

CRITTENDEN CONVERSION CORPORATION

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STITCHER



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**MODEL 102
SOLID STATE COUNTER**

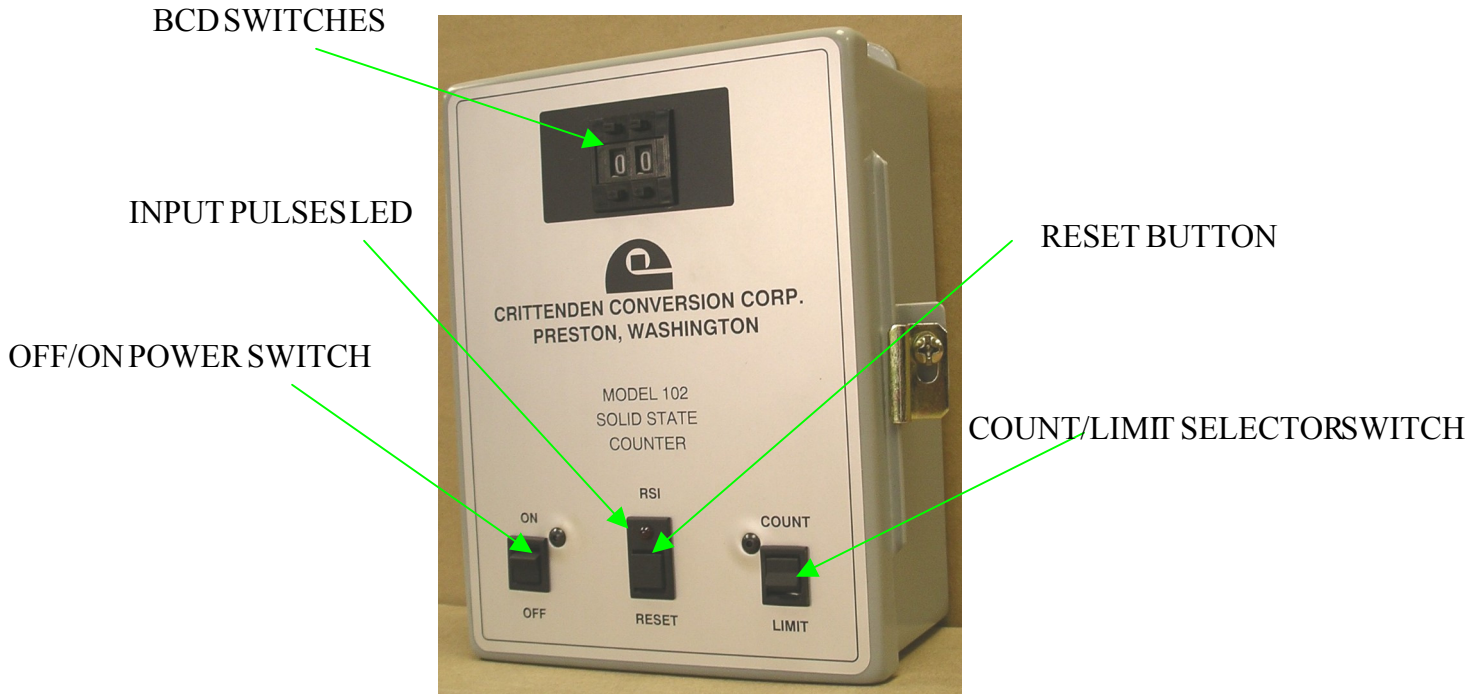


Figure 1. Controller Box front view.

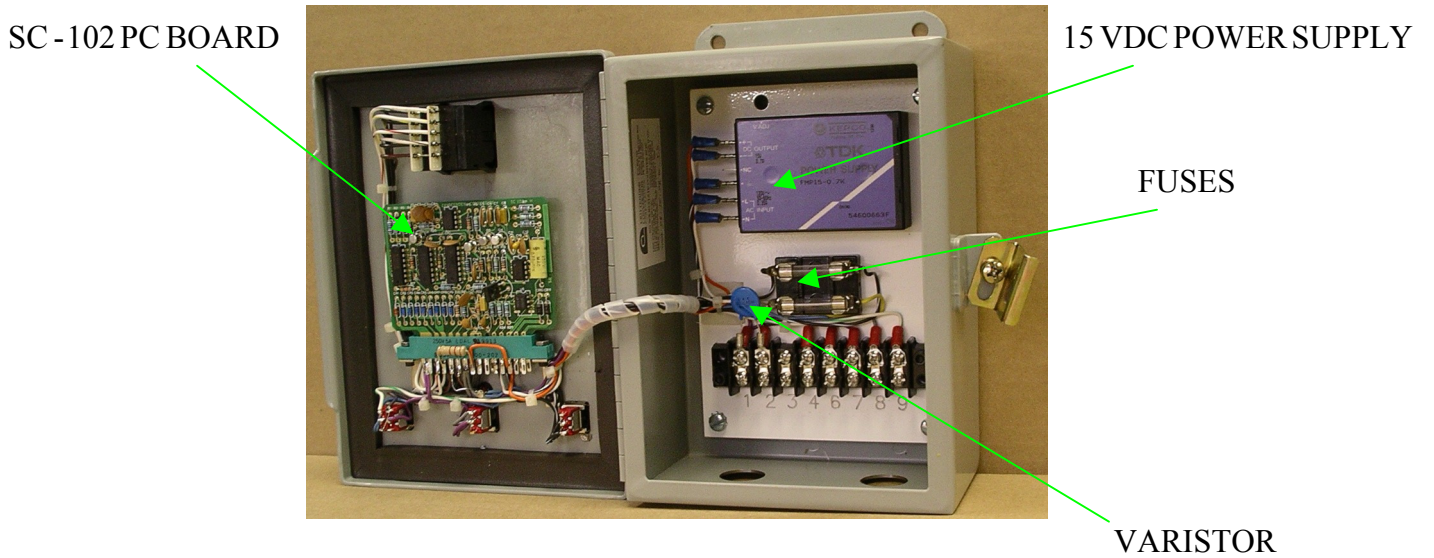


Figure 2. Controller Box inside view.

STITCHER CONTROL PANEL INSTALLATION NOTES

- 1) *RUN THE CONDUIT INTO THE BOTTOM OF THE CONTROL PANEL, AS MOISTURE IS THE BIGGEST PROBLEM. IF YOU MUST RUN THE CONDUIT OTHER THAN TO THE BOTTOM SEAL THE INSIDE AND OUTSIDE OF IT WITH SILICON.*
- 2) *PULL NEW WIRES, AS USING OLD WIRING CAN CAUSE PROBLEMS LEFT BEHIND IN OTHER INSTALLATIONS.*
- 3) *MAKE SURE THE CONTROL PANEL IS MOUNTED SQUARELY, AS BOWING CAN CAUSE MOISTURE PROBLEMS.*
- 4) *WHEN DRILLING HOLES IN THE CONTROL PANEL MAKE SURE TO COVER OR REMOVE THE INSIDE COMPONENTS, MANY CUSTOMERS HAVE DESTROYED THEIR PANEL BECAUSE THEY HAD METAL CHIPS ALL OVER THE INSIDE OF THE PANEL.*
- 5) *THE CONTROL PANEL SUPPLIES POWER FOR IT'S OWN NEEDS, IF YOU NEED ANY TYPE OF SUPPLY VOLTAGE YOU MUST FURNISH THAT ON YOUR OWN.*

STITCHER Electrical Current Requirements

	230 VAC	460 VAC
1 HP Lift motor	4.2 A	2.1 A
1 HP Conveyor motor	4.2 A	2.1 A
1 HP Stitcher motor	4.2 A	2.1 A
110 VAC T1 500VA transformer	2.2 A	1.1 A
Total:	14.8 A	7.4 A

