sailoQ
SAIL DATA

INSTALLATION AND USER MANUAL

sailoQ cube-micro v1.6

GPS speed log: replaces your paddlewheel and sends GPS speed to your display, with no parts in the water and no maintenance.



Raymarine ST60 | Raymarine ST40 | B&G Network | 9–16 V DC

1 What it is and how it works

The **sailoQ cube-micro** generates the same electrical pulses as a paddlewheel speed log, but calculated from the speed of its built-in GPS receiver. Your display reads them as if they came from the paddlewheel, so speed, the distance log and wind data keep working as before.

Speed is updated **every second**, similar to a paddlewheel. That is why it may look a little more "lively" than a chartplotter, which usually averages several seconds. This is normal.

> **Speed over ground, not through the water.** A paddlewheel measures speed through the water (STW); GPS measures speed over ground (SOG), which is the speed that actually gets you to your destination. The difference between them is the current: with the cube-micro you always see true speed over ground, but you cannot work out the current by comparing both readings. More information at www.sailoq.com, in the guide "Current with you or against you".

Compatible displays

- **Raymarine ST60 and ST40** (speed log input).
- **B&G Network.**

Each display needs a different type of pulse, so the cube-micro leaves the workshop **configured for the display you stated in your order**. If you change displays, contact us.

In the box

The sailoQ cube-micro v1.6 in its case. **Cables and fuse are not included**: it connects to the wiring already on your boat.

Specifications

Power supply	9–16 V DC (boat 12 V system)
Protection	Internal resettable fuse: on overcurrent or reverse polarity it disconnects and resets itself within 1–2 minutes
GPS receiver	Built-in, with ceramic antenna inside the case
Update rate	Once per second
Output	Speed log pulses for Raymarine ST60/ST40 or B&G Network (as ordered)
Start-up test	3.5 knots for 30 seconds at power-up
Indicators	3 LEDs: power, GPS fix and pulse output
Size and weight	105 × 42 × 15 mm · 48 g
Installation	Indoors, protected from moisture, screw-mounted

2 Connections

The connections are marked on the lid. The wires go in through the slots on the side and are tightened with a small screwdriver through the windows in the lid: **there is no need to open the case**.



1 **speed** (green terminal): speed output to the display

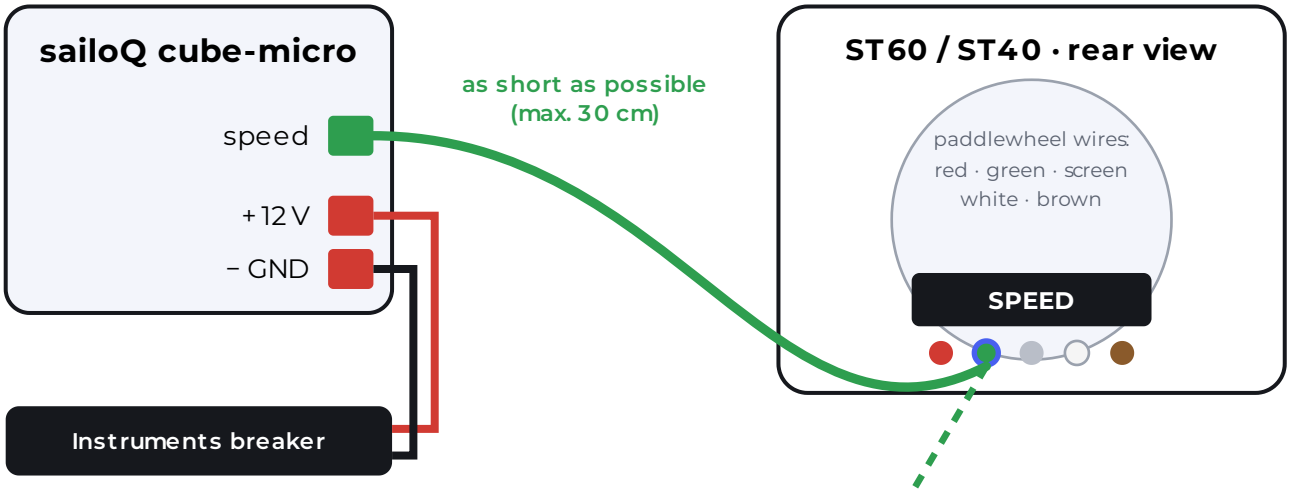
2 **+** (red terminal): positive, 12 V

4 Side slots: the wires go in here

3 **–** (red terminal): negative, GND

Wiring diagram for Raymarine ST60/ST40

On the back of the display, the paddlewheel cable goes to the terminal block marked **SPEED**. Of its wires, the **green** one carries the speed signal: it is the only one you change.



paddlewheel green: removed and insulated

The other paddlewheel wires (red, screen, white and brown) stay where they are, so you keep the water temperature reading.

3 Installation

Where to fit it

- **Indoors**, protected from moisture and spray.
- **Away from steel structures** and other equipment (VHF radio, magnetic compasses…), which can interfere with the GPS.
- **Close to the display**: the speed wire should be as short as possible, 30 cm at most.
- Lid facing up and with no metal above it: the GPS antenna is inside the case.

