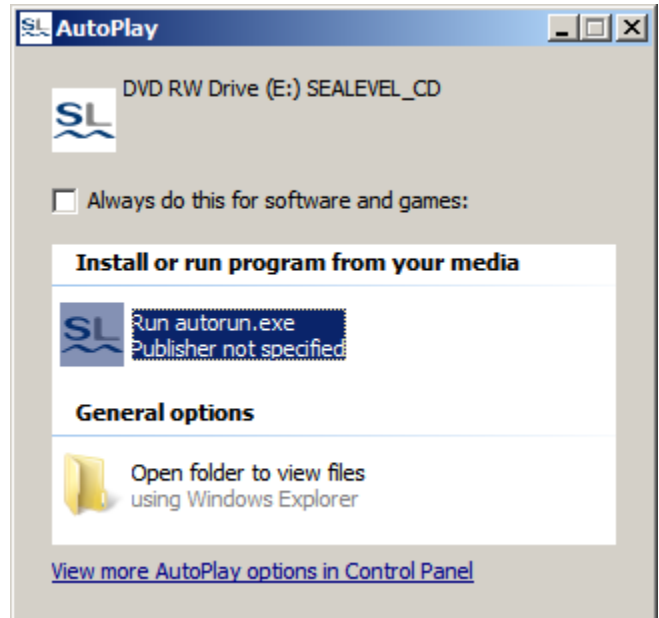


CompleteView Guide: Sealevel I/O Device Configuration Guide

Important Note: Do not install the Sealevel I/O device until you have installed the drivers. See Appendix A of this guide for Sealevel I/O device specifications and wiring diagrams.

Installation Step by Step Instructions:

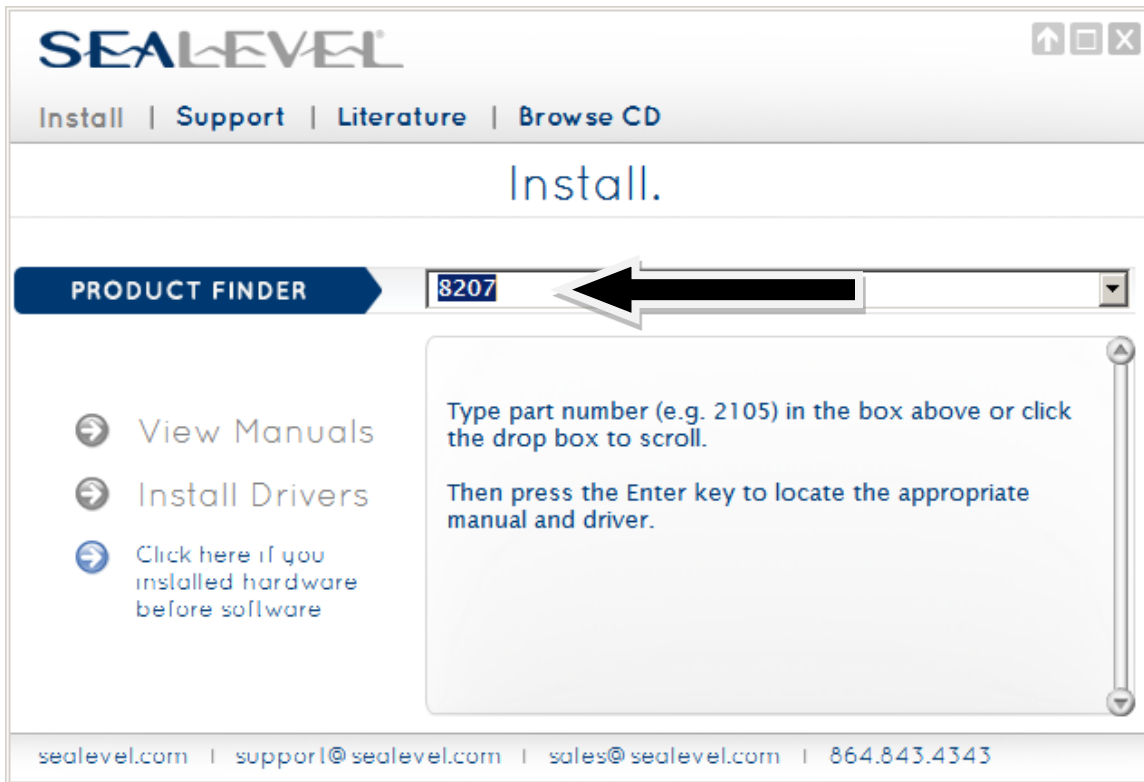
1. Insert the CD into the system you will be attaching the I/O device to.
2. Once the CD is inserted click on run autorun.exe from auto play dialog box.



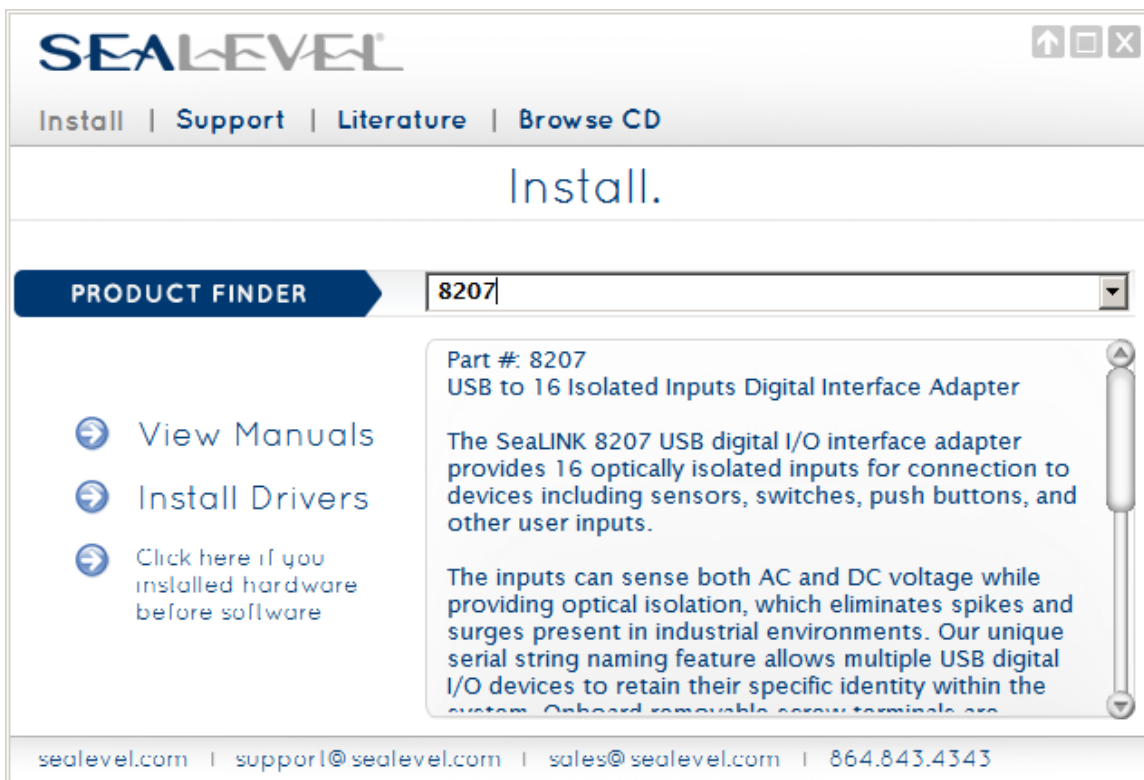
3. Click on Install from the top menu.



