



iX Controller MK4

Installation Guide

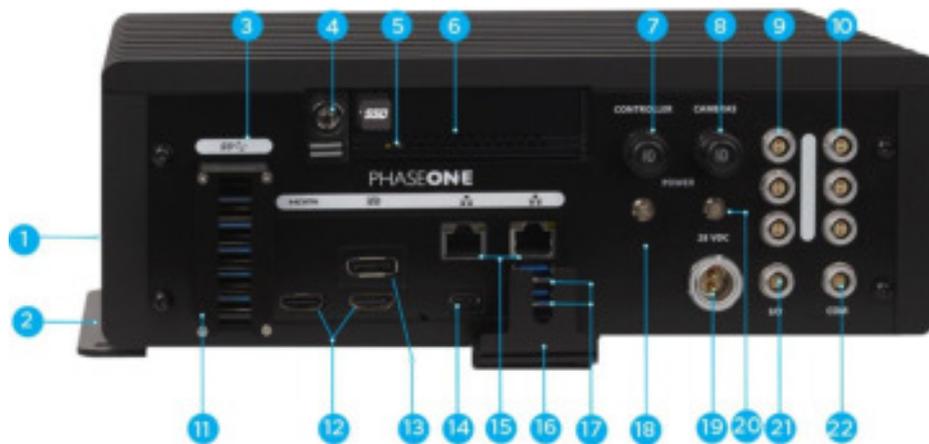
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1. What's in the Box?

- iX Controller
- iX Controller power cable
- iX Controller camera power cable
- Control cable to GPS
- Control cable for camera
- SSD drive lock key
- SSD frame (to be assembled in a post-processing host computer)
- 1.3mm Hex Screwdriver
- USB drive with documentation

2. Overview



- | | |
|---|---|
| 1. iX Controller | 12. HDMI ports (2) |
| 2. iX Controller legs | 13. DP port |
| 3. USB 3 ports (6) | 14. USB-C port |
| 4. SSD Drive TrayLock | 15. RJ45 network ports (2) |
| 5. SSD Drive Tray LED | 16. USB 3 cable bracket |
| 6. SSD Drive Tray | 17. USB 3 ports (2) |
| 7. iX Controller Circuit breaker | 18. Controller power indicator |
| 8. Circuit breaker for all Camera / Accessories power ports | 19. Power in |
| 9. Camera power ports (3) | 20. Camera power indicator (only left column cameras power ports) |
| 10. Accessories power ports(3) | 21. I/O port |
| 11. USB 3 cable bracket | 22. COM port |

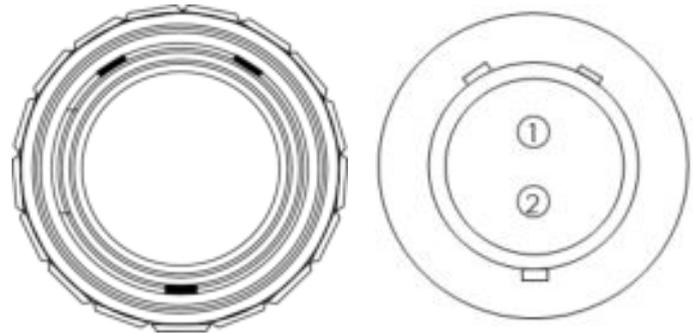
Notes:

- You can use the accessory power ports for cameras, as needed. The accessory terminology is mainly for PAS.
- The Camera power circuit breaker controls power to all 6 ports.

3. Connecting Power Cables

Wiring the Power Cable

The power cable has a connector at one end for connecting to the iX Controller, the other end has two loose wires, that attach to the aircraft's power bus.



Refer to the table below when wiring the power cables.

To wire the power cable:

1. Connect the red wire to + 28 V DC.
2. Connect the black wire to ground (common).

Note: The iX Controller must be powered by a limited fused power source, up to 12 A single fault condition.

Le iX Controller doit être alimentée par une source d'alimentation protégée par un fusible, d'une capacité maximale de 12 Ampères.

