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manual onboard!



User Manual

*Including Installation For
External Control Unit
ECU*



SLEIPNER AS

P.O. Box 519

N-1612 Fredrikstad

Norway

www.sleipnergroup.com

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Products

SM903807 | ESI-1 - External Signal Interface

DECLARATION OF CONFORMITY

MC_0020



Sleipner Motor AS
P.O. Box 519, Arne Svendsensgt. 6-8
N-1612 Fredrikstad, Norway

Declare that this product with accompanying standard control systems complies with the essential health and safety requirements according to:

DIRECTIVE 2013/53/EU
DIRECTIVE 2014/30/EU
DIRECTIVE 2014/35/EU

RESPONSIBILITY OF INSTALLER

The installer must read this document to ensure necessary familiarity with the product before installation.

Instructions in this document cannot be guaranteed to comply with all international and national regulations. It is the responsibility of the installer to follow all applicable international and national regulations when installing Sleipner products.

The recommendations given in this document are guidelines ONLY, and Sleipner strongly recommends that advice is obtained from a person familiar with the particular vessel and applicable regulations.

This document contains general installation instructions intended to support experienced installers. If you are not skilled in this type of work, please contact a professional installer for assistance.

If required by local regulation, electrical work must be done by a licensed professional.

Health and safety procedures must be followed during installation.

Faulty installation of Sleipner products will render all warranties given by Sleipner Motor AS.

MC_0038

IMPORTANT NOTICE S-LINK™ SYSTEM

When installing an S-Link™ system DO NOT connect any other control equipment directly to the S-Link™ bus except original Sleipner S-Link™ products. Connecting third-party equipment must always be connected through a Sleipner-supplied interface product. Any attempt to directly control or connect into the S-Link™ control system without a designated or approved interface will render all warranties and responsibilities of all connected Sleipner products. If you are interfacing the S-Link™ bus by agreement with Sleipner through a designated Sleipner supplied interface, you are required to install at least one original Sleipner control panel to enable efficient troubleshooting if necessary.

MC_0265

Considerations and Precautions

MC_0403

- Always keep the boat's motor running when operating the windlass.
- Always turn off the power to the windlass when it is not operated.
- The anchor must always be secured with security line when windlass is not in use.
- While dropping anchor, do not push the "UP" button until the anchor is resting at the seabed.
- Windlass and accessories must be installed and used in a manner that will not cause damage or injury.
- Personnel qualified for high current installations must carry out or check the installation.
- Do not mount any windlass parts in hazardous environments (I.e. flammable fumes or gasses).
- The control unit is NOT protected from water ingress, it must be installed in a dry area and not exposed for water.

- Automatic detection of 12V or 24V system.
- Programmable windlass type (Mini/Midi/Maxi/Maxi Chain)
- LEDs Power for program/failure/end stop indication.
- PWM speed control.
- Over-current limiting and motor overheat protecting algorithm protects motor from damage. Note that there is no physical temperature sensor in the motor.
- Motor Soft Start.
- Reduced speed and force limit after first end stop detection.
- Two end stop points can be detected (detected by metal wire spun around the rope at user selected positions). Maxi Chain windlass does not include the end stop function.
- Power relays disconnect motor power when the windlass is not in use or if a fault has been detected.
- Delayed start on operation "OUT" to safeguard against unwanted operation.
- Physically separated terminals reduce risk of short circuits

Operations

Side-Power Windlass Control Unit is designed to control the Side-Power Mini, Midi and Maxi windlasses. These windlasses are equipped with a "Free fall" system allowing the anchor rope to wind out freely for a quick anchor drop and easy mooring bow/stern against pier or land. The free fall is initiated by pushing the "Down" button on your panel or remote control. The anchor weight and fitting of the anchor bracket must be selected so the anchor will drop/fall out when released.

The Side-Power Windlass Control Unit is compatible with SidePower panels and remote control systems. Special care has been taken to simplify installation, improve usability and the inherent features of this control unit. Additionally this controller has a range of new security features. Still, be aware that anchor loads may be very high, this equipment must be operated wisely, and only by responsible crew knowing how the system works.

IMPORTANT

This manual contains information you need to know before installing the windlass. Please read it carefully.

