


REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE ECO 8926	93-3-25	RG
B	REV'D P1 & P2 ECO 9063	93-7-22	RG

**SALES DRAWING**

REV.	B	B	A	A	A	A	A	A	A	A	A	A								
SHEET	1	2	3	4	5	6	7	8	9	10	11	12								

				P.O. BOX 4422 Santa Barbara, CA 93140-4422	
			<b>TITLE</b> GENERAL PURPOSE AEROSPACE 270VDC, 5A VACUUM RELAY		
PREP. BY	TANNER	93-3-19	<b>DWG. NO.</b> AP5B SERIES		
CHKD. BY	RG	93-3-25			
			FSCM. NO.	18741	SHEET 1 OF 12
ENG. APRVL.	RG	93-3-25			

REV.  
B

**SPECIFICATIONS:**

**PHYSICAL**

CONTACT ARRANGEMENT	SPST-NC
FORM	B

**ENVIRONMENTAL**

SHOCK, 11 MS 1/2 SINE (g, Peak)	50
VIBRATION, SINUSOIDAL (55-2000 Hz; g PEAK)	10
OPERATING TEMPERATURE (°C)	-55 TO +85
OPERATIONAL ALTITUDE, MAX. (FT.)	80,000

**ELECTRICAL**

CONTACT RATING	
OPERATING VOLTAGE (Vdc)	270
RATED RESISTIVE LOAD @ 270 VDC (Amps)	5*
LOAD LIFE, MIN. (CYCLES)	50,000
OVERLOAD, SWITCHED (Adc)	20
OVERLOAD CONTACT LIFE, MIN (CYCLES)	50
CONTINUOUS CURRENT CARRY, MAX. (Adc)	SEE TABLE I

TABLE I	ADC
AP5B232, AP5B234, AP5B332, AP5B334, AP5B532, AP5B534 AP5B732, AP5B734, AP5B832, AP5B834, AP5B932, AP5B934	15
AP5B235, AP5B335, AP5B535	5
AP5B245, AP5B345, AP5B545, AP5BA47, AP5BA57, AP5BB47 AP5BB57, AP5BC47, AP5BC57	10

**OTHER DATA**

DIELECTRIC STRENGTH AT SEA LEVEL (VRMS)	
COIL TO CASE	500
ALL OTHER POINTS	2,000
DIELECTRIC STRENGTH AT 80,000 FT.	
ALL POINTS (VRMS)	500
OPERATE TIME, MAX., INCLUDING BOUNCE AT	
NOMINAL VOLTAGE (ms)	10
RELEASE TIME, MAX. (ms)	10
INSULATION RESISTANCE, 500 Vdc, MIN. (MEGOHMS)	
BEFORE LIFE	100
AFTER LIFE	50
CONTACT RESISTANCE, MAX. (OHMS)	SEE TABLE II

TABLE II	OHMS
AP5B232, AP5B234, AP5B332, AP5B334, AP5B532, AP5B534 AP5B732, AP5B734, AP5B832, AP5B834, AP5B932, AP5B934	.010
AP5B235, AP5B245, AP5B335, AP5B345, AP5B535, AP5B545 AP5BA47, AP5BA57, AP5BB47, AP5BB57, AP5BC47, AP5BC57	.030

**COIL DATA**

COIL VOLTAGE, NOMINAL (Vdc)	12	28	120
COIL VOLTAGE, MAX. (Vdc)	14	32	140
PICK-UP VOLTAGE, MAX. (Vdc)	10	20	85
DROP-OUT VOLTAGE, (Vdc)	.3-6	.7-12	5-55
COIL RESISTANCE (OHMS ±10% @ 25°C)	53	290	4700

**NOTES:** RATINGS LISTED ARE ACROSS THE OPERATING TEMPERATURE RANGE.  
\*THE LOAD TERMINALS SHOULD ALWAYS BE CONNECTED AS FOLLOWS:  
COMMON CONTACT +; OTHER CONTACT -.

DIMENSIONS IN INCHES  
(DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS)

TOLERANCES EXCEPT AS NOTED

.xx = ± .03  
.xxx = ± .010  
X° = ± 2°

DO NOT SCALE DWG.



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**AP5B SERIES**

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SCALE  
NONE

SHEET  
2

# PART NUMBER SELECTION

SAMPLE PART NUMBER:    AP5B    B    5    7

COIL OPTIONS

- 2 = 12 Vdc - BUS WIRE/PC BOARD (SEE FIGURES 1, 2, 5 & 6)
- 3 = 28 Vdc - BUS WIRE/PC BOARD (SEE FIGURES 1, 2, 5 & 6)
- 5 = 120 Vdc - BUS WIRE/PC BOARD (SEE FIGURES 1, 2, 5 & 6)
- 7 = 12 Vdc - TURRET TERMINAL (SEE FIGURES 3 & 4)
- 8 = 28 Vdc - TURRET TERMINAL (SEE FIGURES 3 & 4)
- 9 = 120 Vdc - TURRET TERMINAL (SEE FIGURES 3 & 4)
- A = 12 Vdc - STUD TERMINAL (SEE FIGURE 7 & 8)
- B = 28 Vdc - STUD TERMINAL (SEE FIGURE 7 & 8)
- C = 120 Vdc - STUD TERMINAL (SEE FIGURE 7 & 8)

