Exhibit Control
ENGINEERING
102 Waterview Circle
Forest, VA 24551
(434) 385-4144
EMAIL: EXHIBIT_CONTROL@YAHOO.COM
WEB: WWW.EXHIBIT-CONTROL.NET

General Purpose Interactive Exhibit Controller

PN: ece-C-13-009, REv 0

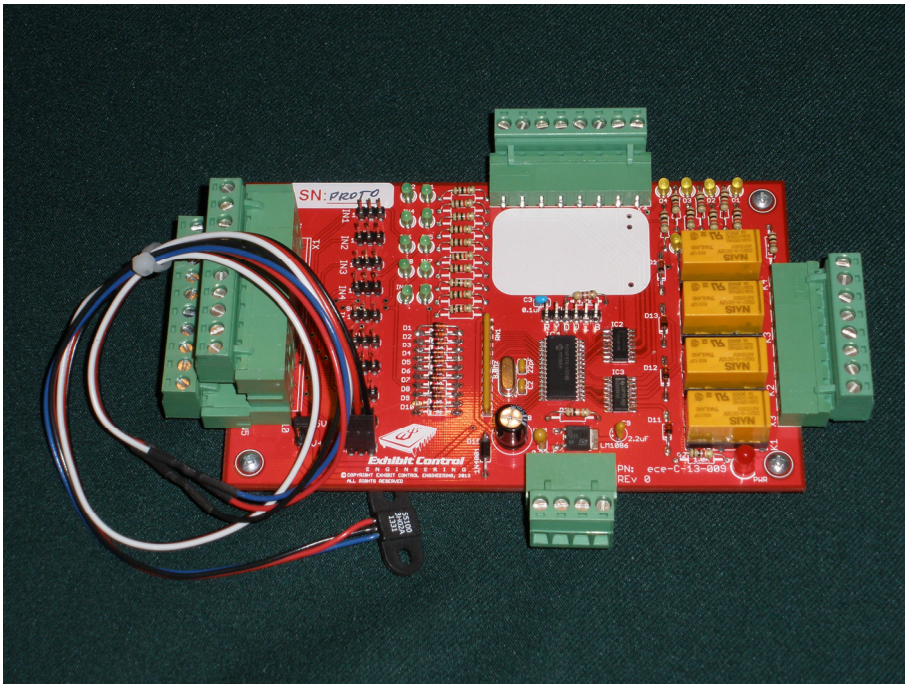

Figure 1

Overview:

This product is for those basic stand-alone exhibits that need some economic interactivity to bring them alive. In many cases people try to use switch or relay logic for these exhibits, but they usually result in experiences that are very buggy for the visitor. This device was designed to solve that problem. It can be configured to take up to 10 digital inputs: contact closure via switches or motion detectors, TTL signals, or sensor outputs under 5vdc. It can provide either 12 or 5-volt power to those sensors requiring moderate power. It has eight open collector outputs that can each sink 500ma at 30vdc. That output can handle LEDs, 12-volt incandescent lights and relays. There are even some back-lit panels made by Rosco that are under the 500ma limit. And, of course, relays could then control much more severe voltages and currents. Optionally, four of those outputs can be directly converted to relays on the PCB that can handle up to 2 amps at 30vdc.

Obviously, there are numerous ways this device could be incorporated into interactive exhibits. Visitor input has been pretty well covered. However, besides the bi-state output mention earlier, these outputs could trigger digital message repeaters as part of the visitor payoff as well.

View Figure 2 for the layout of the features of this controller.