STITCHER CONTROLLER OPERATION

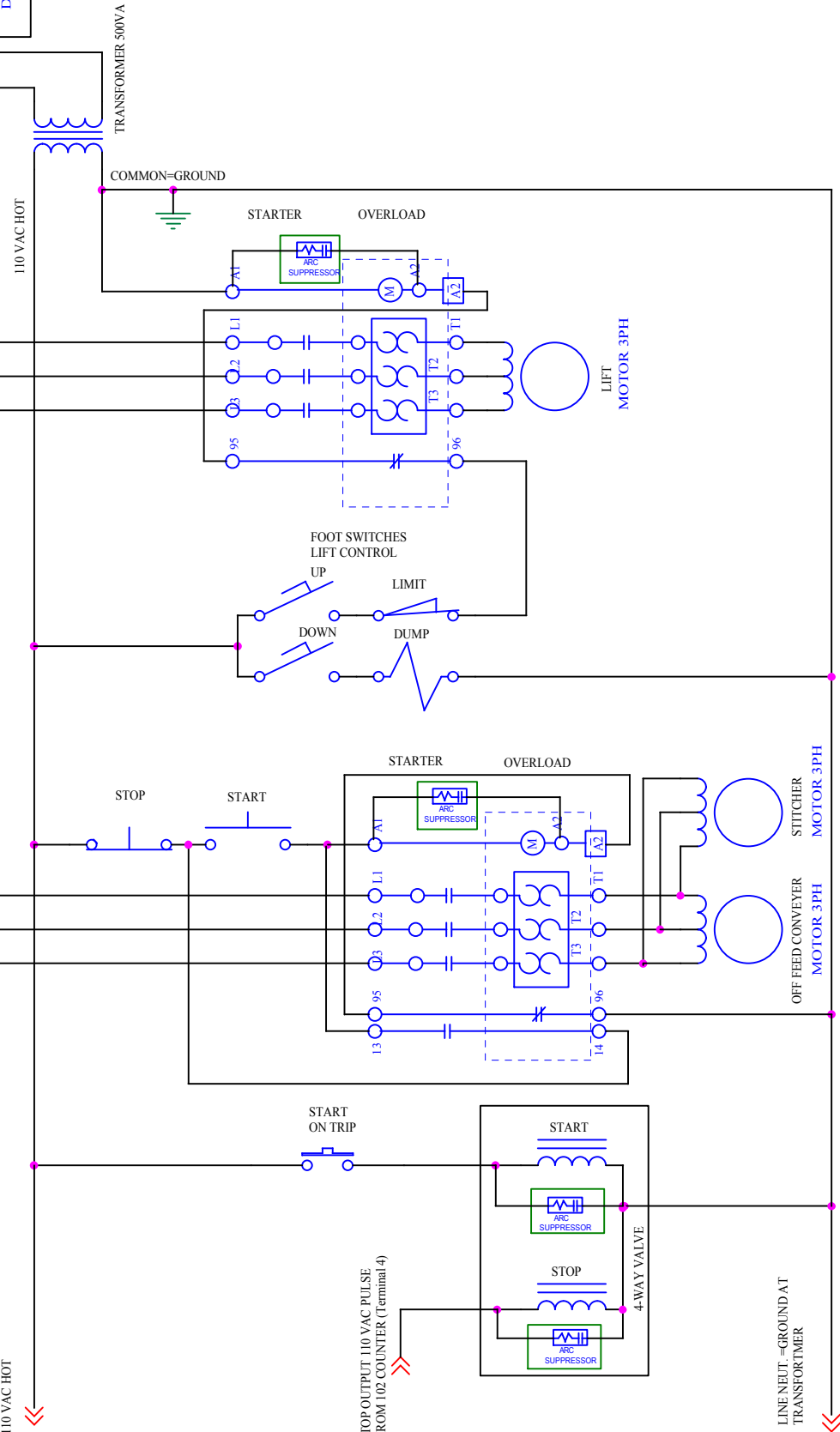
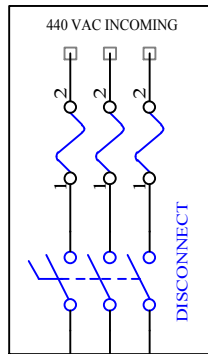
SWITCH NAME	FUNCTION
BCD	Allows to set quantity of stitches. (0-99)
On/off switch	Allows powering Up the Controller.
Count/Limit	- With COUNT "ON" count pulses from reed switch RS1. - With LIMIT "ON" operation from the limit switches LS2, LS3.
RESET	Allows to Reset counter.

STITCHER COMMON PROBLEMS AND CURES

ARC SUPPRESSOR (100ohms, 1.0 mf @ 200v) IS INSTALLED ACROSS THE START COIL WIRES. THIS USUALLY SOLVES THE PROBLEM OF PUTTING IN ONE STITCH AND THEN EJECTING THE BOX.

THE REED SWITCH (RS1) WIRES MUST BE ROUTED DIRECTLY TO THE COUNTER BOX AND NOT THROUGH ANY CONDUIT WHICH CONTAINS POWER CARRYING LINES.

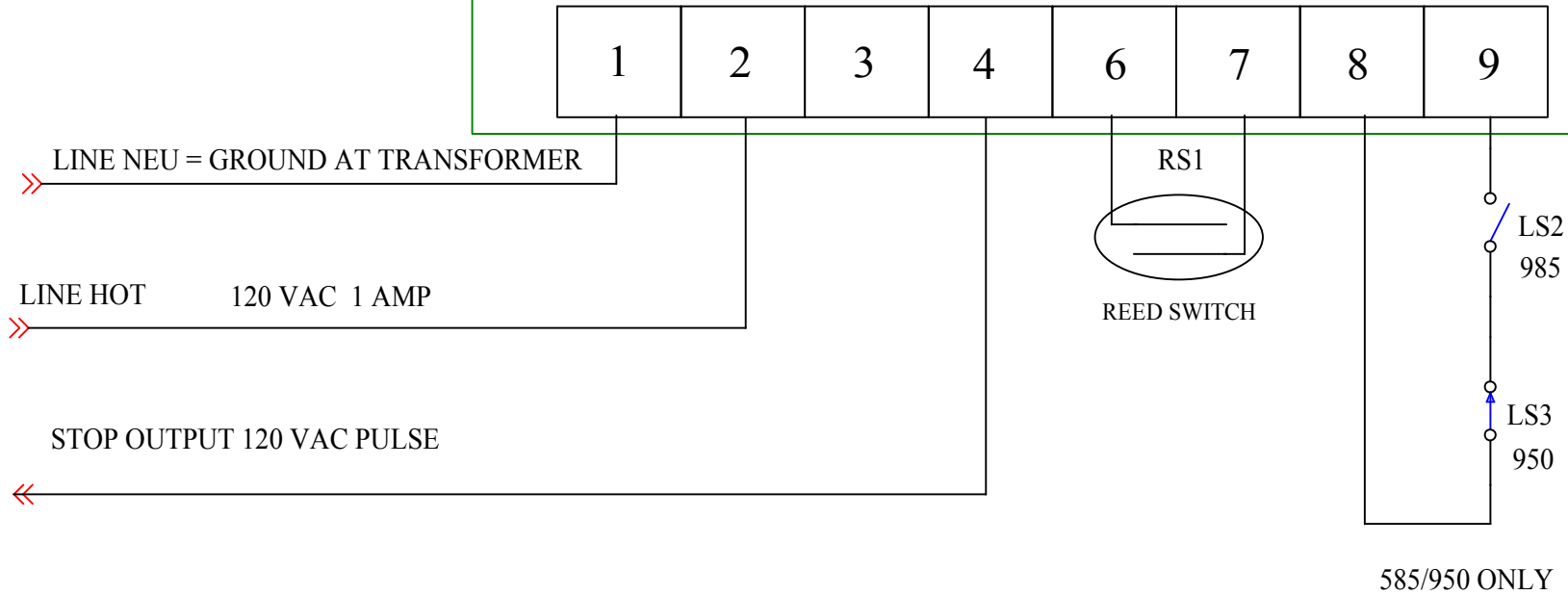
LS2 AND LS3 (LIMIT SWITCHES) ARE INSTALLED ON THE OFF FEED CONVEYOR OF THE 585 AND 950 MACHINES ONLY. THEY ARE USED TO STOP THE STITCH CYCLE WHEN OPERATING IN THE LIMIT MODE RATHER THAN THE COUNT MODE. THE LIMIT MODE IS RECOMMENDED WHEN STITCHING LONG BOXES REQUIRING 15 OR MORE STITCHES. A MORE CONSISTENT PLACEMENT OF THE LAST STITCH IS THE ADVANTAGE OF USING THE LIMIT MODE.



ARC SUPPRESSOR, QUENCHARC PAKTRON 100 OHM, 1.0 UF. 200 V INSTALL AS SHOWN, ACROSS THE START COIL WIRES. INSTALLATION OTHERS ARE OPTIONAL. THIS WILL USUALLY SOLVE THE PROBLEM OF PUTTING IN ONE STITCH, THEN EJECTING THE BOX.