Table 1 – Power Cable Description

Connector Pin	Color	Name	Description	Direction	Level	Notes
1	Red	DC In +	Provides positive power	Input	28 V DC	Power: Should provide: Single camera — 120W Multiple cameras (max 6) — 220W
2	Black	DC In -	Common	Input		

Attaching the iX Controller Power Cable

To connect the iX Controller power cable:

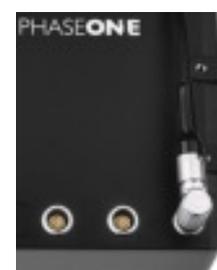
1. Connect a power cable to the power in port on the iX Controller.
2. Connect the other end to the aircraft's power bus.



Attaching Camera Power Cables

To connect a camera cables to the iX Controller:

1. Connect a camera power cable to a camera power port on the iX Controller.
2. Connect the other end to the power port on the Phase One aerial camera.
3. Repeat for additional cameras.



Note: The voltage from all six iX Controller power ports (Cameras and Accessories), is the same as the voltage

supplied to the iX Controller on its main power inlet.

Connecting GNSS SYSTEM

To connect the GNSS system's cable:

1. Connect GNSS control cable to the COM port on the iX Controller
2. Connect the other end to the GNSS system according to the instructions in the GNSS manual.



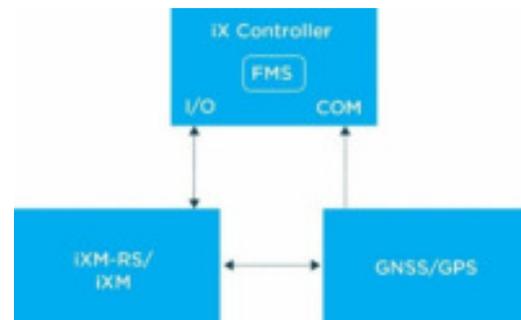
Table 2 – COM Port

Connector Pin	Name	Description	Direction	Level	Notes
5	RS232 RX	An external system can send specific information to the iX-Controller system	In	TIA/EIA-232-F	+ / - 15V Vit+ = 1.9V Vit- = 0.8V
6	RS232 TX	The iX Controller system can send specific information to an external system	Out	TIA/EIA-232-F +/- 5V	+ / - 5V RL = 3KΩ to GND
9	Common				

Connecting iX Controller / Camera Control Cable

To connect the iX Controller / camera control cable:

1. Connect one end of the iX Controller / camera control cable to the I/O port on the iX Controller.
2. Connect the other end of the iX Controller / camera control cable to an I/O port on the camera.



Connecting USB 3.0 Cables

The iX Controller communicates with the camera via a USB 3.0 cable. It is also how the camera sends files to the iX Controller for storage. Secure all USB 3.0 cables to the iX Controller with the USB 3.0 cable bracket to prevent accidentally disconnecting them.

To connect USB 3.0 cables to the iX Controller:

1. Use a 1.3 mm hex key to unscrew the four screws of the USB 3.0 cable bracket.
2. Plug 1-6 six cables into the USB 3.0 ports.
3. Place the front cover on the USB3 bracket and fasten the screws with a 1.3 mm screwdriver.
4. Connect the other end of each USB 3.0 cable to the port on each Phase One aerial camera.



Attaching a Monitor

Connect a monitor to the iX Controller using either the HDMI or DP ports.

Attaching up to three Monitors

You can connect up to three monitors to the iX Controller. This enables the pilot and the operator to use one or more monitors.

To display on three monitors:

1. Attach a monitor to the Display port.
2. Attach a second monitor to an HDMI port.
3. Attach a third monitor to the second HDMI port.
4. To extend displays, follow the instructions for your Windows operating system.



Attaching a Keyboard and a Mouse

You can connect a keyboard and mouse to the additional USB 3.0 ports. Connect and secured them to the iX Controller with the USB 3.0 cable bracket.