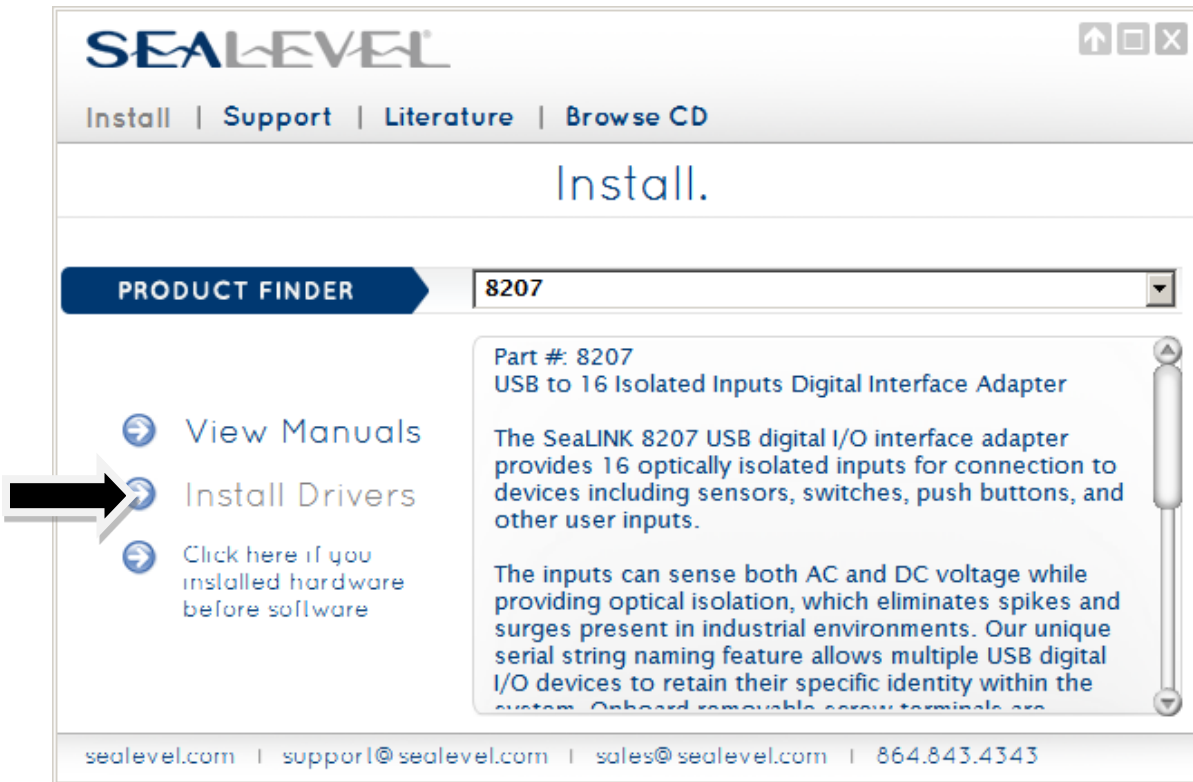
4. Enter the Model Number (this can be found on the bottom of the I/O device)



5. Once you input the model number hit enter key on the keyboard.

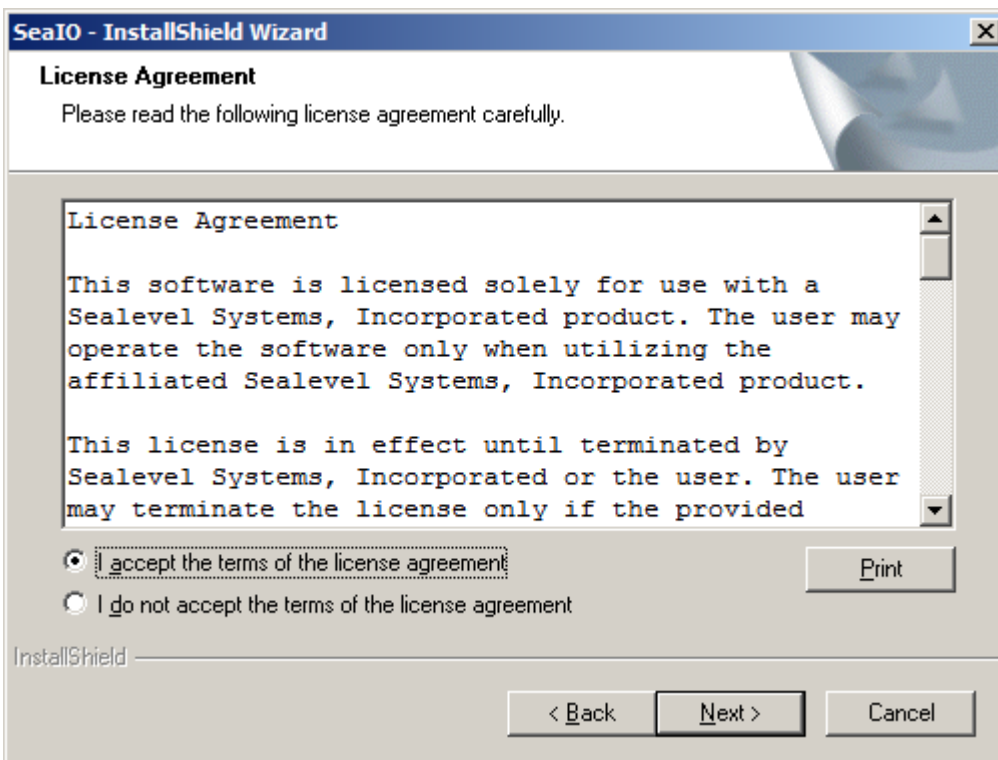
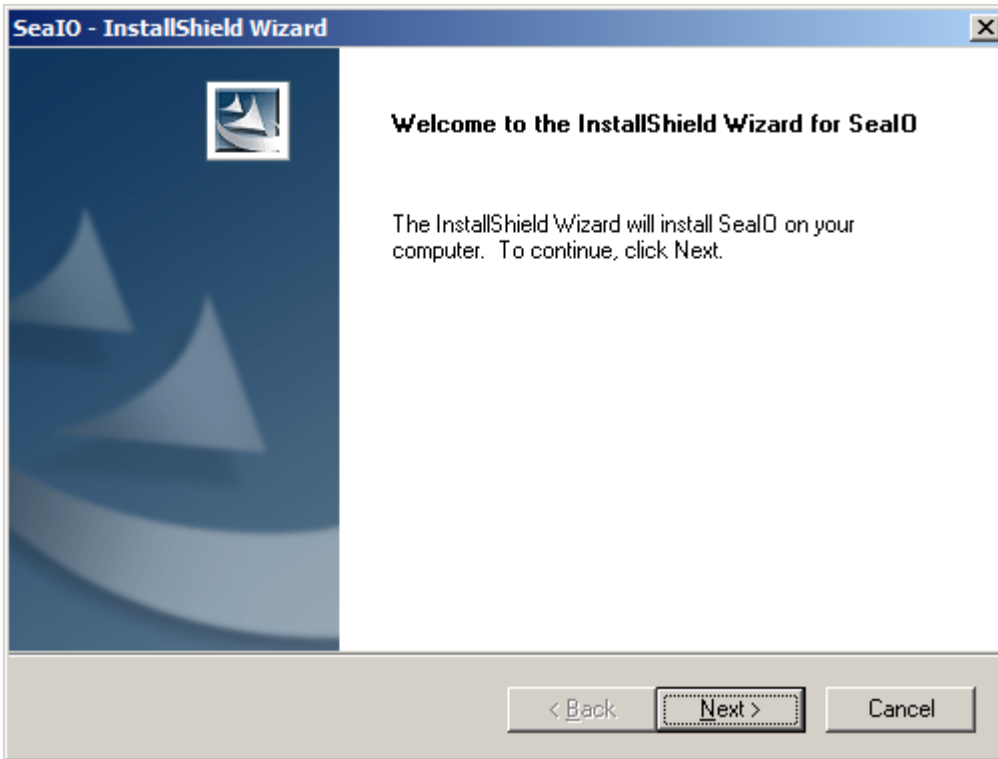


