

ALPHATRON
Alphatron Marine

The human touch in technology

ALPHAMULTICOURSE MFC



ALPHAMULTICOURSE MFC JOYSTICK/AUTOPILOT SYSTEM FOR SEA AND RIVER NAVIGATION

Based upon the combined expertise of Alpatron Marine and Navis, the Alphamulticourse MFC system is a versatile ship control system designed for workboats, yachts, patrol vessels, windfarm service vessels, for operation at sea and restricted inland waters.

EASY OPERATION

The Alphamulticourse MFC system is designed with ease of operation in mind. A unique multifunction steering joystick/tiller combination is the only device the vessel is controlled from.



The Alphamulticourse MFC is containing a fully wheel mark type approved (AP3000) auto-pilot system and a integrated river autopilot for rate steering at narrow waters like the Rhine river, estuaries or harbor areas complying with the applicable rules for these sailing area.

ALPHAMULTICOURSE MFC OPERATION MODES

AUTOPILOT CONTROL MODES

- **"AUTO"** control mode – Automatic Heading control
- **"TRACK"** control mode – controls vessel motion on straight legs (ECDIS or ECS can be used as an external track controller in this mode, TCS Category A)
- **"AutoNAV"** control mode – controls vessel motion on straight legs and turns by an external ECDIS (TCS Category C) **"Survey System"**
- **"Dodge"** control mode – Direct manual control of synchronized rudders, using the rotary knob on operator unit
- **"Override"** control mode - Direct manual control of synchronized rudders, using external override devices (tiller, jog lever) *(Option)*
- **"Follow up"**. FU control of the rudder installation by steering
- **"Riverpilot"** rate steering of the vessel using input from a rate of turn gyro *(Option)*

JOYSTICK CONTROL MODES

- **"Joystick Manual"** control mode – This mode is used for fore-and-aft and traverse steering, vessel moment control using joystick manually
- **"Joystick Auto Heading"** control mode - This mode is used for fore-and-aft and traverse steering with automatic heading control
- **"Speed Control & Auto Heading"** control mode – This mode is used for fore-and-aft and traverse steering with automatic heading control. Joystick is intended to set longitudinal

and transverse speed. Knob is used to set a new heading value (preset heading)

- **"Hold Position"** control mode – This mode is used for automatic vessel positioning in the open sea, at dock maneuvering, drilling rigs, etc. *(Option)*
- **"Anchor Watch"** control mode – This mode allows keeping a vessel in the set radius from the coordinates, preestablished by the operator *(Option)*

INTERFACES

Main Engine and Thrusters interface

- Proportional control via – 0...10 V, $\pm 10V$ or 4...20mA control signal

Steering Gear interfaces

- Solenoid valves, 24V DC (up to 3A load current)
- Proportional valves – 0...10 V, $\pm 10V$ or 4...20mA control signal
- Proportional rudder control (steering gears with follow-up steering control system) – 0...10 V, $\pm 10V$ or 4...20mA control signal

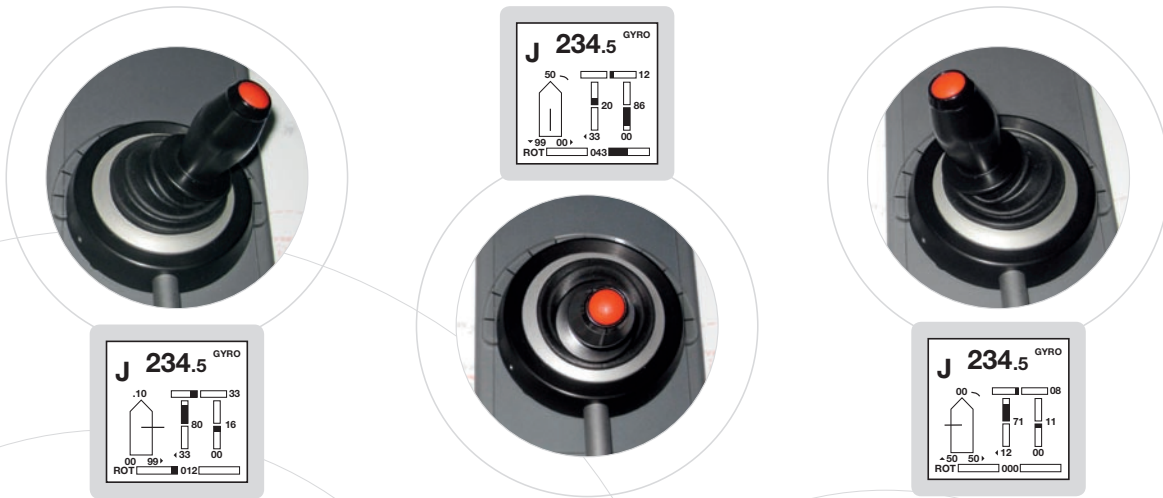
Sensor interfaces (NMEA)

