

Datasheet and User Manual

3800-82

Independent Relay Board

3/15/2012

Features

This board allows independent control over 8 relays. Relays are DPDT non-latching. Access to common, normally closed, and normally open relay contacts.

This board is used to connect signals during functional test, share system resources between multiple UUTs, or provide isolation for ICT points.

Works best with +5V and Dig outputs from PWR-2 or FUNC-2 card.

Operational Characteristics

I/O Pin Descriptions

Relay contacts are accessed through COM, NC, and NO 16 pin headers.
Relays are controlled by the COILS+ and COILS- headers.

COM

16 pin header output 1 through 16.

When coils *are not* energized, each pin connects to corresponding NC of the same number.

When coils *are* energized, each pin connects to corresponding NO of the same number.

NC

16 pin header output 1 through 16.

When coils *are not* energized, each pin connects to corresponding COM of the same number.

NO

16 pin header output 1 through 16.

When coils *are* energized, each pin connects to corresponding COM of the same number.

COILS+

2 pin header

Both pins are connected. Supply +5V input to either pin.

COILS-

8 pin header output 1 through 8.

Each pin in order controls activation of 1 relay, or 2 sets of contacts. See Truth Table for details.

Programming Requirements

None

Communication Busses

None

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Truth Table

C : Connected to NC
 O : Connected to NO
 Z : Open
 + : Closed

INPUT NAME	COILS-	COM	NC	NO
HEADER Location	[8:1]	[16:1]	[16:1]	[16:1]
	11111111	CCCCCCCCCCCCCCCC	+++++	ZZZZZZZZZZZZZZZZ
	11111110	CCCCCCCCCCCCCCCCO	+++++ZZ	ZZZZZZZZZZZZZZ++
	11111101	CCCCCCCCCCCCCOCC	+++++ZZ+	ZZZZZZZZZZZZZZ++ZZ
	11111011	CCCCCCCCCOOCCCC	+++++ZZ++++	ZZZZZZZZZZZZ++ZZZZ
	11110111	CCCCCCCCOCCCCC	+++++ZZ+++++	ZZZZZZZZZZZZ++ZZZZZ
	11011111	CCCCCOCCCCCCCC	+++++ZZ+++++	ZZZZZZZZZZZZ++ZZZZZZ
	10111111	CCOCCCCCCCCCCCC	++++ZZ+++++	ZZZZZZZZZZZZ++ZZZZZZZZ
	01111111	OCCCCCCCCCCCCC	++ZZ+++++	ZZ++ZZZZZZZZZZZZ
	00000000	O00000000000000	ZZZZZZZZZZZZZZZZ	+++++

AC DC Requirements

PARAMETER	Min	Typ	MAX	Units	NOTES
Vdc On	3.38	4.5		V	
Vdc Off	0		.45	V	
Coil Resistance		145		Ω	
Contact Switching Current			2	A	Per contact
Contact Carrying Current			2	A	Per contact
Operating Power		140		mW	Per coil
Operating Current (@5V)		276		mA	Total

Flyback diodes must be included across all coils if not already included in the output driving the coil. For example, digital outputs from the PWR-2, FUNC-2, and DIG-1 all include flyback diodes; switched ground or undedicated relay outputs do not.

Switching Capabilities of CheckSum System Digital Outputs:

Card	Current Sink	Units	Relays : Digital Bits
PWR-2	600	mA	17 : 1
FUNC-2	100	mA	2 : 1
DIG-1	24	mA	1 : 2

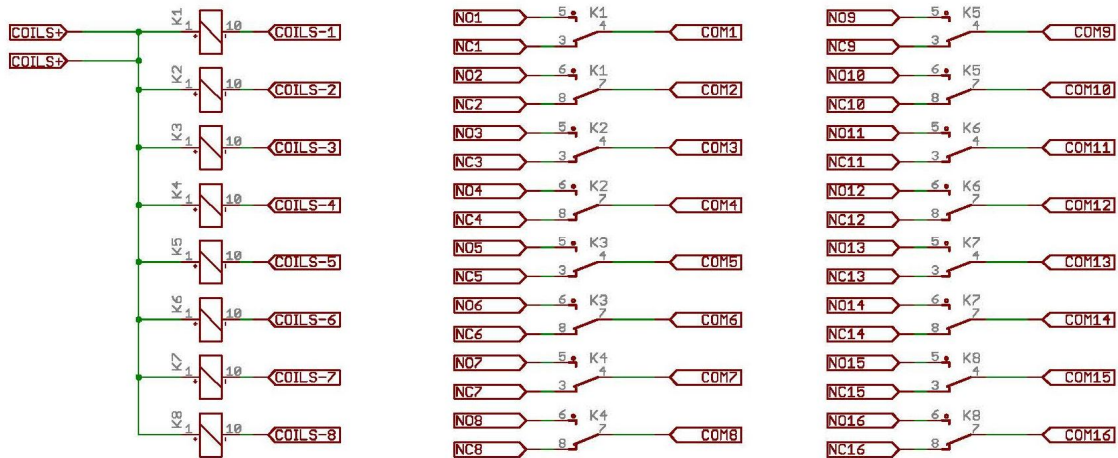
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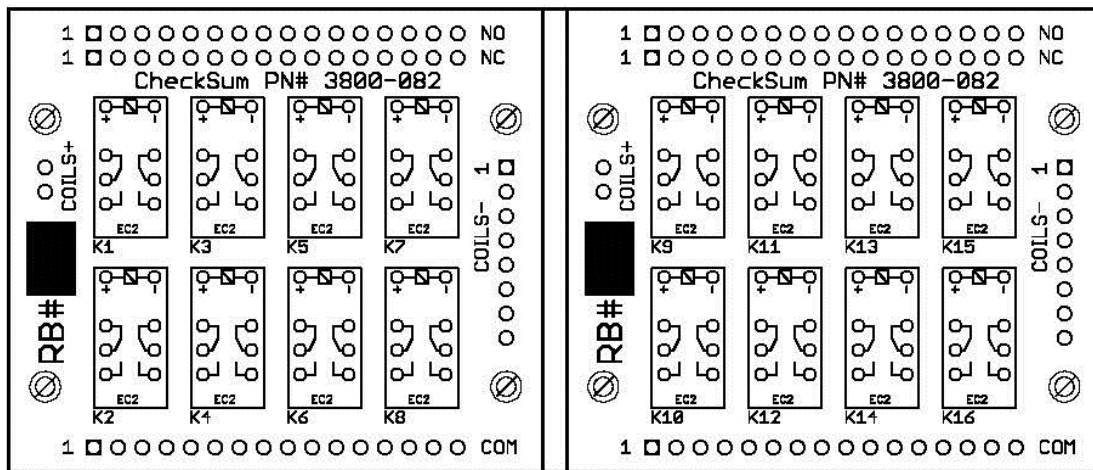
Schematic and Board Layout

Schematic



PCB Layout

2up IRB shown



Board Dimensions & Mounting

For 1up IRB
 Board outline measures 2.2 x 1.9 inches
 Mounting holes measure 2.05 x 1.45 inches
 Drill size .126 inches

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Parts Listing

Qty	part#	Value	Parts	Device
5	1020-004	WW HEADER	COM, NC, NO, COILS+, COILS-	WW HEADER
8	1180-003	EC2-4.5V	K1, K2, K3, K4, K5, K6, K7, K8	EC2-4.5V RELAY

Glossary**References**

NEC datasheet Miniature Signal Relay EC2 Series