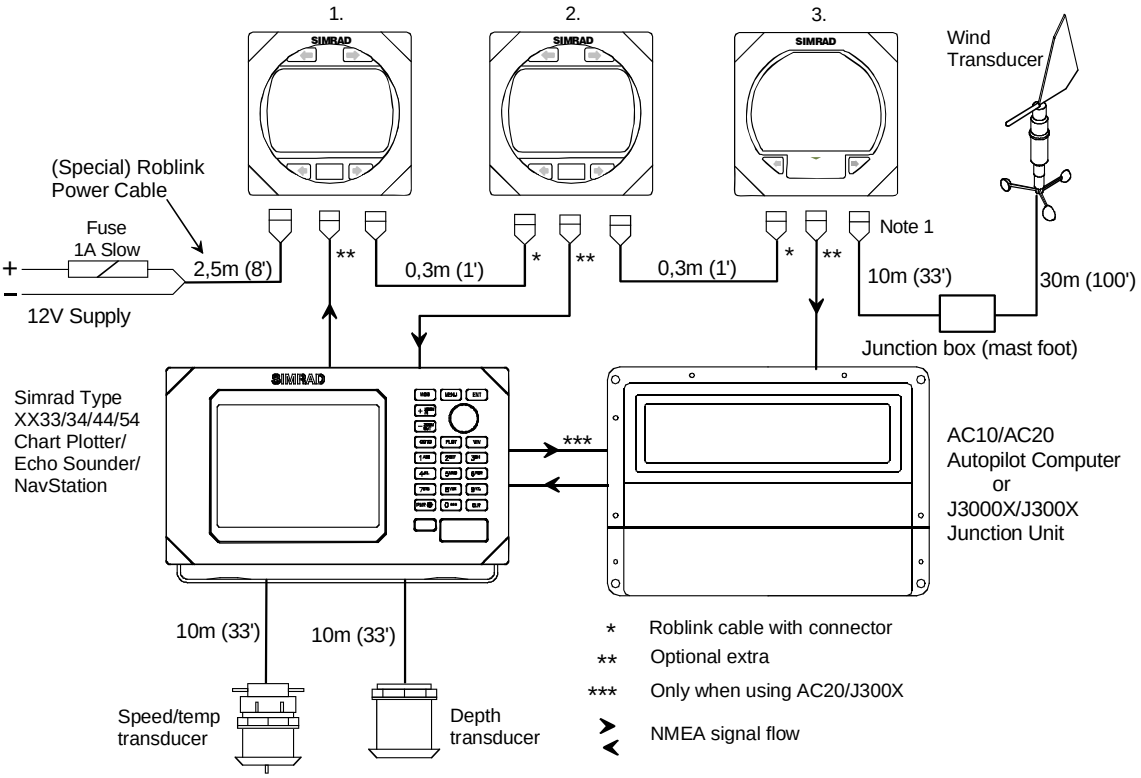


Figure 2-3 Interconnecting 2-3 heads

A Roblink Power Cable (P/N 22093587) is required as supply cable. Extend the cable if necessary using a wire gauge of 0,75 mm^2 (AWG18). Use a 1 amp. fuse.

Notes

1. *The use of the Roblink cable is limited to maximum 3 instrument heads. If more heads are installed an IS15 Power Supply (P/N 22093595) is required.*
2. *Connect the wind transducer to no. 2 connector (not SENSOR).*

3. *The listed Simrad plotters or autopilot may be replaced by other NMEA "talkers".*

Caution ***Do not use different sources simultaneously for the same type of information. They may interfere or show different values on the instrument head.***

3 SETTING UP THE COMBI AND MULTI INSTRUMENT

3.1 First time turn on

Note ! *Always turn on all NMEA "listeners" and "talkers" connected to the system before the first time you turn on the IS15 system. This includes turn on after a COMMUNICATION RESET or a MASTER RESET. The system will then automatically configure the IS15 NMEA ports as talkers or listeners.*

Before leaving the factory a Master Reset has been performed on all instruments. The first time power is applied to an instrument, the display will prompt you to press the illumination key.

