Configuration and Installation

Before installing the camera, you must ensure the camera is configured properly. The camera communication settings must be configured the same as your controller – If using an EZ Watch Pro 4.0 TRP-C08 module, an Armor-Pro DVR, or the AU40E/AU40Z/AU40M joystick controllers then it is recommended that the camera be set to the 'Pelco-P' Protocol and the 9600 baud speed. If you are not using any of those controllers then please refer to your controller manual to determine what protocols and speeds the controller supports.

To set the protocol and speed of the camera, remove the camera from its housing. To do so, press in on either of the retaining levers on the side of the camera (The levers are located inside of the housing), and angle the camera away from the lever you depressed. The camera should slide free.

At the base of the camera are two banks of dip switches, each with 8 switches. Switch 1 controls the Protocol and Baud Rate, Switch 2 controls the camera number. For the 'Pelco-P' protocol, 9600 baud rate flip switches #2 and #7 to the 'on' position, and leave the rest off. For the camera identifier, flip the switches on the 2nd bank to the camera position that corresponds to the table in the appendix at the end of this guide (SEE NOTE). Protocols Pelco-P and Pelco-D are recommended; other protocols may not support all functions.

NOTE – The address assigned to this camera must always be one lower than the address on your monitor/dvr for the camera to respond properly. If the camera is set as camera #1 on your recorder, then you must address the camera as number 0!

Connect the camera power connector to the included power supply. If you need to extend power, then you must use 12VDC pigtails to extend it. Connect the BNC Video output to a recorder or monitor, and connect the control lines to the camera controller. The camera must be connected to an RS485 connector; the Red wire is the RS485 +, and the Black wire is the RS485–. Connect these wires to the RS485 + and – jacks on your controller. Power the camera on, and it should be ready for use.

Basic Camera Use

Once the EZ-TRACK camera has been connected and configured, controlling the unit and entering in basic commands is done via joystick or PC interface.

Moving the camera around is done by tilting the joystick in the direction you wish the camera to move. With a proportional PTZ controller (models AU40Z and AU40M only!), the angle of tilt adjusts the camera's rotation speed (Slight tilt is slow, large tilt is fast).

Zooming in and out can be done using the Wide (Zoom Out) and Tele (Zoom In) buttons on the joystick, or in the case of the AU40Z or AU40M controllers can also be accessed by rotating the joystick left (Zoom Out) or right (Zoom In).

The camera can be set up with up to 256* preset positions. Presets are 'bookmarked' camera positions – positions that are stored so that they can be called up later. Setting a preset saves the camera's rotation angle, elevation angle, and zoom level. Calling a preset will immediately move the camera to the saved angles. Presets can be stored and recalled manually, and the camera can be set to rotate through each assigned preset in sequence.

When a preset is stored, a message will appear stating 'Preset has been saved'. When a preset is recalled, the camera will swivel, tilt, and zoom to the stored location. The camera can be instructed to 'Cruise', which means it will rotate in sequence from the first preset, to the second, then the third, and so on and so forth. This allows it to rotate through various frequently-viewed areas in sequence and repeated. The cruise is initiated through calling preset 82.

* - Please note that while the camera can support 256 presets, a large number of these are used for internal functions. Presets 80 – 103 and 170 – 173 are reserved for camera functions and cannot be used to store positions.

IMPORTANT NOTE: Preset functions are also used to access special features of the camera, and this raises one very, very important distinction: Setting a preset involves pressing the 'preset' key while calling a preset involves pressing the 'call' key. Many features require the specific function of either setting or calling a preset, and those features will not work if the wrong command is used!

Setting presets with an AU40E joystick is simple, simply type in the preset and hit the 'preset' key. With an AU40Z joystick, you must instead press the preset key first, then type in the preset number, and finally hit enter.

The camera can be set up with four 'patterns'. A pattern is a range of motion controlled by a person that can be recalled for later use. A pattern differs from a preset in that a pattern stores movements and motions, while a preset stores only a single, fixed location.