POWER TERMINAL OPTIONS

- 3 = SOLDER CONNECTION/PC BOARD (SEE FIGURES 1-5)
- 4 = FLYING LEAD (SEE FIGURES 6 & 7)
- 5 = STUD TERMINAL (SEE FIGURE 8)

MOUNTING OPTIONS

- 2 = FLANGED MOUNT (SEE FIGURES 1 & 3)
- 4 = THROUGH CHASSIS MOUNT (SEE FIGURES 2 & 4)
- 5 = PC BOARD MOUNT (SEE FIGURES 5 & 6)
- 7 = PANEL MOUNT (SEE FIGURE 7 & 8)

DIMENSIONS IN INCHES  
(DIMENSIONS IN PARENTHESES ARE IN  
MILLIMETERS)

TOLERANCES EXCEPT AS NOTED

.xx = ± .03

.xxx = ± .010

$\angle$  x° = ± 2°

DO NOT SCALE DWG.



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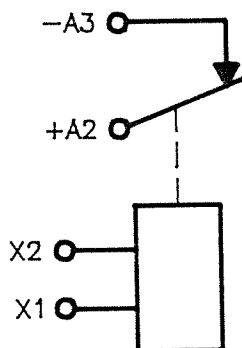
SCALE  
NONE

SHEET  
3

REV.  
A

# SCHEMATIC

(FOR FIGURES 1-4, 7 & 8 ONLY)



NOTE: ON PANEL MOUNT OPTIONS, COIL TERMINALS ARE POLARIZED AS FOLLOWS: X1 IS NEGATIVE (-), X2 IS POSITIVE (+).

DIMENSIONS IN INCHES  
(DIMENSIONS IN PARENTHESES ARE IN  
MILLIMETERS)

TOLERANCES EXCEPT AS NOTED

.xx =  $\pm$  .03

.xxx =  $\pm$  .010

$\angle$  x° =  $\pm$  2°

DO NOT SCALE DWG.

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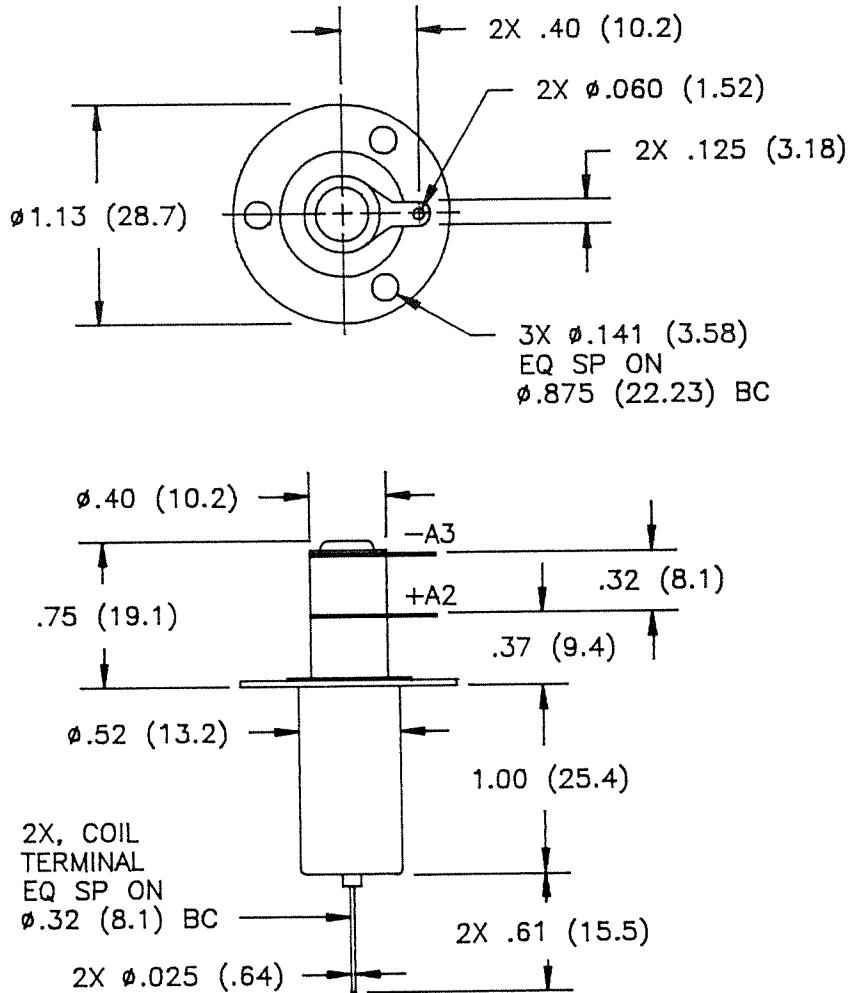
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18741

