

RAD-IO2-DIO Digital I/O Module

12 Digital/Analog Inputs and 8 Digital Outputs

Rugged, Isolated, and Programmable

The RAD-IO2 Digital Input and Output (DIO) module is a ruggedized, high-performance solution for data acquisition and control, designed for seamless integration with your bench or your data logging fleet. The RAD-IO2 family provides an isolated analog, digital, or temperature interfaces via a USB port or CAN network, ensuring signal integrity in demanding environments.

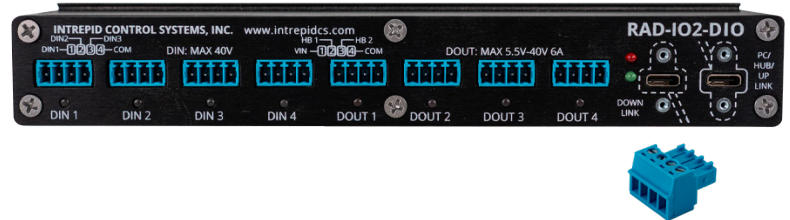
The RAD-IO2 DIO simplifies testing with 20 digital I/O channels in one compact, rugged module capable of operating from -40°C to 85°C . It offers 2.5 kV isolation for PC protection and high-speed sampling (up to 1000 sps aggregate) for precision data acquisition.

You can enjoy flexible control with programmable I/O and the power to drive loads directly with high-current output of up to 6A per channel. Additionally, it supports cross-platform development with open-source APIs for Python, C and C++.

Key Features

- **Isolated Banks:** Includes 8 isolated banks with one common ground per bank.
- **Versatile Inputs:** The first 4 banks feature twelve 0-40V 12-bit ADC inputs (3 per bank) that can be configured as analog or digital with programmable thresholds.
- **Flexible Outputs:** The remaining 4 banks provide 8 total digital outputs configurable as separate channels or H-Bridge outputs.
- **High-Current Drive:** Each output can pass 5.5V to 40V at 6A (user-supplied).
- **Programmable PWM:** Supports PWM programmable output for fine-tuned control.
- **Standalone PC Connection:** Connect via USB for immediate standalone setup.
- **Intrepid Device Pairing:** Easily paired with Intrepid devices with USB Host support.

Note: You can easily pair these modules with other Intrepid products that include a USB port.



- **Standardized Connectivity:** Utilizes TBP03P3-350-04E 4-pin plug-in terminal blocks for secure and easy wiring.
- **CAN/CAN FD Networking:** Use the RAD-IO2-CANHUB to power the module and connect to a CAN or CAN FD network.
- **Daisy-Chaining:** Connect multiple units to a PC or RAD-IO2-CANHUB to scale channel counts. (Note: Daisy-chained RAD-IO2 devices require use of a powered USB hub.)
- **Dimensions:** 208.8 mm x 80.0 mm x 31.9 mm.
- **Isolation:** 2.5 kV channel-to-channel and channel-to-USB.

The RAD-IO2 Ecosystem: Modular Pairing

The RAD-IO2-DIO is part of a larger family of modules designed to be daisy-chained to meet your specific channel requirements. According to official documentation, you can pair this device with:

- **RAD-IO2-TC:** 8 isolated channels for K-type thermocouples.
- **RAD-IO2-AIN:** 8 isolated banks of high-performance analog inputs.
- **RAD-IO2-AOUT:** 8 isolated banks for analog output/sensor simulation.
- **RAD-IO2-PWRRLY:** 8 isolated SPDT electro-mechanical relays (5A @ 250VAC).
- **RAD-IO2-CANFD-HUB:** Powers the modules and connects any RAD-IO2 device to any CAN/FD network.



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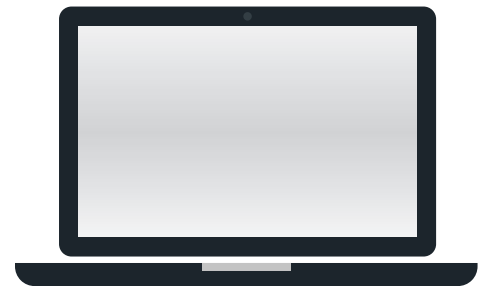
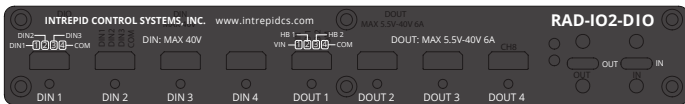
1850 Research Drive
Troy, MI 48083 USA
Ph: +1 (586) 731-7950

Product Specifications:

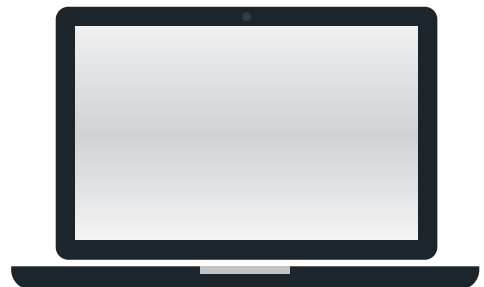
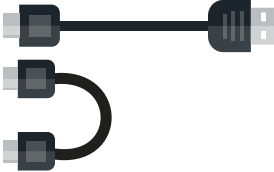
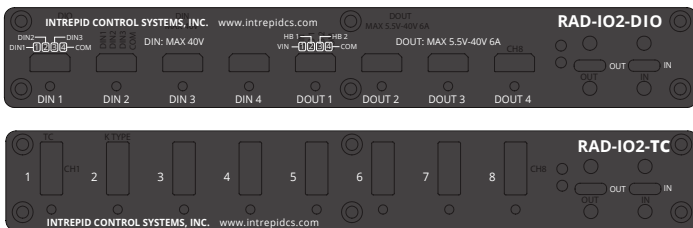
- **Inputs:** 12 Digital/Analog (0-40V, 12bit ADC)
- **Outputs:** 8 Digital (Configurable as separate channels or H-Bridge)
- **Output Current:** Up to 6A per channel (user supplied)
- **Isolation:** 2.5 kV channel-to-channel and channel-to-USB
- **Operating Temperature:** -40°C to 85°C
- **Dimensions:** (L x W x H): 208.8 mm x 80.0 mm x 31.9 mm (8.22" x 3.15" x 1.26")
- **Open Source APIs:** Python, C and C++
- **OS Support:** Windows, Linux and MacOS

