

# SERVICE MANUAL

4-20 mA SIMULATOR

MODEL : CC-MA

## RS 180-7082

1. PARTS LISTIST.
2. CIRCUIT DIAGRAM.

A. EDIT DATE : 94/12/1  
B. MODIFY DATE :  
C. MODIFY DATE :

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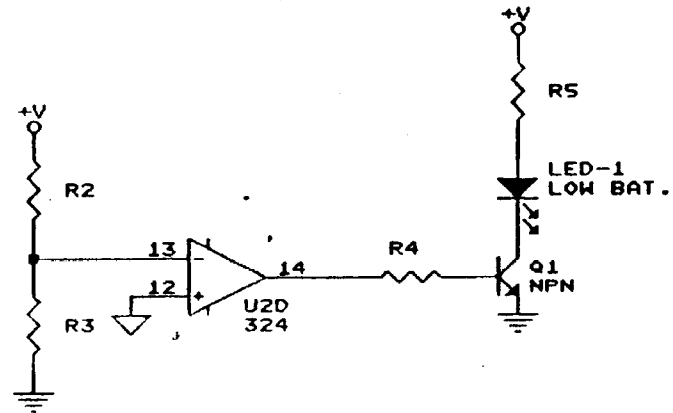
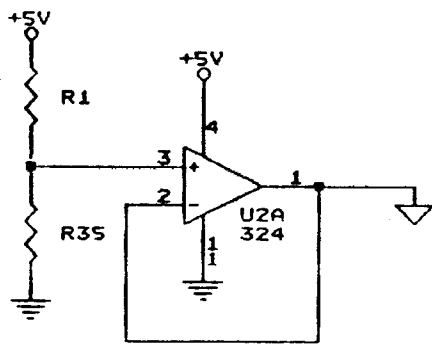
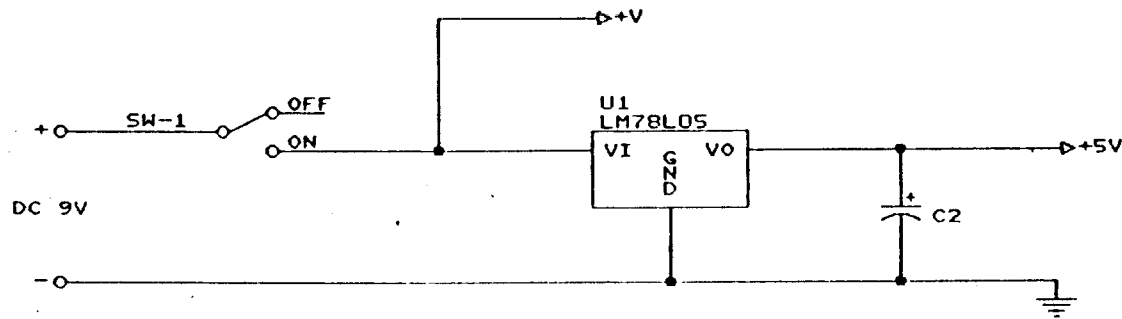
DATE:94/12/1

- NOTE: 1. WHEN IT IS NECESSARY TO REPLACE ANY OF THE ELECTRICAL COMPONENTS SPECIFIED IN THIS PARTS LIST, USE COMPONENTS OF EQUAL OR BETTER SPECIFICATIONS.
2. ALL THE PARTS DESCRIBED IN THIS ELECTRICAL PARTS LIST ARE SUBJECT TO CHANGE DUE TO ENGINEERING CHANGES FOR IMPROVEMENT.
3. FOR ORDERING SPARE OR REPLACEMENT PARTS, REFER TO THE PARTS DESCRIPTIONS SHOWN FOR EACH ITEM.

CIRCUIT REF. NO.	DESCRIPTION	RATING
CAPACITORS		
C1	METAL FILM	0.22 uF, 50V
C2	ELECTROLYTIC	100 uF, 16V
RESISTORS		
R1	METAL FILM	1 M 1 % 1/4W
R2	METAL FILM	18K 1 % 1/4W
R3	METAL FILM	10K 1 % 1/4W
R4	METAL FILM	1K 1 % 1/4W
R5	METAL FILM	2.49K 1 % 1/4W
R9	METAL FILM	174K 1 % 1/4W
R10	METAL FILM	1K 1 % 1/4W
R11	METAL FILM	221K 1 % 1/4W
R12	METAL FILM	4.02K 1 % 1/4W
R13	METAL FILM	130K 1 % 1/4W
R14	METAL FILM	4.02K 1 % 1/4W
R17	METAL FILM	1K 1 % 1/4W
R18	METAL FILM	10K 1 % 1/4W
R19	METAL FILM	10K 1 % 1/4W
R23	METAL FILM	10 ohm 1 % 1/4W
R24	METAL FILM	1K 1 % 1/4W
R25	METAL FILM	9.76K 1 % 1/4W
R26	METAL FILM	10K 1 % 1/4W
R27	METAL FILM	90.9K 1 % 1/4W
R28	METAL FILM	10K 1 % 1/4W
R29	METAL FILM	1K 1 % 1/4W
R30	METAL FILM	2.49K 1 % 1/4W
R35	METAL FILM	1 M 1 % 1/4W

