



INSTALLATION & OPERATION MANUAL

GB6-GB7 CONTROLLER USERS' MANUAL



About The Installation & Operation Manual

Purpose of the Manual

To ensure proper installation, please email digital pictures of your setup along with your contact information to info@tekleen.com prior to startup.

Additionally, for future reference and visual guidance, video tutorials are available on our website at www.tekleen.com.

Scan the QR code to access the digital version of this manual at www.tekleen.com.



GB6-GB7 CONTROLLER

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This manual is intended as a general guide for the proper installation, operation, and maintenance of Tekleen controllers. It may not address all specific system configurations or site conditions. Tekleen assumes no liability for improper installation or misuse of this equipment. All installation and service work should be performed by qualified personnel in accordance with local codes and safety regulations. Specifications and content in this manual are subject to change without notice. No part of this publication may be reproduced, stored, or transmitted in any form without prior written permission from Tekleen Automatic Filters, LLC.

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SECTION I: GETTING TO KNOW YOUR INTELLIGENT GB CONTROLLER

Introducing the GB CONTROLLER

Welcome to smarter water management with your new Tekleen GB Series Controller! This manual will guide you through setting up and operating your GB6 or GB7 controller, designed to keep your water filtration system running smoothly.

Automatic Filters, LLC/Tekleen brings you the cutting-edge GB series of electronic backwash controllers. These state-of-the-art units are built to give you precise control over your water filtration system.

Key Features:

1. **Differential Pressure Switch:** Your system's real-time indicator, letting you know when your filter needs a wash.
2. **Backwash Counter:** Keeps track of how many cleaning cycles your filter has performed, helping you monitor maintenance.
3. **Emergency Alarm Output:** An added layer of protection, alerting you to potential issues.

Model Capabilities:

1. **GB6 Controllers:** Designed to efficiently backwash a single filter.
2. **GB7 Controllers:** Capable of controlling and coordinating the backwash of up to two filters in sequence.

Smart Cleaning Activation: Both the GB6 and GB7 models are versatile and can initiate a cleaning cycle intelligently in three ways:

1. **Pressure-Smart Cleaning:** Automatically starts a backwash when the differential pressure across your filter indicates it's time for a clean.
2. **Scheduled Refresh:** Initiates periodic backwashes based on a timer you can set, ensuring timed backwashing of the filter.
3. **On-Demand Cleaning:** Allows you to manually start a backwash whenever you need it.

These controllers are available in both standard **115/230 Volt AC** versions and convenient **9/12 Volt battery-operated** models, offering flexibility for various installations.

SECTION I

SECTION II: SIMPLE SETUP - GETTING YOUR CONTROLLER READY

Your GB6 or GB7 controller arrives factory-prepared and ready for use! You just need to follow a few straightforward steps for installation:

1. **Mounting Your Controller:** Secure the controller to a convenient wall or panel. For optimal performance, try to mount it as close to your filter as possible. This minimizes the length of the pressure tubing, ensuring accurate readings. You can even mount the controller directly on the filter using appropriate brackets.
2. **Connecting the Pressure Sensor (PD Gauge):** The Pressure Differential (PD) gauge/switch is typically installed on the bottom of the controller housing.
 - Connect the **1/4" tubing from the high pressure connection** on the center of the PD gauge to the high-pressure side of your filter or manifold (this is typically the inlet).
 - Connect the **1/4" tubing from the low pressure connection** of the PD gauge to the low-pressure side of your filter or manifold (this is usually the outlet).
 - **Flexibility:** If it's more convenient for your setup, the PD gauge comes in a separate package from the controller, so you can mount it separately on or near your filter.
3. **Connecting the Power Supply (AC Models Only):**
 - For 110/230 Volt AC models, you'll need to connect the appropriate power supply (either 120 VAC or 230 VAC, depending on your region's primary voltage) to the transformer wires.
 - The 24 VAC leads come pre-wired on the transformer.
4. **Connecting Your Electric Ball Valve:** Link the wires from your filter's electric ball valve to the controller. (We'll cover specific wiring details in Section 3).

Once these steps are complete, your Tekleen controller will be mounted, powered, and ready to take command of your automatic filter system!

