



655-8-1000/1001/3000/3001 Panel Mounted Digital Timer

INSTALLATION
INSTRUCTIONS
JUNE 2010
655-0-0000

DESCRIPTION

The Model 655-8-1000 (EEPROM) or 655-8-3000 (Battery) Timer is a microprocessor-based device capable of performing 2 different timing modes over five different timing ranges. The timing ranges allow for delays from 1 millisecond to 199 hours, 29 minutes. Both the timing modes and ranges are selected using a DIP switch assembly located on the inside of the timer.

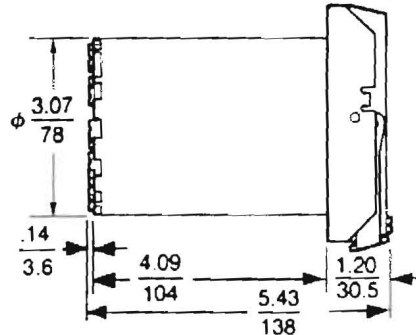
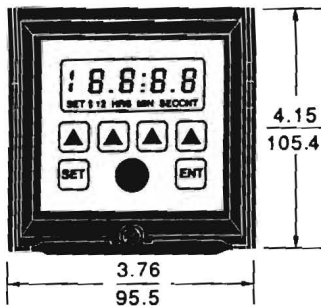
The time setting is entered through the front panel keypad while the time value is displayed on the LCD readout. The timer keypad can be disabled to guard against accidental time changes by using the internal DIP switch.

The timer is housed in a standard 15-terminal plug-in round case and can directly replace most existing electromechanical or electronic plug-in round case timers. A sealed faceplate allows this timer to be used in harsh environments.

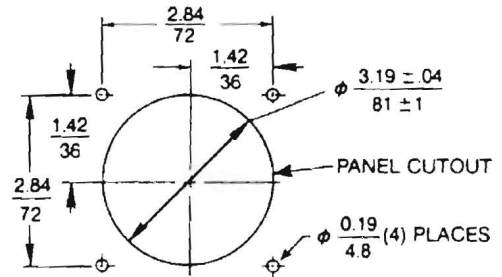


Both instantaneous and timed contacts are provided and 655 timer models are available for operation on either 120VAC or 240VAC.

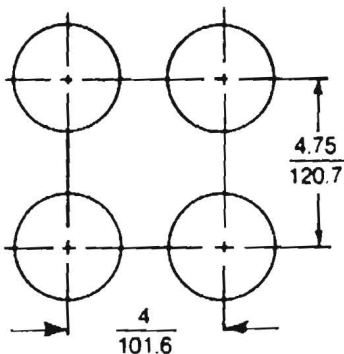
DIMENSIONS



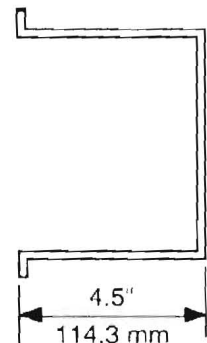
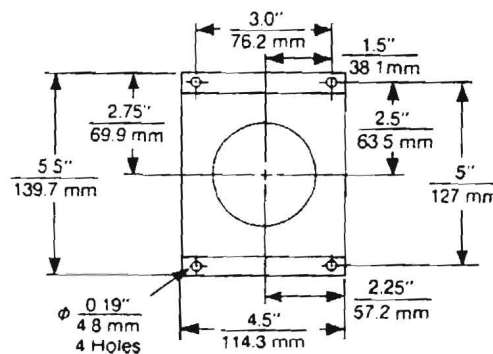
MOUNTING DIMENSIONS



MINIMUM DIMENSIONS MULTIPLE MOUNTINGS



OPTIONAL 600-3-3950 SURFACE MOUNTING BRACKET



TIMING MODE SELECTION

The Model 655 is capable of performing two different modes of timing operation; On-Delay, or Reverse Start, Delay. The selection of the timing mode is accomplished by setting DIP switches 5, 6 and 7 on the switch assembly that is accessed when the timer is removed from its mounting case.

SW5	SW6	SW7	TIMING MODE
OFF	OFF	OFF	On-Delay
OFF	ON	OFF	Reverse Start, Delay

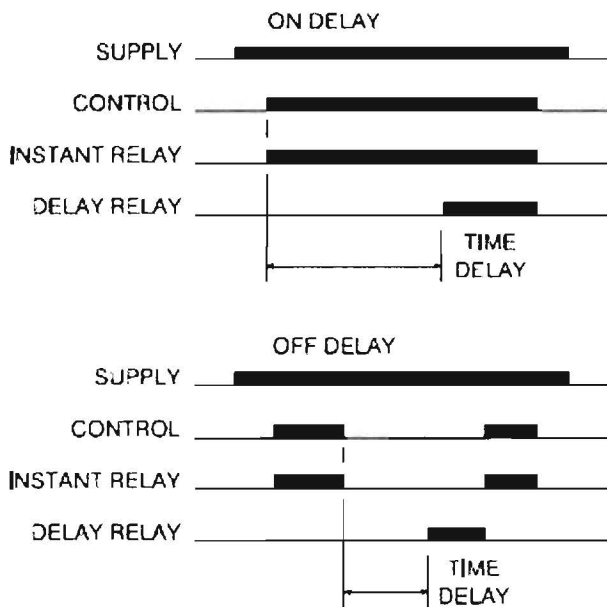
TIMING MODE DEFINITION

ON-DELAY

The supply voltage is applied at all times. When voltage is applied to the control terminal, the instantaneous contacts change state and timing begins. At the completion of the timing period, the timed contacts change state. Reset takes place upon removal of the control voltage.