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CIRCUIT REF. NO.	DESCRIPTION	RATING
VARIABLE RESISTER		
P1	multi turns	1K ohm
P2	multi turns	1K ohm
P3	multi turns	1K ohm
INTEGRATE CIRCUITS		
U1	POWER REGULATOR	LM78L05
U2	OP AMP.	LM324
U3	COUNTER	7490
U4	ANALOG MULTIPLEXERS/ DEMUTIPLEXERS	CD4052
DIODES, ZENERS, TRASISTORS, LED LAMPS		
Q1	NPN TRANSISTOR	945
Q3	NPN TRANSISTOR	945
Q4	NPN TRANSISTOR	945
Q5	NPN TRANSISTOR	945
LED-1	LED LAMP	
LED-2	LED LAMP	
LED-3	LED LAMP	
LED-4	LED LAMP	
LED-7	LED LAMP	
SWITCHES		
SW1	POWER ON/OFF SW.	CC-MA
SW2	RANGE SW.	CC-MA



Title

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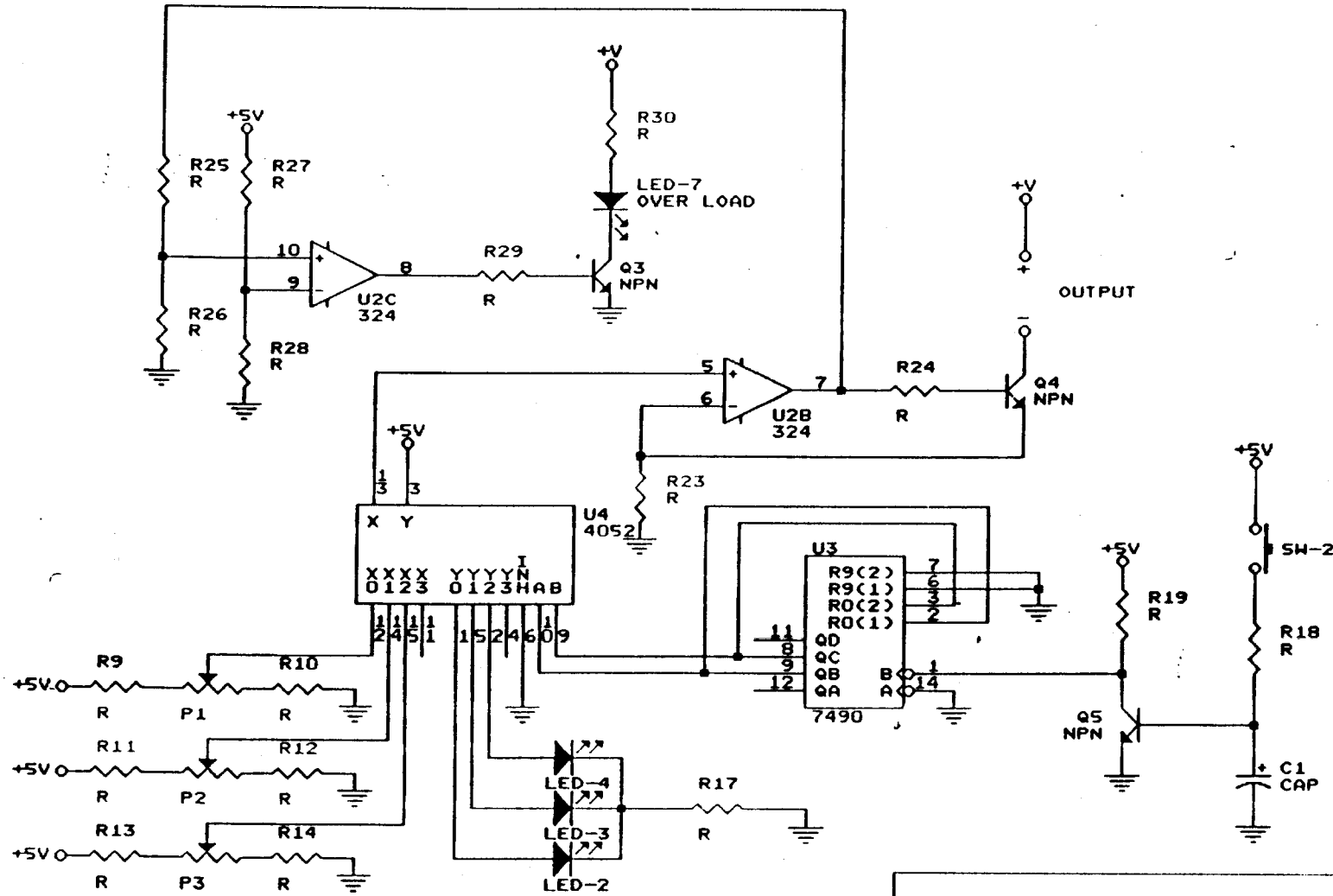
Size Document Number

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CC-MA

REV

Date: December 1, 1994 Sheet of



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