REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE ECO 8926	93-3-23	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								

PREP. BY	TANNER	93-3-19
CHKD. BY	RG	93-3-25
ENG. APRVL.	RG	93-3-25

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TITLE GENERAL PURPOSE AEROSPACE 270VDC, 5A VACUUM RELAY

DWG. NO. AP5A SERIES

FSCM. NO. 18741

SHEET 1 OF 12

REV. B

SPECIFICATIONS:

PHYSICAL

CONTACT ARRANGEMENT	SPST-NO
FORM	A

ENVIRONMENTAL

SHOCK, 11 MS 1/2 SINE (g, Peak)	50
VIBRATION, SINUSOIDAL (55-2000 Hz; g PEAK)	10
OPERATING TEMPRATURE (°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
AP5A232, AP5A234, AP5A332, AP5A334, AP5A532, AP5A534 AP5A732, AP5A734, AP5A832, AP5A834, AP5A932, AP5A934	15
AP5A235, AP5A335, AP5A535	5
AP5A245, AP5A345, AP5A545, AP5AA47, AP5AA57, AP5AB47 AP5AB57, AP5AC47, AP5AC57	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
AP5A232, AP5A234, AP5A332, AP5A334, AP5A532, AP5A534 AP5A732, AP5A734, AP5A832, AP5A834, AP5A932, AP5A934	.010
AP5A235, AP5A245, AP5A335, AP5A345, AP5A535, AP5A545 AP5AA47, AP5AA57, AP5AB47, AP5AB57, AP5AC47, AP5AC57	.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
~~4~~ x° = ± 2°
DO NOT SCALE DWG.

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CAGE CODE	SCALE	SHEET
18741	NONE	2

REV. A

PART NUMBER SELECTION

SAMPLE PART NUMBER: AP5A [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
~~4~~ x° = ± 2°
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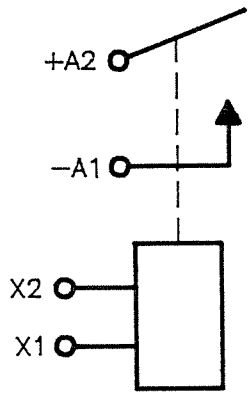
AP5A SERIES

CAGE CODE	SCALE	SHEET
18741	NONE	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 = ± .03
.xxx = ± .010
~~4~~ x° = ± 2°
DO NOT SCALE DWG.

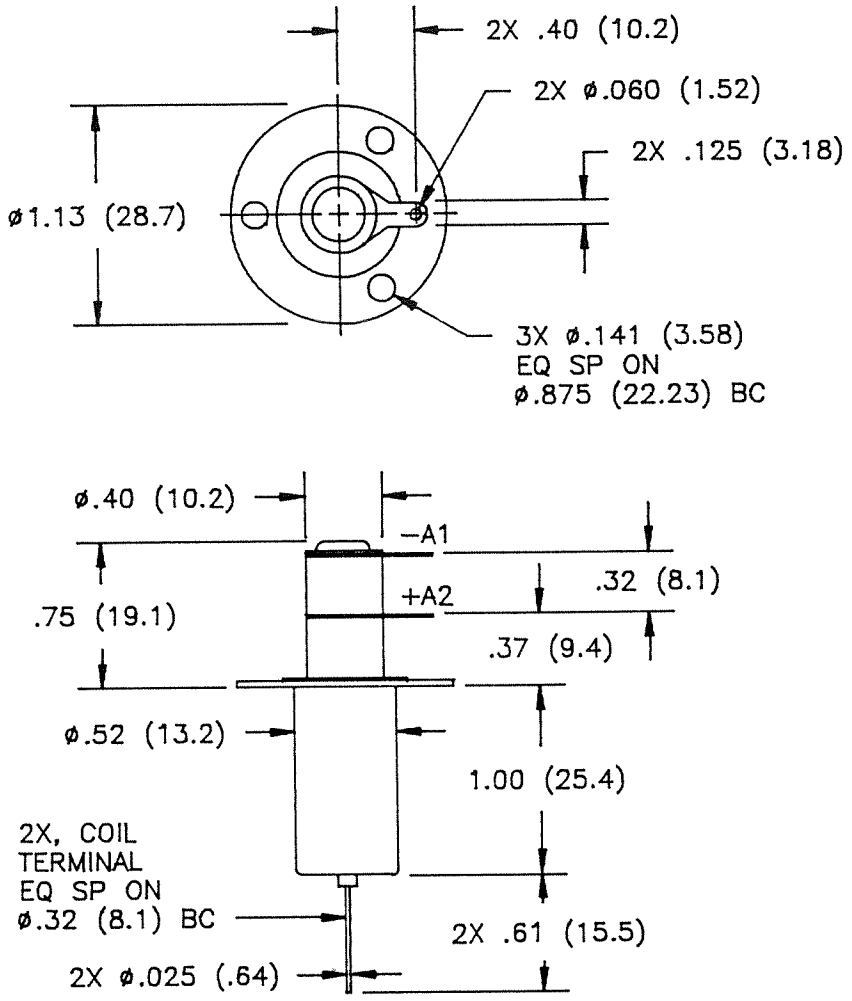
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AP5A SERIES

