MANUAL

Simrad IS15
Instruments
General Manual

[20220760]   [LA]

SIMRAD
A **KONGSBERG** Company

This page is intentionally left blank

This manual is intended as a reference guide for operating and correctly installing a Simrad IS15 Instrument System using the digital IS15 Combi and IS15 Multi instruments, the analog IS15 Compass instrument and the IS15 Transceiver with speed and depth transducers.

Please take time to read the manual to get a thorough understanding of the operation and system components and their relationship to a complete IS15 instrument system.

Other documentation material that is provided with your system includes a 'bridge card', and a warranty card. The warranty card must be filled out by the authorized dealer that performed the installation and mailed in to activate the warranty. You will find the warranty card in this manual.

Document revisions

Rev	Date	Written by	Checked by	Approved by
G	300301	NG		ThH
H	290801	NG		ThH
I	180402	NG	IK	ThH
J	200203	NG		ThH
K	060204	NG		ThH
L	190405	*NG*		*Th. q.*

Document history

Rev. G   Instrument Software Information on page 48 updated. Figure 6-5 corrected. Depth specifications on page 45 updated.

Rev. H   IS15 Expander included

Rev. I   Updated to software version V1R5.

Rev. J   Corrected supply voltage for IS15 Expander in fig. 6-24 and 6-33. Included connection drawing for Airmar transducers with 200KHz-G designator, page 74. Added software information V1R6, page 55. New transducer ST610 added, page 58.

Rev. K   New transducer ST300/P371 added, page 59. Minor modifications in text on page 54, 55 and 61. True wind angle and speed added in table page 56.

Rev. L   Corrected the environmental rating on page 51 and 52. Figures 6-20 and 6-21 corrected.

Contents

1 INTRODUCTION

1.1 The Basic IS15 System

A basic stand alone IS15 SDT-1 (tri-data) system is shown in Figure 1-1. It comprises:

- IS15 Combi instrument head
- IS15 Transceiver
- Speed/temperature and Depth transducers.

More instrument heads may be added to the system by using single cables in a "daisy chain". Please study the different system configurations in section 6 for more information.
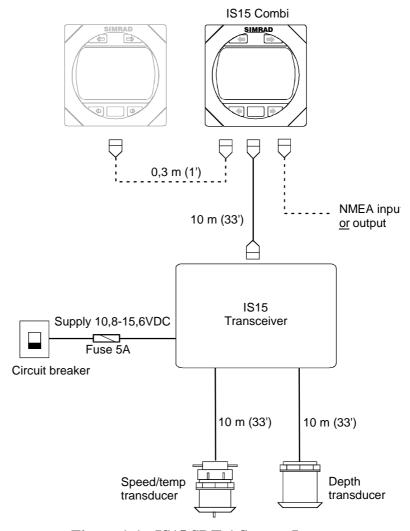
Figure 1-1 - IS15 SDT-1 System Layout

The IS15 Instrument System uses a single cable to carry power and data between the IS15 Transceiver and the instruments. The transfer of power and data is made by a proprietary data link called Roblink. Interface to peripheral equipment is made on NMEA 0183 format, the marine industry standard.

1.2 Equipment supplied

The units in an IS15 Instrument system are supplied with the following parts as standard:

- All instrument heads: Mounting kit, 0,3 m (1') IS15 (Roblink) Cable and Operator's Quick Reference Guide ("bridge card").

- IS15 Transceiver: Mounting kit, 10 m (33') IS15 (Roblink) Cable and IS15 General Manual.

- Speed/Temperature
  transducer: 10 m (33') cable attached
  + mounting instructions.

- Depth transducers: 10 m (33') cable attached +
  mounting instructions.

Optional equipment

- IS15 Cable 2 m (6,5') P/N 22093728
- IS15 Cable 5 m (16') P/N 22092548
- IS15 Cable 10 m (33') P/N 22092027

  The cables can be used for extension and/or as cables for NMEA interface to peripheral equipment.
- IS15 Cable Adapter (joiner) P/N 22092001

  Interconnects IS15 cables where cable extension is required.
- IS15 Roblink Power Cable 2,5 m (8') P/N 22093587.

  Required when using 2 or 3 instrument heads as NMEA repeaters in a "daisy chain".

  Also required when using a single IS15 Wind instrument as stand alone with the Wind Transducer connected directly to the head. Comes as standard with a W-1 system.
- IS15 Power Supply P/N 22093595.

  Required when using 4-7 instrument heads as NMEA repeaters in a "daisy chain".

- IS15 Expander (P/N 22092431)

IS15 Expander is an upgraded version of the IS15 Transceiver.
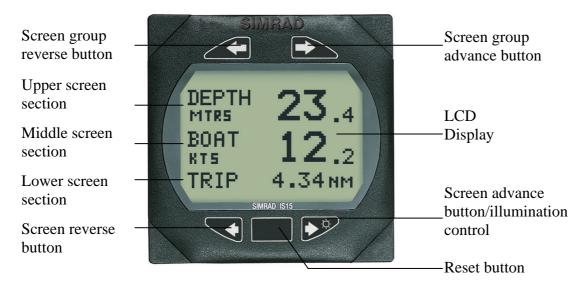
In addition to electronics for depth sounding and speed/temperature transducers it offers two NMEA I/O ports and the capability of driving 8 instrument heads. Further instructions on how to connect the instruments and peripheral equipment are found in this manual.

The following parts are included as standard:

- − Mounting kit
- − 2 ea. 10 m (33') Roblink cable
- − IS15 General Manual

This page is intentionally left blank

2 OPERATION OF THE IS15 COMBI INSTRUMENT

Screen group reverse button

Upper screen section

Middle screen section

Lower screen section

Screen reverse button

Screen group advance button

LCD Display

Screen advance button/illumination control

Reset button

2.1 General Description

The instrument is operated by five buttons. By pressing one of the arrow buttons you can move up, down, or sideways through the selection of display screens that are available. The table of screens is shown on page 11. The reset button is only active on some of the screens. When a button is pressed a beep will confirm the operation.

The display is divided into three sections, each section normally containing one set of information. On some screens a graphical display may cover more than one section.

2.2 Powering Up

When the instruments are powered up for the first time, see section 7.1. 'First time turn on' on page 89.

At normal power up, each instrument shows the start-up screen with the software version for approximately two seconds. The display will then change to show the screen that was on at turn-off.

2.3 Display backlighting

Press the ▶ button and hold for 2 seconds. The display then presents the backlighting level. Repeat pressing until desired backlighting level. Selectable values are 1-7 and off (0).

2.4 Display Screens

The Table of Display Screens

The display screens of the COMBI instrument are arranged in a 'table' as per below. The table consists of a number of screen groups, each group being a logical collection of useful screens. To access the screens you move 'up' or 'down' through the groups using the upper ◄ and ► buttons, and 'sideways' through the screens using the lower ◄ and ► buttons. When moving 'up' or 'down' to a new screen group the first display will be the last one accessed in that group. If you press and hold any of the two ◄ ► buttons it will return to the group's Main Display.

◁ ▷° **Screen** **Group** ⬔ ⬕	**Screen 1**	**Screen 2**	**Screen 3**	**Screen 4**	**Screen 5**	**Screen 6**	**Screen 7**
Group 1 SPEED DEPTH	Depth Boat speed Trip Log *3	Depth SOG Sea Temp. *2	Trim speed Depth *3	SOG Boat speed Average speed Max. speed *1	Shallow alarm status Deep alarm status Anchor alarm status *5		
Group 2 WIND	Apparent Wind Angle Apparent Wind Speed *1	True Wind Angle True Wind Speed *3	Wind Direction *1				
Group 3 VMG	VMG to wind Boat speed Apparent Wind Angle *1	VMG to wind Trim speed Apparent Wind Angle	VMG to wind Apparent Wind Speed Apparent Wind Angle				
Group 4 NAV	Heading Boat speed Rudder angle *1	Heading COG SOG *1	Waypoint ID WP bearing XTE *1	Waypoint ID WP bearing WP distance *1	Waypoint ID WP bearing COG *1	VMG to WP Time to go Local time *1	Position
Group 5 TIME LOG	Race time Local time *2	Race time Race log Local time *2	Cum. log Trip log Passage time				

Figure 2-1 - Table of Display Screens

* Denotes the number of (concealed) sub-screens (-Setup-)

Notes !

1. *If data is not available then "----" will be displayed in place of data on the appropriate screen(s).*

2. *Some of the main screens have (concealed) sub-screens attached for added information and user settings.*

Sub-screens (- setup -)

The diagram on the next page shows the sub-screen matrix, how to select a sub-screen and how to change a setting.

Note !   *Main screens that have repeated or no sub-screen(s) are not shown in this diagram.*

SUB SCREEN	DEPTH/SPEED		WIND		VMG	NAVIGATION				TIMER LOG	
MAIN SCR.	SHALLOW ALARM OFF 0.0 MTRS / DEEP ALARM OFF 0.0 MTRS / ANCHOR ALARM OFF	DEPTH↑ 188 MTRS / BOAT 12.3 KTS / TRIP 5.20 NM	TRUE WIND ↑ 34° 13.0 KTS	WIND DIRECTION 180°M	VMG 4.0 KTS / BOAT 12.3 KTS / WIND APP 11° →↑	Egersund BRNG WP 271°M / XTE .003 NM	Egersund BRNG WP 271°M / DIST 200 NM	VMG-WP 11.7 KTS / TIME TO GO 99:26 / LOCAL 03:16:50	HDG 090° / COG 272°M / SOG 14.0 KTS	RACE TIME 05:00 / LOCAL TIME 08:24:23	RACE TIME 05:00 / RACE NM 0.50 / LOCAL 14:27:52
1	Shal. Alarm ON-OFF	Boat Speed Damp 0-3	Wind damp. 1-4	Mag. Var Monitor Auto or manual adjust	Boat Speed Damp 0-3	Mag. Var Monitor Auto or manual adjust	Mag. Var Monitor Auto or manual adjust	UTC Offset	Mag. Var Monitor Auto or manual adjust	Select timer 5-10 min. 3-6 min.	Select timer 5-10 min. 3-6 min.
2	Shal. Alarm Limit	Depth Sounder ON/OFF	True Wind Speed Alarm ON/OFF					UTC Offset		UTC Offset	UTC Offset
3	Deep alarm ON-OFF	Depth damping	Wind alrm limit								
4	Deep alarm Limit										
5	Anch. Alarm ON-OFF										

Main screen — 2 sec. → Sub screen 1 `- Setup - XXX`

Quick press to select sub screen → Sub screen 2 `- Setup -`

XXX / YYY

Increase / Decrease — Quick press to adjust setting

2 sec. → Enter setting `- Setup - YYY`

2 sec. → Exit — Main screen

Figure 2-2 Access of sub-screen(s)

2.5 Screen Group 1: Depth, Speed, Trip Log

There are five screens in this group (all have one or more sub screens).

Screen 1

```
DEPTH↑ 188
MTRS
BOAT    12.₃
KTS
TRIP   5.20 NM
```

DEPTH

BOAT SPEED

TRIP LOG

- The upper screen section displays 'DEPTH', unit (e.g. 'mtrs') and the depth value. An arrow indicates a rising (↑) or falling (↓) bottom. A bargraph indicates the strength of the signal. 'EXT' replaces the bargraph if the depth signal is from an external source on NMEA format.

- The middle screen section displays 'BOAT', unit (e.g. 'kts') and boat speed value.

- The lower screen section displays 'TRIP' and the trip log value in nautical miles.

Note !   *If the system depth transducer signal is lost, the Depth display will flash the last good echo value for one minute, then it will show ---. If there is an alternative depth input to the system on NMEA format and the sounder is set to Off, this depth will be displayed instead.*

Screen 1 has three sub screens. Setting of the boat (water) speed damping, switching the depth sounder on and off, and setting the level of depth damping.

Speed damping

```
SETUP
BOAT SPEED
DAMPING
0
```

The displayed speed has four damping levels (0-3), 0=Off.

On power up the last set damping level is selected.

To change the speed damping level follow the procedure in Figure 2-2, page 12 and select the wanted damping level. The higher the figure the more damping.

To Set the Depth Sounder On or Off

```
SETUP
DEPTH SOUNDER
OFF
```

In certain circumstances, e.g., to save power in known waters or when out of depth range, you may want to turn the depth sounder off. It is also recommended to turn it off if there is another sounder on board operating on the same (200 kHz) frequency. Interference between the two can thus be avoided.

Note !   *When the sounder is turned off, the display will show OFF instead of the depth reading.*

Follow the instructions in Figure 2-2 to access the depth sounder ON/OFF screen. With the ON-screen flashing select OFF and return to Screen 1 as per instructions.

This setting is not affected by power off/on or a Communication Reset, but defaults to ON after a Master Reset.

Depth damping

```
┌─────────────┐
│    SETUP     │
│ DEPTH DAMPING│
│      0       │
└─────────────┘
```

The displayed depth has four levels (0-3), 0 = Off. On power up the last set damping is selected. To change the depth damping level follow the procedure in Figure 2-2, page 12 and select the wanted damping level.

The higher the figure the more damping.

Screen 2

```
┌─────────────┐
│DEPTH↑ 87.5  │
│MTRS          │
│SOG    14.0  │
│KTS           │
│SEA     8.5°c │
└─────────────┘
```

DEPTH

SPEED OVER GROUND

SEA TEMPERATURE

- The upper screen section displays 'DEPTH', as on Screen 1.

- The middle screen section displays 'SOG', the unit (e.g. 'kts') and the Speed Over Ground value. SOG will only be displayed if a GPS receiver input is available.

- The lower screen section displays 'SEA', the sea temperature value and the units, '°C' or '°F'.

Screen 2 has two sub-screens: one for setting the depth sounder on and off and one for depth damping. Refer to above.

Screen 3

```
┌─────────────┐
│TRIM  +2.34  │
│KTS           │
│DEPTH↑ 188   │
│MTRS          │
└─────────────┘
```

TRIM SPEED

DEPTH

- The upper screen section displays 'TRIM' and the unit, e.g. 'kts'. The Trim Speed is the difference between the present boat speed and the target speed.

- At turn on the Trim Speed will only be indicated if it has been reset (see below), until that time it will show '----'.

- The lower screen section displays DEPTH as on screens 1 and 2.

Screen 3 has three sub-screens, similar to screen 1. Refer to pages 13 and 14.

To Reset the Trim Speed

The Trim Speed may be reset at any time, as per below:

- Select either of the two display screens that show Trim Speed.

- A short press of the ■ (Reset) button will set the target speed as the current speed. The trim speed displays will then show changes from the current speed.

Screen 4

```
     SPEED
SOG    14.0KTS
BOAT   12.3KTS
AVG     9.0KTS
MAX    15.8KTS
```

SPEED OVER GROUND

BOAT SPEED

BOAT AVERAGE SPEED

BOAT MAX SPEED

- The upper screen section displays 'SOG', the unit (e.g. 'kts') and the Speed Over Ground value. SOG will only be displayed if a GPS receiver input is available.

- The second screen section displays 'BOAT', speed value and the unit (e.g. 'kts').

- The third screen section displays 'AVG', average speed value and the unit (e.g. 'kts'). The average speed is calculated as the distance covered by the boat since power up or when the passage time was last reset, divided by the passage time.

- The lower screen section displays 'MAX', maximum speed value and the unit (e.g. 'kts').

Screen 4 has a sub-screen for setting the water speed damping.

Note !   *Average speed and max speed are reset by Passage Time reset (See paragraph 2.9).*

Screen 5

SHALLOW ALARM

DEEP ALARM

ANCHOR ALARM

The screen shows the setting of the alarm limits and whether the alarms are activated or not (On/Off).

The alarms can be set to ON or OFF at any time.

Screen 5 has five sub screens. The first two are for Shallow Alarm ON/OFF and Shallow Alarm Limit settings. The next two are for Deep Alarm ON/OFF and Deep Alarm Limit settings. The last one is for setting the anchor alarm 'ON' or 'OFF'.

SHALLOW ALARM AND DEEP ALARM

The screen displays the Alarm status, 'ON' or 'OFF', and the set alarm limit in the order shown.

To turn the alarms ON or OFF and/or set the alarm limits follow the procedure as shown in Figure 2-2, page 12.

ANCHOR ALARM ON/OFF

Refer to Figure 2-2, page 12 to turn the Anchor Alarm ON or OFF.

Note !

The anchor alarm should be off when the boat is not at anchor. The alarm will sound when during a 40 seconds time period there is a change in the depth of 2-3 meters (6-10 ft.).

2.6 Screen Group 2: Wind

There are three screens in this group.

Screen 1

APPARENT WIND
➡️▮ 61°
8.0 KTS

APPARENT WIND ANGLE

APPARENT WIND SPEED

- The upper screen section displays 'APPARENT WIND'

- The middle screen section displays a wind direction icon and the apparent wind angle value.

- The lower screen section displays the apparent wind speed reading and the unit (e.g. 'kts').

Screen 1 has a sub screen for setting the wind data damping.

Wind damping

SETUP
WIND DAMPING
1

The displayed wind information has four damping levels (1-4).

On power up the last set damping level is selected.

To change the damping level follow the procedure in Figure 2-2, page 12 and select the wanted damping level. The higher the figure the more damping.

Screen 2

TRUE WIND
➡️▮ 34°
13.0 KTS

TRUE WIND ANGLE

TRUE WIND SPEED

- The upper screen section displays 'TRUE WIND'.

- The middle screen section displays a wind direction icon and the True Wind Angle value.

- The lower screen section displays the True Wind Speed reading and the unit (e.g. 'kts').

Screen 2 has three sub-screens. One for setting the wind damping, one for switching the wind speed alarm on and off, and one for setting the wind speed alarm limit.

Wind damping

Refer to screen 1.

SETUP
WIND SPD ALRM
OFF

True Wind Speed Alarm ON/OFF

Refer to Figure 2-2, page 12 to turn the True Wind Speed Alarm ON or OFF.

```
  SETUP
 WIND ALARM
  30 KTS
```

True Wind Speed Alarm limit

Refer to Figure 2-2, page 12 to set the wind speed alarm limit (0-99 knots).

```
   WIND
 DIRECTION
  180°M
```

Screen 3

WIND DIRECTION

The screen displays the Wind Direction in degrees and the unit ('T'rue or 'M'agnetic). Refer to page 20.

Screen 3 has a sub screen for setting the magnetic variation. Refer to page 21.

Notes !

