

SealISO™ USB Isolator

User Manual | ISO-1 and ISO-1R



Item# ISO-1



Item# ISO-1R

SEALEVEL®

Contents

CONTENTS..... 2

INTRODUCTION 3

BEFORE YOU GET STARTED 4

SPECIFICATIONS..... 7

APPENDIX A – DRAWINGS²..... 8

APPENDIX B – HOW TO GET ASSISTANCE..... 10

APPENDIX C – COMPLIANCE NOTICES 11

WARRANTY..... 12

Introduction

The SealISO USB Isolator is a device that provides galvanic separation between USB devices and host control systems. It is powered from the host system and allows energy transfer over the isolation barrier to the slave device. The Isolator is a USB 2.0 compatible device connecting with the host over a high-speed link and featuring full speed (12 Mbit/s) connection to the isolated slave device.

Model ISO-1 is a standard version enclosed in an ABS plastic case dedicated mainly for industrial use. Model ISO-1R is a custom ruggedized version featuring cable “bump” design and sealed TPE overmold for environmental protection in medical applications.

Features

- Medical grade 4000Vac isolation, data, and power
- Meets 60601-1 3rd Edition requirements for 1x MOPP at working voltage up to 250Vac
- Meets 60601-1 3rd Edition requirements for 2x MOPP at working voltage up to 42.4Vac
- High retention connectors
- USB bus powered
- High speed host port
- ¹Full speed device port
- Energy transfer with isolation
- 300mA minimum output current (with host port capable of 500mA)
- Up to 1.1A output current from high-power host port
- Tested for compatibility with USB 3.0
- Overload and short circuit protection
- No software required – appears in the system as a 1-port hub

¹ Low speed only devices such as keyboards and mice must be connected through an intervening USB hub.

Before You Get Started

Advisory Conventions



Warning

The highest level of importance used to stress a condition where damage could result to the product, or the user could suffer serious injury.



Important

The middle level of importance used to highlight information that might not seem obvious or a situation that could cause the product to fail.



Note

The lowest level of importance used to provide background information, additional tips, or other non-critical facts that will not affect the use of the product.

Important Safety Instructions

SAVE THIS MANUAL— It contains important safety and operating instructions for the installing and using the SealSO USB Isolator.



Prior to beginning the installation, carefully read, understand, and follow all related safety guidelines and documentation. This manual includes warnings, recommendations, and safety precautions that must be observed.

- Carefully follow all the installation instructions later in this manual.
- There are no user-serviceable parts in the SealSO USB Isolator. Do not disassemble.
- Contact the manufacturer if service or repair is required.
- Do not operate the system if it has visible damage. Contact the manufacturer for a replacement.

What's Included

ISO-1

The SealISO ISO-1 USB Isolator is shipped with the following items. If any of these items are missing or damaged, please contact Sealevel for replacement.

- SealISO USB Isolator (model # ISO-1)



- USB cable extension (CA-536)



- USB A-B cable 1m (CA-539)



Installation Instructions (ISO-1)

- Connect B-type USB connector on the isolator to the host computer via the included A-B type 1m long USB cable CA-539
- Connect CA-536 cable to the A-type female USB connector on the isolator
- Connect your desired USB device to the A-type female end of the CA-536 cable
- Host computer should detect a new device and start enumeration
- After enumeration completes (and appropriate device drivers are loaded, if required) your USB device is ready to use

ISO-1R

The SealISO ISO-1R Ruggedized Isolator is shipped as an overmolded cable with the isolation electronics contained in a “bump” in the cable.



Installation Instructions (ISO-1R)

- Connect A-type male USB connector of the isolator to the host computer.
- Connect your desired USB device to the A-type female connector of the isolator
- Host computer should detect a new device and start enumeration
- After enumeration completes (and appropriate device drivers are loaded, if required) your USB device is ready to use

Specifications

Physical Dimensions

Length	4.0"
Width	2.0"
Height	1.2"



For CAD drawing with dimensions, see [Appendix A](#)

Power Consumption

Input	5VDC	5VDC
Output	(host USB port)	Current limited by host port capability (up to 1.1A)

