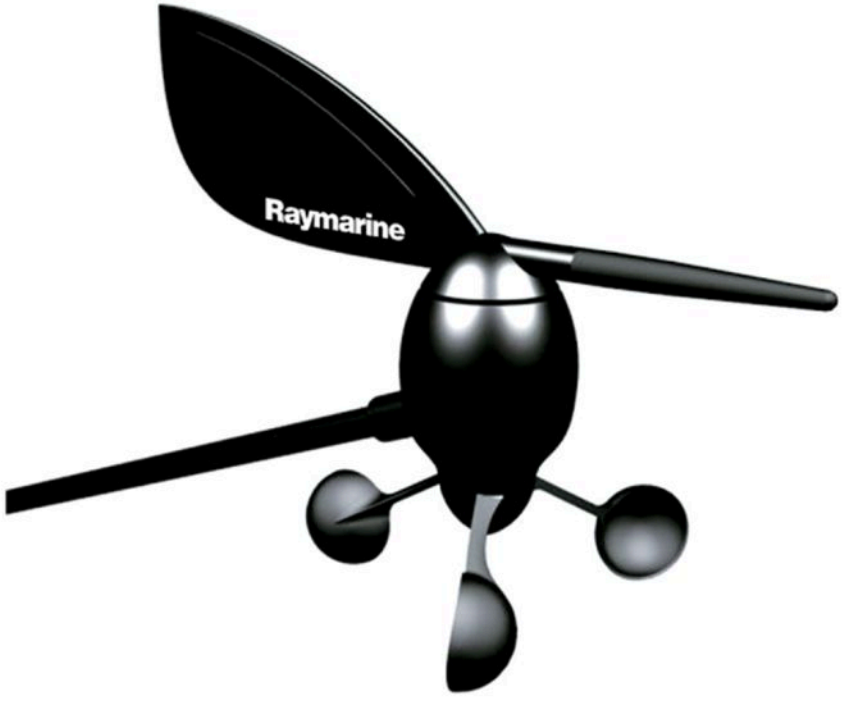


Raymarine®

MASTHEAD WIND TRANSDUCER

Installation Instructions

Document number: 87220 (Rev 3) | English (en-US) | Date: 12-2025

Legal notices

Trademark and patents notice

Fair Use Statement

Content notice

Please ensure that you have obtained this document only from Raymarine, and that it is the **latest** available version.
There are numerous third-party Internet websites (such as *www.manualslib.com*) hosting Raymarine product manuals. These websites are not authorized by Raymarine to do so, and are often hosting illegitimate or older versions of Raymarine product manuals, which may contain inaccurate or misleading information.
To obtain the latest official documentation for a Raymarine product, please visit the official Raymarine website: www.docs.raymarine.com

Artificial Intelligence (AI) content notice

There are numerous third-party **Artificial Intelligence** (AI) services available to the public, which are capable of providing a summary or transcription of the information provided by official Raymarine publications or websites, either in written or audio/video formats. These services may alter, supplement, or convey the original information provided by Raymarine in inaccurate or misleading ways.
Please ensure that you have obtained this document only from Raymarine, and that it is the **latest** available version.

English (en-US)
Document number: 87220 (Rev 3)
AC;77949;2025-12-09T16:36:17

CONTENTS

CHAPTER 1 IMPORTANT INFORMATION 7
Safety warnings 7
Regulatory notices 8
Water ingress 8
Disclaimer 8
Warranty policy and registration 8
Product disposal 8
IMO and SOLAS 9
Technical accuracy 9
Publication copyright 9

CHAPTER 2 DOCUMENT INFORMATION 10
2.1 Product documentation 11
2.2 Operation instructions 11
2.3 Display software 11
2.4 Document illustrations 11

CHAPTER 3 PRODUCT AND SYSTEM OVERVIEW 12
3.1 Applicable products 13
Wind vane products 13
Wind vane replacements 13
Compatible displays 14
Compatible converter and pods 14

CHAPTER 4 PARTS SUPPLIED 15
4.1 Parts supplied — Wind vane transducers 16
4.2 Parts supplied — Replacement wind vane assembly 16

CHAPTER 5 PRODUCT DIMENSIONS 17
5.1 Wind vane dimensions 18

CHAPTER 6 LOCATION REQUIREMENTS 19
6.1 Warnings and cautions 20
6.2 Wind transducer location requirements 20

CHAPTER 7 MOUNTING 21
7.1 Tools required for installation 22
7.2 Mounting 22
Mounting 22
Mounting the junction box 23
7.3 Replacing an existing wind vane 24
Improved base and protective cap design 25
Replacing wind vane and base using existing cable 25
Replacing wind vane and cable 26
Replacing the wind vane arm only 26
Protective cap 26

CHAPTER 8 CABLES AND CONNECTIONS — GENERAL INFORMATION 27
8.1 General cabling guidance 28
Cable types and length 28
Cable routing and bend radius 28
Strain relief 28
Cable shielding 28
Connecting cables 29
Bare-ended wire connections 29

CHAPTER 9 CONNECTIONS 30

9.1 Cable routing....31
Routing the cable through the deck mast....31
Routing the cable through a stepped deck mast....31
Replacing spade terminals....31
9.2 Wind vane connections....32
CHAPTER 10 SYSTEM CHECKS AND TROUBLESHOOTING....34
10.1 Troubleshooting....35
10.2 Wind data troubleshooting....35
CHAPTER 11 OPERATION....36
11.1 Calibration and linearization....37
11.2 Operation instructions....37
CHAPTER 12 MAINTENANCE....38
12.1 Wind vane routine checks....39
Wind Vane maintenance....39
12.2 Unit cleaning instructions....39
CHAPTER 13 TECHNICAL SUPPORT....40
13.1 Raymarine technical support and servicing....41
13.2 Learning resources....42
CHAPTER 14 TECHNICAL SPECIFICATION....43
14.1 Physical specification....44
14.2 Conformance specification....44
CHAPTER 15 SPARES AND ACCESSORIES....45
15.1 Wind vane spares and accessories....46

CHAPTER 1: IMPORTANT INFORMATION

Safety warnings

Warning: Product installation and operation

• This product must be installed and operated in accordance with the instructions provided. Failure to do so could result in personal injury or damage to your vessel. It may also cause poor product performance or invalidate the product warranty.

• Raymarine highly recommends certified installation by a Raymarine approved installer. A certified installation qualifies for enhanced product warranty benefits. Register your warranty on the Raymarine website: www.bit.ly/rym-warranty

Warning: Weather conditions

When working in adverse weather conditions, ensure that a full risk assessment is carried out prior to working aloft. Adverse weather conditions can include — but are not restricted to — high winds, heavy rain, snow, ice, or a sea state which may cause vessel pitch and roll.

Warning: Working aloft

When working at height, ensure that:

• All applicable regulatory, employer, shipyard and vessel health & safety requirements are adhered to, including but not limited to the inspection and use of Personal Protective Equipment (PPE), such as approved safety harnesses and protective gloves etc.

• All nearby devices with moving parts or which emit Radio Frequency (RF) radiation are fully electrically and mechanically isolated.

• Someone in authority and at ground level is aware of the required works and that suitable clear warnings are in place.

• A safety cordon is put in place below the working area.

• All access routes are secure. Beware of wet or slippery surfaces, such as work areas or ladder rungs etc.

• All equipment and loose items such as replacement equipment and tools are safely stowed or secured, to prevent a drop hazard.

Warning: Potential ignition source

This product is NOT approved for use in hazardous/flammable atmospheres. Do NOT install in a hazardous/flammable atmosphere (such as in an engine room or near fuel tanks).

Warning: Switch off power supply

Ensure that the vessel's power supply is switched OFF before starting to install this product. Do NOT connect or disconnect equipment with the power switched on, unless instructed to do so in this document.

Warning: Positive ground systems

Do NOT connect this unit to a system which has positive grounding.

Regulatory notices

Caution: Service and maintenance

This product contains no user serviceable components. Please refer all maintenance and repair to authorized Raymarine dealers. Unauthorized repair may affect your warranty.