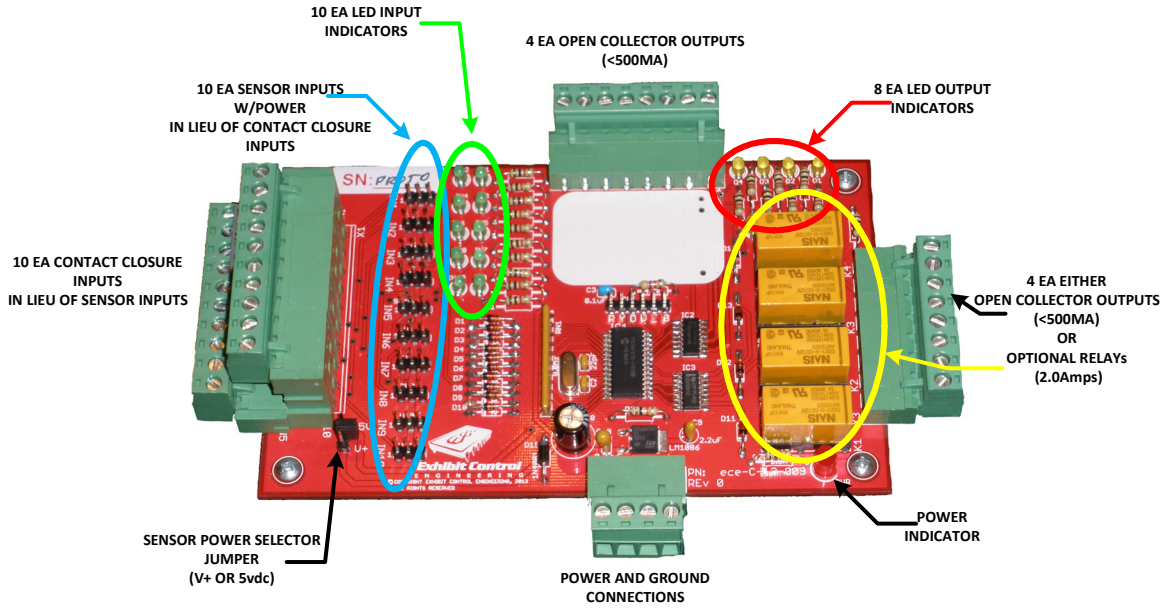

Figure 2

Among the potpourri of different applications, four are attached in a drawing series that were actually implemented in a prestigious museum gallery in 2014. Take a look to get a sense of how it might be used in your future exhibits. Call us to discuss any possibilities.

[redacted]

STAND-ALONE INTERACTIVE EXHIBITS

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102 Waterview Circle, Forest, VA 24551
(434) 385-4144 (tel)
email : exhibit_control@yahoo.com
WEB Site : exhibit-control.net

LEGEND:

REV	DATE	DESCRIPTION	APPROVED

Exhibit Control ENGINEERING

[redacted]

PROJECT
[redacted]

