

AUTOMATIC FILTERS, INC.

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GB8 USERS'
MANUAL

Tekleen

GB8 *USERS' MANUAL*



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SECTION I INTRODUCTION

Automatic Filters, Inc. features state of the art electronic backwash controllers in the GB series. The GB8 controller is complete with solenoids, a differential pressure sensor, a backwash counter, and an emergency alarm output. GB8 controllers backwash multiple filters, 4-8 or 12. The filters can be cleaned in 3 different modes: D/P, timer, and manual. They are available in 115/230 volts or are battery operated, 12VDC. The solenoid needs to be energized to open the flushing valve. The controller will sequence the filters to rinse one at a time.

SECTION II INSTALLATION

The controllers come factory-prepared and are ready to use. The only steps necessary for installation are:

1. Mounting the controller
2. Connecting the tubings and wires of the PD gauge
3. Connecting the power supply (AC models)
4. Connecting the tubing and wires of the solenoid

Mount the electric controller on a convenient wall or panel as close as possible to the filter to minimize the length of the pressure tubing. The controller can also be mounted directly on the filter itself with brackets.

The pressure differential (PD) gauge/switch is installed on the bottom of the controller housing. The 1/8" tubing from the high pressure connection (red) on the center of the PD gauge goes to the high pressure side of the filter or manifold (inlet). The low pressure connection (blue) of the PD goes to the low pressure side of the filter or manifold (outlet). If desired, the gauge may be removed from the housing and mounted at a suitable location on the filter.

For 110/230 Volt AC models, connect 120 VAC or 230 VAC, depending on the primary voltage in your area, to the transformer terminals. The 24 VAC leads are to be connected to the terminal strip.

SECTION III SOLENOID

The GB8 controllers come with a standard 24 volt AC 3-way solenoid or a 12 VDC 3-way solenoid.

The solenoid may use filter inlet water or instrument air (80 PSI) to open the flushing valve. The vent line should be drained. Install the solenoid not more than 3 ft. (1m) away from the flushing valve.

SECTION IV FRONT PANEL CONTROLS & SETTINGS

4.1 Periodic Flush

A periodic flush will occur at the elapsed time set on the PERIODIC switch -- provided a normal PD flush or manual flush has not occurred during that time cycle. The PD periodic switch resets after each backwash. For example, if the switch is set for one hour and a PD flush occurs at 49 minutes, the periodic flush will not start a cycle 11 minutes later. It will reset for 1 hour later. Settings range from OFF to 24 hours.

4.2 Flush Time

The amount of time that the filter backwashes should be set in a range of 2 to 15 seconds.

4.3 Dwell Time

The GB8 controller can control up to 4, 8, or 12 filters. The controller flushes each filter in sequence, starting with filter #1. The dwell switch sets the time between successive filter flushes. It allows the 1st filter's rinse valves to close completely before the 2nd filter starts to flush, and so on. Factory setting is 10 seconds.

4.4 Power On/Off Switch

The power on/off switch controls power to the controller and to all filter solenoids, alarms, and the master valve solenoid. Make sure that this switch is in the OFF position when the system is not in use or work is being performed on the electrical system.

4.5 LCD Screen

The LCD screen displays the backwash counter. Also, when the output fuse has blown, the display indicated "FUSE," and the PD and DWELL lights will flash alternately until the fuse is replaced.

4.6 Manual Start Button

The manual start button activates back flushing of filter(s).

4.7 Counter Reset Button

The counter reset button resets the back flush counter.

4.8 Alarm Reset

An alarm output is activated whenever the controller initiates three or more consecutive backwashes by pressure differential signal in less than 2 minutes. This alarm has both a visible light and an electrical output capable of activating a relay which can, in turn, operate a lamp or a bell. The alarm is resettable with the push button on the panel.

SECTION V BEHIND-THE-PANEL CONTROLS

5.1 AC/DC Voltage Switch

The AC/DC voltage switch is a large black toggle-type switch located near the bottom center on the backside of the control panel. It controls the voltage available to operate either 24 VAC or 12 VDC solenoids. "OUTSIDE" is for the 24 VAC setting -- "INSIDE" is for 12 VDC. The factory preset is 24 VAC for 120/230 volts.

