LOWRANCE

SIMRAD

B&G

Information Display
Installation Manual

ENGLISH

www.bandg.com
www.simrad-yachting.com
www.lowrance.com

Preface

As Navico is 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.

NAVICO HOLDING AS AND ITS SUBSIDIARIES, BRANCHES AND AFFILIATES DISCLAIM ALL LIABILITY FOR ANY USE OF THIS PRODUCT IN A WAY THAT MAY CAUSE ACCIDENTS, DAMAGE OR THAT MAY VIOLATE THE LAW.

Governing Language

This statement, any instruction manuals, user guides and other information relating to the product (Documentation) may be translated to, or has been translated from, another language (Translation). In the event of any conflict between any Translation of the Documentation, the English language version of the Documentation will be the official version of the Documentation. 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.

Copyright

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.lowrance.com

www.simrad-yachting.com

www.bandg.com

Compliance Statements

Europe

Navico declare under our sole responsibility that the product conforms with the requirements of:

- Integration hub: CE under RED 2014/53/EU
- Display module: CE under EMC Directive 2014/30/EU

The relevant declaration of conformity is available in the product's section at the following website:

www.lowrance.com

www.simrad-yachting.com

www.bandg.com

Countries of intended use in the EU

AT - Austria
BE - Belgium
BG - Bulgaria
CY - Cyprus
CZ - Czech Republic
DK - Denmark
EE - Estonia
FI - Finland
FR - France
DE - Germany
LI - Liechtenstein
LT - Lithuania
LU - Luxembourg
MT - Malta
NL - Netherlands
NO - Norway
PL - Poland
PT - Portugal
RO - Romania
SK - Slovak Republic

GR - Greece
HU - Hungary
IS - Iceland
IE - Ireland
IT - Italy
LV - Latvia
SI - Slovenia
ES - Spain
SE - Sweden
CH - Switzerland
TR - Turkey
UK - United Kingdom

United States of America

Navico declare under our sole responsibility that the product conforms with the requirements of:

Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

> ⚠ **Warning:** The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

➔ ***Note:*** This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that of the receiver
- Consult the dealer or an experienced technician for help

Industry Canada

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions: (1) This device may not cause interference; and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et. (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnemen.

Industry Canada Statement: Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée quivalente (p.i.r.e.) ne dépassepas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Australia and New Zealand

Navico declare under our sole responsibility that the product conforms with the requirements of:

- Level 2 devices of the Radiocommunications (Electromagnetic Compatibility) standard 2017
- Radiocommunications (Short Range Devices) Standards 2014

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Contents

1 Introduction

About this manual

This manual is a reference guide for installing the Information Display system.

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

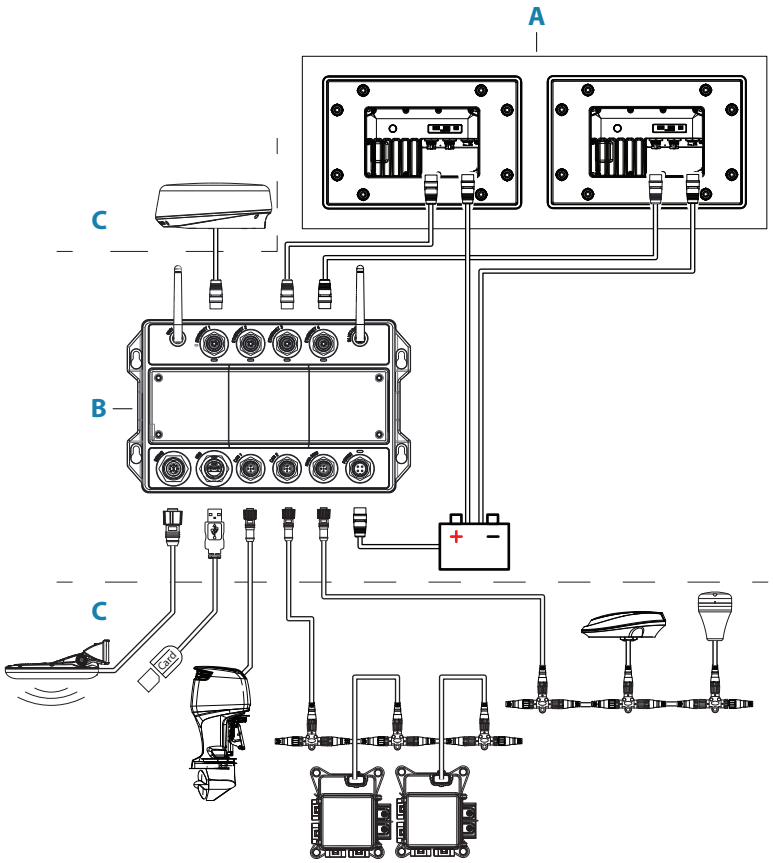
➔ ***Note:*** Used to draw the reader's attention to a comment or some important information.

> ⚠ **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.

Information Display system

The Information Display system consists of:

- Bonded glass smart display (Information Display)
  Single or multiple Smart Displays bonded to a single glass.
- Integration Hub
  The hub allows for connecting various vessel equipment to the Information Display System.



A Information Display
B Integration Hub
C Accessories and optional equipment

2 Mounting

Mounting guidelines

Choose the mounting location carefully, ensuring there are no hidden electrical wires or other parts behind the panel before you drill or cut. Ensure that any holes cut are in a safe position and will not weaken the boat's structure.

