

TORK[®]

nsi
INDUSTRIES

INSTRUCTION MANUAL



SunSet[™]

DIGITAL TIME SWITCH
7 DAY WITH INPUT

DGU-A SERIES
DGUM-A SERIES
DGLC-A SERIES



FOR TECHNICAL SUPPORT:
888.500.4598

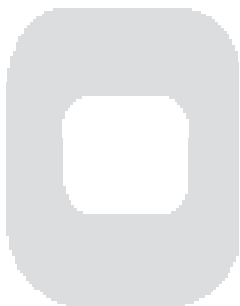


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TORK MODEL DGU-A/DGUM-A/DGLC-A SERIES 7 DAY DIGITAL TIME SWITCH WITH INPUT

READ INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO INSTALL TIME SWITCH. SEE

WARNING ON FRONT PANEL – Failure to comply with instructions could result in personal injury and/or property damage.

INSTALLATION:

UNIT IS TO BE INSTALLED BY A LICENSED ELECTRICIAN

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. Mount the enclosure at eye level using screws or other suitable fastening device. Bring supply and load wires in through or side knockouts. **DO NOT USE TOP.**
3. Reinstall unit by reversing step #1 above and connecting wires to units as per suggested wiring diagrams at the back of the manual.
4. Unit should be programmed with AC power. Do not program under super cap back up power.

AT POWER UP;

Connect unit to main power source prior to entering the settings. When powering up the unit for the first time, allow 1-2 minutes for super cap to charge and the display will show 12 HOUR. Press reset button after 2 minutes if screen is blank.

CAPABILITIES

- 7 day scheduling
- 56 set points
- 9 Block holidays
- Photo sensor and switched inputs
- Sunset Astronomic

FEATURES

Daylight saving - Automatic (user selectable)

Leap year - Automatic compensation

Power outage - Permanent schedule retention. Super capacitor provides 7 days of real time back up.

Manual override - Until the next scheduled event

AM/PM or 24 hour format - user selectable

Multi-Voltage Input: 120 – 277VAC

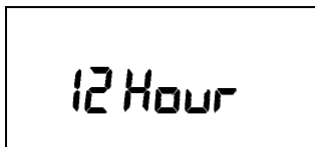
0.0 PHOTO SENSOR CALIBRATION

(IF EPC-A installed, per wiring at the back of the manual)

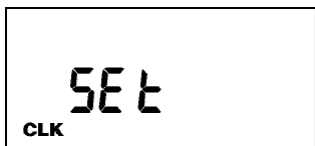
- Completely cover the EPC-A sensor.
- Gently press the recessed Sensor Cal Switch for at least 5 seconds then release. After this button has been pressed, the red LED directly above the button will blink four times.
- Calibration complete go to step 1.0 for control set-up.

1.0 CLOCK FORMAT

The first time unit is powered up, it will display a flashing 12 Hour. Use **HOUR** key to set clock format to either 12 Hour (AM/PM) or 24 Hour. Press the **ENTER** key.



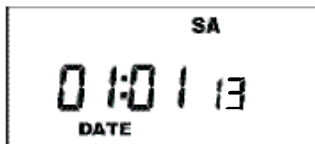
2.0 CLOCK SET MODE



Press **HOUR** and **MIN** to advance to the present hour

and minutes. Check AM/PM, and press **ENTER**.

3.0 DATE SET MODE

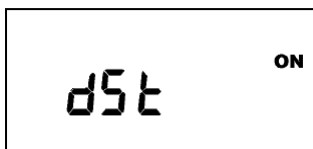


Press **MONTH**, **DATE**, and **YEAR** key to advance to the desired month, date and year, then press **ENTER**.

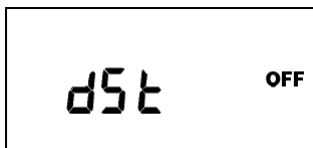
NOTE: The day of the week will automatically set once the date is entered.