- Keep your distance to the windlass, the rope, anchor and anchor brackets during operation.
- Keep the rope/chain under observation during anchor handling.
- Make sure anyone using the windlass knows how to operate it.
- Be aware when the anchor are raised as it can bring unwanted debris up from the bottom, potentially damaging your boat.
- If the windlass is straining as the anchor are raised, stop for a few seconds and let the boat pick up momentum before continuing the raise.
- If the anchor is stuck, release some rope/chain and attach it to a cleat before using the boat to pull the anchor free. The windlass is not designed for loads beyond the specified pull capabilities.
- The anchor must always be secured to the boat while sailing. Use the security line or other means to prevent unintentional anchor drop.
- Turn off the power to the windlass when not in use.
- Children must not operate the windlass.
- Careless use can cause damage or injury!
- Make sure to have good battery capacity, and keep the engine running windlass operation.
- Sleipner Motor AS is not responsible for injury caused by the use of our windlass systems.

Technical Specifications

Description	Value
Supply	8-31 VDC/ max 7 Watts
Operating temperature	-20°C to +70°C [-4°F to +158°F]
Storage temperature	-40°C to +85°C [-40°F to +176°F]
IP Rating	IP20
Weight	800 g [1.8 lb]
Maximum motor current	350A
Terminal connections control/ endstop	0.2 to 1.5 mm ² [16 to 24 AWG] Cage clamp
Terminal connections motor/ battery	M6 bolt terminals

OPERATIONS AND FUNCTIONS OF THE WINDLASS CONTROL UNIT 150800			
Operation/operation Down = Out and Up = Inn	Incident	Description	Limitation
Main power to the windlass control unit is turned on	Check powerup. Fan runs 1 sec. Possibly, previously selected windlass mode will still be enabled. Error codes reset.	Normal situation by anchoring for transit or departure after anchoring.	Form is covering both chain and rope windlasses. Where there is a difference this is described
"Out" is pressed. Or "out" is pressed and held	Rope windlass: Freefall activated (you can hear the windlass motor run for 1 sec). Motor stops after 1 sec whether "out" held in. Chain windlass: "Out" is held as long as you want to run out anchor.	Rope is released and anchor can drop to the bottom. When the anchor reaches the bottom, the rope is still disengaged. The function is completed profundity of 'out' button is pressed or held down.	Since windlass control unit do not remember where the anchor is located, will a normal "inn"/pulling of anchor run not be possible after powerup. "Do not press ""up"" before anchor has reached the bottom. NBI Motor always has a straight flow shift resting time of 1 second."
"inn" is pressed briefly	Anchor pulled slightly in. Rope is no longer disengaged.	Used to adjust the anchor or to lock the rope.	Cautions! When setting anchor, it may be difficult to control applied load. Low drift when releasing the rope (boat and rope is not in line) can also cause heavy loads on the anchor rollers and fastenings. Use a suitable mounting point on the boat. Especially under rough conditions.
"inn" is pressed and held	The windlass starts pulling the anchor	The windlass goes from 0-100% speed in 3 sec and continues until the button is released or first end stop is activated.	Long and heavy run on motor or short nearly blocked run can cause the protection device to stop the windlass. Other recorded errors can also cause stops. (Error Codes is shown under the cover on the control unit, see manual for more information).
First end stop is detected (NB end stop detected during run)	Windlass stop	Windlass stops. From this point the anchor can be released again or pulled up (windlass will be running at reduced speed if you continue running towards second end top)	Continue pulling inn: Maximum allowed power consumption is limited to protect fittings, brackets, platform and windlass.
Second end stop is detected (NB end stop detected during run)	Windlass stop	From this point it is only possible to drop anchor if the main power is cut. (Control unit is reset)	Not possible to pull inn.
Double-tap, with hold on second press 2	(2) Up slowly / anchor inn (1) Normal inn	Windlass runs with 40% speed (approximately 8 m / min)	Reduced power consumption. Maximum running time on reduced speed = 30sec.
	(1) Firmware version 1.007		
	(2) Firmware version 1.008		

1. Press and hold "Config" button for 3 seconds, until Power and Fault LED starts blinking.
2. Press "Config" button to cycle through types, until the Mode LEDs show the correct pattern.
3. The controller returns to normal operation after 3 seconds of inactivity
4. Verify that the pattern shown is correct. This description can also be found on the back of the terminal covers

Configure windlass type

1: Press and hold "Config" button for 3 seconds, until Power and Fault LED starts blinking.

