



Alex-Tronix
FILTER MASTER SERIES

FM-8UL

Filter Backwash

Controller

Operation Manual



IMPORTANT: Prior to use, please read manual in order to avoid system damage.

FM-8UL Operation Manual

Thank you for purchasing the Alex-Tronix filter controller-- manufactured in the U.S.A. The FM-8UL is our latest controller accommodating our digital differential pressure gauge (included), yet compatible to the Murphy switch gauge. Additionally, the FM-8UL features 'progressive backwashing' which allows every new cycle to start cleaning a different tank for better backwashing performance. Finally, the FM-8UL features an external start input for remote backwash initiation, making it easy for PLC control.

INSTALLATION: Refer to separate Installation Manual prior to use.

CONTROLS:

Power: Use this switch to turn controller on or off. When power is removed from the unit by any means, all programmed settings are retained in flash memory. The FM-8UL always resumes operation at the point where the controller was turned off, when later powered back on. There is no "real time clock" in the controller.

Function Selector Knob: Use this knob to select which function you wish to view or program. There is no specific setting this knob must be set to for normal operation, and will normally operate as long as the FM-8UL is correctly programmed.

Select: This pushbutton selects what part of the function you will program. The cursor blinks when selected.

+ and - : These two pushbuttons allow you to edit any parameters up or down within a function.

Enter/Manual Start: Pressing this pushbutton sets the parameters desired. You must press 'ENTER' after changing any parameters when programming the unit. Once programmed, if desired, you can manually initiate a backwash when the function knob is on the "STATUS" position.

PROGRAMMING (FUNCTIONS):

STATUS: This function displays what mode the controller is in. Typical modes can include: Filtering, Pre-dwell, Tank Backwashing Number, and Dwell. Unit shown in filtering mode below:



P.D. DIFFERENTIAL SETTING: Use this setting to set the trigger point for the sensor gauge based on the SENSOR/GAUGE TYPE function. If the function is set for "P.D. GAUGE" then this display will show: "SET DIFFERENTIAL PSI ON GAUGE" and no adjustable parameter is available. If the SENSOR/GAUGE TYPE function is set for "SENSOR", then a differential trigger setting will be available for adjustment. Press SELECT, +, and - to set the backwash trigger point of the sensor.

7 PSI is the default setting if programmed for 'SENSOR'. Set as needed. Press ENTER when finished.

SENSOR SET
POINT: 07.0 PSI

OR

SET DIFFERENTIAL
PSI ON GAUGE

PRE-DWELL TIME: This is a delay time used to build system pressure in orchestration with the pressure sustaining master valve, in order to ensure valves open and close on systems with smaller pumps. Press SELECT, +, and - to set the delay time (up to 255 seconds) before the unit goes into backwash mode.

BACKWASH TIME: This sets the cleaning duration for each filter tank. Press SELECT, +, and - to set the time (up to 255 seconds) per tank. Press ENTER when finished. If the unit has no backwash time programmed, NO BACKWASH TIME is displayed.

DWELL TIME: This sets idling time between tank backwashes in order to maintain system pressure, and allow valves enough time to open and close as backwashing progresses. Press SELECT, +, and - to set the delay time (up to 99 seconds). Press ENTER when finished.

PERIODIC TIME: This sets backwashing *cycle intervals*. It is independent from the P.D. gauge initiation; however, if the gauge triggers a backwash cycle before a periodic interval initiates one, the periodic's internal time clock will reset to zero when a backwash starts, and begins timing up again. After a cycle is complete, the controller reverts back into filtering mode, the periodic time resets to zero, and periodic timing begins again. **NOTE: If the set periodic time (including dwell) is less than the total backwash cycle time, the controller will continuously start another backwash (loops).**

P.D. DELAY TIME: Intermittent surge pressure in a filter system can trigger the controller which could cause 'nuisance triggering' of a backwash cycle unnecessarily. Adding P.D. delay time alleviates unnecessary backwashing, and allows 'gauge bouncing' to stabilize before a legitimate pressure reading is taken. Press SELECT, +, and - to set the delay time (up to 255 seconds). Contact filter manufacturer for recommended settings.

