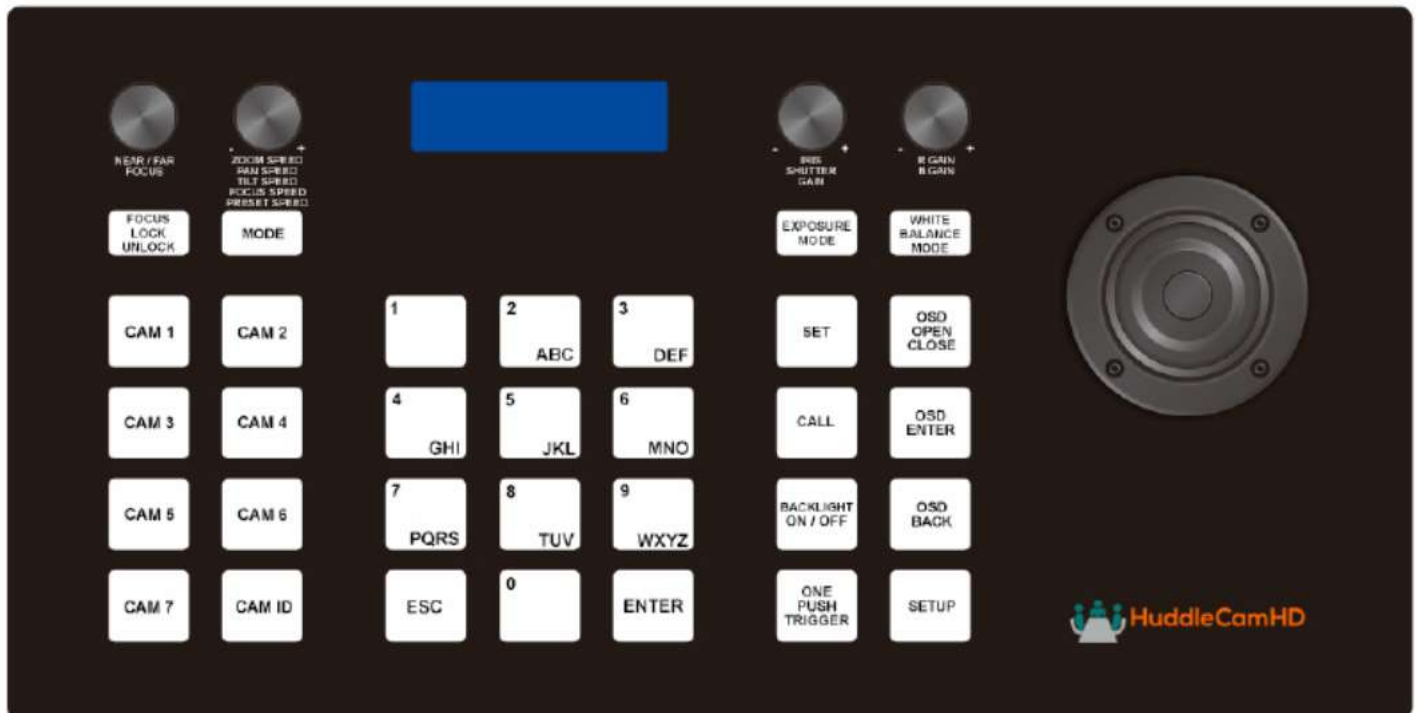




# HuddleCamHD Serial Joystick Controller



## User Manual Model No. HC-JOY-G4 V1.0 (English)

Please check [huddlecamed.com](http://huddlecamed.com) for the most up to date version of this document.



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## Preface

Congratulations on receiving your new HuddleCamHD Serial Joystick Controller. This manual introduces the function, installation, and operation of the Joystick. Prior to installation and usage, please read the manual thoroughly.

## Precautions

To avoid any damage to the unit, please take these precautions when using your HC-JOY-G4 Joystick Controller.