CRITTENDEN CONVERSION CORPORATION	
Title STITCHER WIRING DIAGRAM W/LIFT & TAKEOFF	
Size A	Document Number STITCHER.DSN
Rev A	Date: Wednesday, October 26, 2011
Sheet 1	of 2

MODEL 102 COUNTER



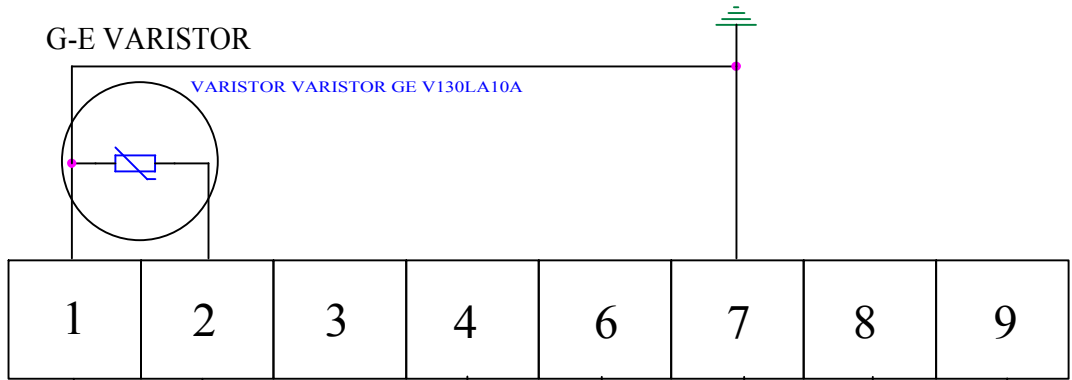
NOTES:

THE REED SWITCH (RS1) WIRES MUST BE ROUTED DIRECTLY TO THE COUNTER BOX AND NOT THROUGH ANY CONDUIT WHICH CONTAINS POWER CARRYING LINES.
 LS2 AND LS3 (LIMIT SWITCHES) ARE INSTALLED ON THE OFF FEED CONVEYOR OF THE 585 AND 950 MACHINES ONLY. THEY ARE USED TO STOP THE STITCH CYCLE WHEN OPERATING IN THE LIMIT MODE RATHER THAN THE COUNT MODE.
 THE LIMIT MODE IS RECOMMENDED WHEN STITCHING LONG BOXES REQUIRING 15 OR MORE STITCHES. A MORE CONSISTENT PLACEMENT OF THE LAST STITCH IS THE ADVANTAGE OF USING THE LIMIT MODE.

CRITTENDEN CONVERSION CORPORATION		
Title 102 COUNTER BOX WIRING		
Size A	Document Number STITCHER.DSN	Rev A
Date:	Wednesday, October 26, 2011	Sheet 2 of 2

G-E VARISTOR

VARISTOR VARISTOR GE V130LA10A



120 VAC
1 AMP

LINE NEU
LINE HOT

LS4

950

900

TC1

LS1

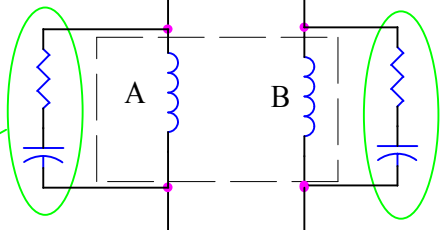
RS1

LS2

585

950

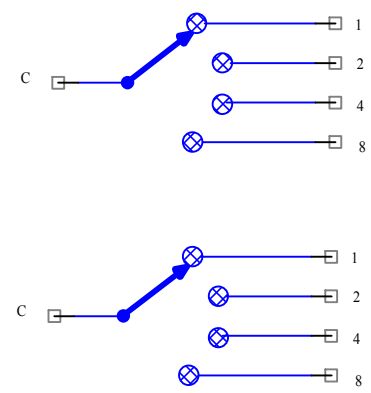
LS3



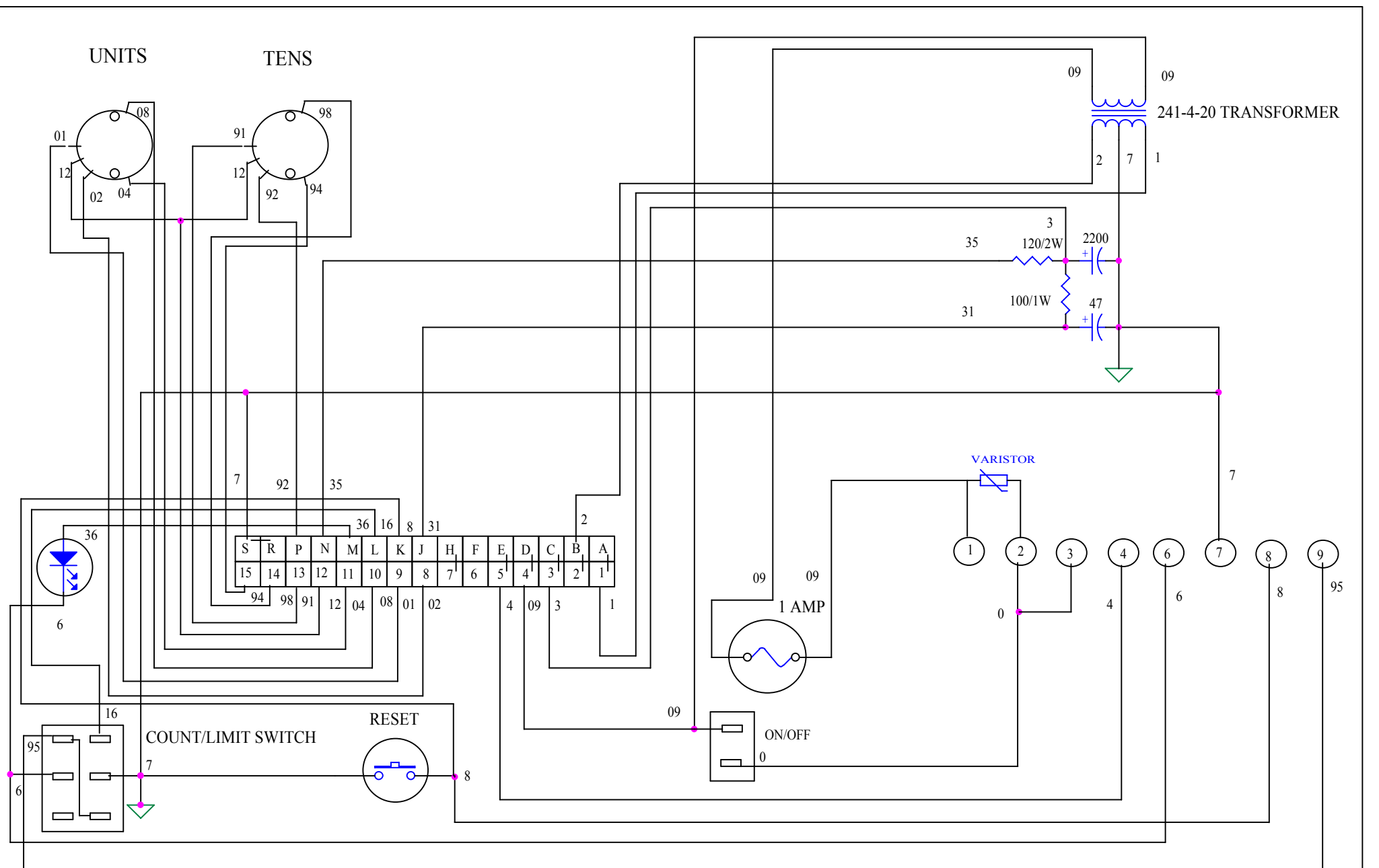
ARC SUPPRESSOR, QUENCHARC PAKTRON 100 OHM, 1.0 UF, 200 V INSTALL AS SHOWN, IN JUNCTION BOX, ACROSS THE START COIL WIRES. THIS WILL USUALLY SOLVE THE PROBLEM OF PUTTING IN ONE STITCH, THEN EJECTING THE BOX.

1. THE RS1, REED SWITCH WIRES MUST BE ROUTED DIRECTLY TO THE COUNTER BOX AND NOT THROUGH ANY CONDUIT WHICH CONTAINS POWER CARRYING LINES.
2. LS4 AND TC1 ARE USED ONLY ON 900 & 950 MACHINES WITH THE ORIGINAL BOSTITCH TRIP-GATE ASSEMBLY.
3. LS2 AND LS3 LIMIT SWITCHES ARE INSTALLED ON THE OFF FEED CONVEYOR OF 585 AND 950 MACHINES ONLY. THEY ARE USED TO STOP THE STITCH CYCLE WHEN OPERATING IN THE LIMIT RATHER THAN COUNT MODE. LIMIT MODE IS RECOMMENDED WHEN STITCHING LONG BOXES REQUIRING 15 OR MORE STITCHES. A MORE CONSISTENT PLACEMENT OF THE LAST STITCH IS THE ADVANTAGE OF USING THE LIMIT MODE.