SCALE  
NONE

SHEET  
4



WEIGHT, MAX (oz): 1.00

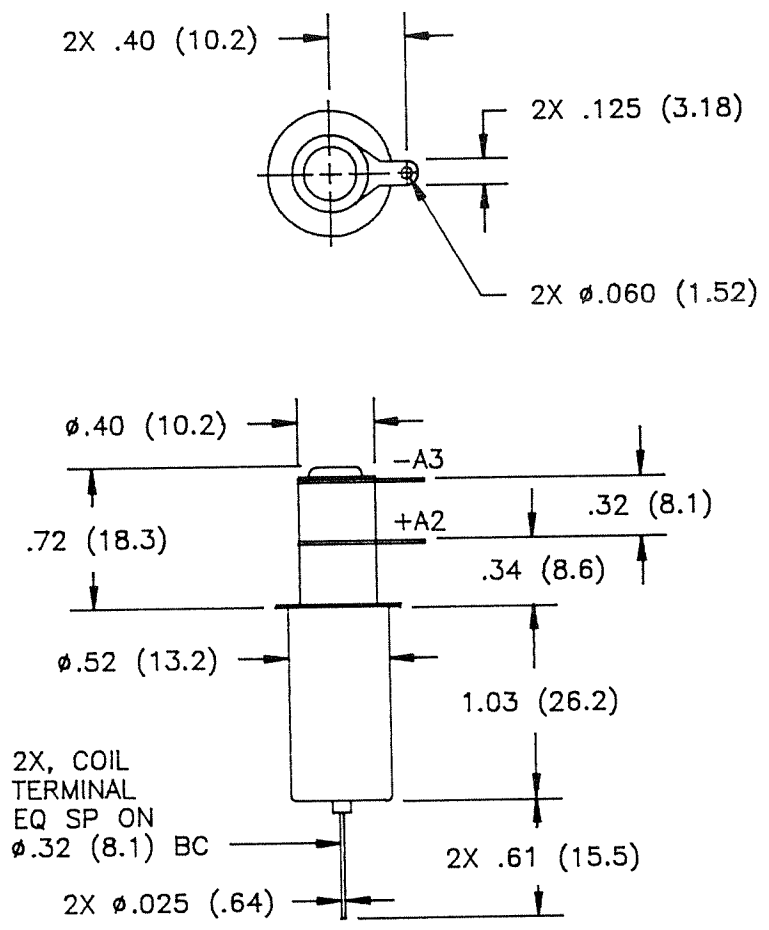
AVAILABLE OPTIONS:

COIL OPTIONS	POWER TERMINAL OPTIONS	MOUNTING OPTIONS
2 = 12 Vdc - BUS WIRE LEADS 3 = 28 Vdc - BUS WIRE LEADS 5 = 120 Vdc - BUS WIRE LEADS	3 = SOLDER CONNECTIONS	2 = FLANGED MOUNT

(PART NUMBER, CONTACT RATINGS, COIL VOLTAGE/RESISTANCE AND SCHEMATIC ARE MARKED ON SIDES OF RELAY.)

FIGURE 1: FLANGED STYLE MOUNTING WITH SOLDER TYPE POWER TERMINALS AND BUS WIRE COIL LEADS

<p>DIMENSIONS IN INCHES (DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS)</p> <p>TOLERANCES EXCEPT AS NOTED</p> <p>.xx = ± .03 .xxx = ± .010 X° = ± 2° DO NOT SCALE DWG.</p>			<p>P.O. BOX 4422 Santa Barbara, CA 93140-4422</p>	
	<h1>AP5B SERIES</h1>			
<p>CAGE CODE 18741</p>		<p>SCALE 1:1</p>		<p>SHEET 5</p>



WEIGHT, MAX (oz): 1.00

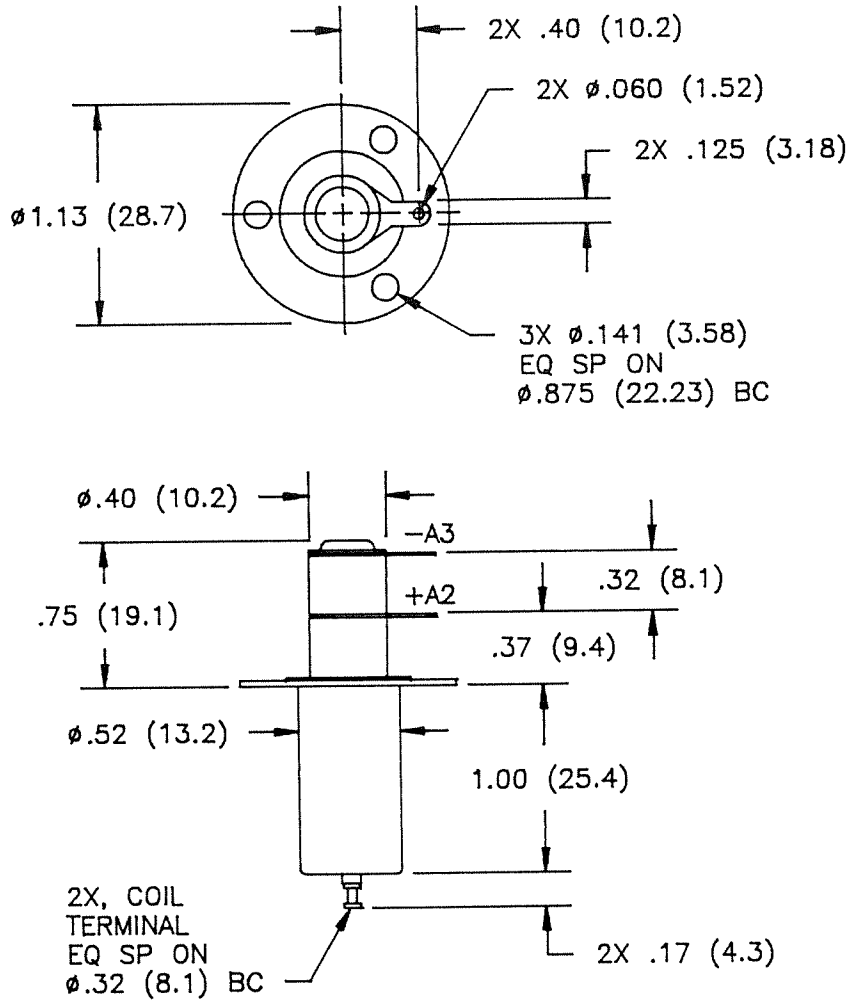
AVAILABLE OPTIONS:

COIL OPTIONS	POWER TERMINAL OPTIONS	MOUNTING OPTIONS
2 = 12 Vdc - BUS WIRE LEADS 3 = 28 Vdc - BUS WIRE LEADS 5 = 120 Vdc - BUS WIRE LEADS	3 = SOLDER CONNECTIONS	4 = THROUGH CHASSIS MOUNT

(PART NUMBER, CONTACT RATINGS, COIL VOLTAGE/RESISTANCE AND SCHEMATIC ARE MARKED ON SIDES OF RELAY.)

FIGURE 2: THROUGH CHASSIS STYLE MOUNTING WITH SOLDER TYPE POWER TERMINALS AND BUS WIRE COIL LEADS

DIMENSIONS IN INCHES (DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS)  TOLERANCES EXCEPT AS NOTED  .xx = ± .03 .xxx = ± .010 $\angle$ x° = ± 2°  DO NOT SCALE DWG.			P.O. BOX 4422 Santa Barbara, CA 93140-4422	
	AP5B SERIES			
	CAGE CODE <b>18741</b>	SCALE <b>1:1</b>	SHEET <b>6</b>	



WEIGHT, MAX (oz): 1.00

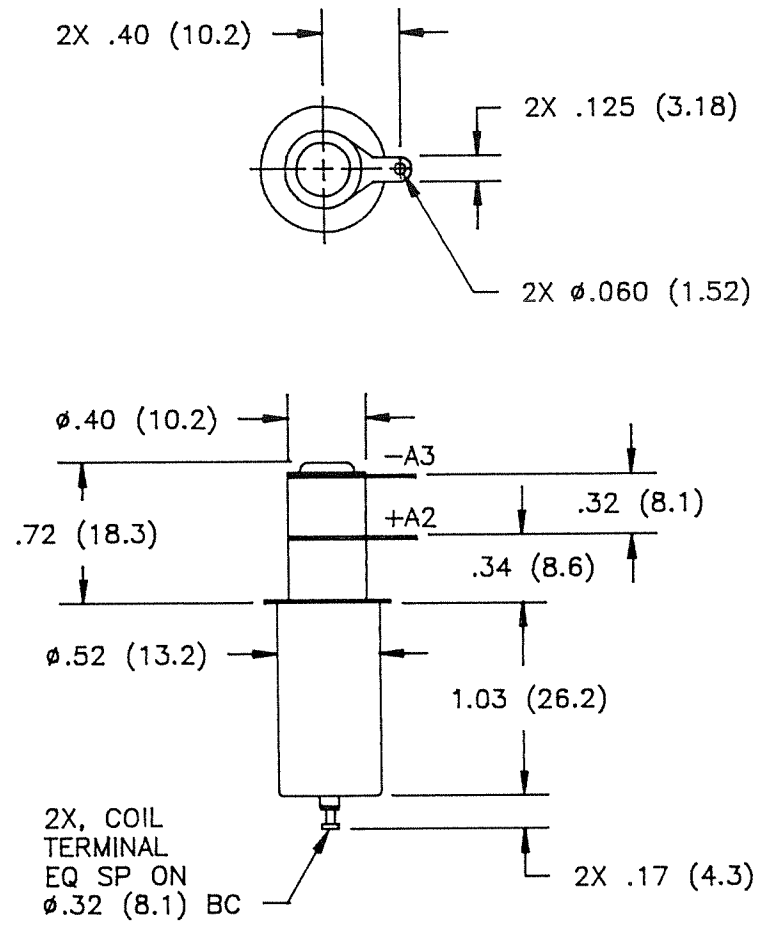
AVAILABLE OPTIONS:

COIL OPTIONS	POWER TERMINAL OPTIONS	MOUNTING OPTIONS
7 = 12 Vdc - TURRET TERMINALS 8 = 28 Vdc - TURRET TERMINALS 9 = 120 Vdc - TURRET TERMINALS	3 = SOLDER CONNECTIONS	2 = FLANGED MOUNT

(PART NUMBER, CONTACT RATINGS, COIL VOLTAGE/RESISTANCE AND SCHEMATIC ARE MARKED ON SIDES OF RELAY.)

