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GB6 & GB7 USERS'  
MANUAL

# Tekleen

## Check List for Optimal Filter Performance

- There should be no back-pressure on the flush line. A 1" valve should have a 2" waste line, and 2" valve should have a 3" waste line. Do not use rubber hosing or flexible tubing for the waste line.
- The differential pressure gauge should be mounted within 3 feet of the filter. Long tubing lines will result in faulty gauge readings.
- The water supply line to the piston should be connected to the neck of the flush outlet and filtered by a 1/4" mini filter.
- The fitting on the side of all pistons is for venting only. It should be open to atmospheric pressure and pointing toward the ground.
- Sealant should be applied on the contact points on the backside of the d/p gauge to protect it from water. The d/p gauge should be mounted up-side down to prevent shorting of the contact points in the event of a water leak.
- If the filter outlet discharges to a tank, or to open atmosphere, a valve should be installed at the filter outlet to maintain a minimum working pressure of 40 PSI during the cleaning cycle.
- If the flush valve fails to open or close, verify the connections to the controller are wired correctly (see diagram on pg. 6-9).
- A surge protector should be installed before the electronic controller.

To ensure proper installation, email digital pictures with contact information to [info@tekleen.com](mailto:info@tekleen.com) before startup.

# GB6 & GB7 USERS' MANUAL



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## **SECTION I      Introduction**

Automatic Filters, Inc. features state of the art electronic backwash controllers in the GB series. GB6 and GB7 controllers are complete with a differential pressure sensor, a backwash counter, and an emergency alarm output. The GB6 controller backwashes a single filter, while GB7 controllers control up to two filters simultaneously. Both models will initiate a backwash cycle in three ways: when the differential pressure gauge is triggered, periodically by timer, or when manually activated. They are available in 115/230 volts or battery operated at 9/12 volts.

## **SECTION II      Installation**

GB6 and GB7 The controllers come factory-prepared and are ready to use. The only steps necessary for installation are:

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

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 to be installed on the bottom of the controller housing. The ¼” 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 or near 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 wires. The 24 VAC leads are to be connected to the terminal strip.

## **SECTION III      Electric Ball Valve**

The 24VAC stainless steel electric ball valve should be wired to the controller terminals in the following manner:

Red Wire: Connected to terminal R/+

Black Wire: Connected to terminal R/-

White Wire: Connected to terminal 1

Green Wire: Connected to ground

Consult the wiring diagrams (see pages 5-9 for your specific setup)

## **SECTION IV      Front Panel Controls & Settings**

### **4.1 Periodic Flush**

A periodic flush will occur at the elapsed time set on the PERIODIC dial, provided a normal PD flush or manual flush has not occurred during that time cycle. The 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 duration of the filter backwash should be set in a range of 4 to 12 seconds.

### **4.3 Dwell Time**

The GB6 controller can control 1 filter, while the GB7 models can control up to 2 filters. The controller flushes each filter in sequence, starting with filter #1. The dwell dial 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. If only one filter is being controlled, this switch is not used. Recommended dwell time is 10 seconds.

### **4.4 Power On/Off Switch**

The power on/off switch controls power to the controller and to all filter components. 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 indicates "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 the 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 can be reset with the push button on the panel.

## **SECTION V Behind-the-Panel Controls**

### **5.1 AC/DC Voltage**

Tekleen controllers operate at 120 VAC at 60 Hz. and 230 VAC at 50 Hz. Battery operated controllers will operate with 12 VDC or 9 VDC.

### **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 3 amp 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.  $R1 + R2 = 24VAC$   
 $R1 + W = 12VAC$   $R2 + W = 12VAC$

### **6.2 Flush Terminal 1**

This terminal controls the valve assigned as valve #1. See the wiring diagram for connections.

### **6.3 Flush Terminal 2**

This terminal controls the valve assigned as valve #2. See the wiring diagram for connections.

### **6.4 Master Valve “M”**

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.

### **6.5 Alarm Output “A”**

These are terminals for the alarm output. The GB6/7 are available in two pre-set logic versions. The first does not disable the operation of the filter. This type is supplied. The second version does disable the operation of the filter by cutting out power to the valve(s). Reactivation of the controller is by “alarm reset.”

