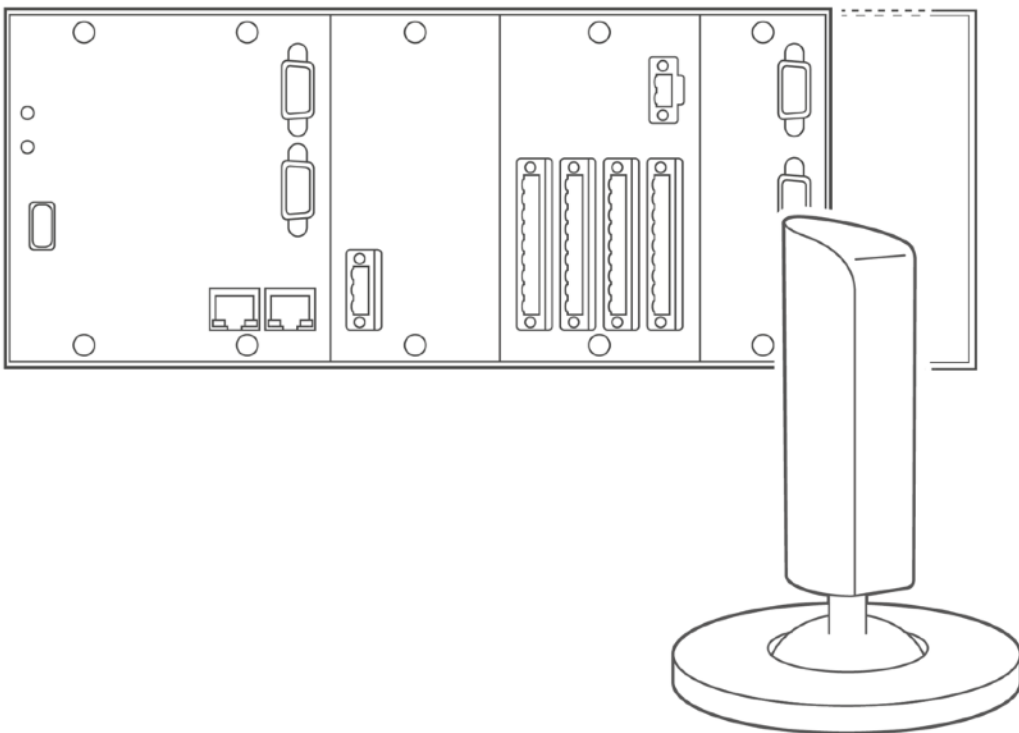


Manual

argoPositionPilot



Version 1.0

13.04.2026

Table of Contents

1. Safety instructions	5
1.1.Warnings in the operating manual	6
2. Notes on this Manual	7
3. Privacy Policy Information	8
4. Functional Description	10
4.1.System Overview	10
4.2.Operating Concept	11
5. Display	12
5.1.Display Principles	12
5.2.Main Menu (“Home”)	13
Conning Display	13
Rudder Propeller Display	14
Status “Position”	14
6. Operation	15
6.1.System Ready	15
6.2.System Active	15
Mode – Maneuvering	16
6.3.Deactivate	19
6.4.Emergency Takeover	19
6.5.External Control Station (optional)	19
6.6.Updating the Software	20
7. Interaction with Rudder Propeller Manufacturer	21
7.1.Status	21
Schottel	21
Veth	21
8. Settings	22
8.1.argoPositionPilot Settings	22
8.2.General Settings	23
9. Behavior in Case of a Fault	25
9.1.Service-Homepage	25
9.2.Remote Support	25
9.3.Restart	26
9.4.Warnings and Alarms	27

Signals	27
Warnings	28
Alarms	29
10. Scope of delivery	30
10.1.Joystick	30
10.2.Control Panel	30
10.3.Control System MC206	31
10.4.External Control Station (optional)	31
11. Technical Data	32

Versioning

Version	Date	Changes	Editor
1.0	17.03.2026	Translated from German	Gschwandtner/ Eger

1. Safety instructions

This operating manual applies to the maneuvering assistance system argoPositionPilot.

The system is equipped with only one measurement system for determining position and orientation (GPS). In the event of an undetected failure or malfunction, significant deviations from the intended behavior may occur. Particular attention must be paid when operating under bridges or in other situations where satellite signal reception is limited; in such cases, the argoPositionPilot must be monitored with increased vigilance.

For safe operation of the system, please observe the following instructions:



- Read the complete manual before activating the maneuvering assistance system.
- Keep this manual accessible to all users at all times.



- Operate the system only when it is in proper technical condition.
- Maintenance and installation must only be carried out by qualified persons.



- **Risk of electric shock or physical damage!**

Always disconnect power to the track control system before performing any maintenance. Make sure the track control system can not be switched on by accident.



- Follow the local rules concerning accident prevention and environmental protection.
- Observe the safety regulations and requirements of the country in which the product is used.



- The skipper must continuously monitor the proper functioning of the argoPositionPilot at all times and immediately switch to manual control in the event of a malfunction.
- Before each voyage, check whether switching from argoPositionPilot to manual steering can be carried out in accordance with regulations.
- If an argoPositionPilot alarm occurs, a serious operational fault is present. Switch to manual steering immediately.

1.1. Warnings in the operating manual

In addition to the general safety instructions for proper handling—as described above—you may encounter further specific safety and warning notices throughout this operating manual, which highlight particular residual risks. They may appear as follows:

Warnings of danger to life or risk of injury



DANGER

A warning marked with the signal word **DANGER** indicates an imminent hazard. If the hazard is not avoided, it will result in death or serious injury.

- ▶ Follow the required measures to prevent the hazard.



WARNING

A warning marked with the signal word **WARNING** indicates a potential hazard. If the hazard is not avoided, it could result in death or serious injury.

- ▶ Follow the required measures to prevent the hazard.