- Gyrocompass (recommended)
- GPS compass
- Magnetic or fluxgate compass
- (D)GPS Receiver
- Log (water track referenced)
- External ECS or ECDIS for track control



JOYSTICK MANUAL

The “JOYSTICK MANUAL” control mode provides you with the variety of ways to control your vessels motion. The rotating knob on the main unit allowing you to steer the vessel freely, also makes it possible to set the rotation for the vessel.

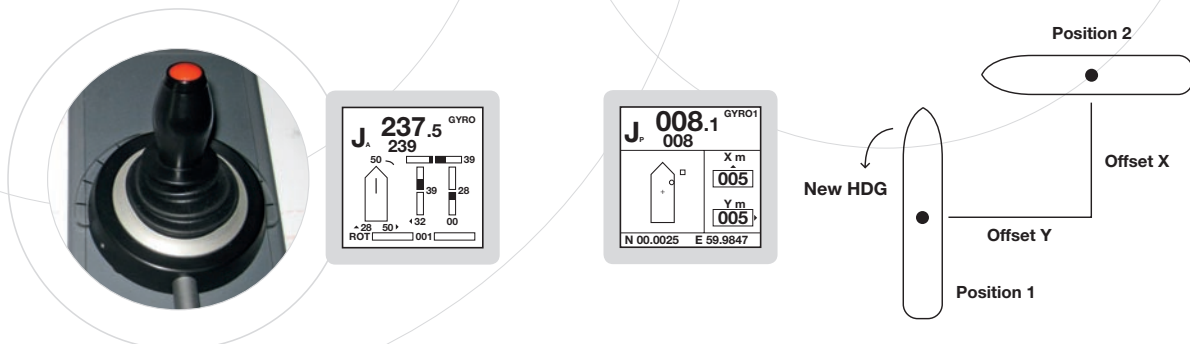


JOYSTICK AUTO HEADING

When you switch to the “JOYSTICK AUTO HEADING” mode, you can steer the vessel in the fore-and-aft and traverse directions with preset heading and the rotating of the knob (the rotation moment) is ignored.

HOLD POSITION (OPTION)

This completely automatic position keeping mode (“HOLD POSITION”) maintains the ship in a selected position. Fore, aft and athwartships forces from propellers, rudders and thruster are commanded by the Alphamulticourse MFC to keep the vessel in preset position. This mode is used for vessel automatic positioning in the open sea, at dock maneuvering, drilling rigs, etc. Joystick is intended to set the initial position or position offset in meters (axis X and Y). Knob is used to set a new heading value (preset heading). The 3rd axis of the joystick (the rotation moment) is ignored.



ANCHOR WATCH (OPTION)

The “ANCHOR WATCH” mode holds a vessel within a set area defined by entering into the system the radius of the circle-like zone, within which the yacht must be kept. Having arrived to a certain point, the captain simply sets the current position (via GPS) and inputs into the system the radius of the circle within which the yacht will be positioned. All the propulsion is switched to the Stand-by Mode and the vessel starts to drift. When the vessel crosses the boundary of the set area, the system automatically starts all the propulsion, moves the yacht back to the center of the circle area, where the propulsion is again switched to the Stand-by Mode.