Water ingress

Water ingress disclaimer

Although the waterproof rating capacity of this product meets the stated water ingress protection standard (refer to the product's *Technical Specification*), water intrusion and subsequent equipment failure may occur if the product is not installed correctly or subjected to high-pressure washing. Raymarine will not warrant products subjected to high-pressure washing.

Disclaimer

Raymarine does not warrant that this product is error-free or that it is compatible with products manufactured by any person or entity other than Raymarine.

Raymarine is not responsible for damages or injuries caused by your use or inability to use the product, by the interaction of the product with products manufactured by others, or by errors in information utilized by the product supplied by third parties.

Third-party hardware, such as converters, adapters, routers, switches, Access Points etc., provided by third parties, may be made available directly to you by other companies or individuals under separate terms and conditions, including separate fees and charges. Raymarine UK Ltd or its affiliates have not tested or screened the third-party hardware.

Raymarine has no control over, and is not responsible for:

- (a) the content and operation of such third-party hardware; or:
- (b) the privacy or other practices of such third-party hardware.

The fact that Raymarine's documentation may make reference to such third-party hardware does not indicate any approval or endorsement of any such third-party hardware. Raymarine may reference such third-party hardware only as a convenience.

THIS INFORMATION IS MADE AVAILABLE BY Raymarine ON THE BASIS THAT YOU EXCLUDE TO THE FULLEST EXTENT LAWFULLY PERMITTED ALL LIABILITY WHATSOEVER FOR ANY LOSS OR DAMAGE HOWSOEVER ARISING OUT OF THE USE OF THIS INFORMATION OR RELIANCE UPON THIS INFORMATION.

Raymarine does not exclude **Raymarine**'s liability (if any) to you for personal injury or death resulting from **Raymarine UK Ltd** negligence, for fraud or for any matter which it would be illegal to exclude or to attempt to exclude.

Warranty policy and registration

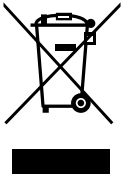
Visit the Raymarine website to **read the latest warranty policy**, and **register** your product's warranty online: www.bit.ly/rym-warranty

It is important that you register your product to receive full warranty benefits. Your product package includes a barcode label indicating the serial number of the unit. This serial number is also provided on a label affixed to the product itself. You will need this serial number when registering your product online.

Product disposal

Dispose of this product in accordance with the WEEE Directive.

The Waste Electrical and Electronic Equipment (WEEE) Directive requires the recycling of waste electrical and electronic equipment which contains materials, components and substances that may be hazardous and present a risk to human health and the environment when WEEE is not handled correctly.



Equipment marked with the crossed-out wheeled bin symbol indicates that the equipment should not be disposed of in unsorted household waste. Local authorities in many regions have established collection schemes under which residents can dispose of waste electrical and electronic equipment at a recycling center or other collection point. For more information about suitable collection points for waste electrical and electronic equipment in your region, refer to the Raymarine website: https://bit.ly/rym-recycling

IMO and SOLAS

The equipment described within this document is intended for use on leisure marine boats and workboats NOT covered by International Maritime Organization (IMO) and Safety of Life at Sea (SOLAS) Carriage Regulations.

Technical accuracy

To the best of our knowledge, the information in this document was correct at the time it was produced. However, Raymarine cannot accept liability for any inaccuracies or omissions it may contain. In addition, our policy of continuous product improvement may change specifications without notice. As a result, Raymarine cannot accept liability for any differences between the product and this document. Please check the Raymarine website to ensure you have the most up-to-date version(s) of the documentation for your product: www.docs.raymarine.com

Publication copyright

CHAPTER 2: DOCUMENT INFORMATION

CHAPTER CONTENTS

- 2.1 Product documentation — page 11
- 2.2 Operation instructions — page 11
- 2.3 Display software — page 11
- 2.4 Document illustrations — page 11

2.1 Product documentation

The following documentation is applicable to your product:

All product documentation is available from the Raymarine website: www.bit.ly/rym-docs

Description	Part number
Wind vane transducer installation instructions (This document) Installation of a short or long arm wind vane transducer. and connection to a wider system of marine electronics.	87220
Long and short arm wind vane transducer mounting template	87377
i60 Installation and operation instructions Details the connection and operation of the instrument display in conjunction with a short or long arm wind vane transducer.	81342
i70 Installation and operation instructions Details the connection and operation of the instrument display in conjunction with an iTC-5.	81357
iTC-5 Installation instructions Details the connection of a short or long arm wind vane transducer to a wider system of marine electronics.	87138
LightHouse™ 3 operations instructions Details calibration of wind transducers using an MFD.	81370

2.2 Operation instructions

For detailed operation instructions for your product, refer to the documentation that accompanies your display.

All product documentation is available to download from the Raymarine website: www.bit.ly/rym-docs

2.3 Display software

Ensure that your display software is updated to the latest version.

To update your display software, refer to the relevant *Operations Instructions* document for your display.

For the latest software for your display, refer to the Raymarine website: www.bit.ly/rym-software

2.4 Document illustrations

Your product and if applicable, its user interface may differ slightly from that shown in the illustrations in this document, depending on product variant and date of manufacture.

All images are provided for illustration purposes only.

CHAPTER 3: PRODUCT AND SYSTEM OVERVIEW

CHAPTER CONTENTS

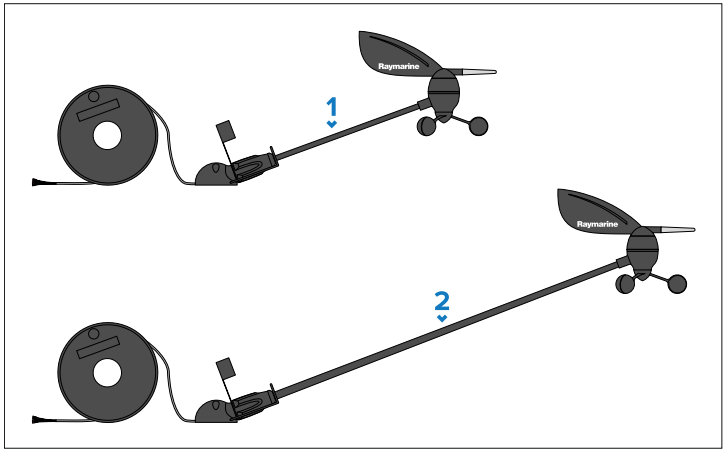
- 3.1 Applicable products — page 13

3.1 Applicable products

This document is applicable to the following products:

Wind vane products

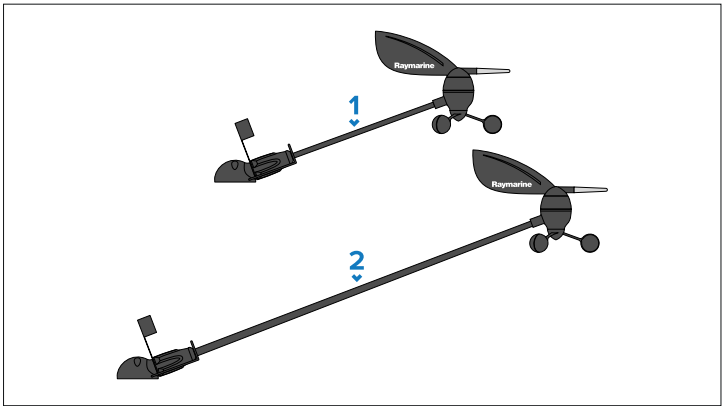
Wind vanes transducers are available in long and short arm variants.



	Part	Description	Cable
1	E22078	**Short** arm 300 mm (11.8 in) wind vane transducer. Provides both wind speed and wind direction data.	30 m (98.4 ft)
2	E22079	**Long** arm 600 mm (23.6 in) wind vane transducer. Provides both wind speed and wind direction data.	50 m (164 ft)

Wind vane replacements

Replacement wind vane assemblies and associated part numbers.



