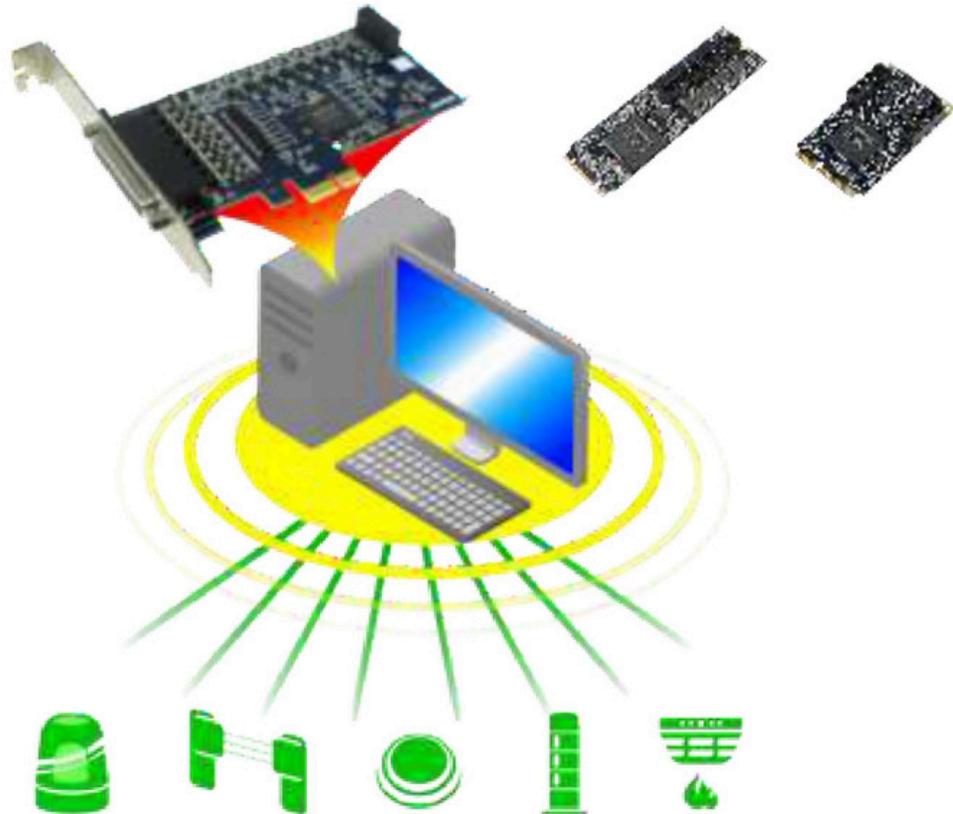




# Digital Input/Output (DIO) Solution Introduction

Product Division

# Overall Introduction



*Industrial Isolated Digital I/O Solutions*

The **SUNIX DIO Series** is engineered for **industrial-grade digital input/output (DI/DO) applications**, offering multiple form factors and configuration options to meet the integration needs of embedded systems, factory automation, and smart equipment. Available in **PCIe, mini PCIe, and M.2** interfaces, SUNIX DIO modules enable flexible deployment across a wide range of smart control platforms and field I/O scenarios.

#### Ideal for Applications Including:

-  Factory automation and machine control
-  Robotic systems and smart conveyors
-  Packaging and inspection equipment
-  Material handling, AGV/AMR docking station

**SUNIX DIO Series** delivers stable, responsive, and configurable digital I/O solutions for the most demanding automation applications. Whether you're building new equipment or retrofitting existing systems, SUNIX offers the **reliability and flexibility** your project needs.

# Product Features



## Isolation Protection

Opto-isolated inputs and protected outputs ensure safety and signal reliability in harsh environments — enabling **seamless deployment into smart edge PCs for industrial automation.**



## Easy Integration

With ready-to-use Windows/Linux drivers and SDKs, SUNIX DIO modules allow **fast integration into edge devices**, accelerating your **smart manufacturing transformation.**



## Cost-Effective

Industrial-grade reliability at an affordable price. SUNIX DIO lets you **build smart edge computing systems without high upfront investment**, perfect for OEMs and scalable projects.



