

DMX 2-Channel Relay Board

Version 1.0 -2010
WD1564

Overview

A two-channel DMX relay switch for switching loads up to 10A at 240V AC per channel.
 The DMX switch operates on the standard DMX512 bus and requires 1-2 DMX channels for operation.
 Relays can operate Independently or be set as Flip-Flop Relays
 The DMX address can be set between 1 and 512.



Setup

Connections

The DMX Switch (2-Ch Relay) board requires a 12V DC supply at 500 mAmps. (via 2.1mm socket, center pin positive or wire terminal block positive (+) and minus (-) connections.)
 Connect the relay board to the DMX network using 5-pin XLR connectors. (Input and Feed through)
 Connect the loads / devices to the relevant volt-free relay outputs 1-2 . (See relay setup and application example pages for details). Each relay is rated at 10 Amps at 240V AC.

Settings - (See Pages on Control / Addressing)

Set the required base address using the DIP switches 1 through 9. Add-up the values where the switch is set to the ON positions. The base address is read continuously.

Set the base address of Relay No. 1 as follows: Determine the start address value to be used for the DMX 2 Ch Relay board. (See DMX Value table for values and switch ON setting) Switch ON the DIP switches for the address value selected to the **ON** position. Example: DIP switches 5 =(16) and 6=(32) set to **ON** position, the base address for the DMX 2 Ch Relay board is now 16 + 32 = 48, this setting is used to determine the starting address output of the first Relay. Address 48 is the base address for Relay No. 1. The address of Relay No. 2 is the base address of Relay 1 plus 1 for Relay 2. Example: Base = 49 (Relay No. 1) Relay No 2 is 49 (48 +1 =49)

Relay Control (JP1 switch setting)

The relays on-board can be set as two different modes, by setting JP1 switch ON or in the OFF position.

JP1 switch **OFF** = normally relay mode, operates from 2-DMX channels with individual relay control.

Relay-1	DMX CH-1 Value
Status	224 - 255 = ON 223 - 0 = OFF

Relay-2	DMX CH-2 Value
Status	224 - 255 = ON 223 - 0 = OFF

JP1 switch **ON** = relays are interconnected and operate from 1-DMX channel. (Flip-Flop Mode)

DMX CH1 Value	Relay-1 Status	Relay-2 Status
Less than 80	ON	OFF
Between 80 and 160	OFF	OFF
Greater than 160	OFF	ON

DMX LED- **ON** when a suitable DMX signal is being received or a flashing LED when **NO** valid DMX signal stream is being received by the 2-Ch DMX relay board.

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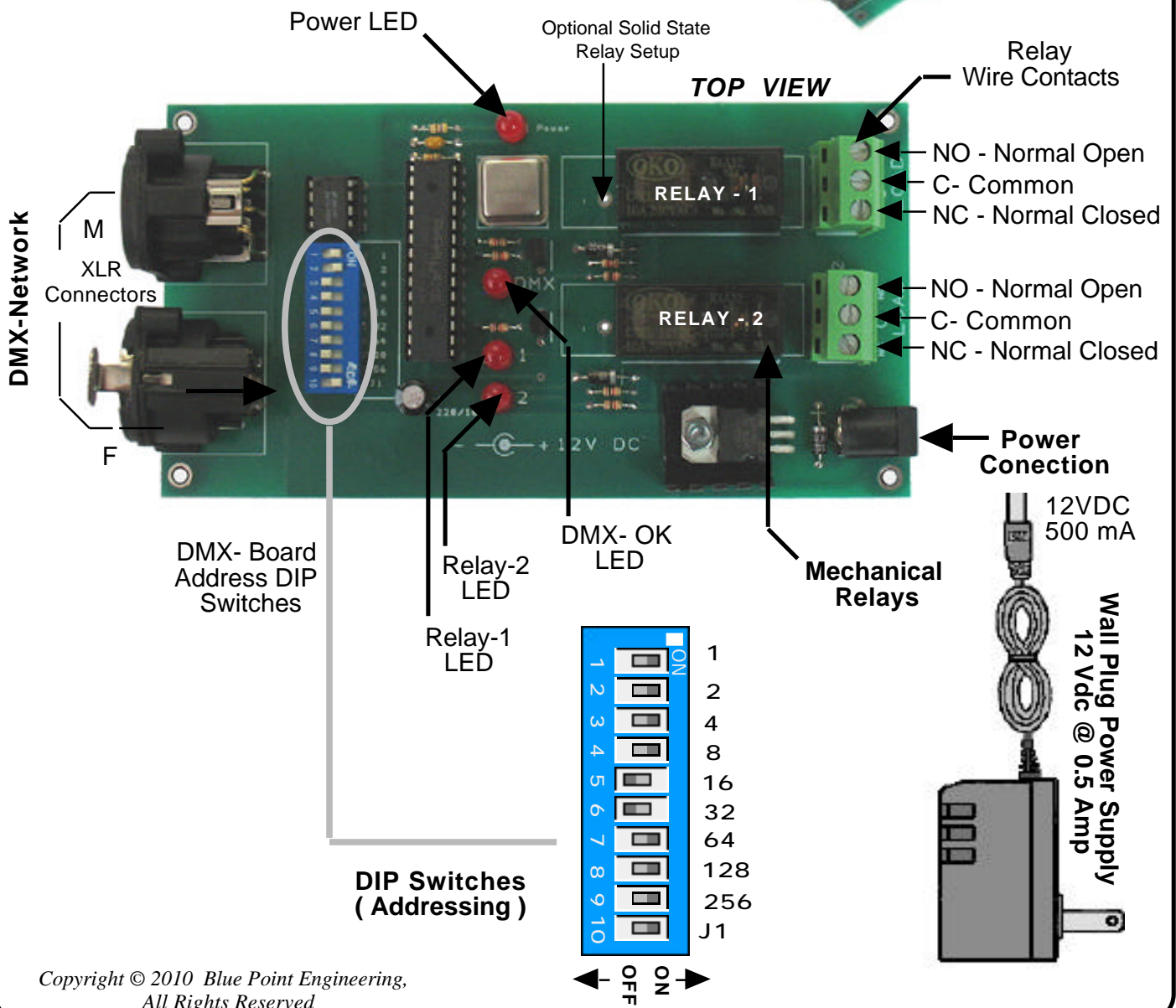
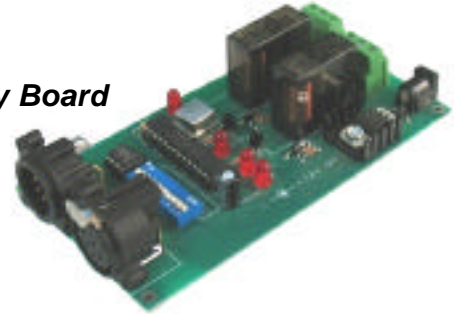
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DMX 2-Channel Relay Board

