

TORK K-9EASO

**INSTALLATION
AND
USER'S GUIDE
K401Z, K601Z, K801Z**

DESCRIPTION:

The TORK "K-Seasonal" Series is a multi-circuit 4, 6, or 8 channel system designed for the load control of electrical energy in commercial, industrial, institutional and other facilities.

FEATURES:

- Allows for different daily schedules during various periods of the year.
- Allows for different signal durations on each channel (1-99 seconds).
- Holiday scheduling for up to 40 dates + 8 seasons of unlimited duration.
- 40 Multi-day ON/OFF or signal operations per channel, per week
- Astronomic Capability on any or all channels
- LCD readout displays scheduling instructions in everyday English
- Remote manual timed override requires only single momentary contact pushbutton – may be set from 1-255 minutes timed ON and may be pushed again to terminate
- Duty cycle ratio from 1-99 minutes with nine different patterns
- Staggered start feature
- Conventional AM/PM or 24 hour format
- Daylight Saving – automatic or user defined dates
- Leap year – automatic adjustment
- Safety override switch for each channel

INSTALLATION:

NOTES OF IMPORTANCE BEFORE BEGINNING INSTALLATION —

1. Make sure unit is grounded (earth ground).
2. If remote overrides are used, make sure these unpowered wires are not run in the same conduit as the load wires or supply voltage for the controller.
3. Controller must have its own dedicated 120VAC(*) power source; i.e., NO OUTLETS OR OTHER LOADS ATTACHED TO THE SAME SUPPLY SOURCE COMING FROM YOUR BREAKER PANEL.

The following instructions must be followed to assure proper controller program functions:

- The Controller is to be installed where temperatures will remain between 32-120 degrees Fahrenheit. For trouble-free operation, it should not be exposed to mechanical vibrations, dusty conditions, corrosive sprays or condensing humidity.
- Controller relays are plug-in type; SPDT dry contacts (unpowered) with LED indication when N/O contacts are energized. Contacts are 10 AMP @ 120VAC/240VAC/28VDC and 1/3 HP @ 120VAC.
- To install unit, open front cover, remove (2) screws on right side of inside front panel and swing panel to left. Locate upper screw keyhole and two lower screw holes.
- For convenience, mount unit so LCD display is at eye level and fasten with #10 sheet metal screws or other suitable fastening devices.
- Connect 120VAC(*) power (dedicated), SEE DIAGRAM INSIDE FRONT DOOR. POWER FEED IS BROUGHT TO RIGHT HAND CORNER TERMINAL BLOCK.
- CONNECT LOAD WIRES to lower terminal board. LED will light indicating "ON" between C and N/O, if programmed to be *ON* or by manual override. See Figure 2 as typical.
- If remote override is to be used, connect remote override (2 wires per channel for appropriate loads) to terminal block in top left side inside panel. Use a momentary push-button (bell-type button) — one wire to load, one to common. **DO NOT CONNECT ANY POWER TO THESE TERMINALS.**
- When unit is first powered battery is not connected. The unit will prompt you to *PRESS BATTERY SWITCH — THEN PRESS ENTER.*
- Locate the slide switch next to battery on circuit board (see drawing located inside front door) and slide it left into the ON position. Return inside front panel to proper position and fasten with screws. Then *PRESS ENTER* button. The model number will first be displayed. Verify that it matches the model number on your unit. If not, call TORK.

* For -2 use 240VAC 50/60HZ. Not UL and CSA approved.

DESCRIPTION OF KEYS — See Figure 9

0-9	Serves to set load numbers, time, and day of week for ON/OFF entries as well as real time and date.
Exit	Allows unit to return to RUN MODE immediately after any entry.
AM/PM	Used to set AM or PM.
YES	Used to answer YES to questions posed by Controller, also enters information into the memory. Confirmed by double audible <i>BEEP</i> .
NO	Used to answer NO to questions posed by Controller, or advance to the next instruction, or delete any entry already in the REVIEW MODE.
Reverse	Permits return to a previous question in the scheduling routine or enters options mode from the run mode.
Enter	Must be pressed to store entries into memory.

SET REAL TIME AND DATE

- Display is now showing: **SET TIME HH:MM**
- Using the appropriate numeric keys, enter time. *Example: 09:30*. If an error is made, key in all zeros and begin again.
- Press AM/PM, then *PRESS ENTER*.
- Next display will show: **SET DATE MM/DD/YY**. *Example: April, 2, 2000 = 04/02/00*. *PRESS ENTER*.
- Unit will now proceed to the run mode and time, date, and day of the week will be displayed in rotating order. Day of the week will automatically be displayed by date recognition.
- Familiarize yourself with the Controller by entering sample schedule provided.
- **AT THIS TIME, LOAD SCHEDULES SHOULD BE PREPARED AND ENTERED ON SCHEDULE SHEETS PROVIDED (REFER TO SAMPLE).**

OPERATION

There are two modes of operation: RUN and SET.

RUN: The controller will display in sequence day, month, year, time of day in AM/PM or 24 hour format.

SET: To enter the set mode, *PRESS ENTER* or *REVERSE*. IN THIS MODE, IF NO ENTRIES ARE MADE IN (5) MINUTES, UNIT WILL RETURN TO THE RUN MODE.

NOTE: *If YES key is not pressed after any given entry, it will NOT be entered — likewise if EXIT key is pressed.*

In the SET MODE, the Controller will display and prompt the following:

- 1 — Set time
- 2 — Set date
- 3 — Set or review schedule
- 4 — Set or review holiday dates
- 5 — Set or review seasonal dates
- 6 — Enter options mode

AUDIBLE SIGNALS

A 'one beep' will sound when any key is pressed. A double beep will sound when a correct entry is accepted into the memory.

When an entry is deleted by pushing the *NO* Key, a multi beep will sound.

SCHEDULING

- To advance to scheduling, *PRESS ENTER* button. Unit will ask — **Do you want to set time?** Since time has already been set, *PRESS NO*.
- Unit will then ask — **Do you wish to set date?** Since the date has already been set, *PRESS NO*.
- Unit will then ask — **Do you want to set or review schedule?** *PRESS YES*.
- You are now ready to begin scheduling.

NOTES:

- In order to keep a load ON past midnight, YOU MUST SCHEDULE AN ADDITIONAL ON AT 12:00 A.M. (00:00 MILITARY TIME) FOR THE NEXT DAY (except for Astronomic).
- IF ANY CHANNEL IS TO BE SET FOR ASTRONOMIC, IT MUST BE SCHEDULED IN THE OPTIONS MODE — SEE ASTRONOMIC SETTINGS (Steps 28-40)

1. Enter load number (channel).

Normally you would begin by pressing #1. Then *PRESS ENTER*.

2. Seasonal Schedule?

If desired, *PRESS YES*. If not, *PRESS NO* and proceed to Step #3. Seasons can be assigned to loads which require omission of schedules or special schedules. Up to 8 seasons can be assigned and each one can be used for any or all loads.

Enter the number or numbers of the seasons you want for load #1 (refer to your schedule sheet). *PRESS ENTER*. **NOTE:** Season dates will be set later.

