

CAME-ASTRAL Wireless Follow Focus System

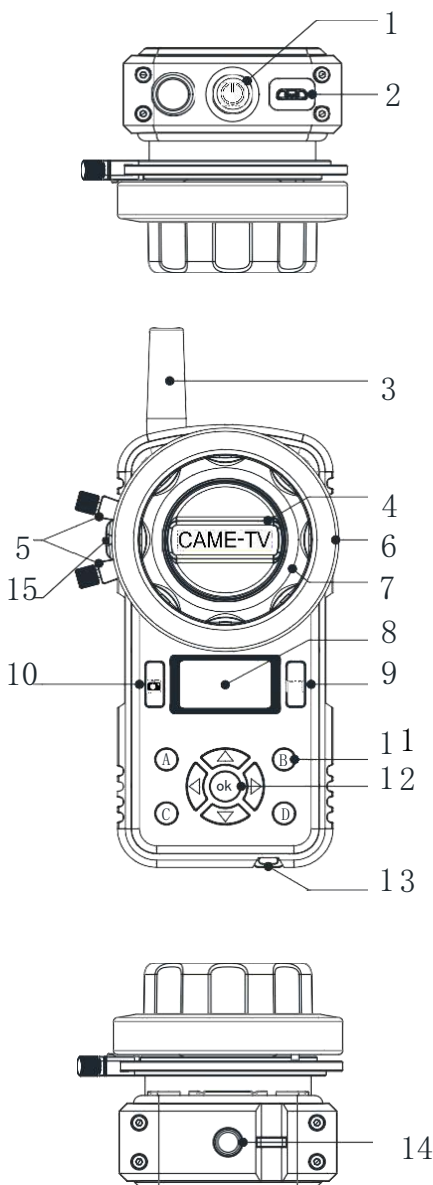


V1.4

One: Brief Introduction:

The CAME-TV Came-Astral is a wireless professional follow focus system designed for industry professionals. It features a reliable control of focus, iris, zoom, and comes with a remote controller & motor. The controller features a control knob and a quick focus button to configure the OLED display. The maximum output speed of the motor is 250rpm. Torque is high up to 0.50Nm and motor noise is low at 25db (with rotation speed at 100 rpm). With 2.4GHz wireless communication, the controller and the focus motor will be automatically paired after being turned on. The maximum transmission range is 100 meters (328 feet). The controller has a built-in 3.7V/1000mAh lithium-ion battery. The OLED display on the controller indicates the battery level in real time. When the battery is low, it can be charged through the Micro USB interface. The working time in the fully charged state is approximately 8 hours.

Two: Controller

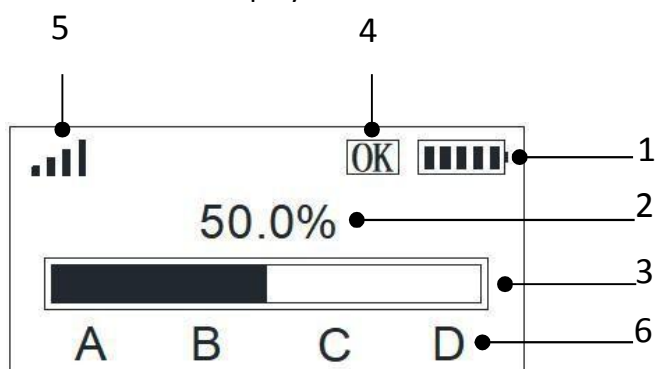


1. Power Button
2. USB Interface
3. Antenna
4. Torque Button
5. Limitation Pins
6. Marking Disk
7. Focus Knob
8. OLED Display
9. Rec Button
10. Photo Button
11. A/B/C/D Point Button
12. Function Button
13. Lanyard Attachment
14. 1/4" Thread
15. Marking Disk Indicator