2: Press "Config" button to cycle through types, until the Mode LEDs show the correct pattern.

3: The controller returns to normal operation after 3 seconds of inactivity.

Mode LED	NOT SET	MINI ROPE	MIDI ROPE	MAXI ROPE	MAXI CHAIN	MHPP ROPE
1	●●●	●	○	●	●	○
2	●●●	○	●	●	○	○
3	●●●	○	○	○	●	●

NOT SET

Press and hold "Config" button for 3 seconds, until Power and Fault LED starts blinking.

MINI ROPE

Configuration set for using a MINI windlass utilising a rope anchor lead.

MIDI ROPE

Configuration set for using a MIDI windlass utilising a rope anchor lead.

MAXI ROPE

Configuration set for using a MAXI windlass utilising a rope anchor lead.

MAXI CHAIN

Configuration set for using a MAXI windlass utilising a chain anchor lead.

.....
MHPP ROPE

Configuration set for using a MHPP (Midi Hard Pull Parking) windlass utilising a rope anchor lead. This configuration allows for increased pull after the first end stop. This is designed for installations that require a higher pull than normal to bring the anchor into its parked position.

If not required the MHPP configuration can damage the windlass system.

Fault Codes

"Fault" LED is lit:

The last fault condition detected by the controller is indicated by the "Mode" LEDs, visible when the terminal cover is removed. Some faults will inhibit operation, while others allow continued use. See Troubleshooting table.

Fault Codes

If the "Fault" LED is lit, the last fault condition is indicated by the "Mode" LEDs.

Consult User Manual for complete fault descriptions.

Mode LED	Low Voltage	Motor Overload	Controller Overtemp	Motor Overtemp	Controller Overload	Runtime Exceeded
1	●	○	●	○	●	○
2	○	●	●	○	○	●
3	○	○	○	●	●	●

IMPORTANT

Main switch/ braker must be disconnected whenever working on the windlass mechanical parts

FAULT SYMPTOM	FAULT CODES/STATUS	SOLUTION
Windlass does not operate	"Power" LED not lit	Check: Main switch/breaker is engaged. Check battery fuses. Visually inspect cables and verify that terminals are tight. Measure battery voltage.
	"Power" LED lit	Turn on panel / remote control (see user manual) See below:
Windlass does not operate after installation	"Controller Overload"	Current limitation has triggered. If motor is not turning and you can hear a relay inside the controller clicking in and out when you try to operate the windlass, check wiring A1, A2, D1 & D2 between motor and controller.
Windlass only runs for 0,5 seconds when pressing "IN"	None	Check control panel connections. Signals for "IN" and "OUT" might be swapped.
When pressing "OUT" free fall is not engaged. Or: When pressing "IN", motor is running but gypsy is not turning	None	Swap motor cables D1 and D2 on the control unit
Windlass has poor performance	"Low voltage"	Voltage has dropped below 9V Check batteries.
	None	Measure battery voltage while operating the windlass. I voltage measure below 11V/22V, allow batteries to charge. If the battery voltage is acceptable, measure voltage on the motor terminals, cable voltage drop should be less than 1V when motor is running.
Windlass releases anchor, but do not wind in	None	Check that end stop sensor is not active (Indicated by "End Stop" LED on control unit or LED built into the sensor.) Check sensor connections on the control unit. Sensor LED should not be lit if no metal object is present in front of it.
Windlass wind past endstop	None	Check that the end stop wire wound around the rope is intact. Pull the rope with end stop wire over the end stop sensor and verify that («End Stop» LED light up) Adjust sensor closer to the rope if necessary.
Windlass releases anchor, but stops immediatly when pressing "IN"	None or "Low voltage"	If the battery is in poor condition it might measure 12/24V when windlass is not in use and still experince a significant voltage drop when the motor starts (such voltage dips might be difficult to measure) This type of voltage drops can lead to false triggering of the end stop sensor.
Windlass stops during operation	"Motor Overload"	Current limitation has triggered. This means that the windlass is overloaded. Try again with reduced load. If this fault is triggered while the windlass is lightly loaded, it might indicate a mechanical failure.
	"Controller Overtemp"	The control unit temperature sensor is too warm. Let the controller cool down, and try again.
	"Motor Overtemp"	The motor is too hot. The windlass controller calculates motor temperature depending on load an run time. Let the windlass cool down.
	"Controller Overload"	This fault indicates that the internal protection of the controller has triggered. This can be caused by excessive surrounding temperature and high load
	"Runtime Exceeded"	Signal "OUT" or "IN" have been continuous for more than 5 minutes. This is a protection against possible faulty control signals. Re-activation is possible.
Abnormal noise during operation		The windlass must be serviced.
Windlass operates, but rope is not wound in		The rope can slip in the gypsy if the windlass is mounted incorrectly.
Anchor is not released		The anchor might not release from the bracket if mounted incorrectly.

