

tekmar® - Data Brochure

Timer 030

D 030

07/93



The tekmar Timer 030 is a microprocessor-based timer with a large, easy to read digital display. This timer can be programmed to switch its SPDT relay on and off twice a day (4 events per day). A different program can be entered for each of the seven days in a week, or the user can simply select one of 7 pre-programmed schedules.

In case of a power down condition, the clock will remain active through its battery backup for 24 hours, while all programming information will be retained in memory for up to 10 years.

This timer can be used as a setback timer for other tekmar controls, or, since the timer output is a dry relay contact, it can be used as a universal timer in a wide variety of other applications.

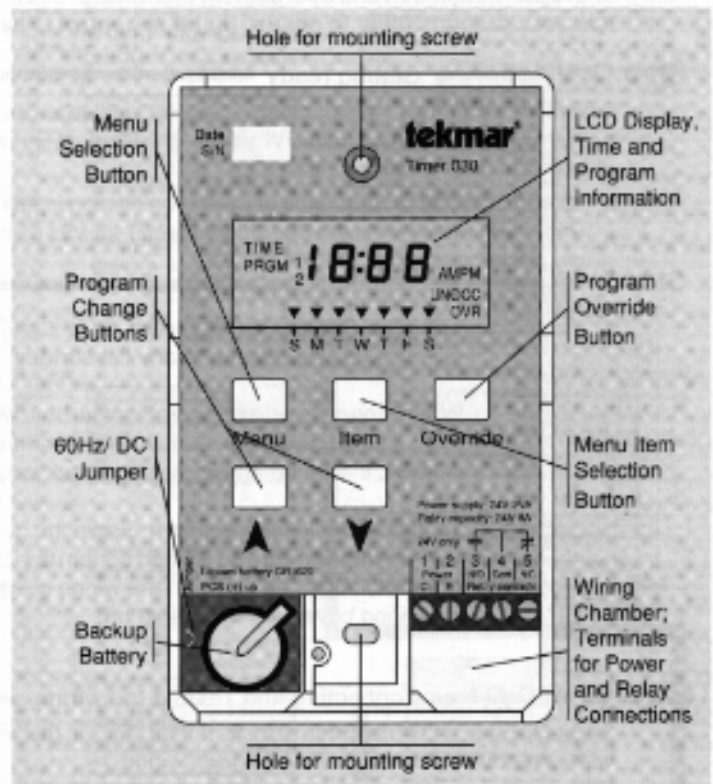
Technical Data

Technical specifications

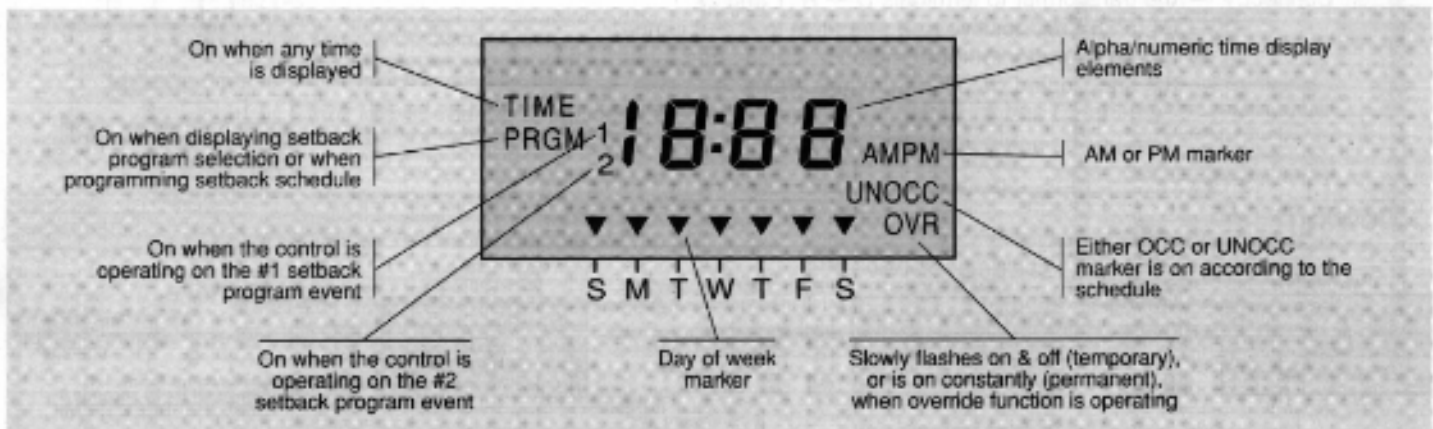
Dimensions	— 2-7/8" x 4-3/4" x 7/8" (74 x 120 x 22 mm)
Gross Weight	— 1 lb (450g)
Ambient	— -15 to 120° F (-10 to 50° C) < 90% RH non-condensing
Power supply	— 20 to 28Vac, 60 Hz, 2VA, class II transformer — 24 to 36Vdc, cut the small jumper wire beside the battery
Relay capacity	— SPDT, 24Vac, 8 amp resistive
Battery	— CR1620 Lithium non-rechargeable, maintains clock operation for 24hrs (60 events of 24 hour power down)

