ChronTrol®

Microprocessor-based
Expandable Wall Mount Timers

FEATURES

- Forty programs
- 8, 12, or 16 independent circuits
- Up to 8 inputs for external activation
- Cycle times from two 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
- 14-day battery backup keeps time even during power outages
- 12- or 24-hour time readout
- Countdown timer
- Serial interface for remote monitoring
- Field-proven dependability
- Easy to program and operate
- Modular design allows easy interchange of components in the field

OPERATIONAL CAPABILITIES

40 On/Off Programs

Assign up to 40 independent programs, each with independent On and Off times, in any combination to the (up to 16) individual circuits. Settings are made right 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 once every year. Cycle lengths can be set, and are accurate, to the second.

- **Ideal for commercial buildings, parking lots, schools, churches, restaurants, industry and agriculture**
- **Energy management: load allocation, scheduling and duty cycle**
- **Inside/outside lighting control**
- **Security system timing**
- **Illuminated sign or display controls**
- **Irrigation systems**
- **Industrial process control**
- **HVAC, air handling system control**
- **Laboratory equipment control**

ChronTrol Expandable Wall Mount Timers give you programmable control of up to sixteen independent circuits used to operate devices such as lights, motors, heaters, air conditioners, solenoids, fans, ovens or other equipment. With 40 independent On/ Off programs available at your fingertips, you can exercise control right to the second, AM and PM, every day of the week.

Time settings are entered directly 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.

An electronic keyboard lock with a selectable unlock code provides security from unauthorized changes.

These rugged units are available with 8, 12, or 16 independent outputs. Each output is equipped with 20 amp SPDT relays as standard equipment, each rated up to 277 VAC. Four-output expander modules let you start with 8 outputs, then easily increase to 12 or 16 in the field at a later time.

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 onboard serial communication port, or remotely by modem over the dial-up telephone network.

ChronTrol timers are also available in tabletop and rack mount versions, as well as in a non-expandable wall mount version with 2, 4, or 6 outputs.

Day Omission

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

Calendar Operations

ChronTrol's versatile calendar 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.

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 standard "DB-9" 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 retriggered through the keyboard, 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 and performed from a computer terminal through ChronTrol's RS-232 serial communication port. Or, by attaching a modem to this port, programming can by performed remotely over the telephone for centralized control.

ORDERING GUIDE

Code	Description
XT-W8	8 circuit Dry Contact model (includes 2 expander modules)
XT-W12	12 circuit Dry Contact model (includes 3 expander modules)
XT-W16	16 circuit Dry Contact Model (includes 4 expander modules)
EX	4-circuit expander module

Optional Equipment

Code	Description
N8	8 inputs
240V	240 volt power source

When ordering, add option code to basic model number.

Example: XT-W16N8 is a 16-circuit, dry contact Wall Mount Timer with 8 inputs.

SPECIFICATIONS

Number of Available Circuits: Expandable from 8 to 16 independent circuits with plug-in 4-circuit modules.

On/Off Programs: 40. Each one can be assigned 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 days of 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: Single row terminal strip, SEMS top

hardware with Common (C), Normally Closed (NC), and Normally Open (NO) contacts for each relay. Will accept AWG 12 and smaller wire. USE COPPER WIRE ONLY.

Access: Four (4) 7/8" diameter bottom entrance knockouts and four (4) 7/8" diameter side entrance knockouts for power source and circuit wiring.

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

Number of Digital Inputs: 8

Input Timing: Edge-triggered, with programmed enable/disable on each input.
Minimum input pulse width: 100mS ($^1/_{10}$ sec.)
Maximum input pulse width: Indefinite
Maximum input repetition rate: 2 seconds

Input Electrical:
Current: 500 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.

Power Source: 120 volts AC ± 5%
   Optional: 240 volts AC ± 5%

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)

Enclosure Type: Wall mount with locking, hinged front cover access

Enclosure Finish: Black textured paint

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: $16^3/_8$" x $12^1/_2$" x $4^5/_8$" (H/W/D) 416mm x 317mm x 116mm

Shipping Weight: XT-W8 approximately 24 lb / 11 kg

Expander Module

Dimensions: $2^1/_2$" x $11^3/_8$" x $2^3/_4$" (H/W/D) 63mm x 288mm x 70mm

Shipping Weight: 2.5 lb / 1.1 kg

WARRANTY:
Limited, 1 year parts and labor

Design and specifications subject to change without notice.

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