

# TIME BASED METERS PUMP CONTROLLERS

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**MODELS -            290-TIME-1            TIME BASED TOTALIZER**  
**290-TIME-P3            TIME BASED CONTROLLER**

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# I. OVERVIEW FOR TIME BASED METERS

JP Tech's Time Based meters incorporate several screen options in the Menu designed for ease of operation, information gathering, and programming. All models incorporate displays showing accumulated total time in seconds, minutes, or hours and a resettable total time display .

All models use a two (2) button keypad to cycle through the Menu displays available and to set the parameters of the meter:

◆ The **SELECT** key, when pressed and released, cycles through the different screens available to the specific model. In all screens (except the SECONDS, MINUTES, OR HOUR, SETUP and SPECIAL FUNCTION screens where applicable), holding the **SELECT** key for about 3 seconds will enable the flashing cursor; releasing and pressing again will position the cursor for a change to be made. *The **SELECT** key will not change any existing information. It only provides a way to move through the menu or move the flashing cursor.*

◆ The **CHANGE** key is used to change a value or option related to the specific display chosen with the **SELECT** key (for example RSTBLE = VALUE and RELAY1 = OPTION). NOTE: Pressing and releasing, **at any time**, BOTH the **SELECT** and the **CHANGE** keys together will take you back to the AH TOTAL default screen.

## ◆ HOW TO ENTER OR CHANGE DATA:

**VALUES:** RESETTABLE SCREEN: From the SECONDS, MINUTES, OR HOUR screen, PRESS/RELEASE the **SELECT** key. This will bring you to the RSTBL (Resettable) screen. To enter any value or reset existing values, PRESS/HOLD the **SELECT** key for about 3 seconds until the *LEFT MOST DIGIT* begins to flash. When it flashes, release the **SELECT** key. If you want the digit that is flashing to stay the same, PRESS/RELEASE the **SELECT** key *ONCE*. This will move the flashing cursor over to the right one digit. [\[This is the method used to move the flashing cursor over for all screens.\]](#)

If you want to change the value of the flashing digit, PRESS/RELEASE the **CHANGE** key *ONCE*. Each time the **CHANGE** key is pressed and released, the value of the digit increases by one (1) and cycles from 0 through 9. [\[This is the method used to change the value of the flashing cursor for all screens.\]](#)

Once you have set the values you want, PRESS/HOLD the **SELECT** key until the flashing cursor disappears (about 3 seconds).

**OPTIONS:** RELAY1: To select the options for RELAY1, PRESS/RELEASE the **SELECT** key until the **SETUP** screen is shown. PRESS/HOLD the **SELECT** key at the **SETUP** screen for about 3 seconds until the RELAY1 screen appears.

To select the RELAY1 options, PRESS/HOLD the **SELECT** key until the flashing cursor appears just to the right of "PUMP" (the programmed setting). PRESS/RELEASE the **CHANGE** key to scroll through the options available until the correct option is shown. PRESS/HOLD the **SELECT** key for about 3 seconds until the flashing cursor stops. Your new option has been set. PRESS/RELEASE the **SELECT** key at this point takes you to the next screen.

## ◆ TURNING COUNTING ON AND OFF:

There are two (2) ways this meter can switch the counting on and off: (1) via software or by (2) contact switch.

### 1. Software On and Off.

To turn the counting On and Off in software, the meter must be in the default screen: SECONDS, MINUTES, OR HOURS. This screen will be the first one to appear on the initial energizing of the meter. This screen will also have a "OFF" in the lower right hand corner indicating that the timer is off at this point.

To change the status of the counter from OFF to On, PRESS/HOLD the **CHANGE** key for about 3 seconds. When the word "ON" appears, release the **CHANGE** key. In the "ON" condition, seconds begin to be recorded in the SECONDS, MINUTES, OR HOUR screen and in the RSTBL (Resettable) screen. At the appropriate time either P1, P2, or P12 will appear instead of the "ON" word indicating which pump(s) is activated.