4.0 DAYLIGHT SAVING TIME

After setting or modifying the date, display will show:



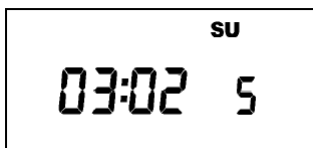
- For standard USA daylight savings (DSt), press **MODE** and go to step 5.0.
- For dates other than standard USA dates, press **MONTH** and go to step 4.1.
- If daylight saving time (DSt) is NOT required, press **DEL** display will show:



Press **ENTER** then go to step 5.0.

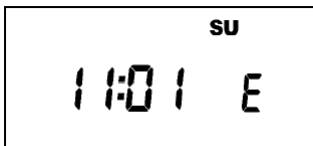
4.1 TO MODIFY STANDARD USA DAYLIGHT SAVINGS DATES

NOTE: The first two digits represent the month and the second set of digits represent the week in the month. Choices for week are 01 (1st), 02 (2nd), 03 (3rd) or L (Last) week of the month. The default day is Sunday (SU.) Once modified date set, the unit will automatically calculate the correct start dates in the future.



Now press **MONTH** and **DATE** buttons to modify the starting DST settings. Pressing **DAY** changes default day. EXAMPLE: A screen showing "04:01 SU S" represents April (04), the first week (01), Sunday (SU), and the Start (S) of daylight savings time.

Press **ENTER** to save and the display will show:

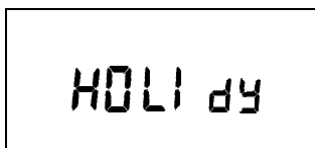


Now press **MONTH** and **DATE** buttons to modify the ending DST settings. Pressing **DAY** changes default day. EXAMPLE: A screen showing "10: L SU E" represents October (10), the Last week (L), Sunday (SU), and the End (E) of daylight savings time.

Press **ENTER** to save and the display will show the modified DSt starting date.

Press **MODE** twice to go to step 5.0.

5.0 HOLIDAY DATES

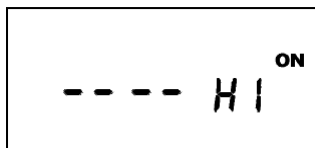


You are able to select up to 9 holiday blocks, which will exclude all of the regular schedules, and execute a special set that will only run on those specified days. If no holiday schedule is entered in step 6, operations will be omitted during the block. Holiday blocks can be anywhere from 1 day in length (the same start and end dates) or up to 364 days. Holiday blocks cannot end after they begin. If a holiday block must run from December 18th through January 5th, you have to program one block from 12/18 to 12/31, and then another from 01/01 to 01/05.

To skip, press the **MODE** key.

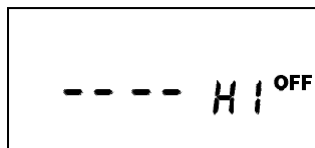
5.1 TO SET HOLIDAY DATES

Press the **ENTER** key.



Press the **MONTH**, and **DATE** keys to set the date to the desired start date (H1 ON).

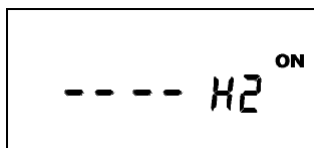
Press the **ENTER** key.



For a single day holiday, press the **ENTER** key
(OR)

Press the **MONTH**, and **DATE** keys to set the date to
the desired end date (H1 OFF)

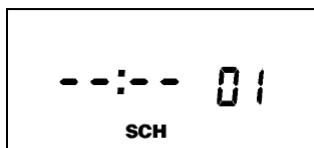
Press the **ENTER** key.



Repeat for all holidays.

Press **MODE** when holidays are complete.

6.0 SCHEDULE SET MODE



6.1 SETTING HOURS, MINUTES, AND DAYS

Note: A schedule is needed for each event. If a typical ON/OFF pair is required, use SCH 01 for the ON event and SCH 02 for the OFF event.

Press the **HOUR**, and **MIN** keys to set the desired time.

Press **EVENT** to set desired event (ON or OFF)

Press **CH SELECT** key to select channel on
two channel units.

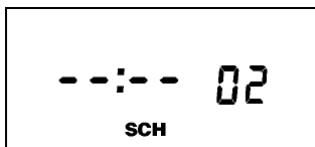
Press **DAY** to set desired day(s).

