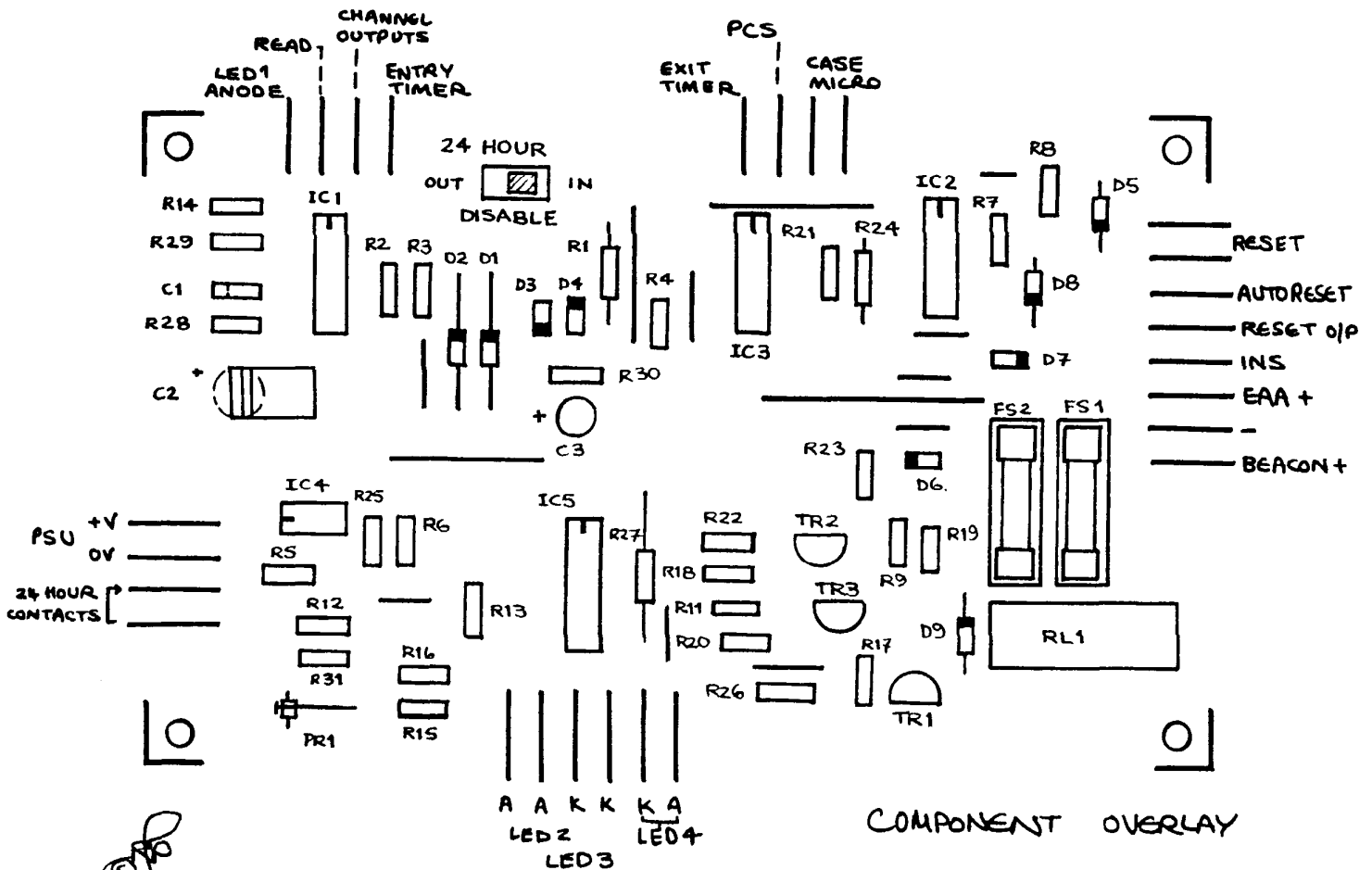
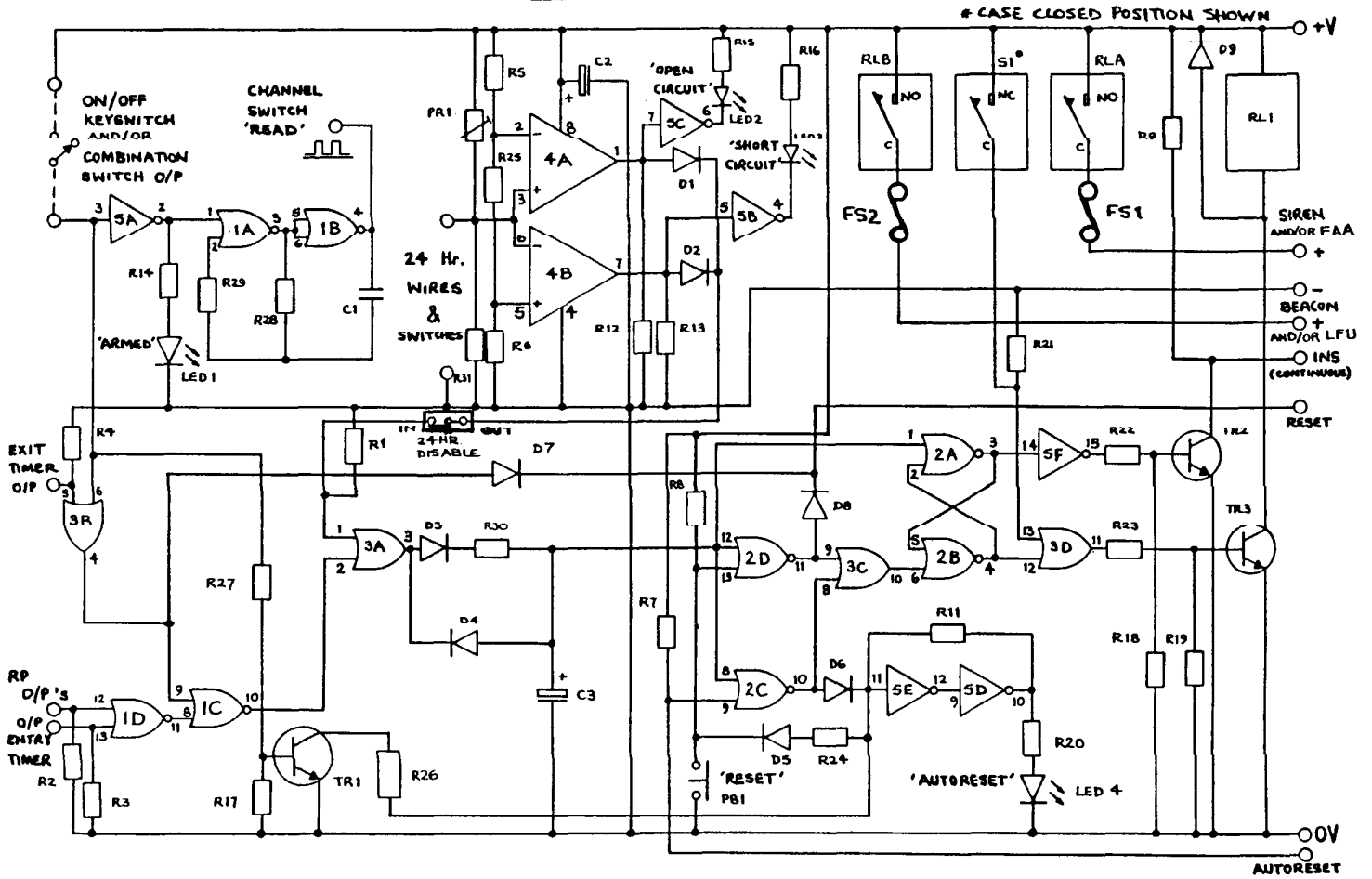


# CONTROL BOARD



87

COMPONENT OVERLAY

# CONTROL BOARD. Parts List.

REF. N <sup>o</sup> (s):	DESCRIPTION:	QTY.:	REMARKS & EQUIVALENTS:
R14 → R20	1K 0W4 ±1%	7	± 5%
R21 → R27	10K " "	7	"
R30	33K " "	1	"
R31	51K " "	1	"
R1 → R13	100K " "	13	"
R28	1M " "	1	"
R29	3M3 " "	1	" ECON.
PR1	100K PRESET	1	
C1	100nF CERAMIC	1	
C2	1μF 16V	1	AXIAL ELECT.
C3	4μF 16V	1	" "
D1 → D8	1N4148	8	
D9	1N4001	1	
LED2, LED3	3mm RED LED	2	+ CLIP
LED1	5mm GREEN LED	1	"
LED4	5mm YELLOW LED	1	"
TR1 → TR3	BC548	3	
IC1, IC2	4001BE	2	
IC3	4071BE	1	
IC4	1458C	1	
IC5	4049BE	1	
DIL 8	8 PIN SOCKET	1	
DIL 14	14 PIN SOCKET	3	
DIL 16	16 PIN SOCKET	1	
PB1	PUSH TO MAKE	1	HIGH QUALITY
RL1	320Ω, 12V RELAY	1	DPDT
S1	CASE MICROSWITCH	1	SPST
TERM	12WAY PCB TERM.	1	
PCB	3" x 4"	1	
SOL	SOLDER, LETRASET		
NBF	NUTS, BOLTS, FIXTURES		
FS1	1.25A (20mm)	1	+HOLDER (PCB)
FS2	300mA (20mm)	1	+HOLDER (PCB)
SW1	SPST PCB MOUNT	1	