CAGE CODE	SCALE	SHEET
18741	NONE	4

REV. A



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

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

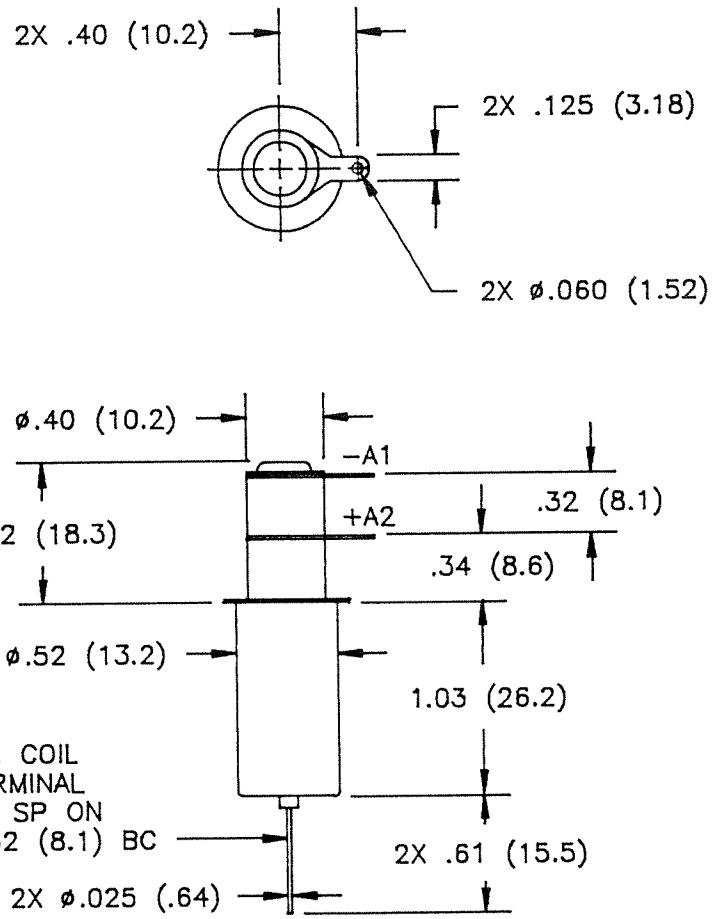
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AP5A SERIES

