VIPER VCAM SERIES IP CAMERAS

Installing Multiple PTZ Cameras in a Single Building

Installing Multiple Cameras

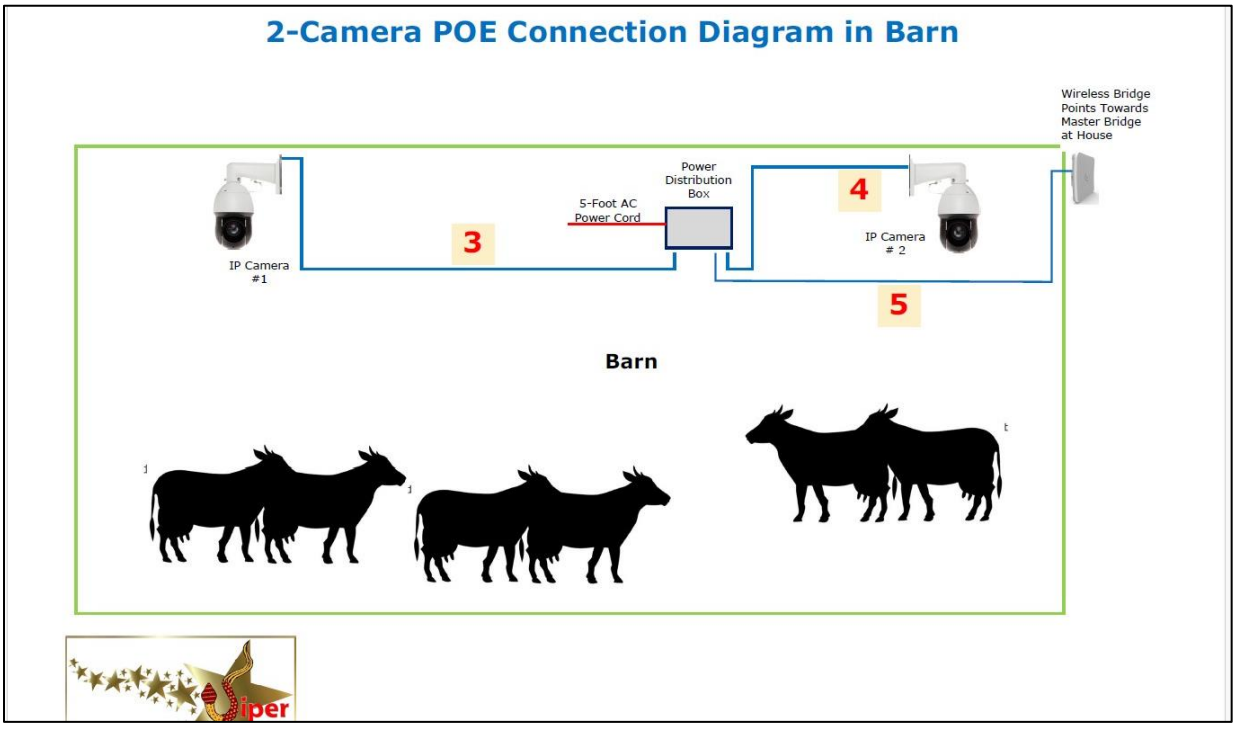
The main difference here is you will be wiring more than once camera into a single Power Distribution Box (Power Distribution Box). This is common when installing multiple cameras in a barn shed, shop, etc. The Power Distribution Box should be placed within 3 or 4 feet of a standard electrical receptacle.

No matter how many cameras, distribution boxes, or bridges you have in your system, the following rules apply:

- Each camera must connect to a Power Distribution Box – this provides power and data communications to and from the camera(s).
- Each Power Distribution Box must connect to a Wireless Camera Bridge – this provides data communication between the Power Distribution Box and the Master Bridge and other equipment installed at your house.
- Most Power Distribution Boxes have a power cord – this power cord must be connected to a standard 110-volt standard receptacle. ** A good-quality power filter or UPS battery backup is STRONGLY recommended.
- A CATCBL-RJ-CG outdoor-rated cable is used to connect most cameras to a Power Distribution Box. These cables are available in lengths from 10’ to 150’. This cable is sometimes integral and pre-installed into the Power Distribution Box.
- A CATCBL-RJ-CG outdoor-rated cable is used to a Camera Bridge to a Power Distribution Box. These cables are available in lengths from 10’ to 150’. This cable is sometimes integral and pre-installed into the Power Distribution Box.

