AutoAnchor 560

OWNER'S MANUAL

AutoAnchor 560 Owner's Manual

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To the best of our knowledge the information in this manual was correct at the time of printing. However, the AutoAnchor products are continuously being reviewed and improved and product specifications may be changed without notice. The latest product specifications may not be reflected in this version of the manual. The documentation relating to the AutoAnchor products is created in the English language and may be translated from English to another language. In the event of any conflict between translated documents, the English language version will be the official version.

AutoAnchor documents are available on the website www.autoanchor.co.nz

PART 1 IMPORTANT INFORMATION
READ BEFORE INSTALLING OR USING THE AUTOANCHOR

- The AA560 should only be installed by a qualified marine electrician. Do not attempt to install the AA560 unless you are suitably qualified.
- This manual supports the use of the AA560 only. The appropriate manufacturer's instructions must be followed for the installation and use of the windlass it is set up to control.
- There must be an alternative method available to operate the windlass .
- The AA560 can be fitted to most vertical windlasses. A horizontal windlass may require a sensor holder or a custom designed sensor which is not included in the standard pack. Check with your supplier or the AutoAnchor manufacturer.
- The AA560 must be fitted to a windlass with a dual direction control box or solenoid pack.
- Information for installation and operation of the AA560 is supplied, including pre-set windlass profile lists, wiring diagrams, templates, the Owner's Manual and the Quick User Guide. **All documents must be left on board for the owner.**
- Non compliance with the instructions could impair the windlass and the AA560 operation, and could result in personal injury and/or damage to the boat.
- Non compliance with the instructions will negate the manufacturer's warranty.
- The AA560 manufacturer and supplier accept no liability for personal injury or property damage resulting from failure to follow the installation and operation instructions or the use of the AA560 in a way that may cause accidents or damage or that may violate the law.
- All the technical and cable specifications must be checked and adhered to.
- Wiring diagrams must be followed without modification.
- Before use the AA560 must be correctly set up for the windlass it is to control and tested in a safe environment. The AA560 will not count correctly if the windlass selection is wrong or the windlass is not standard (eg it is installed with a different chainwheel or motor).
- All installations must be carried out in accordance with USCG, ABYC, NMMA and BMEA requirements.
- When this product reaches the end of its useful life it must be disposed of in accordance with local regulations.

TECHNICAL SPECIFICATIONS AA560

Parameter	
Power Supply	12V/24V DC
Current Consumption	70mA
Output Current Draw	Maximum 4 Amp
IP Rating	IP67 from the front provided the unit is mounted so the back is protected from moisture
Maximum Voltage	30V DC
Operating Temperature Range	23°F to 140°F (-5°C to 60°C)

ELECTROMAGNETIC COMPATIBILITY (EMC)

FCC Information:

This device complies with CFR47 Part 15 of FCC Rules for Class B equipment.

ESTI Information (CE):

This device meets the relevant standards set out in European Standard EN 60945:2002 for maritime navigation and radio communication equipment and systems. These standards are intended to provide reasonable protection against interference by other emission generating products on the boat. Compliance with these standards is no guarantee that interference will not occur in a particular installation. The installation instructions must be followed to minimise the potential for interference.

The AA560 console must be installed at least 3 ft (1m) away from any equipment transmitting or cables carrying radio signals eg VHF radios, cables and antennas or radar antennas; and at least 6 ft (2m) away from any SSB equipment. AA560 cables must be installed at least 1.5ft (500mm) away from such items.

PART 2 INSTALLATION

The windlass must be installed according to the windlass manufacturer's instructions with the correct size rope and chain. It must also be regularly serviced and lubricated. For smooth operation, the windlass requires a good quality bow roller and a swivel where the anchor joins the chain.

RODE

Combination Rope and Chain Rode: must have a minimum of 10 ft (3 m) of chain. Chain must be galvanised steel. Rope should be a good quality, nylon anchor rope. Type 66 or equivalent.

Chain Only Rode: can be stainless or galvanised steel.

MAGNET AND SENSOR INSTALLATION

Critical to Operation: Correct magnet and sensor installation is critical to windlass operation using the AA560. If it is not possible to comply with these instructions please check with the AutoAnchor manufacturer or your supplier for other options. Some windlasses are predrilled for sensor and magnet fitting.

⚠ **Reed Switch Sensors:** Some windlasses are supplied pre-fitted with a reed switch sensor. Reed switch sensors can only count the revolutions of the chainwheel. This works for a chain only windlass but it does not provide an accurate count for rope and chain rode. If you use a reed switch sensor with rope and chain, the display may read zero when there is rode still deployed. For an accurate rope and chain count, the reed switch sensor should be replaced with the AA grey sensor (#9067). Reed switch sensors must have a 10mm x 8mm magnet (#9061) and the gap between the reed switch sensor and the magnet must be a minimum of 3mm and a maximum of 5mm.

MAGNET INSTALLATION FOR VERTICAL WINDLASSES

Vertical Windlasses Using Chain Only Rode

Magnet Size: 6mm x 4mm magnet (#9009). A larger magnet may be used. Check with your supplier.

Magnet Fit: If your chainwheel is not predrilled, drill a hole 6.5mm (1/4") diameter and 5mm (3/16") deep to fit the magnet in the underside of a spoke in the bottom of the chainwheel. The magnet must be aligned with the sensor. See Fig 1.

Magnet Seal: Insert the magnet into the hole and cover it with a minimum of 1mm of epoxy to seal it from salt water. Failure to do this will impair the magnet's strength and durability.

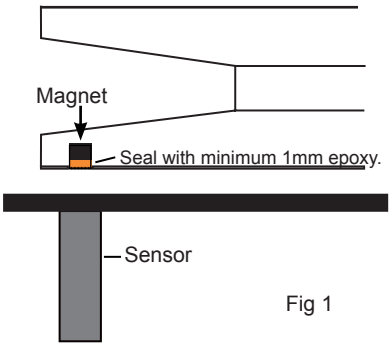


Fig 1

Gap Between the Sensor and Magnet:

Grey AutoAnchor Sensor (#9067):
6mm x 4mm Magnet (#9009): Minimum 3mm and Maximum 30mm
10mm x 8mm Magnet (#9061): Minimum 3mm and Maximum 50mm

Black 2 wire AutoAnchor Sensor (#9008): Minimum 3mm and Maximum 8mm

Reed Switch 2 wire Sensor: Minimum 3mm and Maximum 5mm
(Must use a 10mm x 8 mm magnet)

Magnet Polarity: Not relevant when using the grey AA sensor (#9067) or a reed switch sensor. If retrofitting, using the black AA sensor (#9008) the south pole (white side) of the magnet must face the sensor.

