DIO24SIGMxS2

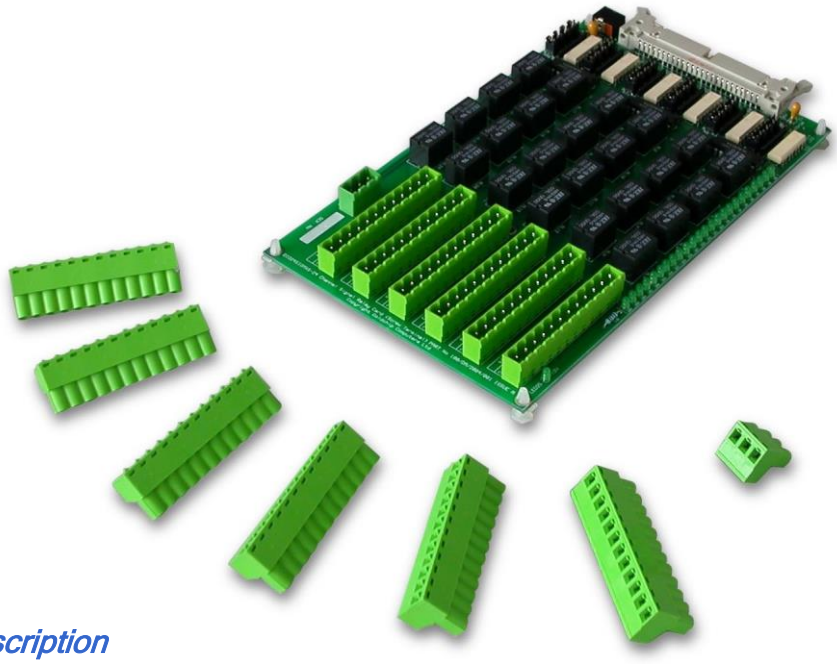
24 channel (high sensitivity) relay card

Low cost DAQ & Control products

Product Datasheet 4

Features

- Requires 12V DC external power supply (via 2.5mm jack socket or screw term's), and 5V connected via 50 way header connector
- Uses high sensitivity, low contact resistance relays
- Contact material AgAu, rated at 1A (24VDC/120V AC). 100mOhms Max
- Operate/release time 5mS Max
- Relays are SPDT, Form C, changeover type, with N/O, COM and N/C contacts taken to two part screw terminal blocks allowing quick connect/ disconnect of card
- PCB Tracking will handle 6 amps (1 amp relay contacts)
- Channels can be configured as either inputs or outputs via user selectable links
- 12V Power consumption approx 500mA Max (all channels active)
- Opto-isolated input drive voltage 0/5V to 75V DC (2K2 opto-isolator input resistor per channel). Input opto-isolation 2500V rms (minimum)
- Pin compatible with NIDAQ DIO24/6503 DIO card
- Supplied with nylon feet (will take self tapping screws)
- Corner mounting holes allow cards to be stacked if required
- A protective Perspex cover & base is also available for all relay card types
- 5V max output voltage per channel
- 20mA (max) drive current per output (40mA max per 8 channels) when driven from 24 channel DIO card
- Directly compatible with our range of 24 channel USB & serial output cards



Description

These cards are general purpose 24 channel (high sensitivity, low contact resistance) relay cards. (Relay contact material is AgAu (100mOhms), and rated at 1A/24VDC). All cards have a 50 way header connector (compatible with NIDAQ DIO24/6503 DIO card) which connects to opto-isolated input relay drive signals. All relay contacts are connected to two-part screw terminal blocks, allowing rapid disconnection/ replacement of the card. Power connections are also taken to a 3 way terminal block making them readily available to the target system wiring.

Digital inputs can be connected via the N/O connection and onboard header links, directly to the 50 way header. These cards are also compatible with our range of 24 channel USB & serial port DIO cards which can be used to control upto 24 relays or to achieve a mixture of relay control and logic level digital input & output signals.

