KAM7315

Attachment No. 1

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
-	REL'D ON C/N S1958	2-29-80	DHC
A	REV'D PER C/N S2004 SHTS 2,3,4,9,10,11,12,13. 172VDC WAS 120/125VDC.	3-20-80	K. RICH
B	REV'D PER C/N S'2059 ¶5.2.4 47.25 WAS 47.5 ¶5.2.10 52.75 WAS 52.5	4-3-80	K RICH
C	REV'D PER C/N S2306. ADDED 'TYP INPUT CKT' TO FIG 6,7,8	6/25/80	KRC

BECHTEL COMPANY	JOB NO. 7749
SUPPLIER DOCUMENT REVIEW STATUS	

STATUS NO.

1 ☒ Approved — Mfg. may proceed
2 ☐ Approved — Submit final dwg — Mfg. may proceed
3 ☐ Approved — except as noted — Make changes and submit final dwg — Mfg. may proceed as approved
4 ☐ Not Approved — Correct and resubmit
5 ☐ Review not required — Mfg. may proceed

Approval of this document does not relieve supplier from full compliance with contract or purchase order requirements. Status 1, 2 or 5 approval required prior to shipment of materials.

BY [signature] DATE 4-22-80

7749-E-238-2-4

REV																										
SHEET																										
REV																										
SHEET																										

REV STATUS OF SHEETS																	
	REV	C	A	A	B	-	-	-	-	A	A	A	A	A	C	C	C
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

	9N16	DRAWN L.L. 2/29/80	CONSOLIDATED CONTROLS CORPORATION — BETHEL CONN — EL SEGUNDO, CALIF
NEXT ASSY	USED ON	CHECKED DHC	ANALOG AND DIGITAL ISOLATION DEVICE TEST PROCEDURE
APPLICATION		ENGR D. [signature]	
		RELEASED KRC 2/29/80	

SIZE	FSCM NO.	DWG NO.	
A	02750	KAM7315	
SCALE		WT. CALC ACT	SHEET 1 OF 16

0031A

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1.0 SCOPE

This procedure details the objectives, test and documentation requirements to implement the isolation device testing program.

2.0 OBJECTIVE

The objective of these tests is to demonstrate the ability of the isolation devices used in the SFAS modules and system to withstand the application of fault voltages and currents to the Non-1E side of the isolator.

3.0 TEST EQUIPMENT

Power Supply

Module Power ± 15 VDC @ 2.0 amp

+ 24 VDC @ 1.0 amp

Fault V & C 172 VDC @ 2.0 amp

24 VDC @ 36 amp

DVM - Data Tech Model 40 or equivalent

Oscilloscope - Techtronic 465 or equivalent

Chart Recorder - Gould/Brush 220 or equivalent

Ammeter - Weston 931 50 amp or equivalent

Current Probe - Techtronic P6042 or equivalent

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4.0 TEST PROGRAM OUTLINE

4.1 Digital Isolation Device Test

4.1.1 Clare Relay
4.1.1.1 Fault Voltage
4.1.1.2 Fault Current
4.1.1.3 Test to Failure

4.1.2 6N81 Bistable
4.1.2.1 K1 Relay Input

4.1.3 6N83 Output Module
4.1.3.1 K3 Relay Input

4.2 Analog Isolation Device Test

4.2.1 Fischer Porter I/I
4.2.1.1 Operational Test
4.2.1.2 Fault Voltage
4.2.1.3 Fault Current

5.0 TEST PROCEDURE

5.1 Clare Relay MBR2A12 CCC P/N KEL431B

1. Connect Relay Under Test as shown in Figure 1. Note: Connect 172 VDC P/S to separate isolated 115 VAC source from 115 VAC for scope or chart recorder.

2. Operate S1 in test circuit and observe and record scope and chart recordings on Data Form 6.1.

3. Connect relay under test as shown in Figure 2.

4. Operate S1 in test circuit and observe and record scope and chart recordings on Data Form 6.2.

5. Connect relay under test as shown in Figure 3.

6. Operate S1 in test circuit and increase current thru relay contacts until relay fails. Record scope and chart recordings on Data Form 6.3.

