INSTALLATION & OPERATION MANUAL

LOOP VELOCITY MONITOR

MODEL 00820185, 00820186, 00820187

Manufactured With Pride
In The USA

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REV A

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1. THEORY OF OPERATION

The Loop Velocity Monitoring package is designed to integrate with the existing AmeriWater alarm panel (**00850250 to 00850256**) to alert nurses and technicians that the loop velocity has fallen below 1.5 ft/s in a traditional storage tank distribution system. When the loop velocity falls below 1.5 ft/s, an audible alarm will sound at the main alarm panel and remote nurse's station. If used in a direct feed application, the alarm will sound at all times the RO is not in operation.

The flow switch is specifically sized for flow rates in ¾", 1", and 1 ¼" PVC schedule 80 piping that achieve 1.5 ft/s. When the flow rate exceeds the preset value, the alarm will silence.

2. FEATURES

Table 1, Minimum system flow rate for 1.5 ft/s

Loop Size	Part Number	Preset Flow Rate [GPM]
¾"	00820185	2.00
1"	00820186	3.25
1 ¼"	00820187	6.00

- Loop Velocity Monitoring system features integration with AmeriWater alarm packages using the normally closed relay inputs on the alarm panel.
- Ability to remotely alert nurses of a velocity issue at the nurse's station.
- Easy removal for servicing with PVC schedule 80 unions.

3. INSTALLATION

- Locate the flow switch at the end of the recirculation loop before the storage tank return, Bicarbonate mixing/distribution fill, Acid mixing/distribution fill, or any other point of use which features an unregulated draw from the loop. Failure to do so may cause the loop flow rate to drop below the required set point for the flow switch. The flow switch should be placed as close to the AmeriWater alarm panel as possible.
- Solvent weld the distribution loop piping into the correct inlet and outlet unions on the Flow switch. See Figure 1. The flow switch **MUST BE MOUNTED VERTICAL WITH THE WIRES POINTING UP. THE FLOW SET POINT MAY CHANGE OTHERWISE.**

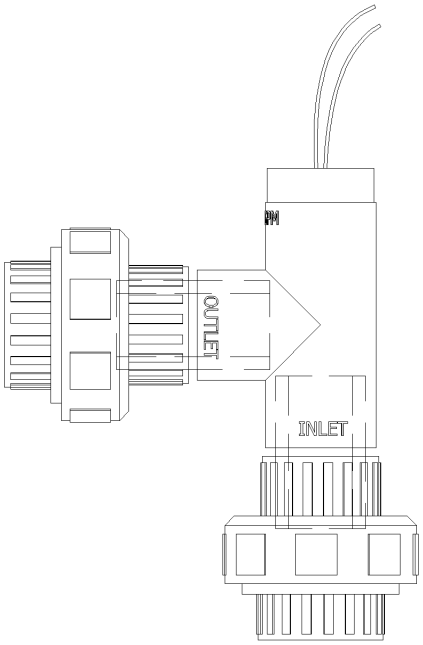

Figure 1

- Route wires from flow switch to alarm panel. Keep wire runs clean and tight to the piping or wall.
- Route the wire through on of the strain reliefs on the bottom of the AmeriWater alarm panel.
- Connect flow switch into IN5 on the AmeriWater alarm panel. See Figure 2.

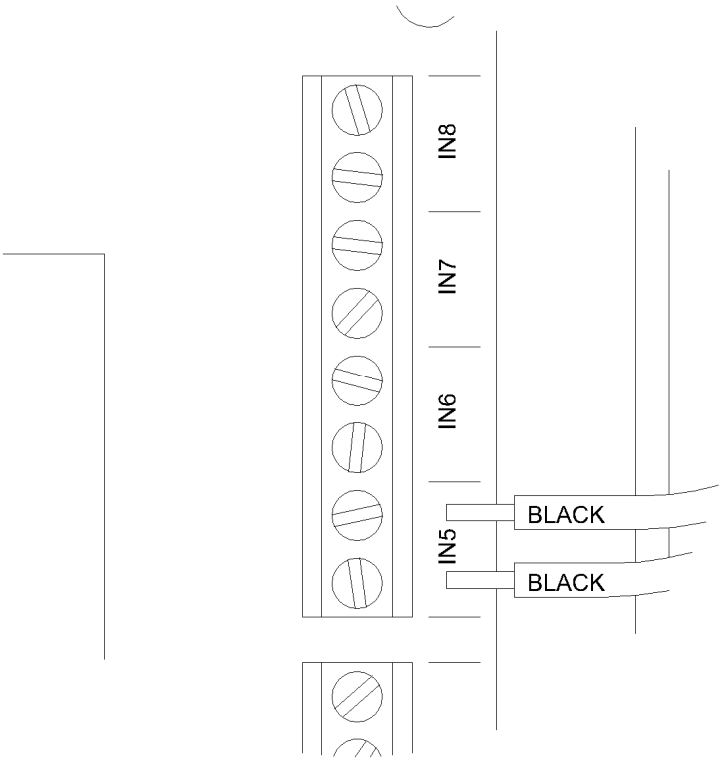

Figure 2

- Once the switch is connected to the alarm panel and installed in the distribution loop, open the AmeriWater alarm panel door and move the write protect key to the **OFF** position.

