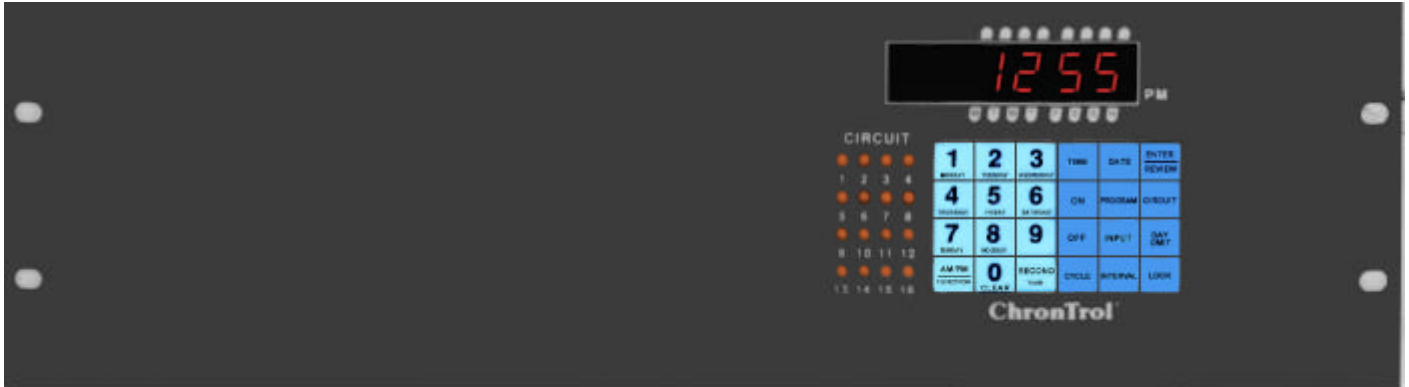


- Ideal for broadcast stations, theatres, music systems, studios, communications systems, instrumentation systems
- Video recorder control for satellite program delay
- Sampling control of air and other fluids

- Process control
- Directional broadcast
- Security system timing
- Remote data collection/transmission control
- Laboratory equipment control

## Microprocessor-based Rack Mount Timers



ChronTrol Rack Mount timers give you time-programmed control of up to 16 independent circuits used to operate devices such as tape or chart recorders, program switching, lights, sound distribution equipment, fans, solenoids, pumps, motors, or other equipment. With twenty independent On/Off programs—or up to 40 programs optional—you can exercise control right to the second, AM and PM, every day of the week.

Time settings are entered right from the keyboard, with settings displayed on the digital clock during entry. Any or all of the available programs can be applied to an individual output, so the On/Off sequencing can be as simple or as complex as you require.

These rugged units are available with 2, 4, 8, 12 or 16 independent outputs. Each output is equipped with 20 amp SPDT relays as standard equipment, each rated up to 277 VAC.

Up to 8 inputs can be connected, allowing timing sequences to be synchronized with external triggers, such as manual pushbuttons or switch closures from other equipment.

These timers can be computer-controlled, either directly through an on-board serial communication port, or remotely by modem over the dial-up telephone network.

ChronTrol timers are also available in table top and wall mount versions.

### OPERATIONAL CAPABILITIES Twenty On/Off Programs (40 optional)

Assign up to 20 independent programs, each

with independent On and Off times, in any combination to the (up to sixteen) individual circuits. Settings are made to the second from the keyboard, with AM / PM selection. Each program has individual cycle length and day-of-the-week omission settings.

#### Cycle Length

A program can be set to repeat, or Cycle, at a rate anywhere from every two seconds (one second on, one second off) to every year. Cycle lengths can be set, and are accurate, to the second.

#### Day Omission

Programmed operations can be selectively omitted on any day or days of the week, including holidays.

#### Calendar Operations

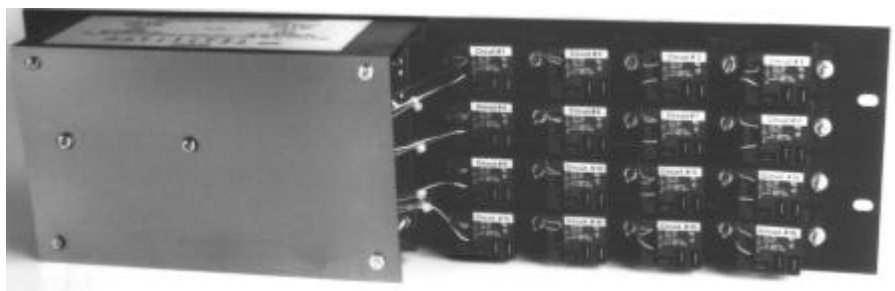
ChronTrol's versatile calendar automatically compensates for leap years and can be programmed for any number of holidays. On/Off programs may be set for specific dates.

#### Daylight Saving Time

ChronTrol's real-time clock can be moved forward or backward one hour at Daylight Saving Time, automatically.