6. Then click install drivers.

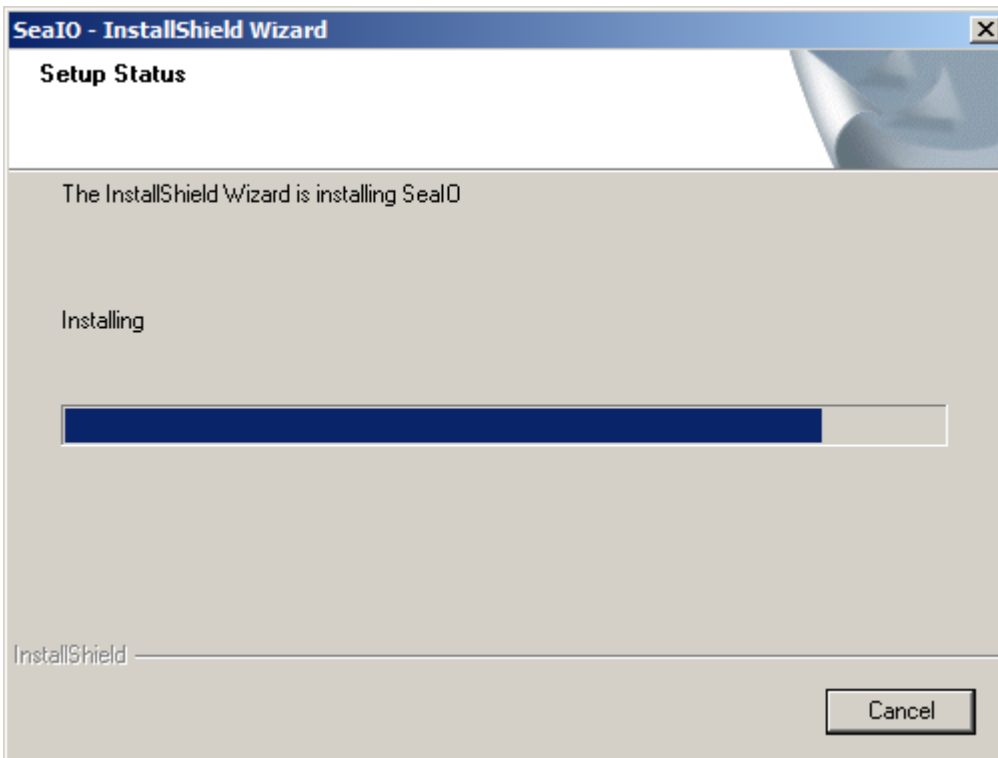
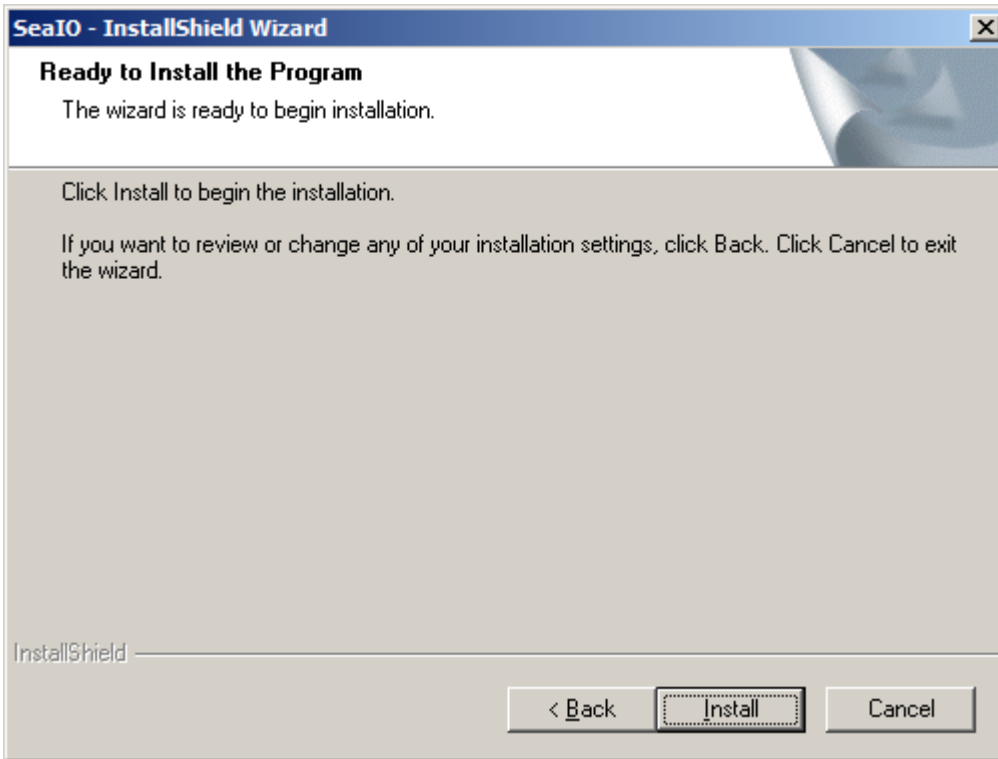


The screenshot shows a web browser window with the SEALEVEL logo in the top left corner. Below the logo is a navigation bar with links for 'Install', 'Support', 'Literature', and 'Browse CD'. The main heading of the page is 'Install.'. A 'PRODUCT FINDER' section contains a search box with '8207' entered. To the left of the product details is a sidebar with three links: 'View Manuals', 'Install Drivers', and 'Click here if you installed hardware before software'. A large black arrow points to the 'Install Drivers' link. The product details on the right include the part number '8207', the product name 'USB to 16 Isolated Inputs Digital Interface Adapter', and two paragraphs of descriptive text. The footer of the page contains contact information: 'sealevel.com | support@sealevel.com | sales@sealevel.com | 864.843.4343'.

