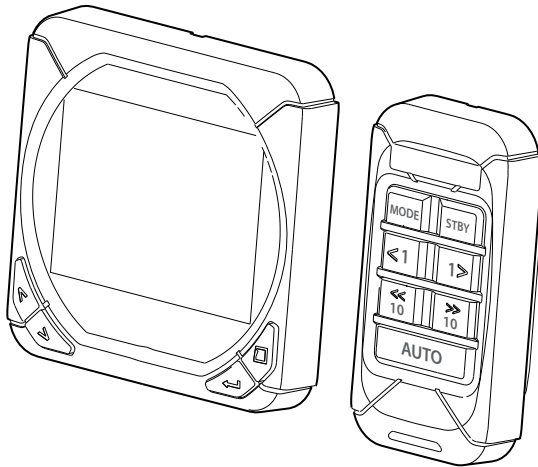




IS40/Triton System Installation Manual

ENGLISH



Preface

As Navico are continuously improving this product, we retain the right to make changes to the product at any time which may not be reflected in this version of the manual. Please contact your nearest distributor if you require any further assistance.

It is the owner's sole responsibility to install and use the instrument and transducers in a manner that will not cause accidents, personal injury or property damage. The user of this product is solely responsible for observing safe boating practices.

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This manual represents the product as at the time of printing. Navico Holding AS and its subsidiaries, branches and affiliates reserve the right to make changes to specifications without notice.

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Warranty

The warranty card is supplied as a separate document. In case of any queries, refer to the brand web site of your display or system: www.bandg.com and www.simrad-yachting.com

Important text that requires special attention from the reader is emphasized as follows:

- **Note:** Used to draw the reader's attention to a comment or some important information.

 **Warning:** Used when it is necessary to warn personnel that they should proceed carefully to prevent risk of injury and/or damage to equipment/personnel.

Declarations and conformance

This equipment is intended for use in international waters as coastal sea area administered by countries of the E.U. and E.E.A.

The Triton and IS40 systems comply with the following regulations:

- CE under EMC directive 2004/108/EC
- Level 2 devices of the Radio communications (Electromagnetic Compatibility) standard 2008

The IS40 and Triton Display meet the technical standards in accordance with Part 15.103 of the FCC rules.

About this manual

This manual is a reference guide for installing the Triton and IS40 system. The manual assumes that the installer has at very least, basic knowledge of DC electrical systems, and of working with power tools with materials such as fiberglass and wood.

An understanding of basic navigation, nautical terminology and practices may be helpful in correct configuration of the product.

⚠ Warning: It is your sole responsibility to install and use the instrument and transducer(s) in a manner that will not cause accidents, personal injury or property damage. Always observe safe boating practices.

- **Note:** The choice, location, and installation of transducers and other components of the system are critical to the performance of the system as intended. If in doubt, consult your dealer.
- **Note:** Global Positioning System: The Global Positioning System (GPS) is operated by the US Government which is solely responsible for its operation, accuracy and maintenance. The GPS is subject to changes which could affect the accuracy and performance of all GPS equipment anywhere in the world, including this instrument.

Contents

4 Introduction

5 Overview

6 Installation

6 Choosing a location

6 Viewing angles

7 Fitting with mounting clip

8 Fitting with retention bracket

8 Multiple displays

9 Wiring

9 Introduction to NMEA 2000 (SimNet)

11 Daisy chaining the display

11 Drop cable connection of the display

12 Typical network example

13 The SG05 EVC gateway

14 Troubleshooting

15 Spares & Accessories

16 Technical Specifications

16 Display

17 Dimensional drawings

Introduction

The Triton and IS40 Display utilizes a unique bonded 4.1-inch sunlight viewable LCD display to offer clearly read sailing information, including wind, speed, depth, heading, autopilot status, log, timer and much more.

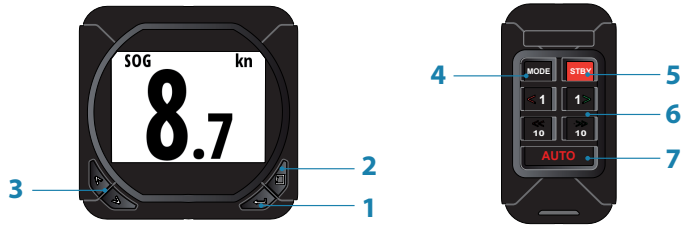
High contrast and a 155° viewing angle provide excellent readability, whilst the bonded display ensures there is no chance of condensation occurring regardless of the conditions.