Index

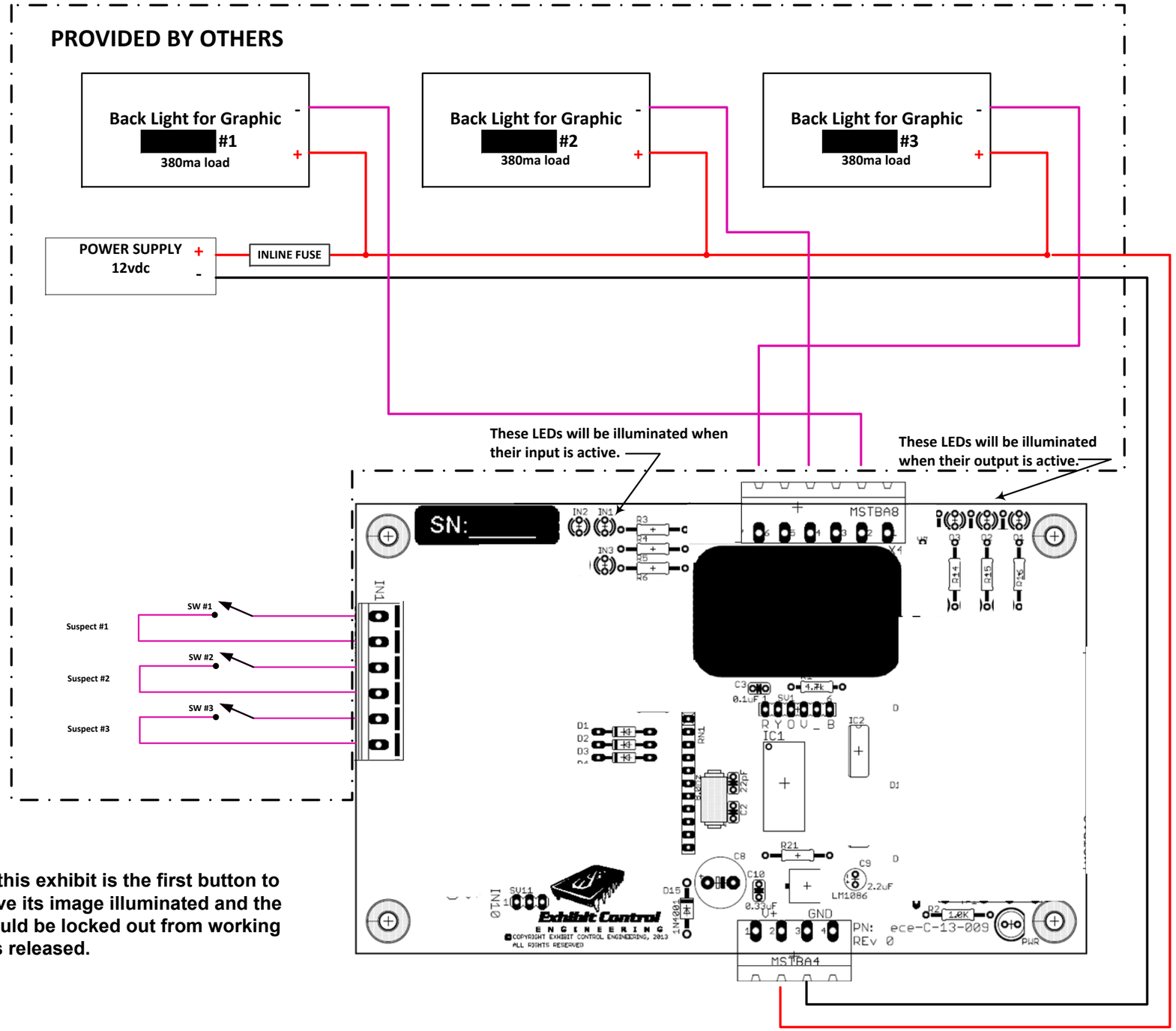
ITEM
Control Electronics

DATE	DRAWN	CHECKED
3/24/14	FGP	

JOB NO.
14-015-001

SHEET
1.0

FILE NAME
[redacted]



NOTE: The logic for this exhibit is the first button to be pressed would have its image illuminated and the other two buttons would be locked out from working until the first one was released.

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LEGEND:

LOW VOLTAGE WIRING

PS GND

PS B+

REV	DATE	DESCRIPTION	APPROVED

Exhibit Control ENGINEERING

[redacted]

ITEM

DATE	DRAWN	CHECKED
3/24/14	FGP	

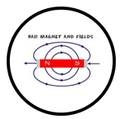
JOB NO. 14-015-001

SHEET 2.0

FILE NAME [redacted]

Note:
The logic for this exhibit will be the backlight will be illuminated once the slider is in one of the correct locations (for a short amount of time, a "de-bounce" feature) and will stay illuminated until the slider is moved off the active position.

MAGNET IN SLIDER MECHANISM FULL RIGHT



MAGNET IN SLIDER CENTERED

MAGNET IN SLIDER FULL LEFT

HORIZONTAL CENTER OF [redacted] WINDOW

PROVIDED BY OTHERS

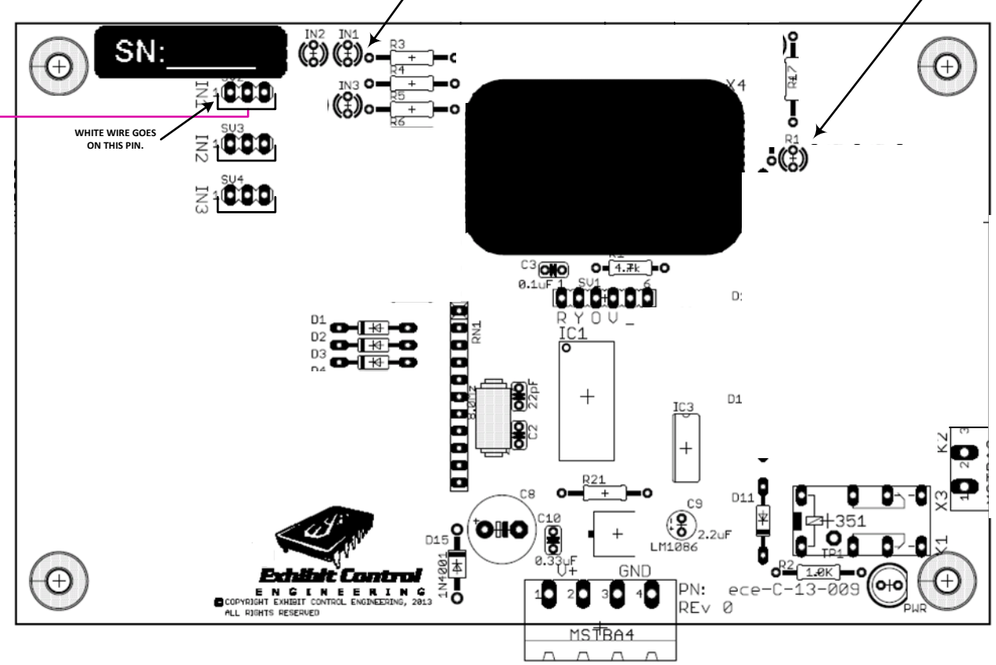
Back Light for [redacted] GRAPHICS
750 ma load
-
+

POWER SUPPLY
12vdc
+
-

These LEDs will be illuminated when their input is active.