In a multiple instrument system, the instruments are assigned and given an Id number in the same sequence as the buttons are pressed. The instrument that is assigned as #1 will be the master unit and broadcast common set-up information on the Roblink to the other instruments.

Note ! *When assigning more than one instrument to a system, allow an interval between each assignment, while the instruments read "Please Wait" or "– – –".*

After having assigned all instruments in the system, turn the power Off and then On (the instruments will display POWER OFF [P.OFF] if you forget). The system will now display the start-up screens.

IS15 Combi

IS15 Multi

Note ! *When an instrument is replaced it is important that a Master Reset has been made on the new one before it is connected to the system. Refer to section Local Master Reset.*

3.2 Installation and Calibration Menu

The installation screens of the IS15 digital instruments are arranged in a ‘table’ as below. It consists of a number of menu groups (chapters), each group being a logical collection of screens (pages). Access to the menu and the individual screens are described below.

Notes !

1. *Some of the items in the table are marked N/A. This means that you, unless otherwise stated, need not or can not make these adjustments when the information comes from an external NMEA source.*

2. *If an IS15 Wind Transducer is connected to the system calibration and offset has to be performed according to the IS15 Wind Manual.*

2 sec. Screen / Group	Screen 1	Screen 2	Screen 3	Screen 4	Screen 5	Screen 6	Screen 7	Screen 8
Group 1 General	Illuminat-ion bank	LCD Contrast	Shop mode (on/off)	NMEA communica tion In/Out (2)	Roblink com. & id (on/off)	Roblink test (1)	Com. (municat-ion) Reset	Master reset
Group 2 Depth	Depth unit	Depth offset	Depth source (1)					
Group 3 Boat speed	Speed unit	Log calibration factor (2)	Log calibration SOG (2)	Log calibration Distance N/A	Log source (1)			
Group 4 Temperature	Tempera-ture unit							
Group 5 Wind	Wind Speed unit	Wind angle offset N/A (Automatic)	Wind angle offset (Manual)(2)	Wind source (1)				
Group 6 Navigation	Distance unit	Pos. source (1) Nav. Source (1)						
Group 7 Compass	Compass calibration	Heading offset (2)	Bearing unit	Heading source (1)				
Group 8 Rudder (1)	Rudder angle offset (2)	Rudder angle source (2)						
Group 9 Expander (1)	N/A	N/A						

(1) IS15 Combi only.

(2) Not applicable with software version V1R4.

1. Press the button and hold for 10 seconds to access the Installation Menu. – The display will read ‘GENERAL’.
2. Apply a short press on the or button to select a group in the Installation Menu.
3. Again press and hold the button for 2 seconds to access the screens in the selected group.
4. Apply a short press on the or button to select a particular screen in the group.
5. Press the button and hold for 2 seconds to change a setting shown on a screen. The item to be set starts flashing.
6. Apply short presses on the or button to change or decrease/increase the setting. A quick double press will start an automatic count down or count up respectively (autorepeat).
7. Press the button and hold for 2 seconds to save a setting. (The item will stop flashing).
8. Apply a short press on the button to show the next screen or again press and hold the button for 2 seconds to return to the group screen.
9. Press and hold the button for 2 seconds to return to the main screen.

The flow chart below shows the principle of how to access the installation set-up menu, select a particular installation screen and change a setting.

