



FILTER BACKWASH CONTROLLERS

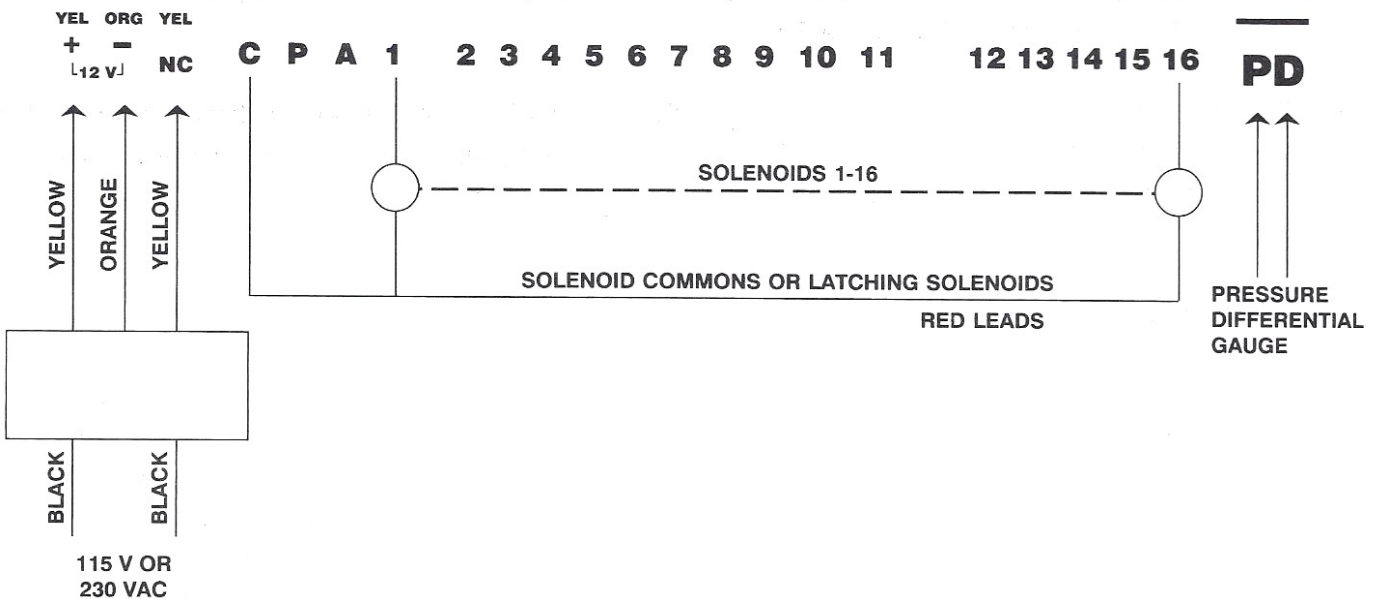
Models F12AC/DC/DCL and F16AC/DC/DCL

INSTRUCTIONS



WIRING

The F12 or F16 can be powered with either 115 VAC or 230 VAC (optional). The output can be selected to operate either 24 VAC or 12 VDC solenoids when the input power is AC. If the input power is either 12 VDC from a battery, diesel generator battery, or by solar panel, the output is selectable to operate either regular 12 VDC solenoids or two wire latching solenoids for solar applications. The output terminal wiring is shown below:



POWER CONNECTIONS:

AC POWER

The F12 and F16 come with transformers pre-wired from the factory. Verify that the proper voltage is applied to the transformer. The standard transformer is for 115 VAC input. Do not connect 230 VAC to this transformer. A 220 Volt (or 230 Volt) transformer is marked on top of it as 4483-220 V. If not specifically marked as 220 volt, it is 115 volt.

Use the green lead to ground the controller box. The transformer has two black primary leads connected to the line voltage of 115 volts. On the secondary of the transformer, there are three leads: two yellow, and one orange. The two yellow leads are connected to the terminals marked YEL, and the orange center tap lead connected to the terminal marked ORG.

DC POWER

If 12 VDC power is used, remove the transformer since it is not needed. The source for DC can be from either a diesel generator, battery, or solar panel-battery. The positive lead from the battery is connected to the + of the terminal and the negative to the -. With DC, the third terminal marked NC (no connection) is not used. This system can be used either with regular 12 VDC solenoids or two wire 12 VDC latching solenoids.

For a latching solenoid remote application, a 5 watt solar panel and a 7 amp-hour battery is recommended. The solar panel is connected in parallel with the battery terminals. The red leads both from the solar panel and the battery are connected to the + terminal and the black leads are connected to the - terminal. Again, the third terminal is not used. Only use this combination with latching solenoids. A 5 watt solar panel is not adequate to operate non-latching solenoids. A larger solar panel and larger battery would be needed for non-latching solenoids. If a diesel generator is used, its battery should be adequate to operate non-latching solenoids directly without the solar panel.

When testing the battery, disconnect the solar panel to get a true battery voltage reading.

The M output is the master valve that is activated at the start of every backwash cycle while the controller is in PREDWELL. The PREDWELL is adjustable from 0 to 105 seconds. See lid instructions. This helps to maintain adequate water pressure for backwashing and helps the first tank to backwash as effectively as the others. The M output stays energized throughout the entire backwash cycle and goes off after the last tank has finished backwashing. See "Programming Behind the Panel".

