CP370 / CP470 / CP570
INSTALLATION INSTRUCTIONS

CP570 PROFESSIONAL CHIRP SONAR

Network   Power   Transducer

Raymarine®
BY **◆FLIR®**

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Chapter 1: Important information

Certified Installation

Raymarine recommends certified installation by a Raymarine approved installer. A certified installation qualifies for enhanced product warranty benefits. Contact your Raymarine dealer for further details, and refer to the separate warranty document packed with your product.

> ### 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, damage to your vessel and/or poor product performance.

> ### 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: Product grounding
>
> Before applying power to this product, ensure it has been correctly grounded, in accordance with the instructions provided.

> ### Warning: Positive ground systems
>
> Do not connect this unit to a system which has positive grounding.

> ### Warning: Power supply voltage
>
> Connecting this product to a voltage supply greater than the specified maximum rating may cause permanent damage to the unit. Refer to the *Technical specification* section for voltage rating.

> ### Warning: Switch off power supply
>
> Ensure 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 in this document.

> ### Caution: Power supply protection
>
> When installing this product ensure the power source is adequately protected by means of a suitably-rated fuse or automatic circuit breaker.

> ### Warning: High voltage
>
> This product contains high voltage. Adjustments require specialized service procedures and tools only available to qualified service technicians. There are no user serviceable parts or adjustments. The operator should never remove the cover or attempt to service the product.

> ### Warning: Transducer cables
>
> Do not remove the transducer cable whilst the product is powered on, doing so can cause sparks. If the transducer cable is accidently removed whilst the product is powered on, switch the product's power off, replace the cable and then switch the power back on.

> ### Warning: Sonar operation
>
> - NEVER operate the sonar with the vessel out of the water.
> - NEVER touch the transducer face when the sonar is powered on.
> - SWITCH OFF the sonar if divers are likely to be within 7.6 m (25 ft) of the transducer.

> ### Caution: Do not cut transducer cables
>
> - Cutting the transducer cable severely reduces sonar performance. If the cable is cut, it must be replaced, it cannot be repaired.
> - Cutting the transducer cable will void the warranty and invalidate the European CE mark.

> ### 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 IPX standard (refer to the product's *Technical Specification*), water intrusion and subsequent equipment failure may occur if the product is subjected to commercial 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.

EMC installation guidelines

Raymarine equipment and accessories conform to the appropriate Electromagnetic Compatibility (EMC) regulations, to minimize electromagnetic interference between equipment and minimize the effect such interference could have on the performance of your system

Correct installation is required to ensure that EMC performance is not compromised.

> **Note:** In areas of extreme EMC interference, some slight interference may be noticed on the product. Where this occurs the product and the source of the interference should be separated by a greater distance.

For **optimum** EMC performance we recommend that wherever possible:

- Raymarine equipment and cables connected to it are:
  - At least 1 m (3 ft) from any equipment transmitting or cables carrying radio signals e.g. VHF radios, cables and antennas. In the case of SSB radios, the distance should be increased to 7 ft (2 m).
  - More than 2 m (7 ft) from the path of a radar beam. A radar beam can normally be assumed to spread 20 degrees above and below the radiating element.

- The product is supplied from a separate battery from that used for engine start. This is important to prevent erratic behavior and data loss which can occur if the engine start does not have a separate battery.

- Raymarine specified cables are used.

- Cables are not cut or extended, unless doing so is detailed in the installation manual.

> **Note: Where constraints on the installation prevent any of the above recommendations**, always ensure the maximum possible separation between different items of electrical equipment, to provide the best conditions for EMC performance throughout the installation

Suppression ferrites

- Raymarine cables may be pre-fitted or supplied with suppression ferrites. These are important for correct EMC performance. If ferrites are supplied separately to the cables (i.e. not pre-fitted), you must fit the supplied ferrites, using the supplied instructions.

- If a ferrite has to be removed for any purpose (e.g. installation or maintenance), it must be replaced in the original position before the product is used.

- Use only ferrites of the correct type, supplied by Raymarine or its authorized dealers.

- Where an installation requires multiple ferrites to be added to a cable, additional cable clips should be used to prevent stress on the connectors due to the extra weight of the cable.

Connections to other equipment

Requirement for ferrites on non-Raymarine cables

If your Raymarine equipment is to be connected to other equipment using a cable not supplied by Raymarine, a suppression ferrite MUST always be attached to the cable near the Raymarine unit.

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.

Chapter 2: Document and product information

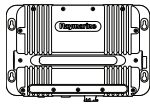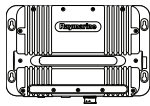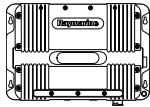## Chapter contents

2.1 Document information

This document contains important information related to the installation of your Raymarine product.

The document includes information to help you:

- plan your installation and ensure you have all the necessary equipment;
- install and connect your product as part of a wider system of connected marine electronics;
- troubleshoot problems and obtain technical support if required.

Applicable products

This document is applicable to the following products:

	Part number	Name	Description
	E70297	CP370	ClearPulse™ sonar module
	E70298	CP470	ClearPulse™ CHIRP broadband sonar module
	E70258	CP570	ClearPulse™ CHIRP dual-channel broadband sonar module

Note: Your multifunction display's Fishfinder application menu options and settings will differ depending on the type of sonar module in use.

Document conventions

The following conventions are used throughout this document when referring to:

Type	Example	Convention
Procedures for performing specific tasks using the product's user interface.	Select **Set-Up**.	The term "Select" is used to refer to the action of: • Touchscreen control — using your finger to select a menu option or item on the screen. • Physical buttons — Highlighting an item using the navigational buttons and confirming the selection by pressing the **OK** button.
Procedures for navigating menu hierarchies.	1. The internal sonar module is turned off from the Fishfinder application menu: **Menu > Set-up > Sounder Set-up > Internal Sounder**. 2. The internal GPS can be switched off from the Set-up menu: **Menu > Set-up > GPS Set-up > Internal GPS**.	Menu hierarchies are used in this document to provide a quick summary on how to access a particular function or menu option.

Document illustrations

Your product 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.

Product documentation

The following documentation is applicable to your product:

Description	Part number
CP370 / CP470 / CP570 Installation instructions Installation of a CP370 /CP470 / CP570 unit and connection to a wider system of marine electronics.	87213 / 88027
CP370 and CP470 Mounting template Mounting diagram for surface mounting a CP370 / CP470	87240
CP570 Mounting template Mounting diagram for surface mounting a CP570	87206
LightHouse™ Operation instructions Details the operation of the CP370 / CP470 / CP570 and the Fishfinder application for the following multifunction displays: • a Series • c Series • e Series • eS Series • gS Series	81360

Operation instructions

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

Transducer installation instructions

This document includes installation instructions for the sonar module only. For installation instructions for a connected transducer, please refer to the documentation that accompanies the transducer.

2.2 Parts supplied

CP370 — Parts supplied

D13267-2
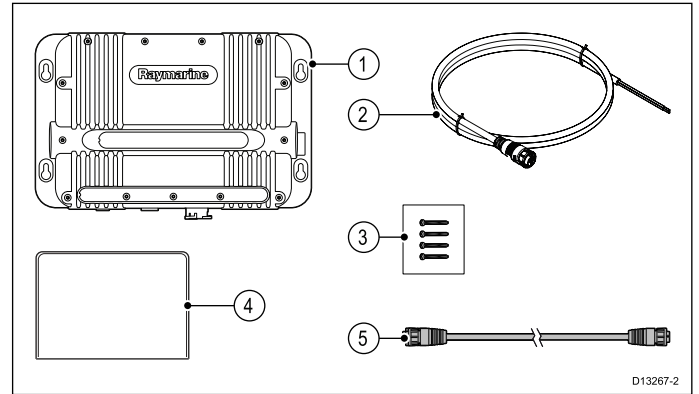
Item	Description	Quantity
1	Sonar module	1
2	1.5 m (5 ft) power cable	1
3	No.8 fixing screws	4
4	Documentation pack	1
5	2 m (6.56 ft) RayNet (Female) to RayNet (Female) network cable	1

CP470 — Parts supplied

D13268-3
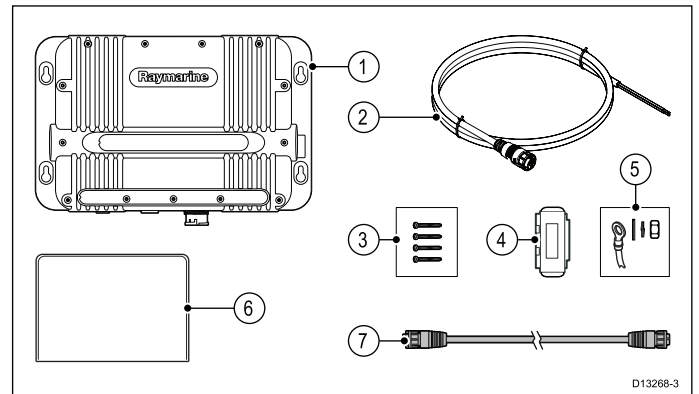
| Item	Description	Quantity
1	Sonar module	1
2	1.5 m (5 ft) power cable	1
3	No.8 fixing screws	4
4	Cable ferrite	1
5	Additional ground-wire kit	1
6	Documentation pack	1
7	2 m (6.56 ft) RayNet (Female) to RayNet (Female) network cable	1

CP570 — Parts supplied

D13310-3
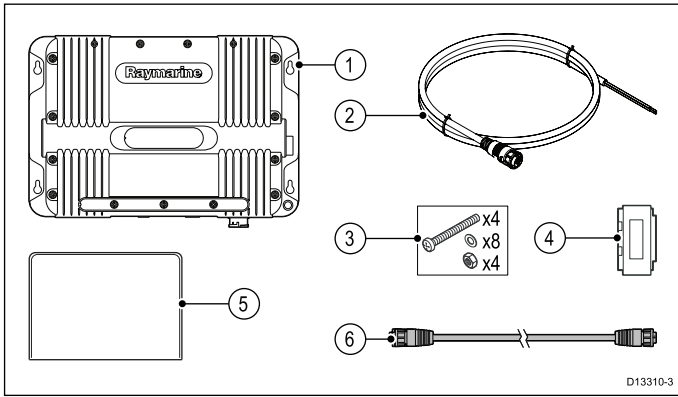
Item	Description	Quantity
1	Sonar module	1
2	1.5 m (5 ft) power cable	1
3	Fixing screw kit	1
4	Cable ferrite	1
5	Documentation pack	1
6	2 m (6.56 ft) RayNet (Female) to RayNet (Female) network cable	1

2.3 Product overview

CP370 product overview

The CP370 is a **ClearPulse™** traditional sonar module. In conjunction with a compatible multifunction display, the CP370 provides a detailed view of the water beneath your vessel including the bottom, enabling you to identify fish and other objects.


D13250-2
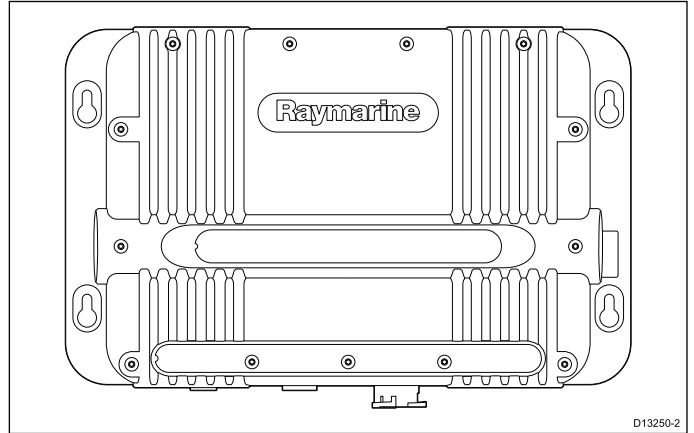
The CP370 has the following features:

- Single channel **ClearPulse™** sonar (conical beam).
- Up to 1,500 m depth range.
- Water temperature and speed sensing.
- Support for transom, through-hull and in-hull transducers.
- 12 V or 24 V dc operation.
- Waterproof to IPX6.
- Robust and waterproof high-speed network connection.

CP470 product overview

The CP470 is a **ClearPulse™** CHIRP broadband sonar module. In conjunction with a compatible multifunction display, the CP470 provides a detailed view of the water beneath your vessel including the bottom, enabling you to identify fish and other objects.

