

TORK MODEL DZM200A 2 CHANNEL DIGITAL TIME SWITCH WITH MOMENTARY CONTACT INSTALLATION & OPERATION

CAPABILITIES

365 Day Advance Single Holiday and Seasonal Scheduling.

ON and OFF set points:

Combined total for both channels - 99 per week

Minimum setting - 1 minute

Capable of different schedules each day of the week.

Astronomic for automatic ON at sunset, OFF at sunrise of outdoor lighting.

FEATURES

| | |
|------------------------------|--|
| Holidays | 1 to 24 individual dates. |
| Seasons | 1 to 4 with different daily schedules which wrap around into the new year. |
| Daylight Saving | Automatic adjustment (can be omitted). |
| Leap Year | Automatic compensation. |
| Display | LCD |
| Manual Override | Until the next regularly scheduled ON or OFF. Automatic operation then resumes. |
| Clock Format | AM/PM only (although 24HR may flash, it is not available at present). |
| Power Outage | Permanent schedule retention for up to 40 years. Snap-in lithium battery maintains real time. |
| Operating Temperature | 4° to 140°F (-20° to 60° C). |

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INSTRUCTIONS FOR INSTALLATION

1. Remove unit from enclosure by pushing the inside tab (located near the outside hasp) to the right. Swing unit to left and remove.
2. Five combination 1/2" and 3/4" knockouts are provided on this enclosure. Remove the 1/2" (inner) knockout by inserting a screwdriver in the slot provided and pound screwdriver handle with a hammer. Remove knock-out with pliers and smooth hole edges with file or knife if necessary. When the 3/4" outer knockout is required, place screwdriver in groove and pound screwdriver handle with hammer. Remove loose knock-out with pliers and smooth hole edges with file or knife if necessary.

Disconnect power at main panel prior to installing or servicing this time switch or the equipment connected to it.

Connect in accordance with national and local electrical codes.

Installation by a licensed electrical contractor is recommended.

3. When attaching conduit to enclosure, exercise care to align and support conduit in order to prevent unnecessary stress on enclosure.
4. Install 9V lithium battery supplied with the unit. *Note:* Unit should be connected to AC power within 24 hours of battery installation in order to prolong battery life which has 30 day cumulative backup for real time and 7-10 year shelf life. REPLACE WITH ANOTHER 9V NON-RECHARGEABLE BATTERY ONLY.
5. Reinstall unit by reversing step 1 above and connect wires according to wiring diagram on inside case label.

GROUNDING

National Electrical Code requires that grounding must be continuous and in proper electrical contact in all grounding conductors, metallic conduits and grounding terminals. When using metal conduits, install the proper size approved grounding bushings. The minimum size copper grounding conductors must be #10 AWG if the circuit breaker or fuse is 30 or 40 amp, #12AWG if 20 amps, and #14 AWG if 15 amp.

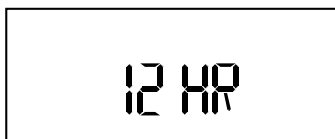
NOTE: Do not use top entry for wiring.

WE SUGGEST YOU MAKE COPIES OF THE SCHEDULE SHEETS LOCATED IN BACK OF THIS BOOKLET AND COMPLETE THEM PRIOR TO SETTING THE UNIT.

INSTRUCTIONS FOR SETTING THE UNIT

Connect unit to main power source prior to entering the settings.

First time power up - display shows 12HR



Press **ENTER**.

Note: If screen shows 24HR, press hour key so that 12H appears instead. Then press **ENTER**. This unit will *not* accept 24 hour military format although it may appear on the screen.

After you press **ENTER** unit display shows



NOTE:

1. If 24HR format is entered in error, it can only be changed by clearing all memory. See note 4 on page 15.
2. Unit will not go to run mode unless it has clock and calendar information.
3. In any of the other setting modes, if no entry is made for 5 minutes, unit will go to run mode (time and day are displayed - colons are flashing).

1.0 TO SET THE CLOCK (Time of day and day of the week.)

Press **HOUR** to advance the time in hours to desired setting. Check AM/PM.

Press **MIN** to advance the time in minutes to desired setting.

Press **DAY** key to advance to today's day.

When present hour, minute and day are shown, press **ENTER**.

1.1 TO MODIFY THE CLOCK

(If the unit was already running the program, then unit will show the day of the week, hours, minutes).

Press **MODE** key. Display shows current time and day with colon *NOT* flashing and CLK symbol at the bottom.

Use **HOUR**, **MIN**, and **DAY** key to modify or alter the information. You must press **ENTER** to make the changes effective.