This LED will be illuminated when its output is active.

WHITE WIRE GOES ON THIS PIN.



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LEGEND:

LOW VOLTAGE WIRING

PS GND

PS B+

REV	DATE	DESCRIPTION	APPROVED

Exhibit Control
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[redacted]

PROJECT

ITEM

DATE	DRAWN	CHECKED
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JOB NO. 14-015-001

SHEET 3.0

FILE NAME [redacted]

PROVIDED BY OTHERS

Back Light for Graphic [redacted] #1 (Far Left)
130 ma LOAD

Back Light for Graphic [redacted] #2
130 ma LOAD

Back Light for Graphic [redacted] #3 (Center)
130 ma LOAD

Back Light for Graphic [redacted] #4
130 ma LOAD

Back Light for Graphic [redacted] #5 (Far Right)
130 ma LOAD

POWER SUPPLY
12VDC

INLINE FUSE

[redacted] #1 POSITION

[redacted] #2 POSITION

[redacted] #3 POSITION

[redacted] #4 POSITION

[redacted] #5 POSITION

MAGNET IN SLIDER MECHANISM

PROVIDED BY OTHERS

PLAY BUTTON

SW #1

These LEDs will be illuminated when their input is active.

These LEDs will be illuminated when their output is active.

WHITE WIRE GOES ON THESE PINS.

SN:_____

Exhibit Control ENGINEERING

PN: ece-C-13-009
REv 0

NOTE:
When the play button is pressed, if the slider is aligned with a [redacted], that [redacted] graphic will be illuminated as long as the play button is depressed.

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LEGEND:

- LOW VOLTAGE WIRING
- PS GND
- PS B+
- Jumper

REV	DATE	DESCRIPTION	APPROVED

Exhibit Control ENGINEERING

[redacted]

PROJECT

[redacted]

ITEM: Control Electronics

DATE	DRAWN	CHECKED
3/24/14	FGP	

JOB NO.: 14-015-001

SHEET: 4.0

FILE NAME: [redacted]

NOTE:
The logic for this exhibit will be the payoff LED (or light) will be illuminated once the correct solution has been dialed into all three cylinders (which must exist for a short amount of time, a "de-bounce" feature) and will stay on for approximately 15 seconds or until one the cylinders have been rotated out of position.