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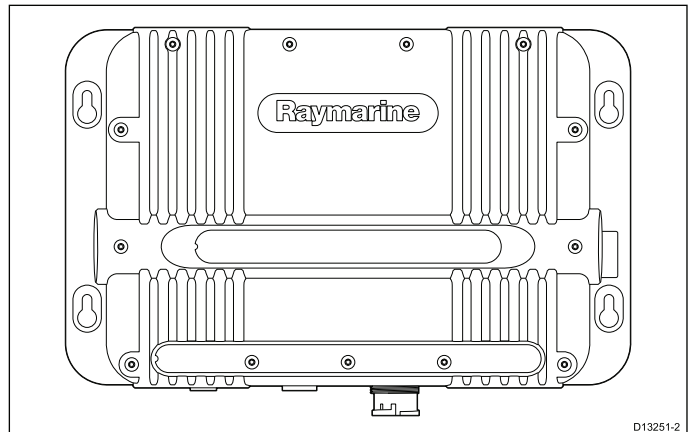
The CP470 has the following features:

- **ClearPulse™** CHIRP broadband sonar (conical beam).
- Up to 3,000 m depth range.
- Water temperature and speed sensing.

- Support for transom, through-hull and in-hull transducers.

- Support for Wide Beam transducers.

- 12 V or 24 V dc operation.

- Waterproof to IPX6.

- Robust and waterproof high-speed network connection.

CP570 product overview

The CP570 is a **ClearPulse™** CHIRP dual-channel broadband sonar module. In conjunction with a compatible multifunction display, the CP570 provides a detailed view of the water beneath your vessel including the bottom, enabling you to identify fish and other objects.
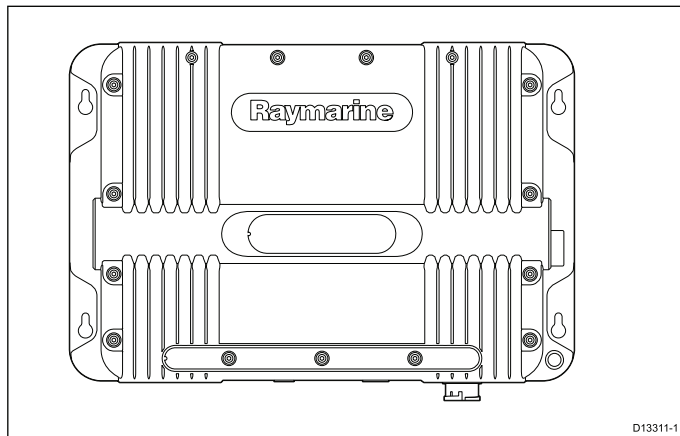
The CP570 has the following features:

- Dual channel **ClearPulse™** CHIRP sonar (conical beam).

- Independent channels (2 transmit, 2 receive).

- Up to 3,000 m depth range

- Water temperature and speed sensing.

- Support for transom, through-hull and in-hull transducers.

- Support for Wide Beam transducers.

- 12 V or 24 V dc operation.

- Waterproof to IPX6.

- Robust and waterproof high-speed network connection.

2.4 Sonar technology

Traditional sonar technology

Traditional sonar uses a single carrier frequency or carrier wave for the sonar ping. The sonar works by measuring the time it takes the ping echo to return to the transducer to determine target depth.
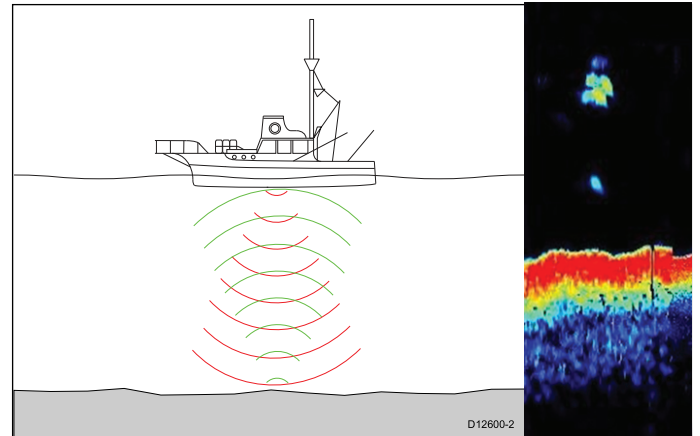
CHIRP technology

CHIRP sonars use a swept frequency 'CHIRP' signal which can distinguish between multiple close targets, this enables the sonar to display multiple targets instead of large combined targets that you would see when using traditional non-CHIRP sonar.

Benefits of CHIRP include improvements to target resolution, bottom detection even through bait balls and thermoclines and detection sensitivity.
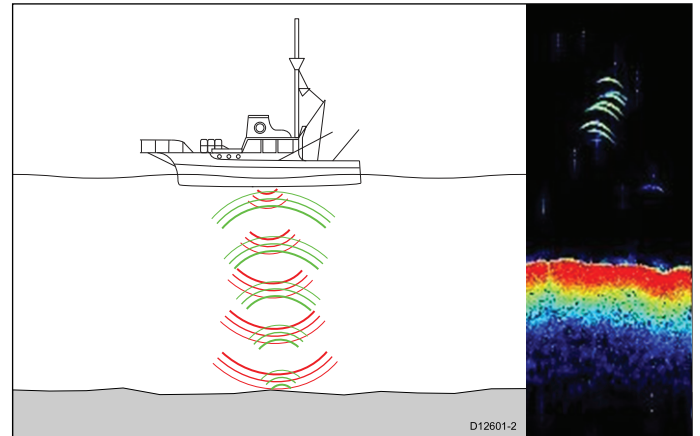
2.5 Raymarine sonar modules

The table below lists Raymarine's current range of sonar modules.

Sonar module	Technology / Description
CP100	CHIRP **DownVision**™ / Sonar external
CP200	**SideVision**™ external
CP300 / CP370	Traditional (1 kW) external
CP450C / CP470	CHIRP external
CP570	CHIRP external
a68 / a78 / a98 / a128 / eS78 / eS98 / eS128	CHIRP **DownVision**™ / Sonar internal
a67 / a77 / a97 / a127 / c97 / c127 / e7D / e97 / e127 / eS77 / eS97 / eS127	Traditional (600 W) internal
DSM30 / DSM300	Legacy external
Dragonfly	CHIRP **DownVision**™ / Sonar internal

Note: SideVision™ cannot be used as a source of depth data.

Chapter 3: Planning the installation

Chapter contents

3.1 Installation checklist

Installation includes the following activities:

	Installation Task
1	Plan your system.
2	Obtain all required equipment and tools.
3	Site all equipment.
4	Route all cables.
5	Drill cable and mounting holes.
6	Make all connections into equipment.
7	Secure all equipment in place.
8	Power on and test the system.

Schematic diagram

A schematic diagram is an essential part of planning any installation. It is also useful for any future additions or maintenance of the system. The diagram should include:

* Location of all components.
* Connectors, cable types, routes and lengths.

3.2 Required additional components

This product forms part of a system of electronics and requires the following additional components for full operation.

* For a list of transducer cables refer to 10.1 Spares and accessories.
* Compatible Raymarine multifunction display. Refer to 3.3 Compatible multifunction displays for a list of compatible products.
* Data cables. Refer to Chapter 4 Cables and connections for suitable cables. Some installations may also require extensions to data, power or transducer cables. Refer to the Chapter 4 Cables and connections and Chapter 10 Spares and accessories sections for more information.

CP370: EMC compliance

> **Important:** To ensure EMC Compliance, the transducers listed below are NOT certified to be used with the CP370 in the following regions:
>
> * Australia;
> * New Zealand;
> * any member state of the European Economic Area (EEA);
> * European Free Trade Association countries Iceland, Liechtenstein, Norway and Switzerland;
> * any country that requires EMC Directive Compliance.
>
> If in doubt, please contact your local dealer or Raymarine technical support.

Transducers NOT certified to be used with the CP370 in the regions listed above:

* E66054 (P66, Plastic, Transom mount)
* E66008 (P79, Plastic, In-hull)
* A66091 (B744V, Bronze, Through-hull)
* A66092 (B744VL, Bronze, Through-hull)
* E66013 (P319, Plastic, Through-hull)
* E66014 (B117, Bronze, Through-hull)
* E66085 (B60–20°, Bronze, Tilted element, Through-hull)
* E66086 (B60–12°, Bronze, Tilted element, Through-hull)

3.3 Compatible multifunction displays

The following Raymarine multifunction displays are compatible with your sonar module.

Multifunc-tion display	CP370	CP470	CP570
gS Series	●	●	●
eS Series	●	●	●
e Series	●	●	●
c Series	●	●	●
a Series	●	●	●
E-Series Widescreen	●	Not compatible	Not compatible
C-Series Widescreen	●	Not compatible	Not compatible
G-Series	●	Not compatible	Not compatible
E Classic	●	Not compatible	Not compatible
C Classic	Not compatible	Not compatible	Not compatible

3.4 Software updates

The software running on the product can be updated.

- Raymarine periodically releases software updates to improve product performance and add new features.

- You can update the software for your product using a connected and compatible multifunction display.

- If in doubt as to the correct procedure for updating your product software, refer to your dealer or Raymarine technical support.

> **Caution: Downloading software updates**
>
> The software update process is carried out at your own risk. Before initiating the update process ensure you have backed up any important files.
>
> Ensure that the unit has a reliable power supply and that the update process is not interrupted.
>
> Damage caused by incomplete updates are not covered by Raymarine warranty.
>
> By downloading the software update package, you agree to these terms.
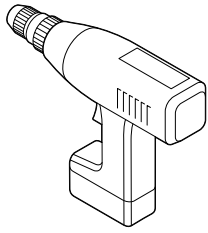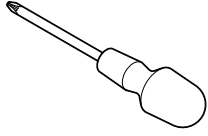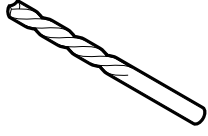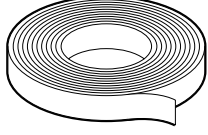
3.5 Tools required

Product installation requires the following tools:

Item	Description	Quantity
	Power drill	1
	Pozidrive screwdriver	1
	Drill bit of appropriate size*	1
	Adhesive tape	1

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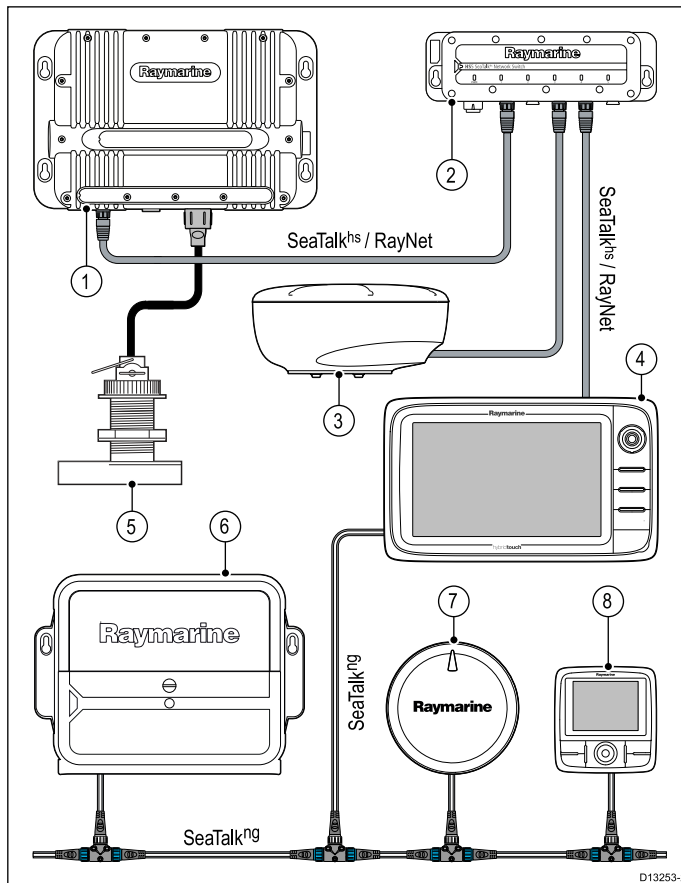
3.6 System examples

The system examples below apply to your sonar module.

Example: Basic system

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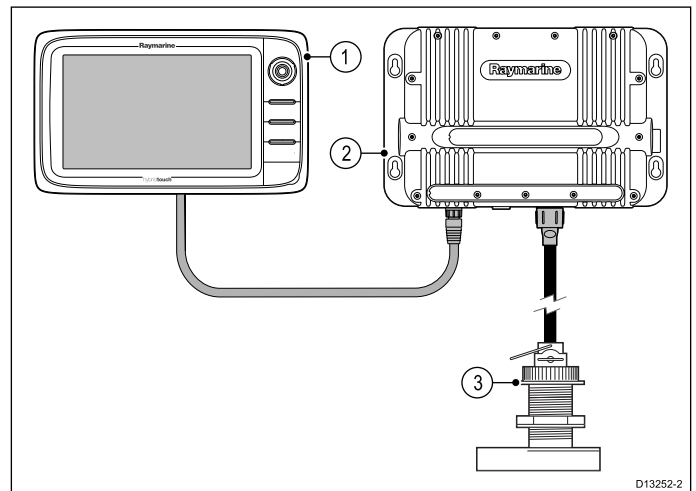
Item	Description
1	Compatible Raymarine multifunction display
2	Sonar module (CP470 illustrated)
3	Transducer

Example: Extended system

Item	Description
1	Sonar module (CP470 illustrated)
2	Raymarine network switch
3	Digital radome
4	Compatible Raymarine multifunction display
5	Transducer
6	Actuator Control Unit (ACU)
7	EV unit
8	SeaTalk^{ng} Pilot controller

Note: For detailed information on sonar module connections refer to Chapter 4 Cables and connections.