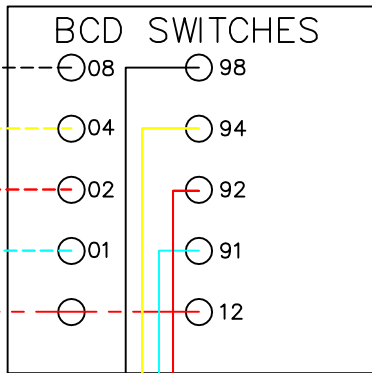
BCD SWITCH



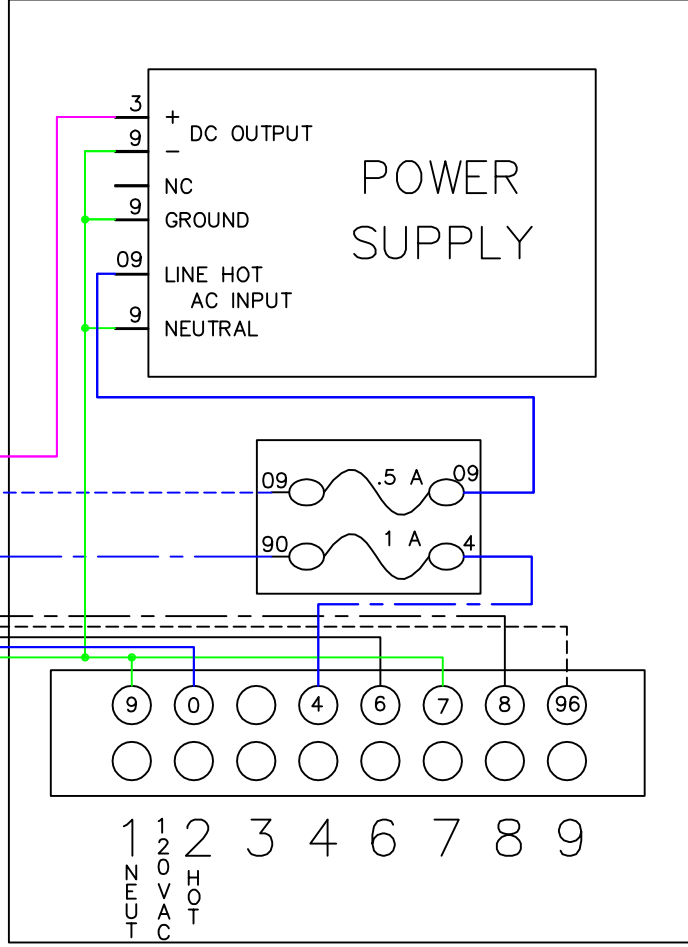
CRITTENDEN CONVERSION CORPORATION		
Title MODEL 102 COUNTER BOX TERMINAL WIRING		
Size A	Document Number 102TERMINALWIRING.DSN	Rev A
Date:	Wednesday, September 12, 2012	Sheet 2 of 2



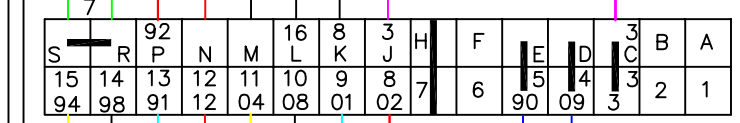
Title		
SC102 -E (OLD) DIAGRAM		
Size	Document Number	Rev
A	{Doc}	A
Date:	Monday, March 03, 2008	Sheet 1 of 1



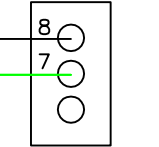
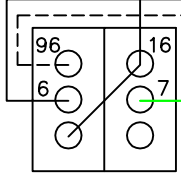
COLOR CODE
 BLACK=0
 BROWN=1
 RED=2
 ORANGE=3
 YELLOW=4
 GREEN=5
 BLUE=6
 PURPLE=7
 GREY=8
 WHITE=9



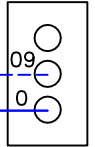
150 ohms 1 W



OLDER DIODES LONG LEAD WAS ANODE
 NOW THE LONG LEAD IS THE CATHODE
 CHECK WHICH IS WHICH BEFORE WIRING



RESET



OFF / ON

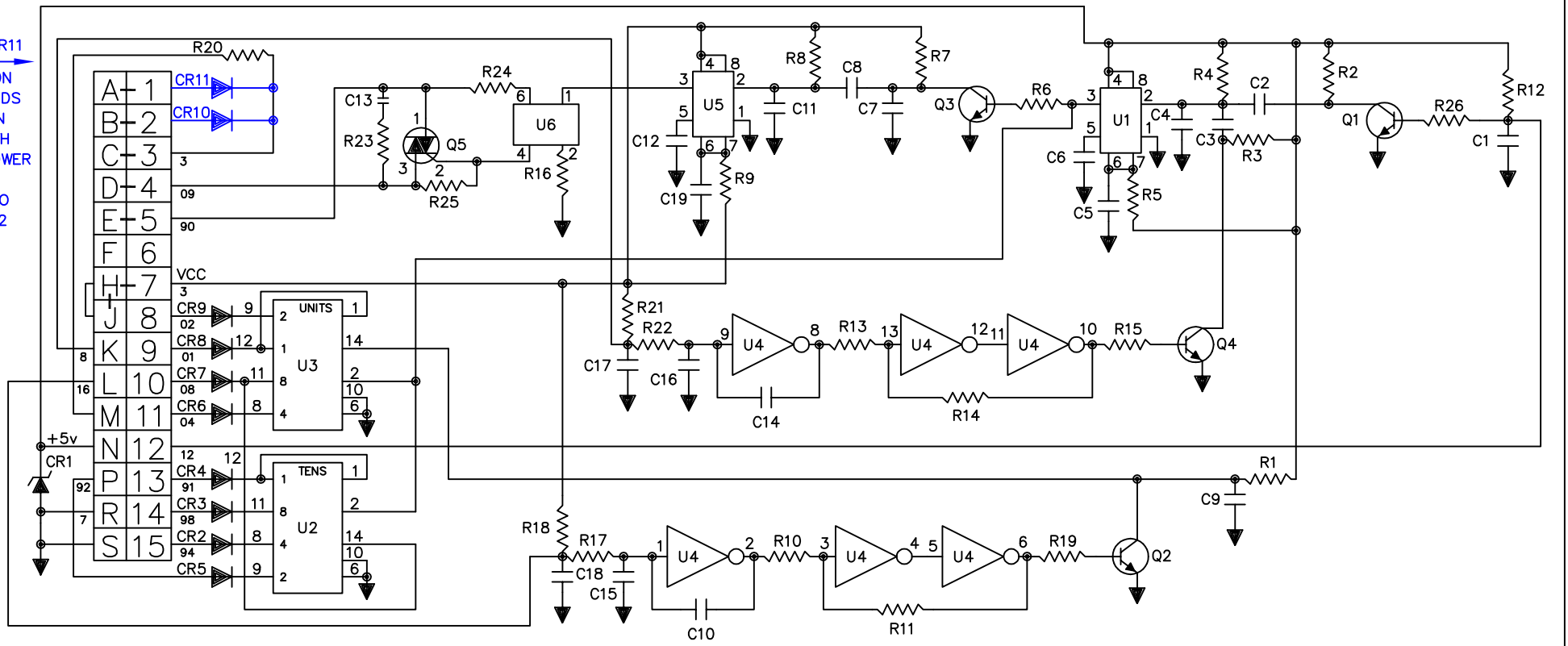
MODEL 102 COUNTER WIRING

SCALE: 1=1 | APPROVED BY: | DRAWN BY: CDV
 DATE: JAN92 | 1=1 | REDRAWN:

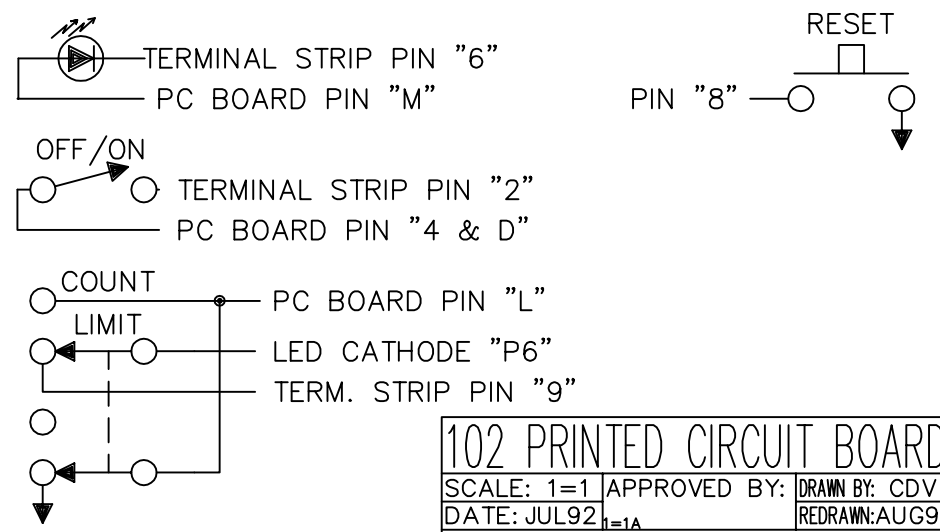
CRITTENDEN CONVERSION CORP.

