



142 SIERRA ST., EL SEGUNDO, CALIFORNIA 90245 (213) 322-2136

CAUTION!

Examine the carton and contents of this shipment for damage at once.

Contact the carrier immediately, if any damage is found, or suspected.

Do not discard the carton or any packing material until the carrier's representative has seen the damage.

This shipment is insured. If these steps are not followed, the carrier may not assume responsibility for damage.



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ES 1372

Operation & Maintenance Manual

The ES 1372 is similar to an ES 1296. The ES 1372 has two timed AC outlets instead of the single timed outlet on the ES 1296. The outlets are located on the rear and identified as "1" and "2". AC power is applied to outlet "1" at the alarm time and day selected and remains on for 138 minutes and 53 seconds. (The ES 1372 is set in the identical fashion as the ES 1296). AC power is applied to outlet "2" 60 minutes after power has been applied to outlet "1" and remains on for 78 minutes and 53 seconds. The ES 1372 is contained in a case similar to the case used for the ES 1296. The difference is the width is 10" instead of 8". The ES 1372 can not be supplied with the program time selection option which is available on the ES 1296. Manual override and control relay options similar to those provided on the ES 1296 are available. These options are described below. All other features and specifications of the ES 1296 apply.

Control Relay Option This option provides two extra form A reed relay contacts. These form A contacts are for control circuits (20 watts maximum resistive rating). Both contacts close for approximately  $\frac{1}{2}$  second, approximately one second after 117V AC power has been applied. This occurs twice, when AC power is applied to outlet 1, and again when power is applied to outlet 2. One set of contacts is brought to pins A and B on the rear connector while the other set is brought to pins D and E.

Manual Override Option This option provides a rear mounted toggle switch which allows the operator to manually turn on AC power to both outlets ("On" position) anytime it is desired.



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ES 1296

### Operating Instructions

The ES 1296 is a six digit twelve hour clock with LED displays and a programmable 300 watt, 117V AC outlet on the rear. There are four controls on the ES 1296 (Fast, Slow, Set and Reset). The Fast and Slow controls are used to set the hours and minutes for both clock time and program start time. When setting clock time only the Fast and Slow controls are used (the seconds are automatically reset to zero when either of these controls are used). A dot will appear on the display and it is used to differentiate between AM and PM. When setting the program start time (turn on time of rear outlet) the Set button must be pressed and held while the Fast and Slow controls are used just as they were used to set clock time. The Reset control initializes the day selector counter and allows for manual turn-off of the outlet power at initial installation and at any time it is desired to terminate outlet power. The program start time can be set to the nearest minute and once the outlet is turned on it will remain on for 66 minutes and 40 seconds unless the Reset control is pressed. (After setting a program start time always press the reset button to correct operation of the day selector switch.)

3-4 days  
A four position switch is mounted on the rear of the unit to allow presetting the turn-on-time as far ahead as 96 hours. When switch is in position "1", the output will switch "On" as soon as the preset program time is reached and switch "Off" 66 minutes and 40 seconds later. When the switch is in position "2", the output will switch "On" 24 hours after the first preset time is reached. Position "3" 48 hours after, and position "4" 72 hours after the first preset time is reached. Also, after an output has occurred the next output will not occur for another 96 hours unless the unit is reset or re-programmed & reset. If you attempt to test the day feature by advancing the clock, you must wait 66 minutes and 40 seconds each time the preset program time is reached before advancing the clock to the next day. There is an internal timer which must time out which necessitates this need to wait.

At initial installation or after power failure the clock must be first advanced at least six minutes and then the Reset control pressed before normal operation can be achieved.

Control Relay Option This option provides two extra form A reed relay contacts. These form A contacts are for control circuits (20 watts maximum resistive rating). Both contacts close for approximately  $\frac{1}{2}$  second, approximately one second after 117V AV power has been provided to the rear outlet. One set of contacts is brought to pins A and B on the rear connector while the other set is brought to pins D & E.

Program Time Selection Option This option allows choice via the rear mounted selector switch of the following outlet on times: 16:40 minutes, 33:20 minutes, 66:40 minutes and 138:53 minutes, or 33:20, 66:40, 138:53 and 250:00 minutes.

Manual Override Option This option provides a rear mounted toggle switch which allows the operator to manually turn on AC power to the outlet ("On" position) anytime it is desired.

