

# DISO-32-4U Digital I/O Isolator

## Introduction

The DISO-32-4U Digital I/O Isolator is a digital signal isolation device developed by Startorus Fusion for applications in fusion plasma experiments and similar scenarios. The isolator supports CMOS-level digital signal input and output with an isolation withstand voltage of up to 3000 VDC, effectively severing the electrical connection between input and output to prevent common-mode interference and transient surges from the high-voltage side being conducted to the downstream data acquisition system. Featuring a standard 4U chassis with 32 channels and equipped with a PCI-1750 interface, the device meets the requirements of fusion experimental platforms for large-scale digital I/O signal isolation.



## Parameters

Parameter	Specification
Number of Channels	32
Input Signal Type	Digital Logic Signal
Output Signal Type	Digital Logic Signal
Input Voltage Range	0~5 V
Output Voltage Range	0~5 V
Isolation Withstand Voltage	$\geq 3$ kV DC (1 min)
Data Transfer Rate	100 Mbps
CMOS Threshold Voltage	$V_{IN} > 2.0$ V, $V_{IL} < 1.0$ V
CMOS Output Voltage	$V_{OH} > 3.8$ V, $V_{OL} < 0.5$ V

## Applications

The DISO-32-4U Digital I/O Isolator is primarily designed for fusion plasma experimental scenarios, suitable for multi-channel digital control and status signal isolation in high-voltage environments such as Tokamak devices and magnetically confined fusion experimental platforms. The 3000 VDC isolation withstand voltage effectively protects the downstream data acquisition system from strong electromagnetic interference (EMI) and high common-mode voltage transients. With 32 channels integrated into a standard 4U chassis and support for direct interfacing with the PCI-1750 digital I/O acquisition card, the device is well-suited for rack-mounted integration in experimental control rooms.

Additionally, this product is applicable to other scenarios requiring high-reliability digital signal isolation, such as trigger command transmission for high-voltage pulsed power supplies and safety interlock signal isolation for experimental equipment.