2.0 TO SET DATE

If you are setting for the first time, display will show



Press **MONTH** key. Display will show 010194

Advance month to desired setting.

Press **DATE** key to advance date.

Press **YEAR** key to advance to correct year.

When desired MONTH, DAY and YEAR are on the display, press **ENTER**.

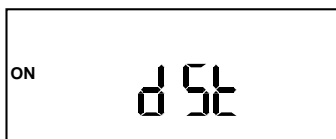
2.1 TO MODIFY OR CHANGE DATE

Press **MODE** key until display shows DATE. Use **MONTH**, **DATE** and **YEAR** key to modify MONTH, DATE, YEAR. Press **ENTER**.

3.0 DAYLIGHT SAVING TIME

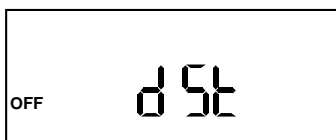
This unit is already set for automatic DAYLIGHT SAVING adjustment. If this is desired, you can proceed to section 4.0 by pressing mode key.

Display will show



To eliminate daylight saving adjustment, press **ON/OFF** key.

Display should show



Press **ENTER**. Daylight saving correction is deleted or turned off.

4.0 SEASON DURATION SET

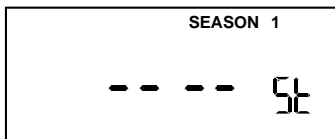
You can set up to four different seasons. If this is *NOT* needed, you can proceed to section 5.0 by pressing mode key.

Season durations are set by starting MONTH/DATE and ending MONTH/DATE:

NOTE:

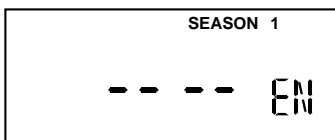
1. Each season can be set for up to 364 days.
2. Any season can cross the year boundary, i.e., season can start in the current year and end in the next year.
3. When any two or more seasons overlap, the higher numbered season has priority.

Press **MODE** key till display shows



Unit is ready to be programmed for starting MONTH and DATE for season 1.

Press **MONTH** and **DATE** keys to set MONTH and DATE for starting of season 1. Press **ENTER**. Display now shows



Use MONTH and DATE key to set ending MONTH and DATE for season 1. Press **ENTER**.

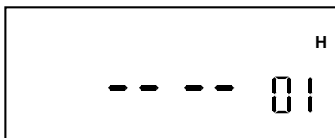
Set the start and end for other 3 seasons if desired.

To delete an entry, press **DELETE** key.

NOTE: If for any reason you set starting MONTH and DATE and forget to set ending MONTH and DATE, that season becomes invalid. Unit will erase the starting date.

5.0 SET INDIVIDUAL HOLIDAY DATES

Press **MODE** key until display shows



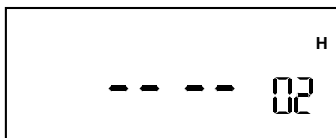
NOTE:

A total of 24 individual holiday dates can be set. Each holiday is set by MONTH and DATE. The same schedule will repeat on every holiday date.

Press **MONTH** key to advance to desired month.

Press **DATE** key to advance to desired date.

Press **ENTER**. Now display shows



This means unit is ready to accept 2nd holiday date.

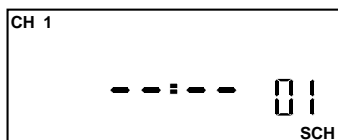
Use same procedure to set more holidays.

To delete a holiday date press the **DELETE** key.

Press **ENTER**.

6.0 SCHEDULE SET MODE

Press **MODE** key till display shows



In the SCHEDULE mode, the following information is set:

1. CHANNEL selection (CH1 and CH2)
2. TIME: HOUR and MIN.
3. EVENT: ON or OFF
4. DAY: DAY or DAYS combination.
5. HOLIDAY
6. SEASON: Use **SEASON** key to advance or **SELECT** to select SEASON in which this particular TIME, EVENT and DAYS combination is to occur.

NOTE: Duration for each season should have been already established.

Now you are ready to begin setting the schedules. There are a total of 99 ON/OFF events.

6.1 CHANNEL SELECTION

Press **SELCT** key to toggle between channel 1 and channel 2. When desired channel flashes, begin setting hours and minutes.

6.2 SETTING HOURS AND MINUTES

Press **HOUR** and **MIN** keys to desired setting.

6.3 SETTING DAYS, HOLIDAY, SEASONS

MO (Monday) is flashing - If Monday is desired, press **SELCT** key. If Monday is *not* desired, press **DAY** key to pass Monday and advance to Tuesday.

