Oceanus Handheld Controller
(v3.0) - Layout & Functions

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Mini / Pro / P8 Pro ROV Systems

A. Thruster ⊕ Button

Pressing button increases power to all thrusters in a measured incremental amount. Press and hold button to steadily increase power to maximum power to thruster.

B. Thruster ⊖ Button

Pressing button decreases power to all thrusters in a measured incremental amount. Press and hold button to steadily decrease power to no power to thruster.

C. Photo Button

Activates Photo Mode software function. Clicking button captures a single photograph, while depressing and holding the button initiates a burst of photographs.

D. Video Button

Pressing button initiates Video record function. Clicking button a second time ends video recording.

E. Cam Tilt ⊖

Pressing button will move camera tilt in a downward motion.

F. Cam Tilt ⊕

Pressing button will move camera tilt in a upward motion.

G. Thrusters On/Off Button

This button acts as a kill switch ensuring thrusters cannot be engaged while the ROV is powered on. This serves as a precautionary safety function when the ROV is still powered up, but is removed from the water.

H. Lights ⊖ Button

Pressing button initiates dimming of lights, continue holding button to decrease brightness of lights.

I. Lights ⊕ Button

Pressing button initiates lights becoming brighter, continue holding button to increase brightness of lights.

J. Joystick

The Oceanus joystick is a 3-axis Hall effect joystick providing precise and controlled movement of the ROV.

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Mini / Pro / P8 Pro ROV Systems

K. Potentiometer Thumb wheel

The potentiometer thumb wheel controls the behaviour of the vertical ROV thrusters controlling rate of ROV depth or ascent. If the thumb wheel is not engaged the ROV remains at its current depth.

L. Pilot Mode - Auto

Selecting button keeps the locks the current depth of ROV, engages stabilize function minimizing ROV drift, pitch and roll.

M. Pilot Mode - Stabilize Button

Pressing button virtually keeps the ROV on the same heading and will reduce any roll of the ROV due to side currents.

N. Pilot Mode - Manual Button

Selecting manual button cancels any ROV flight behaviour, returning full manual control to pilot. This includes stabilize and depth hold settings.

O. Manipulator - Rotate Left Button

The rotate left button function controls the head rotation towards the left of an attachment head fixed to a rotating manipulator arm. Single-axis manipulators do not respond to this button command.

P. Manipulator - Rotate Right Button

The rotate right button function controls the head rotation towards the right of an attachment head fixed to a rotating manipulator arm. Single-axis manipulators do not respond to this button command.

Q. Manipulator Close Button

A universal command for ROVs outfitted with either a single-axis, or rotating manipulator. Pressing and holding button closes any jaw attachment head attached to the manipulator arm.

R. Manipulator Open Button

A universal command for ROVs outfitted with either a single-axis, or rotating manipulator. Pressing and holding button opens any jaw attachment head attached to the manipulator arm.

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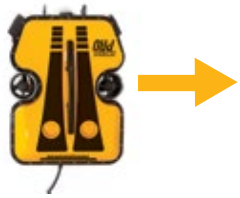
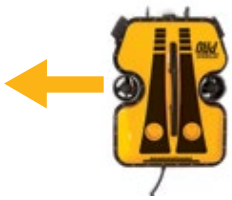
Rotate Right		
Rotate Left		
Lateral Right		
Lateral Left		

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Forward		
Reverse		
Vertical Up (Surface)		
Vertical Down (Dive)		
Vertical Neutral (No thruster movement)		

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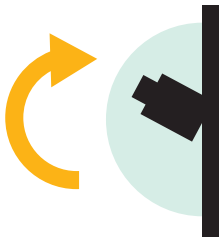
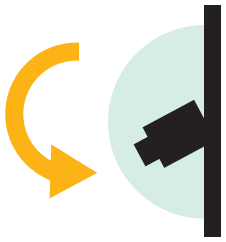
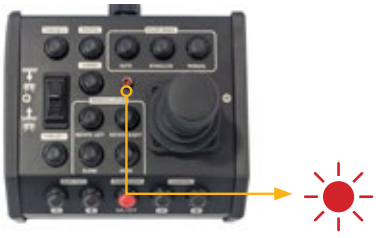
Camera Tilt Up		
Camera Tilt Down		
Thrusters On / Off		As a safety precaution the power relay to thrusters is set to an “Off” position, meaning the thrusters are inoperable. Push the Thruster Off/On button once to set the power relay to thrusters to the “On” position. Thrusters will respond to corresponding thruster commands.
Power Indicator		The Oceanus hand controller is equipped with a power indicator light. The light will glow brightly indicating the hand controller is properly connected in an USB port found in the topside and is receiving power. Your hand controller may be furnished with either a red or green indicator light.

