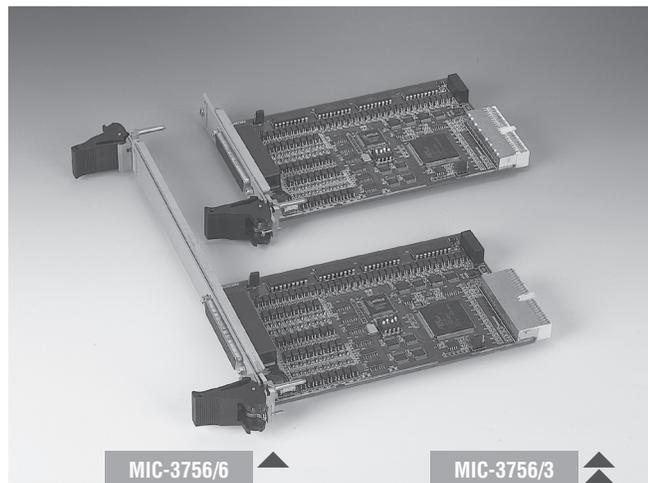


# MIC-3756

## 64-ch Isolated Digital I/O Card



CE FCC

### 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<sub>DC</sub>)
- Wide input range (5 ~ 50 V<sub>DC</sub>)
- Wide output range (5 ~ 40 V<sub>DC</sub>)
- High-sink current on isolated output channels (200 mA max./channel)
- High over-voltage protection (70 V<sub>DC</sub>) for input channels
- BoardID™ switch
- 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

### 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<sub>DC</sub>, 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 a channel-freeze function that keeps the current output status unchanged for each channel during operation.

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<sub>DC</sub>, 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<sub>DC</sub> ESD (Electrostatic Discharge) protection for input channels. Even if the input voltage rises up to 70 V<sub>DC</sub>, the input channels of MIC-3756 can still manage to work properly for a short period of time.

### Specifications

#### General

- **I/O Connector Type** One female 78-pin D-type connector
- **Dimensions** 160 x 100 mm (6.3" x 3.9") with 3U/6U Bracket
- **Power Consumption** Typical: +5 V @ 285 mA  
Max: +5V @ 475 mA
- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F) IEC 68-2-1,2
- **Storage Temperature** -20 ~ 70° C (-4 ~ 158° F)
- **Relative Humidity** 5 ~ 95% RH non-condensing (IEC-68-2-3)

#### Isolated Digital Input

- **Channels** 32
- **Interrupt Inputs** 2 (DI00, DI16)
- **Optical Isolation** 2500 V<sub>DC</sub>
- **Over-voltage Protection** 70 V<sub>DC</sub>
- **Input Resistance** 1 kΩ (50 V), 4 kΩ (5 V)
- **Input Voltage**
  - VIH (max.) 50 V<sub>DC</sub>
  - VIH (min.) 5 V<sub>DC</sub>
  - VIL (max.) 2 V<sub>DC</sub>

#### Isolated Digital Output

- **Channels** 32
- **Optical Isolation** 2500 V<sub>DC</sub>
- **DO Response Time**
  - OFF delay (±20%) 5 μs
  - ON delay (±20%) 120 μs
- **Supplied Voltage** 5~40 V<sub>DC</sub>
- **Sink Current** 200 mA max/channel

#### Photo-Couple Response Time

Input Voltage	*OFF delay (±20%)	*ON delay (±20%)
5 V	100 μs	60 μs
12 V	120 μs	10 μs
24 V	140 μs	5 μs
30 V	150 μs	4 μs
50 V	200 μs	4 μs

\*OFF delay means the photo-couple turn OFF delay time when DI input is removed

\*ON delay means the photo-couple turn ON delay time when DI input voltage is connected.

### Ordering Information

- **MIC-3756/3** 3U 64-channel isolated digital I/O Card, user's manual and driver CD-ROM. (cable not included)
- **MIC-3756/6** 6U 64-channel isolated digital I/O Card, user's manual and driver CD-ROM. (cable not included)
- **PCL-10178-1** DB-78 cable assembly 1 m
- **ADAM-3978** DB-78 wiring terminal for DIN-rail mounting

## Feature Details

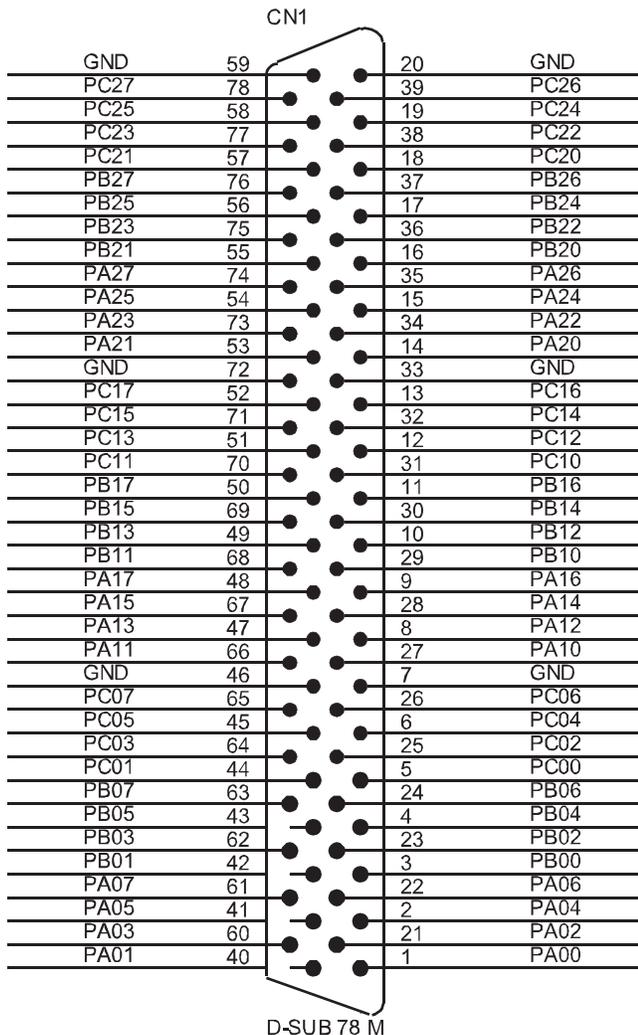
### Wide Input/Output Range

The MIC-3756 has a wide range of input voltage from 5 to 50 V<sub>DC</sub>, and it is suitable for most industrial applications with 12 V<sub>DC</sub>, 24 V<sub>DC</sub> and 48 V<sub>DC</sub> input voltage. It also features a wide output voltage range from 5 to 40 V<sub>DC</sub>, suitable for most industrial applications with 12 V<sub>DC</sub>/24 V<sub>DC</sub> output voltage. You can also request tailored solutions for specific input/out voltage ranges.

### BoardID™ Switch

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

## Pin Assignments



### Channel-Freeze Function

The MIC-3756 provides a 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 since it is useful in software simulations and testing programs.

### Reset Protection Fulfills Requirement for Industrial Applications

If 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.

## 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

## Block Diagram

