

Product Datasheet 63 (Draft)

Features

- Choice of either 240VAC/10 Amp power relays or 30VDC/1A, high sensitivity (gold contact, low contact resistance) signal relays
- 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
- Requires 5V DC external power supply (via screw terminals) @ 500mA (all channels active)
- NEW Optional 8V-30V to 5V Dc-Dc power supply.
- Signal relays are high sensitivity, low contact resistance type. Contact material is AgAu, rated at 1A (30VDC/120V AC). 100mOhms Max
- Operate/release time 5mS Max
- LED channel & 5VDC status indicators are located along one end of the card give visual indication of activation status
- PCB Tracking is designed to handle 240VAC @ 10 amps
- Stackable design with horizontal entry, 2-part (male/female) screw terminal blocks
- Card design allows for rapid connect/disconnect from target wiring
- Can be used in conjunction with our USBDO96 card to provide a convenient 96 channel relay card stack
- Pin compatible with NIDAQ DIO24/6503 DIO card
- Supplied with nylon feet (will take self-tapping screws)
- Protective Perspex cover & base available
- DIN rail mount Perspex cover/base option also available for this card



Description

General purpose 24 channel relay card, available with a choice of either power (240VAC/10amp) or signal (gold contact, low contact resistance) relays.

Relay control/activation is via logic level inputs via the 50 way male header connector. All relay contacts are connected to two-part screw terminal blocks along each side of the card. The use of horizontal mounted screw terminal connectors and header connector ejector latches allow easy and rapid connect/disconnect from users target system. DC power connection is made via a 2 way screw terminal block in one corner of the card.

The card is stackable, via corner fixing holes, and is also compatible with our 96 channel USB Digital output card, allowing low cost implementation of relay stack or matrix functions.

Specifications:

Control Interface

50 way, (90°) male header connector. See [V2.x board upgrade details](#).

Power supply

5V, 12V or 24V dependant on relay selection or 8V-30V Dc-Dc input.

Operating temp range

-20 to +80°C

Relays

See page 3 for technical details of the relays used.

Dimensions

Dimensions approx. 205mm (D) 126mm (W) 22mm (H) (exc. feet), Weight 360g (signal relays), 540g (power relays).

Order codes summary

DO24MxP

24 channel relay card, fitted with 240VAC/10Amp Power relays & two part (right angle) screw terminal blocks giving access to NO/COM/NC relay contacts (for all channels & the DC supply).

DO24MxS

As above, but fitted with 30VDC/1A, high sensitivity (gold contact) signal relays. Suitable for low voltage/current, or low contact resistance signal switching applications.

See Order codes table below for comprehensive list of options.

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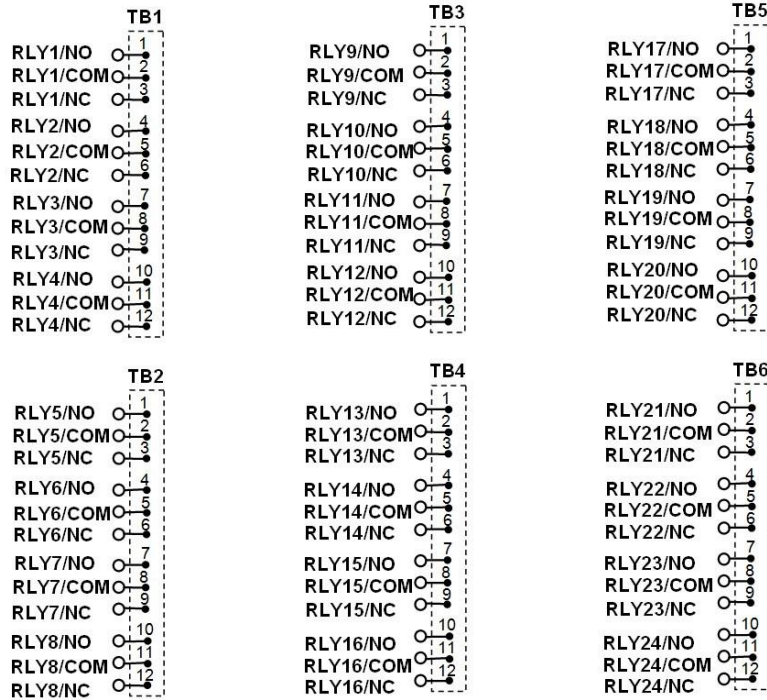
V2.x board upgrade details:

- Optional onboard Dc-Dc (step down) power supply for 8V to 30V DC power input.
- Reverse polarity protection on power and control inputs.
- Wider control input voltage range. 0V to 0.6V relay off. 3V to 43V relay on.
- Lower input current, 30uA at 3V, 50uA at 5V, 15mA at 34V.
- Surface mount LEDs and relay drivers.