Vertical Windlasses Using Rope and Chain Rode

The rode must run between the sensor and magnet for an accurate rope and chain count. If your windlass is prefitted with a magnet in the bottom of the chainwheel you need to remove it and fit a new magnet in the top of the chainwheel. Refer to Fig 2.

Magnet Size: 10mm x 8mm magnet (#9061). An 8mm x 6mm magnet (#9052) may be used on smaller windlasses. Check with your supplier.

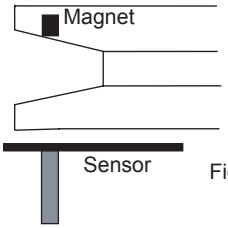


Fig 2

Magnet Fit: If the windlass is not pre-drilled, drill a hole 10.3mm (13/32”) diameter and 9.5mm (3/8”) deep into a spoke in the top of the chainwheel. The magnet and sensor must be aligned so that the anchor rode passes between them. (See Figs 2 & 3). The centre of the magnet and the centre of the sensor may be up to 10mm (3/8”) out of direct alignment. (See Fig 6). Templates and drilling instructions are supplied for some windlasses.

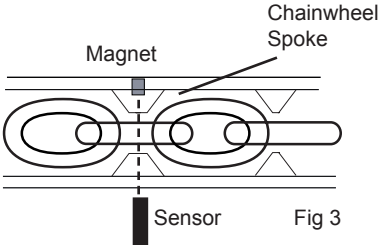


Fig 3

Magnet Seal: Insert the magnet into the hole and cover with a minimum of 1mm of epoxy to seal it from salt water. Failure to do this will impair the magnet’s durability.

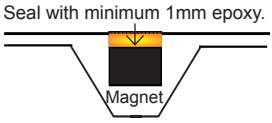


Fig 4

Gap Between the Sensor and Magnet:
Grey 3 wire AutoAnchor Sensor (#9067):
10mm x 8mm Magnet (#9061): Minimum 35mm and maximum 50mm
8mm x 6mm Magnet (9052): Minimum 30mm and maximum 44mm

Magnet Polarity: Not relevant.

SENSOR INSTALLATION FOR VERTICAL WINDLASSES

For accurate rope and chain counting the AA560 must be fitted using the grey AutoAnchor sensor (#9067) supplied in the kit. Some windlasses are prefitted with a reed switch sensor. The reed switch sensor can be used for chain only counting.

The sensor is fitted into the windlass deckplate. Some windlasses are predrilled for the sensor. Others have a dimple or mark to show where the sensor should be fitted. Check with the AutoAnchor or windlass supplier if you are not sure where to drill for the sensor.

Sensor Position for Vertical Windlasses Using Chain Only Rode: The sensor hole can be drilled anywhere on the deckplate provided it is in alignment with the magnet in the chainwheel and the gap between the sensor and magnet will be correct.

Sensor Position for Vertical Windlasses Using Rope and Chain Rode: The hole must be within the sensor position range at the stern end of the windlass (See Fig 5). The sensor must also be aligned with the magnet so that the rode passes between the sensor and the magnet. The centre of the magnet and the centre of the sensor may be up to 10mm out of direct alignment. (See Fig 6)

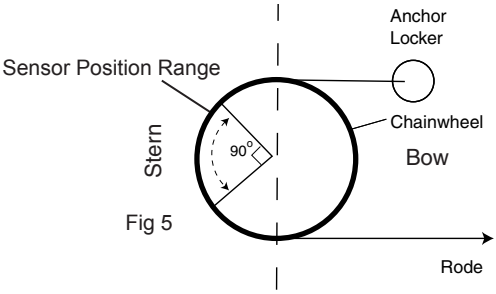


Fig 5

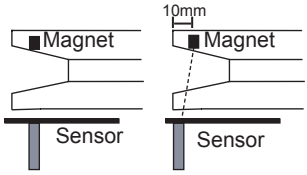


Fig 6 Sensor & Magnet Alignment

Drilling the Deckplate: If the windlass is not factory drilled, drill a hole 10.3 mm (13/32") diameter through the windlass deckplate. Some windlasses will be marked for sensor fitting. Check the AutoAnchor drilling templates supplied with this kit.

Drilling the Deck: Before drilling into the deck, ensure there is nothing below the deck that could be damaged and that any hole you drill will not weaken the boat's structure. Drill a hole 10.3mm (13/32") diameter through the deck. Ensure this hole is directly in line with the sensor hole in the deckplate.

Fitting the Sensor: Do not force the sensor into the hole. Hammering the sensor head can damage the internal electronics. Ensure the sensor head is positioned so that it will not be hit by the chainwheel during windlass operation and that it is at least 300mm (1ft) away from the battery and motor cables. Secure the sensor using a good quality neutral cure silicone or a strong adhesive eg. Sikaflex 291 or 3M 5200.

Sensor Connection: Refer to the wiring diagrams for the sensor connection. If the AutoAnchor plug in cable is not used all sensor wires must be soldered and sealed in adhesive heat shrink tubing. Refer to the sensor splice sheet. Do not leave the cable hanging loose, it must be tied in place with cable ties. Extension cable and field connectors are available for the AutoAnchor plug in sensor connections.

HORIZONTAL WINDLASSES

Before starting check with the AutoAnchor manufacturer, or supplier, that you can fit a sensor to your windlass. There are several sensor options for windlasses using chain only rode but if your windlass uses rope and chain rode it may not be possible to fit the sensor for an accurate rope count.

MAGNET INSTALLATION FOR HORIZONTAL WINDLASSES

Horizontal Windlasses Using Chain Only Rode

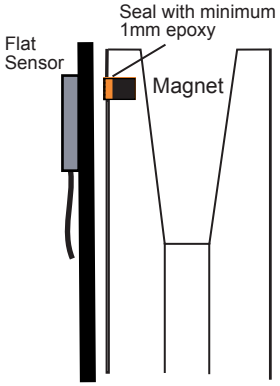


Fig 7a BASE

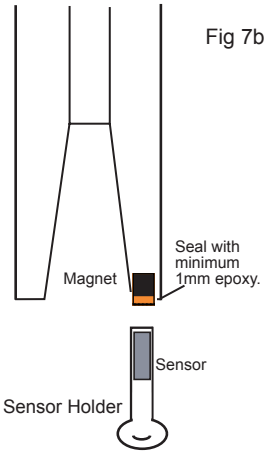


Fig 7b EDGE

Magnet Size: 6mm x 4mm magnet (#9009).
A larger magnet may be used. Check with your supplier.

Magnet Fit: If your chainwheel is not predrilled, drill a hole 6.5mm (1/4") diameter and 5mm (3/16") deep in the underside of a spoke or in the edge of the chainwheel.
See Fig 7a & 7b.

Magnet Seal: Insert the magnet into the hole and cover it with a minimum of 1mm of epoxy to seal it from salt water. Failure to do this will impair the magnet's strength and durability.