Note: With each **DAY** button push a different group of
days will appear.

- 1: MO TU WE TH FR SA SU
- 2: MO TU WE TH FR SA
- 3: MO TU WE TH FR
- 4: SA SU
- 5: MO
- 6: TU
- 7: WE
- 8: TH
- 9: FR
- 10: SA
- 11: SU
- 12: (All days flashing) **Holiday Blocks**

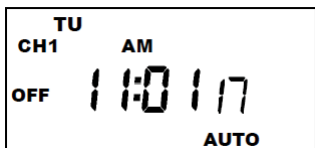
Note: Selection #12 will only show if a holiday date has been entered in step 5.

Press **ENTER** to save.



Follow the same procedures above to set more schedule entries.

Press **MODE** when schedules are complete.



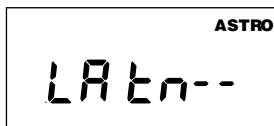
Unit is in the AUTO (automatic) mode.

The word FLASH may appear to indicate a new program has been written to memory.

Press the **EVENT** key once (or twice for two channel units) to activate current schedule then **EVENT** key again to return to AUTO mode.

7.0 TO SET SUNSET ASTRONOMICAL SCHEDULE

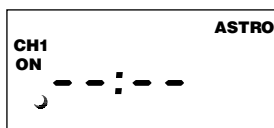
Press **MODE** until display shows:



Press **CH1/CH2** to select channel 1 or 2.

Press **LAT** key to advance to the desired degree of latitude, from 0° to 60° north or 0° to 60° south.

Press **ENTER**. The display will show:



7.1 SELECTING ASTRO DAYS

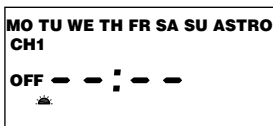
Press **DAY** to select desired days in which you want the indicated channel to turn ON at sunset and then press **ENTER**.

NOTE: Sunset Time will be based on Date and Latitude entered. The display will show:



If an offset to sunset time is required, press **HOUR** and **MIN**. Offset can be set to 3 hours and 59 minutes max. Press **EVENT** to select + or - and then press **ENTER**.

NOTE: A + sign will turn load ON that many hours and/or minutes after sunset. A - sign will turn load ON that many hours and/or minutes before sunset. The display will show:



Press **DAY** and then **ENTER** to activate sunrise time. **NOTE:** To turn load OFF at a preset OFF time, leave this field blank. Press **ENTER**. The display will show:



If an offset to sunrise time is required, press **HOUR** and **MIN**. Offset can be set to 3 hours and 59 minutes max. Press **EVENT** to select + or - and then press **ENTER**.

NOTE: A + sign will turn load OFF that many hours and/or minutes after sunrise. A - sign will turn load OFF that many hours and/or minutes before sunrise. Press **MODE** to return to the **AUTO** mode.

8.0 SUNSET ON AND USER-SELECTED TIME OFF

Set sunset ON per sections 7.0 and 7.1

USER-SELECTED TIME OFF:

Press **MODE** until SCH 01 appears. Press **ENTER** until a blank schedule appears then press **CH1/CH2** to select channel 1 or 2. Press **HOUR**, **MIN** and **EVENT** to set desired OFF time. Press **DAY** to select desired days and then press **ENTER**.

8.1 USER-SELECTED TIME ON AND SUNSET OFF

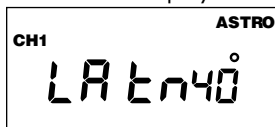
Press **MODE** until SCH 01 appears. Press **ENTER** until a blank schedule appears then press **CH1/CH2** to select channel 1 or 2. Press **HOUR**, **MIN** and **EVENT** to set desired ON time. Press **DAY** to select desired days and then press **ENTER**.

