

mze

MZ ELECTRONIC



Istruzioni per l'uso

Instructions for use

Instructions d'utilisation

Gebrauchsanweisung

Instrucciones de uso

RADIO CONTAMETRI

RADIO CHAIN COUNTER

RADIO COMPTEUR MÉTRIQUE

RADIO METERZÄHLER

RADIO CUENTAMETROS



WHC040

Rev. 04-2021

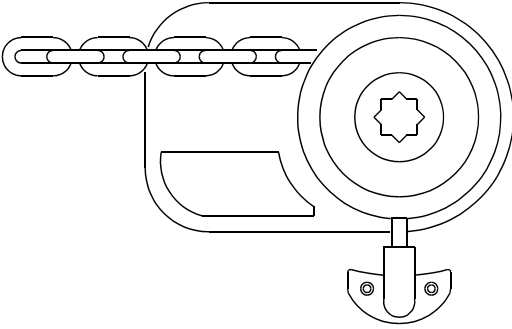


Fig. 1A

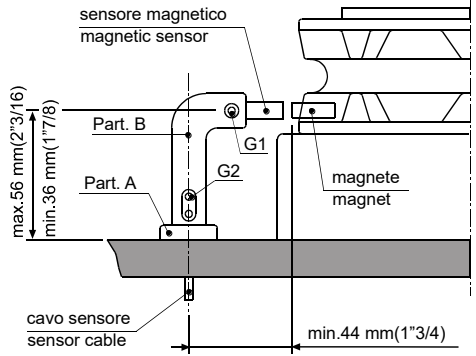


Fig. 1B

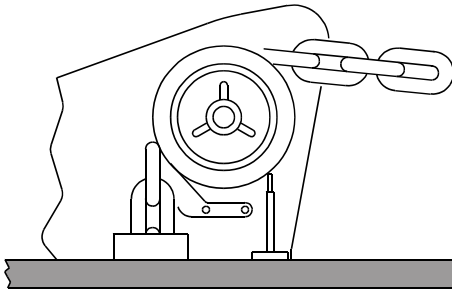


Fig. 2A

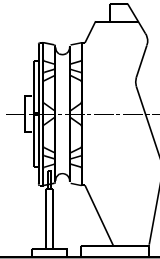


Fig. 2B

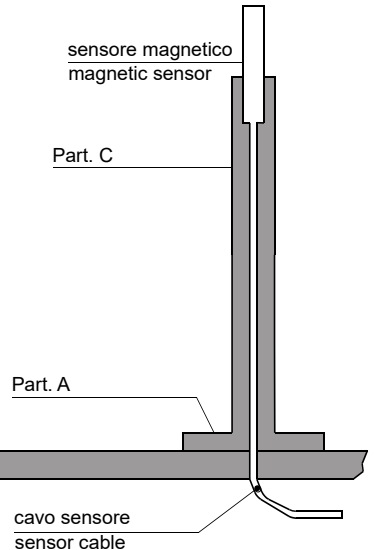


Fig. 2C

Description

The **WHC040** chain counter displays the length of chain let out or down, expressed in metres or feet and the speed of the same. It also allows you to control two thrusters independently.

Technical data

Transmitter	
Power supply	from 10 to 30 V DC
Current intake	min. 5 mA – max 60 mA
Protection rating	IP67
Operative temperature	0 / +70 °C (32 / 158 °F)
Graphic display	128 x 128 pixels
Max. chain length	999 metres – 999 feet
Size (mm)	170 x 80 x 50
Weight (g)	450
Radio frequency	868MHz
Receiver	
Power supply	from 10 to 30 V DC
No-load current intake	max 50 mA
Protection rating	IP66
Operative temperature	0 / +70 °C (32 / 158 °F)
Size (mm)	150 x 110 x 75
Weight (g)	350



Warning

CONNECT ONLY TO A DC POWER SUPPLY.

General notes

The **WHC040** chain counter must be used solely for the purposes described herein, i.e. to operate and display the number of metres/feet of chain let out by an anchor windlass or to operate a capstan. Any other use is to be considered improper.

Any tampering with the instrument will result in immediate voiding of the warranty.

Components

The package contains:

- radio-meter with rechargeable lithium-ion battery;
- radio-meter counter fixing kit (1 bracket with 2 screws);
- charging base for charging the lithium ion battery;
- receiver-transmitter power unit;
- Instructions for Use.

