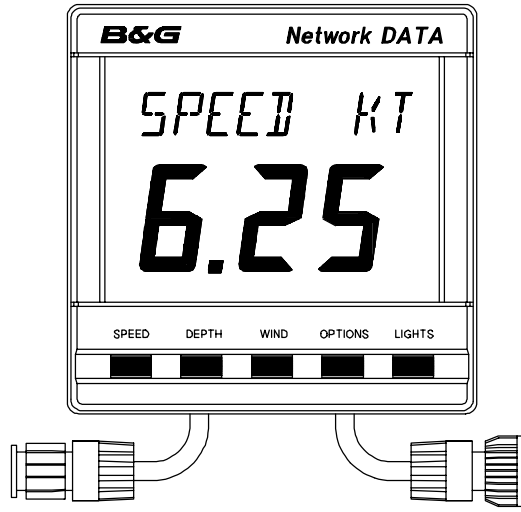
# Overview




## General Introduction To The B&G Network

The B&G Network range of instruments is designed to be used as individual units or connected together to form an integrated navigational system. A single network cable is used to carry data and power between units. The latest technology and screened cables throughout the Network System ensure the ultimate protection from interference between units and other systems. All Network instruments can be linked to Network PILOT, Network CHART, Network GPS or Network LORAN receivers or via NMEA 0183 (v1.5) to other navigational equipment.

| INSTRUMENTS | NAVIGATIONAL AIDS |
|---|---|
| Network SPEED | Network GPS |
| Network DEPTH | Network LORAN |
| Network QUAD | Network NAV |
| Network WIND | Network CHART |
| Network TACK | |
| Network DATA | |
| AUTOPILOTS | COMMUNICATIONS |
| Network PILOT | Network VHF |

# Introduction to the Network Data

The Network DATA unit is a repeater of available networked information supplied from other Network Instruments via the system network. The information is presented on a large back-lit Liquid Crystal Display (LCD).

It has no sensor interfaces as all data is passed to the unit via the system network cables. The unit is capable of transmitting NMEA 0183 v1.5 data via the network cables. The Network DATA unit has its' own internal buzzer that sounds when an alarm condition is met and received via the system network from other Network units. The row of five keys are used for selecting the displayed information when the appropriate unit and its sensor is connected to the Network DATA unit.

| | |
|---|---|
| • **SPEED** | Current, maximum and average speed |
| • **DEPTH** | Water depth and depth alarms |
| • **WIND** | Apparent wind speed and angle, True wind speed and angle, VMG. |
| • **OPTIONS** | Heading, DR distance, DR course, Temperature, Timers, Battery Volts. |
| • **LIGHTS** | Three levels of illumination and off. |

# Certification

CE

# Trademarks



Information in this document is subject to change without notice. B&G reserves the right to change or improve its products and to make changes in the content without obligation to notify any person or organisation of such changes.

# Warnings & Precautions:

The GPS system is operated by the United States government, which is solely responsible for its accuracy & maintenance. The system is subject to changes that could affect the accuracy and performance of all GPS equipment. Although the B&G *Network Compass* is a precision electronic NAVigation AID (NAVAID), any NAVAID can be misused or misinterpreted and, therefore, become unsafe.

Use the *Network Compass* at your own risk. To reduce the risk of unsafe operation, carefully review and understand all aspects of this Owner's Manual – and thoroughly practice operation using the simulator mode prior to actual use. When in actual use, carefully compare indications from the *Network Compass* to all available navigation resources, including the information from other NAVAIDs, visual sightings, charts, etc. For safety, always resolve any discrepancies before continuing navigation.

**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 interference will not occur in a particular installation. If this equipment does cause harmful interference, the user is encouraged to try to correct the interference by relocating the equipment or connecting the equipment to a different circuit. Consult an authorised dealer or other qualified technician for additional help if these remedies do not correct the problem.

This device meets requirements for CFR47 Part 15 of the FCC limits for Class B equipment.

The *Network Compass* meets the standards set out in European Standard EN 60945: 1997 IEC 945 : 1996 for maritime navigation and radiocommunication equipment and systems .

The *Network Compass* contains no user-serviceable parts. Repairs should only be made by an authorised service centre. Unauthorised repairs or modifications will void your warranty.