Keypad Programming

Clock Resolution	— 1 minute, 12 hour, 7 day clock
Prgm. Resolution	— 10 minute, 12 hour, 7 day
Setback schedules	— 7 pre-programmed — 1 programmable — 7 day, 4 events per day
Program settings	— Ten year memory backup retains programmed information for up to 10 years



The 030 Display



Sequence of Operation

When the Timer 030 is powered up for the first time; the digital display will show all of the display elements. After approximately 5 seconds, the display will default to the time/operating mode and show a flashing 12:00. At this point the user can set the clock and select a pre-programmed setback schedule or program schedule P 0.

If power is removed, the display will go blank but all programmed information will be retained. The time clock will operate for 24 hours on the battery, and will then shut down after 24 hours of power down in order to conserve the battery life. The battery has a capacity to run the clock for a total of 1440 hours, which is 60 x 24 hour events.

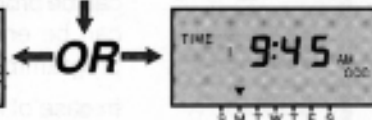
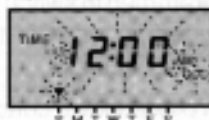
When a setback schedule has been selected, the timer will switch its relay on at the start of any programmed unoccupied time period and keep it on until the start of the next occupied time period. Override options are detailed in the "Programming" section.

On Power-up

If power has been off for more than 24hrs. or the battery requires replacement;



If power has been off for less than 24hrs. and the clock has already been set;



the time will be flashing and the clock will need to be set.

the time will not be flashing and the timer will be in the operating mode

Installation

Caution

Improper installation and operation of this control could result in damage to equipment and possibly even personal injury. It is your responsibility to ensure that this control is safely installed according to all applicable codes and standards.

Step One — Getting ready

Check the contents of this package. Type 030 includes one Control 030 and One Data Brochure D 030. If either piece is missing or damaged, refer to the Limited Warranty and Product Return Procedure on the back of this brochure and contact your wholesaler or tekmar sales agent for assistance.

Note: Carefully read the Sequence of Operation section in this brochure to ensure that you understand the functions of this timer and that it will work within the operational requirements of your system.

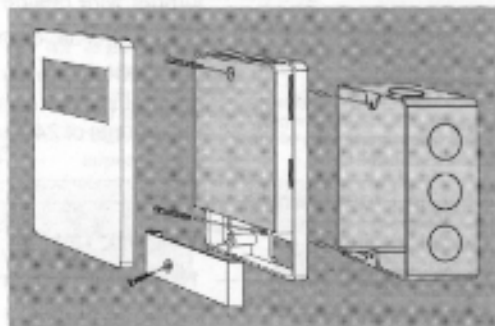
Step Two — Mounting



The type 030 can be mounted on a standard duplex electrical box or directly to any flat surface.