## **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**

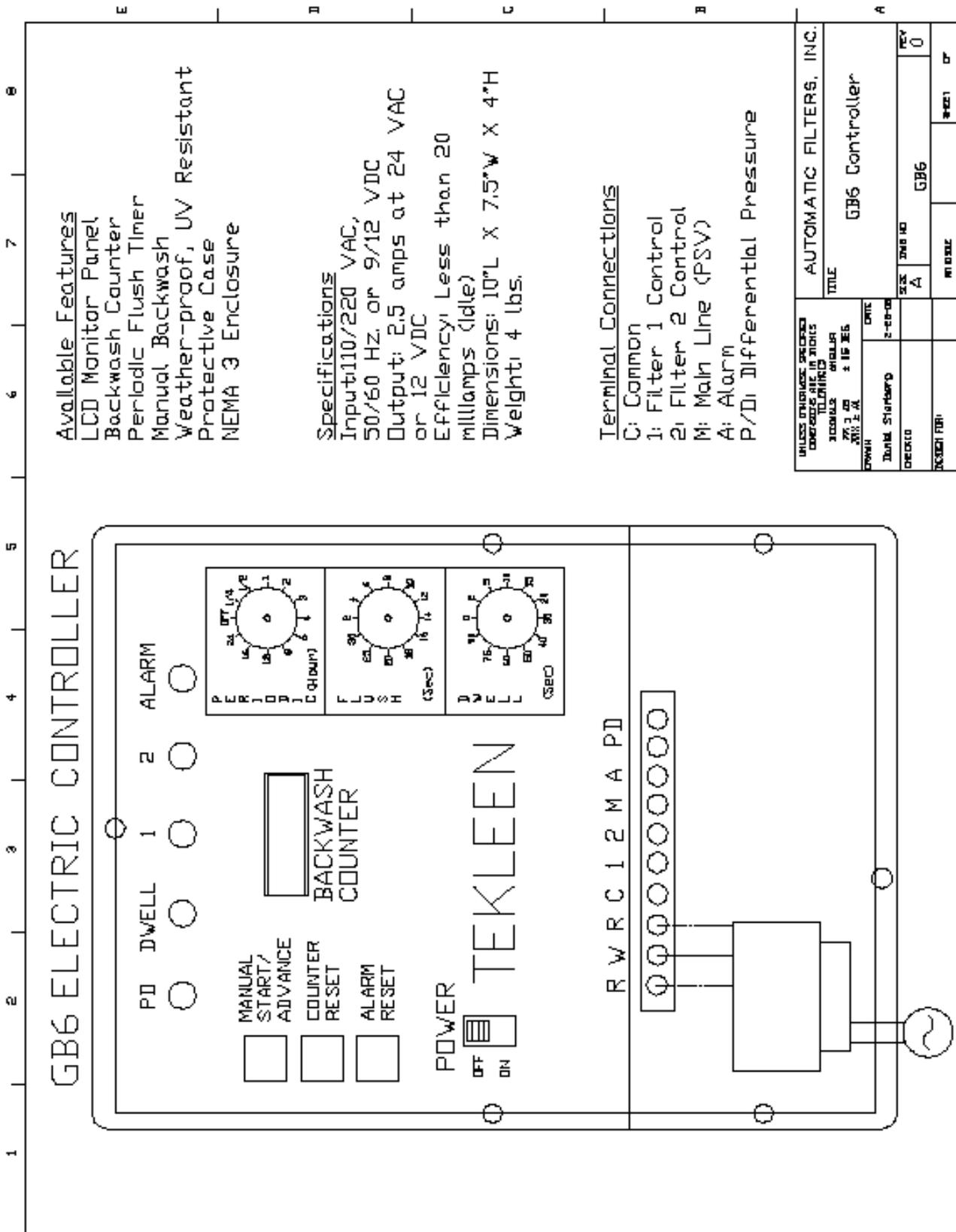
A built-in time delay of 30 seconds, before the first backwash, is activated as soon as a signal to flush (from the PD gauge) enters the controller. The purpose of this delay is to eliminate any water pressure spikes or false pressure surges from actuating a rinse.

### **7.2 Cautions**

1. DO NOT exceed output ratings of controller (3 amps).
2. Make sure output voltage is correctly set for 24 VAC or 12 VDC.
3. When using a 12 VDC power source, use only the first two terminals on the terminal block. The third terminal is not used for DC input.
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, provided that the DP switch is at the filter.
2. A surge protector is needed to protect the controller from voltage spikes. Surge protectors can be purchased at any electrical supplies store.
3. It is always advisable to check and clean the mini-filter, which is located on the tubing line, between the flush outlet and the piston.

