

Electronic timers exist because many processes are based upon timed events. They are available in many forms each with a major characteristic best suited for a particular application. Electronic timers can be found in a broad spectrum of industrial and commercial applications where the highest accuracy and resolution is required.

Eagle Signal brand industrial timers have a 70 year history of providing accuracy and reliability in harsh industrial environments.

The reset timer can be considered a single cycle timer. Most reset timers are used to turn a load ON *for a timed interval* or to turn a load ON *after a timed interval*. A reset timer can either be in one of three states: Reset, Timing, and Timed-Out. When reset, the timer does not perform any timing function. The timing period starts when an external signal is received. The timed-out state is the period between the end of timing and when the timer returns to the reset state.

A **repeat cycle timer** just as the name applies, repeats the cycle of turning a load on and off in a repeating pattern as long as power is applied to the unit. Repeat cycle timers are produced in many varieties and types. All Eagle Signal brand electronic repeat cycle timers allow separate adjustment of the ON and OFF times. Some repeat cycle timer models have batch counters and allow dwell times between ON and OFF periods.

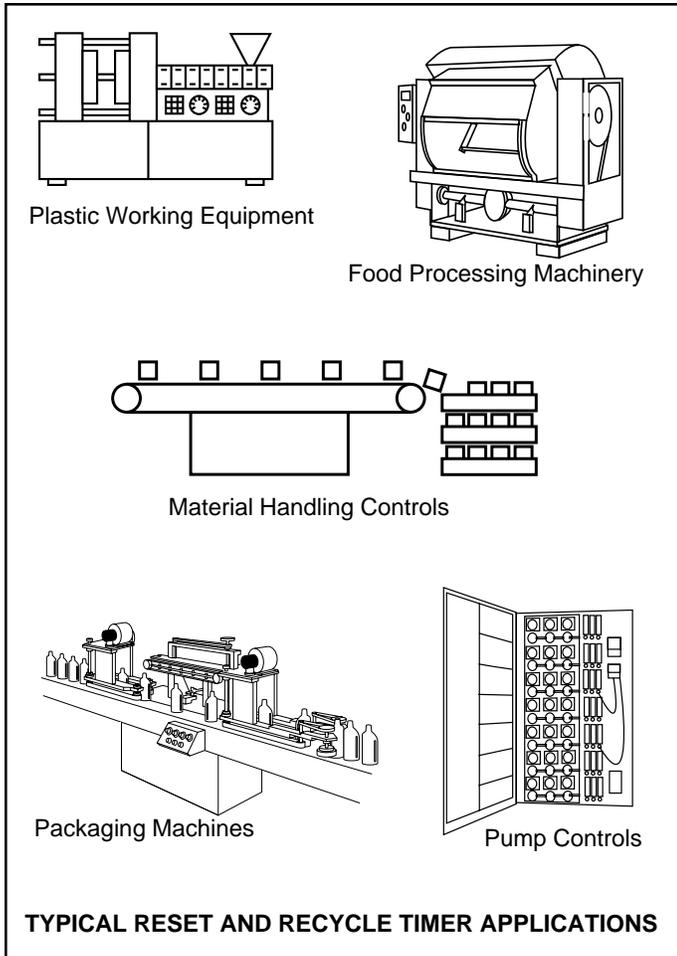
### ADVANTAGES OF ELECTRONIC TIMERS

Electronic timers and time indicators bring the advantage of modern digital displays, precise digital settability, high accuracy and fast reset times. Although electromechanical controls provided accurate and reliable time control, the electronic timer is specified for its modern appearance, high precision and advanced features. Digital electronic timers use LCD or LED displays and offer high accuracy and long time ranges.

They typically have fast reset times and are available in compact DIN standard enclosures.

Liquid Crystal Displays (LCD) are best suited for installation in areas where there is reasonably good lighting.

Light Emitting Diode (LED) displays, since they produce their own light can be viewed in very dimly lit areas -even in the dark.

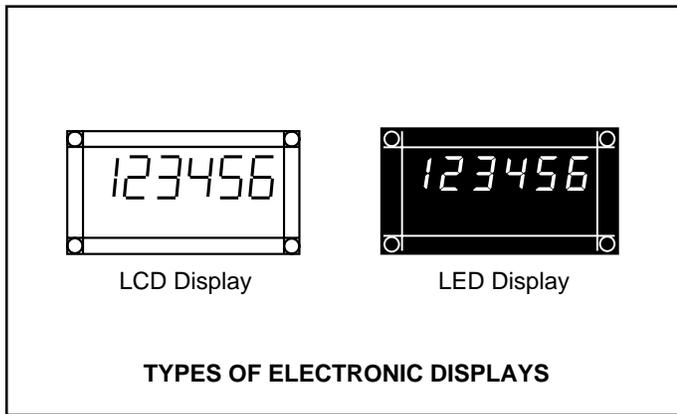


### TYPES OF ELECTRONIC TIMERS

A **time indicator** is simply a device which records and displays an elapsed time but performs no output function. Various models are available with LED or LCD displays. A time indicator will time in increments of fractions of a second up to a total time of several minutes, or in increments of one hour up to a total time of several years.

A **reset timer** is a control device. It is inactive until it is started by an external command, then measures a specific time interval, after which it becomes inactive once again. It times through a preset time period, produces a control output, then is automatically or manually reset, awaiting another cycle to begin.





**SPECIFYING AN ELECTRONIC TIMER**

The following criteria should be considered when selecting an electronic timer for your application:

**Control Function** - Reset function, repeat cycle function.

**Time Range** - What time range will the timer use?

**Mounting** - Jack-in case, Panel mount, Surface mount, DIN rail mount, Timer lock

**Size** - What are the size limitations if any for the timer?

**Service Voltage and Frequency** - 12 VDC, 24 VDC, 24 VAC, 120 VAC, 240 VAC; 50 Hz, 60 Hz., Other

**Setting Accuracy** - What is the minimum setting accuracy required for the time setting?

**Repeat Accuracy** - What is the minimum repeat accuracy required for the timing cycle?

**Front Panel** - What type of interaction does the operator need to have with the front panel controls of the unit?

**Load** - What device will be controlled by the timer and what are the electrical specifications for this load?

**Cycle Rate:** How often will the timer switch the load.

**Action on Power Failure** - After a failure, what should the timer do upon restoration of power?

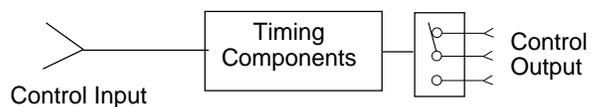
**Operator Restraints** - Lighting, gloves, low skill level

**Special Requirements** - NEMA-4 Washdown, High temperature and humidity, High vibration, Corrosive atmosphere, Electrical interference and brownouts

**Agency Approval** - U.L., CSA, FM

**ELEMENTS OF ELECTRONIC TIMERS**

All electronic timers will have three basic elements: (1) Control Input, (2) Timing components (3) Output Elements



Timer Control Inputs	Electronic Timing Components	Timer Control Outputs
AC voltage	Microprocessor	Instantaneous Relay
DC voltage	Integrated Circuit	Delay Relay
Contact		Triac