SECTION III: WIRING YOUR ELECTRIC BALL VALVE

Your Tekleen controller is designed to work with 24VAC stainless steel electric ball valves. Here's how to wire them correctly to the controller's terminal strip:

1. **Red Wire:** Connect this wire to the terminal labeled R/+.
2. **Black Wire:** Connect this wire to the terminal labeled R/-.
3. **White Wire:** Connect this wire to the terminal labeled 1.

For your specific setup and a visual guide, please consult the detailed wiring diagrams on **pages 5-9** of this manual. Correct wiring ensures your filter's cleaning cycle operates perfectly.

SECTION III

SECTION IV: NAVIGATING YOUR FRONT PANEL CONTROLS & SETTINGS

The front panel of your GB6 or GB7 controller features three dials and three buttons, giving you full control over your filtration system.

4.1 Periodic Flush:

This dial allows you to set the 24 hour clock to a scheduled, automatic backwash. A periodic flush will occur if no pressure-differential flush or manual flush has happened within the set time.

1. **How it Works:** The timer for the periodic flush resets after every backwash cycle (whether manual, pressure-triggered, or timed). For example, if you set it for 1 hour, and a pressure-triggered flush happens at 49 minutes, the 1-hour countdown restarts immediately after that flush.
2. **Settings:** You can set this from OFF (to disable periodic flushing) up to 24 hours.
3. **NOTE DIFFERENTIAL PRESSURE GAUGE SET POINT ALWAYS SUPERCIDES THE 24 HOUR CLOCK**

4.2 FLUSH TIME

This dial sets the duration of each filter's backwash cycle. **WHICH SHOULD BE SET TO THE TIME IT TAKES FOR THE PISTON TO MOVE FULL STROKE AS THIS VARIES DEPENDING ON INLET PRESSURE TO THE FILTER.**

1. **Recommended Range:** We recommend setting this value in a range of 4 to 12 seconds for effective cleaning.

4.3 Dwell Time

This setting is crucial for systems with multiple filters.

1. **GB6 Controllers:** Control 1 filter, so this setting is not used.
2. **GB7 Controllers:** Can control up to 2 filters. The controller flushes each filter one after the other, starting with Filter #1.
3. **Purpose:** The Dwell dial sets the pause time between successive filter flushes. This ensures the first filter's rinse valve closes completely before the second filter begins its flush.
4. **Recommended Dwell Time: 10 seconds.**

4.4 Power On/Off Switch

This switch controls the main power to your controller and all connected filter components.

1. **Safety First:** Always ensure this switch is in the OFF position when the system is not in use or when you are performing any work on the electrical components.

4.5 LCD Screen

The liquid crystal display (LCD) provides important information about your system.

1. **Backwash Counter:** This screen displays the total number of backwash cycles that have occurred.
2. **Error Indication:** If the output fuse has blown, the screen will clearly display "FUSE," and the PD (Pressure Differential) and DWELL lights will flash alternately until the fuse is replaced.

4.6 Manual Start Button:

This button allows you to instantly activate a backwash cycle for your filter(s) on demand.

4.7 Counter Reset Button:

This button resets the backwash counter displayed on the LCD screen back to zero.

4.8 Alarm Reset:

Your controller includes an alarm output for critical conditions.

1. **Alarm Trigger:** An alarm will activate if the controller initiates three or more consecutive backwashes due to a pressure differential signal in less than 2 minutes. This indicates an unusual or persistent issue.
2. **Alarm Output:** This alarm provides both a **visible light** on the panel and an electrical output that can activate an external relay, which can then trigger a lamp or an audible bell.
3. **Resetting the Alarm:** The alarm can be easily reset by pushing the dedicated button on the panel.

SECTION V: BEHIND-THE-PANEL CONTROLS

Behind the main front panel of your GB6 or GB7 controller, you'll find additional settings and the circuit board.

5.1 AC/DC Voltage:

Tekleen controllers are versatile when it comes to power.

1. **AC Models:** Operate at **120 VAC** at **60 Hz** or **230 VAC** at **50 or 60 Hz**.
2. **Battery Operated Models:** Function with either **12 VDC** or **9 VDC**.

5.2 Circuit Board Fuse

Your controller's electronics are protected by a fuse.

1. **Location:** The fuse is located between the front panel and the main circuit board.
2. **Replacement:** To replace it, carefully remove the front panel and swap the old fuse with a **3 amp fuse**.
3. **Important: DO NOT** replace it with a higher amp fuse, as this could damage the circuit board.

