

# **WATER LEVEL CONTROLLER**

## **WATER LEVEL ADJUSTMENT INSTRUCTIONS**

Part No. 9843148

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**MUELLER**<sup>®</sup>  
REFRIGERATION PRODUCTS

# WATER LEVEL CONTROLLER INSTRUCTIONS

## 1.0 General

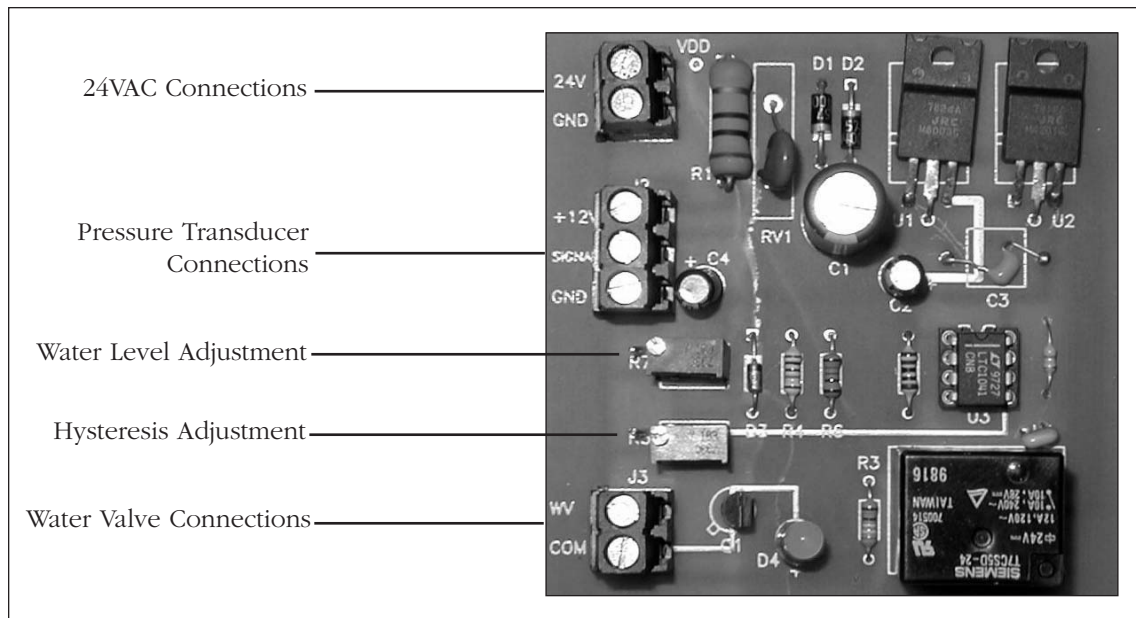
The level controller is a stand-alone board, designed to read the input from a pressure transducer and operate water valve(s) based on the transducer reading. The output of the board is a normally open relay contact that can be used to operate a 24 VAC water solenoid valve(s).

The board provides for a range of operation from 0 to 60 inches of water level with a hysteresis setting from 0 to 6 inches of water. Hysteresis is normally preset and adjustment is not required.

## 2.0 Electrical Connections

The electrical connections to the controller are depicted in the figure below.

**Figure 1 - Water Level Controller Electrical Connections**



The input power to the board (24 VAC) is brought in from the transformer to the terminals marked 24V and GND at the top left corner of the board. The wires from the pressure transducer are connected to the center terminal strip as follows:

<b>Red:</b>	+12
<b>White:</b>	SIGNAL
<b>Black, Drain:</b>	GND

**Note:** The system is grounded through the transducer to earth ground.

The 24 VAC water solenoid valve(s) are connected to the terminals marked “WV” and “COM.”

### 3.0 Water Level Adjustment

Connect a DC voltmeter between R7 and the pressure transducer GND. Refer to Table 1 and set desired water level. This setting will read the water level above the pressure transducer. To reduce the water level, turn the potentiometer screw counterclockwise until desired voltage (water level) is obtained. To increase the water level, turn the potentiometer screw clockwise until desired voltage (water level) is obtained.

### 4.0 Hysteresis Adjustment

Connect a DC voltmeter between R5 and the pressure transducer GND. Refer to Table 1 and set desired water level differential. To reduce the hysteresis, turn the potentiometer screw counterclockwise until desired voltage (hysteresis) is obtained. To increase the hysteresis, turn the potentiometer screw clockwise until desired voltage (hysteresis) is obtained.

**Table 1 - Water Level/Hysteresis Table**

WATER LEVEL				HYSTERESIS	
Inches	DC Volts	Inches	DC Volts	Inches	DC Volts
0	1	31	1.896	0.5	0.014
1	1.029	32	1.925	0.75	0.022
2	1.058	33	1.954	1	0.029
3	1.087	34	1.983	1.25	0.036
4	1.116	35	2.012	1.5	0.043
5	1.145	36	2.040	1.75	0.051
6	1.173	37	2.069	2	0.058
7	1.202	38	2.098	2.25	0.065
8	1.231	39	2.127	2.5	0.072
9	1.260	40	2.156	2.75	0.079
10	1.289	41	2.185	3	0.087
11	1.318	42	2.214	3.25	0.094
12	1.347	43	2.243	3.5	0.101
13	1.376	44	2.272	3.75	0.108
14	1.405	45	2.301	4	0.116
15	1.434	46	2.329	4.25	0.123
16	1.462	47	2.358	4.5	0.130
17	1.491	48	2.387	4.75	0.137
18	1.520	49	2.416	5	0.145
19	1.549	50	2.445	5.25	0.152
20	1.578	51	2.474	5.5	0.159
21	1.607	52	2.503	5.75	0.166
22	1.636	53	2.532	6	0.173
23	1.665	54	2.561		
24	1.694	55	2.590		
25	1.723	56	2.618		
26	1.751	57	2.647		
27	1.780	58	2.676		
28	1.809	59	2.705		
29	1.838	60	2.734		
30	1.867				

*\*The hysteresis is the distance below the setpoint that the water valve will open, and the distance above the setpoint that the water valve will close.*

**Table 2 - Approximate Vertical Distance from Water Level Sensor to Bottom of Overflow**

FFC Cabinet Size	Approximate Vertical Distance from Water Level Sensor to Bottom of Overflow
2-8 Plate 3 x 5	15"
2-8 Plate 4 x 8	21"
9-16 Plate 4 x 8	21"
17-24 Plate 4 x 8	21"
25-35 Plate 4 x 8	21"

**Example:**

Distance from sensor to overflow: 21"  
 Distance below overflow to shut off: 1"  
 Maximum desired depth above sensor: 20" (21" – 1")  
 Distance below shut off point for water valve to open: 4"  
 Water Level Setpoint: 1.520 DC volts (20" – 2" of Hysteresis\* = 18")  
 Hysteresis Setpoint: 0.058 DC volts (Equals 2" above water level setpoint and 2" below water level setpoint for a total drop of 4")



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