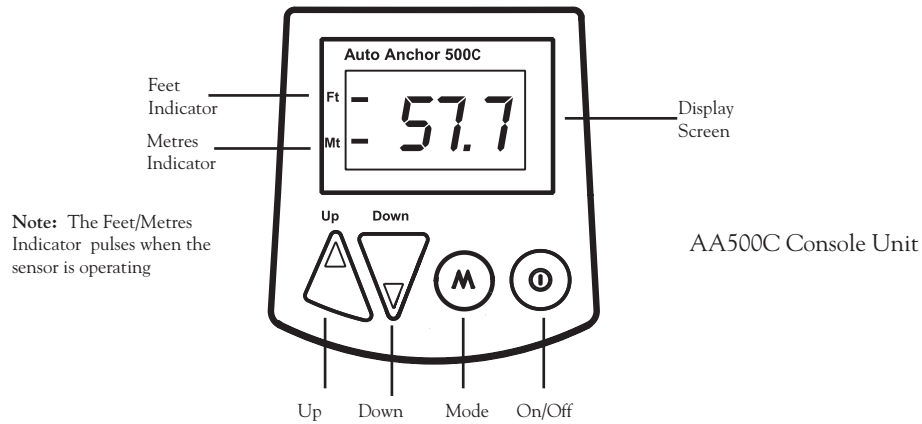


Installation Instructions

AutoAnchor 500C Electronic Windlass Controller and Chaincounter for Chain Rodes



READ ALL THE INSTRUCTIONS BEFORE STARTING INSTALLATION

All installations should be carried out in accordance with USCG, ABYC, NMMA and BMEA requirements

Check that the following parts are included in the kit:

Kit 9005 Includes:

- 1 x AA500C Console Unit
- 1 Console Fastening Kit(3 bolts, 3 nuts and 3 grommets) Part No: 9017
- Wiring Diagrams
- 1 x Operation Manual
- 1 x Black Sensor Part No: 9008
- 1 x Magnet 6mm x 4mm Part No: 9009



IMPORTANT NOTES

- 1 The AutoAnchor 500C should only be installed by a qualified marine electrician. Do not attempt to install the AutoAnchor 500C unless you are suitably qualified.
- 2 Information for installation and operation of the AutoAnchor 500C is supplied. The documentation includes: Installation instructions, Wiring diagrams and the Operation Manual which contains the calibration and testing procedures. All instructions and manuals should be left on board for the owner.
- 3 Non compliance with the instructions in the documentation could impair windlass and AutoAnchor 500C operation, and could result in personal injury and/or damage to the boat.
- 4 Non compliance with the instructions will negate the manufacturer's warranty.
- 5 The AutoAnchor 500C is designed for use with an all-chain rode.
- 6 All the technical and cable specifications must be checked and adhered to.(See page 2)
- 7 Wiring diagrams must be followed without modification.
- 8 Connections to the windlass motor should be completed according to the windlass manufacturer's specifications.
- 9 Installation is not complete until the AutoAnchor 500C has been calibrated to comply with the boat's windlass and chain and then tested in a safe environment. Refer to the Operation Manual Part 2 for the calibration and testing instructions.



ELECTROMAGNETIC COMPATABILITY (EMC)

The AA500C meets and exceeds the CE standard for EMC (EN60945). These standards are intended to provide reasonable protection against interference by other emission generating products on the boat. However, 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. AA500C equipment must be installed to maintain the following distances away from any equipment transmitting or cables carrying radio signals eg VHF and SSB radios, cables and antennas or radar antennas:

- the console at least 1m (3 ft), except for SSB equipment where it must be 2m (6ft) away
- the cables at least 500 mm (1.5 ft)

TECHNICAL SPECIFICATIONS AA500C

Power Supply: 12V or 24V DC
 Current Consumption: 30 mA
 Temperature Range: 23°F to 140°F (-5°C to 60°C)
 Solenoids: Maximum 4 Amp draw
 Maximum Voltage: 30V DC
 EMC: EN 60945

CABLE SPECIFICATIONS

Sensor Cable (From AutoAnchor 500C console to the Sensor):
 Must be Belden 9965 (AWG22) or Tycab PCT1702 (0.22mm²) or the equivalent, tinned, single core, shielded.
Note: Aluminium foil covered data cable is not suitable.