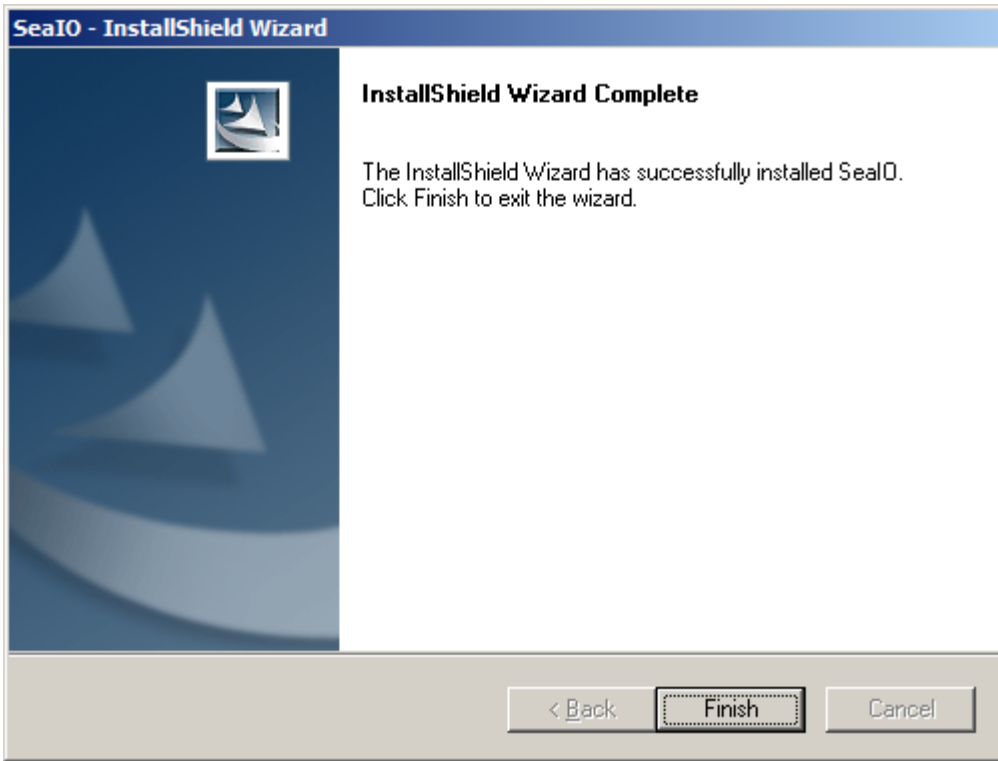
7. Installation will start, click Next.



8. Click Install.



9. Click Finish.



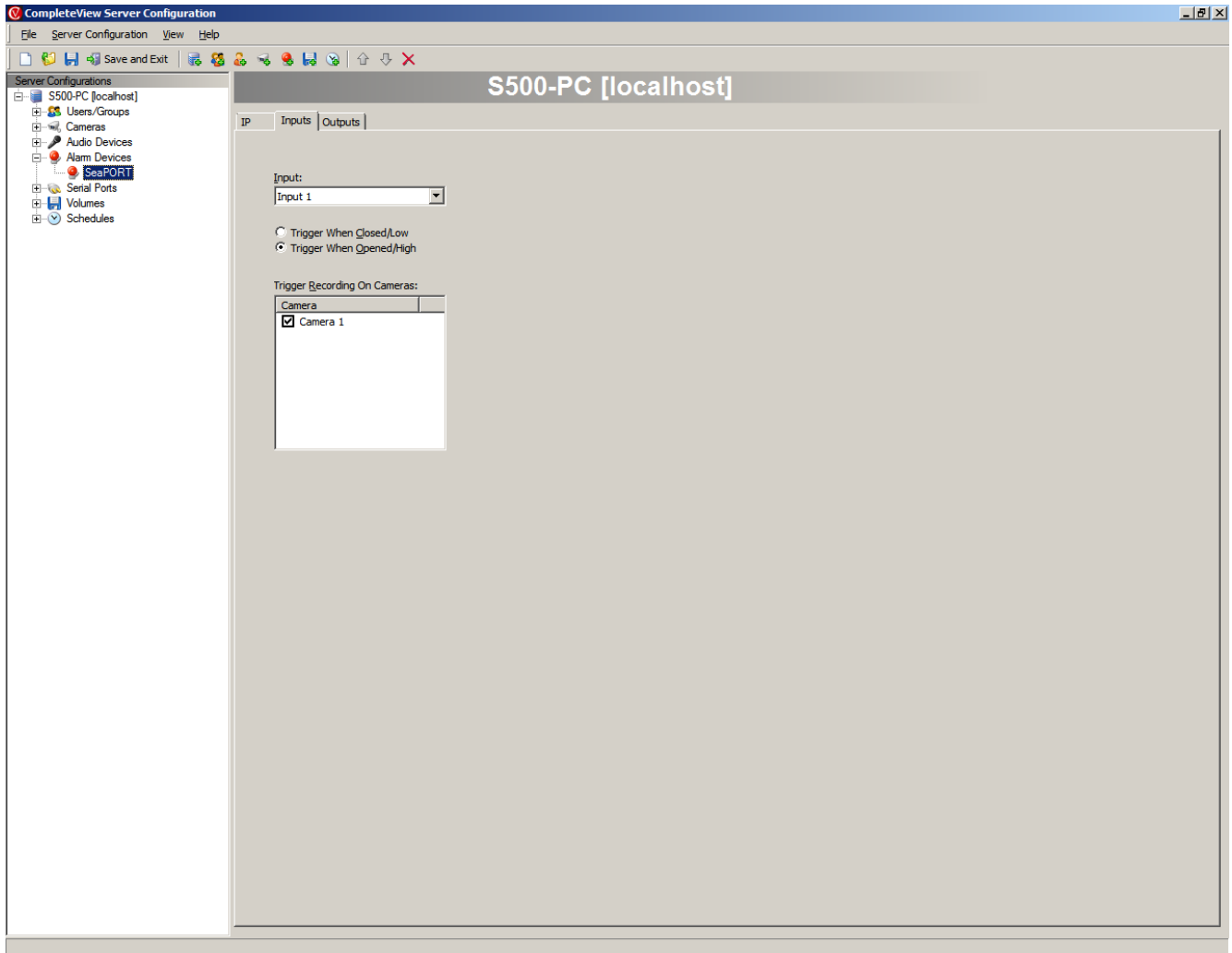
10. Close out the below windows and **reboot your computer and install the device to the USB Port.**