To secure USB 3.0 cables to the iX Controller:

1. Use a 2.5 mm hex key to unscrew the screws on the



bottom plate of the USB 3.0 cable bracket.

2. Remove the front plate, the screws and washers and set them aside.
3. Plug-in the keyboard and mouse cables to free USB ports.
4. Use a 2.5 mm hex key to reattach the front plate of the USB 3.0 cable bracket to the iX Controller.



Note: The bottom plate of the USB 3.0 cable bracket has two sets of holes for attaching to the iX Controller.

When using USB cables with long hoods, attach the bottom plate to the iX Controller with the holes closer to the edge.

When using USB cables with shorter hoods, attach the bottom plate to the iX Controller with the holes closer to the center of the bracket.



4. Power Modes

Powering up the iX Controller

To power up the iX Controller:

1. Connect the power cable to an appropriate power supply (12V DC–30V DC).
2. Push-in the Controller's circuit breaker. The Controller's green indicator light illuminates, the iX Controller powers on and a standard Windows 10 logon GUI displays.



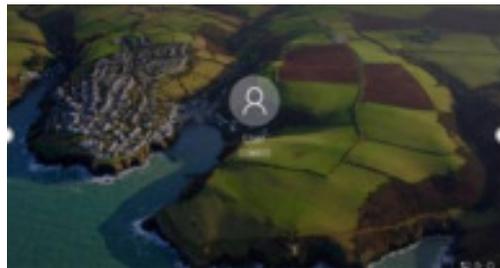
Logging into the iX Controller

To log into the iX Controller:

1. In the Windows GUI, press **ENTER**.

Logging into the iX Controller Remotely

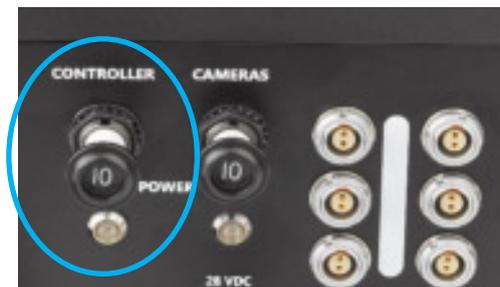
A comprehensive guide to connect remotely to the Phase One iX Controller is available for download at <https://industrial.phaseone.com/Downloads.aspx>.



Shutting Down the iX Controller

To shut down the iX Controller:

1. Use any standard Windows 10 shutdown method.
2. Pull out the iX Controller circuit breaker to cut off power.



5. Image Storage

Locking/Unlocking the Drive BayDoor

The iX Controller enables securely locking SSD drives into the Controller body.

To lock/unlock the SSD drive bay:

- **To Lock:** Insert the drive bay key into the lock and turn it clockwise. The drive bay door locks and the Operation LED on the drive bay illuminates to indicate that the drive is accessible.
- **To Unlock:** Insert drive bay door key and turn it counterclockwise. The drive bay door unlocks.

Notes:

The Drive-bay key comes secured to the left side of the iX Controller.

When the drive bay is not locked, iX Controller ignores the drive.

Removing SSD Drive Carriers

To remove the SSD drive carrier from the iX Controller:

1. Unlock the drive bay door (see Locking/Unlocking the Drive Bay Door).
The Operation LED switches off.
2. Press the ejection bar (either slowly twice or once quickly). The SSD drive carrier disengages and moves out of the drive bay.
3. Gently pull the SSD carrier all the way out of the Controller. You can now move the carrier (containing its SSD drives) to another computer with an appropriate drive bay.

Replacing SSD Drives

The iX Controller is factory provided with two 512 GB SSD drives installed into a drive carrier. You can replace the SSDs with different one as long as they have a fast write speed. You can use one or two drives of the same or different capacities.