Do not:

- Mount any part where it can be used as a hand hold
- Mount any part where it might be submerged
- Mount any part where it will interfere with the operation, launching, or retrieving of the boat

Do:

- Test the WiFi and Bluetooth performance, and try to locate a good position for best reception. Metal and carbon materials are known to impact the performance in a negative way

→ ***Note:*** The WiFi and Bluetooth antennas must be mounted on the Integration Hub.

- Leave sufficient clearance to connect all relevant cables
- Check that it is possible to route cables to the intended mounting location
- Ensure adequate separation between products that generate heat
- Ensure that the equipment is accessible after installation. Install service panels if needed

→ ***Note:*** Enclosures should be dry and well ventilated. In small enclosures, it may be required to fit forced cooling.

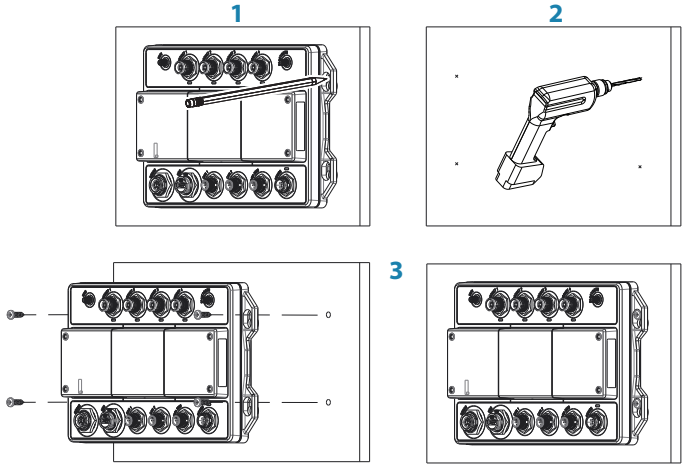
→ ***Note:*** White materials will be around 8°C (14°F) cooler than black materials in direct sunlight.

> ⚠ **Warning:** Inadequate ventilation and subsequent overheating of the unit may cause unreliable operation and reduced service life. Exposing the unit to conditions that exceeds the specifications could invalidate your warranty. Refer to the "Technical specifications" on page 23.

Integration Hub mounting

The Integration Hub should be mounted using four screws with a maximum thread diameter of 6.0 mm (0.23").

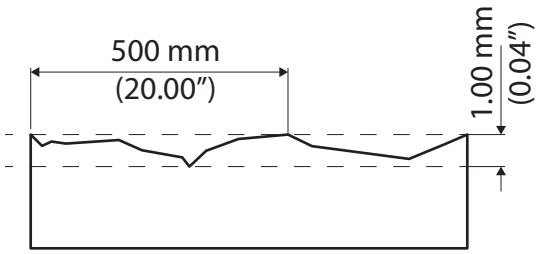
1. Use the Integration Hub as a template and mark the position of the screw holes.
2. Drill pilot holes suitable for the material and screws.
3. Secure the Integration Hub and gently tighten the screws.



Information Display mounting

Dash flatness

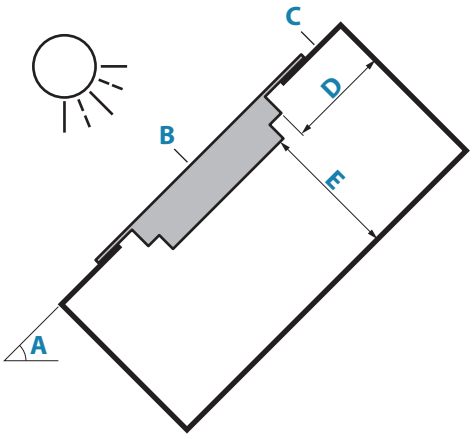
The surface the Information Display attaches to must be flat, with no more than 1 mm (0.04″) deviation from a theoretical flat plane over a distance of 500 mm (20″). This is to avoid the glass and LCDs being distorted when installed into vessel.



Thermal considerations

Ensure that the general mounting guidelines are followed. Additionally, the following should also be taken into consideration when mounting the Information Display.

- Ensure reasonable airspace around the Information Display, minimum 150 mm (5.91″) at rear (**E**) and 75 mm (2.95″) at top/bottom/sides (**D**) is recommended
- If the Information Display is mounted in an angle (**A**) of less than 45°, ensure that the air temperature inside the enclosure does not exceed 35°C (95°F) with no air flow, or 45°C (113°F) with forced airflow (minimum air velocity across the back of the unit 1 m/s (3.3 ftps))



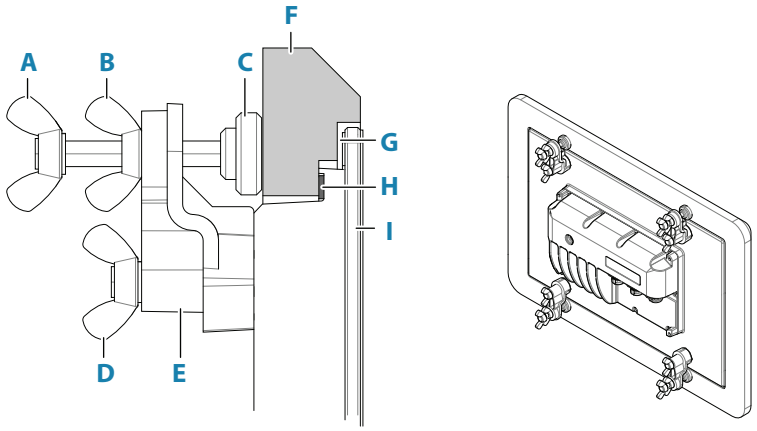
A Installation angle
B Information Display
C Dashboard enclosure
D 75 mm (2.95″) minimum free space to top, bottom and sides
E 150 mm (5.91″) minimum free space at the rear

Mounting methods

Three mounting methods are available.

