

Model AC-151	Admix Controller	Installation & Operation Manual
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***IMPORTANT !!!! Read this manual before attempting any installation, wiring or operation.***



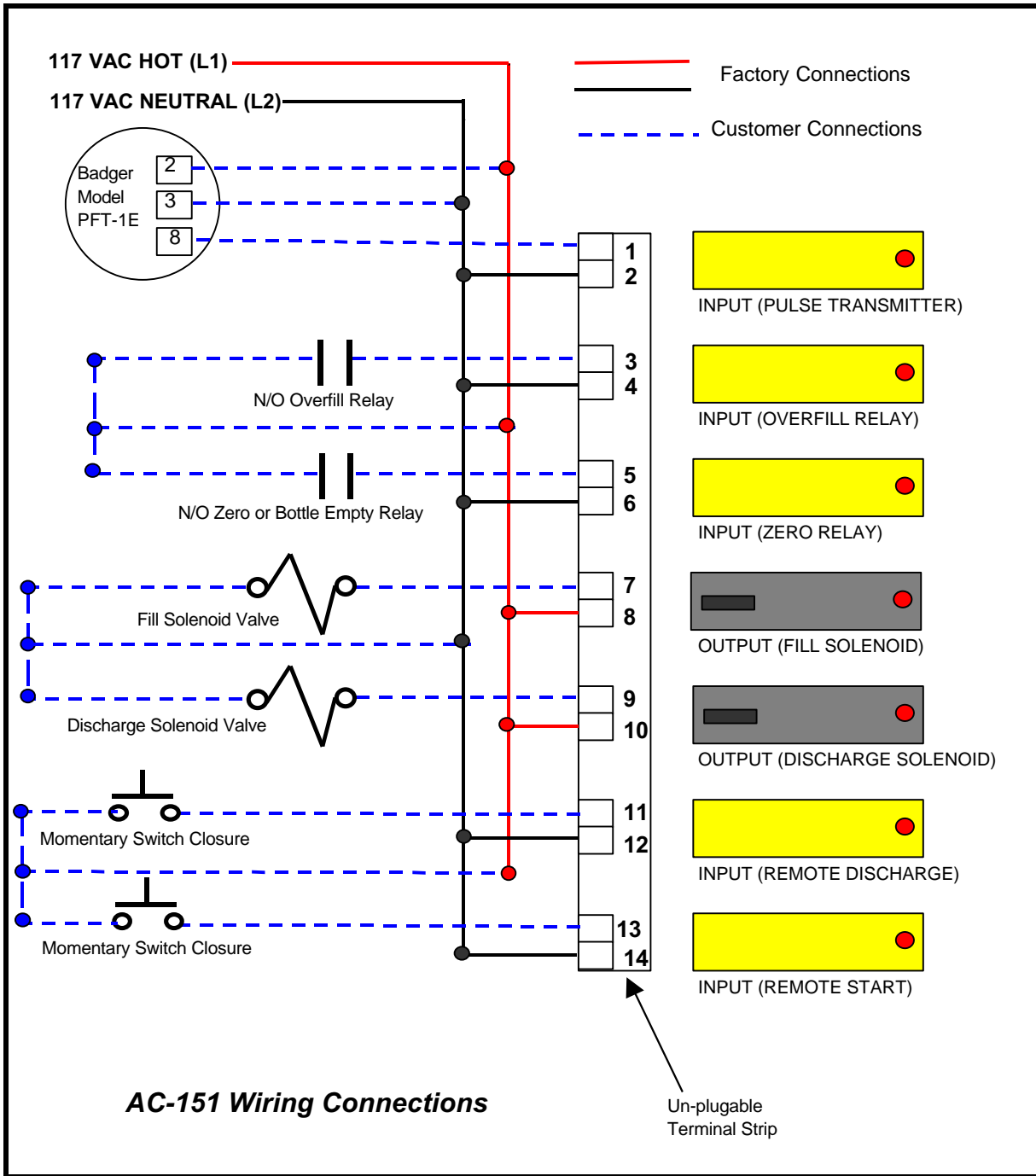


**WIRING PROCEDURE**

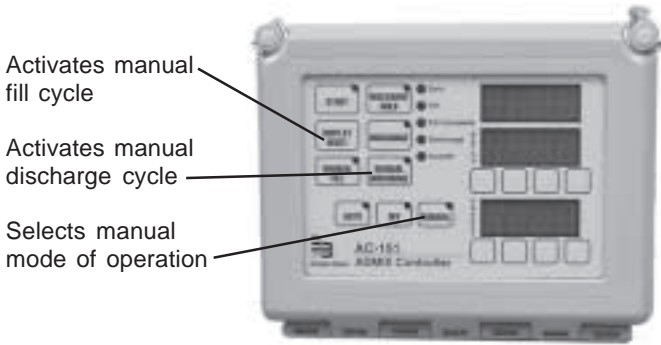
The AC-151 is designed to be used in conjunction with Badger Model DP-10 probe amplifier or a probe amplifier of equal operation. This controller is also designed to work in conjunction with Badger Model PFT-1E electronic scalable transmitter, PM-5 reed switch transmitter, and Badger Model CT reed switch transmitter. The terminal strip inside the AC-151 contains 14 terminals for wire connections. This terminal strip is a pluggable type and can be removed from the AC-151 circuit

board for ease of making connections. Below is a wiring diagram for the AC-151.

