

AMP HOUR METERS PUMP CONTROLLERS

USER MANUAL

MODELS	290-AH1	290-AHP2	290-AH1-DIN
(incl. L models)	290-AHP1	290-AHP3	290-AHP1-DIN

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INSTALLATION

Step-by-Step Guide

1. Read Manual to familiarize yourself with the operation of the meter.
2. Mount Unit. **FOR PUMP (P) MODELS:** Attach feed tubes to the Squeeze tubes using wire ties or stainless hose clamps. **NOTE:** Pick up tube may float so you might need to weigh it down.
3. Connect the 15' of 2 wire twisted pair signal wire (included in all except DIN and P2 models) to the rectifier's shunt (red to the more positive side of shunt) or connect to the ammeter's plus/minus leads. **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 should the shielding be grounded.
4. **FOR COUNTLINK (L) MODELS:** Attach Countlink wires between units. Do not connect the "CL-IN" on the first unit or the "CL-OUT" on the last unit to any other units. (See page 4; "Countlink Installation" for more details)
5. Connect the 120VAC power source plug into the 120VAC receptacle.
6. Apply power to the unit.
7. **IMPORTANT:** Set Shunt size in the "Shunt Size" screen. Remember, you want to set the shunt size to the max output rating of the rectifier (i.e., 15,000A rating, 3000A rating, etc.) not your operating amperage setting.
8. **FOR PUMP (P) MODELS:** Set your Presets (how often to feed chemicals) and Timers (how much chemical to feed). Use the Worksheet at the end of the manual to figure these values. These values can be changed any time to get the correct balance.
9. You can use the "Prime Pump" function to prime these pumps if need be.

NOTE FOR PUMP (P) MODELS: CHECK PUMP SQUEEZE TUBE REGULARLY FOR INTEGRITY

INSTALLATION

AHP1 Model

PUMP OUTPUT

(Only in Pump Control Versions)

The AHP1 and AHP2 models come with two 120 VAC pigtails with female receptacles. Any 120 VAC pump which draws no more than **five amps** can be plugged into these receptacles. When the preset number of amp/hours is attained, the pump will be energized for the length of time that the operator has designated.

MILLIVOLT INPUT

All models (except DIN and P2 models) of the meter come with 15 feet of shielded twisted pair wire for millivolt input. This wire can be connected either to the shunt or to the back of the ammeter. The **red** wire must be connected to the positive terminal and the **black** wire to the negative terminal.

DO NOT CONNECT THE BRAIDED WIRE OR SHIELD TO GROUND!



120 VAC POWER

The meter operates off 120 VAC. The AH1 meter uses a two wire cord and plug while all models of the AHP meters use a three wire grounded plug.

230 VAC POWER users should connect directly to the terminal strip inside the meter.

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 the board is removed from its protective casing.

AHP3 Model

PUMP OUTPUT

(Only in Pump Control Versions)

The AH-PMP-3 models come with either one or two peristaltic pumps. When the preset number of amp hours 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.

120 VAC POWER

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

230 VAC POWER users should connect directly to the terminal strip inside the meter.



MILLIVOLT INPUT

All models of the meter come with 15 feet of shielded twisted pair wire for millivolt input. This wire can be connected either to the shunt or to the back of the ammeter. The **red** wire must be connected to the positive terminal and the **black** wire to the negative terminal.

DO NOT CONNECT THE BRAIDED WIRE OR SHIELD TO GROUND!

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 the board is removed from its protective casing.