CYLINDER #1
MAGNET
SOLUTION #1

CYLINDER #2
MAGNET
SOLUTION #1

CYLINDER #3
MAGNET
SOLUTION #1

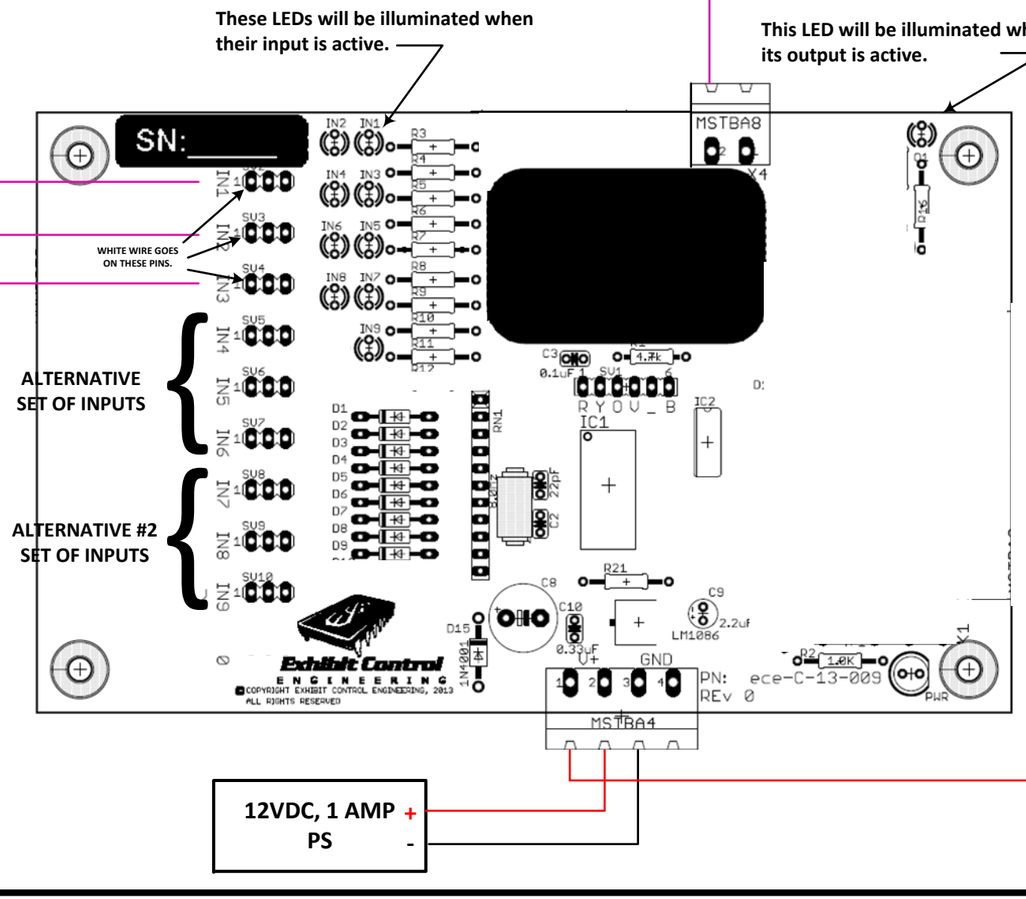
CYLINDER # 1
SOLUTION #1
SENSOR

CYLINDER # 2
SOLUTION #1
SENSOR

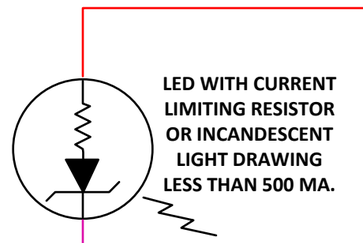
CYLINDER # 3
SOLUTION #1
SENSOR

SEE SHEET FOR PHYSICAL PLACEMENT OF MAGNETS AND SENSORS IN THE EXHIBIT.

NOTE:
ANY SET OF INPUTS (SET #1: 1, 2 & 3; SET #2: 4, 5 & 6; SET #3: 7, 8 & 9) CAN BE USED TO OBTAIN THE CORRECT GAME PLAY.



PROVIDED BY OTHERS



LED WITH CURRENT LIMITING RESISTOR OR INCANDESCENT LIGHT DRAWING LESS THAN 500 MA.

12VDC, 1 AMP
PS **+** **-**

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LEGEND:

LOW VOLTAGE WIRING

PS GND

PS B+

REV	DATE	DESCRIPTION	APPROVED

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[redacted]

PROJECT

[redacted]