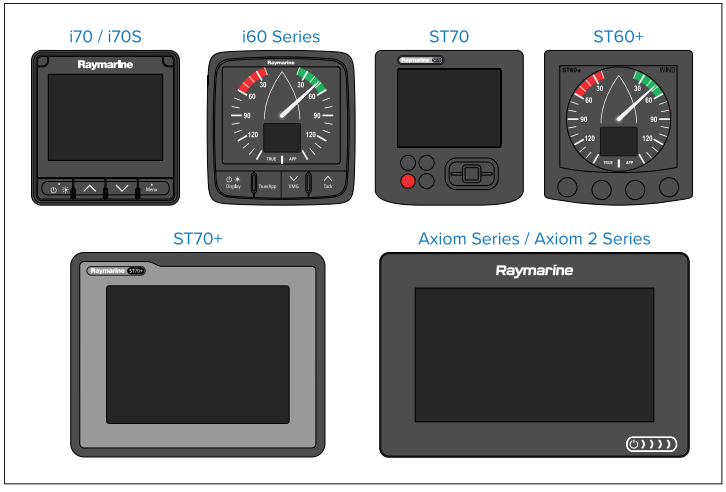
	Part	Description
1	**R28170**	Replacement **short** arm wind vane assembly.
2	**R28171**	Replacement **long** arm wind vane assembly.

Note:
Replacement wind vane assemblies are NOT supplied with a cable. New cables can be purchased separately:

- 30 m (98.4 ft) cable assembly — A28162
- 50 m (164 ft) cable assembly — A28163

Compatible displays

A compatible instrument display is required to calibrate and display wind data from the wind vane transducer. A list of compatible displays is provided below.

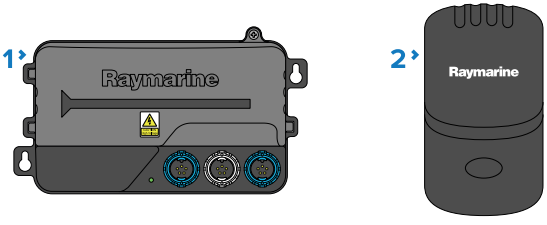


Instrument display	Connection method
i70 / i70s	iTC-5 or transducer pod
i60-Series	Direct connection
ST70	iTC-5 or transducer pod
ST60+ Wind	Direct connection
ST70+	iTC-5 or transducer pod
Axiom-Series / Axiom 2-Series	iTC-5 only

Note:
Axiom-Series MFDs / chartplotters must be running LightHouse 3, v3.11.42 (or later).

Compatible converter and pods

Wind vane transducers can also be connected to a SeaTalk NG network using a compatible converter. Wind data will then be available to all displays connected to the same network.



1. iTC-5 (E70010).
2. ST70 (E22108) / ST290 (E22068) wind transducer pod.

CHAPTER 4: PARTS SUPPLIED

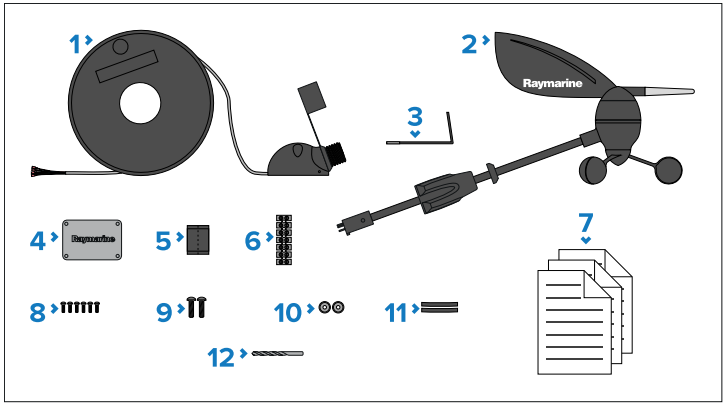
CHAPTER CONTENTS

- 4.1 Parts supplied — Wind vane transducers — page 16
- 4.2 Parts supplied — Replacement wind vane assembly — page 16

4.1 Parts supplied — Wind vane transducers

The following parts are supplied with the short and long arm wind vane transducers, part numbers: E22078 and E22079.

Unpack your product carefully to prevent damage or loss of parts. Check the box contents against the list below. Retain the packaging and documentation for future reference.



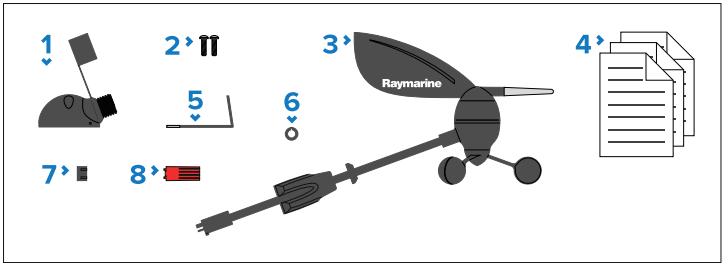
1. Cable assembly (including wind vane base and protective cap):
   - Short arm wind vane is supplied with a 30 m (98.4 ft.) cable.
   - Long arm wind vane is supplied with a 50 m (164 ft.) cable.
2. Short arm wind vane assembly / Long arm wind vane assembly
3. Arm retaining clip
4. Junction box
5. Double sided adhesive pads x 2
6. Terminal block
7. Documentation pack
8. 4 mm drill bit
9. No. 4x3/8” pan head pozi screws (junction box fixings x 6)
10. No. 10x3/4” pan head pozi screws (base mounting fixings x 2)
11. Junction box grommets x 2
12. 40 mm x 4 mm protective sleeve x 2

Note:
Fixings are provided for various installation scenarios; you may not need to use all of the supplied fixings.

4.2 Parts supplied — Replacement wind vane assembly

The following parts are supplied with the replacement short and long arm wind vane assemblies, part numbers: R28170 and R28171.

Unpack your product carefully to prevent damage or loss of parts. Check the box contents against the list below. Retain the packaging and documentation for future reference.



1. Base and protective cap
2. No. 10x3/4” pan head pozi screws (base mounting fixings x 2)
3. Short arm wind vane assembly / Long arm wind vane assembly
4. Documentation pack
5. Arm retaining clip
6. Cable washer
7. Cable nut
8. Cable nut spanner

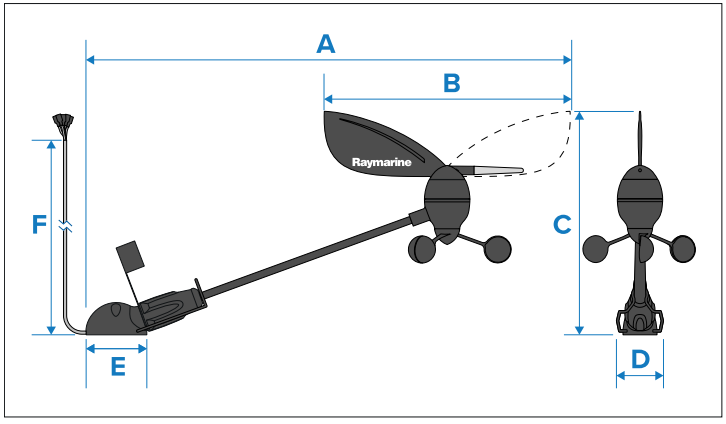
CHAPTER 5: PRODUCT DIMENSIONS

CHAPTER CONTENTS

- 5.1 Wind vane dimensions — page 18

5.1 Wind vane dimensions

Dimensions for the short and long arm wind vanes are shown below.



	Short arm	Long arm
A	538.5 mm (21.20 in)	803.5 mm (31.65 in)
B	272 mm (10.70 in)	272 mm (10.70 in)
C	248 mm (9.76 in)	345.5 mm (13.60 in)
D	38 mm (1.50 in)	38 mm (1.50 in)
E	68 mm (2.70 in)	68 mm (2.70 in)
F	30 m (98.4 ft)	50 m (164 ft)

CHAPTER 6: LOCATION REQUIREMENTS

CHAPTER CONTENTS

- 6.1 Warnings and cautions — page 20
- 6.2 Wind transducer location requirements — page 20

6.1 Warnings and cautions

Important:
Before proceeding, ensure that you have read and understood the warnings and cautions provided in the following section of this document:

• **p.7 — Important information**

6.2 Wind transducer location requirements

When selecting a location for your wind transducer it is important to consider a number of factors.