SECTION VI: UNDERSTANDING YOUR TERMINAL STRIP CONNECTIONS

The terminal strip on your controller allows you to connect various components of your filtration system.

6.1 Transformer “RWR” Connections:

These three terminals are where the power supply from the transformer connects.

1. You'll see two red leads and one white lead. The white lead should be connected to the middle terminal.
2. **Note:** This connection is typically pre-installed by the manufacturer.
3. **Voltage Relationships:**
 - $R1 + R2 = 24VAC$
 - $R1 + W = 12VAC$
 - $R2 + W = 12VAC$

6.2 Flush Terminal 1:

This terminal controls the flush valve assigned as **Valve #1**. Refer to your specific wiring diagram for connection details.

6.3 Flush Terminal 2:

This terminal controls the flush valve assigned as **Valve #2**. This is primarily used on GB7 models for multi-filter setups. Refer to your wiring diagram for connections.

6.4 Master Valve “M” Output:

The master valve output is clearly marked with an “M” on the terminal block.

1. **Operation:** This output is ON at the beginning of each backwash cycle and switches OFF when the controller returns to IDLE mode.
2. **Use Case:** The master valve output is used when your filter system requires an optional pressure sustaining valvedownstream from the filter. This ensures the filter maintains an inlet pressure greater than 35 PSI (2.5 BAR) during the rinsing cycle.

6.5 Alarm Output: Terminal “C” for common and “A” for alarm.

These terminals are for the alarm output.

6.6 PD Gauge “PD” Connections:

These terminals are for connecting your Pressure Differential (PD) gauge.

1. **Polarity:** Polarity is not important for these connections.
2. **Differential Pressure (DP) Gauge:**
 - Mount the DP gauge within 3 feet of your filter. Keeping the tubing short prevents inaccurate readings.
 - Apply a non-conductive silicone sealant over the two screw terminals on the back of the gauge. This protects them from water. If silicone isn't available, mount the gauge upside down. This way, if water drips from the tubing, it won't short out the gauge.

SECTION VII: IMPORTANT GENERAL NOTES

Here are a few final tips to ensure your Tekleen controller operates efficiently and reliably.

7.1 First Filter Actuation Delay:

Your controller has a built-in 6 to 8 -second time delay before the very first backwash cycle begins, right after it receives a flush signal from the PD gauge to make sure the filter has a true differential.

1. **Purpose:** This smart delay is designed to prevent unnecessary rinses caused by brief water pressure spikes or false pressure surges.