1. *The Wind Direction is calculated from available heading data. The wind direction given is the effective wind direction over the water. The display will be most accurate after a period on one heading, however, it will respond rapidly to course changes.*

2. *If there is no heading data, but Course Over Ground (COG) data is available then the Wind Direction is calculated from the Course Over Ground. In this case there is compensation for the tide, and the wind direction given is the effective wind direction over the ground. However the display will not be accurate after a course change, and will require a period on one heading before it is correct. (Any errors in the Navigation Receiver's fix will degrade the accuracy of the wind direction.)*

3. *The Wind Direction is referenced to either Magnetic or True North as selected for the heading. The data can be converted from one to the other if the local magnetic variation is available (page 20).*

4. *Note that the 'TRUE' and 'APPARENT' readings that are shown in this group of screens relate to the Wind Speed and Angle, and not the Wind Direction.*

2.7 Screen Group 3: VMG

There are three screens in this group.

Screen 1

```
VMG          4.0
KTS
BOAT        12.3
KTS
WIND APP.    11°
  →↑
```

VELOCITY MADE GOOD (VMG) TO WIND

BOAT SPEED

APPARENT WIND ANGLE

- The upper screen section displays 'VMG', the VMG to wind value and the unit (e.g. 'kts'). The VMG display shows the Velocity Made Good into the wind, this is shown as a positive speed if the vessel is travelling upwind, and as a negative speed if the vessel is travelling downwind.

- The middle section displays 'BOAT', the Boat Speed reading and the unit (e.g. 'kts').

- The lower screen section displays 'WIND APP', a wind direction icon and the apparent wind angle reading.

```
   SETUP

 BOAT SPEED
  DAMPING
     0
```

Screen 1 has a sub screen for setting the boat (water) speed damping.

Refer to page 13.

Screen 2

```
VMG          4.0
KTS
TRIM  +2.34
KTS
WIND APP.    11°
  →↑
```
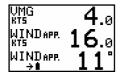
VELOCITY MADE GOOD (VMG) TO WIND

TRIM SPEED

APPARENT WIND ANGLE

- The upper screen section displays 'VMG' as on Screen 1.

- The middle screen section displays 'TRIM SPD', the trim speed value and the unit (e.g. 'kts'). Trim Speed is the difference in speed between the present boat speed and the target speed. It will only be indicated if it has been reset at turn on, until that time it will show '----'.

- The lower screen section displays 'WIND APP', a wind direction icon and the apparent wind angle reading.

Screen 2 has no sub-screen.

Screen 3

VELOCITY MADE GOOD (VMG) TO WIND

APPARENT WIND SPEED

APPARENT WIND ANGLE

The upper screen section displays 'VMG' as on Screen 1.

The middle screen section displays 'WIND APP.', apparent wind speed value and the unit (e.g. 'kts').

The lower screen section displays 'WIND APP.', a wind direction icon and the apparent wind angle value.

Screen 3 has no sub-screen.

2.8 Screen Group 4: Nav(igation)

There are seven screens in this group.

Note !   *When the instrument is receiving an invalid message from the navigation receiver or the message is missing, the display will show '---'*

Screen 1

HEADING

BOAT SPEED

RUDDER ANGLE

- The upper screen section displays 'HDG' (Heading) in degrees and the unit, 'M'agnetic' or 'T'rue. The heading may be referenced to either Magnetic or True North as set in paragraph 7.9 Screen 3 "Bearing Unit".

Note !   *The selection of 'M' or 'T' will set the reference for all the bearings that are shown by the instruments, including the Waypoint Bearing, the Course Over Ground, and the Wind Direction. If only one of the two readings ('T'rue or 'M'agnetic) is available, and the other one is required, the instruments can convert from one to the other. This will, however, <u>not change the displayed unit</u>. See 'MAG. VARIATION' below.*

- The middle section displays 'BOAT', the Boat Speed reading and the unit (e.g. 'kts').

- The lower screen section displays the rudder angle.

Screen 1 has a sub-screen for setting the magnetic variation.

MAG. VARIATION

```
   SETUP
  MAGNETIC
  VARIATION
    000
```

The IS15 instruments automatically read the Magnetic Variation compensation from a connected GPS. The compensation is presented on the screen. You are not allowed to adjust the compensation from the GPS. If you press the ◀ button and hold for 2 seconds the screen just flashes AUTO and returns to show the compensation from the GPS.

If a GPS is not connected you will be able to enter the magnetic variation manually using the ◀ and ▶ buttons.

Screen 2

HEADING

COURSE OVER GROUND (COG)

SPEED OVER GROUND (SOG)

```
HDG  090°
COG  272°M
SOG
KTS   14.0
```

- The upper screen section displays 'HDG' (Heading) as on screen 1.

- The middle screen section displays 'COG', Course Over Ground similar to screen 2.

- The lower screen section displays 'SOG', Speed Over Ground value and the unit, (e.g. 'kts').

Screen 2 has a sub screen for setting the magnetic variation. Refer to above.

Screen 3

WAYPOINT ID

WAYPOINT BEARING

CROSS TRACK ERROR (XTE)

```
WP Egersund
BRNG
WP   271°M
XTE
NM    ▮  .003
```

- The upper screen section displays the Waypoint ID.

- The middle screen section displays 'BRNG WP', the Bearing to the waypoint in degrees and the unit ('T'rue or 'M'agnetic). See note on page 20.

- The lower screen section displays 'XTE', the Cross Track Error (XTE) value and the boat position relative to the track line. The XTE is shown for any error greater than 0.001 NM if the XTE message contains three decimal points. Otherwise it will show errors greater than 0.01 NM. The direction to steer will be towards the track line. When the boat is on track, the boat icon will disappear while the track line remains.

Note !   *The direction to the track line may not be the direction to steer directly to the Waypoint, but may be important for safety reasons; for instance, if the track passes close to shoals, or a restricted area.*

Screen 3 has a sub screen for setting the magnetic variation. Refer to page 21.

Screen 4

WAYPOINT ID

WAYPOINT BEARING

DISTANCE TO WAYPOINT

- Here the lower screen section displays the distance to waypoint and the unit, 'nm' or 'km'.

Screen 4 has a sub screen for setting the magnetic variation. Refer to page 21.
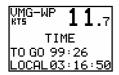
Screen 5

WAYPOINT ID

WAYPOINT BEARING

COURSE OVER GROUND (COG)

Screen 5 has a sub screen for setting the magnetic variation. Refer to page 21.

Screen 6

VELOCITY MADE GOOD (VMG) TO WAYPOINT

TIME TO GO

LOCAL TIME

- The upper screen section displays 'VMG–WP', the Velocity Made Good to WP value and the unit (e.g. 'kts').

- The middle screen section displays time 'TO GO' in hours:minutes:seconds to the destination waypoint.

- The lower screen section displays 'LOCAL' time in hours:minutes:seconds. The Local Time is only given if a suitable GPS data input is available. The GPS system runs on Universal Co-ordinated Time (UTC), which is the same as Greenwich Mean Time (GMT). The display can be set to local time.

UTC offset

```
   SETUP
UTC OFFSET
 00:00:00
```

Screen 3 has a sub screen for setting of the UTC offset.

To change the UTC offset follow the procedure in Figure 2-2, page 12. It can be changed in steps of 30 minutes.

Screen 7

```
 LATITUDE
07°33.57 N

LONGITUDE
148°50.45 E
```

POSITION

- The upper screen section displays the 'LATITUDE' (N or S) in degrees and minutes with two or three decimal points.

- The lower screen section displays the 'LONGITUDE' (E or W) in degrees and minutes with two or three decimal points.

Screen 5 has no sub-screen.

2.9 Screen Group 5: Time Log

There are three screens in this group.

Screen 1

```
 RACE TIME
 05:00
LOCAL TIME
 08:24:23
```

RACE TIME

LOCAL TIME

- The upper screen section displays 'RACE TIME' start time, the count down time and the elapsed time after start. See Notes.

- The lower screen section displays 'LOCAL TIME' and hours:minutes:seconds.

Screen 1 has two sub-screens. One for setting the UTC offset, and one for selecting a Race Timer of 5-10 min. or 3-6 min.

Race Timer

```
   SETUP
RACE TIMER
 5-10 MIN
```

To change the Race Timer follow the procedure in Figure 2-2, page 12. 5-10 min. or 3-6 min. are available.

UTC Offset

```
   SETUP
UTC OFFSET
 00:00:00
```

To change the UTC offset follow the procedure in Figure 2-2, page 12. It can be changed in steps of 30 minutes.

Screen 2

RACE TIME

RACE LOG

LOCAL TIME

- The upper section displays 'RACE TIME' as on Screen 1.

- The middle screen section displays 'RACE' (log), the distance and the unit, 'nm' or 'km'.

- The lower screen section displays 'LOCAL' (time) and hours:minutes:seconds.

Screen 2 has the same two sub-screens as screen 1.

Notes !

1. *Two Race Timers are available; 10-5 minutes or 6-3 minutes. They are selectable in a sub-screen to the Race timer main screens.*

2. *The Race Timer is global and will be counting down towards the race start time on all of the other instruments that show the Race Timer.*

3. *The Race Log gives the distance covered after the race start time.*

4. *The Race Log is reset if the system is turned off, or if the Race Time is reset.*

5. *The local time is only given if a suitable GPS data input is available. The GPS system runs on Universal Co-Ordinated Time (UTC), which is the same as Greenwich Mean Time (GMT).*

6. *The Local Time display gives the time of the day in 24 hour format.*

To Start the Race Timer

The Race Timer may be started at any time, as below:

1. Select either of the 'RACE TIME' screens.

2. Select between 5 or 10 (3 or 6) minute start time by pressing the ▮ button and hold for 2 seconds (ref. Notes above).

3. Start the timer by pressing the RESET button. The timer will count down with audible alarms at times as below:

5 minutes	BEEP (3 minutes if 3-6 timer selected)
1 minute	BEEP BEEP
30 seconds	BEEP BEEP BEEP
5 seconds	BEEP
4 seconds	BEEP
3 seconds	BEEP
2 seconds	BEEP
1 second	BEEP
	BEEP BEEP BEEP BEEP $\rightarrow$ GO

To Freeze the Race Timer

The Race Timer may be frozen and restarted at any time that it is running, before or after the start of a race, as below:

1. Apply a short press on the RESET button to freeze the Race Timer.

2. Press the RESET button a second time to show the running Race Timer again.

Notes !

1. *If the Race Time display is frozen before the start of the race the timer will stop counting, so that when the display is unfrozen it carries on from the displayed time, delayed from its original start time.*

2. *If the Race Time display is frozen after the start of the race the timer itself will continue to count, so that when the display is unfrozen the count is unaffected.*

3. *The Race Log is unaffected by freezing the Race Time.*

To Reset the Race Timer and Race Log

The Race Timer may be stopped and reset at any time, before or after the start of a race, as below:

1. Select the Race Time and Race Log screen.

2. Press the RESET button and hold for 2 seconds to reset the Race Time to the previous start time and to reset the Race Log to zero (- - -).

```
LOG   58.77
NM
TRIP   1.25
NM
PASSAGE TIME
  08:23:00
```

Screen 3

CUMULATIVE LOG

TRIP LOG

PASSAGE TIME

- The upper screen section displays 'LOG', the cumulative log value and the units, 'nm' or 'km'. The cumulative log is the total distance traveled by the vessel. It can only be reset by a Master Reset.

- The middle screen section displays 'TRIP', the trip log value and the units, 'nm' or 'km'. The trip log can be reset, but is not lost when the system is turned off.

- The lower screen section displays 'PASSAGE TIME', hours, minutes and seconds. Passage Time is the time since the system was powered up or since it was last reset.

Screen 3 has no sub-screen.

To Reset the Passage Time to Zero

The passage time may be reset at any time, as per below:

1. Select the Log, Trip Log and Passage Time screen (3).

2. Press the RESET button and hold for 2 seconds. The Passage Time, Average Speed and Max Speed will be reset.

To Reset the Trip Log to Zero

The trip log may be reset together with the passage time at any time, as per below:

1. Select the Log, Trip Log and Passage Time display screen (3).

2. Press the RESET button and hold for 2 seconds. This will initially reset the Passage Time, Average Speed and Max Speed. Press and hold the button once more and the Trip Log will also be reset.

Note !   *The Trip Log and Passage Time are system wide, resetting it on one instrument will reset it across the whole system.*

2.10 Alarm Sounding

The alarm is system wide and all the instruments will sound and flash a warning message.

If there is an external alarm connected then this will be sounded at the same time (only if an IS15 Expander is part of the system).

To cancel a sounding alarm press any button on any of the instrument displays.

Note !   *The flashing warning will remain as long as the alarm condition exists and disappears automatically when there is no longer an alarm condition. The sounding alarm will always have to be cancelled.*

Alarm messages

The text that are shown when an alarm is triggered are as per below:

'ALARM SHALLOW' = The Shallow Water Alarm

'ALARM DEEP' = The Deep Water Alarm

'ALARM ANCHOR' = The Anchor Alarm
   The actual depth is displayed.

'ALARM WIND SPEED' = The High Wind Speed Alarm
   The actual wind speed is displayed.

'ALARM SYSTEM XX' = System failure (Contact your Simrad dealer)

'COMPASS CALIBRATION FAILED' = The calibration failed and/or a new calibration is required.

This page is intentionally left blank.

3 OPERATION OF IS15 MULTI INSTRUMENT

Screen group reverse button

Screen group advance button

LCD Display

HEADING °M
267

SIMRAD IS15

Screen reverse button

Screen advance button/illumination control

Reset button

3.1 General Description

The instrument is operated by the five buttons. By pressing one of the arrow buttons you can move up, down, or sideways through the selection of display screens that are available. The table of screens is shown on page 30. The reset button is only active on some of the screens. When a button is pressed a beep will confirm the operation.

The display is divided into two sections. The lower section is the 7-segment main display, while complementary information is written in the top section.

3.2 Powering Up

IS15 Multi

Ver. 1.6

When the instruments are powered up for the first time, see section 7.1 'First time turn on' on page 89.

At normal power up, each instrument shows 'IS15 Multi' followed by the software version installed. After approx. 2 seconds the display will change to show the screen that was on at turn-off.

3.3 Display backlighting

Press the ▣ button and hold for 2 seconds. The display then presents the backlighting level. Repeat pressing until desired backlighting level. Selectable values are 1-7 and off (0).

3.4 Display Screens

The Table of Display Screens

The data screens of the MULTI instrument are arranged in a 'table' as per below. The table consists of a number of screen groups, each group being a logical collection of useful screens. To access the screens you move 'up' or 'down' through the groups using the upper ◀ ▶ buttons, and 'sideways' through the screens using the lower ◀ ▶ buttons. When moving 'up' or 'down' to a new screen group the first display will be the last one accessed in that group. When you press and hold any of the two ◀ ▶ buttons it will return to the group's Main Display.

Group \ Screen	Screen 1	Screen 2	Screen 3	Screen 4	Screen 5	Screen 6
Group 1 DEPTH	Depth *2	Sea Temperature	Shallow alarm status *2	Deep alarm status *2	Anchor alarm status *1	
Group 2 SPEED	Boat speed *1	Trim speed	VMG to wind	SOG	Average speed	Maximum speed
Group 3 WIND	Apparent Wind Angle *1	Apparent Wind Speed *1	True Wind Angle *1	True Wind Speed *3	Wind Direction *1	
Group 4 NAV1	Waypoint ID	XTE	Bearing to waypoint *1	Distance to waypoint	Time to go	VMG to waypoint
Group 5 NAV2	Heading *1	COG *1	SOG	Local Time *1		
Group 6 RACE	Race time *1	Race log	Local Time *1			
Group 7 LOG	Cum. log	Trip log	Passage time			

Figure 3-1 - The Table of Display Screens

* Denotes the number of (concealed) sub-screens (-Setup-)
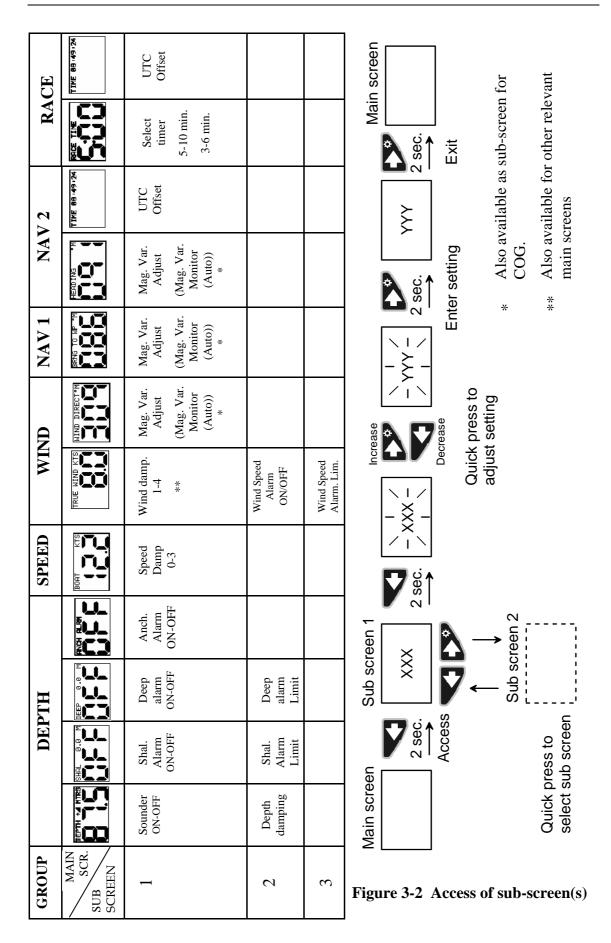
Notes !

1. *If data is not available then "---" will be displayed in place of data on the appropriate screen(s).*

2. *Some of the main screens have (concealed) sub-screens attached for added information and user settings.*

Sub-screens (- setup -)

The diagram on the next page shows the sub-screen matrix, how to select a sub-screen and how to change a setting.