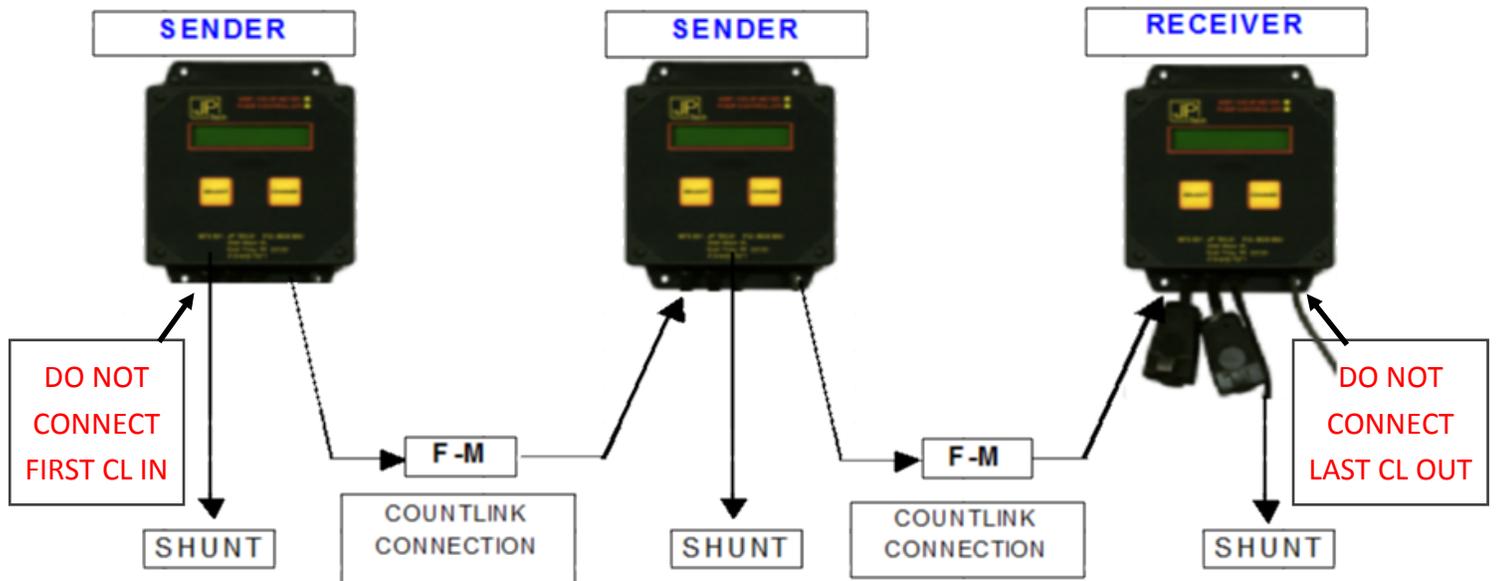
PUMP PARAMETERS (AHP3 ONLY)

10' HEAD MAX

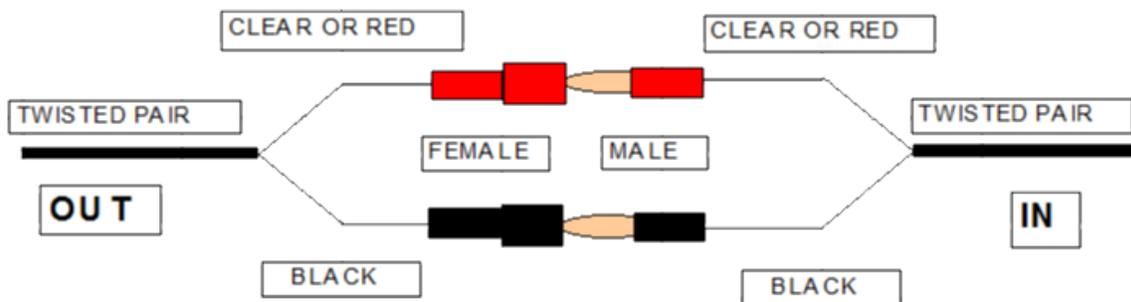
75' LATERAL RUN MAX

INSTALLATION

Countlink (For L Models Only)