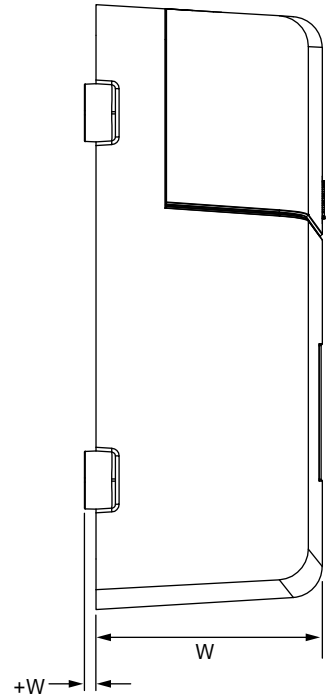
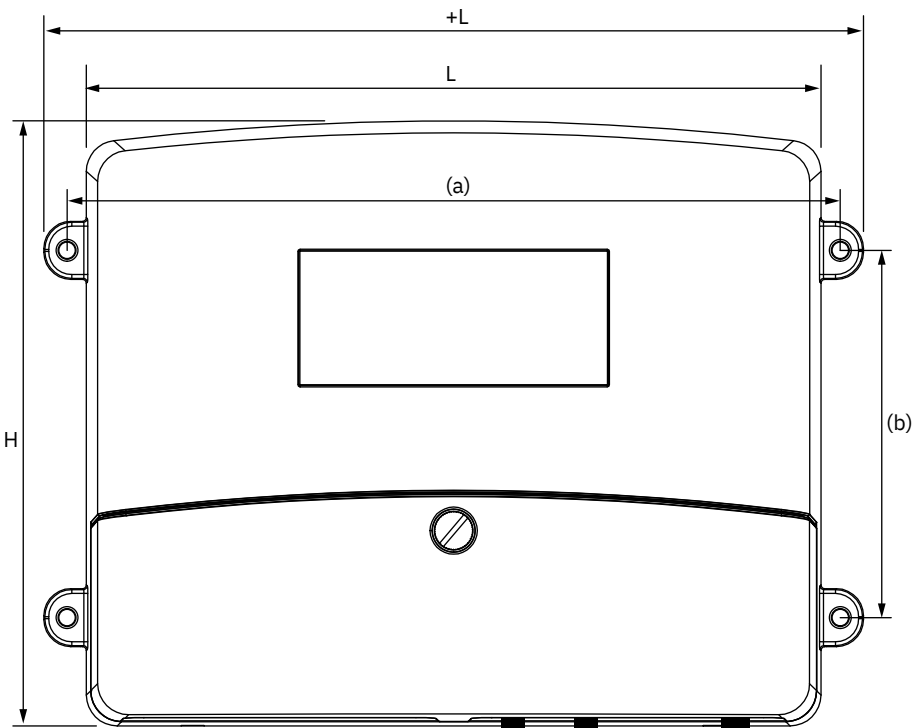
IMPORTANT

If the windlass still does not work normally after you have tried these procedures, the fault is in the windlass itself. Contact your nearest dealer.