Gap Between the Sensor and Magnet:
Grey or Flat 3 wire AutoAnchor Sensor (#9067 or #9058):
6mm x 4mm Magnet (#9009): Minimum 3mm and Maximum 30mm
10mm x 8mm Magnet (#9061): Minimum 3mm and Maximum 50mm

Black 2 wire AutoAnchor Sensor (#9008): Minimum 3mm and Maximum 8mm

Reed Switch 2 wire Sensor: Minimum 3mm and Maximum 5mm
(Must use a 10mm x 8 mm magnet)

Magnet Polarity: If retrofitting, using the black 2 wire AA sensor (#9008) the south pole (white side) of the magnet must face the sensor. Magnet polarity is not relevant when using the other AA sensors or a reed switch sensor.

Horizontal Windlasses Using Rope and Chain Rode

Fig 8

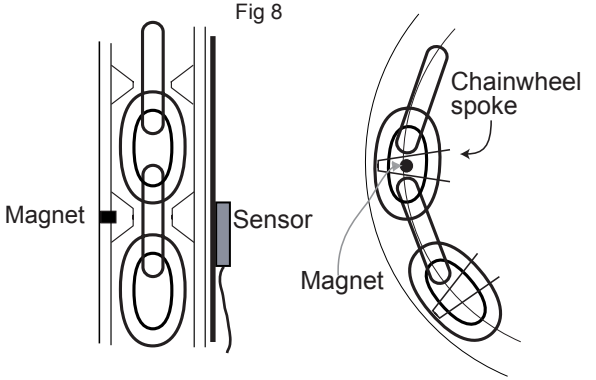
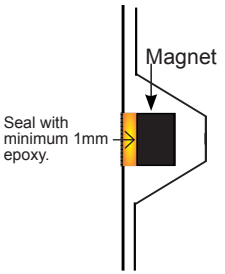


Fig 9



Magnet Size: 10mm x 8mm magnet (#9061). An 8mm x 6mm magnet (#9052) may be used. Check with your supplier.

Magnet Fit: If the windlass is not pre-drilled, drill a hole 10.3mm (13/32”) diameter and 9.5mm (3/8”) deep into a spoke in the top of the chainwheel. The magnet and sensor must be aligned so that the anchor rode passes between them. See Fig 8. The centre of the magnet and the centre of the sensor may be up to 10mm (3/8”) out of direct alignment.

Magnet Seal: Insert the magnet into the hole and cover with a minimum of 1mm of epoxy to seal it from salt water. Failure to do this will impair the magnet’s durability. See Fig 9

Gap Between the Sensor and Magnet:
Grey or Flat 3 wire AutoAnchor Sensor (#9067 or #9045):
10mm x 8mm (#9061) Magnet: Minimum 35mm and maximum 50mm
8mm x 6mm (#9052) Magnet: Minimum 30mm and maximum 44mm

Magnet Polarity: Not relevant.

SENSOR INSTALLATION FOR HORIZONTAL WINDLASSES

Horizontal Windlasses Using Chain Only Rode

Standard Sensor

The standard sensor (#9051) is cylindrical 35mm long and 10mm in diameter. This sensor may be fitted inside the windlass housing (See Fig 10a) or it can be fitted using a sensor holder fixed to the deck to sit under the chainwheel (See Fig 10b). The AutoAnchor sensor holder (#9070) is not included in the standard kit. Check with your supplier.

Fig 10a

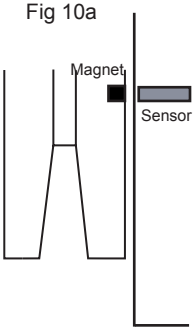
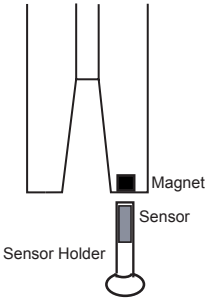


Fig 10b



Flat Sensor

AutoAnchor also makes a 3 wire flat sensor (# 9045) that can be fixed to the exterior housing of the windlass (See Fig 11a) or inside the windlass housing (See Fig 11b). Secure the sensor using a good quality neutral cure silicone or a strong adhesive eg. Sikaflex 291 or 3M 5200. The magnet is aligned with the cross on the sensor. This sensor requires a female plug attached to the cable.

Fig 11a

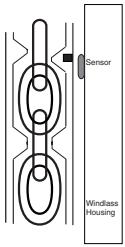
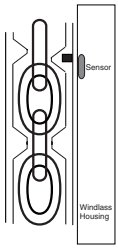


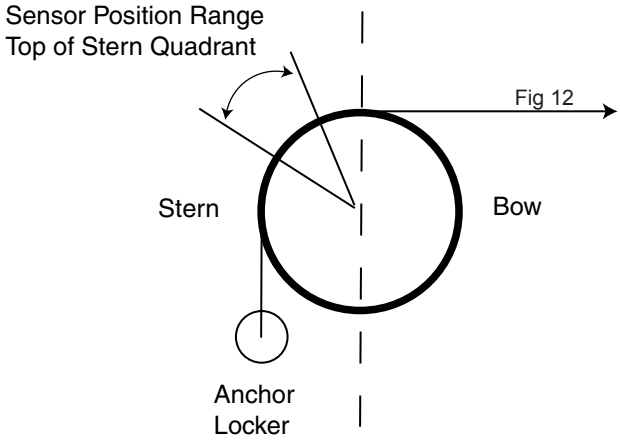
Fig 11b



Horizontal Windlasses Using Rope and Chain Rode

It may not be possible to fit the sensor to achieve an accurate rope and chain count on your horizontal windlass. Please check with the AutoAnchor manufacturer, or supplier, to see if you can fit the AA560 to your windlass.

For an accurate rope and chain count the rode must run between the sensor and magnet. On a horizontal windlass this area is limited to the top of the stern quadrant. (See Fig 12). To count rope and chain the sensor must be fitted within this quadrant.



Some windlasses are designed with a space to fit the sensor internally. For other windlasses it may be possible to use the AutoAnchor flat sensor and fix it inside the windlass housing (See Fig 13b) or, on the exterior of the windlass housing behind the chainwheel. (See Fig 13a). The magnet must be aligned with the cross on the flat sensor.

Fig 13a

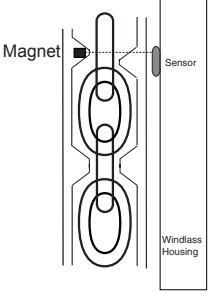
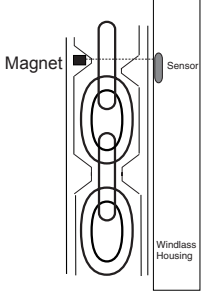


Fig 13b



Sealed Rope and Chain Windlasses

Some rope and chain horizontal windlasses are sealed so it is not possible to fit the sensor inside the windlass housing. If there is sufficient space between the chainwheel and the windlass housing, the sensor can be fitted externally (See Fig 13a), or it can be fitted using a sensor holder as for an all-chain system (See Fig 10).

