



XENTA Operations Manual

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1 Warnings and limitations

Never open the system units.

Any unauthorized service will void the warranty.

XENTA system allows the pilot to take full advantage of the vessel's intrinsic maneuverability with automatic control. However, pilots are strongly advised to familiarize themselves with all aspects of the vessel's standard operation in all weather conditions.

XENTA reserves the right to make changes in any part or units of its products without any prior notice.

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2 Helm

The **Helm by Wire** system is designed to help the captain to turn the boat without any stress and preventing him to apply a strong force on the wheel, in such a way allowing the captain to drive even the largest boat.

The **Helm by Wire** system can be installed in single or multi station configuration. In the multi station configuration, it is possible to activate the different control stations in order to drive the boat from the desired dashboard.

In a multi station installation, only one station at time can control the steering system, for safety reasons.

The installation of the **Helm by Wire** system is much easier than the installation of the most common hydraulic systems.

The **XENTA Helm by Wire** system can be easily integrated with the existing autopilot system allowing the captain to choose between them at any time he prefers.

With its dedicated interface for the most common steering systems, the **Helm by Wire** presents a layout completely independent from the steering system installed on the vessel. It is enough to change the rudder interface (called RD unit) to pass from a steering system to another.

The **Helm by Wire** system also independently controls the rudders in order to achieve the best possible performance of the boat, also moving them independently in case of non-coupled rudders.

The captain has just to turn the steering wheel and the **Helm by Wire** system will move the rudders in the best position to achieve the requested maneuver.

The angle sensor, connected to each RD unit, constantly acquires the real position of the rudders, allowing the **Helm by Wire** system to move the rudders according to the position of the steering wheel.

Since it is electronic based, the **Helm by Wire** system can be tuned according to the desires of the captain. In particular, it is possible to modify the force to apply to rotate the steering wheel and the number of revolution according to the speed of the boat.

A dedicated feature also allows the captain to control the independent rudders as they were mechanically coupled, according to the situation and to the requested maneuver, thanks to a virtual electronic bar.

The **Helm by Wire** system also adapts its characteristics to the speed of the boat.

Indeed, the **Helm by Wire** can independently change from passive to active mode just according to the speed of the boat. When the boat is in dock or approach mode the **Helm by Wire** is passive to allow the captain to have total control of the vessel, while in cruise mode it switches to active as soon as the boat reaches the speed set during the vessel's parameterization phase.

In passive mode the **Helm by Wire** behaves as a standard helm, while in active mode it returns to the center.



2.1 Control procedure

2.1.1 Helm by Wire activation

The **Helm by Wire** system is automatically activated when turning ON the ignition keys.

The system, after a short start up procedure, is ready to work.

It is now possible to control the rudders according to the requested maneuver.

In a multi station installation, to pass from a station to another, make sure that nobody is using one of the steering wheel then move the desired one. The system will automatically provide to pass the control to the chosen wheel, deactivating the others.

When the **Helm by Wire** system is active and the captain rotates the steering wheel, the system acquires the speed of the boat and automatically changes the number of revolutions and the force to be applied to the wheel.

In this way, the captain can have always the best feeling according to the cruise speed.

If the rudders are not mechanically coupled, the CU unit also controls them independently in order to always achieve the best performance from the boat. When turning the boat at high speed, for example, it could be necessary to have one of the rudders more turned than the other. This is done automatically by the CU unit.

2.1.2 Autopilot activation

When activating the autopilot, the **Helm by Wire** system automatically sets itself as a bypass, shutting OFF the own signals, in such a way allowing the autopilot to directly control the rudders.

When the autopilot is activated, it is possible to quit by simply moving the steering wheel in order to use the Helm by Wire system.

When switching from the **Helm by Wire** to the autopilot or vice versa, the rudders remain in the last reached position.

2.2 Warnings

The **Helm by Wire** system allows the pilots to perform easily turns while cruising with the vessel. However, pilots are strongly advised to familiarize themselves with all aspects of the vessel's standard operations in all weather conditions.

It is always captain responsibility to verify the correct behavior of the **XENTA** systems installed on-board. If it is his feeling that the system is not responding in the right way, it is his exclusive responsibility to stop using the **XENTA** system.

The maintenance of the **XENTA** system is exclusive responsibility of the operator. **XENTA** is not responsible for any problem related to bad maintenance.