CAGE CODE	SCALE	SHEET
18741	1:1	5

REV. A



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

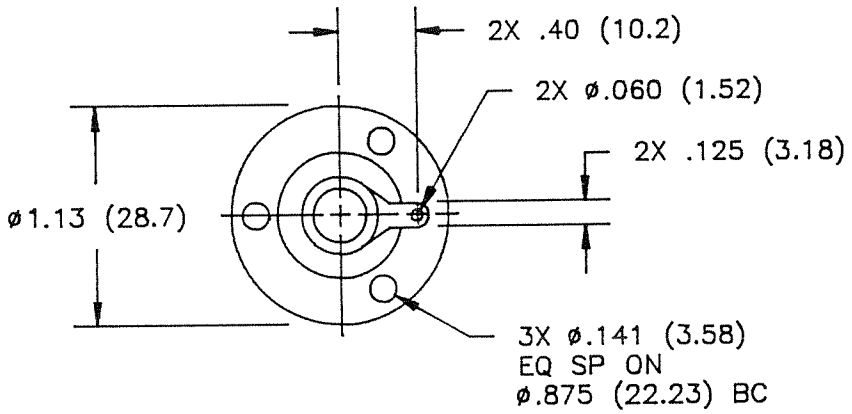
DIMENSIONS IN INCHES
(DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS)
TOLERANCES EXCEPT AS NOTED
.xx = ± .03
.xxx = ± .010
~~4~~ x° = ± 2°
DO NOT SCALE DWG.

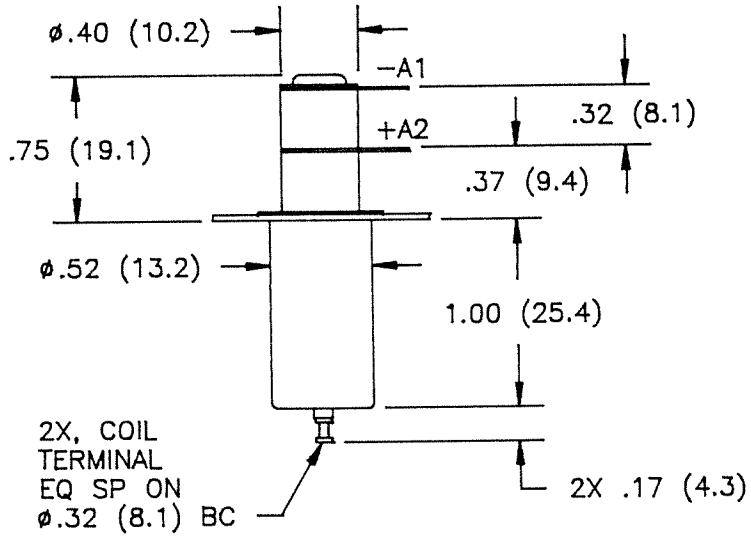
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AP5A SERIES

CAGE CODE	SCALE	SHEET
18741	1:1	6

REV. A





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

DIMENSIONS IN INCHES
(DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS)
TOLERANCES EXCEPT AS NOTED
.xx = ± .03
.xxx = ± .010
~~4~~ x° = ± 2°
DO NOT SCALE DWG.

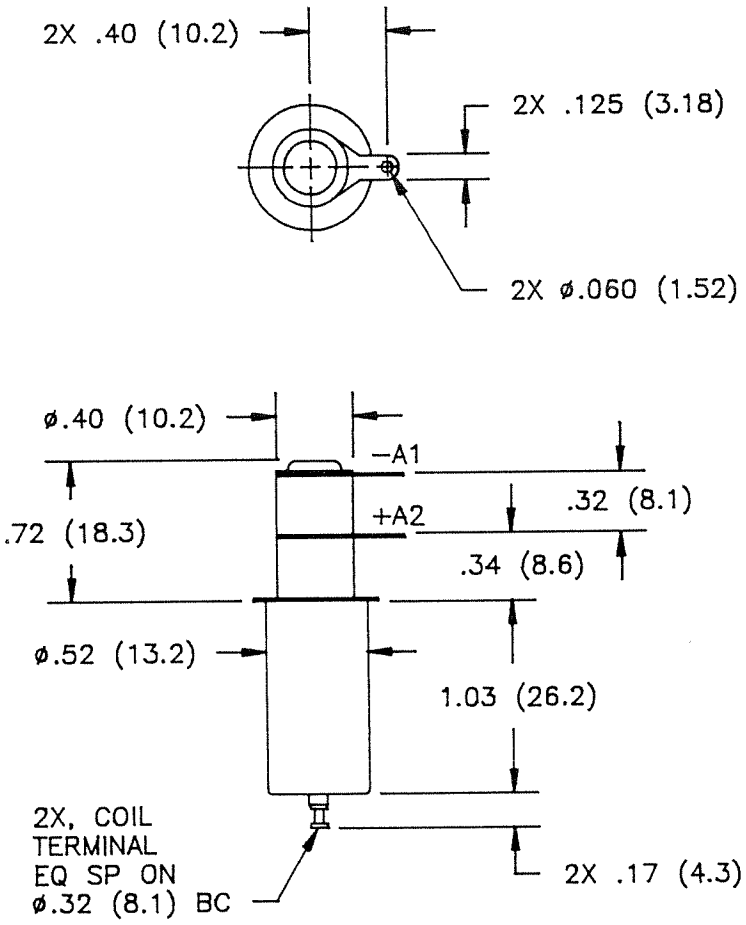
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AP5A SERIES