The transducer's location must ensure that:

- It is installed facing forwards.
- It is installed on a horizontal surface. If a surface (e.g. a mast top) is otherwise suitable but not horizontal, make up a suitable wedge piece to provide the necessary horizontal surface.
- It is installed as high as possible and away from any equipment which may shield the transducer or otherwise disturb the air flow to the transducer.
- There is a viable route for the transducer’s cable to be routed to the display / converter that it will be connected to.
- The vane and cups can spin freely.
- There is sufficient access for installation and servicing.

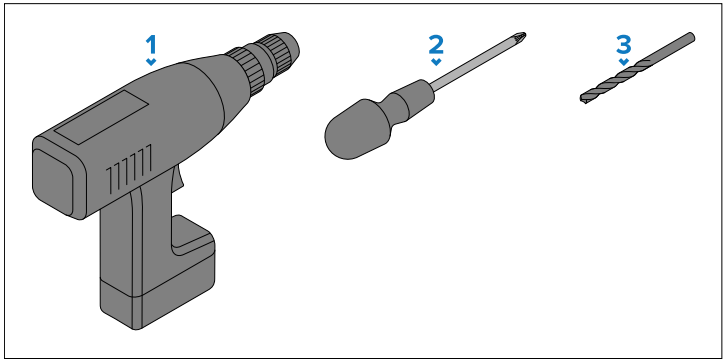
CHAPTER 7: MOUNTING

CHAPTER CONTENTS

- 7.1 Tools required for installation — page 22
- 7.2 Mounting — page 22
- 7.3 Replacing an existing wind vane — page 24

7.1 Tools required for installation

Product installation requires the following tools:



1. Power drill.
2. Pozi drive screwdriver.
3. Drill bit.

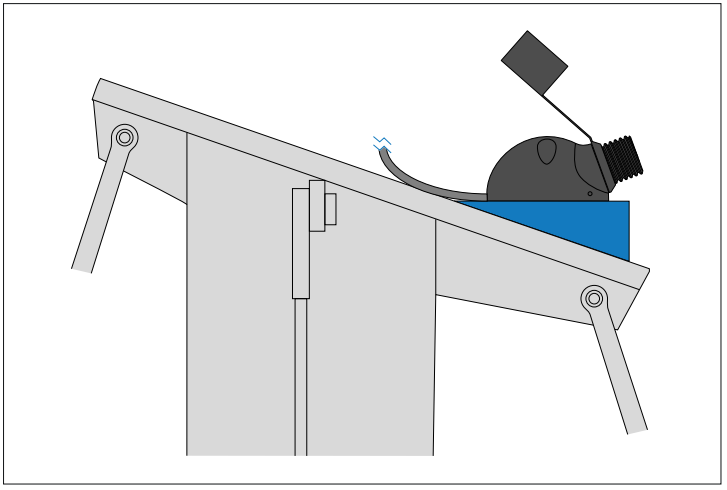
Note:
The appropriate drill bit size is dependent on the thickness and material of the mounting surface.

7.2 Mounting

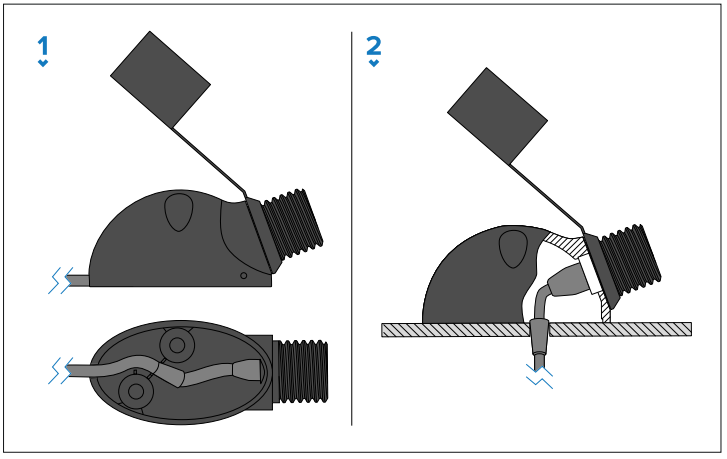
Mounting

Follow the steps below to mount your wind vane.

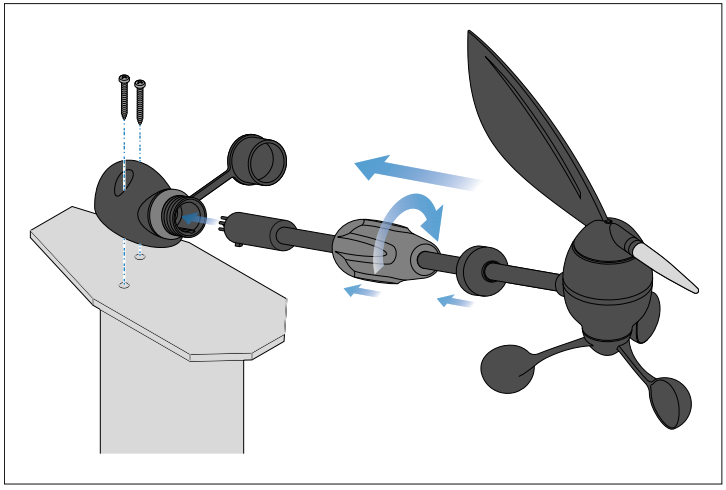
The unit must be mounted on a horizontal surface. If the mounting surface is not horizontal, create a wedge piece to make the surface horizontal.



The unit's cable can be routed either protruding from the rear of the base or underneath the base, as shown below:

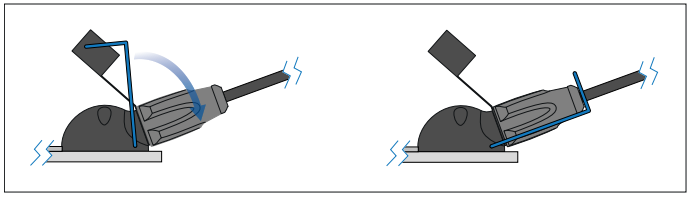


1. Cable protruding from rear.
2. Cable protruding underneath.



Note:
Do NOT remove the protective cap from the base connector until you are ready to fit the wind vane arm.

1. Decide on the cable routing option that best suits your installation.
2. Mark the mounting surface based on your cable routing option:
   i. **Option 1** — Place the base of the unit in the desired location, with the connection end facing directly forwards, and mark the position of the mounting holes.
   ii. **Option 2** — Use the supplied mounting template to mark the position of the mounting holes and the cable hole.
3. Drill holes in the mounting surface based on your chosen cable routing option:
   i. **Option 1** — Drill a hole at each of the 2 mounting hole locations.
   ii. **Option 2** — Drill a hole at each of the 2 mounting hole locations, and an 8 mm hole for the cable routing.
4. Unreel the unit's cable from its supplied spindle.
5. If option 2 has been chosen or you need to use the junction box, you may need to remove the spade terminals from the end of the cable to feed the cable through the hole in the mounting surface.
6. Using the provided fixings, secure the unit's base to the mounting surface, ensuring that the cable does not get squashed between the base and the mounting surface.
7. Remove the protective cap from the connector in the base, ensuring that it stays attached to the base.
8. Ensuring correct connector orientation, insert the wind vane assembly into the base.
9. Slide the locking collar down the arm towards the base.
10. Tighten the locking collar using one hand, turning clockwise until tight.
11. Slide the rubber cover down the arm and fit to the end of the locking collar.
12. Use the retaining clip to secure the wind vane's arm.

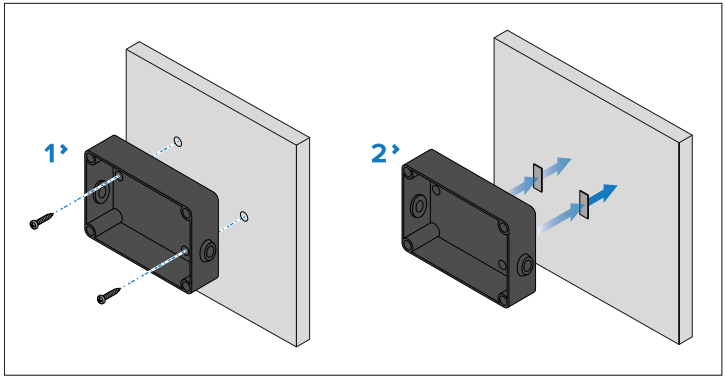


13. Route the cable back to the display, using the junction box if required.
14. If it was necessary to remove the spade terminals, new spade terminals (not supplied) must be fitted to each wire.
15. Connect the spade terminals to the relevant connectors on the back of the display.