Power consumption is extremely low for this class of product - 155 mA at 13.5 V with backlight driven at full brightness.

Dual Micro-C connectors provide for quick and easy daisy-chain connection - ideal for retrofit or new build. Micro-C is the industry standard cabling used for NMEA 2000 systems.

Overview

The Display and Autopilot controller



- 1. Menu / Enter key**
Used to enter the main menu, select sub menus and confirm selection.
→ **Note:** Press and holding the Enter key for 3 seconds takes you directly to the display setup lighting level screen. If the lighting level is set below 5 it will automatically increase to 5. Use the up and down keys to set the desired level and press Enter to confirm.
- 2. Page key**
Scrolls through the eight default display pages and navigates back a step in menus.
→ **Note:** the eight default display pages including Autopilot page can be customized to display the required data.
- 3. Directional keys**
Scrolls up and down through selected menus / set values.
- 4. Mode key**
Changes the Autopilot mode.
- 5. STBY key**
→ **Note:** the key is labeled OFF on some models.
Changes the autopilot to Standby mode.
- 6. Course control keys**
Changes target course / Activates Non Follow Up (NFU) mode when in Standby mode.
- 7. Auto key**
Changes the autopilot to AUTO mode.

Installation

The IS40/Triton display may be mounted via a flush mounting clip or with the retention bracket attached to the rear of the unit.

Choosing a location

Choose the mounting locations carefully before you drill or cut. The display should be mounted so that the operator can easily use the controls and clearly see the display screen. Be sure the chosen location allows access for routing the cables.

Ensure that any holes cut will not weaken the boat's structure. If in doubt, consult a qualified boat builder. Before cutting a hole in a surface, make sure that there are no hidden electrical wires or other parts behind the panel. Leave sufficient clearance space to connect all relevant cables.

If multiple instruments are to be mounted in a row, ensure measurement of space takes in to account the correct spacing between displays.

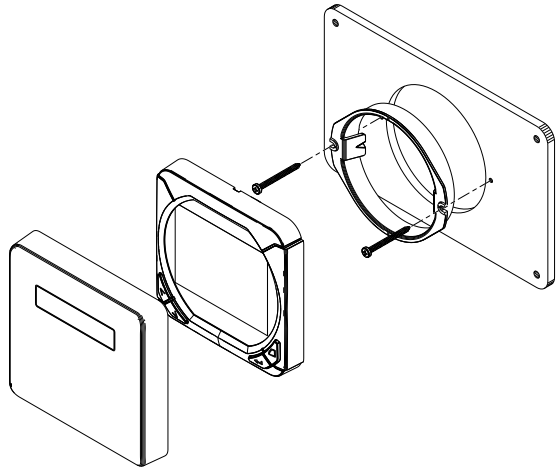
These displays are high-contrast, anti-reflective and are easily read in direct sunlight.

For width, height and depth requirements, please see the drawings at the back of this manual.

Viewing angles

The IS40/Triton display offers 170 degrees viewing angle, both horizontally and vertically. Avoid installation in locations that require the instrument to have significant rotation of axis relative to the deck. Users wearing polarized sun glasses may have trouble clearly reading a screen that is at a significantly different angle to the lenses.

Fitting with mounting clip



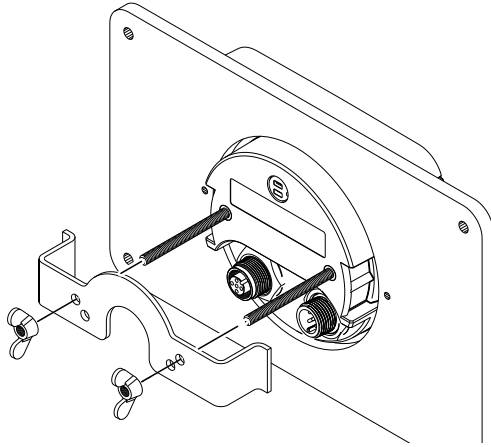
Use the template to cut the required size hole in the chosen location. At the same time mark the holes to be drilled for the fasteners. Take care to be as accurate as possible when cutting out the mounting hole - the mounting clip should be a close, but not tight fit in the hole. If the clip requires pressure to get in to position, there is a high chance it will distort, and not retain the display as well as intended.

