



ISOLATED I/O CONNECTIVITY FOR FACTORY AUTOMATION

For any application where electrical spikes or surges may cause disruption, optical isolation helps protect personnel and equipment, and helps maintain reliable communications. It is especially applicable in industrial environments where intermittent, heavy electrical loads can cause havoc with line voltage.

Introduction

In a modern factory (especially in a smart factory) more and more devices are interconnected. That is what the IoT is all about; everything is talking with everything. Problems can arise, though, if communication lines get overwhelmed by non-signal spikes or pulses that come from dirty power, or heavy motor startups, ESDs, and occasionally even RF transmissions. Such transients can cause minor data losses, to equipment

damage, all the way up to controller crashes and resulting system failures. But these problems can be forestalled by designs that incorporate optical isolation that keeps power circuits discreet from communications lines. Advantech developed [iDoor opto-isolation modules](#) for exactly these reasons. Conveniently installed in [modular fanless embedded computer ARK-2230](#), these [iDoor I/O modules](#) protect the system from

excessive current, and give everyone peace of mind.

Application Requirements

Customers need to connect various sensors and devices, so I/O expansion capacity as well as flexibility is important. As increasing numbers of devices and machines work together in complex relationships, opportunities for signal disruption and system breakdown multiply. Electronic equipment is sometimes subjected to power surges that can be crippling, or even lethal, to the equipment. Resulting breakdowns can be very costly in terms of replacement, manpower, and lost production.

System Solution

Advantech's new **iDoor Technology** offers a modular approach to adding flexible functionality to a wide range of devices. **iDoor Technology** gives System Integrators the flexibility to choose the functions they need without paying for functions they will never use. Standardized components and interfaces allow the integrator to leverage current state-of-the-art technologies as well as future proofing against emerging IPC trends.

Advantech **modular fanless embedded computer ARK-2230** has a slot for **iDoor** integration that can take any of several **I/O modules**, all of which are verified and certified. A number of Advantech **iDoor modules** provide opto-isolation that blocks high voltages and voltage transients, so that a surge on one part of the system will not disrupt or destroy sensitive electronics elsewhere. RS232/422/485, CANBus, DB9, DB37,

or other general digital I/O modules, all featuring optical isolation, are conveniently interchangeable.

Benefits

- Reduced costs for I/O expansion
- Reliable data communications, stable systems
- Ensured product lifespan
- Better performance and increased factory capacity
- Perfect for IoT apps: efficient development of intelligent systems and iFactory automation

For more information on Advantech's Embedded Computers check out **Buy.Advantech.com/Go/Embedded-Computers** or call **877-825-4146**

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