



Bridging the Gap between Real World and Computer

DIO3217



Multifunction I/O Card (16 DI and 16 DO Photo-Coupler Isolated)

Features

- ▶ 16 isolated DI and 16 isolated DO channels
- ▶ High voltage isolation on all isolated channel (2500Vac)
- ▶ Software debounce : No debounce, 100Hz, 200Hz, 1KHz
- ▶ No output transition during start-up
- ▶ Output status read back
- ▶ External triggered interrupt (on IN07~IN00)
- ▶ Keep output state after hot reset (jumper selectable)
- ▶ High speed timer counter function : counter and PWM timer, Gate control; Counter input; Programmable trigger output
- ▶ Quadrature counter function

Introduction

The DIO3217 card, except for the traditional digital I/O function, the multifunction timer/counter function distinguish it from others. As a general purpose timer/counter, it can be a timer with gate input or a counter with counter input and gate input. Both timer and counter can trigger a programmable pulse width output. Besides these, it also provide PWM mode with gate input.

For the motion related application, the timer/counter can programmed as quadrature counter, the counter input and gate input function as A phase and B phase input with multiple rate X1,X2 or X4. It also provides a wide range of input software debounce time to filter out the unwanted signal in noise environment.

Dll is provided for WinXP, Win7 and later or LINUX platform and sample programs come with VB source code.

Pin Assignments

ADP9201_JM1

EXT +24Vin	20	19	EXT +24Vin
EXTG	18	17	EXTG
EXT_OUT07	16	15	EXT_IN07
EXT_OUT06	14	13	EXT_IN06
EXT_OUT05	12	11	EXT_IN05
EXT_OUT04	10	9	EXT_IN04
EXT_OUT03	8	7	EXT_IN03
EXT_OUT02	6	5	EXT_IN02
EXT_OUT01(High speed out)	4	3	EXT_IN01(High speed in)
EXT_OUT00(High speed out)	2	1	EXT_IN00(High speed in)

ADP9201_JM2

EXT +24Vin	20	19	EXT +24Vin
EXTG	18	17	EXTG
EXT_OUT17	16	15	EXT_IN17
EXT_OUT16	14	13	EXT_IN16
EXT_OUT15	12	11	EXT_IN15
EXT_OUT14	10	9	EXT_IN14
EXT_OUT13	8	7	EXT_IN13
EXT_OUT12	6	5	EXT_IN12
EXT_OUT11	4	3	EXT_IN11
EXT_OUT10	2	1	EXT_IN10

Software Support

▶ PC OS Support

WinXP, Win7 and later or Linux O.S.
Embedded XP, Win CE (at request)

▶ Library

DLLs, VI library

▶ Develop Software

Visual C++, Visual Basic,
Borland C/C++ Builder, LabVIEW etc

▶ Example Source Code

Visual Basic

Applications

- ▶ Accept :
 - P.B./M.S./EMG./Contact -
 - Start/Stop/Limit switch/sensor
 - Interlock/selective Sw.- Proximity switch
 - Aux. contact of transducer/detector
- ▶ As I/O of S/W PLC Controller
- ▶ Industrial ON/OFF control
- ▶ High speed counter
- ▶ Trigger event counter
- ▶ Quadrature encoder counter
- ▶ Up/down or pulse / direction counter
- ▶ PWM controller



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Specifications (With Matched Wiring Board)

Input Section

- ▶ Input channel : 14 isolated digital input,
2 high speed magnetic coupler (TTL level)
IN00 : Gate
IN01 : Ti
- ▶ Software debounce : No debounce, 100Hz, 200Hz, 1KHz
- ▶ ON State : 2.8Vdc(max) 4.5mA(min)
- ▶ OFF State : 8Vdc(min) 3mA(max)
- ▶ Switching speed : 10KHz max. (limit by photo-coupler speed and debounce filter)
- ▶ Interrupt : IN07 ~ IN00

Output Section

- ▶ Output channel : 14 isolated digital output,
2 high speed magnetic coupler (open collector)
OUT00 : Tout
OUT01 : General
- ▶ Output Range : Open collector 0Vdc ~ 45Vdc (on card)
- ▶ Output Rating : 3A @250Vac, 30Vdc (Relay)
1A @24Vdc (PMOS)
2A @240Vac (SSR)
- ▶ Sink Current : 500mA(peak) per channel (on card)
- ▶ Switching Speed : 20KHz(max)(MOS out only)

Timer/Counter/PWM Section

- ▶ Timer time base : 1us
- ▶ Timer/counter length : 32-bit
- ▶ Counter frequency (max) : 8MHz
- ▶ PWM time base : 33MHz
- ▶ PWM frequency : 16-bit
- ▶ PWM duty : 16-bit

Quadrature Counter

- ▶ Input multiple rate : x1, x2, x4 programmable
(quadrature signal only)
- ▶ Maximum quadrature input frequency :
8MHz @x1, 5MHz @x2, 3MHz @x4
- ▶ Input mode : A,B phase (quadrature mode)
- ▶ Counter length : 32-bit

Main Card General

- ▶ Card ID : 4-bit
- ▶ Insulation Resistance : 100M Ohm (min) at 1000Vdc
- ▶ Isolation Voltage : 2500Vac 1Min
- ▶ Connector : Two 20-pin male flat-cable connectors
- ▶ Operation Temperature : 0 °C ~ +70 °C
- ▶ Storage Temperature : -20 °C ~ +80 °C
- ▶ Operation Humidity : 5~95% RH, non-condensing
- ▶ Dimensions : 130(W)*102(H)mm, 5.2(W)*4.1(H)in

Ordering Information

- ▶ **DIO3217** : 32-channel Digital I/O Card with multi-function timer/counter for 16 DI and 16 DO Photo-coupler isolated
- ▶ **ADP3217DIN(R)** : DIN rail mounted wiring board with 12 I/O LED indicators, Relay output for 6 DI, 6DO and 2 high speed TTL input, 2 high speed open collector output P.87
- ▶ **ADP3217DIN(P)** : DIN rail mounted wiring board with 12 I/O LED indicators, PMOS output for 6 DI, 6DO and 2 high speed TTL input, 2 high speed open collector output P.87
- ▶ **ADP3217DIN(S)** : DIN rail mounted wiring board with 12 I/O LED indicators, SSR output for 6 DI, 6DO and 2 high speed TTL input, 2 high speed open collector output P.87
- ▶ **ADP9201DIN(R)** : DIN rail mounted wiring board with 16 I/O LED indicators and Relay output for 8 DI, 8DO P.79
- ▶ **ADP9201DIN(P)** : DIN rail mounted wiring board with 16 I/O LED indicators and PMOS output for 8 DI, 8DO P.79
- ▶ **ADP9201DIN(S)** : DIN rail mounted wiring board with 16 I/O LED indicators and SSR output for 8 DI, 8DO P.79
- ▶ **JS51053** : DIN rail mounted dummy wiring board for ADP9201_JM1/ADP9201_JM2 I.12
- ▶ **M23207** : 20-pin flat cable 1.5 M for ADP9201_JM1/ADP9201_JM2 I.17
- ▶ **M23209** : 20-pin flat cable 3.0 M for ADP9201_JM1/ADP9201_JM2 I.17

Note