Hook-up

DMX 2-Ch Relay Board

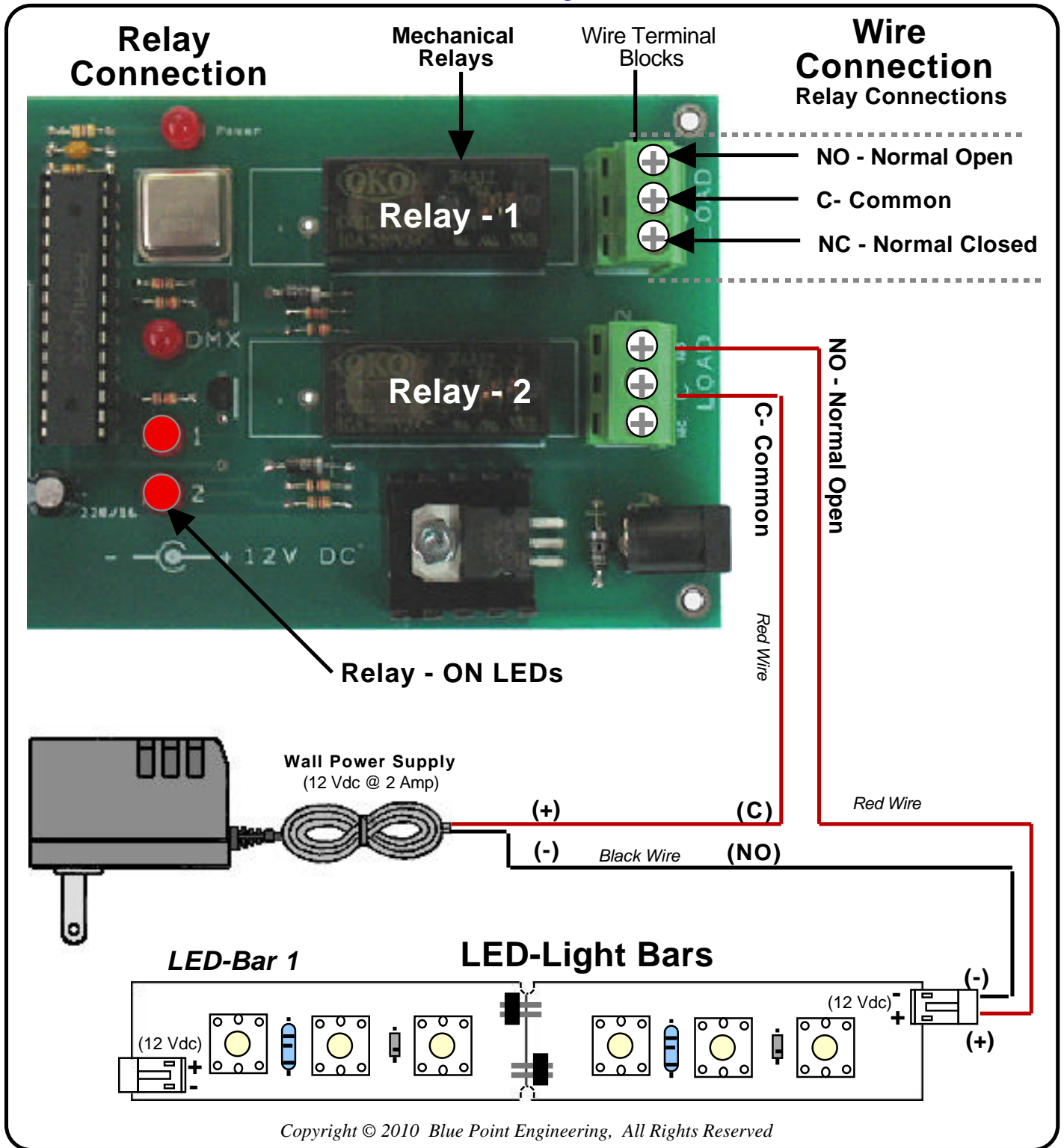


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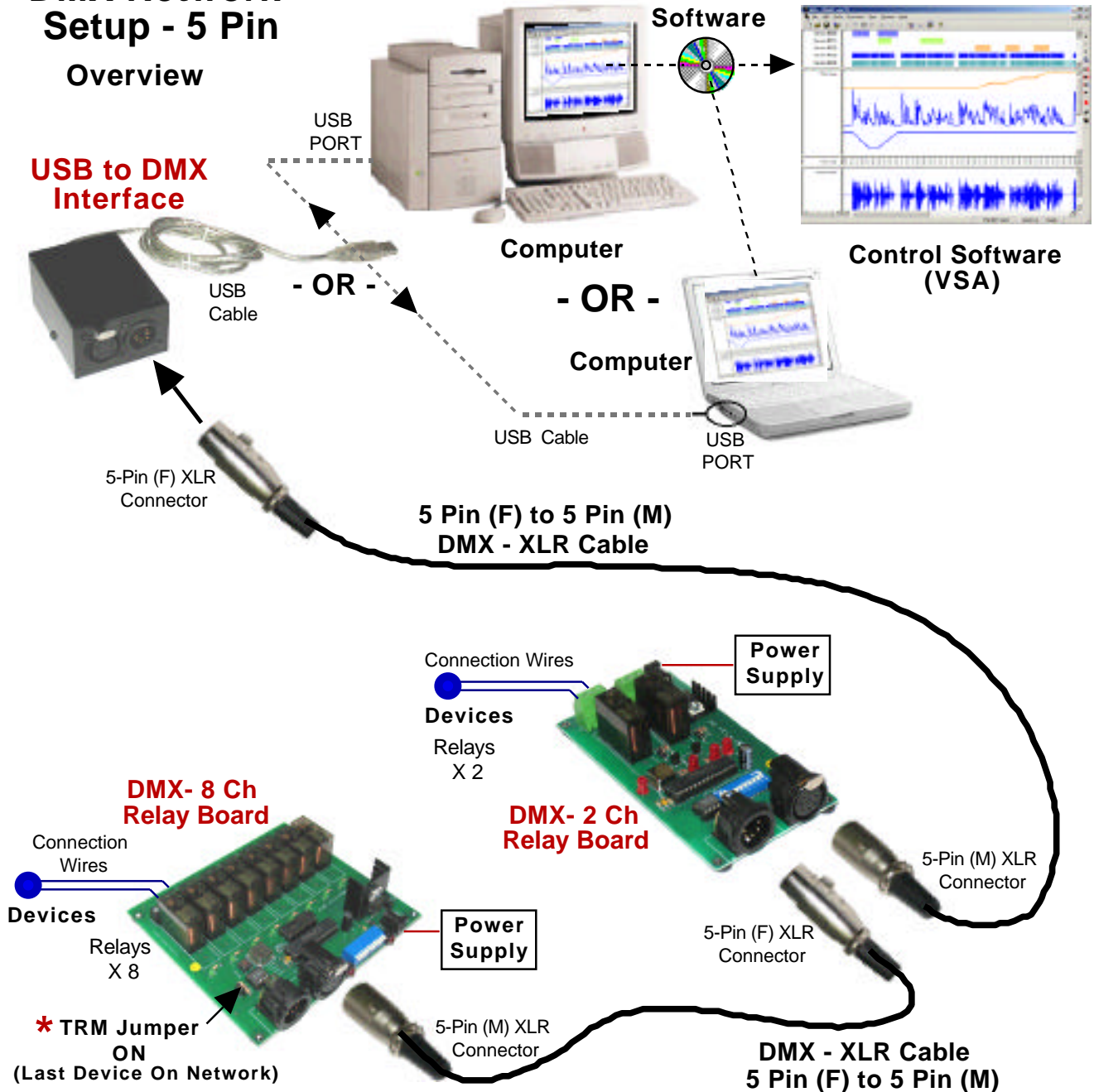
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DMX