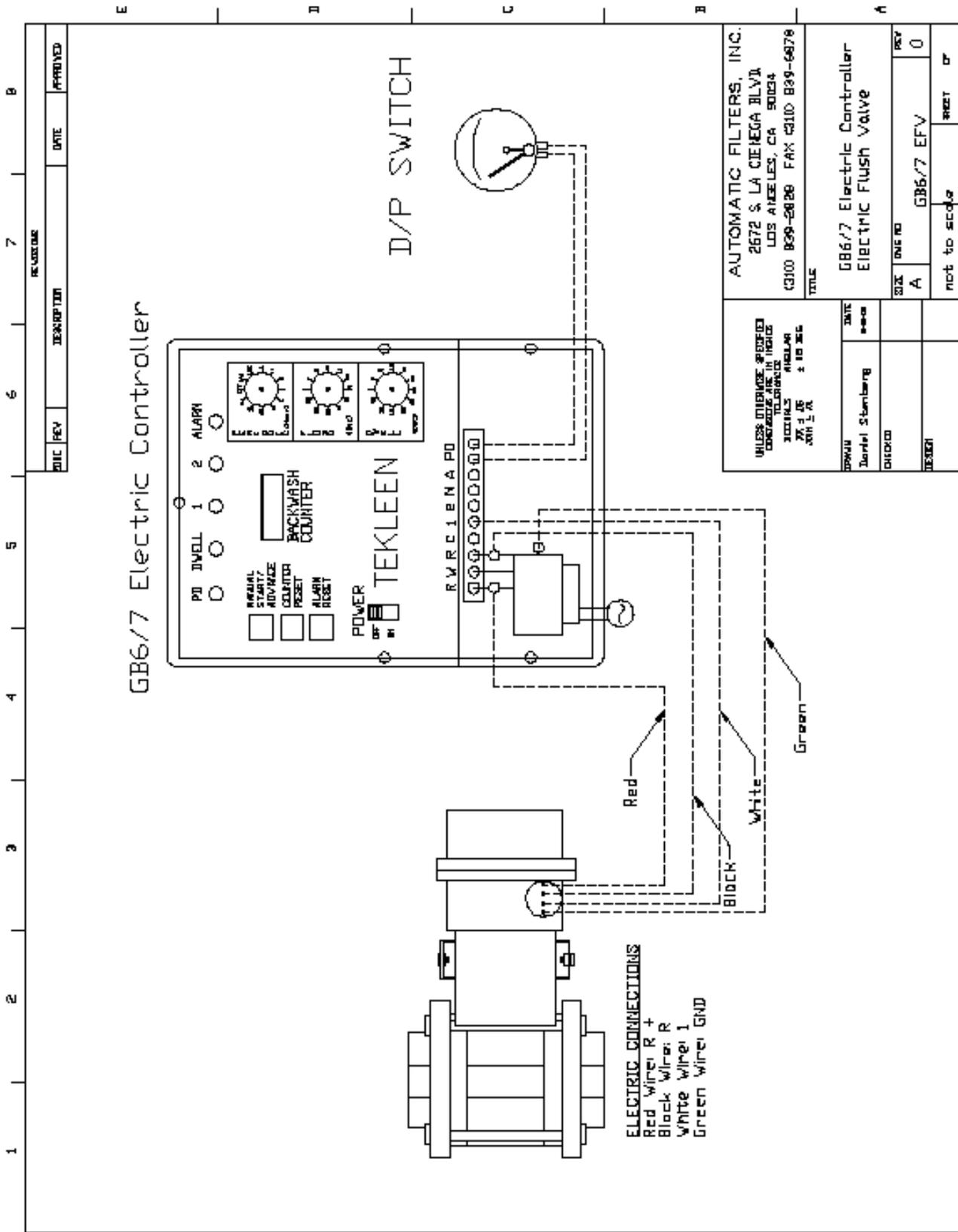


**Available Features**  
 LCD Monitor Panel  
 Backwash Counter  
 Periodic Flush Timer  
 Manual Backwash  
 Weather-proof, UV Resistant  
 Protective Case  
 NEMA 3 Enclosure

**Specifications**  
 Input: 110/220 VAC,  
 50/60 Hz. or 9/12 VDC  
 Output: 2.5 amps at 24 VAC  
 or 12 VDC  
 Efficiency: Less than 20  
 millamps (idle)  
 Dimensions: 10"L X 7.5"W X 4"H  
 Weight: 4 lbs.