CAGE CODE	SCALE	SHEET
18741	1:1	7

REV. A



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

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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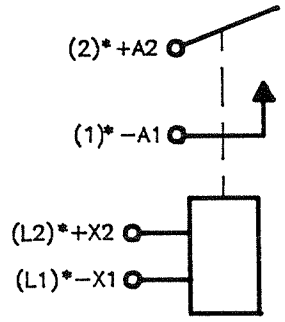
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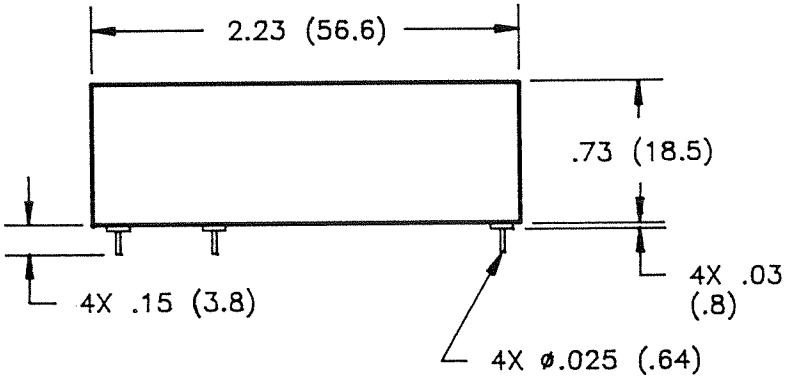
CAGE CODE	SCALE	SHEET
18741	1:1	8

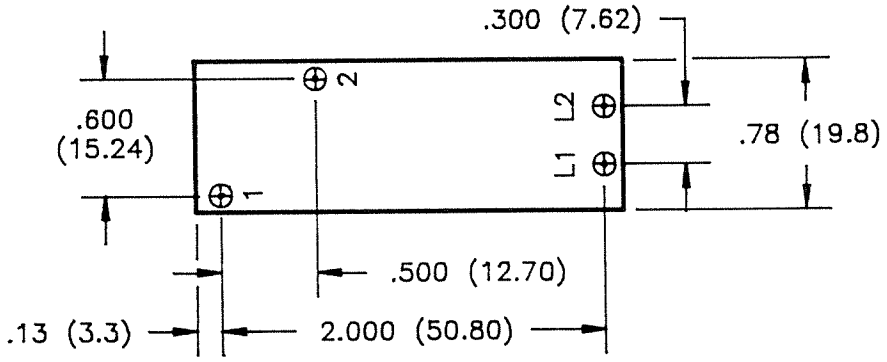
REV. A

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 = 28 Vdc – PCB TERMINALS 5 = 120 Vdc – PCB TERMINALS	3 = PCB TERMINALS	5 = PCB MOUNT