1. **Power Button:** Perform long press for 3 seconds to turn on/off.
2. **Micro USB Port:** For Charging and upgrading firmware. Charging input is 5V/1A.
3. **Antenna:** 2.4GHz/2dbi.
4. **Torque Button:** To adjust the torque. Rotate counterclockwise for lighter and clockwise for harder torque.
5. **Limitation Pins:** To adjust the rotation angle of the hand-wheel.
6. **Marking Disk:** To mark focus in the disk.
7. **Focus Knob:** Adjust the rotation angle of the hand-wheel to control the focus, iris, and zoom of the camera lens with the motor. The rotation angle sensor has a resolution of 12bit.
8. **OLED Display:** Display battery level, connection status, calibration status, travel, memory point, function menu, etc.
9. **Rec Button:** Tap once to start recording, twice to stop recording.
10. **Photo Button:** Used to focus and take photos. This button is a two-segment button by pressing down. Press the first segment to focus camera, then press the second segment to take photos.
11. **A/B/C/D Point Button:** First adjust the focus position by adjusting the Focus Knob. Then long press one of these buttons for 3 seconds to mark the current focus with a result of the corresponding letter will be displayed on the OLED screen displays. Perform a second long press to cancel the memory focus. The corresponding letter on the screen will then disappear. The four buttons A/B/C/D can set 4 focus memory positions. When the memory point is set, tap the button once to quickly switch to the memory focus position or exit the memory point position.
12. **Function Button:** Consists of 4 direction buttons and OK button. Press the OK button in the main interface to enter the function main menu. After the function setting is completed, each time you tap the right button, you can return to the previous interface and repeat the operation to return to the main interface. Tap the up button once in the main interface to turn on/off the disk indicator.
13. **Lanyard attachment:** To attach the unit to the lanyard.
14. **1/4 Thread:** to mount the unit onto other accessories.
15. **Marking Disk Indicator:** To indicate the marking disk or use as lighting. Tap the UP button once in the main interface to turn on/off the disk indicator.

Three: Controller Manual

OLED Manual Display:



1. Battery Level
2. Focusing Knob Stroke Percentage
- 3 Focusing Knob Stroke Progress Bar
- 4 OK for Calibration complete while TX not
- 5 Signal Intensity. TX means not connected.
- 6 Memory point: A B C D

1. CALIBRATION

On the main page ,please press“OK” button to enter MEMU:



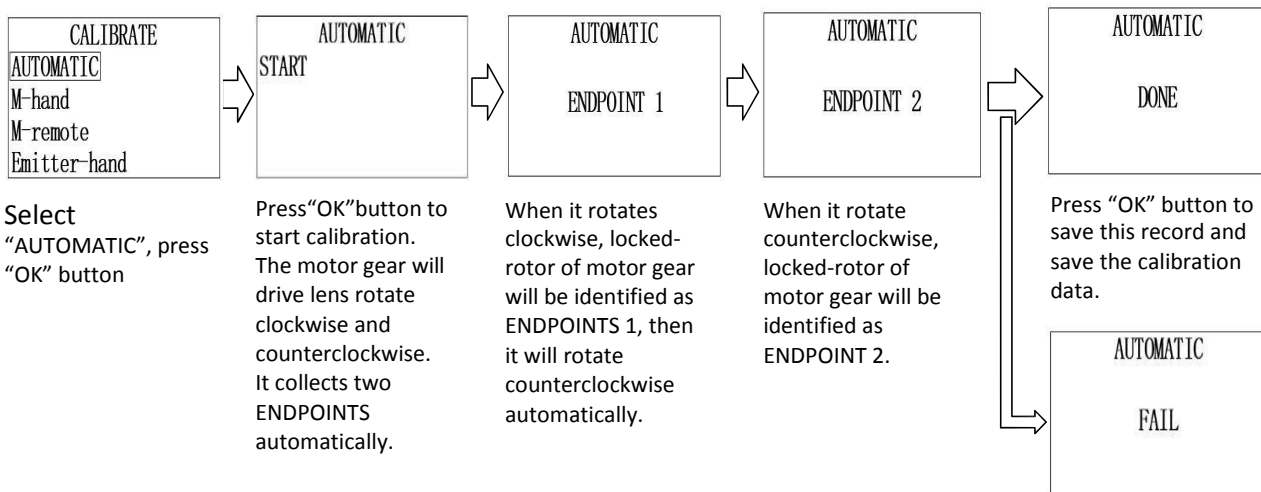
Select “1. CALIBRATE”, then press “OK” button to enter “CALIBRATE” page

For the first time use, please calibrate once to check the overall stroke of the lens, so that the controller can precisely control the stroke position of the camera lens. The motor will automatically record and save the last calibration data. After this, there is no need to calibrate every time. If a new lens is used, or the position of the focus motor, or the gear tooth position is changed, the lens stroke will then need to be re-calibrated automatically or manually. It supports AUTOMATIC , Manual(M-hand/M-remote), Emitter-hand Calibration.

1)AUTOMATIC Calibration:

If the camera lens has a mechanical limit, it is recommended to calibrate the camera lens with the Automatic calibration function.

Please make sure the gear of the motor and lens are installed correctly first.