BUILT IN HOUSE | DWG # | E801
 MFG # | T=9

CR10 & CR11
 LOADED ON ALL BOARDS
 -USED ON UNITS WITH OLDER POWER SUPPLIES
 -PRIOR TO JUNE 1992



NOTES ON RS1's LED AND SWITCH WIRING

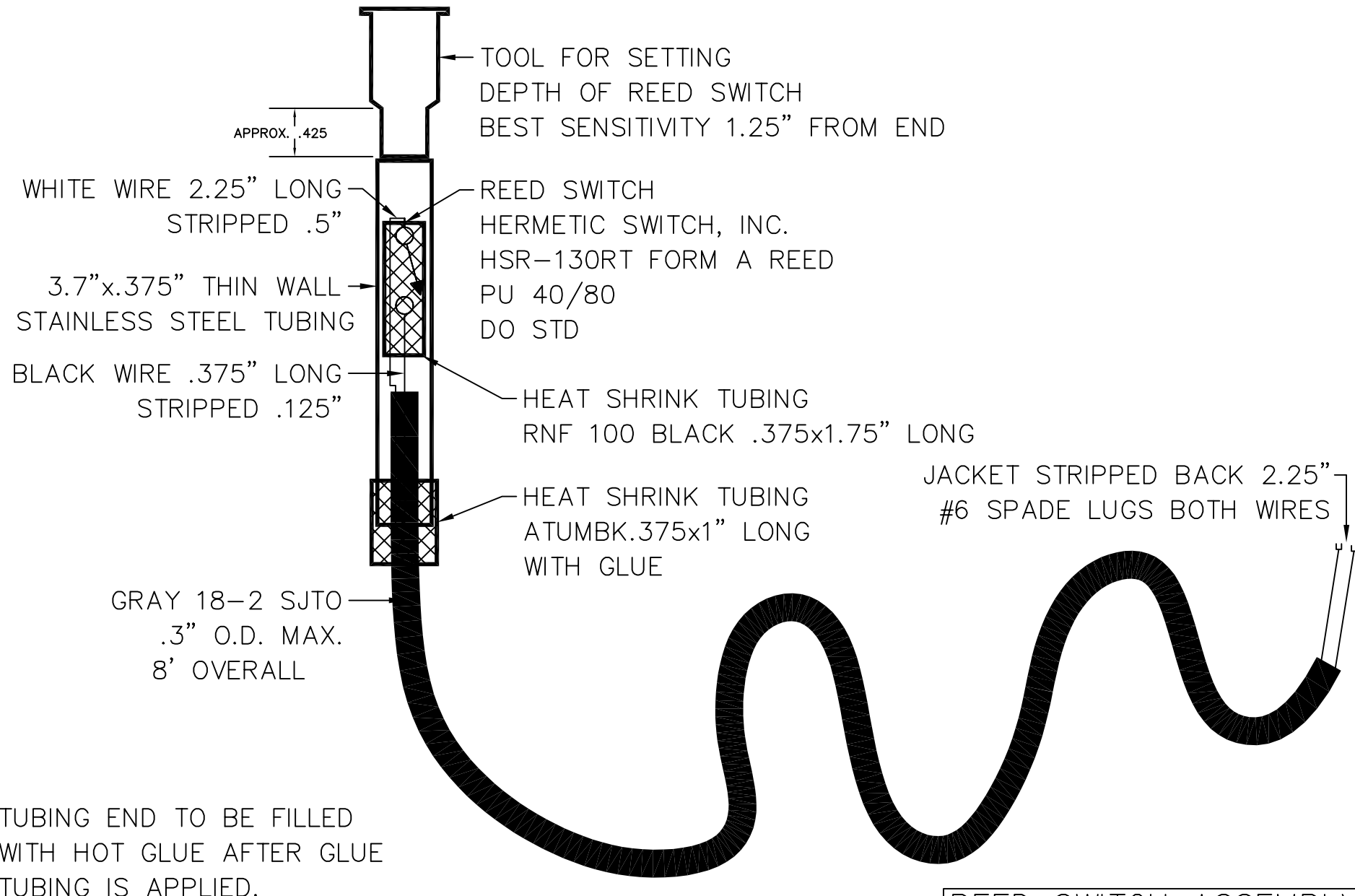


REFERENCE	VALUE /P.N.
C1,2,8,16	.047mf
C3,5,6,7,9,10,12,14,15	.01mf
C4,11,17,18	47pf
C13	.22mf@ 250v
C19	4.7mf@ 16v
CR1	1N4733
CR2-9	1N270
CR10,11	1N4007 (2-7)
Q1-4	2N2222A
Q5	2N6073A
U1,5	LM555
U2,3	74LS90N
U4	4584BE
U6	3011

REFERENCE	VALUE ohms
R1,9,12,18,21	10K
R2,7	22K
R3,4,6,8,15,19,24,26	4.99K
R5	68K
R10,13	82K
R11,14	150K
R16,20	680
R17,22	47K
R23,25	56
RESISTORS ARE 1/4w,10% UNLESS OTHERWISE NOTED	
U2 & U3 PIN 5 = +5v	
U4 PIN 14 = VCC	
U4 PIN 7 = GROUND(↓)	

102 PRINTED CIRCUIT BOARD

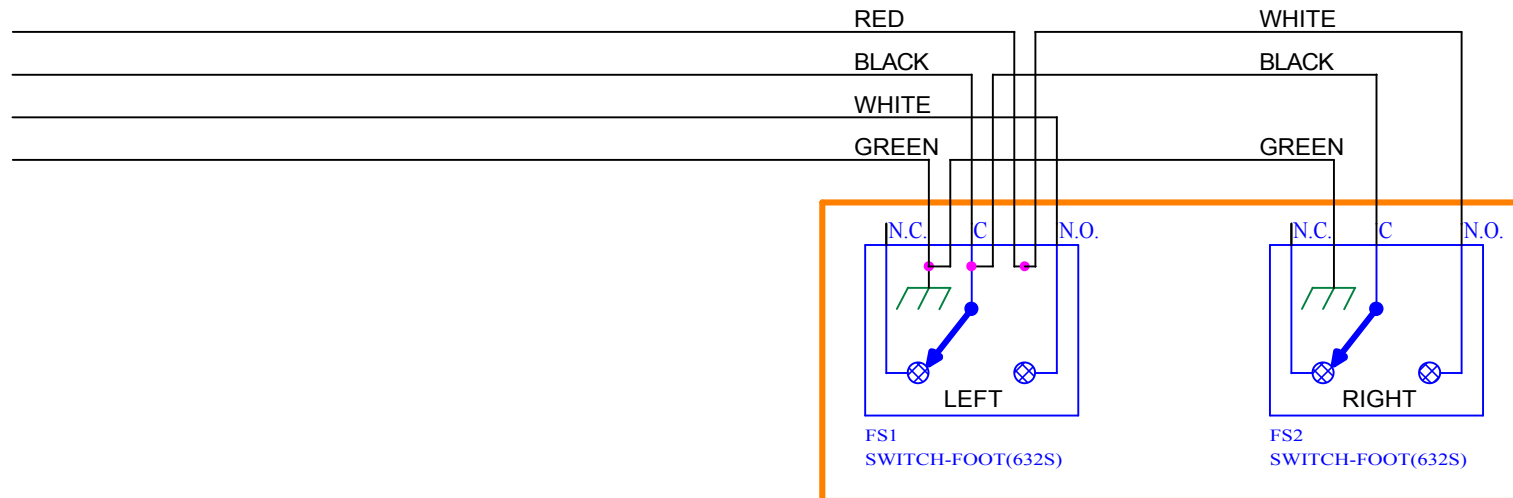
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DATE: JUL92	1=1A	REDRAWN:AUG98
CRITTENDEN CONVERSION CORP.		
SC 102-E CCC	DWG #	E817
	MFG #	T=5.5m



REED SWITCH ASSEMBLY			
SCALE: 1=1	APPROVED BY:	DRAWN BY: CDV	
DATE: JUL92	T=1	REDRAWN:	
CRITTENDEN CONVERSION CORP.			
CCC		DWG #	E816
		MFG #	T=14.5

16-4 SJO 12-1/2' WITH SPADE CONNECTORS

16-3 SJO 10" WITH SPADE CONNECTORS



CRITTENDEN CONVERSION CORP.

Title
DUAL FOOT SWITCH WITH GUARD

Size A	Document Number DUAL-FOOT-SW	Rev A
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Date: Thursday, January 16, 2003 Sheet 1 of 1

INSTRUCTION SHEET



KEPCO An ISO 9001 Company.