Specifications

Control Interface
50 way, (90°) male header connector, 0/5V DC drive signal (2K2 input resistor/40mA max).

Power supply
5V DC/150mA (max, supplied from DIO24 card)) & 12V DC/500mA (max)

Operating temp range
0-70°C

Relays
See page 3 for technical details of the relays used

Output channels
5V (max) @ 20mA (max) per output or 40mA (max) for per group of 8 channels

Dimensions
Dimensions approx 205mm (D) 126mm (W) 22mm (H) (exc feet), Weight 450g.

Order code

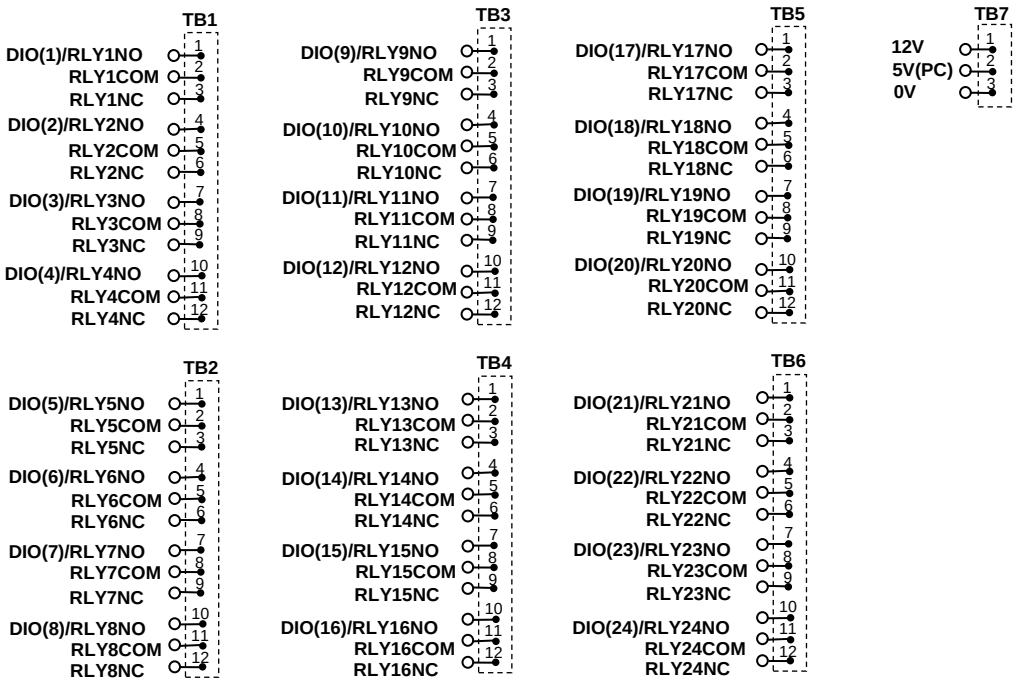
DIO24SIGMxS2
24 channel high sensitivity relay card, fitted with two part (right angle) screw terminal blocks for connection to all relay contacts.

DIO24SIGMxS2V
As above, but fitted with two part (vertical) screw terminal blocks.