Cable from AA500C console to the batteries and solenoids:

Note: All battery cables must be ring type.
 This specification is based on the total cable length measured from the battery to the console plus from the console to the solenoids.
 Where the total length is less than 33 ft (10 m) - 1.5mm² (AWG16)
 Where the total length is between 33 ft (10 m) and 66 ft (20 m) - 2.0mm² (AWG14)
 Where the total length is between 66 ft (20 m) and 132 ft (40 m) - 3.0mm² (AWG12)
 For lengths greater than this refer to your supplier for specifications.

WINDLASS & ANCHOR SPECIFICATIONS

The AA500C is designed for use with all-chain windlasses. The windlass must be installed according to the windlass manufacturer's instructions with the correct size chain for the windlass chainwheel. For smooth operation the windlass requires a good quality, properly fitted bow roller and a swivel should be connected to the anchor where it joins the chain.



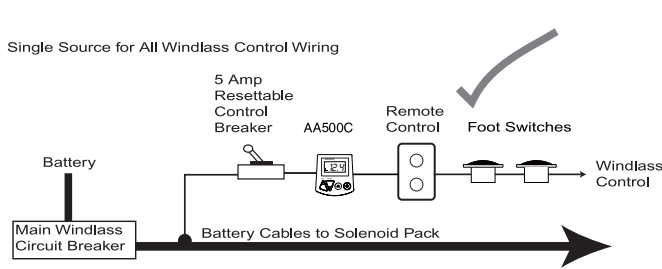
POWER SUPPLY

THE POWER SUPPLY MUST BE DISCONNECTED DURING INSTALLATION AND WHEN MAKING ANY CHANGES TO WIRING AFTER INSTALLATION.

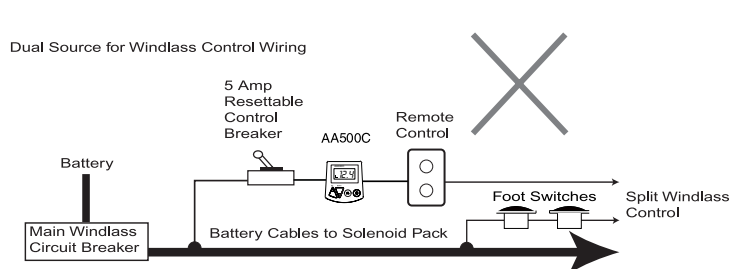
Power Supply & Wiring Connections

- 12V or 24V DC power supply is required to the AA500C console.
- If connecting to an AC or hydraulic powered windlasses ensure relays are installed as per the wiring diagrams.
- The power must be disconnected when installing and connecting the wiring.
- Check battery polarity before connecting power and ensure output terminals will not short.
- A 5 Amp resettable isolating/breaker switch to shut off power to the AA500C and the windlass must be installed in a position easily accessed by the AA500C operator.
- Power to the AA500C console, toggle switches, deck switches, solenoid pack and windlass motor must be supplied from a common point and not from separate systems. Multiple battery bank negative terminals must be permanently connected together to become the common negative return (ground).

Correct Power Supply Wiring



Wrong Power Supply Wiring



Refer to the Wiring Diagrams for wiring installation detail. The cable specifications on page 2 of these instructions must be followed. Interlock protection is included in the system. Do not fit diodes or interlock devices 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. 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. Insulation must be used to protect all terminals. Do not leave cables hanging loose, they should be tied in place with cable ties.

VOLTAGE LEVELS

Neither the windlass nor the AA500C will operate with insufficient power. (See 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. To check the voltage to the console. Turn the AA500C off and then press and hold the Down button. The voltage will display on the LCD. During operation, if the voltage drops below the minimum the AA500C will show **BATT** and the voltage.

Minimum Voltage Required

Minimum voltage required to start windlass operation.	12V system	10 Volts
	24V system	19 Volts
If the windlass is already operating, this is the minimum voltage required to continue operating.	12V system	8 Volts
	24V system	14 Volts

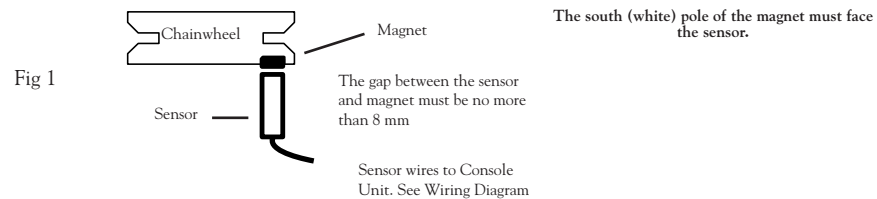
Magnet & Sensor Installation

The magnet and sensor are used to record the rotation of the chainwheel. They must be installed correctly or the AutoAnchor 500C will not work. Refer to Fig 1 below to see positioning.