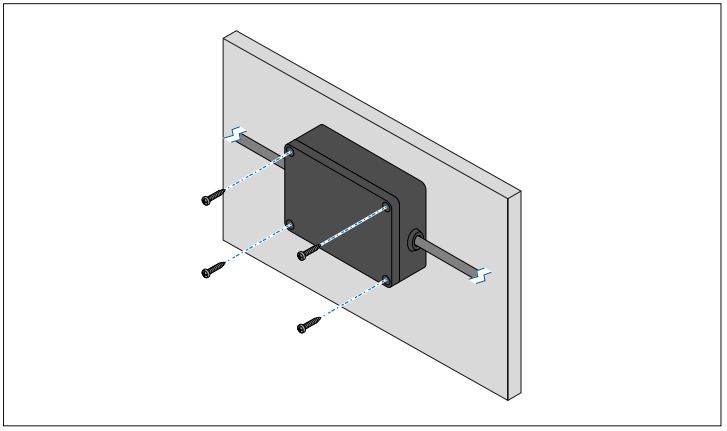
Mounting the junction box

The junction box can be mounted using either the supplied screws, or double-sided adhesive pads.

The junction box should be mounted below decks, close to the cable entry point.



1. To mount the junction box using the supplied fixings screws:
   i. Hold the junction box against the mounting surface at the desired location.
   ii. Mark the location of the mounting holes on the mounting surface.
   iii. Drill 2 holes in the mounting surface at the marked locations.
   iv. Holding the junction box in place, secure to the mounting surface using the supplied screws.
2. To mount the junction box using the supplied double-sided pads:
   i. Remove the backing from one side of the double-sided adhesive pads
   ii. Evenly space the adhesive pads and stick to the rear of the junction box.
   iii. Remove the backing from the opposite side of the adhesive pads.
   iv. Hold the junction box against the mounting surface at the desired location.
   v. Apply firm pressure to the front of the junction box to ensure that the pads affix the junction box to the mounting surface securely.
3. Feed the necessary cables through the grommets in the junction box.
4. Connect the relevant wires together inside the junction box using the supplied terminal block.
5. Place the lid onto the junction box.
6. Use the screws provided to secure the lid to the junction box.



7.3 Replacing an existing wind vane

When replacing an existing wind vane, it is important that the latest hardware design is utilized. When considering what needs replacing, there are 3 options.

- **Option 1** — Replacing wind vane and base:If the wind vane cable is in good condition but your base is an older design, you can replace the wind vane and base using the existing cable. The parts required for this type of replacement are:
  - Replacement wind vane **short** arm assembly — **R28170**
  - Replacement wind vane **long** arm assembly — **R28171**

Note:
Before deciding to keep the existing cable, you must first ensure that sufficient slack exists in the cable to allow for the connector to be removed and re-fitted to the base.

- **Option 2** — Replacing wind vane only:If the wind vane cable is in good condition and the base is the new design then you can replace just the wind vane. The parts required for this type of replacement are:
  - Replacement wind vane **short** arm assembly — **R28170**
  - Replacement wind vane **long** arm assembly — **R28171**

- **Option 3** — Replacing wind vane, base, and cable:If the wind vane cable requires replacement then it is advisable to replace the entire assembly: the wind vane, its base, and the cable. The parts required for this type of replacement are:
  - **Short** arm wind vane transducer — **E22078**
  - **Long** arm wind vane transducer — **E22079**

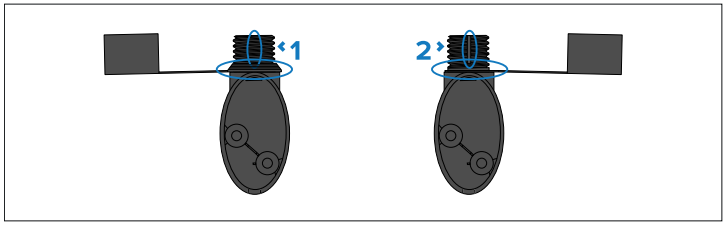
Improved base and protective cap design

The design of the wind vane components has changed since the initial product release, with an improved design to aid protection against water ingress and prolong the life of your wind vane. When replacing an existing wind vane, it is important to use the latest hardware design.

Important:

• If your current installation uses the old design, the base and protective cap must be changed to the new design.

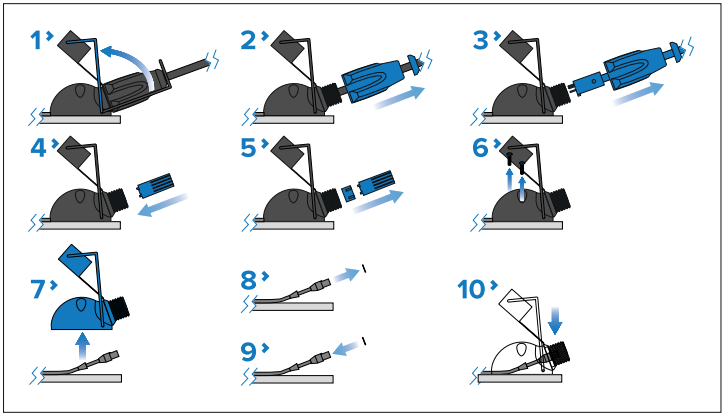
• Failure to replace the base and protective cap with the improved design may affect product warranty.



1. **New design** — The new design has an arm alignment recess instead of a slit through the thread, and the new protective cap design includes a tapered collar.
2. **Old design** — The old design has a slit through the thread, used for arm alignment.

Replacing wind vane and base using existing cable

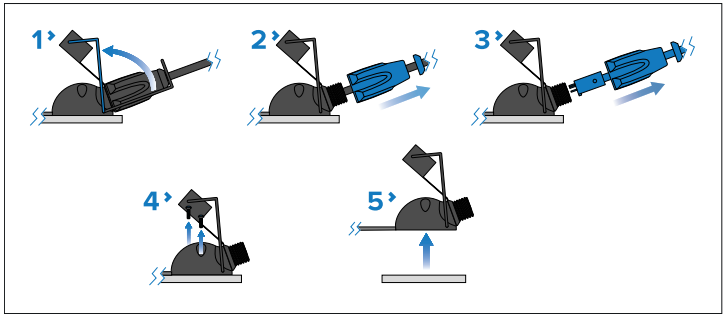
When replacing an existing wind vane,––– you can either fit the new wind vane including the new cable, or you can keep the existing installed cable. It is recommended that the wind vane base is changed. The method below describes replacing the wind vane and base, keeping the existing cable.



1. Release the arm from the retaining clip.
2. Push the plastic sleeve up the arm and unscrew the locking collar
3. Pull the wind vane arm away from its base.
4. Place the cable nut removal tool (supplied with the replacement arm) inside the thread area of the base, aligning the tags with the grooves on the nut.
5. Unscrew the cable retention nut and remove from the base.
6. Unscrew the base fixing screws.
7. Remove the base, leaving the cable in place.
8. Remove the cable washer from the end of the cable connector.
9. Replace the cable washer with the new one supplied.
10. Fit the new base to the cable, ensuring that the located tag at the top of the cable connector is engaged in the groove in the new base.
11. Re-assemble following the above instructions **in reverse order**, from Step 6 to Step 1.

Replacing wind vane and cable

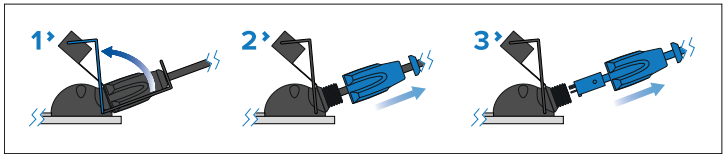
When replacing an existing wind vane, you can either fit the new wind vane including the new cable, or you can keep the existing installed cable. It is recommended that the wind vane base is changed. The method below describes replacing the entire assembly: wind vane, base, and cable.