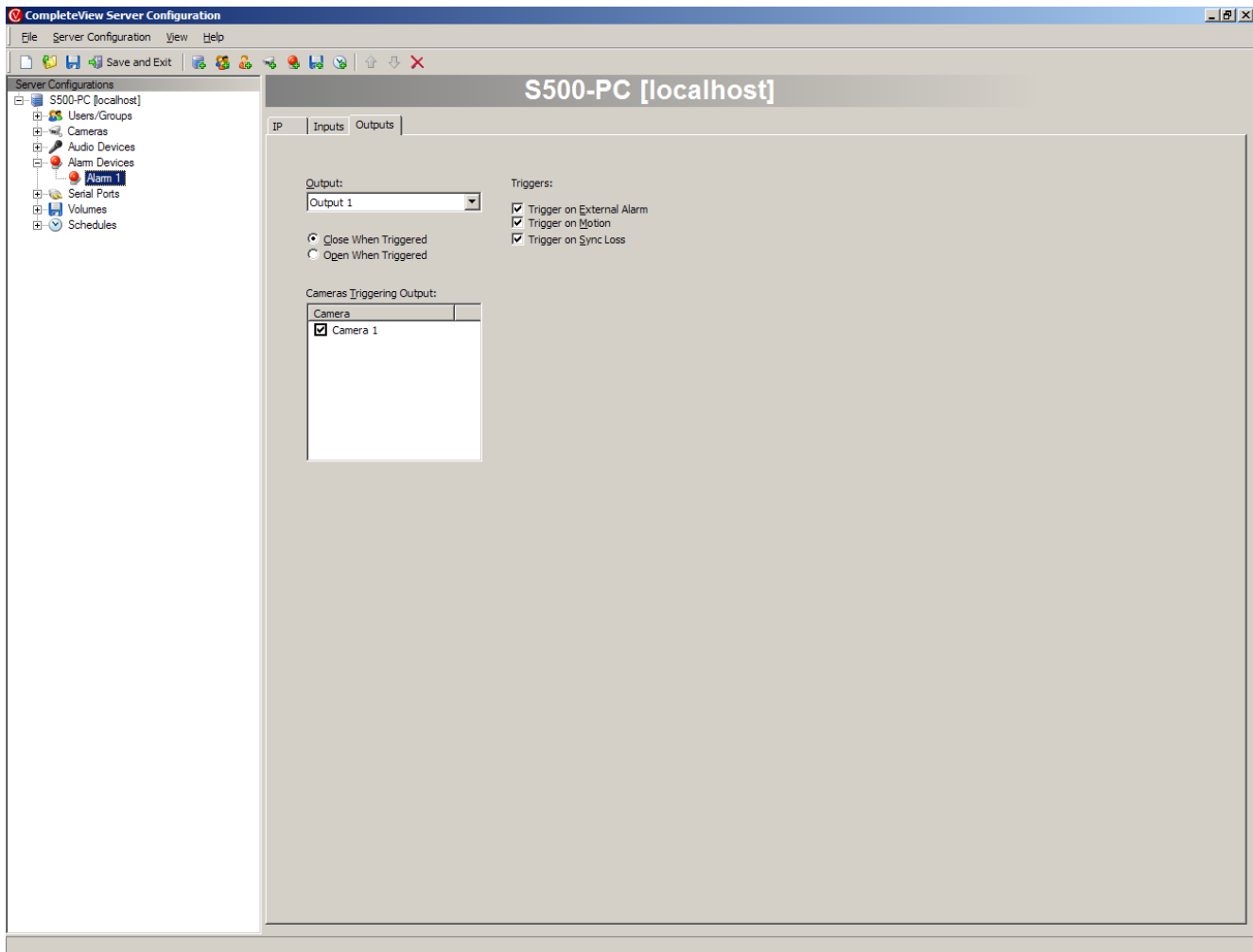
CompleteView Settings

1. Login to system configuration and click on alarm devices. Make sure you see the SeaPORT device.

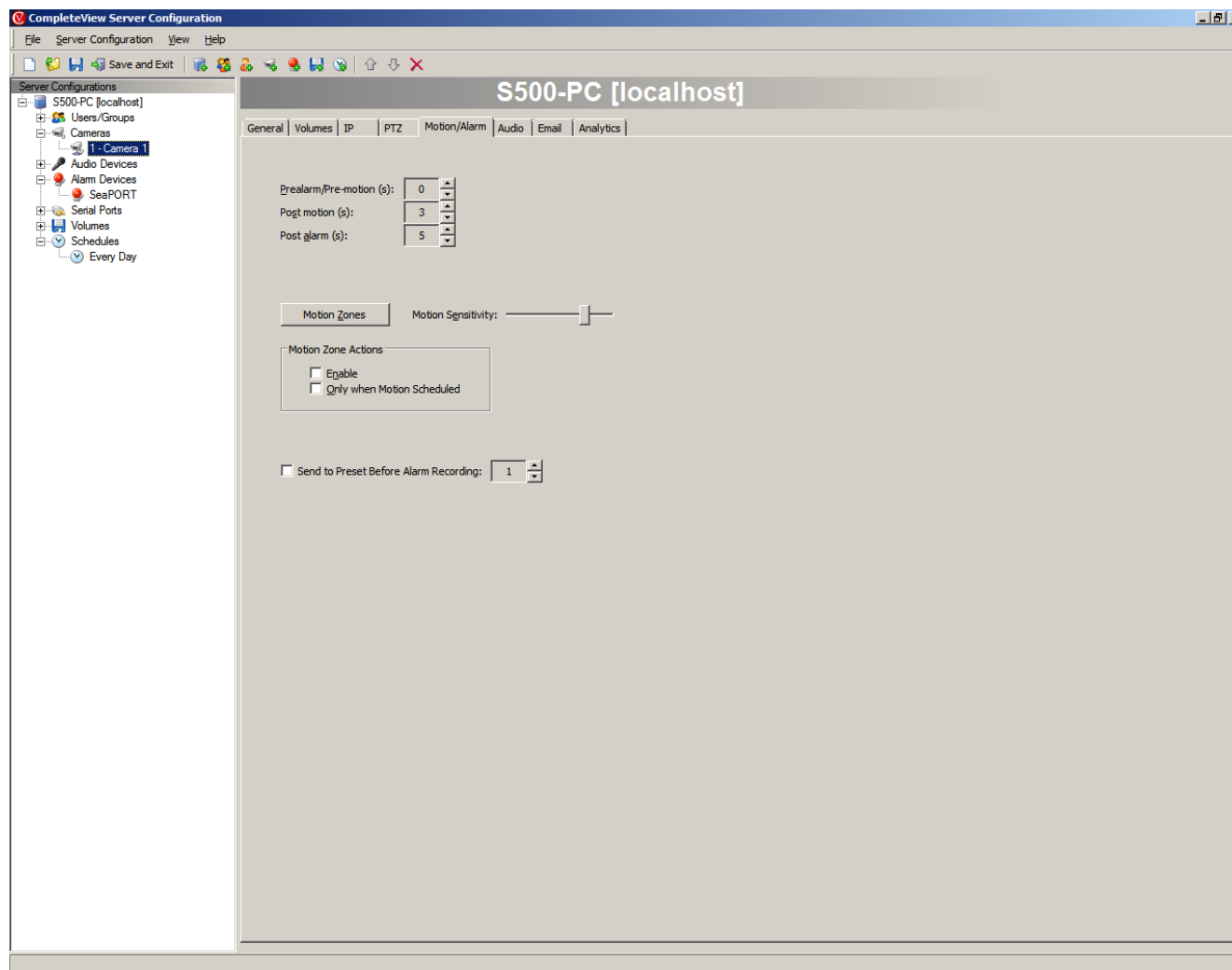
Setup the inputs to trigger recording for your specified cameras by checking on the cameras, typically the setting would be to trigger when opened/high.