Installation

On a few models of anchor windlass the sensor and the magnet are already installed (chain counter setting). Therefore, the operations described below are not necessary.

Installing the magnet on the anchor windlass

A hole having a diameter of 6.5 mm (~1/4") and depth of 8 mm (5/16") must be drilled on a tooth of the gipsy, in a place outside the chain's path.

In the case of vertical shaft anchor windlasses (see Fig. 1B), drill the hole in the lower circumference of the gipsy.

In the case of horizontal shaft anchor windlasses (see Fig. 2B), drill the hole in the outer circumference of the gipsy.

Also make sure that the protruding part of the magnet will not collide with the base or sensor during rotation of the gipsy.

Insert the metal part of the magnet in the hole, allowing the protected part to protrude by about 2 mm. Fix it in place using an adhesive for metals (two-component epoxy glue) or silicone. The glue used must be able to withstand a marine environment.

Installing the magnetic sensor for vertical shaft anchor windlasses

(see Fig. 1A – 1B)

Drill a 4 mm (~3/16") hole in the cover through which to thread the sensor cable.

Fasten Part A of the support with the two screws provided, after having positioned the O-ring in the lower part of the support.

Fit Part B with the magnetic sensor on support A and adjust its height until it is aligned with the magnet fastened on the gipsy.

Bring the sensor to a distance of about 3 mm (~1/8") from the magnet and secure it in place by tightening screw G1. Then tighten screw G2.

Installing the magnetic sensor for horizontal shaft anchor windlasses

(see Fig. 2A – 2B – 2C)

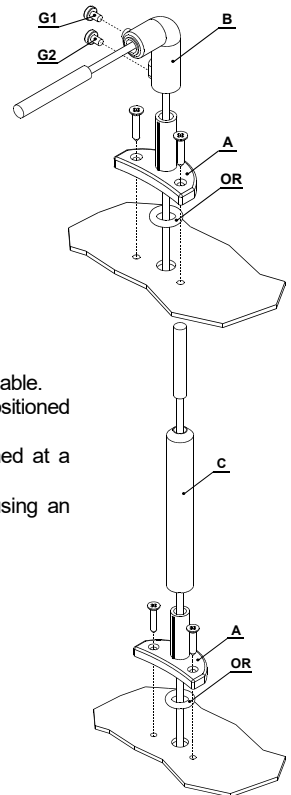
Drill a 4 mm (~3/16") hole in the cover through which to thread the sensor cable.

Fasten Part A of the support with the two screws provided, after having positioned the O-ring in the lower part of the support.

Cut Part C to measure using a hacksaw. The sensor must be positioned at a distance of about 3 mm (~1/8") from the magnet.

Fit Part C with the magnetic sensor on support A and fix it in place using an adhesive for plastic (two-component epoxy glue) or silicone.

Using the same glue, attach the sensor to Part C.



Installing the chain counter
(see connection diagram at page 73/74)

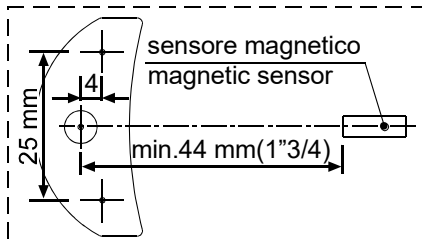
 Warning

ALWAYS DISCONNECT THE BATTERY PRIOR TO INSTALLATION.

Connections

12-poles Terminal Block in the receiver	
PIN	SEGNALE
POS	+ Battery
NEG	- Battery
UP	UP Command
DOWN	DOWN Command
SW-M	Magnetic sensor (1st wire)
SW-M	Magnetic sensor (2nd wire)
BO-L	Bow Left Command
BO-R	Bow Right Command
ST-L	Stern Left Command
ST-R	Stern Right Command
CAN-H	CAN-H signal (CanOpen serial interface)
CAN-L	CAN-L signal (CanOpen serial interface)

Sensor holes



Starting up

The chain counter features a graphic display and three keys: **Ⓚ (ON)**, **Ⓢ (UP)** and **Ⓣ (DOWN)**, **Ⓛ (BOW LEFT)**, **Ⓡ (BOW RIGHT)**, **Ⓦ (STERN LEFT)**, **Ⓟ (BOW RIGHT)**.