FIGURE 3: FLANGED STYLE MOUNTING WITH SOLDER TYPE POWER TERMINALS AND TURRET COIL TERMINALS

<p>DIMENSIONS IN INCHES (DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS)</p> <p>TOLERANCES EXCEPT AS NOTED</p> <p>.xx = ± .03 .xxx = ± .010 x° = ± 2°</p> <p>DO NOT SCALE DWG.</p>			<p>P.O. BOX 4422 Santa Barbara, CA 93140-4422</p>	
	<h1>AP5B SERIES</h1>			
	<p>CAGE CODE 18741</p>	<p>SCALE 1:1</p>	<p>SHEET 7</p>	



WEIGHT, MAX (oz): 1.00

AVAILABLE OPTIONS:

COIL OPTIONS	POWER TERMINAL OPTIONS	MOUNTING OPTIONS
7 = 12 Vdc - TURRET TERMINALS 8 = 28 Vdc - TURRET TERMINALS 9 = 120 Vdc - TURRET TERMINALS	3 = SOLDER CONNECTIONS	4 = THROUGH CHASSIS MOUNT

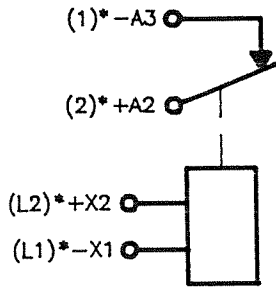
(PART NUMBER, CONTACT RATINGS, COIL VOLTAGE/RESISTANCE AND SCHEMATIC ARE MARKED ON SIDES OF RELAY.)

FIGURE 4: THROUGH CHASSIS STYLE MOUNTING WITH SOLDER TYPE POWER TERMINALS AND TURRET COIL TERMINALS

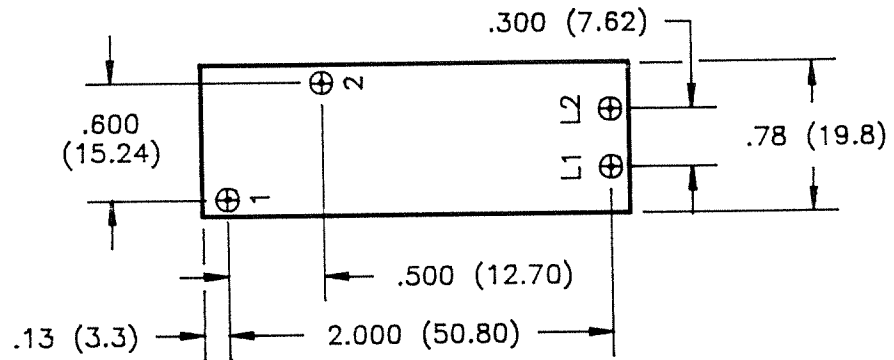
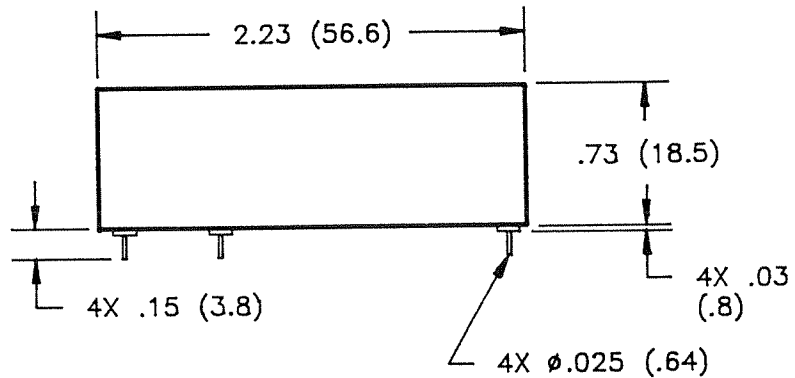
<p>DIMENSIONS IN INCHES (DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS)</p> <p>TOLERANCES EXCEPT AS NOTED</p> <p>.xx = ± .03 .xxx = ± .010 x° = ± 2°</p> <p>DO NOT SCALE DWG.</p>			<p>P.O. BOX 4422 Santa Barbara, CA 93140-4422</p>	
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	<p>CAGE CODE 18741</p>	<p>SCALE 1:1</p>	<p>SHEET 8</p>	



**SCHEMATIC**



\*HARDWARE MARKING  
WILL BE AS SHOWN  
IN PARENTHESES.



WEIGHT, MAX (oz): 2.00

AVAILABLE OPTIONS:

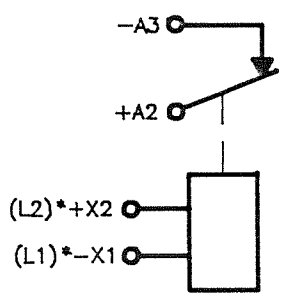
COIL OPTIONS	POWER TERMINAL OPTIONS	MOUNTING OPTIONS
2 = 12 Vdc - PCB TERMINALS	3 = PCB TERMINALS	5 = PCB MOUNT
3 = 28 Vdc - PCB TERMINALS		
5 = 120 Vdc - PCB TERMINALS		

(PART NUMBER, CONTACT RATINGS, COIL VOLTAGE/RESISTANCE AND SCHEMATIC ARE MARKED ON SIDES OF RELAY.)

**FIGURE 5: PC BOARD STYLE MOUNTING WITH PC BOARD TERMINALS**

<p>DIMENSIONS IN INCHES (DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS)</p> <p>TOLERANCES EXCEPT AS NOTED</p> <p>.xx = <math>\pm</math> .03 .xxx = <math>\pm</math> .010 <math>\angle</math> x° = <math>\pm</math> 2° DO NOT SCALE DWG.</p>			P.O. BOX 4422 Santa Barbara, CA 93140-4422	
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	CAGE CODE 18741	SCALE 1:1	SHEET 9	

# SCHEMATIC



\*HARDWARE MARKING WILL BE AS SHOWN IN PARENTHESES.

NOTES:

- 1. TERMINALS 1 AND 2 ARE FOR MOUNTING ONLY, THEY ARE NOT ELECTRICALLY CONNECTED.