CAUTION

A warning marked with the signal word **CAUTION** indicates an imminent hazard. If the hazard is not avoided, it could result in minor injury.

- ▶ Follow the required measures to prevent the hazard.

Warning of damage to machinery or environmental hazards



NOTICE

A notice marked with the signal word **NOTICE** indicates a potential risk of property damage or environmental harm. If the action is not avoided, significant damage to property or the environment may result.

- ▶ Follow the required measures to prevent the hazard.

2. Notes on this Manual

Although this operating manual has been prepared with great care, Argonics GmbH assumes no liability for the consequences of any errors in this manual. Argonics GmbH reserves the right to make changes to this operating manual without prior notice.

Reproduction or duplication—whether in whole or in part—is permitted only with the express written consent of Argonics GmbH.

3. Privacy Policy Information

Data Collection and Processing

We place great importance on the protection of your data.

The collection of **personal data** (e.g., phone numbers) is based on your consent in accordance with Art. 6(1)(a) of the GDPR. In line with the GDPR, we do not collect personal data through the argoPositionPilot. However, for support inquiries, we use your contact details (e.g., your phone number). These are stored in our database and, where applicable, in the contact management of one or more support phones, so that we can contact you again if necessary.

The processing of **operational data** (e.g., system operating states) is carried out on the basis of our legitimate interests in accordance with Art. 6(1)(f) of the GDPR, to ensure the functionality and safety of the system. This includes, among other things, the selected modes, activity and inactivity phases, version number, as well as warnings and alarms.

Purposes of Data Collection and Processing

The collection of operational data serves the following purposes:

Product Improvement

- The continuous optimization and further development of our products.

Compliance with Legal Obligations

- Manufacturers are obligated to continuously monitor their products for defects and potential risks. Through continuous system monitoring, potential risks can be identified at an early stage, and measures can be taken to mitigate those risks. The collection of operational data also contributes to ensuring the flawless functionality of our system and your safety.
- In certain cases, legal regulations may require the transfer of collected data, for example, in the context of official investigations or court orders. In such cases, personal and operational data will only be shared if it is strictly necessary and no other legal options are available to fulfill these obligations.

Storage and Transfer

The collected personal and operational data is **stored** for the duration of the active use of the system and for up to three years thereafter. The storage serves the purposes of effective error analysis, system optimization, compliance with legal obligations, and ensuring traceability and defense in legal disputes. After this period, the data will be securely deleted or anonymized in accordance with recognized standards, ensuring that it cannot be traced back. If a longer storage period is required due to legal obligations, this will be appropriately documented and implemented.

Data **transfer** occurs only in cases where legal regulations require it, e.g., in the context of investigations.

Withdrawal of Consent

A withdrawal of consent does not affect the lawfulness of processing that took place before the withdrawal. **The withdrawal of data collection and processing results in the Trackpilot and its optional modules no longer being usable.**

As a Shipowner: A withdrawal must be made in **writing** and can be submitted at any time to either our postal address or our support email address, including the ship's name and ENI.

As an Employed Shipmaster: A withdrawal of data collection and processing is typically initiated by the shipowner. If you, as a user, wish to initiate a withdrawal, this is only possible with the **written** consent of the shipowner. For the duration of your employment on board, your phone number is

stored solely for contact purposes. You may request the deletion or modification of your number at any time, including by **phone**.

Contact

Our contact details may change. Please also visit <https://argonics.de/en/kontakt/> for the most up-to-date information.

Address: Argonics GmbH | Heßbrühlstraße 21D | 70565 Stuttgart | Germany

Email: support@argonics.de

Phone: +49 711 / 25253721

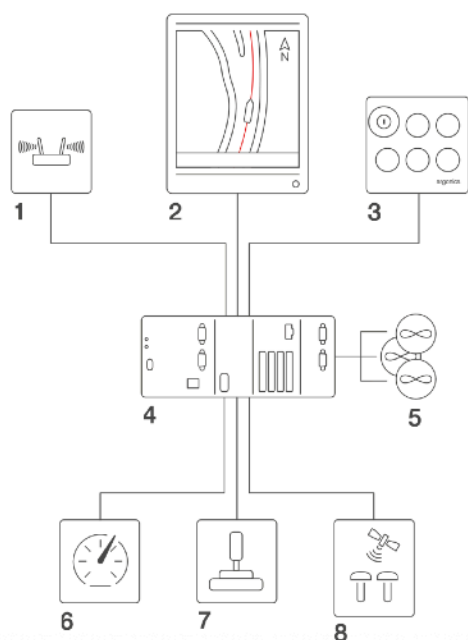
4. Functional Description



The argoPositionPilot is a **maneuvering assistance system for inland vessels** equipped with rudder propellers and a 360° bow thruster. Operation is carried out using a 3-axis joystick and buttons. This allows the vessel to be controlled with a single joystick instead of multiple levers. The argoPositionPilot thus enables intuitive vessel control and facilitates maneuvering in front of locks, in harbors, and during docking and undocking.

Using GNSS and rate-of-turn sensors, the system can control rotational motion as well as longitudinal and lateral velocity, and the vessel's position.

4.1. System Overview



1. LTE-Modem
2. ECDIS, z.B. argoRadarPilot with argoControlPanel flex
3. Control panel argoPositionPilot
4. Control system argoPositionPilot MC206, certified by DNV, BV
5. Connection to Azimuth-Antrieben
6. ROT indicator
7. Joystick
8. GNSS-compass

4.2. Operating Concept



WARNING

The argoPositionPilot is a maneuvering assistance system and not a fully automated system. Collisions or obstacles cannot be automatically detected or avoided. The accuracy of the system depends heavily on the accuracy of the positioning sensors.

- ▶ The argoPositionPilot must be continuously monitored by the vessel operator during use.

The system is operated via three elements: a **control unit** for activation, the **joystick** for setting target values, and the **graphical user interface** for adjusting settings and monitoring system status.