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Oceanus Handheld Controller

(v3.0) - Flying and Operation

Pilot Mode - Auto Pilot		**Auto Mode** When Auto Control Mode is engaged the ROV calculates for variables to course caused by currents and automatically makes adjustments, minimizing ROV drift.
Pilot Mode - Stabilize		**Stabilize Mode** When Stabilize Mode is engaged the ROV will virtually remain on the same heading and will reduce any roll of the ROV due to side currents.
Pilot Mode - Manual		**Manual Mode** Selecting manual mode button releases the ROV from any engaged commands returning full flight control to the ROV pilot. Includes release from Stabilize, Auto Pilot or preset ROV depth settings.

Contact MarineNav for more information on this ROV hand controller, or any of our ROV products.

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Designed for the Ultimate ROV System

A. Thumb Wheel (ROV Depth Control)

The thumb wheel controls the behaviour of the vertical ROV thrusters.

B. ROV Pitch & Roll Micro Joystick

A two axis micro joystick that provides user with both ROV pitch and roll control. Moving the micro joystick forwards (up away from you) controls the downward pitch of ROV, lowering the nose of the ROV. Moving the micro joystick backwards (down towards you) controls the upwards pitch of the ROV, raising the nose of the rov toward the water's surface. Moving the micro joystick to the left initiates a roll maneuver of the ROV in a leftwards direction. Moving the micro joystick to the right initiates a roll maneuver of the ROV in a rightwards direction.

IMPORTANT

The ROV does not revert back to level after pitch or roll controls are used. This is an incremental change that reacts to each micro joystick movement and is remembered by the ROV. To correct ROV position, manually adjust the pitch, or roll to the required angle.

To quickly reset ROV to a level position users can switch pilot mode, then switch back, returning to the original pilot mode. (eg: If you are currently flying the ROV in manual mode select Auto mode, then switch back to Manual mode. This action will return your ROV to a level position.

C. ROV Manual Control Mode

Pressing button releases ROV from Auto Stabilize and Auto Depth functions, returning full piloting control of the ROV to the user.

D. ROV Auto Control Mode

Selecting this button will engage Auto Control settings which is a combination of the ROV's Auto Stabilizing and Depth Hold functions. When Auto Control Mode is engaged the ROV calculates for variables to course caused by currents and automatically makes adjustments, minimizing ROV drift.

E. Thrusters ⊕ Button

Pressing button increases power to all thrusters. The Oceanus joystick is a 3-axis Hall effect joystick providing precise and controlled movement of the ROV.

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Ultimate ROV System

F. Lights ⊖ Button

Pressing button decreases power to all thrusters.

G. Joystick

The Oceanus joystick is a 3-axis Hall effect joystick providing precise and controlled movement of the ROV.

H. Front Camera Button

Select this button to engage the ROV's front Camera. Once selected user can select the other camera function buttons to control selected camera's behaviour.

I. Rear Camera Button

Select this button to engage the ROV's rear Camera. Once selected user can select the other camera function buttons to control selected camera's behaviour.

J. Camera Function - Record Photo

Activates Photo Mode software function. Clicking button once captures a single photograph, while holding the button initiates a burst of photographs.

K. Camera Function - Record Video

Pressing button initiates Video record function. Clicking button a second time ends video recording.

L. Camera Function - Camera Focus In

(Function available to Front Camera Only)

Manual focus allows users the ability to refine focus adjustments of the ROV camera, where a user can focus to an object of their choice. Camera Focus In adjusts the camera focal point to bring an object in greater focal sharpness.

M. Camera Function - Camera Focus Out

(Function available to Front Camera Only)

Manual focus allows users the ability to refine focus adjustments of the ROV camera, where a user can focus to an object of their choice. Camera Focus Out adjusts the camera focal point to bring an object in greater focal sharpness.

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Ultimate ROV System

N. Camera Function - Camera Tilt Up
(Function available to Front Camera Only) Pressing button will move camera tilt in a upward motion.

O. Camera Function - Camera Tilt Down
(Function available to Front Camera Only) Pressing button will move camera tilt in a downward motion.