Installation Guide



Measurement code	Measurement description	ECU	
		mm	inch
L	ESI Length	190	7.48
+L	Additional ESI Length	212	8.35
H	ESI Height	167	6.6
W	ESI Width	59	2.3
+W	Additional ESI Width	5	0.2
(a)	Distance of attachment holes (width)	200	7.87
(b)	Distance of attachment holes (height)	95	3.74

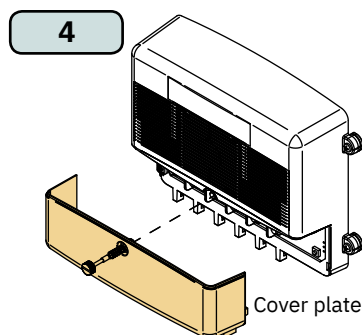
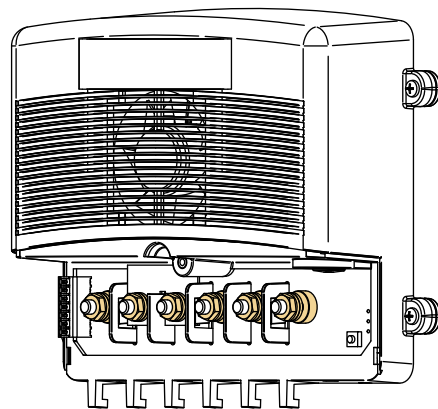
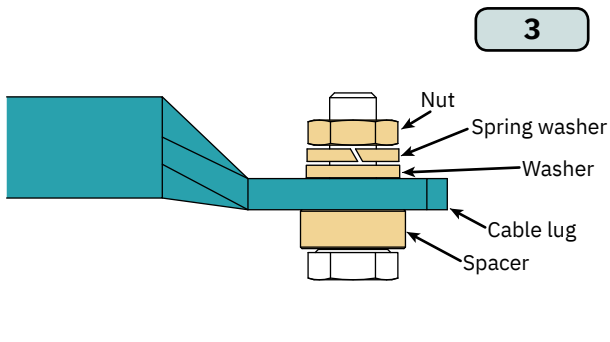
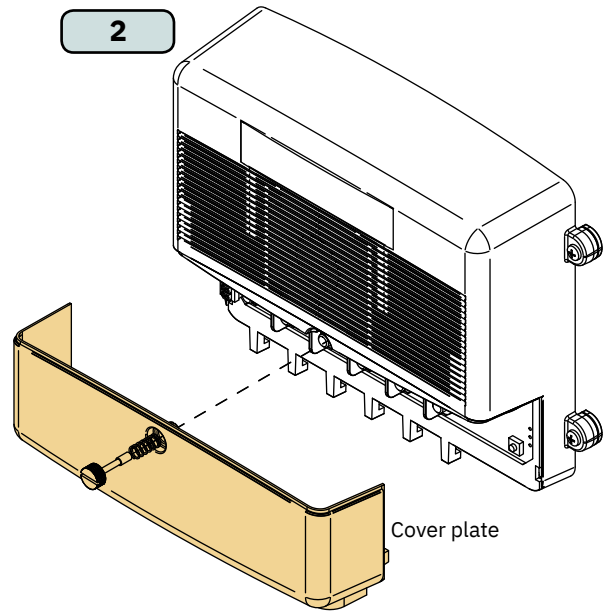
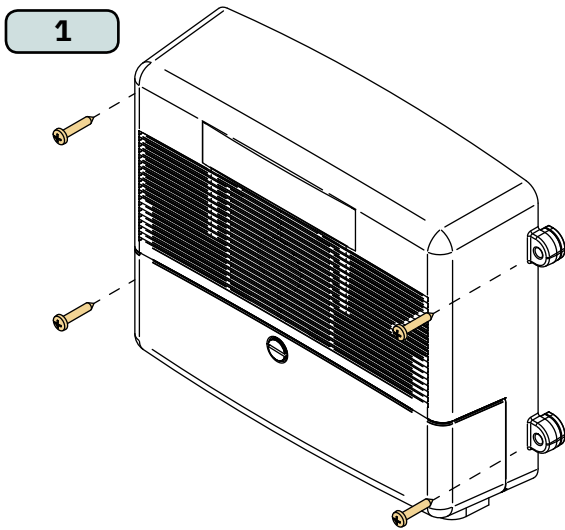


