Manufactured By:
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⚠ WARNING!
ELECTRICAL SHOCK HAZARD
Disconnect all power sources before servicing. Failure to do so could result in serious injury or death.

Warranty void if panel is modified.

Notice:
This electrical panel must be installed and serviced by a licensed electrician in accordance with the NEC NFPA-70, state and local electrical codes. Cable connections must be liquid tight in NEMA 4X enclosures. Nema 4X enclosures ensure a degree of protection against corrosion, dust, rain, & splashing water from any angle.

Installation

Mounting & Wiring
Note: Conduit sealant must be used to prevent moisture and gasses from entering the panel. If splicing is required use liquid tight junction box and connectors. **Do not mount junction box inside sump or basin. Run control switches in separate conduit from pump and line power.**

1. Determine a good location for mounting the control panel.

2. Use the mounting devices supplied with the panel to mount the panel in an upright position, high enough so the panel will not be subject to submersion.

3. Determine the number, size, and location of the conduit locations on the enclosure. Note: control switches require separate conduit from power and pump cables.

4. Drill proper size holes for conduit connectors.

5. Attach cable/conduit connectors to enclosure.

6. Identify and label each wire before pulling through conduit/connectors.

7. Pull cables though conduit/connectors.

8. Tighten connectors/apply conduit sealant.

9. Make connections per panel schematic. Ensure incoming pump and control voltages match that of the panel and pump motors.

10. Power up the panel. After making final adjustments, ensure the panel is operating properly.

Sequence of Operation

The controller program is designed to operate a timed or demand dose Duplex (two pumps) System. Refer to the float diagram below for duplex operation/description.
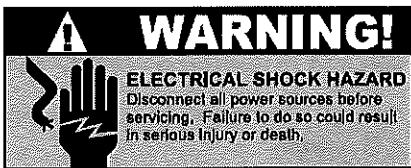
Hand Mode:
When a HOA switch is placed in "Hand" mode the corresponding pump will be called to run regardless other inputs.

Auto Mode Demand Dose:
When the pump HOA switches are placed into auto mode, the pump(s) will be called to run by liquid level and float switch orientation. The placement of the float switches determines stop, lead start, lag start, & high alarm levels (see float diagram... Page 2). The lead pump will alternate after each run cycle. When the lead pump has failed or is taken out of "Auto" mode the lag pump will take over the lead pumps duty.

Auto Mode Time Dose:
When the liquid level rises and both FS-1 and FS-2 are activated the rest/dose cycle will begin. If the liquid rises to FS-3 and activates the switch, and the controller will start the override time rest/dose cycles. If FS3 drops the pump will continue the normal time rest/dose cycles until FS-2 is deactivated. If FS-2 drops while dosing the controller will finish the dose cycle. If FS-1 deactivates the pump will stop and reset the rest/dose timers. A timer disable value will display accumulated time FS-1 has been down. The placement of the float switches determines stop, rest/dose, & high alarm levels (see float diagram... Page 2).
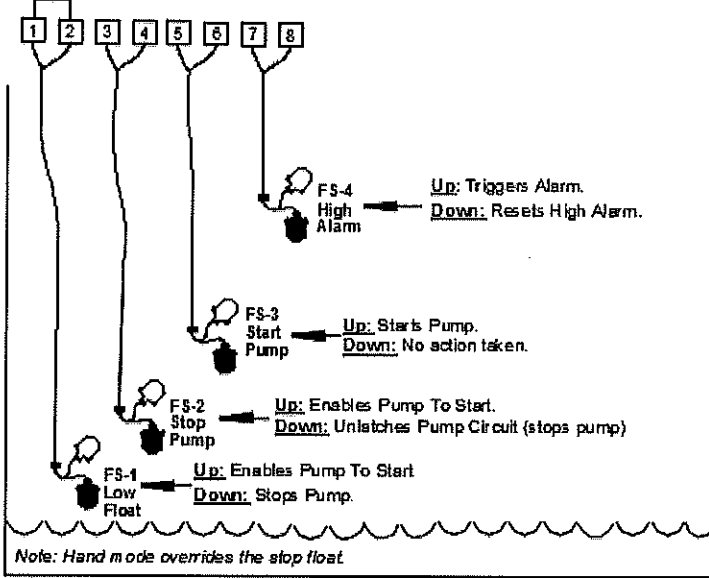
Alarm Condtions