Please note that contrary to the commands indicated by the camera manual, patterns can only be set up within the menu. Setting presets 84-87 will NOT store patterns as indicated by the manual. However, to recall a pattern CALLING presets 84-87 will function as indicated. When a preset is stored, any actions entered are recorded, and when a preset is recalled those actions are performed exactly.

The camera has three different 'scan' functions. Scanning is when the unit rotates around 360 degrees. The first scan function, auto scan, rotates the unit constantly to view the surroundings. The second scan function, random scan, rotates the unit constantly with random stops as it does so. The last scan function, frame scan, rotates constantly, stopping at points defined by the user.

The final feature and perhaps the most widely-used and regarded is the motion tracking feature of the camera. The camera can be configured to follow any movement it sees. It does so in 'steps' – first the camera stops and waits for motion to appear, then when it sees motion it attempts to center itself on where it saw the motion, then stops and looks

for more. Because of this, the camera will move in short bursts when it is set up in motion tracking mode. A large amount of configuration is available for this mode, all of which is detailed in the next section. Motion tracking mode is activated by calling preset number 80.

Camera Configuration & Setup

All configuration and setup for the camera is done within the camera menu. Accessing the camera menu is done by setting preset 95.

Once in the menu, movement through the screens is done with the joystick. Tilting the joystick up/down/left/right will move the cursor around. The 'Iris Open' key functions as 'enter', and the 'Iris Close' key functions as a cancel.

The Main camera Menu consists of 4 sub-sections and 4 functions. It also has an 'exit' option. Choosing the 'Exit' option, no matter which menu or section you are in, will ALWAYS exit the menu entirely. The menu options are:

<System Information>
<Display Setup>
<Dome Settings 1>
<Dome Settings 2>
<Dome Label>
Reset Camera
Reboot System
Language
Exit

The first option, System Information, simply displays relevant information about the camera. It displays the protocol, address, and baud rate of the unit as well as the temperature of the unit. This is primarily used for the temperature, as the protocol/address/baud rate can be seen when the unit is first powered on and the language should be self-explanatory.

The second, third, and fourth options (Display Setup, Dome Settings 1, and Dome Settings 2) are sub-menus which will be explained in further detail later.

Dome Label allows you to enter a name or label for this camera. This is primarily used to identify the camera in situations where multiple EZ-TRACK units are being viewed simultaneously. This section has two options – Edit Label, and Clear Label. The label is normally displayed at the top center of the EZ-TRACK screen.

Resetting the camera will reset all menu options to their defaults, but does not erase any stored presets or patterns.

Rebooting the camera will restart the camera without needing to physically cut the power to the unit. In cases where the power cannot be easily accessed this is the best way to restart the camera.

Display Setup Submenu

Display setup primarily focuses on what is seen on the camera while it's in use. It consists of 5 options and 1 sub-menu. The five options are:

Preset Label – This option controls whether or not the preset label (ID and Label) appears on the screen while the camera is positioned at that preset.

Zone Label – If the user has any zones set up, this controls whether or not the zones appear on the screen. Zones will be discussed in further detail later on in this guide.

Zoom – Controls whether or not the current zoom setting (1x, 2x, 5x, 18x) is displayed on the screen.

Azimuth/Elevation – Controls whether or not the camera's current rotational angle/elevation angle is displayed on the screen. The 0º position normally refers to north, and will be configured later in this guide.

Camera Label – This controls whether or not the camera's dome name/label appears on the screen (See the previous section to assign a name/label).

<Label Position> - This sub-menu allows the user to move the labels above to different positions on the screen.

Dome Settings 1 Submenu

This sub-menu is used to control camera behavior and configure features of the camera. It has 7 sub-menus and one setting. The only setting that is itself on the main submenu is the 'Presets number' setting – allowing you to set the maximum number of presets to 40, 64, or 256.

Dome Settings 1 -> Camera Submenu

This submenu controls certain camera capabilities. It consists of two settings and one more submenu. The settings are:

Digital Zoom – If turned on, the camera can digitally zoom beyond the normal 18x range. Please note that the image quality may decrease when zoomed in beyond the normal 18x.