3.7 Warnings and cautions

Important: Before proceeding, ensure that you have read and understood the warnings and cautions provided in the Chapter 1 Important information section of this document.

3.8 General location requirements

Important considerations when choosing a suitable location for your product.

This product is suitable for mounting above or below decks.

The product should be mounted where it will be:

- protected from physical damage and excessive vibration.
- well ventilated and away from heat sources.
- away from any potential ignition source such as an engine room, near fuel tanks or a gas locker.

When choosing a location for the product, consider the following points to ensure reliable and trouble-free operation:

- **Access** — there must be sufficient space to enable cable connections to the product, avoiding tight bends in the cable.
- **Diagnostics** — the product must be mounted in a location where the diagnostics LED is easily visible.

> **Note:** Not all products include a diagnostics LED. Refer to the Chapter 6 System checks and troubleshooting for more information.

- **Electrical interference** — the product should be mounted far enough away from any equipment that may cause interference such as motors, generators and radio transmitters / receivers.
- **Magnetic compass** — refer to the *Compass safe distance* section in this document for advice on maintaining a suitable distance between this product and any compasses on your vessel.
- **Power** — to keep cable runs to a minimum, the product must be located as close as possible to the vessel's dc power supply.
- **Mounting surface** — ensure the product is adequately supported on a secure surface. Refer to the weight information provided in the *Technical specification* for this product and ensure that the intended mounting surface is suitable for bearing the product weight. Do NOT mount units or cut holes in places which may damage the structure of the vessel.

Cable routing requirements

Consider the following before installing the system cables:

- You will need to attach power, transducer and network cables to the unit.
- The transducer cable should only be extended where the sonar module cannot be installed close enough to the transducer to allow a direct connection.
- All cables should be adequately secured, protected from physical damage, and protected from exposure to heat.
- Avoid sharp bends in cables.

- Use a watertight feed-through wherever a cable passes through an exposed bulkhead or deckhead.
- Secure cables in place using tie-wraps or lacing twine. Coil any extra cable and tie it out of the way.
- Do NOT run cables through bilges or doorways, or close to moving or hot objects.
- 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.

Compass safe distance

To prevent potential interference with the vessel's magnetic compasses, ensure an adequate distance is maintained from the product.

When choosing a suitable location for the product you should aim to maintain the maximum possible distance from any compasses. Typically this distance should be at least 1 m (3 ft) in all directions. However for some smaller vessels it may not be possible to locate the product this far away from a compass. In this situation, when choosing the installation location for your product, ensure that the compass is not affected by the product when it is in a powered state.
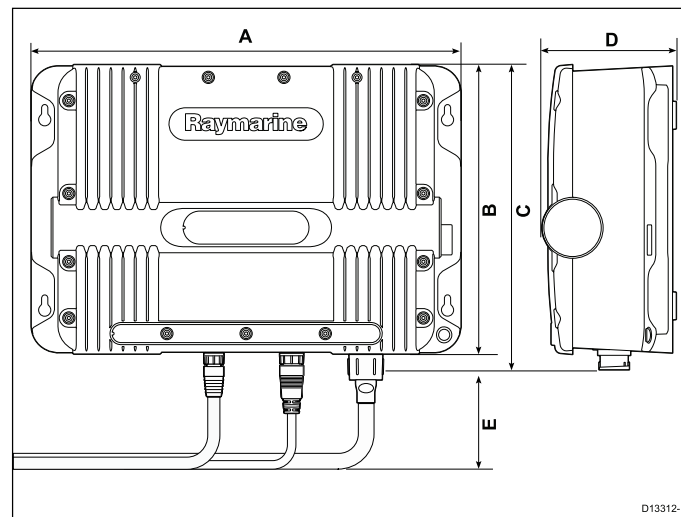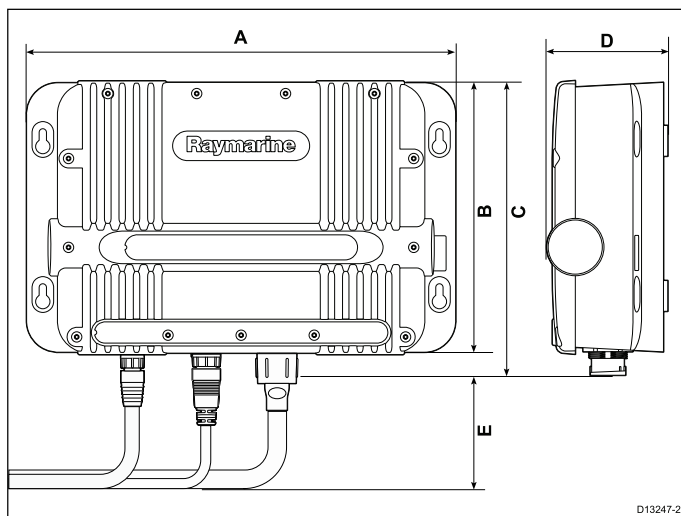
3.9 Product dimensions

CP370 dimensions
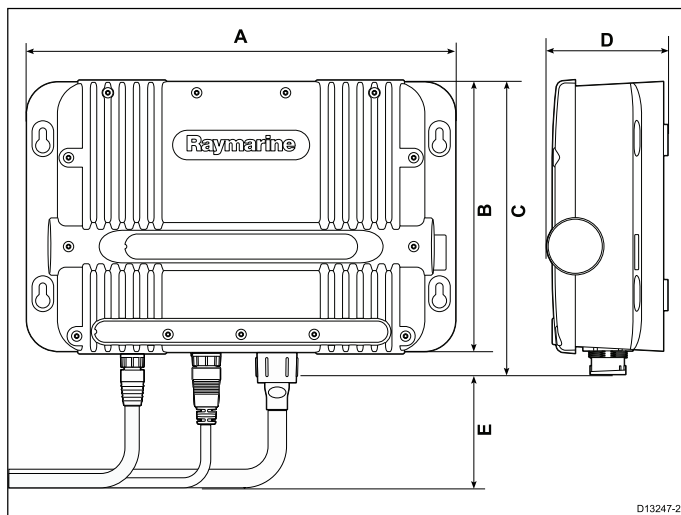
Item	Dimension
A	299.4 mm (11.79 in)
B	188.0 mm (7.4 in)
C	201.5 mm (7.9 in)
D	84.4 mm (3.3 in)
E	80.0 mm (3.1 in)

CP470 dimensions

Item	Dimension
A	299.4 mm (11.79 in)
B	188.0 mm (7.4 in)
C	205.6 mm (8.1 in)
D	84.4 mm (3.3 in)
E	80.0 mm (3.1 in)

CP570 dimensions

Item	Dimension
A	352.5 mm (13.9 in)
B	235 mm (9.3 in)
C	248.1 mm (9.8 in)
D	109.9 mm (4.3 in)
E	80.0 mm (3.1 in)

Chapter 4: Cables and connections

Chapter contents

4.1 General cabling guidance

Cable types and length

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

- Unless otherwise stated use only standard cables of the correct type, supplied by Raymarine.

- Ensure that any non-Raymarine cables are of the correct quality and gauge. For example, longer power cable runs may require larger wire gauges to minimize voltage drop along the run.

Routing cables

Cables must be routed correctly, to maximize performance and prolong cable life.

- Do NOT bend cables excessively. Wherever possible, ensure a minimum bend diameter of 200 mm (8 in) / minimum bend radius of 100 mm (4 in).
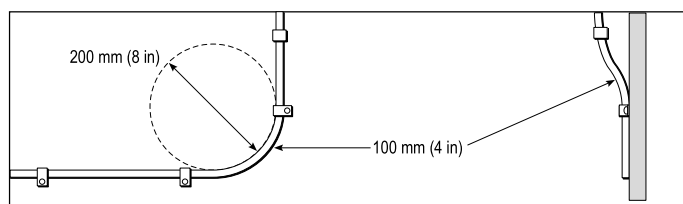
- Protect all cables from physical damage and exposure to heat. Use trunking or conduit where possible. Do NOT run cables through bilges or doorways, or close to moving or hot objects.

- Secure cables in place using tie-wraps or lacing twine. Coil any extra cable and tie it out of the way.

- Where a cable passes through an exposed bulkhead or deckhead, use a suitable watertight feed-through.

- 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,

- antennae.

Strain relief

Ensure adequate strain relief is provided. Protect connectors from strain and ensure they will not pull out under extreme sea conditions.

Circuit isolation

Appropriate circuit isolation is required for installations using both AC and DC current:

- Always use isolating transformers or a separate power-inverter to run PC's, processors, displays and other sensitive electronic instruments or devices.

- Always use an isolating transformer with Weather FAX audio cables.

- Always use an isolated power supply when using a 3rd party audio amplifier.

- Always use an RS232/NMEA converter with optical isolation on the signal lines.

- Always make sure that PC's or other sensitive electronic devices have a dedicated power circuit.

Cable shielding

Ensure that all data cables are properly shielded that the cable shielding is intact (e.g. hasn't been scraped off by being squeezed through a tight area).

Suppression ferrites

- Raymarine cables may be pre-fitted or supplied with suppression ferrites. These are important for correct EMC performance. If ferrites are supplied separately to the cables (i.e. not pre-fitted), you must fit the supplied ferrites, using the supplied instructions.

- If a ferrite has to be removed for any purpose (e.g. installation or maintenance), it must be replaced in the original position before the product is used.

- Use only ferrites of the correct type, supplied by Raymarine or its authorized dealers.

- Where an installation requires multiple ferrites to be added to a cable, additional cable clips should be used to prevent stress on the connectors due to the extra weight of the cable.
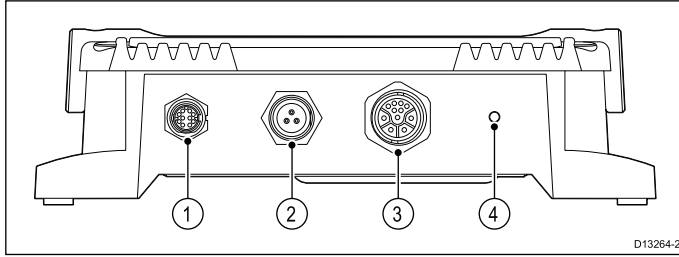
4.2 Connections overview

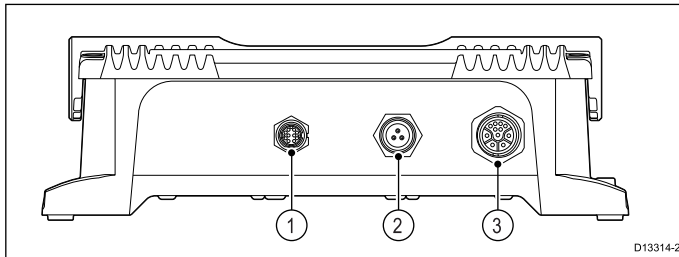Cable connectors for your sonar module are shown below:

CP370 sonar module

D13265-2

CP470 sonar module

D13264-2

CP570 sonar module

D13314-2
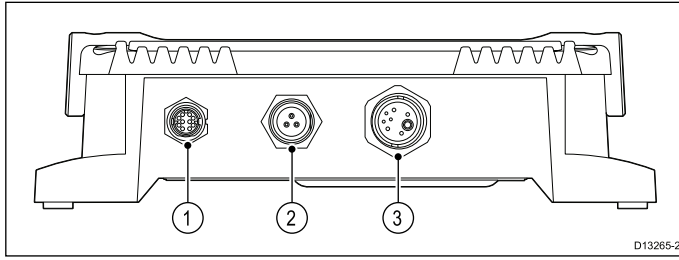
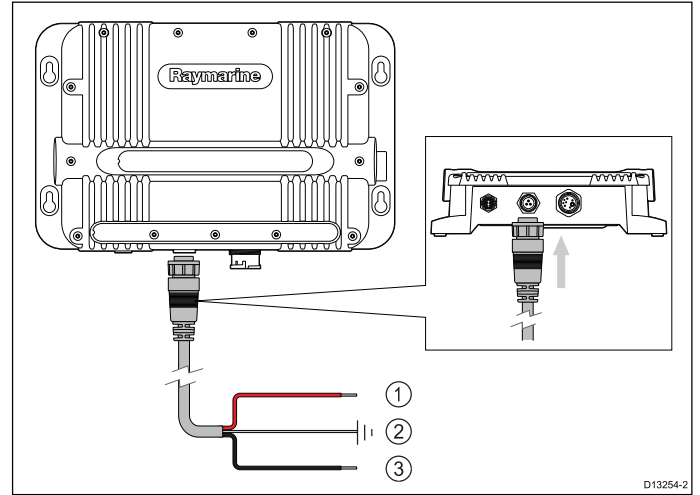| Item	Description
1	Network connection
2	Power connection
3	Transducer connection
4	Additional grounding point (CP470 only)

Making connections

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 to the unit has been installed in accordance with the installation instructions supplied with that device.
3. Ensuring correct orientation, push the cable connector fully onto the corresponding connector on the unit.
4. Turn the locking collar clockwise to secure the cable.