Drilling the Deck: Before drilling into the deck, ensure there is nothing below the deck that could be damaged and that any hole you drill will not weaken the boat's structure. Drill a hole 10.3mm (13/32") diameter through the deck. Ensure this hole is directly in line with the sensor hole in the deckplate.

Fitting the Sensor: Ensure the cable is protected against any moving parts in the windlass. Do not force the sensor. Hammering the sensor head can damage the internal electronics. Ensure the sensor head is positioned so that it will not be hit by the chainwheel during windlass operation and that it is at least 1ft (300mm) away from the battery and motor cables. Secure the sensor using a good quality neutral cure silicone or a strong adhesive eg. Sikaflex 291 or 3M 5200.

Sensor Connection: Refer to the wiring diagrams for the sensor connection. If the AutoAnchor plug in cable is not used all sensor wires must be soldered and sealed in adhesive heat shrink tubing. Refer to the sensor splice sheet. Do not leave the cable hanging loose, it must be tied in place with cable ties. Extension cable and field connectors are available for the AutoAnchor plug in sensor connections.

CONSOLE INSTALLATION

Choose a position where the operator will be able to see the anchor and windlass when using the AA560.

Mount on a flat surface at least 3 ft (1m) away from any equipment transmitting or cables carrying radio signals eg VHF radios, cables and antennas or radar antenna and at least 6 ft (2m) away from any SSB equipment. The front of the console is waterproof but the cable boot on the back is designed to breathe. Mount the console so that the back is protected from moisture. Refer to the drilling template to drill the 4 holes to mount the console. Do not use sealer or glue. The rubber grommets will seal the unit. Do not use metal studs, nylon bolts are supplied. These should be hand tightened only.

Multiple Console Installation

Two AA560 consoles can be installed to provide multiple control stations. The AA560 can also be installed with other windlass control stations eg foot switches, remote controls and other AutoAnchor products. A T-adapter and 2m extension cable are available for dual installations. Refer to the wiring diagram and/or your supplier for details.

See the note on page 13 re wiring for multiple console installation.

POWER SUPPLY

⚠ THE POWER SUPPLY MUST BE DISCONNECTED WHEN INSTALLING, CONNECTING OR CHANGING THE WIRING

12V or 24V DC power supply is required.

Check battery polarity before connecting power and ensure output terminals will not short.

Refer to the windlass manufacturers' specifications for fuse/breaker, isolator and main power cable specifications.

Ensure any fuse/breaker on the control circuit has a rating applicable to the current loads connected to the outputs. (AA560 Output maximum is 4 Amps).

An additional isolating switch should be installed for controls if the main breaker or isolator is not readily acessible from the helm.

Multiple battery bank negative terminals must be permanently connected together to become the common negative return (ground).

Power supply to the AA560 must be from the windlass control circuit, along with all other windlass controls eg. toggle switch, remote switches, deck switches, other AutoAnchor devices. **Power supply must not be from the motor positive near the windlass.**

VOLTAGE LEVELS

Neither the windlass nor the AutoAnchor will operate with insufficient power. (See minimum voltages below). Batteries must be properly maintained and charged and all connections and wires must be of good quality and the correct gauge to prevent voltage drop.

Minimum Voltage Required

Minimum voltage required to start windlass operation.	12V system 24V system	10 Volts 20 Volts
If the windlass is already operating, this is the minimum voltage required to continue operating.	12V system 24V system	7 Volts 14 Volts

WIRING

MOTOR LOAD WIRES (BROWN AND WHITE)

The brown and white wires must be connected for rope/chain counting and for high current foot switches. These wires are connected direct to the windlass motor terminals to measure the load on the motor. **A 1000 Ohm resister must be fitted near the motor terminal** for short circuit protection. The motor load terminators supplied in the kit have motor terminal connectors with a 1000 Ohm resister prefitted.

If the AA560 is fitted to an **all-chain windlass** the brown and white wires are not connected to the motor.

CABLE SPECIFICATIONS	
Total Length	**Cable Size**
Cable from AA560 to the Power Supply and Selenoids	
Less than 10 m (33 ft)	1.5mm^2 (AWG16)
10 m (33 ft) - 20 m (66ft)	2.0mm^2 (AWG14)
20 m (66 ft) - 40m (132 ft)	3.0mm^2 (AWG12)
Cable from Motor Load Wires	
Up to 30.5 m (100 ft)	1.0mm^2 (AWG18)

Plug In Sensor Connections
The AA560 console and the sensor are prefitted with connector plugs. Extension cables are available.

Field Connector Plugs: Required for the sensor cable if there is no plug connected eg AA black sensors or reed switch sensors. The field connector is soldered to the wires and provides an all in one waterproof plug-in connector. (Female #9509)

Multiple AutoAnchor Installations: T-adapters (#9506) and 2m/6.56 ft extension cables with plugs (#9505) are available. Refer to the wiring diagrams for detail.

WIRING DIAGRAMS FOR AA560

The following diagrams are included in the kit. Please refer to them for wiring detail.

AA560.1: Chain Only Wiring for AA560 System
AA560.2: Rope/Chain Wiring for AA560 System
AA560.3: AC and Hydraulic All Chain Wiring for AA560 System
All Chain Wiring for Multiple AutoAnchor Products
Rope and Chain Wiring for Multiple AutoAnchor Products

Multiple AutoAnchor installations: It is important when wiring multiple AutoAnchor products that potential differences do not occur along the ground connection. This can cause incorrect counting. Ensure consoles are star grounded, and that there are no other high current paths between consoles. **All wiring for multiple installations is run in parallel.** Refer to wiring diagrams for further details.

Interlock protection is included in the system. Do not fit diodes or interlock devices to windlass outputs as these will prevent the system from operating correctly.

All battery and motor cables must be ring type, insulated to prevent short circuits and installed no closer than 1 ft (300mm) away from the sensor head.

All main power conductors and terminations are to be installed according to the windlass manufacturer's specifications. Seal terminals against moisture by spraying with CRC [3013] Soft Seal or CRC [2043] Plasticoat 70. Insulation must be used to protect all terminals.

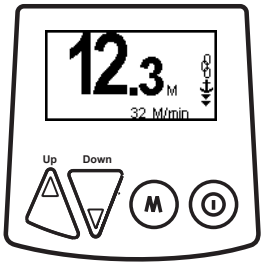
To reduce the potential for interference all cables must be located at least 1.5ft (500mm) away from any equipment transmitting or cables carrying radio signals eg VHF or SSB radios, cables and antennas or radar antennas.

Do not leave cables hanging loose, they must be tied in place with cable ties.

