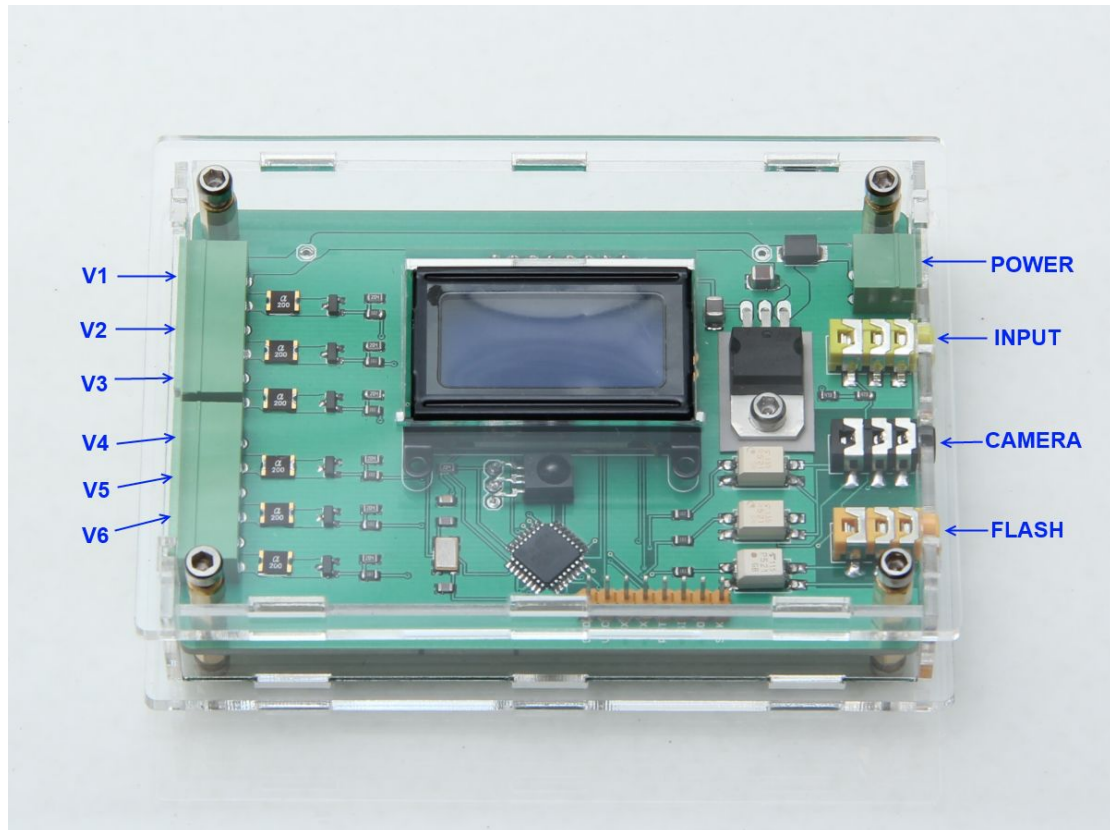


Six Valve Water Drop Controller Quick Start Guide

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Hardware



Pic 1

Operating voltage for this device is 7.5V to 24V.

There are six valve output ports, namely V1, V2, V3, V4, V5 and V6 as shown above. These are used to connect solenoid valves. Each of these ports has current limiting self resettable fuse of 1A to prevent accidental short circuit. So any valve that draws less than 1A can be used within voltage limit.

The INPUT port is essentially a TTL level input with pull up resistor, it can be used with any device that can simulate a short circuit.

The CAMERA port is a dual optically isolated port that is used to control cameras.

The FLASH port is an optically isolated port used to control flash or wireless flash

trigger.

Concepts

MJKZZ Water Drop Controller is designed around the following concepts:

- Tick time (TK)
- Camera Shutter Lag (LAG)
- Flash Trigger Duration (XS)
- Valve
- Number of Drops for each Valve (#)
- Drop Size for each Drop of each Valve (S)
- Sync time for each Valve (D 0)
- Drop Delay between two Drops of each Valve (D)
- Flash synchronization delay (FD)

Tick Time (TK)

Tick time refers to unit of time that the controller counts to carry out action. This six valve controller can have the following tick precision:

- 100us (microseconds or 1/1,000,000th of second)
- 200us
- 500us
- 1000us or 1ms (milliseconds or 1/1,000th of second)

What this means is that if you specify a flash delay (FD) of 400, the controller will count 400 of ticks and then fires flash. If Tick unit is 100us, it will fire the flash after $400 * 100us = 40ms$, if tick time is 1000us (1ms), it will fire flash after 400ms or 0.4 second. To change its value, press TK on remote and use +1/-1, +10/-10, and +100/-100 to change its value.



Camera Shutter Lag (LAG)

This refers to how fast camera can take a picture when it receives a signal to do so. Every camera has its own value. This controller needs this information in order to synchronize camera and flash.



To change the value of this parameter, press LAG on the remote and use +1/-1, +10/-10, and +100/-100 to change its value

Flash Trigger Duration (XS)

This is also known as X sync duration -- how long to keep the flash trigger signal asserted. Most of the time 1 - 5ms duration is enough to trigger most flashes. However, for those flash that has MULTI function, as long as the XS signal is asserted, the flash will keep flashing at predefined interval and frequency.



To change this value, press XS on the remote and use +1/-1, +10/-10, and +100/-100 to adjust its value.

Valve

This refers to valve port. This controller supports up to six valves. Though, there is no direct access to this parameter, it is accessible when a associated parameter needs to be changed.

Number of Drops (#)

Number of drops is associated with each valve and maximum value is 100. Note, this value is associated with each valve and the valve index is displayed at lower left corner (see picture below)



To change the value of this parameter, press # on the remote and use +1/-1, +10/-10, and +100/-100 to change its value. To change valve associated with it, use V up and V down to change valve index.

Drop Size (S)

Drop size is a parameter to specify how large/small a drop can be. This controller supports up to 16 different drop sizes for each valve.



Press S up or S down to access this parameter. The size index specifies which drop (up to 16) the size is set for. Use +1/-1, +10/-10, and +100/-100 to change its value and use V up and V down on the remote to change to different valve.

Sync for each Valve (D0)

The Sync value refers to how long the controller has to wait before start dropping. This is essentially the delay zero, if delay between start of process and actual dropping.



To access this parameter, press D up or D down and navigate to Index 0 where the word "Delay" becomes Sync. To change its value, use +1/-1, +10/-10, and +100/-100. Since it is associated with a particular valve, use V up and V down to change valve index.

Delay between Drops (D)

This parameter refers to delay between two drops for each valve. This controller supports up to 16 different delays for each valve.



To change the value of this parameter, press D up or D down and then use +1/-1, +10/-10, or +100/-100. Since this parameter is associated with a particular valve, use V up or V down to navigate to the right valve.

Flash Delay (FD)

This value refers to tick delay before flash is fired. This tick value starts right after the process begins.



Press FD on the remote to access this parameter and use +1/-1, +10/-10, or +100/-100 to change its value.

Operation

Saving

Setting for a particular session can be saved by press S



Up to **two** session parameters can be saved, using +1/-1, +10/-10, or +100/-100 to change index value. Only index 1 and index 2 are available to save to because index 0 is the factory default values.

Loading

Saved session parameters can be loaded back by pressing L. Note, when index is zero, factory default setting is loaded.



Up to **two** session parameters can be loaded, using +1/-1, +10/-10, or +100/-100 to change index value. By default, when there is nothing saved, index 1 and index 2 are the same as factory default.