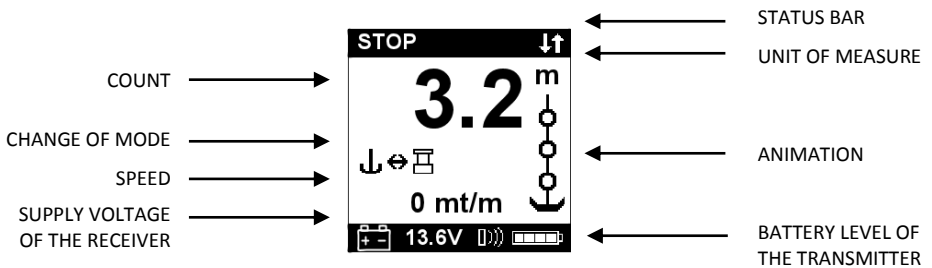
The **ON** key switches on the display and enables the other two keys. It must be used to access the parameter setting menus. For selecting the parameters to be modified and to confirm the values set. The display backlight will switch off 15 seconds after the last command given.

The **UP** key commands the hoisting of the anchor and the **DOWN** key casts it. When the key is released, the action is stopped. During parameter setting, the two keys allow the User to move around the menu and vary parameter values.

When switched on, the instrument will make a beep and the following page will appear for a few seconds:



Once the initialisation procedure is complete, the main page will appear.



Where:

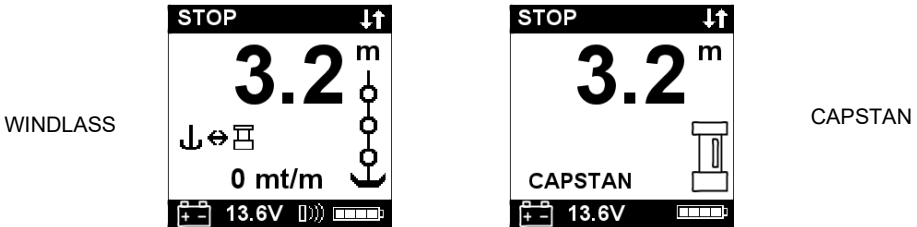
- STATUS:** indicates the status of the instrument and any failure.
- UNIT OF MEASURE:** shows the current unit of measure (metres or feet)
- ANIMATION:** an animated anchor or capstan shows the direction of the movement.
- COUNT:** indicates the measurement of the chain lowered (in metres or feet).
- CHANGE OF MODE:** this icon is displayed when there is a change in working mode (windlass mode or capstan mode)
- SPEED:** indicates the chain speed during hoisting or lowering in meters per minute (mt/m) or feet per minute (ft/m)
- SUPPLY VOLTAGE:** indicates the power supply voltage of the receiver.
- INTERNAL BATTERY LEVEL:** indicates the state of charge of the internal battery of the remote control. The icon immediately to its left indicates the charge in progress when the transmitter is placed on its charging base.

When the instrument is turned on for the first time, it will set up as programmed in the factory (see table).

Parameter	Default value
Up Alarm	3.0 metres
Auto Down	Off
BackLight Time	15 seconds
Units of measurement	Metres/centimetres
Chain Measure	0.0 metres
Barbotin Circumference	33 cm
Sensor type	Standard
Language	Italian
Works Hours	0
Division factor	1

Windlass / Capstan mode

HC020 chaincounter has two different operating modes: Windlass mode and capstan mode:



When the device is turned on it is set in windlass mode, which is standard operating mode by default: it is possible to operate the windlass obtaining lowered chain meters, chain speed and sensor error in case of faults on the sensor installed on the windlass.

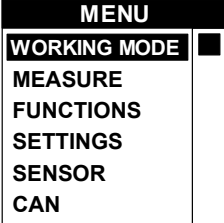
In capstan mode, capstan is put in motion for standard mooring operation, without sensor reading; this way, the chain length doesn't change, chain speed is not displayed, and no sensor signal is given as it is not used when the chain is not in motion.

In order to shift from one mode to the other one, you need to press the button **(ON)** for about 3 seconds to make the icon change mode appear:

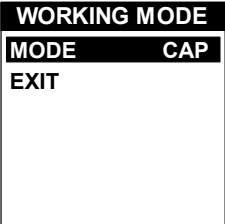



Release the button **(ON)** when the icon appears in order to do the mode change from windlass to capstan and vice versa.