5.2 Circuit Board Fuse

The fuse for the electronics is located between the front panel and circuit board. To replace, remove the front panel and replace with a 1 amp, 5 X 20 mm fuse. DO NOT replace with higher amp fuse.

SECTION VI TERMINAL STRIP CONNECTIONS

6.1 Transformer “RWR”

These transformers are three terminals which connect to the power supply from the transformer -- two red leads and one white lead. The white lead should be connected in the middle terminal. This will be pre-installed by the manufacturer. $R_1 + R_2 = 24VAC$ $R_1 + W = 12VAC$ $R_2 + W = 12VAC$

6.2 Solenoid 1 “C1”

These terminals control the solenoid valve. “C” stands for “common,” and “1” indicates the solenoid #1. This will be installed by the customer. Polarity is not important.

6.3 Solenoid 2 and More

Connect Solenoid #2 to 2 & common, attach Solenoid #3 to 3 & C, and so on.

6.4 Master Valve “CM”

The master valve output is marked with an M on the terminal block. This output is ON at the start of each backwash cycle and goes OFF when the controller returns to IDLE. The master valve output is only used when the filter system requires the optional pressure sustaining valve at the down stream of the filter. The filter needs to maintain inlet pressure greater than 35 PSI (2.5 BAR) during rinsing. The mastervalue energizes as soon as the cycle starts. 15 seconds later, the first filter starts to rinse. Next is Dwell, and so on. The master valve goes off when the last filter shuts off.

6.5 Alarm Output “C & A”

These terminals are for alarm output. The condition for alarm is 3 consecutive backwashes with the DP gauge still activating. You may connect a light or a buzzer to C & A terminals.

6.6 PD Gauge “PD”

These are terminals for the PD gauge. Polarity is not important. They are installed by either the manufacturer or by the customer. Please make sure to install the DP gauge upside down. This will eliminate any future shorts if the high or low pressure tubing leaks. You may cover the contact points with silicone or any water sealant to prevent shorting.

SECTION VII GENERAL NOTES

7.1 1st Filter Actuation

A built-in time delay of 30 seconds before the 1st filter starts to flush is activated as soon as a signal to flush (from the PD gauge) enters the computer. The purpose of this delay is to eliminate any water pressure spikes or false pressure surges from actuating a rinse.

7.2 Cautions

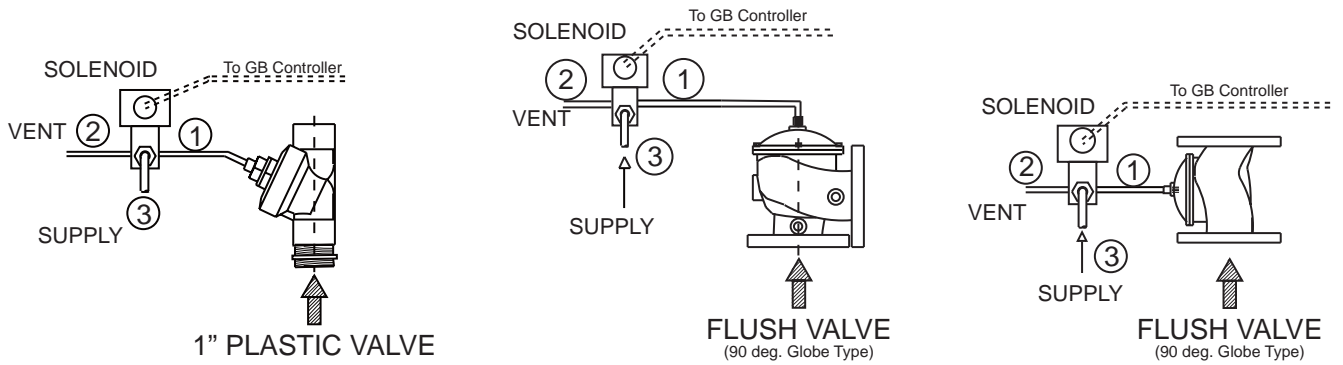
1. DO NOT exceed output ratings of controller (2.5 amps).
2. Make sure output voltage switch is correctly set for 24 VAC or 12 VDC solenoids.
3. When coming in with 12 VDC, only use the first two terminals on the terminal block. The third terminal is not used for DC input. Also, the output switch (the toggle switch at the backside of the board) needs to be in the DC position.
4. DO NOT connect 230 VAC to a 115 VAC transformer.