REVERSE START, DELAY

The supply voltage is applied at all times. When voltage is applied to the control terminal, the instantaneous contacts change state. When the voltage is removed from the control terminal, the instantaneous contacts change back to their original state and timing begins. At the completion of the timing period, the timed contacts change state. Reset takes place when voltage is once again applied to the terminal.



TIMING RANGE SELECTION

The Model 655 allows for the selection of five different timing ranges. While operating in the "Hours:Minutes" range, the colon will flash to give an indication that timing is taking place. The correct timing range is selected using switches #1, #2 and #3 on the seven switch DIP assembly located on the inside of the timer. See the chart for the correct switch settings.

TIME RANGE SELECTION CHART

SW1	SW2	SW3	TIMING RANGE
OFF	OFF	OFF	0.001 - 19.999 Sec.
OFF	OFF	ON	0.01 - 199.99 Sec.
OFF	ON	OFF	0.1 - 1999.9 Sec.
OFF	ON	ON	1 Sec. - 90 Min., 59 Sec.
ON	OFF	OFF	1 Min. - 199 Hrs., 59 Sec.

Note: OFF = Open, ON = Closed

POWER FAILURE

If all power is lost during a cycle, the instantaneous contacts will transfer back to their original state. When power is restored, the timer will reset back to the set point is programmed for "standard start" or continue from the point of power interruption if programmed to "reverse start" the timer set point will be maintained.

KEYPAD LOCKOUT SELECTION

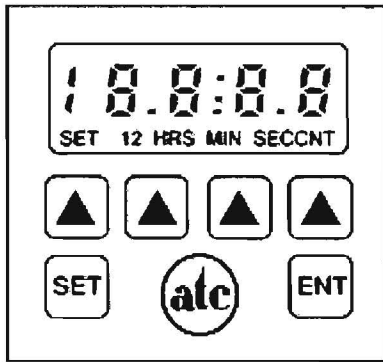
The Keypad can be disabled to guard against accidental changes by using switch #4 on the five-switch DIP assembly located on the inside of the timer. See the table below for the correct setting.

SW4	KEYPAD LOCKOUT
OFF	Keypad Enabled
ON	Keypad Disabled

PROGRAMMING THE TIME

After the timing mode and the timing range have both been selected, the proper time delay value can now be programmed.

The Model 655-8-3000 is equipped with a 10-year life, replaceable lithium battery and can be programmed without an outside power source. To program push the "SET" button and the display will illuminate the timing range selected. Four dashes will also appear indicating that no set point is presently programmed. Depress the "SET" key a second time and the word "SET" will now be illuminated on the display along with four zeros. The desired time value is now entered using the four increment keys.

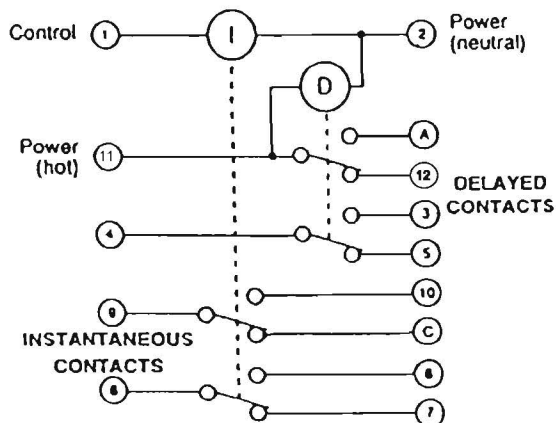


Each key controls its own digit with the exception of the left increment key which is used to set the left most 1 and 1/2 digits on the display (these increment to 19 before Returning to 0). With a timing range of "MIN:SEC" or "HR:MIN", the digit to the right of the colon will roll over from 5 to 0. Holding a key depressed for longer than 1 second causes the digit to automatically increment at the rate of 2 numbers per second until released. When the digits on the display correspond to the desired time value, pressing the "ENT" key will enter that value into the memory.

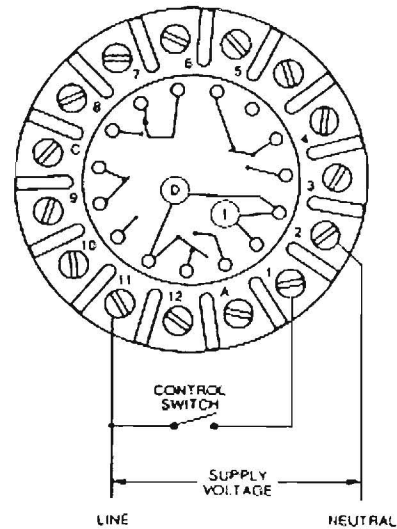
The set point can be changed without interrupting the timing cycle by following the normal programming procedure. This new value will then be used on the next timing cycle.