The inputs from the sensors and the joystick are processed by the argoPositionPilot and translated into setpoints for the rudder propellers, which are transmitted via a manufacturer-specific interface. An operating mode with two functions is available, which is explained in the “Operation” chapter.

5. Display

5.1. Display Principles

In the argoPositionPilot, you will encounter consistent display principles throughout. These are as follows:

Color coding of setpoints and actual values

In various displays in the main menu, you will find a distinction between **setpoints (red)**: values specified by the system or the user for control, **actual values (green)**: currently measured values.



This logic is also used in the conning display.

This color scheme is independent of the red-green coding of port and starboard commonly used in navigation.

Color coding of status and mode displays

In the main menu, you will find several status and mode indicators. Their color coding is consistent throughout.



Grey – Mode/device is inactive



Yellow – A fault/error is present. In addition, a warning is issued.



Red – A serious fault/error is present. An alarm is issued. The system/mode cannot be used in this condition.



Green – Mode/device is active. System status is OK.

Menu Navigation

The available subpages of the argoPositionPilot can be found in the menu on the left side of the screen.

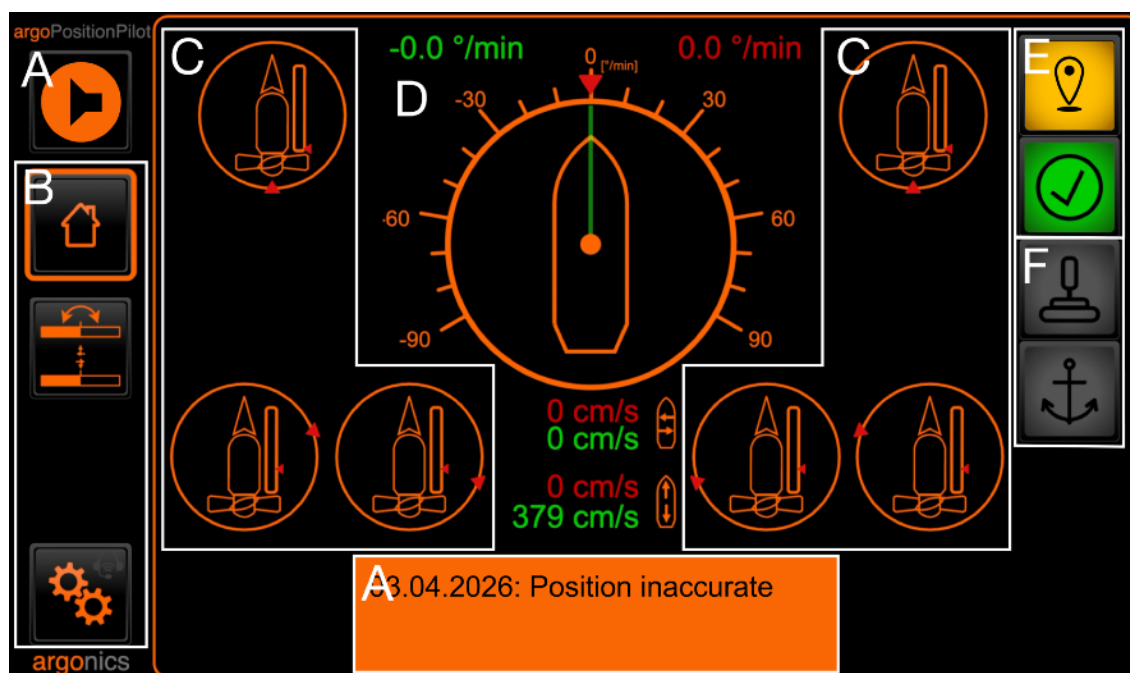


The first subpage is the “Main Menu” (“Home”). You will spend most of your time here while using the system.



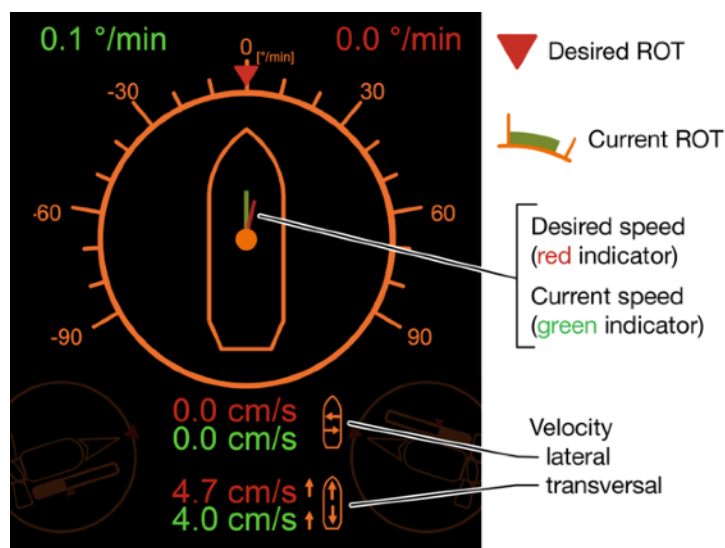
In the remaining menus or subpages, you can return to the respective main display using the “Back” button.

5.2. Main Menu (“Home”)



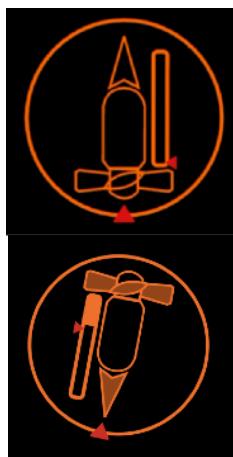
- A. Display of warnings and alarms
- B. Menus (“home”/main menu, settings, general settings)
- C. Rudder propeller display
- D. Conning display
- E. argoPositionPilot status (position, system ready)
- F. argoPositionPilot mode/function (maneuver, virtual anchor)

Conning Display



The system controls the vessel's current motion to match the desired setpoint. The desired motion is specified via the joystick and displayed as a red indicator.