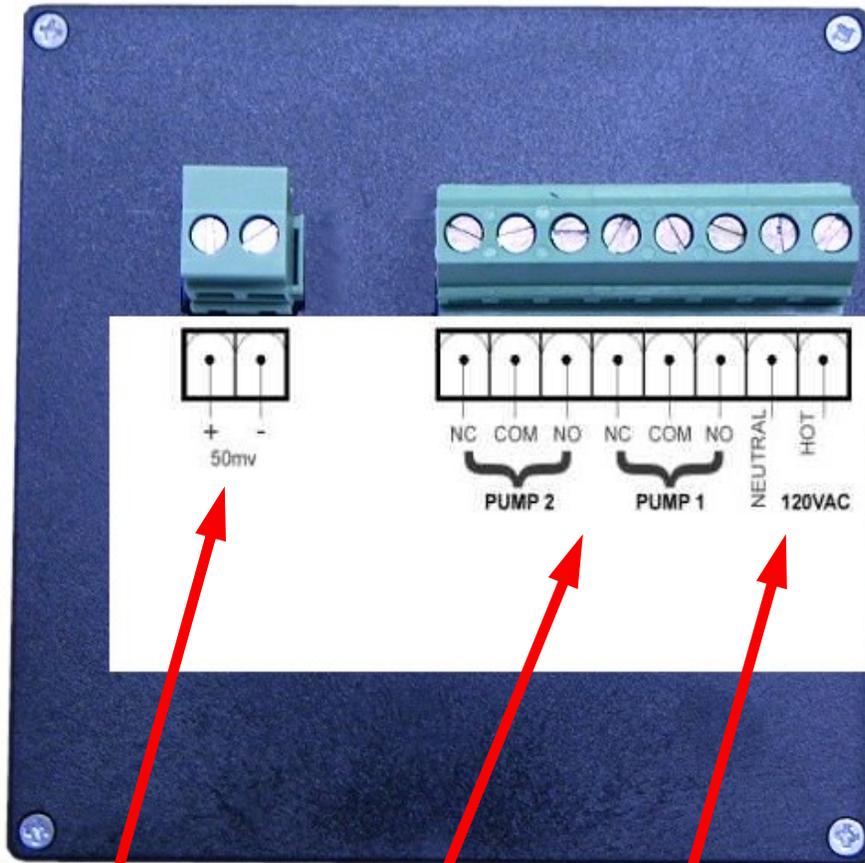
CONNECTORS FOR THE COUNTLINK HOOKUP



IMPORTANT: IN THE "SHUNT SIZE" SCREEN, SET EACH METER TO THE AMPERAGE RATING OF THE RECTIFIER IT IS ATTACHED TOO. THIS INCLUDES THE VERY LAST METER THAT IS USUALLY THE "RECEIVER" UNIT. DO NOT CONNECT THE "CL-IN" ON THE FIRST UNIT TO ANY OTHER CONNECTOR. LIKEWISE, DO NOT CONNECT THE "CL-OUT" ON THE LAST UNIT TO ANY OTHER CONNECTOR.

INSTALLATION

DIN Installation (for DIN models only)



MILLIVOLT INPUT

Use a minimum 22AWG red/black shielded twisted pair wire for the millivolt input. This wire can be connected either to the shunt or to the back of the meter. The **red** wire must be connected to the positive terminal (or most positive side of the shunt) and the **black** wire to the negative terminal (or most negative side of the shunt).

DO NOT CONNECT THE BRAIDED WIRE OR SHIELD TO GROUND!

PUMP OUTPUT

(Only in Pump Control Versions)

Any pump which draws no more than **five amps** can be wired into these terminals. To make terminal "hot", jump the "COM"s together and connect them to the 'Hot' AC in. Wire the pump to either NC or NO and Neutral.

120 VAC POWER

The meter operates off 120 VAC. 230 VAC is optional.