4.3 Power connection

Always use the power cable provided with your product.

D13254-2

Item	Description
1	RED positive wire
2	Ground
3	BLACK negative wire

D13255-2
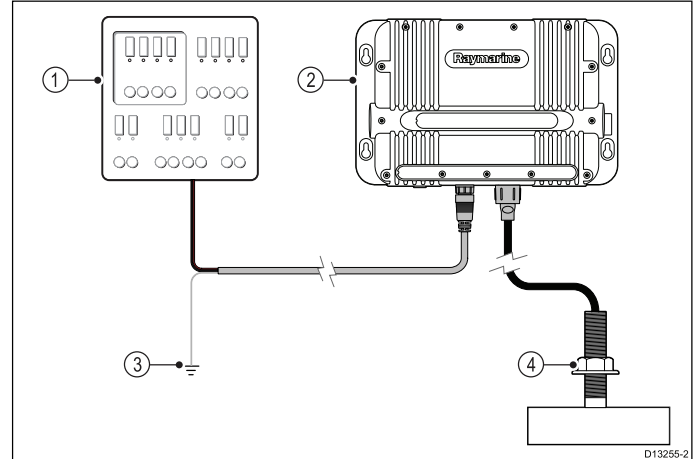
Item	Description
1	Power supply
2	Sonar module (CP470 illustrated)
3	Vessel's RF ground
4	Transducer

The unit is intended for use on dc 'negative' or 'floating' ground power systems rated from 10.2 V to 32 V.

Raymarine recommends that all power connections are made via a distribution panel. All equipment must be either:

- powered from a circuit breaker or switch, with circuit protection (5 A), or
- powered from a slow blow in-line fuse (5 A) connected to the RED positive wire of the power cable.

The unit does NOT have a power switch. The unit is powered when the power cable is attached to the vessel's power supply.

Note: The unit should be mounted so that the power cable can be easily removed if necessary. If the unit is placed in a difficult to reach location, Raymarine recommends installing an on/off switch on the power connection at a point that is easily accessible.

Power cable extension

The product is supplied with a power cable, which can be extended if required.

- The power cable for each unit in your system should be run as a separate, single length of 2-wire cable from the unit to the vessel's battery or distribution panel.
- Raymarine recommends a **minimum** wire gauge of 18AWG (0.82 mm^2) for any length of cable extension.
- For all lengths of extension to the power cable, ensure there is a continuous **minimum** voltage at the product's power connector of 10.8 V with a fully flat battery at 11 V.

Important: Be aware that some products in your system (such as sonar modules) can create voltage peaks at certain times, which may impact the voltage available to other products during the peaks.

Breakers, fuses and circuit protection

The information below is provided as guidance to help protect your product. The example illustrations provided are for common vessel power arrangements. If you are unsure how to provide the correct level of protection then please consult a Raymarine authorized dealer for support.

Distribution panel connection

It is recommended that your product is wired through your vessel's distribution panel via a thermal breaker or fuse.
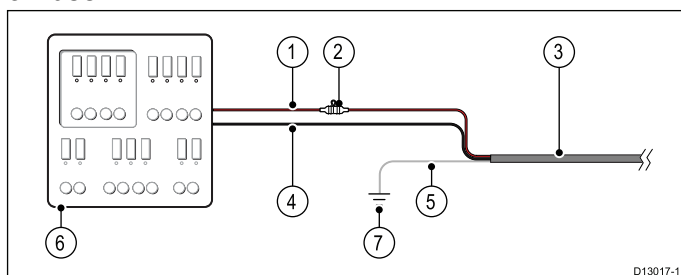
1. Vessel power supply positive (+)
2. In-line fuse (your product may contain a fuse already built in to the power cable.)
3. Product power cable
4. Vessel power supply negative (-)
5. * Drain wire
6. Vessel distribution panel
7. * Vessel RF ground point connection

Note: * Only applicable to products that include a drain wire on the product's power cable.

Thermal breaker rating
5 A (if only connecting one device)

Battery connection with RF ground

If your vessel does not have a distribution panel then your product may be wired directly to the battery with the drain wire connected to the vessel's RF ground point.
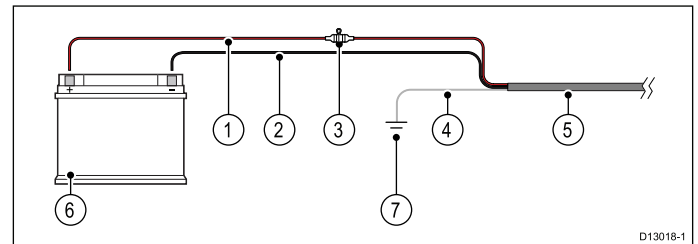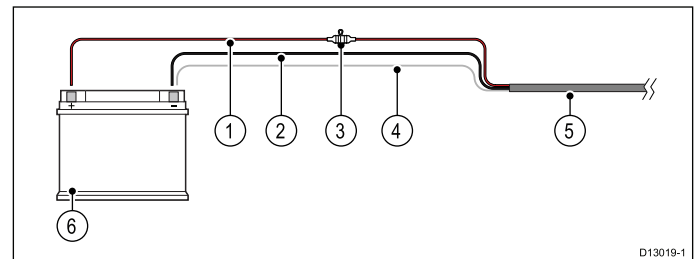

1. Vessel power supply positive (+)
2. Vessel power supply negative (-)
3. In-line fuse (If your products power cable does not have a built in fuse then an in-line fuse must be fitted.)
4. * Drain wire
5. Product power cable
6. Vessel battery
7. * Vessel RF ground point connection

Note: * Only applicable to products that include a drain wire on the product's power cable.

Battery connection with no RF ground

If your vessel does not have a distribution panel or an RF ground point then your product may be wired directly to the battery with the drain wire also connected to the battery's negative terminal.

1. Vessel power supply positive (+)
2. Vessel power supply negative (-)
3. In-line fuse (If your products power cable does not have a built in fuse then an in-line fuse must be fitted.)
4. * Drain wire connected to vessel negative power supply.
5. Product power cable
6. Vessel battery

Note: * Only applicable to products that include a drain wire on the product's power cable.

Sharing a breaker

Where more than 1 piece of equipment shares a breaker you must provide protection for the individual circuits. E.g. by connecting an in-line fuse for each power circuit.
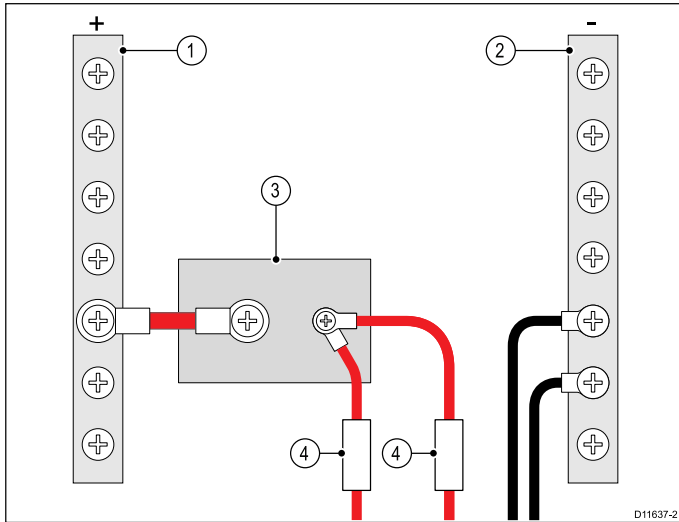
1	Positive (+) bar
2	Negative (-) bar
3	Circuit breaker
4	Fuse

Where possible, connect individual items of equipment to individual circuit breakers. Where this is not possible, use individual in-line fuses to provide the necessary protection.

> ⚠️ **Warning: Product grounding**
>
> Before applying power to this product, ensure it has been correctly grounded, in accordance with the instructions provided.

Grounding — Dedicated drain wire

The power cable supplied with this product includes a dedicated shield (drain) wire for connection to a vessel's RF ground point.

It is important that an effective RF ground is connected to the system. A single ground point should be used for all equipment. The unit can be grounded by connecting the shield (drain) wire of the power cable to the vessel's RF ground point. On vessels without an RF ground system the shield (drain) wire should be connected directly to the negative battery terminal.

The dc power system should be either:

- Negative grounded, with the negative battery terminal connected to the vessel's ground.

- Floating, with neither battery terminal connected to the vessel's ground

> ⚡ **Warning: Positive ground systems**
>
> Do not connect this unit to a system which has positive grounding.

Grounding — additional dedicated drain wire required (CP470 only)

The CP470 requires an additional dedicated drain wire. This wire supplements the drain wire (shield) that is part of the product's power cable.

CP470 sonar module — additional grounding connection
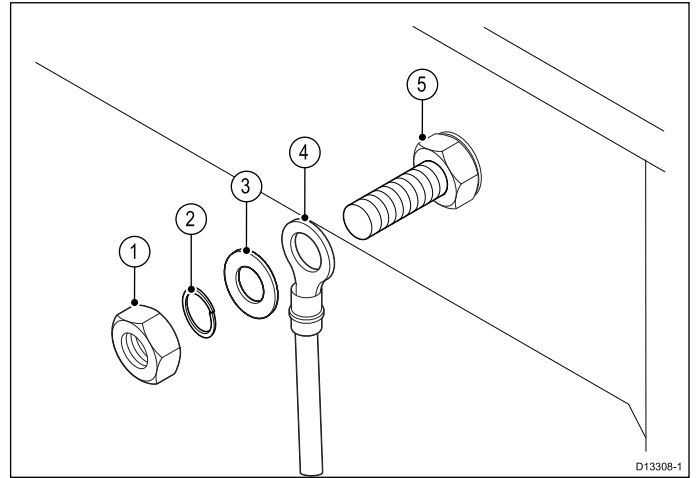
Item	Description
1	Nut
2	Spring washer
3	Washer
4	Additional drain wire
5	Product additional ground point

Connect one end of the additional drain wire to your product. To locate the additional grounding point on your product, refer to the Connections illustration in this document.

Connect the other end of the additional drain wire to the same point as the power cable drain wire (shield). This will be either the vessel's RF ground point, or on vessels without an RF ground system, the negative battery terminal.

The dc power system should be either:

- Negative grounded, with the negative battery terminal connected to the vessel's ground; or

- Floating, with neither battery terminal connected to the vessel's ground.

If several items require grounding, they may first be connected to a single local point (e.g. within a switch panel), with this point connected via a single, appropriately-rated conductor, to the vessel's common RF ground point.

Implementation

The preferred minimum requirement for the path to ground is via a flat tinned copper braid, with a 30 A rating (1/4 inch) or greater. If this is not possible, an equivalent stranded wire conductor may be used, rated as follows:

- for runs of <1 m (3 ft), use 6 mm² (#10 AWG) or greater.

- for runs of >1 m (3 ft), use 8 mm² (#8 AWG) or greater.

In any grounding system, always keep the length of connecting braid or wires as short as possible.

References

- ISO10133/13297
- BMEA code of practice
- NMEA 0400

4.4 Transducer connections

⚠️ **Warning: Transducer cables**

Do not remove the transducer cable whilst the product is powered on, doing so can cause sparks. If the transducer cable is accidently removed whilst the product is powered on, switch the product's power off, replace the cable and then switch the power back on.

Caution: Do not cut transducer cables

- Cutting the transducer cable severely reduces sonar performance. If the cable is cut, it must be replaced, it cannot be repaired.
- Cutting the transducer cable will void the warranty and invalidate the European CE mark.

CP370 Transducer connections

The CP370 is a **ClearPulse™** sonar module designed for use with traditional transducers.

