Taco Comfort Solutions
A Taco Group Company

Instruction Sheet

102-067B

Timer and Aquastat

SUPERSEDES: January 3, 2014 EFFECTIVE: November 24, 2015

Plant I.D. 001-4223

Application:

The Taco Clock Timer/Temperature Aquastat combination is designed to cycle the circulator during peak demand periods. The Analog Timer (No. 265-1) is adjustable to 15 minute intervals within a 24 hour time frame. The Digital Timer (No. 265-3) can be programmed for 7 day operation. The Temperature Aquastat (No. 563-2) automatically switches the circulator ON at 95ºF and OFF at 115ºF. The two can be used in combination, or they can be used separately. When the Clock Timer/Temperature Aquastat are used together, the Timer switches ON sending power to the unit. The Temperature Aquastat measures the temperature, and cycles the circulator as long as the Timer is switched to the ON mode.

If used separately, the Clock Timer operates the circulator during the chosen number of ON/OFF intervals. When using only the Temperature Aquastat, the circulator cycles intermittently to maintain a temperature between 95ºF and 115ºF.

The Clock Timer and Temperature Aquastat are easy to retrofit to any "00" Series Circulator. The user-friendly 24 hour analog clock has an hour hand, raised minute hand for ease of adjustment, two directional arrows, and AM/PM time settings. Our easy to program digital timer provides maximum convenience, comfort and energy savings. The Clock Timer can be mounted in any direction by just attaching it to the capacitor box electrical connection hole.

Installation: FOLLOW ALL INSTRUCTIONS IN THE SEQUENCE THAT THEY APPEAR.

Analog Timer Installation Instructions:

1. Disconnect the electrical supply. Remove circulator terminal box screw and cover.
2. Loosen Timer box cover screw and remove cover.
3. Assemble the back portion of the Timer to the "00" terminal box as shown in the Timer installation diagram (006 circulator pictured). Make sure that the protruding tang on the back of the Timer box fits under the circulator's terminal box base. Adjust until the two terminal box openings are aligned.
4. Secure the locknuts. Feed the yellow and white circulator lead wires into the Timer through the bushing. Reassemble circulator terminal box cover and secure with the screw.
5. See electrical hook-up for Timer wiring.

Aquastat Installation Instructions:

1. Disconnect the electrical supply. Securely fasten the Aquastat clip to ¾" pipe or to the circulator casing for ½" pipe applications. The Aquastat must be properly fastened to insure a good reading.
2. See electrical hook-up for Aquastat wiring.

Electrical Hook-Up:

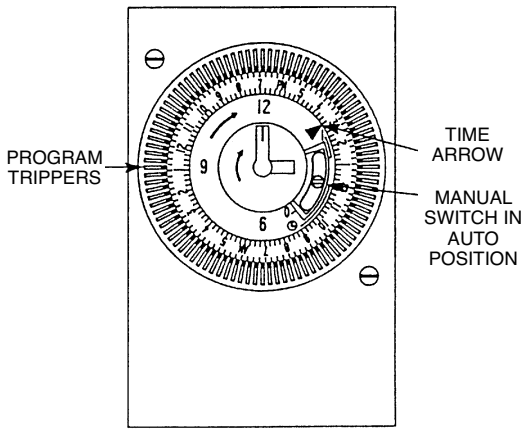
1. All electrical work must be performed by an electrician in accordance with the latest edition of the National Electrical Codes and Local Codes and Regulations.
2. Verify that the voltage, phase and frequency are correct for the Circulator, Timer and Aquastat prior to connection.
3. Follow the appropriate wiring diagram

Analog 24 Hour Timer Programming:

1. Set clock to the exact time of day by turning the outer black ring clockwise to move the hour/minute hands to the correct position. Pay special attention to the white arrow pointing to the correct **AM/PM** time in the 24 hour outer ring.
2. Set the desired **ON/OFF** times by pushing the trippers away from the clock face for **ON** operation. Leave the trippers toward the clock face for **OFF** operation. Each tripper represents a 15 minute interval.
3. Set switch in the middle position for ◷ automatic operation.

