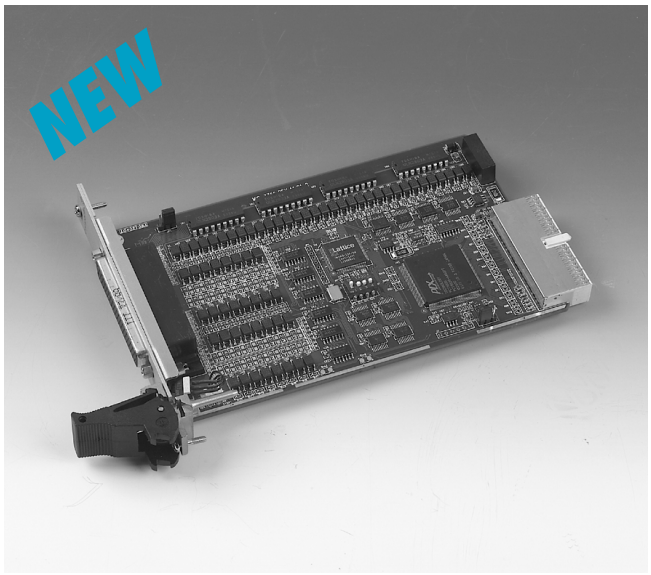
# MIC-3756

## 64-channel Isolated Digital I/O Card




## Features

- 32 isolated digital output channels
- 32 isolated digital input channels
- Either +/- voltage input for DI by group
- High-voltage isolation on I/O channels (2,500 $V_{DC}$)
- Wide input range (10 ~ 50 $V_{DC}$)
- Wide output range (5 ~ 40 $V_{DC}$)
- High-sink current on isolated output channels (200 mA max./channel)
- High over-voltage protection (70 $V_{DC}$) for input channels
- Board ID
- Output status read-back for output channels
- Keeps digital output values after hot system reset
- Channel-Freeze function for output channels
- Interrupt handling capability
- Provides convenient wiring terminal module with LED indicators for DIN-rail mounting
- High-density 100-pin SCSI connector

## Introduction

The MIC-3756 card offers 32 isolated digital input channels as well as 32 isolated digital output channels with isolation protection up to 2,500 $V_{DC}$, which makes it ideal for industrial applications where high-voltage isolation is required. In addition, all output channels are able to keep their last values after a hot system reset. Furthermore, the MIC-3756 provides Channel-Freeze function that keeps the current output status unchanged for each channel during operation.

### Robust Protection

The MIC-3756 features robust isolation protection for applications in industrial, lab and machinery automation. It can durably withstand voltage up to 2,500 $V_{DC}$ , preventing your host system from any incidental harm. If connected to an external input source with surge-protection, the MIC-3756 can offer up to a maximum of 2,000 $V_{DC}$ ESD (Electrostatic Discharge) protection for input channels. If the input voltage rises up to 70 $V_{DC}$, the input channels of MIC-3756 can still manage to work properly for a short period of time.

### Wide Input/Output Range

The MIC-3756 has a wide range of input voltage from 10 to 50 $V_{DC}$, and it is suitable for most industrial applications with 12 $V_{DC}$, 24 $V_{DC}$ and 48 $V_{DC}$ input voltage. It also features a wide output voltage range from 5 to 40 $V_{DC}$, suitable for most industrial applications with 12 $V_{DC}$/24 $V_{DC}$ output voltage. In the mean time, we are also ready to serve your needs for specific input/output voltage range. Do not hesitate to ask us about tailoring our products to meet your specifications. All these qualities make the MIC-3756 the best choice for customers in industrial applications.

### Board ID

The MIC-3756 has a built-in DIP switch that helps define each card's ID when multiple MIC-3756 cards have been installed on the same PC chassis. The board ID setting function is very useful when users build their system with multiple MIC-3756 cards. With correct Board ID settings, you can easily identify and access each card during hardware configuration and software programming.

### Channel-Freeze Function

The MIC-3756 provides Channel-Freeze function, which can be enabled either in dry contact or wet contact mode (selected by the on-board jumper). When the Channel-Freeze function is enabled, the last status of each digital output channel will be safely kept for emergency use. Moreover, you can enable this function through software as it is useful in software simulation and testing program.