ITEM
Control Electronics

DATE	DRAWN	CHECKED
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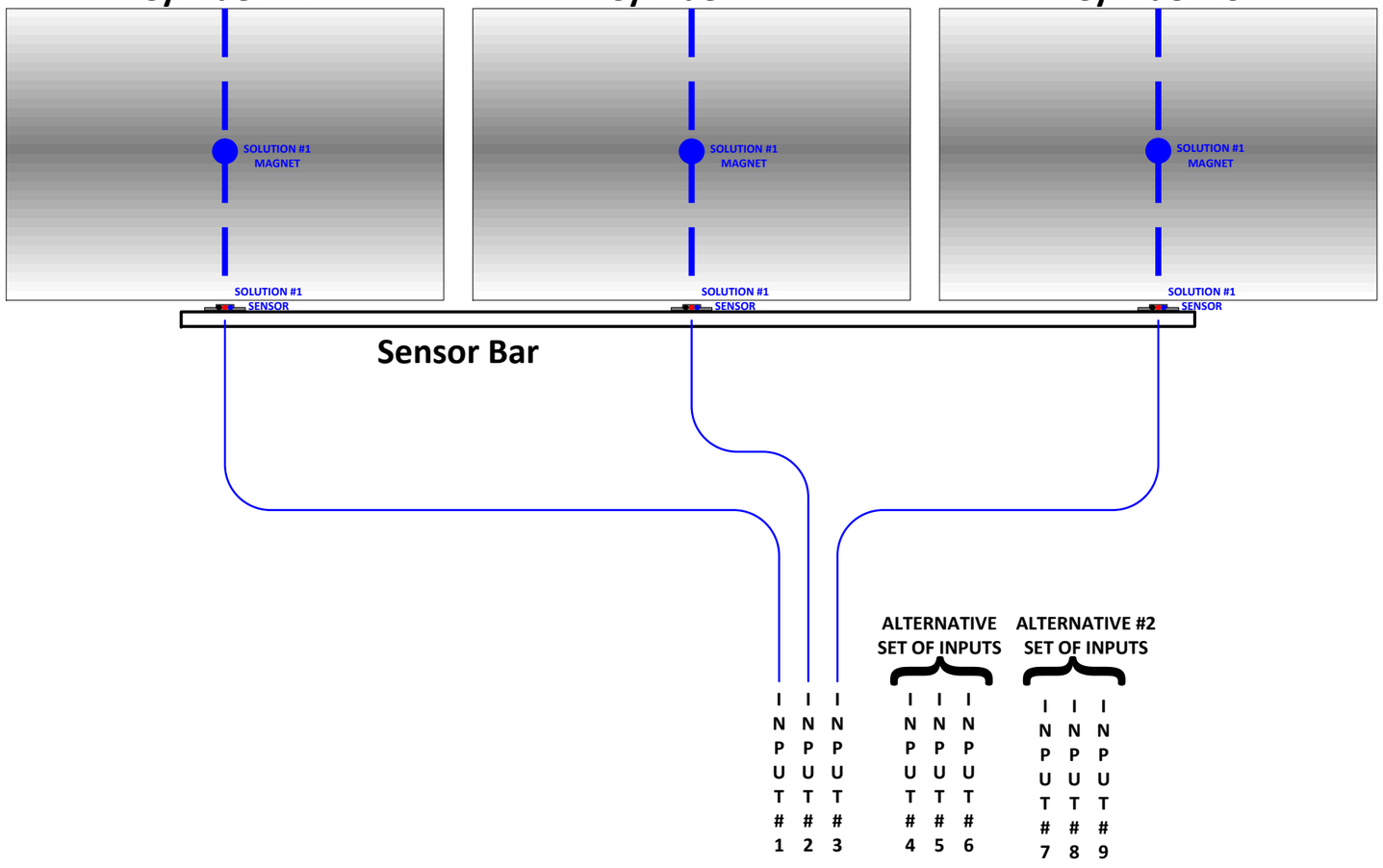
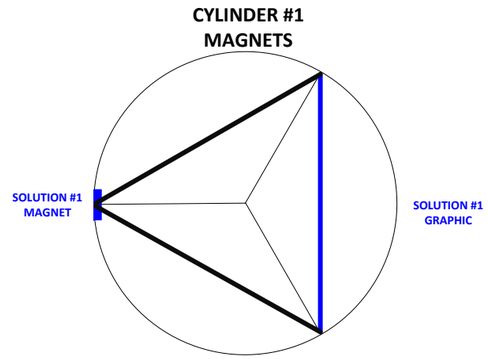
JOB NO. 14-015-001

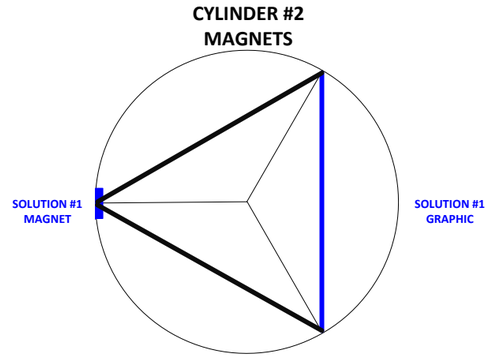
SHEET 5.0

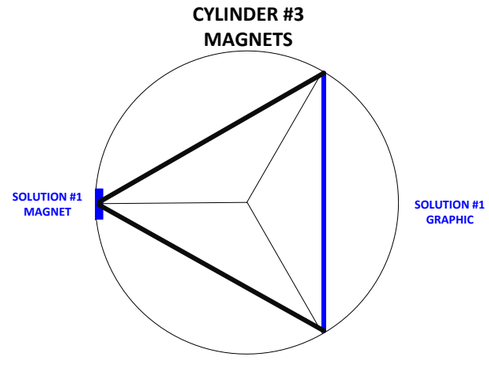
FILE NAME [redacted]

NOT TO SCALE









CYLINDER END VIEW

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LEGEND:

SOLUTION #1 COMPONENTS

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[redacted]