- Please read this manual carefully before using the joystick.
- Avoid damage from stress, violent vibration or liquid intrusion during transportation, storage or installation.
- Do not apply excessive voltage. (Use only the specified voltage.) Otherwise, you may experience electrical shock.
- Keep the joystick controller away from strong electromagnetic sources.
- Do not clean the joystick controller with any active chemicals or corrosive detergents.
- Do not disassemble the joystick controller or any of the joystick's components. If problems arise, please contact your authorized dealer.
- After long term operation, moving components can wear down. Contact your authorized dealer for repair.



## Warranty

HuddleCamHD includes a limited parts & labor warranty for all HuddleCamHD manufactured joystick controllers. The warranty is valid only if HuddleCamHD receives proper notice of such defects during the warranty period. HuddleCamHD, at its option, will repair or replace products that prove to be defective. HuddleCamHD manufactures its hardware products from parts and components that are new or equivalent to new in accordance with industry standard practices.

## Supplied Accessories

When you unpack your joystick controller, make sure that all the supplied accessories are included:

- Joystick Controller 1
- RS-232 Cable 1
- 12V DC Power Supply 1
- Quick Start Guide 1



Note: The included RS-232 cable is used to connect the joystick to the first camera. If the first camera is located further than the cable, a DB9 extender should be used. Subsequent 2nd, 3rd and 4th cameras are connected using the in and out 8-pin mini-din connections using cascade cables. You can learn more at [PTZOptics.com/cables](http://PTZOptics.com/cables).

## FCC Statement

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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radiofrequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. Operation is subject to the following two conditions: This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

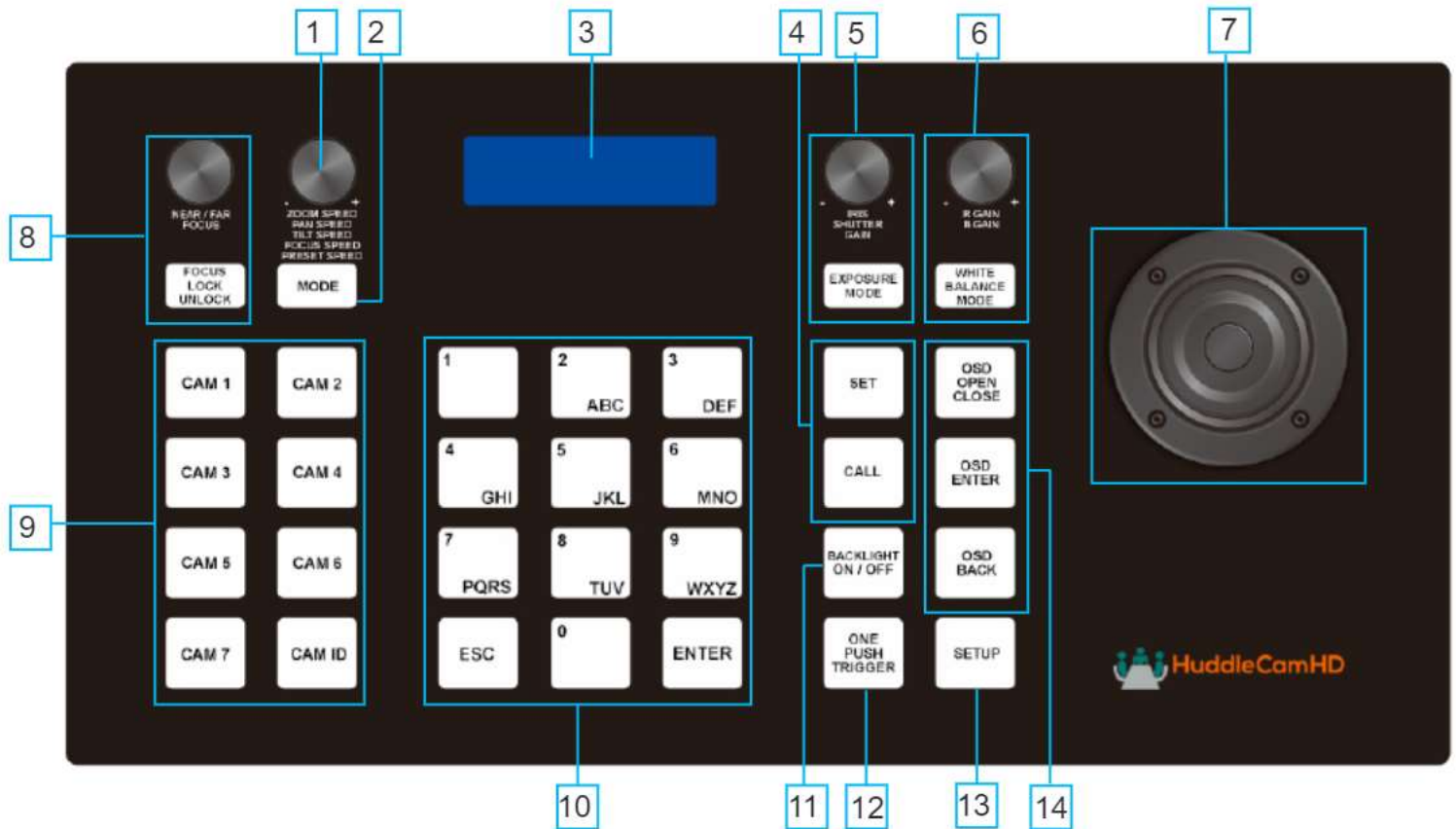
- **Warning** - This is a class B product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

