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Aputure Manufacturing Authority

Aputure®

V-Control

USB电子调焦控制器

User Manual

使 用 者 指 南

Vivo Movie Solution

AP-020 - -2012.10
Tuesday, October 16, 2012 10:38:00 AM

目 录

安全须知

为了防止对产品造成损害或伤害到您自己或他人，请在使用前充分阅读下面的安全需知，并妥善保管以便所有本产品使用者可随时参阅。

☞ 请勿自行拆卸或改装

违反此警告可能会触电或导致产品故障。若本产品因为摔落或其它意外事故造成破损，请取出电池，并送到专业维修店维修。

☞ 保持干燥

- 请勿用湿手操作，禁止将产品置于水中或在雨中作业。否则可能引起火灾或触电。
- 请勿在有易燃气体的环境下使用。
- 违反此警告可能引起爆炸或火灾。

☞ 置于儿童接触不到的地方

本产品包含的零部件，有可能造成窒息的危险。如果儿童不小心吞食了零件，请立即送往医院救治。

☞ 请勿暴露于高温环境

请勿将本产品置于阳光直射下的封闭的车辆内或其他高温环境。否则可能导致产品发生爆炸。

☞ 电池使用安全事项

- 只能使用本手册中指定的电池。不要混用新旧电池或不同类型的电池。
- 请勿拆卸电池或使电池短路。
- 装电池时要注意正负极对应正确。
- 电池电量耗完时容易发生漏液，为防止对产品造成损害，当长期不使用本产品时请将电池取出。
- 如果受损电池中的液体接触到皮肤或衣物，应立刻用大量清水冲洗。

前　言

爱图仕 Aputure® USB电子调焦控制器，是通过佳能USB协议对佳能EOS系列单反相机进行全面控制的设备。该控制器创造性的将静态(Still)和动态(Video)模式用档位开关一键切换。爱图仕USB电子调焦控制器让您远离功能键繁多的困恼，为您的拍摄带来更加愉悦的体验。

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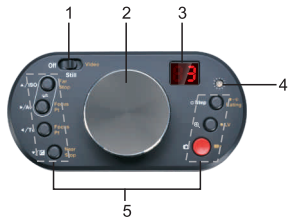
一、产品功能简介

爱图仕USB电子调焦控制器共有两种工作模式：静态(Still)模式和动态(Video)模式。静态模式为照片拍摄模式，动态模式为视频拍摄模式。七个多功能键，配合中心旋钮，可设置相机的ISO、光圈、快门速度和曝光补偿等参数。此外，该产品可控制相机快门和视频拍摄，并且在视频拍摄中，具有选择和保存焦点等诸多功能。

主要特点：

1.全球首创的静态/动态一键切换
2.全方位曝光控制
3.全方位视频控制
4.多个接口支持更多搭配
5.LED显示清晰直观
6.静态模式可选择多个焦点
7.动态模式可设置四个焦点
8.两个USB接口让您的操控更便捷
9.操作简单，轻巧便携

二、各部件名称



（正面）

（侧面）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控制器部件名称

1.档位开关(Off/Still/Video)
2.中心旋钮
3.LED数码管(左边显示对焦指令发送频率，右边显示步长)
4.状态指示灯
5.多功能键
6.USB接口