PART 3 SET UP

The AA560 must be tested with the equipment it is to control to ensure it is working correctly.

USING THE AUTOANCHOR BUTTONS



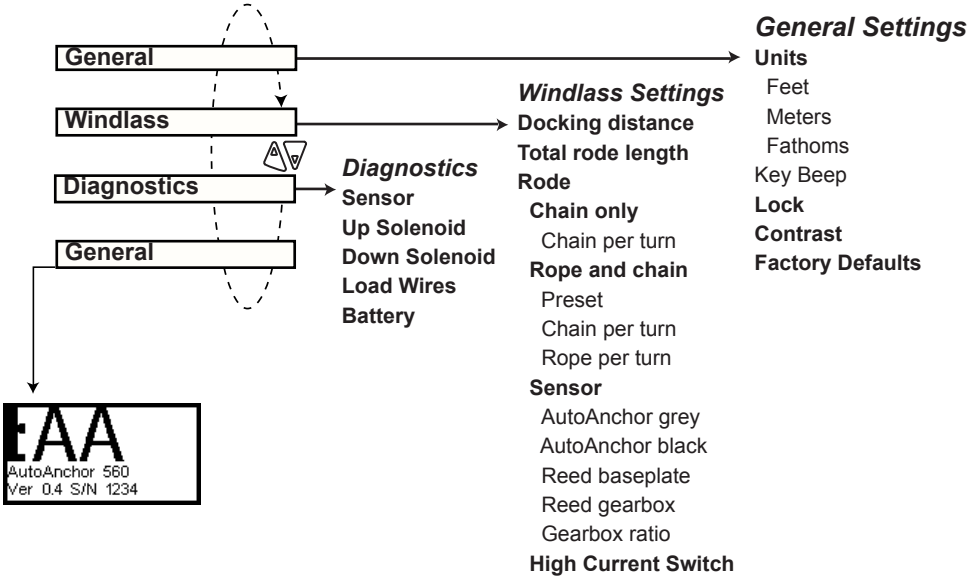
▲▼	Scroll: Menu/Numbers/Up/Down.
Ⓜ	Mode/Select/Enter/Save.
⏻	Escape or Back.
Ⓜ+⏻	Hold together to access the Set up menu.
Ⓜ	Hold for 2 seconds to disable the lock.
⏻	Hold for 2 seconds to return the AutoAnchor to the idle state.

SET UP MENU OVERVIEW

The AutoAnchor must be turned off to access the Set up menu.

Hold Ⓜ+⏻ together to display the Set up menu.

Use ▲▼ to scroll through the menu.



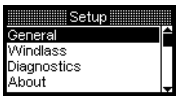
GENERAL SETUP

To Access General Set Up

Ⓘ Turn the AutoAnchor Off.

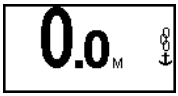
Ⓜ + Ⓘ Hold together to display the Set up menu.

Ⓜ Select General.



To Exit General Set Up

Ⓘ Exit to the Set up menu or hold for 2 seconds to exit to the start menu.



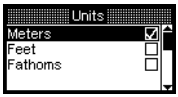
Set Units

Ⓜ Select units.

▲▼ Scroll to select meters, feet or fathoms.

Ⓜ Save.

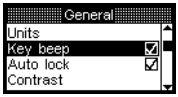
Ⓘ Return to General Menu.



Set Key Beep

▲▼ Scroll to select key beep.

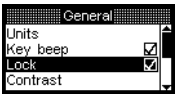
Ⓜ Save key beep on or off.



Set Lock - For safety we recommend the lock be left on.

▲▼ Scroll to select lock.

Ⓜ Save lock on or off.



Set Contrast

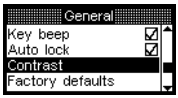
Adjust contrast for best viewing at installation. This is temperature compensated and should not require further change.

▲▼ Scroll to contrast.

Ⓜ Select contrast.

▲▼ Increase or decrease the contrast.

Ⓜ Save and return to General Set up.



FACTORY DEFAULTS

⚠ **Resetting the Factory Defaults clears all programmed settings.**

To Reset Factory Defaults:

Ⓘ Turn the AutoAnchor off.

Ⓜ + Ⓘ Hold together to access the Set up menu.

Ⓜ Select General.

Ⓜ Select Factory defaults

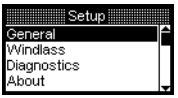
▲▼ Select No/Yes.

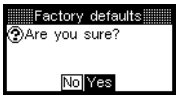
Ⓜ **Yes** - Apply the factory reset. The AutoAnchor will turn off.

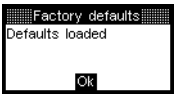
Ⓜ **Re-enter all your Settings.**

Ⓘ **No** - Return to the General menu.

Hold the On/Off button down for 2 seconds to return the AutoAnchor to the idle state.



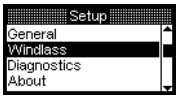




WINDLASS SET UP FOR CHAIN COUNTING

For accurate chain counting you must set up the AutoAnchor with the information for your windlass. Record the settings for future reference.

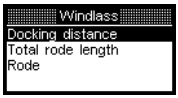
To Access the Windlass Set up

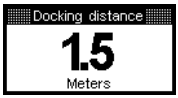


- ⏻ Turn the AutoAnchor Off.
- M + ⏻ Hold together to access the Set up menu.
- ▲▼ Scroll to Windlass.
- ⏻ Select Windlass.

Set Docking Distance Setting: _____

Defaut = 1.5m or 4ft. Minimum setting = 1m or 3.3ft
This is the point during automatic retrieval when the windlass will stop. Complete retrieval using manual operation from this point.

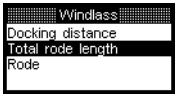


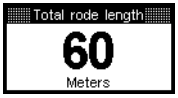


- ▲▼ Scroll to Docking distance.
- M Select docking distance.
- ▲▼ Increase or decrease the docking distance.
- M Save and return to Windlass Setup.

Set Total Rode Length Setting: _____

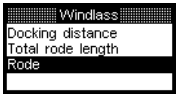
Add total length of chain plus total length of rope
Defaut = 60m or 196 ft. Minimum setting = 10m (33 ft)
or OFF to operate as a counter only.

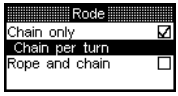




- ▲▼ Scroll to Total rode length.
- M Select Total rode length.
- ▲▼ Increase or decrease the value in meters or feet
- M Save and return to Windlass Set up.

Set Rode





- ▲▼ Scroll to Rode.
- M Select Rode.
- M Select Chain only or Rope and chain and follow the instructions below to enter the settings for the rode selected.