The A output is the alarm output that comes on to indicate there may be a problem with the backwash cycle. It is activated after three consecutive backwash cycles by the PD, indicating that either the PD is defective, or that the filter is not properly backwashing. The controller continues to operate while in the alarm mode.

FRONT PANEL PROGRAMMING

Turn the POWER witch to ON. After a few seconds, the display will say POWER ON (OK) and display the station backwashing or it may be in IDLE which means it is not backwashing. On the lower left side of the display, a 4 digit backwash counter is displayed. To reset the backwash count, slide the switch in the upper right of the front panel to BACKWASH COUNT RESET and press the MANUAL START/RESET button for one second. To reset the ALARM, slide to ALARM RESET and press the same button for one second. Return the switch to RUN after resetting the count or alarm. However, the unit will run normally in any position, but a manual start can only be initiated while in RUN.

Program the PERIODIC time. This will backwash every so many hours. Now program the BACKWASH TIME by combining the minutes and seconds settings. Now set the DWELL time. This allows time for one backwash valve to close before the next one opens to maintain adequate water pressure. Adjust the time settings to suit.

There are three ways to initiate a backwash cycle: Manually, by programmed time interval (periodic), and by pressure differential gauge.

To start a manual cycle, press the MANUAL START button for one second. If backwash time is programmed and at least one station is on, the controller will initiate a backwash cycle and the display shows PREDWELL. After the set PREDWELL time, it will go to the first station programmed and continue to backwash each station selected until all the tanks are backwashed, then return to IDLE.

If a PERIODIC time setting is selected, a backwash cycle will start automatically according to the time selection whether a backwash cycle is required or not.

If a backwash is triggered by the pressure differential gauge, a cycle will start after the appropriate PD delay time has passed. (See PD delay programming). any start of a backwash cycle (manually or by PD) resets the PERIODIC time.

PROGRAMMING BEHIND THE PANEL

Select the proper output voltage to the solenoid by sliding the large switch on the back of the circuit board toward AC for 24 VAC solenoids, or to DC-DCL for 12 VDC non-latching and latching solenoids with DC input. Do not mix AC, DC, or DC latching solenoids. Do not use 24 VDC solenoids.

Select the number of filter tanks on the two banks of DIP switches on the back of the board. For the F12, a 12 position switch will allow up to 12 tanks to be selected. For the F16, a second 4 position bank of DIP switches is located to the right of the 12 position switch.

Program the PD delay on the three position DIP switch marked PD to the left of the 12 position station switches. The PD delay insures that a pressure differential signal really means a dirty filter rather than a momentary pressure surge. The PD delay time is adjustable according to the chart listed on the inside of the front door lid.

ALARM will automatically flash intermittently on the display if three or more consecutive backwashes have occurred initiated by a signal by the pressure differential gauge. This indicates that the filter is either not cleaning well enough to reduce the pressure differential, or that the gauge itself may be defective or improperly set. During the alarm indication, the controller continues to function normally. A relay may be connected to outputs at terminals "A" and "C" (common) to activate an external light or bell.

The three position dip switch located to the left of the PD delay switch is the PRE-DWELL delay, which is adjustable from 0 to 105 seconds. Consult the door lid sticker for switch settings. Pre-dwell insures the first tank has just as much backwash time as the other tanks, particularly when a field valve needs to be closed prior to a backwash cycle. The display says PREDWELL during this time.

To select latching solenoid output with DC operation, return controller to IDLE. While in idle, slide the single position located behind the circuit board below the 12 station switches to the latch position. A small L will appear on the display following the backwash count. To return to standard output (non-latching), slide switch to the STEADY position.

DISPLAY INFORMATION

1. When the system is in filter mode, display shows IDLE, the backwash count, and the elapsed time since the last backwash was started.
2. When the PD is activated, display shows IDLE WITH PD.
3. When a backwash cycle is started, it shows PREDWELL for the set predwell time before it starts to backwash the first tank.
4. While backwashing, display shows the station being backwashed or whether it is in DWELL (between stations).

CAUTIONS

1. Do not power a 115 VAC transformer with 230 VAC. This controller is 50 or 60 Hz compatible.
2. For DC input, remove the transformer and rewire with 12-15 VDC system.
3. Do not mix AC and DC solenoids.
4. Do not overload output. The standard unit is rated for 1.5 amps output, AC or DC.
5. Warranty is voided if controller is modified, or front door is left open. Also, it is not warranted against lightning damage or improper voltages or wiring.

LIMITED WARRANTY AND LIABILITY AGREEMENT

Upon purchase, users of all Alex-Tronix products agree to the following terms, conditions, and limitations of warranty and liability coverage:

Alex-Tronix warrants its products to be free from original defects for two years 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 any applicable instructions or limitations issued by Alex-Tronix. 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 therefore limited to the repair of the products manufactured by Alex-Tronix. No agent or representative of Alex-Tronix 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.

ALEX-TRONIX

A DIVISION OF GNA INDUSTRIES, INC.

4761 West Jacquelyn Avenue • Fresno, California 93722

Telephone (559) 276-2888 • FAX (559) 276-2890 • Toll Free (888) 224-7630

Email: orders@alextronix.com • <http://www.alextronix.com>