- a. Press **SELCT** key to select the flashing day, holiday, or season.
- b. Press **DAY** key to pass the flashing day and advance to other days, holiday, and seasons.

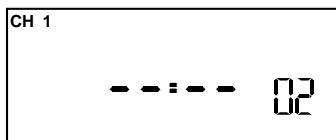
The same schedule will repeat on every holiday date.

Each season can have a different daily schedule.

NOTE: **SELCT** key can also be used to *delete* a day, holiday, or season *previously selected* when the aforementioned is flashing.

When you have desired time, event, steady days and season, press **ENTER**. This completes the first schedule entry.

Now display shows that SCH 02 appears on the display.



This means unit is ready to accept 2nd schedule entry.

Use same procedure to set more SCHEDULES for channel 1.

When you are finished setting schedules for channel 1, press **SELCT** key at the next blank schedule screen and CH2 will flash. You can now begin setting schedules for channel 2.

7.0 TO SET ASTRONOMIC SCHEDULE

Press **MODE** key until display shows



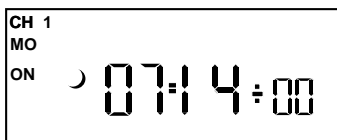
Press **SELCT** key to toggle between channel 1 and channel 2.

By default, latitude north 10° will appear on the display.

The latitude of your location can be set in this mode.

Press **LAT** key to advance to the desired # from 10° to 60° north or 10° to 60° south. Press **ENTER**. (Unit can not be used for latitudes greater than 60°).

Now display shows



7.1 SELECTING ASTRO DAYS/SEASON(S)

NOTE: Entering your latitude does not assign the astronomic function. You must enter DAYS/SEASONS while in the astro mode in order to enable this function.

Select the day(s) and/or season(s) in which you want the indicated channel to turn ON at sunset. This is done in the same way as section 6.3 “a.” and 6.3 “b.” using **DAY** key and **SELCT** key.

If you want the load to come on after or before sunset, you use the **OFFSET** key. A \div sign before the last 2 digits means the load comes ON that many minutes **after** sunset. A **-** sign means the load comes ON that many minutes **before** sunset.

Once desired DAYS/SEASON and OFFSET is set
press **ENTER**.

Now display shows SUNRISE time along with all days and seasons displayed.



ALL DAYS TURN OFF AT SUNRISE whether or not those days were astro selected.

In this mode you can only set OFFSET for sunrise. If you want the load to turn OFF before or after sunrise, you use the **OFFSET** key. A \div sign before the last 2 digits means the load turns OFF that many minutes after sunrise. A **-** sign means the load turns OFF that many minutes before sunrise.

Unit displays CH and ASTRO along with LATITUDE.

If channel 2 is to be astronomic, press **SELCT** key to advance to CH2. Press **ENTER**. Repeat section 7.1. If the latitude was set in CH1, it will appear again and need *NOT* be changed.

7.2 ASTRONOMIC ON, TIME OFF AND/OR TIME ON, ASTRONOMIC OFF

Set astronomic ON/OFF per section 7.0 and 7.1

To set a time OFF during the night and/or a time ON before sunrise, proceed as follows:

Press **MODE** key until schedule 01 appears



Press **ENTER** key repeatedly until the next blank schedule screen appears. Use **SELECT** key to select Channel 1 or Channel 2 (whichever one is to be set for time ON or OFF during the night).

Set the hours, minutes, and days per sections 6.2 and 6.3. You can first set an OFF during the night and use the next blank schedule screen to set an ON before dawn.

8.0 REVIEW MODIFY AND DELETE

Use **MODE** key to advance to any of the following MODES:

1. CLOCK MODE: Use **HOUR**, **MIN**, and **DAY** keys to modify existing settings. Press **ENTER**.
2. DATE MODE: Use **MONTH**, **DATE**, and **YEAR** keys to modify existing settings. Press **ENTER**.
3. DST → Daylight Saving is automatic. You do not have to enter start and stop dates. Unit calculates 1st Sunday of April and last Sunday of October. You do not have to remember to change every year. To eliminate, press **ON/OFF** key to OFF. Press **ENTER**.
4. SEASON MODE: Seasons duration can be changed or deleted. Press **MONTH** and **DATE** keys or **DELETE** key. Press **ENTER** to confirm.
5. HOLIDAY MODE: Similar procedure as above can be used for the holidays. Press **ENTER**.

6. SCHEDULE MODE: Schedule review, modify, delete. You can modify the schedule entry using **HOUR**, **MIN**, **ON/OFF** key and **SELCT** key. Press **ENTER** after each modification.