P. Manipulator Micro Joystick
Functionality of this two axis micro joystick is available when an ROV manipulator accessory is mounted to the ROV system. The micro joystick provides user with the ability to easily control a mounted single-axis or dual-axis manipulator. Moving the micro joystick in a forward (Up) position opens the manipulator jaws. Releasing the joystick stops the opening motion. Moving the micro joystick in a backwards (Down, towards you) position closes the manipulator jaws.

Releasing the joystick stops the closing motion. If a dual-axis manipulator accessory is attached to the ROV, users can control rotation of manipulator jaws by using the 'Left' and 'Right' axis of the micro joystick. Moving the joystick to the 'Left' rotates the jaws in a counter-clockwise motion, while moving the joystick to the 'Right' rotates the jaws in a clockwise direction. Rotational movement of jaws can be stopped by releasing the joystick.

PLEASE NOTE: Single-axis manipulators will not respond to joystick 'Left' or joystick 'Right' control movements.

Q. ROV Auxiliary Function - 1
Future ROV Function.

R. ROV Auxiliary Function - 2
Future ROV Function.

S. ROV Auxiliary Function - 3
Future ROV Function.

T. ROV Auxiliary Function - 4
Future ROV Function.

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Ultimate ROV System

U. Lights ⊖ Button

Pressing button decreases power to both front and rear ROV lights in increments of 10%. Continue holding button for rapid dimming of ROV lights.

V. Lights ⊕ Button

Pressing button increases power to both front and rear ROV lights in increments of 10%. Continue holding button for rapid brightness of ROV lights.

W. Thruster Armed / Disarmed Function

By default the ROV thrusters are disarmed, or 'OFF'. If thrusters are receiving power pushing the button once cuts power to thrusters so that they are disarmed or 'OFF'. This is a safety feature to be used when conducting ROV cleaning, inspections or maintenance. It can also be used as an emergency kill switch, immediately stopping power to thrusters.

To engage power to thrusters, click button a second time to return ROV thrusters to normal functionality.

X. Power Indicator Light

Power Indicator light glows red indicating the hand controller is properly connected to the topside control case and receiving power.

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Rotate Right

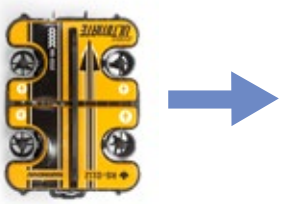
The ROV "Rotate Right" movement is achieved by turning the rotating head of joystick toward the right.

Rotate Left

The ROV "Rotate Left" movement is achieved by turning the rotating head of joystick toward the left.

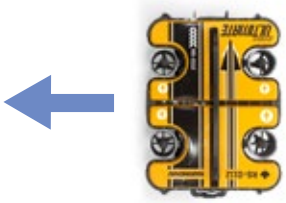
Lateral Right

The ROV "Lateral Right" movement is achieved by pushing the joystick toward the right.



Lateral Left

The ROV "Lateral Left" movement is achieved by pushing the joystick toward the left.



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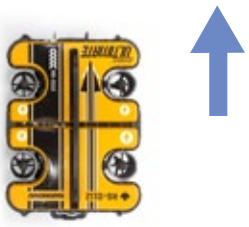
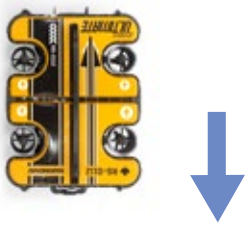
Forward

The ROV "Forward" movement is achieved by pushing the joystick forwards (a movement away from pilot).



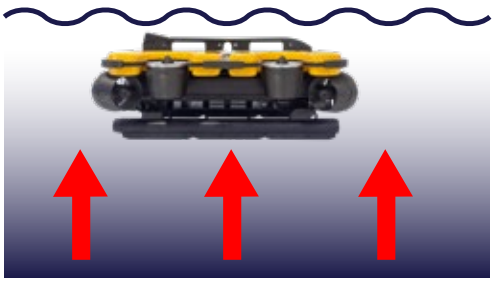
Reverse

The ROV "Reverse" movement is achieved by pushing the joystick backwards (a movement towards the pilot).