1. Release the arm from the retaining clip.
2. Push the plastic sleeve up the arm and unscrew the locking collar.
3. Pull the wind vane arm away from its base.
4. Unscrew the base fixing screws.
5. Remove the base and cable.
6. Install the new wind vane and cable, utilizing the existing base fixing holes and following the steps above **in reverse order**.

Replacing the wind vane arm only

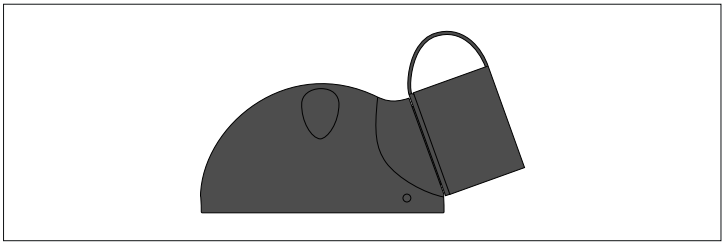
In some installations, when replacing the wind vane, it is possible to re-use the existing installed base and cable, and replace only the wind vane arm



1. Release the arm from the retaining clip.
2. Push the plastic sleeve up the arm and unscrew the locking collar.
3. Pull the wind vane arm away from its base.
4. Using the new wind vane, re-assemble following the above steps **in reverse order**.

Protective cap

When removing the vane arm for servicing, maintenance or replacement, it is important to fit the protective cap. The protective cap's tapered collar provides a seal to protect the wind vane cable connector against water and dust ingress, and must be used in all installations.



CHAPTER 8: CABLES AND CONNECTIONS — GENERAL INFORMATION

CHAPTER CONTENTS

- 8.1 General cabling guidance — page 28

8.1 General cabling guidance

Cable types and length

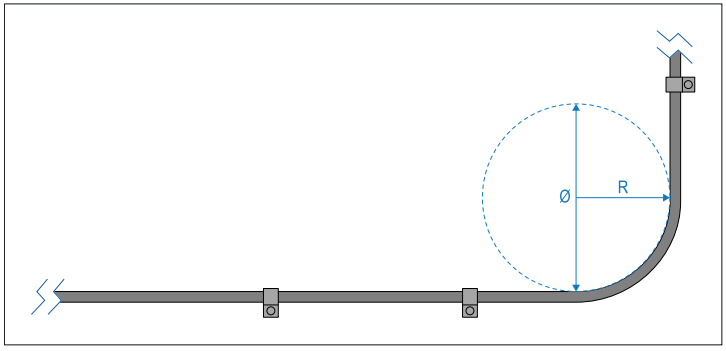
It is important to use cables of the appropriate type and length.

- Unless otherwise stated only use cables supplied by Raymarine.
- Where it is necessary to use non-Raymarine cables, ensure that they are of correct quality and gauge for their intended purpose. (e.g.: longer power cable runs may require larger wire gauges to minimize voltage drop along the run).

Cable routing and bend radius

To maximize cable performance and lifespan, it's important to ensure that all cables are routed correctly and adequate space is provided to allow for each cable's minimum bend radius.

Minimum cable bend radius



Do NOT bend cables excessively. Wherever possible, ensure that your chosen product installation location allows enough clearance for the minimum cable bend diameter specified in the following table:

	Description	Value
Ø	Cable minimum bend **diameter**.	200 mm (7.87 in.)
R	Cable minimum bend **radius**.	100 mm (3.94 in.)

Note:
For products where multiple different cable types are connected, each with a different minimum cable bend radius, the higher figure is provided in the table above (i.e. the cable with the greatest minimum bend radius is specified).

Cable routing — best practices

- Protect all cables from physical damage and exposure to heat. Use trunking or conduit where possible. Do NOT run cables through bilges or doorways, or close to moving or hot objects.
- Secure cables in place using cable clips or cable ties. Coil any excess cable and tie it out of the way.
- Where a cable passes through an exposed bulkhead or deckhead, use a suitable watertight feed-through (conduit).
- Do NOT run cables near to engines or fluorescent lights.
- Always route data cables as far away as possible from:
  - Other equipment and cables.
  - High current-carrying AC and DC power lines.
  - Antennas.

Strain relief

Use adequate strain relief for cabling to ensure that connectors are protected from strain and will not pull out under extreme sea conditions.

Cable shielding

Ensure that cable shielding is not damaged during installation and that all cables are properly shielded.

Important:
Be aware that some **third-party** cables and adapters (for example, certain Ethernet cables using RJ45 connectors) are not always shielded. To prevent breaks in cable shielding continuity and potential grounding issues, special attention is required to ensure that any cables, extension cables, adapters, or other signal-coupling devices used in cable runs **maintain all shield connections throughout the cable run**.

Connecting cables

Follow the steps below to connect the cable(s) to your product.

1. Ensure that the vessel's power supply is switched off.
2. Ensure that the device being connected has been installed in accordance with the installation instructions supplied with that device.
3. Ensuring correct orientation, push cable connectors fully onto the corresponding connectors.
4. Engage any locking mechanism to ensure a secure connection (e.g.: turn locking collars clockwise until tight, or in the locked position).
5. Ensure any bare ended wire connections are suitably insulated to prevent shorting and corrosion due to water ingress.

Bare-ended wire connections

You must ensure that any bare-ended wires are adequately protected from short circuit and water ingress.

Bare-ended wire connections

It is recommended that bare-ended wire connections are made by soldering or using crimp connectors, and then protected by wrapping the connection in electrical insulation tape.

Unused bare-ended wires

Any unused bare-ended wires should be folded back and wrapped in electrical insulation tape.

CHAPTER 9: CONNECTIONS

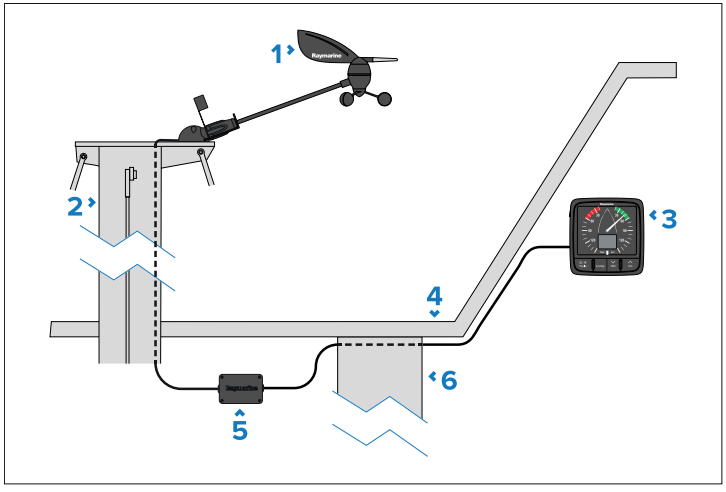
CHAPTER CONTENTS

- 9.1 Cable routing — page 31
- 9.2 Wind vane connections — page 32

9.1 Cable routing

Routing the cable through the deck mast

Follow the steps below to route the transducer's cable through a deck mast.



	Description
1	Wind vane transducer
2	Mast
3	Compatible instrument display
4	Deck
5	Junction box
6	Bulkhead

1. Feed the cable down the mast and out through a suitable below-decks aperture.
2. Run the cable back to the display or converter and connect the spade terminals to the relevant connectors.

Routing the cable through a stepped deck mast

Follow the steps below to route cable through a stepped deck mast.

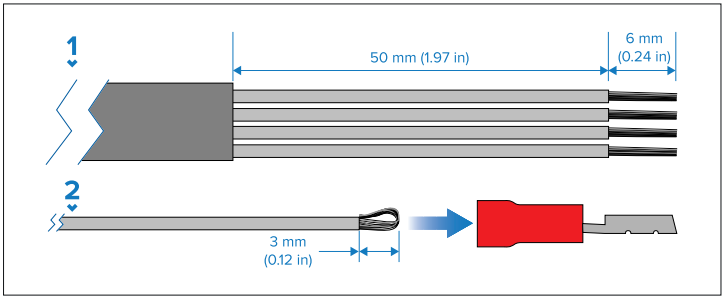
You will require new 1/8th spade terminals to perform this procedure.