7. Perform dielectric test between coils and contacts @ 1250 VAC. Record on Form 6.3.

5.2 6NB1 Bistable Test

1. Connect Bistable as shown in Figure 4A.
2. Set Trip Set Pot to 50%.
3. Set input to cause module to trip.
4. Set input to 47.25% of input. Clear trip light.
5. Apply fault voltage 172 VDC @ 1.5A to test input. Maintain input for 20 seconds.
6. Set input to cause module to trip.
7. Observe and record scope and chart recordings on Form 6.4A.
8. Connect bistable as shown in Figure 4B.
9. Set input to cause module to trip.
10. Set input to 52.75% of input. Clear trip light.
11. Apply fault voltage 172 VDC @ 1.5A to test input. Maintain input for 20 seconds.
12. Set input to cause module to trip
13. Observe and record scope and chart recordings on Form 6.4B.

5.3 Output Module Test

1. Connect module as shown in Figure 5.
2. Open and Close S1 in test circuit. Verify output operation of module.
3. Apply fault voltage 172 VDC @ 1.5A to test input. Maintain input for 20 seconds.
4. Open and Close S1 in test circuit. Verify output operation of module.
5. Observe and record scope and chart recordings on Form 6.5.

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5.4 Fischer Porter I/I CCC P/N KD978

1. Connect Fischer Porter as shown in Figure 6.
2. Verify correct operation by completing Form 6.6A.
3. Connect I/I as shown in Figure 7.
4. Set input to values shown on Form 6.7. Apply fault voltage and current at each input value.
5. Observe and record scope and chart recording on Form 6.7.
6. Perform Dielectric Test between +,4 and -,8 terminals @ 1064 VAC. Record on Form 6.7.
7. Connect I/I as shown in Figure 8.
8. Set input to values shown on Form 6.8. Apply fault voltage and current at each input value.
9. Observe and record scope and chart recordings on Form 6.8.
10. Perform Dielectric Test between +,4 and -,8 terminals at 1064 VAC. Record on Form 6.8.
11. Connect I/I as shown in Figure 6.
12. Verify correct operation by completing Form 6.6B.

DATA FORM 6.1, 2, 3, 4A, 4B, 5 CIRCLE APPLICABLE NO.

Ref. Para. 5.1, 2, 3

Note - Attach chart recordings to Data Form.

Chart Recorder Ch. 1 Scale V/cm_____

Speed cm/sec_____

Observations

Chart Recorder Ch. 2 Scale V/cm_____

Speed cm/sec_____

Observations

Scope Ch. 1 Scale V/cm_____

Horiz cm/sec_____

Observations

Dielectric Test_____ VAC

Observations

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DATA FORM 6.6 A,B

Ref. Para. 5.4

DVM 1	DVM 2
1.00 ± .001 VDC	_____ VDC
2.00 ± .001 VDC	_____ VDC
3.00 ± .001 VDC	_____ VDC
4.00 ± .001 VDC	_____ VDC
5.00 ± .001 VDC	_____ VDC

Dielectric Test _____ VAC

Observations

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DATA FORM 6.7, 6.8

Ref. Para. 5.4

DVM 1	Chart Recorder Ch. 2	Chart Recorder Ch. 2	Scope Ch. 1
1.00 ± .001 VDC			
3.00 ± .001 VDC			
5.00 ± .001 VDC			