High Level Alarm:
The alarm will trigger if the high alarm float is in the raised position and it remain on until the silence button is pressed. The alarm buzzer may be silenced by toggling the alarm switch to the "silence" position. The alarm may also be tested by toggling the same switch to the "test" position.
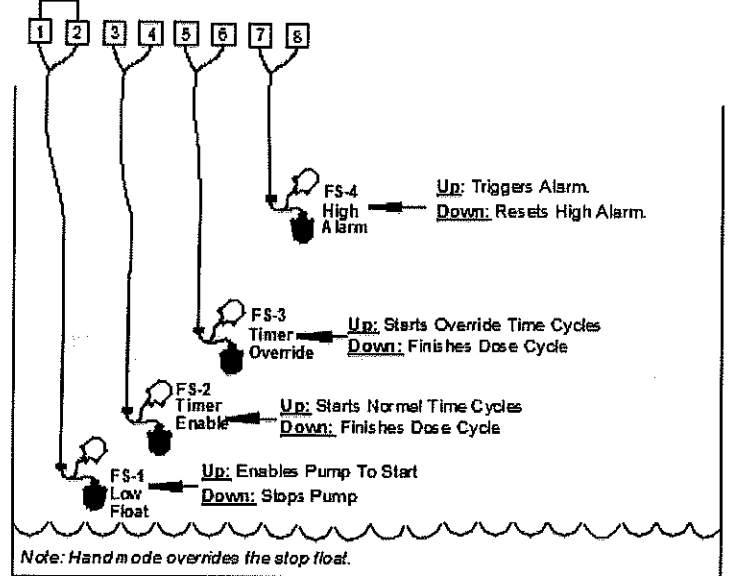
4 Float Operation

Remove Jumper If Using Redundant Off Float

1 2 3 4 5 6 7 8

FS-4 High Alarm — Up: Triggers Alarm. Down: Resets High Alarm.

FS-3 Start Pump — Up: Starts Pump. Down: No action taken.

FS-2 Stop Pump — Up: Enables Pump To Start. Down: Unlatches Pump Circuit (stops pump)

FS-1 Low Float — Up: Enables Pump To Start Down: Stops Pump.

Note: Hand mode overrides the stop float.

Demad Dose Simplex Basin Float Diagram

4 Float Operation

Remove Jumper If Using Redundant Off Float

1 2 3 4 5 6 7 8

FS-4 High Alarm — Up: Triggers Alarm. Down: Resets High Alarm.

FS-3 Timer Override — Up: Starts Override Time Cycles Down: Finishes Dose Cycle

FS-2 Timer Enable — Up: Starts Normal Time Cycles Down: Finishes Dose Cycle

FS-1 Low Float — Up: Enables Pump To Start Down: Stops Pump

Note: Hand mode overrides the stop float.

Time Dose Simplex Basin Float Diagram

Controller Display

The controller has 16 display screens. To scroll between the screens press the A or B buttons.

(ESC) Button always goes back to the main screen
(B) Button goes back to previous screen
(A) Button advances to next screen

| Main Screen |

```
Floats Up  >1
Floats Down> 234

*Time
```

This screen shows the pump total lapsed time and the total pump cycles

```
                    HHHH:MM
Pump ETM>000000:00

Pump Cycles>000000
```

This screen shows the total high and low level alarms

```
High Level Alarm
Counts      >00000
Low Level Alarm
Counts      >00001
```

This screen allows you to change time off/on setting for a normal dose condition when FS2 is activated

```
   Time Settings
              HH:MM:SS
Time Off >00:00:10
Time On  >  00:10
```

This screen allows you to change override time off/on setting for a peak dose condition when FS3 is activated

```
   Time Settings
              HH:MM:SS
Ovrd Off >██:01:05
Ovrd On  >  00:05
```

This screen allows you to allows you to set how long you want to controller to say in override once the FS3 is activated

```
Minimum Override
Time
              HH:MM
              00:01
  \
```

This screen shows the total cycle counts for override and time cycles

```
Time  Override
Cycles      >00000
Time
Cycles      >00000
  \
```

This screen allows you to change the high level alarm delay when FS4 is activated *for time dose mode only

```
High Level Alarm
Delay
              HH:MM
              ██:01
  /
```

This screen allows you to change the minimum pump run time when FS3 is activated *for demand dose mode only

```
Minimum Pump Run
Time
              MM:SS
              00:██
  \
```

This screen shows the input and outputs that are on or off. Top 1-8 are inputs, bottom 1-4 are outputs

```
12345678

1234
              12:47
  \
```