Chain counter setting menu

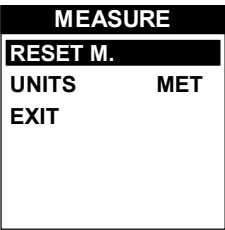











<p>Hold down the Ⓜ (ON) key for six seconds to access the instrument setting menu. The following page will appear on the display:</p> <p>Use the ⏴ (DOWN) and ⏵ (UP) keys to move around the menu options.</p>	
<p>Once you are positioned on the item to be modified press the Ⓜ (ON) key to confirm your choice.</p>	
<p>Use the ⏴ (DOWN) or ⏵ (UP) keys to move from one parameter to another.</p>	
<p>Once one is positioned on the parameter press the Ⓜ (ON) key to enable modification.</p>	
<p>According to the type of parameter, using the ⏴ (DOWN) and ⏵ (UP) keys it is possible to reduce/increase the value of the same or disable/enable the function.</p>	
<p>Once the modification has been performed, press the Ⓜ (ON) key to confirm.</p>	
<p>Using the ⏴ (DOWN) key go to the Exit option and press the Ⓜ (ON) key again to return to the setting menu. The same procedure must be used to return to the main page.</p>	

Working mode menu

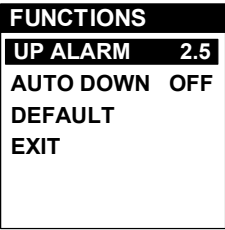


	
<p>Use the ⏴ (DOWN) or ⏵ (UP) key to move around the parameters.</p>	
<p>Mode Selects the working mode:</p> <ul style="list-style-type: none"> • Windlass (WND) • Capstan (CAP) 	<p>Select with Ⓜ Change with ⏴ ⏵ Confirm with Ⓜ</p>

Exit To return to the previous menu	Confirm with 
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Measurement menu

	
Use the  (DOWN) or  (UP) key to move around the parameters.	
Reset Measurement Resets the chain measurement value (0.0).	Select with   = Yes  = No Confirm with 
Units Selects the unit of measurement: Feet/ inches Metres / centimetres	Select with   = Feet  = Metres Confirm with 
Exit To return to the settings menu.	Confirm with 










Functions menu

	
Use the  (DOWN) or  (UP) key to move around the parameters.	















<p>Up Alarm It is possible to enable the function and establish the height at which the anchor-winch stops; after which it is only possible to give pulsed commands. Settable values: OFF, 0.5 – 1.0 – 1.5 – 2.0 – 2.5 - ... 10.0 (metres or feet).</p>	<p>Select with ⏏ Select value with ⬆ ⬇ Confirm with ⏏</p>
<p>Auto Down Enables the automatic anchor lowering procedure, at the desired height, with the pressing (for at least 3 seconds) of the keys ⏏ and ⬇. Settable value: OFF, 1,2,3...25 (metres or feet).</p>	<p>Select with ⏏ Select value with ⬆ ⬇ Confirm with ⏏</p>
<p>Load Default This function allows the User to revert to the original factory default settings, <u>thus erasing all settings memorised</u>. This command must only be used in the event of programming errors.</p>	<p>Select with ⏏ ⬇ = Yes ⬆ = No Confirm with ⏏</p>
<p>Exit To return to the previous menu.</p>	<p>Confirm with ⏏</p>

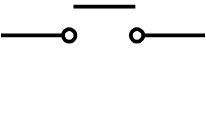

Settings menu

<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <p>SETTINGS</p> <p>CONTRAST 3</p> <p>LITE 5</p> <p>OFF TIME 30</p> <p>LANGUAGE ITA</p> <p>EXIT</p> </div>	
<p>Use the ⬇ (DOWN) or ⬆ (UP) key to move around the parameters.</p>	
<p>Contrast By enabling this function it is possible to start the display contrast programming procedure.</p>	<p>Select with ⏏ Select value with ⬆ ⬇ Confirm with ⏏</p>
<p>Lite By enabling this function it is possible to start the display luminous intensity programming procedure.</p>	<p>Select with ⏏ Select value with ⬆ ⬇ Confirm with ⏏</p>






