



# PTZ Camera Controller

## CM-CON100

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# INTRODUCTION

## Congratulations

Thank you for your Avonic purchase. Before beginning to operate this device, please read the manual in order to make sure the best performance is obtained. Save this manual for future reference.

## Contact

For any questions or suggestions, contact your reseller or the local distributor of Avonic. Find the local distributor on the website of Avonic. For the most recent version of the manual or datasheet, look at the Avonic website: [www.avonic.eu](http://www.avonic.eu)

## Join Avonic



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## Safety Notes

- Installation and servicing should only be done by Qualified Service Personnel and conform to all local codes.
- This unit is designed for indoor use only and it must not be installed where exposed to water or other liquids and moisture.
- Before powering on the device, check the input power voltage carefully.
- Avoid shock and vibration when transporting and installing the device.
- Electronic devices produce heat. Do not block the ventilation slots of the device and make sure the installation environment is well ventilated to avoid overheating.
- Before cleaning, unplug the power cable. Use a soft, damp cloth to clean the device, do not use strong or abrasive detergent to clean that will damage the device.
- If you wish to dispose this product, please contact Avonic to obtain info about the disposal procedure.

## PACKAGE CONTENTS AND ACCESSORIES

### Contents

| Quantity | Description                    | Avonic SKU    |
|----------|--------------------------------|---------------|
| 1 pc     | PTZ Camera Keyboard Controller | CM-CON100     |
| 1 pc     | Power Supply 12V/A             | CM-CON100-PSU |

## PRODUCT OVERVIEW

The Avonic CM-CON100 is a compact PTZ camera controller. With this controller it is possible to control up to 255 camera's and using up to 255 presets.

The controller supports the Visca, Pelco-D and Pelco-P protocol and can be connected with RS232/485. The Avonic CM-CON100 is therefore compatible with the Avonic camera's as well with other brands that support these protocols.

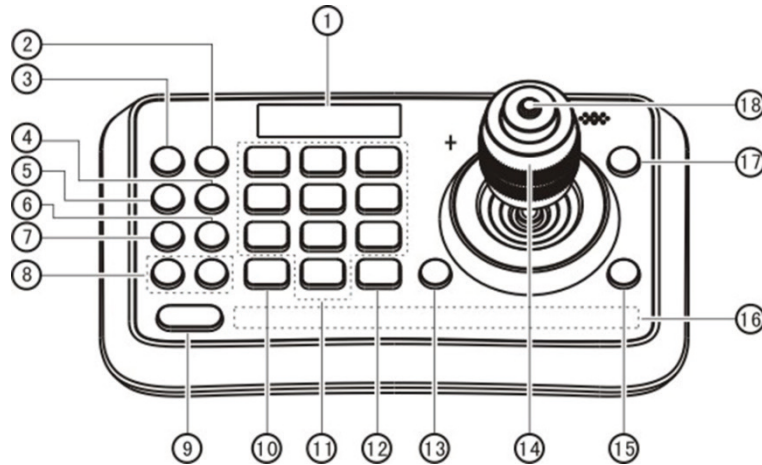
Switch easily between auto and manual focus, save and load presets, and connect multiple controllers to multiple camera's

### Features

- Number of presets: With this compact controller, it is possible to control up to 256 cameras and use up to 256 presets.
- Connection: Easy to connect with RS232, RS485
- Control: Every setting of the camera can be controlled by accessing the OSD of the camera through the controller.
- Direct control Pan, Tilt, Zoom and Focus.