Magnet

Drill a hole 1/4 inch (6.5mm) diameter and 3/16 inch (4.5mm) deep in the underside of a chainwheel spoke and insert the magnet. (In some chainwheels the hole is factory drilled). Insert the magnet into the hole and seal it completely with epoxy to ensure protection from salt water. Failure to do this will impair the magnet's strength and durability. **The south (white) pole of the magnet must face the sensor.**

Magnet & Sensor Position



Sensor

Drilling the Deckplate:

If the deckplate is factory drilled: Remove the plug in the deckplate, slide the sensor inside the fitting plug, provided in the sensor pack so that the top of the sensor is flush with the top of the plug. Push the whole assembly into the deckplate from the top. Some force will be required. The plug should sit firmly in the hole with no need for adhesive. The recommended gap between the magnet and sensor is 6.5mm. It must be no more than 8.0mm. Refer to Fig. 1.

If the deckplate is NOT factory drilled: Drill a hole 14.5mm diameter into either the deckplate - for a vertical windlass, or the side of the housing - for a horizontal windlass. Ensure this hole is directly in line with the chainwheel magnet hole. slide the sensor inside the fitting plug, provided in the sensor pack so that the top of the sensor is flush with the top of the plug. Push the whole assembly into the deckplate from the top. Some force will be required. The plug should sit firmly in the hole with no need for adhesive. The recommended gap between the magnet and sensor is 6.5mm. It must be no more than 8.0mm. Refer to Fig. 1.

Drilling the Deck: The windlasses are supplied with full instructions and templates for drilling into the deck. These templates include space for the sensor and to feed the sensor wire through the deck. Before drilling into the deck ensure there is nothing below the deck that could be damaged. Also ensure any hole you drill will not weaken the boat's structure.

Gap Between the Sensor and Magnet: The gap between the magnet and the sensor is critical for proper operation of the AA500C. The recommended gap between the magnet and sensor is 6.5mm. It must be no more than 8.0mm. A sensor holder is supplied for use with Liberty windlasses. **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 1 ft (300mm) away from the battery and motor cables.**

Sensor Wiring: Sensor connection cable must be Belden 9965(AWG22) or Tycab PCT1702 (0.22mm²) or equivalent single core, tinned, shielded. Sensor cable joins must be soldered and sealed in adhesive heat shrink tubing or crimped with immersion resistant crimp splices. Do not leave the cables hanging loose, they should be tied in place with cable ties. Connect the sensor wires to the AutoAnchor 500C console. Ensure the core wire connects to the core wire and the shield wire connects to the shield wire. Both connections must be made for the AutoAnchor 500C to operate. Refer Fig 2.

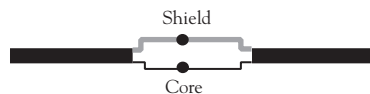


Fig 2

Sensor Indicator: The Sensor Indicator (also the feet/metres selector indicator) flashes on the screen every time the sensor receives a reading.

Console Unit Installation

Choose a position where the operator will be able to see the anchor and windlass when using the AA500C. The console should be mounted 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. The console should be mounted so that the back is protected from moisture. There are 4 holes required to mount the console. Refer to the drilling template supplied for the hole sizes and positions. 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 Control Unit Installation

Up to 3 AutoAnchor 500C units can be installed to provide multiple control stations. The AutoAnchor 500C can also be installed with other windlass control stations eg deck switches or plug in hand controls. Refer to the wiring diagrams for detail.

Twin Chainwheel Installation

Windlasses with two chainwheels require 2 parallel AutoAnchor 500C system installations. Each chainwheel must have an independent sensor and magnet installed. Ask your supplier for the wiring diagrams.

Connections to the Windlass Motor

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.

Calibration & Testing:

Before installation can be considered complete, the AA500C must be calibrated to comply with the boat's windlass and rode and then tested to ensure it is working correctly.

Refer to the AA500C Operation Manual for the calibration instructions. Most chainwheel circumferences are set out on the enclosed list.

Before operating the windlass using the AA500C, ensure the anchor is fully docked and re-set the AA500C to 0. To do this turn the AA500C on. Press and hold the ON/OFF button. A rapid beeping will be heard. Release the ON/OFF button when the display shows 0.0.

To the best of our knowledge the information in these instructions 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 instructions.

Documentation relating to the AutoAnchor products is created in the English language and can 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.

Please contact the manufacturer, or your supplier for further information.

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