Check that the clip lines up with the markings for the fastener mounting holes, then drill the holes. Fasten the mounting clip in place with the supplied screws.

The display can then be fitted by pressing into the mounting clip aperture - a positive 'click' should be felt when the display engages with the clip. Check that all four edges of the display make good contact with the mounting surface, and apply adequate compression to the gasket.

Fitting with retention bracket

The display may be mounted using only the mounting clip, or may be secured additionally with the retention bracket. In order to secure the bracket, adequate rear access must be available to fit the fasteners.



Before fitting the display in to the mounting position, firmly wind the threaded rods into the back of the display by hand.

Place the display in to position and fit the retention bracket, followed by washers and fasteners.

Multiple displays

If mounting displays in a row or column, ensure that enough space is left for the sun covers to clip on.

Even where the sun covers are not required, the correct spacing should be used, as the displays require 3.5 mm on each side when rotating for removal from the mounting clip.

The absolute minimum space that should be allowed for each display is:

- Width: 123 mm (4.84")
- Height: 120 mm (4.72")

Wiring

The IS40/Triton display can be connected to either an NMEA 2000 or SimNet network. There is no separate power cable, as the unit is powered from the network.

There are two Micro-C connectors on each display, allowing for daisy chaining, which greatly increases the ease of connecting multiple displays that are in close proximity, and can save in cable weight and loom size. Note this method is approved in SimNet networks, but not in NMEA 2000 networks.

Introduction to NMEA 2000 (SimNet)

NMEA 2000 is a combined electrical and data specification, and is based on CAN (Controller Area Network - SAE J1939) bus technology. NMEA 2000 permits exchange of data and commands between the interfaced products. NMEA 2000 stipulates the use of Micro-C and Mini-C hardware for the physical aspect of the network.

Most NMEA 2000 devices can be connected directly to the NMEA 2000 backbone and SimNet devices can be connected by using adapter cables.

Essential network information

- NMEA 2000 is a powered network. It must have a separate 12-15 V DC power supply protected by a 5 Amp fuse. Do not connect the NMEA 2000 power cable to the same terminals as the start batteries, Autopilot Computer, Radar, thruster or other high current products
- An NMEA 2000 network consists of a linear “backbone” from which “drop cables” connect to NMEA 2000 devices
- A single drop cable has a maximum length of 6 m (20 ft). The total length of all drop cables combined should not exceed 78 m (256 ft)
- An NMEA 2000 network has a maximum cable length of 100 m (328 ft), between any two points
- An NMEA 2000 network needs to have a terminator at each end of the backbone. A terminator can be one of the following:
 - a power cable with built in terminator
 - a terminated blanking plug
 - a wind transducer (terminator is in the mast head unit as opposed to mast cable).

- Certain products have two Micro-C or SimNet connectors, which can be made to be an in line component of the backbone. Connecting from device to device is known as ‘daisy chaining’ This network topology is not officially NMEA 2000 compliant.

Planning and installing a network backbone

Plan the backbone carefully.

The NMEA 2000 backbone needs to run between the locations of all products you want to install, typically in a bow to stern layout, and be no further than 6 m from a device to be connected.

Choose from the following components to make up your NMEA 2000 backbone:

- Micro-C cables: Available lengths from 0.4 m (1.3 ft) to 25 m (82.5 ft)
- Micro-C power cables with or without termination
- T-connector. Use at locations where you want to connect a device by drop cable
- Wind transducer. If using a wind sensor, plan to connect this to one end of the backbone as this has a terminator built in
- Micro-C male and Micro-C female to SimNet adaptor cables for connecting to existing SimNet bus, or adding devices fitted with a SimNet connector to a Micro-C network.

Power the network

An NMEA 2000 network requires its own 12 V DC power supply protected by a 5 amp fuse or breaker.

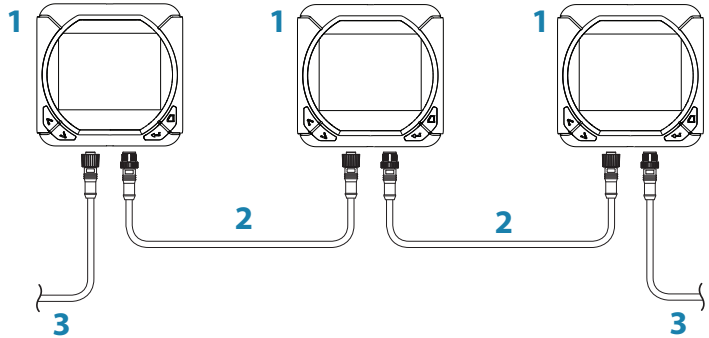
In smaller NMEA 2000 systems, the power connection may be made anywhere in the system,

For larger systems introduce power at a central point in the backbone to “balance” the voltage drop of the network. Use a power cable without termination.

