

# DIO-64

32 digital input & 32 digital output with timer/counter board



## Functional Description

The DIO-64 provides 32-channel digital input, 32-channel digital output and 6-channel counter/timer. The DIO-64 consists of two 16-bit input ports and two 16-bit output ports. The user can use the DB-16P to connect the input ports (CN2, CN4) for isolation purpose, or use DB-16R to interface to the output ports (CN1, CN3) for relay control. The first 8254 chip is used as general-purpose timer/ counter, such as frequency measurement, event counting and pulse generation. The second 8254 chip is used to generate interrupt trigger signal. The Counter 3 accept event signal and it will generate trigger signal for interrupt. The counter 4 and counter 5 are cascaded together. The clock source is 4MHz. It is used to generate pacer timer trigger for interrupt.

## Applications

- Factory automation
- Product test
- Relay control

## Specifications

### Logic inputs and outputs

- All outputs and inputs are TTL Compatible
- Input logic high voltage: 2.0V min / 5.0V max
- Input logic low voltage: -0.5V min / 0.8V max
- Input load current: -0.45 mA min / +70  $\mu$  A
- Output sink current: +64 mA max
- Output source current: -15 mA

### General Specifications

- I/O Connector: five 20-pin ribbon male
- Power requirements: +5V @ 500 mA typical
- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 80°C
- Dimensions: 93 mm x 135 mm

## Features

- 32-channel digital input
- 32-channel digital output
- Buffered output for higher driving capability
- 3 independent programmable 16-bit down counters
- Four clock sources: 2M, 1M, 500K, 250KHz
- Three frequency divider: 100, 10, 1
- One 16-bit counter, one 32-bit timer with a 4 MHz for interface function
- Interrupt source: timer, event, direct trigger
- Breadboard area for add-on circuit

## Pin Assignment

CN1/CN3				CN2/CN4			
DO0	1	2	DO 1	DI0	1	2	DI 1
DO2	3	4	DO 3	DI2	3	4	DI 3
DO4	5	6	DO 5	DI4	5	6	DI 5
DO6	7	8	DO 7	DI6	7	8	DI 7
DO8	9	10	DO 9	DI8	9	10	DI 9
DO10	11	12	DO 11	DI10	11	12	DI 11
DO12	13	14	DO 13	DI12	13	14	DI 13
DO14	15	16	DO 15	DI14	15	16	DI 15
GND	17	18	GND	GND	17	18	GND
+5V	19	20	+12V	+5V	19	20	STROBE

### CN5

CLK2	1	2	CLK1
OUT2	3	4	OUT1
GATE2	5	6	GATE1
CLK3	7	8	CLK0
OUT3	9	10	OUT0
GATE3	11	12	GATE0
GATE4	13	14	CLK4
X	15	16	OUT4
GND	17	18	GND
+5V	19	20	X

## Ordering Information

### Standard

- DIO-64/3:** 64 digital I/O with three timer/counter board
- DIO-64/6:** 64 digital I/O with six timer/counter board

### Optional

- DB-16P:** 16-channel OPTO-isolated input board
- DB-16R:** 16-channel relay terminal board
- DB-24PR:** 24-channel power relay board
- DB-24POR:** 24-channel PhotoMos relay board
- DB-24C:** 24-channel open-collector output board
- DB-24OD:** 24-channel open-drain output board
- DB-8025:** General screw terminal board
- DN-20:** DIN-rail mounting terminal board
- ADP-20:** 20-pin extender