To shut the counter off, PRESS/HOLD the **CHANGE** key for about 3 seconds until the word "OFF" appears. In this mode, the seconds, minutes, or hours will stop counting and the presets will be put on hold. This software ON and OFF functions the same in the ONE SHOT mode as it does in the regular pump control mode.

**NOTE:** When the meter is in any other screen than SECONDS, MINUTES, OR HOUR, the operation of the **SELECT** and **CHANGE** keys will operate like they are described in the OVERVIEW.

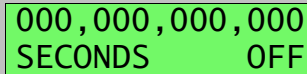
### 2. CONTACT SWITCH (HARDWARE ON AND OFF):

Next to the power cord of the meter, there is a shielded twisted pair to which a switching device can be attached. When the contact is closed, the counter is turned "ON" (the word "ON" will appear in the SECONDS, MINUTES, or HOUR screen) and the time will begin to be counted and recorded. All other pump settings will be activated at this time. When the contact is opened, "Off" will once again appear in the SECONDS, MINUTES, or HOUR screen and the time will stop being accumulated, pump functions will complete their timed sequence if already started; then stop. This hardware ON and OFF operates the same in the ONE SHOT mode as it does in the regular pump control mode. The twisted pair wire needs to be connected to a "DRY" contact switch.

## II. MODEL TIME-1 MENU OPERATION

This model monitors cumulative seconds, has permanent memory retention in case of a power failure, and can record up to 1 trillion seconds. There are two (2) screens with this model.

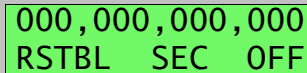
- A. To the right is the default display screen that shows the cumulative **TIME** in seconds (shown), minutes, or hours (See DISPLAY MODE below). This display will appear when the meter is first energized and is the screen that will appear when BOTH the **SELECT** key and the **CHANGE** key are pressed and released at the same time when you are in the main menu. The **OFF** appears in all screens when the meter is switched to the "OFF" position.



000,000,000,000  
SECONDS OFF

**NOTE:** This value cannot be reset and is good up to one (1) trillion seconds.

- B. To the right is the **RSTBL (Resettable)** screen. This display totals cumulative time in seconds (shown), minutes, or hours like the **TIME** screen but can be reset to zero or any other value at any time.



000,000,000,000  
RSTBL SEC OFF

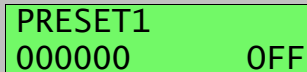
**Programming:** See 'OVERVIEW'

## III MODEL TIME-P3 MENU OPERATION

This model incorporates everything the Model TIME-1 has plus it can support 2 pumps with associated Presets and Timers or one (1) pump and one (1) rectifier or two (2) rectifiers. All internal output relays are fused. Also, the status of the pump(s) will be indicated in each of the main display screens by either an **OFF** (the counter is OFF and the pump(s) is OFF), **ON** (the counter is on but the pump(s) is not engaged), **P1** (pump 1 is engaged, counter ON), **P2** (pump 2 is engaged, counter ON) , or **P12** (pumps 1 and 2 are engaged, counter ON).

Besides the 2 display screens that Model TIME-1 has, Model TIME-PMP-1 has 13 additional screens.

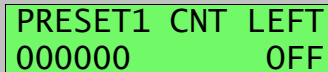
- C. To the right is the **PRESET1** screen. This screen is used to set the interval of **SECONDS** before Pump 1 is turned on. The **PRESET2** screen operates the same way for Pump 2.



PRESET1  
000000 OFF

**Programming:** See 'OVERVIEW'

- D. To the right is the **PRESET1 CNT LEFT** screen. This screen shows the amount of seconds of Preset time that is remaining before it activates the timer (see below). This screen is generally for information purposes only and does not need to be edited.