Network Setup - 5 Pin Overview



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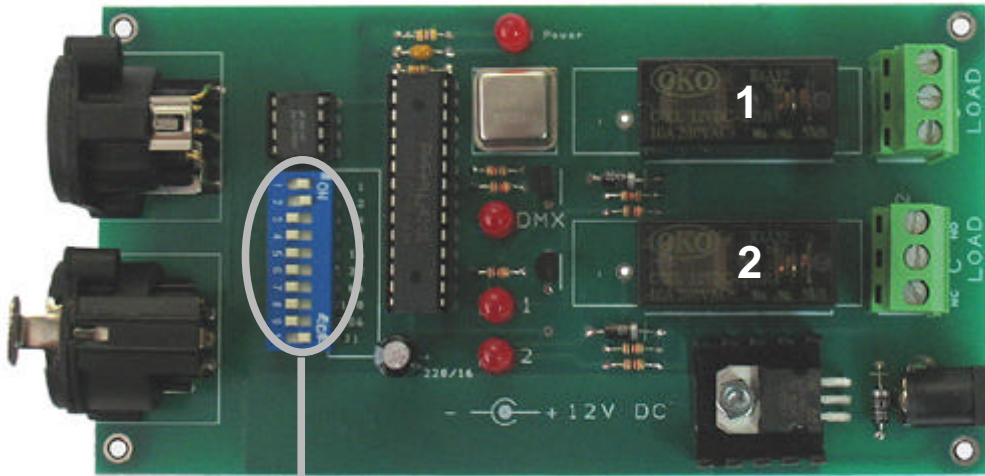
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DMX 2-Channel Relay Board