FMP

FMP 10 WATT SINGLE OUTPUT MINIATURE SWITCHING POWER SUPPLIES

I-INTRODUCTION

The Kepco FMP 10W Series of a compact high reliability 3.53-ounce 10-Watt switching power supplies feature simplicity and high reliability with isolated input/output. Units operate from a 120V a-c 47-440Hz source and are housed in a plastic case with threaded inserts for versatile mounting. All connections are made through a STO-41T-187N(JST) or 170037-2 (AMP) mating connector. The FMP 10W Series consists of four models with different output voltages shown in Table 1. An external 125V, 1A slow-blow fuse is recommended.

II-SPECIFICATIONS

The following specifications apply to all FMP 10W models.

MODEL	FMP 5-2K	FMP 12-0.85K	FMP 15-0.7K	FMP 24-0.45K
Output	5V, 2.0A/10.0W	12V, 0.85A/10.2W	15V, 0.7A/10.5W	24V, 0.45A/10.8W
Adjustment Range (120V Input @ 25°C)	4.5V - 5.5V	10.8V - 13.2V	13.5V - 16.5V	21.6V - 26.4V
Ripple (mV p-p max)	50	80	80	100
Noise (mV p-p max)	100	150	150	150
Overcurrent (120V input @ 25°C)	2.2A/3.3A	0.9A/1.4A	0.75A/1.2A	0.5A/0.8A
Efficiency (Nominal input, rated load, @ 25°C)	75% typ. 72% min.	78% typ. 75% min.	78% typ. 75% min.	81% typ. 78% min.

TABLE 1 SPECIFICATIONS OF INDIVIDUAL FMP 10W MODELS

INPUT

Voltage: 120V a-c, single phase, 85-132V a-c or 145V d-c, 110V-170V d-c

Frequency: 47-440 Hz

Brownout Voltage: 80V a-c, 105V d-c

Current rated load @ 25°C: 0.25A rms, typ., @ 120V input
0.35A rms, max. @ 85V input

Initial Turn-on Surge: (one-half of first input cycle). @ Rated Load, 25°C cold start:

@ 120V input: 16A max.

@ 132V input: 20A max.

STABILIZATION:

Source Effect: <0.1% typ. (85V-132V)

Load Effect: <0.8% typ. (10% - 100% load)

Temperature Effect: 1% (0°C to 50°C)

Combined Effect: (includes source, load and temperature effects); ±1% typ., ±3% max.

Drift (8 hr. after 1/2 hr. warmup): 0.5% max.

Start-up and Hold-up time (25°C, nominal input @ rated load):

Start-up time: 100 ms. max. to reach 90% of nominal output.

Hold-up time: 20 ms. min.

Recovery Characteristics: A step load change from 50% to 100% produces less than ±4% output excursion. Recovery occurs within ± 1% of the original setting within 1ms. A step load change should be over 50 micro-seconds.

Ripple: See Table 1. Ripple components are harmonically related to the source frequency and the switching frequency.

Noise: See Table 1. Noise bandwidth is d-c to 50MHz.

Isolation: (20°C, 65% relative humidity).

Insulation resistance between output terminals and ground, d-c 500V, 100 MOhm, min.

Dielectric strength:

Between input and output or input and ground terminals, 2KV a-c for one minute.

Between output and ground terminals, 0.5KV a-c for one minute.

Leakage current, nominal input with rated load @ 25°C, UL method: 0.5 mA rms, max.

Safety: UL 478 recognized; CSA 1402 certified.

EMI: Designed to meet FCC Class B (0.45-30MHz, 48dB max.)

Vibration: (non-operating, one hour on each of three axes):

5-10 Hz, 10 mm amplitude

10-55 Hz, 2G acceleration

Shock (non-operating, one-half wave sinusoidal pulse, three shocks to each axes):

Acceleration: 20g peak

Duration: 11ms. ±5ms

Operating Temperature: See Figure 1

Storage Temperature: -40°C to + 85°C

Operating and Storage Relative Humidity: 20% - 95% non-condensing

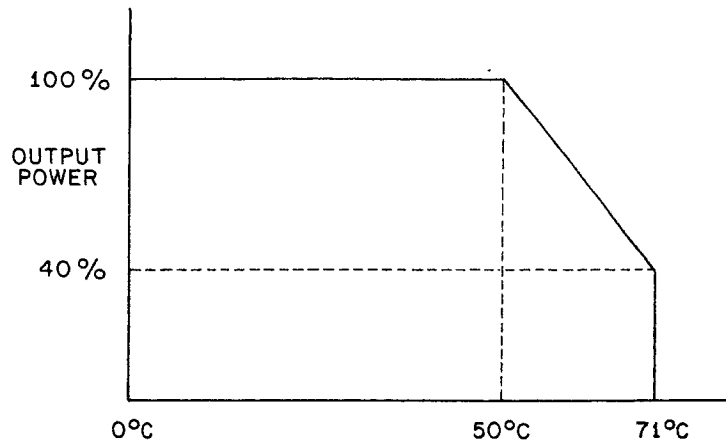
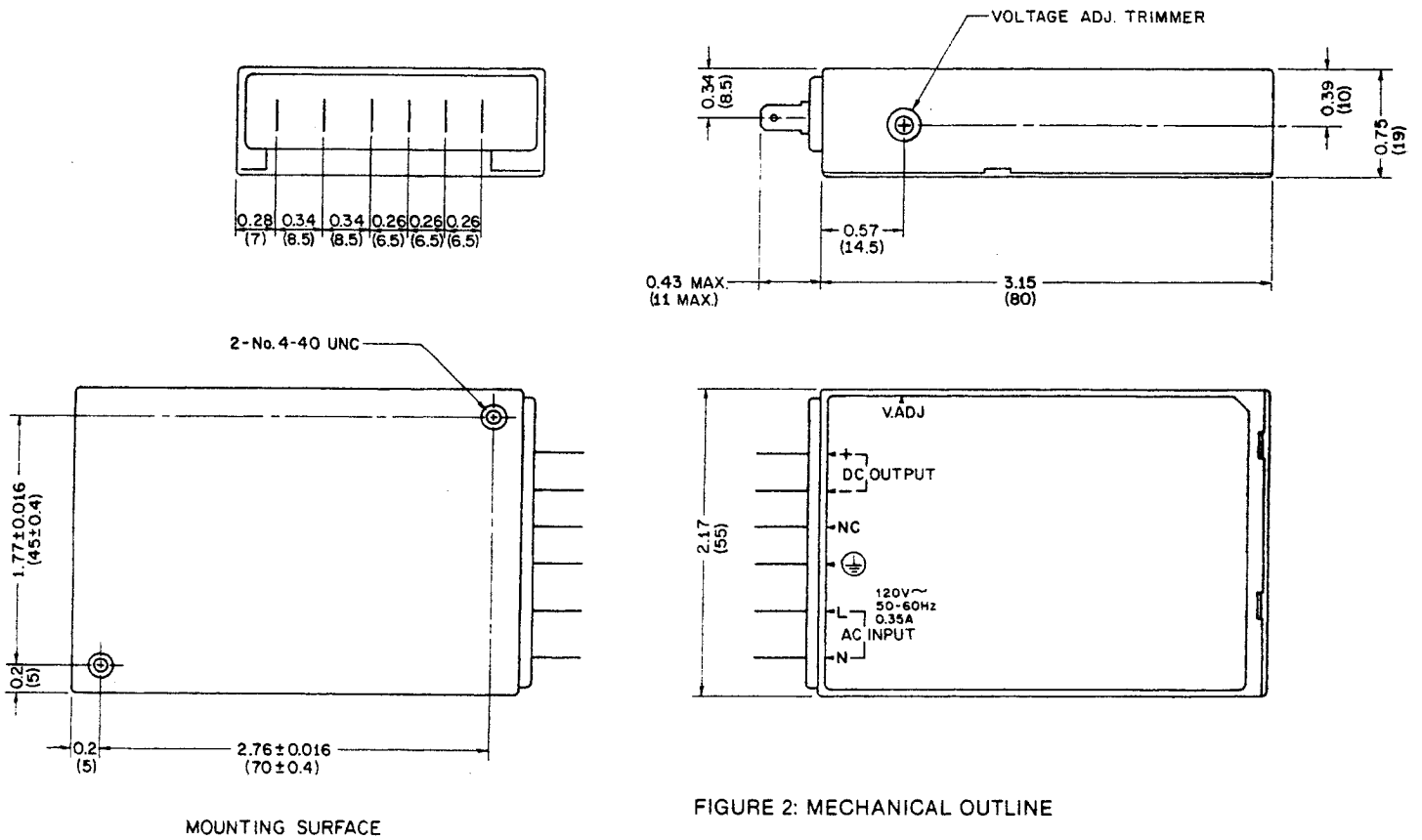
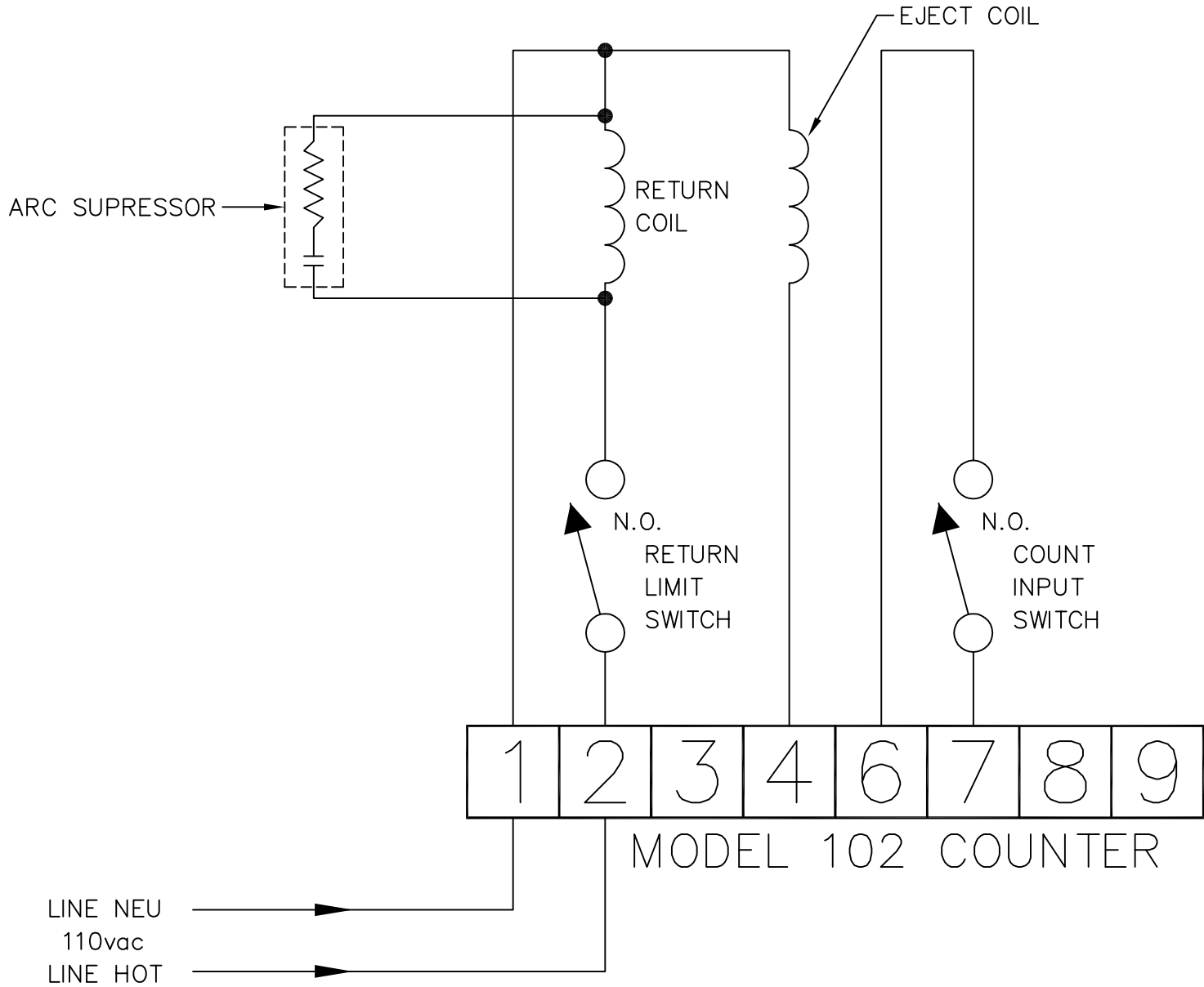