SUNSET OFF:

Set sunset OFF per sections 7.0 and 7.1

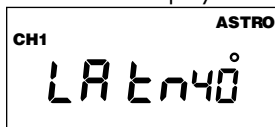
8.2 TO DELETE SUNSET SETTINGS

- a. To delete selected channel
Press **MODE** until the display shows:

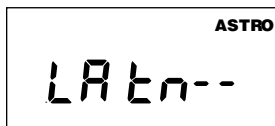


Press **CH1/CH2** to select desired channel and press **ENTER**. Press **DEL** and then **ENTER** to delete all unwanted entries.

- b. To delete the sunset schedule for both channels
press **MODE** until the display shows:



Press **DEL** and **ENTER**. The display will show:



Press the **MODE** key to return to the **AUTO** mode.

9.0 REVIEW, MODIFY AND DELETE

Press **MODE** to advance to any of the following MODES:

1. **AUTO MODE**: In this automatic mode, the unit will execute the scheduled programs. Time, day, seconds and load status are displayed. If today is a programmed holiday, the day of the week will flash.

OVERRIDE IN AUTO MODE: The load status of the channel can be manually changed by pressing the **OVRD** key (or **OVR1** and **OVR2** key for two channel units).

The unit will stay in this position until the next scheduled event. A flashing LCD load indication (ON, OFF) shows the status was changed by the override not a scheduled event.

Note: To force the circuit ON when an EPC-A photo sensor installed, you must cover the photo sensor and place the override into the ON position.

2. **MAN MODE**: In this manual mode, the unit will ignore the schedule programs. Time, day, seconds and load status are displayed. If today is a programmed holiday, the day of the week will flash. This can be used as a VACATION SETTING to keep load off while away. Use override to set to OFF position.

OVERRIDE IN MAN MODE: The load status of the channel can be manually changed by pressing the **OVRD** key (or **OVR1** and **OVR2** key for two channel units).

The unit will stay in this position until **OVRD** is pressed again. A flashing LCD load indication (ON, OFF) shows the status was changed by the override not a scheduled event.

3. **CLOCK MODE:** Press **HOUR** and **MIN** to modify existing settings. Press **ENTER** to save changes.
4. **DATE MODE:** Press **MONTH**, **DATE** and **YEAR** to modify existing settings. Press **ENTER** to save changes. DAY is automatically adjusted.
5. **DSt MODE:** Factory default is set at US standard daylight savings dates noted by ON. To remove daylight savings time setting, press **DEL** to change screen to show OFF. DST may be activated again by pressing **DEL**. Press **ENTER** to save changes. To change from the standard DST month/week/day setting press **HOUR** and refer to step 4.1.
6. **HOLIDAY MODE:** Press **ENTER** to advance to desired holiday. Press **MONTH** and **DATE** to modify start of holiday (ON) then press **ENTER**. Press **MONTH** and **DATE** to modify end of holiday (OFF) then press **ENTER** to save changes.
7. **SCH MODE:** To change schedule, press **ENTER** to advance to desired event. Press **HOUR**, **MIN**, **EVENT**, and **DAY** to modify time settings. Press **DEL** to delete. Press **ENTER** after each modification to save changes.

NOTES:

1. Unit has a look back feature. Press the **EVENT** key once (or twice for two circuit units) to activate current schedule then **EVENT** key again to return to the time (run) screen. Unit will automatically pick up the last schedule.
2. To clear date and time only and provide unit with a soft reboot, press and release the reset button that is recessed under the small hole to right side of LCD screen.
3. Clear all memory. To clear all memory, while in the RUN mode, press **ENTER**, display will show:



Use the **EVENT** key to display:



Now Press **ENTER** briefly and everything in the timer memory is cleared and 12HOUR will flash.

4. A "PF" on the display indicates a Power Failure and the unit requires AC power to operate. The time and date are protected for 7 days by the super cap. The program is retained in permanent memory.

5. A "Lo" on the display indicates that the super cap has run low and the unit needs to be powered with AC. A minimum of 8 hours is required to fully charge the super cap.

Planning Your Program

The single channel unit will operate as a standard timer for typical indoor or outdoor control needs. Only if a photo sensor is connected can it operate with a photo and time logic.

Two channel units allow you to set-up different control logic for each channel by using the Select Switch. To meet Title 24 requirements, one channel could be sunset to sunrise while the other channel is sunset to time OFF. Also one channel could be used for indoor lighting control with fixed ON and OFF times while the other channel is set for sunset to sunrise.