**Board Address
DMX - Values**

**Duo DMX (2) Channel Control
DIP Switch 10 = OFF
Individual Relay Control**

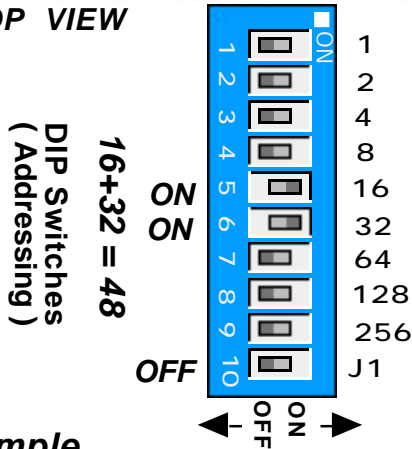


Example

Relay-1
(CH=48)
(Value= 224-255)
(Relay = ON)
(Value= 223-0)
(Relay = OFF)

Relay-2
(CH=49)
(Value= 224-255)
(Relay = ON)
(Value= 223-0)
(Relay = OFF)

TOP VIEW



Control Syntax - (See DMX512 Chart Chart for Values)

J1 = OFF (DIP Switch 10) set to OFF: (Multiple DMX control channels)

The output on a particular channel will go high (ON) when the DMX transmitted value for that channel exceeds 224 and go low (OFF) when the DMX transmitted value for that channel is lower than 223.

(223= OFF, 0% and 224= ON, 100%)

DMX Value 0-255 = 0-100%

Example

Setting the base address of Relay Outputs (Switch 10 (J1) set to OFF)

Add the value of the address DIP switches set to the **ON** position to calculate the base address.

Example(CH): DIP switches 5 and 6 set to **ON** position, the base address is now 48, (16+32) this setting is used to determine the starting address output of Relay 1, the next relay would be address 49 for Relay 2.

Dip Switch 5 and 6 ON = **Base start Address 48 = Relay No.1**

J1- Switch 10 = OFF

Relay 1 **ON** at DMX value 224-255 **RELAY - 1**
Relay 1 **OFF** at DMX value 223-0

Dip Sw 5 ON- Value =16

DIP Sw 6 ON- Value =32

Value= (16+32= 48)

48 = Start Address for Relay No.1

Relay No2. = 49 (Base address Relay No.1 = 48 + 1= 49, Relay No.2 = 49)

Relay 2 **ON** at DMX value 224-255 **RELAY - 2**
Relay 2 **OFF** at DMX value 223-0

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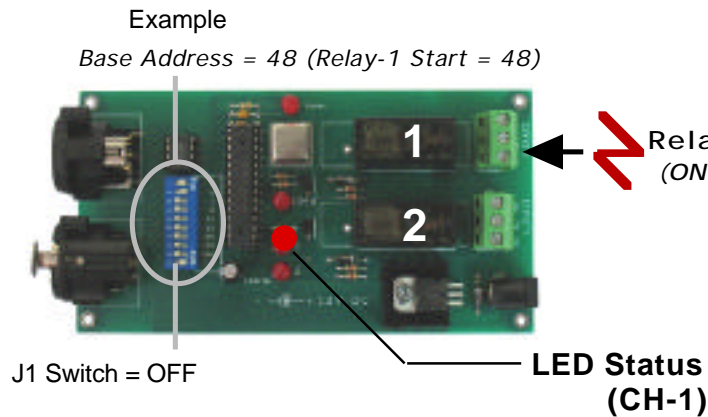
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DMX 2-Channel Relay Board

Board Address DMX - Values

Duo DMX (2) Channel Control
DIP Switch 10 = OFF
Individual Relay Control

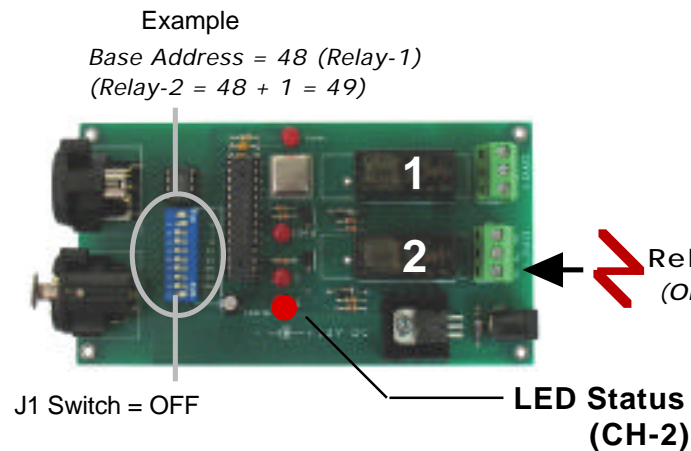


Relay-1
(ON / OFF)

Example

(DMX Board Base Address = 48)
(Relay 1 = DMX Channel 48)
(Relay 1 = ON Value = 224-255)
(Relay 1 = OFF Value = 223-0)

Relay-1	DMX CH-1 Value
Status	224 - 255 = ON 223 - 0 = OFF



Relay-2
(ON / OFF)

Example

(DMX Board Base Address = 48)
(Relay 2 = DMX Channel 49)
(Relay 2 = ON Value = 224-255)
(Relay 2 = OFF Value = 223-0)

Relay-2	DMX CH-2 Value
Status	224 - 255 = ON 223 - 0 = OFF

0 = OFF (0 %)
255 = ON (100 %)

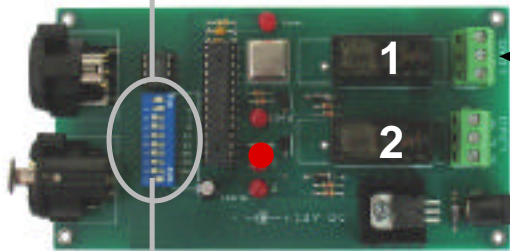
DMX 2-Channel Relay Board

**Board Address
DMX - Values**

Single DMX (1) Channel Control
DIP Switch 10 = ON
Flip-Flop Relay Control

DIP Switches
(Addressing)