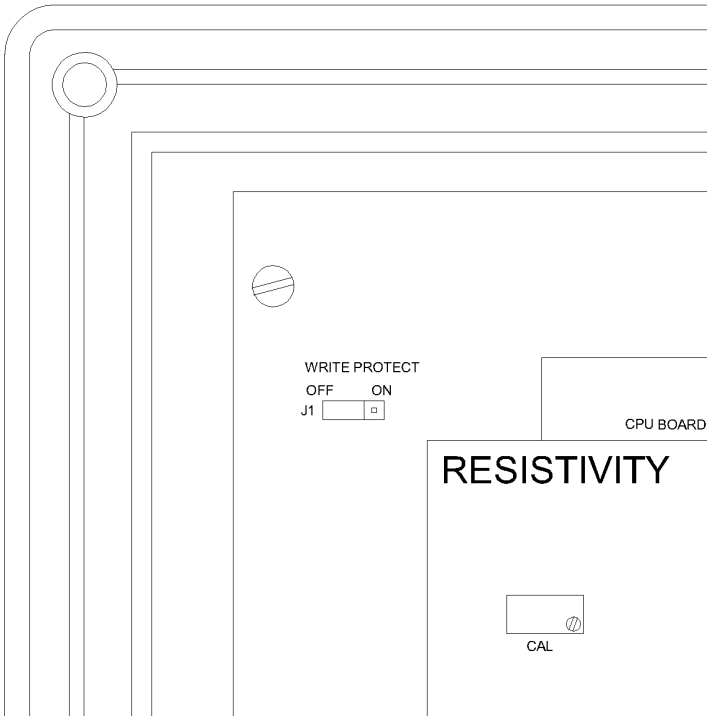

Figure 3

- Close the door on the alarm panel and power up the unit. Use the ▲ key, to navigate the LCD display until "**SW SELECT**" is displayed. Press the **ENTER** key and ▲ simultaneously to edit the setting. The Flow switch uses a normally open (NO) switch to sound the alarm. Set IN5 to normally closed (NC). The value can be set between 0-255. Use the following Table to set the correct switches to NC:

Table 2

Software Switch	Input	N.O	N.C.	Value
RO ALARM	IN1	0	1	
TANK LOW	IN2	0	2	
BICARB LOW	IN3	0	4	
HEATSAN ACTIVE	IN4	0	8	
AUX 2 ALARM	IN5	0	16	
AUX 3 ALARM	IN6	0	32	
AUX 4 ALARM	IN7	0	64	
AUX 5 ALARM	IN8	0	128	
			Total:	

*__EXAMPLE__: If the RO ALARM and AUX 2 ALARM inputs are to be normally closed (N.C.) and the remainder of the inputs are normally open (N.O.), the 'SW SELECT' set point value would be 17 (1+16).

- Once the correct switches are set, power down the panel and replace the write protect key to the **ON** position.
- Power the alarm panel up, the alarm should be active if no water is flowing through the distribution loop. When alarm is active, **AUX 2 ALARM** will be displayed on the LCD display.

4. MAINTAINENCE

- If the Switch fails, use the following steps to replace the switch. Table 3 provides the part number for replacement switches.
    - Remove pressure from the distribution loop piping.
    - Pull the locking pin from the PVC SCH40 tee.
    - With the locking pin removed, carefully lift the removable bonnet from the top of the switch body.
    - Remove bonnet from new switch. Place new bonnet into switch body and replace the locking pin.

Table 3

Part Number	Switch set point
67-0015	3.25 GPM
67-0016	2.00 GPM
67-0017	6.00 GPM

5. SPECIFICATIONS

Specification	00820185	00820186	00820187
Loop Velocity Set point [ft/s]	1.5	1.5	1.5
Minimum Flow Rate [GPM]	2.00	3.25	6.00
Connection Size	0.75”	1.00”	1.25”
Wetted materials	PVC SCH80, PVC SCH40, Stainless Steel, Viton A, Ceramic Ferrite	PVC SCH80, PVC SCH40, Stainless Steel, Viton A, Ceramic Ferrite	PVC SCH80, PVC SCH40, Stainless Steel, Viton A, Ceramic Ferrite
Accuracy	±20% MAX	±20% MAX	±20% MAX
Reed Switch	SPST 20VA Pilot Duty	SPST 20VA Pilot Duty	SPST 20VA Pilot Duty
Pressure Range [PSIG]	-14.7 - 150	-14.7 - 150	-14.7 - 150
Reed Switch Logic	Black-Common, Black-NO	Black-Common, Black-NO	Black-Common, Black-NO
Temperature Range [ºF]	-20 - 140	-20 - 140	-20 - 140