WARNING:

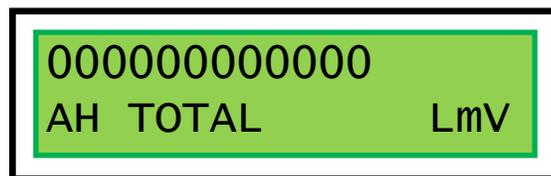
All board components and circuitry use a "floating ground" and must remain isolated from all other circuits and grounds. This is only an issue if the board is removed from its protective casing.

QUICK START

USING THE METER

JP Tech's Amp-Hour meters are designed for measuring accumulated amp-hour, amp-minute, or amp-second totals. AHP1 & AHP3 models of Amp-Hour meters can also control two (2) pumps, or one (1) rectifier and one (1) pump.

JP Tech's Amp-Hour meters incorporate a simple menu design featuring a two (2) button keypad. Pressing the **SELECT** key once cycles through different menu screens. Holding the **SELECT** key for about three (3) seconds will enable changes to be made on the menu screen chosen (not applicable on all screens; see the *Menu Operation* section for information on which values are editable).



The default menu screen, showing the non-resettable amp-hour total

After holding the **SELECT** key for three (3) seconds, a flashing cursor will appear, allowing for changes to be made. In this mode, the **SELECT** key moves your cursor right, and the **CHANGE** key advances the selected value by one. Once you have set the values you want, hold the **SELECT** key to save the setting and return to the menu.

NOTE: The **SELECT key will not change any values by itself! It only provides a way to move through menu screens or move the flashing cursor.**

When the cursor is not flashing, pressing both the **SELECT** and **CHANGE** keys together will take you back to the default 'AH TOTAL' screen (as shown above). However, while editing values (cursor is flashing), pressing both the **SELECT** and **CHANGE** keys together will reset the value to zero or the default factory settings.

SETTING SHUNT SIZE

JP Tech's Amp-Hour meters are designed to handle a variety of shunt sizes (in amp-hours, -minutes, or -seconds) and millivolt input signals. To set the shunt size, navigate to the 'SETUP' screen and hold **SELECT** for three (3) seconds to enter setup. The 'SHUNT SIZE' menu appears. Hold **SELECT** for three (3) seconds on this screen to edit the shunt size.

The following settings are available for Amperage:

1A-15A Seconds

1A-500A Minutes

10A-30,000A Hours

The following settings are available for Shunt Size (most rectifiers use a 50mV signal):

25mV-250mV Shunt

Once you have set your desired settings, hold the **SELECT** key for three (3) seconds to return to the menu. Your shunt settings have been saved.

MENU OPERATION

Menu Hierarchy

1. Cumulative Amp-Hour Total (**Default Screen**)
2. Resettable Amp-Hour Total
3. Time Total (Total Runtime)
4. Prime Pump (if either pump is enabled)

IF PUMP 1 IS ENABLED

5. Preset 1
6. Preset 1 Count Left
7. Timer 1
8. Timer 1 Count Left
9. Cycle Count 1

IF PUMP 2 IS ENABLED

10. Preset 2
11. Preset 2 Count Left
12. Timer 2
13. Timer 2 Count Left
14. Cycle Count 2

15. Setup
 - 15.1. Shunt Size
 - 15.2. Relay 1
 - 15.3. Relay 2
 - 15.4. Countlink (L Models Only)
 - 15.5. Rectifier Power On Reset

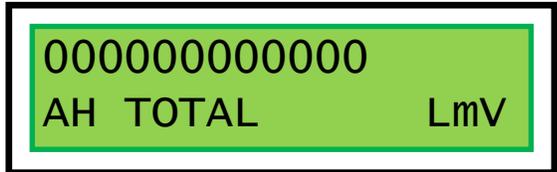
MENU OPERATION

Main Menu Screens

NOTE: The status of the pumps is indicated in the lower right hand corner. **LmV** indicates that no amp hours are accumulating and the pump(s) is off. If pumps are activated, **1** (pump 1), **2** (pump 2), or **12** (pumps 1 and 2) will appear. A **blank** area here indicates you are getting a mV signal but neither pump is enabled.