Select “AUTOMATIC”, press “OK” button

Press“OK”button to start calibration. The motor gear will drive lens rotate clockwise and counterclockwise. It collects two ENDPOINTS automatically.

When it rotates clockwise, locked-rotor of motor gear will be identified as ENDPOINTS 1, then it will rotate counterclockwise automatically.

When it rotate counterclockwise, locked-rotor of motor gear will be identified as ENDPOINT 2.

Press “OK” button to save this record and save the calibration data.

If FAIL, please check the lens limit, adjust CALI-Torque and CALI-Speed to Max, then calibrate again.

On the main page ,please press“OK” button to enter MEMU, steps as follows: “CALIBRATE” -> “AUTOMATIC” -> “START” -> “ENDPOINT1” -> “ENDPOINT2” -> “DONE” ->Press “OK” button to save this record and save the calibration data. After the calibration is completed, press the Right button to return to the main page.

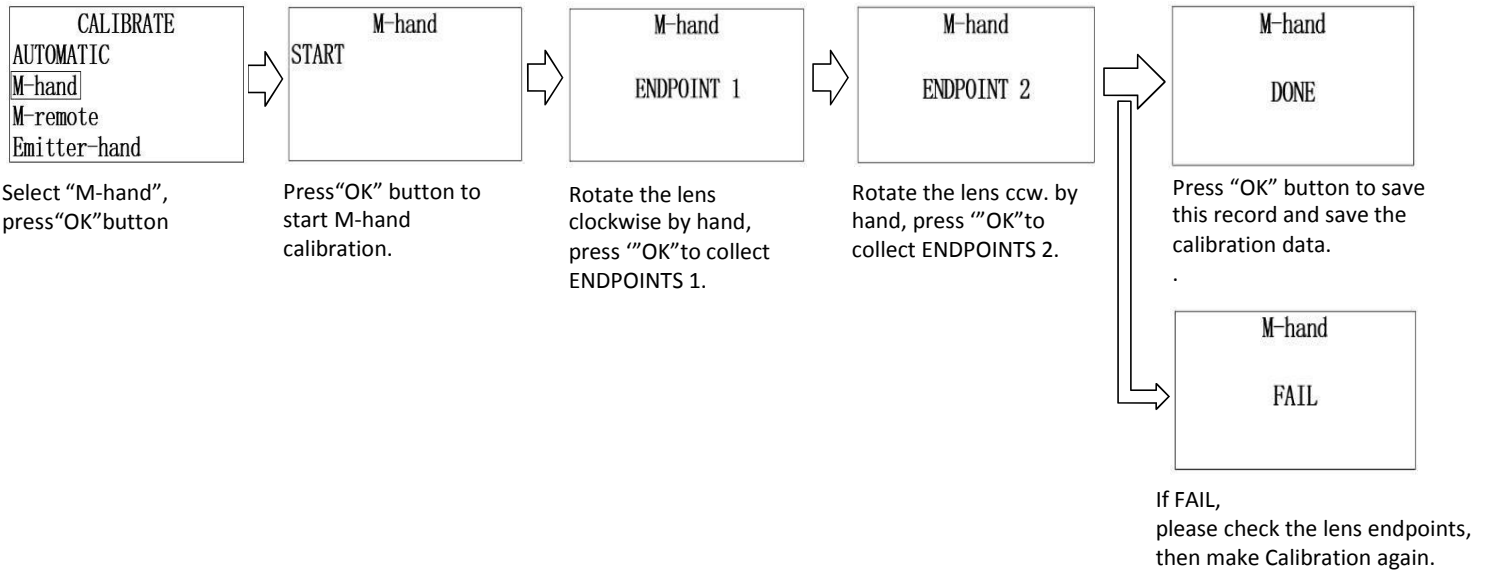
Manual Calibration:

Manual calibration is recommended when the lens has no mechanical limit. Manual calibration can use only part of the stroke of the camera lens.

Please make sure the gear of the focus motor and lens are installed correctly first.

