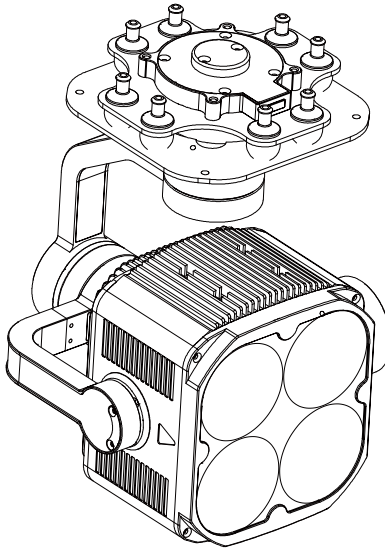
L4 Pro 3-axis stabilized gimbal searchlight

User Manual



For more details please scan the QR code or visit our website:
www.viewprotech.com

Warning

Thank you for purchasing Viewpro product. Please read this user manual carefully to make sure the correct operation of this product. Failure to follow instructions and operate in accordance with the instruction in this user manual may damage the product. Do not disassemble or assemble the product by yourself, otherwise it may be damage or not work properly. Viewpro has no ability for any damage that caused by users' incorrect operation, installation and reassembling in directly or indirectly.

Note

Warning

Important Note

Important

1. Please put the device away in a dry environment after using to avoid lens fogging caused by high humidity. If the lens is fogged up, you can power it on and wait for a while for the fog to dissipate.

2.When cleaning dirty lens, be sure to wipe the lens surface with a soft, dry cleaning cloth.

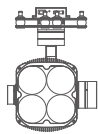
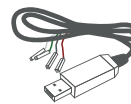
1.Product Introduction

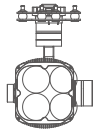
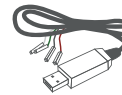
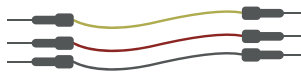
1.1 Introduction

L4 pro is a high-precision 3-axis stabilized gimbal searchlight equipped with 4 sets of optical module groups, each of which is composed by 4 pieces of lens. The wicks have various-mulitple temperature sensors, which can adjust output power in the hash weather conditions to prolong the use-life of the lamp. The searchlight can emit 15° beam, and provide an operating range of up to 150m by rotating the gimbal.

Being mounted on the UAV with damping system and gimbal improve the stability of the lightening, and garantee the capacity to operate missions in utter poor light environment in night surveillance, emergency response/search and rescue,ect.

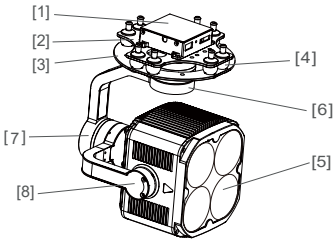
1.2 Packing List

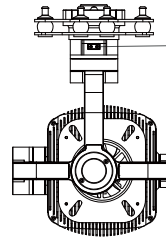
A. Standard Version			
Gimbal ×1		USB to TTL ×1	
Aluminum Cylinder ×4		M3 screw ×8	
Power line ×2			

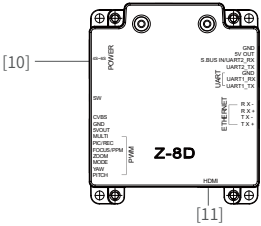
B. Viewport Version			
Gimbal ×1		USB to TTL line ×1	
Aluminum Cylinder ×4		M3 screw ×8	
Power Line ×1			
PWM Control line ×1			
Serial port/S.bus Control lin ×1			
Connect serial port line ×			

2.Install Instruction

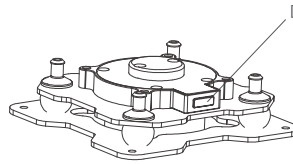
2.1 Overview







Control Box



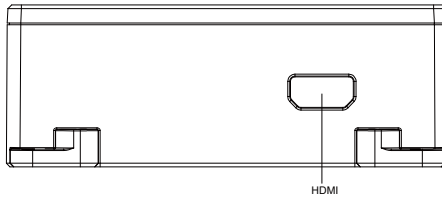
Viewport

[1] Control box
[2] Upper damping ball
[3] Lower damping ball
[4] Damping ball
[5] Searchlight
[6] Yaw axis motor
[7] Rolling axis motor
[8] Pitch axis motor
[9] [10] 6Spower interface
[12] Viewport unlock button

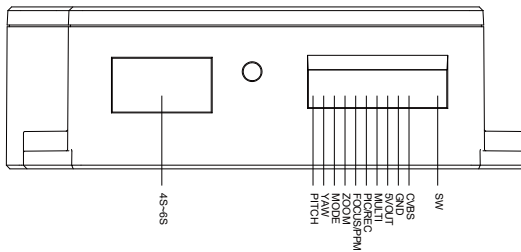
- Please ensure that there isn't any obstacle while the motor rotating.
- Please remove the obstacle immediately if gimbal camera is blocked during rotation.