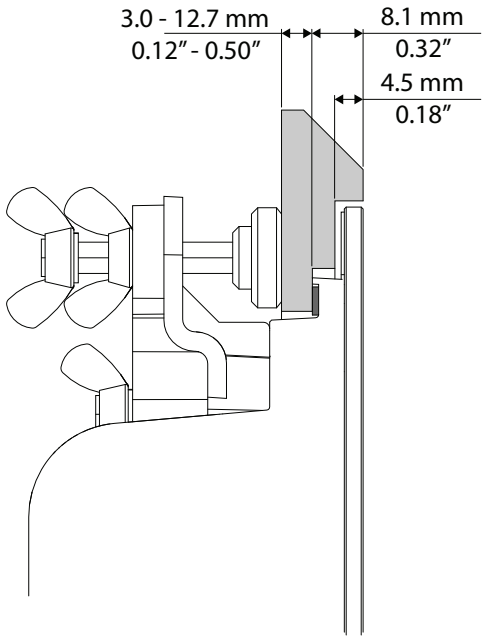
Dash bracket mount

Clamping force must only be applied to the Information Display enclosure. After installed, there should be a small gap (**G**) between the dash and the Information Display glass.

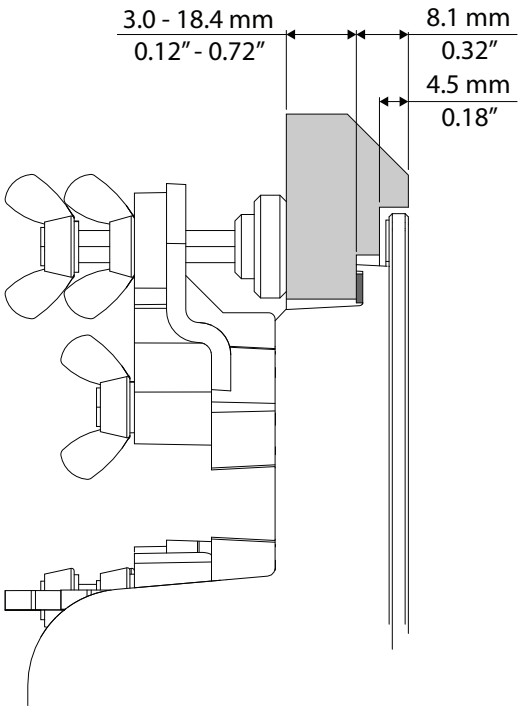


A Wing screw to fix Information Display to the dash
B Wing nut to lock and prevent from loosening
C Bracket foot
D Wing screw to fix the bracket on the Smart Display module
E Bracket body
F Boat bulkhead/dash
G Gap between Information Display glass and dash
H Foam seal
I Information Display glass and Smart Display module(s)

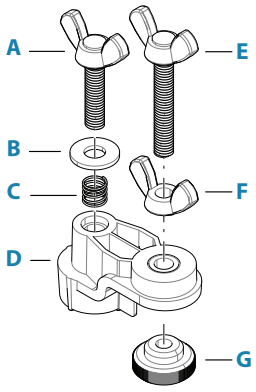
9" display dash steps



12″ display dash steps



Bracket assembly



A Wing screw to fix the bracket to the Smart Display module

B Flat washer

C Spring to keep the bracket body from rotating during installation of the Information Display

D Bracket body

E Wing screw to fix the Information Display to the dash (two screws are supplied to cover the dash thickness range specified in the mounting illustrations)

F Wing nut to lock and prevent from loosening

G Bracket foot

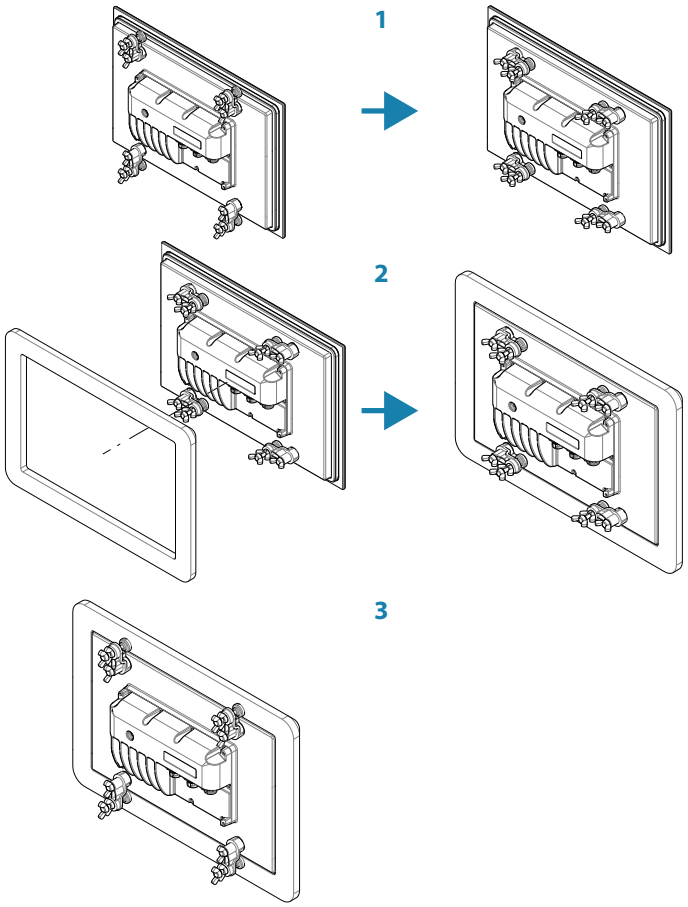
Installation

→ ***Note:*** The 12″ Smart Display is shipped with 4 brackets. It is recommended to install one bracket in each corner of the Smart Display module.