NOTES:

Seasons can extend for several days, weeks, or months, and may be used for a school's summer shut down or alternate schedule for retail stores during changing holiday seasons.

Seasons take priority according to season number where the higher number supersedes the lower ones.

Example: Season No. 1 is from June 1 through June 30, **ON** at 9:00 A.M. and **OFF** at 3:00 P.M. Season No. 2 is from June 20 through June 25 and schedule is 8:00 A.M. **ON** and 5:00 P.M. **OFF**. Season No. 2 will take priority for those five days then revert back to the schedule of Season No. 1.

3. Which days of the week?

Press days you want to enter a schedule for load #1. If you press a day by mistake, simply press that button again and it will be removed from the display. After all days are displayed, *PRESS ENTER*.

4. Turn Load ON?

PRESS YES.

NOTE: For a signal timer channel, the display will show 'ENTER TIME OF THE SIGNAL'.

NOTES:

Any schedule programmed for one or more seasons becomes a seasonal schedule. This schedule will be active only for the duration of the season(s) on the days selected.

Any schedule programmed *without* any seasonal assignment, will become a regular schedule and will be active on the days selected when *no* season is active.

If an ON or OFF event is to occur every week whether a season is active or not, you must enter 2 schedules for it — a seasonal schedule selecting all the seasons and a regular schedule.

Example: Channel #1 controls outside lights which are to turn off everyday at 11:00 P.M.

Schedule 1: Season 1, 2, 3, 4, 5, 6, 7, 8	Schedule 2:	S M T W T F S H
S M T W T F S H		11:00 PM
11:00 PM		OFF
OFF		

DUTY CYCLE ASSIGNMENT

5. **Duty Cycle?**

There are 9 variations of duty cycles. If desired, *PRESS YES*. If not, *PRESS NO* and proceed to Step #8.
NOTE: Duty cycle will always begin with the OFF cycle.

6. Enter duty cycle number which represents the pattern required (refer to schedule sheet). *PRESS ENTER*. PATTERN ITSELF WILL BE SET IN STEP #23.

7. **Set ON Time**

Enter the hours and minutes. Be sure AM/PM is correct. *PRESS ENTER*.

NOTE: TO MAINTAIN ANY LOAD ON PAST MIDNIGHT, AN ADDITIONAL ON MUST BE ENTERED FOR 12:00 AM.

8. Unit will now review the entire ON sequence —

Load number

Season number(s)

Days of week

Time ON

Duty cycle number

Unit will ask **IS THIS OK?**

If YES is pressed, above entries will be entered. If NO is pressed, above entries will be deleted.

9. **Another Schedule Entry for Load #1?**

PRESS YES because an OFF entry must be entered.

10a. Season number(s) previously set for ON will be displayed. Press the number of any season you want to add or delete from the OFF entry. *PRESS ENTER*.

10b. **Days previously set for ON will be displayed.**

Normally the same days scheduled for ON will be scheduled for OFF . . . however, if a different OFF time is needed for one of the ON days, press that day's button to delete it. When the desired OFF days are displayed, *PRESS ENTER*. Seasonal holiday number(s) will be displayed. *PRESS ENTER*. **TURN LOAD ON? PRESS NO.**

11. **Set OFF Time**

Enter the hours and minutes. Be sure AM/PM is correct. *PRESS ENTER*.

12. Unit will now review entire OFF sequence —

Load number

Season number(s)

Days of week

Time OFF

Unit will ask **IS THIS OK?**

If YES is pressed, above entries will be entered. If NO is pressed, above entries will be deleted.

13. **Another Schedule Entry for Load #1?**

If another schedule is required, *PRESS YES* and follow above procedures. If no additional schedule is required for load #1, *PRESS NO*.

14. **Do You Want to Set or Review Schedules?**

PRESS YES and enter schedules for all other load numbers following above procedures. After all are entered, answer NO to question #14.

HOLIDAY DATES

15. **Do You Want to Set or Review Holiday Dates?**
PRESS YES. If not, *PRESS NO* and proceed to Step #18. Enter holiday date (month and day). *PRESS ENTER.*
16. **Add another Holiday?**
Enter additional holidays up to a maximum of 40 dates — unit will arrange them chronologically.
17. **Do You Want to Set or Review Holiday Dates?**
PRESS YES to review or add dates. *PRESS NO* to proceed.

SEASONS

18. **Do You Want to Set or Review Season Dates?**
PRESS YES if seasons are required. If not, *PRESS NO* and proceed to Step #22. Enter season number beginning with #1. (Refer to your schedule sheet). *PRESS ENTER.*
19. **Enter Starting Date**
PRESS MONTH/DAY. PRESS ENTER.
20. **Enter Ending Date**
PRESS MONTH/DAY. PRESS ENTER.
21. **Do You Want to Set or Review Season Dates?**
PRESS YES to enter additional season numbers up to a maximum number of 8. *PRESS NO* to proceed.
22. **Do You Want to Enter Options Mode?**
PRESS YES. (If *NO* is pressed, unit will skip all remaining options/steps and return to RUN mode).

NOTES:

Seasons must have a beginning month/day and an ending month/day.

If a season date is programmed and no schedule is entered for it, all loads will remain OFF during that season.

IF A SEASON'S START DATE IS LATER IN THE YEAR THAN ITS END DATE, IT WILL CROSS THE YEAR BOUNDARY.

OPTION MODE FEATURES

In the OPTIONS MODE, you will have the following features:

Duty Cycles

Remote Timed Overrides

Astronomic Function

Load Outputs (Signal Timer)

Standard and Daylight Savings Options

AM/PM or Military Time Format

Clear All Memory? If YES is pressed, Are You Sure? will be asked. If YES is pressed, you will delete your entire schedule and must start over again.

DUTY CYCLE PATTERN

23. **Do You Want to Set or Review Duty Cycles?**
PRESS YES if duty cycle patterns are required. If not, *PRESS NO* and proceed to Step #26. *ENTER* Duty Cycle Number — *PRESS ENTER.*
24. **Enter Minutes OFF/ON**
PRESS MINUTES (1-99) OFF and 1-99 ON. Then *PRESS ENTER.*
25. **Do You Want to Set or Review Duty Cycles?**
PRESS YES and enter next duty cycle number and pattern. Repeat for all other duty cycles up to a maximum of 9. (Refer to your schedule sheet). *PRESS NO* to proceed.

REMOTE OVERRIDE

26. **Do You Want to Set or Review Remote Override Time?**
PRESS YES if required. If not, *PRESS NO* and proceed to Step #28.
Enter Load Number — *PRESS ENTER*
Load 1 Remote Override time MIN 000 **IS THIS OK?**
PRESS NO for unit to delete 000.
Unit asks — **ENTER Remote Override Time.**
ENTER amount required up to 255 minutes. (4 hours, 15 minutes)
Unit will review entry and ask if OK?
PRESS YES if correct. If not, *PRESS NO* and enter a different time.
27. Unit will again ask **Do You Want to Set or Review Remote Override Time?**
PRESS YES for any additional override times or *PRESS NO* to proceed.