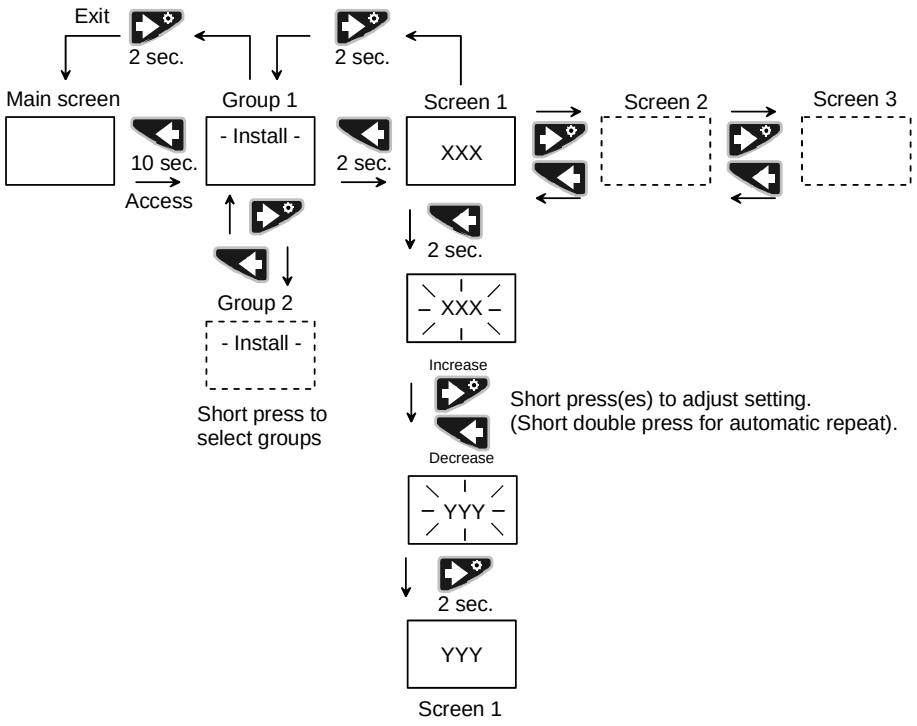
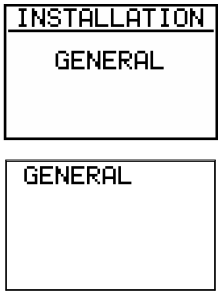


Figure 3-1 Access to installation screen(s)

3.3 General Screen Group

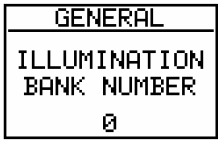


The sequence for IS15 Combi and IS15 Multi is identical but the screens are slightly different. In the following both screens are presented.

1. Press the ◀ button and hold for 10 seconds to access the Installation Menu, General Screen Group.
2. Press the ◀ button and hold for 2 seconds to access the screens in the General Screen Group.

Screen 1

ILLUMINATION BANK

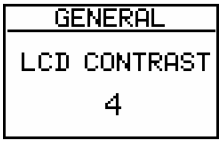


The IS15 instrument system can have two separate illumination banks of instruments. Setting the lighting level on one head will set all the other heads in that bank to the same level, but will not effect any head in the other bank.

Note ! *You can also have individual lighting on all heads. Then the illumination bank setting must be 0.*

Screen 2

CONTRAST



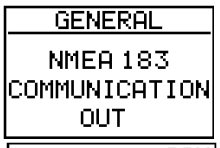
The LCD on IS15 Series instruments can be set to one of eight contrast levels to best suit the viewing angle of the particular installation. The default level (level 4) is suitable for a wide range of viewing angles. However, view the display from different angles and adjust if required. In twilight or in the dark use appropriate illumination when adjusting the contrast.

Screen 3

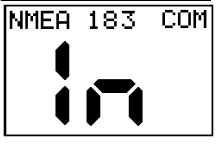
SHOP MODE A mode for shows and demonstration purpose.

Screen 4

NMEA IN/OUT (Not applicable for software version V1R4)



This screen allows you to manually change the NMEA ‘listener’ port = NMEA IN to a ‘talker’ port = NMEA OUT, or vice versa. Hence you need not make a Master reset or a Communication reset. Refer to chapter 3.1 First time turn on. See also note below.



The setting is local to each instrument.

Note ! *If there is an active 'talker' connected to the NMEA port, you will not be able to change this port from 'IN' to an 'OUT' port unless the 'talker' is disconnected.*

Screen 4

ROBLINK ON/OFF

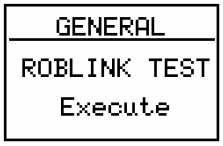
This screen allows you to turn the Roblink Off (or On). The setting is local on each instrument.

Notes !

1. *The Roblink must be turned Off when the instrument is used as a stand-alone NMEA repeater. However, if more heads are added in a daisy chain the Roblink must be On.*
2. *When the Roblink has been turned Off it will not default to ON after a Master Reset. It must therefore be turned On again the same way.*

Screen 5

ROBLINK TEST

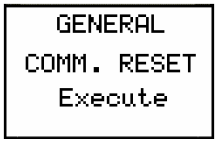


Test screen on IS15 Combi only.