附件名称：

7.双管固定锁扣
8.单管固定锁扣
9.USB数据线
10.挂绳
11.皮套

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三、按键信息

静态(Still)模式

1.短按为对焦区域下移键
2.长按为曝光补偿调节键

半按自动对焦，不松手直接全按拍照

Lv开启时，同时按此两按键，可将对焦点还原至中心点

1.短按为循环选择1倍/5倍/10倍数字变焦键
2.长按为实时取景切换键

1.短按为对焦区域左移键
2.长按为快门速度调节键

1.配合其他按键调整参数设置
2.焦点调整旋钮

1.短按为对焦区域右移键
2.长按为光圈调节键

1.短按为步长设置键
2.长按为对焦指令发送频率设置键

1.短按为对焦区域上移键
2.长按为ISO调节键

动态(Video)模式

最近焦点设置键

1.半按自动对焦，不松手直接全按拍照
2.直接全按开启/关闭视频拍摄

第三焦点设置键

第二焦点设置键

1.短按为循环选择1倍/5倍/10倍数字变焦键
2.长按为实时取景切换键

未连接相机状态下，同时长按住此两按键可实现反转设置

焦点调整旋钮

最远焦点设置键

1.短按为步长设置键
2.长按为对焦指令发送频率设置键

四、产品使用前准备

1.在开始使用之前，请确认单反相机的USB协议与佳能USB协议一致，如Canon EOS 1D Mark IV，5D Mark III，5D Mark II，7D，60D，600D/T3i/Kiss X5，550D/T2i/Kiss X4，500D/T1i/Kiss X3，1100D/T3/Kiss X50等。
2.您如果想使用本产品的对焦控制功能，您必须使用带有电动机的镜头（带USM超声波马达的镜头）；手动镜头也可正常使用，但是您就不能使用该产品实现电子对焦控制功能。

电池安装

1.安装电池时，按电池仓上的箭头反方向滑动并打开电池仓。
2.插入电池前请对准正负极。
3.按照箭头方向滑动电池仓仓盖关闭电池仓。

产品安装

将USB数据线一端插入电子调焦控制器，另一端插入相机的USB接口。

小贴士：
调焦器的两个USB接口适用于不同的使用场合，而当两个USB接口同时接入相机时，将只有一个USB接口工作。

按键测试

在控制器处于非连接状态并且处于Still或Video模式时，可以进行按键测试。短按任意按键或者旋转中心旋钮，LED灯开始绿灯闪烁。长按任意按键，LED灯红灯亮起，此时表明此控制器按键是正常的。

反转设置

您可以通过反转设置对相机的参数调整和调焦方向进行反向调节，即中心旋钮使用的方向与之前的方向相反。
1.将USB调焦器开启并处于非连接状态。
2.同时按住<▲>键和<►>键，红绿指示灯会交替闪烁，此时应松手。
3.当绿灯长亮2秒，表示反转设置成功。

小贴士：
每一次方向被反转设置后，控制器即使重启，之前的设置也会被保存。

对焦步长及对焦指令发送频率调节

对焦步长的调节

当控制器向相机发送对焦指令时，佳能允许有三种不同的步长。短按<Step>键可以循环选择短/中/长三种步长，同时，LED数码管的右边部分以1/2/3显示相对应的步长。对焦步长设置的越大，镜头每一步移动的距离越大，焦点移动的就越快，反之亦然。

小贴士：
1.调整后的对焦步长会保存在控制器中，因此无需每次开机后都对该项参数进行设置。
2.请不要在焦点保存后改变对焦步长，否则对焦点精度会受影响。

对焦指令发送频率的调节

1.对焦指令发送率是USB调焦器最重要的设置之一，是指单位时间内镜头移动的次数。该设置决定了镜头以何种速率进行对焦，同时也允许精确和重复的存储焦点。
2.当控制器处于Still或Video模式时，长按<Rating>按键，同时旋转中心旋钮即可调节对焦指令发送频率。对焦指令发送频率在LED数码管的左半部分以1-9对应显示。

小贴士：
1.调整过的对焦指令发送频率会保存在控制器中，因此无需每次开机后都对该项参数进行设置。
2.对焦指令发送频率设置为4-6较为适宜。
3.请不要在焦点保存后改变对焦指令发送频率，否则对焦点精度会受影响。