Transducers must be installed in accordance with the instructions provided with the transducer.

Traditional transducer connection

D13256-2
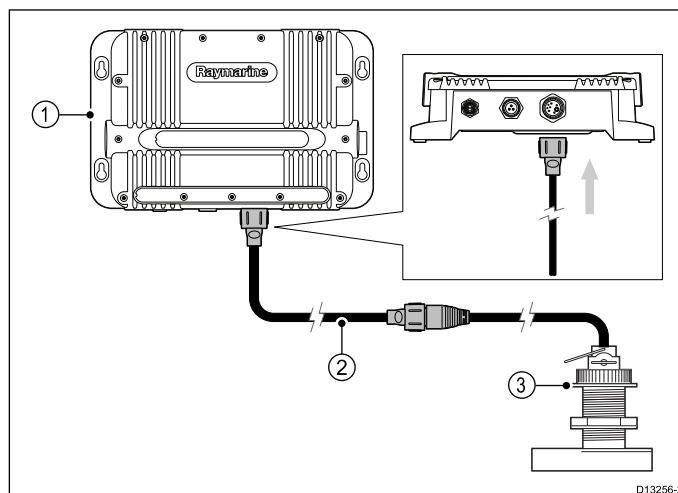
Item	Description
1	CP370
2	Extension cable (optional)
3	Transducer

Dual transducer connections
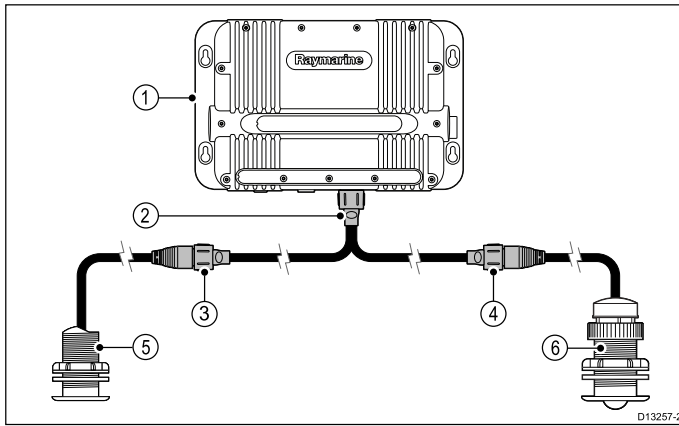
Item	Description
1	CP370
2	Dual Speed and Temperature traditional transducer cable (part number E66022)
3	Cable to transducer connection
4	Cable to transducer connection
5	Traditional transducer (e.g. Depth)
6	Traditional transducer (e.g. Speed and Temperature)

For a list of transducer cables refer to 10.1 Spares and accessories.

CP470 / CP570 Transducer connections

The CP470 is a **ClearPulse™** CHIRP broadband sonar module designed for use with broadband transducers.

The CP570 is a **ClearPulse™** CHIRP dual-channel broadband sonar module designed for use with broadband transducers.

Note: Transducers without Transducer ID® are not supported.

Important: Transducers must be installed in accordance with the instructions provided with the transducer.

The following connection diagrams show a CP470 sonar module, but also applicable to the CP570 sonar module.

Broadband transducer connections
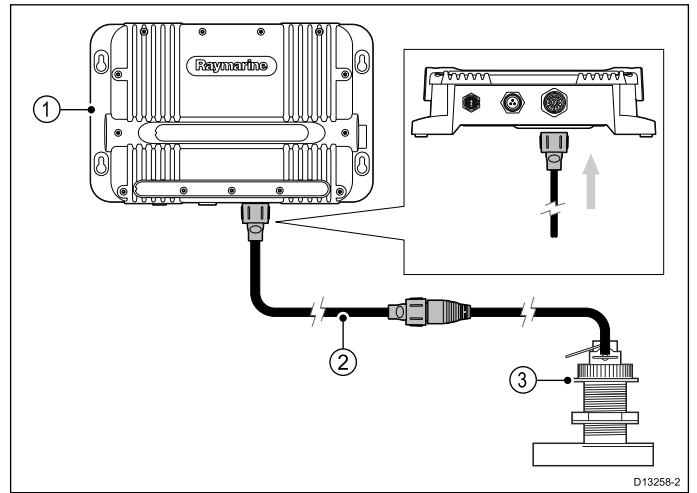
Item	Description
1	CP470
2	Extension cable (optional)
3	Broadband transducer

Dual broadband (single element) transducer connections
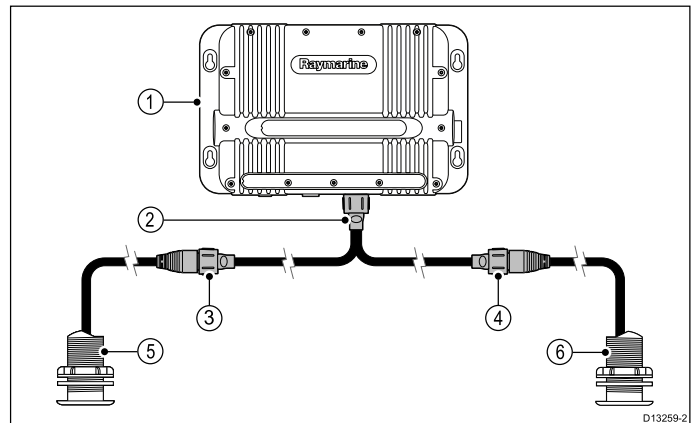
Item	Description
1	CP470
2	Paired CHIRP transducer Y-cable (part number A102146)
3	Channel B of combined cable
4	Channel A of combined cable
5	Broadband transducer
6	Broadband transducer

Transducer pair connections

Transducer Pair Frequencies	Cable Channel A	Cable Channel B
Low & High	Low frequency transducer	High frequency transducer
Low & Medium	Low frequency transducer	Medium frequency transducer
Medium & High	Medium frequency transducer	High frequency transducer

Note: When fitting transducer pairs ensure that channel A and channel B of the transducer cable are connected to the relevant transducer as shown in the table above.

Single broadband (single element) transducer connections

D13315-1

Item	Description
1	CP470
2	Single B75/B175 operation cable (part number A80328)
3	Broadband transducer

Dual transducer connections
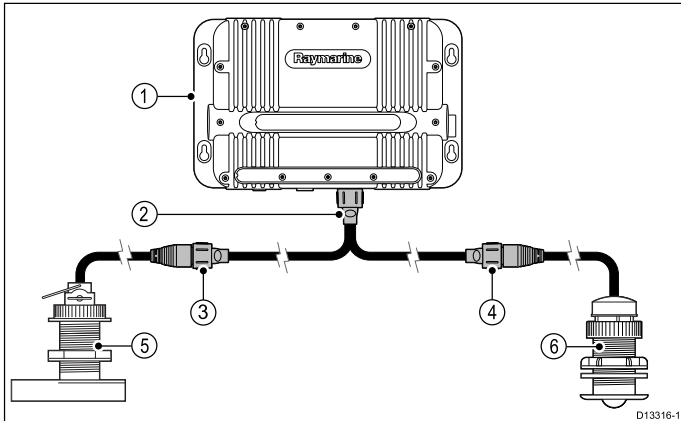
D13316-1

Item	Description
1	CP470
2	Dual Speed and Temperature CHIRP transducer cable (part number A80345)
3	Cable to transducer connection
4	Cable to transducer connection
5	Broadband transducer
6	Speed and Temperature transducer
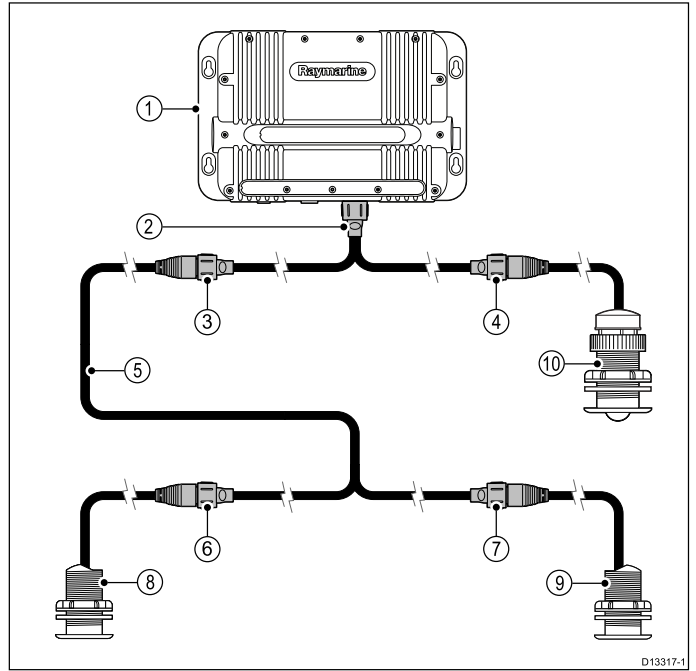
Dual broadband (single element) transducer connections (with Speed and Temperature transducer)

D13317-1

Item	Description
1	CP470
2	Dual Speed and Temperature CHIRP transducer cable (part number A80345)
3	Cable to Y-cable (A102146) connection
4	Cable to transducer connection
5	Paired CHIRP transducer Y-cable (part number A102146)
6	Channel B of combined cable
7	Channel A of combined cable
8	Broadband transducer
9	Broadband transducer
10	Speed and Temperature transducer

Transducer pair connections

Transducer Pair Frequencies	Cable Channel A	Cable Channel B
Low & High	Low frequency transducer	High frequency transducer
Low & Medium	Low frequency transducer	Medium frequency transducer
Medium & High	Medium frequency transducer	High frequency transducer

Note: When fitting transducer pairs ensure that channel A and channel B of the transducer cable are connected to the relevant transducer as shown in the table above.

Single broadband (single element) transducer connections (with Speed and Temperature transducer)

Item	Description
1	CP470
2	Dual Speed and Temperature CHIRP transducer cable (part number A80345)
3	Cable to cable (A80328) connection
4	Cable to transducer connection
5	Single B75/B175 operation cable (part number A80328)
6	Speed and Temperature transducer
7	Broadband transducer

For a list of transducer cables refer to 10.1 Spares and accessories.

Transducer cable extension

For some installations it may be necessary to extend the transducer cable.

• Refer to Chapter 10 Spares and accessories for a list of suitable transducer extension cables.

• Raymarine recommends a maximum of one cable extension for any single transducer cable.

• For best performance, keep all cable lengths to a minimum.

Cable extensions for Wide Beam transducers

All Wide Beam transducers are supplied with a fixed 2 m cable.

You must pair the fixed 2 m cable with an appropriate extension cable to connect the Wide Beam transducer to your CHIRP sonar module.

For paired Wide Beam transducer installations, extension cables must be placed between the Y-cable and the transducer.

4.5 Network connection

The unit must be connected to a compatible Raymarine multifunction display to enable echo sounder data to be viewed.

Multifunction display connection

Unit connected to a multifunction display using a RayNet cable.
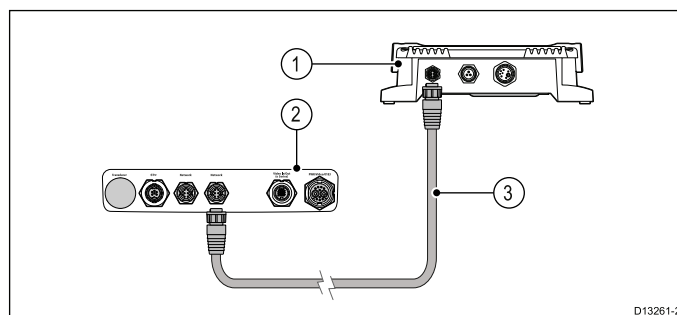
Note: The connection panel on your product may look slightly different to that shown, depending on variant. The network connection method remains the same for all products featuring RayNet connectors.

Item	Description
1	Sonar module (CP370 illustrated).
2	Connector panel for compatible Raymarine multifunction display.
3	RayNet cable.

Multifunction display configuration (extended cables)

When the required length of a single network cable run is greater than 20 m (65.6 ft), a RayNet (male) to (male) adaptor cable should be used to connect RayNet cables together .
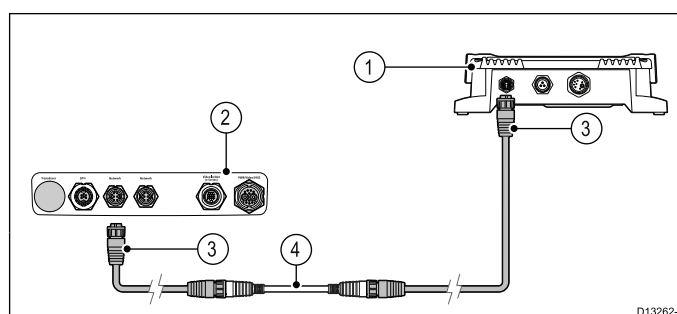
Note: The connection panel on your product may look slightly different to that shown, depending on variant. The network connection method remains the same for all products featuring RayNet connectors.