NOTE:

A signal timer channel will turn ON only for the programmed signal duration when the remote input is activated.

ASTRONOMIC SETTINGS

NOTE: To set channel for Astronomic from the RUN MODE, *PRESS REVERSE*. *PRESS YES* to enter options, *PRESS NO* until units asks for Astro. Now *PRESS YES*, then proceed as below:

28. **Do You Want to Set or Review Astro?**
PRESS YES if you want to set a channel or channels to ASTRO MODE.
If not, *PRESS NO*, and you will be transferred to the next option (pulse switching).
29. **Latitude 10 Deg North. Is this OK?**
PRESS YES if this latitude is desired or *PRESS NO* if you wish to choose a different latitude.
If *NO* is pressed, display shows:
Is North Latitude OK?
Answer *YES* or *NO*. If *NO* is chosen, display shows:
30. **Is South Latitude OK?**
After one of the above questions is answered *YES*, display shows:
ENTER LATITUDE _____ DEG
Enter latitude between 10 and 60 degrees, then *PRESS ENTER*. Check with your local weather bureau for the correct latitude in your area.
Unit will now display latitude and degrees chosen and asks, IS THIS OK? If correct, *PRESS YES*. If *NO* is pressed for South Latitude, unit will ask if North Latitude is OK.
31. **Enter Load Numbers**
Enter the load number for which ASTRO MODE is desired, then *PRESS ENTER*.
32. **WHICH DAYS?**
Select days for which Astro operation is desired, then *PRESS ENTER*.
33. **Seasonal Schedule?**
If you want your normal Astro schedule during any Season, *PRESS YES*.
34. **Display Asks: Which Seasons?**
Select any Season during which you want astronomic schedule to occur, then *PRESS ENTER*. You must enter *ALL* Seasons if you wish year round ASTRO operation.
NOTE: Sunrise OFF will automatically be entered for every day, holiday, and season.
35. **Sunrise AM ##:##**
Enter Offset _____ Min
Enter how many minutes (1-99) before or after sunrise you want Astro-Off to occur, then *PRESS ENTER*, or enter two zeros if no offset is desired.
36. **After Sunrise?**
PRESS YES if you want lights to go OFF after sunrise. Otherwise *PRESS NO*. If *NO* is pressed, display asks: BEFORE SUNRISE?

After you answer *YES* to one of the above questions, the display then shows:

37. **Sunset PM ##:##**

Enter Offset _____ Min

Input how many minutes (1 to 99) before or after sunset you want Astro-On to occur, then *PRESS ENTER*, or enter two zeros if no offset is desired.

38. **After Sunset?**

PRESS NO if you want lights to come ON before sunset. Otherwise, *PRESS YES*. After you answer *YES* to one of the preceding questions, the Astro settings are reviewed. The display shows:

39. **Load Number #**

S M _ _ _ F _ H

_ 2 3 _ _ 6 _ _

OFF # # Min After or Before Sunrise

ON # # Min After or Before Sunset

Is This OK?

Answer *YES* if the information is correct. If you answer *NO*, all Astro settings are deleted. Enter new settings.

40. **Another Load?**

If you want to set or re-schedule another load number, *PRESS YES* and follow above steps.

Programming is complete. You may review or re-program an Astro load, or program a new Astro load by returning to above steps.

ASTRONOMIC WITH STANDARD ON/OFF SCHEDULE

If you desire to have astronomic ON at sunset and time switch OFF at a preset time, then ON again during the night and astronomic OFF at sunrise, see: *REGULAR SCHEDULING* procedures. Schedule an OFF at night and an ON before sunrise. *NOTE: DO NOT set an AM ON AFTER 2:30 A.M. ABOVE 50 DEGREES NORTH LATITUDE.*

IMPORTANT NOTES:

Astro loads can also be reviewed in the Schedule/Set Review Mode. It cannot however, be altered or deleted in this mode.

Duty Cycling may not be set for loads assigned to Astro.

Astro-ON and Astro-OFF times are automatically adjusted for Daylight Saving Time.

Normal ON/OFF schedules for an Astro channel are set in schedule review. *ANY ASTRO LOAD CARRIES PAST MIDNIGHT AUTOMATICALLY.*

LOAD OUTPUTS (SIGNAL TIMER)

41. **Do You Want to Set or Review Load Outputs?**

PRESS YES if required. If not, *PRESS NO* and proceed to Step #45.

ENTER LOAD NUMBER for which you would require a signal timer. *PRESS ENTER.*

42. **Maintained Output. Is this OK?**

PRESS NO since signal output is required.

43. **Signal Output. Is this OK?**

PRESS YES.

43a. **Enter Duration in Seconds.**

Use the numbered keys to set the signal duration (1-99 seconds.) *PRESS ENTER.*

43b. **Load Number #**
Signal Duration
Sec. # #

Is This OK?

Answer YES if the information is correct.

44. **Do You Want to Set or Review Load Outputs?**

PRESS YES for additional signal timer loads or *PRESS NO* to proceed.

DAYLIGHT SAVING

45. **Is Standard Time OK?**

PRESS NO if your area has daylight saving time. *PRESS YES* only if your area does NOT use daylight saving time, and proceed to Step #51.

46. **Is Daylight Saving OK?**

PRESS YES.

47. **Is U.S. option OK?**

This is automatic daylight saving. It will advance 1 hour on the first Sunday in April and turn back 1 hour on the last Sunday in October. If this applies to your area *PRESS YES* and unit will proceed to Step #51. If not, *PRESS NO.*

48. **Enter Spring Date**

Any date may now be entered for the beginning of daylight saving. *PRESS ENTER.*

49. **Enter Fall Date**

Any date may now be entered for the end of daylight saving. *PRESS ENTER.*

50. Unit will review Spring and Fall dates and ask IS THIS OK? *PRESS YES,* If correct. If not, *PRESS NO* and enter new Spring and Fall dates.

AM/PM or 24 HOUR FORMAT

51. **Is AM/PM format OK?**

PRESS YES for standard AM/PM format. *PRESS NO* if 24 hour military format is desired. Then *PRESS YES.*

CLEAR ALL MEMORY

52. **Do You Wish to Clear All Memory?**

CAUTION: If *YES* is *PRESSED,* unit will ask if you are sure. If *YES* is *PRESSED* again, **ALL MEMORY WILL BE DELETED.**

ENTER HOLIDAY SCHEDULE FOR SINGLE DATES

Inserting a holiday schedule is the same as assigning a normal weekly schedule to a load. However, a holiday schedule should be entered after all other schedule entries are completed. One schedule will apply to all single date holidays. Holidays will be effective for all loads. If no schedule is entered for holidays for any load, it will remain OFF during the holiday.

Proceed to the mode for **REVIEW OR SET SCHEDULES.**

PRESS YES.

Enter load number(s) to be assigned. All previous entries will be reviewed by the unit. Continue to press *YES* until unit asks for another schedule entry.

PRESS YES.

Seasonal Schedule?

Answer YES to program for holiday dates that fall within any season. Answer NO to program a regular holiday schedule.

Which Days?