Back Light Comp – If turned on enables the Back Light Compensation feature. This feature is useful for improving visibility when the background light is very bright.

Dome Settings 1 -> Camera -> Program AE Mode

This submenu controls the Automatic Exposure settings, or how the camera reacts to different levels of light. The settings within this menu are for advanced users who understand exactly how the camera reacts to extremely specific lighting conditions and understand how changing the camera's Iris opening time affects the image produced under those specific conditions. Changing the camera options may have adverse effects upon the camera's frame rate, the quality of the image, how bright/dark the image is, or other similar concerns. In other words, change these settings at your own risk.

AE Mode – This mode controls how the exposure is handled. Automatic allows the camera to automatically open/close the iris to control the amount of light that's let in. The 'Auto' setting is ideal for 99.9% of all applications. Other settings include 'Shutter' (Which allows manual control over the IRIS opening time), 'Iris' (Which allows manual control over how wide the iris opens), 'Manual' which allows full control over the Speed and opening size of the iris as well as the Automatic Gain Control, and 'Bright' which allows for a different algorithm for controlling the Iris.

Low Light Mode – Auto allows the camera to control the low light mode, while Manual allows the user to configure the Low Light limit.

Low Light Limit – Selects the maximum amount of time that the iris is open when in 'low light' mode. Adjusting this could adversely affect the frame rate of the camera.

Iris Level – Selects the amount of time that the iris is open when in normal mode. Adjusting this could adversely affect the frame rate of the camera.

AGC Level – Manually allows the user to increase the gain of the video signal. Adjusting this could adversely affect the camera's image quality.

Bright Level – Allows the camera to automatically control the camera gain and iris opening using a unique algorithm.

Spot AE – This function controls whether or not the Automatic Exposure looks at the center of the image or the image as a whole when adjusting the exposure settings. Adjusting this may enhance or detract image quality depending on whether or not the camera is looking at an object that is brighter/darker than its surroundings.

Dome Settings 1 -> Motion Submenu

These settings control how the camera moves and acts while moving. It consists of 5 settings and 4 sub-menus.

Auto Flip – This setting allows the camera to automatically rotate and flip when it is rotating downwards. If it's off, and the customer rotates the camera down, the camera stops when looking straight down. If it's on, and the customer rotates the camera down, when it reaches straight down it rotates 180 degrees and continues up the opposite side, allowing for better tracking of a person moving beneath the camera.

Proportional pan – This setting tells the camera to rotate slower when zoomed in, allowing for much finer control over the view. If the setting is off then it will rotate just as fast no matter how far zoomed in or out it is.

Park Time – This setting tells the camera how long to wait with no input before performing the 'park action'. This is so that after being taken over for manual control, it can resume a previous action uninterrupted. Adjustable 15 seconds to 12 hours.

Park Action – This setting tells the camera what to do after the park time elapses. Valid options are None, Auto Scan, Random Scan, Frame Scan, go to Preset 1 or 8, begin following Patterns 1 through 4, Auto-Cruise through presets, Begin Motion Tracking, or Repeat Last. Repeat last tells the camera to perform whatever action it was doing before it was interrupted with manual control.

Scan Speed – How fast the camera rotates when in Auto, Random, and Frame Scan modes. It can be set from 1 to 32 degrees per second.

Set Scan – This sub-menu allows you to set where the camera will stop when in Frame Scan mode.

Manual Limit – This allows you to set a manual left/right limit when controlling the camera. This limit does not affect presets, scanning, or motion tracking but will prevent a person controlling the camera with the joystick from moving further left or right.

Azimuth Zero – This function allows the user to tell the camera what direction the rotation degree 0 is. This affects the azimuth display on the camera which shows what rotation degree the camera is currently facing.

Dome Settings 1 -> Power Up Submenu

This submenu allows the user to configure what action the camera takes when first turned on.