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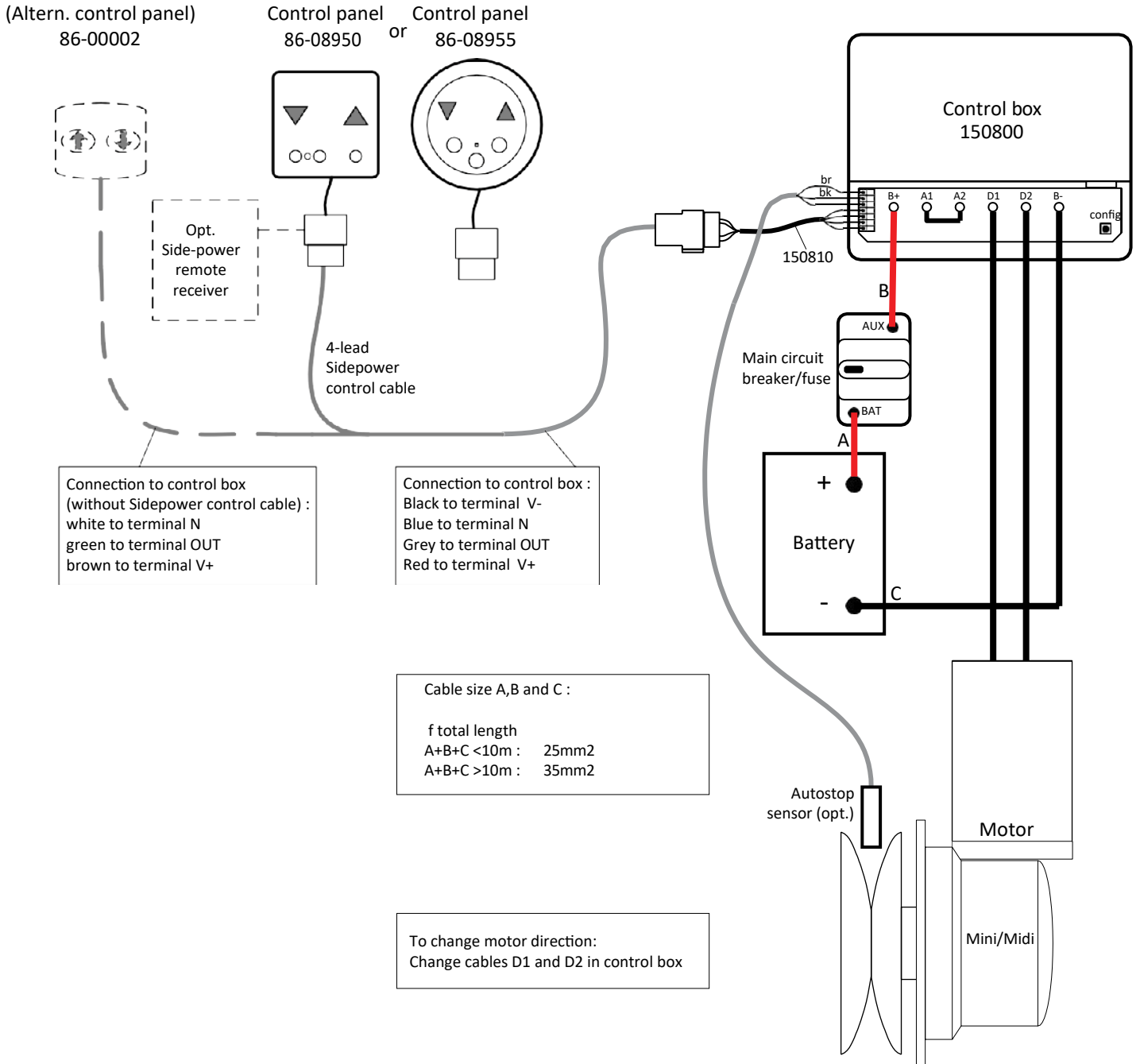
Pre Installation check.

- The unit is not water resisttant and must be placed in a dry area close to the windlass motor.
- Use ring termianls of good quality with the correct size for the selected battery cables. Bolt hole shuld be 6mm.
- The control unit must be mounted with the the cables protruding downwards.

1. Mount the ECU to a dry surface area. Ensure attached cables will protrud downwards. *(NB: The unit has mounts that ensures space between the unit and it's mounting surface. This to avoid condensation to enter the unit. It also ensures proper ventilation of the enclosure.)*
2. Remove the cable cover plate.
3. Attached cables. Pay attention to assemble the terminal spacers and washers in the correct order. Tighten the teminals to maximum 8 Nm.
4. Remount the cable cover plate.