PRESS HOL

PRESS ENTER

Turn Load ON?

PRESS YES and proceed with regular scheduling.

NOTES: A season date will take priority over a single holiday date. If single day holidays fall both within a season and outside a season, they must be scheduled for separately within the season(s) and outside the season(s). Both a seasonal schedule and a regular schedule must be entered.

Single day holiday schedules will take priority over daily schedules. Single day holidays in one season can have a different schedule from single day holidays in another season.

REVIEW — CHANGE — ADD — DELETE

The unit is capable of selective review, change, add, or delete. Simply proceed to the desired mode (load schedule, holiday dates, season dates, options) and then press the YES button. By answering the self-prompting questions the user can review entries, change them, add new ones, or delete entirely.

NOTE: ASTRO can only be deleted or changed in the ASTRO OPTION.

HARDWARE RESET: A hardware reset button is provided on the rear of the display panel through a hole in the metal plate. Pushing this button causes the microprocessor to restart the program without erasing the clock or memory information. All channels will turn off momentarily and then stagger back on in 5 second intervals.

IMPORTANT NOTE: When using this unit to control inductive loads such as lighting contactors, relays or those which generate excessive electrical noise, we recommend installation of a surge suppressor such as TORK Part #90058-1 for each inductive load.

SPECIFICATION WRITER'S GUIDE FOR TORK K SEASONAL

- Furnish and install where indicated a Microprocessor-based Digital Controller with (4), (6), or (8) channels, each channel programmable for each day of the week on a separate schedule, or repeat function for everyday of week, with one setting.
- Controller shall be capable of different daily schedules during various periods of the year.
- Controller shall be capable of different signal durations on each channel (1-99 seconds)
- Program entries shall be made by mechanical push-button and an acknowledgement of each entry into the unit shall be by audible signal.
- Override switches shall be provided for continuous ON or OFF and automatic and visual indicators for each channel.
- Controller shall provide 365 day programming in advance with up to 40 Holiday dates and 8th Day Holiday schedule. Also 8 Seasons of unlimited duration, each capable of a different schedule.
- Each channel shall have independent programming with 40 ON/OFF pairs per week or 40 signals per week.
- Each channel shall have 0-255 minutes remote timed override, user adjustable.
- Controller shall have AM/PM or military time, user selectable
- Controller shall have automatic daylight saving or standard time. Daylight Saving option will offer U.S. option (first Sunday in April/last Sunday in October) or any user selectable dates.
- Controller shall have up to nine different duty cycle patterns settable from 1-99 minutes OFF and 1-99 minutes ON.
- Controller shall have signal timer or maintained output contacts, user selectable.
- Controller shall have plain English self prompting display.

SPECIFICATIONS

Input Voltage:	120VAC(*), 50/60HZ
Power Consumption:	36VA maximum
Output Contacts:	SPDT — dry contacts (unpowered)
Contact Rating:	10 AMP Resistive @ 120VAC/240VAC/28VDC; 1/3HP @ 120VAC
Battery Backup:	Six months cumulative battery reserve (10 years shelf life)
Fuse:	20mm - 3/8 A
Temperature:	32-122 degrees Fahrenheit (0-50 degrees centigrade)
Enclosure:	NEMA 1, surface mount
Size:	10"W X 15"H X 4"D
Weight:	14 LBS. (6.35KG)
Knockouts:	1/2" - 3/4" sides and bottom

* For -2 use 240VAC 50/60HZ. Not UL and CSA approved.

“K-SEASONAL” SCHEDULING FORMS

HOLIDAY SINGLE DATES	
1.	21.
2.	22.
3.	23.
4.	24.
5.	25.
6.	26.
7.	27.
8.	28.
9.	29.
10.	30.
11.	31.
12.	32.
13.	33.
14.	34.
15.	35.
16.	36.
17.	37.
18.	38.
19.	39.
20.	40.

SEASONS		
#.	START DATE	END DATE
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

DUTY CYCLE PATTERNS		
#.	MIN. OFF	MIN. ON
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		

LOAD NO. 1

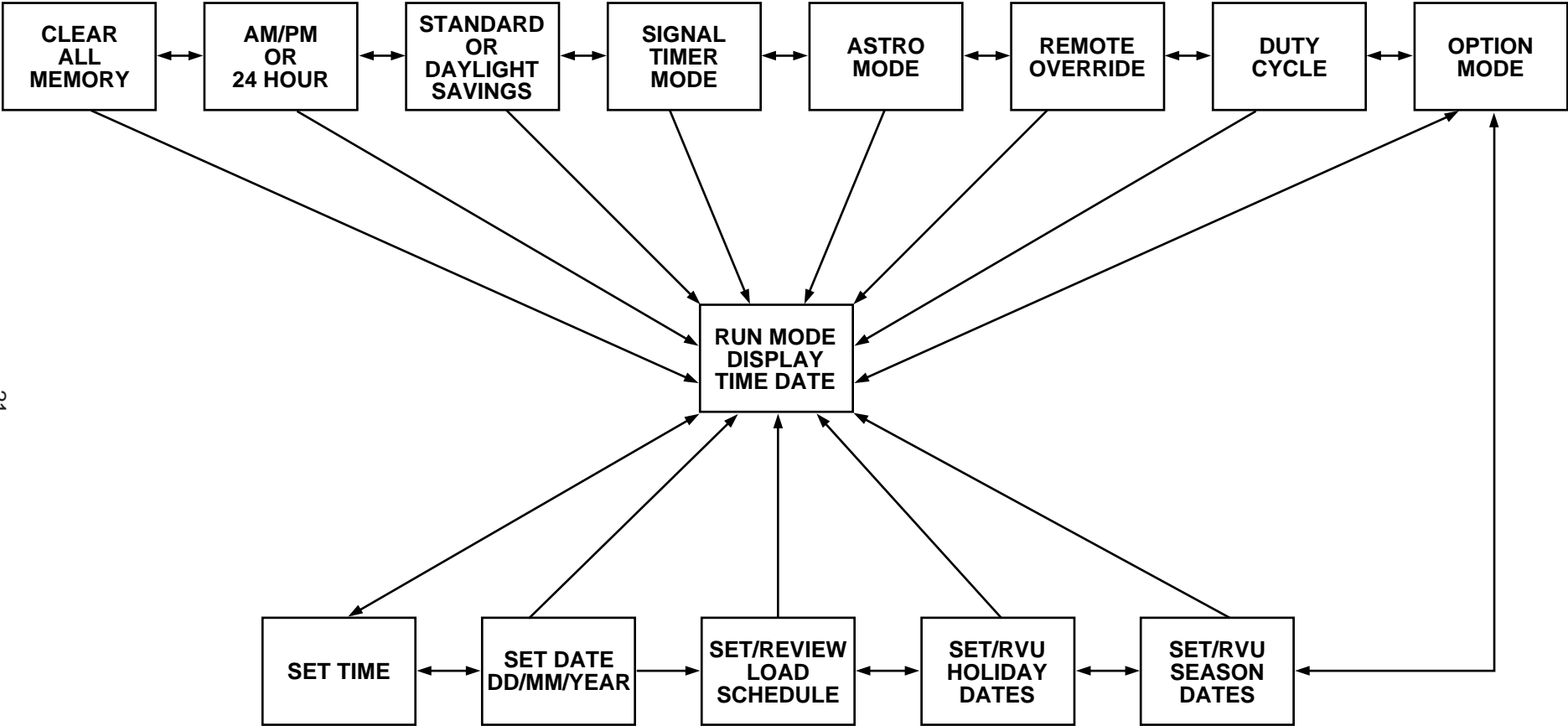
LOAD NAME OVERHEAD SIGN

SIGNAL
 DURATION _____ SEC.