## Flexible Form Factors

Offered in PCIe, mini PCIe, and M.2, SUNIX DIO modules **fit directly into compact edge PCs**, making it easy to **upgrade traditional systems into intelligent edge appliances.**

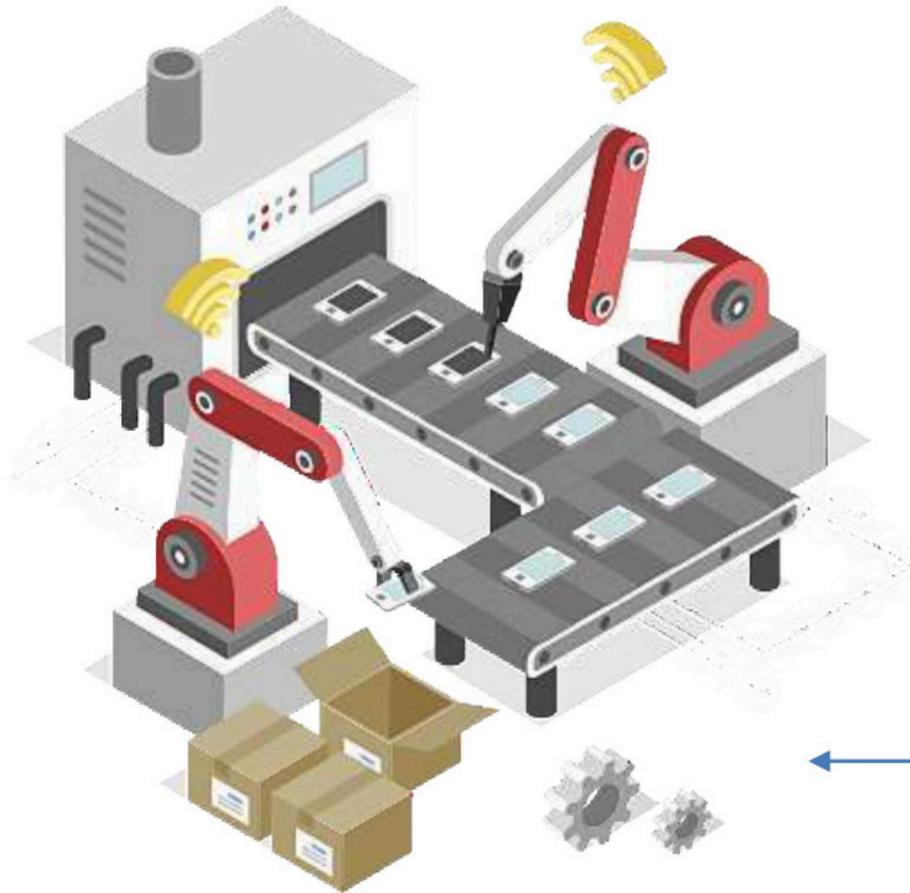
# Feature Comparison

Features	 SUNIX	Adxxxxxxx	ADXXXX	ICXXXX
<b>Industrial Temp. Range</b>	✓ -20 to +70 °C	0 to +60 °C	0 to +60 °C	0 to +60 °C
<b>Isolation Voltage</b>	✓ 2500 VDC Full protection across all models / DI and DO port	✓ 2500 VDC	✓ 2500 VDC	⚠ 2000 VDC
<b>Compact Form Factor</b>	✓ Full range: M.2 & Mini PCIe available	PCIe only	PCIe only	PCIe only
<b>DI Input Voltage Range</b>	✓ Up to 50 VDC	30 VDC max.	24 VDC max.	24 VDC max.
<b>DO Output Type</b>	NPN	NPN or PNP	NPN or PNP	✓ PhotoMOS Relay
<b>Output Current per Channel</b>	✓ 500 mA — Highest in class	Medium: 350 mA	Low: 130 mA	Low: 130 mA
<b>Embedded System Friendly</b>	✓ IPC series for embedded (M.2/Mini PCIe)	✗	✗	✗
<b>Serial and DIO Combo</b>	✓ SDC4880B both COM and DIO on a card, saving PCIe slot space	✗	✗	✗

# Product Spec Overview

Models	SDC4880B	SDC0880I	SDC0FF0I	IPC-M4884I / IPC-M4443I	IPC-C4884I / IPC-C4443I
<b>Controller</b>	SUNIX UART Digital-I/O Controller				
<b>PCIe Bus</b>	PCI Express 2.0 x 1(single lane)				
<b>DI</b>	<b>Dry Contact</b> (Logic 0: Open; Logic 1: Close )/ <b>Wet Contact</b> (Logic 0: 0 to 3VDC ; Logic 1: 10 to 50VDC)				
<b>DO</b>	3.5 to 40 VDC with 500mA per Channel				
<b>Frequency</b>	Input Range 2KHz with Isolation				
<b>Form Factor</b>	PCIe x1 Half High			M.2 M Key 2280 Type	Mini-PCIe Full Size
<b>PCB Dimensions</b>	146 x 68.5 mm	120 x 68.5 mm	84.44 x 68.5 mm	22 x 80 mm	30 x50 mm
<b>Channel</b>	4S/8DI/8DO	8DI/8DO	16DI/16DO	8DI/8DO ; 4DI/4DO	8DI/8DO ; 4DI/4DO
<b>Isolation</b>	2500 VDC				
<b>ESD</b>	±15KV Air / ±8KV Contact				
<b>Green Product</b>	RoHS, WEEE				
<b>Regulatory Approvals</b>	CE / FCC / VCCI / BSMI				
<b>Operation Temperature</b>	-20 to 70°C (-4 to 158°F)				
<b>Operation Humidity</b>	5~ 95% non-condensing				
<b>Storage Temperature</b>	-20 to 85°C (-4 to 185°F)				
<b>Drivers</b>	Win 10/11 & Linux Kernel 5.x/6.x				
<b>SDK</b>	Library: DLL for Windows supporting C, C++ sample code and Linux also available				