The AC-151 is equipped with a power entry module for the main power supply. Included in the package you will find a power supply cord. Connect the female end of this cord to the power entry module. Plug the opposite end into a standard 15 amp 117 VAC outlet.



**MANUAL OPERATION**



Manual operation is achieved through operator use of the AC-151 front panel switches. Once all wiring connection is made and the power supply is connected, press the "MANUAL" switch. The LED light on the switch will illuminate indicating the switch is in the "on" position. Depress the "MANUAL FILL" switch. This switch is a momentary switch and will only stay on as long as it is depressed. When the "MANUAL FILL" is on, the "Fill" indicator light will illuminate indicating the AC-151 is in the fill cycle. While filling, the "Zero" light will illuminate indicating admixture in contact with the zero probe.

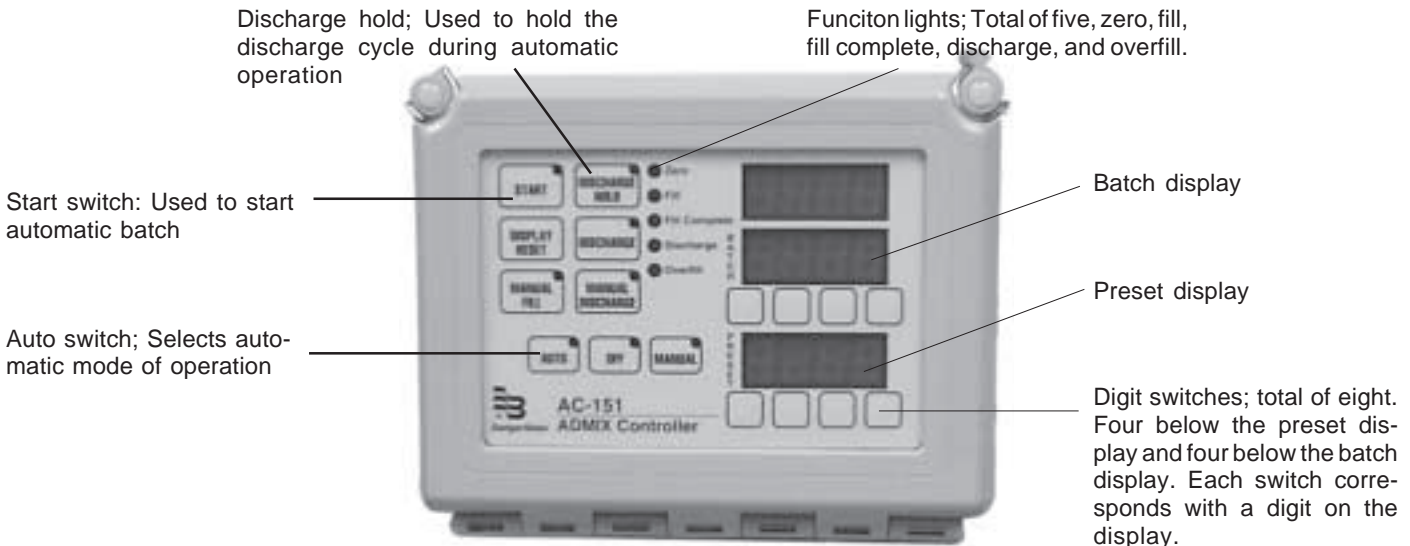
Also during the fill cycle, the meter pulse will count on the top display of the AC-151.

To discharge, depress the "MANUAL DISCHARGE" switch. Like the "MANUAL FILL", this switch is also a momentary switch. The discharge cycle will stay activated until the "MANUAL DISCHARGE" SWITCH is released.

should show 22.50.)

**AUTOMATIC OPERATION CONT.**

Once the AC-151 is preset for the desired dosage of admixture, the operator is ready to begin the automatic batch mode. Simply depress and release the "START" switch. At this time the "fill" light will illuminate indicating the AC-151 is in the fill cycle. The "zero" light will illuminate when admixture come in contact with the zero probe, and the top display will count indicating pulses received from the flow meter transmitter.