To delete, simply press the **DLETE** key when unwanted information is on display. This will blank the entry. Press **ENTER** to confirm. Do not leave the MODE without pressing **ENTER**.

7. ASTRO MODE: Press **LAT** key to change latitude. Press **ENTER**. Press **DAY** key and **SELCT** key to add or delete days in the sunset mode. Press **OFF-SET** key to change offset time for sunset or sunrise. Press **ENTER** after each.
8. RUN MODE: Time and day is displayed. If today is a programmed holiday, the **H** will be displayed steady. If today falls within a programmed season, that season # will be displayed.

9.0 OVERRIDE

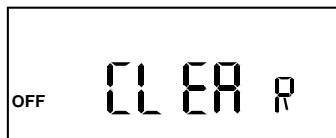
OVR1 and **OVR2** (override keys) are effective only in the **run mode**.

The present load status of the channel will change until the next scheduled event. The LED will indicate whether the load is ON or OFF.

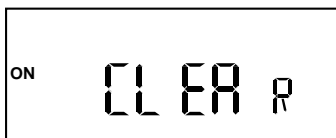
NOTES:

1. Unit will go to RUN MODE automatically if no key is pressed for five minutes.
2. Units do not have look back feature. If you have just finished setting the unit and an output is to be presently ON, press the **OVR** key to turn it On. Unit will automatically pick up the regular schedule thereafter.

- Units do not have stagger start.
- Clear all memory. All memory can be cleared using the following procedure: while in the RUN mode, press **Enter** key, display shows:



Use ON/OFF key to display:



Now press ENTER briefly and everything in the timer memory is wiped off including real time and date.

| Season | | | |
|---------------|------------|----------|-------------|
| # | Start Date | End Date | Description |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |

| Holiday (H) | | |
|--------------------|------|-------------|
| # | Date | Description |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
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| 24 | | |

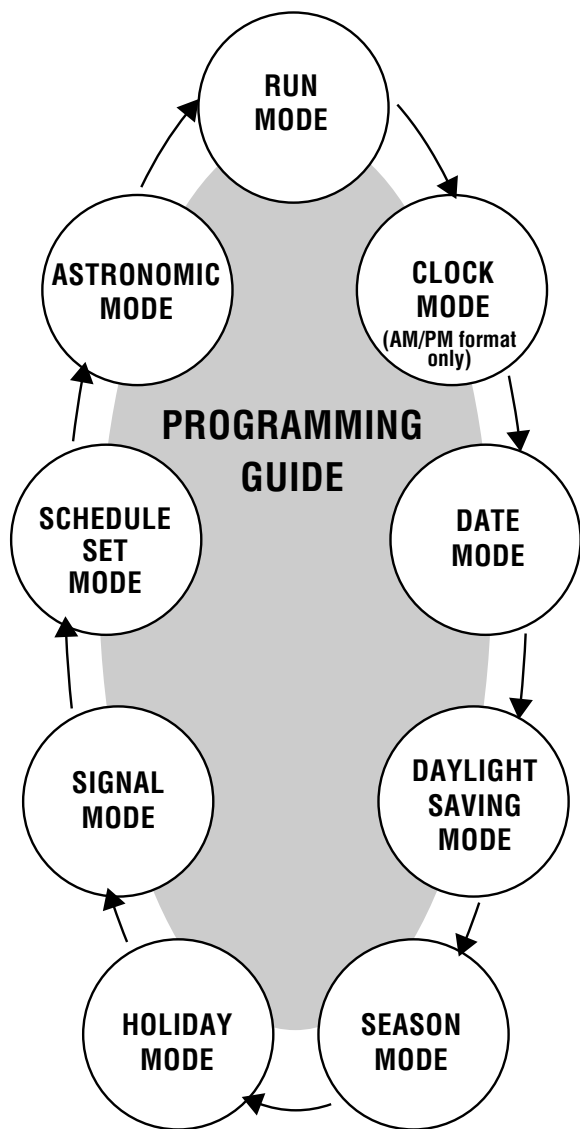
ASTRONOMIC SCHEDULE

| Latitude _____ | | | | | | | | | | SEASON | | | | Sunset | Sunrise |
|----------------|-------|----|----|----|----|----|----|----|---|--------|---|---|---|--------|---------|
| Sch. # | Ch. # | MO | TU | WE | TH | FR | SA | SU | H | 1 | 2 | 3 | 4 | Offset | Offset |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

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ASTRONOMIC LATITUDE ZONES





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