Mechanical - Etched Aluminum case 2½" High x 8" Wide x 5 5/8" Deep

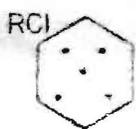
Electrical - Input: 117V AC 60 Hz

Output: 117V AC 300 watts maximum

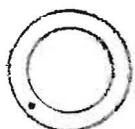
ES 1296



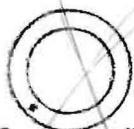
12 39 00



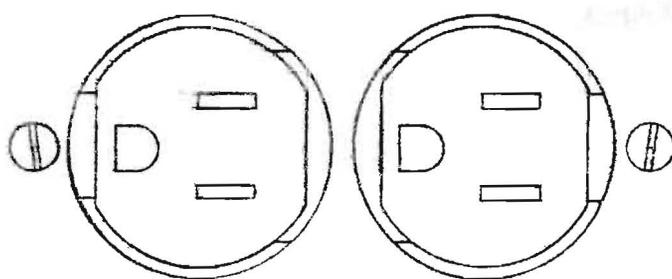
117V  
60HZ



DAY

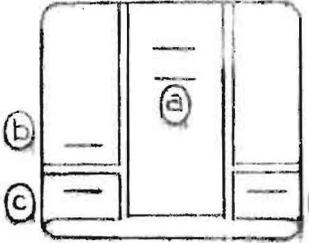
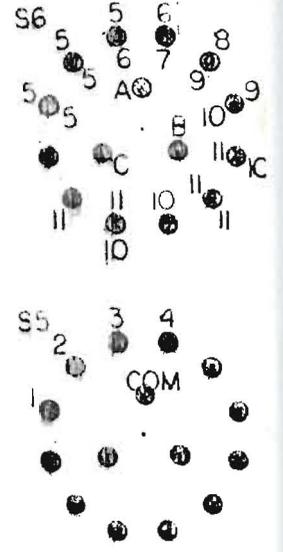
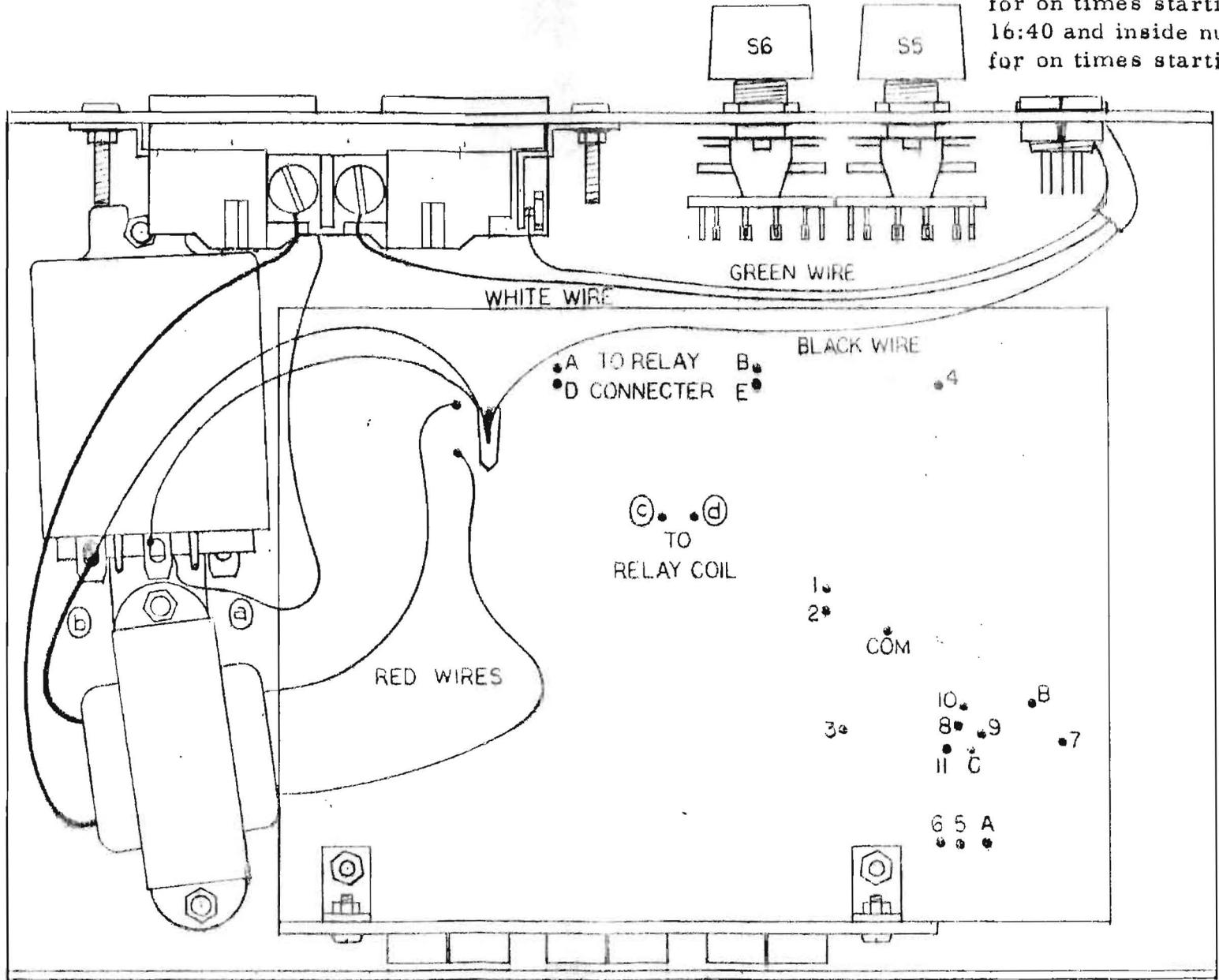