Depending on size of each of the PTZ cameras, you may be able to connect up to 4 PTZ cameras to a single Power Distribution Box.

Here is a typical connection diagram for multiple cameras:



1. Determine a suitable location for your cameras and Power Distribution Box. The Power Distribution Box should be placed within 3 to 4 feet of a standard electrical receptacle. On a multiple-camera system, the Power Distribution Box must be located within 100 feet of every camera. Keep in mind you also will need a wire run from the Power Distribution Box to the Camera Bridge.

2. Depending on your system design, your Power Distribution Box may be a medium (6”x6”) or large (8”x8”) model. If your system was built using a medium Power Distribution Box, all related cables will be installed and connected to it when you receive it. If your system was built using a large box, only the power cord will be installed into the box; you will need to remove the cover and snap each cable into its correct port inside the box.

Medium Power Distribution Box	Large Power Distribution Box
	

3. Mount the Power Distribution Box using the four included ¼” hex-head screws. Be sure to mount the box so the connections and power cord are downward to prevent water infiltration, and that the box is close enough to a standard electrical receptacle.

DO NOT attempt to open a medium (sealed) Power Distribution Box. This contains high voltage components as well as delicate communication components. Breaking of one or both tamper-evident seals **will void the**

4. Decide on the location of the wireless Camera Bridge. The Camera Bridge must be installed outside of a building, and must point towards the wireless Master Bridge.

The Master Bridge and all Camera Bridges MUST be installed so the cable connecting to it exits DOWNWARD. Mounting the bridges so the cable exits sideways or up will result in your system functioning poorly or not at all

5. Run a CATCBL-RJ-RJ outdoor-rated data cable from the Power Distribution Box to the Camera Bridge location, leaving 12” to 18” of extra cable at each end to make connections and leave adequate slack.

6. Assemble the wireless Camera Bridge to its mount:
    a. Install screw clamp (included with bridge – DO NOT use the screw clamp included with the mount as it is too large).
    ** Make sure screw clamp is installed through one of the two side slots – the bottom of the bridge where the wire connects MUST be to the bottom when the bridge is installed.

    b. Run the screw clamp through the slot in the QuickMount, again making sure the bottom of the bridge is oriented down.

    c. Tighten the clamp, but leave it loose enough so it can be adjusted for alignment.

7. Mount the wireless Camera Bridge and mount assembly using the included four ¼" hex-head screws.

8. Tighten the clamp snugly, making sure the wireless Camera Bridge's flat face faces the wireless Master Bridge. Refer to next page for complete system diagrams.

9. Connect the CATCBL-RJ-RJ data cable from the Power Distribution Box to the bridge. Make sure it snaps in firmly. Close the cover – it will snap shut to keep out the elements. Refer to Master Bridge installation for connection diagrams.

10. Coil up any extra cable and attach it to the mount or building securely using tie straps.

Be sure to leave a little slack in the cable before it enters into the bridge and the Power Distribution Box – if not, when the wire shrinks due to cold weather, it could disconnect the cable from the bridge.

11. Decide on the locations of all cameras that will be connected to the Power Distribution Box. Depending on the camera style and size, the mounting and connecting procedures will differ.

12. Run a CATCBL-RJ-CG outdoor-rated data cable from the Power Distribution Box to each camera location, leaving 12" to 18" of extra cable at each end to make connections and leave adequate slack. Be sure to run cabling so the weatherproof cap and seal are at the camera end. **These cables may be already installed into the Power Distribution Box, or they may be loose.