Rudder Propeller Display



On the main screen, the rudder propellers are displayed according to their arrangement on your vessel, e.g., bow thrusters at the bow (top) and additional propellers at the stern (bottom). In the example below, the propeller is engaged.

The orientation of the propeller indicates its current direction (**angle** display). The bar next to it represents the rotational speed.

- The **red** arrows indicate the **setpoints**.
- The **current** rotational speed is shown in **orange** within the bar.

Status “Position”



The “Position” status indicator shows the status of the positioning sensors.



All sensors provide consistent data and can be processed by the system.



One of the sensors is temporarily not providing valid data. Increased vigilance is required.



One of the sensors is not providing valid data. Deactivate the system!

6. Operation

The operating modes differ primarily in terms of which **setpoint** is specified and which **sensors** are used. Depending on the situation, a different mode may be more suitable for executing the intended maneuver.

General Limitations

- Continuous monitoring required
- No obstacles are taken into account
- Sensor accuracy
- GNSS accuracy:
 - Heading: 0.5° RMS (JLR-41)
 - Position: 4 m (JLR-41)

6.1. System Ready



Prerequisite

To activate the system, the following status LEDs must be green:

- Status “Position” – The sensors are functioning.
- “System Ready” (checkmark, OK) – The system is ready for operation.
- Emergency takeover released



6.2. System Active



When the system is active, the corresponding symbols light up in the user interface and on the control panel.



Mode – Maneuvering



The “**Maneuvering**” mode is activated via the “**Joystick**” button (see left). It includes the functions “**Virtual Anchor**” and “**Joystick**”.

When the system is activated, the speed is reduced. As soon as a threshold in “**Maneuvering**” mode is undershot, the reached position is maintained by the “**Virtual Anchor**” function.

The “**Joystick**” function is active when the joystick is not in the neutral position in “**Maneuvering**” mode. If the joystick is moved back to the neutral position, the system reduces the speeds below the thresholds and maintains the reached position.



The system automatically switches between the “**Virtual Anchor**” and “**Joystick**” functions depending on the joystick position and the vessel’s speed.

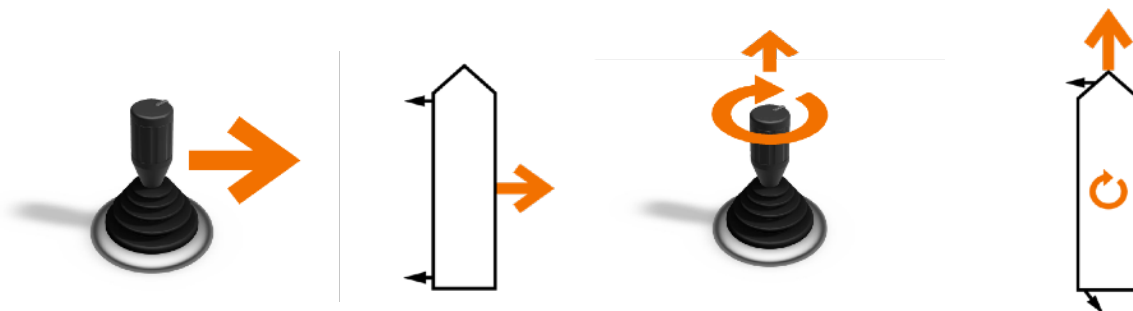
Function – “Joystick”

Use case

- Maneuvering
 - Harbor
- Turning in river current

Limitation

- Continuous monitoring required
- No obstacles are taken into account!
- Sensor accuracy! Use caution near obstacles!
- Propulsion power



Description

With the “**Joystick**” function, you control the vessel using the joystick at a constant speed in a specific direction. Turning/rotating is also possible. This function is comparable to the “**Auto**” mode of an autopilot.

Speed and rotation follow the input given via the joystick and are regulated by the system. This allows the speed to be maintained despite the influence of river currents and wind.



Prerequisite

- The system is ready.
- “Maneuvering” mode is active.



Activate “Joystick” function

Move the joystick in the desired direction. The further you move away from the center (neutral position), the faster the maneuver is carried out.

→ The argoPositionPilot controls the vessel in the desired direction at the corresponding speed.

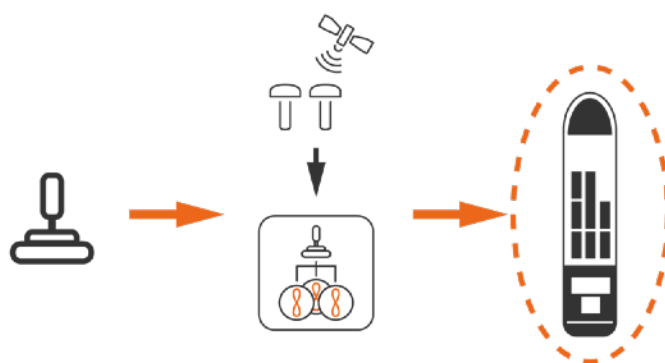
Function – Virtual Anchor

Application

- Maintaining position and heading
 - In the stream
 - In front of locks, despite wind and stream

Limitation

- No obstacles are taken into account!
- Continuous monitoring required
- Sensor accuracy
- Limitations depend on the available propulsion power and the vessel geometry
- Tested up to:
 - 7 km/h stream velocity along the vessel axis
 - 30 km/h wind from the side



Description

With the “Virtual Anchor” function, the argoPositionPilot automatically keeps the vessel at its current position – even in wind and stream.

The accuracy strongly depends on the available GNSS signal.

Even in this mode, the system status must be continuously monitored!



CAUTION

If environmental influences are too strong, it may not be possible to fall below the thresholds. In this case, the “Virtual Anchor” function will not be activated.

- ▶ Check the LED in the user interface.
- ▶ Align the vessel according to the stream and wind conditions.



Prerequisite

- “Maneuvering” mode is active.
- Speed at the desired position is below 0.36 km/h and 2°/min (thresholds).