五、控制器功能简介

相机实时取景开启/关闭

长按<LV>按键开启或关闭实时取景。

小贴士：
在视频录制模式时，7D和500D/ T1i/ Kiss X3会忽视实时取景“开启”指令，您必须手动开启相机上的"实时取景"功能。

数字变焦

相机启动实时取景后，短按<🔍>按键可以循环选择1倍/5倍/10倍的比例放大对焦框的内容，您可以配合调焦旋钮进行精确对焦。

小贴士：
在视频录制过程中，不能使用数字变焦。

焦点控制

当实时取景模式打开后，可以利用中心旋钮选择对焦点。当旋钮以顺时针旋转时将焦点拉近，当旋钮以逆时针旋转时将焦点向无限远移动。这种机制与佳能EF和EF-S的旋转相符合。当然您也可以反向设置旋钮方向，反转设置请参阅P8。

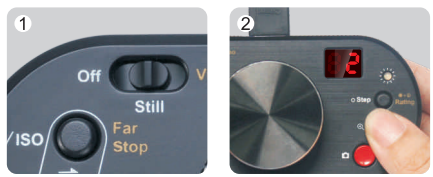
小贴士：
有些镜头有自动对焦转换功能。
例如：每次向无限远端转动对焦环15度，但是靠近焦点的时候每次转动对焦环只有10度。这种特征使得利用焦点对焦模式不够稳定。当然只有部分的镜头具有这样的特征，因此需要您通过保存两个焦点反复测试这种情况。

六、控制器操作

静态(Still)模式

静态模式为相机拍摄照片的模式

1.将档位开关拨至Still档。
2.长按<LV>按键，打开相机的实时取景功能。
3.选择对焦区域。
短按<▲▼◀▶>按键可对对焦区域进行选择，当数字变焦为1X时，同时按下<◀▼>按键可将对焦矩形框恢复到画面的中央。



小贴士：
在移动对焦矩形区域时，请不要同时操作相机和控制器上的按键。

4.曝光调节

长按标有ISO/AV/TV/ 的图标的按键，同时旋转中心旋钮以分别改变相机的感光度、光圈、快门速度、曝光补偿，当新的参数显示在相机上时，释放按键和旋钮。

小贴士：
调节时，相机需设置为M/AV/TV/P模式，而曝光补偿只能在AV/TV/P模式下进行调节。

5.自动对焦及拍照

半按红色按键，相机进行自动对焦，此时的对焦框由红色变为绿色，不松手继续长按，相机拍照。

小贴士：
自动对焦时，相机的镜头需要拨到自动档。

动态(Video)模式

动态模式为相机拍摄视频的模式

1.将档位开关拨至Video模式，相机设置为视频录制模式。
2.长按LV按键，打开相机的实时取景功能。
3.四个对焦键的使用。
按键<▲▼◀▶>可用于存储、清除和返回四个焦点。<▲▼>按键作为限位的焦点以锁定对焦范围。最远端焦点为<▲>，最近端为<▼>，一旦焦点锁定在两端，那么焦点就只能在存储的焦点区域内进行变化。

4.对焦点的保存/清除/切换
1)旋转中心旋纽用以选择对焦点。
2)保存焦点
长按<▲▼◀▶>按键会以当前位置存储焦点，绿灯闪烁一次。
3)清除焦点
再次长按<▲▼◀▶>按键，之前存储的焦点将被清除，此时绿灯闪烁两次。
4)切换焦点
短按<▲▼◀▶>任意按键，焦点自动切换到存储的位置。若您没有存储任何焦点，该项操作没有反应。

小贴士：

1.当实时取景开启但是没有进行视频录制的时候，焦点可以保存和清除。

2.四个焦点的保存和切换应从上依次向下或从下依次往上，按顺序进行。

3.焦点的存储基于指令总数的多少。

例如：USB电子调焦控制器需要通过一定指令到达所存储的焦点的位置。如果对焦指令发送频率太快，指令会丢失并且您所存储的焦点精度会降低。另外当您没有设置最近端和无限远端的焦点，并且焦点到达临界点后，您继续旋转中心旋钮，您已经保存的焦点将不会工作。