1. Remove the existing spade terminals from the end of the cable.
2. Feed the cable down the mast and out through a suitable above-decks aperture.
3. Fit a suitable cable gland to the deck.
4. Pass the cable through the gland and run it back to the display or converter.
5. Crimp the new spade terminals (not supplied) to the end of the cable.
6. Connect the new spade terminals to the relevant connectors on the unit.

Replacing spade terminals

Although the transducer cable is fitted with spade terminals for direct connection to a compatible display or converter, it may be necessary to remove these to allow the cable to be routed through bulkheads or masts etc. 5 x 1/8th spade terminals will be required (not supplied), to replace the removed terminals.

When fitting the new spade terminals, prepare the cables as shown and detailed below:



1. Prepare the cable as shown in annotation **1** in the above illustration.
2. Fold back the wire strands and insert into the new spade connector, as shown in annotation **2** in the above illustration.
3. Ensure the wire strands do not extend beyond the rear of the spade connector insulation.
4. Crimp the connector to the wire.

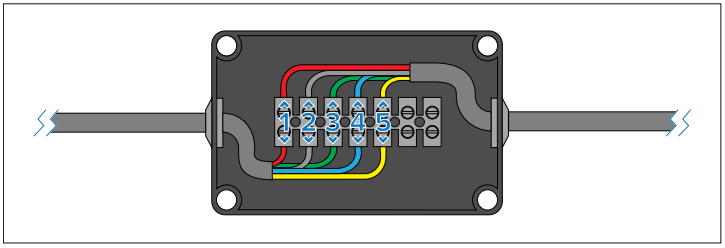
9.2 Wind vane connections

How to connect the wind vane to a junction box, iTC-5, compatible instrument, or legacy transducer pod.

Important:
Wires and connections are color-coded; ensure that all colors match before making connections.

Junction box connection

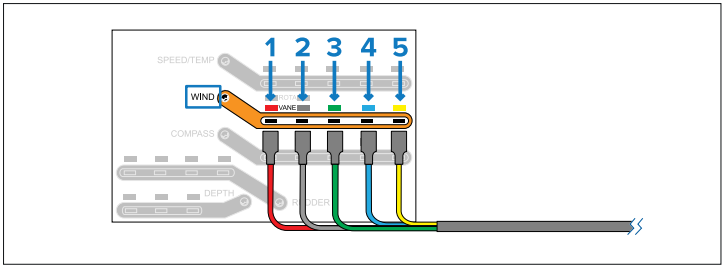
If you need to splice and re-join the cable, the supplied junction box should be used to ensure that all connections are protected.



Wire colors / signal

	Wire color	Signal
1	Red	Wind V+
2	Gray	Wind 0 V (Shield)
3	Green	Sine wind direction
4	Blue	Cosine wind direction
5	Yellow	Anemometer (signal)

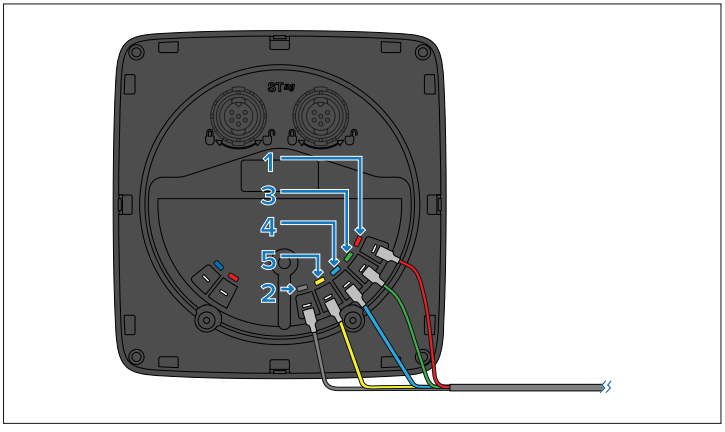
iTC–5 connection



Wire colors / signal

	Wire color	Signal
1	Red	Wind V+
2	Gray	Wind 0 V (Shield)
3	Green	Sine wind direction
4	Blue	Cosine wind direction
5	Yellow	Anemometer (signal)

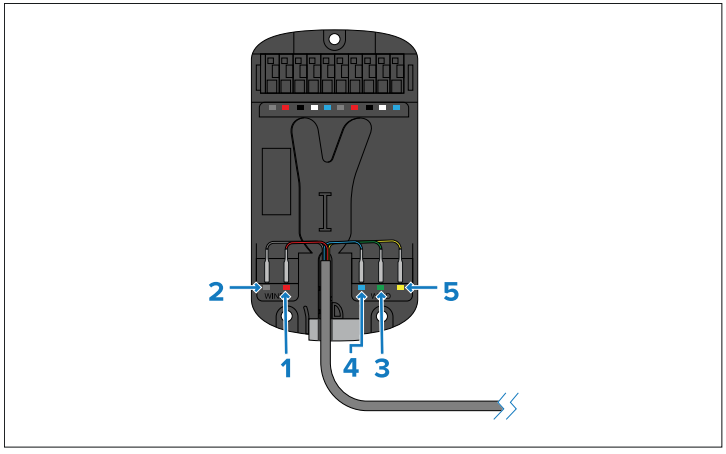
Compatible wind instrument display connection



Wire colors / signal

	Wire color	Signal
1	Red	Wind V+
2	Gray	Wind 0 V (Shield)
3	Green	Sine wind direction
4	Blue	Cosine wind direction
5	Yellow	Anemometer (signal)

Pod (legacy) connection



Wire colors / signal

	Wire color	Signal
1	Red	Wind V+
2	Gray	Wind 0 V (Shield)
3	Green	Sine wind direction
4	Blue	Cosine wind direction
5	Yellow	Anemometer (signal)

CHAPTER 10: SYSTEM CHECKS AND TROUBLESHOOTING

CHAPTER CONTENTS

- 10.1 Troubleshooting — page 35
- 10.2 Wind data troubleshooting — page 35

10.1 Troubleshooting

The troubleshooting section provides possible causes and the corrective action required for common problems that are associated with the installation and operation of your product.

Before packing and shipping, all products are subjected to comprehensive testing and quality assurance programs. If you do experience problems with your product, this section will help you to diagnose and correct problems to restore normal operation.

If after referring to this section you are still having problems with your product, please refer to the *Technical support and servicing* section of this manual for useful links and contact details.

10.2 Wind data troubleshooting

Note:
Where solutions are provided in numbered steps, follow the steps in order.

Data appears as dashes on display

Possible causes	Possible solutions
Wind data is set to *[True]* wind and there is no Speed Through Water (STW) data available.	1. Set wind data to *[Apparent]* and check for wind data. 2. If wind data appears, and you require True wind instead, check the source of STW data.
Wind transducer connection problem.	1. Check cabling to ensure it is free from damage. 2. Check the cable junction box (usually located at the bottom of the mast) for damage and corrosion, and ensure that connections are clean and secure. Repair and replace as necessary. 3. Check connections to display or converter for damage and corrosion, and ensure that connections are clean and secure. Repair and replace as necessary. 4. Disconnect the wind vane arm and check arm and base connectors for damage and corrosion. Ensure that they are clean and secure, and repair and replace as necessary.

Data appears to be incorrect

Possible causes	Possible solutions
Wind transducer has not been calibrated, or has lost its calibration settings.	1. Re-calibrate the wind transducer. Refer to the operations instructions supplied with your display for calibration procedures.

CHAPTER 11: OPERATION

CHAPTER CONTENTS

- 11.1 Calibration and linearization — page 37
- 11.2 Operation instructions — page 37

11.1 Calibration and linearization

In order to achieve optimum data readings from your transducer it must be calibrated and linearized.

Please refer to the operation instructions that accompanied your compatible wind instrument display for calibration and linearization procedures.

11.2 Operation instructions

For detailed operation instructions for your product, refer to the documentation that accompanies your display.