ITEM
Solution/Cylinder Matrix

DATE	DRAWN	CHECKED
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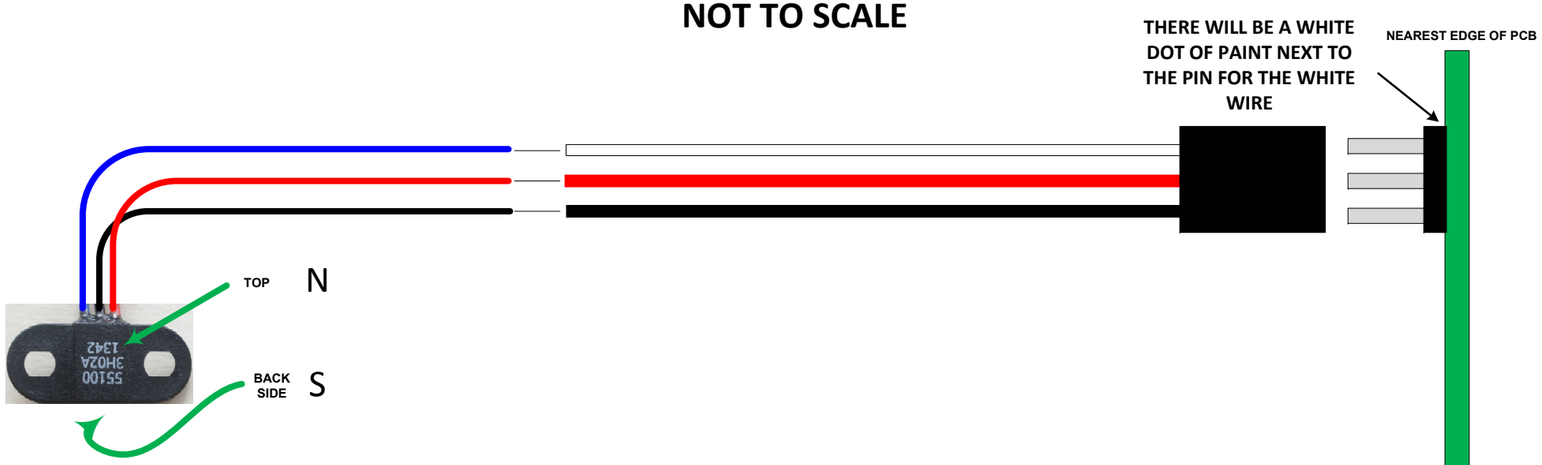
FILE NAME [redacted]

NOT TO SCALE



NOTE:
MAGNET /SENSOR ACTUATION IS POLE POLARITY RESTRICTED, I.E. THE TOP OF THE SENSOR WILL ONLY SENSE THE SOUTH POLE OF THE MAGNET AND THE BOTTOM OF THE SENSOR WILL ONLY SENSE THE NORTH POLE OF THE MAGNET. CORRECT ORIENTATION OF THE MAGNET/SENSOR COMBINATION IS ESSENTIAL.