**Terminal Connections**  
 C: Common  
 1: Filter 1 Control  
 2: Filter 2 Control  
 M: Main Line (PSY)  
 A: Alarm  
 P/D: Differential Pressure

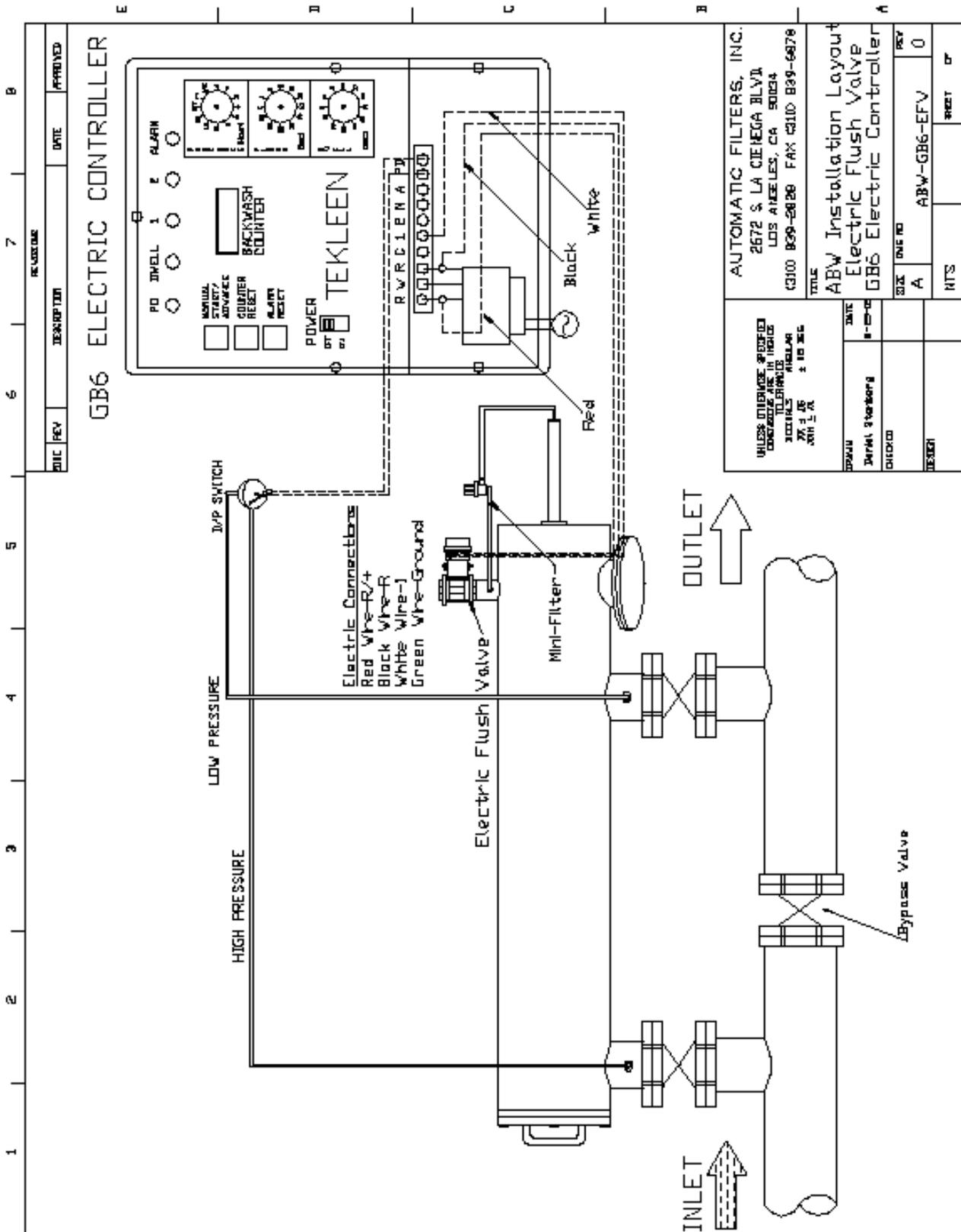
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS .0001 .0005 .0010 .0015 .0020		AUTOMATIC FILTERS, INC.	
DRAWN		TITLE	
DATE		GB6 Controller	
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DESIGNED BY	IN CHARGE	PROJECT	DR
		GB6	