## Copyright Notice

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## Physical Description



### 1. Speed Control Dial

Adjust Control Speeds

### 2. Mode Change Button

Basic & Matrix Modes

### 3. LCD Display

Displays Connection Info

### 4. Set & Call Presets

Set and/or Call Preset

### 5. Exposure Control

Exp Modes & Settings

### 6. White Balance Control

WB Modes & Settings

### 7. Joystick Controller

Pan, Tilt & Zoom

### 8. Focus Control

Adjust or Lock Focus

### 9. Camera Select

Select your camera

### 10. Numeric Buttons

Used for Presets

### 11. Backlight Toggle

Increase Backlight

### 12. OnePush Trigger

Calculate white level

### 13. Joystick Setup Menu

Enter Joystick Menu

### 14. Camera OSD

Adjust camera settings



## Back View of the Joystick Controller



1. RS-232 Port (DB9 connection)
2. RS-422 / RS-485 Port
3. 12V DC Power Port
4. Power Switch
5. Grounding Knob



## Key Product Features

- All Metal housing
- VISCA, PELCO-D and PELCO-P protocol support
- Key-press “BEEP” confirmation (optional – set on or off)
- Variable speed control of pan, tilt, zoom, focus, and presets
- Auto/Manual Focus and Iris
- Cameras #1 -7 Quick Select buttons
- Quick preset set & call (0 – 9)
- Set and Call up to 255 presets per camera
- Real time display of the current status
- 2 Year Warranty

## Key Technical Specifications

- Control Interfaces
- RS232 full-duplex, RS485 semi duplex, RS422 full-duplex
- Variable Baud Rate 1200 to 19200 bps
- Maximum communication distance: RS485: 3,937ft [1200m] using 24 gauge twisted pair cabling
- Can control a maximum 255 cameras via Pelco-D/P
- Voltage: 12VDC
- Power Consumption: 6W Max
- Display: LCD
- Working Temperature: 14°F ~ 122°F [-10° ~ +50° C]
- Working Humidity: 10 ~ 90% (non-condensation)
- Weight 3.4 lbs. [1.6 kg]
- Dimensions: 12.6”(W) x 7.1”(D) x 4.3”(H) [320mm x 181mm x 110mm]



## Installation

- Power Supply Interface (5.5mm x 12mm center pin JEITA style jack):  
12VDC / 2000mA power supply
- RS485/422 interface (5p screw terminal):
  - 1:485+/422TxA
  - 2:485-/422TxB
  - 3:422RxA
  - 4:422RxB
  - 5:485/422Gnd
- RS232 interface (DB9M port): 2:Rx, 3:Tx, 5:Gnd