1. CUMULATIVE AMP HOUR TOTAL

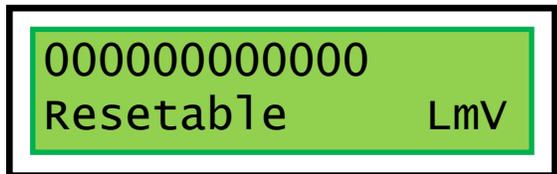
This menu screen shows the accumulated amp hour totals over the life of the meter. This is the default menu screen and will appear when both the **SELECT** and **CHANGE** keys are pressed at the same time.



NOTE: This value cannot be reset and is good to 1 trillion amp hours. This is for EPA compliance and lifetime tracking standards.

2. RESETTABLE AMP HOUR TOTAL

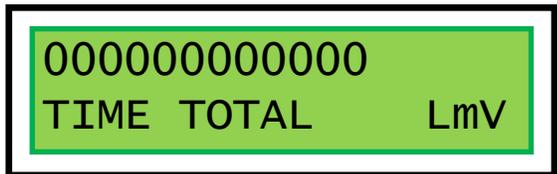
This menu screen totals accumulated amp hours similar to AH TOTAL, but can be reset to zero at any time.



NOTE: Remember that while editing values, pressing both the **SELECT** and **CHANGE** keys together will reset the value to zero. Outside of editing values, this will navigate back to the AH TOTAL menu screen.

3. TIME TOTAL

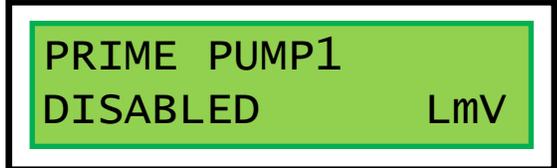
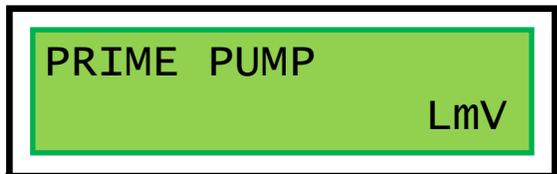
This menu screen totals the amount of time the meter has been running.



NOTE: This value is for lifetime EPA tracking standards and cannot be reset.

4. PRIME PUMP (if either pump is enabled)

Holding **SELECT** on this screen will allow you to enable/disable both pumps separately. Press **SELECT** to switch between PUMP 1 and PUMP 2. Press **CHANGE** to enable/disable the pump. When a pump is enabled, the "LmV" symbol will disappear.



NOTE: There is no automatic shutoff once pumps are enabled!

15. SETUP

Holding **SELECT** on this screen will allow you to enter Setup (see page 9; *Setup Options* for more information).

(TOP) The prime pump main menu
(BOTTOM) The prime pump submenu, allowing pumps to be enabled/disabled

MENU OPERATION

Pump Controls (P models only)

5. PRESET 1 / 10. PRESET 2

This screen is used to set the interval of amp hours before the pump is turned on. The pump will activate for the length of time (in seconds) specified in the corresponding TIMER.



PRESET1
000000 LmV

6. PRESET 1 COUNT LEFT / 11. PRESET 2 COUNT LEFT

This screen shows the number of amp hours remaining before the meter activates the corresponding TIMER.



PRESET1 CNT LEFT
000000 LmV

NOTE: This screen is for information purposes only and does not need to be edited.

7. TIMER 1 / 12. TIMER 2

This screen is used to set the amount of time (in seconds) the corresponding pump should run. The amount of amp hours in PRESET COUNT LEFT will count to zero (0), activating the corresponding pump for the amount of time (in seconds) set here.