Note !   *Main screens that have repeated or no sub-screen(s) are not shown in this diagram.*

GROUP →	DEPTH				SPEED	WIND		NAV 1	NAV 2		RACE	
MAIN SCR. / SUB SCREEN	DEPTH 14 MTRS 07.5	SHAL 0.0 M OFF	DEEP 0.0 M OFF	ANCH ALRM OFF	BOAT KTS 12.2	TRUE WIND KTS 08.0	WIND DIRECT °M 307	BRNG TO WP °M 085	HEADING °M 057	TIME 08:49:24	RACE TIME 5:00	TIME 08:49:24
1	Sounder ON-OFF	Shal. Alarm ON-OFF	Deep alarm ON-OFF	Anch. Alarm ON-OFF	Speed Damp 0-3	Wind damp. 1-4 **	Mag. Var. Adjust (Mag. Var. Monitor (Auto)) *	Mag. Var. Adjust (Mag. Var. Monitor (Auto)) *	Mag. Var. Adjust (Mag. Var. Monitor (Auto)) *	UTC Offset	Select timer 5-10 min. 3-6 min.	UTC Offset
2	Depth damping	Shal. Alarm Limit	Deep alarm Limit			Wind Speed Alarm ON/OFF						
3						Wind Speed Alarm. Lim.						

Figure 3-2 Access of sub-screen(s)

Main screen
↑ 2 sec. (Access)
Sub screen 1 XXX
↓ / ☼ Quick press to select sub screen
Sub screen 2

Main screen
↓ 2 sec. (Access)
XXX — ↑/↓ → Sub screen 1 — ☼ → Sub screen 2

Increase ↑ ☼ / Decrease ↓ — -XXX- — Quick press to adjust setting

-YYY- ☼ ↑ — 2 sec. Enter setting — YYY ↑ ☼ — 2 sec. Exit — Main screen

* Also available as sub-screen for COG.

** Also available for other relevant main screens

3.5 Screen Group 1: Depth

There are five screens in this group:

Screen 1

DEPTH

- The upper screen section displays 'DEPTH' and the data unit, e.g. 'MTRS'. An arrow indicates a rising (↑) or falling (↓) bottom. A bargraph indicates the strength of the signal. If the depth signal is from an external source on NMEA format, an "E" will replace the bargraph.

- The lower screen section displays the water depth reading.

Note !

If the system depth transducer signal is lost, the Depth display will flash the last good echo value for one minute, then it will show ---. If there is an alternative depth input to the system on NMEA format and the sounder is set to Off, this depth will be displayed instead.

Screen 1 has two sub screens. One for switching the depth sounder on and off and one for setting the depth damping.

Depth Sounder On / Off

In certain circumstances, e.g., to save power in known waters or when out of depth range, you may want to turn the depth sounder off. It is also recommended to turn it off if there is another sounder on board operating on the same (200 kHz) frequency. Interference between the two can thus be avoided.

Note !

When the sounder is turned off, the display will show OFF instead of the depth reading.

Follow the instructions in Figure 3-2, page 32 to access the depth sounder ON/OFF screen. With the ON-screen flashing select OFF and return to Screen 1 as per instructions.

This setting is not affected by power off/on or a Communication Reset but will default to ON after a Master Reset.

Depth damping

The displayed depth has four levels (0-3), 0 = Off. On power up the last set damping is selected. To change the depth damping level follow the procedure in Figure 3-2, page 32 and select the wanted damping level.

The higher the figure the more damping.

Screen 2

SEA TEMPERATURE

- The upper screen section displays 'SEA' and the temperature unit, e.g. '°C'.

- The lower screen section displays the sea temperature reading.

Screen 2 has no sub-screens.

Screen 3

SHALLOW ALARM

- The upper screen section displays 'SHAL', the depth that the Shallow Alarm is set to and the depth unit, such as 'M' (metres).

- The lower screen section displays whether the alarm is ON or OFF.

Screen 3 has two sub screens; one for setting the shallow alarm 'ON' or 'OFF' and one for setting the shallow alarm limit.

Shallow Alarm On / Off

Refer to Figure 3-2, page 32 to turn the Shallow Alarm ON or OFF.

Shallow Alarm limit

Refer to Figure 3-2 to set the Shallow Alarm limit.

Screen 4

DEEP ALARM:

- The upper screen section displays 'DEEP', the depth that the Deep Alarm is set to and the data unit, e.g. 'M' (metres).

- The lower screen section displays whether the alarm is ON or OFF.

Screen 4 has two sub screens; one for setting the deep alarm 'ON' or 'OFF' and one for setting the deep alarm limit.

Deep Alarm On / Off

Refer to Figure 3-2, page 32 to turn the Deep Alarm ON or OFF.

Deep Alarm limit

Refer to Figure 3-2 to set the Deep Alarm limit.

Screen 5

ANCHOR ALARM STATUS

- The upper screen section displays 'ANCH ALRM'.

- The lower screen section displays the Anchor Alarm status; 'ON' or 'OFF'.

Screen 5 has a sub screen for setting the anchor alarm 'ON' or 'OFF'.

Anchor Alarm On/Off

Refer to Figure 3-2, page 32 to turn the Anchor Alarm ON or OFF.

Note !   *The anchor alarm should be off when the boat is not at anchor. The alarm will sound when during a 40 seconds time period there is a change in the depth of 2-3 meters (6-10 ft.).*

3.6 Screen Group 2: Speed

There are six screens in this group:

Screen 1

BOAT SPEED

- The upper screen section always displays 'BOAT' and a speed unit, e.g. 'KTS' (knots).

- The lower screen section displays the boat speed reading.

Screen 1 has a sub screen for setting the water speed damping.

Water speed damping

The displayed water speed has four damping levels (0-3). On power up damping level 0 is always selected.

To change the water speed damping level follow the procedure in Figure 3-2 and select the wanted damping level. The higher the figure the more damping.

Screen 2

TRIM SPEED

- The upper screen section always displays 'TRIM', a sign '+' or '–' showing increasing or decreasing speed, and the trim speed unit, e.g. 'KTS'.

- The lower screen section displays the trim speed reading.

The Trim Speed is the difference in speed between the present boat speed and the target speed. At turn on the Trim Speed will only be displayed if it has been reset (see below), until that time it will show '---'.
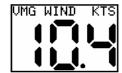
To Reset the Trim Speed

The Trim Speed may be reset at any time, as below:

- Select the Trim Speed display screen.

- Apply a quick press on the ▬ (Reset) button. This will set the current speed as the target speed. The Trim Speed display will then show changes from the current speed.

The following screens 3-6 have no sub-screens.

Screen 3

VELOCITY MADE GOOD TO WIND

- The upper screen section displays 'VMG WIND' and the VMG to wind unit, e.g. 'KTS'.

- The lower screen displays the VMG to wind reading. The reading is positive sailing upwind and negative sailing downwind.

Screen 4

SPEED OVER GROUND

- The upper screen section displays 'SOG' and a Speed Over Ground unit, e.g. 'KTS'.

- The lower screen displays the Speed Over Ground reading.

The SOG will only be displayed if a GPS receiver input is available.

Screen 5

BOAT AVERAGE SPEED

- The upper screen section displays 'BOAT AVG' and the Average Speed unit, e.g. 'KTS'.

- The lower screen section displays the Average Speed reading.

The Average Speed is calculated as the distance covered by the boat since power up or when the passage time was last reset, divided by the passage time. Resets at Passage Time reset and Trip log reset. (see paragraph 3.11).

Screen 6

MAXIMUM SPEED

- The upper screen section displays 'BOAT MAX' and a Maximum Speed unit, e.g. 'KTS'.

- The lower screen displays the Maximum Speed reading.

Resets at Passage Time reset and Trip log reset (see paragraph 3.11).

3.7 Screen Group 3: Wind

There are five screens in this group:

Screen 1

APPARENT WIND ANGLE

- The upper screen section displays 'APP WIND°' and a wind direction icon.

- The lower screen section displays the Apparent Wind angle in degrees.

Screen 1 has a sub-screen for setting the wind damping. Refer to screen 4.

Screen 2

APPARENT WIND SPEED

- The upper screen section displays 'APP WIND' and the unit, e.g. 'KTS'.

- The lower screen displays the Apparent Wind speed reading.

Screen 2 has a sub-screen for setting the wind damping. Refer to screen 4.

Screen 3

TRUE WIND ANGLE

- The upper screen section displays 'TRUE WIND°' and a wind direction icon.

- The lower screen section displays the True Wind Angle reading.

Screen 3 has a sub-screen for setting the wind damping. Refer to screen 4.

Screen 4

TRUE WIND SPEED

- The upper screen section displays 'TRUE WIND' and the unit, e.g. as 'KTS'.

- The lower screen section displays the True Wind Speed reading.

Screen 4 has three sub-screens. One for setting the wind damping, one for switching the True Wind Speed Alarm on or off, and one for setting the Wind Speed Alarm limit.

Wind damping

The displayed wind information has four damping levels (1-4).

On power up the last set damping level is selected.

To change the damping level follow the procedure in Figure 3-2, page 32 and select the wanted damping level. The higher the figure the more damping.

True Wind Speed Alarm ON/OFF

Refer to Figure 3-2, page 32 to turn the True Wind Speed Alarm ON or OFF.

True Wind Speed Alarm limit

Refer to Figure 3-2, page 32 for setting the alarm limit (0-99 knots).

Screen 5

WIND DIRECTION

- The upper screen section displays 'WIND DIRECT' and the unit type, '°T or '°M'.

- The lower screen section displays Wind Direction reading.

Screen 5 has a sub-screen for setting the magnetic variation. Refer to page 40

Note !   *Refer to notes 1-4 on page 18.*

3.8 Screen Group 4: Nav 1

There are six screens in this group. Only screen 3 has a sub-screen.

Screen 1

| WP   Egersund |

WAYPOINT ID

- The upper screen section displays the destination waypoint I.D.

- The lower screen section is empty.

Screen 2

| XTE I ↕ 1⁄1000NM |
| 003 |

CROSS TRACK ERROR

- The upper screen section displays 'XTE' (Cross Track Error), the boat position relative to the track line, XTE resolution, and XTE unit.

- The lower screen section displays the magnitude of the XTE in 1/1000 NM, or 1/100 NM if the message provides data with only two decimal places.

Note !   *The direction to steer is towards the track line. When the boat is on track the boat icon will disappear while the track line remains. The direction to the track line may not be the direction to steer directly to the Waypoint, but may be important for safety reasons; for instance, if the track passes close to shoals, or a restricted area.*

Screen 3

| BRNG TO WP °M |
| 086 |
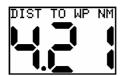
BEARING TO WAYPOINT

- The upper screen section displays 'BRNG TO WP' and the bearing type, '°M' or '°T'.

- The lower screen displays the bearing to the waypoint in degrees.

Screen 3 has a sub-screen for setting the magnetic variation. Refer to page 40. – See also note on page 21.

Screen 4

DISTANCE TO WAYPOINT

- The upper screen section displays 'DIST TO WP' and the unit, e.g. 'NM'.

- The lower screen section displays the reading of the distance to the waypoint.

Screen 5

TIME TO GO

- The upper screen section displays 'TIME TO GO'.

- The lower screen section displays Time To Go to destination waypoint in hours and minutes (h:mm or hh:m).

Screen 6

VELOCITY MADE GOOD TO WAYPOINT

- The upper screen section displays 'VMG TO WP' and the unit, e.g. 'KTS'.

- The lower screen section displays the Velocity Made Good (VMG) reading to the waypoint.

3.9 Screen Group 5: Nav 2

There are four screens in this group:

Screen 1

HEADING

- The upper screen section displays 'HEADING' and the unit, '°M' or '°T'. The heading is referenced to either 'M'agnetic or 'T'rue North as set in section 7.9 Screen 3 'Heading Bearing Unit'. See also note on page 21.

- The lower screen displays the Heading in degrees.

Screen 1 has a sub-screen for setting the magnetic variation.

MAG. VARIATION

The IS15 instruments automatically read the Magnetic Variation compensation message from a connected GPS. The compensation is presented on the screen. You are not allowed to adjust the compensation from the GPS. If you press the ◄ button and hold for 2 seconds the screen just flashes AUTO and returns to show the compensation from the GPS.

If a GPS is not connected you will be able to enter the magnetic variation manually using the ◄ and ►buttons.

Screen 2

COURSE OVER GROUND

- The upper screen section displays 'COG' and the unit, '°M' or '°T'.

- The lower screen displays Course over Ground (COG) reading.

Screen 2 also has a sub-screen for setting the magnetic variation.

Screen 3

SPEED OVER GROUND

- The upper screen section displays 'SOG' and a Speed Over Ground (SOG) unit, e.g. 'KTS'.

- The lower screen displays the Speed Over Ground (SOG) reading.

Screen 3 has no sub-screen.

Screen 4

LOCAL TIME

- The upper screen section displays 'TIME', the local time in hours, minutes and seconds (hh:mm:ss). See note 5 on page 24.

- The lower screen section is empty.

Screen 4 has a sub screen for setting the UTC offset.

UTC offset

To change the UTC offset in increments of 30 minutes follow the procedure in Figure 3-2, page 32.

3.10 Screen Group 6: Race

There are three screens in this group:

Screen 1

RACE TIME

- The upper screen section displays 'RACE TIME'.

- The lower screen section normally displays the Race Timer start time. See Note 1 below.

Screen 1 has a sub-screen for selecting Race Timer (5-10 min. or 3-6 min.)

Screen 2

RACE LOG

- The upper screen section displays 'RACE LOG' and the unit, 'NM' or 'KM'.

- The lower screen section displays the Race Log (which is "- - -" when the Race Timer is not started). See Notes 3 & 4 on page 24.

To Start the Race Timer

The Race Timer may be started at any time, as below:

1. Select the Race Time display screen and the start time as required.

2. Select between 5 or 10 (3 or 6) minute start time by pressing the ▮▮▮ button and hold for 2 seconds.

3. Start the timer by a quick press on the ▮▮▮ button. The timer will count down with audible alarms at times as below:

5 minutes	BEEP (3 minutes if 3-6 timer selected)
1 minute	BEEP BEEP
30 seconds	BEEP BEEP BEEP
5 seconds	BEEP
4 seconds	BEEP
3 seconds	BEEP
2 seconds	BEEP
1 second	BEEP
	BEEP BEEP BEEP BEEP →GO

To Freeze the Race Timer

See page 25.

To Reset the Race Timer and Race Log

The Race Timer may be stopped and reset at any time that it is running, before or after the start of a race, as below:

1. Select the Race Time display screen.

2. Press and hold the ■ button to reset the Race Time to the previous start time and to reset the Race Log to "---".

The Race Timer instructions are echoed to all other Combi and Multi instruments so that Start/Freeze/Reset occur synchronously (together).

Screen 3

`TIME 08:49:24`

LOCAL TIME

This is the same as screen 4 in Group 5: 'Nav2'. See page 40.

Note !   *See notes about the Race Timer on page 24 and 25.*

3.11 Screen Group 7: Log

There are four main screens and no sub-screens in this group:

Screen 1

`LOG          NM`
`5.00`

CUMULATIVE LOG

- The upper screen section displays 'LOG' and the unit, 'NM' or 'KM' (Nautical miles or Kilometers).

- The lower screen section displays the Cumulative Log reading.

The Cumulative Log is the total distance travelled by the vessel, it cannot be reset unless you perform a Master Reset.

Screen 2

`TRIP         NM`
`1.25`

TRIP LOG

- The upper screen section displays 'TRIP' and the Trip Log unit, 'NM' or 'KM'.

- The lower screen section displays the Trip Log reading.

The Trip Log can be reset, but is not lost when the system is turned off.

To Reset the Trip Log to Zero

The Trip Log may be reset together with the Passage Time, Average speed and Max. Speed at any time, as below:

1. Select the Trip Log screen.

2. Press the RESET button and hold for 2 seconds. This will reset the Trip log, Passage Time, Average Speed and Max. Speed.

3. The Trip Log is system wide, resetting it on this instrument will reset it across the whole system.

Screen 3

PASSAGE TIME

- The upper screen section displays 'PASSAGE TIME'.

- The lower screen section displays the Passage Time in hours and minutes (h:mm or hh:m).

The Passage Time is the time since the system was powered up or since it was last reset.

To Reset the Passage Time to Zero

The Passage Time may be reset together with the Average speed and Max. Speed at any time, as per below:
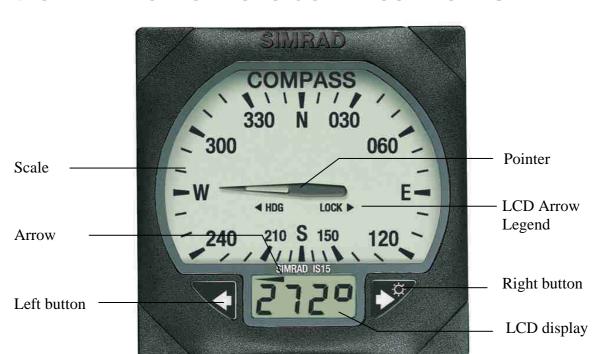
1. Select the Passage Time screen.

2. Press the RESET button and hold for 2 seconds. The Passage Time, Average speed and Max. Speed will be reset.

Note !   *The Passage Time is system wide, resetting on one instrument will reset it across the whole system.*

3.12 Alarm Sounding

See paragraph 2.10, page 27.

4 OPERATION OF IS15 COMPASS INSTRUMENT

Scale

Pointer

LCD Arrow Legend

Arrow

Right button

Left button

LCD display

4.1 General Description

The display is divided into two sections, the scale with pointer, and the LCD. Both are controlled by the two buttons.

The Scale

The scale indicates heading in degrees and the four main bearings N, S, E, W. The pointer always indicates True or Magnetic Heading.

The LCD Display

In normal operation the LCD has two modes:

• Heading

• Locked Course/Direction to steer

There are two arrows at the top of the LCD indicating what data is being displayed at any one time. The arrow legend is printed on the scale. The right arrow points to LOCK for 'Locked Course' mode, the left arrow points to HDG for 'Heading' mode.

The Buttons

A given press on any of the two buttons will change the mode from 'Heading' to 'Locked Course' mode and vice versa.

The left button is used to enter set-up and installation screens. The right button sets the lighting level. When in a set-up or installation screen both buttons are used to change settings.

Figure 4-1 - The Buttons

4.2 Powering Up

At first time turn on please refer to section 7.13. At normal power up, the pointer will TURN to the top, and the LCD will show the software version for approximately one second.

The display and the pointer will then show the current heading.

Note !   *It may take up to 20 seconds before the heading is displayed.*

4.3 Display backlighting

Press the ▷ button and hold for 2 seconds. The display then presents the backlighting level. Repeat pressing until desired backlighting level. Selectable values are 1-7 and off (0).

4.4 The Heading Display

The Heading Display is the first display that is shown after power up. The pointer shows the present heading, and so does the LCD with the left arrow lit.