2.2 Control Box Printing (Viewport Version)

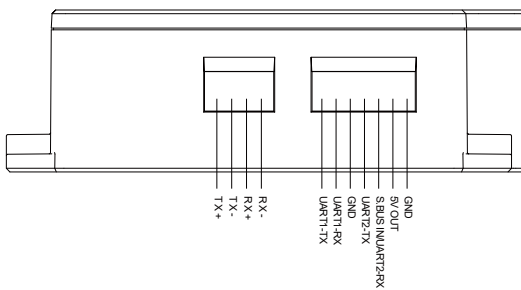
Front Side



Left Side

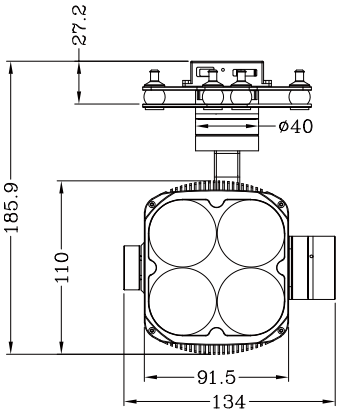


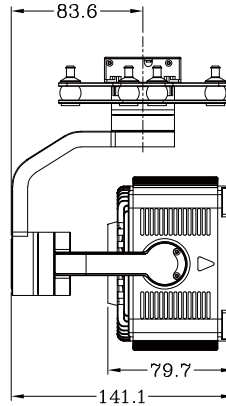
Right Side

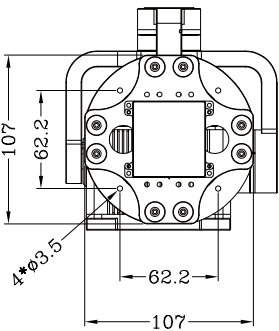


2.3.1 Device Dimensions (Standard Version)

Unit: mm

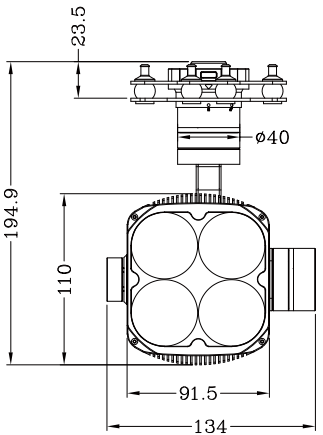


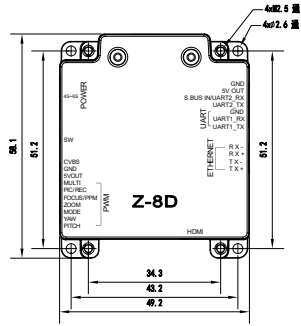




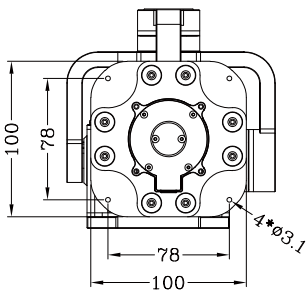
2.3.2 Device Dimensions (Viewport Version)

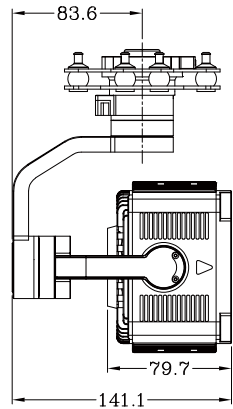
Unit: mm





Control Box



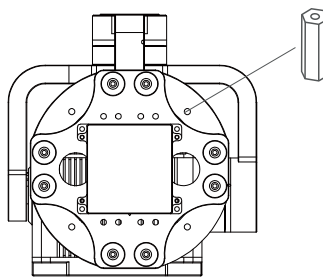


2.4 Mounting Part Installation

(1) Find out the arrow on the gimbal which indicating the yaw heading of the payload (i.e. the lens direction when the camera power on), and synchronize with the direction specified by the UAV.