SEASON NUMBERS								M	Tu	W	Th	F	Sa	Su	H	ON/ OFF/ SIG	DC #	TIME	AM/PM	ASTRO- NOMIC	OFFSET SUNSET	OFFSET SUNRISE		
1	2	3	4	5	6	7	8																	
✓								✓	✓	✓	✓	✓						ON		5:00	PM			
✓								✓	✓	✓	✓	✓						OFF		7:00	AM			
																						✓	-15	+10

SAMPLE

"K-SEASONAL" BLOCK DIAGRAM



TORK K-SEASONAL

DIGITAL TIME SWITCHES & ENERGY MANAGEMENT CONTROLS

RELAY OR CONTACTOR SWITCHING

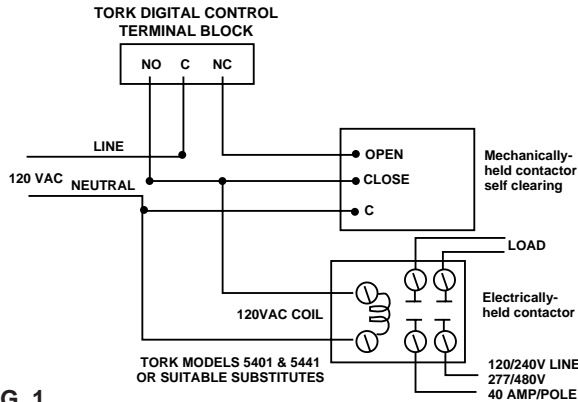


FIG. 1

LINE VOLTAGE SWITCHING LOAD DIRECT

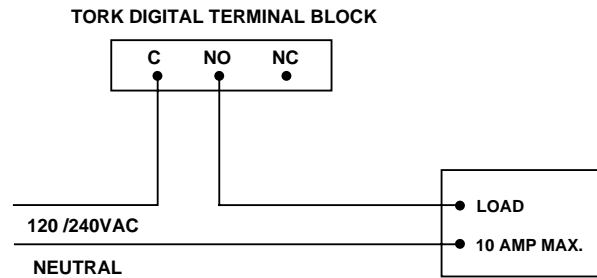


FIG. 2

PHOTOELECTRIC CONTROL INTERFACE

Tork Model 2101 — Conduit Mount

Tork Model 5021S with 2421 — Bracket Mount

Model 5401 — DPST

To control lighting circuits where a Photoelectric control turns "ON" at dusk and "OFF" by preset times of 120VAC controller. Controller can be set to turn "ON" early a.m. before dawn, and have Photoelectric control turn "OFF" at dawn . . . turn back "ON" at dusk, and controller turns lights "OFF" during nights when lighting is no longer needed.

Photoelectric control can be wired directly to 120VAC control circuits.

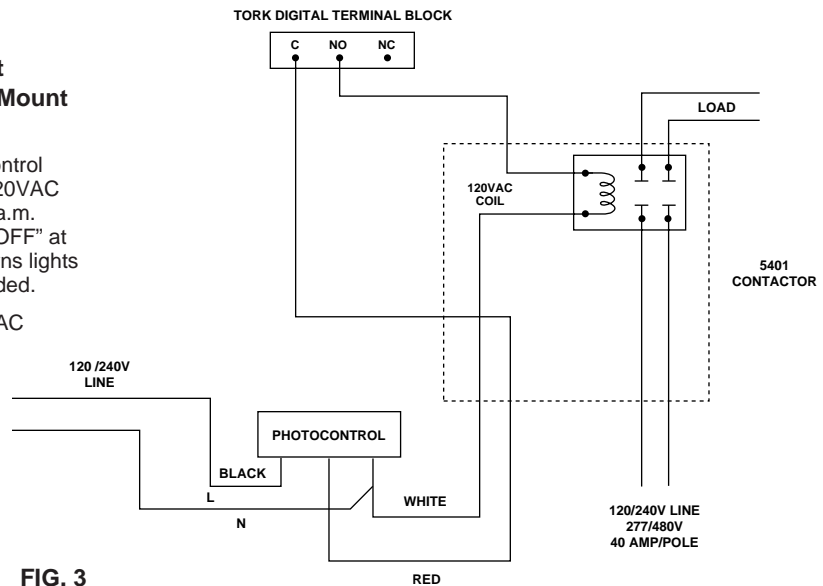


FIG. 3

MOMENTARY CONTACT

Tork Model SMC-3D

The SMC-3D will operate low voltage latching relays or mechanically-held contactors with or without remote manual push button override.

The adapter converts a constant applied 120VAC (input) to a 2 second contact closure at the "ON relay" output closing common and normally open (C, NO). When the constant applied 120VAC input opens, a 2 second contact closure at the "OFF relay" output between common and normally open (C, NO) occurs. The SMC-3D can be operated by any TORK Time Controller or a remote manual SPST standard constant "ON-OFF" switch.

The SMC-3D will pulse "ON" an electrically-held contactor or motor starter with self contained "ON-OFF" push buttons. "ON" relay will pulse 2 second "ON" and electrically hold the contactor "ON". By interrupting the holding circuit of the contactors "OFF" button across common and normally closed (C, NC) of the SMC-3D "OFF" relay the 2 second opening of common and normally closed (C, NC) will allow the electrically held contactor to open, thereby going "OFF".