Dielectric Test _____ VAC

Observations

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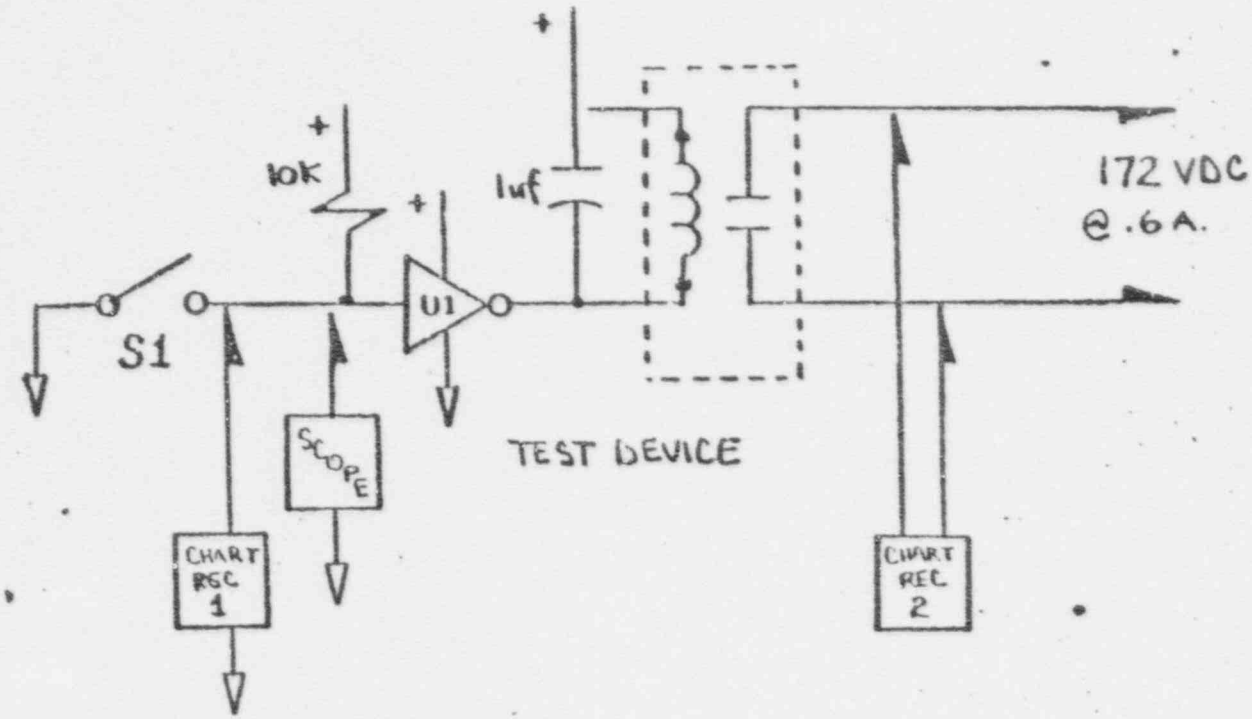
SCALE	REVISION --	SHEET 8