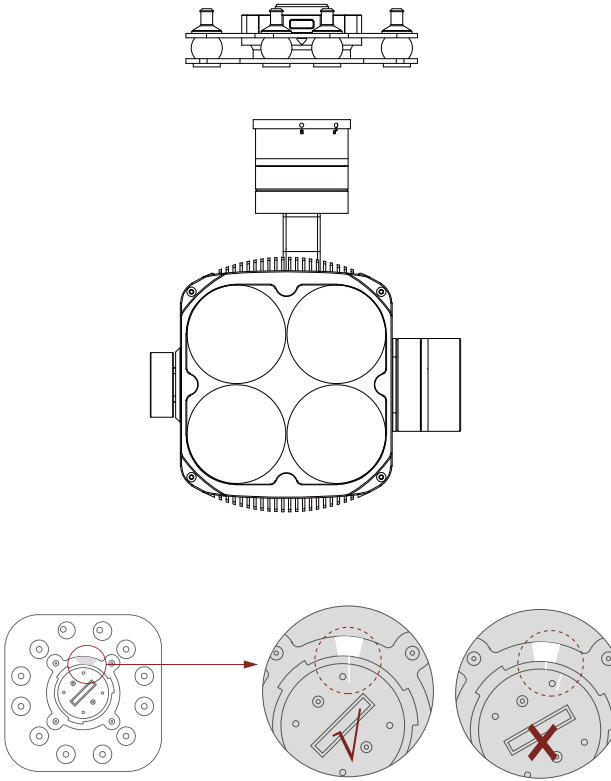
(2) Fix one end of the copper cylinder on the screw hole of lower damping board, and use M3 screw to fasten it.

(3) According to the provided screw hole dimension you can make suitable mounting holes on the UAV mounting board, and fixes the other end of the copper cylinder on the mounting board of the UAV (Viewport version is the same).

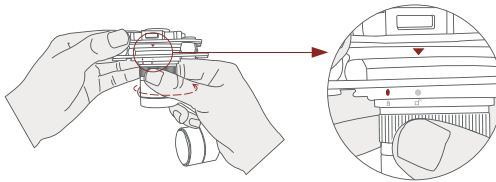


Front

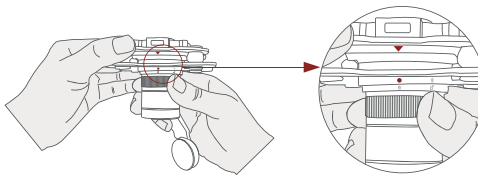
2.5 Viewport Release Instruction



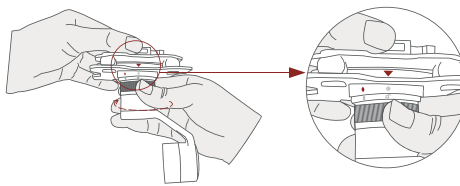
1. Make sure the two white stripes indicated in above picture are aligned with each other. (If the stripes are not aligned to each other, please pinch the connector part and turn it to left manually)



2. Align the white dot (unlock icon) to the red triangle (below unlock button), push the gimbal into the Viewport completely and then rotate the gimbal camera anticlockwise.



3. When you hear "click" sound (when red dot is aligned to the red triangle) means the gimbal camera and Viewport has been locked.



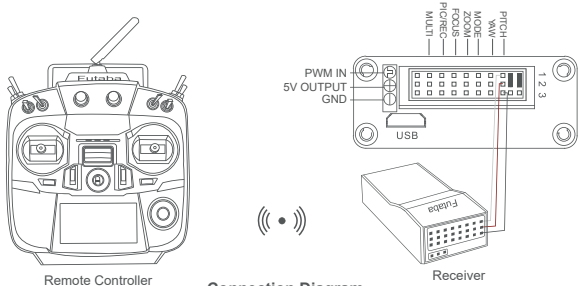
4. To unlock the Viewport, you need to press on unlock button and rotate the gimbal camera clockwise till the white dot align to the red triangle. Then pull the gimbal out from the Viewport.

3. Signal Control

3.1 PWM Control

Control the gimbal camera functions by the multiplex pulse width modulation signal outputted by PWM channel of the remote control receiver. The camera needs up to 6 control channels of PWM (to expand tracking function use up to 6 PWM channels). You can choose needed functions according to actual usage to reduce the required number of PWM channels.

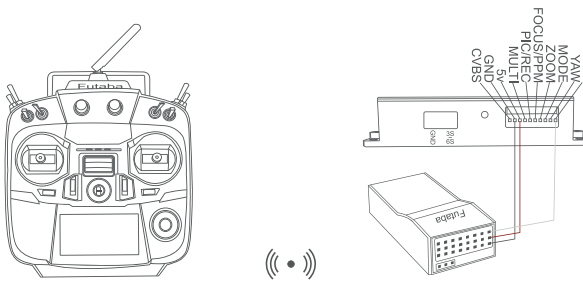
PWM Connection Diagram (Connect pitch channel as example)



Remote Controller

Receiver

Connection Diagram (Standard Version)



Remote Controller

Receiver

Connection Diagram (Viewport Version)

PWM Control Operation Instruction

1) Pitch (PWM Pitch channel in to control Pitch. Joystick, rotary knob or 3-gear switch on remote control are optional. 3-gear switch as example.)