- The heading may be referenced to either Magnetic or True North. If only one type of data is available, and the other data is required then the local magnetic variation may be entered, or it may be read in from a GPS if one is fitted. This may enable the display of True heading when only a magnetic referenced heading sensor is available.

- If no data is available the LCD will show four dashes, '----' and the pointer will point upwards.

Magnetic variation [Var]

This is a sub-screen to the Heading display.

The IS15 instruments automatically read the Magnetic Variation compensation message from a connected GPS. The compensation is presented on the screen. You are not allowed to adjust the compensation from the GPS. If you press the ◀ button and hold for 2 seconds the screen just flashes **AUtO** and returns to show **VAr**.

If a GPS is not connected you will be able to enter the magnetic variation manually.

1. Press the ◀ button and hold for 2 seconds. The MagVar reading flashes. It indicates '000' when there is no compensation for the variation.

2. To select or increase an easterly variation value, apply short presses on the ▶ button. The reading will be positive.

3. To select or increase a westerly variation value, apply short presses on the ◀ button. The reading will be negative.

4. Press the ▶ button and hold for 2 seconds to save the setting.

5. Press the ▶ button and hold for 2 seconds to return to the main screen.

The Locked Course Display

From the Heading Mode a quick single press on the ◀ or ▶ push-button will enter Locked Course Mode and the right arrow will lit on the LCD. If the boat stays steady on course, the LCD will display the locked course. Whenever the boat is off course the LCD shows >XX or XX<. 'XX' is the magnitude of the course error and the arrow (<>) points in the direction to steer to get back on course.

Changing the Set Course in 'Locked Mode'

This is a sub-screen to the 'Locked Course' display and allows you to view the set course or to manually set to a new course to steer.

With the LCD arrow pointing right press the ◀ button for 2 seconds and the LCD starts flashing.

The LCD will flash the current set course. If you want to maintain the set course, press and hold the ▶ button for 2 seconds.

If you want to change the set course apply short presses on the ◀ or ▶ button to set the next course to steer to port or starboard respectively.

Press and hold the ▶ button for 2 seconds to enter the new setting.

The display will stop flashing and the arrow points in the direction to steer, while the digits on the LCD show how much the boat is off the new set course.

4.5 Alarm Sounding

The alarm is system wide and all the instruments will sound and flash a warning message.

If there is an external alarm connected then this will be sounded at the same time (only if an IS15 Expander is part of the system).

To cancel a sounding alarm press any button on any of the instrument displays.

Note !

The flashing warning will remain as long as the alarm condition exists and disappears automatically when there is no longer an alarm condition. The sounding alarm will always have to be cancelled.

Alarm messages

The symbols that are shown when an alarm is triggered are as below:

'SHAL' = The Shallow Water Alarm

'dEEP' = The Deep Water Alarm

'AnCH' = The Anchor Alarm

'HIGH' = The High Wind Speed Alarm

'Er.XX' = System failure (Contact your Simrad dealer)

Compass calibration:

'RUn.C' = Compass calibration running

'FAIL' = Compass calibration failed

'dOnE' = Compass calibration done

5 TECHNICAL SPECIFICATIONS

See page 56 for NMEA information.

5.1 IS15 Combi and IS15 Multi

Speed Functions

Speed Display	0 to 99.9 Knots
Speed Units/Resolution	Knots, mph or km/h / 0.1 speed units
Speed Damping	3 damping levels + 0=off
Average Speed	From Power On or passage time reset
Maximum speed	From Power On or passage time reset
Speed Trim	changes in speed to 0.01 Speed Units
Speed Over Ground Display	(with NMEA sentence input)

Depth functions

Depth Units	Metres, Feet or Fathoms
Depth Display	0 to 655 mtrs, 0 to 999 feet, 0 to 358 fath
Depth Resolution	0.1 Depth Units
Depth Alarms	Deep and Shallow alarm limits, Anchor Alarm, Alarms On/Off
Sounder On/Off Control	Switches the Transceiver Sounder On or Off
Depth Damping	3 damping levels + 0=off

Sea Temperature Functions

Sea Temperature Units	°C/°F
Sea Temperature	-10 to +40°C, ± 0.1°C (+14 to +104°F)
Sea Temperature Resolution	To 1°C/°F or to 0.1°C

Heading Functions

Heading Display (Digital)	000 to 359°
Heading Resolution	1°
Heading Reference	True or Magnetic North

True and Apparent Wind Angle Functions

Wind Angle Display	0 to 180° Port /Stbd
Wind Angle Resolution	1°
Wind Angle Damping	4 damping levels (default: 1)
Wind Direction	0 to 360° Mag /True

True and Apparent Wind Speed Functions

Wind Speed Units	Knots, m/s, km/h or Beaufort Scale
Wind Speed Display	0 to 99.9 Wind Speed Units
Wind Speed Resolution	0.1 Wind Speed Units
Wind Speed Damping	Linked to wind angle damping
True Wind Speed Alarms	On/Off Control, one adjustable alarm limit

Velocity Made Good (VMG) Functions

VMG Units	Knots, km/h or mph (same as boat speed units)
VMG Display	0 to 99.9 VMG Units
VMG Resolution	0.1 VMG Units
VMG Damping	Linked to wind angle damping

Log Functions

Log Units	Nautical Miles or Kilometers
Log	To 9999 Log Units (permanently saved)
Trip Log	To 9999 Log Units (resettable/saved)
Race Log	To 999.9 Log Units (over race distance)
Log Resolution	1, 0.1 or 0.01 Log Units (3 digits)

Timing Functions

Passage Time	0 to 99.59 hours (rolls over to zero / resettable
Race Timer	10 and 5 minute countdown

Position Functions

Lat/Long Display	Degrees, Minutes and Thousandths of Minutes (Not IS15 Multi)
Datum	As received from Navigator
Course Over Ground (COG)	0 to 359° True or Magnetic
COG Resolution	1°
Speed over Ground (SOG)	0 to 99.9 Speed Units
SOG Resolution	0.01 Speed Units
Local Time	24 Hour Clock, Hours, Minutes and seconds

Waypoint Functions

Waypoint Identity	13 Alpha-Numeric characters
Waypoint Bearings	0 to 359° (True or Magnetic)
Waypoint Bearing Resolution	1°
Waypoint Distance	0 to 999 Log Units
Waypoint Distance Resolution	1, 0.1 or 0.01 Log Units as appropriate (4 digits)

Navigation Functions

Cross Track Error (XTE)	0 to 99 XTE unit
XTE unit	Nautical Miles or Kilometres
XTE Resolution	0.01 or 0.001 XTE unit (4 digits)

Additional Functions

Display Backlighting Levels	Seven levels plus Off
Display Backlighting Colour	Green
Display Backlighting Control	Two independent lighting banks or individual setting (bank 0)
External Alarm Drive	via IS15 Expander unit

General

Power Requirement	10.8 to 15.6V, 75 mA, (no light), 140 mA (full light)
Size	110 x 110 x 21 mm (above panel)
Mounting Hole Size	85 mm
Total Depth Below Panel Front	32 mm including cable connector
Weight	210 grams
Environmental Rating	IP56 from front, IP43 from rear
Temperature Range	Operating: 0°C to 55°C (+32 to +130°F) Stored: -30°C to 80°C (-22 to +176°F)

Alternative Transducers

Speed, depth, wind and sea temperature will be displayed if available on NMEA format. However, with a Transceiver or Expander in the system it will not display (boat) speed or temperature on NMEA format, nor will it display wind data with an IS15 wind transducer connected.

Note ! *All headings and bearings may be referenced to either True or Magnetic North.*

5.2 IS15 Compass

Heading Functions

Heading Display (Digital) Heading Resolution	0 to 359° 1°
Heading Display (Analog) Heading Resolution	0 to 359,9° 1/6°
Heading Reference	True or Magnetic North
Heading Lock	Direction to steer on digital display.
Course to Steer	Settable on digital display Direction to steer on digital display.

General

Power Requirement	10,8 to 15,6VDC, 70 mA, (100 mA max with max lighting)
Size	See Figure 5-1
Weight	225 grams
Environmental Protection	IP56 from front, IP43 from rear
Temperature Range	Operation: 0°C to +55°C (+32 to +130°F) Storage: -30°C to +80°C (-22 to +176°F)
Display Backlighting	Green colour with seven levels plus Off
Display Backlighting Control	Two independent lighting banks or individual settings (bank 0)

5.3 IS15 Transceiver

General

Power Requirement	10.8-15.6V, max 20 W
Dimensions	Refer to Figure 5-2 IS15 Transceiver Dimensions.
Weight	0.4 kg
Environmental Rating	IP44
Temperature Range	Operating: 0°C to 55°C (+32 to +130°F) Stored: -30°C to 70°C (-22 to +158°F)
Compass safe distance	0.5 m (1.6')

Cable connections

Instrument port no. 1, J1/J2	1-7 instruments, Roblink serial communication and instrument supply.
Wind sensor, J6	Roblink serial communication and sensor supply
Depth transducer, TB3	200 kHz +5/-2 kHz, 25 W rms

Speed/temp transducer, TB2	Pulse rate 4.8 Hz/knot
Power supply TB1	10.8 –15.6V

5.4 IS15 Expander

General

Power Requirement	10.8-15.6V, max 20 W
Size	Refer to Figure 5-2 IS15 Transceiver Dimensions
Weight	0.4 kg
Environmental Rating	IP44
Temperature Range	Operating: 0°C to 55°C (+32 to +130°F) Stored: -30°C to 70°C (-22 to +158°F)
Compass safe distance	0.5 m (1.6')

Cable connections

Instrument port no. 1, J1	1-7 instruments, Roblink serial communication and instrument supply. See note.
Instrument port no. 2, J2/J4/J5	1-7 instruments, Roblink serial communication and instrument supply. See note.
Wind sensor, J6	Roblink serial communication and sensor supply
Depth transducer, TB3	200 kHz +5/-2 kHz, 25 W rms
Speed/temp transducer, TB2	Pulse rate 4.8 Hz/knot
NMEA input port 1, TB5	NMEA0183, non polarized
NMEA input port 2, TB11	NMEA0183, non polarized
NMEA output port 1, TB6	NMEA0183
NMEA output port 2, TB7	NMEA0183
External alarm TB12	Open collector, 0.5A max.
Power supply TB1	10.8 –15.6V, polarity protected

Note !   *The number of instrument heads all together on port 1 and port 2 must not exceed 8.*

5.5 Instrument Software Information

V1R1: Beta version, not used in ordinary production.

V1R2: First production version

V1R3: Upgraded version with added features.

- Trip log replaces sea temperature on first screen of IS15 Combi.

- In Locked Course mode the LCD on IS15 Compass has been changed to show deviation in degrees from locked course.

- Improved log calibration procedure. Possible to set Log reading as percent (%) of default value. Log calibration can be set to same value on identical boats.

- Boat speed always reads 0.0 at zero speed. (V1R2 may show - - - at turn on and a 'residual' speed value when slowing down to zero speed).

- Improved boat speed and wind speed damping.

- Improved damping of heading displays.

- Depth transducer remains OFF at turn on if it was set to OFF while the system was running.

- Test screens added to Installation Menu to simplify trouble shooting.

- Roblink can be turned off and thus eliminate a possible interference when a single instrument is connected as NMEA repeater.

- 'Communication reset' added. Saves all settings in the event an anomaly in the system functions calls for a reset.

V1R4: Substitutes V1R3 that contains a bug. V1R3 should not be used.

V1R5: Upgraded version with added features.

- Two new display screens in Display group 4, Nav. Screen 1 shows heading, boat speed and rudder angle. Screen 5 shows waypoint bearing and COG. Screen order has been altered.

- Two new screens in the Installation Menu Group 8, Rudder. Screen 1 shows rudder angle offset and screen 2 shows rudder angle source.

- New Setup screen for Depth damping in Screen group 1.

- Default depth offset change from –0.3 m to 0.0 m.

- Increased damping of wind display at level 2, 3 and 4.

- Increased damping of boat speed at level 2 and 3.

- Instruments output True Wind Angle and Speed in addition to Relative Wind Angle and Speed.

- NMEA depth sentence 'DBT' added.

- Access to all offset adjustments when the instrument is used as NMEA repeater.

- Corrected a bug in the UTC offset.

- New NMEA In/Out screen in the Installation Menu Group 1 General. Allows you to manually change the NMEA 'talker' port to a 'listener' port.

V1R6: New software to comply with PCB Ass'y Revision H (B on round heads) onwards. V1R6 is backwards compatible with previous software and hardware versions.

Notes!

1. *PCB Ass'y with this revision does not accept V1R2 or V1R4 software.*

2. *On IS15 Combi, V1R6 should replace V1R5 if the display turns pale in bright sunshine.*

3. *V1R6 is backward compatible with V1R2 and V1R4. However, anomalies may be observed if attention is not being paid to the NMEA interface. In systems with mixed software, do not interface NMEA 'talkers' to heads with V1R2 software.*

5.6 NMEA messages and data overview

See next page.

NMEA messages and data overview for IS15

Message ident.		HDG	(HDM)	HDT	RSA	MWV	(VWR)	(DBK)	DBT	DPT	MTW	VHW	VLW	GGA	GLL	RMA	RMC	VTG	ZDA	(APA)	APB	BOD	BWW	BWC	BWR	RMB	XTE	XTR	ZTG	HSC	Remarks:
Compass_Data	Compass heading, M	x	x									x																				
	Compass heading, T	x		x								x																				
Rudder_Data	Rudder angle				x																											
Wind_Data	Apparent wind angle and speed					x	x																									Instruments V1R5 onwards, Expander V1R2 onwards, also transmits MWV with true wind.
	True wind angle and speed					x																										
Depth_Data	Depth ref transducer							1	2	2																					1: normal priority, 2:higher priority
	Transducer-Keel Offset									x*																						* Output only. Input offset is ignored and set on instruments.
	Depth range									x																						
Speed_Temp_Data	Speed through water											x																				
	Log distance and trip												x																			
	Water temperature										x																					
Gps_Data	Present position Lat, Long													x	x	x	x															
	COG, T															x	x	x														
	COG, M																	x														
	Universal Time Coordinated (UTC)													x	x		x		x													
	Magnetic variation	x														x	x															Magnetic variation in HDG message see note2.
	SOG															x	x	x														
Nav_Data	To-wp ident.																			x	x	x	x	x	x	x						
	From-wp ident.																					x	x			x						
	Bearing wp-wp, T																				x	x	x									Outputs bearing as magnetic
	Bearing wp-wp, M																			x	x	x	x									
	Bearing pos-wp, T																				x			x	x	x						Outputs bearing as magnetic
	Bearing pos-wp, M																				x			x	x							
	Distance pos-wp																							x	x	x						
	Time to go to dest. Wp																												x			
	XTE																			x	x					x	x	x				
	Waypoint closure velocity, VMG																									x						
Steering_contr1	Heading steering cmd, T / M																													x		Not displayed
IS15 RX:		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
IS15 TX:		x			x	x			x	x	x	x	x			x	x				x					x				x	x DBT out (instruments V1R5 or later, Expander V1R2)

Note1: APB message may read in true or magnetic bearing wp-wp and bearing pos-wp. These fields are however sent as magnetic bearings <u>from</u> IS15

Note2: *Magnetic variation* from the HDG message is only used to calculate true heading from the magnetic heading in the same message.

Magnetic variaton out in the HDG-message is however the variation currently in use in the IS15 system.

Proprietary sentences in/out IS15:

In to Is15 $PSTOK,a<CR><LF> Status of compass calibration: a = I:init, R:running, F:failed, C:calibrated

Out from IS15: $PSTOK,,,x.x,*XX<CR><LF> Set compass offset. x.x is offset angle, 0 to 360 degrees

Out from IS15: $PSTOC,*77<CR><LF> Start compass calibration.