# Digital I/O Devices in Industrial Automation



Photoelectric Sensor



DI

Solenoid valve control cylinder



DI

Push button (Start / Stop)

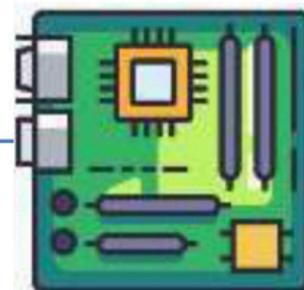


DO

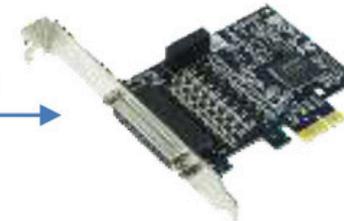
Warning light (red, yellow, green)



DO



PCIe



Model	Channels
SDC4880B	8DI / 8DO / 4S
SDC0880I	8DI / 8DO
SDC0FF0I	16DI / 16DO
IPC-M4443I	4DI / 4DO
IPC-M4884I	8DI / 8DO
IPC-C4443I	4DI / 4DO
IPC-C4884I	8DI / 8DO

# Digital I/O in Medical Equipment

Foot Switches / Pedals



DI

Safety Interlock Switches



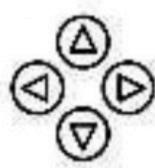
DI

Lid/Door Sensors



DI

User Panel Buttons



DI

Warning Lights



DO

Alarm Sirens



DO

Locks

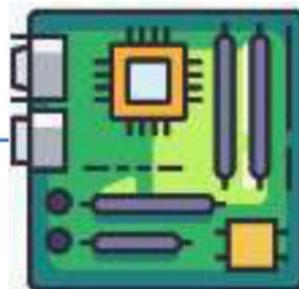


DO

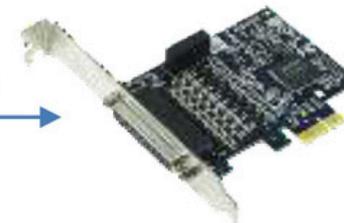
Relay Control



DO

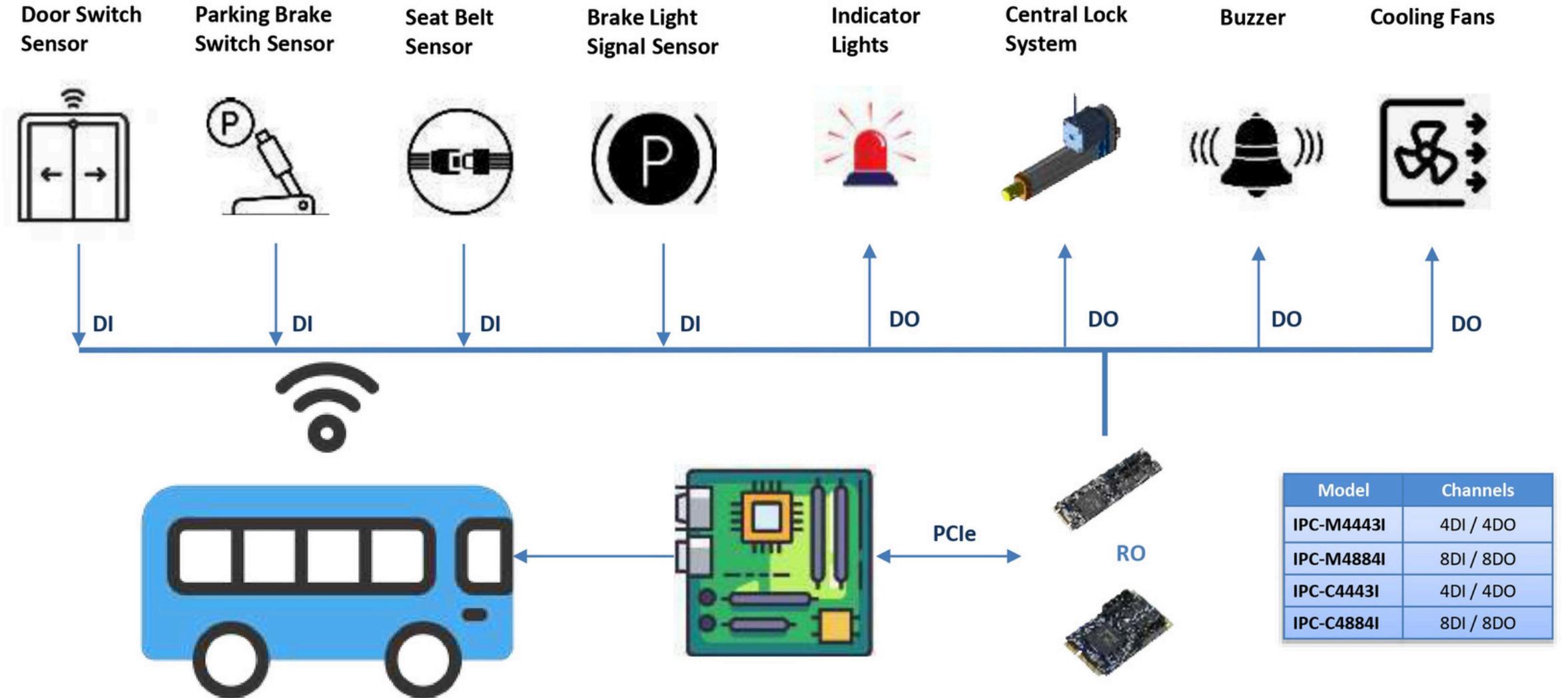


PCIe



Model	Channels
SDC4880B	8DI / 8DO /4S
SDC0880I	8DI / 8DO
SDC0FF0I	16DI / 16DO
IPC-M4443I	4DI / 4DO
IPC-M4884I	8DI / 8DO
IPC-C4443I	4DI / 4DO
IPC-C4884I	8DI / 8DO

# Digital I/O Devices in Smart Automotive



# Digital I/O Devices in Building Automation

Door/Window Sensors



DI

Motion Detectors



DI

Smoke/Fire Alarms



DI

Water Leak Sensors



DI

Lighting



DO

Motorized Curtains



DO

Security Alarms

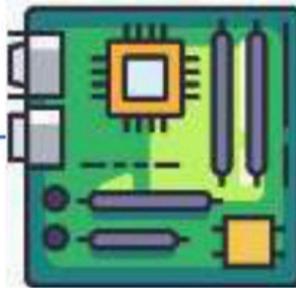


DO

Ventilation Controls



DO



PCIe

RO



Model	Channels
IPC-M4443I	4DI / 4DO
IPC-M4884I	8DI / 8DO
IPC-C4443I	4DI / 4DO
IPC-C4884I	8DI / 8DO

# Product selection guide

Model	Form Factor	DIO Channels	Serial Ports	Interface	Notes
<b>SDC0880I</b>	PCIe Half-Size	8DI / 8DO	–	PCIe x1	Standard low-port count use
<b>SDC0FF0I</b>	PCIe Half-Size	16DI / 16DO	–	PCIe x1	High-density I/O use