4.如果您设置好了焦点，以下情况可能会导致对焦点保存的精确性。

- 手动对相机的对焦环进行调节。
- 改变对焦步长或对焦指令发送频率。
- 将对焦指令发送频率设置得过快。
- 改变镜头的焦距（使用了变焦）。
- 使用了自动对焦。
- 在焦点到达可调焦临界点后没有停下来，而是继续旋转中心旋钮。
- 利用了镜头增倍镜等附加配件，导致了焦点的改变。

5.视频拍摄开启/关闭

直接全按红色按键可以开启或者关闭视频录制，也可以直接通过相机机身上的视频录制按键来操作。

小贴士：

由于相机自身的原因，部分相机在视频录制时半按无法对焦。详见相机使用说明书。

6.动态（Video）模式下拍照

1）视频拍摄关闭时：半按红色按键会开启相机自动对焦功能，此时的对焦框由红色变为绿色，不松手继续长按，相机拍照。

2）视频拍摄开启时：半按红色按键后不松手继续长按，相机拍照。拍照不影响视频拍摄。

小贴士：

某些佳能相机在视频拍摄过程中，不能拍照。

LED状态指示灯信息

状态		操作	LED灯指示
连接状态	Video模式	无操作	红灯常亮
		保存焦点	绿灯闪烁一次
		清除焦点	绿灯闪烁两次
	Still模式	无操作	绿灯常亮
非连接状态		按键测试，短按任意按键或者旋转中心旋钮	绿灯亮
		按键测试，长按任意按键	红灯亮
		反转设置	红绿指示灯交替闪烁
		档位切换，从Off 档拨至Video 档	红灯闪三下后熄灭
		档位切换，从Off 档拨至Stil1 档	绿灯闪三下后熄灭
		按键被卡住	红灯常亮
		电池电量不足	红灯闪烁

七、技术参数

工作电压: DC 3.0V(AA 1.5V X2)

工作电流: ≤50MA

产品尺寸: 114.5(L) X 57.5(W) X 49.2(H)MM

待机时间: 80个小时

连续工作时间: 40个小时

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八、重要注意事项

1.在镜头达到了自身的焦点临界点后，仍然旋转中心旋钮会导致自动对焦马达磨损。为避免这种情况，在焦点到达临界点后应停止旋转旋钮。

2.使用USB电子调焦控制器时，不要频繁切换档位开关，否则可能造成功能紊乱。

九、常见问题

1.控制器不能开启
- 请确认电池的电量。
- 确认控制器拨至Still或Video模式。

2.控制器与相机连接但无法识别
- 请确认相机与控制器是否兼容（兼容机型请查阅本手册中的P7）。
- 请确认USB数据线的两端分别已经完全插入控制器和相机。
- 请确认相机工作正常并且电量充足。

3.相机显示错误或者反应迟钝
- 请确认电池的电量，并确认控制器已拨至正确的模式。
- 将USB数据线移除，分别将相机与控制器关闭。将相机电池取出并等待10秒，随后重新装入电池，再次将相机与控制器连接，接着打开相机，启动控制器。

4.当控制器打开后LED灯连续不断的闪烁红灯或绿灯
某一个按键被卡住。逐个按住或者松开以便找出被卡住的按键。

5.按键使用困难
执行特定功能时按下功能键但无法工作。这种情况是由于按键被卡住或者有缺陷造成的。通过测试逐个检测按键，一旦发现问题按键，请退回厂家进行维修。

6.焦点位置不精确
- 确认对焦指令发送频率不要设置的过快。保存焦点后再改变对焦指令、对焦步长和焦距会影响焦点精度。
- 有些镜头从近处焦点到无限焦点端旋转增量不一致。
- 不管您如何设置精度都不会准确。（这种情况只是针对少数特定的镜头）

7.焦点停顿或移动不均匀
确认对焦指令发送频率不要设置的过快。如果对焦指令发送频率设置的太快，一些对焦命令会被丢弃，因为相机正在执行之前的命令，当前的命令和之前的命令之间的时间差会造成焦点移动不均匀。建议把对焦指令发送频率设置在4-6。

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Safety Notice

To prevent damage to your product or injury to yourself or to others, read the following safety precautions in their entirety before using this equipment. Keep these safety instructions where all those who use this equipment will read them.