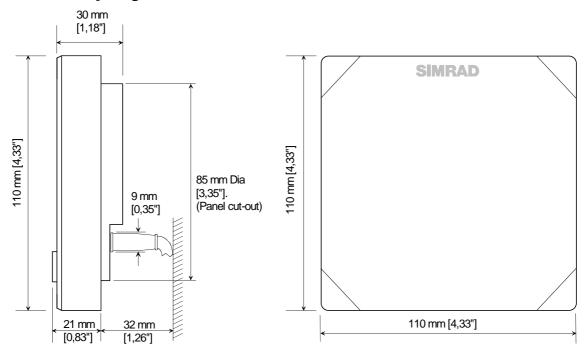# 5.7 Display head and Transceiver dimensions
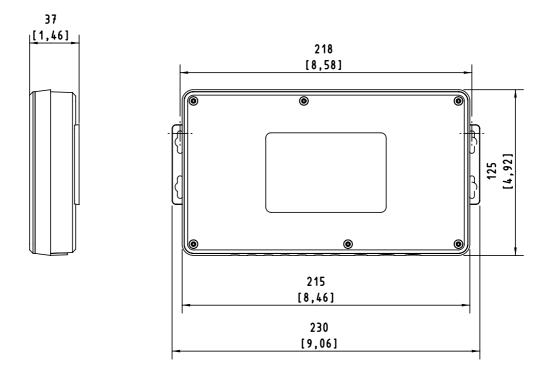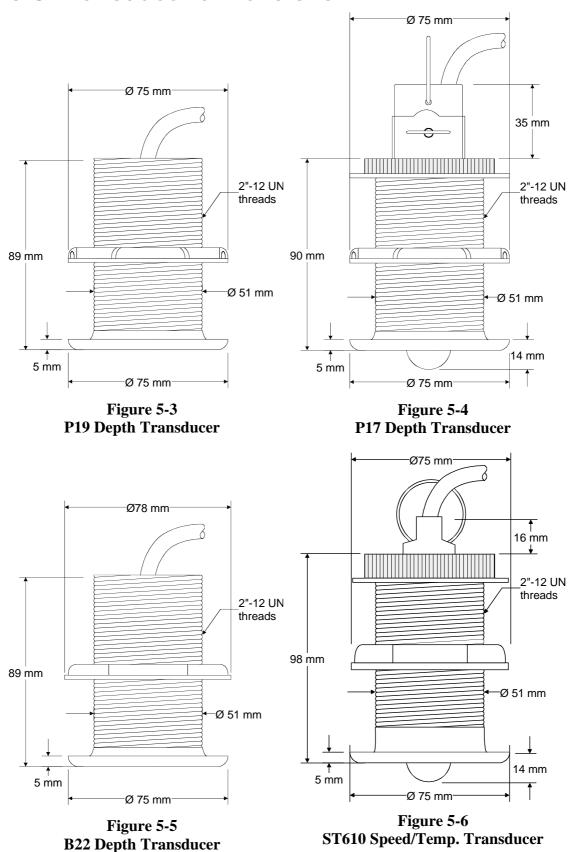

Figure 5-1 IS15 Display Head Dimensions

Figure 5-2 IS15 Transceiver Dimensions

5.8 Transducer dimensions

Figure 5-3
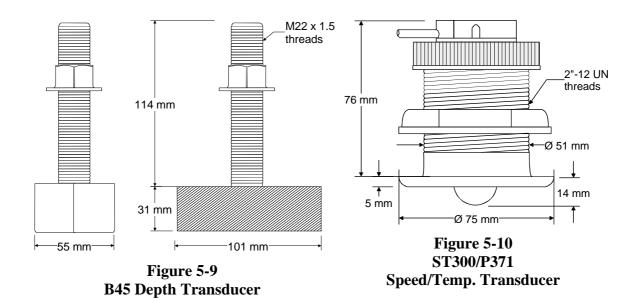**P19 Depth Transducer**

Figure 5-4
P17 Depth Transducer

Figure 5-5
B22 Depth Transducer

Figure 5-6
ST610 Speed/Temp. Transducer
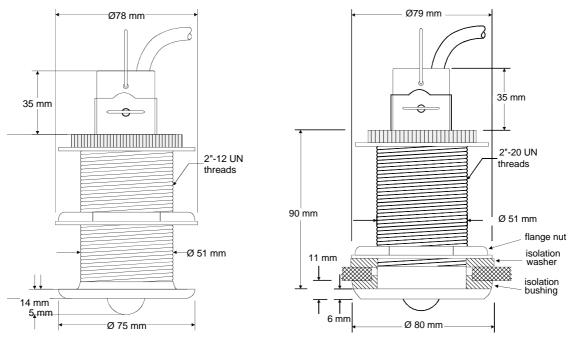
Figure 5-7
ST650/B17 Speed/Temp. Transducer

Figure 5-8
SS557 Speed/Temp. Transducer

Figure 5-9
B45 Depth Transducer

Figure 5-10
ST300/P371
Speed/Temp. Transducer
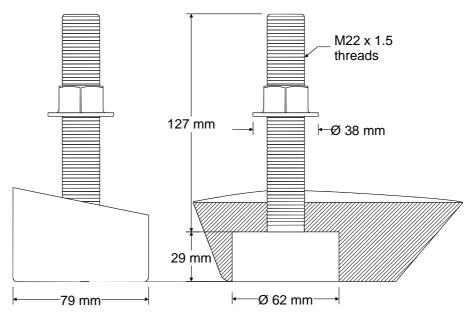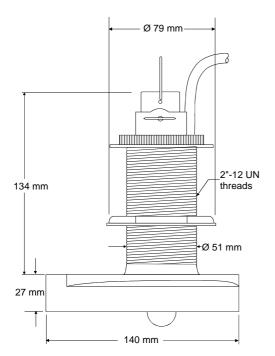
Figure 5-11
SS505 Depth Transducer

Figure 5-12 B744V Tri-ducer
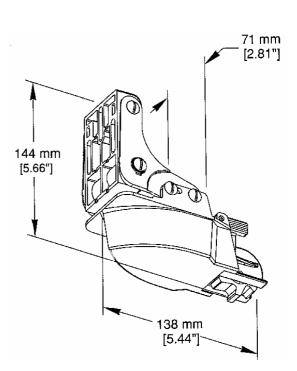
Figure 5-13 P52 Tri-ducer

6 INSTALLATION

6.1 General

This section provides detailed information required to successfully install an IS15 Instrument System utilising the IS15 Combi, IS15 Multi and IS15 Compass instruments. It also describes the interconnection with an IS15 Wind System and the connection to peripheral equipment.

6.2 Mounting of Instrument Head

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

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

The position selected should, in the first instance, meet the requirements of the helmsman, or crew.

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.

0.5 mm max.
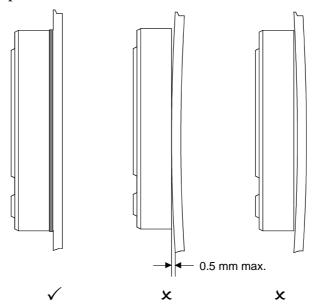
Figure 6-1 - Installation

1. Do <u>not</u> remove the protection film on the display before the installation and setup is completed.

2. Carefully position the self-adhesive template provided on the surface where the display head is to be mounted.

3. Allow sufficient space for the protection cover as shown on the template when instruments are installed adjacent to each other.

4. Drill a small pilot hole first, and then check the location on the other side of the panel or bulkhead to confirm suitability.

5. Open out the pilot hole to 85 mm (3.4") using a cutter in a hand-held brace, or an electric drill saw (86 mm or 3 3/8").

6. Drill the four screw holes using a 2.5 mm (0.1") drill.

7. Secure the instrument using the four self-tapping screws provided. Ensure that the sealing gasket is correctly located.

8. Apply the front panel corners.

Note !   *Ensure that all sockets without cable connections have the protection plug inserted.*

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.
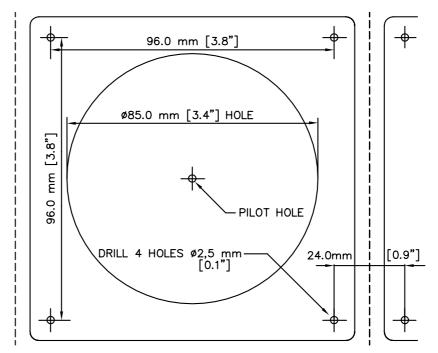
Figure 6-2 - Mounting Details (Not To Scale)

20220760L

6.3 System layout

Basic SDT-1 System
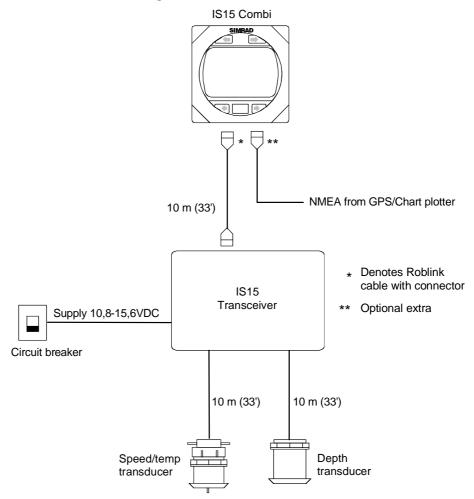
Figure 6-3 IS15 Combi (Tri-data) System layout

The SDT-1 system is capable of displaying Speed, Depth and Temperature on a single IS15 Combi instrument head. It can also display navigation data from a GPS receiver/Chart plotter via the NMEA input. (Please order separate cable).

The transducers come with 10 m (33') cable as standard. The IS15 transceiver comes with a 10 m (33') Roblink cable as standard to connect to the instrument head.

SDT-2 System

Figure 6-4 IS15 Multi (Tri-data) System layout

This system displays the same information as SDT-1. However, when using two IS15 Multi heads speed and depth can be displayed on separate instruments with large characters. With two instruments you can also transmit speed, depth and temperature information on NMEA to the autopilot and/or the chart plotter if installed.

6.4 IS15 Transceiver Mounting

The IS15 Transceiver is not weather proof and should be mounted vertically in a dry place with the cable outlets pointing downwards.

The unit is mounted to bulkhead or panel by four screws through the mounting lugs.

6.5 Transducers

Follow carefully the instructions that come with the speed/temp. and depth transducers.

Mounting Guidelines

Depth Transducers

- The main source of the vessel generated noise is the propeller.
- The deeper the transducer projects the lower the risk of aerated water.
- On displacement hulls place the transducer 1/3 aft along waterline.
- Avoid locations near the keel or bow due to aeration.
- Mount the transducer on the side of the hull where the propeller is moving downward.
- On sailboats mount forward of the fin keel, with minimum dead rise.
- On planing vessels mount aft near the keel to insure water contact at high speed.
- On I/O's mount close to the engine.
- On inboards mount well ahead of the propeller.
- On higher speed vessels (+27 knots) mount in known good locations.
- Do not mount near water discharge or behind struts or fittings, which will create turbulence.
- For dead rise greater than 10 degrees a fairing is recommended.

Speed Transducer

- On sailboats the sensor should be mounted close to the centerline and 12 to 24" ahead of the keel.
- On displacement vessels the paddlewheel should be mounted well aft so the sensor is always in contact with the water.
- Do not position the paddlewheel directly ahead of a depth transducer.
- Do not locate the speed sensor behind struts or thru-hull fittings.

6.6 Cabling
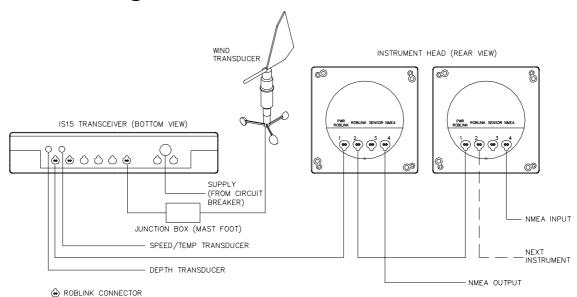
Figure 6-5 Interconnection – Principle diagram

Choosing the Cable Routes

After you have decided on the system and mounted the components of the IS15 System, the next step is to route the cables between the various parts of the system and to the power supply. Choose the most direct paths while avoiding the following hazards:

- Sharp bends or kinks in the cable
- Hot surfaces (exhaust manifolds or cooking equipment)
- Rotating or reciprocating equipment
- Sharp or abrasive surfaces
- Door and window jambs
- Corrosive fluids or gases

Total length of Roblink cables

The IS15 Transceiver can drive a total of 7 instrument heads. They can be connected in one single "daisy chain" with the Transceiver in one end, or in two chains with the Transceiver as a link. The total length of all interconnecting Roblink cables should not exceed 30 m as shown on Figure 6-6.

Note !   *The length of the masthead cables shall not be included in the above.*
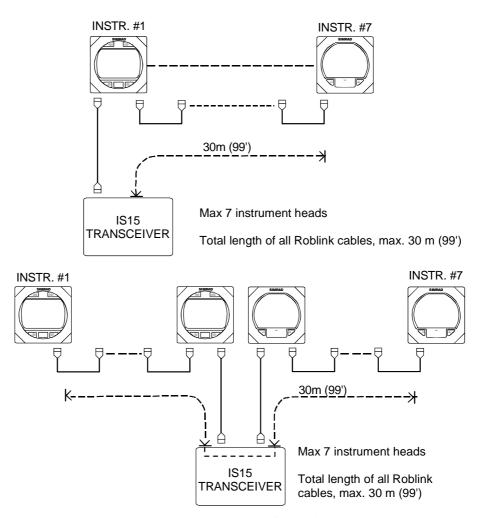
Figure 6-6 Total length of Roblink cables

Extending Cables

See page 6 'Optional equipment'.

Securing the Cables

After the ideal cable routing has been established, use tie-wraps, 'P' - clips or other fixings to secure the cables along the routings.

Note !

To prevent chafing add protection for the cable jackets where the cables pass through bulkheads, or past sharp edges.

Secure the cable near the terminals for strain relief. See also Figure 6-7 below.

Secure the cable ends with enough slack to allow for easy connection / disconnection with the instrument removed from its location.

Cut any spare wire ends to an appropriate length.

Securing the connectors

It is recommended that for extra security you secure the connectors with the enclosed self-tapping screws.
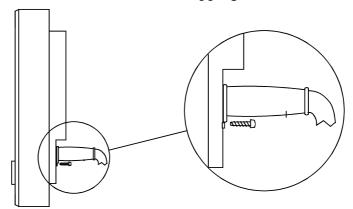
Figure 6-7 Securing connectors to the instrument

Make sure that all empty sockets have the protection plugs inserted. Coat the connectors with silicone grease or petroleum jelly. These products will not harm the instrument.

6.7 Instrument head connections
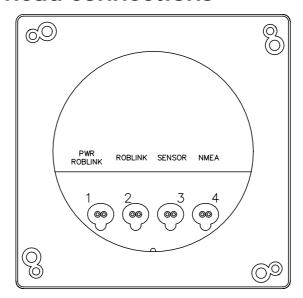
Figure 6-8 - Instrument Connections

The instrument head has four identical two-pin connector sockets protected by rubber plugs. Each socket is identified by number and signal markings.

Caution ! *NMEA cable must be plugged into connector no. 4. Wrong connection may damage the connected equipment.*

Interconnections

Connection between the instrument head and the IS15 Transceiver is made by the 10 m (33') Roblink cable supplied with the Transceiver.

Connect the Roblink cable between one of the three Roblink sockets on the IS15 Transceiver and the PWR-ROBLINK socket (1) on the display head.

Interconnection between instrument heads is made by the supplied 0.3 m Roblink cable. Refer to Figure 6-5 Interconnection diagram on page 66.
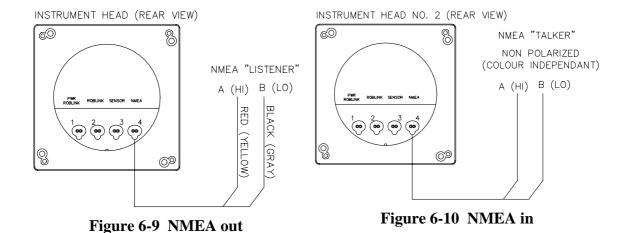
6.8 NMEA connections

General

Note !   *The NMEA port on the IS15 instruments is unidirectional, i.e. it is automatically configured for input (listening) or output (talking). Thus you will need a minimum of any two instrument heads to make the system both 'listen' and 'talk' (I/O).*

Roblink cables have to be ordered separately for NMEA connections (see page 67).

Figure 6-9 NMEA out

Figure 6-10 NMEA in

Caution !   *Use no other connector than no. 4.*

Connecting a Simrad Robertson "X" series autopilot

NMEA Out

This connection will provide speed and depth input to the autopilot. The connection is made to the J3xx Junction Unit Main Board, Terminal RX1+ and RX1-.

If an IS15 Wind Transducer is connected to the system, wind information will also be transferred to the autopilot.

NMEA In

This will provide the instrument system with heading data.

A Roblink cable has to be ordered separately for this purpose.

Connect the Roblink cable to the NMEA socket on one of the instrument heads.

Connect the other end to the screw terminals in the J3xx Junction Unit, Main Board, terminal TX1+ and TX1−.
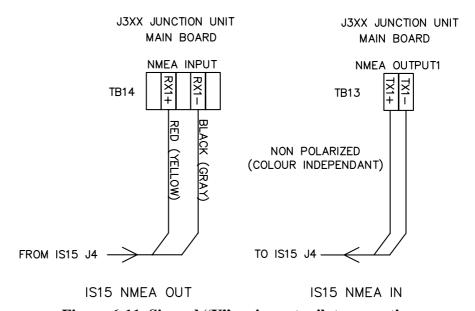
Figure 6-11 Simrad "X" series autopilot connection

Connecting a Simrad XX32/XX40/XX50 series GPS Plotter

NMEA out

This will provide the chart plotter with speed, depth, temperature and wind information.

NMEA in

This will provide navigational data to the instrument system.
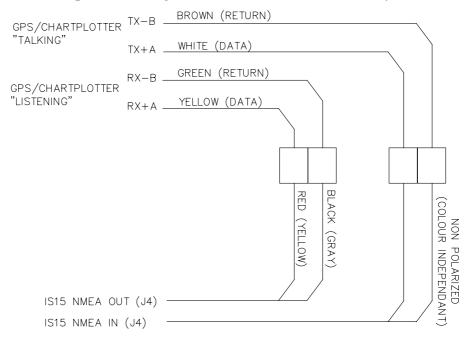
Figure 6-12 Simrad XX32/XX40/XX50 series connection

Note !   *Even if the NMEA input is automatically polarized on the IS15 instruments, it may be necessary to interchange the wires from XX32/40/50 series if depth sounding problems are observed in models that contain a depth sounder.*
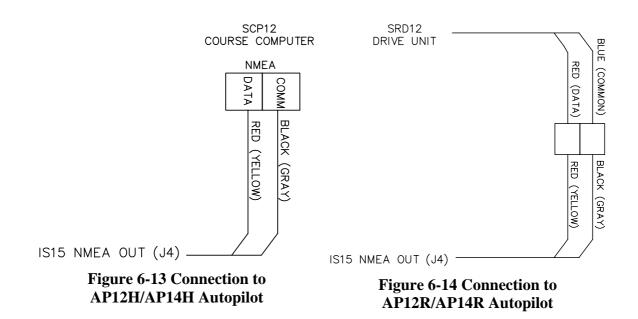
Connecting a Simrad AP12 or AP14 Autopilot

NMEA Out

This connection will provide speed data to the autopilot. For the Hydraulic Drive configuration the IS15 Instrument Head is connected to the SCP Course Computer (Figure 6-13). For the Rotary Drive Configuration the IS15 Instrument head is connected to the SRD12 Rotary Drive Unit (Figure 6-14).

If an IS15 Wind Transducer is connected to the system, wind information will also be transferred to the autopilot.

**Figure 6-13 Connection to
AP12H/AP14H Autopilot**

**Figure 6-14 Connection to
AP12R/AP14R Autopilot**

RFC35N (NMEA) and RFC35R (Rate) Compass connection
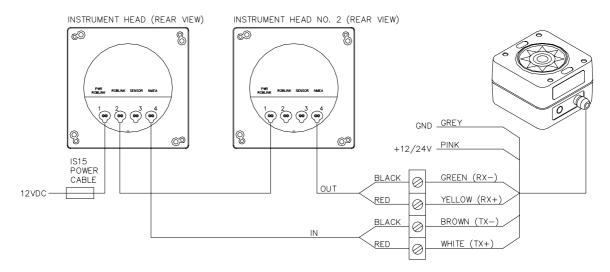

Figure 6-15 Connection to RFC35N and RFC35R Compasses

Note !   *Read the wiring instructions that comes with the RFC35R Rate Compass.*

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

NMEA out: 'Start Calibration' to compass.

6.9 IS15 Transceiver

This unit contains the depth and the speed/temperature electronics. The power supply (battery) and the transducers are connected to the unit.

The unit has three Roblink connectors for instrument heads and wind transducer.