## Hardware Features

- Keys: momentary push buttons (keys)
- Joystick: 3-axis joystick
- Digital display: LCD display

## Control Mode

- VISCA, PELCO-P and PELCO-D protocol support
- Control interfaces:
  - 5p Screw Terminal (RS485/RS422)
  - DB9 (RS232)
- Baud rate: 1200, 2400, 4800, 9600, 19200
- Parameters: 8 bits, 1 stop bit, No parity





# Keyboard/Joystick Operation

## Basic Control

- **Pan & Tilt Control**
  - Joystick movement provides variable speed pan and tilt of the camera head.
- **Zoom Control**
  - Rotation of the joystick controls variable speed zoom of the lens.
    - Clockwise rotation of the joystick = zoom in.
    - Counter-clockwise rotation of the joystick = zoom out.

## Manual Control Options

- **Focus Control** – VISCA Protocol only. Pelco-D & P do not support Manual Focus commands.
  - You can adjust the focus level by twisting the Focus knob. Manual Focus is automatically enabled once the knob is twisted.
    - Twist the knob clockwise to Focus Far, and counter-clockwise to Focus Near.
  - You can return to Auto Focus mode by pressing in the Focus knob.
- **Exposure Control** – VISCA Protocol only. Pelco-D & P do not support Manual Exposure commands.
  - The Iris / Shutter / Gain knob allows you to adjust the corresponding Exposure settings. Press the knob in to change your selection.
  - Note: Some cameras do not have an “Iris” or “Shutter” mode. Use Manual Exposure mode for best results.
- **White Balance Control** - VISCA Protocol only. Pelco-D & P do not support Manual White Balance commands.
  - The R Gain / B Gain knob allows you to adjust the corresponding Red or Blue Gain level. Press the knob in to change your selection.
  - Note: Your camera must be set to Manual White Balance mode in order to manually define the Red and Blue Gain levels.
- **Speed Control**
  - You can adjust the Pan, Tilt, Zoom, Focus, and Preset control speeds by twisting the Speed knob. Press the knob in to change your selection.
  - You can adjust the Pan (0 – 24), Tilt (0 - 20), Zoom (1 - 7), Focus (1 - 7), and Preset Speed (1 - 24).



## Selecting a Camera

### Quick Camera Select

1. Press the CAM # button associated with the camera you want to control.

### CAM ID Button

1. Press the CAM ID Button
2. Input the Camera ID you want to control.
3. Press the Enter button

## PTZ Presets

### Set a PTZ Preset

- **Quick Preset Set**

1. Press and hold one of the 0 - 9 buttons for 3+ seconds to Set a preset in the current position.

### Set Button

1. Press the "Set" button
2. Input the Preset number you want to Set
3. Press the "Enter" button to save the preset.

### Call a PTZ Preset

1. Quickly press one of the 0 - 9 buttons to Call that preset.

### Call Button

1. Press the "Call" button
2. Input the Preset number you want to Call
3. Press the "Enter" button to call the preset.

### Notes on using presets with VISCA:

For your convenience, the HC-JOY-G4 uses the same presets as the IR remote controller, VISCA, Pelco-D, or Pelco-P protocols. This is in contrast to Sony's traditional offset of 1 between the IR remote and VISCA commands.



## Mode

The modes cycle through sequentially. To select a control mode, press the “Modes” button until the desired mode is selected. You can return to standard camera control by selecting “Basic Mode Off”.

- **No Mode selected:** All of the joystick’s functionality behaves as expected.
- **Basic (PTZ Disabled):** Most of the joystick’s functionality is disabled. The user is only capable of selecting a camera to control, and calling presets on that camera.
- **Basic (PTZ Enabled):** Most of the joystick’s functionality is disabled. The user is only capable of selecting a camera to control, calling presets on the camera, and moving it with the joystick.
- **Matrix Mode:** Most of the joystick’s functionality is disabled. The only thing the user can perform is calling the first 3 presets on cameras 1, 2, & 3.
  - On the alphanumeric buttons:
    - Buttons 1 - 3 call presets 1 - 3 on camera 1.
    - Buttons 4 - 6 call presets 1 - 3 on camera 2.
    - Buttons 7 - 9 call presets 1 - 3 on camera 3.