None will instruct the camera to wait until action is initiated by the user.
Auto/Fame/Random scan instructs the camera to perform that scan when first turned on.
Preset 1/Preset 8 instructs the camera to rotate to one of those positions.
Pattern 1-4 instructs the camera to follow one of the four patterns.
Cruise instructs the camera to perform a preset cruise.
Tracking instructs the camera to begin motion tracking.

Dome Settings 1 -> Presets Submenu

This submenu allows the user to configure presets by storing a new preset (As an alternative to storing them by using the 'preset' button), modifying an already-stored preset, removing an individual preset, or giving the preset a name/label.

The first option, Preset Number, allows you to select which preset you're configuring. This menu can configure Presets 1 through 64.

The second option, Edit Preset Label, allows you to enter a name or label for the preset that will be displayed when the camera is viewing that preset position.

The third option, Edit Preset Scene, is used to set or modify the location of a preset position.

The last option, Clear Preset, allows you to delete a preset from memory.

Dome Settings 1 -> Patterns Submenu

This sub-menu allows you to program or clear a pattern from memory. A pattern is a series of actions that are recorded and then followed once completed. This could be a sequence of rotation/zoom and going to presets in any combination.

Programming a pattern is done from within this menu. Select the pattern (1 through 4 available), select Program Pattern, and perform the actions you wish duplicated. The pattern can later be recalled by calling a preset (Presets 84 through 87 reference patterns 1 through 4 respectively), by setting a pattern as a park/power on action, or by triggering an external alarm relay.

Clear pattern allows you to remove one of the patterns from the camera memory.

Dome Settings 1 -> Zones Submenu

A zone is an area of the camera's rotation with a custom label. Zones do not control camera functionality or capabilities, and exist only as a labeled area to organize locations the camera has labeled. The system may have up to 8 zones, and zones are assigned by left and right limits.

Zone Number allows you to select which zone to edit.

Edit Zone Label allows you to enter the label/name that will appear on the camera screen while the camera is facing a location in that zone.

Edit Zone allows you to set the left and right limits for the zone.

Zone Enabled allows you to turn the label on and off for individual zones without turning the labels off for all zones (That feature can be done under Display Setup, earlier in this guide).

Clear Zone will remove a zone from memory.

Dome Settings 1 -> Clear Set Submenu

The clear set submenu is used to remove items from the camera memory, and most importantly, to reset the camera back to its factory default settings. It has four selections.

Clear Zones allows you to remove every single zone from the camera simultaneously.

Clear Presets allows you to remove every single preset from the camera simultaneously. This can also be done by setting Preset 83.

Clear Patterns allows you to remove every single pattern from the camera simultaneously.

Restore Factory Defaults allows you to completely reset the camera. This setting removes every single zone, preset, pattern, label, and everything else from the camera memory while simultaneously resetting every single menu option back to the default.

Dome Settings 2 Submenu

The Dome Settings 2 submenu has additional configuration settings for the camera's advanced features, such as Window Blanking, Cruise Settings, and Motion Tracking settings. It contains 7 submenus and no direct settings.

Dome Settings 2 -> Alarms Submenu

The Camera has built in to itself four alarm inputs which allow an external relay device to trigger the camera to perform certain actions, and two alarm outputs which allow the camera to trigger an external relay (For an alarm or lighting system, for example). The alarms submenu allows you to configure the behavior of the four alarm inputs.

Alarm Number 1-4 allows you to select which input you're configuring.

Alarm Action specifies what action the camera will take when triggered. The options it gives are as follows:

None – No action taken
Preset – Go to the preset associated with the alarm number (IE : Alarm 1 goes to Preset 1, Alarm 2 goes to Preset 2, etc.)
Pattern – Perform the pattern associated with the alarm number.
Auto/Random/Frame Scan – Perform the specified scan.
Cruise – Begin 'Cruise' setting through programmed presets.
Tracking – Begin Motion Tracking.

Alarm Aux allows that alarm to trigger one of the two relay outputs, such as a light or siren.

Alarm Contact On/Off – Allows you to set if the alarm is normally open (On) or normally closed (Off).