Speed/temp transducer and depth transducer are hard-wired to plug-in screw terminals on the PCB (pwr terminal is fixed).

- Remove the top cover to get access to the plug-in terminals.

- Press the cable end through an appropriate recess in the gasket (ref. to Figure 6-5). Remove about 2 cm (0.8") of the cable insulation.

- Pull out the plug-in terminal before connecting the wires.

- Be careful to prepare all wires on each cable before putting it through the gasket to avoid strands getting onto the PCB.

- Insulate the shields by electrical tape or similar.

- Make the connections according to the following connection diagrams.

- Leave sufficient free wires so that the plug-in terminals can be easily connected/disconnected.

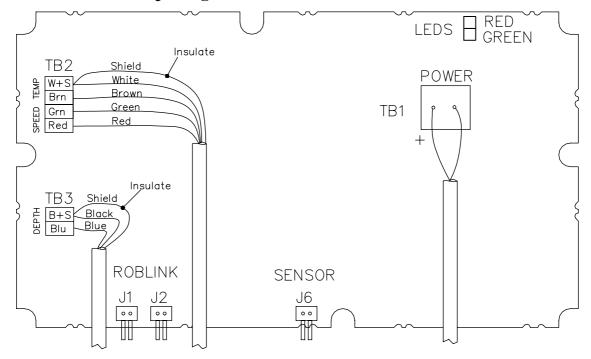- **Ensure that no strands are left inside the unit before putting on the cover.**

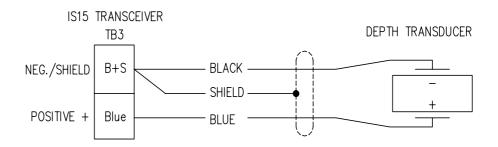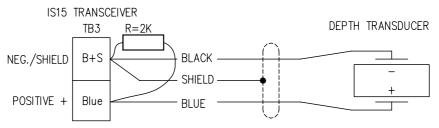**Figure 6-16 IS15 Transceiver PCB - Connector and terminal location**

Figure 6-17 Depth Transducer connections

When installing Airmar depth transducers with a 200KHz-G designator, a 2 Kohm resistor should be connected across the terminals as shown. The resistor provides a better impedance match to the particular element used in these transducers, hence erratic readings are avoided in very shallow waters.

The P52 and the SS505 listed by Simrad have a 200KHz-G designator and will need the 2 Kohm resistor. Other Airmar depth transducers listed by Simrad have a 200KHz-U or 200KHz-B designator.
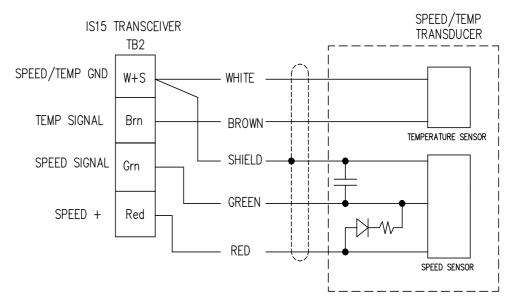

Figure 6-18 Speed/Temp Transducer connections

Power connection

There is no power cable supplied for the Transceiver. Use a cable with minimum wire gauge of 1.5mm^2 (AWG14). The outer diameter should be 10 mm (0,4") to ensure a tight fit through the gasket.

Connect the Power cable to TB1 on the IS15 Transceiver PCB and the other end to a circuit breaker.

The connection is polarity protected and monitored by a green LED. If a red LED is lit on the PCB, swap the supply wires (see Figure 6-16).

6.10 IS15 Instruments as NMEA repeaters

Figure 6-20, Figure 6-21 and Figure 6-22 are examples of how IS15 instruments can be used as NMEA repeaters. Depth, speed and temperature can be displayed when connected to a Simrad CEXX Chart plotter/Echo sounder or CAXX Multifunction radar. Any preferred combination of instruments can be used, the IS15 Combi for example is an excellent display also for wind data presentation.

Installing the Roblink Power Cable

The configuration in Figure 6-20 is limited to a total of 3 instruments and a Roblink Power Cable (P/N 22093587) is required to enhance the Roblink signals. Connect the cable to a circuit breaker. Extend the cable if necessary using a wire gauge of 0,75 mm^2 (AWG18).

Notes !

1. *If an IS15 Wind Transducer is connected to the IS15 instruments when using this configuration, it <u>must</u> be plugged into connector no. 2 (Roblink) on instrument head no. 3. Refer to note 2 for NMEA connection.*

2. *If only a single instrument is installed (Figure 6-22) there is no need for the Roblink Power Cable. Simply 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. – Also refer to instructions for Roblink turn-off (paragraphs 7.3 or 7.13.)*
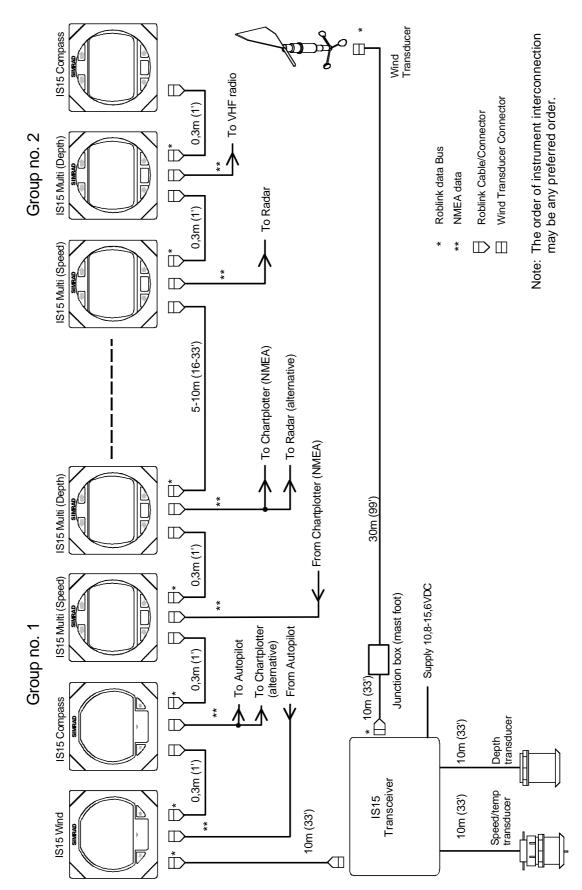
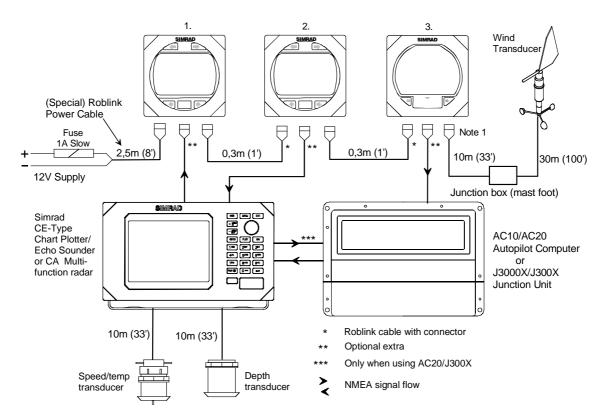**Figure 6-19 IS15 Instrument system – Cabling diagram**

Figure 6-20 NMEA Repeaters using Roblink Power Cable

Refer to section 6.10 for information and cabling instructions. Also refer to the note below Figure 6-12.

Installing the IS15 Power Supply

The IS15 Power Supply (P/N 22093595), like the IS15 Transceiver is capable of driving a total of 7 instrument heads. A 5m Roblink cable (P/N 22092548) is included as standard. Figure 6-21 shows an example of this configuration.

The physical dimensions are equal to the Transceiver and the connections are similar excluding the speed and depth transducers.

Please observe the total length of Roblink cables. See page 67.

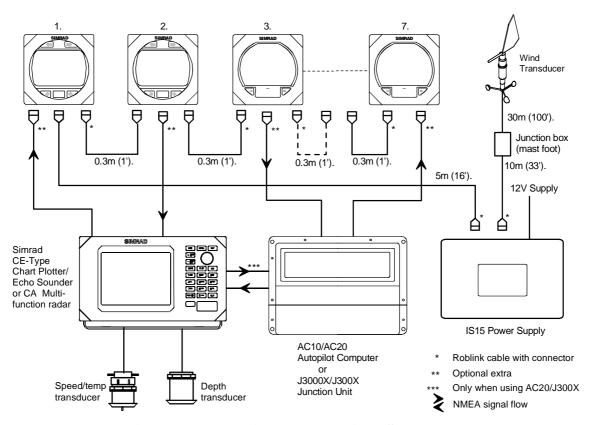Also observe the cabling instructions in sections 6.6 and 6.7.

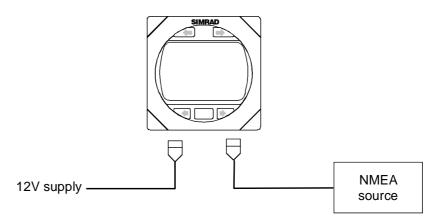**Figure 6-21 NMEA Repeaters using IS15 Power supply**

Simrad
CE-Type
Chart Plotter/
Echo Sounder
or CA Multi-
function radar

Speed/temp
transducer

Depth
transducer

AC10/AC20
Autopilot Computer
or
J3000X/J300X
Junction Unit

Wind
Transducer

30m (100').

Junction box
(mast foot)

10m (33').

12V Supply

IS15 Power Supply

0.3m (1'). 0.3m (1'). 0.3m (1'). 0.3m (1').

5m (16').

*   Roblink cable with connector
**   Optional extra
***   Only when using AC20/J300X
      NMEA signal flow

Figure 6-22 Single stand alone NMEA repeater

12V supply

NMEA
source

Note !

Refer to section 7.3 screen 4 or section 7.13 screen 6 for instructions on Roblink turn-off.

6.11 IS15 Expander

Mounting

The IS15 Expander is not waterproof and should be mounted vertically in a dry place with the cable outlets pointing downwards.

The unit is mounted to bulkhead or panel by four screws through the mounting lugs.

Transducers

Refer to paragraph 6.5.

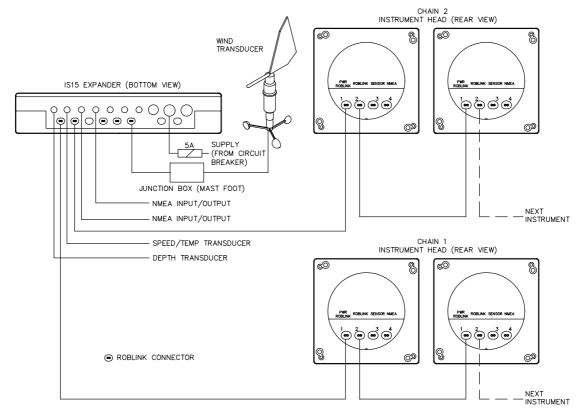## Cabling

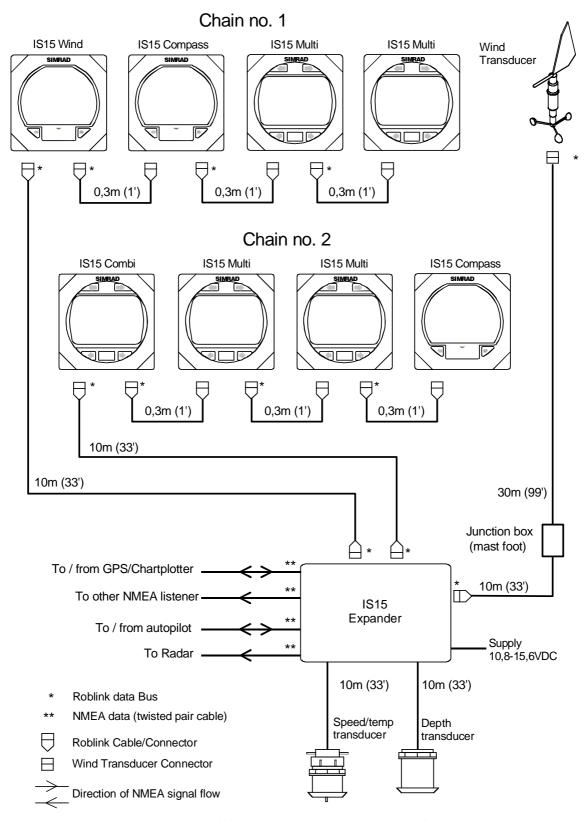**Figure 6-23 Interconnection – Principle diagram**

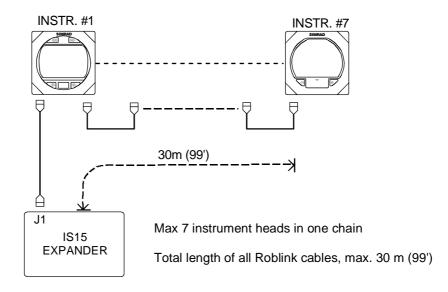**Figure 6-24 IS15 Instrument system with IS15 Expander**

Choosing the Cable Routes

Refer to page 66.

Total length of Roblink cables

The IS15 Expander can drive a total of 8 instrument heads. They can be connected to J1 (port 1) and J2/J4/J5 (port 2) of the Expander with maximum 7 instrument heads to one port. The total length of the interconnecting Roblink cables should not exceed 30 m from each port as shown in Figure 6-25.

Note !   *The length of the masthead cables shall not be included in the above.*
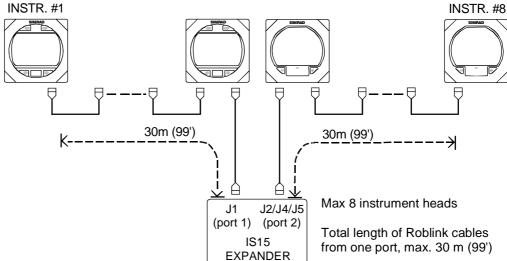

Figure 6-25 Total length of Roblink cables

Extending Cables

See Optional equipment page 6.

Securing Cables and connectors

See page 67.

Transducers and Power connections

Figure 6-26 IS15 Expander – Connector and terminal locations

Refer also to Figure 6-17 and Figure 6-18

Power connection

There is no power cable supplied for the Expander. Use a cable with minimum wire gauge of $1.5mm^2$ (AWG14). The outer diameter should be 10 mm (0,4") to ensure a tight fit through the gasket.

Connect the Power cable to TB1 on the IS15 Expander PCB and the other end to a circuit breaker. Use a 5 Amp fuse in the line.

The connection is polarity protected and monitored by a green LED. If a red LED is lit on the PCB, swap the supply wires (see Figure 6-26).

NMEA connections

General

The IS15 Expander has two sets of NMEA I/O ports. TB5 and TB6 are input and output ports no. 1 respectively and TB11 and TB7 input and output ports no. 2 respectively.

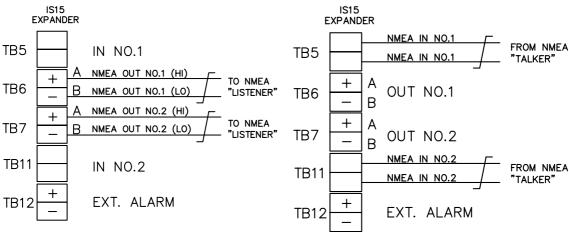Note !   *Always use twisted pair cables for NMEA data.*

Figure 6-27 NMEA out

The NMEA "listeners" must be connected to either TB6 or TB7.

Figure 6-28 NMEA in

The NMEA "talkers" must be connected to either TB5 (GPS) or TB11 (Autopilot and other). The IN ports are non polarized (colour independent).

Notes !

1. The NMEA input ports are dedicated, i.e. port no. 1 is for GPS/Plotter data and port no. 2 for other data. Refer to the NMEA table on page 56 to identify which signals (GPS_Data and Nav_Data) and corresponding NMEA sentences that should be connected to TB5 (port 1).

2. As a rule of thumb, the GPS/Chartplotter should be connected to TB5 (input) and TB6 (output), whilst the autopilot should be connected to TB11 (input) and TB7 (output).

3. Please observe the following:

   – IS15 will read depth on NMEA provided the IS15 depth sounder is turned off.

   – IS15 will read wind speed and angle on NMEA when there is no wind transducer connected.

   – IS15 will <u>not</u> read water speed and temperature on NMEA when there is an IS15 Expander (or IS15 Transceiver) in the system.

4. The output ports (TB6, TB7) are outputting parallel data and each port can drive two NMEA "listeners".

Interfacing to a Simrad AP11 or AP 20 series autopilot

Use a single cable with two twisted pairs of wire for this connection.

NMEA Out

The connection will provide speed, depth, temperature and wind data input to the autopilot.

With a J3000X Junction Unit in the system the autopilot will also receive GPS data via this connection provided a GPS/chartplotter is connected to the Expander.

The connection is made to the J3xx Junction Unit Main Board, Terminals RX1+ and RX1-.

NMEA In

This connection provides heading data input to the instruments.

The connection is made to the J3xx Junction Unit Main Board terminals TX1+ and TX1−.
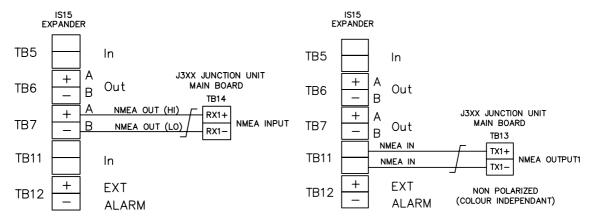
Figure 6-29 Simrad Robertson "X" series autopilot connection

Note !

With a J300X Junction Unit in the autopilot system you may have redundancy and a higher heading output rate if you run a separate and direct NMEA interface between the chartplotter and the autopilot.

In that case connect the IS15 Expander to J300X, RX2/TX2 instead. Connect the chartplotter (port 1) to IS15 as shown in Figure 6-12. In addition connect the chartplotter (port 2) to J300X, RX1/TX1. On the autopilot and the chartplotter the interfacing must be set up accordingly.

Connecting a Simrad XX32/XX40/XX50 series GPS Plotter

Use a single cable containing two twisted pairs of wires if you need to extend the cable(s) that comes with the equipment.

NMEA out

This will provide the chart plotter with speed, depth, temperature and wind information. Compass heading (from the autopilot) will also be provided in the event there is no direct interface between the autopilot and the chartplotter.