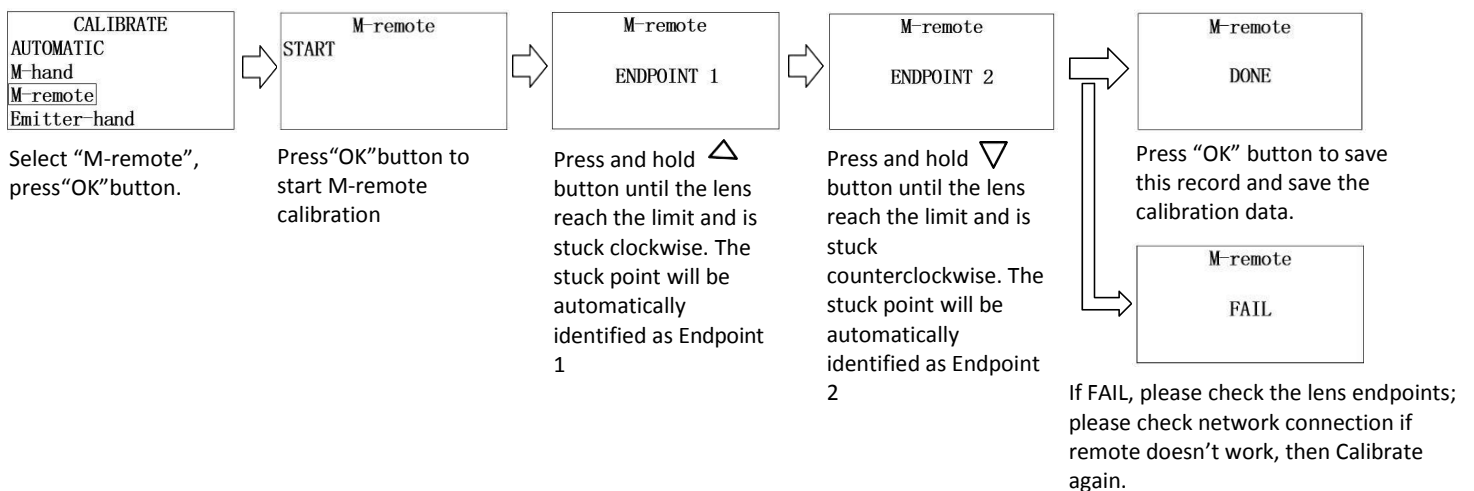
Manual calibration is divided into M-hand and M-remote modes as below:

2) M-hand Calibration Manual



On the main page ,please press "OK" button to enter MENU, steps as follows: "CALIBRATE" -> "M-hand" -> "START" -> "ENDPOINT1" -> "ENDPOINT2" -> "DONE" -> Press "OK" button to save this record and save the calibration data. After the calibration is completed, press the Right button to return to the main page.

3) M-remote by Controller Button :

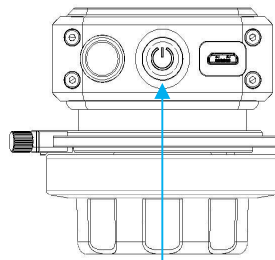
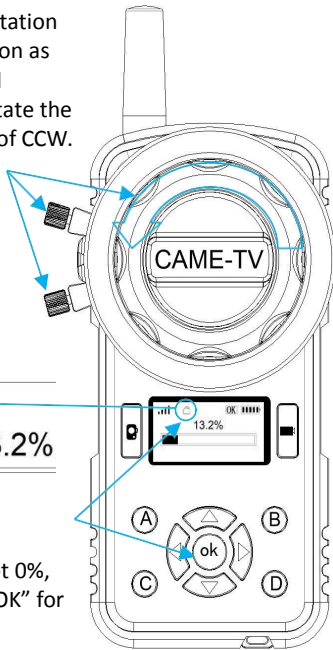


On the main page, please press "OK" button to enter MENU, steps as follows: "CALIBRATE" -> "M-remote" -> "START" -> "ENDPOINT1" -> "ENDPOINT2" -> "DONE" -> Press "OK" button to save this record and save the calibration data. After the calibration is completed, press the Right button ▶ to return to the main page.

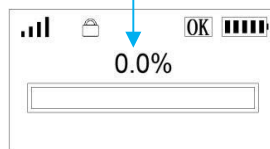
After the calibration with the focus motor, the parameters are automatically saved and recalled. The OLED screen displays "OK" to indicate that the focus motor has been calibrated. If "OK" is not displayed on the screen, the motor is not yet calibrated. The motor cannot be controlled by the controller in this case.