Possible Configurations:

Single RAD-IO2 unit to PC:



Multiple RAD-IO2 units to PC:



Note: When daisy chaining RAD-IO2 devices connected, a powered USB hub is required, or the RAD-IO2-CANHUB.

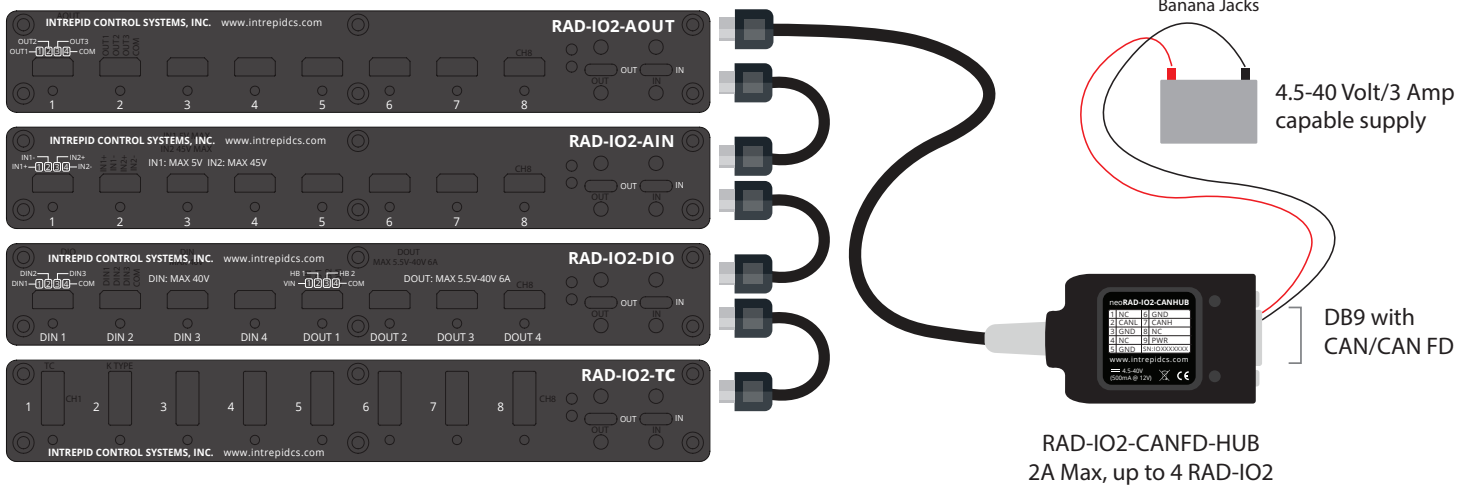


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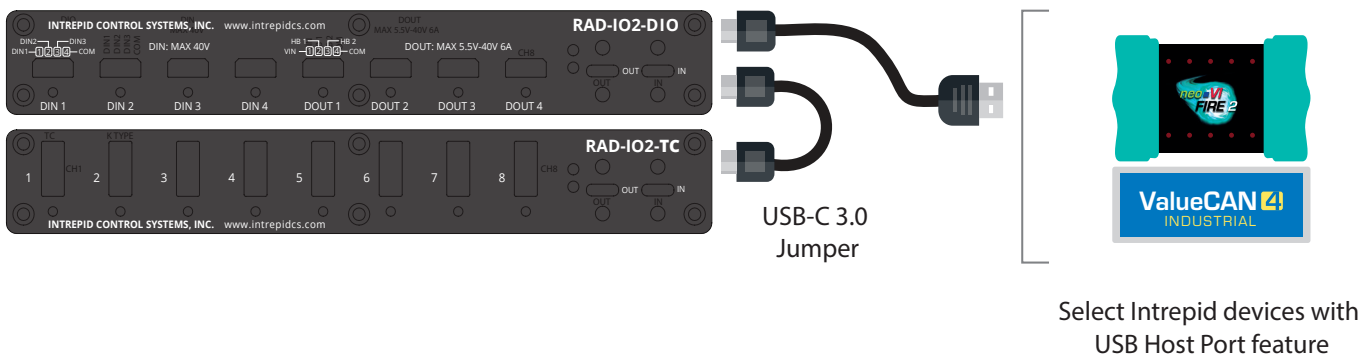
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RAD-IO2-DIO Digital I/O

Single or multiple RAD-IO2 units to RAD-IO2-CANFD-HUB:



Single or multiple RAD-IO2 units to Intrepid Devices:



Ordering Information

Part Number	Description
RAD-IO2-DIO	12 Digital/Analog inputs and 8 Digital Outputs

Specifications subject to change; please contact Intrepid for the latest information. All trademarks are the property of their respective owners.



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Troy, MI 48083 USA
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