FIGURE 1



U1 - KAV918E

SIZE	FSCM NO.	DWG NO.	REVISION
A	02750	KAM7315	A

SCALE | SHEET 9

FIGURE 2

U1 - KAV1918E

SIZE	FSCM NO.	DWG NO.
A	02750	KAM 7315
SCALE	REVISION A	SHEET 10

FIGURE 3

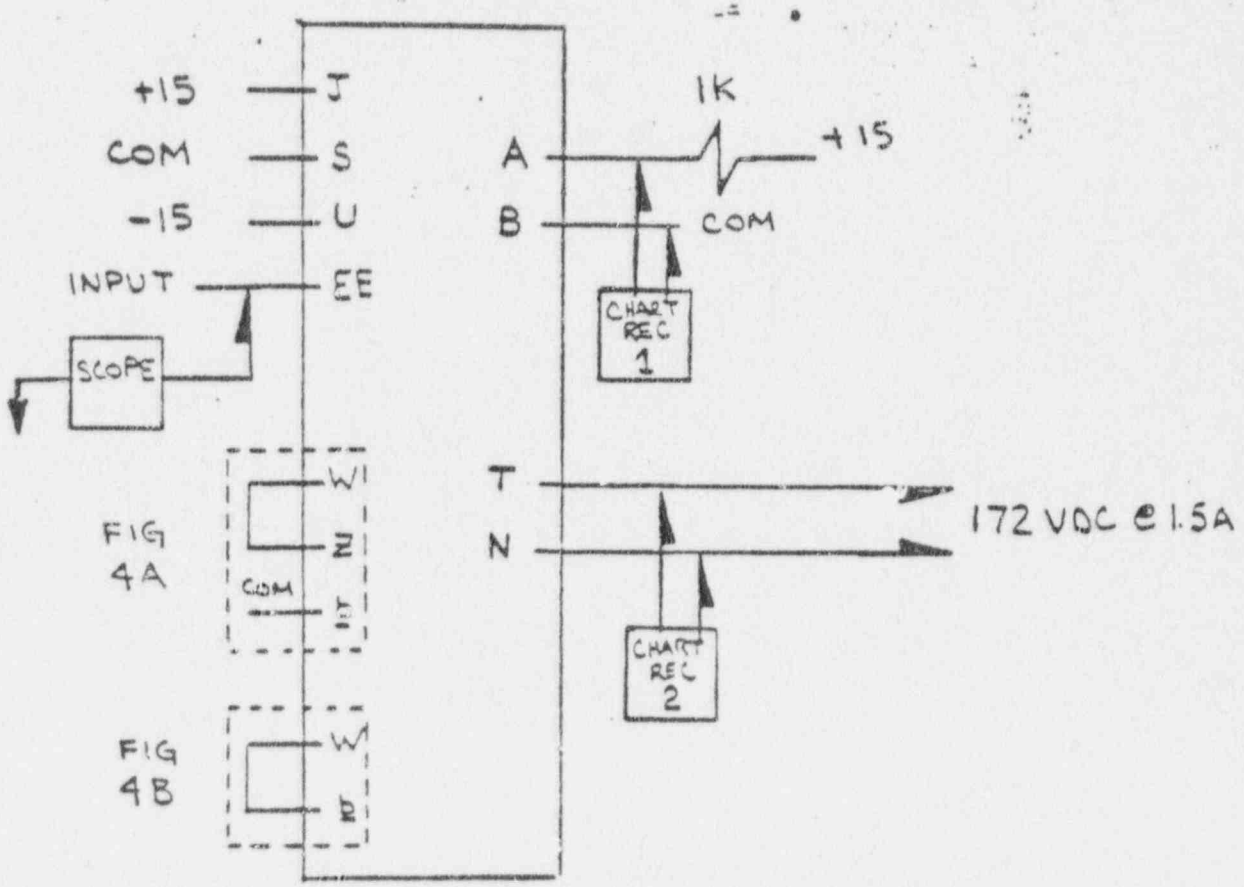
U1 - KAV 918E

SIZE	FSCM NO.	DWG NO.
A	02750	KAM 7315
SCALE	REVISION A	SHEET 11

SH 12

DWG NO. KAM 7315