The set point can also be viewed without interrupting the timing cycle by depressing the "SET" key. Press the "ENT" key to return the display to the time remaining. If the keypad lockout is enabled, you can still view the set point by depressing the "SET" key but the set point cannot be changed using the increment keys. To indicate that the keypad is locked while a programmed value is being viewed, the display alternates the numerical value with the word "LOC."

INTERNAL SCHEMATIC

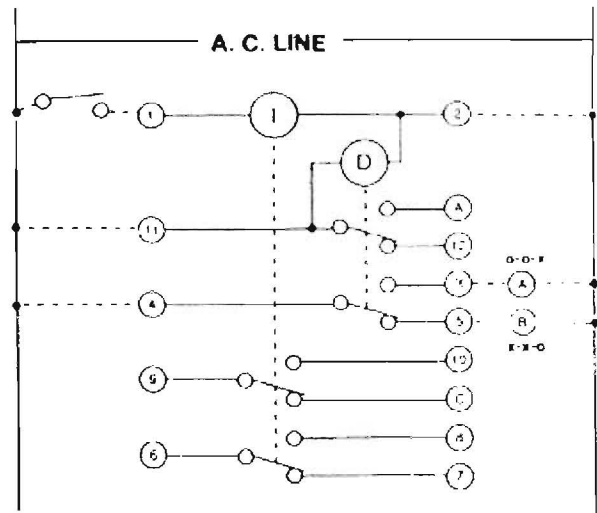


WIRING CONNECTIONS



Note: It is important that the metal bracket on the front of the case be connected to earth ground. Mounting the 655 in a grounded metal panel is satisfactory.

TYPICAL WIRING DIAGRAM
Dotted Line Are External Wiring



SUSTAINED CONTROL SWITCH

Standard Start (On-Delay)	Close to run Open to reset
Reverse Start (Off-Delay)	Close to reset Open to run

The diagram above shows the typical timer wiring for a simple application involving the delayed closing and opening of load circuits. Contacts may be wired in series to achieve timing schemes.

SPECIFICATIONS

Timing Ranges

0.001 sec. to 19.999 sec.
 0.01 sec. to 199.99 sec.
 0.1 sec. to 1999.9 sec.
 1 sec. to 199 min., 59 sec.
 1 min. to 199 hrs., 59 min.

Timing Modes

Start (On-Delay)
 Reverse Start (Off-Delay)

Time Setting

Front Panel Keypad

Time Repeat Accuracy

±005 sec.

Reset Time

25 milliseconds

Control Voltage Initiate Time

25 milliseconds

Memory

1000/1001 - EEPROM
 3000/3001 - Lithium Battery

Operating Power

120 or 240VAC, +10%, -20%,

50/60Hz.

Power Consumption

5.2VA

Instantaneous Relay Output

7 A Resistive, 240VAC, 2 N.O.

Timed Relay Output

7 A Resistive, 240VAC, 2 N.O.
 2 N.C. Contacts

Relay Mechanical Life

50,000,000 Operations

Display

LCD - 4 1/2 Digit, 7/16" High

Termination

Screw Terminals

Mounting

Plug-in Case

Short Circuit Protection

1/4 A Fuse

Transient Voltage Protection

Metal Oxide Varistor

Operating Temperature

32° to 140°F (0° to 60°C)

UL Listing

File No. E104697

C-UL (Canada) Listing

File No. E104697

NEMA RATING

NEMA 12

ORDERING INFORMATION

Part Number	Description
655-8-3000	Timer 120 VAC, W/Battery
655-8-3001	Timer 240 VAC, W/Battery
655-8-1000	Timer 120 VAC, EEPROM Memory
655-8-1001	Timer 240 VAC, EEPROM Memory

Part Number	Description
651-3-0128	Gasket 1/8 Thick (Included with Timer)
651-3-0129	Gasket 1/4 Thick (Included with Timer)
600-3-3950	Surface Mounting Bracket
652-3-0130	Battery (Included with Timer)

A WORD ABOUT SAFETY

Most of ATC's products are designed for general and not specific applications. Because of this, we usually are not aware of how they eventually will be used. However, they are frequently employed in controlling automatic machinery or processes. Although ATC makes products of high reliability, every product, given enough time, can be expected to fail. Statistically, devices can fail after a short period of time or a long period of time or anything in between. In essentially all cases, failure means failure to provide a logic signal or power to an electric load when it should or provide it when it should be absent. Less often, failure to meet some other specification. But, in all cases, it means to do something unwanted and unexpected.

Since the failure of automatic machinery or processes can create hazardous conditions for personnel or property, whatever the definition of failure might be, it is necessary to consider the consequences of failure and design in such a way that failure will not create a hazard to personnel or property. The design must insure that any failure will result in a fail safe condition and there will be no danger to personnel and/or property involved in the use of the product.

Designs incorporating controls of any kind should be carefully considered to provide for their eventual failure.



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