TIMER1
000000 LmV

8. TIMER 1 COUNT LEFT / 13. TIMER 2 COUNT LEFT

This screen shows the amount of seconds remaining while the corresponding pump is currently “on”. This screen can also be used to add time to the current pump cycle without affecting the TIMER setting.



TIMER1 CNT LEFT
000000 LmV

9. CYCLE COUNT 1 / 14. CYCLE COUNT 2

This screen shows the number of times the corresponding PRESET and TIMER have completed their cycles.



CYCLE COUNT1
000000 LmV

See: “Calculating the Preset and Timer Values Needed” in the appendix to calculate specific values needed for your equipment

MENU OPERATION

Setup Options

15.1 SHUNT SIZE

On this screen, you must select the correct amperage value for your rectifier and the millivolt output of the shunt.

The following settings are available for Amperage:

1A-15A Seconds

1A-500A Minutes

10A-30,000A Hours

The following settings are available for Shunt Size (most rectifiers use a 50mV signal):

25mV-250mV Shunt

NOTE: Changing the amperage unit to hours, minutes, or seconds will change the units on the entire meter!

15.2 RELAY 1 / 15.3 RELAY 2

This screen is used to select what kind of device you are controlling. You can choose between a PUMP, a RECTIFIER, or to DISABLE one or both of the relays. Enabling either of the relays will allow access to the corresponding PUMP and TIMER menus.

15.4 COUNTLINK (for L models only)

Countlink allows you to keep a cumulative total of multiple meters in a single system.

This screen is used to choose between making a meter a Countlink SENDER or RECEIVER. You may also DISABLE Countlink in this menu. Only the last meter in a chain should be a RECEIVER. All preceding meters should be SENDERS. (See page 4; *Countlink Installation* for more information)

15.5 RECTIFIER POWER-ON RESET

If you are controlling a rectifier with your meter, rather than a pump, this screen allows you to send a power restart signal to the rectifier when a cycle is completed.



SHUNT SIZE
030000H 0050mV



RELAY1
DISABLED



COUNTLINK
DISABLED



Rect P-on RESET
DISABLED

See: "Calculating the Preset and Timer Values Needed" in the appendix to calculate specific values needed for your equipment

TROUBLESHOOTING

Amp Hour Problems

PROBLEM	COMMON SOLUTION
No amp hours are recording when rectifier is engaged	The leads of the signal wire may be connected wrong at the shunt or analog ammeter in the remote. Reverse the leads (red = positive, black = negative)
Amp hours are being recorded at a very fast rate	The signal wire may be connected to the volt meter rather than the ammeter. Disconnect and reconnect to the ammeter.
	The signal wire may be laying across the bus bar. Double check that it is not.
Amp hours are coming in faster or slower than normal	The shunt size may be incorrect for your rectifier/meter. Double check you have the correct shunt size (see pg. 6; <i>Setting Shunt Size</i> and the <i>Appendix</i> for more information)

Peristaltic Pump Problems

PROBLEM	COMMON SOLUTION
Pump(s) stay on all the time	The PRESET amp hours may be coming in faster than the TIMER can time out. Double check the calculations to make sure feed rate is correct. If so, you may need a bigger pump or to use two pumps together.
Pump(s) won't engage when PRESET times out or when activated in PRIME PUMP screen	The 5A fuse protecting the relays may be blown. Unplug the meter, open the lid, and check the fuse for continuity. If fuse is OK, engage the relay in PRIME PUMP, check for 120VAC out of the receptacle with a DMM meter. If there is 120VAC, the pump controller is OK, but the pump and/or its connection may have problems.
Pumps don't pump as much as they used to in the same amount of time	The squeeze tubes may have deteriorated to the point that they cannot expand after being collapsed. They need to be replaced. The roller may be worn, and must be replaced if so.
Strokes (AHP2 models only) are not being recorded when the pump is enabled	Determine where the problem is located. Place the controller in the "MANUAL PUMP" mode. Carefully take a jumper and, intermittently, go across terminal #9 & #10 for Stroke 1 and terminals #9 & #11 for Stroke 2. If strokes are recorded in the Manual Pump screen for each stroke pump, the controller is working. The problem may be with the signal coming from the pump to the controller. Please call your source to get suggestions on how to fix this problem. If no strokes are recorded in the Manual Pump screen, then the controller is not recording the signal. Please call your source of this meter for directions for repair.