#### Features

- Twenty (optionally 40) programs
- 2, 4, 6, 8, 12, or 16 independent SPDT outputs
- Up to 8 inputs for external activation
- Cycle times from 2 seconds to one year
- Separate On and Off time settings and cycle times on each program
- Six-digit display shows hours, minutes, and seconds
- Directly replaces multiple mechanical timers
- Tamper-resistant locking keyboard
- Program up to one year in advance
- Weekly cycle with day omission
- Microprocessor controlled
- Completely field-programmable
- Battery backup keeps time even during power outages
- 12- or 24-hour time readout
- Countdown timer
- Field-proven dependability
- Easy to set and operate



## Countdown Timer

ChronTrol's display can be set to show, in hours, minutes and seconds, the time remaining until the occurrence of any of its programmed events.

## Easy Verification

**Audible keyboard entry.** Entries made through the front panel keyboard are acknowledged with an audible tone for each key.

**Next Program.** Program numbers can be assigned in any order, or ChronTrol will choose the next available program automatically.

**Cross-Review** feature allows the user to find out immediately what program or programs control any given circuit.

## Manual Override

Any circuit can be switched On or Off immediately without waiting for or disturbing programmed operations.

## Power Fail Protection

The time of day continues to operate, with crystal accuracy, during power failure. A nine volt battery keeps the clock operating and protects the system memory to prevent the loss of stored programs. When power returns, all occurrences of On and Off events are accounted for, and outputs are switched to the proper positions for the current time, in sequence or all at once.

## Inputs

Timers equipped with inputs can perform timing sequences that are synchronized or triggered by contact closures, and they can switch circuits On and Off based on external conditions.

As many as 8 inputs can be wired to detectors, pushbuttons, or automatic equipment through a convenient rear panel connector.

## Use as an Interval Timer

Set up to 40 independent timing operations at once. Durations are set in hours, minutes and, if desired, seconds, from one second through one year. Timing intervals can be triggered and re-triggered through the keyboard, or by any of the 8 available inputs, or by other operational programs.

Timing intervals can be set to repeat at any rate from two seconds (one second on, one second off) to one year.

## Serial Communications

All programming information and procedures can be accessed from a computer terminal through ChronTrol's RS-232 serial communication port. Or, by attaching a modem to this port, programming can be

performed from great distances over the telephone to facilitate centralized control.

## ORDERING GUIDE

Code	Description
XT-R2	2 circuit dry contact model
XT-R4	4 circuit dry contact model
XT-R8F	8 circuit dry contact model, 40 programs
XT-R12F	12 circuit dry contact model, 40 programs
XT-R16F	16 circuit dry contact model, 40 programs

## Optional Equipment

Code	Description
F	40 programs
N8	8 inputs
240V	240 volt power source

When ordering, add option code to the basic model number.

**Example:** XT-R4FN8 is a four circuit dry contact Rack Mount Timer with 40 programs and 8 inputs.

## SPECIFICATIONS

**Number of available circuits:** 2, 4, 8, 12 or 16 independent circuits.

**ON/OFF Programs:** Twenty, or optionally 40, each assignable to any or all outputs. Each On/Off program includes the setting of:

ON time (AM or PM, to the second)  
OFF time (AM or PM, to the second)  
(An ON time and/or OFF time can be set to occur on a specific date within the next twelve months)

Cycle length (from two seconds to one year)

Day omission (inhibits program operations on any day or combination of days within the week, including holidays)

**Optional interval timing:** Each On/Off program can be made an interval timer by specifying a duration of time instead of specifying an On or Off time. Durations can be set from one second through one year.

**Display:** .56" continuous LED display of time-of-day or program information.

**Power switching capabilities:**  
0 to 277 volts,  
20 amps per circuit @ 240 VAC  
6 amps per circuit @ 277 VAC

**Relays:**

20 amp single pole, double throw (SPDT)

**Wiring:** Direct to relay, 1/4" quick connect

**Circuit Status Indicators:** LED circuit ON indicator (one per circuit)

**Number of available inputs:** 8 digital inputs

**Input timing:** Edge triggered, with programmed enable/disable on each input.

Minimum input pulse width: 100 ms (1/10 sec.)

Maximum input pulse width: Indefinite.

Minimum delay between pulses: Two seconds

## Input electrical:

Current: 500  $\mu$ A; requires switch closure or open collector individually or in groups.

Connection: 9-pin D-subminiature, female

**Time base:** 50/60 Hz line frequency (automatically selected) with crystal backup system.

**Power source:** 120 volts AC  $\pm$  5%

**Optional:** 240 volts AC  $\pm$  5%

**Power Consumption:** 6 watts not including switching circuits

**Battery backup system:** 9-volt alkaline battery provides 14-day protection of memory and time-of-day.

## Serial Communication:

Protocol: Serial asynchronous, 2400 baud, 8 data bits, 1 stop bit, no parity  
Signal level: EIA RS-232C  
Connection: 6-position, 4-conductor modular jack (RJ-11 type)

**Front panel finish:** 1/8" aluminum black anodized

**Keyboard:** 24-key, dome switch, audible.

**Environmental Range:** 0°F to 130°F / -17°C to 54°C; 0 to 90% relative humidity (non-condensing)

**Dimensions:** 5.25" x 19.00" x 4.00" (H/W/D)  
133mm x 483mm x 100mm

**Shipping Weight:** 7 lb. / 4.5 kg.

## WARRANTY:

**Limited, 1 year parts and labor.**

Design and specifications subject to change without notice.

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