## SPECIFICATION.

PARAMETER	MIN.	TYP.	MAX.	UNIT
OPERATING VOLTAGE (+V)	9		15.6	V
QUIESCENT CURRENT DRAIN (@ 13V8)				mA
MAXIMUM CURRENT DRAIN (@ 13V8)				mA
- ALL LED'S LIT & RELAY ENERGISED				

## FACILITIES.

RESET PUSHSWITCH

CASE MICROSWITCH CONNECTIONS (N.O.) - CONFORMS TO BS4737

## 24HR. CIRCUIT:

RESISTANCE PROTECTED ('JUMP' & 'SHORT' PROTECTION)

FULL FAULT INDICATION (SHORT & OPEN CIRCUIT LED INDICATION)

ACCEPTS BOTH N.C. & N.O. CONNECTIONS (EG. PBS & PBH)

## INPUTS:

EXIT TIMER O/P (NL) N.O. = NORMALLY OPEN; N.C. = NORMALLY CLOSED

ENTRY TIMER O/P (NL) NL = NORMALLY LOW; NH = NORMALLY HIGH

RPU & SRP O/P's (NL)

AUTORESET (NH) \*(YELLOW)

RCS O/P AND/OR KEYSWITCH (ON = LOW) \*(GREEN)  
(OFF = HIGH)

## OUTPUTS:

SRP SWITCH 'READ' (≈ 10Hz. SQUAREWAVE)

SES/PES AND/OR EAA (3A RELAY CONTACT - ON ALARM = +V)

BEACON AND/OR LFU (3A RELAY CONTACT - ON ALARM = +V)

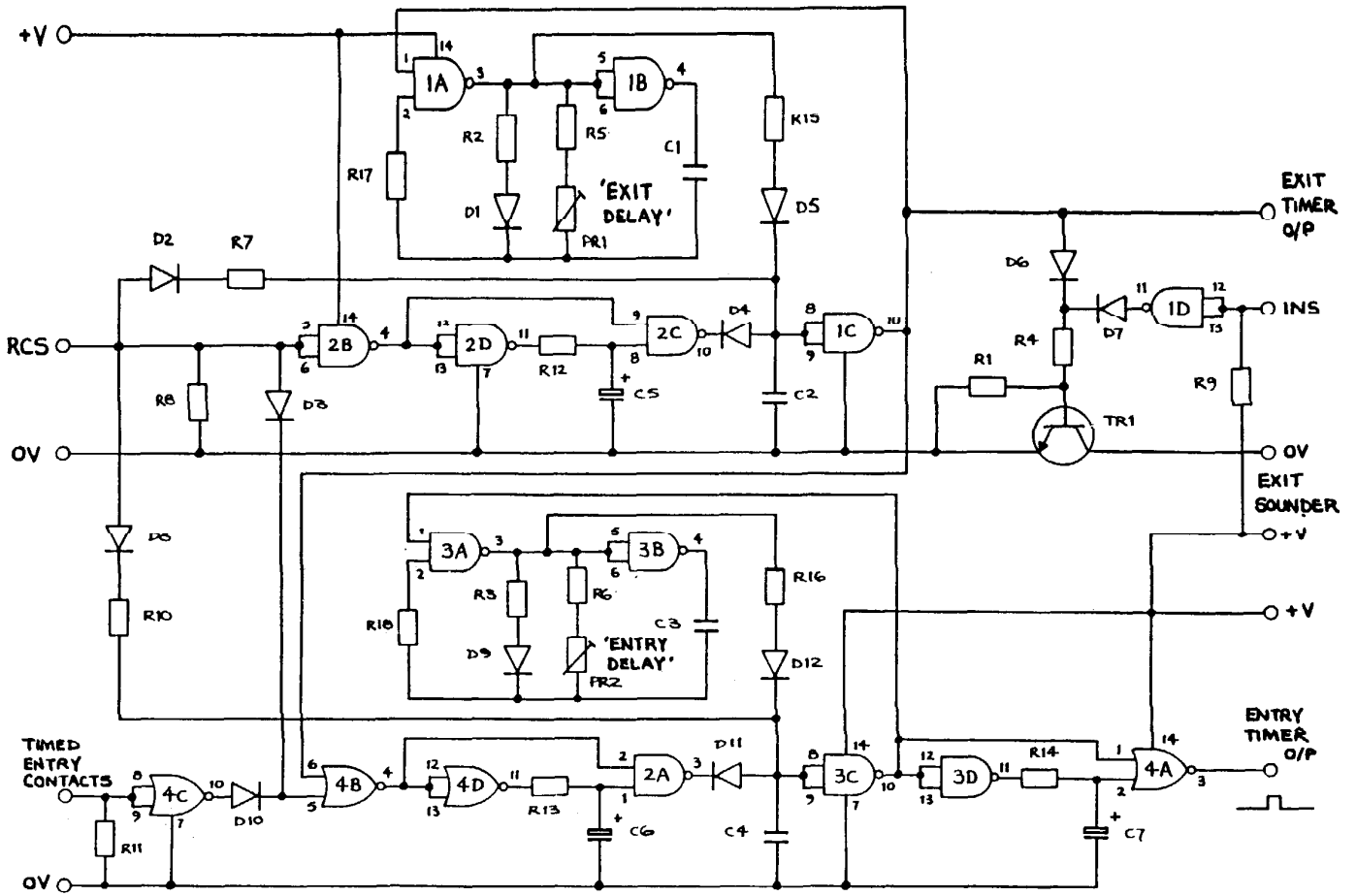
RPU/SRP FAULT INDICATION RESET (NL)

INS (NH)

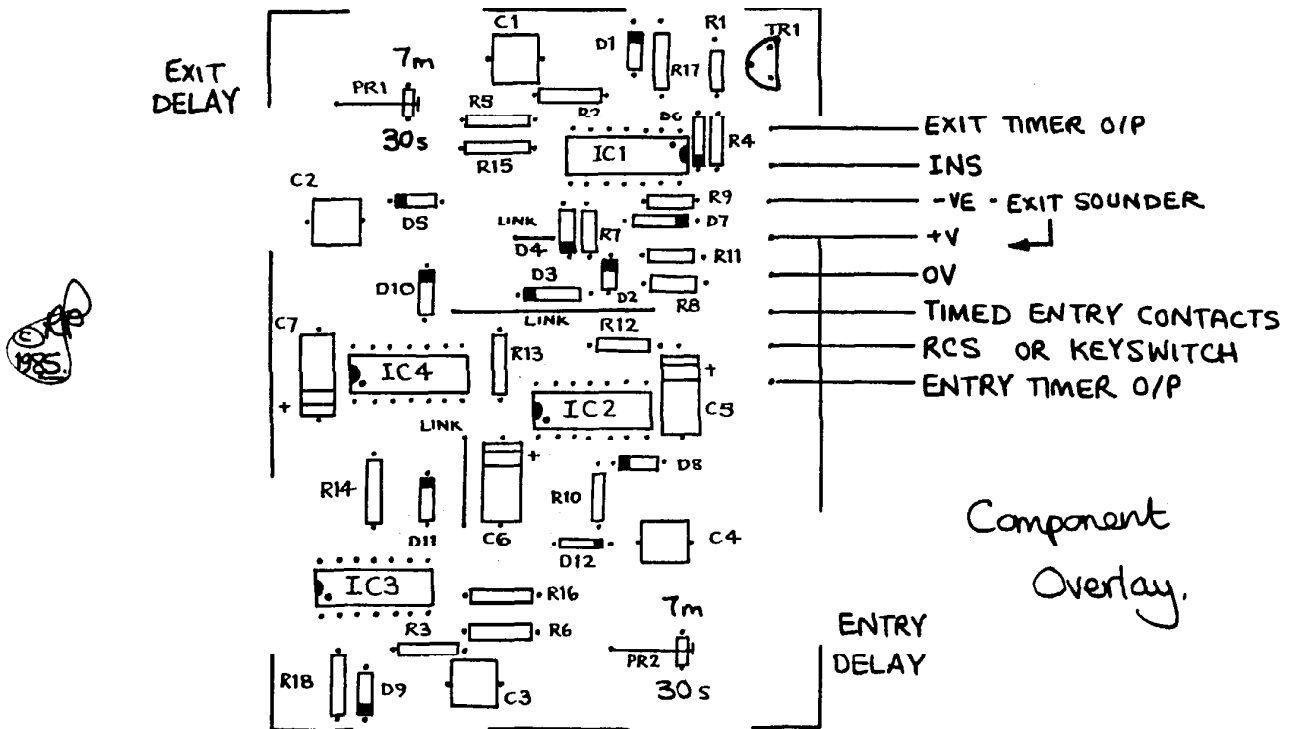
\* LED INDICATION PROVIDED

SES/PES AND/OR EAA AND INS OUTPUTS BOTH FUSED.