Item	Description
1	Sonar module (CP370 illustrated).
2	Connector panel for compatible Raymarine multifunction display.
3	RayNet cables.
4	RayNet (Male) to (Male) adaptor cable.

Multiple multifunction display configuration

A Raymarine network switch can be used to connect the unit to more than 1 multifunction display.

Note: Ensure network cables and connections are tight and secure using any cable ties provided with your network hardware.
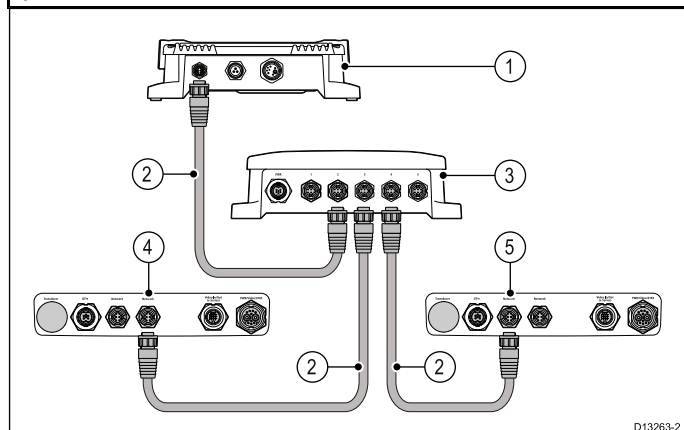
D13263-2

Note: The connection panel on your product may look slightly different to that shown, depending on variant. The network connection method remains the same for all products featuring RayNet connectors.

Item	Description
1	Sonar module (CP370 illustrated).
2	RayNet cable.
3	RayNet network switch.
4	Connector panel for compatible Raymarine multifunction display.
5	Connector panel for additional compatible Raymarine multifunction display.

Chapter 5: Mounting

Chapter contents

5.1 Mounting

Important: The fixing screws supplied with your product may not be suitable for the mounting surface. Please check the security and integrity of the mounted product before finalizing your installation. If necessary, obtain replacement or additional mounting screws to ensure a secure installation.

Mounting the unit

Having chosen a suitable location, install the unit as follows:

Note: Raymarine recommends mounting the unit vertically.

1. Secure the mounting template in the required location using adhesive tape.
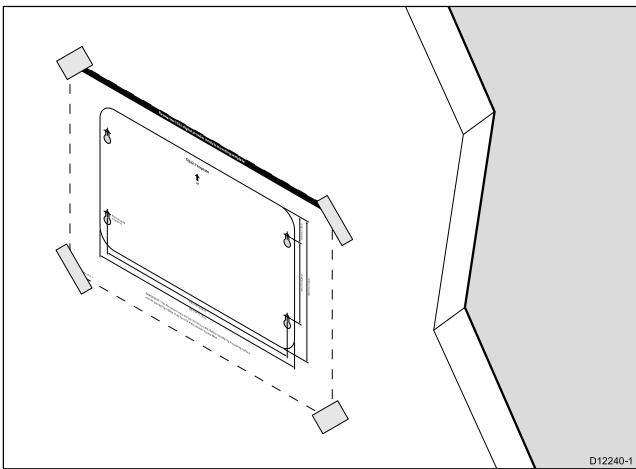
2. Drill 4 holes at the marked location on the template.
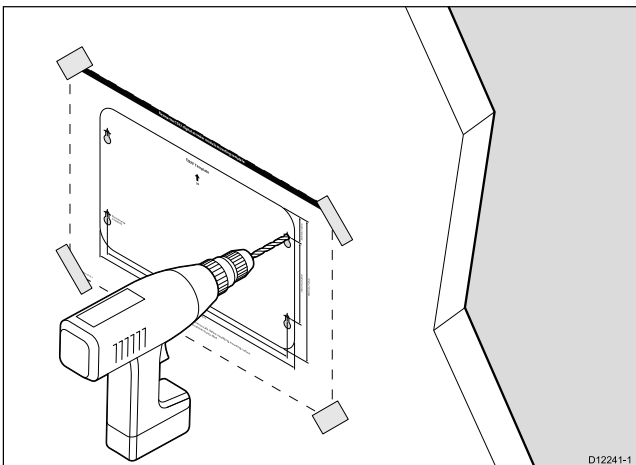
3. Remove the mounting template.
4. Screw in the fixing screws about half way into the holes.
5. Place the unit onto the fixing screws.
6. Push the unit down to engage the key slots in the unit.

7. Tighten the screws (CP370 illustrated).
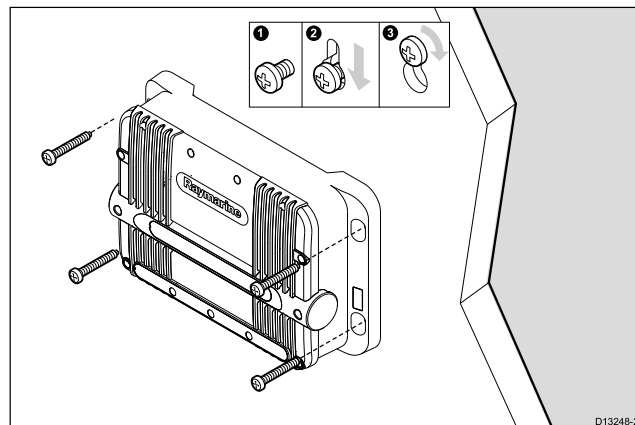
Note: Drill bit, tap size and tightening torque is dependent on the thickness and type of material the unit is to be mounted on.

Chapter 6: System checks and troubleshooting

Chapter contents

6.1 Initial power on test

Once the unit has been correctly installed check that it is operating correctly.

After powering on, the unit will take approximately 25 seconds to start up. From powering on through to normal operation, the LED status indicator should be solid green, changing to blinking green when normal operation is underway. If the LED status indicator is not blinking green then refer to the troubleshooting section of this handbook.

Open the Fishfinder application on your connected multifunction display and ensure that it is operating correctly.
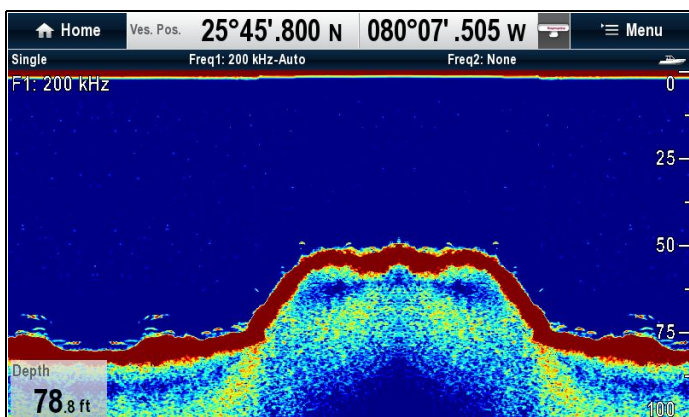
Operation instructions

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

CP370 — Legacy multifunction display transducer set up

To set up the sonar module / transducer on an **E Classic**, **C-Series Widescreen**, **E-Series Widescreen** or **G-Series** the following steps must be followed:

1. Select the relevant transducer from the set-up menu.

2. Wait 10 seconds for the change to take effect

Selecting the transducer

From the main fishfinder screen:

1. Press the **MENU** button.
2. Select **Fishfinder Setup** from the list of options.
3. Select **Transducer Settings** from the list of menu options:
4. Use the **Select Transducer** option and select the appropriate transducer from those available.

> **Important:** A transducer will be selected by default, if this is the same as the transducer you have installed then you must re-select it from the list in order for it to be made the active transducer.

6.2 Troubleshooting

The troubleshooting information provides possible causes and corrective action required for common problems associated with marine electronics installations.

All Raymarine products are, prior to packing and shipping, subjected to comprehensive test and quality assurance programs. However, if you experience problems with the operation of your product this section will help you to diagnose and correct problems in order to restore normal operation.

If after referring to this section you are still having problems with your unit, please contact Raymarine Technical Support for further advice.

Sonar troubleshooting

Problems with the sonar and their possible causes and solutions are described here.

Scrolling image is not being displayed

Possible causes	Possible solutions
Sonar disabled	Select **Ping Enable** from the Sounder Set-up menu.
Incorrect transducer selected	Check that the correct transducer is selected in the Transducer Set-up menu.
Damaged cables	1. Check that the transducer cable connector is fully inserted and locked in position. 2. Check the power supply cable and connectors for signs of damage or corrosion, replace if necessary. 3. With the unit turned on, try flexing the cable near to the display connector to see if this causes the unit to re-boot/loose power, replace if necessary. 4. Check the vessel's battery voltage, the condition of the battery terminals and power supply cables, ensuring connections are secure, clean and free from corrosion, replace if necessary. 5. With the product under load, using a multi-meter, check for high voltage drop across all connectors/fuses etc (this can cause the Fishfinder applications to stop scrolling or the unit to reset/turn off), replace if necessary.
Damaged or fouled transducer	Check the condition of the transducer ensuring it is not damaged and is free from debris/fouling, clean or replace as necessary.
Wrong transducer fitted	Ensure the transducer is compatible with your system.
SeaTalk^{hs} / RayNet network problem.	• Check that the unit is correctly connected to the multifunction display or Raymarine network switch. If a crossover coupler or other coupler cable / adapter is used, check all connections ensuring connections are secure, clean and free from corrosion, replace if necessary.
Software mismatch between equipment may prevent communication.	Ensure all Raymarine products contain the latest available software.

No depth reading / lost bottom lock

Possible causes	Possible solutions
Transducer location	Check that the transducer has been installed in accordance with the instructions provided with the transducer.
Transducer angle	If the transducer angle is too great the beam can miss the bottom, adjust transducer angle and recheck.
Transducer kicked-up	If the transducer has a kick-up mechanism, check that it has not kicked up due to hitting an object.
Power source insufficient	With the product under load, using a multi-meter, check the power supply voltage as close to the unit as possible to establish actual voltage when the current is flowing. (Check your product's Technical specification for power supply requirements.)
Damaged or fouled transducer	Check the condition of the transducer ensuring it is not damaged and is free from debris / fouling.
Damaged cables	1. Check the unit's connector for broken or bent pins. 2. Check that the cable connector is fully inserted into the unit and that the locking collar is in the locked position. 3. Check the cable and connectors for signs of damage or corrosion, replace if necessary. 4. With the unit turned on, try flexing the power cable near to the display connector to see if this causes the unit to re-boot/loose power, replace if necessary. 5. Check the vessel's battery voltage, the condition of the battery terminals and power supply cables, ensuring connections are secure, clean and free from corrosion, replace if necessary.

Possible causes	Possible solutions
	6. With the product under load, using a multi-meter, check for high voltage drop across all connectors/fuses etc (this can cause the Fishfinder applications to stop scrolling or the unit to reset/turn off), replace if necessary.
Vessel speed too high	Slow vessel speed and recheck.
Bottom too shallow or too deep	The bottom depth may be outside of the transducers depth range, move vessel to shallower or deeper waters as relevant and recheck.

Poor / problematic image

Possible causes	Possible solutions
Vessel stationary	Fish arches are not displayed if the vessel is stationary; fish will appear on the display as straight lines.
Scrolling paused or speed set too low	Unpause or increase sonar scrolling speed.
Sensitivity settings may be inappropriate for present conditions.	Check and adjust sensitivity settings or perform a Sonar reset.
Damaged cables	1. Check the unit's connector for broken or bent pins. 2. Check that the cable connector is fully inserted into the unit and that the locking collar is in the locked position. 3. Check the cable and connectors for signs of damage or corrosion, replace if necessary. 4. With the unit turned on, try flexing the power cable near to the display connector to see if this causes the unit to re-boot/loose power, replace if necessary. 5. Check the vessel's battery voltage, the condition of the battery terminals and power supply cables, ensuring connections are secure, clean and free from corrosion, replace if necessary. 6. With the product under load, using a multi-meter, check for high voltage drop across all connectors/fuses etc (this can cause the Fishfinder applications to stop scrolling or the unit to reset/turn off), replace if necessary.
Transducer location	Check that the transducer has been installed in accordance with the instructions provided with the transducer.
	If a transom mount transducer is mounted too high on the transom it may be lifting out of the water, check that the transducer face is fully submerged when planing and turning.
Transducer kicked-up	If the transducer has a kick-up mechanism, check that it has not kicked up due to hitting an object.
Damaged or fouled transducer	Check the condition of the transducer ensuring it is not damaged and is free from debris / fouling.
Damaged transducer cable	Check that the transducer cable and connection is free from damage and that the connections are secure and free from corrosion.
Turbulence around the transducer at higher speeds may affect transducer performance	Slow vessel speed and recheck.
Interference from another transducer	1. Turn off the transducer causing the interference. 2. Reposition the transducers so they are further apart.
Unit power supply fault	Check the voltage from the power supply, if this is too low it can affect the transmitting power of the unit.