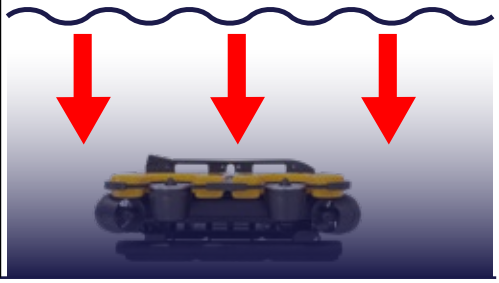
Vertical Up
(Surface)

The ROV "Surface" movement is achieved by pushing the thumb wheel control backwards direction (down towards you).



Vertical Down
(Dive)

The ROV "Surface" movement is achieved by pushing the thumb wheel control forward direction (up away from you).



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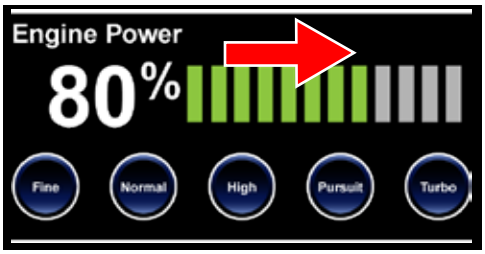
Vertical Neutral

(No directional thruster movement)

By default the thumb wheel returns to a neutral state. ROV depth remains unchanged until thumb wheel control is engaged.

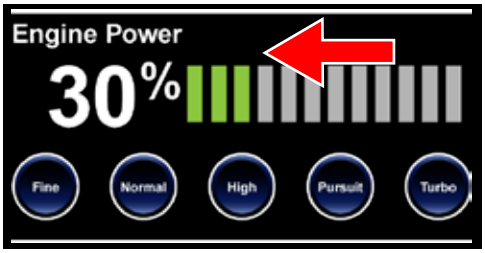
Thrusters +

Pressing "Thrusters +" button increases power to all vertical and horizontal thrusters.



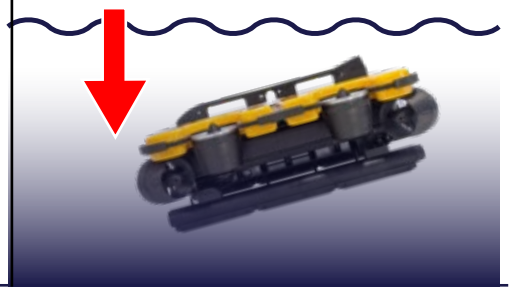
Thrusters -

Pressing "Thrusters -" button decreases power to all vertical and horizontal thrusters.



Pitch Up

Moving the four axis micro joystick forward (up away from you controls the downward pitch of ROV, lowering the nose of the ROV.



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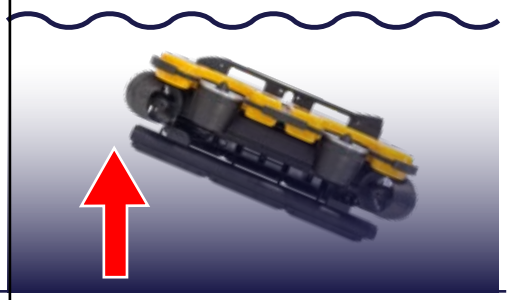
Pitch Down

Moving the four axis micro joystick backwards (down towards you) controls the upward pitch of ROV, raising the nose of the ROV.



Roll Left

Moving the micro joystick to the left initiates a roll maneuver of the ROV to a leftward position as viewed from the ROV

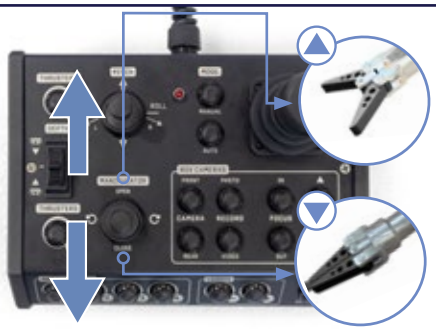
Roll Right

Moving the micro joystick to the right initiates a roll maneuver of the ROV to a rightward position as viewed from the ROV

Manipulator

(Open & close jaws)

The upward and downwards movement of the micro joystick controls single or dual axis manipulator jaws opening or closing



Micro Joystick Up
A continuous gradual opening of manipulator jaw head. Stop the jaw opening motion by stopping the upward joystick movement.

Micro Joystick Down
A continuous gradual closing of manipulator jaw head. Stop the jaw closing motion by stopping the downward joystick movement.

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Dual-Axis Manipulator
(Jaw rotation)

The side to side movement of micro joystick controls the rotational head of a dual axis manipulator

Micro Joystick Left
A continuous gradual counter clockwise turning of the dual-axis rotating manipulator jaw head.