7.3 Common Sense

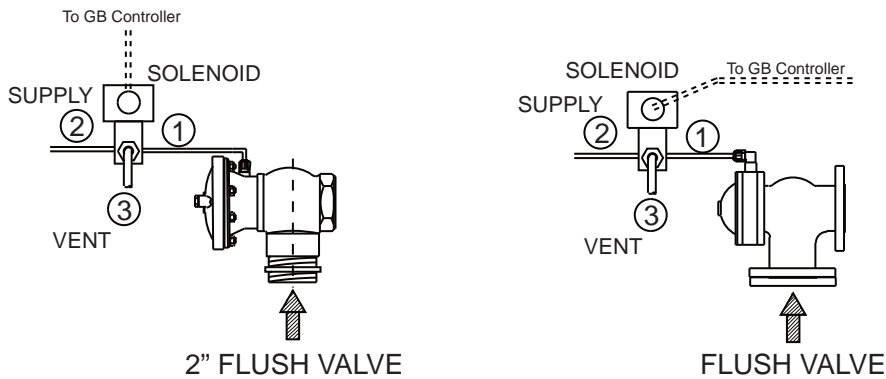
1. You may install the controller far away from the filter. Providing that the solenoid and the DP switch are at the filter.
2. Any time the flush valve fails to open or close, please check for plugged dirty solenoid or dirty tubing.
3. A surge protector is needed to protect the controller from voltage