To replace the SSD drives:

1. Remove the drive carrier (see the section “Removing SSD Drive Carriers”) from the iX Controller.
2. Unscrew the screws at the rear of the carrier.
3. Extract the internal frame from the shell.
4. Unscrew the screws holding the SSD drives in place.
5. Replace the SSD/s in the frame.
6. Screw down the screws that hold the SSD drives in place.
7. Insert the frame into the carrier.
8. Screw down the screws at the rear of the carrier.
9. Insert the carrier into the iX Controller.

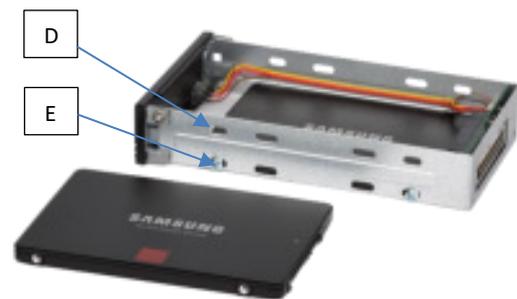


Disk Management

The iX Controller drive carrier holds two SSD drive bays. They are assigned the drive letters as follows:

- **Top bay:** Drive D:
- **Bottom bay:** Drive E:

The drive mapping does not change, even after changing the SSD drives.



Notes:

- An additional frame is provided as part of the iX Controller packaging. This frame should be installed in a computer for post-flight processing (transferring the carrier between the iX Controller and post-processing computer).
- Additional carrier (with or without SSD drives) or USB3 based frame can be purchased by contacting your Phase One sales representative.

6. Using the iX Controller

Activating Cameras

To activate cameras connected to the iX Controller:

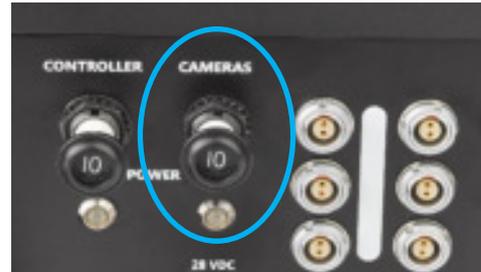
1. Securely connect the camera power cables to all cameras.
2. Push in the camera circuit breaker. The camera power indicator light is illuminated.



Deactivating Cameras

To deactivate cameras connected to the iX Controller:

1. Pull out the camera circuit breaker. The power is cut to the cameras. The green camera power indicator light turns off.



Starting iX Capture

1. Power up the iX Controller, see “Powering up the iX Controller” for full instructions.
2. Double-click the iX Capture icon on the desktop window. The iX Capture application displays.
3. Follow instructions for setup and use of iX Capture. See the iX Capture user guide on the USB drive provided with the iX Controller and in the downloads section of <https://industrial.phaseone.com/Downloads.aspx>



Power Lanes

The iX Controller has two lanes of power ports:

- One lane of 3-ports for Cameras (1)
- One lane of 3-ports for Accessories (2)
- The Camera power circuit breaker controls all power to the Camera power ports and to the Accessories power ports. (3)

In addition, power to the Controller’s power lanes can be controlled from iX Capture.

To control power to the power ports from iX Capture:

4. Go to System | Settings.
5. Check the “Camera Power” checkbox to control the Camera power ports from iX Capture.
6. Check the “Accessories Power” checkbox to control the Accessories power ports from iX Capture (see iX Capture User Guide).

Note: Accessories power ports can be used for Cameras. The accessory terminology is mainly for PAS



7. Status and Troubleshooting

Issue	Solution
Unable to close iX Capture (red X in corner of the window is missing).	iX Capture uses the Windows command 'Alt-F4' to shut-down the application
iX Controller power LED is on but Windows 10 is not showing	Pull out the iX Controller circuit breaker and push it back in
When powering up iX Controller with both circuit breakers pressed, only the Controller LED indication lite up	That is the regular behavior. The Camera LED indication will light up when Windows OS starts up (unless disabled in software)
Cameras does not turn on although Camera LED indication is lite	Check if cameras are connected to Camera power lane or Accessory power lane. The Camera LED indication shows status of Camera power lane only



Visit the website for additional information
industrial.phaseone.com

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