(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

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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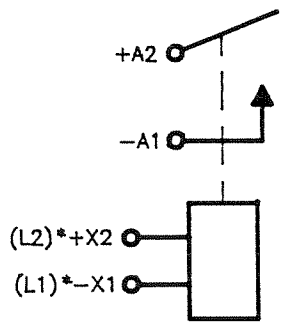
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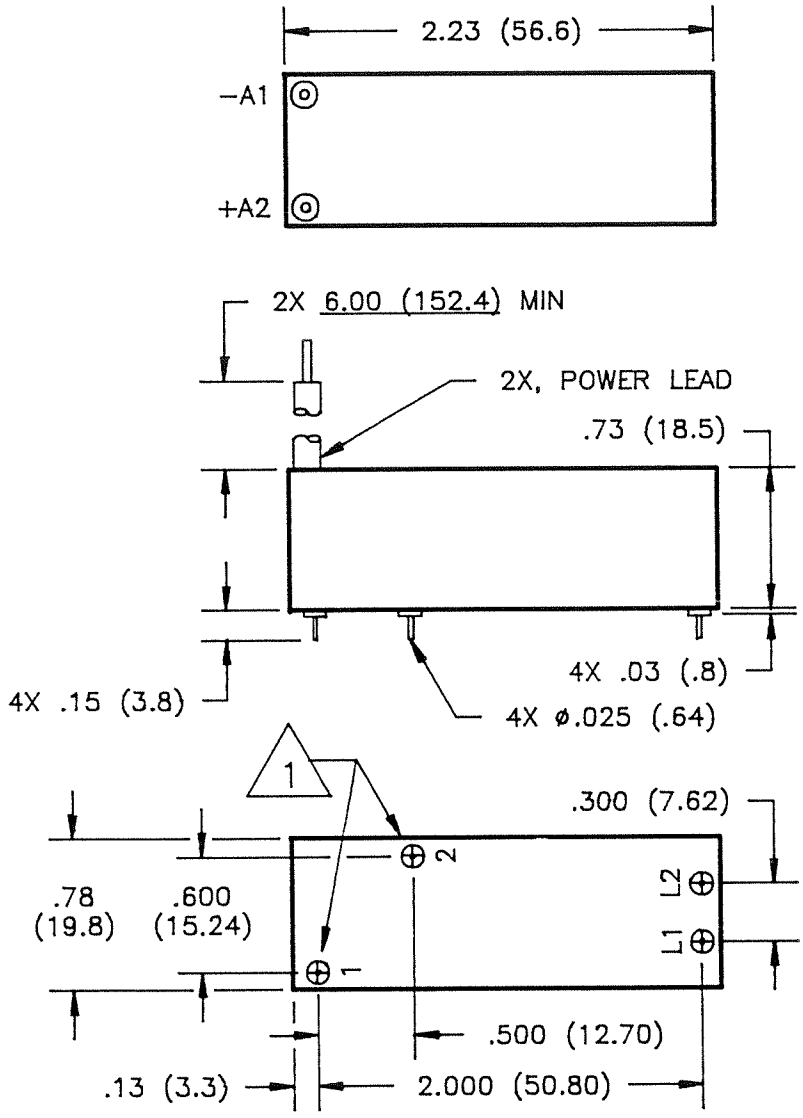
CAGE CODE	SCALE	SHEET
18741	1:1	9

REV. A

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 3 = 28 Vdc – PCB TERMINALS 5 = 120 Vdc – PCB TERMINALS	4 = FLYING LEADS	5 = PCB MOUNT

(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
~~4~~ x° = ± 2°
DO NOT SCALE DWG.