spikes. Will result in burnt PC. If absent, surge protection can be purchased at any electrical supplies store.
4. It is always advisable to check and clean the minifilter which supplies water to the piston.

24 VAC OR 12 VDC 3-WAY SOLENOID FLUSHING VALVE CONNECTION

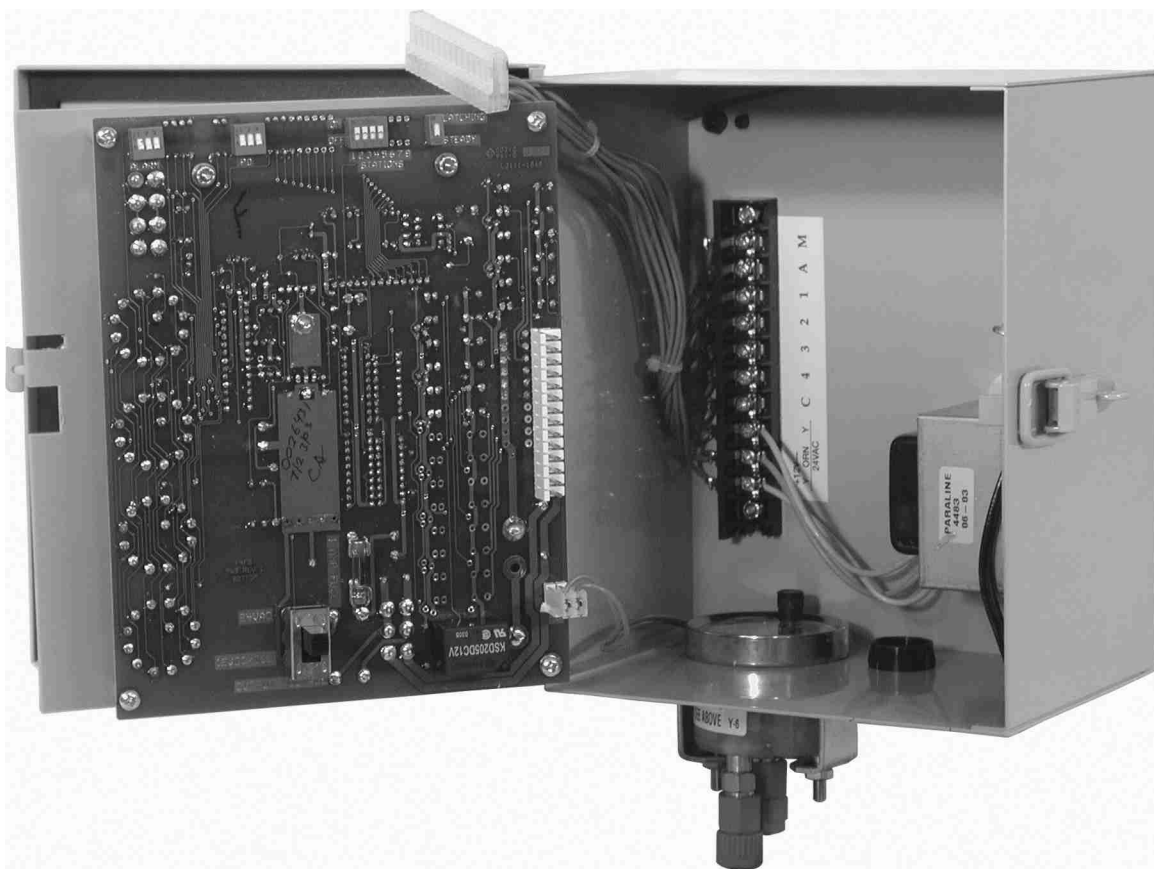
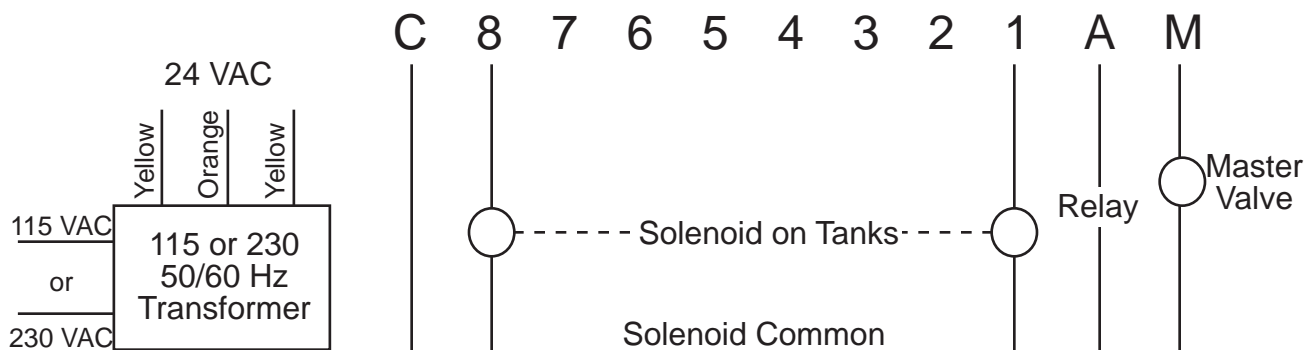
SINGLE CHAMBER VALVES