Connection details

External connections to the cards are shown below:

Relay connections:

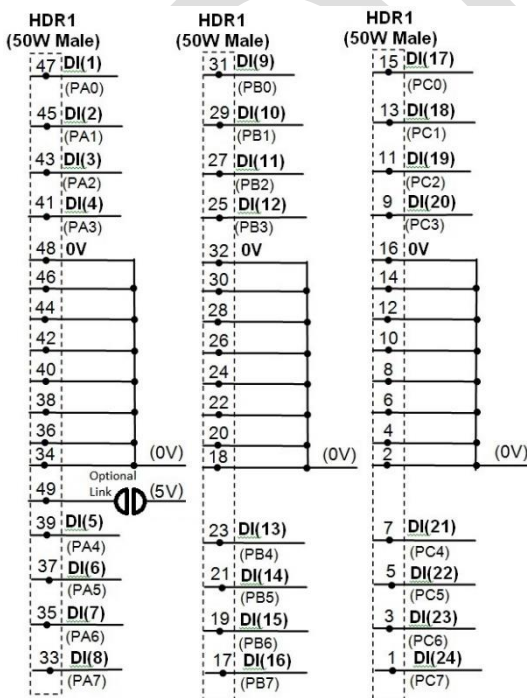


Power Connections:

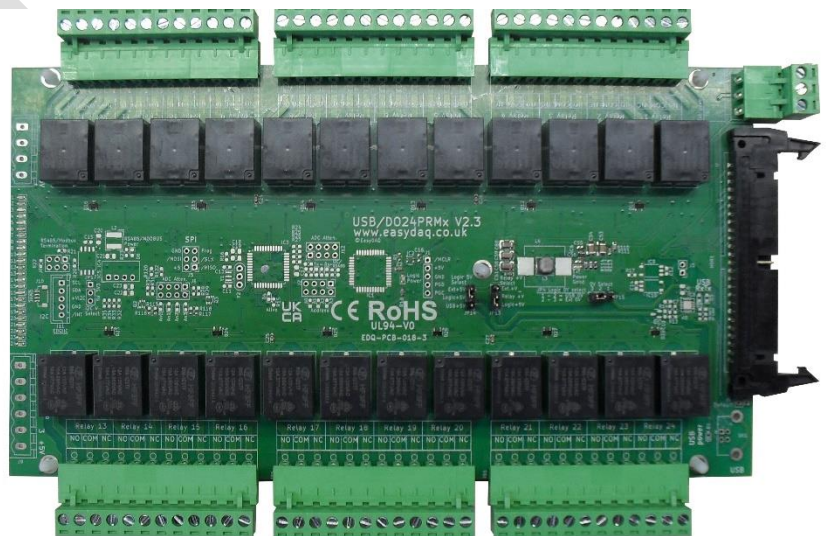


Data connections:

Face view showing connector & LED locations



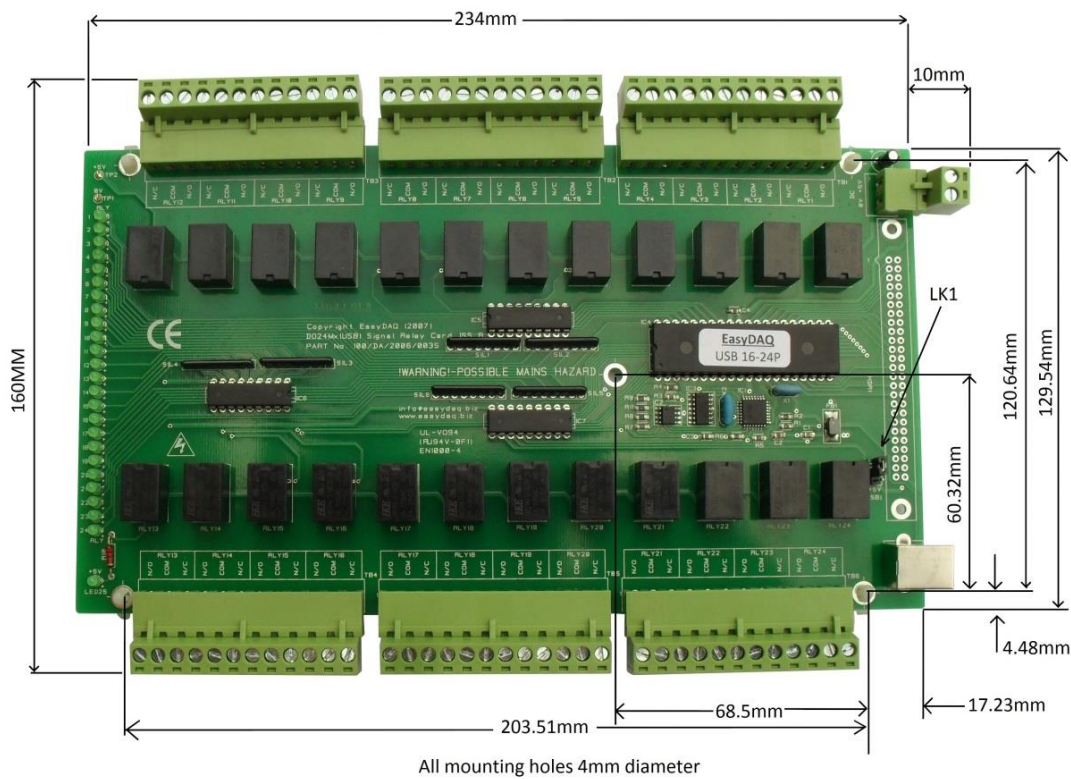
DO24PRMx-(9-30V) shown:



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<i>Specifications: Relays</i>					
Parameter	5V Power relays	6V Power relays	12V Power relays	24V Power relays	Signal relays
Rated voltage/current	5VDC/71mA each	6VDC/60mA each (50mA at 5V)	12VDC/44mA each	24VDC/22mA each	5VDC/42mA each
Must operate/release voltage	75%/10% of rated voltage				75%/10% of rated voltage
Contact ratings	10A/240VAC or 8A 30VDC				1A/120VAC or 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				AqAu
Operational life (min)	Mechanical 10 ⁷ / Electrical 10 ⁵				Mechanical 10 ⁷ / Electrical 10 ⁵
Contact arrangement	SPDT, Form C				SPDT, Form C

Dimensional drawing (Original USB24SRMx shown)



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Order codes table.

Order codes	
DO24PRMx	Our original DO 24 channel relay card, fitted with 6V relays (activated from 5V for lower power operation), 240VAC/10Amp, SPDT Power relays and two part (right angle) screw terminal blocks giving access to NO/COM/NC relay contacts for all channels.
DO24PRMx-5V	As DO24 above but fitted with 5V relays for normal operation, using an external 5V power supply.
DO24PRMx-12V	As DO24 above but fitted with 12V relays for normal operation, using an external 12V power supply.
DO24PRMx-24V	As DO24 above but fitted with 24V relays for normal operation, using an external 24V power supply.
DO24PRMx-(9-30V)	NEW As DO24PRMx plus a +9 V to +30V input to +5V Dc-Dc output regulator. The 5V supply is also available for powering external equipment.
DO24SRMx	<u>NOTE. The DO24SRMx has not been upgraded to V2.x design yet.</u> As DO24PRMx, but fitted with 5V, 30VDC/1A, high sensitivity (gold contact) signal relays. Suitable for low voltage/current, or low contact resistance signal switching applications. Use a 5V external power supply if more than 8 relays are to be activated at one time.

NOTE.

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This is a DRAFT version of a new datasheet. Some details may change. Contact us if there is any information that you require.

Document versions

Version number	Date	Notes
V0.1 (Draft)	13th May 2024	Based on Datasheet 27. Some details need updating.
V0.2	13th March 2025	DC-DC version name changed.