TANK ASSIGN: Depending on how many filter tanks there are, you can activate/deactivate any of them --up to eight. Press select, and move along to each tank number, then use "+" or "-" to activate or deactivate that tank; when finished, press enter. If all tanks have been unassigned, "TANKS UNASSIGNED" will be shown on the display. By default, all tanks are assigned on.

BACKWASH TANK SEQUENCE: There are two orders for backwashing --*Sequential* and *Progressive*. *Sequential* backwashing traditionally starts with Tank 1, 2 ...8 *in order* every time a new cycle starts. *Progressive* backwashing starts by cleaning (rotates) a *different tank* every time a new cycle starts i.e. 1,2,3,4...8 then 2-8,1 then 3...8,1,2, etc, etc. This can be used to help all tanks clean evenly and keep water flow consistent through all tanks while filtering.

BACKWASH CYCLE COUNT: This function displays how many backwashes have occurred since it was last cleared. To reset the count to zero, press select, then select over to 'Y', and ENTER/MANUAL START push button.

SOLENOID TYPE: The FM-8UL is compatible to 24VAC, 12VDC non-latching, and 12VDC latching solenoids. Default solenoid setting is 'NON-LATCHING' mode. To change to Latching mode (12VDC input only), press select twice, and press enter. You must also set the output switch (located on rear panel) to the correct configuration. Referring to earlier discussion, your options are as follows: For 120/240VAC power supply input, the output switch can be set for AC or DC. For 12VDC power supply

input, whether from a DC generator or solar panel set up, set the output switch to DC.

SENSOR/GAUGE TYPE: If you will using the traditional 'Murphy switch gauge' choose **GAUGE**. If using the Alex-Tronix sensor, choose **SENSOR** and press the ENTER/MANUAL START push button.

OPERATING CHARACTERISTICS

NOTE: It is important to always have backwash time and a tank assignments properly set, otherwise system damage may result. The FM-8UL initiates a backwash cycle by: Manual start, differential pressure, and/or periodic time. When backwashing initiates, the FM-8UL moves out of filtering mode, and individually cleans each tank. Note the 'M' (master output terminal) remains active during the whole backwash cycle, then turns off when the unit goes back into filtering mode. The filter system's differential pressure drops when a cycle is complete, and the tanks are deemed washed. If the pressure does not drop after a backwash cycle, troubleshooting of the filter system itself should be performed, beginning with solenoid and valve maintenance. Additional troubleshooting resources on controls can be sought out on the tech support page on the web at: www.alextronix.com. Contact the manufacturer for filter system maintenance or service.

FUSE WARNING: Should the output fuse ever blow, a red LED on the front panel next to the output fuse will illuminate. This fuse is located on the front panel. The following symptoms should be examined before replacing the fuse:

- Solenoids defective or become defective when heated for long periods.
- Primary voltage too high.
- Short circuit in solenoid wiring.
- If a newly installed system is in place, incorrect wiring should be considered.
- Power surge damage.

The display will clear the fault, after the short circuit is resolved, fuse is replaced, and a backwash cycle is initiated.

CAUTION: Replace fuse with same type only! – 3A ATO fuse.

For any questions or help regarding this controller please contact us at 1-888-224-7630.
For questions regarding your filter system, contact the manufacturer.

ALEX-TRONIX --A DIV. OF GNA INDUSTRIES, INC.

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WARRANTY

Suppliers and end users of this product agree to the following terms, conditions and limitations of warranty and liability coverage:

Alex-Tronix warrants the FM-8UL to be free from original defects for two years from the date of original sale. The manufacturer shall 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 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 product 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. For warranty service, ship unit pre-paid to the address below. Controllers damaged in transit due to improper packaging are not covered by warranty.

For warranty repair, send defective product freight pre-paid to:

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