<b>SDC4880B</b>	PCIe Half-Size	8DI / 8DO	4 Ports	PCIe x1	DIO + Serial COM Combo use
<b>IPC-M4443I</b>	M.2 Module	4DI / 4DO	–	M.2 B-M Key	Perfect for with interface and DIO ports embedded applications flexibility. Embedded Systems( M.2 ideal for small, thin devices , miniPCIe for Older IPCs)
<b>IPC-M4884I</b>	M.2 Module	8DI / 8DO	–	M.2 B-M Key	
<b>IPC-C4443I</b>	miniPCIe Module	4DI / 4DO	–	miniPCIe	
<b>IPC-C4884I</b>	miniPCIe Module	8DI / 8DO	–	miniPCIe	

# Why SUNIX

At SUNIX, **our vision is to be the world's No.1 peripheral provider**, delivering cutting-edge connectivity solutions that power businesses across industries. With 4 decades of expertise, we ensure **seamless integration, superior performance, and future-proof technology** for automation, retail, healthcare, and industrial applications.

## What Sets SUNIX Apart?

- ✓ **Innovative Design** – Advanced PC, SBC, and MB solutions for diverse industries
- ✓ **Unmatched Reliability** – Industrial-grade products designed for 24/7 operation
- ✓ **Seamless Compatibility** – Broad connectivity support for maximum flexibility
- ✓ **Efficient Deployment** – Quick setup, easy integration, and low maintenance
- ✓ **Global Recognition** – Approved by the worldwide well-known branding companies

## The SUNIX Advantage

By going together, you gain more than just a supplier - you gain a **strategic partner** dedicated to **innovation, quality, and customer success**. Our solutions **boost efficiency, reduce costs, and keep businesses ahead of the competition**.

**SUNIX - Powering Connectivity, Driving Innovation.**

***Go Together,  
We Go Far and Grow Big!***