For outputs set the camera that will trigger output, and then setup the triggers (trigger on external alarm, motion, or sync loss).



2. Setup the camera Post Alarm settings (recommended settings minimum of 5 seconds).

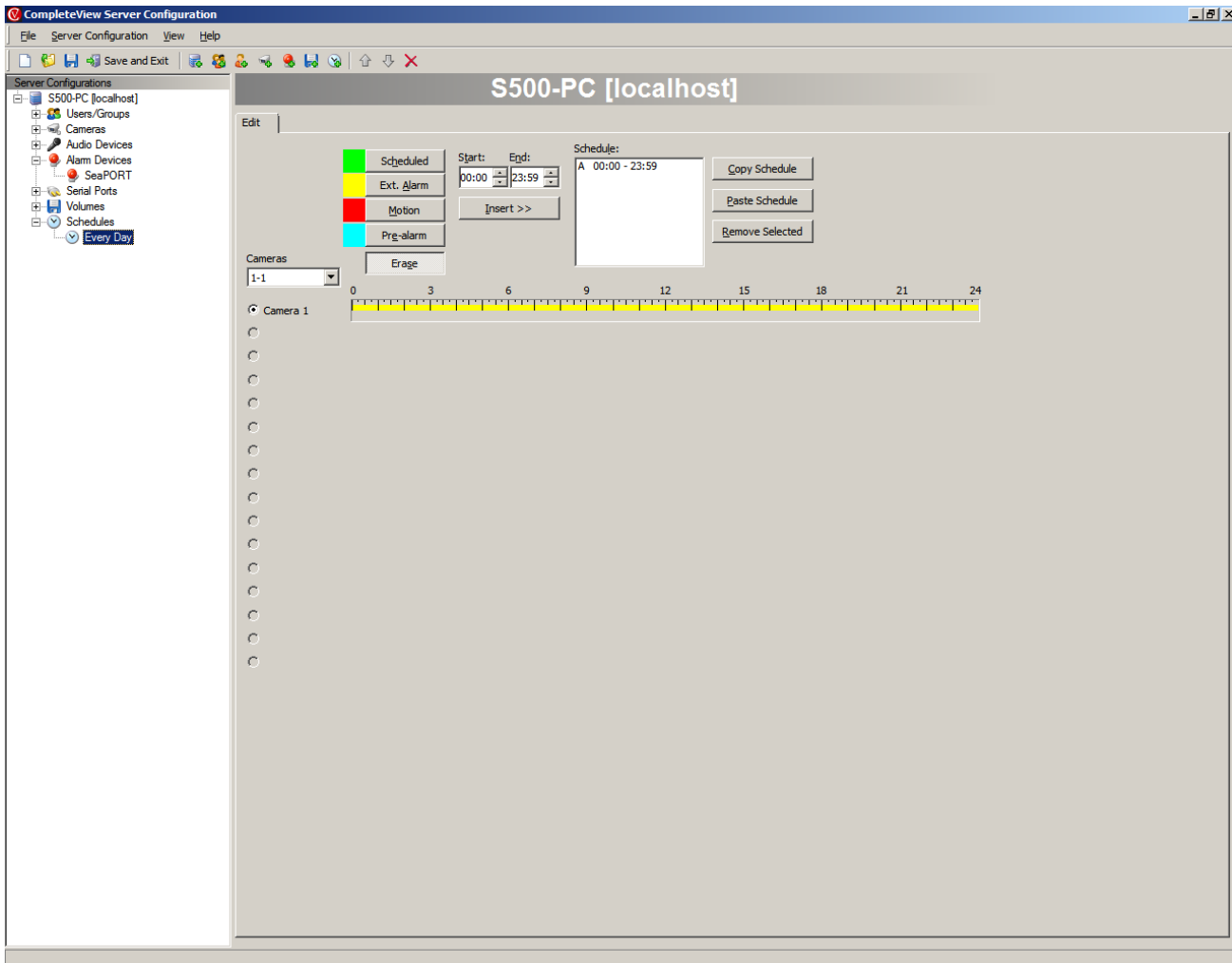


3. Setup Alarm/Pre-Alarm schedule for each camera.

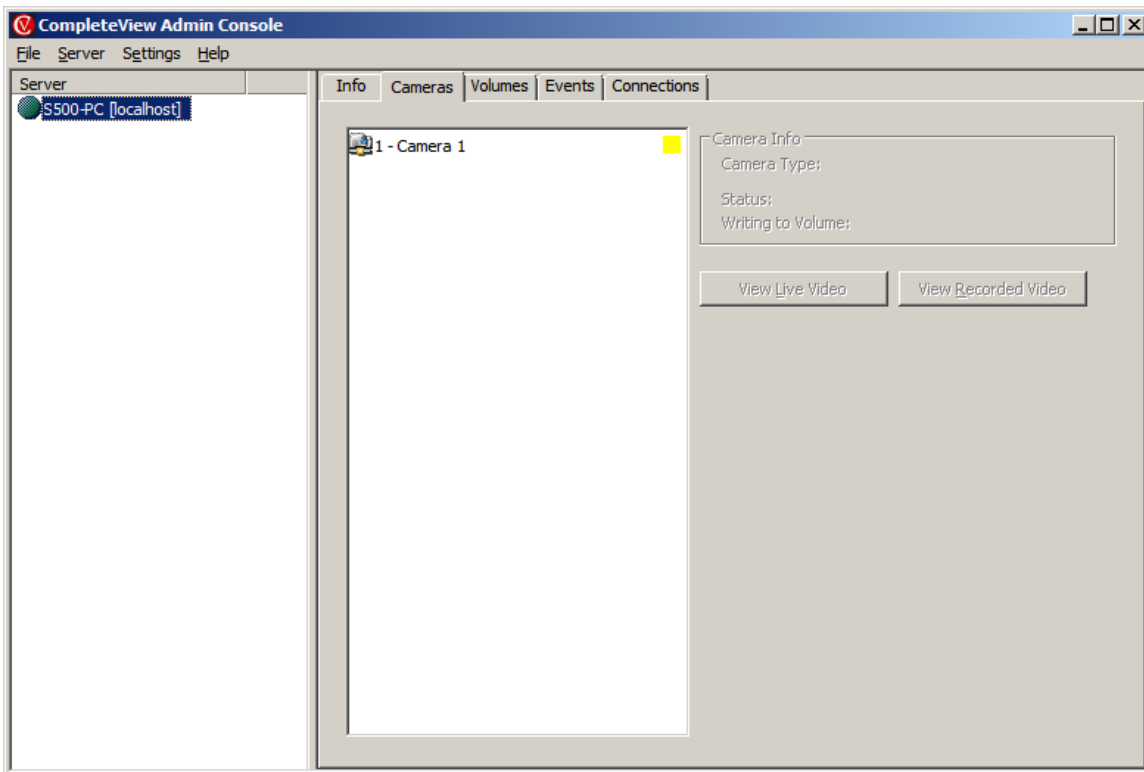
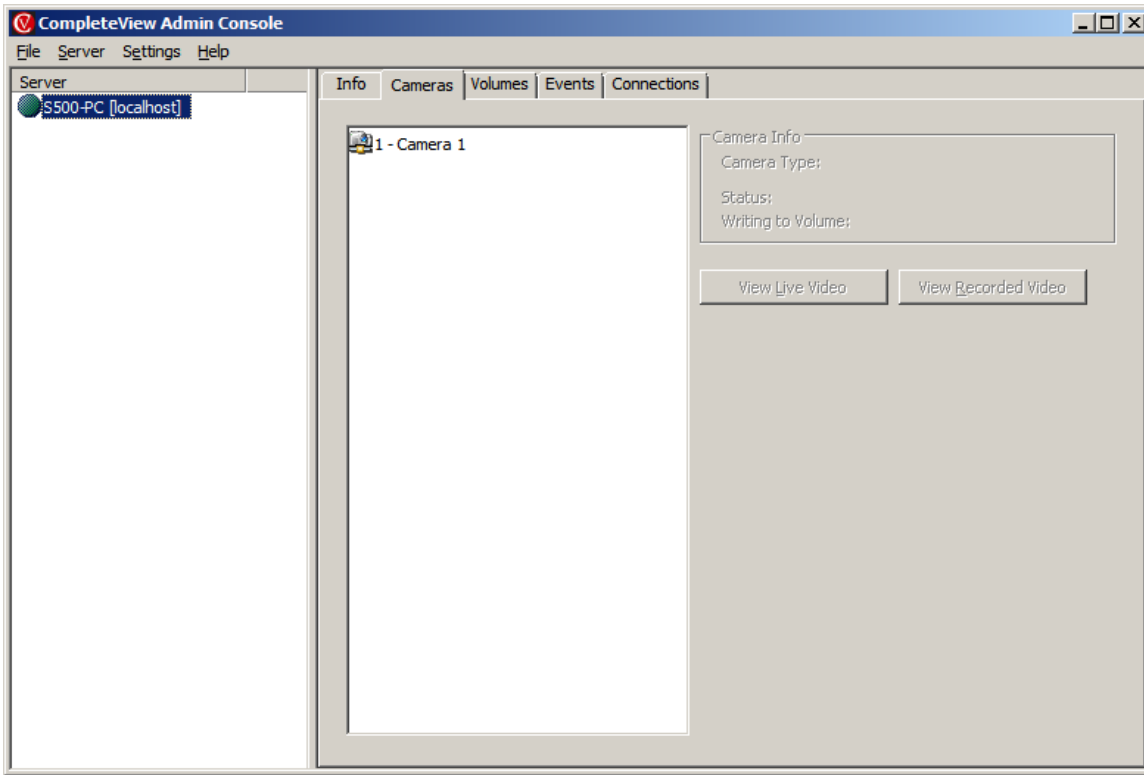
Important Notes:

If you do not enable any pre-alarm settings for the camera to record, then you will only need an alarm schedule setup. If you setup pre-alarm settings within camera, you will need to setup a pre-alarm schedule for the camera as well as an alarm schedule.

Pre-Alarm is turquoise / Alarm is yellow



4. Connect to the Admin Console and select cameras tab. Upon input activation you should see a yellow box next to the camera associated. If the box is yellow and the input is not activated, change the state to trigger when open/closed from the current setting.



Appendix A

Sealevel I/O Device Information

SEALEVEL 8207 – 16 Optically Isolated Inputs

Features

- Sixteen optically isolated inputs
- Removable screw terminals
- Powered by USB port

Specifications

Input Ports

- Turn On Current: 1mA
- Isolator Diode Drop: 1.1 VDC
- Resistor Power Max: .5 W
- Maximum Input Range: 5 – 30 VDC/VAC

Temperature Range

- Operating: 0°C – 70°C