### Reset Protection Fulfills Requirement for Industrial Applications

When the system has undergone a hot reset (i.e. without turning off the system power), the MIC-3756 can either retain the output values of each channel or return to its default configuration as open status, depending on its on-board jumper setting. This function protects the system from wrong operations during unexpected system resets.

## Ordering Information

- ❑ **MIC-3756/3:** 3U 64-channel isolated digital I/O card
- ❑ **MIC-3756/6:** 6U 64-channel isolated digital I/O card
- ❑ **PCL-10250:** 100-pin SCSI to two 50-pin SCSI cable, 1 and 2 m
- ❑ **ADAM-3951:** Wiring terminal module with LED indicators for DIN-rail mounting

# 64-channel Isolated Digital I/O Card

## Applications

- Industrial ON/OFF control
- Switch status sensing
- BCD interfacing
- Digital I/O control
- Industrial and lab automation
- SMT/PCB machinery
- Semi-conductor machinery
- PC-based Industrial Machinery
- Testing & Measurement
- Laboratory & Education

## Specifications

### Isolated Digital Input

| | | |
|---|---|---|
| **Number of Input Channel** | 32 (16-ch/group) | |
| **Interrupt Inputs** | 2 (IDI0, IDI16) | |
| **Optical Isolation** | 2500 $V_{DC}$ | |
| **Opto-isolator response time** | 25 µs | |
| **Over-voltage Protect** | 70 $V_{DC}$ | |
| **ESD (ElectroStatic Discharge)** | 2,000 $V_{DC}$ | |
| **Input Voltage** | VIH (max.) | 50 $V_{DC}$ |
| | VIH (min.) | 10 $V_{DC}$ |
| | VIL (max.) | 3 $V_{DC}$ |
| **Input Current** | 10 $V_{DC}$ | 1.70 mA (typical) |
| | 12 $V_{DC}$ | 2.10 mA (typical) |
| | 24 $V_{DC}$ | 4.40 mA (typical) |
| | 48 $V_{DC}$ | 9.00 mA (typical) |
| | 50 $V_{DC}$ | 9.40 mA (typical) |

### Isolated Digital Output

| | |
|---|---|
| **Number of Output Channel** | 32 |
| **Optical Isolation** | 2500 $V_{DC}$ |
| **Opto-isolator response time** | 25 µs |
| **Supply Voltage** | 5 ~ 40 $V_{DC}$ |
| **Sink Current** | 200 mA max/channel |

### General

| | | |
|---|---|---|
| **I/O Connector Type** | 100-pin SCSI-II female | |
| **Dimensions** | 175 mm x 100 mm (6.9" x 3.9") | |
| **Power Consumption** | Typical | +5V @ 285 m |
| | Max. | +5 V @ 475 mA |
| **Temperature** | Operation | 0˚ ~ +60˚ C (32˚ ~ 140˚ F) (refer to IEC 68-2-1,2) |
| | Storage | -20˚ ~ +70˚ C (-4˚ ~ 158˚ F) |
| **Relative Humidity** | 5% ~ 95% RH non-condensing (refer to IEC 68-2-3) | |

## Pin Assignments

IDI00 ~ IDI15 :Isolated digital input of Group 0

IDI16 ~ IDI31 :Isolated digital input of Group 1

IDO00 ~ IDO15 :Isolated digital output of Group 0

IDO16 ~ IDO31 :Isolated digital output of Group 1

ECOM0 :External common input of Group 0

ECOM1 :External common input of Group 1

PCOM0 :External common output of Group 0

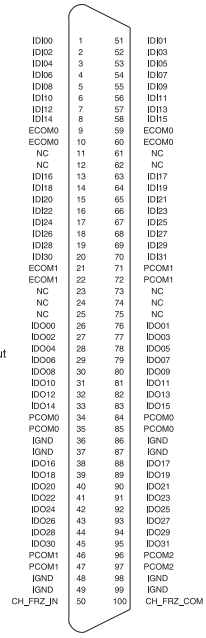
PCOM1 :External common output of Group 1

NC : No connection

IGND : Isolated ground

CH_FRZ_IN :Channel-Freeze input pin

CH_FRZ_COM :Common pin for Cannel-Freeze input




## Block Diagram