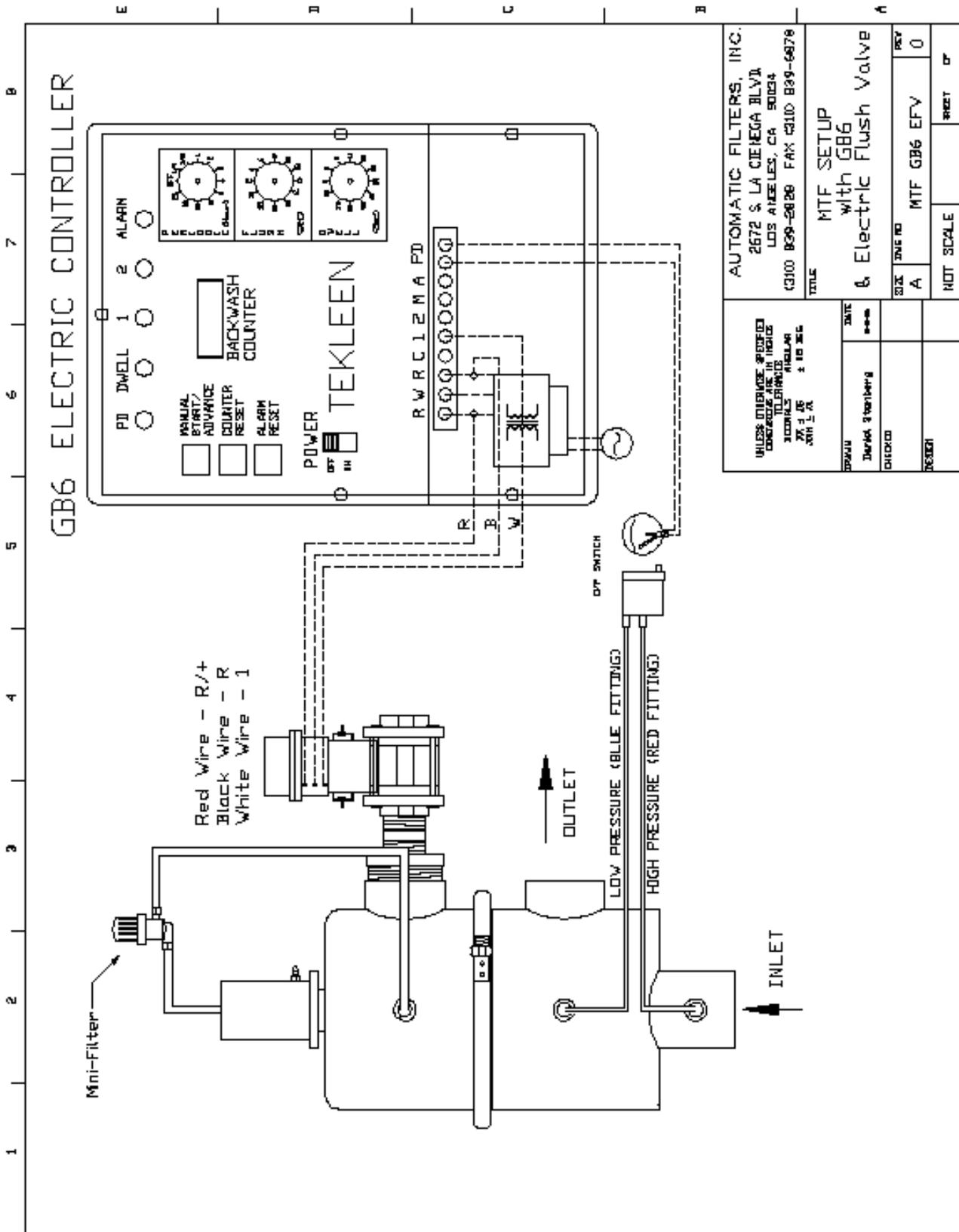
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