

# SeaI/O™

## Data Acquisition Solutions

### FEATURES

- Choice of Connectivity:
  - ▶▶ Ethernet
  - ▶▶ USB
  - ▶▶ RS-485
  - ▶▶ RS-232
- Supports Industry Standard Modbus Protocol
- Five Models Offer Choice of Optically Isolated Inputs, Reed Relay Outputs, and Form C Relay Outputs
- Status Indicator LEDs for Communication, Fault, and Power
- Field Removable Terminal Block Connectors
- 9-30VDC Power Input
- Power Input via Terminal Block or DC Jack
- Daisy Chain up to 247 Modules
- Extended Temperature Available (-40°C to +85°C)
- Rugged Metal Enclosure
- Compact Size - 7.5"(L) x 5.1"(W) x 1.3"(H)
- Din Rail or Table Mount



SeaI/O™ modules provide a powerful way to add I/O to a variety of computers, controllers, and PLCs. Choose from five I/O configurations, each designed for maximum flexibility and easy field wiring. Multiple units can be daisy chained together using convenient pass-through connectors. Ordering options allow connection to the host device via Ethernet, USB, RS-485, or RS-232. For easy software integration, application programs or 3<sup>rd</sup> party software can use Sealevel's SeaMAX™ library or industry standard Modbus protocol.

SeaI/O modules are perfect for a wide variety of applications and environments including:

- ▶▶ Process Control
- ▶▶ Data Acquisition
- ▶▶ Broadcast Automation
- ▶▶ Security
- ▶▶ Facility Management

## SeaI/O - 410

16 Optically Isolated Inputs/16 Reed Relay Outputs

SeaI/O-410 modules provide 16 optically isolated inputs and 16 Reed relay outputs. Inputs can range from 5-24VDC, while the Reed relays provide long life switch closures well suited to low current devices. Inputs and outputs are grouped into four-bit segments that each share a common for easy wiring via removable 3.5mm terminal blocks.



#### INPUTS

Type: 16 non-polarized optically isolated inputs  
 Voltage Range: 5-24VDC  
 Isolation: 300V  
 Input Resistance: 6.2K Ohms in series  
 Response Time: 4 microseconds

#### OUTPUTS

Type: 16 SPST Form A Reed relays  
 Power: 10VA max.  
 Contact Voltage: 60VDC max.  
 Contact Current: 500mA max.  
 Operate Time: 0.5ms max.  
 Bounce Time: 0.5ms max.  
 Release Time: 0.2ms max.

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## SeaI/O - 420

**16 Optically Isolated Inputs/8 Form C Outputs**

The SeaI/O-420 provides 16 optically isolated inputs and 8 SPDT Form C relay outputs. Inputs can range from 5-24VDC and provide 300V isolation to ground. Each output offers normally open and normally closed contact connections via 3.5mm field removable terminal blocks.

**INPUTS**

Type: 16 non-polarized optically isolated inputs  
 Voltage Range: 5-24VDC  
 Isolation: 300V  
 Input Resistance: 6.2K Ohms in series  
 Response Time: 4 microseconds

**OUTPUTS**

Type: 8 SPDT Form C relays  
 Power: DC 30W/ AC 60 VA  
 Contact Voltage: 60VDC max.  
 Contact Current: 2A max.  
 Operate Time: 2ms max.  
 Bounce Time: 7ms max.  
 Release Time: 1ms max.

## SeaI/O - 430

**32 Optically Isolated Inputs**

SeaI/O-430 modules provide 32 optically isolated inputs with 300V external isolation and high channel-to-channel isolation. Ideal for low voltage monitoring applications, connection to real world signals is made via 3.5mm convenient removable screw terminal connectors.

**INPUTS**

Type: 32 non-polarized optically isolated inputs  
 Voltage Range: 5-24VDC  
 Isolation: 300V  
 Input Resistance: 6.2K Ohms in series  
 Response Time: 4 microseconds

## SeaI/O - 440

**32 Reed Relay Outputs**

The SeaI/O-440 provides 32 SPST Form A dry contact Reed relays. Reed relays offer long life performance and fast response time. Convenient removable 3.5mm screw terminal blocks compatible with 14-22 AWG wiring allow reliable connection to real world I/O.

**OUTPUTS**

Type: 32 SPST Form A Reed relays  
 Power: 10VA max.  
 Contact Voltage: 60VDC max.  
 Contact Current: 500mA max.  
 Operate Time: 0.5ms max.  
 Bounce Time: 0.5ms max.  
 Release Time: 0.2ms max.

## SeaI/O - 450

**16 Form C Relay Outputs**

Control a variety of low voltage, low current devices with the SeaI/O-450. The module's 16 channels of highly reliable SPDT Form C relay outputs are rated for up to 60VDC @ 2A. Each output offers normally open and normally closed contact connections via 3.5mm field removable terminal blocks.

**OUTPUTS**

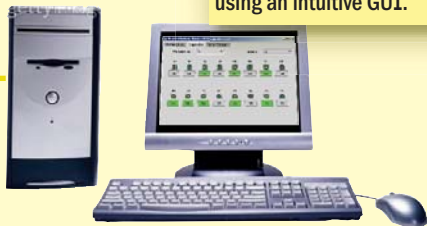
Type: 16 SPDT Form C relays  
 Power: DC 30W/ AC 60 VA  
 Contact Voltage: 60VDC max.  
 Contact Current: 2A max.  
 Operate Time: 2ms max.  
 Bounce Time: 7ms max.  
 Release Time: 1ms max.

