

## Autopilots Overview

/\*-->\*/

Your vehicle system provides several autopilots to make the system easier and more effective to operate. Autopilots are single degree of freedom controllers that control a single motion of the vehicle. Autopilots can be enabled or disabled as required. All autopilots are single-input-single-output controllers meaning they use the feedback from a single state of the system to control the thruster outputs required to achieve the desired state of that state.

Your autopilot controls are implemented through classic controllers and are designed carefully to provide wide bandwidth operation. This means that the controllers should provide satisfactory performance under a very wide set of operating conditions and not require tuning or reconfiguration if system characteristics such as buoyancy, payload, and manipulator position change.

Greensea has carefully designed the interface of each autopilot to provide the operator a flexible and intuitive tool for vehicle positioning. The following table lists the autopilots within your vehicle, their controlled degree of freedom (DOF), and their interfaces.

Autopilot	DOF	Feedback	Joystick Function	Other Controls
Heading	Heading (PSI)	openINS heading	Adjusts setpoint	Incremental jog Direct input
Depth	Depth (Z)	openINS depth	Adjusts setpoint	Incremental jog Direct input
Altitude	Altitude (Z-Ref)	openINS altitude	Adjusts setpoint	Incremental jog Direct input
Station Keeping	Lateral position (X, Y)	openINS position	Disables autopilot	Incremental jog "GoTo Position"
Cruise	Lateral velocity (Xdot, Ydot)	openINS velocities	Sums setpoint	Incremental jog

**Category:** [Workspace - Flight View](#) [1]

**Applies to:** [Balefire Basic](#) [2]

**Article ID:** 129

**Source URL:** <http://localhost:8888/kb2017/autopilots-overview>

### Links

[1] <http://localhost:8888/kb2017/main-categories/workspace-flight-view>

[2] <http://localhost:8888/kb2017/applies/balefire-basic>