Analog Timer Manual Switch Settings:

1. Up = On, Constant Circulation I
2. Middle = Automatic operation ◷
3. Down = Off O



Analog Timer Clock Face

e-smart

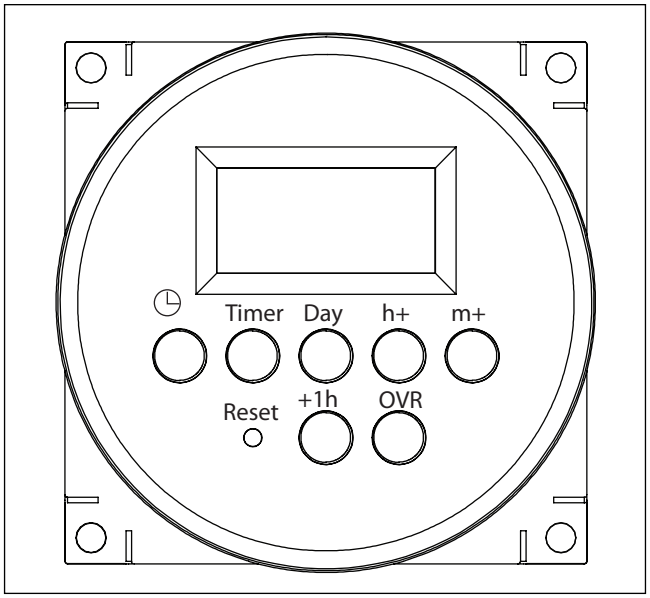
A Taco resource – saving product

Digital 7 Day Programmable Timer:

The Plumb n' Plug (PNP) digital timer features a large LCD display with user friendly keys for setting time and run programs. An internal re-chargeable battery holds programmed settings for up to 2,500 hours during power outages.

Note: Although the Plumb n' Plug digital timer contains some degree of spike and electrical noise protection, as with all electronic devices, these units can be affected by electrical noise. It is recommended that they be powered from a voltage source that has no switching devices or inductive loads connected.

Clock Face Description:



Setting the Time of Day

Follow this procedure to set the time of day and day of the week.

1. Press and release the **Reset** button with a blunt object to reset the unit. The timer screen flashes.
2. Press and hold ◷ and **h+** simultaneously to access the **12:00 AM** screen.
3. Take one of these actions.

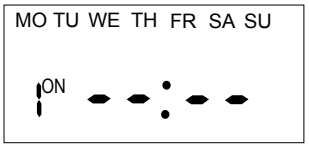
If..	Then...
Your time zone currently is in Daylight Savings Time,	Press the +1h button. Go to step 4.
Your time zone is not in Daylight Savings Time	Go to step 4 to set the current time.

4. Press and hold ◷ and press **h+** repeatedly until you advance to the current hour.
5. Press and hold ◷ and press **m+** repeatedly until you advance to the current minute.
6. Press and hold ◷ and press **Day** repeatedly until you advance to the current day.

Programming Events

To set ON/OFF event pair, set ON event and then repeat procedure to set OFF event. The timer enables up to 7 ON/OFF event pairs.

1. Press the **Timer** button. Dashed lines appear to indicate no event is set for event 1.



2. Press **Day** to select the days of the week for the ON event.
NOTE: To set the ON event:

ON a Specific Day	Select: The desired day
Every Day of Week	Select: **MO, TU, WE, TH, FR, SA, SU**
Every Weekday:	Select: **MO, TU, WE, TH, FR**
Every Weekend:	Select: **SA, SU**
Monday through Saturday	Select: **MO** through **SAT**
Monday, Wednesday, Friday	Select: **MO, WE, FR**

3. Press **h+** to scroll to the desired hour for ON event.
4. Press **m+** to scroll to the desired minute for the ON event.
5. Press **Timer** to advance to the OFF event screen.
6. Press **Day** to select the days of the week for the OFF event.
7. Press **h+** to scroll to the desired hour for the OFF event.
8. Press **m+** to scroll to the desired minute for the OFF event.

Take one of these actions.

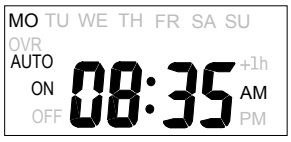
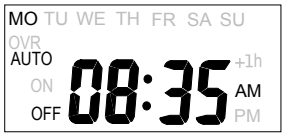
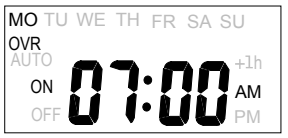
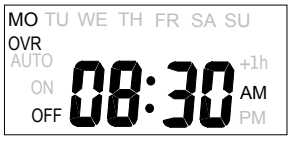
If...	Then...
You need to program another ON/OFF event pair,	Press **Timer** to advance to the next event ON screen and repeat steps 2 through 8.
All the required ON/OFF events are programmed,	Press ◷ to return main screen. The procedure is complete.

NOTE: If events include or intersect with each other, each ON/OFF event can be independently executed at the setpoint.

NOTE: If an ON event and OFF event occur at the same time, the timer will run the OFF event.

