



ES-301UE

100 MINUTE TIMER

OPERATION AND MAINTENANCE MANUAL

The ES-301UE is a four digit, 100 minute master timer with six top-front mounted controls (UP, DOWN, STOP, MIN-SET, SEC-SET and RESET). Each of the controls are actuated by pressing the appropriate switch. The timer will run continuously unless stopped (except in the case of option "Z", where it will stop at 00:00). If stopped the timer will hold the time displayed when it was stopped. Pressing the UP switch will start the timer counting up from the time on the display; the DOWN switch will start the timer counting down from the time on the display. The STOP switch stops the timer count. The RESET switch functions as a combination reset/preset switch. The first time it is pressed, the display is reset to 00:00. If pressed again (within 5 seconds) the timer is set to the last manually preset time. The MIN-SET and SEC-SET switches advance the selected digit pair. In order to store a manually preset time in memory, either the UP button or the DOWN button must be pressed after setting the timer to the desired preset time. The timer may be reset or set while it is stopped or while it is running. If the RESET switch is pressed while the timer is running the timer will not count until the switch is released. When a SET switch is pressed while the timer is running, the timer will stop until either the UP or DOWN switch is pressed again. If option "R" is specified, the unit may be remotely controlled via the rear-mounted 9-pin connector (pin designations are given below). A momentary short to ground or a 5 volt logic "0" is required to actuate the desired function. A remote input should be held low for at least 25 milliseconds to insure that it will be recognized. The connector also provides access to the optional relay contacts (see option "Z" or "Y" on page 3).

SPECIFICATIONS

- Electrical:** Input Voltage 117 VAC, 50/60 Hz, 5 watts max.
Mechanical: Black Plastic/Black Anodized Aluminum case 2.25" High x 7.1" Wide x 5.35" Deep

ES-301UE Option "R" Connector Designations (DB9)

<u>Pin</u>	<u>Function</u>
1	Up
2	Stop
3	Reset
4	Down
5	Sec-Set
6	Min-Set
7	Relay Contact (optional)
8	Relay Contact (optional)
9	Ground

SAFETY INSTRUCTIONS

Please review the following safety precautions. If this is the first time using this unit, then read this manual before installing or using the unit. If the unit is not functioning properly, please contact the **ESE** factory or system installer. Failure to follow these safety instructions could result in injury to you or damage to the unit.

Be careful with electricity:

- **Power outlet:** To prevent electric shock, be sure the electrical plug used on the unit's power cord matches the electrical outlet used to supply power to the unit. Only connect the power cord to a power source that operates between 110 – 120 VAC, 50/60 Hz. If option J is ordered, only connect the power cord to a power source that operates at 220 VAC, 50/60 Hz. If option UL is ordered, only connect the wall wart adapter to a power source that operates at 120 VAC, 60 Hz. If option J/UL is ordered, only connect the line cord of the adapter to a power source that operates between 100 – 240 VAC, 47 – 63 Hz.
- **Power cord:** Be sure the power cord is routed so that it will not be stepped on or pinched by heavy items.
- **Power overloading:** Avoid overloading electrical outlets or extension cords which otherwise could result in electric shock or fire.
- **Lightning:** For protection from lightning or when the unit is left unattended for a long period, disconnect it from the power source.
- **Protect other equipment:** Unplug the unit before connecting any other equipment. Connect all equipment to the unit before plugging in any power cords to the power source.

WARNING!

TO REDUCE THE RISK OF ELECTRICAL SHOCK, UNPLUG THE UNIT BEFORE REMOVING THE COVER
REFER SERVICING TO QUALIFIED PERSONNEL

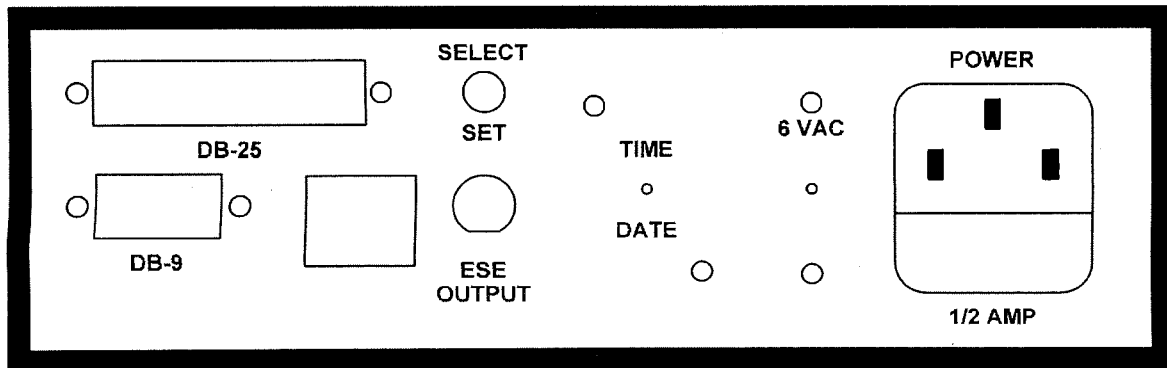
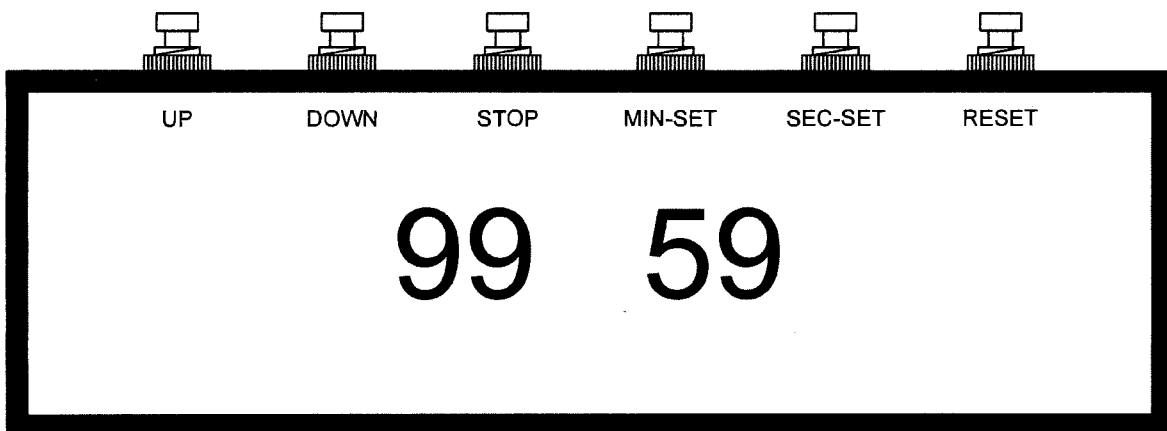
Also follow these precautions:

- **Ventilation:** Do not block any ventilation holes on the unit or place any heavy object on top of it. Blocking the airflow could damage the unit. Arrange components so that air can flow freely around the unit. Ensure that there is adequate ventilation to the unit wherever it is placed. Put the unit in a properly ventilated area, away from direct sunlight or any source of heat.
- **Overheating:** Avoid stacking the unit on top of a hot component.
- **Risk of Fire:** Do not place the unit on top of any easily combustible material, such as paper, carpet or fabric.
- **Proper Connections:** Be sure all cables and equipment are connected to the unit as described in this manual.
- **Object Entry:** To avoid electric shock, never stick anything in the holes on the enclosure or remove the cover.
- **Water Exposure:** To reduce the risk of fire or electric shock, do not expose the unit to rain or any other source of moisture.
- **Keep the unit out of the reach of children or it may fall, causing personal injury or damage to the unit.**
- **Always disconnect the power cord from the power outlet when you are not using the unit.** This reduces your risk of electric shocks or fire.
- **Always turn off the unit, disconnect it from the power outlet, and unplug all other cables from before moving the unit.** This reduces your risk of electric shocks or fire.

OPTIONS

- "C"** - When this option (Crystal Timebase) is specified, a trimmer is included for greater accuracy. The crystal (.002% accuracy) is factory calibrated to provide an accuracy of 2-3 seconds per week and can also be field adjusted for greater accuracy.
- "D"** - When this option is specified, a standard 6' remote cable which attaches to the rear-mounted 9-Pin connector is provided. All function controls (UP, DOWN, STOP, MIN-SET, SEC-SET and RESET) are mounted on a 1/8" clear anodized aluminum switch plate. Extra cable length is available upon request.
- "ESE"** - When this option is specified, the Timer Code output is accessible via a rear BNC connector.
- "J"** - When this option is specified, input voltage is 220 VAC, 50/60Hz.
- "N"** - When this option is specified, a change in count direction occurs when the Down count reaches zero.
- "P"** - When this option is specified, the unit is housed in an Etched aluminum rackmount enclosure – 1.75" high x 19" wide x 10" deep.
- "P2"** - When this option is specified, a 19" rackmount panel allows any two units with a "P2" option to be mounted side by side.
- "Q"** - When this option is specified, the unit is housed in a console mount enclosure with an etched aluminum front panel – 3.5" high x 9" wide x 8" deep.
- "R"** - When this option is specified, all functions are accessible via a 9-Pin connector.
- "T"** - When this option (Tenths of Seconds display) is specified, a tenths digit is included to the right of seconds, with decimal point. The tenths digit is returned to zero when the reset switch is pressed.
- "UL"** - When this option is specified, the unit is supplied with a UL approved wall mount power supply.
- "W"** - When this option is specified, the unit is supplied with a three wire line cord.
- "Y"** - When this option (relay closure output) is specified, a relay closure with a duration of 1 second (100 milliseconds for option "T") occurs when the timer completes a countdown to zero. The relay contacts are rated at 10 watts maximum resistive load, 500 mA maximum switching current.
- "Z"** - When the option (Relay contact closure and stop at zero) is specified, the timer will stop and a reed relay contact closure output occurs when the timer completes a countdown to zero. The contacts remain closed until the timer is restarted. The relay contacts are rated at 10 watts maximum resistive load, 500 mA maximum switching current.

FRONT AND REAR VIEWS



ES-301UE PARTS LIST

QTY	DESIGNATION	DESCRIPTION	PART NUMBER
1		LOGIC BOARD	ES-UCT3 LOGIC
1	T1	TRANSFORMER	P6134
2	T1,T2 (P)	TRANSFORMER	P6465
1	T1 (J)	TRANSFORMER	SSA6-6.3/230
2	T1,T2 (J, P)	TRANSFORMER	P8705/SSA5-6.3/230
1	T1 (UL)	TRANSFORMER	AA-061A5-206 "UL"

NOTE: THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

ALL INFORMATION CONTAINED IN THIS MANUAL IS SUBJECT TO CHANGE WITHOUT NOTICE.

REVISION HISTORY

Revision 1.0 (1/16/18): First version.