1 Partially loosen the wing screws that secure the brackets to the Smart Display module and rotate the brackets inwards.

2 Insert the Information Display in the dash pocket cutout(s).

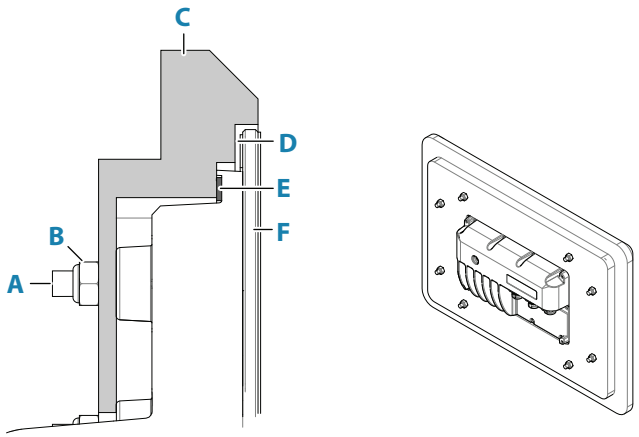
3 Rotate the brackets outwards and tighten the wing screws that secure the brackets to the Smart Display module. Tighten all wing screws and wing nuts.



→ ***Note:*** If the Information Display(s) has to be removed, make sure to support the glass both from the back and the front while removing the glass.

Dash pocket-frame mount

Clamping force must only be applied to the Information Display enclosure. After installation, there should be a small gap (**D**) between the dash and the Information Display glass.

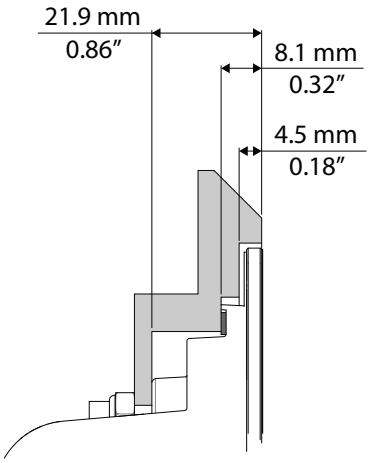


A M5 threaded rod
B M5 nut/locking nut
C Boat bulkhead/dash
D Gap between Information Display glass and dash

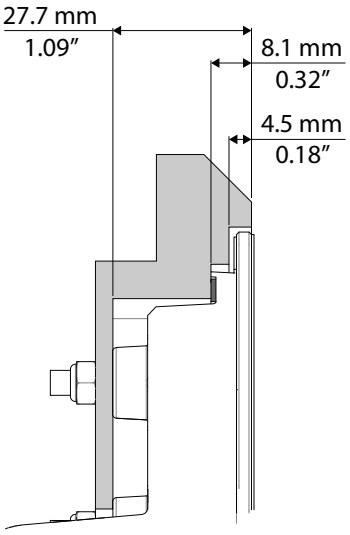
E Foam seal

F Information Display glass and Smart Display module(s)

9″ display dash steps

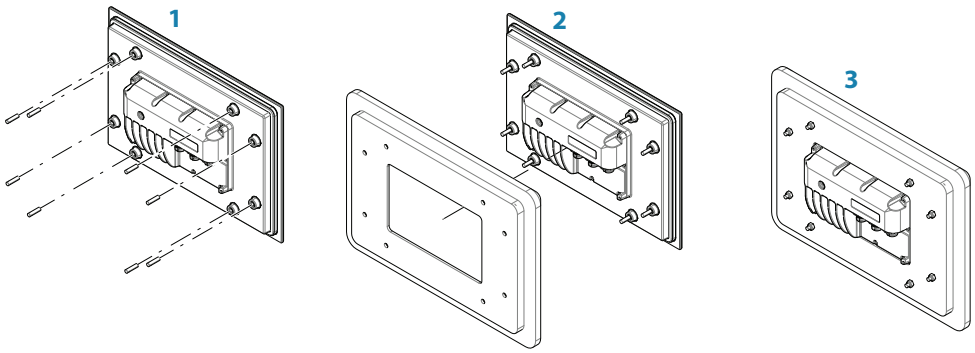


12″ display dash steps



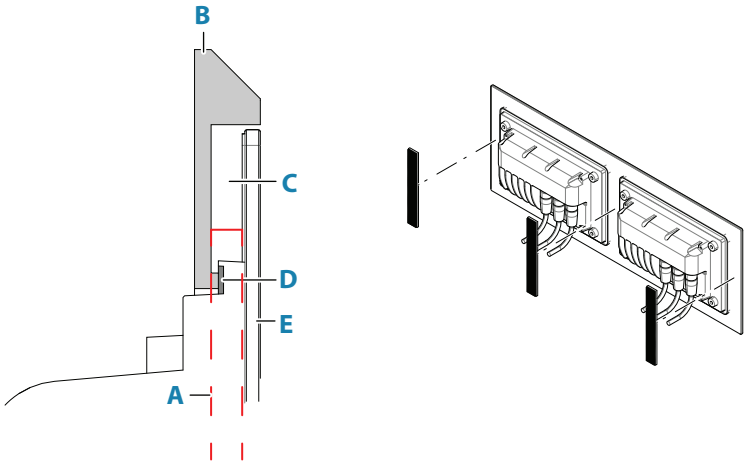
Installation

1. Install M5 stud bolts to the Smart Display module(s), use thread lock to secure the stud bolt.
2. Pass the Information Display into the dash pocket cutout(s).
3. Attach M5 nuts to the stud bolts, use nylock nuts. Secure the Information Display by tighten the nuts.