# INSTALLATION

## Connections



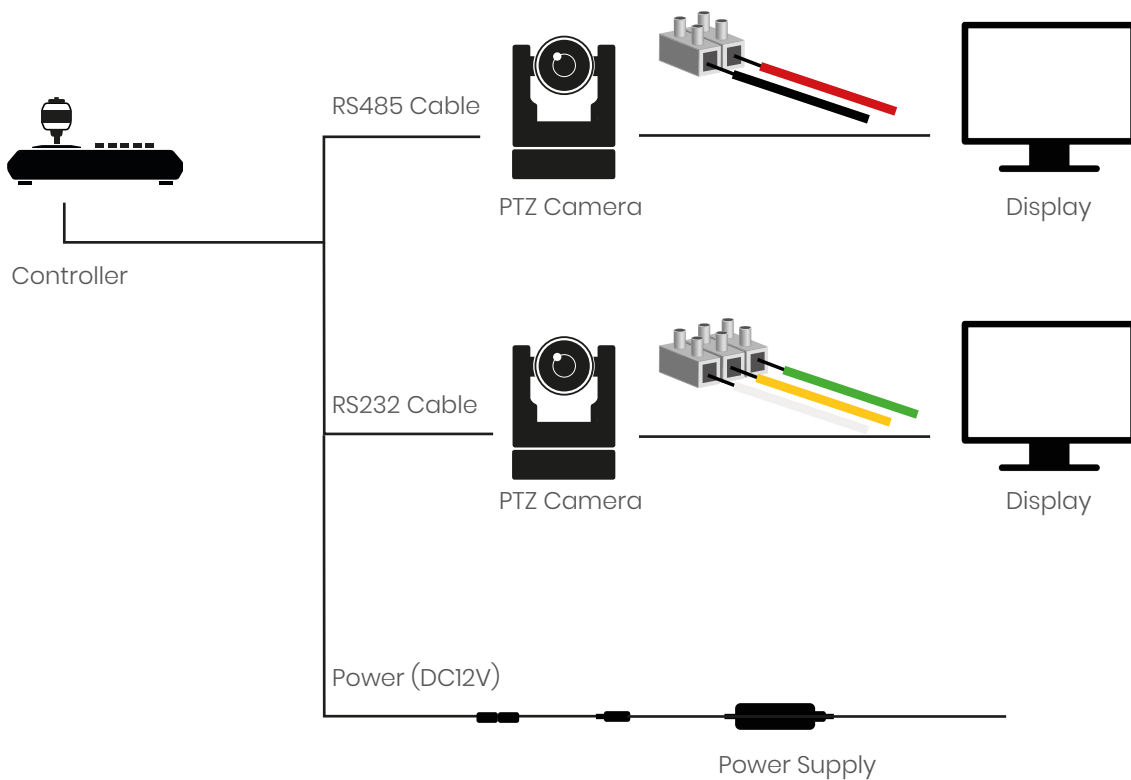
1. OLED screen. The OLED screen displays status of current operation.
2. CALL (Call preset) Input preset number, then press CALL key to call a preset
3. CAMERA (Switch cameras) Input camera number, then press CAMERA key to switch to another camera.
4. SET (Set / Clear preset) Input preset number, then press SET key to set or delete a preset (Short press to "set"; long press to "clear").
5. SETUP (Enter setup menu) Press SETUP key to enter menu and program the keyboard
6. CRUISE (Auto Cruise) Press CRUISE key to do auto cruise.
7. PATTERN (Pattern Scan) Press PATTERN key to do pattern scan
8. F1, F2 Toggle between Auto Focus and Manual Focus (also see 18.)
9. SHIFT (Extension key) It is an extension key to be used with other keys for special functions.
10. ESC (Exit / Delete) It is a key to EXIT in a menu or DELETE in other operations.
11. 0-9 (Numbers) Those are keys used to input numbers. Combine with SHIFT key to activate various functions shown on number keys. For example, press SHIFT + 1 will turn on DIS function of the camera.
12. ENT (Confirm) It is used to confirm menu setting.
13. OPEN (IRIS Open) This key is used to activate IRIS open of the camera. It is also a "confirm" key in a menu.
14. Joystick This joystick is used to Pan, Tilt, Zoom and Focus  
Non-Menu State:  
Left/Right/Up/Down: Pan/Tilt the camera correspondingly  
Twist clockwise: Zoom In,  
Twist anti-clockwise: Zoom Out;  
Press Zoom/ Focus Switch Key and Twist: Focus Near/Far  
Menu State:  
Right: Enter a submenu or Confirm;  
Left: Return to previous menu or exit (expect some not returnable menus);  
Up: Move to last option;  
Down: Move to next option.
15. CLOSE (IRIS Close) This key is used to activate IRIS close of the camera; it is "return" key in a menu.
16. Status Display area This area is used to display status of functions that are turned on, relative icons will be back lighted.
17. MENU (Enter Camera Menu) This key is used to enter camera menu.
18. Zoom / Focus Switch Key. (See also 8.) This key is used to switch between zoom and focus function.  
Operation: Press this key, the red cross indicator light near the joystick will go out, twist the joystick to zoom in / out; press this key again, the red cross indicator light will be lightened, twist the joystick adjust focus value.

## Connection Diagram

The controller has 3 wires:

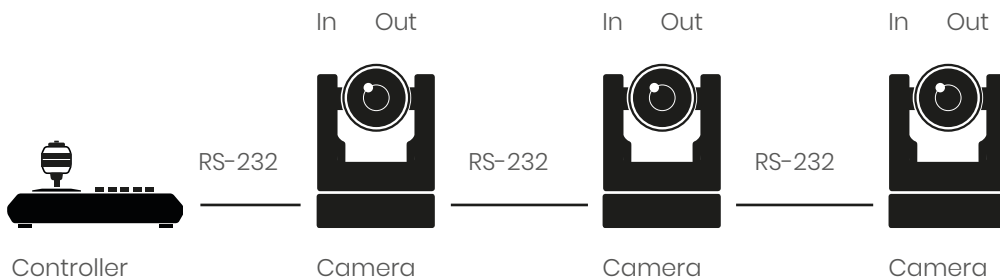
- Power with female JEITA connector
- RS232 with 3 pin Terminal Strip
- RS485 with 2 pin Terminal Strip

Maximum distance for RS232 is about 15 meters. Maximum distance for RS485 is about 1200 meters.