☞ **Do not disassemble or modify**
Failure to observe this precaution could result in electric shock or product malfunction. Should the product break open as the result of a fall or other accident, remove the batteries.

☞ **Keep dry**
- Do not handle with wet hands or immerse in or expose to water or rain. Failure to observe this precaution could result in fire or electric shock.
- Do not use in the presence of flammable gas. Failure to observe this precaution could result in explosion or fire.

☞ **Keep out of reach of children**
This device contains small parts which may pose a choking hazard. Consult a physician immediately if a child swallows any part of this device.

☞ **Do not expose to high temperatures**
Do not leave the device in a closed vehicle under the sun or in other areas subject to extremely high temperatures. Failure to observe this precaution could result in fire or in damage to the casing or internal parts.

☞ **Observe precaution when handling batteries**
- Use only batteries listed in this manual. Do not mix old and new batteries or batteries of different types.
- Do not short or disassemble.
- Do not attempt to insert batteries upside down or backwards.
- Batteries are prone to leakage when fully discharged. To avoid damage to the product, be sure to remove the batteries when leaving the product unattended for prolonged periods or when no charge remains.
- Should liquid from the batteries come into contact with skin or clothing, rinse immediately with fresh water.

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Foreword

Aputure® V-Control is the world's first mode-switching USB focus controller. One can shoot in either Still or Video mode, with full control of live-view, focusing, and exposure settings. Clearly labeled, versatile buttons give you a plethora of options. It'll change the way you record video and shoot stills.

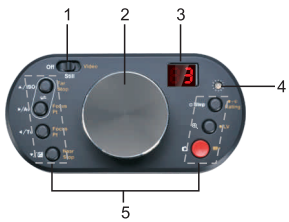
1. Product Introduction

Aputure V-Control is a battery powered, handheld USB host device designed to control certain Canon DSLR cameras that use Canon's USB protocol. 7 versatile buttons and a center control wheel can be used to adjust a variety of settings. Firstly, it can control focus and save focal presets. Secondly, it can control live-view, including digital zooming, navigation, and saving focus zones. And finally, it can control exposure settings, including shutter, aperture, ISO, and exposure compensation.

Main Features

1. World's 1st mode-switching USB focus device
2. Total exposure control (shutter, aperture, ISO, EC)
3. Total live-view control
4. Compatible with many accessories
5. LCD display for adjustment settings
6. Multiple focus options in still mode
7. Four focus point presets in video mode
8. Two USB ports for ergonomic flexibility
9. Simple operation & easy portability

2. Components



(Front)

(Side)


7


10


8


11


9

Controller

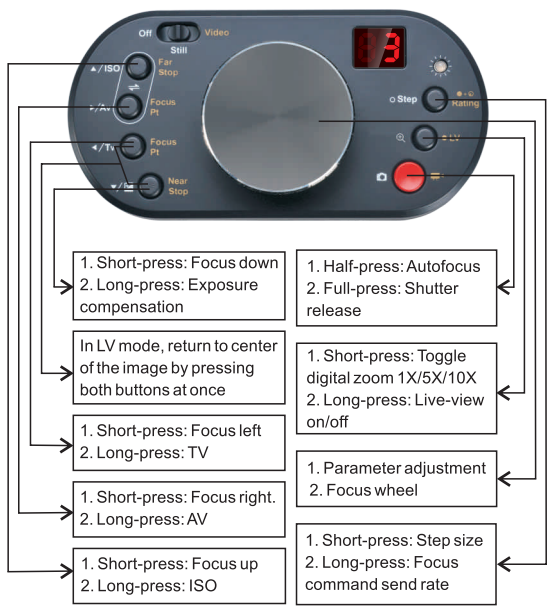
1. Mode Switch Button (Off/Still/Video)
2. Center Wheel
3. LCD Display (Left: command send rate; Right: focus step)
4. Indicator Bulb
5. Versatile Buttons
6. USB Port