➔ ***Note:*** If the Information DIsplay(s) has to be removed, make sure to support the glass both from the back and the front while removing the glass.

Dual-Lock



A Dual-Lock strips
B Boat bulkhead/dash
C Gap between Information Display glass and dash
D Foam seal
E Information Display glass and Smart Display module(s)

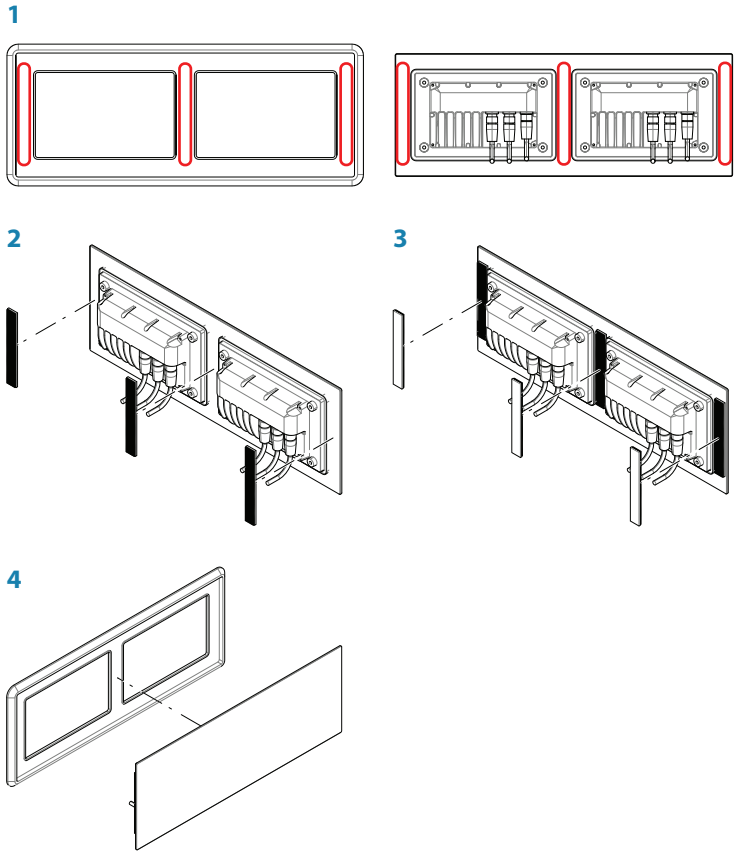
Required Dual-Lock strips

Configuration	Number of strips SJ3560 / SJ3562	Width of the strips		Length of the strips	
		mm	inches	mm	inches
Single 9″	2 / 2	19	3/4	140.0	5.5
Single 12″				165.0	6.5
Dual 9″	3 / 3			140.0	5.5
Dual 12″				219.0	8.6

➔ ***Note:*** The Information Display will need to have enough glass overhang to place the Dual-Lock strips. Standard single 9″ and Standard single 12″ units do not meet with this requirement.

Installation

1. Apply PRIMER 94 to both the rear of the glass and the front of the dash. Allow to dry for five minutes.
2. Remove the protective film and attach the Dual-Lock J3560 strips to the reverse side of the glass.
3. Place the Dual-Lock J3562 strips over the already attached strips of J3560 without removing the protective film (this is to ensure Dual-Lock stripes alignment between glass and dash).
4. Remove the protective film and place the complete assembly into the dash.



→ ***Note:*** The Information Display can be removed from dash by pulling out the glass from the top or bottom side. Support the glass both from the back and the front while removing the glass.

Sun cover

It is recommended the Information Display is protected from the sun when the unit is not in use. Sun covers are not supplied by Navico.

3 Wiring

Wiring guidelines

Do not:

- Make sharp bends in the cables
- Run cables in a way that allows water to flow down into the connectors
- Run the data cables adjacent to radar, transmitter, or large/high current carrying cables or high frequency signal cables
- Run cables so they interfere with mechanical systems
- Run cables over sharp edges or burrs

Do:

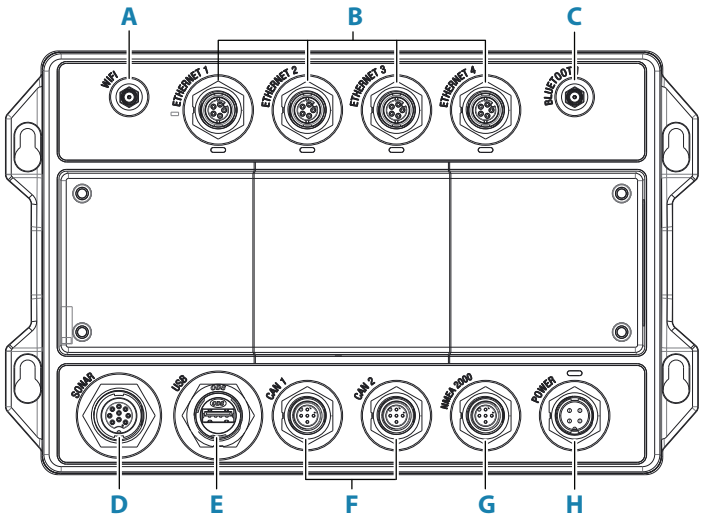
- Make drip and service loops
- Use cable-ties on all cables to keep them secure
- Solder/crimp and insulate all wiring connections if extending or shortening the cables. Extending cables should be done with suitable crimp connectors or solder and heat shrink Keep joins as high as possible to minimize possibility of water immersion
- Leave room adjacent to connectors to ease plugging and unplugging of cables

> ⚠ **Warning:** Before starting the installation, be sure to turn electrical power off. If power is left on or turned on during the installation, fire, electrical shock, or other serious injury may occur. Be sure that the voltage of the power supply is compatible with the connected equipment.

> ⚠ **Warning:** The positive supply wire (red) should always be connected to (+) DC with a fuse or a circuit breaker (closest available to fuse rating).

Integration Hub

Connector overview



A WIFI

SMA connector

B Ethernet 1-4

Navico 5-pin Ethernet connector

C Bluetooth

SMA connector

D Sonar

9-pin sonar connector

E USB

USB-A connector

F Can 1-2

Micro-C connector

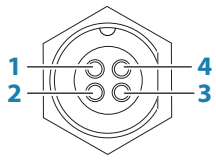
G NMEA 2000

Micro-C connector

H Power

4-pin power connector

Power and external alarm



Pin	Purpose
1	DC negative
2	External alarm
3	Power control
4	+ 12/24 V DC

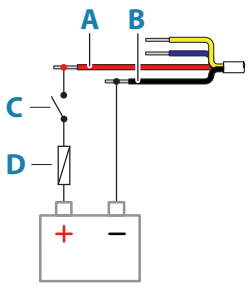
Power connection

The Integration Hub will automatically switch on when power is applied. Therefore, it is recommended a dedicated switch is used to control the power supply to the unit.

The Integration Hub is designed to be powered by a 12 or 24 V DC system.

It is protected against reverse polarity, under voltage and over voltage (for a limited duration).

A fuse or circuit breaker should be fitted to the positive supply. For recommended fuse rating, refer to "Technical specifications" on page 23.



A +12/24 V DC (red)

B DC negative

C Power switch

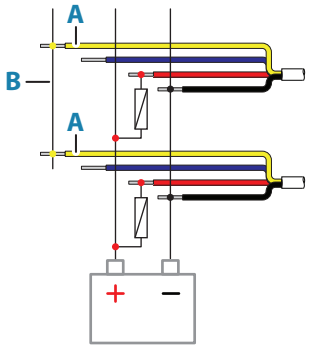
D Fuse

Power control wiring

The power control wire of the Integration Hub can be used to turn on display modules and/or other connected equipment.

The Integration Hub is a power master and will output voltage on the power control wire

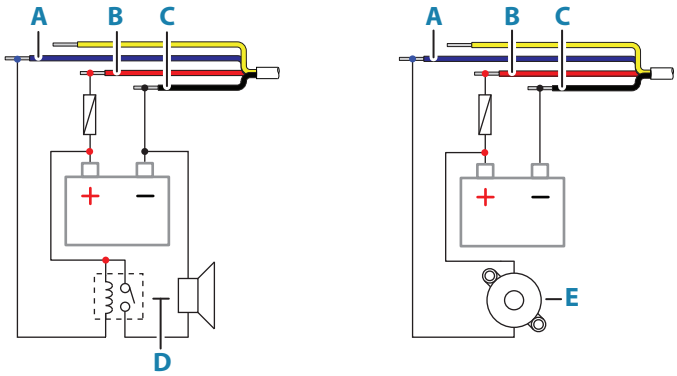
when the Integration Hub is on. This will power on both other power master units and power slave units. If a unit is set to power control slave, it cannot be powered down using its own power key while a power control master unit is turned on. Pressing the power key will set the unit to standby. If all power control masters are off, power control slaves can be turned on using their own power key. This however will not turn on any other units connected to the power bus.



Key	Purpose	Color
A	Power control wire	Yellow
B	Master slave bus	

External alarm

For sirens that draw more than 1 A, use a relay.



- **A** External alarm wire (blue)
- **B** + 12/24 V DC (red)
- **C** DC negative (black)
- **D** Siren and relay
- **E** Buzzer

Sonar

Supports:

- Sonar / CHIRP Sonar
- DownScan
- SideScan
- Active Imaging/Active Imaging 3-in-1/TotalScan/StructureScan

→ ***Note:*** A 7-pin transducer cable can be connected to a 9-pin port using a 7-pin to 9-pin adaptor cable. However, if the transducer has a paddle wheel speed sensor, the water-speed data will not be Displayed on the unit.

Ethernet

Connection of network devices can be made directly to one of the Ethernet ports, or via a network expansion device connected to an Ethernet port.

The Ethernet ports can be used for transfer of data and synchronization of user created data. It is recommended that each unit in the system is connected to the Ethernet network.

The Ethernet ports are also used to connect the Smart Display(s), refer to "Smart Display module" on page 20.