Micro Joystick Right
A continuous gradual clockwise turning of the dual-axis rotating manipulator jaw head.

ROV Control Mode
(Manual control)

Manual Mode
Selecting the Manual Mode button releases ROV control from the Auto Stabilize and Auto Depth functions, returning full piloting control of the ROV to the user.

ROV Control Mode
(Auto control)

A combination of ROV's Auto Stabilizing and Depth Hold functions

Auto Mode
When Auto Control Mode is engaged the ROV calculates for variables to course caused by currents and automatically makes adjustments, minimizing ROV drift.

ROV Cameras
(Camera Select)

Toggles between views as seen through the front & rear ROV cameras

F **Front ROV Camera**
Engages ROV's front camera. Once pressed, select other camera function buttons to control camera

R **Rear ROV Camera**
Engages ROV's rear camera. Once pressed, select other camera function buttons to control camera

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ROV Cameras
(Record Function)

Record still image files to the ROV hard drive as seen through the ROV's selected camera

Single Photo Image
Select button once and release to capture a single photographic image as viewed through active camera

Photo Burst Images
Select button once and hold to capture a photo burst of images as viewed through active camera. Release button to end photo burst session

ROV Cameras
(Record Function)

Record video files to the ROV hard drive as seen through the ROV's selected camera

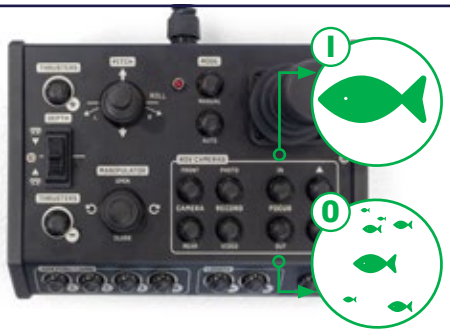
Video Record - Start
Select button once to begin a video recording session of images as viewed from active camera.

Video Record - End
To end a video recording session, user must select the video button a second time.

Camera Focus
(In/Out Function)

front camera function only

A manual focus function that allows user to focus to an object of their choice



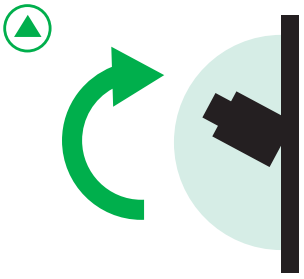
Camera Focus In
Camera Focus In adjusts the active camera's focal point to bring an object in greater focal sharpness

Camera Focus Out
Camera Focus In adjusts the active camera's focal point to bring an object in greater focal sharpness

Camera Tilt
(Up Function)

front camera function only

Selecting and holding button tilts the active camera in an upward direction. Release to stop camera tilt movement



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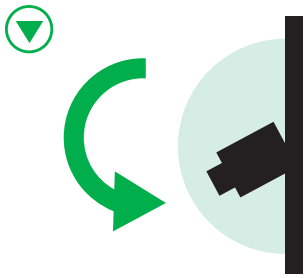
Camera Tilt

(Down Function)

front camera function only

Selecting and holding button tilts the active camera in a downward direction. Release to stop camera tilt movement



Aux Functions

Future ROV function. Contact MarineNav for updates

Lights Button

(⊖ & ⊕ Function)

Selecting either button controls ROV light brightness. All lights (both front and rear facing adjust simultaneously responding to button input

Lights - Diminish Brightness
Press to diminish light brightness by 10% increments. Press and hold for a rapid decrease of ROV light brightness

Lights - Increase Brightness
Press to increase light brightness by 10% increments. Press and hold for a rapid increase of ROV light brightness

Thruster Lock

(Arm/Disarm Function)

A Safety feature which kills power to thrusters. For use when inspecting cleaning, or performing routine ROV maintenance

Thrusters - Off
Press button once to disarm all ROV thrusters. Disarming thrusters inhibits power to both horizontal and vertical thrusters

Thrusters - On
Press button again to arm all ROV thrusters, returning thrusters to normal function

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Oceanus Handheld Controller
(v4.0) - Flying and Operation

Indicator Light
(Power Indicator)

Indicator light glows red when receiving power.

Indicator - On
Proper connection to topside USB port. Hand controller is receiving power

Indicator - Off
No power to hand controller. Check connection to topside USB port

Contact MarineNav for more information on this ROV hand controller, or any of our ROV products.

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