- **Note:** When joining an NMEA 2000 network to a SimNet network, it is not necessary to introduce power to both.
- **Note:** Do not connect the power cable to the same terminals as the autopilot computer, pulse radar, bow thruster or other high current devices - the network may be affected by voltage drop when these devices are operated. Avoid connection to the engine starting batteries where possible.

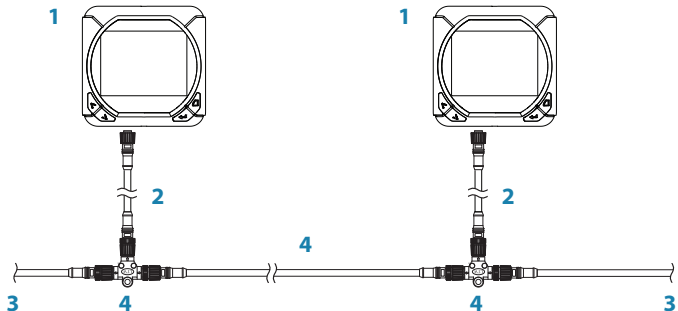
Daisy chaining the display

Where displays are located close together, the supplied interconnection cable may be used to link the displays in series. The daisy chain should form part of the backbone. It is not advisable to daisy chain devices off a drop cable.



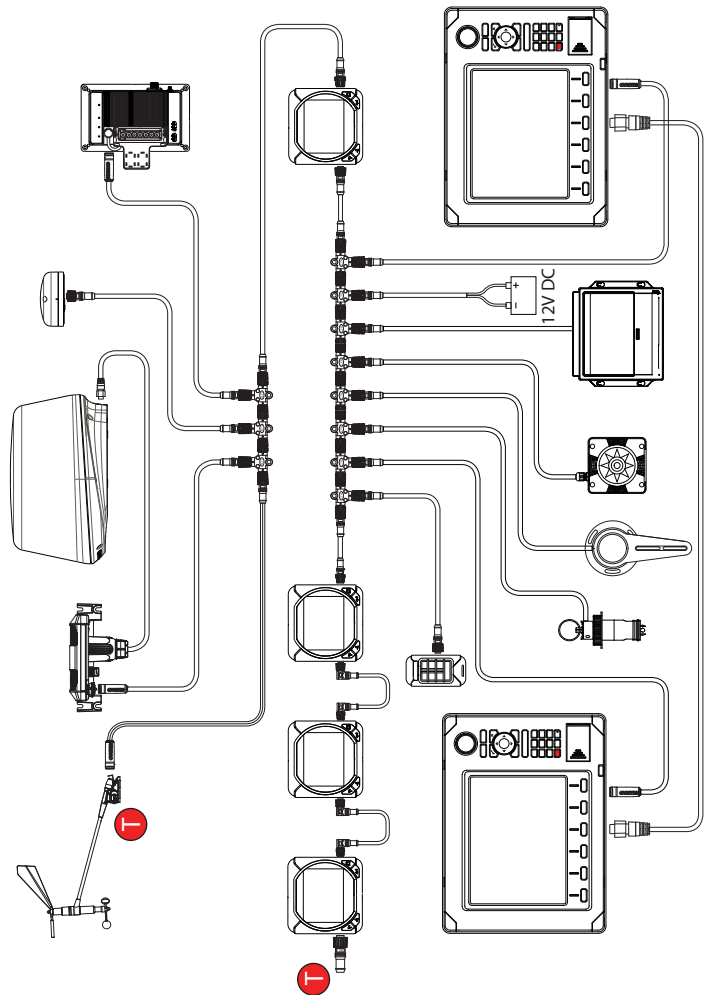
1. IS40/Triton Display
2. Interconnection cable 0.6 m (supplied)
3. NMEA 2000 / SimNet backbone

Drop cable connection of the display



1. IS40/Triton Display
 2. Drop cable
- **Note:** For SimNet backbone a SimNet to Micro-C adapter cable must be used (part no. 24005729)
3. NMEA 2000 backbone
 4. Micro-C T-connectors