Accessories

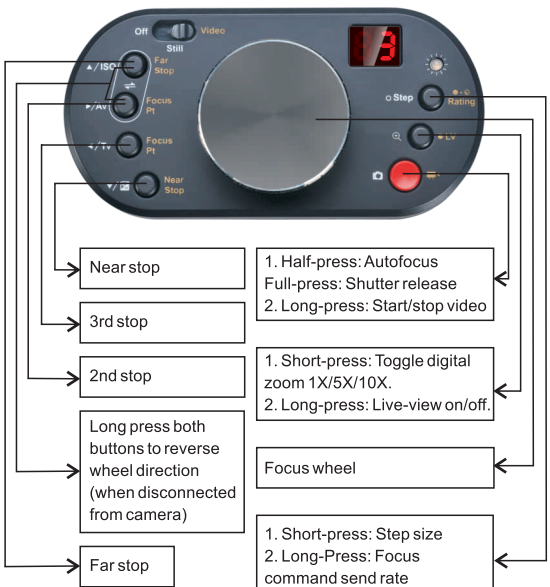
7. Dual Pipe Rig Mount
8. Single Pipe Rig Mount
9. USB Cable
10. Hang rope
11. Leather Case

3. Button Information

Still Mode



Video Mode



4. Getting Started and Basic Operation

1. Aputure V-Control only works with DSLRs that use Canon's USB protocol, including Canon EOS ID Mark IV, 5D Mark III, 5D Mark II, 7D, 60D, 600D/T3i/ Kiss X5, 550D/T2i/Kiss X4, 500D/T1i/Kiss X3, 1100D/T3/KissX50, and so on.
2. An autofocus lens must be mounted on the camera if you intend to use the V-Control's focus function. Manual focus lenses will also work, but you lose the ability to control focus or use the focus point functions.

Battery Installation

1. Open the battery cover in the opposite direction of the arrow.
2. Insert the batteries according to the + and - symbols as shown in the battery compartment.
3. Close the battery cover in the direction of the arrow.

Attaching V-Control

Connect the camera and V-Control by the USB cable as shown below. If V-Control is connected by 2 USB cables, only one USB cable will work.

Button Testing

A diagnostic mode is built into the disconnected state of V-Control. Short pressing any switch by itself or turning the focus wheel will cause the LED to blink green. Long- pressing any switch will cause the LED to turn red.

Reversing Wheel Direction

The center control wheel's rotational direction can be reversed. You can adjust focus or settings in the direction of your choice.
1. The wheel's direction can only be modified while V-Control is turned on and the camera is disconnected or turned off.
2. To reverse direction, press and hold buttons <▲> and <▶>. The LED will begin blinking green and red, then stop.
3. When the LED is green for 2 seconds, the wheel's rotational direction is reversed.

Note:
Wheel rotational direction and button functions are saved automatically, so there is no need to reset them each time you turn on V-Control.

Adjusting Focus Step Size & Focus Command Send Rate

Focus Step Size

Canon's USB implementation allows for three different step sizes when sending a focus command to the camera. Short-pressing <Step> cycles through the three different sizes. 1, 2, or 3 will show on the right part of LCD to indicate small, medium and large step sizes. The bigger the focus step, the quicker the focus moves.

Note:
1. Focus step size is saved automatically. There's no need to reset each time you turn on V-Control.
2. Do not change the focus step size after focus points have been saved, or you will lose focus point accuracy.

