



## Overview

- **Extreme Accuracy:** Our Mag Meters with ARM Programmable Transmitters offer exceptional precision for both small and large admixture measurements. The ARM-2800 ensures accuracy for very fine graduations (as small as 0.125 ounces), while the ARM-3000 provides precise measurements for larger graduations.
- **Threaded Connection:** The ARM-3000 features a 1" NPT threaded connection for easy installation.
- **Consistent Calibration:** It uses the same calibration settings as the ARM-2500, ensuring seamless integration and uniform performance.
- **Real-time Monitoring:** Pulses per second are displayed when admixture is flowing, offering real-time tracking.
- **AC or DC Compatibility:** Supports AC or DC pulsing with no jumper selection required, simplifying setup.
- **Wide Power Supply Range:** Can be powered with 8 to 26 VDC or 80 to 140 VAC for flexibility in installation.
- **Internal Reset:** The internal count resets automatically after each batch completes to prevent carryover errors.
- **Diagnostic Support:** Pulse output is set to ON at power-up, aiding diagnostics by allowing voltage tracking via a multi-meter from the meter pulse wire to the batch computer.
- **Flow Monitoring Alarms:** Built-in alarms for flow loss and turbulent flow, with a status LED to indicate operational health.
- **Meter Status LED:** Indicates flow status and error conditions for quick troubleshooting.
- **Durable Construction:** The measuring chamber is made from a combination of m-PPO and SUS316L stainless steel, offering superior corrosion resistance and weldability.



Pulses per second display  
while running

## Ordering Information

| Part Number       | Description                                                |
|-------------------|------------------------------------------------------------|
| <b>ARM-3000</b>   | 1" Mag Meter with Programable Transmitter                  |
| <b>ARM-CS-100</b> | Set of Couplers Stainless Steel with EPDM Quad Seal O-Ring |
| <b>ARM-CB-100</b> | Set of Couplers Ford Brass with EPDM Gasket                |

### ARM-CS-100 Coupler Set Stainless Steel with EPDM Quad Seal O-Rings



### ARM-CB-100 Set of Brass Ford Couplers with EPDM Gaskets





## Buttons

- DIM/Pulse** Larger display can be dimmed by pressing the DIM button. Pressing the DIM button also turns the meter pulse output on and off to assist in trouble shooting.
- Up and Down** Use these buttons to change the calibration factor.
- Enter** Press this button to store the calibration value permanently.

## Password is Needed to Change Settings

- Password** Calibration settings are password write protected. After powering on, hold down the Up/Down/Enter buttons simultaneously to initiate and enter “696” as the password (See photo on page 1). After entering the password, the blue LED will turn on and the calibration setting can be modified and stored. The password and blue LED will time out automatically.

## Flow Rates

| Model         | Thread    | Maximum  | Maximum                 | Minimum  | Minimum     |
|---------------|-----------|----------|-------------------------|----------|-------------|
|               |           | L/minute | Gals/minute             | L/minute | Gals/minute |
| ARM-3000      | 1 inch    | 106.46   | 28.125                  | 5.33     | 1.407       |
| ARM-2800      | 0.5 inch  | 17.74    | 4.6875                  | 0.5      | 0.132       |
| ARM-2500 5/8" | 0.75 inch | 75.7     | 15 (AOC 30)<br>(max 42) | 0.95     | 0.125       |
| ARM-2500 3/4" | 0.75 inch | 113.6    | 25 (AOC 35)<br>(MAX 50) | 1.89     | 0.5         |
| ARM-2500 1"   | 1 inch    | 189.3    | 35(AOC 50)(max 60)      | 2.83     | 0.75        |

## ARM-3000 Calibration Factors

The ARM-3000 contains an internal jumper (JP2), when shipped from the Aztech factory, in the 3/4" default position which simulates a 3/4" Positive Displacement (PD) Meter; however, the JP2 Jumper can be moved to the 5/8" position to simulate the 5/8" Positive Displacement (PD) Meter. With the JP2 Jumper in the 5/8" position, one can achieve a pulse per quarter ounce when set to the 5/8" calibration chart setting .8870 (Please see picture and full description on page three (3) of this document.) If you do not need to achieve a pulse output of one pulse per quarter ounce (1 pulse per 1/4 oz) please maintain the JP2 jumper in the 3/4" Positive Displacement (PD) Meter default position, as shown in the picture on page (6).