FIGURE 1: OPERATING TEMPERATURE



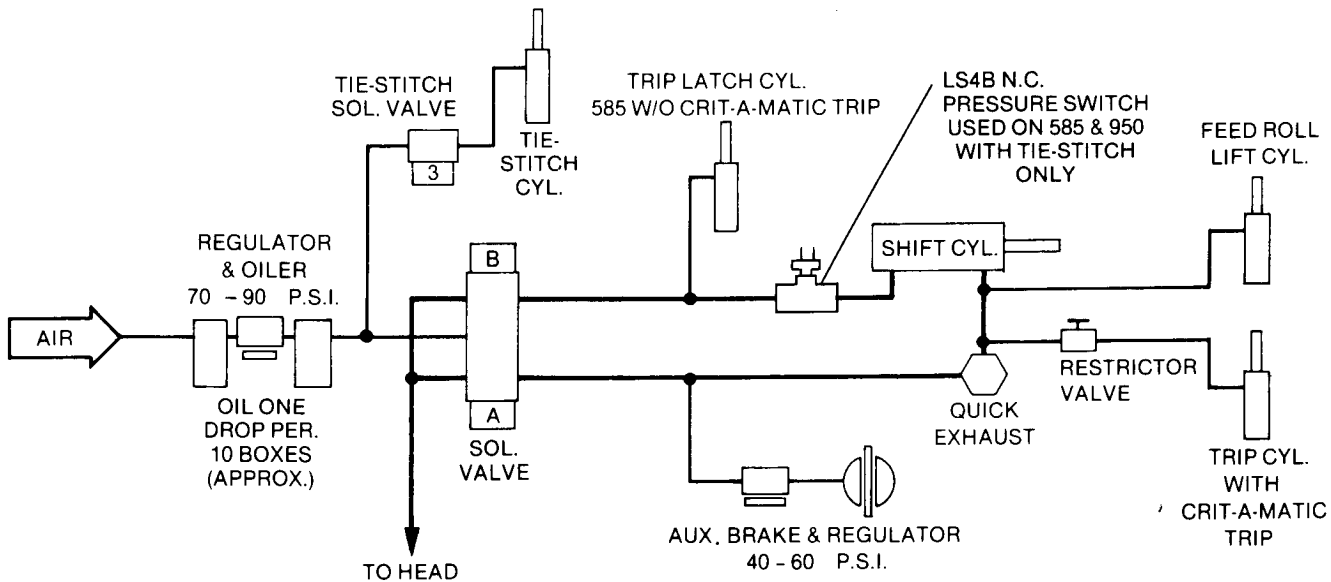
NOTES:

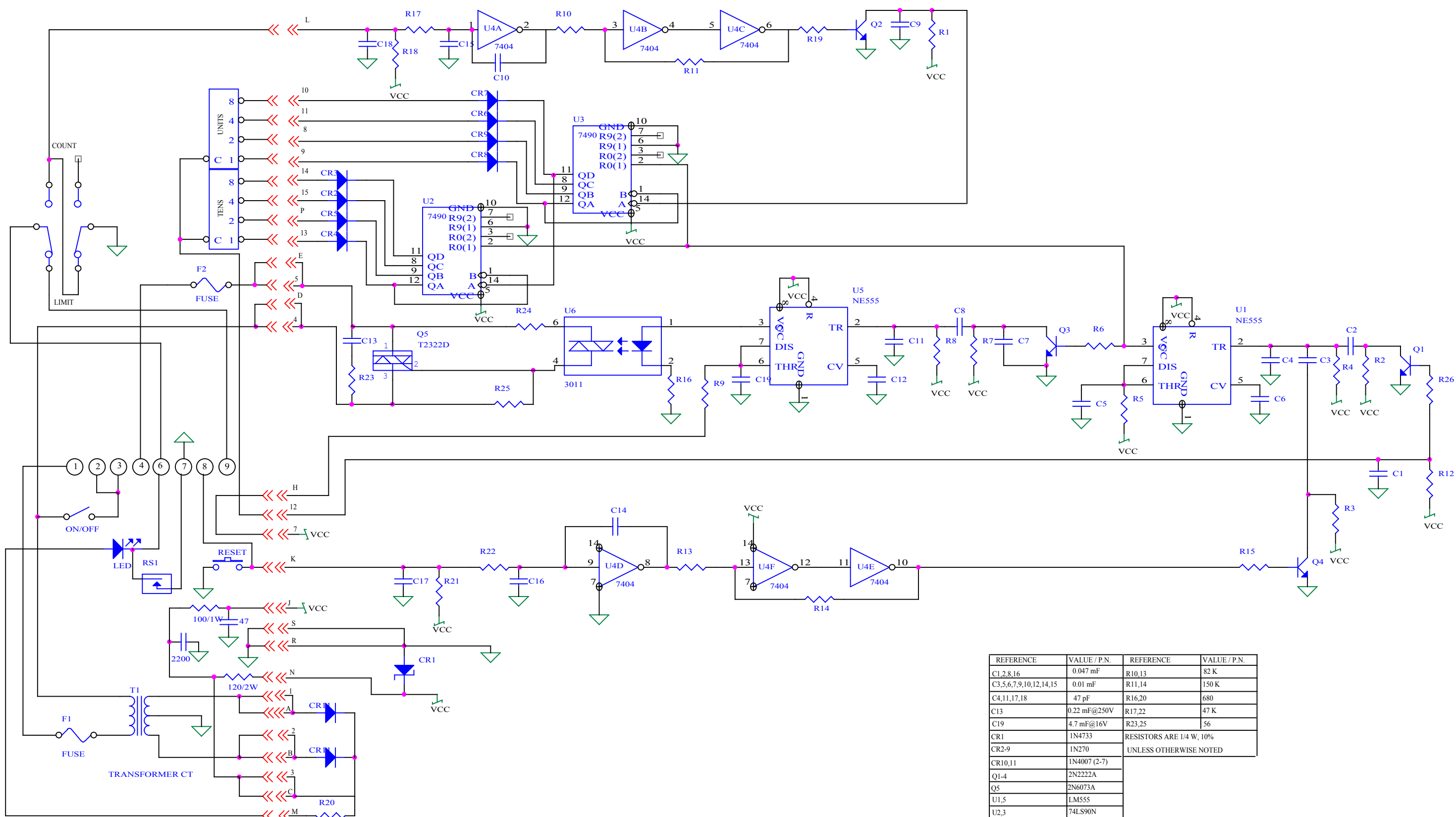
1. MATERIAL: PHENYLENE OXIDE.
2. DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS, OTHERS IN INCHES.
3. TOLERANCE: ± 0.03 (± 0.7) UNLESS NOTED OTHERWISE.
4. AC & DC TERMINALS: 0.187 INCH SERIES TABS.
5. AC & DC MATING RECEPTACLES: AMP. INC., FASTON 187 SERIES OR EQUIVALENT.
6. WEIGHT: 3.53 oz. (100 gr.) MAX.
7. MAXIMUM MOUNTING SCREW PENETRATION: 0.24 (6).