# EET



# EET



# EET. Parts List

REF. NO(s):	DESCRIPTION:	QTY:	REMARKS & EQUIVALENTS:
R1	1K 0W4 ±1%	1	OR ±5%
R2, R3	2k2 " "	2	
R4	10K " "	1	OR ±5%
R5, R6	68K " "	2	
R7 → R11	100K " "	5	OR ±5%
R12 → R14	330K " "	3	"
R15, R16	1M " "	2	
R17, R18	4M7 " "	2	USE ECON. RES. ±5%
PR1, PR2	1M PRESET	2	HORIZONTAL
C1 → C4	1μF POLYCARBONATE	4	±5% OR BETTER
C5 → C7	4μ7 16V	3	AXIAL ELECT.
D1 → D12	1N4148	12	
TR1	BC548	1	
IC1 → IC3	4093BE	3	
IC4	4001BE	1	
DIL 14	14 PIN DIL SOCKET	4	
TERM	10 WAY PCB TERM.	1	
PCB	3" x 4"	1	
SOL	SOLDER, LETRASET		
NBF	NUTS, BOLTS, FIXTURES		
ES	EXIT SOUNDER	1	<15mA @ 13V8

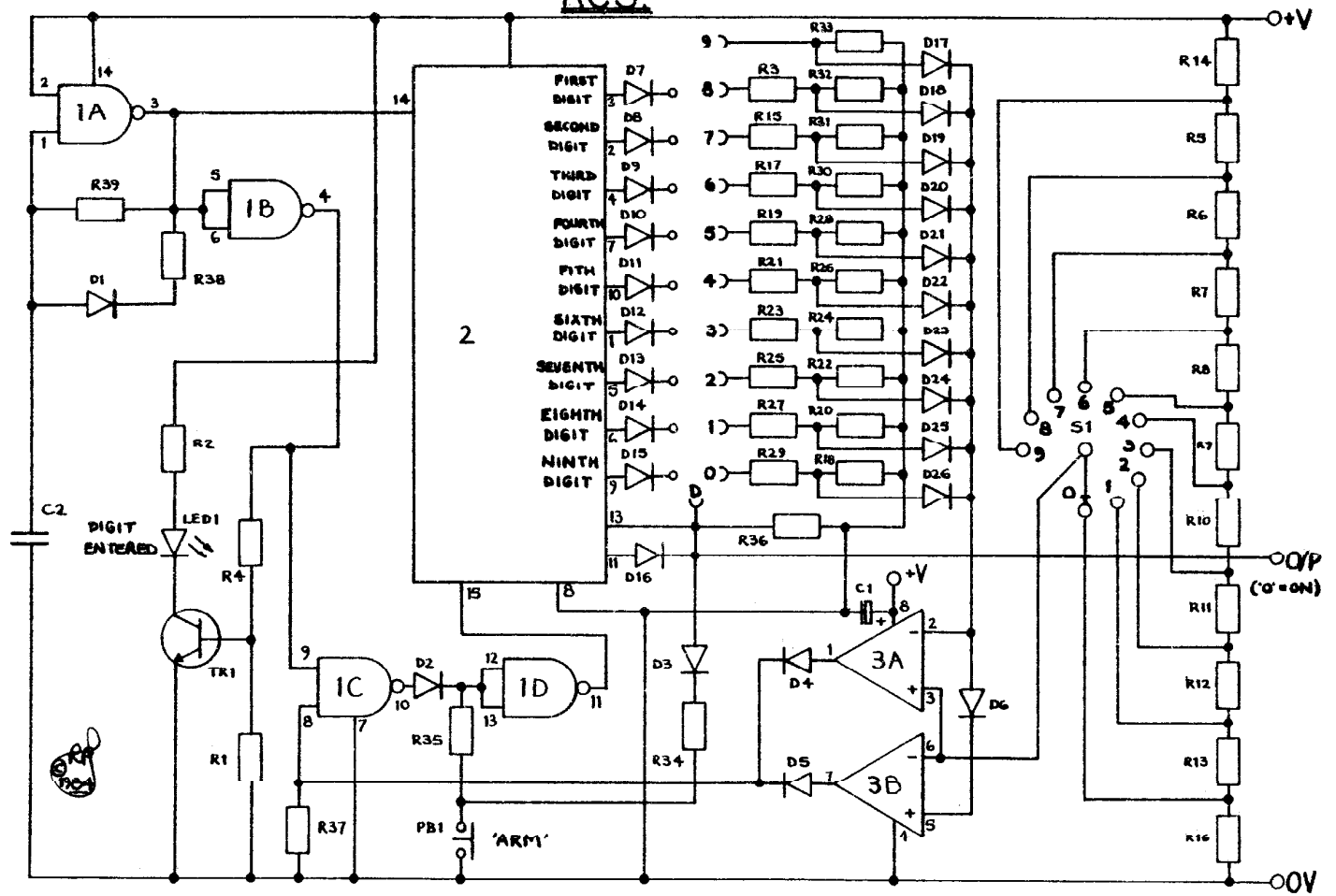
## SPECIFICATION.

PARAMETER	MIN.	TYP.	MAX.	UNIT
OPERATING VOLTAGE	9		16	V
QUIESCENT CURRENT DRAIN				
MAXIMUM CURRENT DRAIN				
DELAY TIME	30		420	s
ACCURACY	±5			%

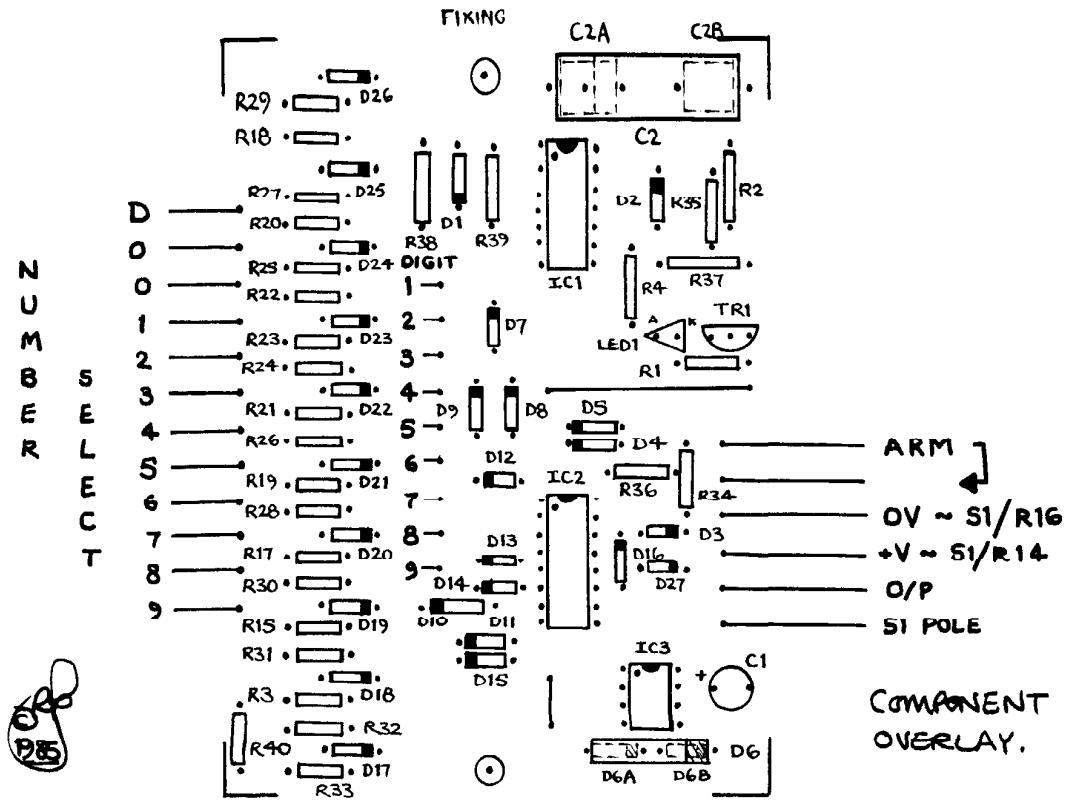
## FACILITIES.

ENTRY DELAY: VARIABLE, 30s → 7min. } INDEPENDANT  
 EXIT DELAY: VARIABLE, 30s → 7min. }  
 EXIT SOUNDER (ALSO SOUNDS WHEN INS ACTIVE)  
 TIMERS RESET ON SYSTEM DISARM

RCS.



# RCS.



## RCS. Parts List.

REF. NO(S):	DESCRIPTION:	QTY.:	REMARKS & EQUIVALENTS:
R1, R2	1K 0W4 ±1%	2	
R3	7K5 " "	1	
R4 → R13	10K " "	10	
R14	15K " "	1	
R15	16K " "	1	
R16	20K " "	1	
R17, R18	24K " "	2	
R19, R20	33K " "	2	
R21, R22	43K " "	2	
R23, R24	51K " "	2	
R25, R26	62K " "	2	
R27, R28	68K " "	2	
R29, R30	75K " "	2	
R31	82K " "	1	
R32	91K " "	1	
R33 → R35	100K " "	3	
R36, R37	1M " "	2	
R38	4M7 " ±5%	1	
R39	10M " ±5%	1	
C1	1 <sub>μ</sub> F 16V	1	AXIAL ELECT.
C2	2 <sub>μ</sub> 2 POLYESTER	1	OR POLYCARBONATE
D1 → D26	1N4148	26	
LED1	TRIANGULAR GREEN	1	
TR1	BC548	1	
IC1	4093BE	1	
IC2	4017BE	1	
IC3	1458C	1	
DIL8	8 PIN DIL SOCKET	1	
DIL14	14 PIN " "	1	
DIL16	16 PIN " "	1	
PB1	PUSH TO MAKE	1	HIGH QUALITY
S1	1P12N ROTARY	1	
N1	MAPPING KNOB NK2	1	
TERM1	12WAY PCB TERM.	1	
TERM2	9WAY PCB TERM.	1	
PCB	3" x 4"	1	
SOL	SOLDER, LETRASET		
NBF	NUTS, BOLTS, FIXTURES		

## RCS.

### SPECIFICATION.

PARAMETER	MIN.	TYP.	MAX.	UNIT
OPERATING VOLTAGE	9		16	V
MAXIMUM CURRENT DRAIN				mA
AVERAGE CURRENT DRAIN				mA

### FACILITIES.

PUSHBUTTON 'ARM' SWITCH.

ENTER CORRECT CODE TO DISARM SYSTEM.

COMBINATION:

EASILY & QUICKLY CHANGED

ENTERED VIA ROTARY SWITCH

2 TO 9 DIGITS - USER SELECTABLE

EACH DIGIT:

ANY NUMBER BETWEEN 0 AND 9 INCLUSIVE

DIGIT MAY BE REPEATED

USER SELECTABLE

LED INDICATION OF DIGIT ENTERED.