<p>Off time This function allows the user to set the backlight on time during which the display remains lit after the last command given (default value 30 seconds).</p>	<p>Select with  Select value with   Confirm with </p>
<p>Language The user may select the display language: Italian, English, French, German, Spanish</p>	<p>Select with  Select value with   Confirm with </p>
<p>Exit To return to the settings menu.</p>	<p>Confirm with </p>

Sensor menu

<table border="1" style="margin: auto;"> <thead> <tr style="background-color: black; color: white;"> <th colspan="2">SENSOR</th> </tr> <tr style="background-color: black; color: white;"> <th>SENSORE</th> <th>STD</th> </tr> </thead> <tbody> <tr> <td>BARBOTIN</td> <td>33.0</td> </tr> <tr> <td>DIVISOR</td> <td>1</td> </tr> <tr> <td>TEST</td> <td></td> </tr> <tr> <td>EXIT</td> <td></td> </tr> </tbody> </table>		SENSOR		SENSORE	STD	BARBOTIN	33.0	DIVISOR	1	TEST		EXIT	
SENSOR													
SENSORE	STD												
BARBOTIN	33.0												
DIVISOR	1												
TEST													
EXIT													
<p>Use the  (DOWN) or  (UP) key to move around the parameters.</p>													
<p>Sensor This function selects the sensor type:</p> <ul style="list-style-type: none"> • 2-wire standard sensor (STD) • 3-wire electronic sensor (HAL) 	<p>Select with  Select value with   Confirm with </p>												
<p>Barbotin The circumference of the gypsy must be entered in this row (in centimeters or inches). To enter the correct value see the paragraph "instrument calibration"</p>	<p>Select with  Select value with   Confirm with </p>												
<p>Divisor If the standard 2-wire electronic sensor (STD) is used, this value must be left at 1. if an electronic sensor is used it must be equal to the number of sensor pulses for each turn of the barbotin. See paragraph "Instrument calibration".</p>	<p>Select with  Select value with   Confirm with </p>												

<p>Test This function allows you to check the correct operation of the tachometer sensor: a screen with the status of the sensor is displayed: by rotating the winch, the contact must close when the mangete passes in correspondence with the sensor, closing it.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>SENSOR</p>  </div>
<p>Exit To return to the previous menu.</p>	<p>Confirm with </p>

Test menu

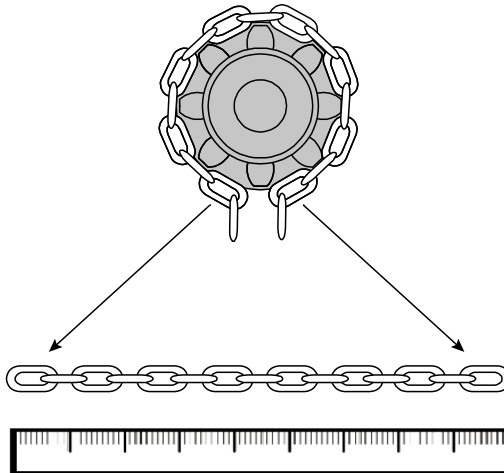
<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>TESTS</p> <div style="border: 1px solid black; padding: 2px; margin: 2px;"> <p>LCD TEST</p> <p>SOFTWARE 1.0</p> <p>WORK. HOUR 0</p> <p>EXIT</p> </div> </div>	
<p>Use the  (DOWN) or  (UP) key to move around the parameters.</p>	
<p>LCD Test This function switches on all the display's pixels thus making it possible to perform a check on them.</p>	<p>Select with </p> <div style="border: 1px solid black; background-color: black; width: 100%; height: 100%; margin: 10px 0;"></div> <p>Confirm with </p>
<p>Software Version Indicates the version of the software installed.</p>	
<p>Work Hours Indicates the hours of operation of the winch.</p>	
<p>Exit To return to the settings menu.</p>	<p>Confirm with </p>

Instrument calibration

Before using the instrument the following parameters must be set:

- **UNIT OF MEASURE**, (metres or feet). It can be set in the Measure menu;
- **SENSOR** (2-wire standard or 3-wire electronic). It can be set in the Sensor menu;