USB

The USB port is used to connect to an MI-10 for Charting, or to connect an external storage device.

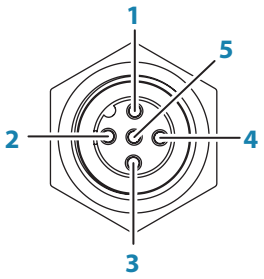
→ ***Note:*** USB cable length should not exceed 5 m when using regular cables. Lengths over 5 m may be possible with the use of an active USB cable.

CAN 1-2

CAN 1 is configurable for J1939 engine interface. CAN 2 is configurable for Naviop digital switching.

J1939 (CAN 1)

The CAN 1 port is configured for J1939 engine interface. For information about connecting an engine to the J1939 interface refer to the documentation supplied by the engine manufacturer. Adapter cables for various engine manufacturers are available as accessories.



Pin	Purpose
1	Shield
2	Not used
3	CAN GND
4	NET-H
5	NET-L

Digital switching (CAN 2)

The CAN2 port is configured for Naviop digital switching. The port can be directly connected to a Naviop CAN network. No additional protocol converter is needed.

NMEA 2000

The NMEA 2000 data port allows receiving and sharing of a multitude of data from various sources.

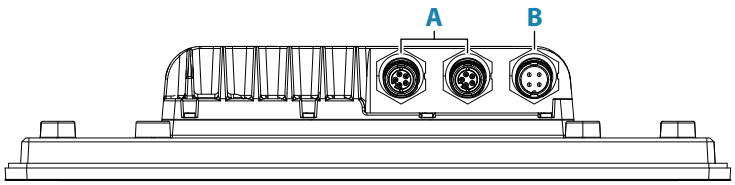
WiFi and Bluetooth

The SMA connector on the Integration Hub is used for connecting the supplied dipole antennas.

→ ***Note:*** Both supplied WiFi and Bluetooth antennas must be installed at all times.

Smart Display module

Connector overview



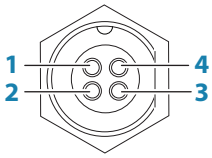
A Ethernet

Navico 5-pin Ethernet connector

B Power

4-pin power connector

Power



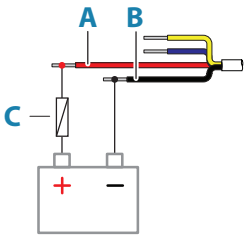
Pin	Purpose
1	DC negative
2	Not used
3	Power control
4	+ 12 V DC

Power connection

The unit is designed to be powered by a 12 V DC system.

It is protected against reverse polarity, under voltage and over voltage (for a limited duration).

A fuse or circuit breaker should be fitted to the positive supply. For recommended fuse rating, refer to "Technical specifications" on page 23.



A +12 V DC (red)

B DC negative

C Fuse

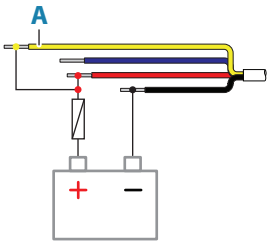
Power control wiring

The power control wire of the Display module is used to turn the module on and off. The Display module is a power slave and cannot control other units.

Power control by supply power

The unit will turn on/off when power is applied/removed.

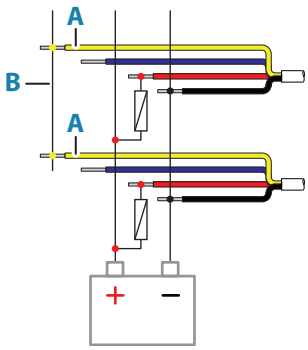
Connect the yellow wire to the red wire after the fuse. A switch can be added for manual control.



Key	Purpose	Color
A	Power control wire connected to supply power	Yellow

Power controlled by the Integration Hub

The Display module is a power slave and can be controlled by the Integration Hub. To turn on the Display module when the Information hub is powered, connect the power control wires of the Integration Hub and the Display module(s) to the same master slave bus.



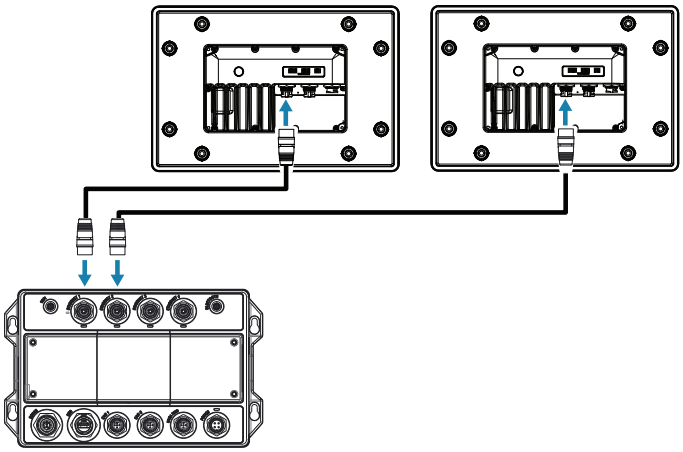
Key	Purpose	Color
A	Power control wire	Yellow
B	Master slave bus	

Ethernet

The Ethernet ports is used to connect the display(s) to the Integration Hub.

Navico 5-pin Ethernet cables should be used. The Integration Hub supports up to 6 Smart Display modules.