Step by step

1. **Switch off the instruments** at the electrical panel.
2. **Screw the cube-micro down** through its mounting lugs. Avoid places with vibration: over time it can weaken the solder joints.
3. On the display's **SPEED** terminal block, **disconnect only the green wire** of the paddlewheel and insulate it with tape or a cap. The other wires stay where they are.
4. **Prepare the wires:** strip about 5–6 mm from each end. Push each wire in through its side slot and tighten the screw through the window in the lid.
5. **Speed:** connect the cube-micro **speed** terminal to the SPEED terminal where the green wire was.
6. **Power:** positive to **+** and negative to **−**. Ideally take it from the **same switch or breaker as the instruments**, so the start-up test runs every time you switch them on.
7. **Switch on** and check the start-up test (section 4).

> **Mind the polarity.** The internal fuse protects the board if it is reversed, but it will not work that way: if the POWER LED does not light up when you switch on, check the wires, correct the connection and wait 1–2 minutes for the fuse to reset.

> **You do not need to remove the paddlewheel.** You can leave it in its through-hull. If you ever take it out, close the through-hull with its blanking plug.

4 Start-up and calibration

Start-up test

Every time it is powered up, the cube-micro **sends 3.5 knots for 30 seconds** and then drops to 0. From then on it shows GPS speed. If the boat is moored you will see 0.0 or very small values: this is normal.

Calibrating the display

The start-up test lets you check the installation and calibrate: **during those 30 seconds the display must read exactly 3.5 knots**.

1. If it shows a different value (for example 3.4 or 3.6), adjust your display's **speed calibration factor** following its manual until it reads 3.5.
2. Switch off and on again to check it with a new start-up test.

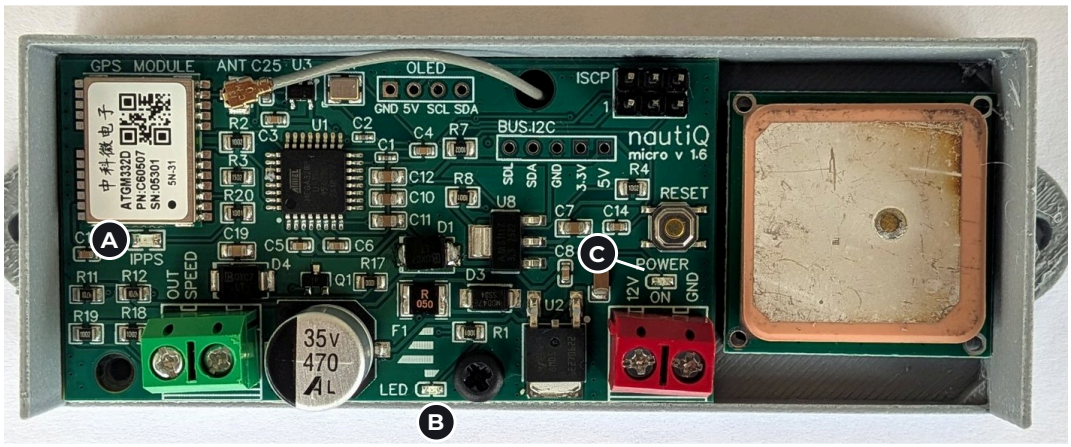
Once calibrated, there is no need to repeat it: the cube-micro always sends the same pulses for the same speed.

GPS signal

The GPS normally gets a fix within a few seconds. The first time, or after a long time switched off, it may take **a few minutes**. Until there is a fix, speed will be 0.

What each LED means

The LEDs are on the board: remove the lid to see them.



LED	WHEN LIT	IF IT DOES NOT LIGHT
C · POWER	Power supply is correct	Check voltage and polarity; wait 1–2 minutes in case the internal fuse has tripped
A · PPS	The GPS has a fix	Move the cube-micro away from metal and other equipment, or wait a few minutes
B · LED	Sending pulses to the display	No speed output: check the power supply and contact us

5 Troubleshooting, warranty and support

Troubleshooting

SYMPTOM	WHAT TO DO
Display does not show 3.5 at start-up	Check that the speed terminal is connected where the green wire was, and that the cube-micro and the display are powered from the same circuit
Shows 3.4 or 3.6 during the test	Calibrate the display (see section 4)
Always reads 0	Check the PPS LED: if it is off, there is no GPS fix
Speed "jumps" a little	This is normal: it updates every second, like a paddlewheel
Water temperature is gone	Only the green wire should be removed: reconnect the other paddlewheel wires

Warranty

The sailoQ cube-micro has a **3-year warranty** from delivery. The warranty does not cover damage caused by:

- incorrect installation or connections other than those shown in this manual;
- tampering with or modifying the board;
- water or moisture ingress;
- voltage surges in the electrical system.

Full terms are in the **Terms of sale** at www.sailoq.com.

Questions or problems?

Write to us before taking anything apart: almost everything can be solved with a photo of the connections. Tell us your display model and, if possible, send a photo of the board with the lid removed.

EMAIL
info@sailoq.com

WEB
www.sailoq.com

End of life

This device is electronic waste. When you no longer use it, take it to a recycling point; do not throw it away with household waste.

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SAIL DATA

Designed and assembled in Valencia, Spain.