Example
Address = 48



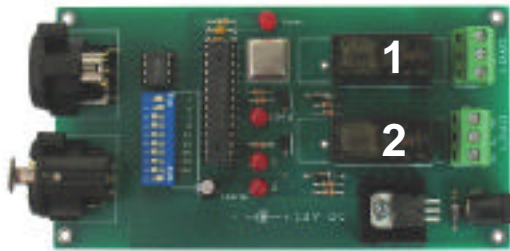
J1 Switch = ON

Relay-1
(ON)
Relay-2
(OFF)

Example

(DMX Board Address = 48)
(Value = 80 - 0)
(Relay 1 = ON)
(Relay 2 = OFF)

DMX CH1 Data Value Less than 80	Relay 1 Status ON	Relay 2 Status OFF
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Relay-1
(OFF)
Relay-2
(OFF)

Example

(DMX Board Address = 48)
(Value = 80 - 160)
(Relay 1 = OFF)
(Relay 2 = OFF)

DMX CH1 Data Value Between 80 and 160	Relay 1 Status OFF	Relay 2 Status OFF
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Relay-1
(OFF)
Relay-2
(ON)

Example

(DMX Board Address = 48)
(Value = 160 - 255)
(Relay 1 = OFF)
(Relay 2 = ON)

DMX CH1 Data Value Greater than 160	Relay 1 Status OFF	Relay 2 Status ON
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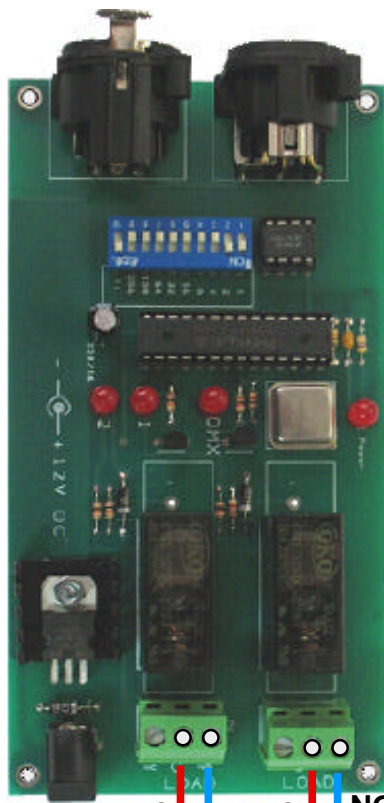
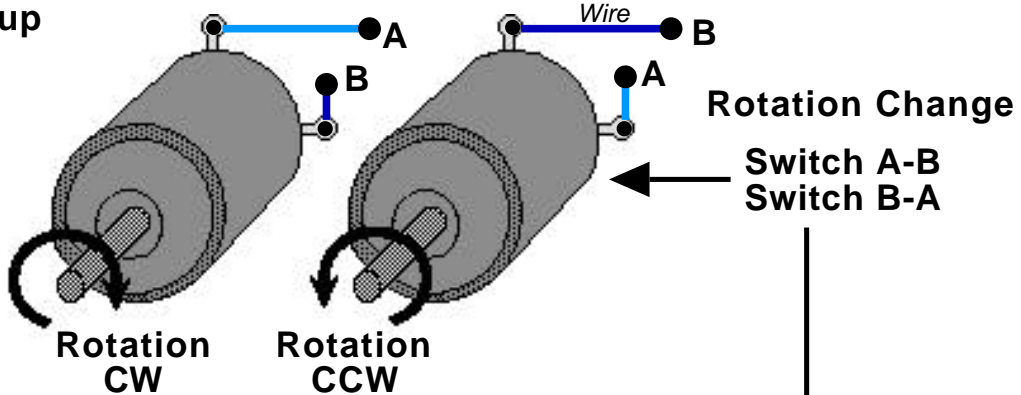
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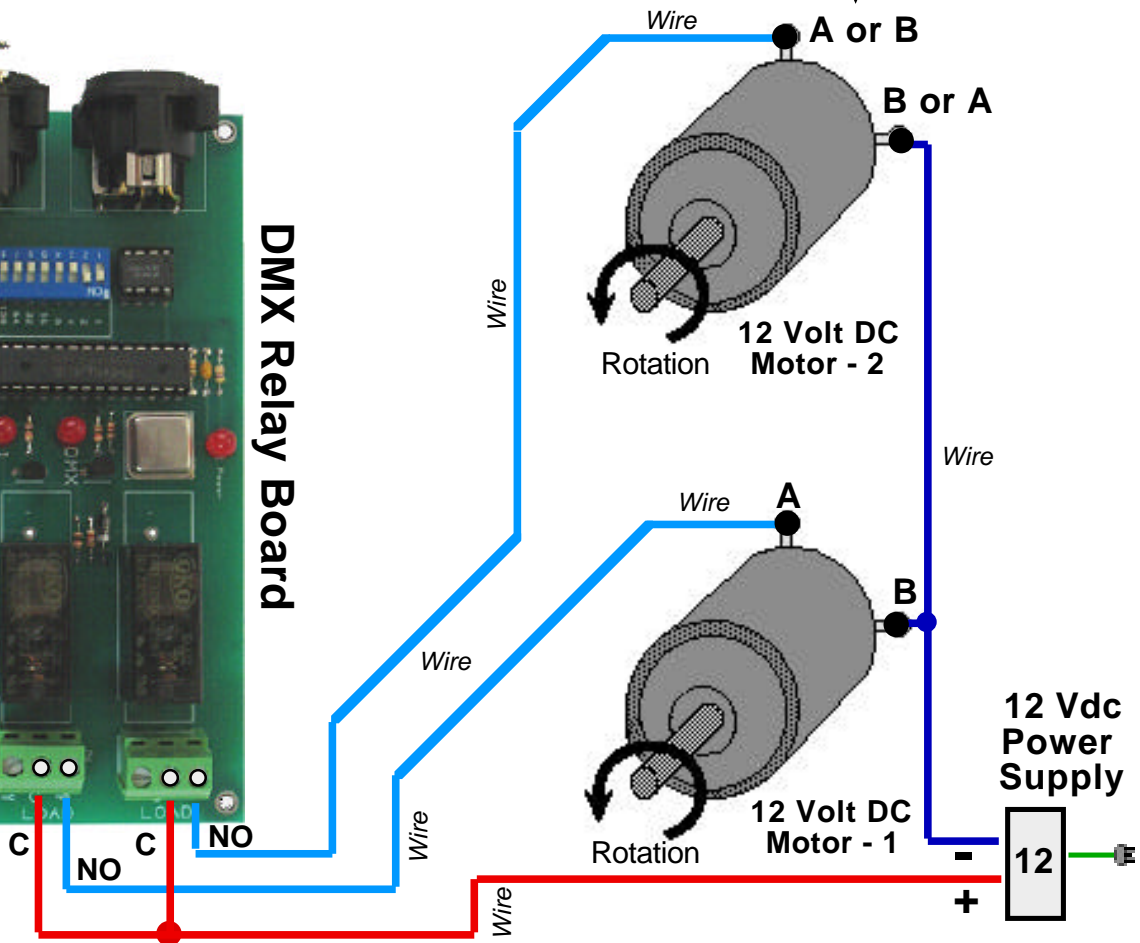
DMX 2-Channel Relay Board