SETTINGS FOR CHAIN ONLY RODE

- M Select Chain only

CHAIN PER TURN WHEN USING CHAIN ONLY RODE

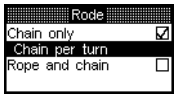
This is the length of chain that is released during one complete turn of the chainwheel. The information for some windlasses is listed in Appendix 1. If your windlass is not listed follow the instructions below.

To Enter the Chain per Turn for Chain Only Rode

Setting: _____

Select Chain per turn.

Enter the measurement. In mm or in metric inches (depending on units selected). See the table below for metric inch calculations.



Save and return to Rode Set up.

Exit to Windlass Set up.

CALCULATING THE CHAIN PER TURN

Step 1 Use adhesive tape to place a mark on the chainwheel.

Step 2 Use adhesive tape to place a mark on the chain coming out of the chain wheel.

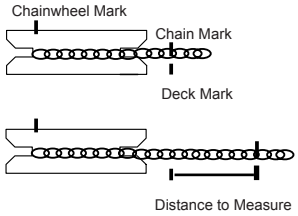
Step 3 Use adhesive tape to place a mark on the deck below the mark on the chain.

Step 4 Carefully release the chainwheel so that it can be turned by hand to feed the chain out.

Step 5 Using the mark on the chainwheel as a guide, turn the chainwheel one turn, causing the chain to be released on to the deck.

Step 6 Measure the length of chain from the mark on the deck to the mark on the chain.

Step 7 Enter this measurement. (See below).



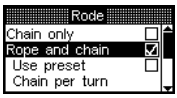
Metric Inches Conversion Table

Inches	Metric Inches	AutoAnchor Setting (to 1 decimal point)
1/8	0.125	0.1
1/4	0.25	0.3
3/8	0.375	0.4
1/2	0.5	0.5
5/8	0.625	0.6
3/4	0.75	0.8
7/8	0.875	0.9

SETTINGS FOR ROPE AND CHAIN RODE

Select Rope and chain

Some rope and chain windlasses have the settings already entered in the AutoAnchor. Refer to the Preset Windlass Profile List in Appendix 1. If your windlass is on the list select “Use preset” to enter the Windlass profile.

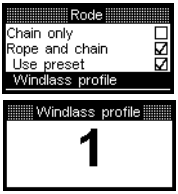


If your windlass is not on the list:

You will need to enter information for the chain and rope per turn. (See instructions on page 18).

Selecting Use Preset Setting: _____

Refer to the Preset Windlass Profile List list in Appendix 1.



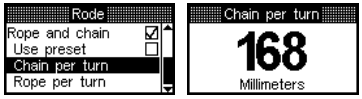
Ⓜ Select Use Preset.
Ⓜ Select Windlass profile.
▲▼ Scroll to the correct Windlass profile for your windlass.
Ⓜ Save and return to Windlass Set up. There are no further settings.
ⓘ Exit to Set up menu or hold for 2 seconds to return to the start screen.

CHAIN PER TURN FOR ROPE AND CHAIN RODE

This is the length of chain that is released during one complete turn of the chainwheel. The chain per turn for some windlasses is listed in Appendix 1. If your windlass is not listed follow the instructions on page 17 to calculate it.

To Enter the Chain per Turn for Rope and Chain Rode

Setting: _____

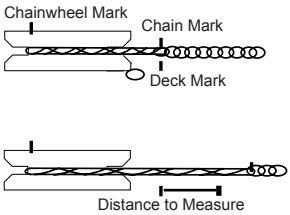


Ⓜ Select Chain per turn.
▲▼ Enter the measurement in mm or metric feet (depending on the units selected). See the table for metric inch calculations.
Ⓜ Save and return to Rode Set up.

ROPE PER TURN FOR ROPE AND CHAIN RODE

This is the length of rope that is released during one complete turn of the chainwheel. You need to measure the length of rope pulled through for 10 turns and divide the result by 10. ***See instructions below to calculate the rope per turn.***

CALCULATING THE ROPE PER TURN



Step 1 Carefully release the chainwheel so that it can be turned by hand to feed the rode out until you have rope.
Step 2 As you did for the chain, use adhesive tape to mark the chainwheel, the deck and the rope. (See the instructions for the chain per turn above).
Step 3 Using the mark on the chainwheel as a guide, pull the rope out by hand until the chainwheel has completed 10 turns.
Step 4 Measure the length of rope pulled, divide it by 10.
Step 5 Enter this measurement (See page 19).

To Enter the Rope per Turn

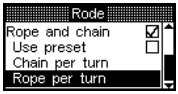
Setting:

Ⓜ Select Rope per turn.

Enter the measurement in mm or metric inches (depending on the units selected).

Ⓜ Save and return to Rode Set up. There are no further settings.

ⓘ Exit to Windlass Set up. Press twice to exit to the Set Up menu or hold for 2 seconds to start up screen.



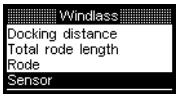
SETTING THE SENSOR

This setting appears on the Windlass set up menu. Default setting is AutoAnchor grey sensor.

Scroll to Sensor

Ⓜ Select Sensor.

There are 4 sensor options: The AutoAnchor grey sensor (supplied with the AutoAnchor kit), the AutoAnchor black sensor, a baseplate fitted reed switch sensor and a gearbox fitted reed switch sensor.



Scroll to the sensor for your windlass.

Ⓜ Select the sensor.

ⓘ If you selected an AutoAnchor sensor or the Reed baseplate sensor there are no further settings. Exit to the Windlass set up menu or hold for 2 seconds to return to the start screen.

Ⓜ

Select Reed Gearbox

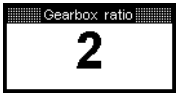
Scroll to Gearbox ratio

Ⓜ Select Gearbox ratio

Increase or decrease the Gearbox ratio

Ⓜ Save and exit to the Sensor set up menu

ⓘ Exit to the Windlass set up menu or hold for 2 seconds to return to start screen.



HIGH CURRENT FOOT SWITCHES

This setting is only selected when the windlass foot switch is wired directly into the high current side of the motor. If the High current switch is not selected the AA560 will not be able to register the direction of the windlass. The brown and white load sensor wires must be connected to the motor terminals for this setting. Default is off.

SET HIGH CURRENT SWITCH

Setting:

Scroll to select High Current Switch.

Ⓜ Save.

ⓘ Exit to Windlass Set up.

PART 4 OPERATION

USER PRECAUTIONS

It is the owner's sole responsibility to ensure the AutoAnchor is installed, used and maintained in a manner that will not cause accidents, personal injury or property damage. When using the AutoAnchor the operator must use safe boating practices and safe windlass and anchoring operation.