MOMENTARY CONTACT ADAPTER FOR USE WITH MECHANICALLY-HELD CONTACTORS

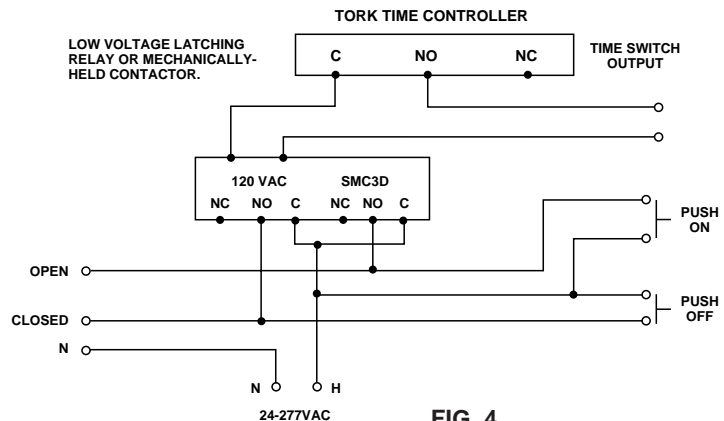


FIG. 4

TORK K-SEASONAL

DIGITAL TIME SWITCHES & ENERGY MANAGEMENT CONTROLS

REMOTE SWITCHED OVERRIDES

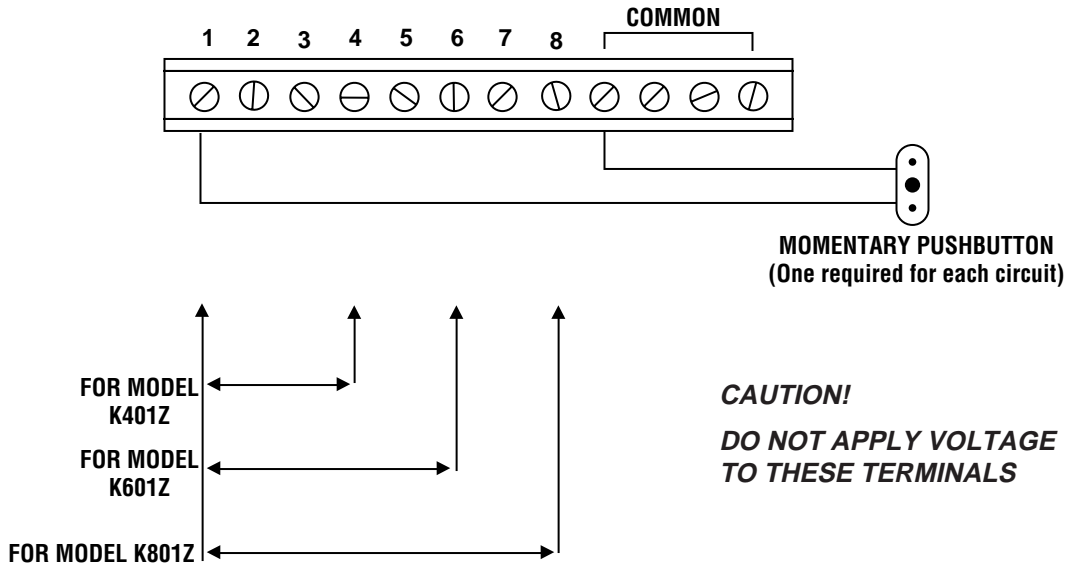


FIG. 5

TRANSFORMER RELAY POWERPACK (TRP) ACCESSORY

SINGLE CIRCUIT CONTROL

APPLICATION:

For direct control by TORK digital time switches or lower amperage mechanical time switches where switching of higher load capacity is necessary. For example, 1.0 HP exhaust fan is switched by a TORK controller using simple low voltage wire.

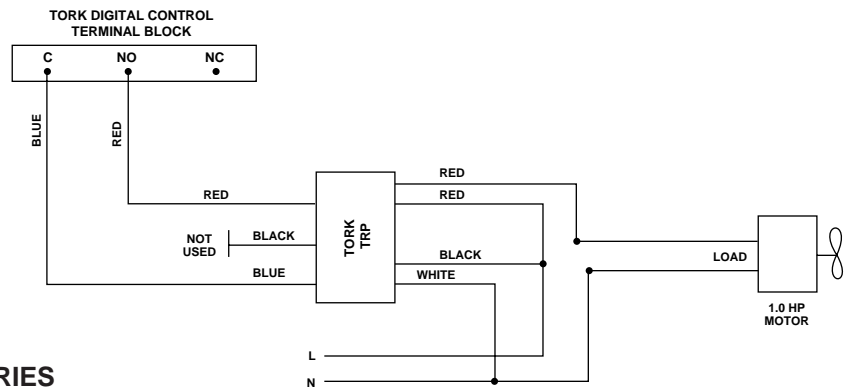


FIG. 6

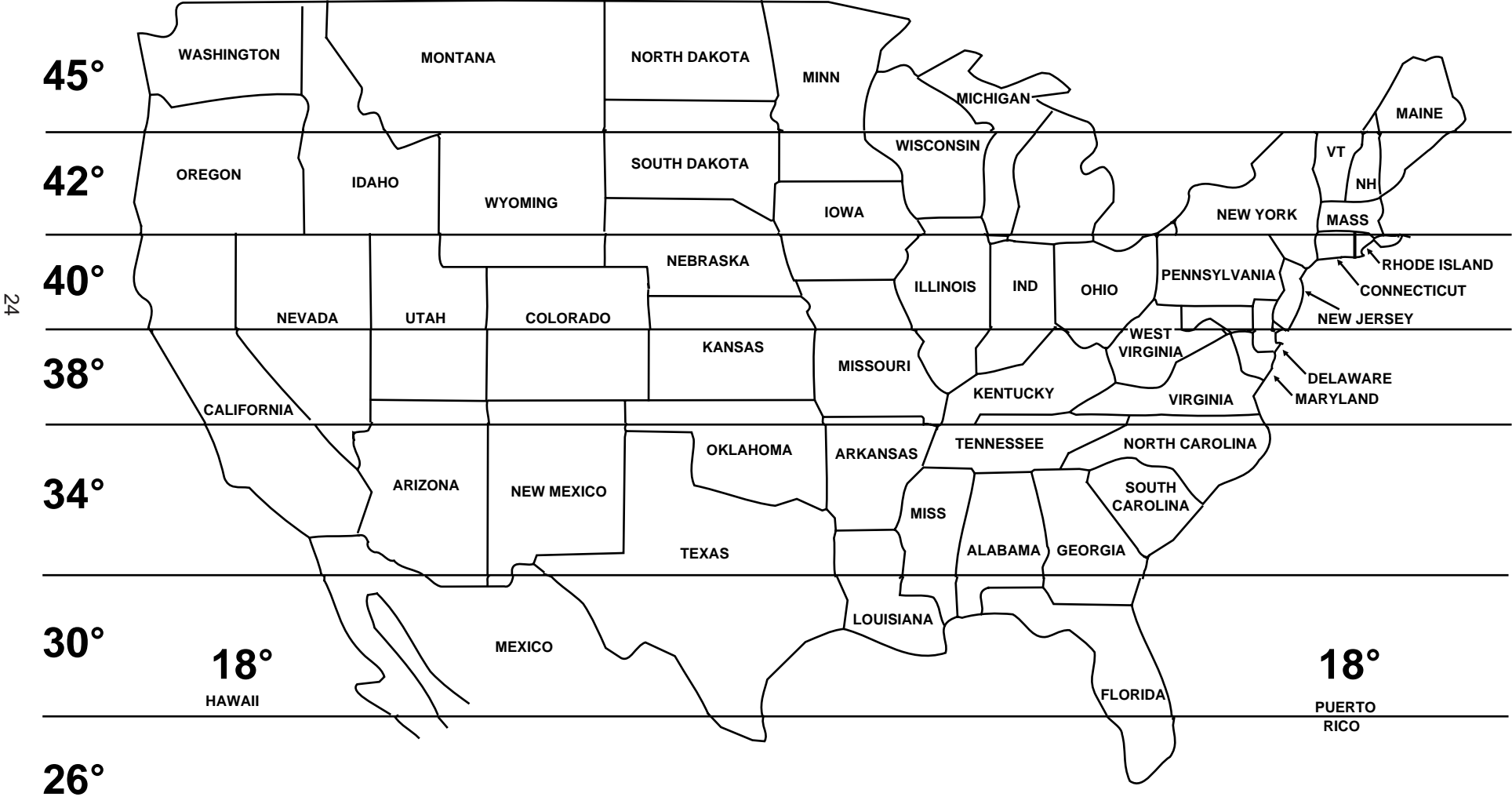
SWITCHING CAPACITY — TRP SERIES

20A Ballast	TRP 1 — 120VAC input
20A Tungsten (at 120VAC)	TRP 2 — 277VAC input
General Use	TRP 5 — 230VAC input
1.0 HP at 120VAC	
1.5 HP at 230/277VAC	