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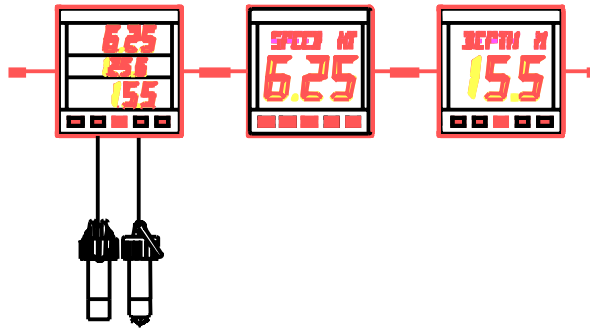
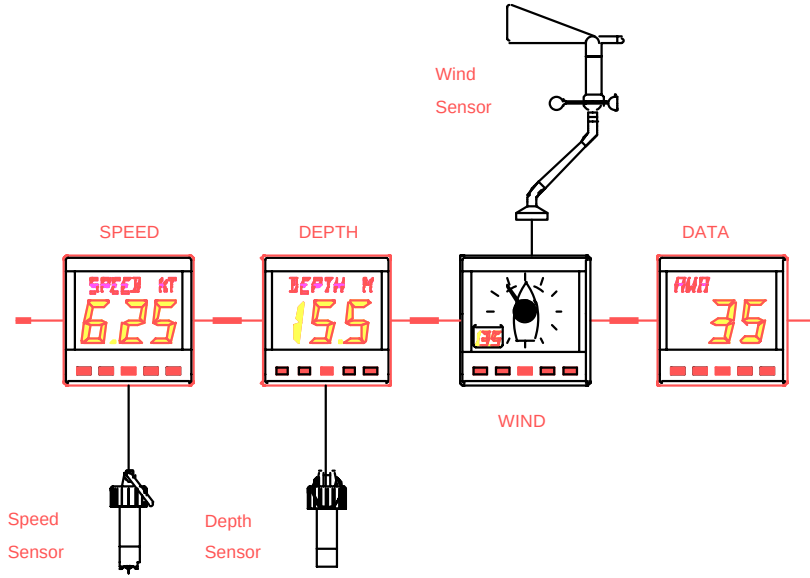
# Example systems using the network compass

Network QUAD main unit with DATA unit repeaters for depth and speed functions.

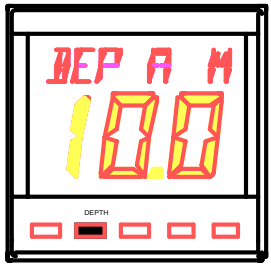



Network SPEED, DEPTH and WIND main units with DATA repeater for all functions.

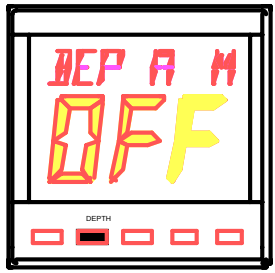



Up to a maximum of four Network DATA units maybe used in an integrated Network Instrument System, where the total number of units does not exceed twenty.

# Alarms and the network data unit



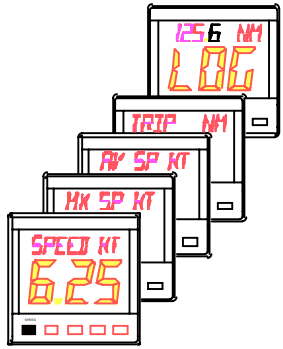

The Network DATA unit can display the depth alarm information that has been set on either Network DEPTH or Network QUAD units. It is NOT able to change the alarm values or enable/disable them. The Network DATA unit has its' own internal alarm buzzer that will sound when an alarm condition is met and transmitted over the entire Network System. It is silenced by pressing any of the five keys, in the lowest row, on any Network display unit.



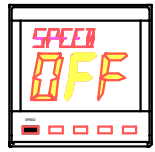

The Network DATA unit can display the alarm value that has been set or **OFF** if it is not enabled. The following are examples of a depth alarm displays.

See USING THE DEPTH KEY for all the available alarm displays.

# Using the speed key




Press the **SPEED** key to cycle through the speed options.



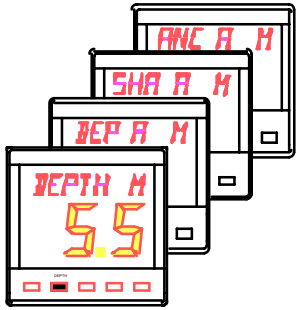

If there is no speed data the Network DATA unit will display **OFF** when the **SPEED** key is pressed.