BARBOTIN circumference setting (in cm or inches) on sensor menu: the value to be entered is the circumference on chain winding point. If this value is not available in windlass technical records, it is necessary to measure chain length which the gypsy can house on its circumference. This measure expressed in centimeters (or inches according to the measure set) is the value which has to be entered in the Barbotin parameters



CIRCUMFERENCE OF THE BARBOTIN

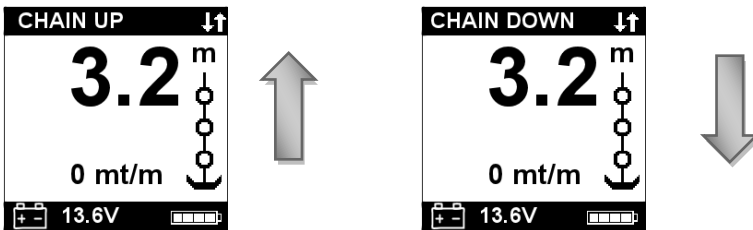
Setting the **DIVIDER** in the Sensor menu: **if a standard sensor is used, this value must be set to 1** while if an electronic sensor is used it must be equal to the number of sensor pulses for each turn of the barbotin:

Use

Press the **(ON)** key to activate controls and to switch on the display lighting. The *display* lighting switches off 15 seconds after the last command given (adjustable *default* time – see “BkLight Time”).

Press key **(UP)** to control the anchor ascending.

Press key **(DOWN)** to cast anchor.



When any key is released (**UP** or **DOWN**) the corresponding action is stopped.

Measurement reset

To reset the measurement count simultaneously press the **(ON)** and the **(UP)** keys for at least three seconds.

Measurement reset may also be performed in the **Measurement** menu by selecting “**Yes**” in the **Reset Measure** row.

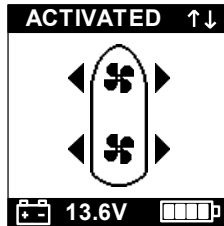
Automatic casting of the anchor

This function must be enabled in the **Alarms and Functions** menu (disabled by default).

Select the row “**Auto Down**” and set the value at which the anchor must stop. Then press the **(ON)** and **(DOWN)** keys for at least three seconds. Once anchor casting has commenced, release the keys.

For safety reasons it is however possible to interrupt automatic descent by pressing any instrument key.

When any of the thruster buttons are pressed, the thruster screen is displayed; an arrow next to the thruster and the moving propeller icon indicates which thruster is being driven and in which direction.



To return to the winch screen, simply press any of the two winch operation buttons, Up or Down.

It is not allowed to simultaneously press the two buttons of a thruster that operate the motor in opposite directions while it is possible to independently control the two thrusters in the same direction for the translational motion or in different directions for the rotary movement.

Charging

Place the transmitter on the charging base: the back of the transmitter must be in direct contact with the rubber surface of the charging base.

Connect the USB cable to a powered USB port.

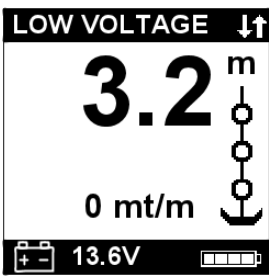
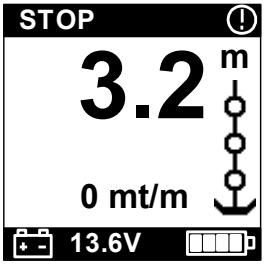
When the transmitter is charging, the charging icon appears on the display:



The charging process is complete when the charging icon disappears.

Troubleshooting

FAULT	CAUSE	CORRECTIVE ACTION
	<p>Though UP or DOWN keys are pressed, the instrument doesn't receive any signal from the magnetic sensor for more than 5 seconds.</p>	<p>Check the sensor electric connections.</p> <p>Check if sensor operates properly. If not, replace it.</p> <p>Check the position of sensor and magnet on gipsy and their distance (3 mm).</p> <p>Check the operation of electric installation or anchor windlass.</p>