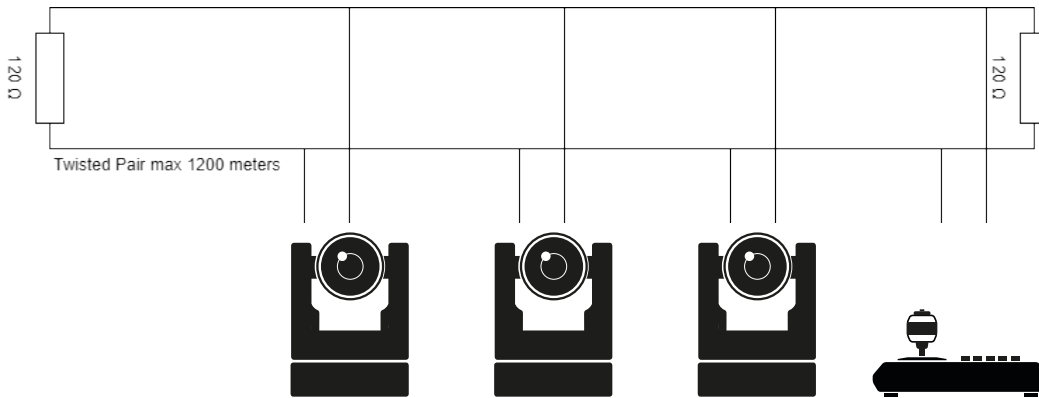
## VISCA network connection diagram

When connecting multiple cameras through RS-232, use daisy chaining network architecture. Max cable length for RS-232 is 10-15m.



## RS485 network connection diagram

To connect multiple cameras by RS485, the cameras are attached to a 2-wire twisted pair bus (max length 1200m) that is terminated at both ends with a 120  $\Omega$  impedance resistor. The maximum distance from the bus to the camera or controller is 5m.



## Addressing Multiple Cameras

In case more cameras are connected to the controller, each camera needs to be addressed the right way to a camera number of the controller.

The following settings need to match in both camera and controller:

1. Protocol (VISCA, PELCO-p or PELCO-d)
2. Camera address number (1, 2 or n)
3. Communication settings as baud rate (9600), parity, etc.



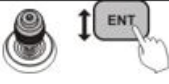
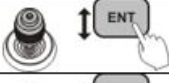
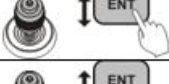
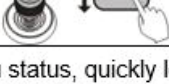
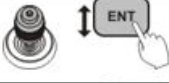


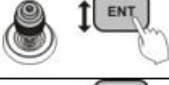
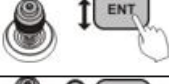






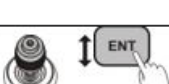
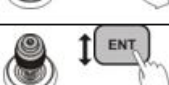
# OPERATION INSTRUCTIONS

## Menu

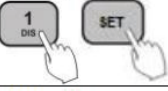

After powered on, "USER PIN" will show on the controller's screen. The initial pin is "111111".

| Operation  | Button              | Screen           | Comment  |
|--|---------------------|------------------|--|
| Enter USER PIN   |                     | USER PIN:        | The initial USER pin is "111111"<br>See "PIN SETTING" to set pin.  |
| <p>Pin Error : When "USER PIN : ERROR" shows on screen, it indicates wrong pin was input. Enter correct pin to get to next step</p> <p>Pin Correct : Screen shows "1" camera icon and default camera number. If there is no operation, after 5 seconds the screen will display the current time. If still no operations, the controller will enter sleepmode (30sec, 1min, 5min, 10min, 30 min or 60 min.)</p> |                     |                  |  |
| Enter menu   | <br>Press SETUP key | ADMIN PIN:       | The initial ADMIN pin is "111111"<br>See "PIN SETTING" to set pin. |
| <p>Menu List</p>   |                     |                  |  |
| Camera Setting   |                     | CAMERA SETTING ▶ | Move up / down the joystick, choose "CAMERA SETTING"               |
| Camera ID  |                     | □ :              | 0-255, use num keys, press ENT to confirm                          |
| Protocol setting   |                     |                  | PELCO D/PELCO P /VISCA   |
| Baud rate setting  |                     | BAUD RATE :      | 2400/4800/9600 / 19200/38400                                       |
| Address Setting  |                     | ADDRESS: 1       | 0-255  |
| Increment  |                     | INCREMENT:       | 1-20   |