Position 1

Low Gear
Pitch Up

Position 2

Middle Gear
Pitch Stop

Position 3

High Gear
Pitch Down

2) Yaw (PWM Yaw channel in to control Yaw. Joystick, rotary knob or 3-gear switch on remote control are optional. 3-gear switch as example.)

Position 1

Low Gear
Yaw Left

Position 2

Middle Gear
Yaw Stop

Position 3

High Gear
Yaw Right

3) Mode (PWM Mode channel in to adjust speed control/one key to Home position etc functions. Rotary knob or 3-gear switch on remote control are optional. 3-gear switch as example.)

Position 1

Low Gear

Position 2

Middle Gear

Position 3

High Gear

Position 1: Low speed mode, control pitch / yaw with this mode at lowest speed
Position 2: Middle speed mode, control pitch / yaw with this mode at middle speed
Position 3: High speed mode, control pitch / yaw with this mode at highest speed
(If it is controlled by rotary knob, the speed will change according to switch position)

Function of continuous switching:

3.1) Operate 1 time continuously and quickly, from position 2 - 3 - 2, to Home position.

3.2) Operate 2 times continuously and quickly, from position 2 - 3 - 2 - 3 - 2, the camera lens looks vertically down.

3.3) Operate 3 times continuously and quickly, from position 2 - 3 - 2 - 3 - 2 - 3 - 2, to disable Follow Yaw Mode (gimbal yaw not follows by frame)

3.4) Operate 4 times continuously and quickly, from position 2 - 3 - 2 - 3 - 2 - 3 - 2 - 3 - 2, to enable Follow Yaw Mode (gimbal yaw follows by frame)

Gimbal Zoom Channel: (PWM Zoom channel in to control brightness intensity， rotary knob or 3-gear switch on remote control are optional. 3-gear switch as example.Brighter)

Position 1

Low Gear
Darker

Position 2

Middle Gear
Unchanged

Position 3

High Gear
Brighter

Gimbal Focus Channel: (PWM Focus channel in to control flash frequency, rotary knob or 3-gear switch on remote control are optional. 3-gear switch as example.)

Position 1

Low Gear
Frequency Reduce

Position 2

Middle Gear
Unchanged

Position 3

High Gear
Frequency Increase

Gimbal Pic/Rec Channel: (PWM Pic/Rec channel in to control lightening mode, rotary knob or 3-gear switch on remote control are optional. 3-gear switch as example.)

Position 1

Flash

Position 2

Power-Off

Position 3

Constant-On

3.2 Serial Port / TTL Control

TTL communication requirements: TTL signal is 3.3V, baud rate: 115200, data bit 8, stop bit 1, no parity, HEX send and receive.

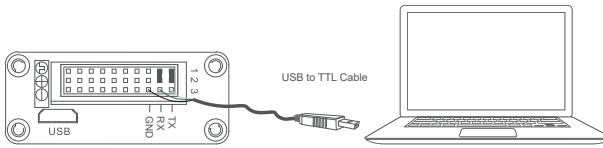
Connection Diagram (PC - USB to TTL Cable- Gimbal Camera as example):

Gimbal Camera **Cable**

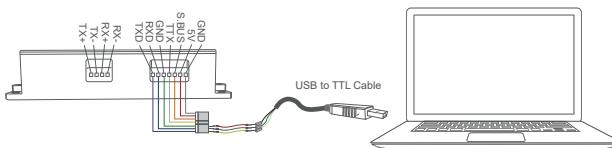
TX ⟷ RX (White)

RX ⟷ TX (Green)

GND ⟷ GND (Black)



Connection Diagram
Standard Version



Connection Diagram
Viewport Version

Diagram of USB to TTL Cable:

Connect the camera to the upper computer by USB to TTL cable (Adopt connection method of TX to RX, RX to TX, GND to GND at Dupont ends of the provided USB to TTL cable, connect to the specified TTL of the gimbal, and the USB end of the cable connect to computer).

Install Viewlink control software to test the functions directly. Users may choose to develop their own software, please contact technical support for TTL control protocol file.