APPENDIX

Pump Settings Example

The values you may need to run your metering system can vary significantly. Usually, the calculations are very straightforward, requiring only a ratio of chemical additions per amp hour units (typically supplied by your chemical representative).

Below is a **step-by-step example** of how to derive your calculations for an actual situation.

STEP 1. Determine desired feed ratio

Nominal Feed Ratio Desired: 1 gallon per 18,000 amp/hours

Convert to Metric: 3784 ml (1 gallon) per 18,000 amp/hours

STEP 2. Determine the feed rate per amp/hour

ml ÷ amp/hours: 3784 ml ÷ 18,000 amp/hours = 0.21 ml per 1 amp/hour

STEP 3. Determine the hourly maximum desired feed ratio

ml per amp/hour x shunt size: 0.21 ml per 1 amp/hour x 6000 amp shunt = 1260 ml per 6000 amp/hours

STEP 4. Determine actual pump flow rate (*Flow rate should be calculated for one minute. Use a measured container to gather this information. If using a pulse type pump, try to remain at 100% stroke and 100% rate for maximum accuracy. Prime the corresponding pump(s) to get your results.*)

Pump rate measured: 32 ml per minute

Pump rate x 60 minutes (1 hour): 32 ml x 60 = 1920 ml per hour

STEP 5. Determine feed rate multiplier (*If your multiplier here is greater than one (1), your pump is too small for the desired feed rate*)

Desired feed rate (STEP 3) ÷ Actual feed rate (STEP 4): 1260 ml per 6000 amp/hours ÷ 1920 ml per hour = .66

STEP 6. Determine pump ON time

Feed rate multiplier (STEP 5) x 3600 seconds (1 hour): .66 x 3600 seconds = 2376 seconds

STEP 7. Calculate and select the final settings (**THIS IS YOUR FINAL RATIO**)

Every 6000 amp/hours the pump will turn on for 2376 seconds (STEP 6)

CONTINUED ON NEXT PAGE

APPENDIX

Pump Settings Example

Now, break down the ratio to a usable number

When rounding seconds, always go down to the next lowest whole second (e.g.; 50.9 sec. = 50 sec; 50.1 sec. = 50 sec.) When rounding amp/hours, always round up to the next whole amp/hour (e.g.; 50.9 = 51; 50.1). This practice will ensure that your meter is adding less rather than too much chemical.

Find the smallest seconds setting:

Ratio:	6000 amp/hours	:	2376 Seconds
Round Down:	6000	:	2376
Difference:	0	:	0
% Error:	0%	:	0%

Dividing by 10 =

Ratio:	600.0 amp/hours	:	237.6 Seconds
Round Down:	600.0	:	237
Difference:	0	:	-0.6 Seconds
% Error:	0	:	-0.25%

Dividing by 10 =

Ratio:	60.00 amp/hours	:	23.76 Seconds
Round Down:	60.00	:	23
Difference:	0	:	-0.76
% Error:	0	:	-3.30%

Keep Seconds and Correct for Error =

Ratio:	60.0 amp/hours X [1-0.033(% error)]	:	23 Seconds
New Ratio:	58.02	:	23
Round Up:	59	:	23
Difference	+0.98	:	23
% Error	1.67%	:	0.0

The final setting will be for every 59 amp/hours the pump must run for 23 seconds. Every 18,000 amp/hours (*STEP 1*) you will need to add 63 ml (3784 ml [*STEP 1*] x 0.0167 [% error]) to correct for the 1.67% error.