13. Assemble the cameras:

    a. Feed the camera's wire harness through the mount:

Small PTZ Camera with Convertible Mount

Large PTZ Camera with Side Mount

b. On our VCAM wide angle barn and security cameras, the mount is convertible, so it can be configured as a side mount for mounting to a wall or rafter, or as a pendant mount for installing to a horizontal surface (ceiling):

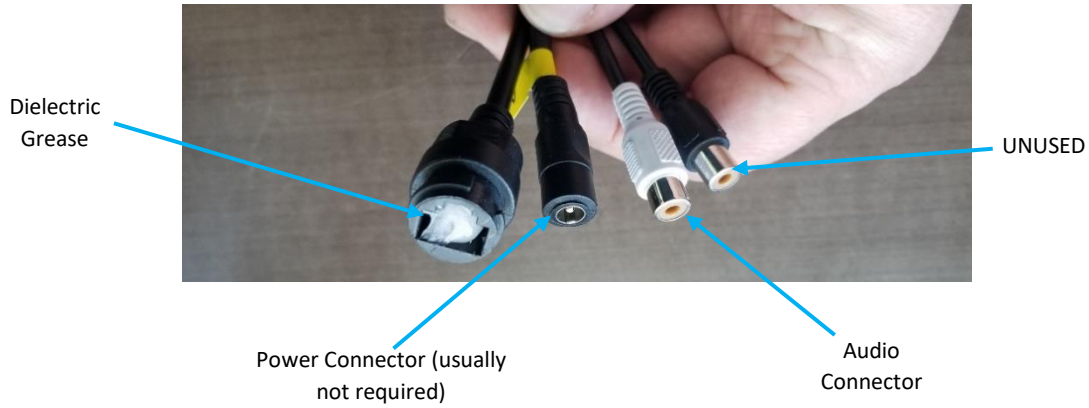
Side Mount

Pendant Mount

c. On our Midi and Large PTZ cameras, a hex wrench is included with your camera. Use it to tighten up the 3 machine screws, starting with the middle one (this screw threads into a hole in the camera to lock it in place).

d. Attach the emergency cable.

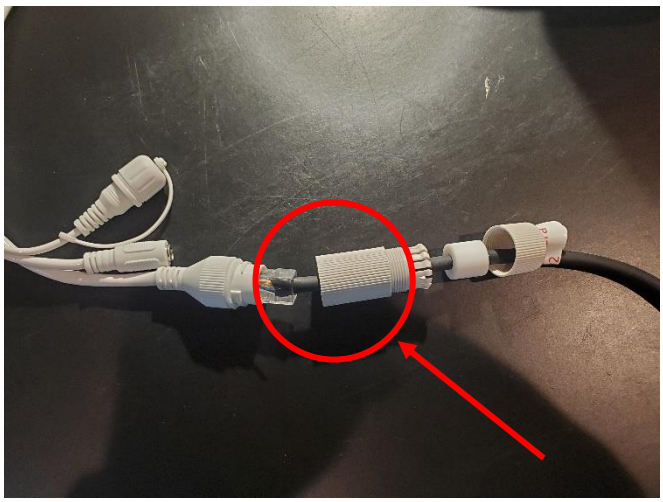
14. Connect the male end of the CATCBL-RJ-RJ cable ran earlier to the camera(s) (may differ by model). The camera's female data port (Ethernet port) connection may have dielectric grease in it. **DO NOT** remove this grease; it is there to protect this sensitive connection against moisture.



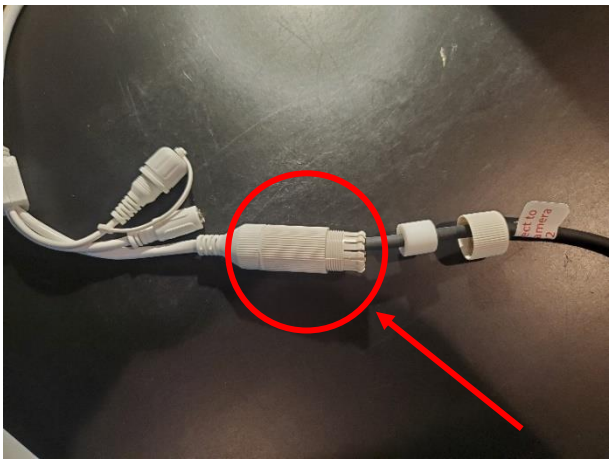
It is extremely important that connections between your camera and the network cable coming from the Power Distribution Box be made carefully, securely and correctly. Failure to do so can expose the connections to moisture and worse, may literally "strangle" the data flow through the cable. **Your warranty will be voided if moisture is present in the connections.**

Here is the correct way to make your connections:

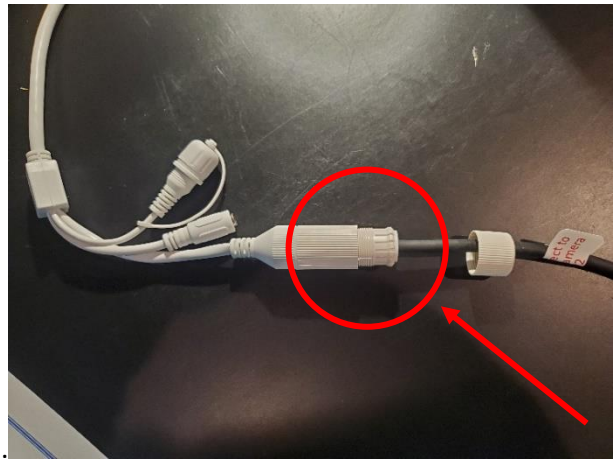
I. Securely snap the male end of the network ("Ethernet") cable into the female end of the cable attached to the camera. If there is dielectric grease in the female connector, do not remote it – it may take slightly more effort to push the male end into the female end with dielectric grease present. Make sure the connection is solid by gently pulling on the cable to make sure it doesn't pull out.



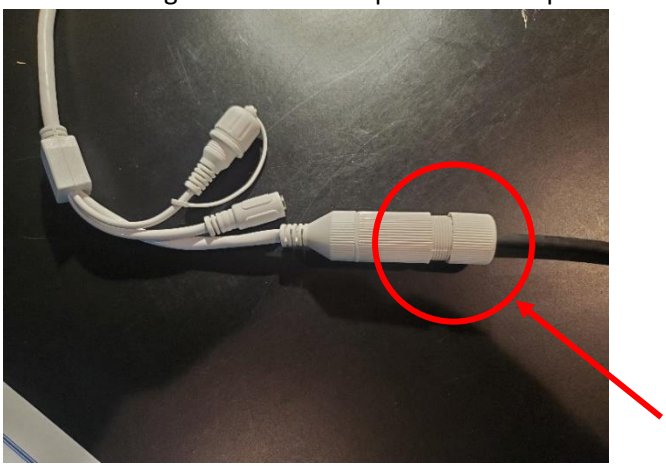
II. Attach the main body of the weatherproof gland to the camera's female connector. There should be a small rubber o-ring on the camera connector to seal against the body. Twist approximately 1/8 of a turn to lock the body onto the camera connector.



III. Slide the rubber seal carefully into the body of the weatherproof gland, being careful not to damage any of the delicate plastic "fingers" that will surround the rubber seal.



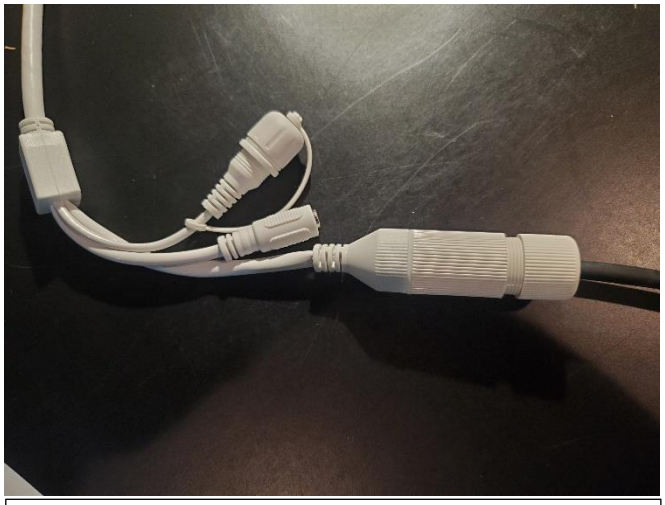
IV. Slide the cap of the weatherproof gland over the fingers of the gland body, making sure not to break or damage the fingers. All the fingers should end up inside the cap if installed correctly.