When mounting on a duplex electrical box, wiring enters the enclosure through the back. When mounted to a flat surface, the wiring enters from the back and/or bottom.

To disassemble for mounting: Grasp the front cover by the fingertip grips on the top and bottom and pull the front cover off. With the screw in the wiring cover removed, the wiring cover will lift straight off.

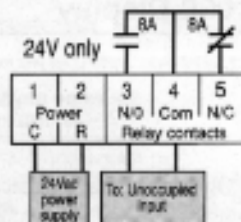


Step Three — Connecting and Testing the wiring

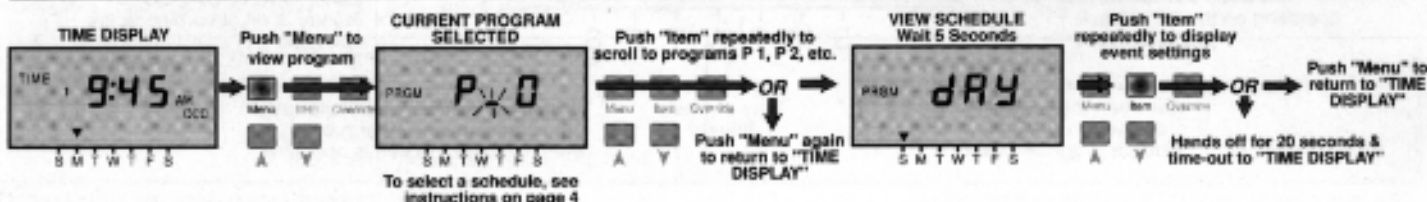
All electrical wiring terminates at the terminal block in the wiring chamber at the bottom right of the timer. Standard 18 AWG solid wire is recommended for all low voltage wiring.

With a good quality electrical test meter, measure the voltage of the transformer before connecting it to the control and also check the wiring to be connected to the relay terminals. At no time should voltages in excess of 28 Vac be measured at any of the wires connected to this control.

- Connect:
- the transformer to terminals C — R (1 and 2)
 - 24 to 36 Vdc, positive to R, negative to C, cut jumper
 - 24Vac operation other than 60 Hz, cut jumper
 - the unoccupied circuit to terminals Relay
 - Terminals 3 and 4 are (N/O) and close during the unoccupied period
 - Terminals 3 and 5 are (N/C) and open during the unoccupied period