4) Emitter-hand Calibration by Controller

1. Adjust the Limitation Pins to the position as below image and tighten them, rotate the knob to the end of CCW.

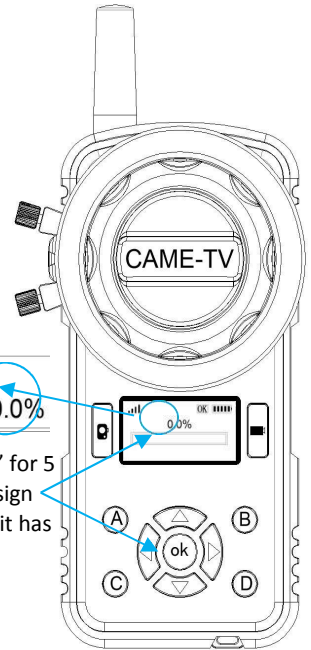


3. Make sure you still press OK button and then Press the power button. Then release "OK" button, the remote knob is set as 0.0% now. Make sure step 2 and 3 is done at the same time.

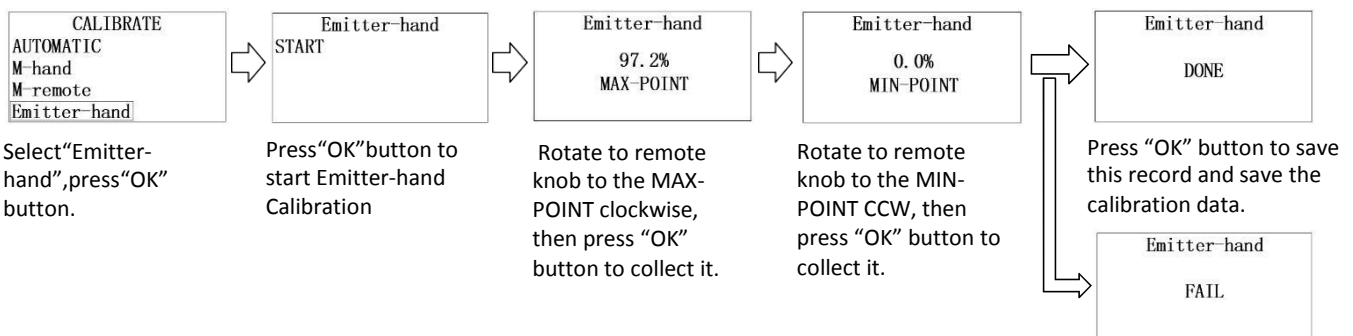


2. If the stroke percentage is not 0%, press and hold "OK" for 5 seconds until "Lock" sign appear.

4. Long press "OK" for 5 seconds, "Lock" sign disappear means it has reset.



5. After it reset, then please follow these steps to make the Emitter-hand Calibration :

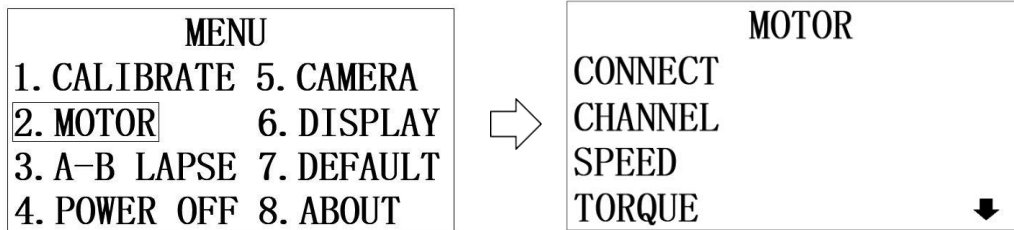


If FAIL is encountered, make sure the value of MAX-POINT is lower than of MAX-POINT, then make steps 1-5 to calibrate it again.

After the calibration is complete, press the Right button to return to the main page.

2. MOTOR

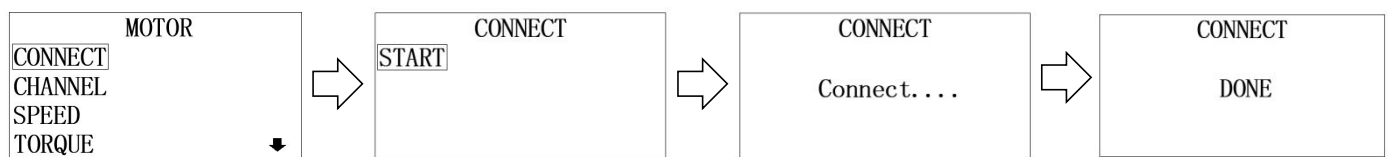
Press OK button in Main Page to enter Menu Page:



Select "2.MOTOR" and press OK button

Enter Motor Main Page

1)CONNECT



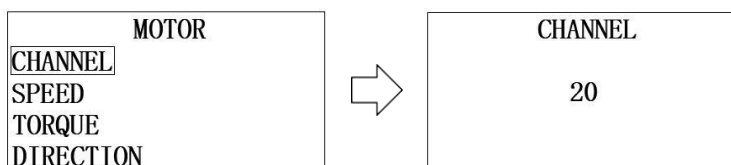
Default setting is connected.
Select "CONNECT" and
press OK button.