The photo sensor will only operate when the program is set to ON. Here are examples for the most common uses. For other ideas call the toll free Tork Tech Help Line 888-500-4598.

1. Sunset ON and Sunrise OFF 7 days a week:
Program the channel for an ON event at 12:00am Monday through Sunday. The photo sensor will take full control and turn on the load ON only when light level drops to the preset footcandles then turns OFF

when the light level is twice the preset footcandles. (For two channel units also set select switch to PHOTO setting.)

2. Sunset ON and Time OFF: Program an ON event at the earliest time you want to allow photo sensor to begin to operate. Then program a night time OFF event. (For two channel units also set select switch to PHOTO setting.)

Example: ON at 3:00pm and OFF at 11:00pm MO – SU. The photo sensor will take control at 3:00pm and turn ON the load only when light level drops to the preset footcandles, but timer will shut OFF the load at 11:00pm regardless of the light level at that time.

3. Time ON and Time OFF: Program the channel for an ON event and an OFF event for the times you choose. Do not connect a photo sensor. (For two channel units photo sensor may be connected but also set select switch to TIMER setting.)

Timed Override

Wiring a Tork SS410 to the remote override connections provides an easy way to meet various energy code requirements for indoor lighting. Include the Tork #TRP to power the low voltage switch.

A Tork A502H may also be used to provide a low cost 2 hour override.

INPUT CONNECTIONS

There are two removable terminal blocks on the rear of the units. The terminal blocks, as viewed from the rear, are labeled TB3 (left side, green), and TB2 (right side, black).

TB3 is used to connect the EPC-A to the unit. Wire the terminal block from left to right, with the blue, black, and red wires going to the EPC-A, wire length not to

exceed the length shown in the chart above. Calibrate per instructions below.

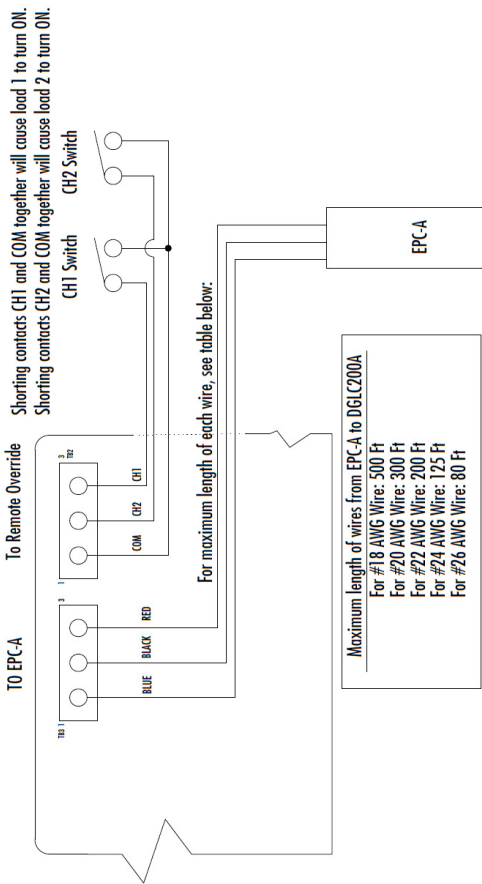
The other terminal block, TB2 is used as remote override inputs. Three wires are used: common wire, channel 2 (if DGLC200A), and channel 1.

NOTE: Do not use any supply voltage for these wires. They should only be connected to dry (unpowered) switches. Closing contacts between the wires for channel 1 and common together will turn load 1 ON. Load will stay ON as long as the two wires are connected, no matter what the timer is set for, or the light level. Closing contacts between the wires for channel 2 and common together will turn load 2 ON. The load status change due to remote override will not be shown in the display.

Photo Sensor Calibration

After installation, in order to ensure accurate light level performance, completely cover the EPC-A sensor. Then gently press the recessed Sensor CAL Switch for at least 5 seconds. After this button has been pressed, the red LED directly above the button will blink four times. If the button is pressed accidentally when the light level is above 10 foot candles, the unit will not recalibrate and the LED will blink once to signal that it did not change calibration.

