VideoRay Pro 4 University Kit
Introduction and Control Panel Assembly Instructions

Congratulations on your purchase of your VideoRay Pro 4 University kit!

Before you get started please read through these brief helpful hints and then follow the control panel assembly instructions that begin on page 3.

1) Talk to us!

Please do not hesitate to contact VideoRay, and in particular our University Program manager if you have any questions or comments. The program is meant to foster cooperation so we vigorously encourage any and all communication.

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2) User supplied item requirements

In order to use the Pro 4, the following items must be supplied by the user.
- Windows Computer
- Windows Compatible Game Controller
- External power source 100-240 VAC, 50, 60 Hz
- Insulated wire (see assembly instructions)

3) Measure twice and cut once

The University kit requires some assembly of the topside components prior to initial operation. The vehicle is fully assembled, tested and ready to operate. The included instructions and wiring diagram explain all the necessary connections. We recommend that after assembly the tether connections be tested with a multimeter, particularly the power inputs.

Furthermore, it is STRONGLY recommended that appropriate power safety devices be installed prior to using the system in a marine environment.

4) Additional information

The Pro 4 University Kit uses the same ROV as the commercial version, but the control panel and tether configuration are different. Keep this information in mind when referring to the user manual. The VideoRay Pro 4 user manual can be viewed or downloaded from: http://download.videoray.com

5) Software and SDK support

VideoRay Cockpit user control software can be downloaded from
http://download.videoray.com

SDK information and samples of code are available at:
http://download.videoray.com/developer

6) Modify the power manager limit

The ROV supplied with the university kit is identical to our standard production models. It thus comes optimized out of the box for use with a higher voltage power supply than provided with this kit.

   The active power manager voltage limit should thus be reduced. See the VideoRay Cockpit Guide of the User Manual for more information.

1) Connect the ROV to the control panel and start VideoRay Cockpit
2) Open the Engine Room
3) Press the Unlock button
4) Change the Power Manager Voltage Trigger from 53V to 36V
5) Press the Save Parameters to ROV button

7) Standard VideoRay Cockpit software and hand controllers

A hand controller is offered as an option. If you did not order a hand controller at the time of purchase a Logitech rumble pad is recommended. This controller will work out of the box with the VideoRay Cockpit software.

8) System Components

VideoRay Pro 4 ROV
20 m (65 ft) Performance Tether
Control Panel Components (see the following assembly instructions)

Control Panel Assembly Instructions

See the parts list and circuit diagram at the end for additional information.

Female Tether Connector and Whip (Qty 2) (includes locking collar)

Communications Circuit

1. Connect the White/Black tether whip wire (pin 7) to pin 2 of the Sealevel DB-25 connector
2. Connect the Red/Black tether whip wire (pin 8) to pin 14 of the Sealevel DB-25 connector
3. Connect the USB cable from the Sealevel to the Computer.

Sealevel RS-485 – USB Converter

USB Cable

Video Circuit

1. Connect the Black tether whip wire (pin 1) to the Video Balun "Ring" connector.
2. Connect the White tether whip wire (pin 2) to the Video Balun "Tip" connector.
3. Connect the RCA-BNC adapter to the Video Balun.
4. Connect the RCA connector from the DVD Maker 2 to the RCA-BNC adapter.
5. Connect the DVD Maker 2 to the computer.

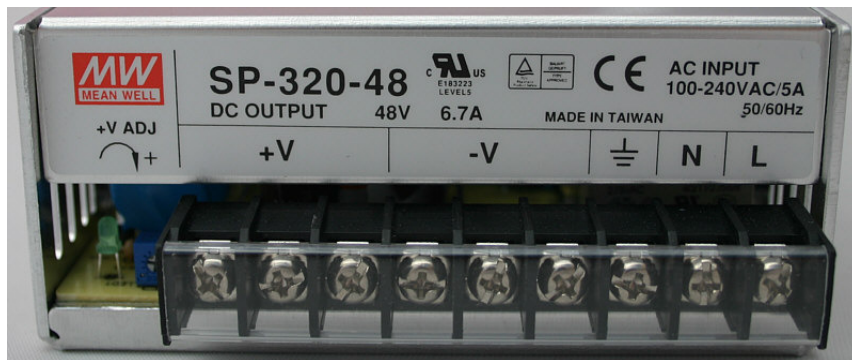Video Balun

Video Balun Connectors

RCA-BNC Adapter

DVD Maker 2

Power Circuit

1. Connect the Red tether whip wire (pin 3) to the +V terminal of the power supply. It does not matter which +V terminal is used.
2. Connect the Orange tether whip wire (pin 5) to the –V terminal of the power supply. It does not matter which –V terminal is used.

Power Supply

Power Supply Connections

Power Source

1. Connect a black wire (user supplied 18 gauge or physically larger) from the L terminal of the power supply to the L terminal of the IEC receptacle (solder connection required).
2. Connect a white wire (user supplied 18 gauge or physically larger) from the N terminal of the power supply to the N terminal of the IEC receptacle (solder connection required).
3. Connect a green wire (user supplied 18 gauge or physically larger) from the Ground terminal of the power supply to the Ground terminal of the IEC receptacle (solder connection required).
4. Plug the power cord into the IEC receptacle and when ready, plug the cord into a GFCI protected wall socket.

Optional – A user supplied DPDT switch can be inserted on the L and N wires between the IEC receptacle and Power Supply to allow the system to be turned on and off.

IEC Receptacle

Accessory Circuit (use is optional)

The Green and Blue tether whip wires can be used to connect an accessory on the ROV to the surface.

The Green wire (pin 4) connects to pin 4 on the 9 pin accessory port on the ROV.
The Blue wire (pin 6) connects to pin 6 on the 9 pin accessory port on the ROV.

System Expansion

The schematic for the commercial control panel and options is also provided as a
reference for further expansion of the control panel in this kit. Major differences include:

- Higher voltage power supply (75 V DC)
- Line Insulation Monitor safety circuit to support higher voltage
- Integrated accessory interface support including Ethernet/DSL, RS-485
- Video Enhancement system from LYYN

Control Panel Component Part List

Item	Description	Part Number	Quantity
1	Control Panel Tether Whip	CW8-001F	2 (1 is a spare)
2	Locking Collar, Male with Ring	CLS-001M	2 (1 is a spare)
4	Sealevel RS-485 - USB converter	CON-001	1
5	DB-25 Connector	3530-04025	1
6	USB cable, 3 feet	PN4-021	1
7	Video Balun	VB-001P	1
8	RCA-BNC Adapter	10-01015	1
9	DVD Maker 2 Video Capture Device	XE-004	1
10	Universal Input 48 Volt DC Power Supply	PN-320	1
11	IEC Receptacle	ICB-024	1
12	Region Specific Power Cord	(Various)	1