FIGURE 4 A/B



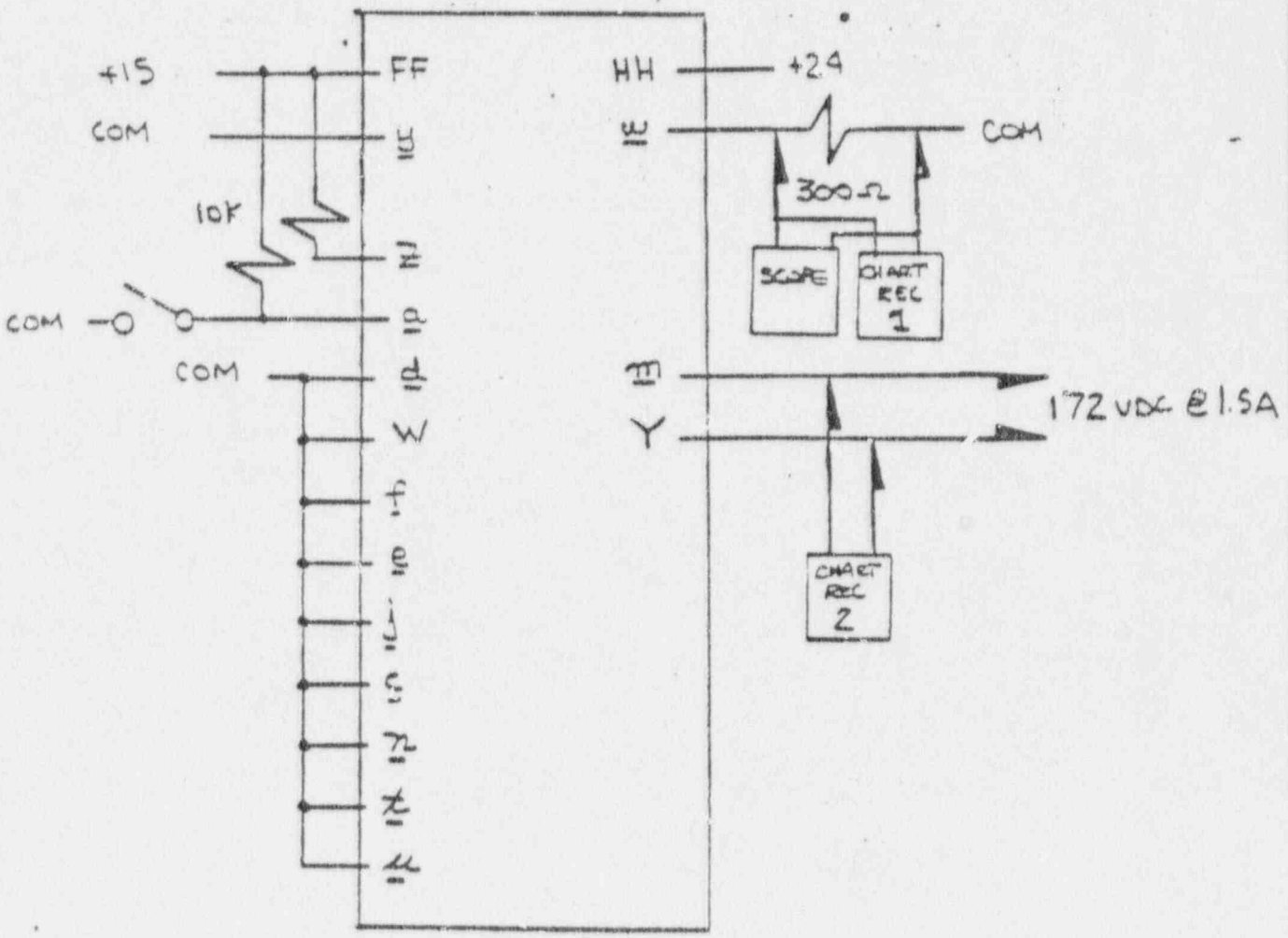
6N81 BISTABLE

SIZE	FSCM NO.	DWG NO.
A	02750	KAM 7315
SCALE	REVISION A	SHEET 12

SHUNING 40-21 31599

00318

FIGURE 5



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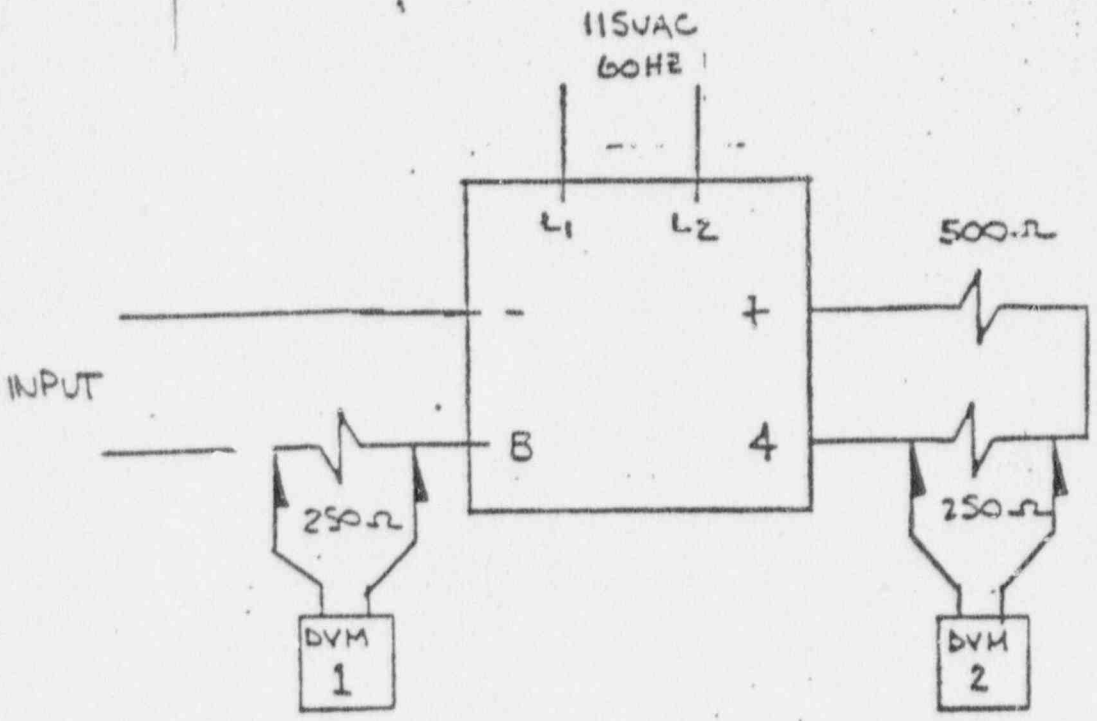
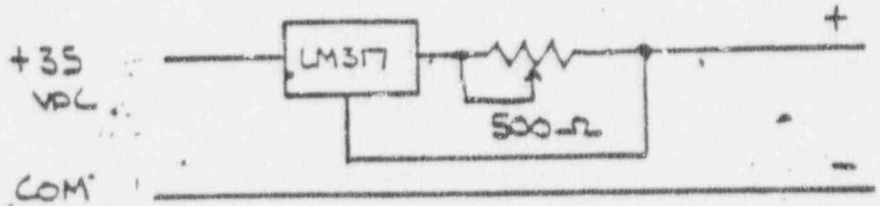
A	02750	KAM 7315
SCALE	REVISION A	SHEET 13

