

# E100B SERIES **MULTIPURPOSE CONTROLS** **1 CHANNEL**

**MULTI-VOLTAGE INPUT 120-277VAC**  
**PATENTED 40 AMP CONTACTS**  
**INDOOR/OUTDOOR ENCLOSURE STANDARD**

### APPLICATIONS:

#### 24 HOUR

- Signs
- Lighting
- Air Conditioning
- Sump Pumps
- Ventilating Fans

#### 7 DAY

- Outdoor Signs
- Display Lighting
- Security Systems
- Heating and Air Conditioning

### FEATURES

#### DISPLAY: LCD

**PROGRAMMING:** Simple, with brief easy-to-follow instructions.

**DAYLIGHT SAVING TIME:** Automatic (can be changed or omitted)

**MANUAL OVERRIDE:** Until the next regularly scheduled ON or OFF when automatic operation then resumes or permanently if desired.

**CLOCK FORMAT:** AM/PM

**POWER OUTAGE BACKUP:** Permanent Schedule Retention. Supercapacitor maintains real time clock for 100 hours.

**E101B EW101B**  
**E103B EW103B**  
**E120B EW120B**



**SUPERCAPACITOR BACKUP!**

**PERMANENT SCHEDULE RETENTION!**

#### 24 HOUR

Capable of same schedules each day of the week

**ON & OFF SET POINTS:** 20 per day, minimum setting is one minute.

#### 7 DAY

Capable of different schedules each day of the week

**ON & OFF SET POINTS:** 20 per day or week, minimum setting is one minute.

**MEETS CALIFORNIA ENERGY COMMISSION'S TITLE 24 REQUIREMENTS**

**and ASHRAE 90.1 1999**

### SPECIFICATIONS

**TIMING ACCURACY:** Line Frequency

**OPERATING TEMPERATURE:**

-40 to +149°F (-40° to +65°C.)

**STORAGE TEMPERATURE:**

-40° to +158°F (-40° to +70°C.)

**RELATIVE HUMIDITY:** 0 to 90% RH

**ENCLOSURE:** Indoor/Outdoor NEMA 3R plastic is standard

**INPUT VOLTAGE:** 120-277VAC, 50/60Hz (automatic detection)

**POWER CONSUMPTION:** 6VA max.

### OTHER MOUNTINGS:

Metal Indoor, add suffix Y

Plastic Indoor/Outdoor with clear window

NEMA 3R: add suffix C

Metal Indoor/Outdoor – NEMA 3: add suffix O

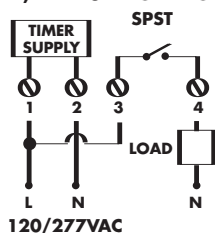
Flush with lock and key: add suffix FLG

Bracket mounting – specify mechanism only with bracket

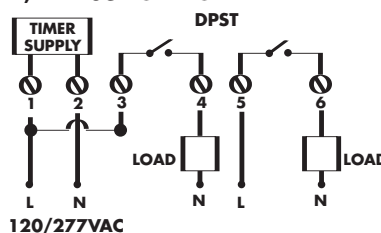
TYPE	CATALOG NO	UPC CODE	DRY CONTACTS	SCHEDULING	SET POINTS	MIN SETTING
24 HOUR	E101B	82401	SPST	SAME EVERYDAY	20	1 MIN
	E103B	82411	DPST	SAME EVERYDAY	20	1 MIN
	E120B	82406	SPDT	SAME EVERYDAY	20	1 MIN
7 DAY	EW101B	82431	SPST	capable of DIFFERENT SCHEDULES each day of the week	20	1 MIN
	EW103B	82441	DPST	capable of DIFFERENT SCHEDULES each day of the week	20	1 MIN
	EW120B	82436	SPDT	capable of DIFFERENT SCHEDULES each day of the week	20	1 MIN

## WIRING DIAGRAMS

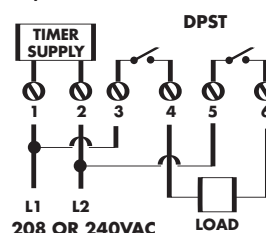
E, EW101B SERIES



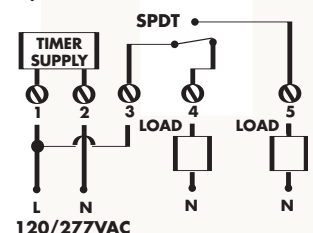
E, EW103B SERIES



E, EW103B SERIES



E, EW120B SERIES



### SERIES E, EW 101B (SPST) SERIES E, EW 103B (DPST)

#### DRY CONTACT RATINGS

LOAD TYPE	120VAC	208-277VAC
Resistive	40A	40A
Inductive	40A	40A
Ballast	30A	20A
Tungsten	15A	
Pilot Duty	720VA	720VA
Motor	1HP	1½HP@208VAC 2HP@240-277VAC