Typical network example



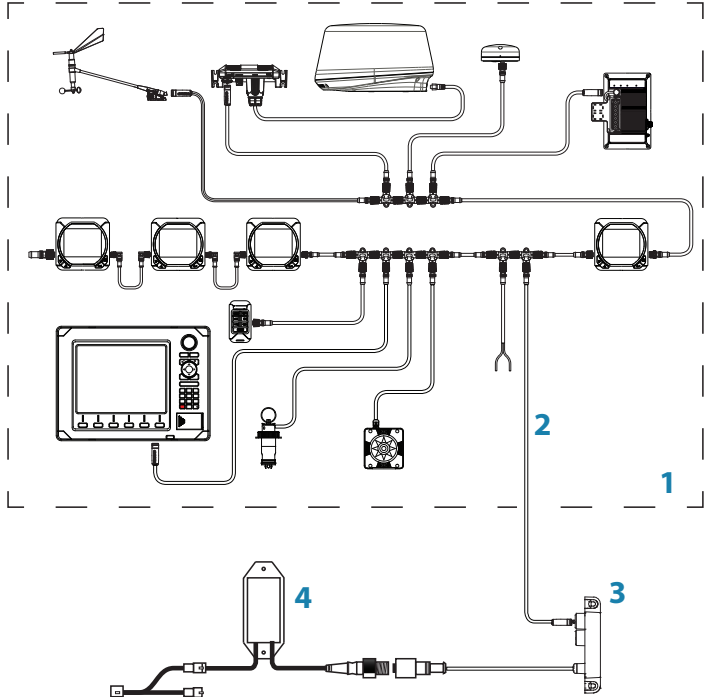
→ Notes:

- The backbone must be terminated at both ends. The wind sensor has a built-in terminator and can be used as one of the terminators
- Daisy-chaining, as shown in this illustration, is recommended for ease of installation. It will still be compatible with most NMEA 2000 devices but not fully comply with NMEA 2000 standard.

The SG05 EVC gateway

The SG05 is connected to the NMEA 2000 network in place of Autopilot computer. It connects to a Volvo Gateway for communication with Volvo's EVC system.

Note that rudder angle data is sourced from the EVC system and a separate rudder angle indicator is not required.



- 1 IS40/Triton system**
- 2 SimNet to Micro-C adapter cable**
- 3 SD05 SimNet - Volvo Gateway**
- 4 Volvo Gateway (p.no. 000-1-258-001)**

Troubleshooting

Issue	Solution
Unit does not power up	<ul style="list-style-type: none">• Check that the NMEA 2000/SimNet network has 12 V connected.• Try connecting to a different network cable in case power wires damaged internally.
Unit does not show data for a specific source	<ul style="list-style-type: none">• In the advanced setup menu, select sources, and manually select the required data source.• Check the network connection on the data source.
Unit does not show any data from any connected source or Unit data sources intermittently drop out.	<ul style="list-style-type: none">• In the advanced setup menu, select sources option, then select AUTO SELECT.• Check the Device List menu and see if any devices are detected.• Try connecting to a different network cable in case data wires damaged internally.• In the advanced setup menu, check the diagnostics page to see if any errors are occurring.• Check network topology and termination rules are correctly implemented.• Disconnect other devices from network, one-by-one, starting with 3rd party devices.

Spares & Accessories

Part Number	Description
000-10637-001	Wind sensor
000-10652-001	Wind sensor pack with 20 meter mast cable
000-10647-001	Wind sensor pack with 35 meter mast cable
000-10613-001	RC42N, Rate compass, micro-c
000-10614-001	Cable, micro-c, right angle interconnect
	Sun cover, display
24005729	SimNet cable to Micro-C. Adapter cable for SimNet products in an NMEA 2000 network

→ **Note:** New accessories are continuously being developed, check with your dealer or on the brand web sites www.bandg.com and www.simrad-yachting.com for details on new products.