Focus Command Send Rate

1. Focus command send rate is one of the most important settings on V-Control. It determines how quickly focus is adjusted, and allows accurate and repeatable saved focus points.
2. When V-Control is in Still or Video mode, long-press <Rating> and rotate the wheel to adjust the focus command send rate. The left part of the LCD will indicate rate by showing 1 to 9.

Note:
1. The focus command send rate is saved automatically, so there is no need to reset each time you turn on V-Control.
2. V-Control works best when the focus command send rate is between 4-6.
3. Do not change the focus command send rate after focus points have been saved, or you will lose focus point accuracy.

5. Functions

Live-View On/Off

Long-press <LV> to start or stop live-view display.

Note:
7D and 500D/T1i/Kiss X3 ignore live-view "on" commands while in video recording mode. You'll need to manually activate live-view on the camera.

Digital Zoom

If live view is enabled, short-pressing <🔍> cycles through 1x/5x/10x digital zoom, which can be used to aid focusing.

Note:
Digital zoom does not work while recording is activated.

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Focus Control

Focus can be adjusted by using the center control wheel when live-view is turned on. By default, turning the wheel clockwise will move focus closer. Turning the wheel counter-clockwise will move focus towards infinity. This matches the focus ring rotation of Canon EF and EF-S lenses. It is also possible to reverse the wheel's direction, which is described in page 8.

Note:
Some lenses suffer from focus point shift. For example, each increment towards infinity focus may rotate the focus ring 15 degrees, while each increment towards near focus may rotate the focus ring 10 degrees. This difference makes it all but impossible to use focus points reliably. Only some lenses suffer from this attribute, so test for this by saving two focus points and repeatedly transitioning between them.

6. Controller Operation

Still Mode

Still mode is for taking photographs.
1. Switch V-Control to Still mode.
2. Long press <LV> to enter live-view.
3. Choose the focus area by short-pressing < ▲▼◀▶ >. Return the focus area to the center of the image by pressing < ◀▼ > together.

Note:
Don't use both camera's and V-Control's buttons at the same time when moving the focus area.

4. Exposure Adjustments
Long-press ISO/AV/TV/ and rotate the center wheel to adjust settings such as ISO, aperture, shutter speed, and exposure compensation.Stop when the new parameter has been shown on the camera.

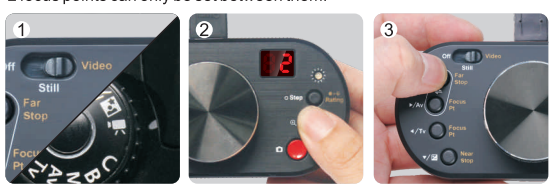
Note:
1. Adjust ISO,AV,TV when the camera is in M/AV/TV/P mode.
2. Adjust when the camera is in AV/TV/P mode.

5. Autofocus and Image Capture
Half press the red button to autofocus, and the LED will turn from red to green. Hold down to fire the shutter.

Note:
The lens on the camera should be set to autofocus.

Video Mode

Video mode is for recording videos/movies.
1. Switch V-Control to Video mode. Set the camera to Video mode.
2. Long-press <LV> to enter live-view.
3. Using Focus Points
Save, delete or return to focus points by pressing < ▲▼◀▶ >. Limit the the focus point by pressing < ▲▼ >. The farthest stop is set by <▲>, and the nearest stop is set by <▼>. Once these focus points have been set, the other 2 focus points can only be set between them.



4. Save/Delete/Switch Focus Points
1) Rotate the center wheel to choose focus points
2) Saving Focus Points
Long-press < ▲▼◀▶ > to save the current point; LED will blink green once.
3) Delete Focus Points
Long-press the buttons again to delete the current position,and it blinks green twice.
4) Switching Focus Points
Short-press < ▲▼◀▶ >, and focus will switch to the corresponding position. If no focus points have been saved, the operation will fail.