Daily Operation

Below is an overview of the different operation modes for FM1D14.

Mode	Timer Display	Description
Auto ON		Appears when an ON setpoint has been triggered
Auto OFF		Appears when an OFF setpoint has been triggered
OVR ON		Indicates relay has been overridden to ON status
OVR OFF		Indicates relay has been overridden to OFF status

NOTE: To execute an ON/OFF status override, press the **OVR** button on the timer to override an ON or OFF status. The override remains active until the next programmed event.

Modifying an Event

Follow this procedure to review or modify an event.

1. Press Timer to scroll to ON or OFF event you want to modify.
2. Take one of these actions.

If you want to modify the...	Then...
Days of the week for ON/OFF event,	Press **Day** repeatedly to scroll to desired days of the week Go to step 3.
Hour for ON or OFF event,	Press **h+** to scroll to desired hour Go to step 3.
Minute for ON or OFF event,	Press **m+** to scroll to desired minute Go to step 3.

3. Repeat steps 1 and 2 as needed to modify additional events.
4. When all the desired events are modified, press ◷ to confirm event settings and return to the time of day screen.

Deleting an Event

Follow this procedure to delete an event.

1. Press **Timer** to scroll to ON or OFF event you want to delete.
2. Press **OVR** to delete the event. Dashed lines appear in place of the time to indicate the event is deleted.
   NOTE: If necessary, repeat this procedure to delete both ON and OFF settings for the event.
3. When the modifications are complete, press ◷ to return to time of day screen.

Retrieving an Event

The timer enables deleted events to be retrieved. All deleted events can be retrieved until a new event is programmed in place of event.

1. Press Timer to scroll to the ON/OFF event you previously deleted. Dashed lines appear in place of the event time.
2. Press OVR to retrieve deleted event. The event ON or OFF time replaces the dashed line indicating that the event is retrieved.
   NOTE: If necessary, repeat this procedure to retrieve both ON and OFF settings for the event.
3. When the modifications are complete, press ◷ to return to time of day screen.

Adjusting Daylight Saving Time

Press **+1h** button to add the Daylight Saving Time hour to the current time or remove the hour to return to standard time.
NOTE: Do not perform this procedure if your area does not use Daylight Saving Time.

Resetting the Timer

In case of a timer malfunction or to delete all previous settings, the unit can be reset.
To reset the timer, use a blunt pointed object to press **Reset** as shown in Figure 4 on the next page. The timer resets and **deletes all the settings in the unit.**

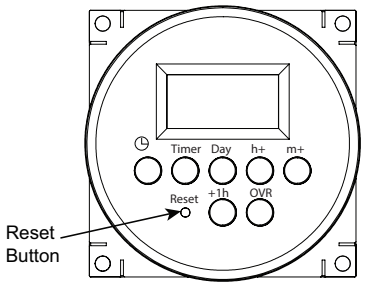


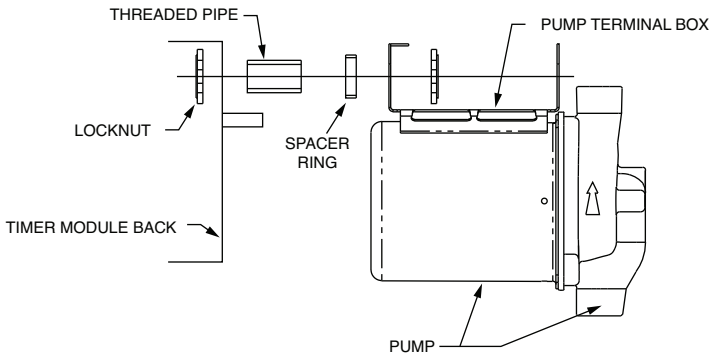
Figure 4. Reset Button

Overview of Power Loss Functions

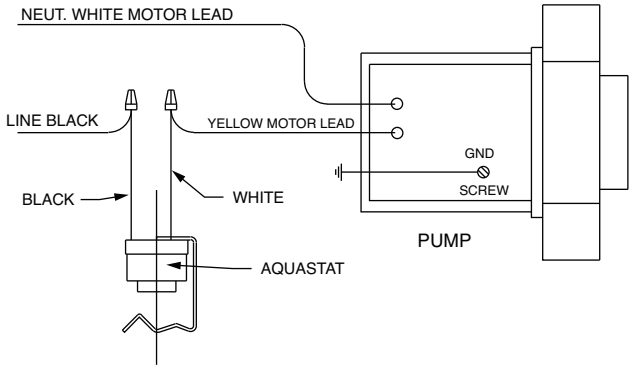
In the event of a power loss, the digital timer does the following:

- Relay will be in the OFF state
- Upon power restore, relay will go to the current programmed state

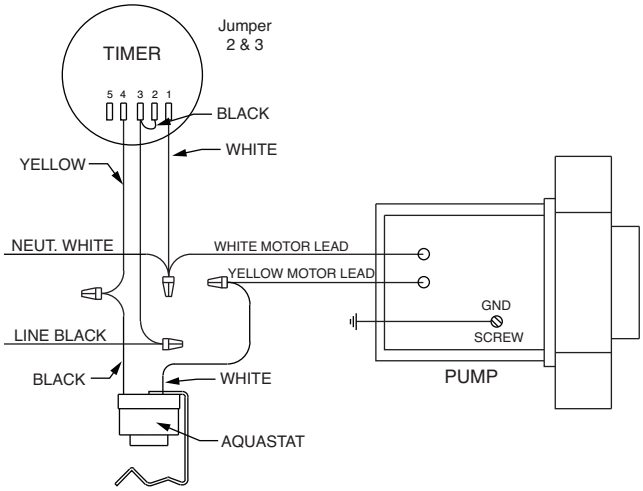
Timer Installation Diagram (006 Circulator Shown)



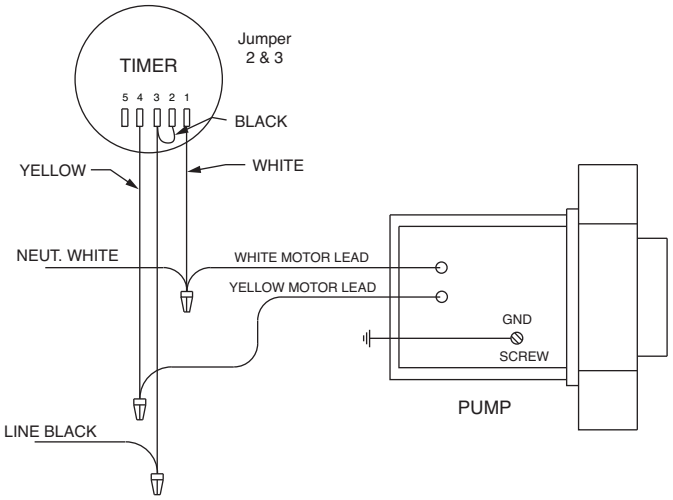
Aquastat Only Wiring Diagram



Timer and Aquastat Wiring Diagram



Timer Only Wiring Diagram



LIMITED WARRANTY STATEMENT

Taco, Inc. will repair or replace without charge (at the company's option) any Taco 00 Series circulator or circulator part which is proven defective under normal use within three (3) years from the date of manufacture.

In order to obtain service under this warranty, it is the responsibility of the purchaser to promptly notify the local Taco stocking distributor or Taco in writing and promptly deliver the subject product or part, delivery prepaid, to the stocking distributor. For assistance on warranty returns, the purchaser may either contact the local Taco stocking distributor or Taco. If the subject product or part contains no defect as covered in this warranty, the purchaser will be billed for parts and labor charges in effect at time of factory examination and repair.

Any Taco product or part not installed or operated in conformity with Taco instructions or which has been subject to misuse, misapplication, the addition of petroleum-based fluids or certain chemical additives to the systems, or other abuse, will not be covered by this warranty.

If in doubt as to whether a particular substance is suitable for use with a Taco product or part, or for any application restrictions, consult the applicable Taco instruction sheets or contact Taco at (401-942-8000).

Taco reserves the right to provide replacement products and parts which are substantially similar in design and functionally equivalent to the defective product or part. Taco reserves the right to make changes in details of design, construction, or arrangement of materials of its products without notification.

TACO OFFERS THIS WARRANTY IN LIEU OF ALL OTHER EXPRESS WARRANTIES. ANY WARRANTY IMPLIED BY LAW INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS IS IN EFFECT ONLY FOR THE DURATION OF THE EXPRESS WARRANTY SET FORTH IN THE FIRST PARAGRAPH ABOVE.

THE ABOVE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR STATUTORY, OR ANY OTHER WARRANTY OBLIGATION ON THE PART OF TACO.

TACO WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF ITS PRODUCTS OR ANY INCIDENTAL COSTS OF REMOVING OR REPLACING DEFECTIVE PRODUCTS.

This warranty gives the purchaser specific rights, and the purchaser may have other rights which vary from state to state. Some states do not allow limitations on how long an implied warranty lasts or on the exclusion of incidental or consequential damages, so these limitations or exclusions may not apply to you.

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