- **use the windlass strictly according to the manufacturer's instructions;**
- **only persons who are fully aware of the correct use of the windlass should be allowed to use the AutoAnchor to control this equipment;**
- **the user must personally control and supervise all anchoring operations;**
- **the user must know the location of the main breaker or battery switch to disconnect the windlass from all power sources in the event of an emergency;**
- **the windlass power supply must be turned off when the equipment is not in use;**
- **there must be an alternative method available to operate the windlass;**

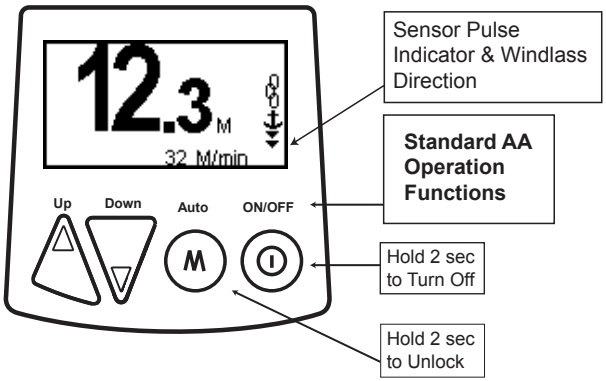
When Controlling a Windlass

- maintain a clear view of the windlass, rode and/or anchor during windlass operation;
- always ensure the anchor is fully docked and secured before moving the boat.

SET UP AND TESTING

Before use the AutoAnchor must be correctly set up for the equipment it is to control and then tested in a safe environment. The AutoAnchor will not count correctly if the windlass selection is wrong or the windlass is not standard (eg it is installed with a different chainwheel or motor).

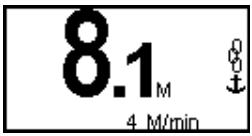
AA560 BUTTONS



In an emergency shut off the power to the windlass using the isolating/breaker switch.

INFORMATION DISPLAYED DURING OPERATION

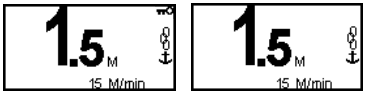
- The length of rode deployed in feet, metres or fathoms
- The direction the anchor is moving
- The type of rode being deployed (chain or rope)
- Windlass speed



Settings and measurements are saved if the unit is turned off or the battery fails. Counting continues if the windlass is operated by another control eg foot switches.

Lock
The AutoAnchor is fitted with a lock to help protect against unintentional windlass operation.

Ⓜ Hold the Mode button for 2 seconds to unlock.



Locked Unlocked

The lock automatically resets 5 minutes after the AutoAnchor was last operated or when the AutoAnchor is turned off. You can also reset the lock by holding down the Ⓜ button until **the key** is displayed in the top right corner.

AUTOMATIC OR MANUAL OPERATION
Keep your finger on the button to deploy the anchor manually or use the automatic function for hands free anchor deployment and retrieval. See the instructions for both options below.

For an accurate reading always ensure the AutoAnchor display reads 0.0 before deploying the anchor.

MANUAL OPERATION

Deploy and Retrieve the Anchor Using Manual Operation

Ⓘ Turn the AutoAnchor on.
Ⓜ Clear the safety lock.
Press and hold the Down button to deploy the anchor and the Up button to retrieve the anchor. Release the button to stop the windlass operation. Ensure the anchor is fully docked and secured before moving the boat.

DOCKING ALARM: During retrieval the AutoAnchor beeps to warn the operator the anchor has passed the preset docking distance.
Extra care must be taken at this stage of retrieval.

AUTOMATIC OPERATION

⚠ **WARNING**: **There is an inherent risk when using any automatic function on a boat. If you choose to use the AutoAnchor automatic functions, you must still control and supervise all windlass and anchoring operation.**

Use the Automatic Function to:
- Preset the length of rode for deployment.
- Have hands-free operation of the windlass.
- Retrieve the anchor automatically to the preset docking distance.

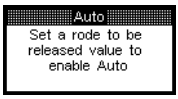
Note: For rope/chain counting, if the sensor or load sensing wires are not installed correctly the automatic function **will not operate**. An Installation warning message will display on the screen. The windlass can still be operated using manual operation but the AutoAnchor will not count accurately.

Safety Override

Press any button on the AutoAnchor to stop the windlass during automatic release or retrieval. **In an emergency shut off the power to the windlass using the isolating/ breaker switch.**

Enable Automatic Operation

A “rode to be released” value must be entered to use automatic operation.



To Set A Rode to be Released Value

- Turn the AutoAnchor on.
- Clear the safety lock.
- Press the Mode button twice to enter Set auto.
- Scroll up or down to change the value.
- Save ready to deploy. Press twice to return to start screen.

To disable the automatic operation: Set the rode to be released value to Off.

Deploy the Anchor Using Automatic Operation

- Turn the AutoAnchor on.
- Clear the safety lock.
- Press the Mode button to select Auto. The screen displays the current length for Auto release.
- If this setting is correct. Press and release the down button to deploy the anchor.

To Change the setting:

- Press the Mode button again to select Set auto.
- Enter the value.
- Save and return to Auto.

The windlass will stop and the AutoAnchor will beep when the preset length of rode has been released. The screen will display “Auto target reached”.

Retrieve the Anchor Using Automatic Operation

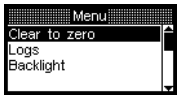
- Turn the AutoAnchor on.
- Clear the safety lock.
- Press the Mode button to Select Auto.
- Press and release the Up button to retrieve the anchor. The windlass will stop and the AutoAnchor will beep when the docking distance is reached. The screen will display Docking distance.
- Press the Up button to complete retrieval of the anchor. The AutoAnchor will beep during this process.

Ensure the anchor is fully docked and secured before moving the boat.

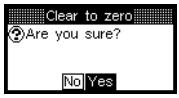
OTHER OPERATION SETTINGS

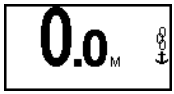
Press ⓘ to access the menu when the AutoAnchor is turned on.

To Clear to Zero
The AutoAnchor must be turned on.

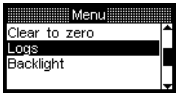


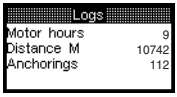
ⓘ Press to access the Menu.
Ⓜ Select clear to zero
▲▼ Select No/Yes
Ⓜ **Yes** - return to start screen
Ⓜ **No** - return to the menu, then press ⓘ again to return to the start screen.





To Check Logs
The AutoAnchor must be turned on.



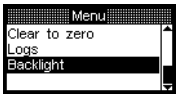


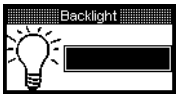
ⓘ Press to access the Menu.
Ⓜ Select Logs.
Ⓜ Return to the menu.
ⓘ Exit and return to start screen.

Logs can be cleared using the Factory Default Settings.

⚠ **Resetting the Factory Defaults clears all programmed settings.**

To Adjust Backlight
The AutoAnchor must be turned on. It is best to change this setting in low light.