FOOLPROOF, ANY ONE DIGIT INCORRECT LEAD TO RESET  
(ie CODE MUST BE ENTERED AGAIN FROM BEGINNING).

HIGH LEVEL OF SECURITY:

ODDS AGAINST 'CRACKING' CODE IN ANY ONE ATTEMPT:

2 DIGITS = 100 TO 1

3 DIGITS = 1000 TO 1

4 DIGITS = 10 000 TO 1

5 DIGITS = 100 000 TO 1

6 DIGITS = 1 000 000 TO 1

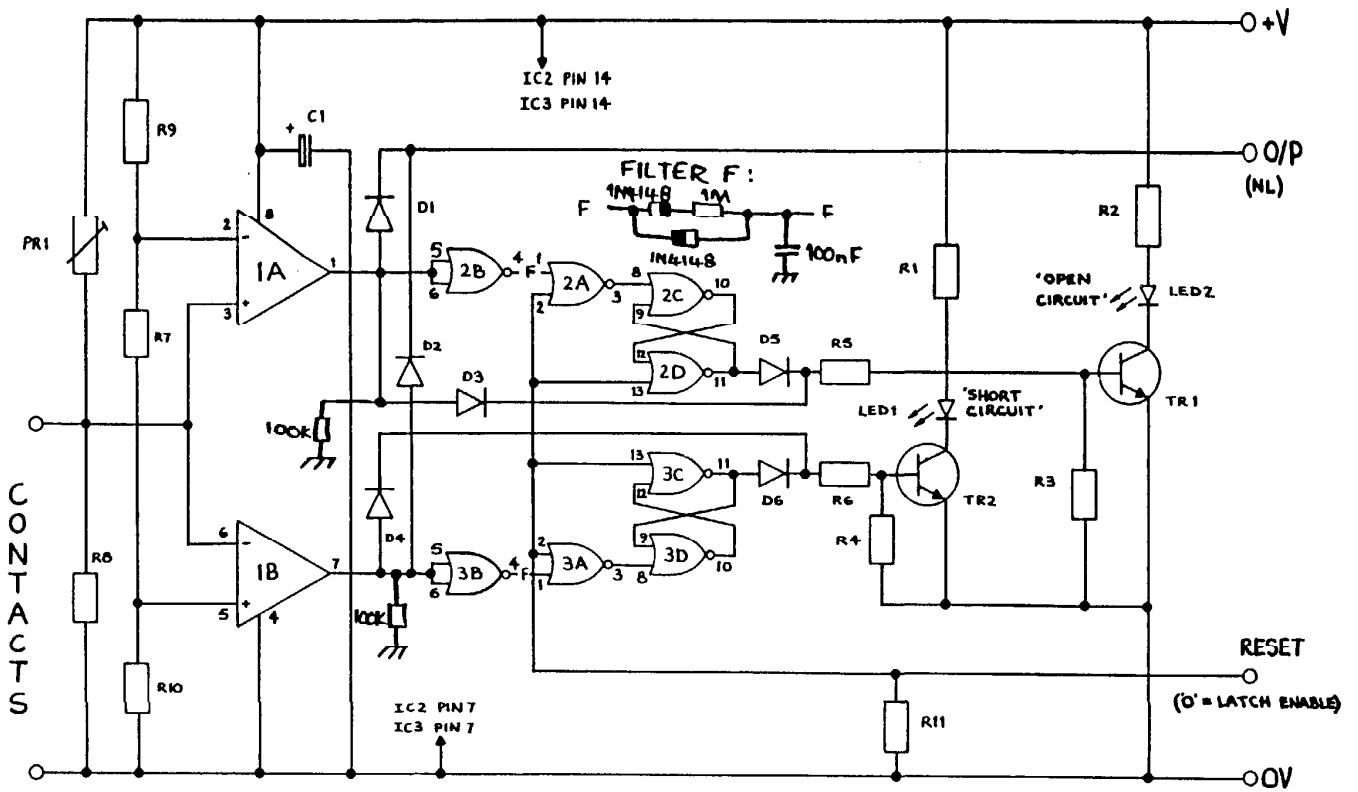
7 DIGITS = 10 000 000 TO 1

8 DIGITS = 100 000 000 TO 1

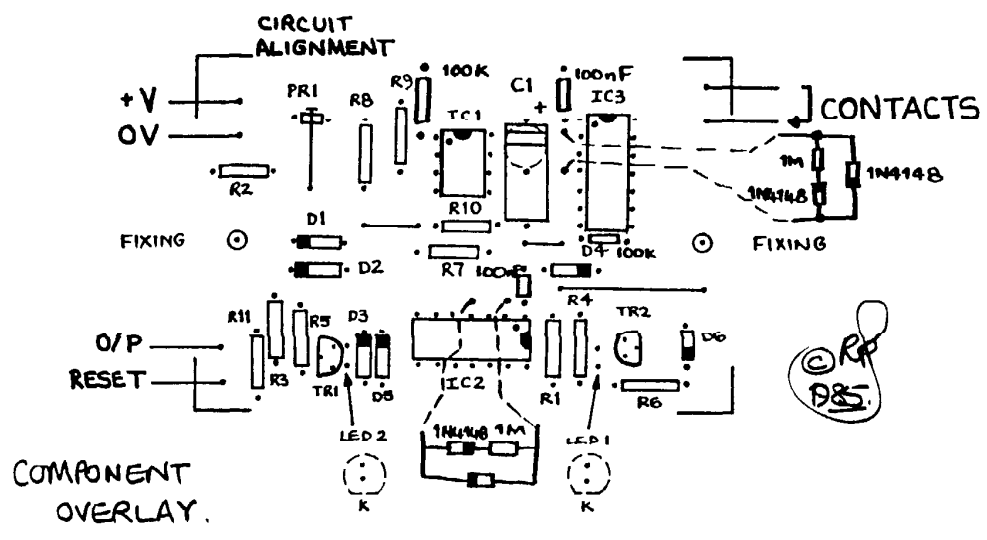
9 DIGITS = 1 000 000 000 TO 1



# RPU.



# RPU.



RPU Parts List.

REF. NO(s):	DESCRIPTION:	QTY:	REMARKS & EQUIVALENTS:
R1 → R4	1K 0W4 ±1%	4	
R5 → R7	10K " "	3	
R8	51K " "	1	
R9, R10	100K " "	2	
R11	1M " "	1	
FR1	100K PRESET	1	HORIZONTAL
C1	1μF 16V	1	AXIAL ELECT
D1 → D6	1N4148	6	
LED1, LED2	3mm RED LED	2	+ CHIP
TR1, TR2	BC548	2	
IC1	1458C	1	
DIL 8	8 PIN DIL SOCKET	1	
IC2, IC3	4001BE	2	
DIL 14	14 PIN DIL SOCKET	2	
PCB	2" x 3"	1	
SOL	SOLDER, LETRASET		
NBF	NUTS, BOLTS, FIXTURES		
FILTER } COMPONENTS } (CLAMPING)	1N4148	4	
	1M	2	
	100K	2	

SPECIFICATION.

PARAMETER	MIN.	TYF.	MAX.	UNIT
OPERATING VOLTAGE	9		16	V
QUIESCENT CURRENT DRAIN			8	mA
MAXIMUM CURRENT DRAIN			40	mA

FACILITIES.

BOTH N.C. AND N.O. CONTACTS MAY BE CONNECTED.

RESISTANCE PROTECTION:

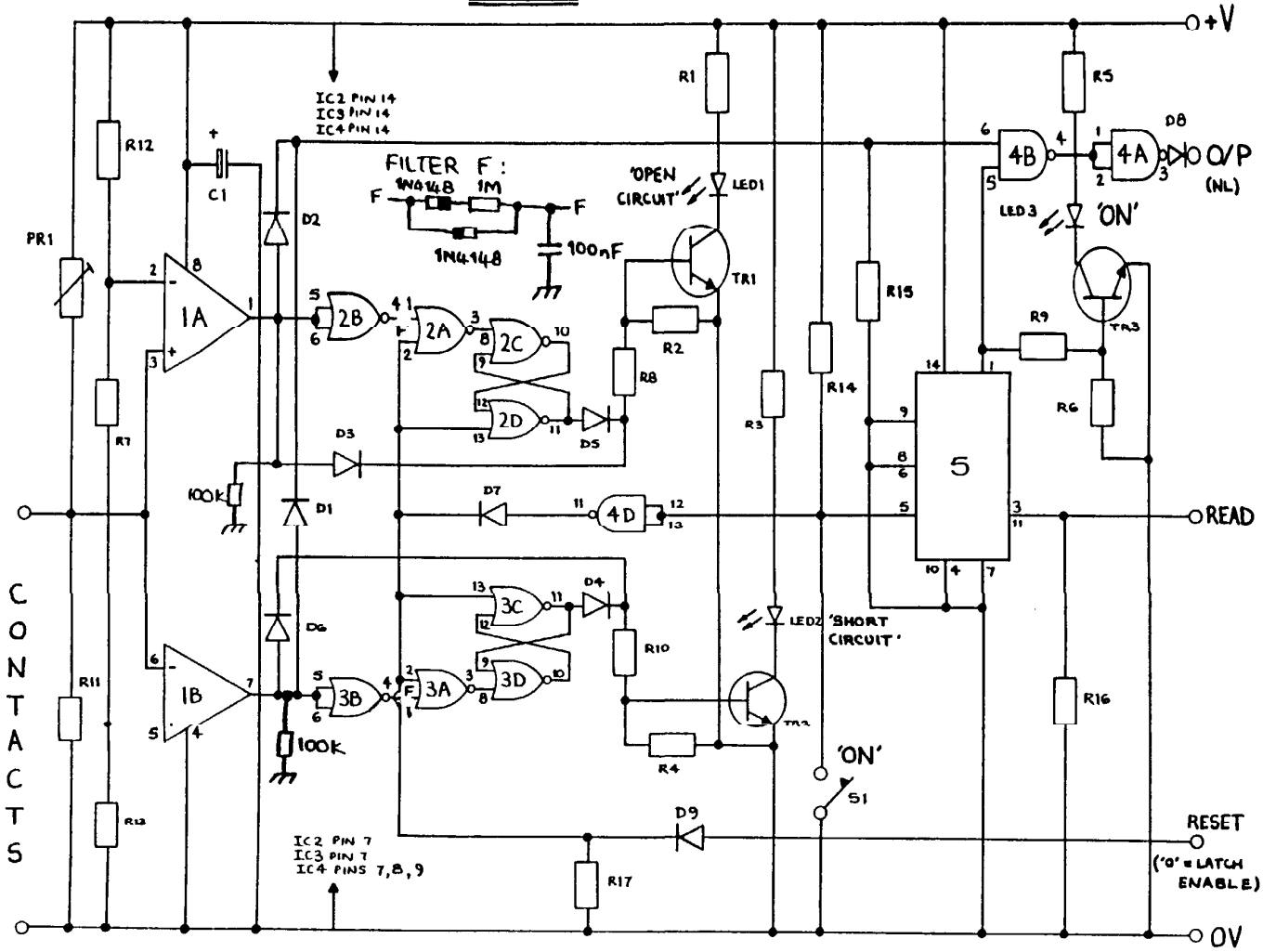
DETECTS ⓐ SHORTING OF CONTACT WIRES  
& ⓑ CUTTING OF CONTACT WIRES.