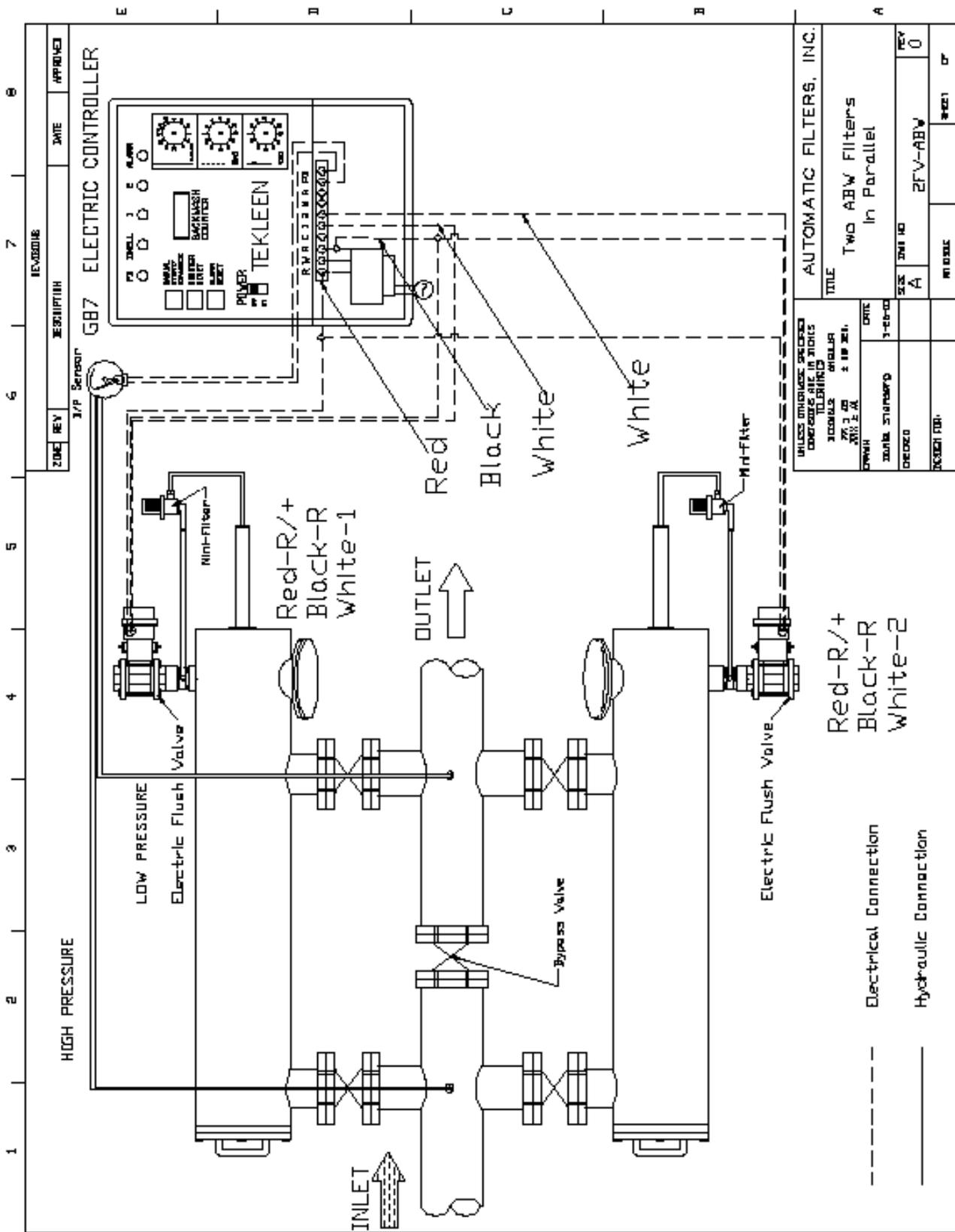
  