**AUTOMATIC OPERATION**

The AC-151 provides three ways of presetting an admixture dosage, total ounces per batch, ounces per 100/wt. Of cement, or ounces per cubic yard of concrete. Each of these three ways can be easily set-up by using the front panel switches. First, place the AC-151 in the automatic operation mode by depressing the "AUTO" switch. The light on the switch will illuminate indicating that the switch is in the "on" position. To set the AC-151 for total ounces per batch, simply set the "PRESET" display for the total number of ounces required. (0000-9999) This display is set by using the four digit switches located below the display. The digit switches can be held down to scroll through the numbers. Once the total number of ounces has been set, the AC-151 is ready for automatic operation.

To operate the AC-151 in ounces per 100/wt. Of cement, set the total cement weight used on the "BATCH" display. Like the "PRESET" display, there are four digit switches used to set this amount. As this amount is being set, a decimal point will appear between the second and third digit on both the "BATCH" and "PRESET" displays. The "PRESET" display is then used to set the desired number of ounces per 100/wt. Of cement. **(Example; 3500 Lbs. cement @ 2 1/2 oz. The "batch" display should show 35.00 and the "preset" should read 02.50.)**

After these two displays are set, the total ounces required will be shown on the top display.

Ounces per cubic yard are set using the same procedure as ounces per 100wt. Of cement.

**(Example: 8 1/4 yards of concrete @ 22 1/2 ounces per yard. The "batch" display should show 08.25 and the "preset"**

Upon reaching the preset amount, the "fill" light will turn off and the "fill complete" will illuminate. The AC-151 will also at this time activate the discharge cycle. The discharge cycle can be held by depressing the "DISCHARGE HOLD" switch, the light on this switch will illuminate when in the "on" position. During the discharge cycle the "discharge" light will be illuminated. The discharge cycle will end when admixture drops off the zero probe. At this time the all function indicator lights will turn off and

the AC-151 will reset itself, ready to be set for the next batch.

**OPERATIONAL FEATURES**

The AC-151 is equipped with four operational features, delay discharge, time discharge, remote start, and remote discharge. Usage of these is explained in the following text.

**DELAY DISCHARGE**

The AC-151 is equipped with a delay discharge feature. The delay discharge is operator settable from 0 to 99 seconds. The delay discharge timer begins timing at the beginning of the automatic discharge cycle.

At the end of the timing cycle the automatic discharge will begin. To set this function, depress the "OFF" switch located

**TIME DISCHARGE**

The AC-151 is equipped with a time discharge feature. The time discharge is operator settable from 0 to 99 seconds. The delay discharge timer begins timing at the end of the automatic discharge cycle, keeping the discharge cycle on for the set time period. This feature is used to empty discharge lines after each batch.

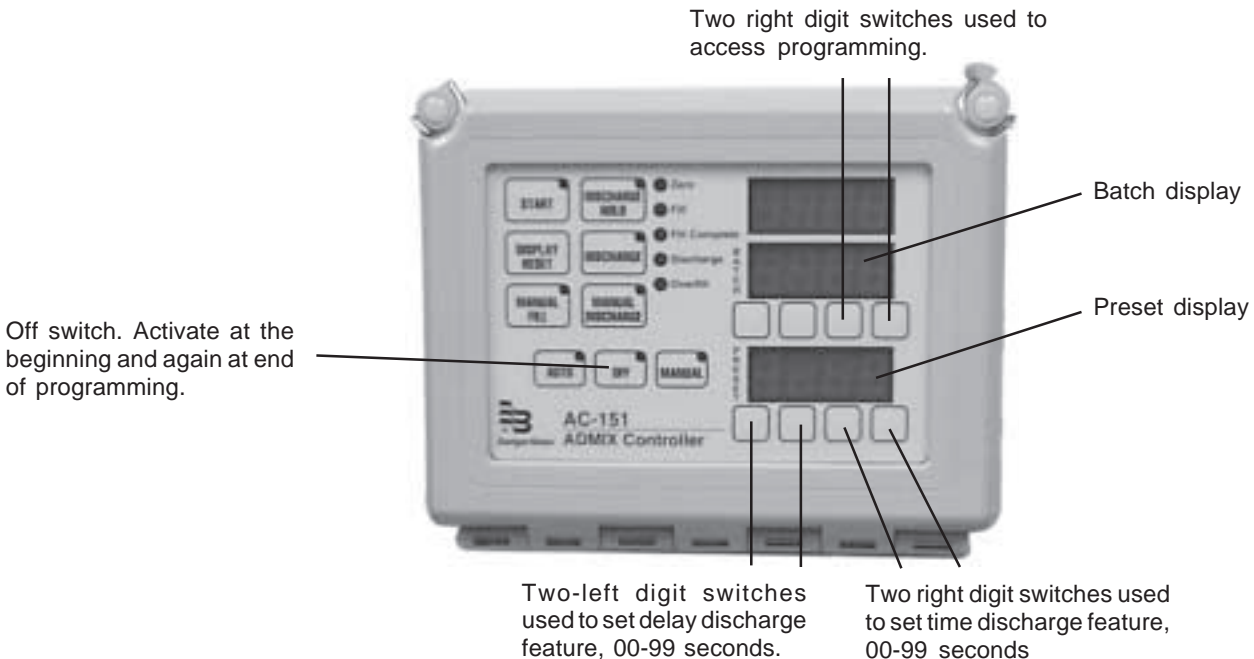
To set this function, depress the "OFF" switch located on the front panel of the AC-151. The light on the switch will illuminate, and the three AC-151 displays will go blank. Next, press the right most digit switch under the "batch" display and then

