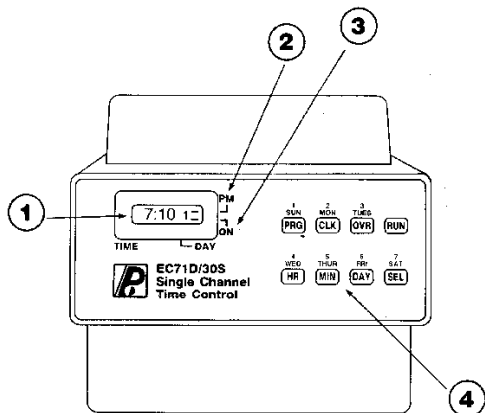


# EC71D/30S Electronic Time Control

The EC71D/30S is a single-channel, 7-day electronic timer that provides simple, inexpensive control for lighting, heating, ventilating, air conditioning, security systems, water heaters, motors, pumps, fans or any load with a time of day schedule. When schedules vary from day to day, the 7-day programming capability allows a different schedule for each day of the week. With 30 setpoints available, the EC71D/30S can satisfy the most demanding schedules.

Note: The control can be programmed on battery power prior to permanent installation. See back page for battery installation.



## FRONT PANEL DESCRIPTION

**1 Time/Day Indicator:** Displays hours, minutes and day of week. (1=Sun, 2=Mon, 3=Tues, 4=Wed, 5=Thurs, 6=Fri, 7=Sat)

**2 AM/PM Indicator:** Displays whether time is AM or PM (12-hour format). An upper bar (ˆ) appears during PM hours. The bar disappears during AM hours.

**3 ON/OFF Indicator:** Displays whether load is ON or OFF. A lower bar (-) appears when load is ON. The bar disappears when load is OFF.

### 4 Keypad: includes:

- 1 *Dedicated key:* **RUN** - enters programmed information and initiates or restores normal operation.
- 7 *Dual-function keys* that: a. select a day of the week, or b. perform various programming functions

**SUN** or **PRG** - initiates setpoint programming or review  
**MON** or **CLK** - initiates clock-setting  
**TUE** or **OVR** - initiates override  
**WED** or **HR** - advances the hour  
**THU** or **MIN** - advances the minute  
**FRI** or **DAY** - selects day of week  
**SAT** or **SEL** - selects type of event, ON or OFF

### TO SET THE CLOCK and PROGRAM DAY OF WEEK

The EC71D/30S offers 12-hour or 24-hour clock format. The 12-hour AM/PM format utilizes a PM indicator to distinguish PM hours. See No. 2, Front Panel Description above. The 24-hour format displays 0:00 at midnight and 23:00 at 11:00 PM.

STEP	KEY	DESCRIPTION
1.		Install battery/power. Control displays 12 Hr.
2.	<b>CLK</b>	Toggles to 24-hour format. Displays 24 Hr. Press key again to revert to 12-hour format.
3.	<b>RUN</b>	Enters 12-hour or 24-hour format. Displays 12:00 1 or 0:00 1 (colon flashing). Flashing stops. Ready to set current time.
4.	<b>CLK</b>	Advance to current hour.
5.	<b>HR</b>	Advance to current minute.
6.	<b>MIN</b>	Advance to current day. (1=Sunday, 2=Monday, 3=Tuesday, 4=Wednesday, 5=Thursday, 6=Friday, 7=Saturday)
7.	<b>DAY</b>	Enters time and day (colon flashing). Time and day displayed.

These instructions depict the timer immediately following power-up. Because the control begins to keep time as soon as power is applied, the display described in Step 3 will not match the display on your control if a delay occurs between power-up and programming. In other words, if six minutes pass before the keys are pressed, 12:06 will be displayed instead of 12:00. Note: If you are programming on battery power and receive an irregular display either the battery is weak or loose. Make sure battery is snapped tightly in place.

110-707B

## UNDERSTANDING SETPOINTS

A setpoint is an event that takes effect on one or more day(s). It defines the type of event as well as the time of the event. It also tells the control on which day(s) the event should occur.

Consider the following business hours:

MONDAY 8:00 AM - 8:00 PM  
 TUESDAY 8:00 AM - 5:00 PM  
 WEDNESDAY 8:00 AM - 5:00 PM  
 THURSDAY 8:00 AM - 5:00 PM  
 FRIDAY 8:00 AM - 9:00 PM  
 SATURDAY 10:00 AM - 6:00 PM  
 SUNDAY 11:00 AM - 2:00 PM

The setpoints that correspond to this schedule are:

ON 8:00 AM MON TUE WED THU FRI  
 ON 10:00 AM SAT  
 ON 11:00 AM SUN  
 OFF 8:00 PM MON  
 OFF 5:00 PM TUE WED THUR  
 OFF 9:00 PM FRI  
 OFF 6:00 PM SAT  
 OFF 2:00 PM SUN

Use the following chart to determine and record your setpoints:

SETPOINT WORKSHEET							
NO.	TYPE	TIME	DAY OF WEEK	NO.	TYPE	TIME	DAY OF WEEK
1	ON or OFF		SMTWTFS	16	ON or OFF		SMTWTFS
2	ON or OFF		SMTWTFS	17	ON or OFF		SMTWTFS
3	ON or OFF		SMTWTFS	18	ON or OFF		SMTWTFS
4	ON or OFF		SMTWTFS	19	ON or OFF		SMTWTFS
5	ON or OFF		SMTWTFS	20	ON or OFF		SMTWTFS
6	ON or OFF		SMTWTFS	21	ON or OFF		SMTWTFS
7	ON or OFF		SMTWTFS	22	ON or OFF		SMTWTFS
8	ON or OFF		SMTWTFS	23	ON or OFF		SMTWTFS
9	ON or OFF		SMTWTFS	24	ON or OFF		SMTWTFS
10	ON or OFF		SMTWTFS	25	ON or OFF		SMTWTFS
11	ON or OFF		SMTWTFS	26	ON or OFF		SMTWTFS
12	ON or OFF		SMTWTFS	27	ON or OFF		SMTWTFS
13	ON or OFF		SMTWTFS	28	ON or OFF		SMTWTFS
14	ON or OFF		SMTWTFS	29	ON or OFF		SMTWTFS
15	ON or OFF		SMTWTFS	30	ON or OFF		SMTWTFS

## TO PROGRAM SETPOINTS

STEP	KEY	DESCRIPTION
1.	<b>PRG</b>	Displays E:01, indicating Event 1.
2.	<b>HR</b>	Displays 12:00 - or 0:00 -. Continue pressing the <b>HR</b> key to set the hour at which the event will occur.
3.	<b>MIN</b>	Advance to the correct minute for the event.
4.	<b>SEL</b>	A bar (-) appears, indicating an ON event. To select OFF instead, press <b>SEL</b> key again.
5.	<b>DAY</b>	Displays the word <i>day</i> . (On which day(s) will the event occur?)
6.	<b>SUN-SAT</b>	Select the first day on which the event will occur. (1=Sun, 2=Mon, 3=Tue, 4=Wed, 5=Thur, 6=Fri, 7=Sat) Continue to add days by repeating Steps 5 and 6. The selected days will appear or flash sequentially.
7.		<b>Repeat Steps 1-6 to program additional setpoints.</b>
8.	<b>RUN</b>	Enters setpoints into memory. Time and day displayed (colon flashing).

## TO REVIEW SETPOINTS

Press the **PRG** key. The first setpoint will be displayed, with the time followed by the day(s) in sequence. A lower bar (ˆ) indicates an ON event; no bar indicates an OFF event. Advance through setpoints by repeatedly pressing **PRG**. Press **RUN** to restore normal operation.

## TO CHANGE SETPOINTS

Advance through setpoints using the Review procedure above. If the time of a setpoint is incorrect, press **HR** and **MIN** keys to change the time. To add or delete a day from the setpoint, press **DAY** and then press the appropriate day, **SUN-SAT**. Press **RUN** to enter programming changes and restore normal operation.

## OVERRIDE

Manual Override temporarily reverses the current output state. Loads that are ON turn immediately OFF; loads that are OFF turn immediately ON. Override remains in effect until programming is overridden again or until the next setpoint is reached.

### TO INITIATE OVERRIDE - Press OVR

Output state is verified by the On/Off Indicator. See No. 3, Front Panel Description. Example - 3:54 1. (load is ON); 3:54 1 (load is OFF)

**TO CANCEL OVERRIDE** - Press **OVR** again. Output reverts to previous state.

## SPECIFICATIONS

### PROGRAMMING CAPABILITIES

- **7-Day Programming** - allows a different schedule for each day of the week.
- **Selectable Clock Format** - 12-hour AM/PM or 24-hour clock format
- **Manual Override** - temporarily reverses current output state. Loads that are OFF turn ON and loads that are ON turn OFF. Begins immediately and remains in effect until override is reset or until the next setpoint is reached.
- **Setpoint Programming** - powerful but simple, defines type of event (ON or OFF) as well as the time and day(s) which the event will occur.

### ELECTRICAL

#### Power requirements

MODEL	VOLTAGE	HERTZ	VA REQ.
EC71D/30S/ 24	24 Vac	50/60 Hz	4 VA
EC71D/30S/120	100-120 Vac	50/60 Hz	4 VA
EC71D/30S/240	200-240 Vac	50/60 Hz	4 VA

**Output** - 1 SPDT relay with dry contacts rated as follows:

VOLTAGE	RESISTIVE	INDUCTIVE	PILOT DUTY
24 Vac	15A	15 A	60 VA
120 Vac	15 A	15 A	345 VA
240 Vac	10 A	8 A	450 VA

**Wiring** - Terminals can accommodate 12 to 24 AWG wire.

### POWER OUTAGE CARRY-OVER

**Program and Time-of-Day Backup** - 100 hours of carryover with a 9-volt alkaline battery, 275 hours of carryover with a 9-volt lithium battery (Kodak Ultralife, U9VL). Battery not provided. During a power outage, the time and program are maintained, but the output relays remain de-energized.