The speed information is only displayed when the Network DATA unit is connected to a Network QUAD or Network SPEED unit. The units in which the speed and log information is display is set on the main display unit.

When speed data is available the following can be displayed:

- **SPEED KT** Boat speed in Knots **KT** or MPH **MH**.
- **MX SP KT** Maximum boat speed since the last reset of the trip log.
- **AV SP KT** Average boat speed since the last reset of the trip log.
- **TRIP NM** The trip log value in Nautical Miles **NM** or Statute Miles **M**.
- **LOG NM** The stored log in Nautical Miles **NM** or Statute Miles **M**.

# Using the depth key




Press the **DEPTH** key to cycle through the depth options.

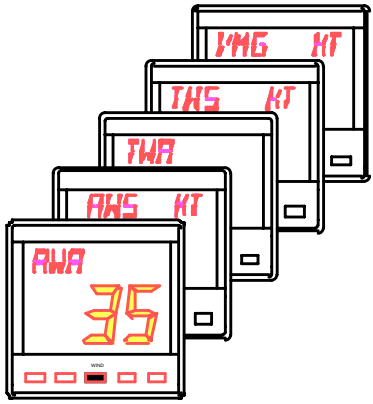

If there is no depth data the Network DATA unit will display **OFF** when the **DEPTH** key is pressed.

The depth information is only displayed when the Network DATA unit is connected to a Network QUAD or Network DEPTH unit. The depth units and the alarm values are set on the main unit.

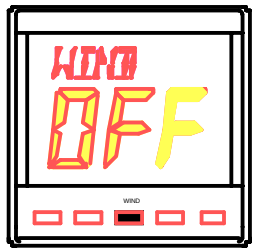
When depth data is available the following can be displayed:

- **DEPTH M** Water depth in metres **M**, feet **FT**, fathoms **FA**.
- **DEP A M** Deep water alarm. The display will show the value or **OFF**.
- **SHA A M** Shallow water alarm. The display will show the value or **OFF**
- **ANC A M** Anchor watch alarm. The display will show the values alternatively or **OFF**.

# Using the wind key




Press the **WIND** key to cycle through the wind options.




If there is no wind data the Network DATA unit will display **OFF** when the **WIND** key is pressed.

Apparent wind functions are displayed when Network DATA unit is connected to a Network WIND unit, true wind and VMG also require a Network SPEED unit.

When wind and speed data is available the following can be displayed:

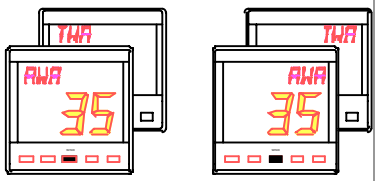
**AWA** Apparent wind angle in degrees.

**AWS KT** Apparent wind speed in knots **KT**.

**TWA** True wind angle in degrees.

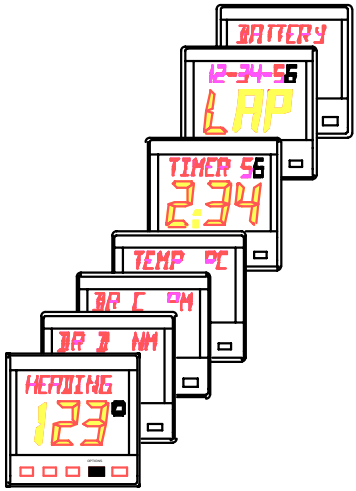
**TWS KT** True wind speed in knots **KT**.

**VMG KT** Velocity Made Good in knots **KT**.

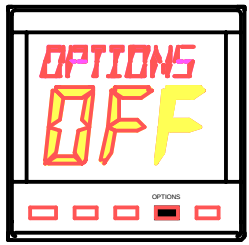



**AWA** and **TWA** are indicated to Port or to Starboard by the position of the displayed legend.

# Using the option key




Press the **OPTIONS** key to cycle through the options.




If there is no data available the Network DATA unit will display **OFF** when the **OPTIONS** key is pressed.

The information is only displayed when the Network DATA unit is connected to Network PILOT and Network SPEED or Network QUAD units.