Visual Wiring Diagram



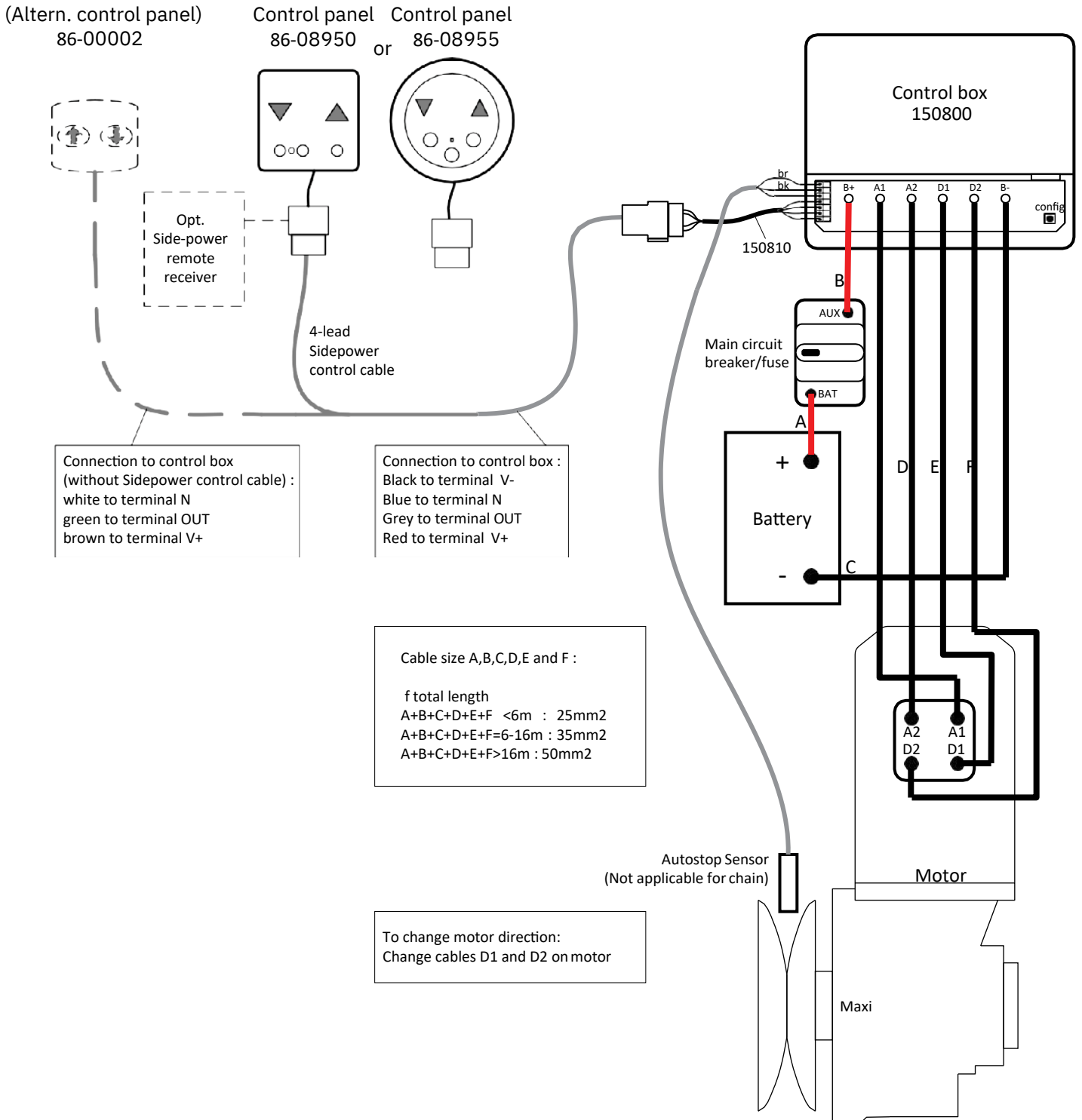
Visual Wiring Diagram

Connecting the motor and battery cables on Maxi

- Connect the four motor cables to the Terminals masked A1/A2/D1/D2.
- Connect supply cable from battery negative to the Terminal marked B-.
- Connect supply cable from breaker/fuse to the Terminal marked B+.
- Connect beaker/fuse to battery main switch.
- Tighten all terminals properly, with a maximum torque of 5Nm. Over-tightening may damage the terminals.
- Leave breaker/fuse disconnected until the installation is completed.