## Joystick Setup Menu - LCD Menu

### Key Tone

- Options include: On, Off

### Restore Default

- You must press Enter twice to restore the default settings. Press the Escape button to cancel.

### ADD:

- Options include: VISCA, Pelco-D, Pelco-P
- To add a camera to the joystick, you will need to select the desired control protocol then press the Enter button. Use the joystick to select the camera ID.
  - Left and Right move in increments of 1.
  - Up and Down move in increments of 5.

### Version

- Displays the firmware version

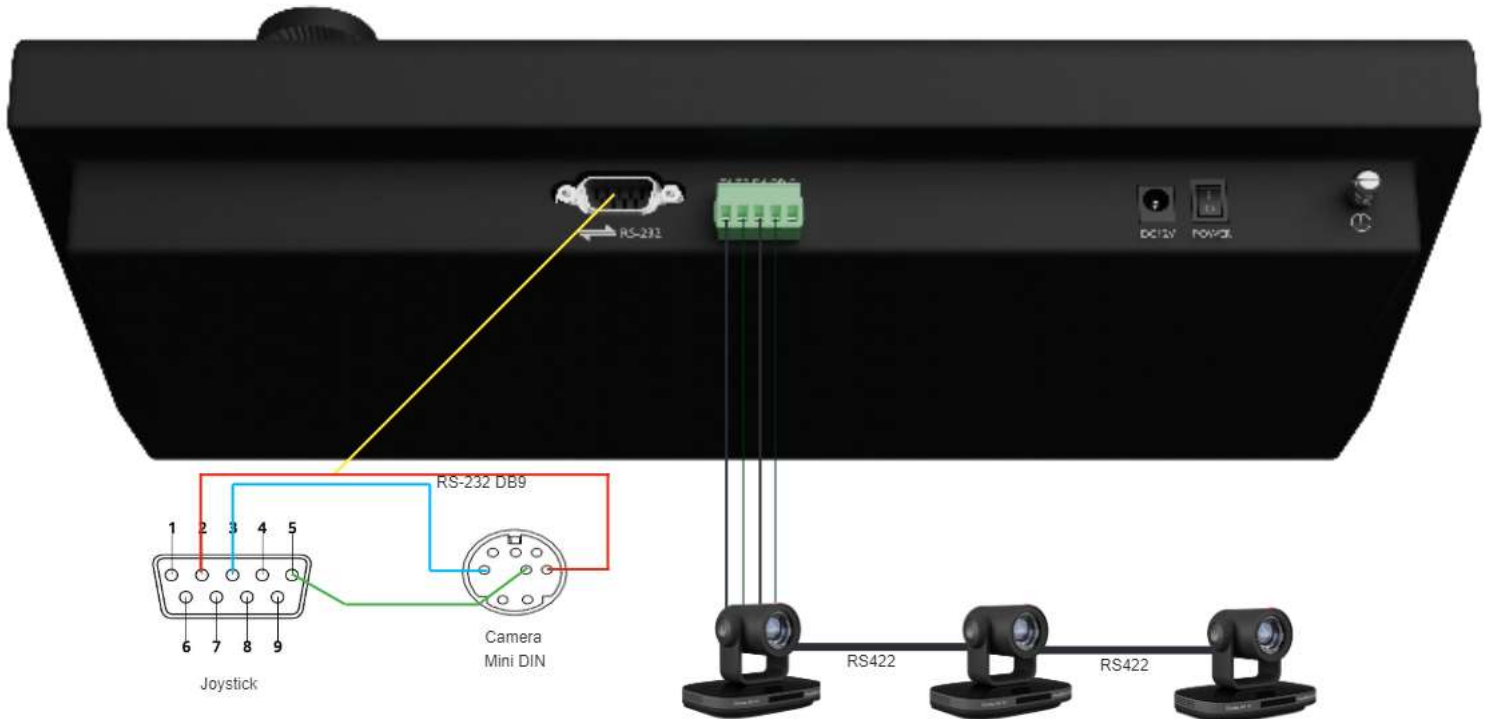
### Invert Pan

- Options include On, Off

### Invert Tilt

- Options include On, Off

## Keyboard/Joystick Connection Wiring and Indicators



### Power:

- Joystick requires external 12VDC. Use only the 12VDC power supply shipped with the unit.