When connected to the appropriate units the following can be displayed:

**HEADING** Compass heading supplied from Network PILOT's internal fluxgate compass.

**DR D NM** Dead Reckoned Distance in **NM** or **M**.

**DR C $^{0}$M** Dead Reckoned Course in degrees Magnetic **M**.

**TEMP $^{0}$C** Sea water temperature in degrees Celsius **C** or Fahrenheit **F**.

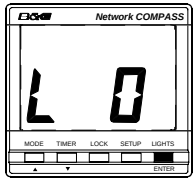
**TIMER** Timer, Hours and Minutes in large digits, Seconds in small digits.

**LAP** Lap timer, reset on main unit.

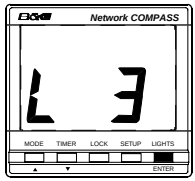
**BATTERY** Battery volts.

# Setting the display backlighting

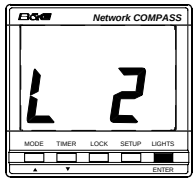
The Network DATA Display unit has 3 levels of illumination and off, controlled by the **LIGHTS** key.



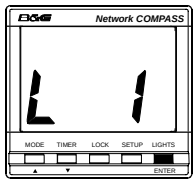

- *L 0* OFF




- *L 3* High




- *L 2* Medium




- *L 1* Low

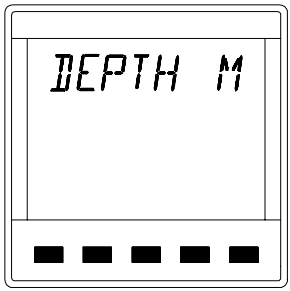
It also changes the illumination level of the key legends.

The **LIGHTS** key is always illuminated so even in complete darkness the key can be located.

# Network Alarms

The Network DATA unit has an internal buzzer that will sound when an alarm condition is met on a Network unit that has alarm functions ie. Network DEPTH and Network QUAD for depth alarms and Network PILOT for Watch Alarm and Off Course alarms. The unit will also display which alarm is activated.

To silence the internal alarm and return the display to normal operation press any of the five keys.




**DEPTH ALARM DISPLAY**

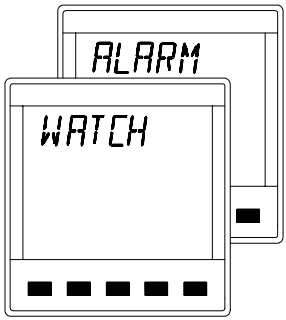
Depth alarms can be set for the following:

Shallow water

Deep water

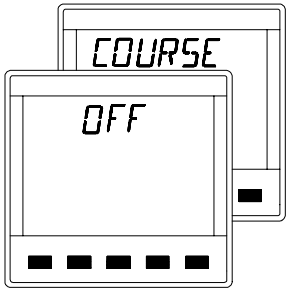
Anchor Watch

Check your Network DEPTH or QUAD unit to see which alarm is activated.




NETWORK PILOT ALARM DISPLAYS

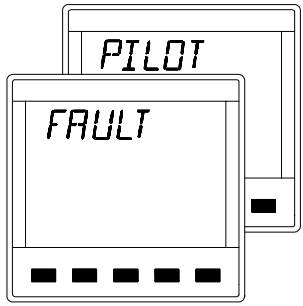
The Watch Alarm is a count-down timer with is activated at the end of the preset count-down period. The display alternates between the messages shown.




NETWORK PILOT ALARM DISPLAYS

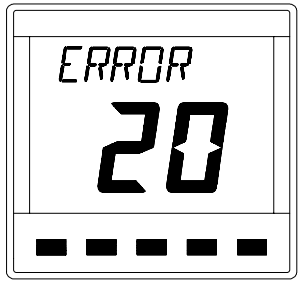
The Off Course alarm is activated when the boat deviates off course by a preset amount. The display alternates between the messages shown.

# Fault and error messages




**NETWORK PILOT FAULT DISPLAY**

If Network PILOT should have a fault the autopilot computer unit will send a message to all other Network Display Units. The Network DATA unit will alternately display the follow message, the actual fault will have to read from the Network PILOT Display unit.




UNIT INTERNAL ERRORS

In the unlikely event that your Network DATA unit should develop an internal error, the unit will sound it's alarm continuously and the display will show an error number. Pressing the keys will not silence this alarm.