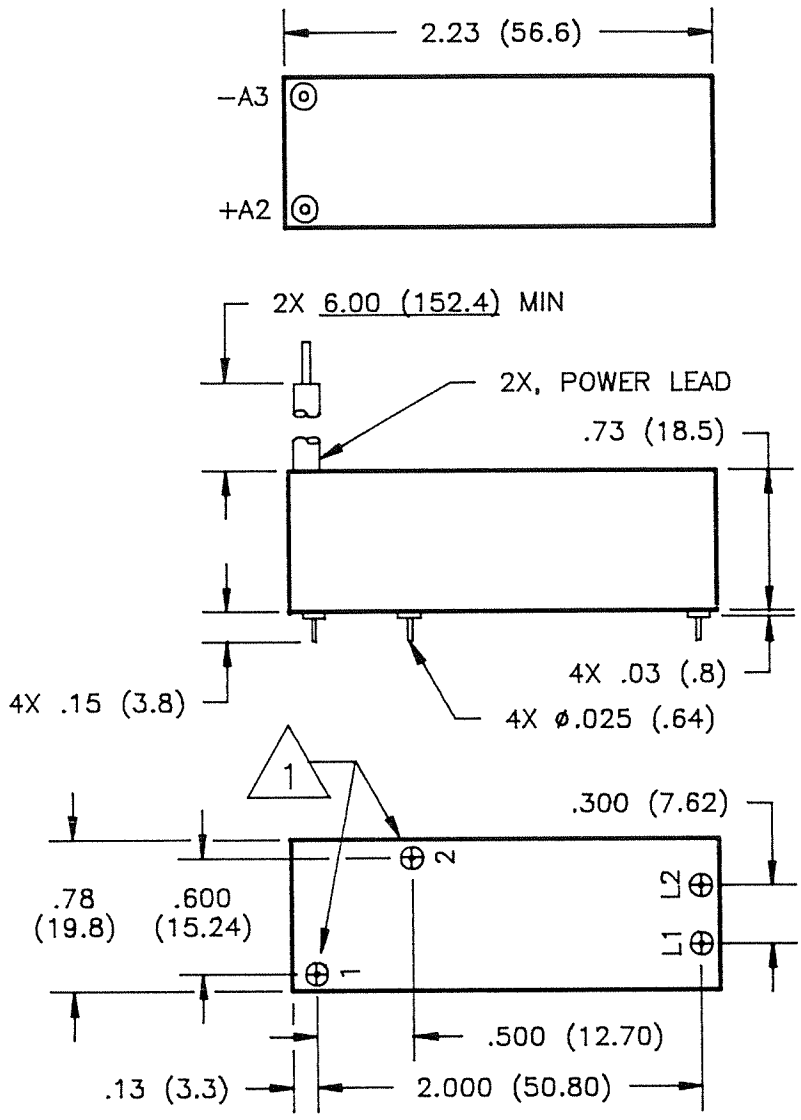
WEIGHT, MAX (oz): 2.00

AVAILABLE OPTIONS:

COIL OPTIONS	POWER TERMINAL OPTIONS	MOUNTING OPTIONS
2 = 12 Vdc - PCB TERMINALS	4 = FLYING LEADS	5 = PCB MOUNT
3 = 28 Vdc - PCB TERMINALS		
5 = 120 Vdc - PCB TERMINALS		

(PART NUMBER, CONTACT RATINGS, COIL VOLTAGE/RESISTANCE AND SCHEMATIC ARE MARKED ON SIDES OF RELAY.)

FIGURE 6: PC BOARD STYLE MOUNTING FLYING POWER LEADS



DIMENSIONS IN INCHES  
(DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS)  
TOLERANCES EXCEPT AS NOTED  
.xx = ± .03  
.xxx = ± .010  
X° = ± 2°  
DO NOT SCALE DWG.