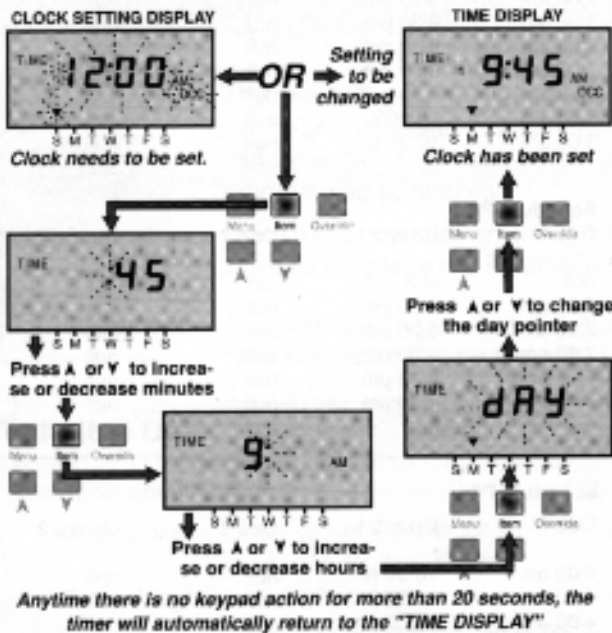


Viewing

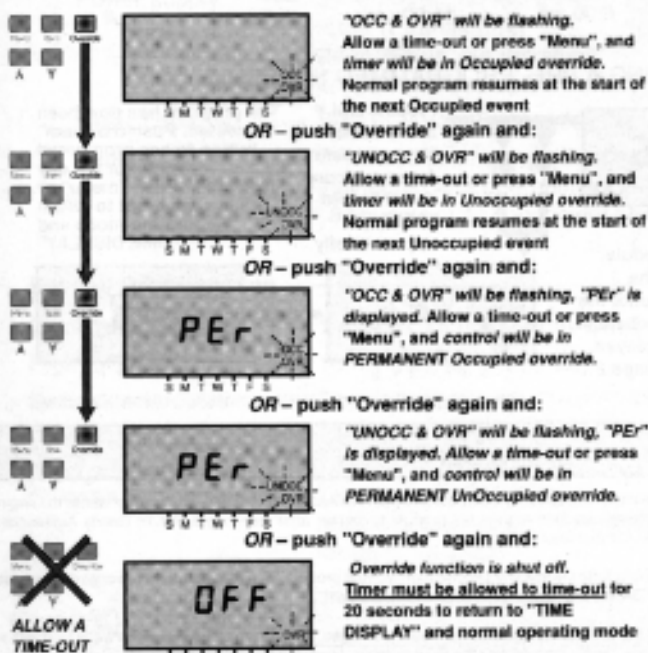


Programming

SETTING THE CLOCK

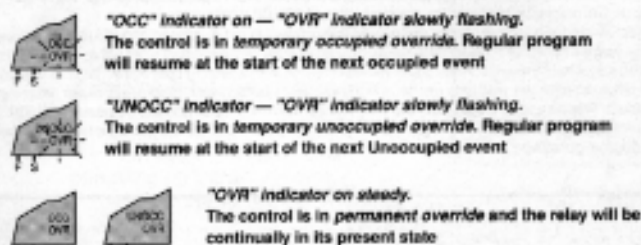


OVERRIDE OPTIONS



Note: After selecting an override function, the user can avoid waiting for the time-out by pressing the "Menu" button.

Override indicators - when timer is in operating mode



To cancel an override option that has been selected, press the "Override" button when the control is showing the "TIME DISPLAY"

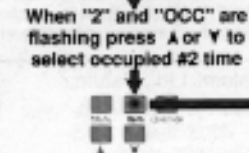
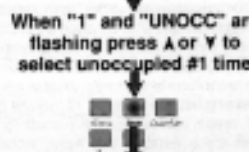
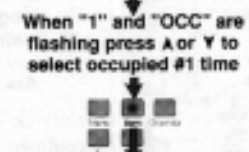
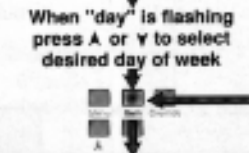
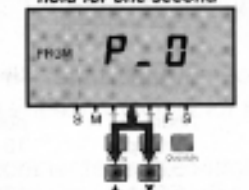
PROGRAM MENU - "P0" PROGRAMMING

Note: All programming displays will "Time-out" in 20 seconds

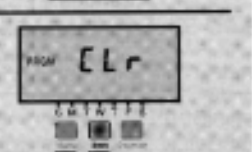
With "P 0" visible in the display window:

To program schedule "P 0", press **A** and **Y** at the same time and hold for one second

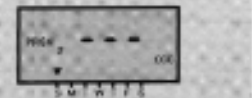
Only "P 0" can be programmed by the user. Pre-programmed schedules are located by pressing "Item" to display "P 1 to P 7".