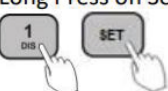


|  |   |                   |   |
|--|---|-------------------|---|
| <p>The controller can also batch program cameras in the system. It will set the same baud rate, protocol for the 10 cameras next to the current one while the cameras' address to be increased by increment number sequentially. After step 5, press SHIFT to enter menu "INCREMENT:" Input a number within 1~20, press ENT to confirm.</p> <p>The address increment between two sequential cameras. For example, the current camera address is 1 and the increment is 2, then the next camera address is 3.</p> |   |                   |   |
| Time Setting   |    | TIME SETTING ▶    |   |
| Set time in 24 hour format.  |    | 10 : 52 : 59      |   |
| Volume Setting   |    | VOLUME SETTING    | OFF (switch off sound)<br>1~6 (6 levels from low to high)         |
| Backlight Setting  |    | BACKLIGHT MODE    | AUTO/ON/OFF   |
| Sleep Setting  |    | SLEEP SETTING ▶   | OFF/ 30S/ 1M/<br>5M/10M / 30M/60M                                 |
| PIN setting  |    | PIN SETTING ▶     | USER/ADMIN  |
| <p><b>[Note]</b> In non-menu status, quickly lock function can be realized by simply pressing <b>SHIFT + ENT</b>. "USER PIN" or "ADMIN PIN" is required for operation the controller again.</p>  |   |                   |   |
| Joystick calibration   |    | JOYSTICK CALIB ▶  | After long-time use, the joystick may require calibration         |
| Pan left   |   | PAN LEFT          | Move the joystick to left limit and press ENT                     |
| Pan right  |  | PAN RIGHT         | Move the joystick to right limit and press ENT                    |
| Tilt up  |  | TILT UP           | Move the joystick to upper limit and press ENT                    |
| Tilt down  |  | TILT DOWN         | Move the joystick to lower limit and press ENT                    |
| Zoom tele  |  | ZOOM TELE         | Twist the joystick clockwise to the limit and press ENT           |
| Zoom wide  |  | ZOOM WIDE         | Twist the joystick anti clockwise to the limit and press ENT      |
| Free state   |  | FREE STATE        | Need not any operation, press ENT                                 |
| Save   |  | <SAVE> CANCEL     | Move the joystick left/right to choose, and press ENT to confirm. |
| Key Custom   |  | KEY CUSTOM ▶      | It is used to custom keys to realize special functions requested. |
| Speed setting  |  | SPEED SETTING ▶   | Set control speed of the joystick<br>HIGH<br>MIDDLE<br>LOW        |
| Default Setting  |  | DEFAULT SETTING ▶ | Restore the keyboard setting to factory default                   |
| Information Display  |  | INFORMATION ▶     | It displays firmware version number                               |

## Set/Call Preset Position

| Operation                      | Button   | Screen         | Comment                           |
|--------------------------------|--|----------------|-----------------------------------|
| Set Camera in desired position | Short press<br> | SET PRESET: 1  | Current position set to preset 1  |
| Call Preset 1                  | Short press<br> | CALL PRESET: 1 | Camera moves to preset position 1 |

## Delete Preset Position

| Operation       | Button   | Screen         | Comment                            |
|-----------------|--|----------------|------------------------------------|
| Call Preset 1   | Press<br>             | CALL PRESET: 1 | Current position moves to preset 1 |
| Delete Preset 1 | Long Press on Set<br> | CLR PRESET: 1  | Preset 1 is now empty.             |

## What to do if the admin pin is lost

By default the admin pin is set to 111111. If this pin has been changed and is lost, use the following mastercode to regain access to the CON-100: 7 7 8 8 9 6

# MAINTENANCE

## Controller Maintenance

- If the controller will not be used for a long time, please turn off the power switch, disconnect AC power cord of AC adaptor to the outlet.
- Use soft cloth or tissue to clean the display.
- Please use a soft dry cloth to clean the controller. If the device is very dirty, clean it with diluted neuter detergent. Do not use any type of solvents, which may damage the surface.

## Unauthorized Use

- Don't operate close to powerful electromagnetic radiation, such as TV or radio transmitters, etc.

# TROUBLESHOOTING

## General advise

- Turn the controller off and on again and check if the problem persists.
- Restore to Factory Default (menu option 11)

## Power Issues

- No display and no buttons lit
  - Check the net power
  - Check the power supply

## Serial functionality issues

- Cannot control camera
  - Check serial cable(s) and the RJ45 termination
  - Reset to factory default