In some cases the fault can be cleared by switching off the instruments at the supply, waiting a few moments and then switching on again. If this does not clear the fault the error number should be recorded.

Switch off the supply and disconnect the faulty unit. Return it with the error number to your dealer for servicing.

# Siting the display unit

All Network Instruments are designed for mounting on or below deck. A mounting position should be selected where they are:

- Easy to read by the helmsman
- On a smooth and flat surface
- At least 100mm (4") from a compass
- Accessible from behind for fitting locking studs if required.

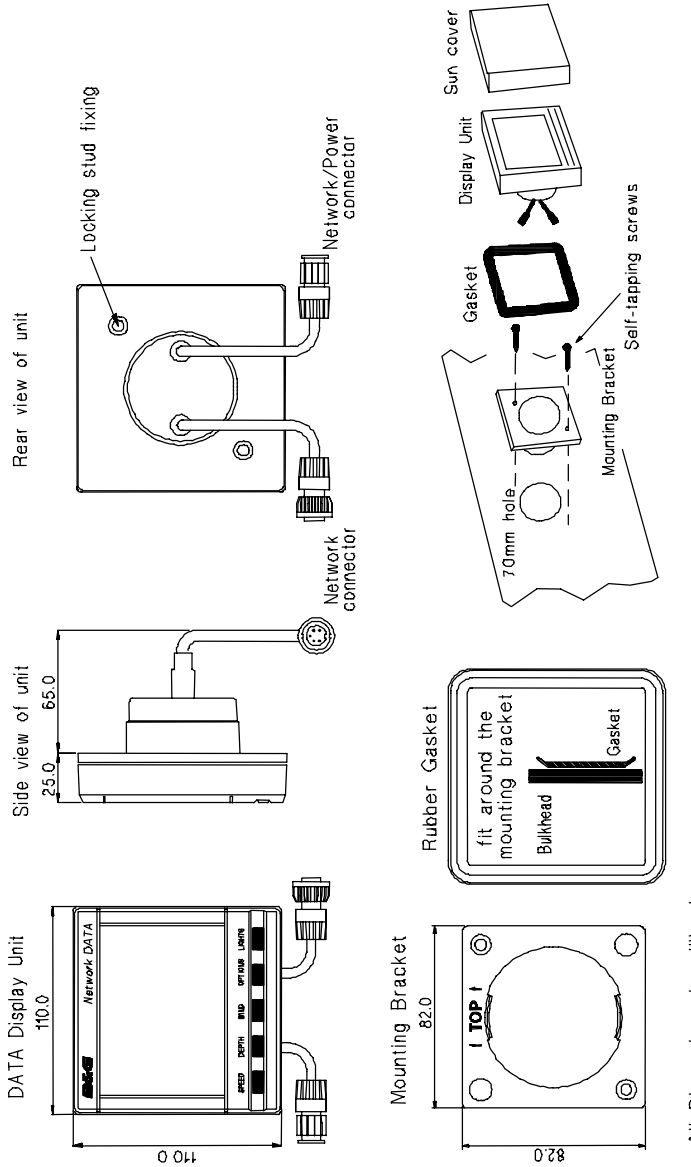
# Mounting the display unit

Use the cutting template supplied to mark the centres of the holes for the self-tapping screw, the fixing stud holes and the mounting bracket.

- The template allows 4mm (5/32") between adjacent units for the suncover, increase this distance if required to maximum of 60mm (2 3/8") between units or 180mm (3 1/8") between centres. For greater distances between units extension cables are available.
- Use a 70mm (2 3/4") diameter hole-cutter for the mounting bracket hole.
- Use a 2.9mm for the self-tapping screw holes.
- Use a 5mm (3/32") drill for the locking stud holes.
- Secure the mounting bracket to the bulkhead with the self-tapping screws supplied
- Fit the rubber sealing gasket around the mounting bracket.
- Screw the locking studs into the back of the display head (if required).
- Carefully pass the cable tails through the mounting bracket hole, connect the cables to the main units.
- Clip the display head into the mounting bracket.
- Secure the instrument with the thumb nuts supplied.

# Installation

The display heads are supplied with a clip-in mounting bracket which allows for easy installation, access from behind is not necessary to secure the unit in place. However to prevent theft and permanently fix the unit in position, locking studs and thumb nuts are supplied.