MINUTES  
ON



ES 1296

On S6 outside numbers are for on times starting with 16:40 and inside numbers are for on times starting with 33:20



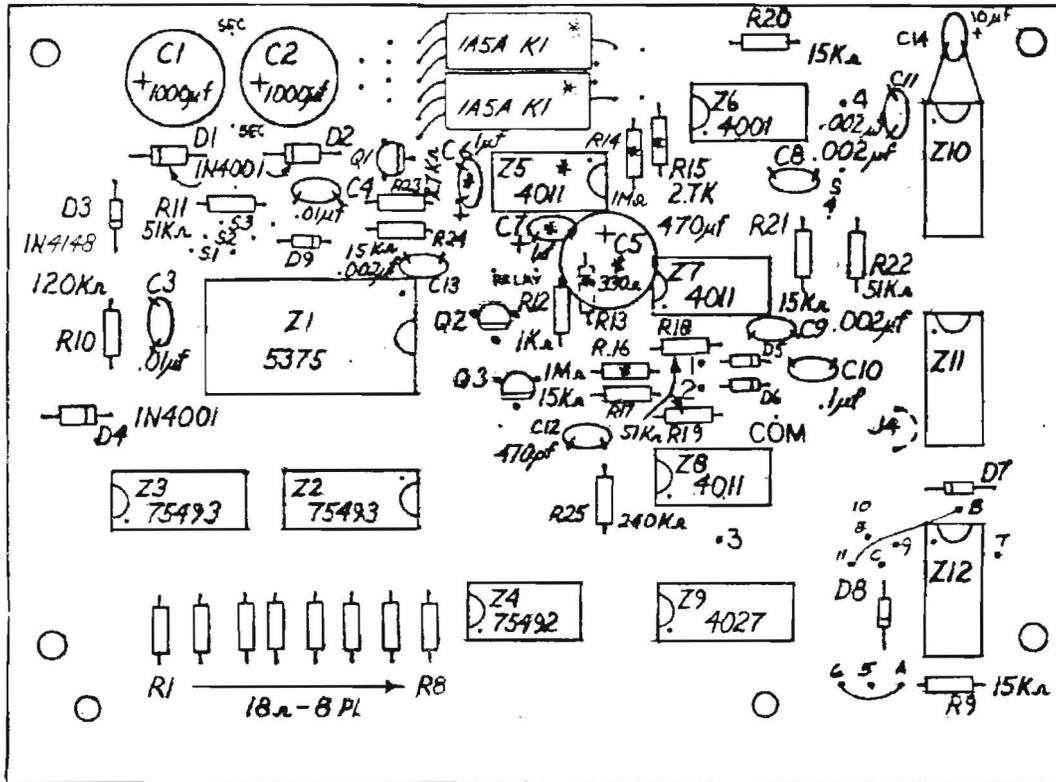
FRONT VIEW OF IOA RELAY

Qty	Designation	Description	Part No.
1	Z6	IC	4001
3	Z5,Z7,Z8	IC	4011
1	Z9	IC	4027
3	Z10,Z11,Z12	IC	4518
1	Z1	IC	5375
1	Z4	IC	75492
2	Z2,Z3	IC	75493
5	D5-D9	Diode	1N914 or 1N4148
3	D1,D2,D4	Diode	1N4001
1	D3	Diode	1N5230
3	Q1,Q2,Q3	Transistor	PN2222
6	N1-N6	LED	MAN4740A or Equiv.
8	R1-R8	Resistor	18 Ohm $\frac{1}{2}W$ $\pm 10\%$
1	R13	Resistor	330 Ohm $\frac{1}{2}W$ $\pm 10\%$
1	R12	Resistor	1 Kohm $\frac{1}{2}W$ $\pm 10\%$
2	R15,R23	Resistor	2.7 Kohm $\frac{1}{2}W$ $\pm 10\%$
5	R9,R17,R20,R21,R24	Resistor	15 Kohm $\frac{1}{2}W$ $\pm 10\%$
4	R11,R18,R19,R22	Resistor	51 Kohm $\frac{1}{2}W$ $\pm 10\%$
1	R10	Resistor	120 Kohm $\frac{1}{2}W$ $\pm 10\%$
1	R25	Resistor	240 Kohm $\frac{1}{2}W$ $\pm 10\%$
2	R14,R16	Resistor	1 Mohm $\frac{1}{2}W$ $\pm 10\%$
1	C12	Capacitor (Ceramic)	470 pf 10V Min $\pm 20\%$
4	C8,C9,C11,C13	Capacitor (Ceramic)	.002 uf 10V Min $\pm 20\%$
2	C3,C4	Capacitor (Ceramic)	.01 uf 10V Min $\pm 20\%$
1	C10	Capacitor (Ceramic)	.1 uf 10V Min $\pm 20\%$
2	C6,C7	Capacitor (Tantalum)	1 uf 25V Min $\pm 20\%$