FULL FAULT INDICATION:

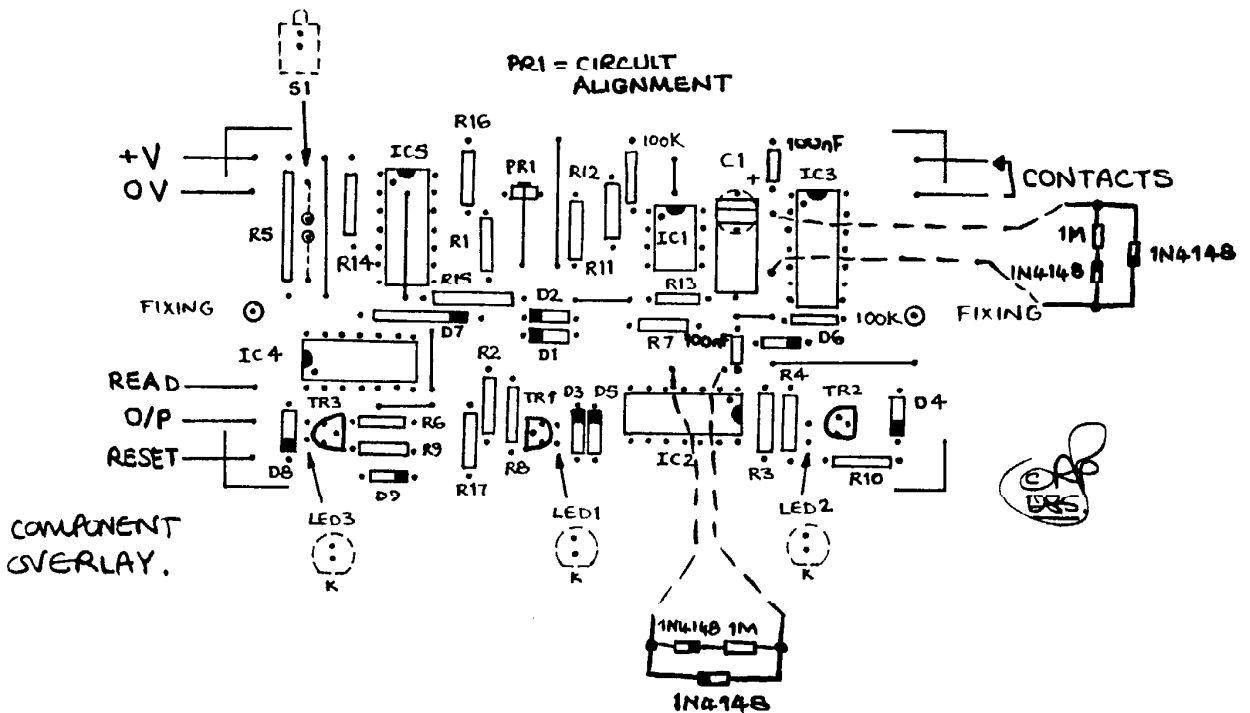
LED INDICATION OF ⓐ OPEN CIRCUIT  
& ⓑ SHORT CIRCUIT.

WHEN SYSTEM ARMED, A FAULT WILL CAUSE THE APPROPRIATE LED TO LATCH ON UNTIL THE SYSTEM IS RESET OR DISARMED (UNAFFECTED BY AUTORESET).

# SRP



# SRP



SRP. Parts List.

REF. NO(s):	DESCRIPTION:	QTY:	REMARKS & EQUIVALENTS:
R1 → R6	1K 0W4 ±1%	6	
R7 → R10	10K " "	4	
R11	51K " "	1	
R12 → R15	100K " "	4	
R16, R17	1M " "	2	
PR1	100K PRESET	1	HORIZONTAL
C1	1μF 16V	1	AXIAL ELECT.
D1 → D9	1N4148	9	
LED1, LED2	3mm RED LED	2	+ CLIP
LED3	3mm GREEN LED	1	+ CLIP
TR1 → TR3	BC548	3	
IC1	1458C	1	
DIL 8	8 PIN DIL SOCKET	1	
IC2, IC3	4001BE	2	
IC4	4011BE	1	
IC5	4013BE	1	
DIL 14	14 PIN DIL SOCKET	4	
S1	SPST TOGGLE	1	MINIATURE
PCB	4' x 3"	1	
SOL	SOLDER, LETRASET		
NBF	NUTS, BOLTS, FIXTURES		
FILTER COMPONENTS { (CLAMPING)	1N4148	4	
	1M 0W4 ±1%	2	
	100K " "	2	

SPECIFICATION.

PARAMETER	MIN.	TYP.	MAX.	UNIT
OPERATING VOLTAGE	9		16	V
QUIESCENT CURRENT DRAIN (SWITCHED IN)			20	mA
MAXIMUM CURRENT DRAIN (SWITCHED IN)			50	mA

FACILITIES.

BOTH N.O. AND N.C. CONTACTS MAY BE CONNECTED.  
 SWITCHABLE WITH LED INDICATION OF ON/OFF STATUS.  
 SWITCH HAS NO EFFECT WHEN SYSTEM ARMED (ie CHANNEL  
 REMAINS IN MODE SELECTED BEFORE ARMING).

RESISTANCE PROTECTION:

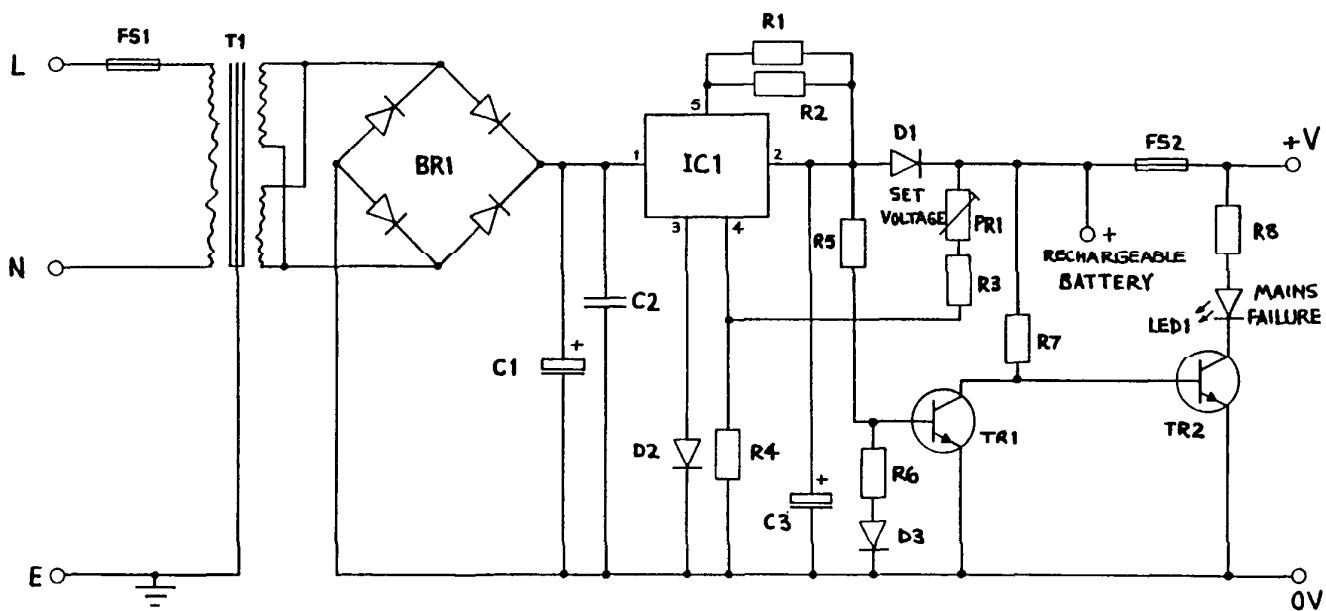
- DETECTS (a) SHORTING OF CONTACT WIRES
- AND (b) CUTTING OF CONTACT WIRES

FULL FAULT INDICATION:

- LED INDICATION OF (a) SHORT CIRCUIT
- AND (b) OPEN CIRCUIT

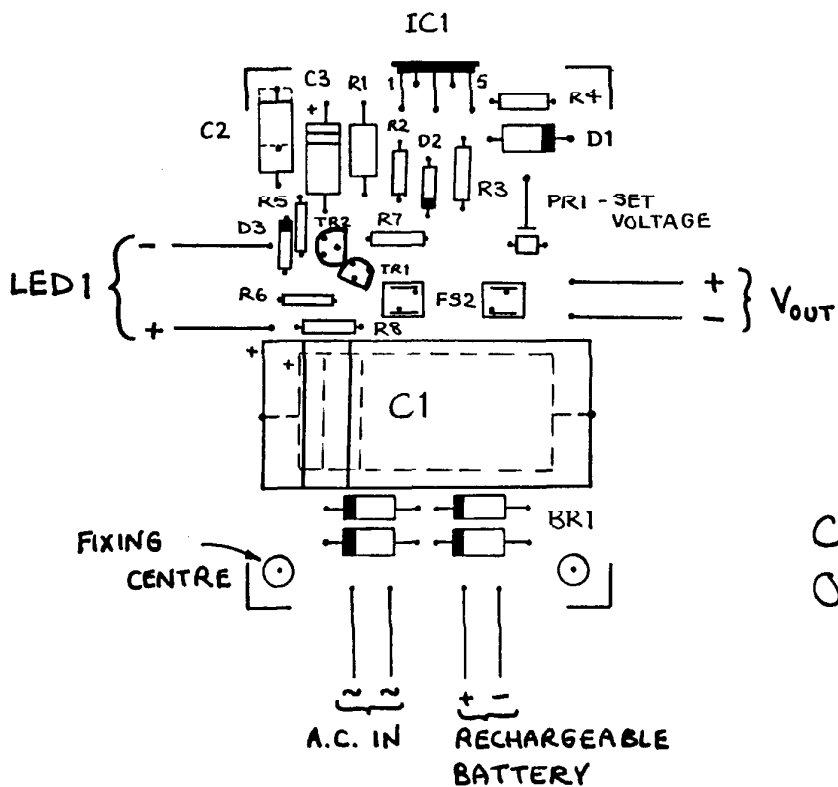
WHEN SYSTEM IS ARMED AND CHANNEL SWITCHED ON A FAULT  
 WILL CAUSE THE APPROPRIATE LED TO LATCH ON UNTIL THE  
 SYSTEM IS RESET, DISARMED OR THE CHANNEL SWITCHED OFF.  
 (UNAFFECTED BY AUTORESET).

## POWER SUPPLY.



## POWER SUPPLY.

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PS1. Parts List.

REF. NO(s) :	DESCRIPTION :	QTY :	REMARKS & EQUIVALENTS :
R1	OR47 3W $\pm 5\%$	1	$\geq 1W$
R2	10R 0W4 $\pm 1\%$	1	OR $\pm 5\%$
R4, R8	820R " "	2	"
R3	1K8 " "	1	"
R6	4K7 " "	1	"
R7	5K6 " "	1	"
R5	10K " "	1	"
PR1	1K PRESET	1	HORIZONTAL
C2	330nF POLYESTER	1	
C3	1 $\mu$ F 16V	1	AXIAL ELECT. $\pm 20\%$
C1	2200 $\mu$ F 35V	1	" " "
BR1	1N4002	4	
D1	1N4002	1	
D2, D3	1N4148	2	OR 1N914
LED1	RED LED + CLIP	1	0.2"
TR1, TR2	BC548	2	OR BC549
IC1	L200	1	
IC1M	T0220 MOUNT KIT	1	USE THERMPATH.
T1	18V <sub>rms</sub> , 30VA	1	REG. = 18%, TOROID
J1	SA MAINS JUNC. BOX	1	LIGHTING JUNCTION BOX
FH1	INLINE FUSEHOLDER	1	1 1/4"
FS1	250mA FUSE	1	1 1/4" ANTI SURGE
FH2	PCB FUSEHOLDER	1	20mm
FS2	2A FUSE	1	20mm FAST BLOW
CON	5 WAY TERM. BLOCK	1	$\geq 2A$
SOL	SOLDER, LETRASET		
NBF	NUTS, BOLTS, FIXTURES		
PCB	PCB	1	2" x 3"
B1	12V6Ahr. BATTERY	1	PbH <sub>2</sub> SO <sub>4</sub> . MAY USE <6Ahr.
BC	BATTERY CLIPS	2	TO SUIT BATTERY

PS2. Parts List.

REF. NO(s):	DESCRIPTION:	QTY:	REMARKS & EQUIVALENTS:
R1	OR22 3W ±5%	1	≥1W
R2	NOT USED		
R4, R8	820R 0W4 ±1%	2	OR ±5%
R3	1K8 " "	1	"
R6	4K7 " "	1	"
R7	5K6 " "	1	"
R5	10K " "	1	"
PR1	1K PRESET	1	HORIZONTAL
C2	330nF POLYESTER	1	
C3	1μF 16V	1	AXIAL ELECT.
C1	4700μF 35V	1	" " ±20%
BR1	1N5402	4	
D1	1N5402	1	
D2, D3	1N4148	2	OR 1N914
LED1	RED LED + CLIP	1	0.2"
TR1, TR2	BC548	2	OR BC549
IC1	L200	1	
IC1M	TOZZO MOUNT KIT	1	USE THERMPATH
T1	18V <sub>rms</sub> , 80VA	1	REG. = 12%, TOROID
J1	5A MAINS JUNK. BOX	1	LIGHTING JUNCTION BOX
FH1	INLINE FUSEHOLDER	1	1 1/4"
FS1	500mA FUSE	1	1 1/4" ANTI SURGE
FH2	PCB FUSEHOLDER	1	20mm
FS2	3A FUSE	1	20mm FAST BLOW
CON	5WAY, 3A TERM. BLOCK	1	> 3A
SOL	SOLDER, LETRASET		
NBF	NUTS, BOLTS, FIXTURES		
PCB	PCB	1	2" x 3"
B1	12V 6Ahr. BATTERY	1	PbH <sub>2</sub> SO <sub>4</sub> . MAY USE < 6Ahr.
BC	BATTERY CLIPS	2	TO SUIT BATTERY

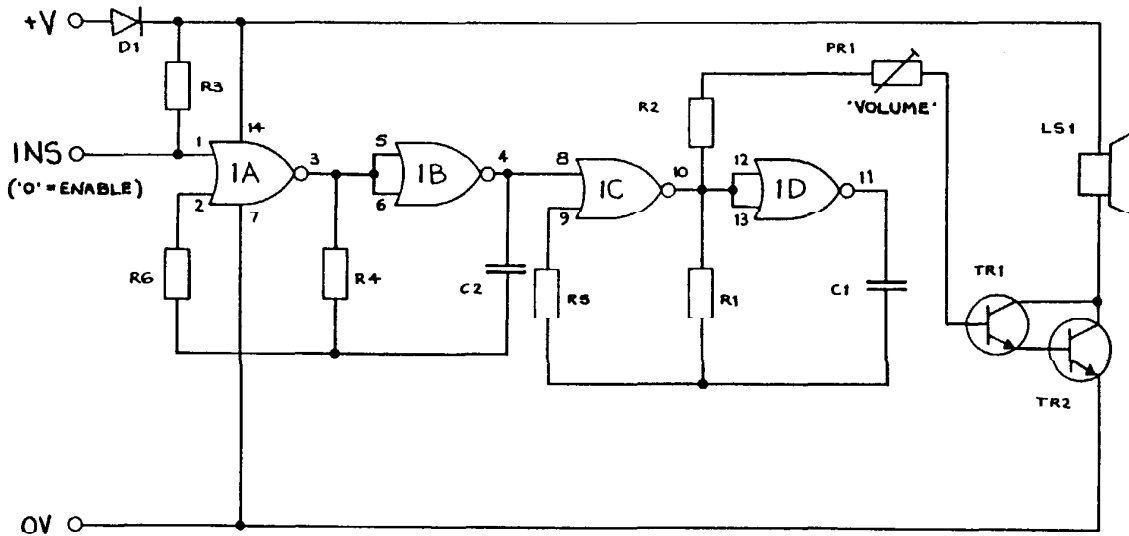
SPECIFICATION:

PARAMETER	MIN.	TYP.	MAX.	UNIT
OUTPUT VOLTAGE (PRESET)	11.9	13.7	15.3	V
MAXIMUM OUTPUT CURRENT		1.0 PS1	2.0 PS2	A

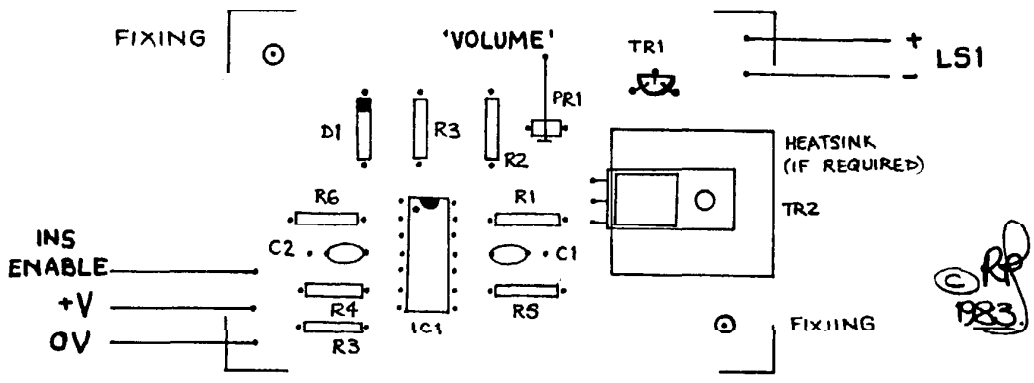
FACILITIES:

MAINS FAILURE INDICATION.  
 6Ahr, AUTOCHARGED STANDBY BATTERY.  
 CONFORMS TO BS4737.  
 INPUT & OUTPUT FUSE PROTECTION.  
 INCORRECT BATTERY POLARITY PROTECTION.  
 OVERHEAT PROTECTION.  
 SHORT CIRCUIT PROTECTION.  
 CURRENT LIMITING.  
 ELECTRICALLY SAFE.