The service on all the **XENTA** products must be performed only by a qualified **XENTA** technician or under the authorization of a qualified **XENTA** service center. A service performed by an unauthorized technician will void the warranty.

3 Back-up panel

3.1 Warnings and limitations

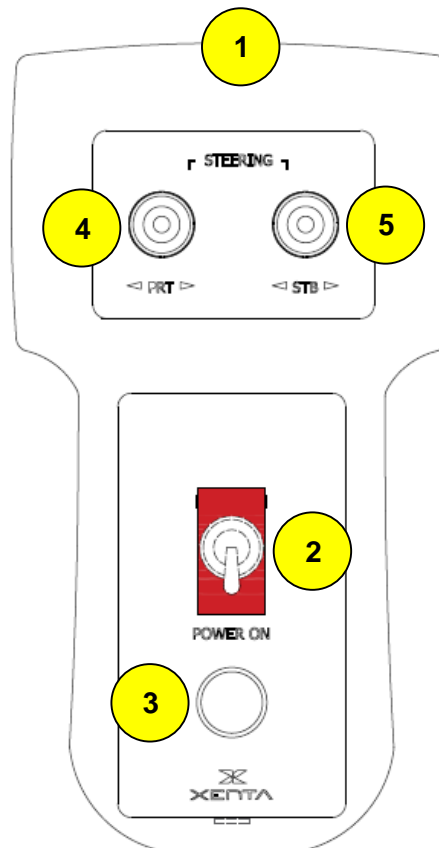
The **XENTA** system can be integrated with a **BACK-UP** control system that ensures the boat's maneuverability in case of failure of the main electronic system.

READ CAREFULLY ALL THE INSTRUCTIONS AND INDICATIONS BEFORE PROCEEDING TO USE THE BACK-UP. THE DISREGARD OF ONE OR MORE PROCEDURES CONTAINED IN THIS MANUAL CAN RESULT DANGEROUS AND CAUSE INJURIES TO THINGS AND PERSONS.

It is always under the captain's responsibility to keep control of the boat's movements and of the surrounding area, taking care of any obstacles or dangers. It is captain's exclusive responsibility to stay next to the control station and promptly react in case of danger.

3.2 Control panel

The following Figure shows the **BACK-UP** control panel to close detail of its components:





BACK-UP panel

1. Panel;
2. Power switch (protected by a safety guard);
3. LED operating indicator;
4. Port switch;
5. Starboard switch.

- **BACK-UP panel** (1): ensures the navigation with reduced functionalities in case of the electronic steering's malfunction.
- **Power switch** (2): turn on the back-up panel
- **LED operating indicator** (3): a red light notifies the switching on and the operating of the back-up panel
- **Port switch** (4): turn on the left rudder's control
- **Starboard switch** (5): turn on the right rudder's control

3.3 Activation

Through the apposite cable, connect the **BACK-UP** panel to the relative connector installed on the dashboard. Activate the system lifting up the safety guard and putting up the power switch: the LED will light up red to notify the switching on and the activation of the **BACK-UP**.

Through the two switches it is possible to move both left and right rudders to port and starboard, so allowing the navigation even during the steering system's emergency conditions, ensuring the minimum maneuverability necessary to get to the dock and to put the boat in safety conditions.

IN CASE OF MAIN STEERING SYSTEM'S FAILURE AND SO DURING THE USE OF THE BACK-UP SYSTEM, THE RELATIVE RUDDERS' POSITION INDICATORS MAY NOT WORK CORRECTLY. CONSEQUENTLY, IT IS UNDER CAPTAIN'S FULL RESPONSIBILITY TO ADAPT THE RUDDERS' POSITION ACCORDINGLY TO THE BOAT'S NAVIGATION DIRECTION.

4 PowerPack by-pass

In case of main electronic system's malfunction and of the impossibility to move one or both rudders with the **BACK-UP** panel, it is possible to release the PowerPack cylinders, activating the by-pass. In this way, the rudders will be released and they will be free to move, aligning themselves with the flow of water from which they are invested when the boat is maneuvered using the main engines' control system.

To open the cylinder by-pass it is necessary to rotate counterclockwise the red handle on the PowerPack valve blocks. To close it, instead, it is necessary to rotate the red handle clockwise, as described in the following picture.