| 5/8" METER<br>Factor (Oz) 4.5 |                   | 5/8" METER<br>Factor (ml) .1522 |                   | 3/4" METER<br>Factor (Oz) 2.51 |                   | 3/4" METER<br>Factor (ml) .0845 |                   |
|-------------------------------|-------------------|---------------------------------|-------------------|--------------------------------|-------------------|---------------------------------|-------------------|
| Ounce<br>/ Pulse              | L.E.D.<br>Setting | Milliliter<br>/ Pulse           | L.E.D.<br>Setting | Ounce<br>/ Pulse               | L.E.D.<br>Setting | Milliliter<br>/ Pulse           | L.E.D.<br>Setting |
| 1/4                           | .8870             |                                 |                   |                                |                   |                                 |                   |
| 1/2                           | .4428             | 10                              | .6570             | 1/2                            | .7968             |                                 |                   |
| 1                             | .2220             | 30                              | .2190             | 1                              | .3984             | 30                              | .3925             |
| 2                             | .1115             | 50                              | .1314             | 2                              | .1992             | 50                              | .2359             |
| 3                             | .0740             | 60                              | .1095             | 3                              | .1328             | 60                              | .1965             |
| 4                             | .0563             | 100                             | .0657             | 4                              | .0996             | 100                             | .1181             |
| 5                             | .0455             | 150                             | .0438             | 5                              | .0790             | 150                             | .0758             |
| 6                             | .0370             | 200                             | .0330             | 6                              | .0663             | 200                             | .0558             |
| 8                             | .0278             | 250                             | .0263             | 8                              | .0499             | 250                             | .0450             |
| 10                            | .0222             | 300                             | .0220             | 10                             | .0399             | 300                             | .0392             |
| 12                            | .0185             | 450                             | .0145             | 12                             | .0330             | 450                             | .0225             |
| 16                            | .0140             | 1000                            | .0066             | 16                             | .0250             | 1000                            | .0117             |
| 32                            | .0069             |                                 |                   | 32                             | .0125             |                                 |                   |

## LEDS Function

**GREEN LED** The GREEN LED is lit to show power is on. The GREEN LED turns off if the calibration value displayed is not the stored value. Once you store the displayed calibration value it will turn green again.

| Green LED ON                                                             | Green LED OFF                                                         | Green LED ON                      |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------|
| The Value shown on the screen is the stored value that they have entered | The value on the screen is a "NON stored value" that is being changed | They just pushed the enter button |

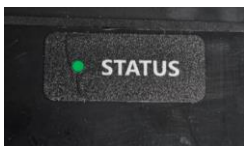
**RED LED** The Red LED pulses with meter pulse. Red LED and PULSE Output is set to ON at power up to assist in diagnostics by using a Multimeter to trace the Voltage on the meter pulse wire back to the Batch computer. **The red LED may stay on at the end of a batch if the system stopped halfway into the current pulse. It will remember that it is halfway to start the next batch.**

**BLUE LED** Is On when a password has been entered. The calibration setting can only be modified and stored when the blue LED is on.

| BLUE LED ON                       | BLUE LED OFF                         |
|-----------------------------------|--------------------------------------|
| Calibration Factor can be changed | Calibration Factor CANNOT be changed |

## Status LED

The status LED on the side of the meter is green under normal operation and pulses as there is flow. Under an error condition the LED will pulse red in different patterns indicating the error.



## Internal Switch SW1 for power supply selection:



There is an internal switch that allows the selection of the power source voltage levels. AC is for powering the transmitter from 120VAC (80 to 140 VAC) and DC is for powering the transmitter from 8 to 26 Volts DC. If the LEDs flicker on quickly and then stays off the power selector needs to match the power supply voltage to the meter.