Application
Motor Set-up

- OR -



DMX Relay Board



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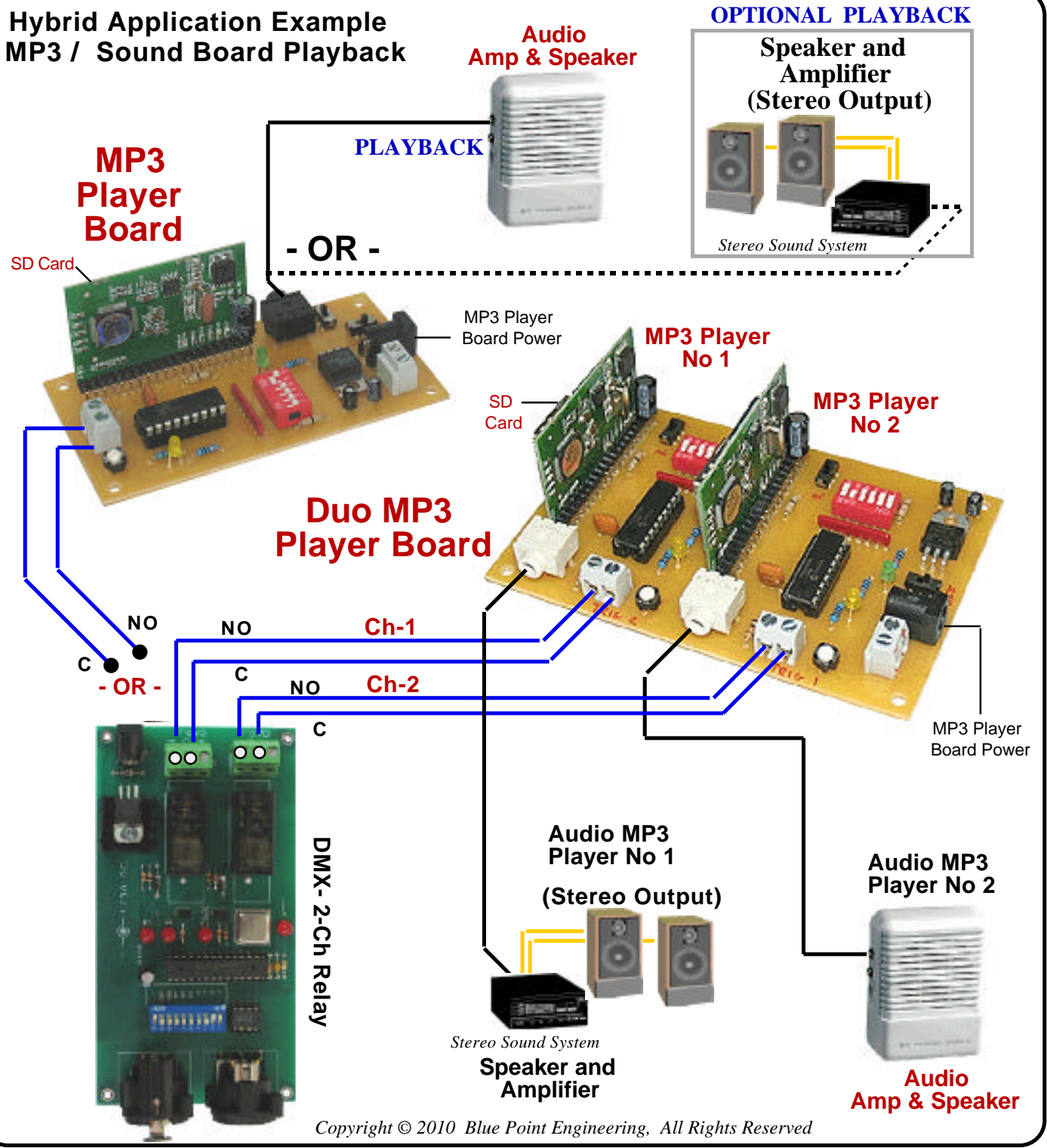
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DMX 2-Channel Relay Board