Environmental Specifications

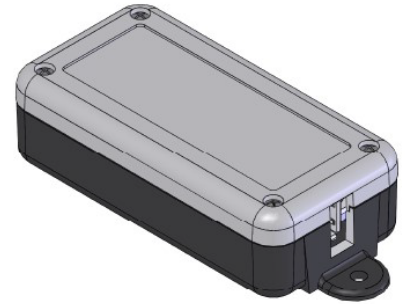
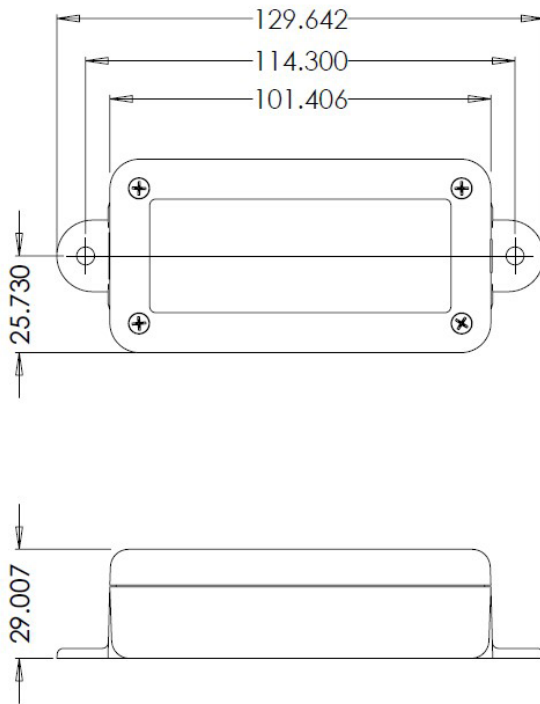
Specification	Operating	Storage
Temperature Range	0° to 50° C (32° to 122° F)	-20° to 70° C (-4° to 158° F)
Humidity Range	10 to 90% R.H. Non-Condensing	10 to 90% R.H. Non-Condensing

Manufacturing

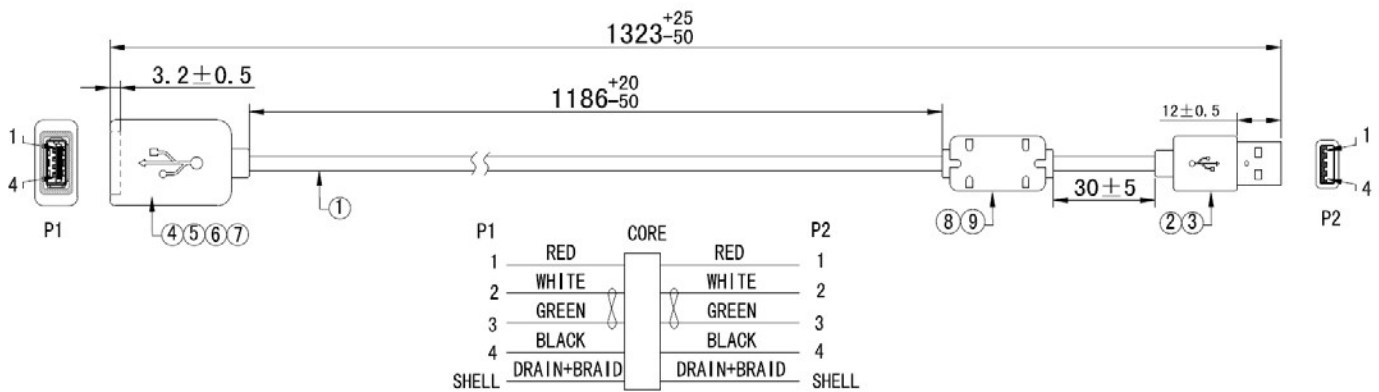
All Sealevel Systems Printed Circuit boards are built to UL 94V0 rating and are 100% electrically tested. These printed circuit boards are solder mask over bare copper or solder mask over tin nickel.

