



Artist rendition (Fig. 1)

Figure 1

**The Monitor™ integrates twin tanks, water sample ports and flow monitoring into one system.**

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**A. Description**

The Monitor™ consists of the Monitor™ Manifold Kit (Fig. 2) and 2 mineral tanks with down-flow tank heads as shown on front cover. Inside each mineral tank is an upper distributor screen and lower distributor screen with 1.05" distributor tubes.

**B. Assembly**

**1. Assembling Monitor™ Manifold kit**

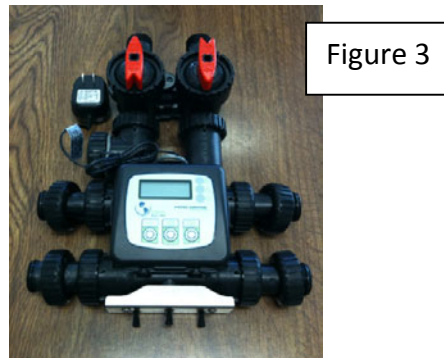
a) Parts List (Figure 2)

- (1) *Monitor™ Manifold includes Meter, Meter Control, transformer and S1, S2, S3 sample taps.*
- (2) *1" plastic M NPT assembly, V3007-04*
- (3) *Bypass Valve.*
- (4) *Two D-1401 Fitting Assembly REP, 2 nut coupling kits.*



b) Assembly (Figure 3)

- (1) *Remove components of Monitor™ Manifold Kit and assemble as pictured in Figure 3.*



**2. Assembling and loading mineral tanks**

- a) Two tanks are preassembled with down-flow heads.
- b) Inside each mineral tank is an upper distributor screen and lower distributor screen with 1.05” distributor tubes.
- c) Remove down-flow heads.
- d) Plug distributor tubes.
- e) Add choice of mineral to each mineral tank.
- f) Remove plugs from distributor tubes.
- g) Re-install down-flow heads.

**3. Final Assembly**

- a) Attach the mineral tanks to the Monitor™ Manifold as seen in Figure 1 on front cover page.
- b) Place bypass valve into the bypass position.

***C. Installation and Start Up***

- 1. Place Monitor™ on level floor and pipe 1” male NPT connections in and out.**
- 2. Refer to mineral manufacturers manual to properly place the Monitor™ into the service position.**
- 3. Plug meter control transformer into 115 volt AC electrical outlet.**
- 4. See Meter Control Section D. to continue Start Up.**

## ***D. Meter Control***

### **1. Description**

Meter Control monitors water use and beeps when threshold gallons is met.

**Flow display:** The meter control will provide a visual digital display of real time flow in gallons per minute; provide a total gallons record and a peak flow rate record. The total gallons and the peak flow may be cleared in Programming mode.

**Threshold visual and audible signals:** Program a threshold value between 10,000 and 9,990,000 gallons and the meter control will provide visual indication at 80% and 90% of the threshold level and an audible beep at 100% of the threshold level. This feature is useful as an indicator or reminder for future service or preventative maintenance.

**Threshold connection:** Connection Opt 2 is energized with 12 VAC when the threshold level is reached. This may be used to interface internet, signal alarms or other devices.

**4-20 milliamp connection:** Connection J2 is a 4-20 milliamp linear signal proportional to flow. This may be used to control a chemical feed pump, VFD, chart recorder or other devices.

**Flow switch connection:** Connection Opt 1 can be energized with 12 VAC when flow is greater than 0.5 GPM. When flow stops Opt 1 remains energized for an adjustable time delay off.

**Batch switch connection:** Connection Opt 1 can also be energized every certain number of gallons for an adjustable time period. This feature is adjustable between 1 to 990 gallons and .1 to 90 minutes to batch operate air pumps, chemical feed pumps, CO2 solenoids to lower pH and more.

## 2. Operation

### **Buttons:**

- Flow button: Flow rate in gallons per minute.
- Total Flow button: Total gallons registered since last memory cleared.
- Peak Flow button: Highest flow rate since last memory cleared.

### **Lights:**

- Green Light: Power on light.
- Yellow Alert Light: Blinks at 80% threshold gallons.
- Red Alert Light: Blinks at 90% threshold gallons.
- See **PROGRAMMING** section below to set threshold gallons.

### **Alarm Beep:**

- 3 Beeps every 15 seconds at 100% threshold gallons.
- Push any button to silence beep for two days.
- See **CLEAR MEMORY** section below to stop beep.

### Clear Memory (Stops Beeping)

*Clear memory will stop 100% Threshold Beep, zero out Total Flow and Peak Flow values. Be sure to write these values down and the date for future reference.*

- Press all 3 buttons simultaneously and screen displays **CLR MEMORY NO.**
- Press Total Flow or Peak Flow button and screen displays **CLR MEMORY YES.**
- Press Flow button.
- Memory is cleared.

### 3. Programming

**Press all three buttons of the display simultaneously for 3 seconds.**

- Flow Button: Toggles to next screen, also acts as the **Enter** Button.
- Total Flow Button: Toggles the values **up**.
- Peak Flow Button: Toggles the values **down**.