The Joystick may be connected to cameras via RS-232, RS-485 or RS-422.

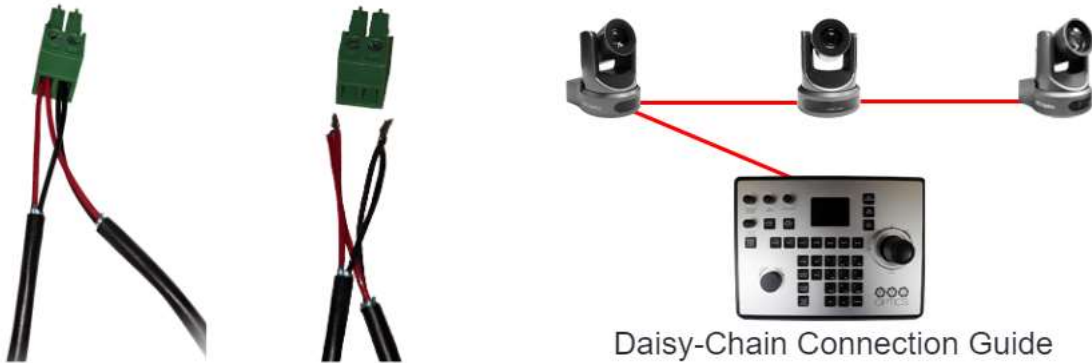
- For RS-232, connect the DB9 port of the joystick to the miniDin8 (VISCA) port of the camera with pin-out as follows:
  - KB Tx – Pin 3..... Camera Rx - Pin 5
  - KB Rx – Pin 2 ..... Camera Tx - Pin 3
  - KB Gnd – Pin 5..... Camera Gnd - Pin 4

When connecting multiple cameras, the first cable in a serial control chain is a DB9 to 8-pin mini-din cable as seen in Fig. 1 (included). The 2nd, 3rd, and 4th cameras are connected using an 8-pin mini-din cascade cable as seen in Fig. 2 (not included). See Fig. 3.



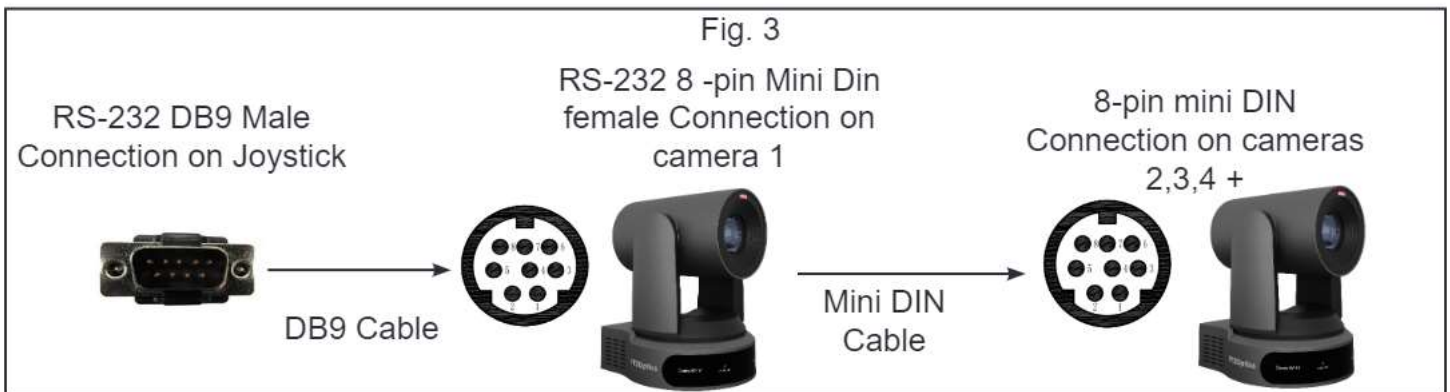
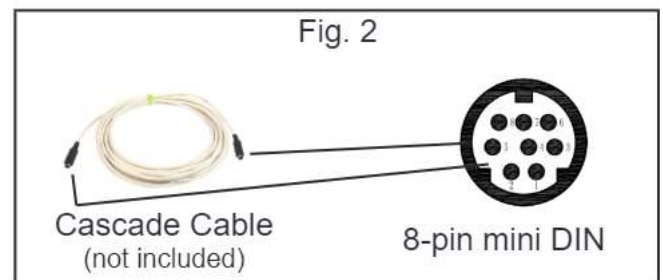
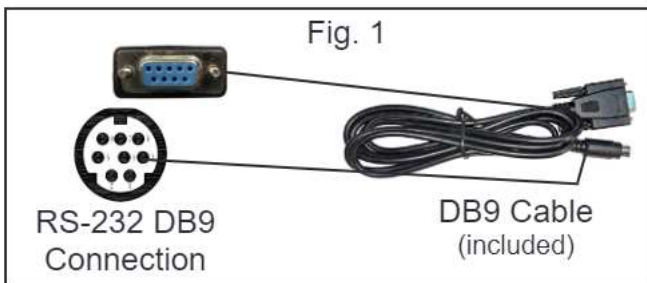
# HuddleCamHD™