1	C14	Capacitor (Tantalum)	10 uf 25V Min $\pm 20\%$
1	C5	Capacitor (Electrolytic)	470 uf 10V Min $\pm 20\%$
2	C1,C2	Capacitor (Electrolytic)	1000 uf 10V Min $\pm 20\%$
1	K1	Reed Relay (DPST)	2A5A or 2-1A5A
1	K2	Reed Relay (Gen'l purpose)	10 Amp 12V Coil
1	T1	Transformer	6.3V 600 ma
4	S1-S4	PB Switch (Momentary)	#44 Cream
2	S5,S6	3P4P Rotary Switch	10WS034
1		Line Cord	3 Wire 6'
1		Strain Relief Bushing	SR-5N-4
1		Power Outlet (Grounded Duplex)	
4		Spade Lug (Crimp type)	
1		Case	ES 10002
1		Case Hardware	
1	RC1	Male Relay Connector	126-217
1	RC1	Female Relay Connector	126-218
1		PCB (Logic)	ES 1296 Logic
1		PCB (Display)	ES 1296 Display
2		"L" Brackets	#1445

NOTE: C5,C6,C7,Q1,K1,Z5,R,13,R14,R15,R16 & RC1 are for optional Relay Contacts only.

All information contained in this manual is subject to change without notice.

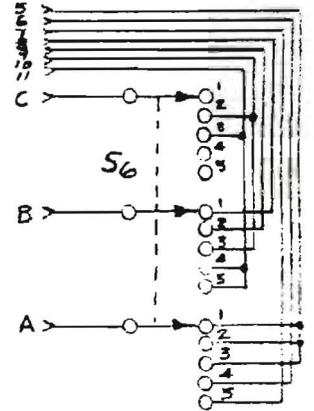
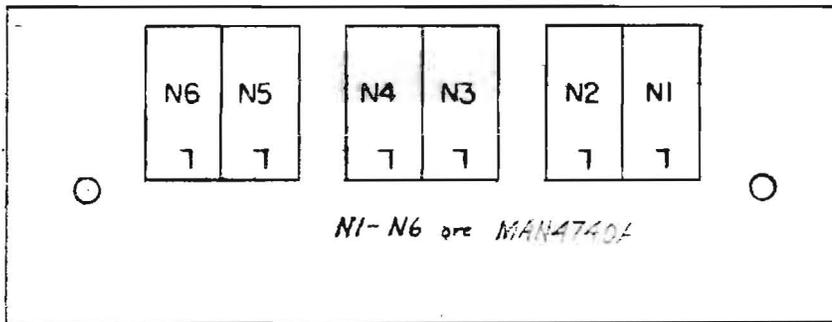
Time 6465.



Z10-Z12 are 4518's.  
D5-D9 are 1N4148's  
Q1-Q3 are 2N2222's

S1 is FAST.  
S2 is SLOW  
S3 is SET.  
S4 is RESET.  
COM, 1, 2, 3 & 4 Refer  
To Day Selector  
Switch. (S5)

\* For Optional Relay Contacts Only.



Time Selection Switch Option  
(Pos 1-4 or 2-5 used only)  
(Omit jumpers J1, J2, J3)

Position	On Time
1	16:40
2	33:20
3	66:40
4	133:53
5	250:00