Activate “Virtual Anchor” function

- Use the joystick to maneuver the vessel to the desired position.
 - Move the joystick to the neutral position.
- The system reduces the speed below the above-mentioned thresholds.
- The “Virtual Anchor” function is activated automatically.



As soon as the position can be maintained, the anchor symbol lights up in the user interface.

6.3. Deactivate



Deactivate the System

You deactivated the system with the currently active mode button (see example on the left).

When the system is deactivated, no mode symbols are illuminated in the user interface or on the control panel.

6.4. Emergency Takeover



Emergency Takeover

In the event of a malfunction, control can be safely transferred back to the rudder propeller levers and the argoPositionPilot can be deactivated by using the emergency takeover. The system can only be used again once the emergency stop has been released.

6.5. External Control Station (optional)



NOTE

The joystick position of the **active control station** – wheelhouse or external control station – is always used.

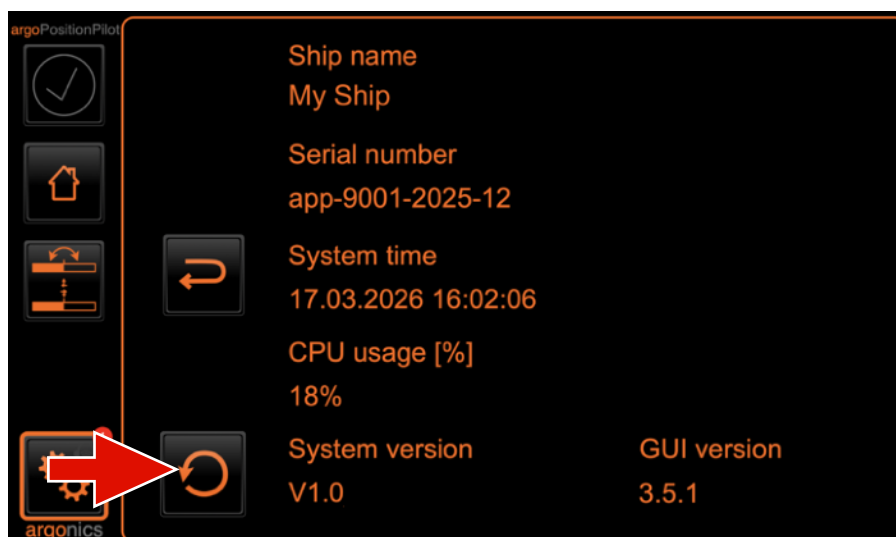
- ▶ When switching, make sure that the joystick is in the correct position for the current situation.

A control station is not active if a mode button is flashing. (This mode is currently active at another control station.)

Pressing a mode button on an inactive control station switches control to that station – it is now active.

6.6. Updating the Software

The argoPositionPilot regularly checks for available updates. If an update is available, this is indicated by a red "1". To install the update, please open the general settings and click on the info icon.



Back to previous page



Updating

Press this button to search for an update.

After pressing the button, follow the on-screen instructions to update the software.

After successful installation of the update, the argoPositionPilot will restart.

7. Interaction with Rudder Propeller Manufacturer

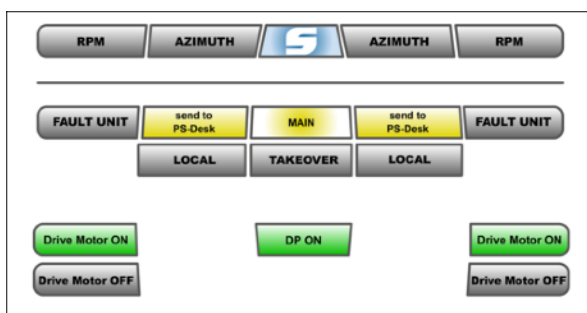
Depending on the rudder propeller manufacturer, there may be differences in operation and display in connection with the argoPositionPilot. Some manufacturer-specific functions are illustrated here as examples.

7.1. Status

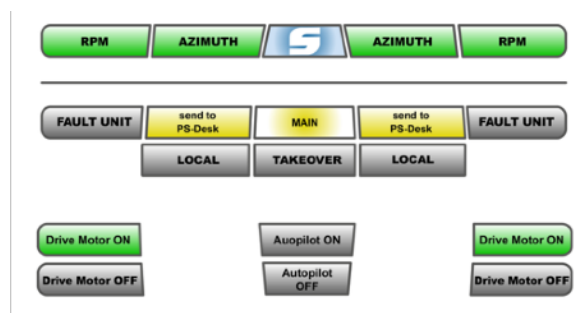
The status of the interface to the argoPositionPilot is also displayed on the rudder propeller manufacturer's display.

Schottel

Active:

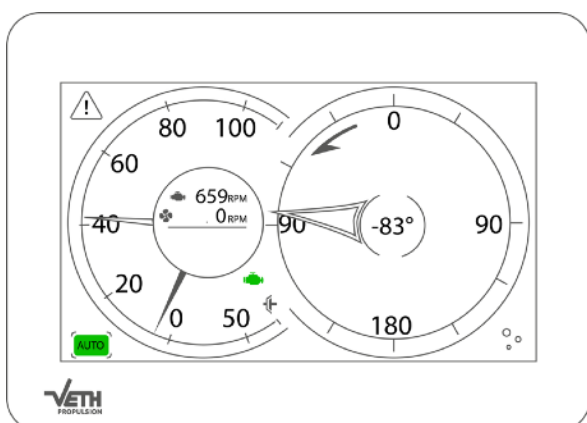


Inactive:

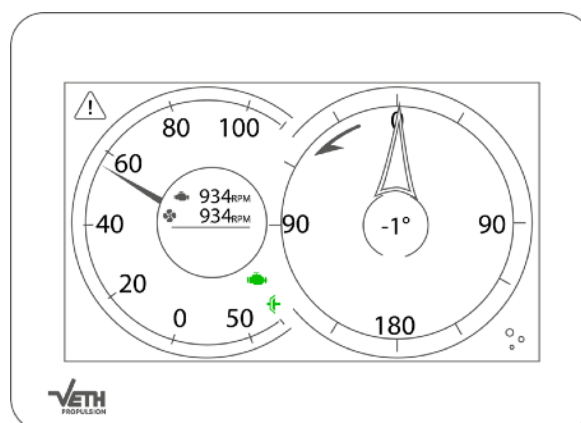


Veth

Active:

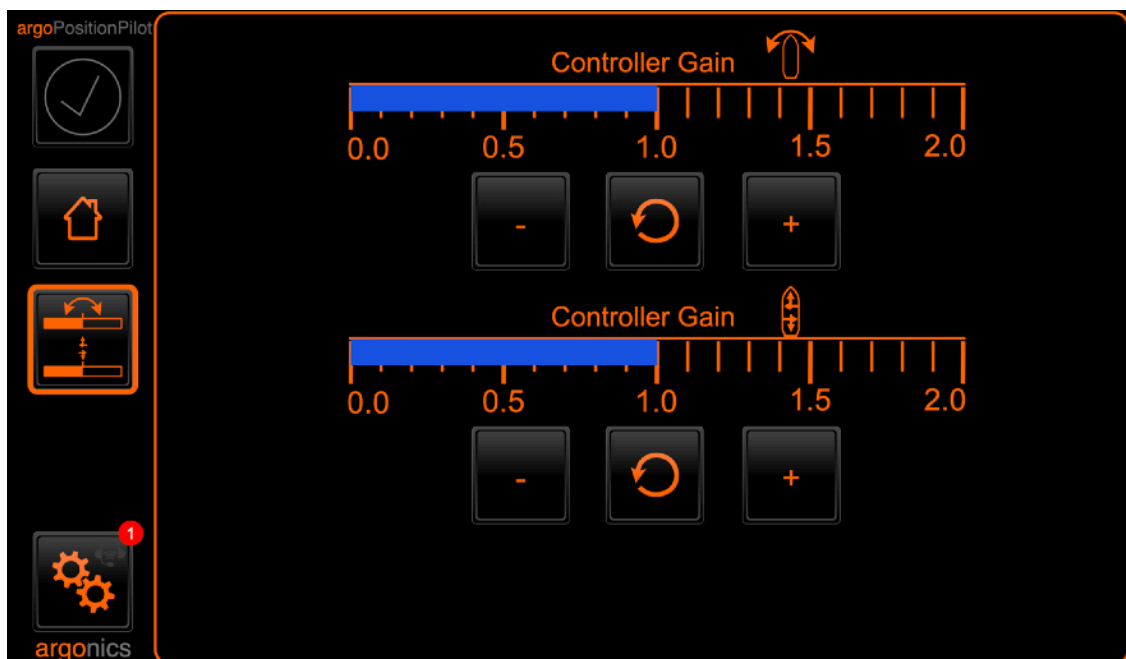


Inactive:



8. Settings

8.1. argoPositionPilot Settings



The **controller gain** (rotating and lengthwise/sideways) can be adjusted in several steps using the corresponding buttons, ranging from low (left button, minus) to high (right button, plus). Pressing the middle button resets the setting to the default value (1.0). The selected setting is indicated by a blue bar.

A higher controller gain allows the argoPositionPilot to apply more activity via the rudder propellers. This enables the desired setpoints to be reached more quickly; however, maneuvers will also be executed more rapidly and more aggressively.

8.2. General Settings

The general settings can be accessed via the last button on the left side of the screen.



The following settings can be adjusted:



1. News History

News regarding software updates or changes related to the argoPositionPilot are displayed here. The system checks daily for updates and downloads them automatically. If new information is available, a notification will appear at the bottom left next to the “General Settings” button. The news items are listed in chronological order. Entries can be expanded or collapsed using ►/▼ or by clicking directly on the respective line.



Use the double arrows at the edge to jump to the beginning or the end.



The single arrows are used for scrolling.



2. System Information („About“)

This button displays the system name, version, and CPU load of the argoPositionPilot system, as well as the available licenses.



Licenses

On this subpage, you can view and update the argoPositionPilot licenses. (LED green = license active, LED gray = license not available, LED red = license expired)



Back to previous page

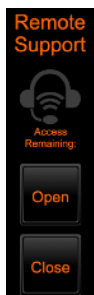


Change Log

Lesen Sie hier, welche Änderungen und Neuerungen in der aktuellen und in früheren Versionen eingeführt wurden. Die Bedienung ist dieselbe wie in der News-Historie (see above).



Check for update/Perform an update



3. Remote Support

Access for remote maintenance can be controlled using the “Open” and “Close” buttons. Pressing “Open” enables access and allows remote maintenance connections. To close access again, the “Close” button must be pressed and held for a few seconds. A small bar above the button indicates the closing process. Above the two buttons, the access status is also shown symbolically. The lock icon indicates whether access is open or closed. If access is open, the remaining time is also displayed. Once the time has elapsed, access is automatically closed again.



You can tell whether an Argonics support technician currently has access to the argoPositionPilot by the remote maintenance symbol in the “Settings” button: it is highlighted in orange when access is active. If remote maintenance is disabled, the symbol is grayed out.



4. Language

The language setting can be changed here. The available languages are German, English, and Dutch. If a permanent language setting is required, this must be configured elsewhere. Please contact Argonics customer support for this.



5. Help

Pressing this button takes you to a subpage with links to various help resources and the customer support number. Here, you will also find links to short videos and operating instructions.



Restart touchscreen and system

Pressing the “Restart” button shuts down the touchscreen and the system and then restarts them automatically. This process may take several minutes.



Back to previous page

9. Behavior in Case of a Fault

9.1. Service-Homepage



On the “General Settings” page, you can access a QR code for the service homepage as well as the Argonics customer support phone number via the Help button.