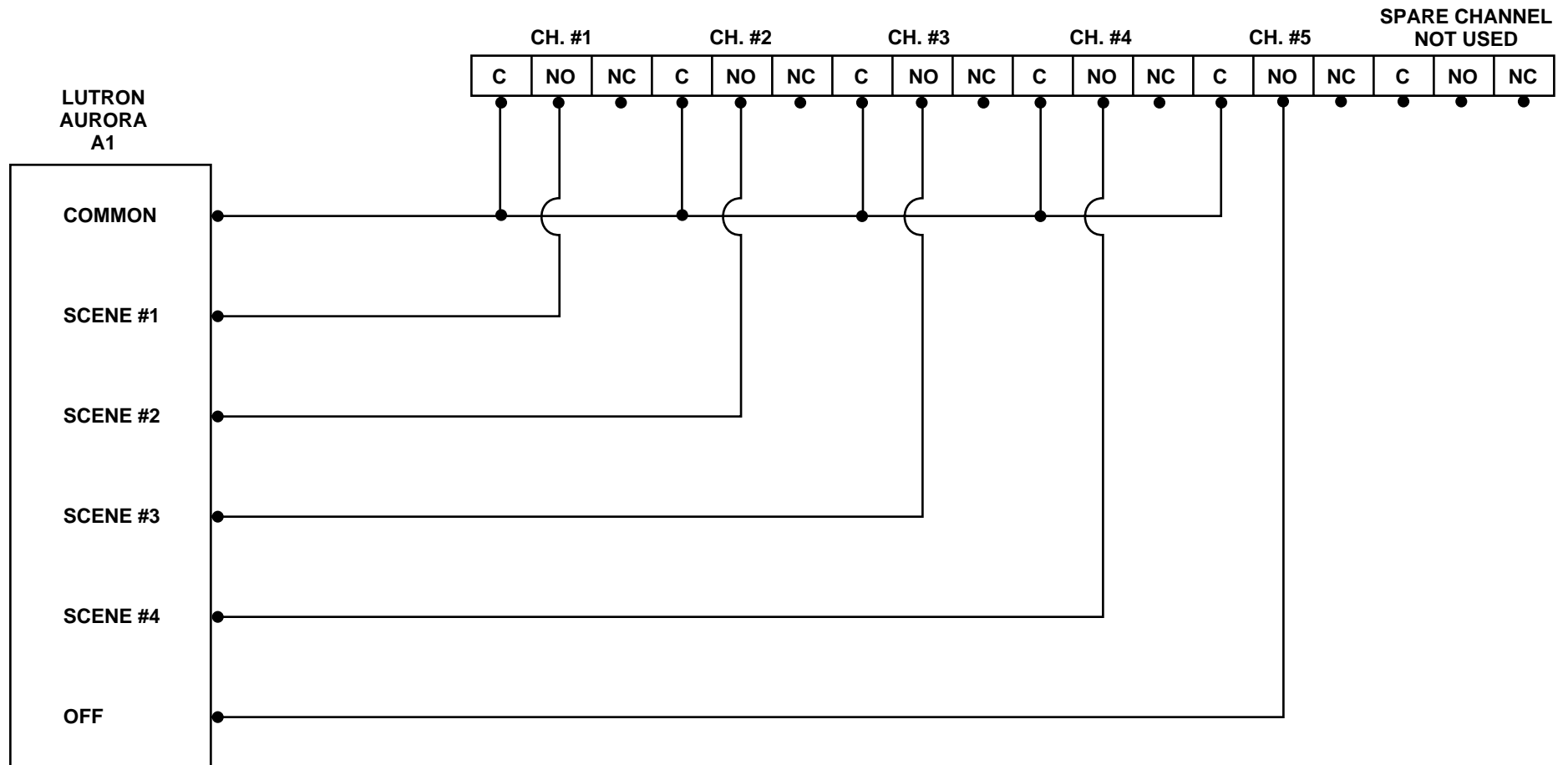
Choose the correct TRP for each load

TORK®

ASTRONOMIC LATITUDE ZONES



TORK K601Z DIGITAL TERMINAL BLOCK



25

TYPICAL WIRING DIAGRAM FOR INTERFACE
 TORK K601Z DIGITAL TIMER WITH
 LUTRON AURORA SYSTEM A1, MOMENTARY OR MAINTAINED

TORK K-SEASONAL

DIGITAL TIME SWITCHES & ENERGY MANAGEMENT CONTROLS

A typical wiring diagram of how to use K-Seasonal for night set-back for heating or night set-up for cooling.

Winter Set-back: Set 2-wire night thermostat at 55°F. When control is "OFF" temperature will not go below 55°.

When control is "ON" (day hours) day thermostat set at 70° to 72° will override night thermostat.

Summer Set-up: Night thermostat is usually set at 90° to 95°. When control turns "ON", day thermostat will override night setting and cool to (76° to 78°) day setting.