Incorrect speed reading (from DST transducer)

Possible causes	Possible solutions
Paddle wheel fault	Check that the paddle wheel is clean.
No speed offset set	Add speed offset.
Incorrect calibration	Re-calibrate equipment

Possible causes	Possible solutions
Transducer does not have a speed element	Install transducer with speed element to enable speed readings.
Incorrect transducer selected (no speed displayed)	Select a transducer that supports speed measurement from the Transducer Set-Up menu.

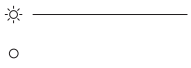## LED Diagnostics

CP370 / CP470
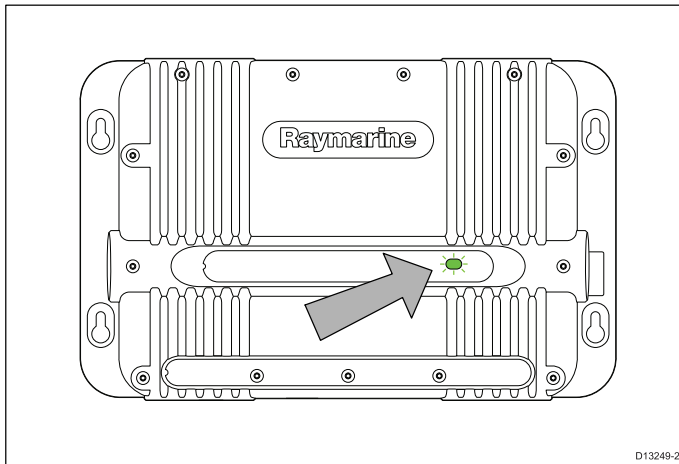
CP570
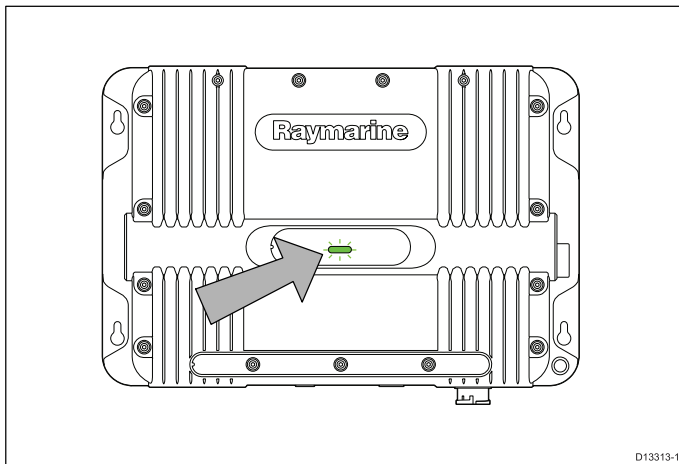
The LED on the front panel of the unit provides information on the status of the sonar module and notifies users of any problems within the unit. The LED blinks the following colors:

- **Green** — shows the unit is operating normally.

- **Amber** — warns of a problem in the unit.

- **Red** — shows that there is an error in the unit.

The number of times the LED blinks is a code which represents the errors or warnings as shown in the LED indication status table. If there are multiple warnings or errors, the codes are given in sequence with a 2 second pause between blink patterns.

LED indication status

LED color	LED code		Status	User action
🟢	☼ ――――――――― ○	Solid Green	Power On	• None (normal power up takes <1 minute.)
🟢	☼⎍ ○	Green 1 blink	Normal operation	• None
🟠	☼⎍ ○	Amber 1 blink	Transducer disconnected	• Ensure transducer cable and connections are secure and free from damage. • Power cycle unit to recover transducer information. • If problem persists contact Raymarine technical support.
🟠	☼⎍⎍ ○	Amber 2 blinks	No network detected	• Ensure network is powered. • Ensure network cable and connections are secure and free from damage. • If problem persists contact Raymarine technical support.
🟠	☼⎍⎍⎍ ○	Amber 3 blinks	Unit overheating	• Ensure installation environment is within recommendations. • Unit will recover when temperature falls within specifications. • If problem persists contact Raymarine technical support.
🟠	☼⎍⎍⎍⎍ ○	Amber 4 blinks	*Transducer overheating	• Ensure installation environment is within recommendations. • Unit will recover when temperature falls within specifications. • If problem persists contact Raymarine technical support.
🟠	☼⎍⎍⎍⎍⎍ ○	Amber 5 blinks	Under voltage (<10.2V)	• Ensure power cable and connections are secure and free from damage. • Ensure power supply cabling is consistent with recommendations. • If problem persists contact Raymarine technical support.
🟠	☼⎍⎍⎍⎍⎍⎍ ○	Amber 6 blinks	Over voltage (>34.2V)	• Ensure power supply levels are consistent with recommendations. • If problem persists contact Raymarine technical support.
🟠	☼⎍⎍⎍⎍⎍⎍⎍ ○	Amber 7 blinks	*Problem reading transducer ID (XID)	• Ensure transducer cable and connections are secure and free from damage. • Power cycle unit to recover transducer information. • If problem persists contact Raymarine technical support.
🔴	☼⎍ ○	Red 1 blink	General failure	• If combined with voltage warning, check power supply and cables. • Power cycle unit to recover. • If problem persists contact Raymarine technical support.
🔴	☼⎍⎍ ○	Red 2 blinks	Not Defined	• If problem persists contact Raymarine technical support.

LED color	LED code		Status	User action
🔴	☼ ⎍⎍⎍ ○	Red 3 blinks	Ambient temperature too hot	• Ensure installation environment is within recommendations. • Unit will recover when temperature falls within specifications. • If problem persists contact Raymarine technical support.
🔴	☼ ⎍⎍⎍⎍ ○	Red 4 blinks	Problems with internal database	• Power cycle unit to recover. • If problem persists contact Raymarine technical support.

Note: *Not applicable to CP370.

Note: During a software upgrade process the LED will be solid Green and change to blinking Green on successful completion.

Note: If any other LED sequence other than described above is seen and persists please contact Raymarine technical support.

Resetting the sonar

The reset function restores the unit to its factory default values.

Note: Performing a factory reset will clear speed and temperature calibration settings and the depth offset.

1. Using a compatible Raymarine multifunction display go to the Fishfinder application page.
2. Select **Menu** from the side menu.
3. Select **Set-up**.
4. Select **Sounder Set-up**.
5. Select **Sonar reset**.
6. Select **Yes** to confirm.

The unit will now be reset to factory default settings.

Chapter 7: Maintenance

Chapter contents

7.1 Routine checks

The following periodic checks should be made:

- Examine cables for signs of damage, such as chafing, cuts or nicks.
- Check that the cable connectors are firmly attached and that their locking mechanisms are properly engaged.

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

⚡ **Warning: High voltage**

This product contains high voltage. Adjustments require specialized service procedures and tools only available to qualified service technicians. There are no user serviceable parts or adjustments. The operator should never remove the cover or attempt to service the product.

7.2 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.

Transducer cleaning

Growth can collect on the bottom of the transducer, this can reduce performance. To prevent the build up of sea growth, coat the transducer with a thin layer of water based antifouling paint, available from your local marine dealer. Reapply paint every 6 months or at the beginning of each boating season. Certain smart transducers have restrictions on where antifouling paint is applied. Please consult your dealer.

Note: Transducers with a temperature sensor may not work properly if painted.

Note: Never use ketone based paint. Ketones can attack many plastics possibly damaging the sensor.

Note: Never use spray paint on your transducer. Spraying incorporates tiny air bubbles, and a marine transducer cannot transmit properly through air.

Use a soft cloth and mild household detergent to clean the transducer. If the fouling is severe, remove the growth with a green scotch brite™ pad. Be careful to avoid scratching the transducers face.

If your transducer has a paddlewheel you can wet sand with fine grade wet/dry paper.

Note: Harsh cleaning solvents such as acetone may damage the transducer.

Chapter 8: Technical support

Chapter contents

8.1 Viewing product information

You can view information about your unit from the **Diagnostics** menu on a compatible multifunction display. This option displays information such as product serial number and software version.

With the Homescreen displayed:

1. Select **Set-up.**
2. Select **Maintenance**.
3. Select **Diagnostics**.
4. Select the **Select Device** option.

   A list of connected devices is displayed.
5. Select the product for which you want to view information. Alternatively, select **Show All Data** to display information for all connected products.

Chapter 9: Technical specification

Chapter contents

9.1 CP370 Technical specification

Physical specification

Dimensions	**Width**: 299.4 mm (11.79 in). **Height**: 205.6 mm (8.1 in). **Height (including connectors)**: 285.6 mm (11.2 in). **Depth**: 84.4 mm (3.3 in).
Weight	1.435 kg (3.16 lbs)

Power specification

Nominal supply voltage	12 V / 24 V dc
Operating voltage range	10.8 V to 31.2 V dc
Power consumption	30.6 W (Maximum)
Current	3 A RMS
Fuse / breakers	5 A

Environmental specification

Operating temperature	–10°C (14°F) to +55°C (131°F)
Storage temperature	–30°C (22°F) to +70°C (158°F)
Relative humidity	95%
Waterproof rating	IPX6

Sonar specification

Frequency	50 kHz and 200 kHz
Power output	Up to 1 KW RMS
Depth	0.9 m (3 ft) to 1524 m (5,000 ft) (In optimum conditions and depending on transducer connected)
Transducer	Transom-mount, in-hull, thru-hull
Connections	1 x Power connection 1 x network connection (RayNet connector) 10 / 100 Mb/s 1 x Transducer connection

Conformance specification

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

9.2 CP470 Technical specification

Physical specification

Dimensions	**Width**: 299.4 mm (11.79 in). **Height**: 205.6 mm (8.1 in). **Height (including connectors)**: 285.6 mm (11.2 in). **Depth**: 84.4 mm (3.3 in).
Weight	1.539 kg (3.39 lbs)

Power specification

Nominal supply voltage	12 V / 24 V dc
Operating voltage range	10.8 V to 31.2 V dc
Power consumption	30.6 W (Maximum)
Current	3 A RMS
Fuse / breakers	5 A

Environmental specification

Operating temperature	–20°C (–4°F) to +50°C (122°F)
Storage temperature	–30°C (22°F) to +70°C (158°F)
Relative humidity	95%
Waterproof rating	IPX6

CHIRP Sonar specification

Frequency	25kHz to 255kHz
Power output	Up to 2 KW (maximum)
Depth	0.6 m (2 ft) to 3,000 m (10,000 ft) (Dependant upon connected transducer)
Transducer	Transom-mount, in-hull, thru-hull
Connections	1 x Power connection 1 x network connection (RayNet connector) 10 / 100 Mb/s 1 x Transducer connection 1 x additional grounding point

Conformance specification

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

9.3 CP570 Technical specification

Physical specification

Dimensions	• **Width**: 352.5 mm (13.9 in). • **Height**: 248.1 mm (9.8 in). • **Height (including connectors)**: 328.1 mm (12.9 in). • **Depth**: 109.9 mm (4.3 in).
Weight	6.35 kg (14.0 lbs)

Power specification

Nominal supply voltage	12 V / 24 V dc
Operating voltage range	10.8 V to 31.2 V dc
Power consumption	30.6 W (Maximum)
Current	3 A RMS
Fuse / breakers	5 A

Environmental specification

Operating temperature	–20°C (–4°F) to +50°C (122°F)
Storage temperature	–30°C (22°F) to +70°C (158°F)
Relative humidity	95%
Waterproof rating	IPX6

CHIRP Sonar specification

Frequency	25kHz to 255kHz
Power output	Up to 2 KW per channel (maximum) (total 4 KW)
Depth	0.6 m (2 ft) (to 3000 m (10,000 ft) (Dependant upon connected transducer)
Transducer	Transom-mount, in-hull, thru-hull
Connections	• 1 x Power connection • 1 x network connection (RayNet connector) 10 / 100 Mb/s • 1 x Transducer connection

Conformance specification

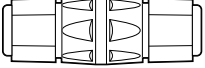| Conformance	• EN 60945:2002 • EMC Directive 2004/108/EC • Australia and New Zealand: C-Tick, Compliance Level 2