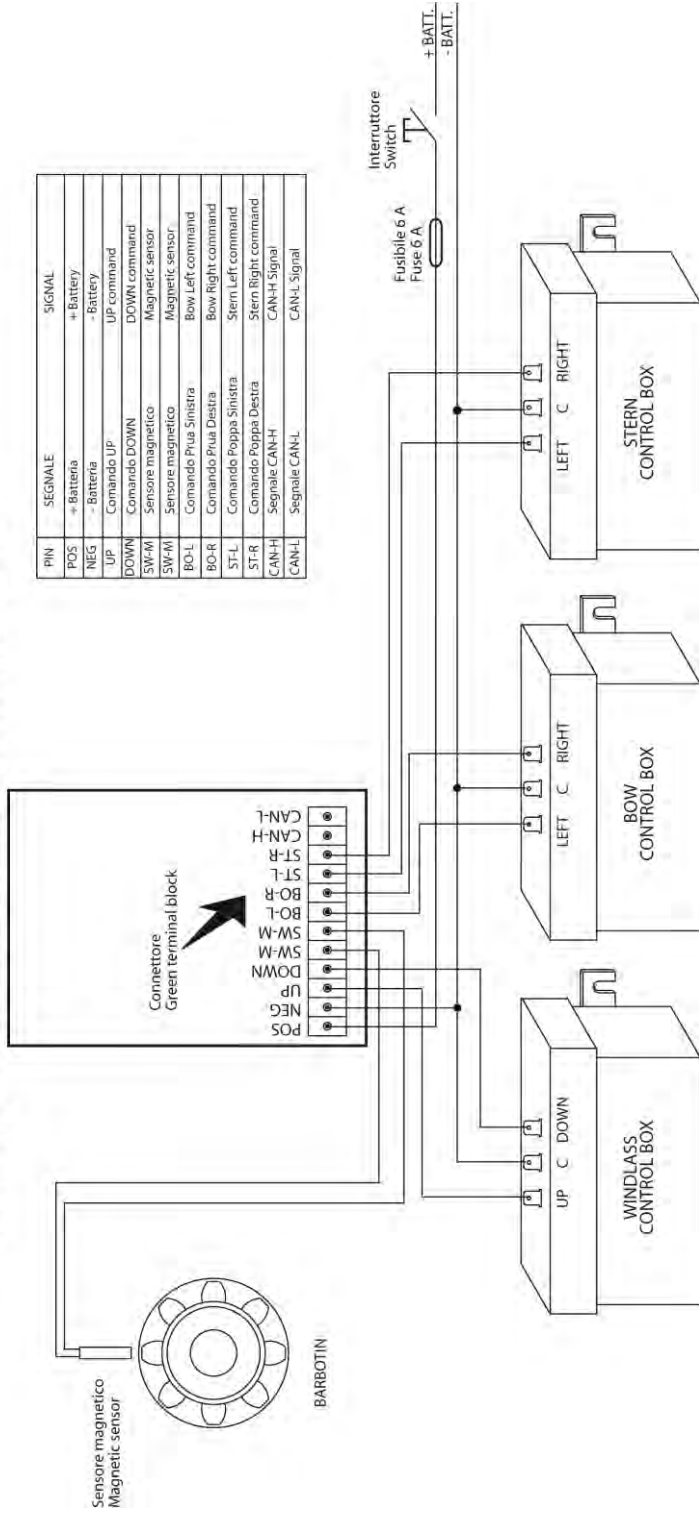
	<p>The instrument's power supply voltage is lower than 10V.</p>	<p>Verify the battery charge or operation of the electrics system.</p>
	<p>The circle with the exclamation point at the top indicates that the control unit cannot communicate via radio. Each maneuver is interrupted.</p>	<p>Check that the receiver is turned on; if it is, try to carry out the radio pairing procedure between the transmitter and the receiver.</p>

Warranty

We guarantee our products from manufacturing defects for 2 years from the purchase date (purchase ticket or any other purchase proof will be requested). Guarantee does not include damages and breakage during the transport, damages and breakage due to faulty installation or improper use. Warranty is no longer valid when repairs or servicing have been made by unauthorized people or made with spare parts which are not original. Warranty does not include the complete replacement of the goods and refers exclusively to the replace of faulty pieces and necessary labour. It does not include transfer or transport expenses. The Customer will not ask for expenses refund.

SCHEMA ELETTRICO / ELECTRICAL DRAWING

Sensore magnetico reed (2 fili) / Reed magnetic sensor (2 wires)



SCHEMA ELETTRICO / ELECTRICAL DRAWING

Sensore magnetico elettronico (3 fili) / Electronic magnetic sensor (3 wires)