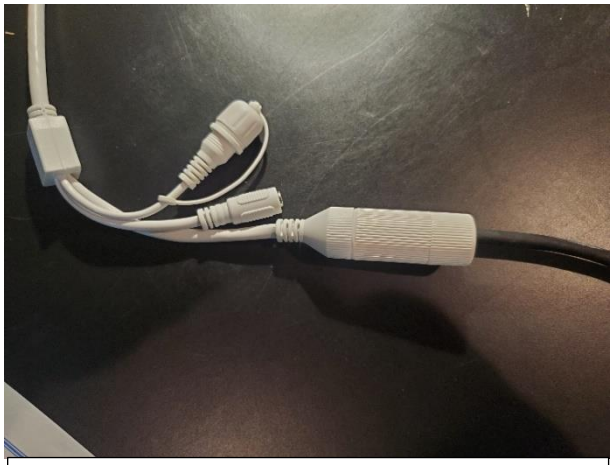
IMPORTANT

Over-tightening the cap of the weatherproof gland can cause many issues, including intermittent connection problems and failure for the camera to produce an image. The next step MUST be done correctly, or the performance of your system WILL be compromised.

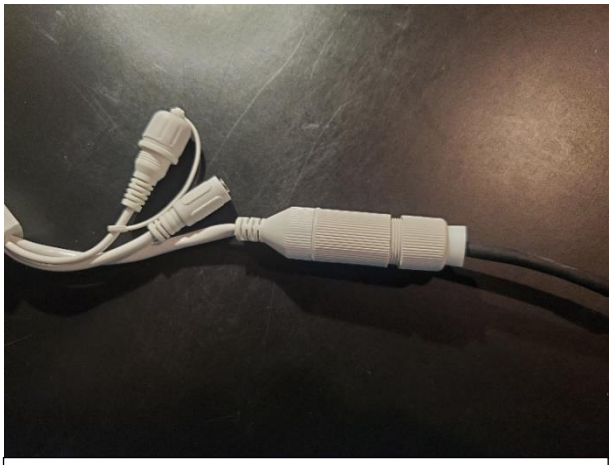
V. Tighten the cap of the weatherproof gland one to two full-turns, but NO MORE. The cable should be snug inside the rubber seal. **The rubber seal MUST NOT be squeezed out of the cap.**



Correct



TOO TIGHT!



RUBBER SEAL SQUEEZED OUT!

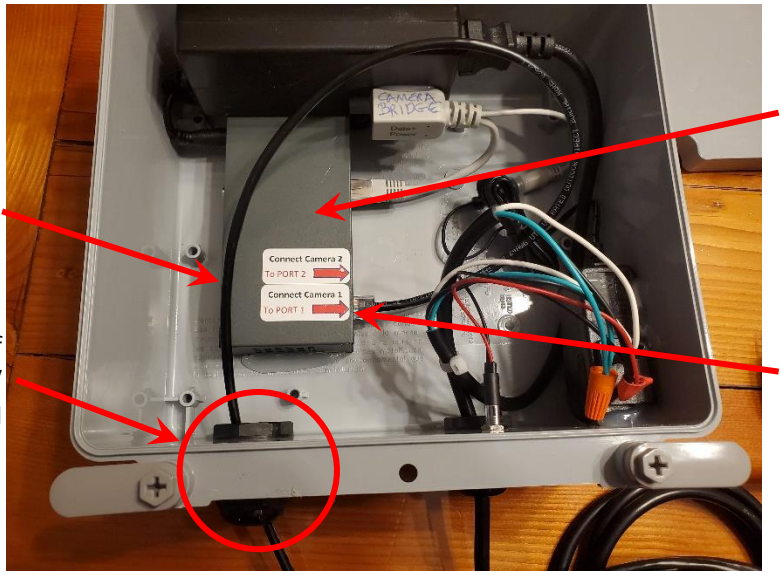
15. On large and midi PTZ cameras (5- and 6-inch models, 16x, 25x, 32x, 45x zoom), the connection MUST be CAREFULLY tucked inside the camera's arm/mount. Be careful to NOT kink the cabling – bend or coil the wires up carefully.

16. On small PTZ cameras (4-inch and Mini models), the connections are left outside the camera. Connect the data cable and power cable (if equipped) as per instructions on the previous pages and orient so any water running down the wire(s) will not seep into the connector . Be sure to wrap the power connection (if required) with electrical tape (or rubber tape if you have) to prevent water infiltration.