# INS.



# INS.



COMPONENT OVERLAY.



# INS. Parts List.

REF. NO (S):	DESCRIPTION:	QTY.:	REMARKS & EQUIVALENTS:
R1	68k 0W4 ±1%	1	
R2, R3	100k " "	2	
R4	270k " "	1	
R5	470k " "	1	
R6	1M " "	1	
PR1	100k PRESET	1	HORIZONTAL
C1	2n2F CERAMIC	1	
C2	100nF CERAMIC	1	
D1	1N4001	1	
IC1	4001BE	1	
DIL 14	14 PIN DIL SOCKET	1	
TR1	BC548	1	
TR2	TIP 31A	1	
TERM	3WAY PCB TERM.	1	
LS1	8Ω 4W LOUDSPEAKER	1	
PCB	2" x 3"	1	
SOL	SOLDER, LETRASET		
NBF	NUTS, BOLTS, FIXTURES		
E1	ENCLOSURE	1	

## SPECIFICATION.

PARAMETER	MIN.	TYP.	MAX.	UNIT
OPERATING VOLTAGE	9		16	V
QUIESCENT CURRENT DRAIN			1	μA
MAXIMUM CURRENT DRAIN (ON FULL VOLUME)			300	mA

## FACILITIES.

REVERSE VOLTAGE PROTECTION.

SOUND OUTPUT:

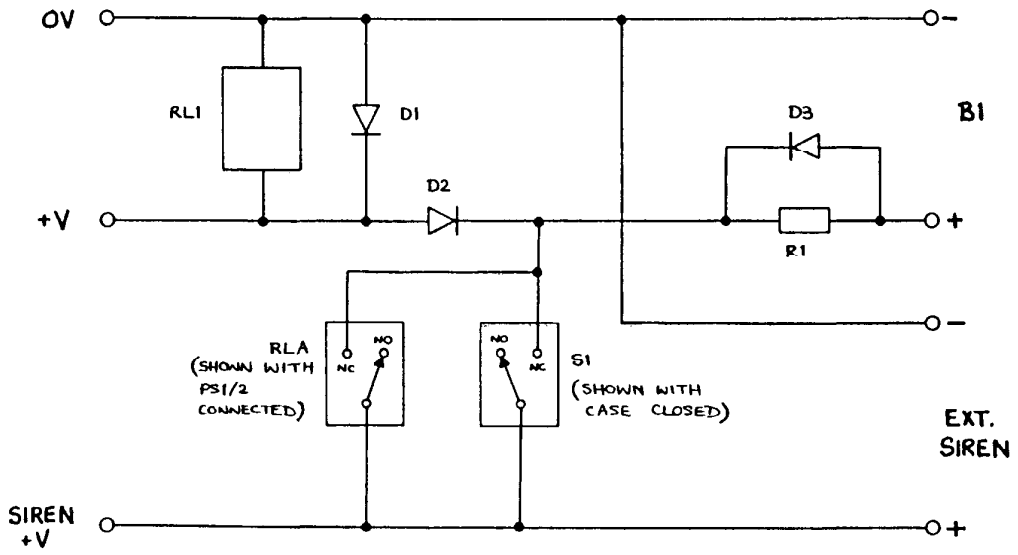
HIGH PITCHED (≈ 6KHz) (EAR PIERCING !)

INTERMITTANT (≈ 20Hz)

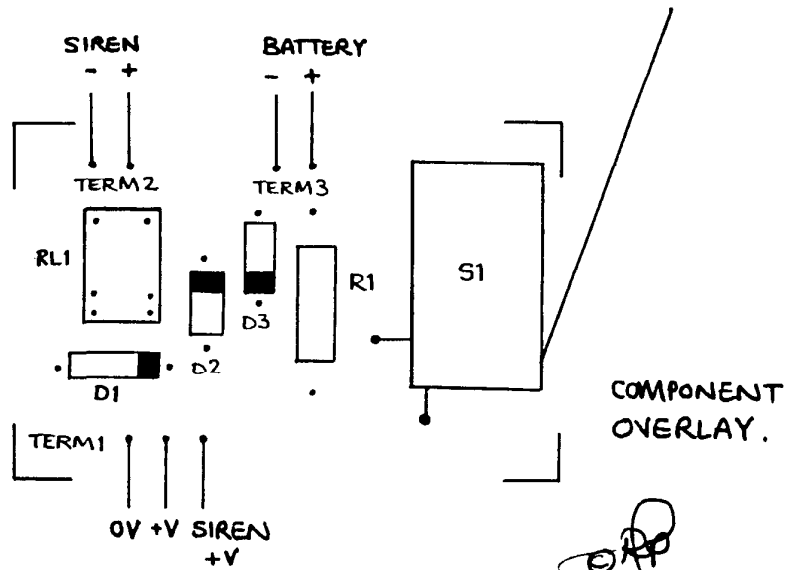
LOUD (≈ 5W)

ADJUSTABLE VOLUME LEVEL

SAM.



SAM.



# SAM Parts List

REF. N <sup>o</sup> (s)	DESCRIPTION :	QTY :	REMARKS & EQUIVALENTS :
R1	47Ω 7W ±5%	1	FOR 2A6 HR. (FOR 1A2 HR. → 1000)
D1	1N4001	1	
D2, D3	1N4001	2	FOR >1A USE 1N5401
RL1	12V SPST RELAY	1	
S1	CASE MICROSWITCH	1	
TERM1	3WAY PCB TERM	1	
TERM2, 3	2 WAY PCB TERM	2	
PCB	2" x 3"	1	
SOL	SOLDER, LETRASET		
NBF	NUTS, BOLTS, FIXTURES		

## SPECIFICATION.

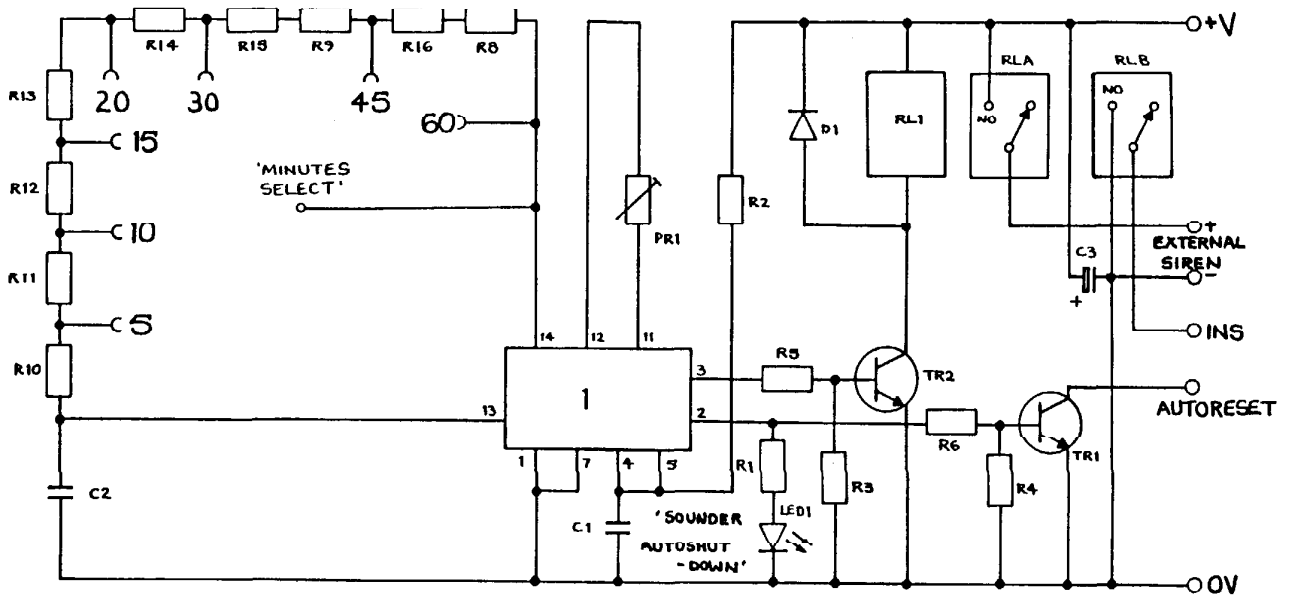
PARAMETER	MIN.	TYP.	MAX.	UNIT
OPERATING VOLTAGE	9	12	15.6	V
MAXIMUM CURRENT DRAIN			180 <sup>1</sup>	mA
MAXIMUM BATTERY CHARGE CURRENT			340 <sup>2</sup>	mA
MAXIMUM ALLOWABLE SOUNDER CURRENT			140 <sup>1</sup>	mA
			300 <sup>2</sup>	mA
			1 <sup>1</sup>	A
			3 <sup>2</sup>	A

