



# USB to 16 A/D, 2 D/A, 8 Open-Collector Outputs, 8 Isolated Inputs Multifunction Module

**Part:** 470U | **Model:** Seal/O-470U

Control and monitor analog and digital interfaces via any USB connection. Designed using the Maxim MAX197 successive approximation-type A/D chip, the Seal/O-470U provides eight differential or 16 single-ended 12-bit inputs and two 12-bit D/A output channels. The A/D inputs are software selectable for 0-5V, 0-10V, +/-5V, and +/-10V ranges and each channel can be configured via hardware for measuring 4-20mA current loop. The two 12-bit D/A channels are jumper selectable for 0-5V and 0-10V output ranges.

Additionally, the Seal/O-470U module provides eight optically isolated inputs rated for 5-30VDC and feature 300V external isolation, while eight open-collector outputs can sink up to 580mA – ideal for switching 24V devices commonly found in industrial environments. Perfect for a variety of data acquisition/control and test & measurement applications, the Seal/O-470U includes removable screw terminals, which simplify field-wiring connections. The Seal/O-470U is powered from your 9-30VDC source, or select from a variety of Sealevel power supply options.

Communicate with the Seal/O-470U using industry-standard Modbus RTU protocol or use the Sealevel SeaMAX API software libraries from your application program. Sealevel's SeaMAX software drivers and utilities make installation and operation easy using Microsoft Windows and Linux operating systems.

Expand your I/O network with Seal/O N-series products. Seal/O modules are available with Reed and Form C relays, optically isolated inputs, TTL interfaces, A/D and D/A functionality. Up to 246 additional expansion modules can be added using convenient pass-through connectors.

The Seal/O-470U integrates Sealevel's SeaLATCH locking USB port, which is fully compatible with standard USB cables. When used with the included USB cable with a SealLATCH USB type B connector, the metal thumbscrew provides a secure connection to the device and prevents accidental cable disconnection.

Get a jump start on your digital I/O development with The Digital I/O Handbook that will provide helpful information that you will use again and again. Check out Chapter 1 for an overview of logic principles.

## Features & Specifications

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#### Features

- 8 differential or 16 single-ended 12-bit inputs
- Two 12-bit D/A output channels
- 8 optically isolated inputs
- 8 open-collector outputs
- Removable screw terminals simplify field wiring
- Input power via terminal block or modular connector
- Sealevel's SeaLATCH locking USB port provides secure connection with SeaLATCH USB cables via metal thumbscrews
- DIN rail or table mount
- Sealevel SeaMAX software supports Microsoft Windows and Linux operating systems
- Includes 6' USB type A to SeaLATCH USB type B device cable (Item# CA356)

#### Specifications

<b>A/D Chip</b>	Maxim MAX197
<b>A/D Inputs</b>	8 Differential or 16 Single-Ended
<b>A/D Range</b>	0-5V, 0-10V, +/-5V, +/-10V
<b>A/D Resolution</b>	12-bits
<b>Analog I/O</b>	A/D Inputs, D/A Outputs
<b>Family</b>	Seal/O
<b>D/A Range</b>	0-5V, 0-10V
<b>D/A Resolution</b>	12-bits
<b>Digital I/O</b>	Isolated Inputs, Open-Collector Outputs
<b>Dimensions</b>	7.5 (L) x 5.1 (W) x 1.3 (H)
<b>Extended Temperature</b>	Call for Options
<b>Humidity Range</b>	10 – 90% Relative Humidity, Non-Condensing
<b>Input Isolation</b>	300V
<b>Input Range</b>	5-30 VDC
<b>Host Interface(s)</b>	USB
<b>Number of Inputs/Outputs</b>	8 Inputs, 8 Outputs
<b>Operating Temperature</b>	0°C to 70°C (32°F to 158°F)
<b>Output Dissipation</b>	Max. 500mA (single), Max. 580mA (all)
<b>Output Type</b>	Open-Collector
<b>Output Voltage</b>	Max. 30V
<b># of Ports</b>	16/2/8/8
<b>Power Requirement</b>	9-30 VDC @ 1.8W
<b>RoHS Compliant</b>	Yes
<b>Storage Temperature</b>	-50°C to 105°C (-58°F to 221°F)
<b>USB Specification</b>	1.1 Compliant, 2.0 Compatible