This screen shows the pump total elapsed time and pump cycles *#R indicates the values on the screen can be reset by holding the silence button for 10 seconds

```
Time  Override
Cycles    #R>00000
Time
Cycles    #R>00000
  \
```

This screen shows the total of override and normal time cycles *#R indicates the values on the screen can be reset by holding the silence button for 10 seconds

```
#R          HHHH:MM
Pump ETM>000000:00

Pump Cycles>000000
  \
```
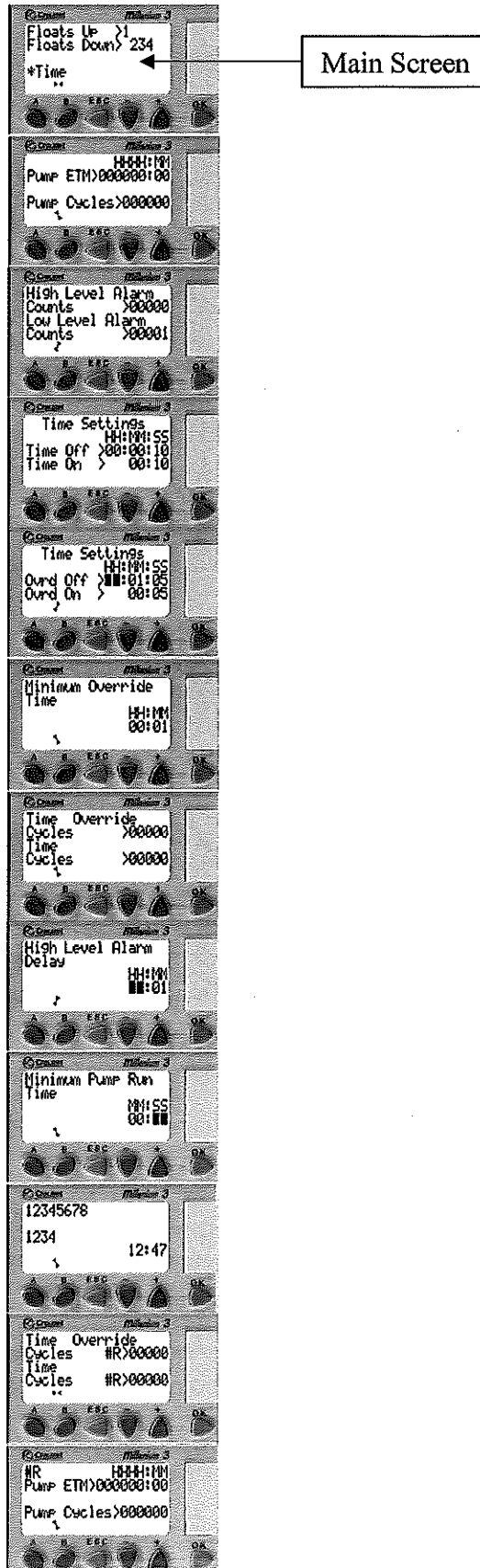
This screen shows the total high and low alarms
*#R indicates the values on the screen can be
reset by pressing and holding the silence button
for 10 seconds

This screen shows the totals for power loss faults
and hours the unit has been in service

This screen shows the totals for power loss faults
and hours the unit has been in service *#R
indicates the values on the screen can be reset by
pressing and holding the silence button for 10
seconds

This screen allows you to change the controller
from time dose to demand dose.
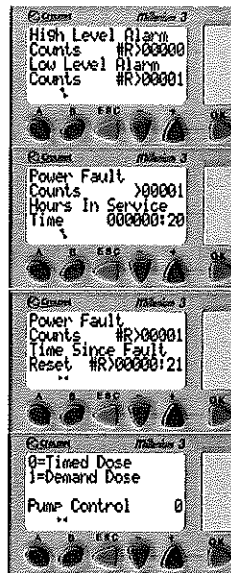
Setting the Adjustable Timers / Count Values

To adjust the timer or count values follow steps 1-5.

Step 1: Scroll to screen #3 by pressing button (A).

Step 2: Use the (+) or (-) buttons to move the blinking boxes over the value you want to change.

Step 3: Press the (OK) button to select the value the boxes should disappear.