<sup>1</sup> D2, D3 = 1N4001 B1 = 1A2  
<sup>2</sup> D2, D3 = 1N5401 B1 = 2A6

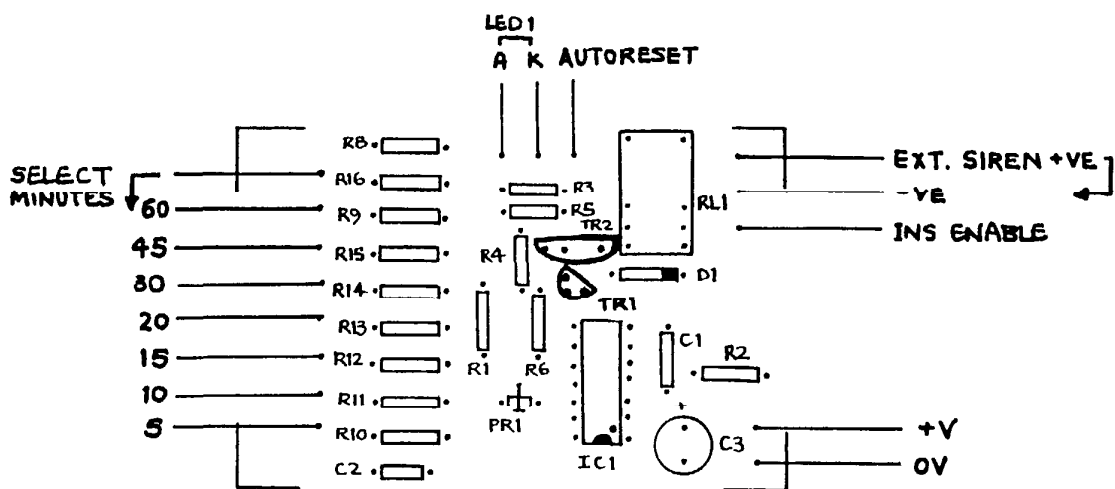
## FACILITIES.

IN THE EVENT OF THE EXTERNAL SOUNDER CABLE BEING CUT, THE ALARM SOUNDS POWERED BY AN INTERNAL BATTERY. IN THE EVENT OF THE CASE BEING OPENED, THE ALARM SOUNDS. INTERNAL BATTERY AUTOCHARGED FROM CONTROL CENTRE.

# EAA.



# EAA.



COMPONENT OVERLAY.

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# EAA Parts List.

REF. N°(S):	DESCRIPTION:	QTY:	REMARKS & EQUIVALENTS:
R1	150R 0W4 ±1%	1	
R2	620R " "	1	
R3, R4	1K5 " "	2	
R5, R6	3K3 " "	2	
R7	Not used	-	
R8	160K 0W4 ±1%	1	
R9	200K " "	1	
R10 → R13	390K " "	4	
R14	750K " "	1	
R15, R16	1M " "	2	
PR1	47k PRESET	1	HORIZONTAL
C1	100nF CERAMIC	1	
C2	220nF POLYCARB.	1	± 5% OR BETTER
C3	100µF 16V	1	PCB ELECT.
C4	NOT USED		
LED1	5mm YELLOW LED	1	+ CLIP
D1	1N4001	1	
TR1, TR2	BC548	2	
IC1	ZN1034E	1	
DIL 14	14 PIN DIL SOCKET	1	
TERM	8WAY PCB TERM	1	
RL1	DPDT 12V ZA	1	320Ω COIL RELAY
PCB	2'x3'	1	
SOL	SOLDER, LETRASET		
NBF	NUTS, BOLTS, FIXTURES		

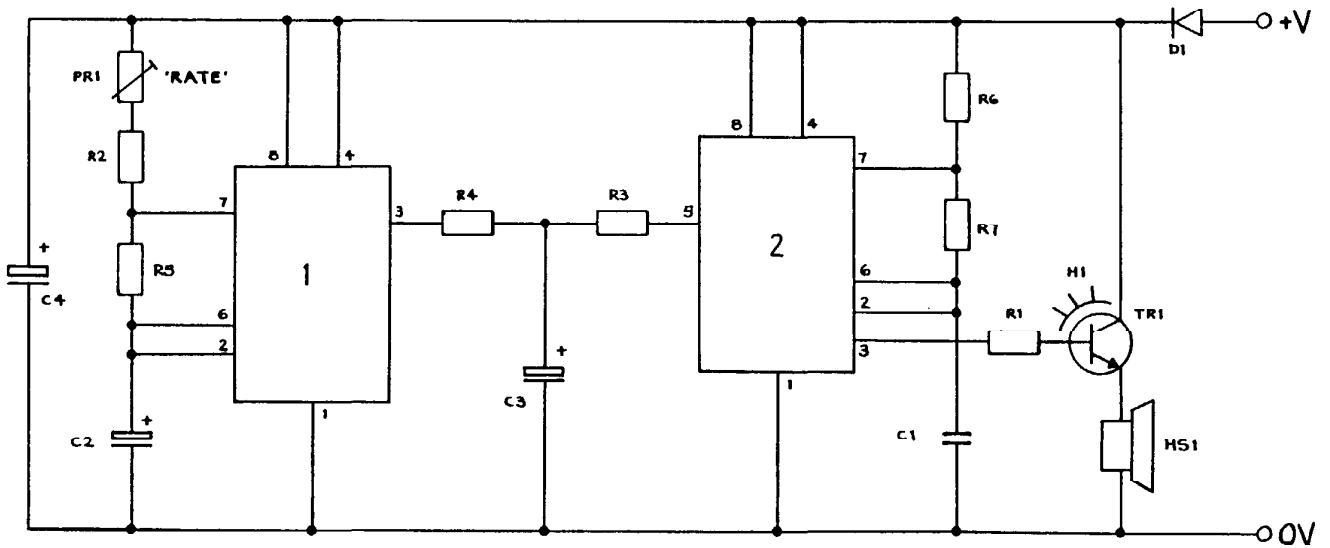
## SPECIFICATION.

PARAMETER	MIN.	TYP.	MAX.	UNIT
OPERATING VOLTAGE	9		16	V
MAXIMUM CURRENT DRAIN				
- SOUNDER(S) ON		50	75	mA
- AUTOSHUTDOWN		10		mA

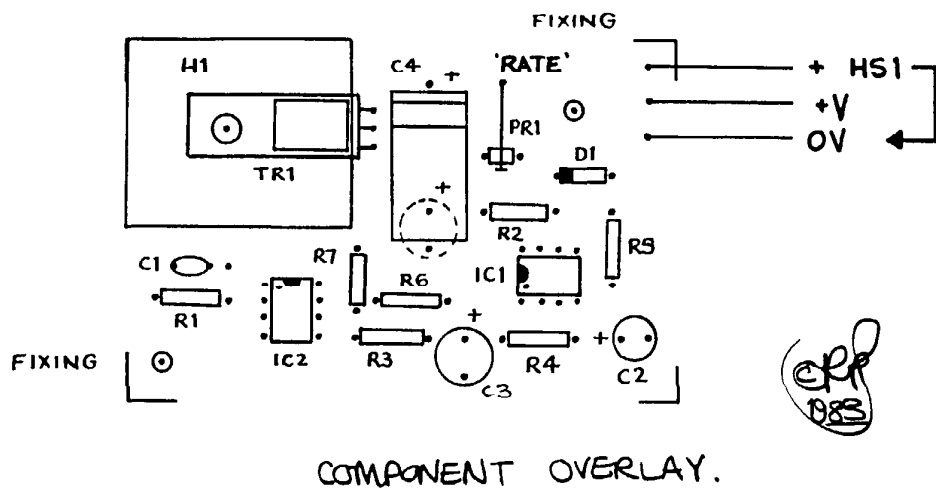
## FACILITIES.

AUTOSHUTDOWN OF EITHER OR BOTH SES/PES AND INS.  
 LED INDICATION OF AUTOSHUTDOWN.  
 AUTORESET OF SYSTEM AT END OF SOUNDER 'ON' PERIOD IFF  
 FAULT CLEARED.  
 ACCURATE, USER ADJUSTABLE SOUNDER 'ON' PERIODS OF 5, 10,  
 15, 20, 30, 45 AND 60 MINUTES.

EXTERNAL SIREN. (U.S. POLICE)



EXTERNAL SIREN. (U.S. POLICE.)



COMPONENT OVERLAY.

EXTERNAL SIREN (U.S. POLICE)

Parts List

REF. NO (S):	DESCRIPTION:	QTY.:	REMARKS & EQUIVALENTS:
R1	470R 0W4 ±1%	1	
R2, R3	1K " "	2	
R4	2K2 " "	1	
R5	22K " "	1	
R6, R7	100K " "	2	
PR1	22K PRESET	1	HORIZONTAL
C1	10nF POLYESTER	1	
C2	10µF 16V	1	AXIAL ELECT.
C3	47µF 16V	1	" "
C4	150µF 16V	1	" "
D1	1N4001	1	
TR1	TIP31A	1	
H1	Heatsink for TR1	1	
IC1, IC2	555	2	
DIL 8	8 PIN DIL SOCKETS	2	
HS1	8Ω SW HORN SPEAKER	1	
PCB	2" x 3"	1	
SOL	SOLDER, LETRASET		
NBF	NUTS, BOLTS, FIXTURES		

SPECIFICATION.

PARAMETER	MIN.	TYP.	MAX.	UNIT
OPERATING VOLTAGE	9		16	V
MAXIMUM CURRENT DRAIN				mA
				@ 13V8
				@ 12V
OUTPUT POWER	5		6	W

FACILITIES.

REVERSE VOLTAGE PROTECTION.  
 SOUND OUTPUT:  
 U.S. POLICE SIREN  
 ADJUSTABLE RATE  
 LOUD (SEE SPECIFICATION)