All product documentation is available to download from the Raymarine website: www.bit.ly/rym-docs

CHAPTER 12: MAINTENANCE

CHAPTER CONTENTS

- 12.1 Wind vane routine checks — page 39
- 12.2 Unit cleaning instructions — page 39

12.1 Wind vane routine checks

You should perform the following routine checks of your wind vane transducer:

- Check the wind vane arm's locking collar is tight.
- Check that the wind vane arm's retaining clip is firmly in place.
- Check cabling for signs of damage, such as chafing, cuts or nicks.
- Check cable connectors are firmly attached and are not corroded.

Note:
Cable and connector checks should be carried out with the power supply switched off.

Wind Vane maintenance

As part of any maintenance ensure that:

- You do NOT use Lubricants or sealants.
- The protective cap is used when the arm is removed.

12.2 Unit cleaning instructions

The unit does not require regular cleaning. However, if you find it necessary to clean the unit, please follow the steps below:

1. Ensure power is switched off.
2. Wipe unit clean with a damp cloth.
3. If necessary, use a mild detergent solution to remove grease marks.

CHAPTER 13: TECHNICAL SUPPORT

CHAPTER CONTENTS

- 13.1 Raymarine technical support and servicing — page 41
- 13.2 Learning resources — page 42

13.1 Raymarine technical support and servicing

Raymarine provides a comprehensive product support service, as well as warranty, service, and repairs. You can access these services through the Raymarine website, telephone, and e-mail.

Product information

If you need to request service or support, please have the following information to hand:

- Product name.
- Product identity.
- Serial number.
- Software application version.
- System diagrams.

Servicing and warranty

Raymarine offers dedicated service departments for warranty, service, and repairs.
Visit the Raymarine website to **read the latest warranty policy**, and **register** your product's warranty online:

- www.bit.ly/rym-warranty

United Kingdom (UK), EMEA, and Asia Pacific:

- Web: www.bit.ly/rym-service
- Tel: +44 (0)1329 246 932

United States (US):

- Web: www.bit.ly/rym-service
- Tel: +1 (603) 324 7900

Web support

Please visit the "Support" area of the Raymarine website for:

- **Manuals and Documents** — www.bit.ly/rym-docs
- **Technical support forum** — www.bit.ly/rym-support
- **Software updates** — www.bit.ly/rym-software

Telephone and online support

Region	Contact details
All regions	**Online support:** www.bit.ly/rym-support
United Kingdom (UK) and EMEA	**Telephone:** +44 (0)1329 246 777 **Address:** Marine House, Cartwright Drive, Fareham, PO15 5RJ, UK.
United States (US)	**Telephone:** Tel: +1 (603) 324 7900 (Toll-free: +800 539 5539) **Address:** 110 Lowell Road, Hudson, NH 03051, USA.
Australia and New Zealand (Raymarine subsidiary)	**Telephone:** +61 2 8977 0300 **Address:** Suite 1.01, 26 Rodborough Road, Frenchs Forest, NSW, 2086, Australia.
France (Raymarine subsidiary)	**Telephone:** +33 (0)1 46 49 72 30 **Address:** 35 avenue Michel Crépeau, 17000 La Rochelle - France.
Germany (Raymarine subsidiary)	**Telephone:** +49 40 237 808 0 **Address:** Atlantic-Haus, Zirkusweg 1, 20359 Hamburg.
Italy (Raymarine subsidiary)	**Telephone:** +39 02 9945 1001 **Address:** Via L. Manara 2, 20812 Limbiate (MB), Italy.
Spain (Authorized Raymarine distributor)	**Telephone:** +34 96 2965 102 **Email:** sat@azimut.es
Netherlands / Benelux (Authorized Raymarine distributor)	**Telephone:** +31 (0)26 3614 905 **Address:** Florijnweg 21G, 6883 JN VELP, Nederland.

Region	Contact details
Sweden (Raymarine subsidiary)	**Telephone:** +46 (0)317 633 670 **Address:** Bolshedens Industriväg 18, 427 50 Billdal, Sweden.
Finland (Raymarine subsidiary)	**Telephone:** +358 (0)207 619 937 **Address:** Suomalaistentie 1-3, 02270 Espoo, Finland.
Norway (Raymarine subsidiary)	**Telephone:** +47 692 64 600 **Address:** Årvollskogen 30, 1529 Moss, Norway.
Denmark (Raymarine subsidiary)	**Telephone:** +45 437 164 64 **Address:** Centervej 7, 4600 Køge, Denmark.
Russia (Distributor)	**Telephone:** Tel: +7 495 788 0508 **Email:** info@mikstmarine.ru

13.2 Learning resources

Raymarine has produced a range of learning resources to help you get the most out of your products.

Video tutorials

Raymarine official channel on YouTube

- http://www.youtube.com/user/RaymarineInc

Training courses

Raymarine regularly runs a range of in-depth training courses to help you make the most of your products. Visit the Training section of the Raymarine website for more information:

- www.bit.ly/rym-training

Technical support forum

You can use the Technical support forum to ask a technical question about a Raymarine product or to find out how other customers are using their Raymarine equipment. The resource is regularly updated with contributions from Raymarine customers and staff:

- www.bit.ly/rym-support

CHAPTER 14: TECHNICAL SPECIFICATION

CHAPTER CONTENTS

- 14.1 Physical specification — page 44
- 14.2 Conformance specification — page 44

14.1 Physical specification

Weight

	Short arm	Long arm
Boxed:	2.5 Kg (5.5 lbs)	3 Kg (6.6 lbs)
Wind vane assembly:	0.2 Kg (0.4 lbs)	0.22 Kg (0.47 lbs)
Cable assembly:	1.2 Kg (2.6 lbs)	1.85 Kg (4 lbs)

14.2 Conformance specification

Specification	
Conformance:	• EN 60945:2002 • EMC Directive 2004/108/EC • Australia and New Zealand: C-Tick, Compliance Level 2

CHAPTER 15: SPARES AND ACCESSORIES

CHAPTER CONTENTS

- 15.1 Wind vane spares and accessories — page 46

15.1 Wind vane spares and accessories

The following spares and accessories are available for the wind vane transducers:

Spares

Part	Description
R28170	Short arm wind vane assembly (no cable)
R28171	Long arm wind vane assembly (no cable)
A28159	Wind vane short arm (300 mm)
A28160	Wind vane long arm (600 mm)
A28161	Wind vane base
A28162	Cable assembly (including base) 30 m (98.4 ft)
A28163	Cable assembly (including base) 50 m (164 ft)
A28164	Wind vane PCB assembly
A28165	Wind vane short arm cable 300 mm (11.8 in)
A28166	Wind vane long arm cable 600 mm (23.6 in)
A28167	Wind vane service kit (includes: vane, counterbalance weight, anemometer cups and screws)
A28168	Wind vane top pod kit (includes: bearing, magnet assembly and O-ring seal)
R28169	Protective cap

Accessories

Part	Description
E70010	iTC-5
E22068	ST290 wind pod
E22108	ST70 wind pod

Index

A

Accessories 46
Applicable products 13

C

Cable
  Bend radius 28
  Protection 28
  Routing 28
  Security 28
  Strain relief 28
Cable routing 22, 31
Calibration 37
Cleaning 39
Compatible converters 14
Compatible displays 14
Connecting cables 29
Connections 32–33
  Bare-ended wires 29
  Instrument display 32
  iTC-5
    Converter 32
  Junction box 32
  pod 33
  Wire 29

D

Documentation
  Installation instructions 11
  Mounting template 11
  Operation instructions 11, 37

I

Instrument display
  Connection 32
iTC-5
  Connection 32

J

Junction box 23–24
  Connection 32

L

Linearization 37
Location requirements 20
Locking collar 23

M

Maintenance 8, 39
Mounting 22

O

Operation instructions 11, 37

P

Parts supplied 16
Pod
  Connection 33
Product dimensions 18
Product recycling (WEEE) 8
Product support 41
protective cap 23
Protective cap 26

R

Replacement vane 13
Retaining clip 23

S

Service Center 41

Servicing 8
Software 11
Spade terminals 23, 31
Spares 13, 46
Specification
  Physical 44
Support forum 42

T

Technical specification
  Conformance specification 44
Technical support 41–42
Tools required 22
Training courses 42
Troubleshooting 35
  Wind data 35

W

Warranty 8, 41
WEEE Directive 8
Wind vane replacement 25–26