- Follow up
- Rate steering
- Controle lever

MULTICOURSE MFC DELIVERY SET

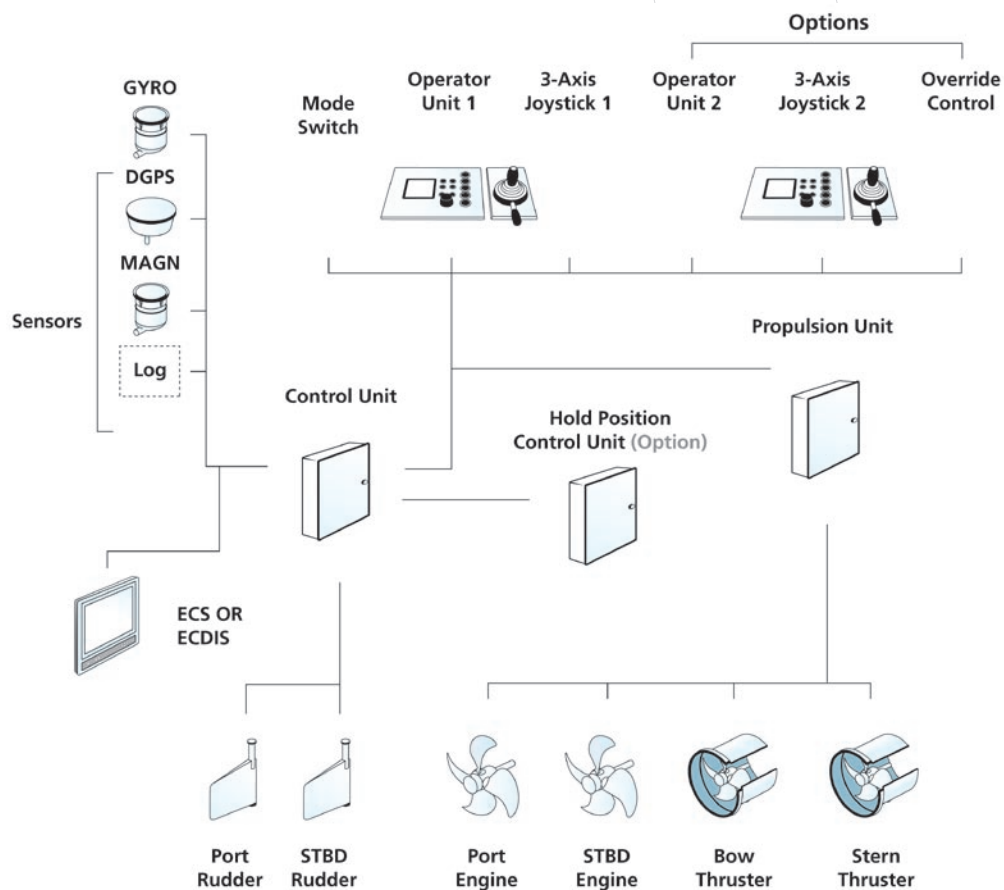
- Operator unit
- Multicommand joystick/steering tiller
- Propulsion Unit
- Control Unit
- Mode Switch Selector
- Documentation Set
- Spare Parts Set
- Synchronization and commutation unit
- Junction box for the propulsion unit (depends On configuration)

OPTIONS

- Hold Position Control Unit (“Hold Position” and “Anchor Watch” control modes)
- Additional operator unit, including multicommand joystick steering tiller
- Override control PCB

CONFIGURATIONS

- J1 Two propellers. Either CPP or FPP with reverse clutch, two rudders and bow thruster
- J2 One propeller. Either CPP or FPP with reverse clutch, one rudder, bow thruster and stern thruster
- J3 Two stern Azimuth Z-drives
- J4 Two propellers. Either CPP or FPP with reverse clutch, two rudders, bow thruster and stern thruster
- J5 Two propellers. Either CPP or FPP with reverse clutch, one rudder, bow thruster and stern thruster
- J6 Bow Azimuth thruster. Either CPP or FPP with reverse clutch, two stern Azimuth Z-drives
- J7 Bow thruster, two stern Azimuth Z-drives



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