NMEA in

This will provide navigational data to the instrument system.
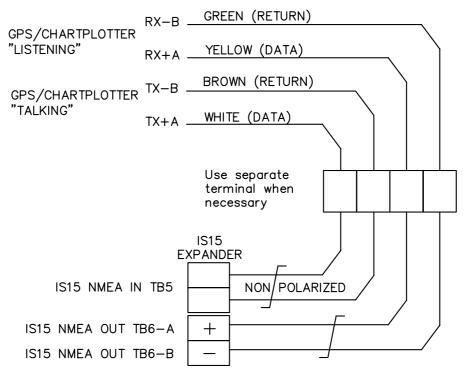
Figure 6-30 Simrad XX32/XX40/XX50 series connection

Connecting a Simrad AP12 or AP14 Autopilot

NMEA Out (TX2, RX2)

This connection will provide speed and wind data to the autopilot. Use twisted pair cable.
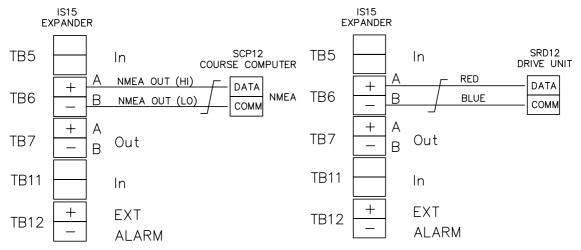
Figure 6-31 Connection to AP12H/AP14H Autopilot

Figure 6-32 Connection to AP12R/AP14R Autopilot

RFC35N (NMEA) and RFC35R (Rate) Compass connection

The heading input is normally from the autopilot on NMEA format. In the event there is no autopilot connected to IS15, a separate compass with NMEA interface can be connected as per figure 6-15 or as per below.
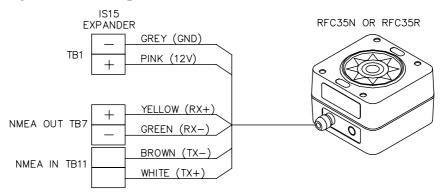
Figure 6-33 Connection to RFC35N or RFC35R Compasses

Note !   *Read the wiring instructions that comes with the RFC35R Rate Compass.*

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

NMEA out: 'Start Calibration' to compass.

Setting-Up

Follow the instructions in Section 7 and in the IS15 Wind Manual, section 6.

Expanding the system

You may add another 7 instruments to an IS15 system that contains an IS15 Expander. Please refer to Figure 6-34 and observe the following:

- The Main system is powered by the Expander

- The Secondary system is powered by an IS15 Power Supply

- The two systems are interfaced on NMEA using a single Roblink cable between the two

- The Secondary system is a repeater system to the Main system

- All sensors are connected to the Expander

- All NMEA interface to peripheral equipment is to the Expander

Please observe:

1. All system units should be the latest version.

2. The Power Supply has a 5m (16') Roblink cable as standard.

3. If you need to extend the cables, please order standard IS15 cables and the cable adapter (joiner) as per our price list and observe the max. cable lengths as per Figure 6-6. Maximum recommended (NMEA) cable length between Main and Secondary system is 70 m (230').

4. Plan your installation so that heads from the two systems are not placed adjacent to each other. You may notice a minor delay in response between the Main and the Secondary system depending on the type of information you are reading. This is caused by the transfer time on NMEA format.

5. When commissioning, start with the Main system, then duplicate on the Secondary system, i.e. first time turn-on, units, off-sets, illumination bank, etc. Perform the calibrations using the Main system and then enter the calibration values into the Secondary system.

6. Normal operational settings, e.g. depth alarms, damping and illumination must also be set on both systems.

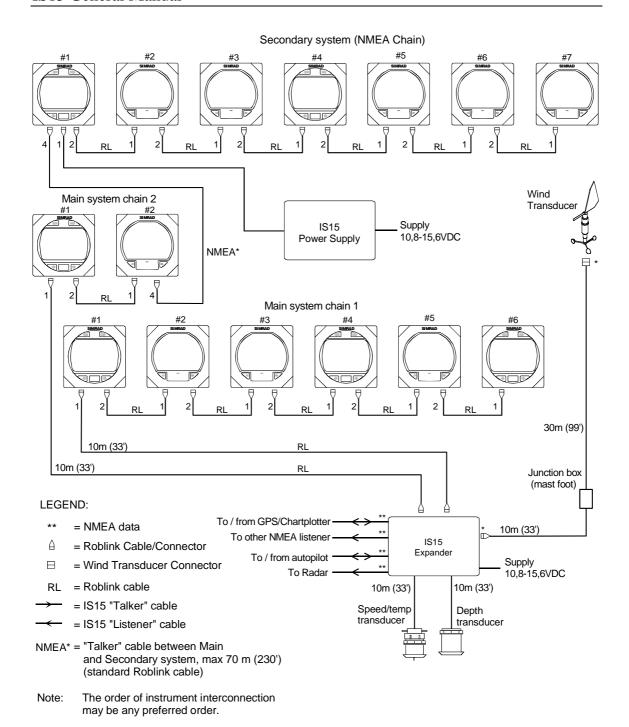7. You can only turn off the IS15 depth sounder from the Main system.
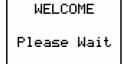
Figure 6-34 Expanded system
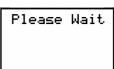
7 SETTING-UP

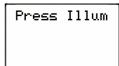## 7.1 First time turn on

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 (NMEA out) or listeners (NMEA in).

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.

```
┌──────────────┐ ┌──────────────┐ ┌──────────────┐ ┌──────────────┐
│   WELCOME    │ │   WELCOME    │ │ Please Wait  │ │ Press Illum  │
│              │ │    PRESS     │ │              │ │              │
│ Please Wait  │ │ ILLUMINATION │ │              │ │              │
│              │ │     KEY      │ │              │ │              │
└──────────────┘ └──────────────┘ └──────────────┘ └──────────────┘
```
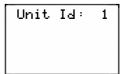
        IS15 Combi   IS15 Multi

To assign an instrument to a system, press the ⏩ button. 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.

```
┌──────────────┐ ┌──────────────┐
│ IS15 COMBI   │ │ Unit Id:  1  │
│ Ver : 1.6    │ │              │
│              │ │              │
│ Unit id: 1   │ │              │
│ Units:   1   │ │              │
└──────────────┘ └──────────────┘
```

Notes !

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

2. With an Expander in the system this will always have Id no. 1, i.e the first instrument to be assigned will then be Id no. 2.

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.

```
┌──────────────┐ ┌──────────────┐
│    SPEED     │ │ DEPTH        │
│    DEPTH     │ │              │
│              │ │              │
└──────────────┘ └──────────────┘
```
    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 9.5 Local Master Reset on page 118.*

7.2 Installation and Calibration Menu

After installation, certain functions in the system should be calibrated to take into account the physical position and type of transducers installed. Furthermore the preferred display units should be selected.

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

2 sec. Screen / Group	Screen 1	Screen 2	Screen 3	Screen 4	Screen 5	Screen 6	Screen 7	Screen 8
Group 1 General	Illumination bank	LCD Contrast	Shop mode (on/off)	NMEA communication In/out	Roblink com. & id (on/off)	Roblink test *	Com. (munication) Reset	Master reset
Group 2 Depth	Depth unit	Depth offset	Depth source *					
Group 3 Boat speed	Speed unit	Log calibration factor	Log calibration SOG	Log calibration Distance	Log source *			
Group 4 Temperature	Temperature unit							
Group 5 Wind	Wind Speed unit	Wind angle offset (Automatic)	Wind angle offset (Manual)	Wind source *				
Group 6 Navigation	Distance unit	Pos. source* / Nav. Source *						
Group 7 Compass	Compass calibration	Heading offset	Bearing unit	Heading source *				
Group 8 Rudder *	Rudder angle offset	Rudder angle source						
Group 9 Expander **	Local Master Reset	Software Version						

*   IS15 Combi only

** IS15 Combi only. Applies with an IS15 Expander in the system.

1. Press the ◄ button and hold for 10 seconds to access the Installation Menu.

2. Apply a short press on the ◄ or ► button to select a group of screens 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.

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.
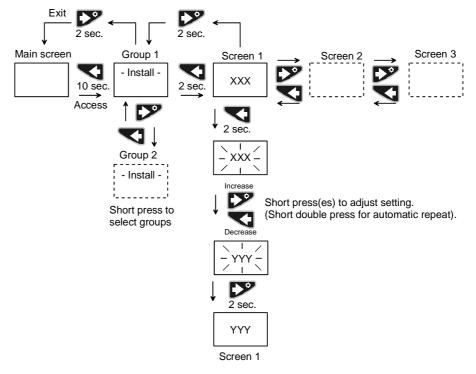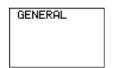

Figure 7-1 Access to installation screen(s)

Use the above procedure and flowchart as reference when accessing installation screens and adjusting the settings.

7.3 General Screen Group

INSTALLATION
GENERAL

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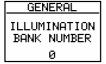
The sequence for IS15 Combi and IS15 Multi is identical but the screens are slightly different. In the following both screens are presented.

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

GENERAL
ILLUMINATION
BANK NUMBER
0

ILLUMN.BANK
2

ILLUMINATION BANK
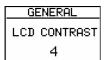
The IS15 instrument system can have two separate illumination banks of instruments. Setting the lighting level on one display will set all the other displays in that bank to the same level, but will not effect any displays in the other bank. For instance, the lighting level can be independently controlled for:

- The cockpit and chart table instruments of a yacht.

- The cockpit and mast instruments on a yacht.

- The cabin and flybridge instruments of a motor yacht.

Note !

You can also have individual lighting on all instruments. Then the illumination bank setting must be 0.

Screen 2

GENERAL
LCD CONTRAST
4

CONTRAST
3
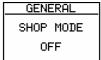
CONTRAST

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 and will probably not require alteration. 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

```
GENERAL
SHOP MODE
OFF
```

```
SHOP MODE
OFF
```
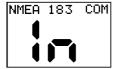
The instrument has a demonstration mode that can be activated by selecting 'Shop Mode' On. This function is very useful for dealers when they want to demonstrate the IS15 system or when it is put on display on a show. The Shop Mode is turned off when power is turned off.

Note !

When in Shop Mode the instruments will display external data if data is available as input from sensors.

Screen 4

NMEA IN/OUT

```
GENERAL
NMEA 183
COMMUNICATION
OUT
```

```
NMEA 183 COM
In
```
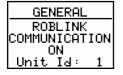
This screen allows you to manually change the NMEA 'listener' port = NMEA IN to a 'talker' port = NMEA OUT, or vice versa. Hence you need not make a Master reset or a Communication reset. Refer to chapter 7.1 First time turn on. See also note below.

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 5

ROBLINK ON/OFF

```
GENERAL
ROBLINK
COMMUNICATION
ON
Unit Id:    1
```

```
ROBLINK ID: 1
On
```

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 single NMEA repeater. However, if more heads are connected as NMEA repeaters in a daisy chain the Roblink must be On.*

2. *When the Roblink has been turned Off it will not default to ON even after a Master Reset. If required it must therefore be turned On again using the procedure above.*

Screen 6

```
  GENERAL
ROBLINK TEST
  Execute
```

ROBLINK TEST

Test screen on IS15 Combi only.

This screen is used for trouble shooting. Refer to Chapter 8.

Screen 7

```
  GENERAL
COMM. RESET
  Execute
```

```
COMM. RESET
```

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 7.1. to assign the instrument(s) to the system.

Screen 8

```
  GENERAL
MASTER RESET
  Execute
```

```
MASTER RESET
```

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 7.1. to assign the instrument(s) to the system.

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

7.4 Depth Screen Group

Screen 1

```
   DEPTH
   UNIT
   MTRS
```

```
DEPTH UNIT  M
```
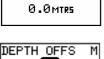
DEPTH UNIT

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

When the depth offset is set to zero, the indicated depth is from the transducer to the bottom. If you want to indicate the depth from the water surface to the bottom you have to set the depth offset according to the vertical distance between the surface and the transducer (Positive (+) value).

If you want to indicate the depth from the keel to the bottom you have to set the depth offset according to the vertical distance between the transducer and the keel (Negative (–) value).

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.

7.5 Boat Speed Screen Group

Screen 1
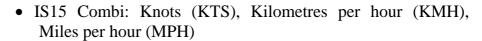
SPEED UNIT

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

- 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

```
BOAT SPEED
LOG CALIBRATE
 SOG 14.0 KTS
 LOG 12.3 KTS
```

```
SOG 14.0  KTS
    12.3
```

LOG CALIBRATION USING SOG

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 4

```
BOAT SPEED
LOG CALIBRATE
DISTANCE
        0.00NM
    Start
```

```
LogDist Start
    0.00
```

```
LogDist Adj.
    1.32
```

MANUAL LOG CALIBRATION

This method is used to calibrate the log while sailing a known distance.

1. Press the ▬ button when starting to sail the known distance. The display flashes 'Run(ning)' and counts up the sailed distance.

2. When reaching the end of the known distance press the ▬ button again. The display shows 'LogDist Adj.' and the measured distance is flashing.

3. Repeat the above while sailing the distance in the opposite direction.

4. Finally adjust the reading to be the same as the sailed distance.

Note !   *The distance in one direction should be minimum 0,1 NM and maximum 10 NM. Otherwise the calibration will fail.*

Screen 5

```
BOAT SPEED
Source: RLink
 Ver: 1.3
 14/9/2001
    HW 0
```

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.

7.6 Temperature Screen Group
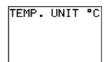
Screen 1

```
+---------------+
| TEMPERATURE   |
|    UNIT       |
|     °C        |
+---------------+
```

TEMP. UNIT

One of the following temperature units may be selected:

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

```
+----------------+
| TEMP. UNIT °C  |
|                |
|                |
+----------------+
```

7.7 Wind Screen Group

Screen 1

```
+---------------+
|     WIND      |
|  SPEED UNIT   |
|    KTS        |
+---------------+
+----------------+
| WSPD UNIT KTS  |
|                |
|                |
+----------------+
```

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 2

```
+---------------+
|     WIND      |
| ANGLE OFFSET  |
|  AUTOMATIC    |
|    Start      |
+---------------+
+----------------+
| WIND OFFSET    |
|                |
|   Aut          |
|                |
+----------------+
```

WIND OFFSET, AUTOMATIC OFFSET

The IS15 instrument system can be automatically corrected for errors in the mounting of the wind angle sensor. Head the vessel directly into the wind, and then activate the automatic calibration function by pressing and holding the ◄ button. The display will then read don(e). Any error in the wind angle will be corrected to zero the display.

```
+---------------+
|     WIND      |
| ANGLE OFFSET  |
|  AUTOMATIC    |
|    Done       |
+---------------+
+----------------+
| WIND OFFSET    |
|                |
|   don          |
|                |
+----------------+
```

Screen 3

```
┌──────────────┐
│     WIND     │
├──────────────┤
│ ANGLE OFFSET │
│    +011°     │
└──────────────┘
```

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.

```
┌──────────────┐
│ WIND OFFSET  │
│ ┌─┐┌─┐┌─┐    │
│ │ ││ ││ │    │
│ └─┘└─┘└─┘    │
└──────────────┘
```

- 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.

```
┌──────────────┐
│     WIND     │
├──────────────┤
│ Source: RLink│
│ Ver: 1.7     │
│   15/12/2000 │
│   HW 2       │
└──────────────┘
```

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)

7.8 Navigation Screen Group

Screen 1

DISTANCE UNIT

```
┌──────────────┐
│  NAVIGATION  │
├──────────────┤
│ DISTANCE UNIT│
│      NM      │
└──────────────┘
```

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

```
┌──────────────┐
│ DIST UNIT  NM│
│              │
│              │
│              │
└──────────────┘
```

Screen 2

POSITION AND NAVIGATION SOURCE

```
┌──────────────┐
│  NAVIGATION  │
├──────────────┤
│ Position     │
│ Source: NMEA │
│ Navigation   │
│ Source: NMEA │
└──────────────┘
```

Test screen on IS15 Combi only.

7.9 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
HDG 090°M
Start
```

COMPASS CAL.

This function will activate the automatic compass calibration procedure.

Note !

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

```
COMPASS CAL.
090
```

Before you begin the compass calibration procedure, make sure you have enough open water around you to make a full clockwise turn. Let the boat turn at idle.

1. Begin turning the boat to starboard.
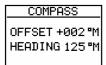
2. Press the ◄ button and hold for 2 seconds. The LCD flashes 'CAL'.

3. When the calibration is completed, (after having made approximately 1 ¼ turns), it will be confirmed by the display reading 'Done'.

Screen 2

HDG OFFSET

Note !

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

```
COMPASS
OFFSET +002°M
HEADING 125°M
```

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 procedure has been completed.

```
OFFSET +002°M
125
```

- Increase the offset reading using the ▶ button (positive offset).

- Decrease the offset reading using the ◄ button (negative offset).

Screen 3

```
COMPASS
BEARING UNIT
M
```

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. See note on page 20.

```
BRNG UNIT °M
```

Screen 4

```
 COMPASS
Source: NMEA
```

HEADING SOURCE

Test screen on IS15 Combi only

7.10 Rudder Screen Group

```
INSTALLATION
   RUDDER
```

The Rudder Screen Group applies only for the IS15 Combi.

Screen 1 Rudder angle offset

```
   RUDDER
ANGLE  +007°
OFFSET  000°
```

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

```
   RUDDER
Source: NMEA
```

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

```
   RUDDER
Source: ....
No input  –
Check sensor
```

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

7.11 Expander Screen Group

These screens are displayed in all system configurations but applies only when an Expander is installed.

```
  EXPANDER
   LOCAL
MASTER RESET
  Execute
```

Screen 1

LOCAL MASTER RESET (Expander only)

Press the ◀ button to master reset the expander. The display will than read 'done'.