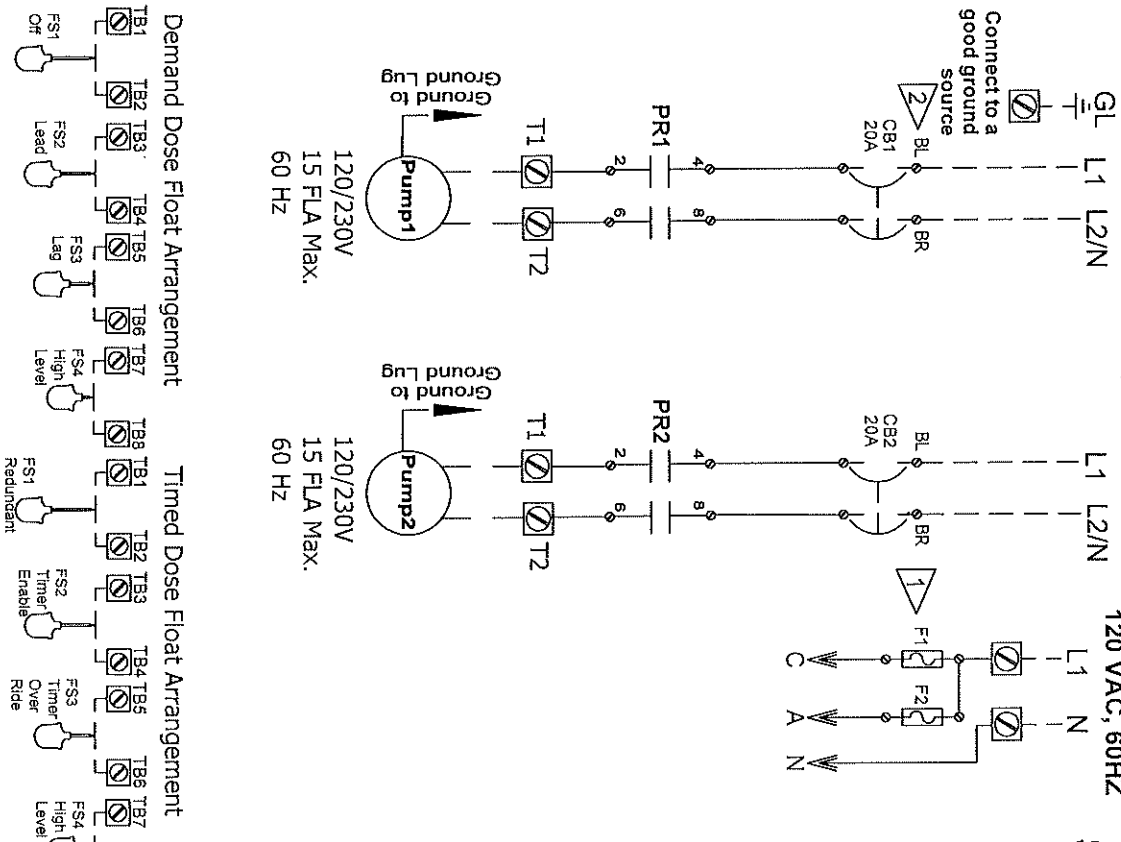Step 4: Use the (+) or (-) buttons to adjust the value.

Step 5: Press the (OK) button to save the change. Repeat steps 1-4 until all the timer and count values are to your satisfaction.

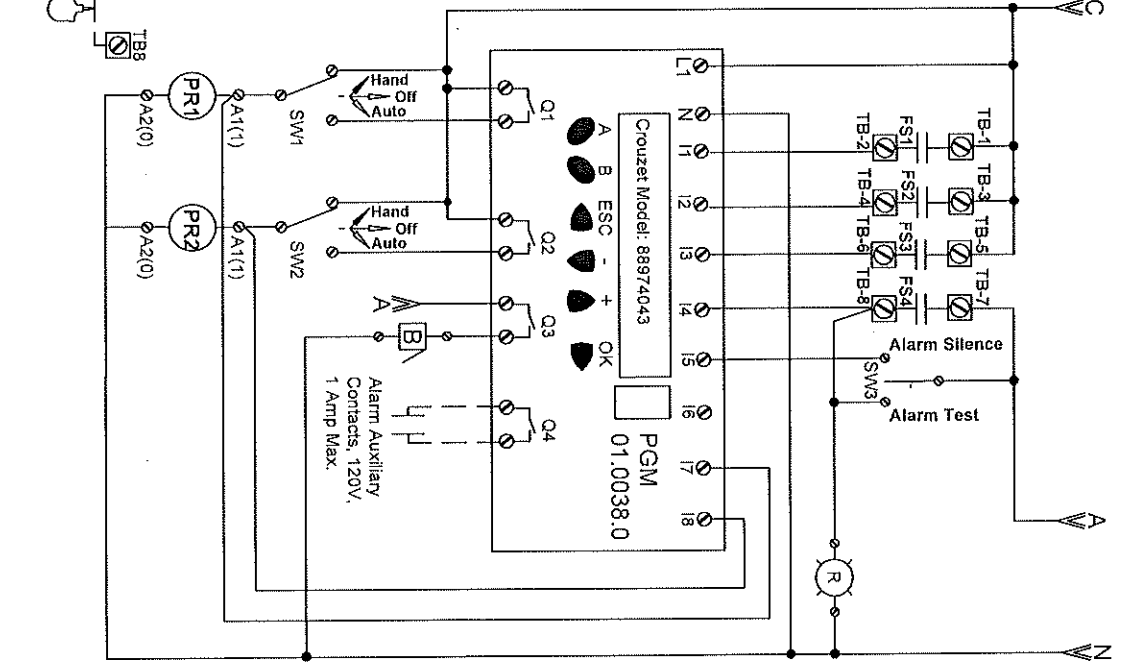Step 6: Press the (ESC) button anytime you want to return back to the home screen.