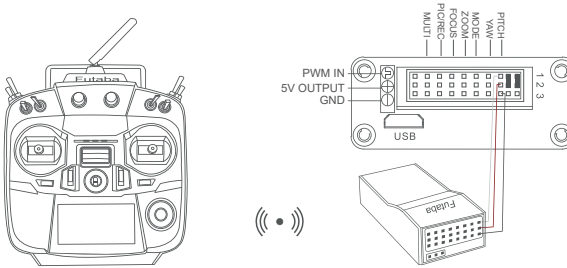
ViewLink is a user interface developed by Viewpro for Viewpro gimbal cameras, you can download it from Viewpro website (www.viewprotech.com) or ask distributors for installation package.

- Connect serial port of gimbal to pins, DO NOT connect with power supply.
- The default baud rate of serial port is 115200, which can be changed according to the docking equipment.

3.3 S.BUS Control

Control the gimbal camera functions by one combining signals. Connect the external S.Bus to S.Bus port on the control box, and the external S.bus signal GND connect to the GND interface of the control box.

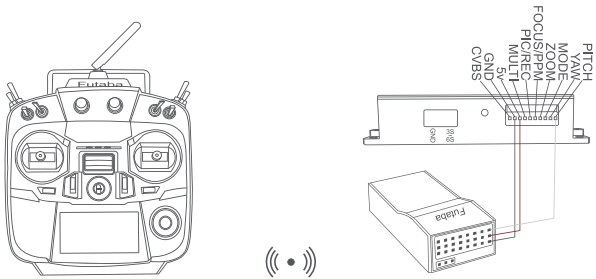
Wiring Diagram (Take Futaba remote control for example):



Remote Controller

Receiver

Connection Diagram (Standard Version)



Remote Controller

Receiver

Connection Diagram
(Viewport Version)

S.Bus control mode: default S.Bus signal channel 7-12 to control gimbal camera functions (the function of channel is consistent with the corresponding channel in PWM function description)

Channel 7: Yaw Control
Channel 8: Pitch Control
Channel 9: Mode Control
Channel 10: Zoom printing (luminance volume control, consistent with PWM)
Channel 11: Focus printing (flash frequency, consistent with PWM)
Channel 12: Pic/Rec printing (lightening mode, consistent with PWM)

- User can set the channels by setting serial command according to the actual requirement. The S.Bus channel position can be arranged in any sequence within channel 1-15 to connect with the flight controller or remote control.
- The seriel port control and S.bus control cannot coexist at the same time for standard version. The defualt control is seriel port if no requirement. The user can set to S.bus control if needed (please contact with our technical support for the setting instruction.)

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4. Specification

Hardware Parameters	
Working voltage	24V
Input voltage	6S (22.2V~25.2V)
Output voltage	5V (connect with PWM)
Dynamic current	6000mA @ 24V
Power consumption	Minimum power: 1W (LED off), Peak power: 144W (LED maximum consumption)
Working environment temp	-20℃ ~ +50℃
Control method	PWM / SBUS / TTL
Gimbal Spec	
Mechanical Range	Pitch/Tilt: -30°(Upward)～100°(Downward), Roll: ±70°, Yaw/Pan: ±120°
Controllable Range	Pitch/Tilt: -25°～90°, Yaw/Pan: ±115°
Vibration angle	Pitch/Roll/Yaw: ±0.02°
One-key to center	√
LED Spec	
LED power	0~128W(Adjustable)
Luminous flux	13500lm+3% (power 128W) 8050lm+3% (power 64W)

Luminous	113lm/W (power 128W)
Spot diameter	40m (power 128W, 50m distance) 13.5m (power 64W, 50m distance)
Illumination area	1230 ㎡ (power 128W,150m distance)
Central illuminance	15Lux (power 128W,150m distance) 8Lux (power 64W,150m distance)
Operating mode	Normally on: 128W , 64W(DJI version) Sharp flash: 125W , 64W(DJI version)
Packing Information	
N.W.	925±10g(Viewport version with Viewport)
Product meas.	141.1*134*185.9mm / 141.1*134*194.9mm (Viewport version with Viewport)

5. FAQ

1. What is the optimal working voltage of L4 pro searchlight?
A: 24V is brightest.

2. Why is the light off when operating on the gimbal?
A: Check if the interface [9] 6S power interface has been connected. If you select PWM control, please make sure lightening mode is selected for the Pic/Rec channel.

If there is any update version of this user manual, please visit the site through
“ https://www.viewprouav.com/documents-download/ ” for the latest product information.

Viewpro Elec. Ltd
Website: www.viewprotech.com
Tel: +86 755 86052484
Support: info@viewprotech.com
Address: Rm 1101~1103, 11th Fl, Bld D, Aotekexing Science Park, No.10 Qiongyu Rd, Yuehai Subdist, Nanshan Distr, Shenzhen, China