Note:
1. Focus points can only be saved or cleared when live view is turned on and you are not recording video.
2. Follow the orders to save the focus points.
3. Saving/switching the focus points depends on the command send rate. Ex: V-Control needs the correct command send rate to arrive at the saved focus point. If the rate is too high, it will impede focus precision. If the far and near point haven't been set, and you rotate the center wheel beyond the range, the saved focus points will not work.
4. If you have saved focus points, the following may cause you to lose your focus point accuracy:
- Turning the focus ring on the lens by hand.
- Changing the focus step size or focus command send rate.
- Setting the focus command send rate too fast.
- Changing the focal length of the lens (if using a zoom).
- Initiating autofocus.
- Continuing to turn the wheel or holding a directional focus button after the focus reaches the end of the focus range.
- Using a lens model with varying focus increments, resulting in focus point shift.

5. Start & Stop
Long press the red button to start or stop recording the video.You can also record the video by pressing record on the camera.

Note:
Some cameras can't focus by half pressing the shutter. Please refer to your camera manual to determine whether yours can or cannot.

6. Shoot in Video Mode
1) When video is not recording, half press the red button to autofocus, and LED will turn from red to green. Hold down to fire the shutter.
2) When video is recording, you can also half press the red button and hold down to shutter, while it won't autofocus. This won't affect video.

Note:
When video is recording, V-Control may not control certain Canon cameras due to the cameras' properities.

State Indicator

State		Operation		Indicator LED
Connected	Video Mode	No operation		Light red
		Save focus point		Blink green once
		Delete focus point		Blink green twice
	Still Mode	No operation		Light green
Disconnected		Test buttons	Short press any button/ Rotate wheel	Light green
			Long press any button	Light red
		Reverse wheel direction		Blink red and green
		Switch modes	Switch from Off toVideo	Blink red three times
			Switch from Off to Still	Blink green three times
		Button is stuck		Light red
		Low battery power		Blink red

7. Specifications

Power Supply: DC 3.0V(AA 1.5V X2)
Current: ⩽ 50MA
Dimensions: 114.5(L)X57.5(W)X49.2(H)MM
Standby Time: 80hours
Working Time: 40hours

8. Important Notice

1. Turning the center focus wheel after a lens has reached the end of its focus range may cause excessive wear on the autofocus motor. To prevent this, do not rotate the wheel any more when you've reached the limit of the lens.
2. Don't switch modes too frequently in order to prevent focusing problems.

9. Troubleshooting

1. Controller does not turn on.
- Make sure the batteries have power.
- Make sure the Mode switch is set to "Still" or "Video" mode.

2. Controller does not recognize when camera is connected.
- Make sure camera is compatible with V-Control. (refer to page 7 for compatible models).
- Check that USB cable is securely plugged into both V-Control and camera.
- Make sure the batteries have power and the mode switch is set appropriately.

3. Camera displays error or is unresponsive.
- Make sure the batteries have power and secure the mode switch is set right.

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- Disconnect the camera from the V-Control and turn both off. Pull the battery from the camera and wait 10 seconds, then replace. Reconnect the camera to the V-Control, then turn the camera on, followed by the V-Control.

4. LED continuously blinks green or red when V-Control is turned on.
One of the switches is stuck. Press/release each one to find the stuck switch.

5. Button presses seem difficult.
Executing specific functions that require you to hold a button don't always work. This indicates a stuck or defective button insert. Once you have found the defective button, please contact the manufacturer.

6. Focus points are not accurate.

- Make sure the focus command send rate is not too fast. Changing the command send rate, focus step size, or focal length after saving focus points can affect accuracy.
- Some lenses have slightly different increments if the focus moves from near to infinity versus infinity to near.
- It will not be accurate regardless of V-Control settings. This is a limitation of the specific lens.

7. Focus occasionally pauses or moves unevenly.
Make sure the focus command send rate is not too fast for the specific combination of lens, focus step size, and focal length. If the command send rate is too fast, some focus commands are dropped because the camera is busy executing the previous command. This gap before the next command is received causes the focus to move unevenly. You should keep the focus command send rate between 4 and 6 commands per second.

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