If you are no longer able to access this menu, you will find all the information listed here again:



<http://manuals.argonics.de>

This link takes you directly to the operating instructions and quick guides (“cheat sheets”) in the “Online Help” section.



<https://argonics.de/produkte/#aPP-videos>

Short help videos are being produced for the argoPositionPilot. In the future, these will be available via the link provided above.



Support-Hotline

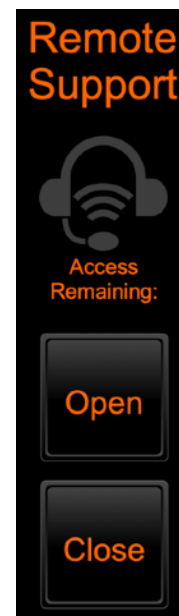
+49 711 / 252 537 21

Mo. - Fr. | 9am - 4pm

9.2. Remote Support

For remote maintenance, the user on site must grant access to customer support.

- Pressing “Open” temporarily enables access to the argoPositionPilot. When access is open, the remaining time until it is automatically closed is displayed. The lock symbol also indicates whether access is open or closed.
- Press and hold “Close” to close access again. A bar appears indicating how long the button must be held.
- After a restart, access is open for 5 minutes. Once the 5 minutes have elapsed, access is automatically closed.



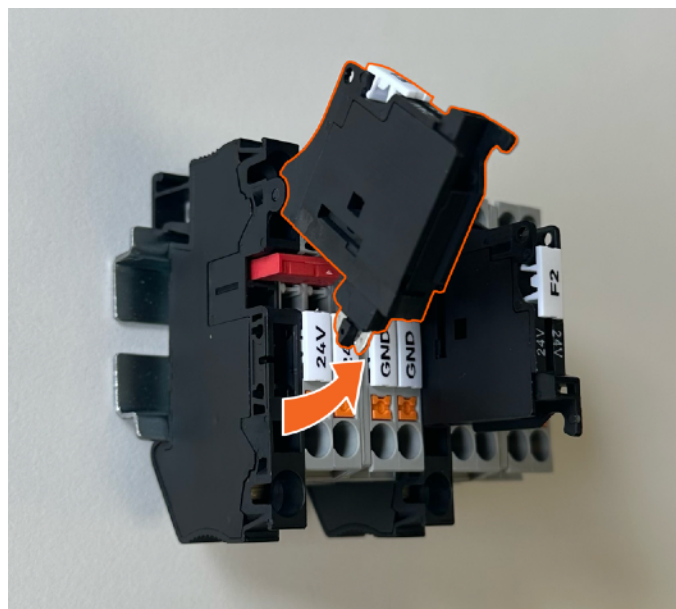
9.3. Restart



You can shut down the argoPositionPilot by pressing the “Restart” button. It will automatically start up again.

Alternatively, the argoPositionPilot can be restarted by opening fuse F1.

After 30 seconds, the fuse can be closed again. The argoPositionPilot will then restart automatically once the fuse is closed.



9.4. Warnings and Alarms



With the help of **warnings**, the Trackpilot signals less critical conditions of the system which do not require immediate intervention by the skipper. However, the skipper should check the cause of the warning and, if necessary, switch to manual mode.



Alarms are triggered in critical conditions of the system and require immediate intervention by the skipper.

Signals

Our warnings and alarms are displayed **visually and acoustically**.

Visual

You will find the alarm symbol in the top left-hand corner. The warning or alarm is displayed at the bottom of the screen with the date, time and name. Warnings are coded orange, alarms red.

Acoustic

An acoustic signal sounds next to this visual display. A short beep sounds at regular intervals for all warnings. Alarms sound continuously.

Activation: 1 short signal
 Deactivation: 2 short signals
 Activation not possible: 4 quick signals

Warnings

The following table lists all warnings and gives recommendations on what to do when the corresponding warning occurs.

Name	Description	Action
Position inaccurate	Error detection of GPS sensor found a problem.	<ul style="list-style-type: none"> • Acknowledge warning • Wait until the warning clears automatically.
GPS (2): No position received	GPS(2) receiver does not send GGA sentences	<ul style="list-style-type: none"> • Acknowledge warning • Monitor the proper functioning of the argoPositionPilot • Increased vigilance • Wait to see if data reception resumes • Continue manually if necessary • Reset the warning or wait until it clears automatically
GPS (2): No velocity received	GPS(2) receiver does not send VTG sentences	<ul style="list-style-type: none"> • Acknowledge warning • Monitor the proper functioning of the argoPositionPilot • Increased vigilance • Wait to see if data reception resumes • Continue manually if necessary • Reset the warning or wait until it clears automatically
GPS (2): No heading received	GPS(2) receiver does not send HDT sentences	<ul style="list-style-type: none"> • Acknowledge warning • Monitor the proper functioning of the argoPositionPilot • Increased vigilance • Wait to see if data reception resumes • Continue manually if necessary • Reset the warning or wait until it clears automatically
argoPositionPilot switched off	The argoPositionPilot was unexpectedly switched off	<p>Activate argoPositionPilot again if required</p> <p>Check correct function of all devices</p>
No ROT received	No rate of turn received	<p>Check that all devices are functioning correctly. If this warning does not clear automatically, contact customer support.</p>

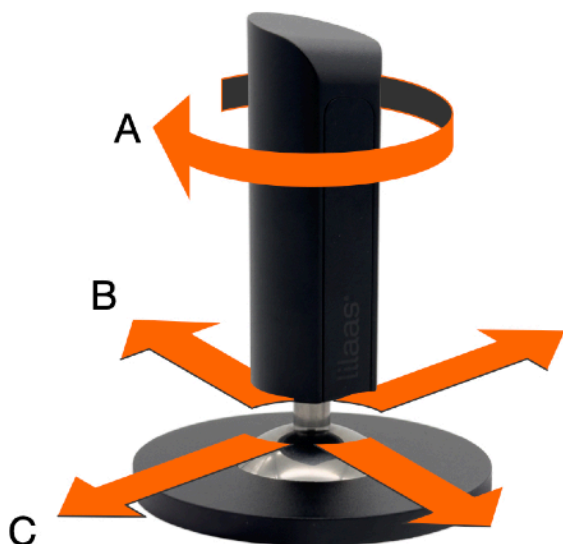
Alarms

The following table lists all critical alarms and gives recommendations on what to do when the corresponding alarm occurs.