## Internal jumper (JP2) for meter size:



The ARM-3000 contains an internal jumper (JP2) that comes from the factory in the 3/4" default position which simulates a 3/4" Positive Displacement (PD) Meter; however, the JP2 Jumper can be moved to the 5/8" position to simulate the 5/8" Positive Displacement (PD) Meter. With the JP2 Jumper in the 5/8" position, one can achieve a pulse per quarter ounce when set to the 5/8" calibration chart setting .8870 (Please see picture and full description above.)

The internal JP2 Jumper can provide calibration settings for both the 5/8" PD Meter or the 3/4" PD Meter, by simply moving the jumper to the 5/8" or 3/4" designation as shown in the picture above.

Upon moving the JP2 Jumper to the 5/8" Meter Factor Setting, all calibrations for a pulse per quarter ounce (1/4 oz pulse) to one pulse per thirty two ounces (1 pulse per 32 oz) will be calibrated utilizing the settings on the left side of the ARM-3000 Calibration Factor chart on the first page "5/8" Meter Factor." Moving the JP2 Jumper back to the factory default setting showing 3/4" Meter Factor Setting, will now require all calibration settings from one pulse per half ounce (1 pulse per 1/2 oz) to one pulse per thirty two ounces (1 pulse per 32 oz) to be factored utilizing the calibration settings shown on the right side of the ARM-3000 Calibration Factor chart.

If you do not need to achieve a pulse output of one pulse per quarter ounce (1 pulse per 1/4 oz) please maintain the JP2 jumper in the 3/4" Positive Displacement (PD) Meter default position, as shown in the above picture on page (6).

Please note the settings are in both ounces (oz) and milliliters (ml); therefore, please make sure you select the correct oz or ml setting for your desired calibration.

## Internal jumper (JP3) for Display Eng or Pulses per second:

When JP3 is installed on, the display will show Ounces per Minute instead of the P-XX pulses per second.

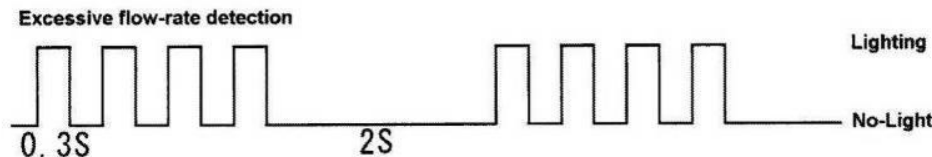
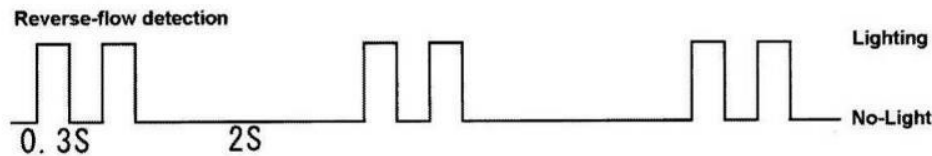
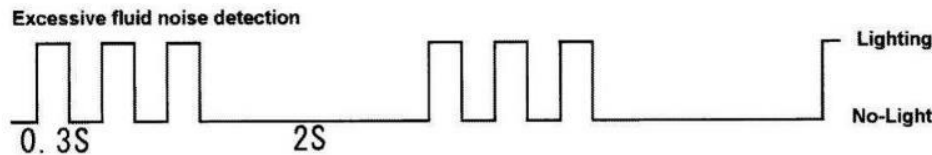
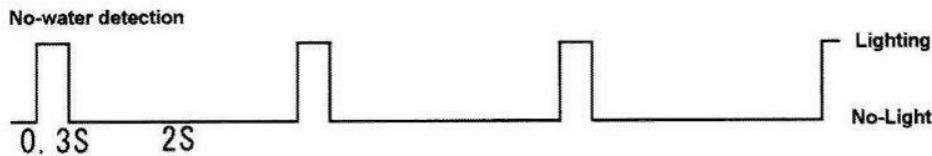
## Status LED Indications

The status LED on the side of the meter is green under normal operation and pulses as there is flow. Under an error condition the LED will pulse red in different patterns indicating the error.