7.2 Important Cautions:

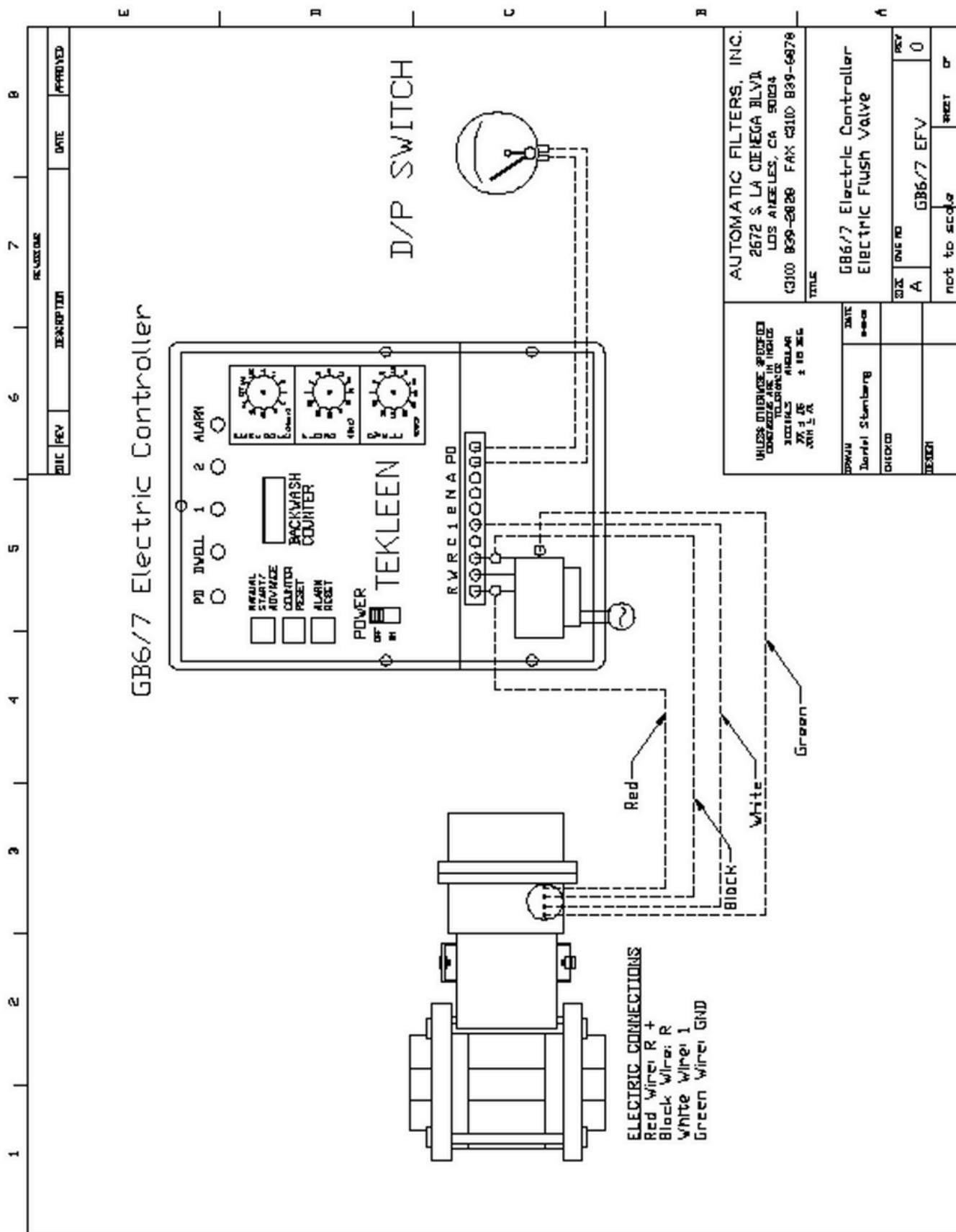
Please keep these safety and operational guidelines in mind:

1. **Output Ratings:** **DO NOT** exceed the output ratings of the controller (3 amps). Overloading can cause damage.
2. **Voltage Settings:** Always ensure the output voltage is correctly set for either **24 VAC (for AC-powered models)** or **12 VDC** (for battery-powered models).
3. **DC Input Terminals:** When using a **12 VDC** power source, connect to only the first two terminals on the terminal block. The third terminal is not used for DC input.
4. **Transformer Compatibility:** **DO NOT** connect a 230 VAC power supply to a transformer designed for 115 VAC. Always match the input voltage to your transformer's specifications.

7.3 Common Sense Tips:

A few simple practices can make a big difference:

1. **Controller Distance:** While you can install the main controller far away from the filter, it's essential that the **DP switch (gauge) itself remains near the filter** for accurate pressure readings.
2. **Surge Protection:** It's always a good idea to install a surge protector before the electronic controller. This will safeguard your controller from unexpected voltage spikes that can occur in your electrical system. Surge protectors are readily available at most electrical supply stores.



WARRANTY

Automatic Filters, LLC (Tekleen) warrants water filters and controllers to be free from defects in materials and workmanship for one year from purchase date.

What's Covered

1. Electronic controller defects affecting operation

What's NOT Covered

1. Normal wear and tear
2. Improper installation, misuse, or neglect
3. Lack of maintenance
4. Chemical damage
5. Labor or shipping costs
6. Property damage or loss of use
7. Products not purchased from authorized dealers

Warranty Claims

1. Call +1.310.839.2828 or email info@tekleen.com
2. Provide proof of purchase
3. Describe the problem
4. Follow troubleshooting if required
5. Get RMA number if needed
6. Ship product at your expense
7. We repair/replace and ship back at our expense

This warranty replaces all other warranties. We reserve the right to repair or replace defective products at our discretion.



Notes:

A series of horizontal blue lines for writing, with a vertical red margin line on the left side.



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Thank you for choosing Tekleen®
We appreciate your trust in our products and team.

We hope your automatic filter system runs smoothly and exceeds your expectations. If you have any questions or need support, don't hesitate to reach out, we're here to help.