Remote Input wiring, rear



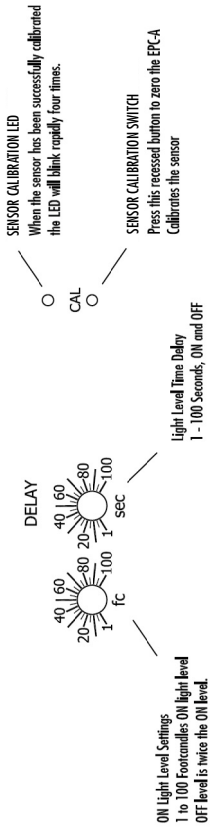
The **Light Level** dial adjusts the foot-candle (fc) set point for the control to turn ON. The load will be turned OFF and continue to hold OFF when the light level is twice this level or more. A timer program must be active for the light level feature to function see "Planning Your Program" below.

The **Time Delay** dial adjusts the amount of time before the load turns ON or OFF due to light level change. The range is between 1 and 100 seconds. To prevent short-duration events such as clouds or stray lighting from prematurely turning the load ON or OFF, select longer time durations.

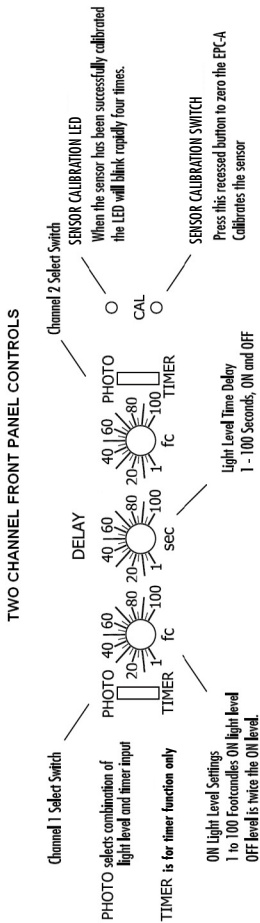
Front Panel Controls

Single channel front panel controls are used if photo sensor EPC-A (Included with DGLC100A) is connected. When the photo sensor is connected, the control will follow a timer/light level logic.

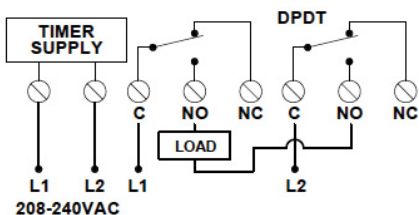
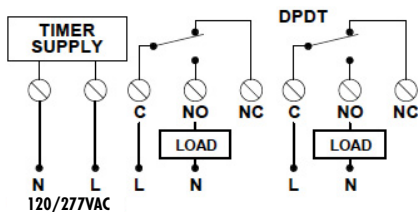
SINGLE CHANNEL FRONT PANEL CONTROLS



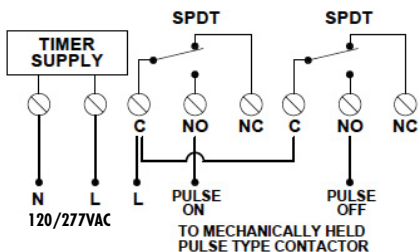
Two channel front panel controls are use if photo sensor EPC-A (included with DGLC200A) is connected. Each channel has a switch to set its independent control logic. The up position (PHOTO) is timer/light level logic. The down position (TIMER) is timer logic and ignores the photo sensor.



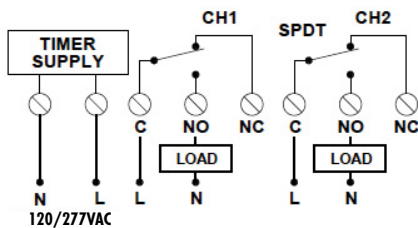
DGU100A/DGLC100A



DGUM100A



DGLC200A



Holiday (H)		
#	Date	Description
1		
2		
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4		
5		
6		
7		
8		
9		

TORK[®] 

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