Press OK button to start
the connection process
(motor must be on first).

Long press the Frequency
auto matching button
while it shows
"Connect..." , then
they will be connected
automatically.

Press OK button to save
it. (Connection process
only needed once). Then
press Right Button to
homepage.

2)CHANNEL: To set the communication channel between the controller and the motor. It has a total of 16 communication channels from 20-36, allowing 16 sets of CAME-TV wireless follow focus system to be used in the same area at the same time.

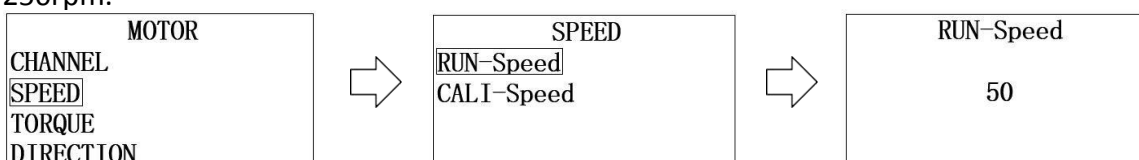


Select Channel, Press
OK button to enter

Press UP and Down Button to
select different channels and
press OK to confirm. Press
RIGHT button to return.

3)SPEED

RUN-Speed: Motor running speed setting, running speed setting range 1-100, maximum running speed 250rpm.

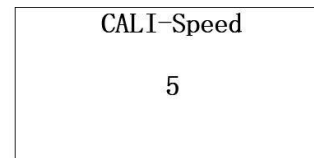
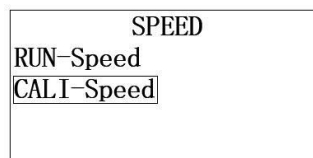
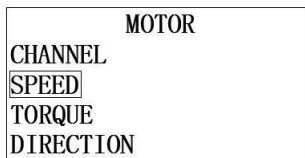


Select SPEED, Press OK
button to enter

Select RUN-Speed,
Press OK

Press UP and Down Button to
select different speed and press
OK to confirm. Press RIGHT
button to return to homepage.

CALI-Speed: Motor calibration speed setting, calibration speed setting range 1-10, maximum operating speed 25rpm.



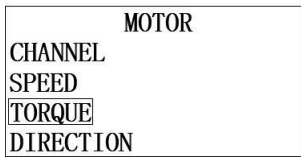
Select SPEED, Press OK button to enter

Select CALI-Speed, Press OK

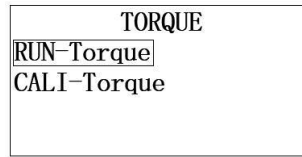
Press UP and Down Button to select different speed and press OK to confirm. Press RIGHT button to return to homepage.

4)TORQUE

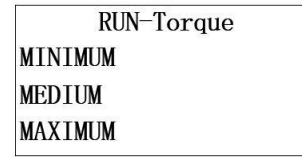
RUN-Torque: Motor running torque setting, torque setting range:MINIMUM/MEDIAN/MAXIMUM, maximum torque output 0.50Nm;



Select "TORQUE, Press "OK" button to enter Torque settings.

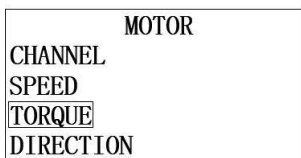


Select"RUN-Torque", Press "OK" button to enter Torque settings.

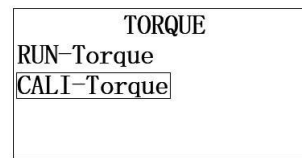


Press UP and Down Button to select different torques and press OK to confirm. Press RIGHT button to return to homepage.

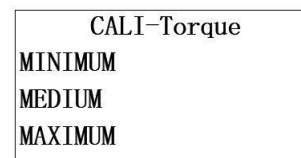
CALI-Torque: Motor calibration torque setting, torque setting range: MINIMUM/MEDIAN/MAXIMUM, maximum torque output 0.25Nm.



Select "TORQUE, Press "OK" button to enter Torque settings.



Select"CALI-Torque", Press "OK" button to enter Torque settings.

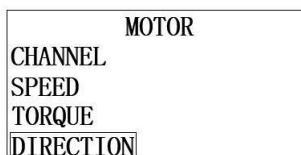


Press UP and Down Button to select different torques and press OK to confirm. Press RIGHT button to return to homepage.