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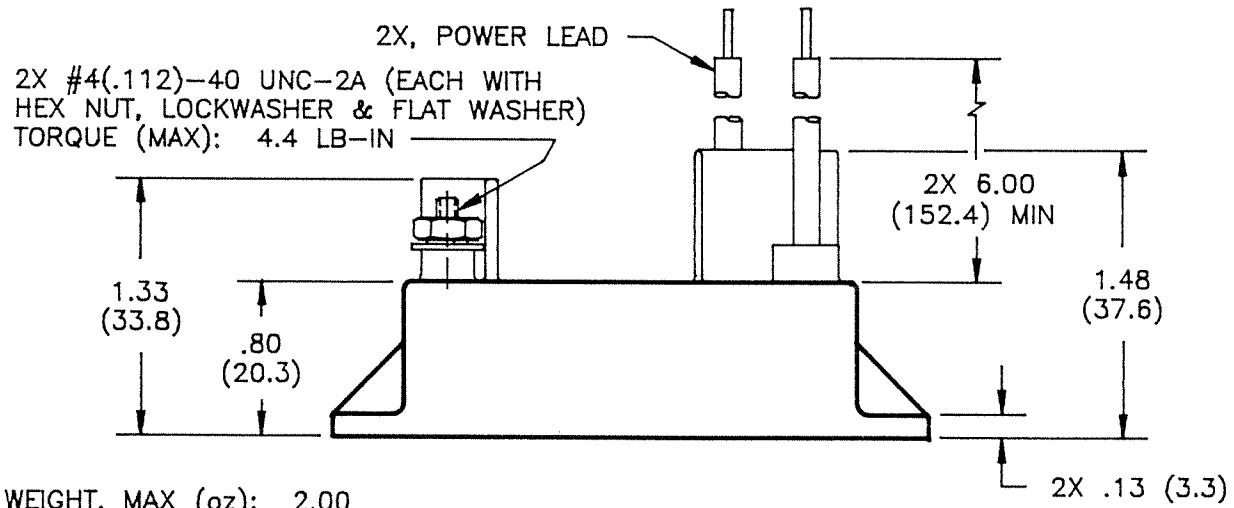
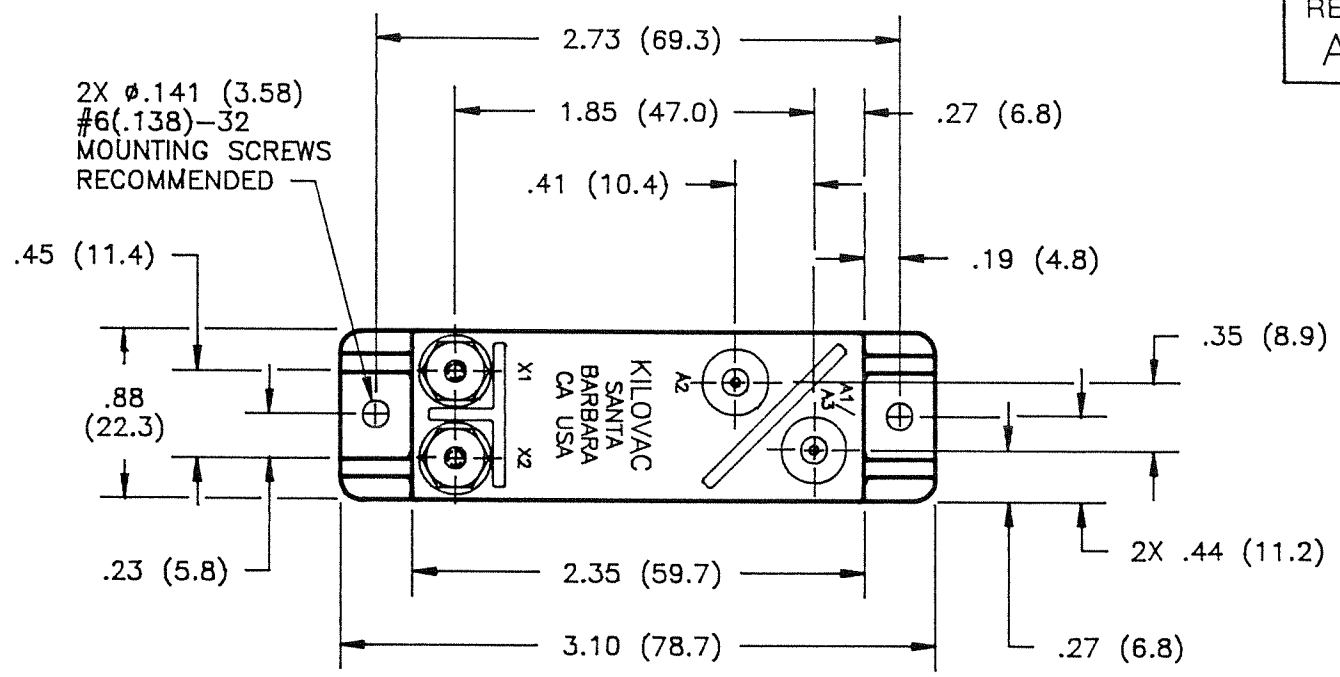
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18741

SCALE  
1:1

SHEET  
10

REV.  
A



WEIGHT, MAX (oz): 2.00

AVAILABLE OPTIONS:

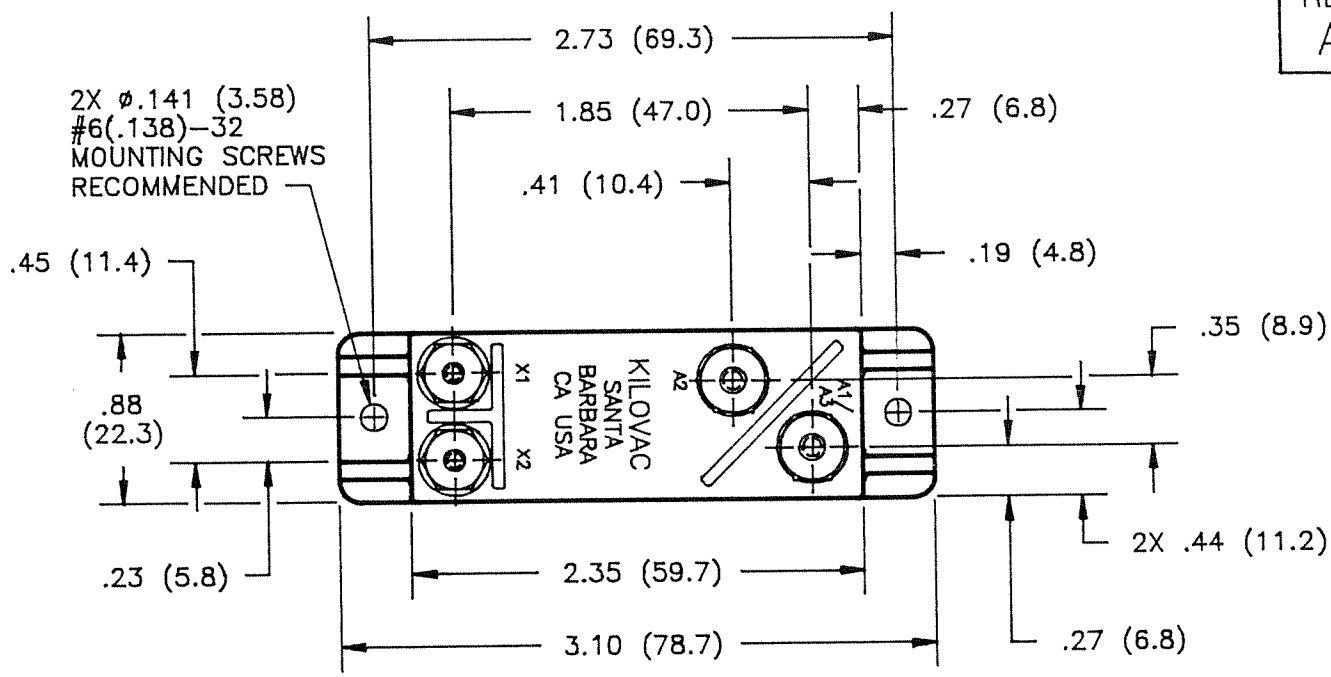
COIL OPTIONS	POWER TERMINAL OPTIONS	MOUNTING OPTIONS
A = 12 Vdc - STUD TERMINALS B = 28 Vdc - STUD TERMINALS C = 120 Vdc - STUD TERMINALS	4 = FLYING LEADS	7 = PANEL MOUNT

(PART NUMBER, CONTACT RATINGS, COIL VOLTAGE/RESISTANCE AND SCHEMATIC ARE MARKED ON SIDES OF RELAY.)

FIGURE 7: PANEL STYLE MOUNTING WITH FLYING POWER LEADS AND STUD COIL TERMINALS

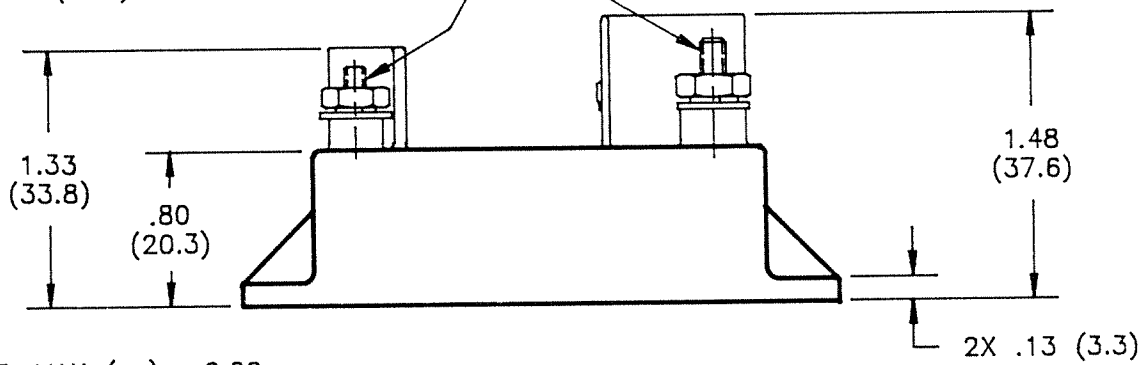
DIMENSIONS IN INCHES (DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS) TOLERANCES EXCEPT AS NOTED .xx = $\pm$ .03 .xxx = $\pm$ .010 $\angle$ x° = $\pm$ 2° DO NOT SCALE DWG.			P.O. BOX 4422 Santa Barbara, CA 93140-4422	
	AP5B SERIES			
	CAGE CODE 18741	SCALE 1:1	SHEET 11	

REV.  
A



2X #4(.112)-40 UNC-2A (EACH WITH  
HEX NUT, LOCKWASHER & FLAT WASHER)  
TORQUE (MAX): 4.4 LB-IN

2X #6(.138)-32 UNC-2A (EACH WITH  
HEX NUT, LOCKWASHER & FLAT WASHER)  
TORQUE (MAX): 10 LB-IN



WEIGHT, MAX (oz): 2.00

AVAILABLE OPTIONS:

COIL OPTIONS	POWER TERMINAL OPTIONS	MOUNTING OPTIONS
A = 12 Vdc - STUD TERMINALS B = 28 Vdc - STUD TERMINALS C = 120 Vdc - STUD TERMINALS	5 = STUD TERMINALS	7 = PANEL MOUNT

(PART NUMBER, CONTACT RATINGS, COIL VOLTAGE/RESISTANCE AND SCHEMATIC ARE MARKED ON SIDES OF RELAY.)

FIGURE 8: PANEL STYLE MOUNTING WITH STUD TERMINALS

DIMENSIONS IN INCHES  
(DIMENSIONS IN PARENTHESES ARE IN  
MILLIMETERS)

TOLERANCES EXCEPT AS NOTED

.xx =  $\pm$  .03

.xxx =  $\pm$  .010

$\angle$  x° =  $\pm$  2°

DO NOT SCALE DWG.

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SCALE  
1:1

SHEET  
12