IMPORTANT

If motor runs in the wrong direction, swap cable D1 and D2 on the control unit.



Find your local professional dealer from our certified worldwide network for expert service and support.

visit our website www.sleipnergrou.com/support

Product Spare Parts and Additional Resources

For additional supporting documentation, we advise you to visit our website www.sleipnergrou.com and find your Sleipner product.

Warranty statement

1. Sleipner Motor AS (The “Warrantor”) warrants that the equipment (parts, materials and embedded software of products) manufactured by the Warrantor is free from defects in workmanship and materials for the purpose for which the equipment is intended and under normal use and service (the “Warranty”).
2. This Warranty is in effect for two years (Leisure Use) or one year (Commercial and other Non-leisure Use) from the date of purchase by the end user (for demonstration vessels, the dealer is deemed as end user).
3. This Warranty is transferable and covers the equipment for the specified warranty period.
4. The warranty does not apply to defects or damages caused by faulty installation or hook-up, abuse or misuse of the equipment including exposure to excessive heat, salt or fresh water spray, or water immersion except for equipment specifically designed as waterproof.
5. In case the equipment seems to be defective, the warranty holder (the “Claimant”) must do the following to make a claim:
 - (a) Contact the dealer or service centre where the equipment was purchased and make the claim. Alternatively, the Claimant can make the claim to a dealer or service centre found at www.sleipnergrou.com. The Claimant must present a detailed written statement of the nature and circumstances of the defect, to the best of the Claimant’s knowledge, including product identification and serial nbr., the date and place of purchase and the name and address of the installer. Proof of purchase date should be included with the claim, to verify that the warranty period has not expired;
 - (b) Make the equipment available for troubleshooting and repair, with direct and workable access, including dismantling of furnishings or similar, if any, either at the premises of the Warrantor or an authorised service representative approved by the Warrantor. Equipment can only be returned to the Warrantor or an authorised service representative for repair following a pre-approval by the Warrantor’s Help Desk and if so, with the Return Authorisation Number visible postage/shipping prepaid and at the expense of the Claimant.
6. Examination and handling of the warranty claim:
 - (a) If upon the Warrantor’s or authorised service Representative’s examination, the defect is determined to result from defective material or workmanship in the warranty period, the equipment will be repaired or replaced at the Warrantor’s option without charge, and returned to the Purchaser at the Warrantor’s expense. If, on the other hand, the claim is determined to result from circumstances such as described in section 4 above or a result of wear and tear exceeding that for which the equipment is intended (e.g. commercial use of equipment intended for leisure use), the costs for the troubleshooting and repair shall be borne by the Claimant;
 - (b) No refund of the purchase price will be granted to the Claimant, unless the Warrantor is unable to remedy the defect after having a reasonable number of opportunities to do so. In the event that attempts to remedy the defect have failed, the Claimant may claim a refund of the purchase price, provided that the Claimant submits a statement in writing from a professional boating equipment supplier that the installation instructions of the Installation and Operation Manual have been complied with and that the defect remains.
7. Warranty service shall be performed only by the Warrantor, or an authorised service representative, and any attempt to remedy the defect by anyone else shall render this warranty void.
8. No other warranty is given beyond those described above, implied or otherwise, including any implied warranty of merchantability, fitness for a particular purpose other than the purpose for which the equipment is intended, and any other obligations on the part of the Warrantor or its employees and representatives.
9. There shall be no responsibility or liability whatsoever on the part of the Warrantor or its employees and representatives based on this Warranty for injury to any person or persons, or damage to property, loss of income or profit, or any other incidental, consequential or resulting damage or cost claimed to have been incurred through the use or sale of the equipment, including any possible failure or malfunction of the equipment or damages arising from collision with other vessels or objects.
10. This warranty gives you specific legal rights, and you may also have other rights which vary from country to country.

Patents

At Sleipner we continually reinvest to develop and offer the latest technology in marine advancements. To see the many unique designs we have patented visit our website www.sleipnergrou.com/patents

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SLEIPNER AS

P.O. Box 519

N-1612 Fredrikstad

Norway

www.sleipnergroun.com

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