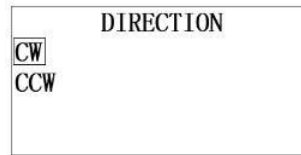
5)DIRECTION:

CW: rotate clockwise.

CCW: rotate counterclockwise



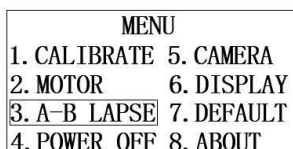
Select "DIRECTION", press OK button to enter Direction settings.



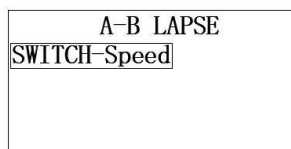
Select "CW" or "CCW", press OK Button to confirm. Press RIGHT Button to return to homepage.

3. A-B LAPSE Set switching speed for recorded focus :

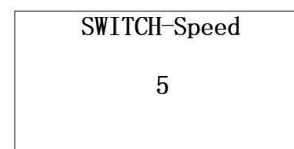
SWITCH Speed speed range 1-10, Max: 250rpm.



Select "A-B LAPSE", press OK button to enter focus settings.



Select "SWITCH-Speed", press OK button to switch Speed.



Press UP and Down Button to select suitable speed and press OK to confirm. Press RIGHT button to return to homepage.

4. POWER OFF AutoPower-Off:

Set shutdown timer on controller if no operation takes place within selected time interval. You can choose 10min/30min/ 60min/Never OFF.

MENU	
1. CALIBRATE	5. CAMERA
2. MOTOR	6. DISPLAY
3. A-B LAPSE	7. DEFAULT
4. POWER OFF	8. ABOUT



POWER OFF
10 MIN
30 MIN
60 MIN
NEVER OFF

Select "POWER OFF", press OK button to enter Auto Power off settings.

Press UP and Down Button to select suitable time interval and press OK to confirm. Press RIGHT button to return to homepage.

5. CAMERA camera settings:

This function is used to control mirrorless camera and DSLR cameras of Canon / Sony / Panasonic. If motor firmware need to be upgraded, it should be operated with Canon selected.

MENU	
1. CALIBRATE	5. CAMERA
2. MOTOR	6. DISPLAY
3. A-B LAPSE	7. DEFAULT
4. POWER OFF	8. ABOUT



CAMERA
Canon
Sony
Panasonic

6. DISPLAY Set screen direction:

NORMAL: displayed in the forward direction;

MENU	
1. CALIBRATE	5. CAMERA
2. MOTOR	6. DISPLAY
3. A-B LAPSE	7. DEFAULT
4. POWER OFF	8. ABOUT



DISPLAY
NORMAL
REVERSE



MENU	
1. CALIBRATE	5. CAMERA
2. MOTOR	6. DISPLAY
3. A-B LAPSE	7. DEFAULT
4. POWER OFF	8. ABOUT

Select "DISPLAY", press OK button to enter screen direction settings.

Select "Normal", press OK button to screen direction

Press Right Button to homepage.

REVERSE: displayed in reverse.

MENU	
1. CALIBRATE	5. CAMERA
2. MOTOR	6. DISPLAY
3. A-B LAPSE	7. DEFAULT
4. POWER OFF	8. ABOUT



DISPLAY
NORMAL
REVERSE



MENU	
1. CALIBRATE	5. CAMERA
2. MOTOR	6. DISPLAY
3. A-B LAPSE	7. DEFAULT
4. POWER OFF	8. ABOUT

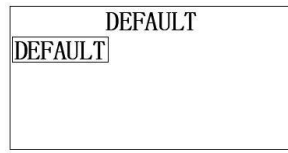
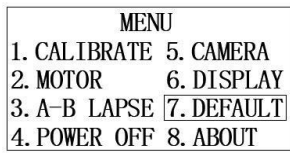
Select "DISPLAY", press OK button to enter screen direction settings.

Select "Reverse", press OK button to enter screen direction settings.

Press Right Button to homepage.

7. DEFAULT restores default settings:

For normal use, it needs to be reset and calibrated after all settings are restored.

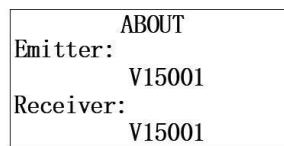
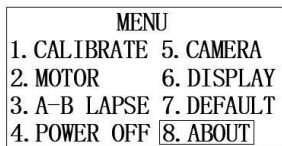


Select "DEFAULT", press OK button to restore default settings.