Dome Settings 2 -> Aux Submenu

This submenu controls the behavior of the two alarm outputs built in to the camera. The two alarm outputs are used to trigger an external relay device. This menu controls how long that device stays triggered by the camera.

Dwell Time 1 or 2 – This allows you to set the time, in seconds, that the AUX 1 or 2 outputs stays triggered. This will accept a value of 0 to 30 seconds.

Dome Settings 2 -> Password Submenu

This menu allows you to set a password to be able to access the camera menu. The default password is '0000'.

Enable Password – This controls if the password is turned on or not. If the password is turned on, then the password must be entered to be able to access the configuration menu. When the menu is opened a password entry field will be displayed.

Edit Password – This allows entry of a password. The new password may be up to 10 digits long, maximum. The password will need to be entered twice to ensure no typos or mistakes are made during entry.

IMPORTANT NOTE: Please be certain not to lose or forget the password, as you cannot access the menu to disable the password or reset to factory defaults without it!

Dome Settings 2 -> Windows Blanking Submenu

To ensure privacy, this camera has a feature which allows you to 'blank' out an area to prevent people from seeing in. This feature is called Windows Blanking. Up to eight areas may be selected to be blanked out.

Style – This option allows you to select between two different kinds of window blanking, Gray or Smear. Gray blanking produces an area which is entirely concealed by an opaque color (Specified Below), while Smear simply blurs the area to a semi-transparent state through which no details can be observed.

Blank All Above – This option allows you to blank out the upper portion of the frame shown.

Blank All Below – This option allows you to blank out the lower portion of the frame shown.

Set Windows – This option allows you to create a custom rectangular area to be blocked out. Up to 8 areas may be blanked out and are defined (Or deleted) within this option.

Set Mask Color – This allows you to select what color is displayed in the blanked-out area when set to the 'Gray' style. The colors are as follows:

0 – Black
1-6 – Grey (Dark to Light)
7 – White
8 – Red
9 – Green
10 – Blue
11 – Cyan
12 – Yellow
13 – Magenta

Dome Settings 2 -> Heater Submenu

The camera has a built-in heater and blower designed to regulate temperature and ensure the camera functions in extreme weather. This menu controls those functions.

Heater Display – If this option is turned on, the word 'Heater' will display on the screen when the heater is enabled. Irregardless of this setting, nothing will be shown on the screen if the heater is turned off.

Heater Mode – Auto allows the camera to control its own heater, off ensures it's always turned off while on forced it to be on all the time.

Temperature Set – This setting controls the threshold (In ºC) under which the heater is activated. Recommended values are 18-20 ºC. Setting the threshold lower may result in camera fogging or condensation buildup.

Dome Settings 2 -> Cruise Submenu

This menu controls the 'cruise' function of the camera. The cruise function allows the camera to move from preset 1, to 2, to 3, and so on in sequence (up to 30 max), delaying a short time between each move.

Dwell Time – This setting indicates how long the camera should wait (in seconds) from 5 to 250 after each move before moving to a new location.

Preset List – This selects which bank of 10 presets is being configured for the cruise. 1 corresponds to presets 1-10, 2 is 11-20, and 3 is 21-30.

Below the preset list is a configuration system allowing the user to customize which presets are included in the cruise and which are not included. The top row is the preset # in the bank (IE: If the 'Preset List' setting is at 1 then the top row corresponds to presets 1 through 10. If the Preset List setting is at 2 then the top row corresponds to presets 21 through 20.)

The bottom row indicates if that preset is part of the cruise or not, with the number 0 if it is not included in the cruise and the number 1 if it is. A cruise that has only presets 3, 5, and 10 included would read "0 0 1 0 1 0 0 0 0 1" on the bottom row. If all presets are to be included then all 10 of the bottom numbers should be set to '1'.

Dome Settings 2 -> Tracking Submenu

The final submenu controls the behavior of the Motion Tracking feature of the camera. Because of the large amount of configuration available for this feature, it includes its own reset at the top (Default Setting) specific to the Motion Tracking Settings.