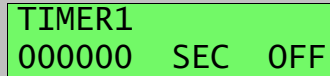
PRESET1 CNT LEFT  
000000 OFF

**Programming:** See 'OVERVIEW'

### III MODEL TIME-P3 MENU OPERATION (Cont.)

E. To the right is the **TIMER1** screen. This screen is used to set the running time in SECONDS for Pump 1. When the PRESET1 CNT LEFT screen counts down to zero, the TIMER1 value is activated and turns ON Pump 1. Values up to 999999 seconds (16,666 minutes or 11.6 days) are available. **TIMER2** for Pump 2 works the same way.

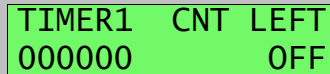
*Programming:* See 'OVERVIEW'



TIMER1  
000000 SEC OFF

F. To the right is the **TIMER1 CNT LEFT** screen. This screen show the amount of SECONDS remaining during the "ON" pump condition. This screen can also be used to ADD time to the current pump cycle for a one time add without effecting the TIMER1 setting. **TIMER2 CNT LEFT** for Pump 2 works the same way.

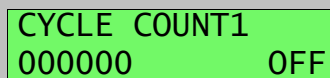
*Programming:* See 'OVERVIEW'



TIMER1 CNT LEFT  
000000 OFF

G. To the right is the **CYCLE COUNT1** screen. This screen show the number of times the PRESET1 and TIMER1 have cycled through their counts. **CYCLE COUNT2** shows a similar value for PRESET2 and TIMER2.

*Programming:* See 'OVERVIEW'



CYCLE COUNT1  
000000 OFF

H. To the right is the **SETUP** screen/menu. This screen provides access to menu items that usually need to be set only once or changed rarely. The RELAY1, RELAY2, DISPLAY MODE, ONE SHOT, and KEYED ON/OFF are submenus of this screen.

*Programming:* See 'OVERVIEW'

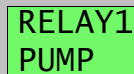


SETUP

#### H. SETUP (Cont.)

1. To the right is the **RELAY1** submenu screen. This display allows you to DISABLE the output of relay #1 or have it ENABLE a PUMP. When first energized, the default setting is "PUMP" indicating that PUMP 1 relay is enabled.

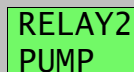
*Programming:* See 'OVERVIEW'



RELAY1  
PUMP

2. To the right is the **RELAY2** screen. This screen operates the same as RELAY1. The default setting is "PUMP".

*Programming:* See 'OVERVIEW'



RELAY2  
PUMP

3. To the right is the **DISPLAY MODE** submenu screen. This allows you to display the 'TIME' in SECONDS, MINUTES, OR HOURS. The default setting is SECONDS.

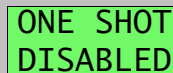
*Programming:* See 'OVERVIEW'



DISPLAY MODE

4. To the right is the **ONE SHOT** submenu screen. This screen allows you to change your meter system from a TIME Based unit to a ONE SHOT based add system. For most users of the TIME-PMP-1 meter, this screen/function will stay DISABLED. See ADDENDIX for the ENABLED functions and screens for the ONE SHOT: ENABLED.

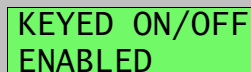
*Programming:* See 'OVERVIEW'



ONE SHOT  
DISABLED

5. To the right is the **KEYED ON/OFF** submenu screen. This screen allows you to disable or enable the key operation to turn the counter on or off.

*Programming:* See 'OVERVIEW: TURNING COUNTER ON AND OFF'



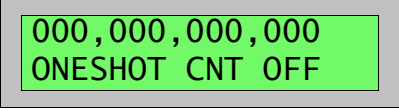
KEYED ON/OFF  
ENABLED

## IV. APPENDIX

### I. ONE SHOT ENABLED OPTION

The ONE SHOT is based on the number of times the ONE SHOT is activated (via key or dry contact) and not on timed sequencing. Each time the ONE SHOT is activated, one (1) count is added to the accumulative total in the ONESHOT CNT screen and the TIMER(S) is activated.