### ACCURACY

**Time-of-Day** - Maintained time is as accurate as line frequency.  
**Resolution** - One minute for time-of-day and programmed ON/OFF events.

### ENVIRONMENTAL

The control should be mounted indoors in an environment that is free from excessive contaminants such as oil, moisture and dirt.

### PHYSICAL

#### Mounting

Surface or DIN-rail (35mm, DIN-EN50022) with plug-in base  
 Conduit adapter B-1186 also available

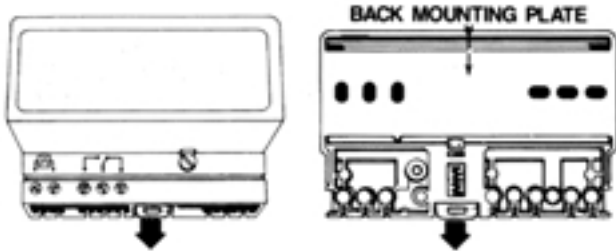
**Weight** - Approximately 1 lb. 3 oz. (0.54 kg)

**Dimensions** - Width 10.5 cm (4 1/8")  
 Height 10.2 cm (4")  
 Depth 7.6 cm (3")

### INSTALLATION

#### Surface Mounting

1. Remove back mounting plate by releasing the bright red spring-loaded catch. See Back View drawing below.
2. Install back mounting plate in a vertical or horizontal position. Utilize the mounting holes on the back mounting plate. (Screws are not provided.)
3. Snap control onto back mounting plate.



EC71D/30S Back View

#### DIN Rail Mounting

1. Remove back mounting plate by releasing spring-loaded catch. See Back View drawing above.
2. Snap base connection block onto DIN-rail.

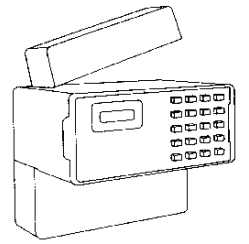
110-707B

## BATTERY

**Installation** - Purchase a 9-volt alkaline or lithium battery (Kodak U9VL).

Remove battery cover by pressing sides together and pulling left or right. Snap battery into battery clip. Replace battery cover.

**Replacement** - Alkaline, approximately every 2 years; Kodak's U9VL, approximately every 5 years. A battery log is provided inside the battery cover to record battery replacement dates.



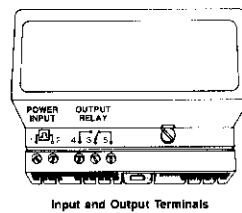
Removal of Battery Cover

## WIRING

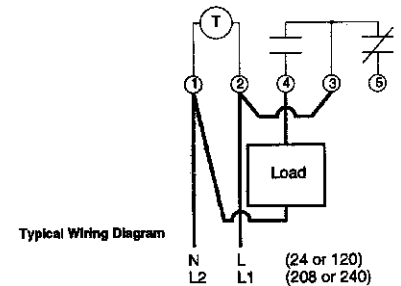
1. Loosen terminal cover screw and set terminal cover aside. The screw is captive to the control. Wiring access for power input and relay output is provided at bottom of terminal block. Terminals can accommodate 12 to 24 AWG wire.
2. Wire 24, 120 or 240 Vac to terminals 1 and 2. Determine voltage according to the model selected.

**CAUTION: Damage will occur to unit if incorrect voltage is applied. Application of incorrect input voltage will void warranty. See product label to make sure you are applying the correct voltage.**

3. Connect output wiring as required for the particular application. See wiring diagram below.
4. Cut out terminal cover for wiring. Cutting guides are molded in the inside bottom of the cover.
5. Replace terminal cover and tighten terminal screw.



Input and Output Terminals



Typical Wiring Diagram

## TROUBLESHOOTING TIPS

Nothing happens when a setpoint occurs to turn the load ON or OFF.

Manual override does not work.

Clock display is locked up, meaningless, or garbled.

Blank display

Control does not operate after programming.

- Review the programmed setpoints. Remember, a - (bar) = an ON event, no bar = OFF event.
- Check to see if day in question has been programmed.
- Check if manual override changes the load's state. If it does not, see next problem/solution.
- Check the load for proper wiring. Remember the contacts on these models only switch what is applied (dry or isolated contacts).
- Disconnect battery and input power to clock for 1 minute. Re-apply power and reprogram.
- Check input power source and battery if installed. Ensure proper connection.
- If programming was performed (changing clock time or entering a setpoint), the control will not update itself. Press the SEL key and override the load until the next scheduled setpoint.



**Maple Chase Company**  
 2820 Thatcher Road  
 Downers Grove, Illinois 60515  
 Made in Mexico

Customer Service 800-951-5526  
 Technical Support 800-732-8400

ISO 9002 registered

**Paragon Electric Canada, Ltd.**  
 5785 Kennedy Road  
 Mississauga, Ontario L4Z 2G3

From outside North America  
 630-719-5500