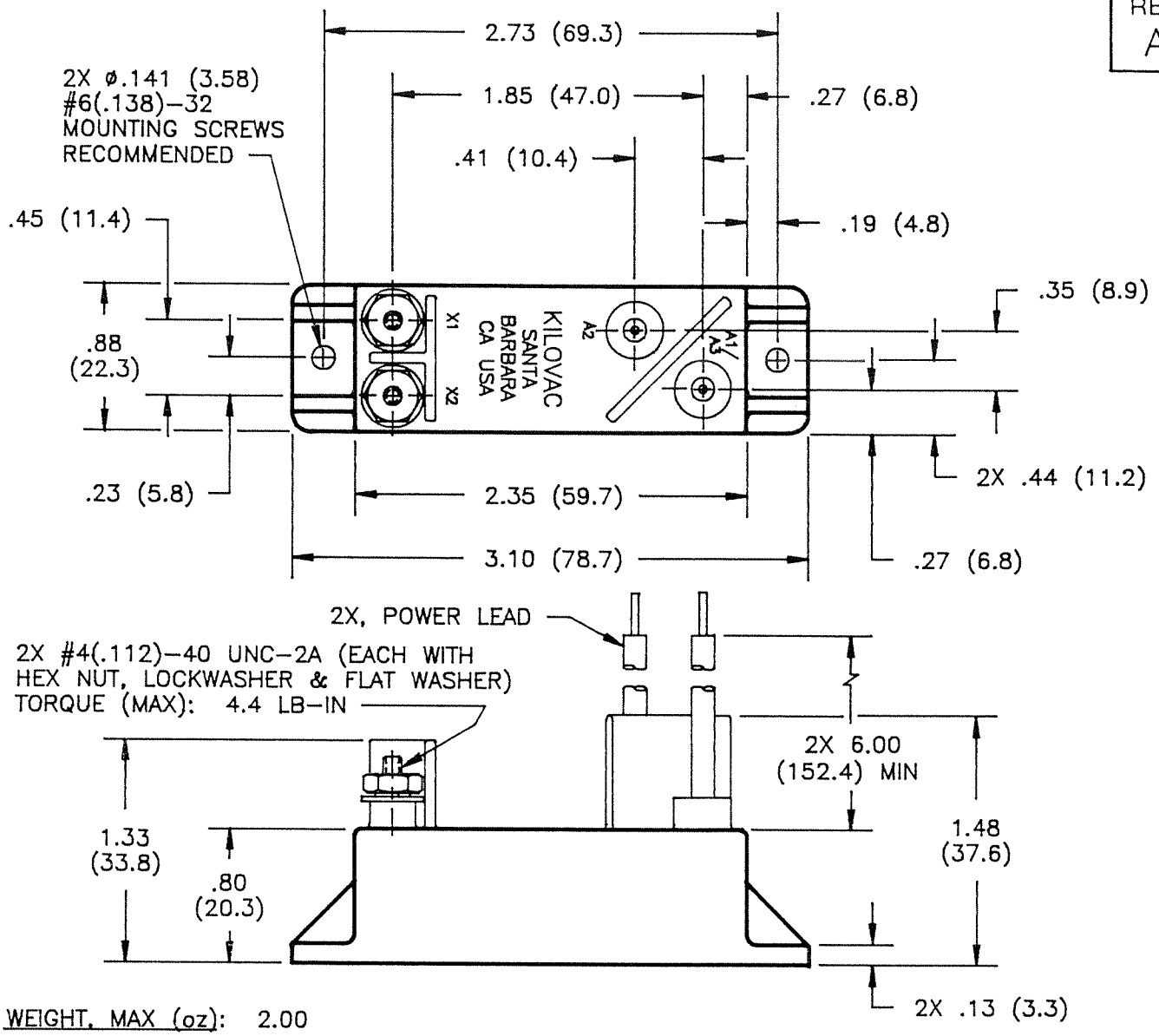
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CAGE CODE	SCALE	SHEET
18741	1:1	10

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 = ± .03
.xxx = ± .010
~~∠~~ x° = ± 2°
DO NOT SCALE DWG.