COUNTER/EJECTOR SCHEMATIC			
SCALE: 1=1	APPROVED BY:	DRAWN BY: CDV	
DATE: FEB95	₁₌₁	REDRAWN:	
CRITTENDEN CONVERSION CORP.			
BUILT IN HOUSE		DWG #	E209
		MFG #	T=5.5m

PNEUMATIC CIRCUIT





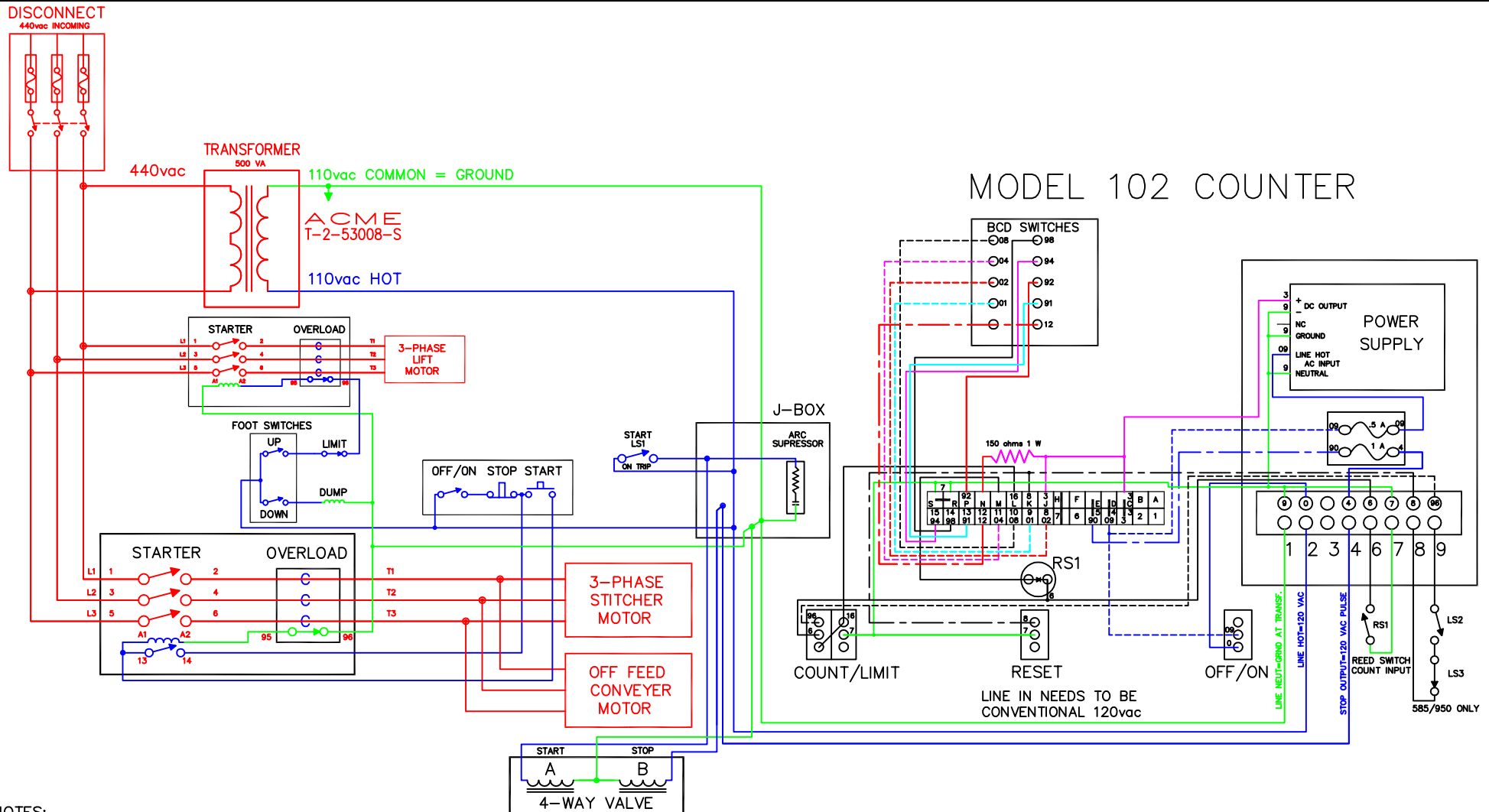
REFERENCE	VALUE / P.N.	REFERENCE	VALUE / P.N.
C1,2,8,16	0.047 mF	R10,13	82 K
C3,5,6,7,9,10,12,14,15	0.01 mF	R11,14	150 K
C4,11,17,18	47 pF	R16,20	680
C13	0.22 mF@250V	R17,22	47 K
C19	4.7 mF@16V	R23,25	56
CR1	1N4733	RESISTORS ARE 1/4 W, 10% UNLESS OTHERWISE NOTED	
CR2-9	1N270		
CR10,11	1N4007 (2-7)		
Q1-4	2N2222A		
Q5	2N6073A		
U1,5	LM555		
U2,3	74LS90N		
U4	4584BE		
U6	3011		
R1,9,12,18,21	10 K		
R2,7	22 K		
R3,4,6,8,15,19,24,26	4.99 K		
R5	68 K		

CRITTENDEN CONVERSION CORPORATION

Title: SC 102 - E SCHEMATIC DIAGRAM

Size: B Document Number: STITCHER.DSN Rev: A

Date: Thursday, March 15, 2012 Sheet: 1 of 1



NOTES:
 ARC SUPPRESSOR (100ohms, 1.0 mf @ 200v) IS INSTALLED ACROSS THE START COIL WIRES. THIS USUALLY SOLVES THE PROBLEM OF PUTTING IN ONE STITCH AND THEN EJECTING THE BOX. THE REED SWITCH (RS1) WIRES MUST BE ROUTED DIRECTLY TO THE COUNTER BOX AND NOT THROUGH ANY CONDUIT WHICH CONTAINS POWER CARRYING LINES.
 LS2 AND LS3 (LIMIT SWITCHES) ARE INSTALLED ON THE OFF FEED CONVEYOR OF THE 585 AND 950 MACHINES ONLY. THEY ARE USED TO STOP THE STITCH CYCLE WHEN OPERATING IN THE LIMIT MODE RATHER THAN THE COUNT MODE. THE LIMIT MODE IS RECOMMENDED WHEN STITCHING LONG BOXES REQUIRING 15 OR MORE STITCHES. A MORE CONSISTENT PLACEMENT OF THE LAST STITCH IS THE ADVANTAGE OF USING THE LIMIT MODE.

STITCHER WIRING DIAGRAM W/LIFT & TAKEOFF
 SCALE: 1=1 APPROVED BY: DRAWN BY: CDV
 DATE: MAY 96 REVISED BY:
 CRITTENDEN CONVERSION CORP.
 BUILT IN HOUSE DWG # E800TL
 MFG # T=20m