# Selectable Interface & Scalable Expansion

SeaI/O products are a perfect solution whether your I/O is centrally located or distributed throughout your facility. Choose only a base module for low I/O count applications or a base and one or more (up to 246) expansion modules for high count or distributed I/O. Expansion modules interface via RS-485 allowing each unit to be separated by as much as 4000 feet.

## Ethernet

SeaMAX software allows remote monitoring and configuration of SeaI/O devices using an intuitive GUI.



RS-485 Up to 4000'

SeaI/O "E" modules are compatible with 10/100BaseT Ethernet and allow remote monitoring and control of I/O from anywhere on your network. Use Sealevel's SeaMAX software or industry standard Modbus/TCP for easy software installation. Expansion units connect via RS-485 allowing expansion locally or up to 4000 feet away.

## USB



SeaMAX libraries provide diagnostic capabilities to facilitate rapid application development.



SeaI/O "U" modules allow any USB port to interface your I/O. Mix and match expansion units to arrange the most efficient I/O configuration for your particular application. Sealevel's SeaMAX software library provides a user-friendly development environment. This expansion capability enables control of a distributed network with a traditional point-to-point USB host connection, something that until now was impossible.

## RS-485



Targeted for traditional plant floor automation applications, SeaI/O "M" modules connect via RS-485 and are compatible with industry standard Modbus/RTU protocol. This compatibility allows SeaI/O implementation in legacy Modbus/RTU networks and operation with a wide variety of PLCs and other controllers.

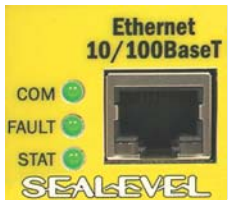



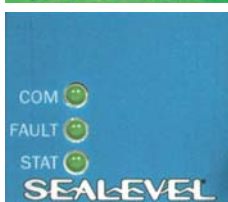
## Easy Integration

- » Address selectable via software or switch
- » Selectable RS-485 line conditioning
- » Easily daisy chain multiple units together
- » Flexible mounting options
- » Powerful software configuration tools

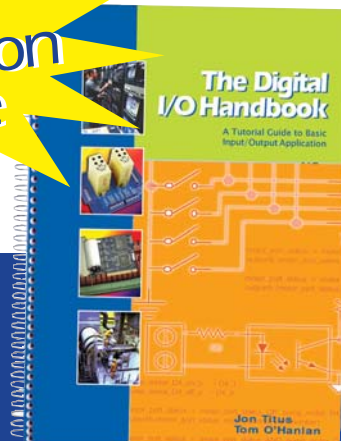


**Extended Temperature Available (-40°C to +85°C)**

# Ordering Options

	<p><b>Ethernet 10/100BaseT</b></p> <p>SeaI/O-410E - 16 Optically Isolated Inputs/16 Reed Relay Outputs ..... \$639</p> <p>SeaI/O-420E - 16 Optically Isolated Inputs/8 Form C Outputs ..... \$609</p> <p>SeaI/O-430E - 32 Optically Isolated Inputs ..... \$599</p> <p>SeaI/O-440E - 32 Reed Relay Outputs ..... \$669</p> <p>SeaI/O-450E - 16 Form C Relay Outputs ..... \$589</p>
	<p><b>USB</b></p> <p>SeaI/O-410U - 16 Optically Isolated Inputs/16 Reed Relay Outputs ..... \$509</p> <p>SeaI/O-420U - 16 Optically Isolated Inputs/8 Form C Outputs ..... \$479</p> <p>SeaI/O-430U - 32 Optically Isolated Inputs ..... \$469</p> <p>SeaI/O-440U - 32 Reed Relay Outputs ..... \$539</p> <p>SeaI/O-450U - 16 Form C Relay Outputs ..... \$459</p>
	<p><b>RS-485</b></p> <p>SeaI/O-410M - 16 Optically Isolated Inputs/16 Reed Relay Outputs ..... \$469</p> <p>SeaI/O-420M - 16 Optically Isolated Inputs/8 Form C Outputs ..... \$439</p> <p>SeaI/O-430M - 32 Optically Isolated Inputs ..... \$429</p> <p>SeaI/O-440M - 32 Reed Relay Outputs ..... \$499</p> <p>SeaI/O-450M - 16 Form C Relay Outputs ..... \$419</p>
	<p><b>RS-232</b></p> <p>SeaI/O-410S - 16 Optically Isolated Inputs/16 Reed Relay Outputs ..... \$489</p> <p>SeaI/O-420S - 16 Optically Isolated Inputs/8 Form C Outputs ..... \$459</p> <p>SeaI/O-430S - 32 Optically Isolated Inputs ..... \$449</p> <p>SeaI/O-440S - 32 Reed Relay Outputs ..... \$519</p> <p>SeaI/O-450S - 16 Form C Relay Outputs ..... \$439</p>
	<p><b>Expansion Units (Connect to Base Unit via RS-485)</b></p> <p>SeaI/O-410N - 16 Optically Isolated Inputs/16 Reed Relay Outputs ..... \$419</p> <p>SeaI/O-420N - 16 Optically Isolated Inputs/8 Form C Outputs ..... \$389</p> <p>SeaI/O-430N - 32 Optically Isolated Inputs ..... \$379</p> <p>SeaI/O-440N - 32 Reed Relay Outputs ..... \$449</p> <p>SeaI/O-450N - 16 Form C Relay Outputs ..... \$369</p>

**FREE**  
Application  
Guide



## Digital I/O Handbook

Order today and receive a free copy of Sealevel's "Digital I/O Handbook". Coauthored by renowned technical author Jon Titus and Sealevel President and CEO, Tom O'Hanlan, this helpful tutorial will guide you through the basics of input/output circuitry, wiring, and programming techniques.

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