30A resistive @28VDC

### SERIES E, EW 120B (SPDT)

#### DRY CONTACT RATINGS

LOAD TYPE	120VAC		208-277VAC	
	NO	NC	NO	NC
Resistive	30A	30A	30A	30A
Inductive	30A	30A	30A	30A
Ballast	30A	10A	20A	10A
Tungsten	15A	2A		
Pilot Duty	720VA	720VA	720VA	720VA
Motor	1HP	1HP	1½HP@208VAC 2HP@240-277VAC	

all NO/NC 30A resistive @28VDC

## SPECIFICATION WRITER'S GUIDES

### Series E100B

1. Furnish and install a TORK digital time switch with (40 Amp SPST contacts, model E101B) (40 Amp DPST contacts, model E103B) (30 Amp SPDT contacts, model E120B).
2. Unit shall be capable of 20 set points.
3. Unit shall repeat the same schedule each day.  
WRITE 4-9 AS BELOW

### Series EW100B

1. Furnish and install a TORK digital time switch with (40 Amp SPST contacts, model EW101B) (40 Amp DPST contacts, model EW103B) (30 Amp SPDT contacts, model EW120B).
2. Unit shall be capable of 20 set points.
3. Unit shall be capable of a different schedule each day of the week.  
WRITE 4-9 AS BELOW

### APPLIES TO ALL MODELS:

4. Unit shall have automatic Daylight Savings Time and Leap Year compensation.
5. Unit shall program in AM/PM format.
6. Unit shall have LCD display.
7. Unit shall have permanent schedule retention.
8. Unit real time clock shall be retained by supercapacitor for 100 hours in a power failure.
9. Unit shall be capable of manual override ON or OFF either to the next scheduled event or permanently.
10. Unit shall have a NEMA 3R indoor/outdoor plastic enclosure.
11. Unit shall have Load Status indication.
12. Unit shall have Power Failure indication.

W  
R  
O  
T

MLI-203(REVA)

# TORK<sup>®</sup>

## INSTRUCTION MANUAL

CLOCK OPERATED SWITCH



### DIGITAL TIME SWITCH

**E101B**  
**E103B**  
**E120B**



**FOR TECHNICAL SUPPORT:**  
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**TORK MODELS E101B / E103B / E120B  
24 HOUR DIGITAL TIME SWITCH**

**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. To remove unit from enclosure: Push the tab on right to swing unit the 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. Unit should be programmed with AC power only and not while on super cap back up power.
4. Reinstall unit by reversing step #1 above and connecting wires to units as per suggested wiring diagrams. See illustration and warning on back page.
5. To reset the timer, insert a paperclip on the small hole next to the EVENT key. This procedure will allow you to reset the time but will not clear the memory.

**CAPABILITIES**

- 24 Hour Day scheduling.
- ON and OFF set points  
Total # - 20 per day
- Minimum setting: 1 minute

**FEATURES**

<b>Daylight Saving</b>	Automatic (can be adjusted).
<b>Leap Year</b>	Automatic compensation.
<b>Display</b>	LCD
<b>Manual Override</b>	Until the next schedule ON or OFF. Automatic operation then resumes.
<b>Power Outage</b>	Permanent schedule retention. Supercapacitor maintains real time up to 4 days.

**KEY FUNCTIONS:**

**Unit should be program with AC power. Do not program on super cap back up power.**

**Mode:** Press to go to the next mode.

**Enter:** Stores or saves current entry.

**DAY/YEAR:**

- a. Press to set the year in the DATE mode.
- b. Selects the desired day of the week in the DST (Daylight Savings Time) mode.

**OVR:**

- a. Press to change the load status in the AUTO (automatic) and the MAN (manual) mode.

**DEL/PREV:**

- a. Press to delete the displayed entry.
- b. Decrement the last selected entry.

**HOUR/MONTH:**

- a. Press to set hour in CLK (clock) mode and the SCH (schedule) mode.
- b. Press to set month in the DATE mode and DST (Daylight Savings Time) mode.

**MINUTE/DATE:**

- a. Press to set minutes in CLK (clock) mode and SCH (schedule) mode.
- b. Press to set date in the DATE mode.
- c. Press to select the week of the month in DST (Daylight Savings Time).

**ENTER:**

- a. Press to store the displayed information into memory. **Information will not be stored until the ENTER key is pressed.**

**Note:** During settings, each press of the key will advance one number. For rapid advance hold key in.

**EVENT:**

- a. Press to select ON/OFF in the schedule.
- b. Press to update the load status In the AUTO (automatic) mode.