**Screen One: CLR MEMORY YES / NO**

- **YES** to clear memory of Total Flow and Peak Flow.
- **NO** to continue on with programming.

**Screen Two: SET PULSES** (factory set at 80)

- Set pulses per gallon (PPG) for Hall Effect meter.

**Screen Three: SET THRESHOLD TOTAL 2 YES or NO**

- **YES** to use threshold function.
- **NO** to turn off threshold function, skips screen four.

**Screen Four: SET THRESHOLD TOTAL 2** (factory set at 80)

- Set threshold gallons.
- Yellow light blinks at 80% threshold.
- Red light blinks at 90% threshold.
- Alarm beeps at 100% threshold.
- Opt2 connection is powered with 12 VAC at 100% threshold. (30 milliamps max.)

**Screen Five: SET GAL/MIN** (no factory setting)

- Set GPM for the 20 milliamp output level.
- Zero flow is a fixed 4 milliamp output.
- Watch polarity. 4-20mA output at J2 connection.

**Screen Six: SET GAL 1**

- Set the gallon batch to energize Opt1
- Set between 1 and 990 gallons.  
For Air Pump factory setting is 20 gal.  
For Feed Pump setting is 1 gal for 10 GPM peak flow.
- A setting of zero energizes Opt1 like a flow Switch, sensitive at .5 GPM.

**Screen Seven: SET MIN 1**

- Set delay off in minutes for Opt1 connection
- Set between 0.1 and 90 minutes.  
For Air Pump factory setting is 0.33 min.  
For Feed Pump setting is 0.10 min.
- Opt1 is 12 VAC (30 milliamps max.)

**Factory Settings:**

CLR MEMORY  
**no**

SET PULSES  
**80**

SET THRESHOLD  
TOTAL  
**2** **yes**

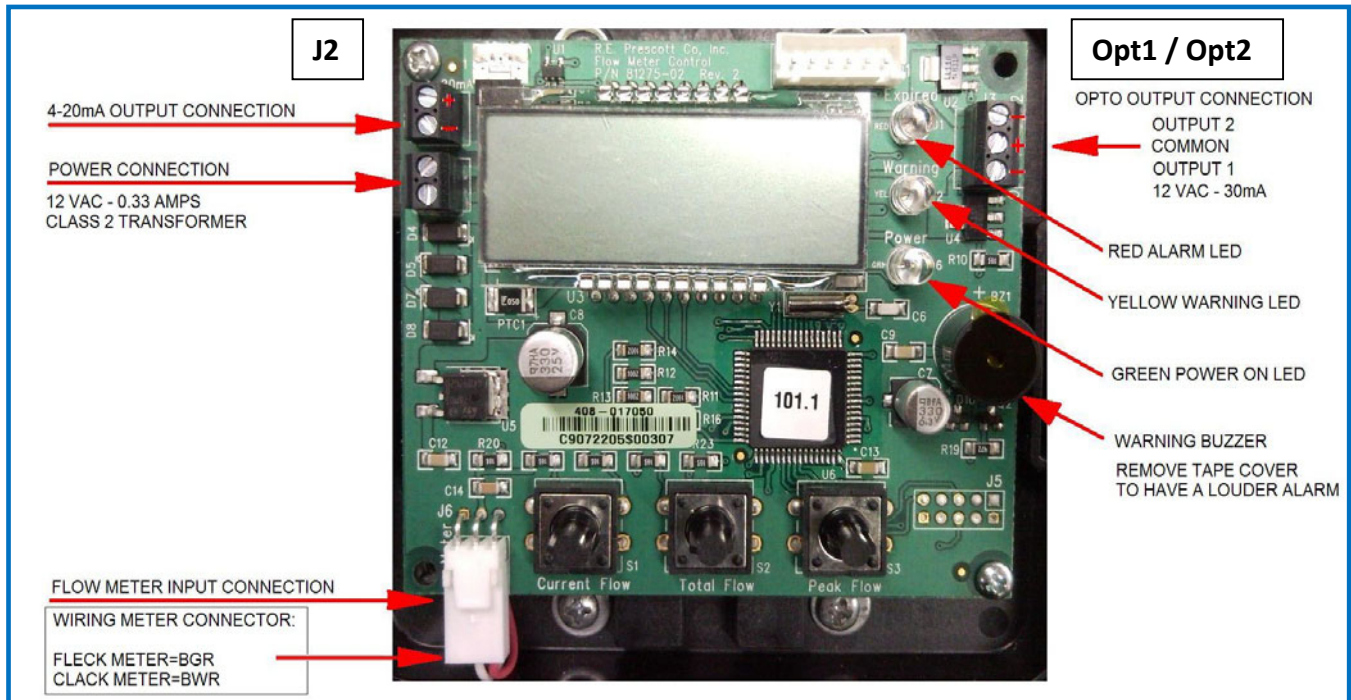
SET THRESHOLD  
TOTAL **80** GAL  
**2** X1000

SET  
**5** GAL  
MIN

SET  
**20** GAL  
**1**

SET  
**0.33** min  
**1**

## 4. Connections



### Meter Pulse Setting

Model	Size	4-20mA range	PPG
• Monitor™ meter	1" male IPS Connections	0-25 GPM max	80 PPG