```
  EXPANDER
 Ver: ...
```

Screen 2

SOFTWARE VERSION

Displays the Expander software version.

7.12 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.

7.13 Setting up the Compass Instrument

First time turn on

Note ! *Please read the first note in this chapter (7.) before turn on.*

Before leaving the factory a Master Reset has been performed on the instrument. The first time power is applied to a Compass instrument, the display will read:

> PrES

To assign an instrument to a system, press the ▷ button. 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.

> Id:1

After having assigned the instrument, turn the system off and then on (the instrument will display P.OFF if you forget). The pointer will make a 360° turn and then the instrument will display the heading.

Notes !

1. *When assigning more than one instrument to a system, allow a few seconds interval between each assignment, while/if the display is showing*

> – – –

2. *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 9.5 Local Master Reset.*

Installation and Calibration Menu

The installation menu is arranged as follows:

Screen / Display	Screen 1	Screen 2	Screen 3	Screen 4	Screen 5
Digital	Illumination bank bAn.1	Compass Calibration CAL.C	Heading Offset OFFS	Heading T/M HdG	Shop mode (on/off) SHOP
Screen / Display	Screen 6	Screen 7	Screen 8	Screen 9	Screen 10
Digital	NMEA In/out N 183	Roblink on/off robl	Test display tESt	Communication reset CrES.	Master reset rES.

To enter Installation Menu:

1. Press the ◄ button and hold for 10 seconds to access the Installation Menu.

2. Apply a short press on the ◄ or ► button to select one of the LCD screens in the Installation Menu.

3. Press the ◄ button, hold for 2 seconds and release to access a setting. The item to be set starts flashing.

4. Apply a short press on the ◄ or ► button to select a new setting.

5. Press the ► button and hold for 2 seconds to save a setting.

6. Apply a short press on the ► button to show the next screen <u>or</u> press the ► button and hold for 2 seconds to return to normal operation.

Screen 1

ILLUM. BANK [bAn.1]

The display reads **bAn.0** – **bAn.2**

The IS15 instrument system can have two separate banks of instruments. Setting the lighting level on one display will set all the other displays in that bank to the same level, but will not effect any displays in the other bank. For instance, the lighting level can be independently controlled for:

- The cockpit and chart table displays of a yacht.

- The cockpit and mast displays of a yacht.

- The cabin and fly bridge of a power boat.

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

Screen 2

COMPASS CALIBRATION [CAL.C]

This function will activate the automatic compass calibration procedure.

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

Before you begin the compass calibration procedure, make sure you have enough open water around you to make a full clockwise turn. Let the boat turn at idle engine speed.

1. Begin turning the boat to starboard.

2. Press the button and hold for 2 seconds. The LCD flashes 'rUN' and then 'CAL.C'.

3. When the calibration is completed, (after having made approximately 1 ¼ turns), it will be confirmed by the display reading 'doNE'.

Screen 3

HEADING OFFSET [OFFS]

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 procedure has been completed. The value of heading offset is specific to the heading sensor that is connected at the time the offset is entered.

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. See page 47.

Screen 5

SHOP MODE [SHOP]

Like the other IS15 instruments the IS15 Compass has a Shop Mode. Refer to Page 93 for more details. Press the ◀ button to activate the selection of Shop Mode '**OFF**' or '**On**'

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.

Notes !

1. *The Roblink must be turned Off when the instrument is used as a single NMEA repeater. However, if more heads are connected as NMEA repeaters in a daisy-chain the Roblink must be On.*

2. When the Roblink has been turned Off it will not default to ON even after a Master Reset. If required it must therefore be turned On again using the procedure above.

Screen 8

ROBLINK TEST [tESt]

Refer to section 8 Fault Finding for details.

Screen 9

COMMUNICATION RESET [C.rES]

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 settings.

Press the ◀ button and hold for 2 seconds. The LCD display shows 'P.OFF'. Turn the system off, refer to the beginning of this section and assign the instrument(s) to the system.

Screen 10

MASTER RESET [rES]

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 it will default settings and calibration values.*

Press the ◀ button and hold for 2 seconds. The LCD display shows 'P.OFF'. Turn the system off, refer to the beginning of this section and assign the instrument(s) to the system.

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

This page is intentionally left blank

8 FAULT FINDING

This chart assumes that the instrument is part of an IS15 instrument system including an IS15 Transceiver, or an IS15 Power Supply or Expander. If it is connected to another equipment as a NMEA repeater, then perform the equivalent checks on that equipment.

General Display and Communications Faults

Condition	Probable Cause	Action
All instruments have blank displays.	No 12V Power Supply.	Check that the ships instrument system fuse(s) or circuit breaker(s) are not blown / tripped.
		Check the power supply wiring to the IS15 Transceiver.
		Check the green LED lamp inside the Transceiver indicating supply polarity OK. (In order to remove the top cover to the Transceiver first remove the six fastening screws.)
		Measure the voltage (10,8-15,6V)
		Check the Roblink/power cable from the Transceiver to the instruments.
		Measure the voltage. Should be ≈ 18VDC.
		Contact your dealer.
One instrument in the middle of the chain have blank display	Instrument head is defective.	Replace instrument (Perform master reset and new setup).
One or more instruments at the end of a chain have blank displays.	There is no Roblink/ supply to the affected instrument (s).	Check the Roblink/power cable(s) to the affected instrument(s).
		Contact your dealer.

Condition	Probable Cause	Action
One or more instrument(s) always show '----', with the pointer of analog instruments at their zero positions.	No data is reaching the affected instrument(s).	Check the signal wiring to the affected instrument(s). Check Roblink data by entering the Roblink test menu on a Combi instrument. See the following fault finding charts for details.

Wind Display Faults

Condition	Probable Cause	Action
There are no Wind Speed or Wind Angle displays, or these displays always show '----'.	The wind transducer is not fitted to the mast head connector. The wind transducer is not connected to the IS15 Transceiver properly.	Check, and fit the transducer if necessary. Check the wind transducer's Roblink connection to the Transceiver. Check that the wind transducer cable is not damaged. Check the connections in the Junction Box at the mast foot. Contact your dealer.
The Wind Speed displays always show '0.0', but the Wind Angle displays are shown.	The anemometer (cups) is seized.	Check the anemometer cups and have the wind transducer serviced if necessary. A broken anemometer cup may be replaced by the dealer/customer.
The Wind Speed is too low, when it was previously correct.	Worn anemometer cups/bearing. Damaged anemometer rotor or transducer body.	Check the anemometer cups and rotor bearings or have the wind transducer serviced if necessary. Check that the rotor (cups) and transducer are not damaged. Make other checks as for 'always showing 0.0' above.
The Wind Speed is too high or erratic, when it was previously correct.	Damaged wiring causing intermittent contact.	Make checks as for 'always showing 0.0' above.

Condition	Probable Cause	Action
The Wind Speed has always been too low or too high.	The wind transducer may be poorly sited.	Check the transducer location. Contact your dealer.
The Wind Angle displays are incorrect.	The wind transducer is not connected to the IS15 Transceiver properly.	Check the wind transducer's connections to the IS15 Transceiver and to the Junction Box. Check that the wind transducer cable is not damaged. Contact your dealer.
The Wind Angle has always been incorrect.	The wind transducer is not calibrated.	Calibrate the wind transducer. (Using another instrument.) Make checks as for 'the wind angle displays are incorrect' above.
Note !	*A broken vane can only be replaced by the factory, as the Masthead Unit (MHU) needs new calibration.*	

Speed and Temperature Display Faults

Condition	Probable Cause	Action
The Boat Speed display always shows "----" and/or Temperature show –16°C/36°F.	The speed transducer is not connected to the IS15 Transceiver properly.	Check the speed transducer's connections to the IS15 Transceiver. Check that the speed transducer cable is not damaged. Contact your dealer.
The Boat Speed display always shows '0.0', but the Sea Temperature display is shown.	The speed transducer is not installed in the hull fitting. The speed transducer is not connected to the IS15 Transceiver properly. Jammed paddle wheel. Damaged paddle wheel or transducer body.	Check, and replace the blanking plug with the transducer if necessary. Check the speed transducers connections to the IS15 Transceiver (especially the Red and Green 'Speed' wires). Check that the speed transducer cable is not damaged. Clean the paddle wheel and transducer as required. Check that the paddle wheel and transducer is not damaged, and that there are not 'holes' at the end of any of the paddle wheels vanes. Contact your dealer.

Condition	Probable Cause	Action
The Boat Speed is too low, when it was previously correct.	Dirty paddle wheel or hull.	Clean the paddle wheel and / or the hull as required.
	Damaged paddle wheel or transducer body.	Check that the paddle wheel and transducer is not damaged, and that there are not 'holes' at the end of any of the paddle wheels vanes.
	The paddle wheel is not aligned fore / aft within the skin fitting.	Check, and if necessary turn the transducer within the skin fitting so that the cross pin is aligned with the centre line of the vessel.
		Make other checks as for 'always showing 0.0' above.
The Boat Speed has always been too low or too high.	The speed transducer is not calibrated.	Calibrate the speed transducer. (Using another instrument.)
		Make other checks as for 'the speed is too low when it was previously correct' above.
The Boat Speed is different on each tack.	The hull form and transducer siting produces different water flow rates over the paddle wheel on each tack.	Turn the speed transducer **slightly** so that the cross pin is not aligned directly fore / aft, and recheck for the same speed display on both tacks. Repeat this until the correct angle is found for the same reading on each tack, and then recalibrate the transducer. (Using another instrument.)
The Sea Temperature display is incorrect, showing – degrees (-16°C).	The speed transducer is not connected to the IS15 Transceiver properly.	Check the speed transducer connection to the IS15 Transceiver (especially the Brown, White and shield "Temp" wires).
		Check that the speed transducer cable is not damaged.
		Check that the Sea Temperature is in fact incorrect by comparing with another temperature sensor.
		Contact your dealer.

Heading and Autopilot Display Faults

Condition	Probable Cause	Action
There are no Heading or Wind Direction displays.	The required data is not being received from the Fluxgate Compass or Autopilot.	If it is a non Simrad compass, check the NMEA output compass specification against the IS15 input specification. (Ref. Table). Check the compass power supply wiring. Check the signal wiring from the compass to the IS15 Instrument head. Check that the compass is driving other instrument head correctly. Contact your dealer.
All Headings are incorrect, by the same amount. Note : When checking a Compass ensure that the check is against a deviated magnetic card compass, or against magnetic bearings, or against a good hand held compass held well away from any magnetic or ferrous objects.	The compass is not aligned correctly.	See manual for Compass calibration and Heading offset.

Condition	Probable Cause	Action
Some or all Headings are incorrect, by different amounts. Note : When checking a Compass ensure that the check is against a deviated magnetic card compass, or against magnetic bearings, or against a good hand held compass held well away from any magnetic or ferrous objects.	The compass hasn't been calibrated. Magnetic or ferrous objects have been moved into or away from the vicinity of the compass. The location of the compass is unsuitable.	Recalibrate the compass. Check for possible objects that may affect the compass, e.g., a portable radio. If the change is permanent then recalibrate the Sensor. Check that the location of the compass is suitable, if not then resite it. Contact your dealer.

Navigation Display Faults

| Condition	Probable Cause	Action
There are no Navigation displays, even though the GPS/Plotter is working.	The required data is not being received from the GPS/Plotter.	Check that the GPS/Plotter has a position fix. Check that the GPS/Plotter's NMEA output is set-up correctly. Check the GPS/Plotter's NMEA output specification against the instrument's input specification. Check the signal wiring from the Navigation Receiver to the IS15 Instrument head. Check that the Navigation Receiver is driving other remote displays correctly. Contact your dealer.
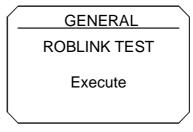
Condition	Probable Cause	Action
There are no Waypoint Data displays, even though the Course Over Ground display is working.	The required data is not available from the GPS/Plotter.	Check that the GPS/Plotter has a destination Waypoint. Make other checks as for 'no navigation displays', above.
There is no Cross Track Error display, even though the Waypoint and Course Over Ground displays are working.	The required data is not available from the GPS/Plotter.	Check that the GPS/Plotter is in Navigate Mode. Make other checks as for 'no waypoint displays', above.
True / Magnetic Course Over Ground and Waypoint Bearing data is not shown, even though the other format is available.	Data of the required format is not being transmitted by the GPS/Plotter.	Check that the GPS/Plotter is set to the same navigation mode, and is set up to transmit the correct navigation format. Contact your dealer.

Roblink test displays

The Roblink test display monitors the data flow on the Roblink. The IS15 Multi does not display a Roblink Test.

The Roblink test display on the IS15 Combi is entered as follows:

- Press and hold the ◁ button for 10 seconds to enter the installation setup 'GENERAL' display.

- Press and hold the ◁ button for 2 seconds.

- Press the ◁ or ▷ button until the display reads:

```
    GENERAL
  ROBLINK TEST

    Execute
```

- Press and hold the ◁ button for 2 seconds to start the test.

```
          ┌─────────────────────────────┐
          │         GENERAL             │
          │                             │
          │      DATA    DETECT         │
Roblink Sync. OK   │  SYC   255     SPD   255  │  Boat speed (Water) OK
Depth OK           │  DPT   255     POS   255  │  GPS Position data OK
Compass heading OK │  HDG   255     NA1   255  ╲  Navigation data OK
Wind Speed & Angle OK │ WND   255     NA2   255  ╱  Waypoint/Route navigation active
          └─────────────────────────────┘
```

All displayed items will start counting at 136. If data are OK they will count up and stop at 255.

If data are not OK they will count down and stop at 15.

On the IS15 Wind, Tack and Compass the Roblink test only monitors the data utilized by the instrument head, e.g. wind data or compass heading.

- Press and hold the ◁ button for 10 seconds to enter the installation menu.

- Press the ◁ or ▷ button until the display reads **tESt**.

- Press and hold the ◁ button for 2 seconds to start the test. As on the Combi, the display will start counting from 136.

There are three more displays available for roblink testing:

Message rate

Messages are sent with a fixed rate from 1 to 5/second. Example: Heading (HDG) is sent with a rate of 5 and depth (DPT) with a rate of 2.

Under normal operation the numbers are steady. If the reading becomes erratic it indicates a problem on the Roblink.

Checksum Err(or)

Counts up detected check sum errors. A check sum error up to 5% of sent message is acceptable.

Verify how much each message is counting up in a periode of one minute.

Examles:

If a message with a rate of 1 has more than 3 errors in a period of 60 seconds, it indicates a problem on the Roblink.

If a message with a rate of 5 has more than 15 errors in a period of 60 seconds, the same problem exists.

The fourth display tells you if an instrument is sending NMEA data to the Roblink.

Send

Displays '-Tx' if the particular instrument is sending the particular message on Roblink. Only the instrument receiving data from NMEA and sending it to the Roblink displays '-Tx'.

Actions to Roblink test results:

1. Zero (0) reading means 'no message available'.

2. If the numbers are continuously flickering or counting down, perform a Communication Reset on the system.

3. Make sure the recommended cable length or number of instruments in the system are not exceeded. See Figure 6-6.

4. Check all NMEA connections.

5. Check the output rate of the NMEA 'talkers' connected to IS15. The rate should not be slower than 0.7 Hz.

Note !   *A Personal Computer (PC) does not comply with the NMEA hardware specifications. Always use a proper interface between the PC and the IS15 NMEA ports to avoid possible anomalies in the IS15 performance.*

9 MAINTENANCE

9.1 General Maintenance

Caution ! *Do not use any abrasives, chemical cleaners, petrol or diesel to clean the units.*

The instrument heads will require no maintenance apart from occasional cleaning. Use fresh water and a mild soap solution (not a detergent).

9.2 Annual Maintenance

Check all connections to the instruments and, if necessary, cover with silicone grease or petroleum jelly.

The wind transducer is a robust unit that should give you years of reliable service. However, it will benefit from an application of silicone grease to the connector at the beginning of each season. It is also recommended that the wand is removed over Winter if the boat is not in use. To prevent corrosion of the connector, always fit the protective cap to the socket when the wand has been removed.

Note ! *A broken or lost wind vane can only be replaced by a re-calibrated unit from the factory.*

A broken anemometer cup may be replaced by the dealer/owner.

9.3 Removal of Instruments

1. If rear access is possible unplug the Roblink connectors from the back of the instrument.

2. Remove the four front panel corners and the fixing screws.

3. Pull the instrument free from the panel, being careful not to strain the cables if they have not yet been disconnected. Unplug the Roblink connectors from the back, and make up the cables if necessary.

9.4 Return for Service

Please ensure that an instrument that is believed to be faulty is correctly installed, the cabling is in good condition and correct, that all connections are secure, and that a correct supply is present at the Roblink/power connector.

Should the unit have to be returned to your dealer, adequate packing must be used. Please ensure that your name, telephone number, return address, a clear fault description, and if possible a copy of the proof of purchase are included with any returned equipment. Simrad and their representatives are not responsible for any equipment lost in transit.

Please quote the instrument's serial number in all correspondence. This is found on the back of the instrument.

9.5 Local Master Reset

When an instrument is leaving the factory a Master Reset has been made. However, if an instrument is being used in a different system or setup, you can perform a local Master Reset on the instrument in that system <u>before you disconnect it</u> and move it to a system where you want to put it.

Refer to screen 4 on page 93 or screen 6 on page 104.

1. Turn off the Roblink as per instructions

2. Perform a Master Reset as per instructions

3. Turn on the Roblink as per instructions

You can now install the instrument in another system without having to make a system wide Master Reset and loose the existing calibration and settings in that system.

10 SPARE PARTS LIST

22092167   IS15 Combi Instrument
22092654   IS15 Combi PROM (programmed) V..R..
20220778   IS15 Combi Operator's Quick Reference Guide

22092183   IS15 Multi Instrument
22093322   IS15 Multi PROM (programmed) V..R..
20220786   IS15 Multi Operator's Quick Reference Guide

22092126   IS15 Compass Instrument
22092720   IS15 Compass PROM (programmed) V..R..
20220810   IS15 Compass Operator's Quick Reference Guide

22092837   IS15 Mounting kit consisting of:
   22084529   Cabinet corners
   44165181   Screw 3.5x32
   44160232   Screw (for securing the connectors)
22091854   IS15 Protection cover
22092241   IS15 Panel gasket

22092449   IS15 Transceiver
22093389   IS15 Transceiver Mounting kit
22093462   IS15 Transceiver PROM (programmed) V..R..
22092068   IS15 Transceiver lid
22092076   IS15 Transceiver housing
22092084   IS15 Transceiver gasket

Roblink Cables
22092019   IS15 Cable 0,3 m
22093728   IS15 Cable 2 m (6,5')
22092548   IS15 Cable 5 m (16,5')
22092027   IS15 Cable 10 m (33')
22093587   IS15 Roblink Power Cable 2,5 m (8')
22092001   IS15 Cable Adapter (joiner for interconnection of cables)

22092456   IS15 Expander

22093389   Mounting kit

22094270   IS15 Expander PROM (programmed) V..R..

22092068   Lid

22092076   Housing

22092084   Gasket

22091953   IS15 Expander PCB Assy