- Storage: -50°C – 105°C

Power Requirements

- 5VDC @ 50mA

Manufacturing

All Sealevel Systems Printed Circuit boards are built to UL 94V0 rating and are 100% electrically tested. These printed circuit boards are solder mask over bare copper or solder mask over tin nickel.

SEALEVEL 8206 – 8 Optically Isolated Inputs / 8 Form C Relay Outputs**Features**

- 8 SPDT Form C relays
- Eight optically isolated inputs
- Removable screw terminals
- Powered by USB port

Specifications**Input Ports**

- Turn On Current: 1mA
- Isolator Diode Drop: 1.1 VDC
- Resistor Power Max: .5 W
- Maximum Input Range: 5 – 30 VDC/VAC

Output Relays

- Type: Bifurcated, Gold clad, silver palladium
- Contact Max Power Rating: 30 W DC / 60 VA AC
- Contact Voltage Maximum: 60 VDC/VAC
- Contact Current Maximum: 2A AC/DC RMS
- Contact Resistance, Initial: .10 Ω
- Rated Life:
 - Mechanical, Minimum: 10 Million Closures
 - Electrical, Minimum: 5 Million Closures (Full Load)
- Contact Speed:
 - Operate: .2 mS
 - Release: .1 mS
 - Bounce: .7 mS

Temperature Range

- Operating: 0°C – 70°C
- Storage: -50°C – 105°C

Power Requirements

- 5VDC @ 50mA

Manufacturing

All Sealevel Systems Printed Circuit boards are built to UL 94V0 rating and are 100% electrically tested. These printed circuit boards are solder mask over bare copper or solder mask over tin nickel.