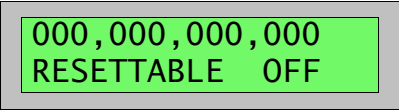
A. Upon enabling the **ONE SHOT** option in the SETUP submenu screen, the screen to the right now becomes your default main screen. When the ONE SHOT is turned on (via key pad or dry contact from a hoist, etc.) the “OFF” changes to an “ON”, one count is added to this screen, and the TIMER (s) is activated. At the appropriate time, P1, P2, or P12 will also appear instead of the “OFF” indicating which pump is activated. The counts in this screen are non-resettable.



000,000,000,000  
ONESHOT CNT OFF

NOTE: NO PRESETS ARE NECESSARY AND WILL NOT BE AN OPTION IN THE ONE SHOT MODE.

B. To the right is the **RESETTABLE** screen. This screen shows the running counts of the ONE SHOT like the default screen above but can be reset to any value you wish. This screen also shows the status of pumps.



000,000,000,000  
RESETTABLE OFF

*Programming:*

See ‘OVERVIEW’ in the Main Manual

C. The programming and functioning of the **TIMER1,2; TIMER1,2 CNT LEFT; CYCLE COUNT1,2;** and **SETUP** screens are the same as in the TIMED based mode explained in the Main Manual.

**REMEMBER: PRESSING, WHEN THERE IS NO CURSOR FLASHING, BOTH THE SELECT KEY AND THE CHANGE KEY TOGETHER BRINGS YOU BACK TO THE MAIN TIME SCREEN. WHEN THE CURSOR IS FLASHING, VALUES IN THE SCREEN WILL ZERO OUT OR THE DEFAULT OPTION WILL APPEAR.**

# INSTALLATION

PUMP 1

PUMP 2

NOTE:  
CHECK  
SQUEEZE  
TUBES  
REGU-  
LARLY FOR  
INTEGRITY.



## PUMP OUTPUT (Only in Pump Control Versions)

The TIME-PMP-3 models come with either one or two peristaltic pumps. When the preset number of seconds is attained, the pump(s) will be energized for the length of time that the operator has designated in TIMER1 or TIMER2. Facing the controller, Pump 1 is to the left and Pump 2 is to the right.

## IMPORTANT

**PARAMETERS:**  
**10' HEAD MAX**  
**LATERAL RUN:**  
**75' MAX**

## 120 VAC POWER

The meter operates off 120 VAC. The TIME-PMP-3 meters use a three wire grounded plug.

## **WARNING:**

All board components and circuitry use a “floating ground” and must remain isolated from all other circuits and grounds. This is only an issue if board is removed outside its protective casing.

## TWISTED PAIR:

The meter comes equipped with a Twisted Pair wire to be connected to a switchable device. The “OFF” position is the Normally Open state. When contact is made (closed), the meter begins to accumulate seconds.

**USE WITH A “DRY”  
CONTACT ONLY**

## PARTS LIST FOR 290-TIME-P3

ITEM	PART NUMBER
ELASTIC SQUEEZE TUBE ( Standard with unit. Good for weak to strong alkalis, weak to medium acids.)	245-4-ELSQZTUB
THERMISTANT SQUEEZE TUBE (Has superior acid-resistant and alkali-resistant qualities.)	245-4-TMSQZTUB
FLUORO-VITON SQUEEZE TUBE ( Good for Strong solvents and acids.)	245-4-FVSQZTUB
SQUEEZE TUBE LUBRICANT	245-4-SQZLUBE
24 VDC PERISTALTIC GEAR MOTOR	245-4-GEARMOTOR-FV
ROLLER FOR PERISTALTIC UNITS	245-4-ROLLER
FACEPLATE FOR PERISTALTIC UNITS	245-4-FACEPLATE
ROLLER / TUBE PUMP BODY HOUSING	245-4-PMPBODY
RED/BLACK TWISTED PAIR SIGNAL WIRE	210-1-TWPR22RD
DELIVERY TUBING—500' ROLL (Polyethylene 1/4' OD, rigid wall tubing)	245-4-PLYTB500
DELIVERY TUBING—100' ROLL	245-4-PLYTB100