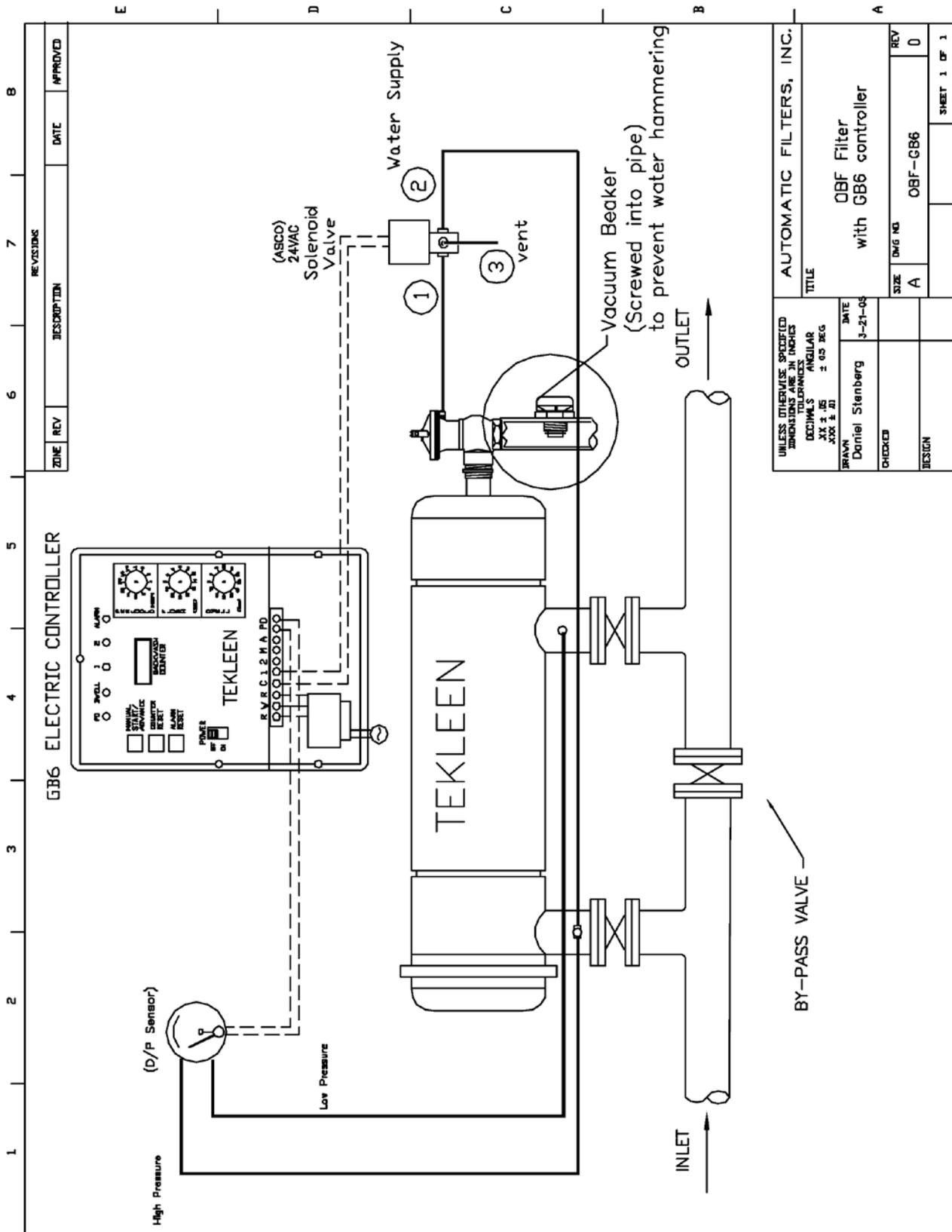
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS AND FRACTIONS 1/16" 1/8" 3/16" 1/4"		<b>AUTOMATIC FILTERS, INC.</b> 2672 S. LA CIENEGA BLVD. LOS ANGELES, CA 90034 (310) 899-6828 FAX (310) 899-6878	
TITLE			
DRAWN Daniel Stenberg	DATE 8-88	GB6/7 Electric Controller ELECTRIC Flush Valve	
CHECKED DEBCH	SIZE A	TITLE NO. GB6/7 EFV	REV. 0
not to scale		SHEET 67	OF 67



AUTOMATIC FILTERS, INC. 2672 S. LA CIENEGA BLVD LOS ANGELES, CA 90024 (310) 839-2828 FAX (310) 839-6678		TITLE ABW Installation Layout Electric Flush Valve GB6 Electric Controller	
UNLESS OTHERWISE SPECIFIED CONNECTIONS SHALL FOLLOW THE FOLLOWING STANDARDS ASME B31.1 AND B31.3	DRAWN Daniel Swanson	DATE 8-2-00	SIZE A
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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS ARE IN ANGULAR		DATE	REV
BRAND	Daniel Stenberg	3-21-05	0
CHECKED			
DESIGN			
TITLE		SIZE	REV
AUTOMATIC FILTERS, INC.		A	0
GBF Filter with GB6 controller		DMG NO	
		OBF-GB6	
		SHEET 1 OF 1	

## **WARRANTY**

Automatic Filters, Inc. (AFI) warrants its filters and 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. 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 warranty claims must be sent along with the defective product, freight prepaid to AFI at its business address. All warranty shipments are for the account of the buyer. The warranty period shall be 12 months from the date of shipment to the client.