TYPICAL CONNECTION FOR TORK DIGITAL TIME SWITCH AND DAY/NIGHT THERMOSTAT WITH HVAC EQUIPMENT

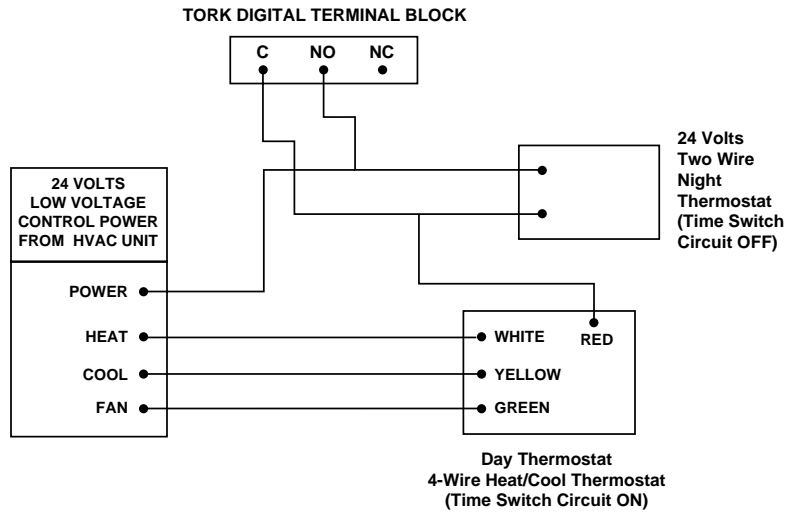


FIG. 7

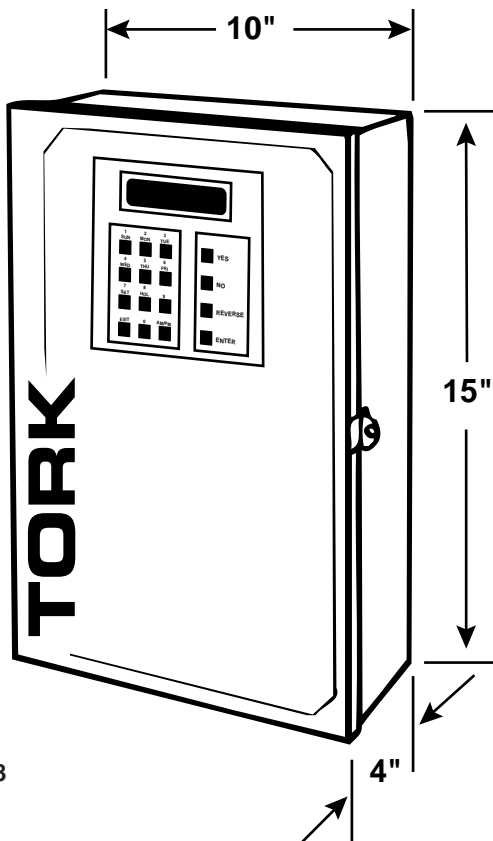


FIG. 8

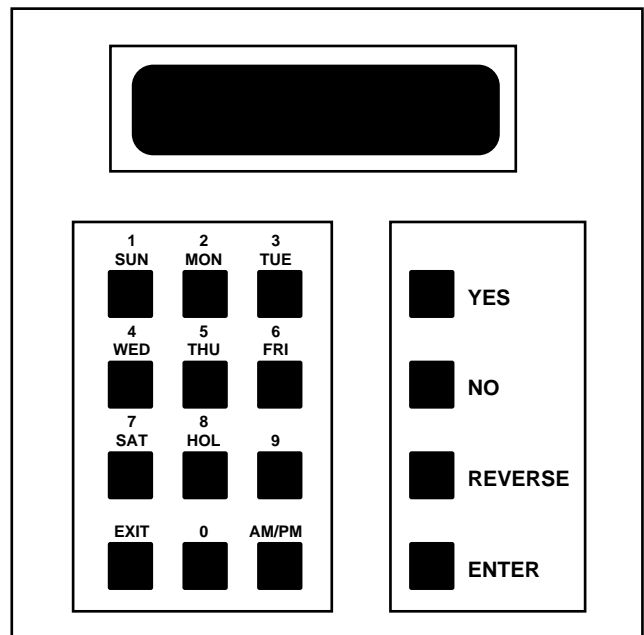
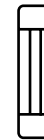


FIG. 9

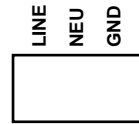
TORK Digital Controls K-SEASONAL



FUSE
375mA
(3/8A)
20mm

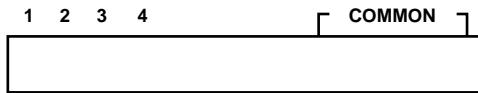


120VAC 60HZ



TO CONNECT BATTERY
SLIDE SWITCH TO ON

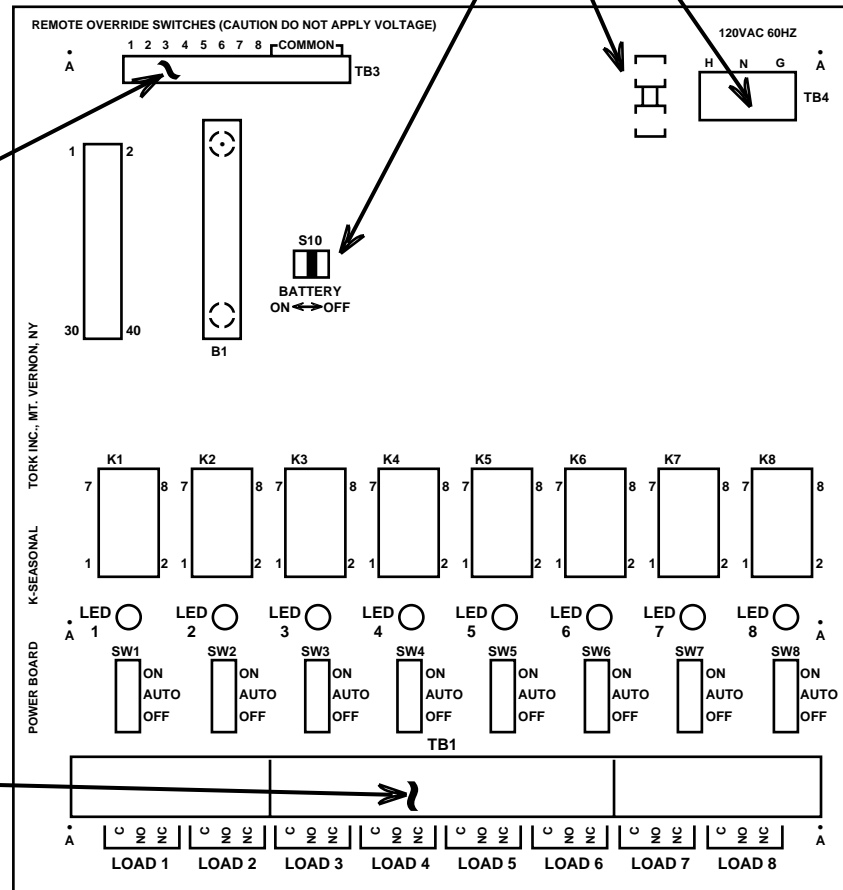
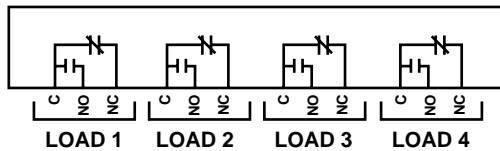
REMOTE OVERRIDE SWITCHES (CAUTION DO NOT APPLY VOLTAGE)



POWER INPUT: 120VAC(*) 50/60HZ
 POWER CONSUMPTION: 36VA MAX.
 OUTPUT CIRCUITS: SPDT UNPOWERED RELAYS
 CONTACT RATING: 10A RESISTIVE AT
 120/240VAC, 28VDC
 1/3 HP AT 120VAC
 BATTERY BACKUP: 6 MONTHS CUMULATIVE
 OPERATING TEMP.: 0°C - 50°C (32°F-120°F)

* For -2 use 240VAC 50/60HZ. Not UL and CSA approved.

K-SEASONAL TYPICAL TERMINAL
BLOCK CONFIGURATION
Dry Contacts (Unpowered)



1 GROVE STREET, MT. VERNON, NY 10550 TEL: 914-664-3542

FAX: 914-664-5052

TORK®