The screen is used for trouble shooting.

Screen 6

COMMUNICATION RESET



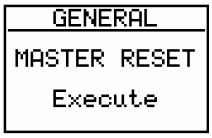
Allows you to reset the system communication (Roblink) in the event anomalies are observed on one or more instruments. This reset will not default the calibration or unit settings.

Press the ◁ button and hold for 2 seconds. The display shows 'POWER OFF'.

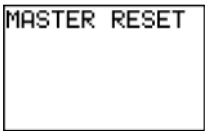
Turn the system off and refer to section 3 to assign the instrument(s) to the system.

Screen 7

MASTER RESET



When a MASTER RESET is performed on one of the instruments in a system it becomes system wide and all instruments are reset to default values.



Note ! *Do not perform a Master Reset unintentionally, because you will default settings and calibration values.*

Press the ◄ button and hold for 2 seconds. The display shows 'POWER OFF'.

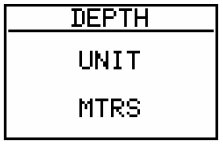
Turn the system off and refer to section 3 to assign the instrument(s) to the system.

Note ! *After the Master Reset a new set-up has to be performed.*

3.4 Depth Screen Group

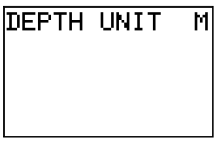
Screen 1

DEPTH UNIT



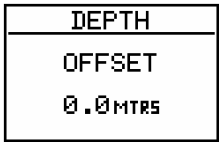
One of the following depth units may be selected:

- IS15 Combi: Feet (FEET), Metres (MTRS), Fathoms (FATH).
- IS15 Multi: Feet (FT), Metres (M), Fathoms (FA).

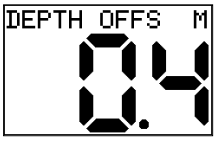


Screen 2

DEPTH OFFSET

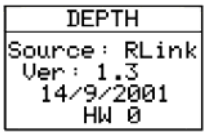


Depending on the received NMEA sentence IS15 may display different from the source, Add or subtract an offset to make the IS15 display read like the source.



Screen 3

DEPTH SOURCE



Test screen on IS15 Combi only.

Displays the source of the depth information, the software and hardware version of the IS15 Transceiver/Expander* and the release date.

NMEA = External source

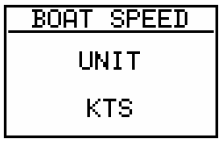
Rlink = IS15 Transducer

* Depth sounder part.

3.5 Boat Speed Screen Group

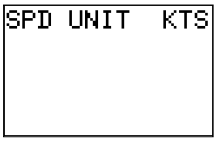
Screen 1

SPEED UNIT



One of the following speed units may be selected:

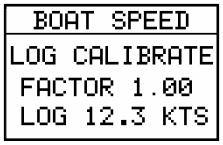
- IS15 Combi: Knots (KTS), Kilometres per hour (KMH), Miles per hour (MPH)



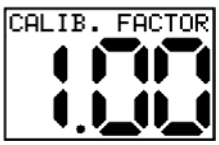
- IS15 Multi: Same as IS15 Combi!

Screen 2

LOG CALIBRATION FACTOR (Not applicable for software version V1R4)



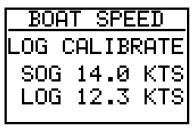
- A calibration factor of 1.00 equals the factory default calibration. An onboard calibration using SOG or a known distance will normally give a different factor.



If you know the calibration factor of the type of boat you are on, simply adjust to the known value and the log is calibrated.

Screen 3

LOG CALIBRATION USING SOG (Not applicable for software version V1R4)



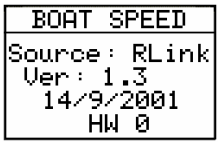
With a GPS connected to the system the log can easily be calibrated using the Speed Over Ground input.

1. Maintain a steady speed and course and allow the SOG and log readings to settle.
2. Adjust the log reading to be equal to the SOG reading.