### Error detection items and patterns of indications

| Error detection item                                 | Priority | Patterns of indication                                                                          |
|------------------------------------------------------|----------|-------------------------------------------------------------------------------------------------|
| Low power voltage detection                          | 1        | No-LIGHTING of the both green and red                                                           |
| Excitation error detection or Memory error detection | 2        | Continuous LIGHTING                                                                             |
| No-water detection                                   | 3        | Repeating of 1 time of 0.3 second LIGHTING and 2 second of NO-LIGHT                             |
| Excessive liquid noise detection                     | 4        | Repeating of 3 times of 0.3 second LIGHTING and 0.3 second of NO-LIGHT + 1.7 second of NO-LIGHT |
| Reverse-flow detection                               | 5        | Repeating of 2 times of 0.3 second LIGHTING and 0.3 second of NO-LIGHT                          |
| Excessive flow-rate detection                        | 6        | Repeating of 4 times of 0.3 second LIGHTING and 0.3 second of NO-LIGHT                          |



## LED Displayed Error Messages

Err1 on display is Error 1. System failed to boot from a hardware error.

Err2 on display is Error 2. System failed to boot from a communication error.

Err3 on display is Error 3. System failed to communicate with the Mag meter from a bad power reset/cycle.

To clear the error, power the meter off for 10 seconds and then power it back on.

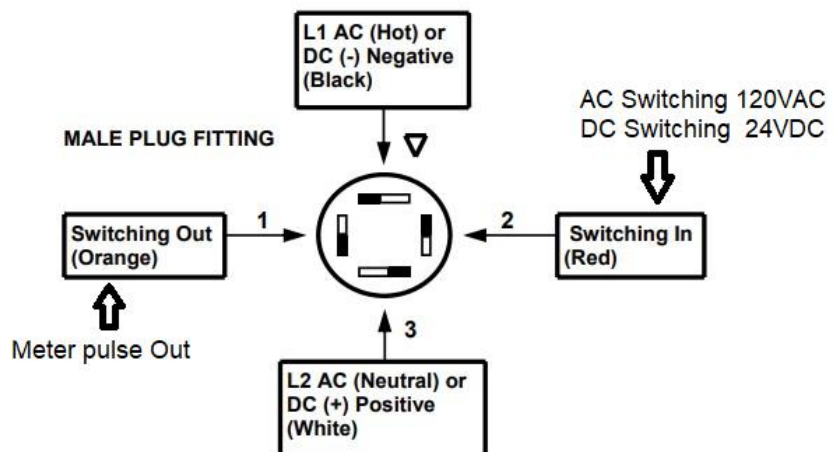
**Note:** Factory Self-Test can be started by holding down the UP, DOWN and DIM buttons at the same time. The test ends with a 100 ounce volume test. After the test the calibration is set to 3984. If you start the test and want to exit, just power cycle the ARM-3000 transmitter. If you have gone through the enter button test, the calibration will have been changed to 3984.

## Wiring Information

|                                             |            |   |   |
|---------------------------------------------|------------|---|---|
| AC INPUT L1 HOT (In Male, Black Wire)       | PIN MARKED | → | ▽ |
| AC INPUT L2 NEUTRAL (In Male, White Wire)   | PIN MARKED | → | 3 |
| DC INPUT (-) NEGATIVE (In Male, Black Wire) | PIN MARKED | → | ▽ |
| DC INPUT (+) POSITIVE (In Male, White Wire) | PIN MARKED | → | 3 |

If AC Hot Switching is desired, place a jumper wire in the back of the female plug in-between Pin Marked ▽ and Pin Marked 2. Use Pin 1 for line back to computer.

For DC Switching put the Meter Common on pin 2. This may be 24VDC positive or it might be 24VDC negative depending on the batch computer. The pulsed output will be DC pulsed on Pin 1.



**Aztech**

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