Options

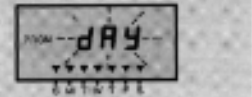


Program "P 0" can be cleared for re-programming. Press "Item", **Y** and **A** at the same time and hold for one second



A schedule event can be skipped by programming a "Null Event"

To program a Null Event, Set the time for that event to between 11:59 PM and 12:00 AM by pressing **A** or **Y**

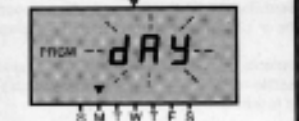


Every day can be programmed to have the same schedule

Press **A** or **Y** until all of the days indicators appear. Program once for all days

Wait 20 seconds to time-out or Press "Menu" to return to "TIME DISPLAY". When "P 0" is selected, the "P 0" underscore indicator will be flashing

When "2" and "UNOCC" are flashing press **A** or **Y** to select unoccupied #2 time



Timer cycles on to the next day. Repeat programming steps for each day until all days are programmed

PRE- PROGRAMMED SCHEDULES

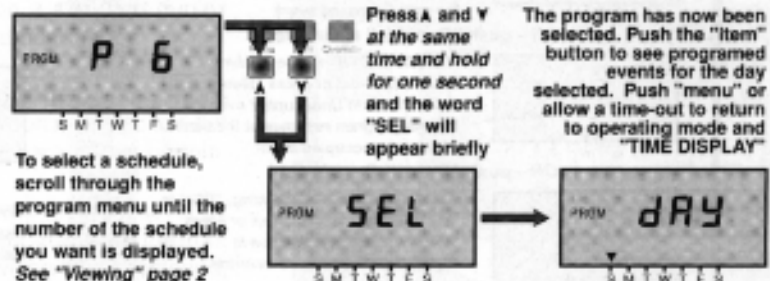
Schedule P1					Schedule P2			
DAY	Occ 1	Unocc 1	Occ 2	Unocc 2	Occ 1	Unocc 1	Occ 2	Unocc 2
Sunday	8:00 am	10:30 pm	null	null	9:00 am	9:30 pm	null	null
Monday	6:00 am	10:30 pm	null	null	7:00 am	9:30 pm	null	null
Tuesday	6:00 am	10:30 pm	null	null	7:00 am	9:30 pm	null	null
Wednesday	6:00 am	10:30 pm	null	null	7:00 am	9:30 pm	null	null
Thursday	6:00 am	10:30 pm	null	null	7:00 am	9:30 pm	null	null
Friday	6:00 am	11:30 pm	null	null	7:00 am	10:30 pm	null	null
Saturday	8:00 am	11:30 pm	null	null	9:00 am	10:30 pm	null	null

Schedule P3					Schedule P4			
DAY	Occ 1	Unocc 1	Occ 2	Unocc 2	Occ 1	Unocc 1	Occ 2	Unocc 2
Sunday	8:00 am	10:30 pm	null	null	null	null	null	null
Monday	6:00 am	8:30 am	5:00 pm	10:30 pm	7:00 am	5:30 pm	null	null
Tuesday	6:00 am	8:30 am	5:00 pm	10:30 pm	7:00 am	5:30 pm	null	null
Wednesday	6:00 am	8:30 am	5:00 pm	10:30 pm	7:00 am	5:30 pm	null	null
Thursday	6:00 am	8:30 am	5:00 pm	10:30 pm	7:00 am	5:30 pm	null	null
Friday	6:00 am	8:30 am	5:00 pm	11:30 pm	7:00 am	5:30 pm	null	null
Saturday	8:00 am	11:30 pm	null	null	null	null	null	null

Schedule P5					Schedule P6			
DAY	Occ 1	Unocc 1	Occ 2	Unocc 2	Occ 1	Unocc 1	Occ 2	Unocc 2
Sunday	null	null	null	null	6:00 am	10:00 pm	null	null
Monday	7:00 am	5:30 pm	null	null	4:00 am	10:00 pm	null	null
Tuesday	7:00 am	5:30 pm	null	null	4:00 am	10:00 pm	null	null
Wednesday	7:00 am	5:30 pm	null	null	4:00 am	10:00 pm	null	null
Thursday	7:00 am	5:30 pm	null	null	4:00 am	10:00 pm	null	null
Friday	7:00 am	5:30 pm	null	null	4:00 am	11:00 pm	null	null
Saturday	7:00 am	5:30 pm	null	null	6:00 am	11:00 pm	null	null