ⓘ Press to access the Menu.
Ⓜ Select Backlight
▲▼ Change the Backlighting level.
Ⓜ Save and return to the menu
ⓘ Exit and return to start screen

PART 5 MAINTENANCE

The AutoAnchor does not contain any user servicable parts.
User maintenance is limited to :

- Checking all cables and connections for signs of wear or damage and replacing them as necessary.
- Checking the sensor head is not worn and has not moved out of alignment with the magnet and replacing the sensor if necessary. **After any sensor repairs or changes to sensor installation reset the sensor by clearing to zero twice.**
- Checking the magnet is not worn or corroded and replacing the magnet if necessary.

Note: Do not use chemical or abrasive materials to clean the console unit. If it is dirty wipe it with a clean damp cloth. Avoid wiping the display screen with a dry cloth as this could scratch the screen.

PART 6 TROUBLESHOOTING

SCREEN MESSAGES

Messages are displayed on the AA560 console screen to assist with operation and troubleshooting. These messages are designed to assist the user. They may be **information messages**, for example that the console is locked, or **diagnostic messages**, for example, that a wire is disconnected. The messages are self explanatory.

Diagnostic messages help find an installation problem. The diagnostic messages are all caused by external wiring or installation issues, which need fixing. **They are not caused by a fault with the AutoAnchor.**

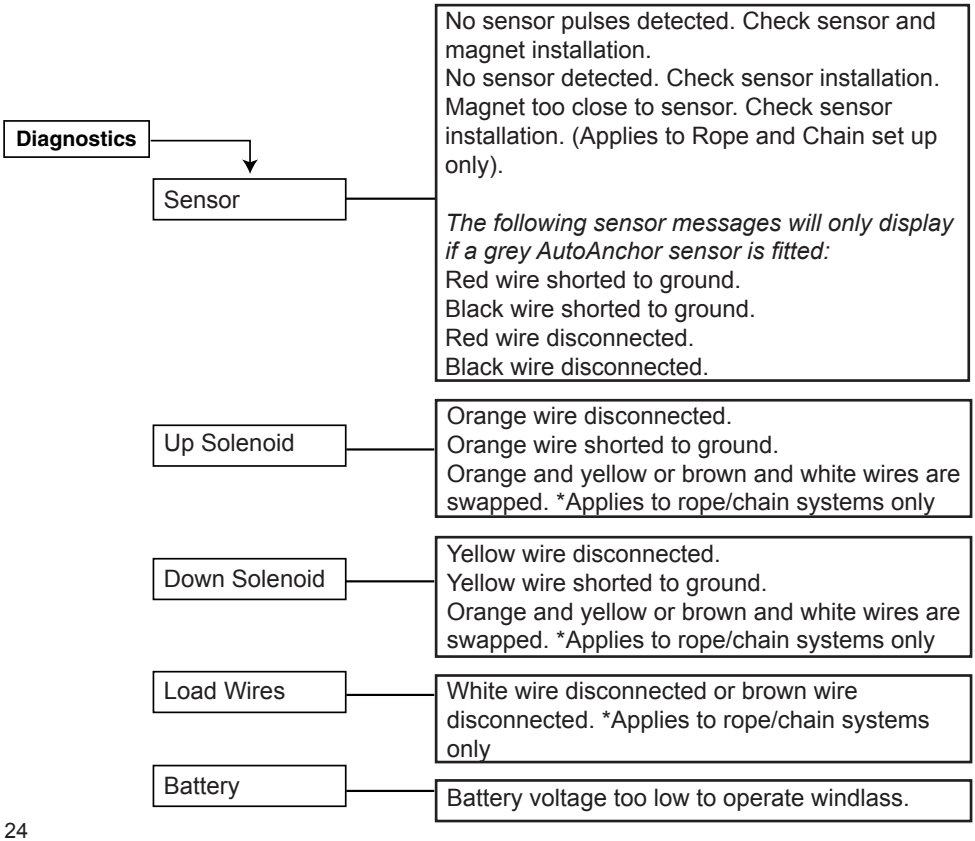
A warning screen or information message appears when an issue is detected.

Scroll to Diagnostics

Select Diagnostics for further information.

The diagnostic messages are designed to help find installation errors such as loose connections or incorrect set up.

INSTALLATION DIAGNOSTIC MESSAGES



WINDLASS TROUBLESHOOTING

SCREEN MESSAGES	POSSIBLE CAUSE/SOLUTION
Auto mode disabled because of sensor or wiring fault.	Check the sensor diagnostics and magnet installation.
Battery voltage too low to operate windlass.	If the battery is fully charged, check the wiring for bad connections. If the cable is the wrong size there may be voltage drop between the battery and the AutoAnchor.
Magnet too close to sensor. Check sensor installation.	Check magnet and sensor installation. (Applies to rope/chain systems only).
No sensor detected. Check sensor installation.	Check sensor diagnostics, the sensor installation, wiring and set up.
No sensor pulses detected. Check magnet and sensor installation.	Check sensor diagnostics, the magnet installation, the gap and the sensor set up.
Orange and yellow or brown and white wires are swapped.	Fix the orange and yellow or brown and white wire connections. (Applies to rope/chain systems only).
Power supply wired incorrectly. Refer to wiring diagram.	Power is backfeeding from incorrect supply.
Solenoid is disconnected or stuck on. Check diagnostics.	Check solenoid diagnostics to see which wire is disconnected and/or check the solenoid operation.
Solenoid output overloaded or shorted to ground.	Check solenoid diagnostics to see which wire is shorted.

Other Troubleshooting

AutoAnchor beeps when it is turned off or locked.	Uncontrolled anchor rode is running through the windlass or external interference.
AutoAnchor counts when the windlass is not turning or counts erratically displaying a large number. The screen may display **Sensor unstable"**	The sensor may be damaged, the sensor cable is not the specified type or the connection may be faulty. Check the sensor wiring. If the AA sensor plug is not used the wires must be soldered. All wires must be connected (including the drain) and screened cable must be used.
The count pauses during retrieval.	If the sensor indicator (arrow) is still pulsing, this is not a fault. The rode is changing from rope to chain.
Windlass deploys when the Up button is pressed and retrieves when the Down button is pressed.	The motor or solenoid wiring is reversed. Change the wiring and check the direction of windlass rotation. If the brown and white wires are connected, also check that they are correct after you have changed the wiring.
Windlass does not stop exactly at the preset point.	Stopping is accurate to +1 chainwheel revolution. The chainwheel will run on slightly with momentum.
Windlass stops before the length of rode specified is deployed.	Using the Automatic function the rode release stops 10 ft (3m) short of the Total Length of Rode on Board setting.

AFTER ANY SENSOR REPAIRS OR CHANGES TO SENSOR INSTALLATION RESET THE SENSOR BY CLEARING TO ZERO TWICE.

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