Name	Description	Action
Position unusable: Take control	The evaluation of the GPS data has detected an issue, such as a sudden jump in position or heading. This may be caused, for example, by passing under a bridge.	<ul style="list-style-type: none"> • Acknowledge the alarm. This can only be done by deactivating the argoPositionPilot • Wait until the “Position” status in the user interface is green • Check whether the vessel’s position and heading in the chart display match reality • Activate the argoPositionPilot • Increased vigilance • Continue manually if necessary
System Error 002 - Contact support	The control system is experiencing a serious problem.	<ul style="list-style-type: none"> • Shut down immediately • Check the correct functioning of all devices • Contact customer service

10. Scope of delivery

10.1. Joystick

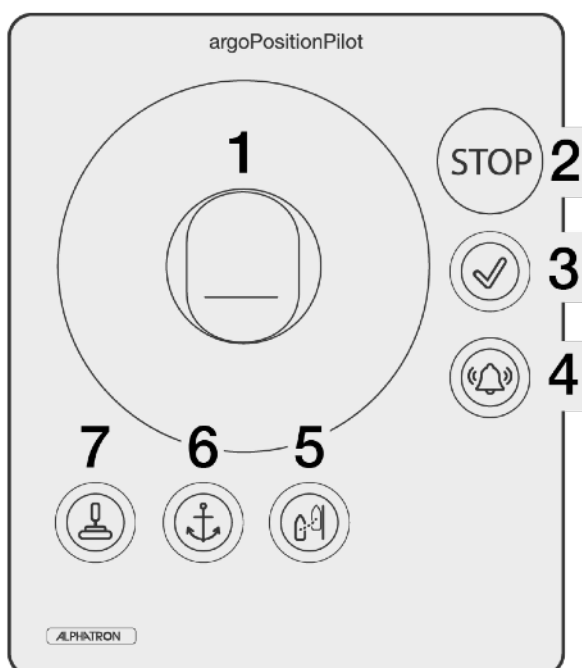


The joystick can be installed either as a standalone unit (see below) or integrated into a larger control panel. It can be operated in three dimensions:

- A – Rotation about its own axis
- B – lengthwise
- C – sideways

The joystick complies with protection rating IP56 and is approved for operation on deck.

10.2. Control Panel

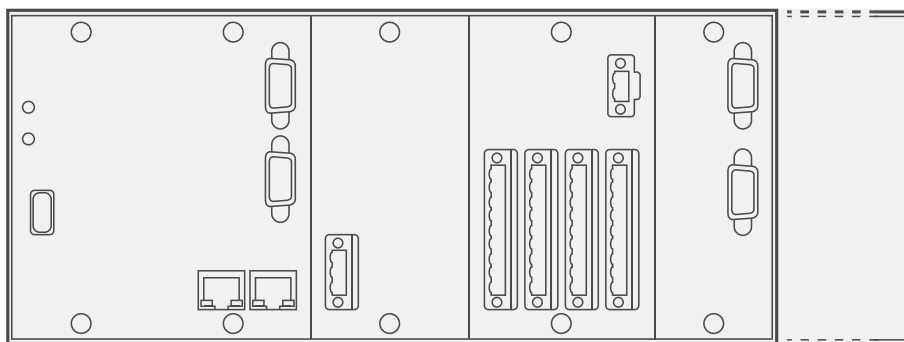


The control panel features buttons for mode selection. Depending on the variant, the joystick may also be integrated into the panel. The terms shown in gray are not (yet) available.

1. Joystick
2. Crash Stop
3. Status „system ready“
4. Warning signal
5. Mode 1
6. Mode 2
7. Mode „Maneuvering“ (Functions “Virtual Anchor” and “Joystick”)

The control panel complies with protection rating IP56 and is approved for operation on deck.

10.3. Control System MC206



The control system is the “computer” of the argoPositionPilot. It is installed in the console.
The exact dimensions depend on the number of interfaces for the azimuth thrusters and the number of external control stations.

10.4. External Control Station (optional)

The argoPositionPilot can be operated both from the wheelhouse and from an external control station.
Operation does not differ between the main and external control stations.
Depending on the configuration level of the argoPositionPilot, some displays may not be available at the external control station.

11. Technical Data

Control System / PLC	
Supply voltage	18 V DC ... 32 V DC
Supply current	1,5 A
Ambient temperature	-25 °C ... 60 °C
Storage temperature	-40 °C ... 85 °C
Relative humidity	5% .. 95%
Dimensions	Width: 220mm, Height: 100mm, Depth: 50,1mm
Weight	1,4 kg
Control Panel	
IP rating	IP 56
Dimensions front plate	Width: 130mm, Height: 70mm
Dimensions for mounting hole	Width: 121mm, Height: 61mm, Depth: 100mm
Weight	0,5 kg
Ambient temperature	-25 °C ... 60 °C
Storage temperature	-40 °C ... 85 °C
Relative humidity	5% .. 95%
Touchscreen	
Diagonal	7"
Resolution	800x480px
Power Supply	24V
Dimensions	Width: 222mm, Height: 167mm
Dimensions for mounting hole	Width: 197mm, Height: 141mm, Depth: 45mm
Weight	0,85 kg
Ambient temperature	0 °C ... 60 °C (without cooling)
Storage temperature	-20 °C ... 70 °C
Relative humidity	5% .. 95% (without condensation)