SEE NEXT PAGE FOR A BLANK WORKSHEET TO CALCULATE YOUR SETTINGS

APPENDIX

Pump Settings Worksheet

You will need the following information to use this worksheet:

Nominal Feed Ratio (as recommended by your chemical representative):

(A) _____ gallons per (B) _____ amp/hours

Shunt Size: (E) _____ Amps

Actual Pump Volume: (G) _____ ml per minute (measured by you)

STEP 1. Determine desired feed ratio

(A) _____ gallons per (B) _____ amp/hours

Convert to metric (3784ml = 1 gallon) (C) _____ ml per (B) _____ amp/hour

STEP 2. Determine the feed rate per amp/hour

(C) _____ ml ÷ (B) _____ amp/hour = (D) _____ ml per amp/hour

STEP 3. Determine the hourly maximum desired feed ratio

(D) _____ ml per amp/hour x (E) _____ amps (shunt size) = (F) _____ ml per hour

STEP 4. Determine actual pump flow rate (*Flow rate should be calculated for one minute. Use a measured container to gather this information. If using a pulse type pump, try to remain at 100% stroke and 100% rate for maximum accuracy.*)

(G) _____ ml per minute x 60 minutes = (H) _____ ml per hour

STEP 5. Determine feed rate multiplier (*If your multiplier here is greater than one (1), your pump is too small for the desired feed rate*)

(F) _____ ml per maximum amp/hour ÷ (H) _____ ml per hour

STEP 6. Determine pump ON time

(I) _____ x 3600 seconds (1 hour) = (J) _____ seconds

STEP 7. Calculate and select the final settings (*THIS IS YOUR FINAL RATIO*)

Ratio: _____ : _____

Round: _____ : _____

Difference: _____ : _____

% Error: _____ : _____

Every (E) _____ amp/hour, the pump must turn ON for (J) _____ seconds.

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 tubes are NOT a warranty item.

VERY IMPORTANT: When replacing squeeze tubes, **DO NOT TWIST THE TUBES WHEN FITTING THEM AROUND THE ROLLERS.** 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 pea-sized drop 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.

PARTS LIST

<u>ITEM</u>	<u>PART NUMBER</u>
ELASTIC SQUEEZE TUBE <i>(Standard with unit. Good for weak to strong alkalis, weak to medium acids.)</i>	245-4-ELSQZTUB
THERMISTANT SQUEEZE TUBE <i>(Has superior acid-resistant and alkali-resistant qualities.)</i>	245-4-TMSQZTUB
FLUORO-VITON SQUEEZE TUBE <i>(Good for strong solvents and acids.)</i>	245-4-FVSQZTUB
SQUEEZE TUBE LUBRICANT	245-4-SQZLUBE
100 RPM/24 VDC PERISTALTIC GEARMOTOR	245-4-GEARMOTOR-FV
ROLLER FOR PERISTALTIC UNITS	245-4-ROLLER
FACEPLATE FOR PERISTALTIC UNITS	245-4-FACEPLATE
ROLLER / TUBE PUMP HOUSING	245-4-PMPBODY
RED/BLACK TWISTED PAIR SIGNAL WIRE	210-1-TWPR22RD
DELIVERY TUBING—20' ROLL <i>(Polyethylene 1/4' OD, rigid wall tubing)</i>	245-4-PLYTB20
DELIVERY TUBING—100' ROLL	245-4-PLYTB100
PERISTALTIC HINGE	245-4-HINGE

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

ORDER PARTS

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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.

JP TECH, INC.

TERMS AND CONDITIONS OF SALE

The purchase of any products or services supplied by JP Tech shall be governed by the terms of this agreement. Purchaser of these products and services acknowledges and agrees to these terms without modification by any competing document or any agreement not reduced to writing and authorized by an officer of JP Tech, Inc.

- 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 31st 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 there of, 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.