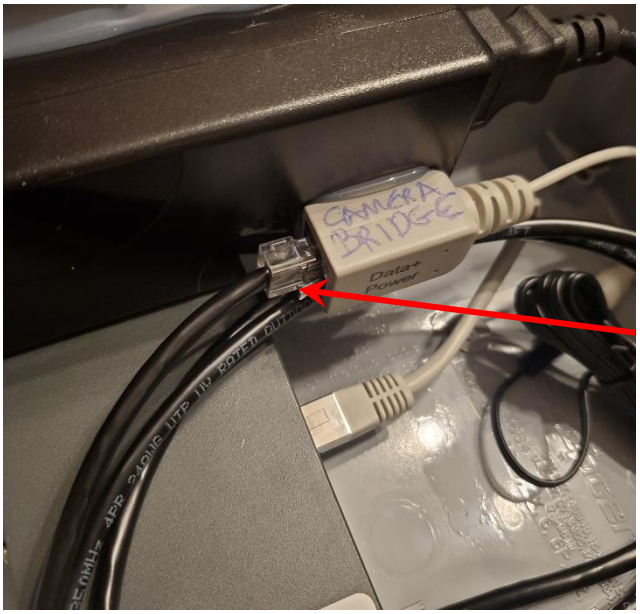
17. Mount the camera using the four included lag screws. Make sure the cables hang down through the machined recess in the base to prevent them from getting pinched between the mount and the mounting surface.

BE CAREFUL not to over-tighten the bolts, especially when mounting to a wood pole. Over-tightening may cause the camera mounting base to crack and **will void the warranty.**

18. On systems with medium power distribution boxes (integrated data cables), please skip to step 19. On systems with a large Power Distribution Box, DO NOT connect to power yet. Run the CATCBL-RJ-RJ camera cable(s) into the Power Distribution Box through the weatherproof connector and plug them securely into their respective port of the POE switch – these ports are labelled, they must be connected to the correct port of the camera may not work.

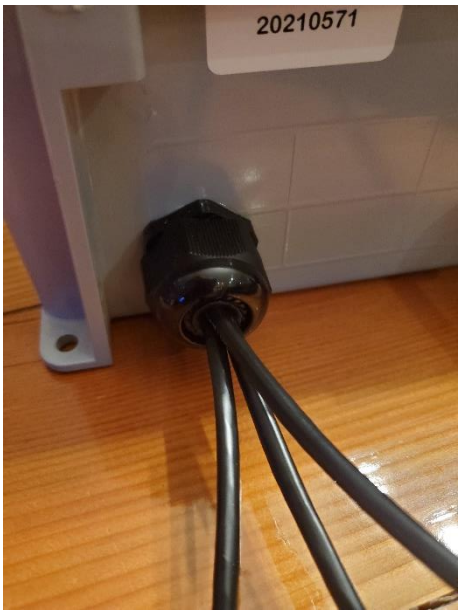


19. Next, run the data cable from the wireless camera bridge into the Power Distribution Box and connect it to the Power Over Ethernet injector (labelled Data + Power).



20. Once all data cables are run into the Power Distribution Box and connected to their respective ports, re-install the cover on the Power Distribution Box. Make sure to lock the cover down using all 4 cam locks to ensure the box is waterproof.

21. Turn the weatherproof connector cap clockwise to close the rubber seal – DO NOT OVERTIGHTEN! You should be able to move the wires in and out of the connector, yet feel some resistance. Over-tightening can cause performance degradation of the data cables.



22. Connect the Power Distribution Box's electrical cord into a standard 110/120V receptacle or extension cord. If the power quality is in any way questionable, we highly recommend installing a UPS (uninterruptable power supply) or good-quality surge suppressor/power filter between the outlet and the Power Distribution Box to ensure clean steady power to your expensive electronic equipment. The camera(s) and wireless bridge is now powered on and within a few minutes will be active.

The Trip Lite UltraBlok will provide solid power protection and some filtering to protect your expensive and sensitive camera equipment.

For the best protection, use a UPS (uninterruptible power supply). This will protect you from power outages, spikes, power drops (brown-outs) and various other power anomalies that no surge bar can or will. These are not for use in the extreme cold, and may need to be installed in an insulated enclosure to keep them from freezing.