FIG 1. SENSOR WIRING HALL EFFECT SENSOR CONNECTIONS TYPICAL FOR ALL

NOT TO SCALE

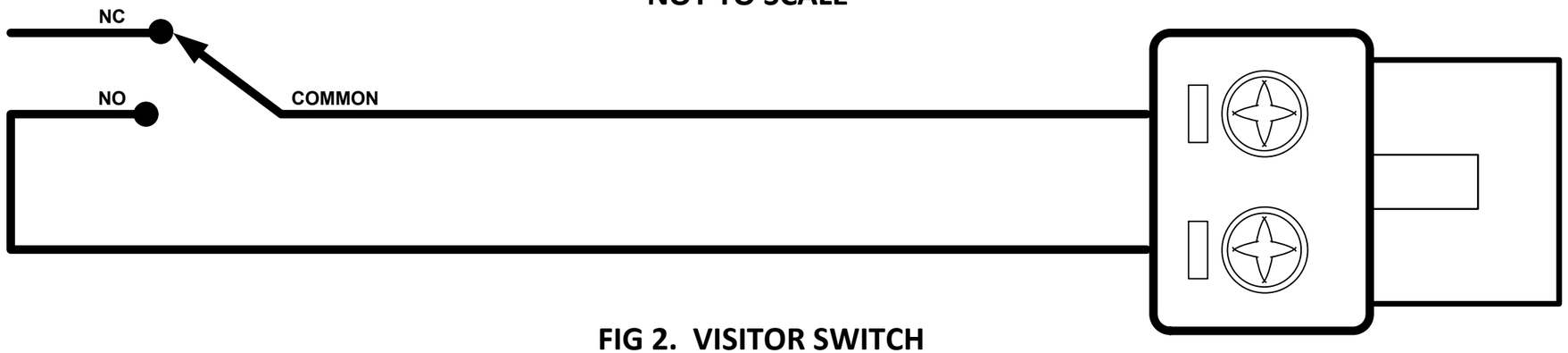


FIG 2. VISITOR SWITCH (BUTTON) WIRING CONNECTIONS TYPICAL FOR ALL

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PROJECT

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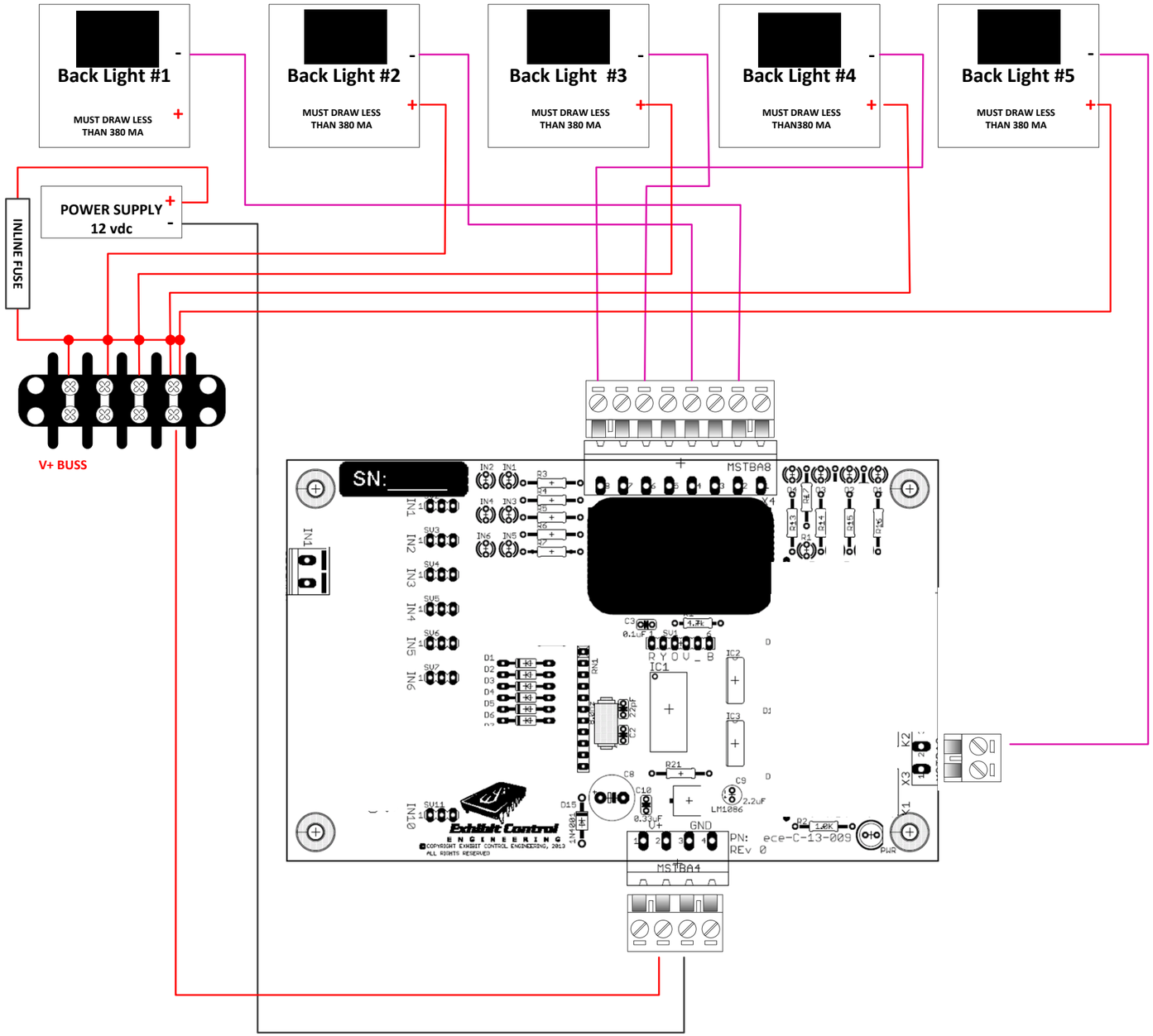
FILE NAME [redacted]

NOT TO SCALE



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LEGEND:

- V+
- GND
- LOW VOLTAGE CONTROL

REV	DATE	DESCRIPTION	APPROVED

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[redacted]

PROJECT [redacted]

ITEM Multiple Backlight Exhibits Power Connections

DATE	DRAWN	CHECKED
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JOB NO.	SHEET
14-015-001	6.1

FILE NAME [redacted]