Note ! *If you are sailing in a known tide or current, add to or subtract this value from the final setting of the log reading.*

Screen 5

SPEED LOG SOURCE



Test screen on IS15 Combi only.

Displays the source of the speed information, the software and hardware version of the IS15 Transceiver/Expander* and the release date.

NMEA = External source

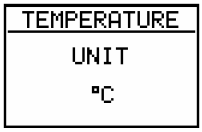
Rlink = IS15 Transducer

* Depth sounder part.

3.6 Temperature Screen Group

Screen 1

TEMP. UNIT



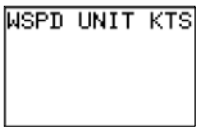
One of the following temperature units may be selected:

IS Combi and IS15 Multi: Centigrades (°C), Fahrenheit (°F).

3.7 Wind Screen Group

Screen 1

WIND SPD UNIT

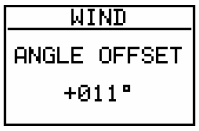


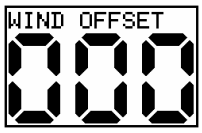
The following apparent and true wind speed units may be selected: Knots, Metres Per Second, Kilometres Per Hour or Beaufort.

- IS15 Combi: KTS, M/S, KMH, BEU.
- IS15 Multi: KTS, M/S, KMH, BEU

Screen 3

WIND OFFSET, MANUAL CORRECTION



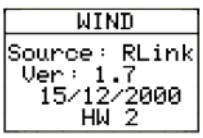


Any residual error in the apparent wind angle display can be corrected manually by entering the required offset. Activate using the ◄ button.

- Adjust the wind angle offset to starboard using the ► button (positive reading).
- Adjust the wind angle offset to port using the ◄ button (negative reading).

Screen 4

WIND SOURCE



Test screen on IS15 Combi only.

Displays the source of wind, the software and hardware version of the wind transducer, and the date of the software release.

NMEA = External source

Rlink = IS15 Wind Transducer (MHU)

3.8 Navigation Screen Group

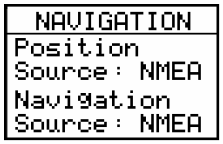
Screen 1

DISTANCE UNIT

The following distance units may be selected: Nautical miles (NM), Kilometres (KM).

Screen 2

POSITION AND NAVIGATION SOURCE



Test screen on IS15 Combi only.

3.9 Compass Screen Group

Access the screens in the Compass Menu Group. Calibration and data input should be carried out in the same sequence as described below.

Screen 1

COMPASS CALIBRATION (when connected to RFC35N or RC37)

This function will activate the automatic compass calibration procedure.

Notes! *1. The procedure will not work with a single instrument head connected to the compass (see note 2 on page 8).*

2. Do not use the calibration procedure when the IS15 is connected to a Simrad autopilot.

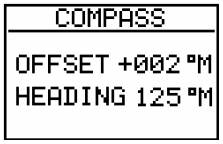
Before you begin the compass calibration, make sure you have enough open water around you to make a full clockwise turn at low speed. (Complete turn should take about 1 minute).

1. Start turning the boat to starboard and press the button and hold for 2 seconds. The LCD flashes ‘CAL’.
2. When the calibration is completed, (after having made approximately 1 ¼ turns), the display will read ‘Done’.

Screen 2

HDG OFFSET

Note ! *Do not use the Heading Offset procedure when the system is connected to a Simrad autopilot.*



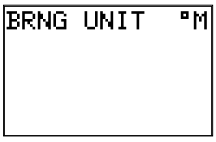
The Heading Offset feature allows you to correct for a permanent heading offset that may be present as a result of the compass being installed with a lubber line offset, or a fixed offset remains after the calibration.

- Increase the offset reading using the button (positive offset).
- Decrease the offset reading using the button (negative offset).

Screen 3

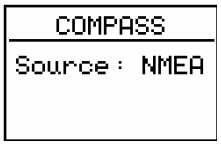
HEADING / BEARING UNIT

The display heading and bearing may be set to reference either Magnetic (M) or True (T) North. If True North is selected, magnetic variation must be available from a GPS or entered manually in the compass heading sub menu(s).