- For RS-485, connect the 5p screw terminal port of the joystick to the RS-485 port of the camera with pin-out as follows:
  - KB Ta – Pin 1----- Camera (+)
  - KB Tb – Pin 2----- Camera (-)
  - KB Gnd – Pin 5----- Camera (G) (if present – some cameras will not require a G)



Daisy-Chain Connection Guide

- For RS-422, connect the 5p screw terminal port of the joystick to the RS-422 port of the camera with pin-out as follows:
  - KB Ta – Pin 1 ..... Camera (Rx-)
  - KB Tb – Pin 2..... Camera (Rx+)
  - KB Ra – Pin 3 ..... Camera (Tx-)
  - KB Rb – Pin 4 ..... Camera (Tx+)
  - KB Gnd – Pin 5 ..... Camera (G) (if present – some cameras will not require a G)



The DB9 cable that is included with the joystick is DB9 F on one end and mini DIN on the other. All of the connections above are OUT of the camera (8-pin mini DIN), and IN to the next camera (also 8-pin mini DIN).



## Troubleshooting

- **Cannot Control Camera at all**
  - Check that LCD is in the Main Menu. Press “Esc” key to return to main menu, if needed. Note: Repeated presses may be required depending on how deep you are in a menu, e.g. this can often happen after setting presets and then attempting to Call presets without exiting the Set menu.
  - Check both KB settings and camera settings to ensure that the following ALL match:
    - Camera ID (e.g. 01, 02, etc...)
    - Camera Protocol (e.g. VISCA, PELCO-P, PELCO-D)
    - Baud Rate (e.g. 9600)
  - Check all KB-camera connections and cabling per “Connection Wiring and Indicators” section above.
  
- **Controlling more than 1 camera at a time.**
  - Check all cameras to ensure that each has a unique ID.
  - Check all camera settings in KB menu to make sure that the protocol setting for that camera ID matches that of the actual camera.
    - Note, you cannot typically mix VISCA, Pelco-P or Pelco-D cameras in the same daisy chain.
  - Check control wiring.
    - For RS232, cabling must flow from KB into the VISCA-in port of the first camera and then from VISCA-out port of first camera to VISCA-in port of next camera, etc... A VISCA cross-over cable must be used for all camera to camera connections. These are available from HuddleCamHD in various lengths as well as from other sources.
    - For RS485 and RS422, all connections are in parallel (e.g. all cams’ 485+ are connected to KB’s 485+ and all cams’ 485- are connected to KB’s 485-) and termination may be required depending upon overall cabling distances involved.