Select "DEFAULT", press "OK" button to restore default settings. Once restore is done, both motor and controller need to be calibrated again.

8. ABOUT

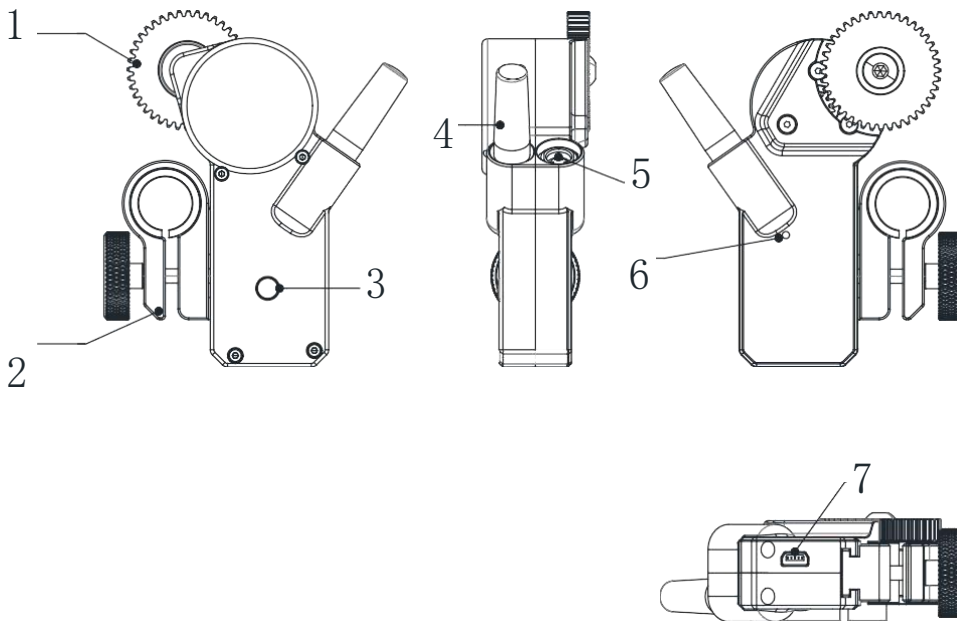
To check the firmware of Emitter and Receiver.



Select "ABOUT", press OK button to enter settings.

Press Right Button to homepage after confirm.

Four: Focus Motor



1. Output gear
2. Assemble fasteners
3. Frequency auto matching button
4. Antenna
5. Power input interface
6. Status indicator
7. Camera control interface

1. **Output gear:** adjust the lens' focus, aperture, zoom by engaging with the lens focusing.
 2. **Assemble fasteners:** install the follower motor to the appropriate bracket.
 3. **Frequency auto matching button:** When it cannot be connected because communication channel does not match. Press this button to pair connection automatically.
 4. **Antenna:** 2.4GHz/1dbi.
 5. **Power input interface:** Use 0B series P06 6-core aviation socket, input power supply DC12-18V/1.5A, When the power is connected, the motor will open automatically, and will wait for connection with the controller.
 6. **Status indicator:** When it is disconnected, the blue light flashes.
When connected successfully, the green light remain on.
When the input voltage is lower than 12V, the red light flashes.
- Camera control interface:** The interface type is MiniUSB-10P. It can be connected to the controlled camera for remote control with a dedicated camera control cable.

Five: Specifications

General features

Working frequency: 2.402-2.480 GHz

Communication distance: 100 m (outdoor, no obstruction)

Working temperature: -20 to 55 °C

Motor

Weight: 200g

Size: 100*85*32mm

Max torque: 0.50 Nm

Max run speed: 250 rpm

Working quiescent current: 70 mA (@12 V)

Stall current: 1.5 A (@12 V)

Working voltage: 12-18 V

Noise: <25 dB (@100 rpm)

Gear modulus: 0.8

Number of gear: 40

Controller

Weight: 250g

Size: 140*67*58mm

Battery type: LIPO

Battery voltage: 3.7 V

Battery capacity: 1000 mAh

Battery power: 3.70 Wh

Six: One Year Warranty

CAME-TV		Service Warranty	
One Year Warranty		Please Save this Card	
RMA Number		Order Number	
Marchandise		Quantity	
Reason of Return			
Name		Date of Claim	
Phone		Email	
Address			

FCC Caution:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Tel: +86-592-6283638 ext 601(from outside Americas areas) / ext 602(from Americas areas)

Hours: Monday to Friday 09:00 - 18:00 (GMT+8)