Size Sensitivity – This controls how big an object must be to be tracked. This indicates how large an object must be on the screen for the tracking to follow it. An object larger

than ¼ of the screen is LARGE, while an object smaller than 1/8th of the screen is SMALL. Everything else falls within MEDIUM.
Gray Sensitivity – This feature configures how sensitive the camera is to contrasting colors – it is designed to help prevent false alerts from similar-colored items moving near each other (Such as a cloth rustling in a breeze or leaves moving together on a tree).

Lost Act – When the camera no longer 'sees' motion, it will perform a Lost Action. This action can be one of three things – Stop Tracking turns the motion tracking off, Keep Tracking continues to look for motion in the last position the camera saw any, and 'To Home & Track' instructs the camera to return to Preset 1 and begin looking for motion in that position.

Zoom Setting – The camera can zoom in on motion when it sees it. This setting allows you to provide a maximum zoom level, so it does not attempt to zoom in too much when following motion.

Wait Time – This is how long the camera must not see motion before performing the Lost Act.

Tracking Boundary – This allows you to set left, right, up, and down boundaries for the tracking system so you can ensure it does not track someone too far in any direction and get 'stuck' facing a blank area or facing an always-moving object (Such as a tree in the wind).

Aux – This allows the camera to trigger one of its two relay outputs when it begins tracking motion.

Tracking Speed – The camera can either automatically move at the speed it feels best to follow the target, or it can be specified to always track at a specific speed. It is configurable from 1 (slow) to 63 (fast).

Tracking Time – This allows the camera to have a hard limit of how long it should track an object. It can be set from 1 to 15 minutes. If it is set to auto, there is no limit. Once the time limit for tracking has been reached, the camera will automatically perform the 'Lost Act'.

Appendix A – Camera Switch Settings

SW01 – Camera Protocol (Switches 1-4 only)

Protocol	Dip1	Dip2	Dip3	Dip4	Dip5	Dip6	Dip7	Dip8
Nanwang	On	Off	Off	Off				
Pelco-P	Off	On	Off	Off				
Pelco-D	On	On	Off	Off				
Kalatel	Off	Off	On	Off				

SW01 – Camera Baud Rate (Swithces 5-8 only)

Baud Rate	Dip1	Dip2	Dip3	Dip4	Dip5	Dip6	Dip7	Dip8
1200 BPS					On	Off	Off	Off
2400 BPS					Off	On	Off	Off
4800 BPS					On	On	Off	Off
9600 BPS					Off	Off	On	Off
19200 BPS					On	Off	On	Off

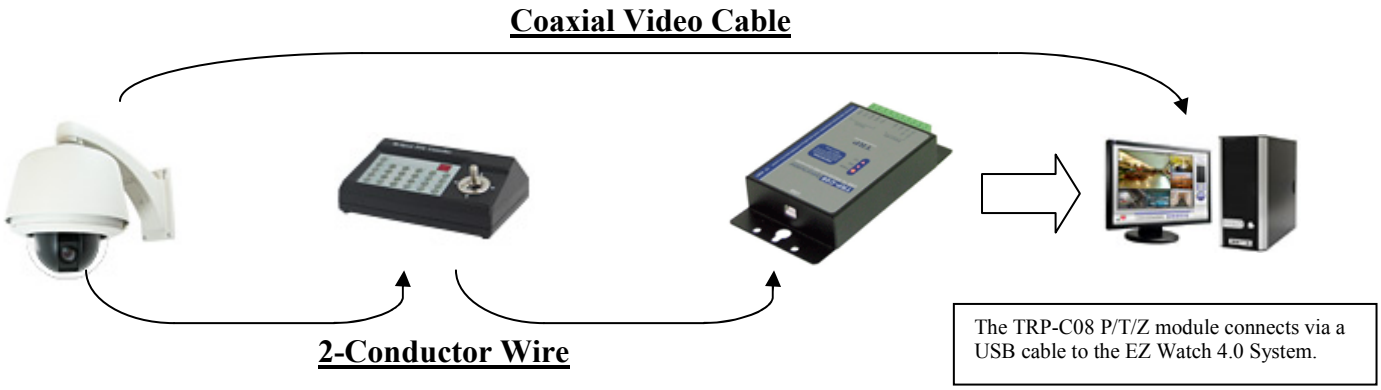
SW02 – Camera Address (SEE NOTE BELOW)