Appendix A – Drawings²

ISO-1

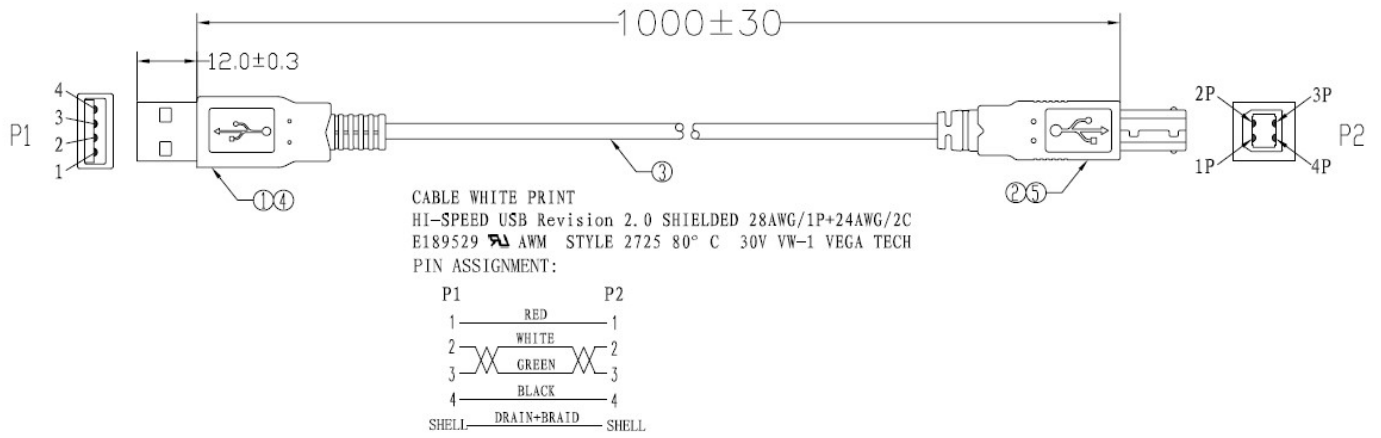


CA-536

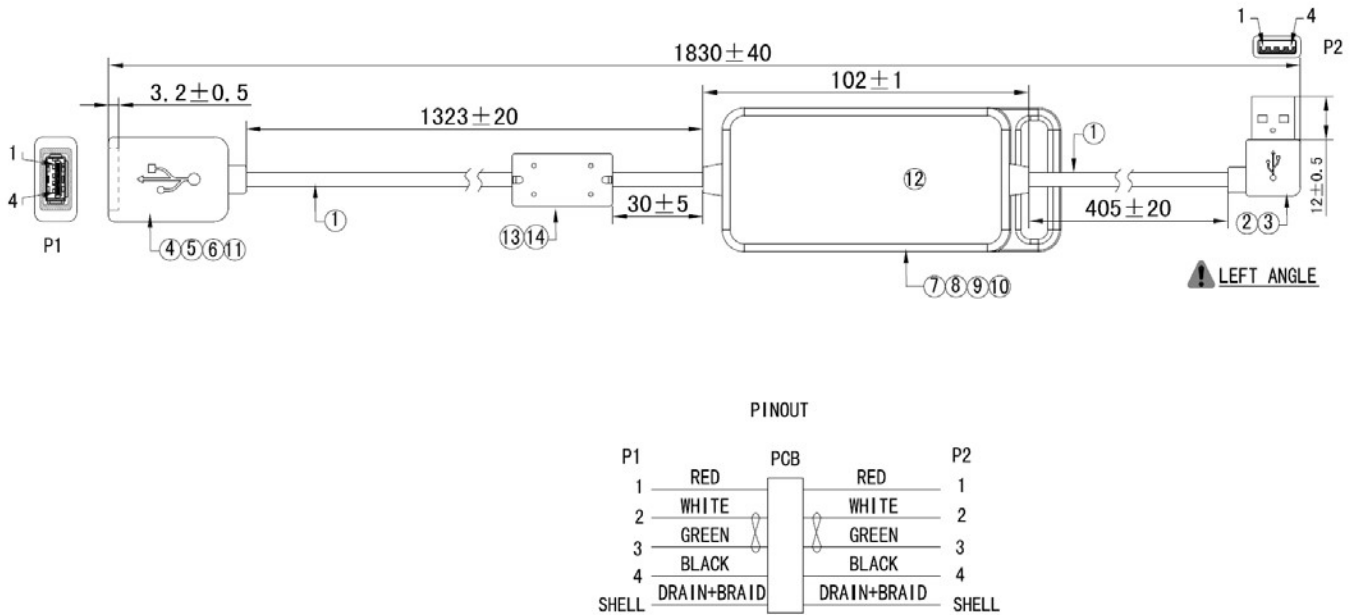


¹ All dimensions in millimeters

CA-539



ISO-1R



Appendix B – How To Get Assistance

When calling for technical assistance, please have your user manual and current adapter settings. If possible, please have the adapter installed in a computer ready to run diagnostics.