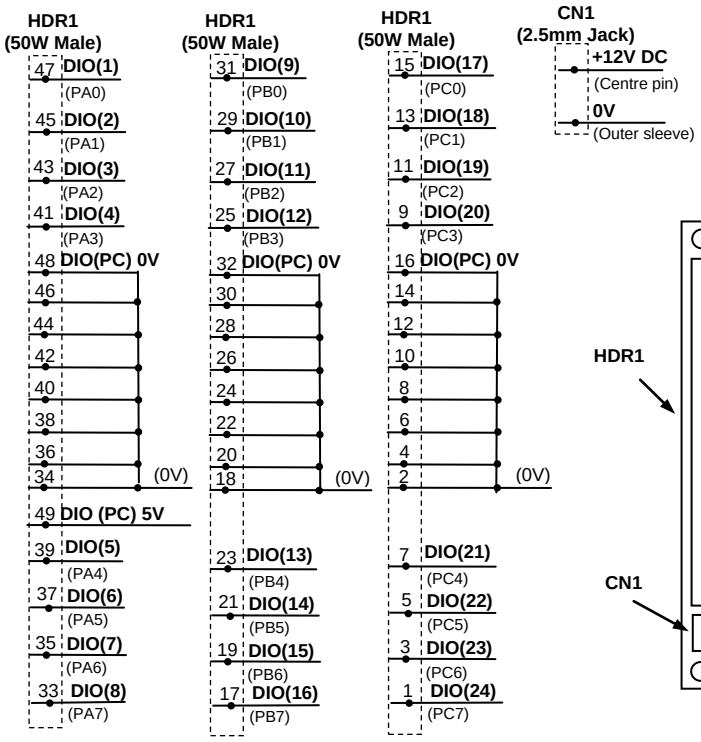
Connection details

External connections to the cards are shown below:

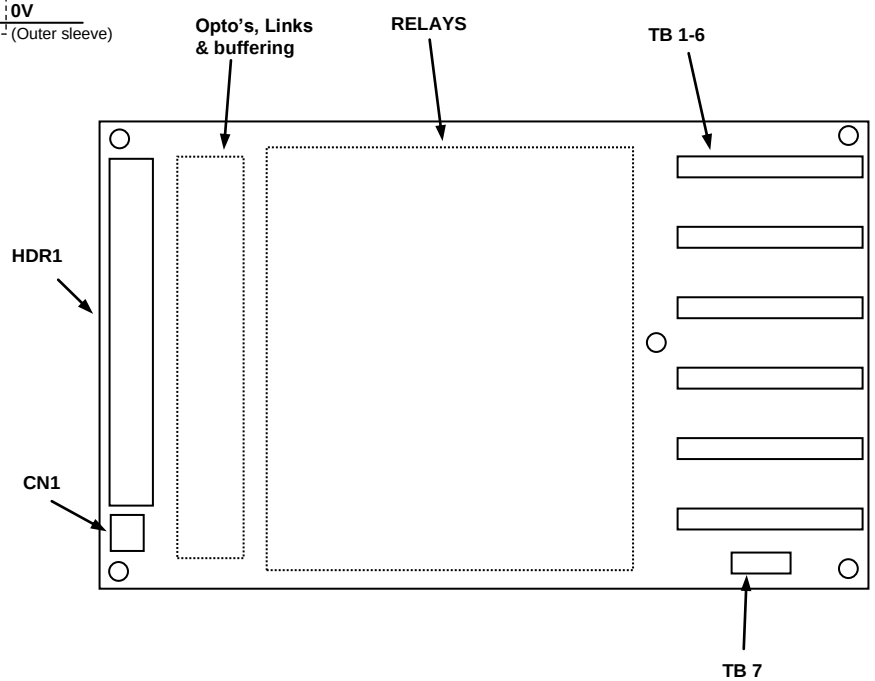
Relay connections:



Drive & power connections:



Card layout:



Specifications: Relays

Parameter	Specification (Power relays)	Specification (Signal relays)
Rated voltage/current	5VDC/80mA	5VDC/42mA
Must operate/release voltage	75%/10% of rated voltage	75%/10% of rated voltage
Contact ratings	10A/240VAC/8A 30VDC	1A/120VAC/1A 30VDC
Contact resistance	100mΩ max	100mΩ max
Operate/release time	10mS/5mS	5mS/5mS
Contact bounce period	0.6mS operate/ 7.2mS release	0.6mS operate/ 7.2mS release
Contact material	$AgSnO_2$	AgAu
Operational life (min)	Mechanical 10^7 / Electrical 10^5	Mechanical 10^7 / Electrical 10^5
Contact arrangement	SPDT, Form C	SPDT, Form C