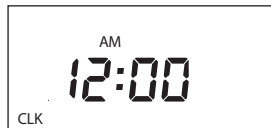
## PROGRAMMING YOUR E101B / E103B / E120B

**NOTE:** AFTER MAKING ANY CHANGES TO THE PROGRAM, PRESS **MODE** TO GO TO RUN MODE AND THEN PRESS **EVENT** TO UPDATE THE LOAD STATUS.

### AT POWER UP:

When powering up the unit for the first time, 12:00 will flash on the display. **NOTE:** Allow 1-2 minutes for the supercap to charge before any display is shown.

Press the **MODE** key to go to the CLK mode. After pressing the **MODE** key the display will show:



### 1.0 TO SET CLOCK

Press **HOUR** and **MIN** to advance to the present hour and mins. Check AM/PM, and press **ENTER**.

### 1.1 TO MODIFY CLOCK

Press **MODE** until the display shows: CLK. Press **HOUR** and **MIN**. to modify clock and press **ENTER**.

### 2.0 TO SET DATE

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



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 be automatically set once the date is set.

### 2.1 TO MODIFY DATE

Press **MODE** until the display shows DATE. Press **MONTH**, **DATE** and **YEAR** to modify present settings and then press **ENTER**.

### 3.0 DAYLIGHT SAVING TIME

After setting or modifying the date, display will show:



For standard USA daylight savings (DSt), press **MODE** then go to step 4.0. For dates other than standard USA dates, press **MONTH** and go to step 3.1. If daylight saving time (DSt) is NOT required, press **DEL** display will show:



Press **ENTER** then go to step 4.0.

### 3.1 TO MODIFY STANDARD USA DAYLIGHT SAVINGS DATES



Press **MONTH** and **DATE**, to modify S (starting) DST settings. **NOTE: DATE** will choose the week of the month to be assigned. Choices are 01 (1st), 02 (2nd), 03 (3rd) or L (Last) week of the month. The default day in SU (Sunday). Pressing **DAY** changes default day. **EXAMPLE:** 04:01 SU S represents the first Sunday in April.

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



Press **MONTH** and **DATE**, to modify E (ending) DST settings. **NOTE: DATE** will choose the week of the month to be assigned. Choices are 01 (1st), 02 (2nd), 03 (3rd) or L (Last) week of the month. The default day is SU (Sunday). Pressing **DAY** changes default day. **EXAMPLE:** 10:L SU E represents last Sunday in October.

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

Press **MODE** to go to step 4.0.

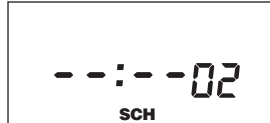
### 4.0 SCHEDULE SET MODE

Press **MODE** until display shows:



#### 4.1 SETTING HOURS AND MINUTES

Press **HOUR** and **MIN** to set desired time. Press **EVENT** to set desired event (ON/OFF) and then press **ENTER**. The display will show:



Follow the same procedures above to set more schedule entries.

#### 5.0 REVIEW, MODIFY AND DELETE

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

1. CLOCK MODE: Press **HOUR** and **MIN** to modify existing settings. Press **ENTER**.
2. DATE MODE: Press **MONTH**, **DATE** and **YEAR** to modify existing settings. Press **ENTER**. DAY is automatically adjusted.
3. DST Daylight Saving Time: To review press **ENTER**. To modify press **MONTH**, **DATE** and **DAY** to change existing setting. Press **ENTER**.
4. SCHEDULE MODE: Press **HOUR**, **MIN** and **EVENT** to modify time settings. Press **DEL** to delete. Press **ENTER** after each modification.
5. RUN MODE: The time, day, seconds, the load status and AUTO is displayed.

#### 6.0 OVERRIDE

**OVR** (Override) is effective in the **AUTO mode** and the **manual mode**. **OVR** on the AUTO mode is effective until the next event. **OVR** on the manual mode is effective indefinitely.

### 7.0 NOTES:

1. MAN mode: Under this mode the unit disregards the settings in the schedule mode and remains in its manually set status ON or OFF. **NOTE:** To resume regular schedule execution press the mode key to return to **AUTO** mode.
2. Unit will go to RUN MODE automatically (except on the MAN mode) if no key is pressed for five minutes.
3. Clear all memory. All memory can be cleared using the following procedure: While in the RUN mode, press **ENTER**, display will show:



Use **EVENT** key to display:



Now press **ENTER** briefly and everything in the timer memory will be erased, including real time and date. **NOTE:** Unit has permanent memory and will not be erased unless done through procedure above.

5. Upon powering up your E101B/103B/120B the display will show at what frequency the unit is operating, 50 will determine 50Hz or 60 for 60Hz. **NOTE:** While in the AUTO mode, if AC power is absent, the display will show a PF (power failure) instead of the seconds scrolling up.
6. 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.