Hybrid Application Example
MP3 / Sound Board Playback



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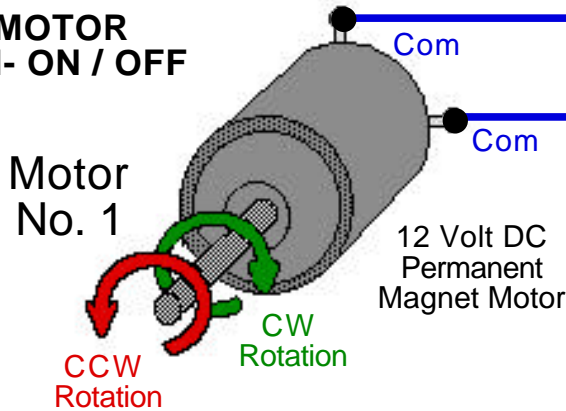
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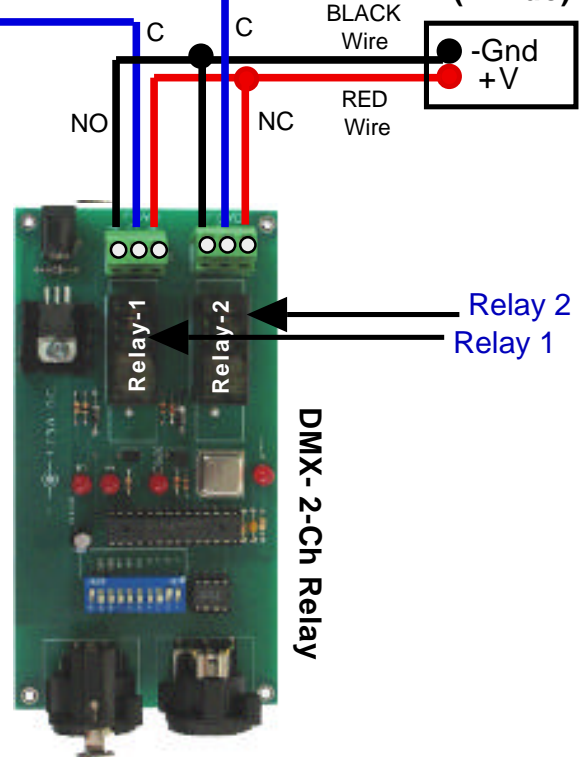
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DMX 2-Channel Relay Board

DC MOTOR
Control- ON / OFF



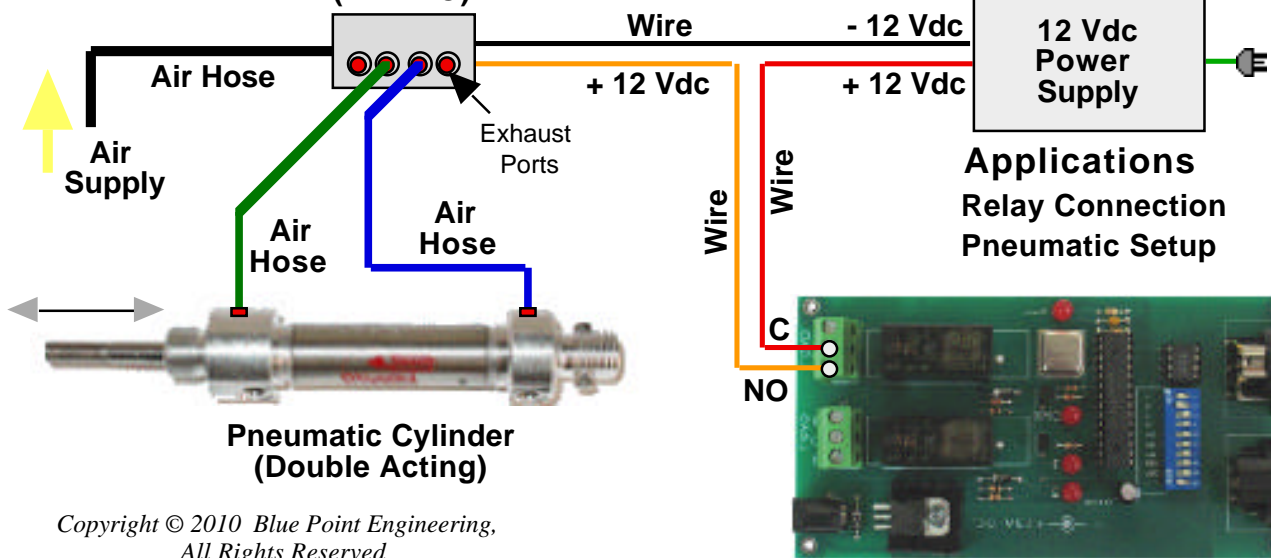
MOTOR POWER
(12Vdc)



Motor Logic

- Relay 1 ON
Relay 2 OFF = Motor CW Rotation
- Relay 1 OFF
Relay 2 ON = Motor CCW Rotation
- Relay 1 and 2 ON = Motor All Stop
- Relay 1 and 2 OFF = Motor All Stop