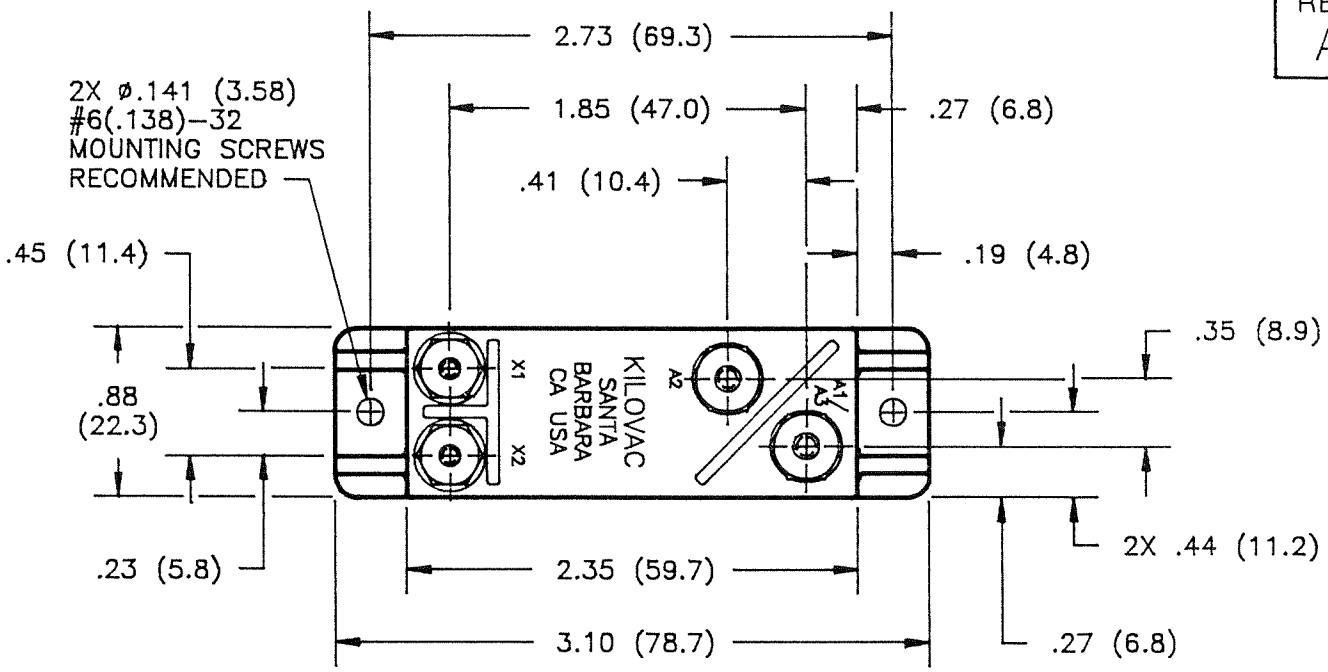
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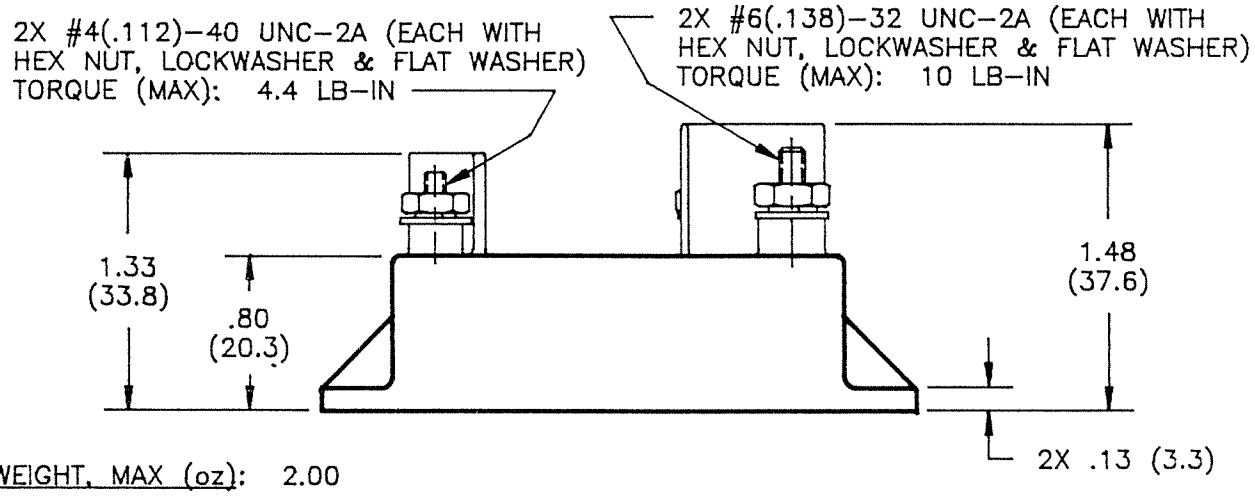
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AP5A SERIES

CAGE CODE	SCALE	SHEET
18741	1:1	11

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	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 = ± .03
.xxx = ± .010
∠ x° = ± 2°
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AP5A SERIES

CAGE CODE	SCALE	SHEET
18741	1:1	12