Chapter 10: Spares and accessories
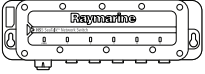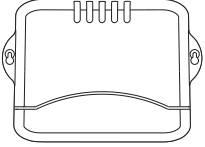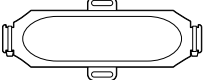
Chapter contents

10.1 Spares and accessories

The following accessories and spare parts are available:
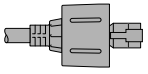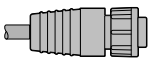
Item	Sonar module	Part number
1.5 m (5 ft) power cable	CP370, CP470, CP570	A80025
3 m (10 ft) CHIRP transducer extension cable	CP470, CP570	A102148
5 m (16.4 ft) traditional transducer extension cable	CP370	E66010
5 m (16.4 ft) CHIRP transducer extension cable	CP470, CP570	A102150
10 m (32.8 ft) CHIRP transducer extension cable **Note:** For use with Wide Beam transducers only.	CP470, CP570	A80327
Dual Speed and Temperature traditional transducer cable	CP370	E66022
Dual Speed and Temperature CHIRP transducer cable	CP470, CP570	A80345
Single B75/B175 operation cable	CP470, CP570	A80328
Paired CHIRP transducer Y-cable	CP470, CP570	A102146

10.2 Network hardware

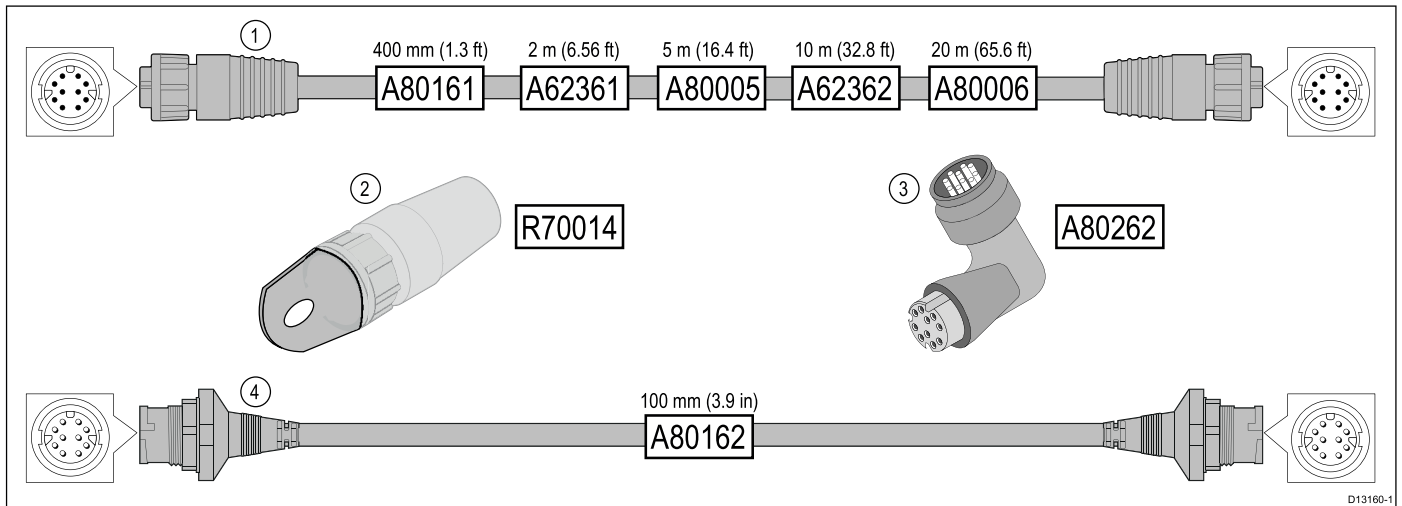| Item	Part number	Notes
HS5 RayNet network switch	A80007	5–port switch for network connection of multiple devices featuring RayNet connectors. Equipment with RJ45 SeaTalkhs connectors can also be connected using suitable adapter cables.
RJ45 SeaTalkhs network switch	E55058	8–port switch for network connection of multiple SeaTalkhs devices featuring RJ45 connectors.
RJ45 SeaTalkhs crossover coupler	E55060	• Enables direct connection of RJ45 SeaTalkhs devices to smaller systems where a switch is not required. • Enables the connection of RJ45 SeaTalkhs devices to a HS5 RayNet network switch (in conjunction with suitable adapter cables). • Enables 2 RJ45 SeaTalkhs cables to be connected together to extend the length of the cabling. Recommended for internal installations. **Important:** Do NOT use crossover devices for POE (Power Over Ethernet) connections.
Ethernet RJ45 coupler	R32142	• Enables direct connection of RJ45 SeaTalkhs devices to smaller systems where a switch is not required. • Enables the connection of RJ45 SeaTalkhs devices to a HS5 RayNet network switch (in conjunction with suitable adapter cables). • Enables 2 RJ45 SeaTalkhs cables to be connected together to extend the length of the cabling. Recommended for external installations.

10.3 Network cable connector types

There are 2 types of network cable connector —
RayNet, and RJ45 SeaTalk[hs].

	RJ45 SeaTalk[hs] connector.
	RayNet connector.

10.4 RayNet to RayNet cables and connectors

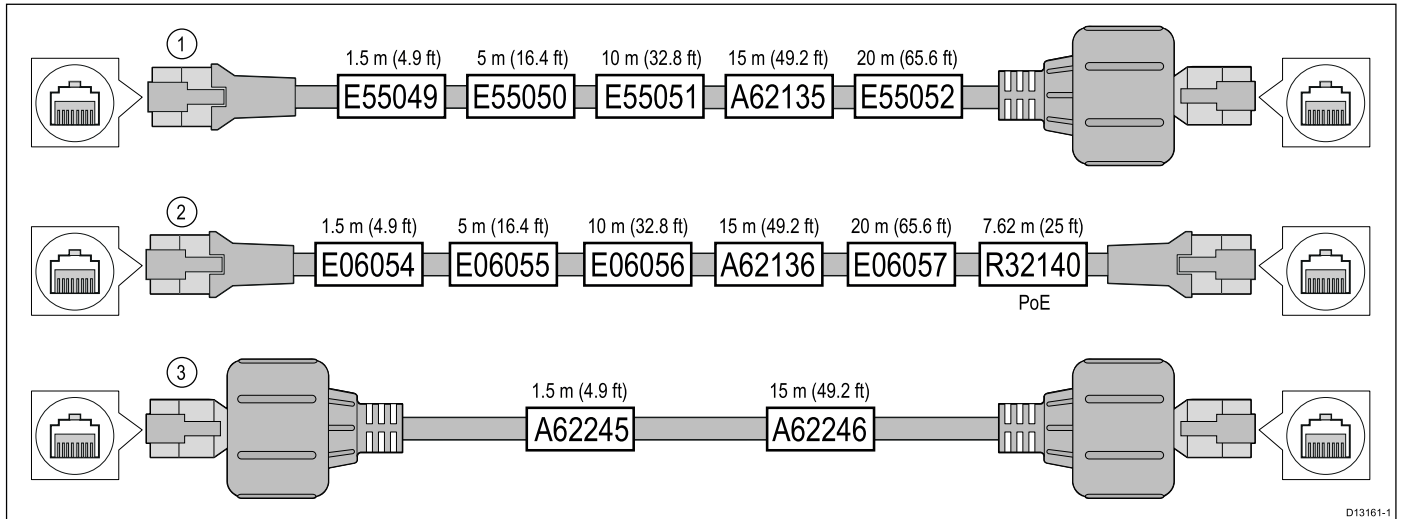|	Description	Typical use	Quantity
1	Standard **RayNet** connection cable with a **RayNet** (female) socket on both ends.	Suitable for connecting all **RayNet** equipment directly to **LightHouse** multifunction displays featuring a **RayNet** connector. Can also be used to connect **RayNet** equipment via a **RayNet** network switch (e.g. **HS5**).	1
2	**RayNet** cable puller (5 pack).	These "handles" securely attach to the twist-lock on **RayNet** cables, enabling you to pull the cables through conduits and other obstacles.	5
3	**RayNet** to **RayNet** right-angle coupler / adapter.	Suitable for connecting **RayNet** cables at 90° (right angle) to devices, for installations where space is limited. For example, use this adapter to connect a **RayNet** cable to a multifunction display when there is not enough space behind the display for the usual cable bend radius required by a standard RayNet cable. This adapter features a **RayNet** (female) socket at one end, and a **RayNet** (male) plug at the other end.	1
4	Adapter cable with a **RayNet** (male) plug on both ends.	Suitable for joining (female) **RayNet** cables together for longer cable runs.	1

10.5 RayNet to RJ45 adapter cables

	Description	Typical use	Quantity
1	Adapter cable with a **RayNet** (female) socket on one end, and a waterproof (female) socket on the other end accepting the following cables with an **RJ45 SeaTalkhs** waterproof **locking** (male) plug: • **A62245** (1.5 m). • **A62246** (15 m).	A typical use for this adapter cable is to connect a **DSM300** sonar module to a **LightHouse** MFD, using all-waterproof cable connections. This adapter cable will also accept the following **RJ45 SeaTalkhs** cables, although the **RJ45** plug that connects at the equipment end (e.g. **DSM300**) will NOT be waterproof: • **E55049** (1.5 m). • **E55050** (5 m). • **E55051** (10 m). • **A62135** (15 m). • **E55052** (20 m).	1
2	Adapter cable with a **RayNet** (female) socket on one end, and a waterproof (female) **RJ45** socket on the other end, along with a locking gland for a watertight fit.	Directly connect a Raymarine radar scanner with an **RJ45 SeaTalkhs** (male) cable to a **RayNet** network switch (e.g. **HS5**) or **LightHouse** MFD.	1
3	Adapter cable with a **RayNet** (male) plug on one end, and an **RJ45 SeaTalkhs** waterproof (male) plug on the other end.	Connect a legacy **G-Series GPM-400**, **C-Series** Widescreen or **E-Series** Widescreen MFD to a Raymarine radar scanner supplied with a **RayNet** power / data cable.	1
4	Adapter cable with a **RayNet** (female) socket on one end, and an **RJ45 SeaTalkhs** waterproof (male) plug on the other end.	Connect a legacy **G-Series GPM-400**, **C-Series** Widescreen or **E-Series** Widescreen MFD to a **RayNet** network switch (e.g. the **HS5**).	1
5	Adapter cable with a **RayNet** (female) socket on one end, and an **RJ45 SeaTalkhs** (female) socket on the other end.	Connect a **LightHouse** MFD to a legacy **SR6** switch / weather receiver or a legacy 8–port **SeaTalkhs** network switch. Another common use for the cable is in conjunction with a crossover coupler (**E55060** or **R32142**) to connect Raymarine products with an **RJ45** connection (e.g. radar scanner, thermal camera or **DSM300**) to a **LightHouse** MFD or **RayNet** network switch (e.g. the **HS5**).	1

10.6 RJ45 SeaTalk^{hs} network and patch cables

	Description	Typical use	Quantity
1	**RJ45 SeaTalk^{hs} network cables** have an **RJ45 SeaTalk^{hs}** (male) plug on one end, and a waterproof **RJ45 SeaTalk^{hs}** (male) plug with locking collar on the other end.	Typical uses for these cables include: • Connecting a device with a **RJ45SeaTalk^{hs}** socket (e.g. the **DSM300**, or an **E-Series** Widescreen **E90W**, **E120W** or **E140W** legacy MFD) to a **SeaTalk^{hs}** 8–port network switch. • Connecting a thermal camera with an RJ45 (male) plug to an **E-Series** Widescreen **E90W**, **E120W** or **E140W** legacy MFD, via an RJ45 coupler (R32142). This assumes that **PoE** (Power over Ethernet) connections are not required, because there is no JCU (Joystick Control Unit) in the system.	1
2	**RJ45 SeaTalk^{hs} patch cables** have an **RJ45 SeaTalk^{hs}** (male) plug on each end.	Typical uses for these cables include: • Connecting multiple **SeaTalk^{hs}** 8–port network switches. • Connecting a PC or laptop computer running **Voyager Planner** software to a **SeaTalk^{hs}** 8–port network switch. • Connecting a JCU (Joystick Control Unit) to a thermal camera, via a PoE injector. For this particular connection the **R32140** cable is required, as this supports **PoE** (Power over Ethernet).	1
3	**RJ45 SeaTalk^{hs} patch cables** have an **RJ45 SeaTalk^{hs}** (male) plug on each end. Each plug features a locking collar for a fully **waterproof** connection.	A typical use for these cables is: • Connecting a device with a locking-type **RJ45SeaTalk^{hs}** socket (e.g. the **DSM300**), to a legacy MFD with a locking-type **RJ45SeaTalk^{hs}** socket (e.g. the **E-Series** Widescreen **E90W**, **E120W** or **E140W**).	1