Sealevel Systems provides an FAQ section on its web site. Please refer to this to answer many common questions. This section can be found at <http://www.sealevel.com/faq.asp>.

Sealevel Systems maintains a Home page on the Internet. Our home page address is www.sealevel.com. The latest software updates, and newest manuals are available via our FTP site that can be accessed from our home page.

Technical support is available Monday to Friday from 8:00 A.M. to 5:00 P.M. Eastern time. Technical support can be reached at (864) 843-4343.

RETURN AUTHORIZATION MUST BE OBTAINED FROM SEALEVEL SYSTEMS BEFORE RETURNED MERCHANDISE WILL BE ACCEPTED. AUTHORIZATION CAN BE OBTAINED BY CALLING SEALEVEL

Appendix C – Compliance Notices

Federal Communications Commission (FCC) Statement



This equipment has been tested and found to comply with the limits for Class A digital device, pursuant to Part 15 Subpart B / ICES 003 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in such case the user will be required to correct the interference at the users expense.

EMC Directive Statement



Products bearing the CE Label fulfill the requirements of the EMC directive (2004/108/EC) and RoHS directive (2011/65/EU). To obey these directives, the following European standards must be met:

- **EN55022 Class A** - "Limits and methods of measurement of radio interference characteristics of information technology equipment"
- **EN55024** – "Information technology equipment Immunity characteristics Limits and methods of measurement".
- UL Recognized in accordance with 60601-1 3rd Ed. (E474084)



This is a Class A Product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures to prevent or correct the interference.



Always use the cabling provided with this product if possible. If no cable is provided or if an alternate cable is required, use high quality shielded cabling to maintain compliance with FCC/EMC directives.

Warranty

Sealevel's commitment to providing the best I/O solutions is reflected in the Lifetime Warranty that is standard on all Sealevel manufactured I/O products. We are able to offer this warranty due to our control of manufacturing quality and the historically high reliability of our products in the field. Sealevel products are designed and manufactured at its Liberty, South Carolina facility, allowing direct control over product development, production, burn-in and testing. Sealevel achieved ISO-9001:2015 certification in 2018.

Warranty Policy

Sealevel Systems, Inc. (hereafter "Sealevel") warrants that the Product shall conform to and perform in accordance with published technical specifications and shall be free of defects in materials and workmanship for the warranty period. In the event of failure, Sealevel will repair or replace the product at Sealevel's sole discretion. Failures resulting from misapplication or misuse of the Product, failure to adhere to any specifications or instructions, or failure resulting from neglect, abuse, accidents, or acts of nature are not covered under this warranty.

Warranty service may be obtained by delivering the Product to Sealevel and providing proof of purchase. Customer agrees to ensure the Product or assume the risk of loss or damage in transit, to prepay shipping charges to Sealevel, and to use the original shipping container or equivalent. Warranty is valid only for original purchaser and is not transferable.

This warranty applies to Sealevel manufactured Product. Product purchased through Sealevel but manufactured by a third party will retain the original manufacturer's warranty.

Non-Warranty Repair/Retest

Products returned due to damage or misuse and Products retested with no problem found are subject to repair/retest charges. A purchase order or credit card number and authorization must be provided in order to obtain an RMA (Return Merchandise Authorization) number prior to returning Product.

How to obtain an RMA (Return Merchandise Authorization)

If you need to return a product for warranty or non-warranty repair, you must first obtain an RMA number. Please contact Sealevel Systems, Inc. Technical Support for assistance:

Available	Monday – Friday, 8:00 AM to 5:00 PM EST
Phone	864-843-4343
Email	support@sealevel.com

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