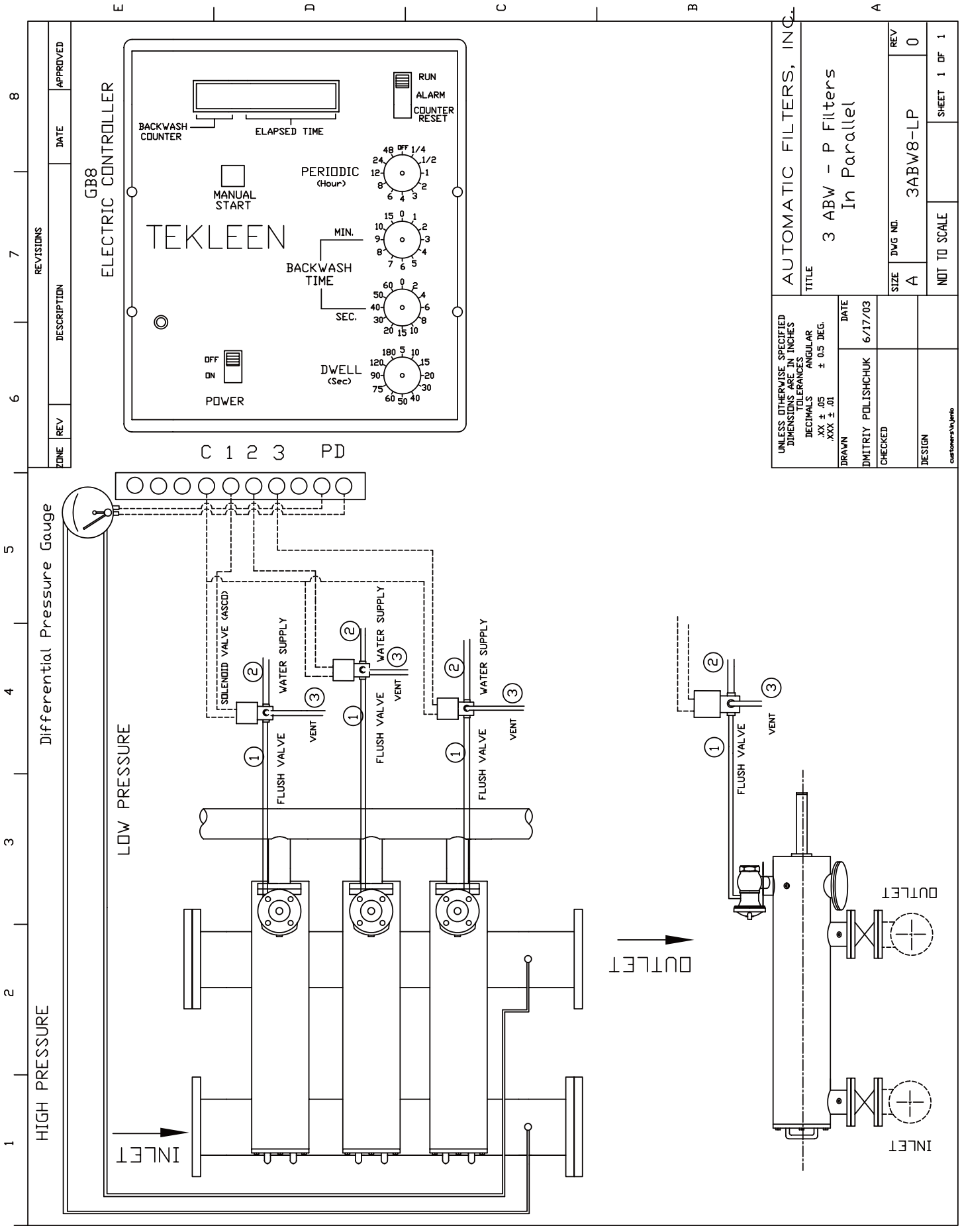
DUAL CHAMBER VALVES



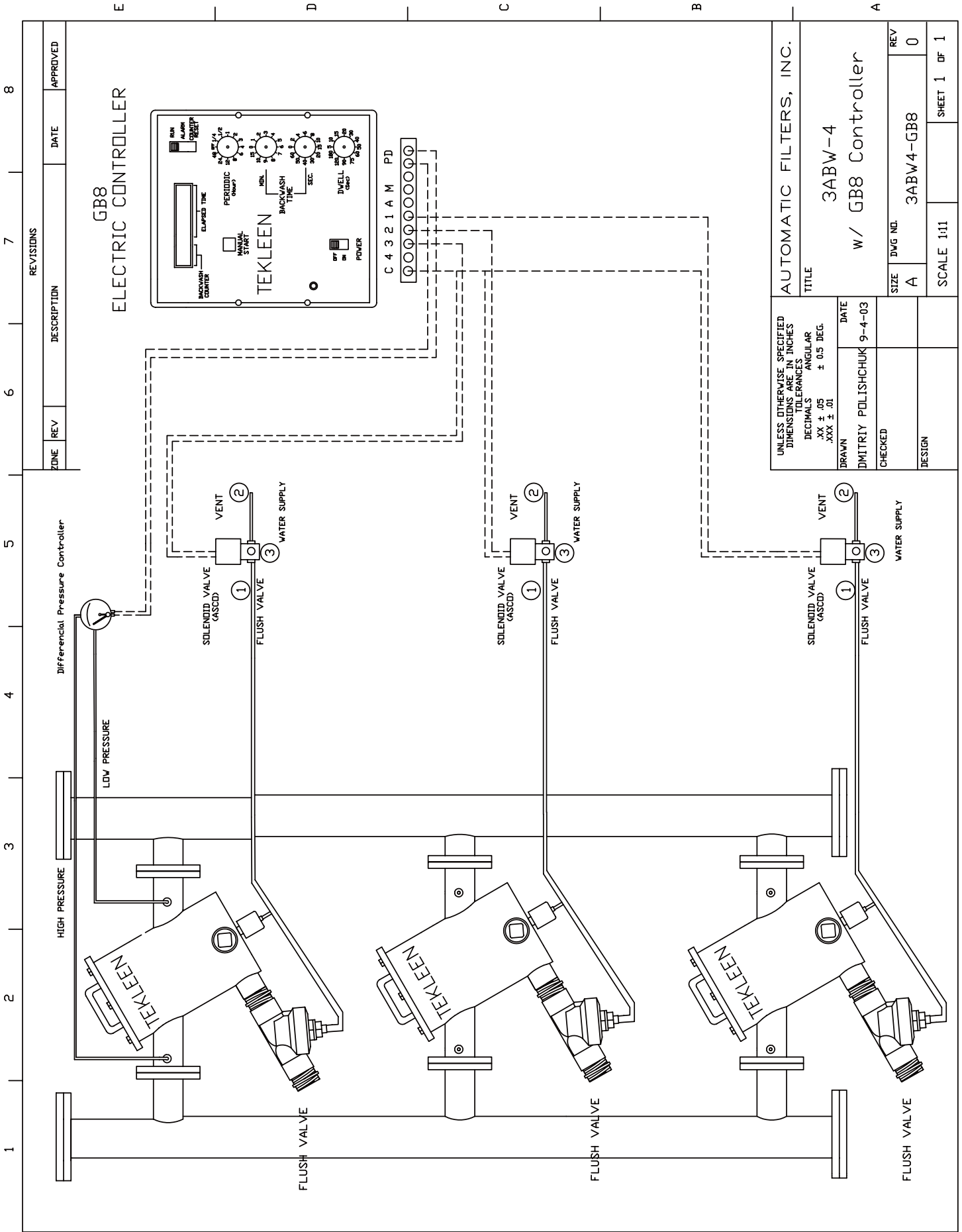
AC POWER WIRING



* To prevent shorting, we recommend installing the D/P upside down.



REVISIONS		DATE	APPROVED
ZONE	REV	DESCRIPTION	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS FRACTIONS ANGULAR .XX ± .02 .XXX ± .01			
DRAWN	DATE	AUTOMATIC FILTERS, INC.	
DMITRIY POLISHCHUK	6/17/03	3 ABW - P Filters In Parallel	
CHECKED		SIZE	REV
DESIGN		A	0
		NOT TO SCALE	SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS ANGULAR XX ± .05 .XXX ± .01		DATE
DRAWN DMITRIY POLLISHCHUK 9-4-03		DATE
CHECKED		DESIGN
AUTOMATIC FILTERS, INC.		
TITLE		
3ABW-4 w/ GB8 Controller		
SIZE A	DWG NO. 3ABW4-GB8	REV 0
SCALE 1:11		SHEET 1 OF 1

SECTION VIII STARTING THE FILTER UP

If possible, please send us a few digital pictures of the filter and controller before the start-up. These photos will help prevent many unforeseen problems in the start-up. Please address pictures to info@tekleen.com.

Isolate the filter. Shut the inlet and outlet valves. Turn the power on, push manual start, and listen for the clicking-buzzing solenoid. Open the inlet and keep the outlet closed. The bypass should be left open. Check for leaks, trigger manual start and see that the flushing valve opens and closes after the flushing timed out. Make sure that the inlet pressure is greater than 35 PSI (2.5 bars) during rinsing. Open the filter outlet and close the bypass. Trigger another manual start and see that the inlet pressure is greater than 35 PSI during the rinsing of the filter.

Congratulations, you have successfully started a Tekleen® filter.

SECTION IX LIMITED WARRANTY & LIABILITY AGREEMENT

Upon purchase of this controller equipment, the user agrees to the following terms, conditions, and limitations of warranty and liability coverage:

Automatic Filters, Inc. (AFI) warrants its filter controllers to be free from original defects for one year from the date of original sale. The manufacturer will replace, free of charge, any part found defective under normal use and service within the guarantee period, provided the product is installed, used, and maintained in accordance with good engineering practice and all applicable instructions or limitations issued by AFI. Components supplied as replacement parts are warranted for 90 days from the date of shipment.

The manufacturer assumes no liability for incidental or consequential damage sustained in the adoption or use of our engineering data, service, or products.

Liability is limited to the repair or replacement of the products. No agent or representative of AFI has the authority to waive or add to this agreement.

Altered products or use of products in a manner not intended shall void this warranty. All product claims under this warranty must be sent along with the defective product, freight prepaid, to AFI at the address listed below:

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