Screen 4

HEADING SOURCE



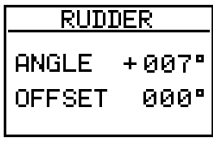
Test screen on IS15 Combi only

3.10 Rudder Screen Group

The Rudder Screen Group applies only for the IS15 Combi.

Screen 1

RUDDER ANGLE OFFSET



Local offset adjustment on instrument.

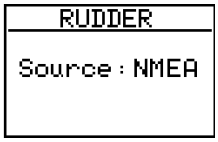
Activate pressing the button (2 seconds)

Adjust offset to Stbd using the button (+)

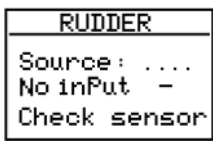
Adjust offset to port using the button (–)

Screen 2

RUDDER ANGLE SOURCE



Tells you that IS15 gets valid rudder angle data on NMEA (from autopilot).



If there is no data available at turn on the display will tell you as shown.

3.11 Leaving the Installation Menu

Return to the main display from the Installation Menu as follows:

1. From any Installation Menu screen, press the button and hold for 2 seconds to return to the group screen.
2. From any group screen press the button and hold for 2 seconds to leave the Installation Menu and return to the main screen.

3.12 Operation

For operation and set-up of the Combi and Multi instruments, refer to the Operator's Quick Reference Guide.

4 SETTING UP THE COMPASS INSTRUMENT

4.1 First time turn on

Note *Please read the first page in chapter 3 before turn on.*

The first time power is applied to a Compass instrument, the display will read:

PrES	and then	Id:x	after it has been assigned.

4.2 Installation and Calibration Menu

To enter this menu, refer to the Operators Quick Reference Guide

Screen 1

ILLUM. BANK [bAn.1]

Refer to Quick Reference Guide.

Screen 2

COMPASS CALIBRATION [CAL.C]

Note ! *Do not use the calibration procedure when the IS15 instruments are connected to a Simrad autopilot.*

Refer to page 22 for information.

Press the ◁ button and hold for 2 seconds. The LCD flashes ‘rUN’ and then ‘CAL.C’. When the calibration is completed the display will read ‘doNE’.

Screen 3

HEADING OFFSET [OFFS]

Note ! *Do not use the Heading Offset procedure when the system is connected to a Simrad autopilot.*

Refer to page 23 for information.

1. Activate the Heading Offset by pressing and holding the button for 2 seconds. The reading starts flashing.
2. Increase the compass reading using the button or decrease the compass reading using the button.
3. Save the offset by pressing and holding the button.

Screen 4

MAGNETIC OR TRUE HEADING [HdG]

The display heading (and bearings) may be set to reference either Magnetic (**MAG**) or True (**trUE**) North. If True North is selected magnetic variation must be available from a GPS receiver or entered manually.

Screen 5

SHOP MODE [SHOP]

For shows and demonstration purpose.

Screen 6

NMEA IN/OUT [n 183]

This screen allows you to manually change the NMEA 'talker' port = NMEA OUT to a 'listener' port = NMEA IN. Hence you need not make a Master reset or a Communication reset.

The setting is local to each instrument.

Press the or button to select NMEA OUT. Press and hold the button to confirm.

Note ! *If there is an active 'talker' connected to the NMEA port, you will not be able to change this port from 'IN' to an 'OUT' port unless the 'talker' is disconnected.*

Screen 7

ROBLINK ON/OFF [robl]

Turning Roblink Off and On is local on each instrument.

The display reads 'robl'. Press the ◄ button and hold for 2 seconds. The LCD display flashes 'Id:x', 'x' being the instrument's present Roblink Id. number.

Press the ◄ or ► button to select Roblink OFF. Press and hold the ► button to confirm.

Refer to notes on page 16.

Screen 8

ROBLINK TEST [tESt]

The screen is used for trouble shooting.

Screen 9

COMMUNICATION RESET [C.rES]

Refer to page 16 for details. The LCD display shows 'P.OFF'.

Screen 10

MASTER RESET [rES]

Note ! *Do not perform a Master Reset unintentionally because it will default settings and calibration values.*

Refer to page 17 for details. The LCD display shows 'P.OFF'.