4 of 4

Pump Power
120/230 vac, 60HZ

Connect to a good ground source

GL

Ground to Ground Lug

Pump1
120/230V
15 FLA Max.
60 Hz

PR1
CB1 20A
BL
BR
T1 T2
2 4 6 8
L1 L2/N

Pump2
120/230V
15 FLA Max.
60 Hz

PR2
CB2 20A
BL
BR
T1 T2
2 4 6 8
L1 L2/N

Ground to Ground Lug

Control/Alarm Source
120 VAC, 60HZ

F1 F2
L1 N
C A N

Demand Dose Float Arrangement

FS1 Off — TB1
FS2 Lead — TB2 TB3
FS3 Lag — TB4 TB5
FS4 High Level — TB6 TB7
TB8

Note: Dual purpose floats are not tagged.

Timed Dose Float Arrangement

FS1 Redundant Off — TB1
FS2 Timer Enable — TB2 TB3
FS3 Timer Over Ride — TB4 TB5
FS4 High Level — TB6 TB7
TB8

PR1 A2(0) A1(1)
SW1 Hand-Off-Auto
PR2 A2(0) A1(1)
SW2 Hand-Off-Auto

Q1 Q2 Q3 Q4

Crouzet Model: 88974043

A B ESC - + OK

PGM
01.0038.0

Alarm Auxiliary Contacts, 120V, 1 Amp Max.

L1 N I1 I2 I3 I4 I5 I6 I7 I8

FS1 TB-2 TB-1
FS2 TB-4 TB-3
FS3 TB-6 TB-5
FS4 TB-8 TB-7

Alarm Silence
SW3
Alarm Test

R

C A N

Legend

FS	Float Switch
B	Alarm Buzzer
R	Alarm Beacon
SW3	Alarm Test/Silence
SW1,2	HOA Switches
TB	Terminal Block
PR1,2	Pump Start Relays
F1,2	Alarm/Control Fuses
CB1,2	Pump Circuit Breakers
GL	GROUND LUG
CR	CONTROL RELAY

Power Wiring = BLK
120VAC Control Wiring = RED
Neutral = WHT
Ground = GRN

AWG/ OR CIRCULAR MILL SIZE	TIGHTENING TORQUE IN INCH POUNDS	
	SCREW DRIVER	EXTERNAL DRIVE WRENCH
14	35	75
12	35	75
10	35	75
8	40	75
6	45	110
4	45	110
2	50	150
1	50	150
1/0	50	150
2/0	50	180

- - - FIELD WIRING
...... FIELD SUPPLIED
TERMINAL BLOCK
120VAC Control Wiring

1 F1 & F2 FUSE MUST BE REPLACED WITH 1 AMP 5mm X 20mm ACTING 250 V MAX.

2 Bottom Feed Breakers BL - Bottom Left BR - Bottom Right

Notes:
1. WARNING! Electrical Shock Hazard! Disconnect power before servicing this product. A qualified service person must install and service this product according to applicable electrical and plumbing codes.
2. Install in accordance with National Electric Code, NFPA 70. Seal all boxes, fittings and conduit with appropriate seal devices to prevent moisture and gases from entering enclosure.
3. Connect all grounds to a good ground.
4. Dashed lines represent field wiring - Use minimum 60 deg C Copper Wire
5. Branch Circuit Protection Device/Disconnect Means Field Provided.

Note: Connect all grounds to a good ground.