5/2 Switching Solenoid Air Valve
(12 VDC)



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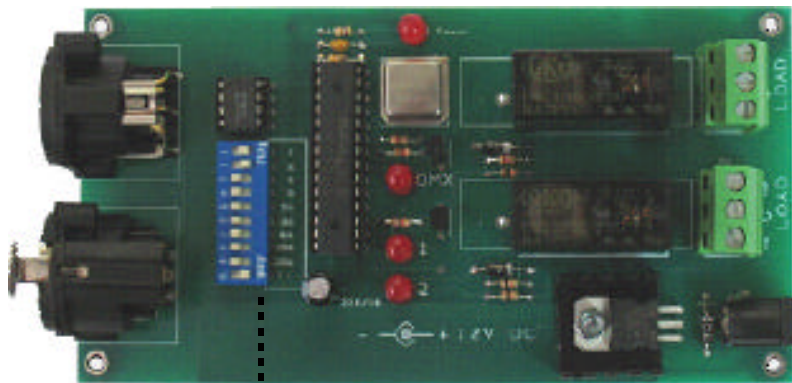
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DMX 2-Channel Relay Board

Notes / Work Sheet:

DMX RELAY BOARD NO: _____

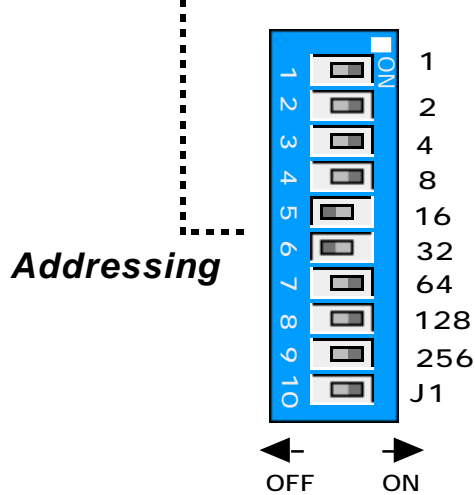
DMX RELAY BOARD Application: _____



Output Application

Relay -1 _____

Relay -2 _____



Addressing

1 = Relay ON
0 = Relay OFF

SW-1 _____
 SW-2 _____
 SW-3 _____
 SW-4 _____
 SW-5 _____
 SW-6 _____
 SW-7 _____
 SW-8 _____
 SW-9 _____
 SW-10 _____

Addressing _____
DMX Value

DMX 512 Address Chart

Technical

T

Chart A - US
Standard DMX 512

Ch - Switches

1 = 1
2 = 2
3 = 1, 2
4 = 3
5 = 1, 3
6 = 2, 3
7 = 1, 2, 3
8 = 4
9 = 1, 4
10 = 2, 4
11 = 1, 2, 4
12 = 3, 4
13 = 1, 3, 4
14 = 2, 3, 4
15 = 1, 2, 3, 4
16 = 5
17 = 1, 5
18 = 2, 5
19 = 1, 2, 5
20 = 3, 5
21 = 1, 3, 5
22 = 2, 3, 5
23 = 1, 2, 3, 5
24 = 4, 5
25 = 1, 4, 5
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27 = 1, 2, 4, 5
28 = 3, 4, 5
29 = 1, 3, 4, 5
30 = 2, 3, 4, 5
31 = 1, 2, 3, 4, 5
32 = 6
33 = 1, 6
34 = 2, 6
35 = 1, 2, 6
36 = 3, 6
37 = 1, 3, 6
38 = 2, 3, 6
39 = 1, 2, 3, 6
40 = 4, 6
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46 = 2, 3, 4, 6
47 = 1, 2, 3, 4, 6
48 = 5, 6
49 = 1, 5, 6
50 = 2, 5, 6
51 = 1, 2, 5, 6
52 = 3, 5, 6

Ch - Switches

53 = 1, 3, 5, 6
54 = 2, 3, 5, 6
55 = 1, 2, 3, 5, 6
56 = 4, 5, 6
57 = 1, 4, 5, 6
58 = 2, 4, 5, 6
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100 = 3, 6, 7
101 = 1, 3, 6, 7
102 = 2, 3, 6, 7
103 = 1, 2, 3, 6, 7
104 = 4, 6, 7

Ch - Switches

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Ch - Switches

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208 = 5, 7, 8

Ch - Switches

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251 = 1, 2, 4, 5, 6, 7, 8
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253 = 1, 3, 4, 5, 6, 7, 8
254 = 2, 3, 4, 5, 6, 7, 8
255 = 1, 2, 3, 4, 5, 6, 7, 8
256 = 9
257 = 1, 9
258 = 2, 9
259 = 1, 2, 9
260 = 3, 9

DMX Address Chart Cont.

Ch - Switches

261 = 1, 3, 9
 262 = 2, 3, 9
 263 = 1, 2, 3, 9
 264 = 4, 9
 265 = 1, 4, 9
 266 = 2, 4, 9
 267 = 1, 2, 4, 9
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 317 = 1, 3, 4, 5, 6, 9
 318 = 2, 3, 4, 5, 6, 9
 329 = 1, 2, 3, 4, 5, 6, 9
 320 = 7, 9
 321 = 1, 7, 9

Ch - Switches

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 326 = 2, 3, 7, 9
 327 = 1, 2, 3, 7, 9
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 334 = 2, 3, 4, 7, 9
 335 = 1, 2, 3, 4, 7, 9
 336 = 5, 7, 9
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