# Technical specifications

## Physical

- High impact ABS plastic
- **Display** — Back-lit Liquid Crystal Display:
  Large Digits: 28.6mm 1.12"
  Small Digits: 11.5mm 0.45"
- **Window** — Acrylic
- **Dimensions** — **110x110x26mm; 4.25x4.25x1”**
  A space of 65 mm (2.6") is required behind the bulkhead for the display barrel.
- **Weight** — **0.3Kg 0.66lbs**

## Environmental

- **Operating Temperature** — **-10 to +55º** C, +14 to +131°F @ 93% RH
- **Storage Temperature** — -25 to +70 °C, -13 to +158 °F @ 95% RH
- **Humidity** — Up to 95%RH
- **Sealing** — Fully sealed front, suitable for bulkhead cockpit mounting. Vented barrel to prevent condensation.

## Electrical

- **Power Supply** — 12V DC nominal (10V to 16V).
- **Operating Current** — 40 mA typical to 100 mA illuminated
- **Protection** — Connect via external fuse or circuit breaker

## Cables and Connections

Connection to adjacent units is via cable tails fitted with either a plug or a socket. Extension cables are available from your dealer. The cable tails carry power and NMEA data between units.

## Alarm

Internal audible alarm

## NMEA OUTPUT SENTENCES

| | |
|---|---|
| $IIHDM | Heading |
| $IIVHW | Speed and Heading |
| $IIDBT | Depth |
| $IIVWR | Apparent wind angle and speed |
| $IIMTW | Sea temperature |

# Conditions of warranty

**1** Brookes & Gatehouse Limited (B&G) warrants B&G NETWORK products, in normal usage, to be free from defects in materials or workmanship for a maximum period of two years (12 months with respect to mechanical items) from purchase by the original owner, subject to the conditions and limitations below. Any part that proves to be defective, in normal usage, during that period will be repaired or replaced by Brookes & Gatehouse Ltd at Brookes and Gatehouse Ltd's option on presentation of the warranty certificate to an authorised dealer, distributor or Brookes & Gatehouse Ltd.

This warranty is subject to the following conditions and limitations.

**A** Brookes & Gatehouse Ltd's liability shall be limited to the repair or replacement of goods or parts defective in materials or workmanship.

**B** Determination of the suitability of the material for the use contemplated by the owner is the sole responsibility of the buyer, and Brookes & Gatehouse Ltd shall have no responsibility in connection with such suitability.

**C** Brookes & Gatehouse Ltd shall not be responsible for any harm resulting from:

**1** Failures due to use of products in applications for which they are not intended.

**2** Failures due to corrosion, wear and tear, or improper installation.

**3** Accident, misuse or neglect.

**4** Malfunctioning of the product due to externally generated magnetic, electrical or acoustic interference.

**D** Brookes & Gatehouse Ltd shall not be responsible for boat slipping or lifting, freight shipping charges or installation labour associated with any warranty claims, or for loss or damage in transit.

**E** Brookes & Gatehouse Ltd shall not be responsible for any charges relating to onboard servicing, sea trials, or any other work associated with the installation. The right is reserved for any such service to be charged at local rate.

**F** Service by anyone other than Authorised Brookes & Gatehouse Ltd Representatives shall void this warranty unless it accords with Brookes & Gatehouse Ltd's guidelines and standards of workmanship.

**2** These are not warranties of merchantability, fitness for purpose of any kind, expressed or implied, and none shall be implied by law. The duration of any such warranties that are nonetheless implied by law for the benefit of the consumer shall be limited to a period of two years from the original purchase by the owner. The warranty is not transferable.

**3** Brookes & Gatehouse Ltd shall not be liable for consequential damages to vessels, equipment, or other property, or persons due to the failure of Brookes & Gatehouse Ltd equipment.

**4** This warranty does not limit in any way your common law or statutory rights.

## Warranty Certificate

| | |
|---|---|
| **Serial No. Display** | |
| **Serial No. Transducer** | |
| **Distributors Name** | |
| **Distributors Address** | |
| | |
| | |
| **Dealers Name** | |
| **Dealers Address** | |
| | |
| | |
| **Owners Name** | |
| **Owners Address** | |
| | |
| | |
| **Date of Purchase** | |
| **Installation Date** | |
| **Vessel Name** | |
| **Vessel Type** | |