Display Daisy chain directly connected



4 Technical specifications

System specifications

Operating temperature harsh (IEC 60945)	-25°C to +65°C (-13°F to 149°F)
Storage temperature harsh (IEC 60945)	-40°C to +85°C (-40°F to 185°F)
Thermal shock harsh	-20°C and +70°C (-4°F to 158°F)
Damp heat (IEC 60945)	+40°C (104°F), 93% RH
Relative humidity	+66°C (151°F), 95% RH
Shock/Thump	Thump test, 20G, 2 axis
Vibration	3 axis, SINE + Random
UV	UV Harsh test 1000 hrs
Waterproofing / Water ingress	IPx6 / IPx7

Integration Hub

Electrical	
Operating voltage	10.4 - 31.2 V DC
Standby current	450 mA at 13.7 V DC (no sonar running, 1 x NMEA 2000, 1 x Ethernet)
Connectors	
Power	1 x 4-pin (Power), black
Ethernet	4 x 5-pin (Ethernet), yellow
CAN (NMEA 2000 / J1939)	3 x 5-pin (M12 Micro-C), black
Bluetooth	1 x SMA-RP
WiFi	1 x SMA-RP
USB	1 x USB-A
Sonar	1 x 9-pin

9" Smart Display module

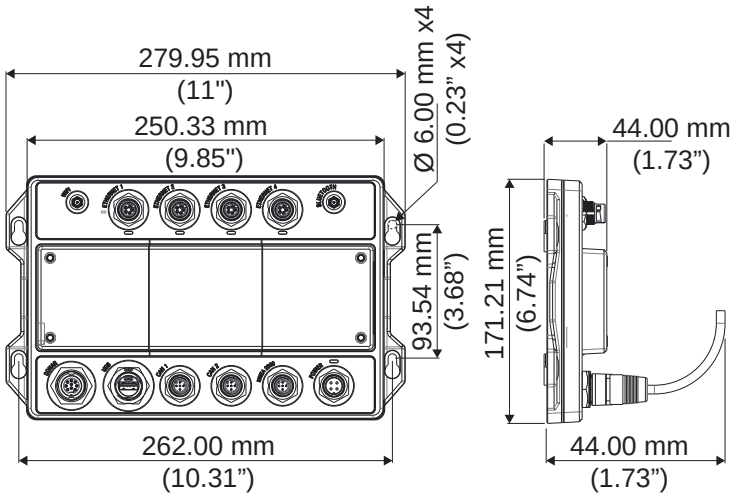
Electrical	
Operating voltage	10.4 - 16.0 V DC
Operating current	380 mA at 13.7 V DC (80% brightness)
Standby current	295 mA at 13.7 V DC
Display	
LCD Technology	TN
Backlight technology	LED (white)
Connectors	
Power	1 x 4-pin (Power), black
Ethernet	2 x 5-pin (Ethernet), yellow
Glass safety (ABYC-H3 standards)	Safety lamination layer on rear

12” Smart Display module

Electrical	
Operating voltage	10.4 - 16.0 V DC
Operating current	600 mA at 13.7 V DC (80% brightness)
Standby current	440 mA at 13.7 V DC
Display	
LCD Technology	IPS
Backlight technology	LED (white)
Connectors	
Power	1 x 4-pin (Power), black
Ethernet	2 x 5-pin (Ethernet), yellow
Glass safety (ABYC-H3 standards)	Safety lamination layer on rear

5 Dimensional drawings

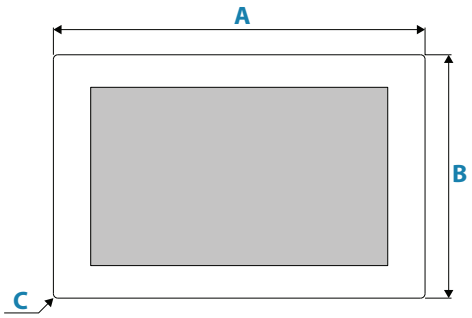
Integration Hub

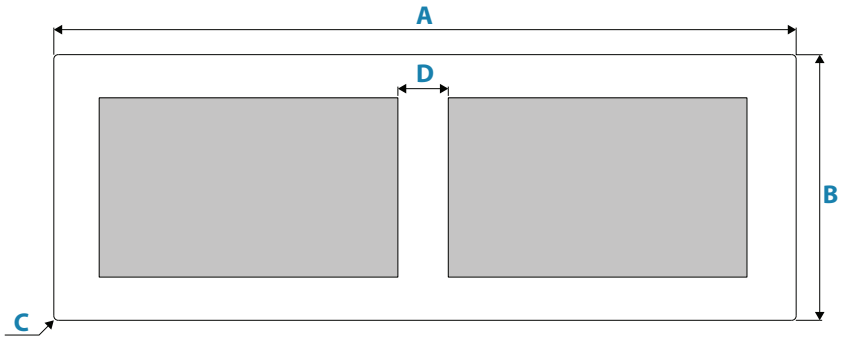


➔ ***Note:*** The Integration Hub is shown without the Bluetooth and WiFi antennas attached.

Information Display standard glass

Configuration	A		B		C		D	
	mm	inch	mm	inch	mm	inch	mm	inch
Single 9″	252	9.92	265	6.50	3.0	0.12	N/A	N/A
Single 12″	322	12.68	220	8.66				
Dual 9″	548.5	21.58	199.5	7.83			63.5	2.50
Dual 12″	686	27.01	254.5	10.02			68.9	2.71





A Width
B Height
C Corner radius
D Gap between LCD visual/active area

→ ***Note:*** For customized glasses refer to separate documentation.

988-12387-001

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