Technical Specifications

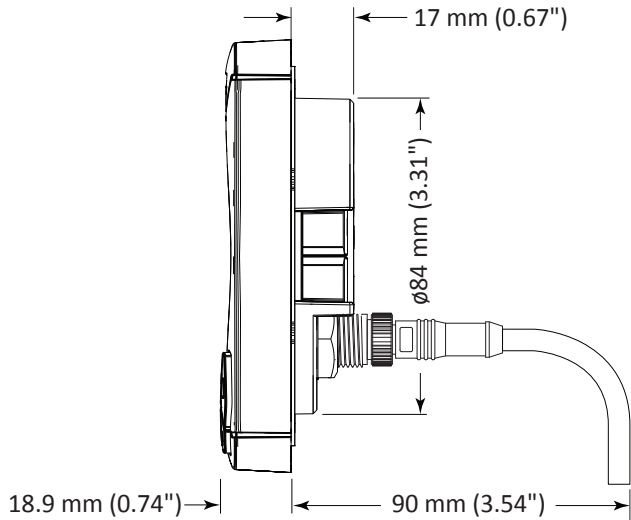
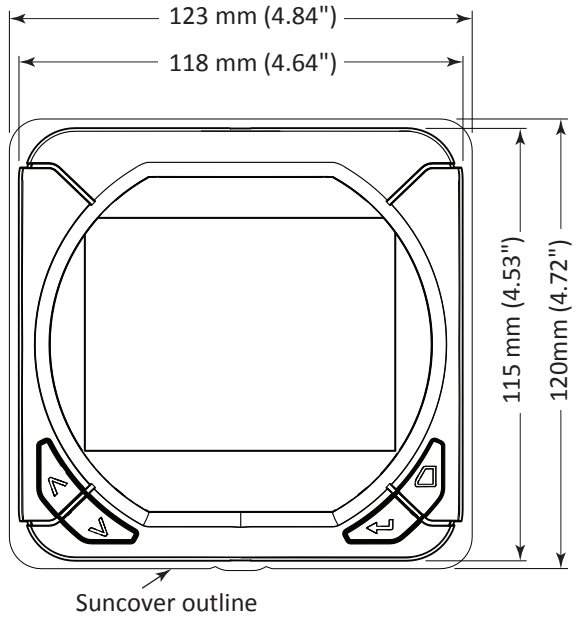
Display

For more technical details, refer to the brand web sites:
www.bandg.com and www.simrad-yachting.com

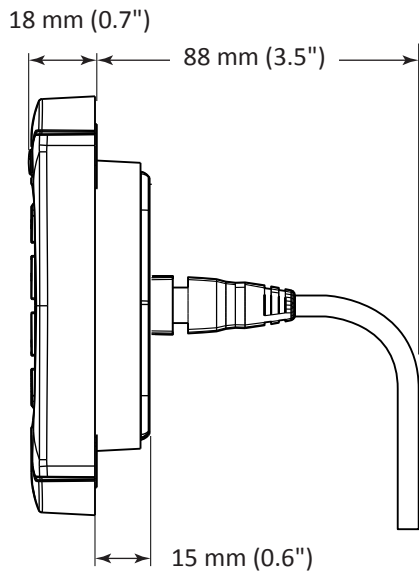
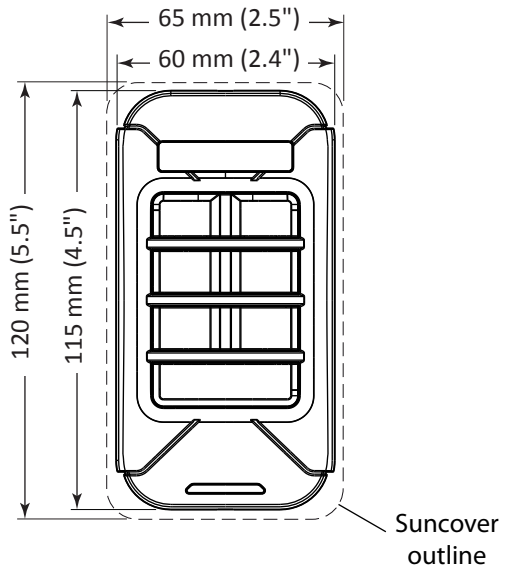
Weight	0.28 kg (0.6 lbs)
Power consumption	150 mA at 13.5 V
Network load	Maximum 10 displays
Colour	Black
Size	4.1" (Diagonal) 4:3 Aspect ratio
Type	Transmissive TFT-LCD White LED back-light
Resolution	320 x 240 pixels
Illumination	White (day mode) / Red (night mode)
Environmental Protection	IPX7
Safe distance to compass	0.3 m (1.0 ft.)
Temperature	
Operating	0 to +55 °C (+32 to +130 °F)
Storage	-30 to +70 °C (-22 to +158 °F)

Dimensional drawings

Display



Autopilot controller





SIMRAD

B&G