**NOTE: CHECK YOUR SQUEEZE TUBES PERIODICALLY FOR INTEGRITY (ABLE TO EXPAND AFTER BEING SQUEEZED BY THE ROLLERS).**

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## INSTALLATION GUIDE

**NOTE: CHECK SQUEEZE TUBE REGULARLY FOR INTEGRITY**

1. Read Manual to familiarize yourself with the operation of the meter.
2. Mount Unit. Attach feed tubes to the Squeeze tubes using wire ties or stainless hose clamps. **NOTE:** Tote nozzle may float so you might need to weight it down.
3. Connect the 15' of 2 wire twisted pair wire to the dry contact switch. **IMPORTANT:** If you shorten this wire, remove all shielding from the ends of the twisted pair and put tape around the ends. At no time must the shielding be grounded.
4. Connect the 110VAC power source plug into the 110VAC receptacle.
5. Apply power to the unit.
6. Set your Presets (how often to feed chemicals) and Timers (how much chemical to feed). These values can be changed any time to get the correct balance.
7. You can use the "Prime Pump" function to prime these pumps if need be.



# MAINTENANCE

The PERISTALTIC Series of metering pumps require a minimal amount of maintenance to achieve optimal performance. Periodically check the squeeze tube for cracks, deterioration, or swelling. The squeeze tube will typically need to be replaced about every 6 months (chemical compatibility and duty cycle can cause this interval to vary). NOTE: Squeeze tube are NOT a warranty item.

**VERY IMPORTANT:** When replacing squeeze tubes, **DO NOT TWIST THE TUBES WHEN FITTING THEM AROUND THE ROLERS.** Insert them so they remain flat in the same plane. (The writing on the tubes should be inline on both sides of the rollers.)

Applying lube to the squeeze tube once a month will extend the life of the tube, minimize wear on other contacting parts, and promote smoother pump operation. Use Knight Tube Lube (P/N 245-4-SQZLUBE) or an equivalent silicone-based lubricant.

1. Remove the faceplate of the pump.
2. Apply a thin bead of Tube Lube to the inner surface (the side that the rollers contact) of the squeeze tube between the 9 o'clock and 3 o'clock positions. Avoid getting the lube near the pinch points where the bottom of the faceplate grips the tube.
3. Put the faceplate back on the pump  
Activate the pump under normal conditions—the lubricant will be evenly distributed as the pump rotates.

**CAUTION:** To avoid severe or fatal shock, always disconnect main power when servicing the unit.

## **JP TECH, INC. LIMITED PRODUCT WARRANTY**

JP Tech warrants to first user of each new JP Tech product or component that it is free from defect in material and workmanship. The obligations of JP Tech under this warranty are expressly limited to the following:

- JP Tech will repair or replace, at its option, any defective components for a period of twelve (12) months from date of shipment. No charges are covered for the removal or replacement of defective components.
- This warranty applies only if the product is defective under normal use. It does not apply to breakage or defect from accident, alteration, misuse, or abuse of the product or component. In addition, this warranty is effective only if the product or component is installed in a location and manner prescribed by JP Tech's instructions and only if it is so maintained. This warranty becomes null and void if the product or component is altered by anyone other than JP Tech, its authorized representatives, or by expressed written authorization for a specific situation.
- If JP Tech elects to send a service technician to a customer site to repair a defect, the cost of transportation and/or living expenses will be paid for by the customer. Should the defect turn out to be the result of the customer's misuse, improper installation, or maintenance of the product or component, the customer will be responsible for the full cost of the service call including labor charges plus the aforementioned travel and living expenses.
- JP Tech will repair or replace any defective part within a product at the sole discretion of JP Tech. If JP Tech should choose to supply a part to the customer as a no-charge warranty replacement, the customer assumes all cost of installation associated with the replacement part. If the product needs to be returned for warranty service, a Returned Material Authorization (RMA) must be issued by JP Tech prior to such return. All returned material must be sent freight prepaid or it will not be accepted by JP Tech irrespective of warranty issues.
- There are no implied warranties of merchantability or of fitness for a particular purpose. The above warranty is made in lieu of all other guarantees or warranties, express or implied. JP Tech distributors or OEMs who purchase JP Tech products for resale are not authorized to assume any other obligation or liability for JP Tech.
- JP Tech will in no case or under any circumstances be liable for special, incidental or consequential damages, loss of profit or commission for any loss caused by any delay in production or shipment of product, or defect of any kind in any product or component covered by the sale. Without limitation, JP Tech will not be so liable with respect to furnishing of any product, or component, delay in such furnishing, use, resale, or other cause. JP Tech's liability arising out of the supply of any product or component, its use, resale or other disposition, or out of any guarantee or warranty, express or implied, or any other cause, shall in no way exceed the cost to JP Tech of the product or component which JP Tech agrees to repair or replace. JP Tech's liability for any product or component terminates upon expiration of the applicable repair or replacement period.

This implementation of this warranty may, under separate agreement, be subrogated to exclusive distributors or manufacturers who shall assume all or portions of the liability associated with warranty costs.

This warranty may be modified, wholly or in part, at any time by JP Tech without notice to past or future customers. The warranty revision in effect at the time of shipment shall prevail in any claims rendered.

Revised 10/3/01

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- Pricing is the effective price at the time of the order. If the shipment of product is postponed by buyer, the price may be changed to reflect any price changes enacted by JP Tech. Prices may be changed by JP Tech at any time for any reason without notice to purchaser except for accepted orders not affected by a purchaser initiated delay. Prices, unless otherwise stipulated, do not include shipping and handling charges.
- Certain products may require initial and progress payments before the commencement and continuation of design, engineering, component procurement, and manufacture. These products will not be shipped until all progress payments have been made. Cancellation of any orders in progress will necessitate the forfeitures of any payments received to date as well as payment of any costs accrued in excess of paid amounts.
- Orders must be accepted by JP Tech at their home office. Acceptance of any purchase order, regardless of the method, is conditioned on assent of buyer to the terms and conditions contained herein.
- Sales are FOB point of shipment. Sales terms are net 30 days from date of shipment. Present or future sales, use, or other taxes on sales, installation or use shall be paid by purchaser. Purchaser shall pay 1% interest per month on all outstanding amounts due to JP Tech. Interest accrual shall begin on the 31<sup>st</sup> day after shipment for all outstanding amounts.
- All sales are final. Any decisions to accept return of product after shipment and receipt by purchaser shall be at the sole discretion of JP Tech and not until payment has been made and agreement by purchaser to pay all shipping, cancellation, and restocking charges that may accrue.
- Shipping dates given prior to shipment are estimated, actual delivery will be based on factory and engineering loading at the time of manufacture as well as the availability of parts required for manufacture. JP Tech shall not be liable for any costs or damages arising out of or related to any delays in shipment or delivery, including but not limited to liquidated damages, unless otherwise agreed in writing.
- JP Tech may change design or construction of any product or component in any way they see fit. Upgrades for previously purchased products may be available for certain products for a price that will be determined when appropriate.
- Except as provided herein, any controversy, claim or dispute arising out of or related to any order or sale or breach thereof, including but not limited to any breach of warranty claims, shall be litigated in state court, Walworth or Waukesha Counties, Wisconsin, and shall be governed by the laws of Wisconsin. If JP Tech is the prevailing party, JP Tech shall be entitled to collect all reasonable fees and costs, including court costs and attorney fees.