SEALEVEL 8209 – 8 Optically Isolated Inputs / 8 Reed Relay Outputs**Features**

- 8 SPST Reed relays
- Eight optically isolated inputs
- Removable screw terminals
- Powered by USB port

Specifications**Input Ports**

- Turn On Current: 1mA
- Isolator Diode Drop: 1.1 VDC
- Resistor Power Max: .5 W
- Maximum Input Range: 5 – 30 VDC/VAC

Output Relays

- Contact Max Power Rating: 10W
- Contact Voltage Maximum: 100 VDC/VAC
- Contact Current Maximum: .5A AC/DC RMS
- Contact Resistance, Initial: .15 Ω
- Rated Life:
 - Mechanical, Minimum: 200 Million Closures
 - Electrical, Minimum: 100 Million Closures (Full Load)
- Contact Speed:
 - Operate: .5 mS
 - Release: .5 mS
 - Bounce: .5 mS

Temperature Range

- Operating: 0°C – 70°C
- Storage: -50°C – 105°C

Power Requirements

- 5VDC @ 500mA

Manufacturing

All Sealevel Systems Printed Circuit boards are built to UL 94V0 rating and are 100% electrically tested. These printed circuit boards are solder mask over bare copper or solder mask over tin nickel.

SEALEVEL Input Devices

Ports A and B are eight bit input ports connected to optically isolated input sensors. Each sensor can be used to interface a voltage input and then sense whether the voltage is on or off. Each sensor is isolated (with respect to a common ground) from every other sensor, and also isolated with respect to the host PC ground. This means that signals such as low-level AC line voltage, motor servo voltage, and control relay signals can be 'sensed', or read by the PC, without the risk of damage due to ground loops or ground faults.

Each sensor input pair has a current limiting resistor (2.7K ohm) that is used to limit the input current to the opto-isolator. The opto-isolator has two 'back-to-back' diodes internally. This allows AC or DC signals to be sensed, regardless of polarity. When the applied voltage is high enough to cause the led in the opto-isolator to turn-on, the output of the opto-isolator goes low (0 volts) and the signal is read as a low logic level (binary 0) by the PC. When the input signal is too low to turn on the opto-isolator, the output goes high and the port bit is read by the PC as a high logic level (binary 1).

The opto-isolator requires approximately 1mA to turn on. The maximum input current is 50mA. There are two things to consider when selecting the input resistor. The first is turn on voltage for the circuit to sense, and second is the maximum input voltage. Maximum input voltage must not provide too much power to the input resistor, and must also not overdrive the opto-isolator input current specification.

The following formulas apply:

$$\text{Turn on Voltage} = \text{diode drop} + (\text{turn on current}) \times (\text{resistance}) \text{ [Ex: } 1.1 + (.003) \times R \text{]}$$

$$\text{Input Current} = ((\text{input voltage}) - 1.1\text{V}) / (\text{resistor value})$$

$$\text{Maximum voltage} = 1.1 + \text{square root of } (.25(\text{resistor value}))$$

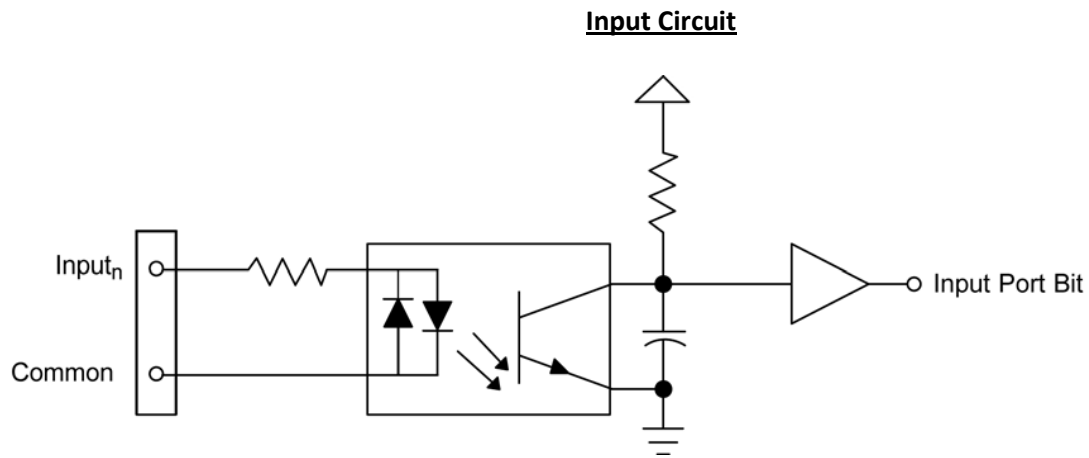
The following table shows the ranges associated with the resistor.

Input Resistor	Turn-On	Input Range	Max Input	Max Current
2.7KΩ	3.0V	5 – 30V	37V	13mA

Note: The turn-off voltage for all resistors is less than 1V.

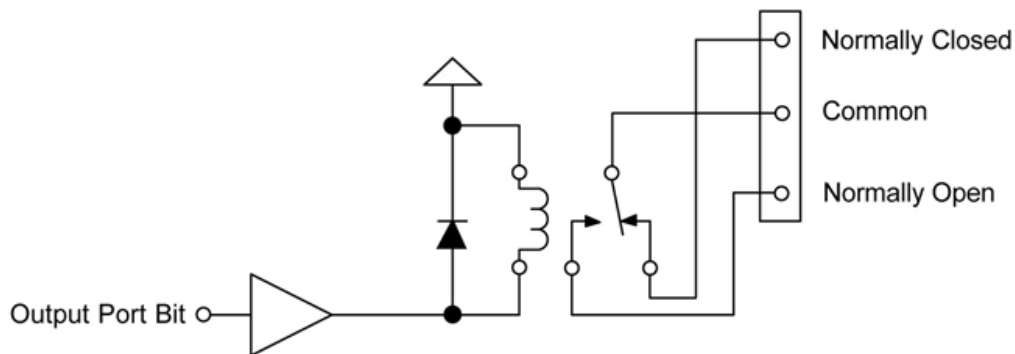
Because through hole resistors are utilized, they cannot be easily replaced. If modification is necessary, Sealevel can do this for an additional charge.

Important: The input circuits are not intended for monitoring 120-volt AC circuits. In addition to being too high a voltage for the circuits, it is dangerous to have that high a voltage on the card.



SEALEVEL Output Devices**Output Ports (Form C Relays)**

The SeaLINK PLC-16 provides 8 Form C (SPDT) Electro-mechanical relays. These relays have three connections; Normally Open (NO), Normally Closed (NC) and a Common. The relays are all de-energized at power-on. Writing a logic value of one or zero will change the state.

Form C Output Circuit**Output Ports (Reed Relays)**

Reed relays provide very high quality, long life, low power, dry contact switch closures. Reed relays are not suited for high current applications, or inductive loads. The relays are normally open, and close when energized. Writing a logic value of one or zero will change the state.