0031B

FIGURE 6

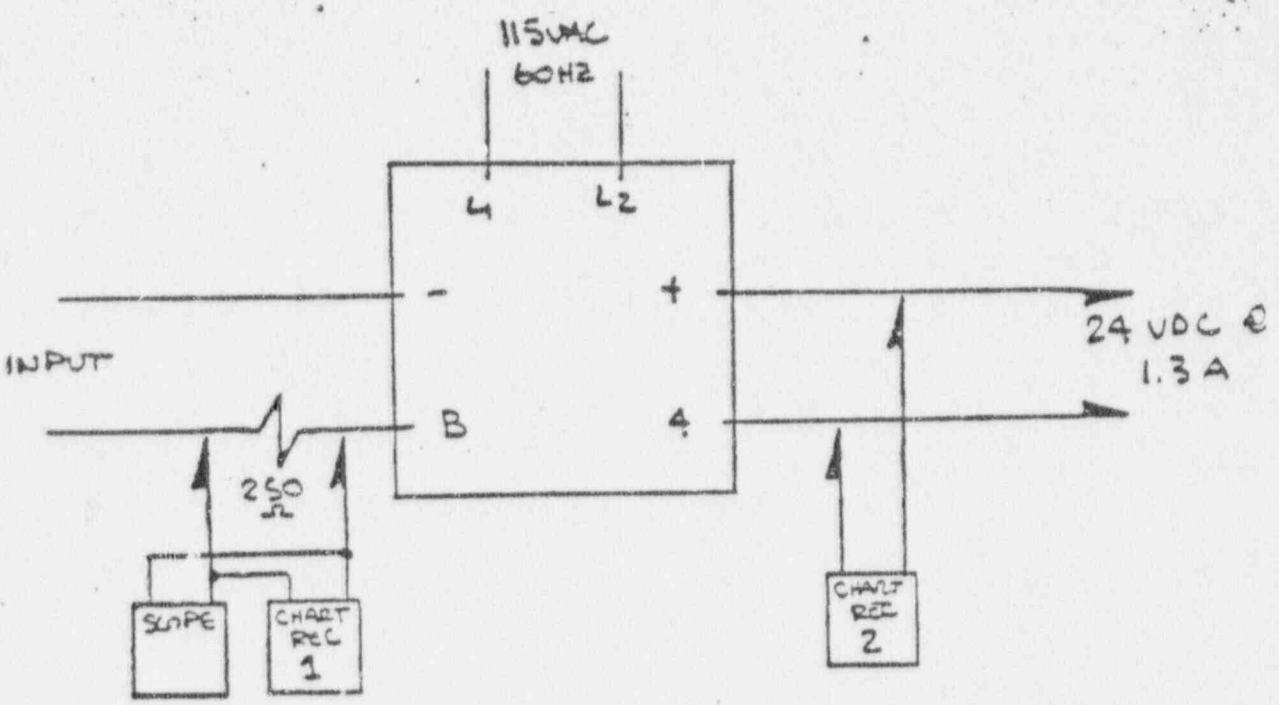


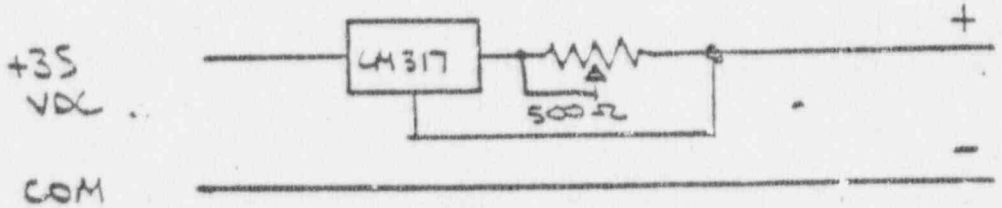


TYP. INPUT CIRCUIT

SIZE	FSCM NO.	DWG NO.
A	02750	KAM 7315
SCALE	REVISION C	SHEET 14

FIGURE 7

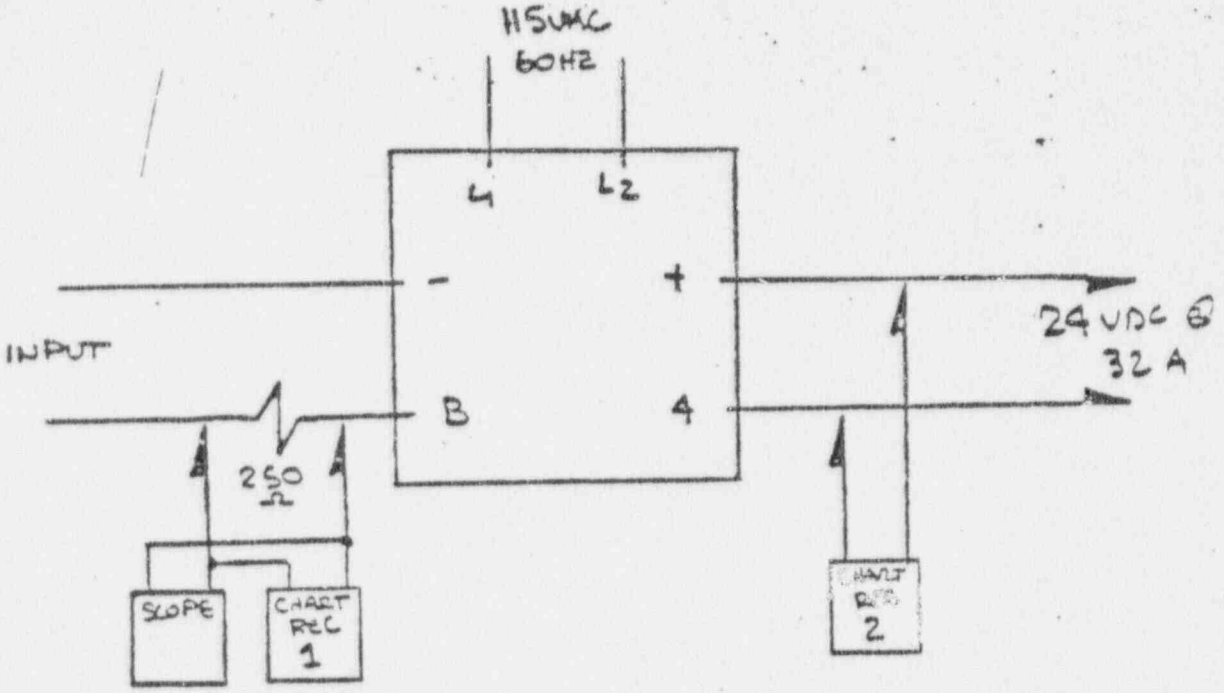


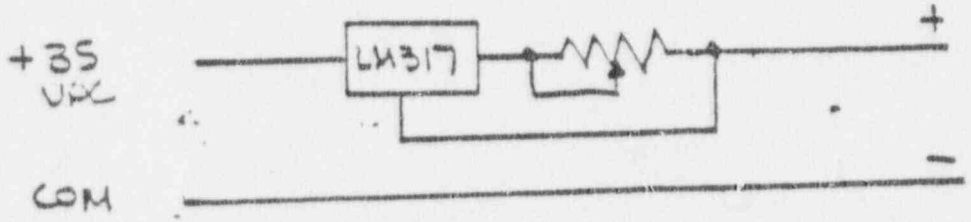


TYP INPUT CKT

SIZE	FSCM NO.	DWG NO.
A	02750	KAM 7315
SCALE	REVISION C	SHEET 15

FIGURE 8





TYP INPUT CKT

SIZE	FSCM NO.	DWG NO.
A	02750	KAM 7315
SCALE	REVISION C	SHEET 16