Schedule P7				
DAY	Occ 1	Unocc 1	Occ 2	Unocc 2
Sunday	6:00 am	10:00 pm	null	null
Monday	3:00 pm	10:00 pm	null	null
Tuesday	3:00 pm	10:00 pm	null	null
Wednesday	3:00 pm	10:00 pm	null	null
Thursday	3:00 pm	10:00 pm	null	null
Friday	3:00 pm	11:00 pm	null	null
Saturday	6:00 am	11:00 pm	null	null

SELECTING A PRE- PROGRAMMED SCHEDULE



Limited Warranty and Product Return Procedure

Limited Warranty: tekmar warrants to the original purchaser each tekmar product against defects in workmanship and materials when the product is installed and used in compliance with tekmar's instructions. This limited warranty covers the cost of parts and labour provided by tekmar to correct defects in materials and/or workmanship. Returned products that are fully operational are not considered a warranty case. tekmar also does not cover parts or labour to remove, transport or reinstall a defective product. tekmar will not be liable for any damage other than repair or replacement of the defective part or parts and such repair or replacement shall be deemed to be the sole remedy from tekmar. This warranty shall not apply to any defects caused or repairs required as a result of unreasonable or negligent use, neglect, accident, improper installation, or unauthorized repair or alterations. In case of defect, malfunction or failure to conform to warranty, tekmar will, for a warranty period of 24 months from the date of invoice to the original purchaser or 12 months from the date of installation of the product, whichever occurs first, repair, exchange or give credit for the defective product. Any express or implied warranty which the purchaser may have, including merchantability and fitness for a particular purpose, shall not extend beyond 24 months from the date of invoice or 12 months from the date of installation of the product, whichever occurs first.

Replacements: tekmar can send replacement products if requested. All replacements are invoiced. Any possible credit for the replacement will only be issued once the replaced product has been returned to tekmar.

Product Return Procedure: Products that are believed to have failed must be returned to tekmar Control Systems Ltd. 4611-23rd Street, Vernon, B.C. Canada V1T 4K7 when agreed to by tekmar. The installer or other qualified service person must, at the owner's expense, determine which

component has failed. The product must be returned complete with proof of purchase to the original purchaser who then returns the product to tekmar after receiving a Return Goods Authorization (RGA) number from tekmar.

Please include the following information with the product. The full address of the original purchaser, the RGA number and a description of the problem.

From the U.S.A., in order to avoid customs charges, products must be returned via US Post with the package clearly marked with the RGA number, product type and the statement "Canadian Product returned for repair". For shipping purposes the product can be valued at one half list price.

- 1) If returned during the warranty period and the product is defective, tekmar will issue full credit for the returned product less cost of missing parts.
- 2) If returned during the warranty period and the product is fully operational, tekmar will return the product to the original purchaser for a testing cost of \$30.00 plus postage.
- 3) If returned during the warranty period and the product is not damaged and is fully operational, tekmar can take back the product for a return charge of 40% of the product's net value. This request has to be specified otherwise the product will be returned with a testing cost of \$30.00 plus postage.
- 4) If returned after the warranty period and the product needs repair, tekmar will repair and return the product. Repair and postage costs will be invoiced. tekmar's repair costs are calculated at \$30.00 / hour plus the cost of parts. If the repair costs will be more than \$60.00 a repair estimate will be sent to the original purchaser.

In North America: tekmar Control Systems Ltd., Canada
 tekmar Control Systems, Inc., U.S.A.
 Head office: 4611 - 23rd Street
 Vernon, B.C. Canada V1T 4K7
 Tel. (604) 545-7749 Fax. (604) 545-0650