on the front panel of the AC-151. The light on the switch will illuminate, and the three AC-151 displays will go blank. Next, press the right most digit switch under the "batch" display and then immediately press the second from right digit key under the "batch" display. At this time the displays will light up, placing the AC-151 in program mode. Using the two left digit switches under the "preset" display, set the delay discharge timer. **(00-99 seconds)**

Once the desired value is entered, press the "OFF" switch to store the time setting into the processor.

immediately press the second from right digit key under the "batch" display. At this time the displays will light up, placing the AC-151 in program mode. Using the two right digit switches under the "preset" display, set the delay discharge timer. **(00-99 seconds)**

Once the desired value is entered, press the "OFF" switch to store the time setting into the processor. Note that when using the time discharge feature, a wiring change may be required. The discharge output from the AC-151 will need to be connected directly to the discharge solenoid valve rather than the discharge input on the Badger Model DP-10 Probe Amplifier.



## **REMOTE START**

The AC-151 has the capability of being activated using a remote start signal.

The signal required for this feature is a momentary switch closure. If the remote start source is a voltage signal, an external relay may be needed in order to interface between the remote source and the AC-151. Refer to the wiring procedure section of this manual for remote start wiring.

Once the remote start is wired, the "AUTO" switch located on the face of the AC-151 must be turned "on" in order for this feature to operate. The light on the switch will illuminate when switch is in the "on" position.

## **REMOTE DISCHARGE**

The AC-151 has the capability of starting the discharge cycle with a remote signal.

When wired and activated, the AC-151 will fill to the preset amount and stop until a remote signal is received to discharge. Like the remote start feature, this too requires a momentary switch closure for operation. If the remote signal source is a voltage signal, an external relay may be needed in order to interface between the remote source and AC-151. Refer to the wiring procedure section of the manual for remote discharge wiring. In order to activate the remote discharge feature a jumper must be placed between the two pins of the J3 jumper. The J3 jumper is located on the front half circuit board located inside the AC-151. Also the "AUTO" switch must be in the "on" position. The light on the switch will be illuminated when switch is in the "on" position.

## **SAFETY FEATURES**

The AC-151 is equipped with two features, which aid in overdose protection. These are overfill and fail-safe. The overfill protection requires a normally open relay contact for operation. Refer to the wiring procedure section of this manual for connection of overfill relay. Upon admixture coming in contact with the overfill probe, the overfill relay will close sending a signal to the AC-151. The AC-151 will in turn stop the fill cycle preventing an overflow. If this condition occurs, place the AC-151 in manual mode of operation, and manually discharge the admixture. Note that the overfill feature will stop the fill cycle electrically and does not protect an overfill condition resulting in a mechanical failure.

The Fail safe feature requires no customer connections for operation. This feature is pre-programmed from the factory. The Fail-safe protects against flow meter failure. After the AC-151 automatic batch is activated, the flow meter must send a pulse within a 5-second time period. If no pulse is received the AC-151 shuts down and shows FAIL on the top display. The fail-safe also monitors the meter pulse during the fill cycle. If there is a 5-second hesitation between pulses the fail-safe feature will also engage.

When this occurs, the AC-151 must be placed in manual mode and operated manual until the flow meter problem is corrected.

## **OPERATIONAL CONSIDERATIONS**

There are a few items that need to be considered when using the AC-151 controller. As mentioned earlier the AC-151 requires a Badger Model DP-10 or a probe amplifier of equal operation. The dispenser level probes **can not** be directly connected to the AC-151 controller. Doing so may result in personal injury.

The AC-151 also requires a scalable type pulse transmitter. The AC-151 counts pulses from the transmitter. If the transmitter is set for 16 ounces per pulse then each count on the AC-151 will equal 16 ounces. The instructions written in this manual are based on a meter pulse rate of 1 ounce per pulse.





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**BadgerMeter, Inc.**

7420 East 46th Place, Tulsa, OK 74145  
Telephone: (918) 628-7400 / Fax: (918) 622-0644  
[www.badgermeter.com](http://www.badgermeter.com)