Address	Dip1	Dip2	Dip3	Dip4	Dip5	Dip6	Dip7	Dip8
0	Off	Off	Off	Off	Off	Off	Off	Off
1	On	Off	Off	Off	Off	Off	Off	Off
2	Off	On	Off	Off	Off	Off	Off	Off
3	On	On	Off	Off	Off	Off	Off	Off
4	Off	Off	On	Off	Off	Off	Off	Off
5	On	Off	On	Off	Off	Off	Off	Off
6	Off	On	On	Off	Off	Off	Off	Off
7	On	On	On	Off	Off	Off	Off	Off
8	Off	Off	Off	On	Off	Off	Off	Off
9	On	Off	Off	On	Off	Off	Off	Off
10	Off	On	Off	On	Off	Off	Off	Off
11	On	On	Off	On	Off	Off	Off	Off
12	Off	Off	On	On	Off	Off	Off	Off
13	On	Off	On	On	Off	Off	Off	Off
14	Off	On	On	On	Off	Off	Off	Off
15	On	On	On	On	Off	Off	Off	Off

NOTE – The camera must be addressed as one number BELOW the camera number in the controller! Camera 1 within the controller will correspond to address 0 on the camera. Failure to address the camera properly will result in an inability to control the camera, or may result in controlling an incorrect camera.

Appendix B – Wiring/Setup Guide

EZ Watch Pro 4.0 P/T/Z Set up :



To connect the EZ-TRACK camera to an EZ Watch Pro 4.0 System, you will need to connect two wires from the camera (The RS485 Positive and Negative wires) to the joystick controller. The wires will need to be run directly from the joystick to the RS485 Positive and Negative ports on the back of the joystick. Always match positive to positive and negative to negative.

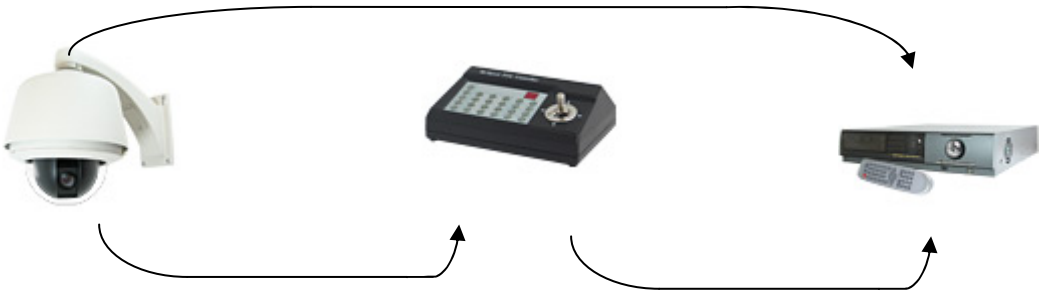
Install the TRP-C08 P/T/Z control module by connecting the included USB Cable from the P/T/Z module to an available USB port on your computer. Run another pair of wires from the joystick to the TRP-C08 module. The wire coming from the RS485 Positive port on the joystick needs to be connected to the 'TX+/D+' port on the TRP-C08 controller. The wire coming from the RS485 Negative port on the joystick needs to be connected to the 'TX-/D-' port on the controller.

Equipment Needed :

- P/T/Z Camera
- P/T/Z Joystick (Optional, but highly recommended)
- TRP-C08 P/T/Z Control Module w/ USB cable
- EZ Watch Pro 4.0 DVR
- 2-Conductor twisted pair wire used to run communication from the camera to the joystick, and to run from the joystick to the TRP-C08 module.

Armor-Pro Standalone P/T/Z Set up :

Coaxial Video Cable



2-Conductor Wire

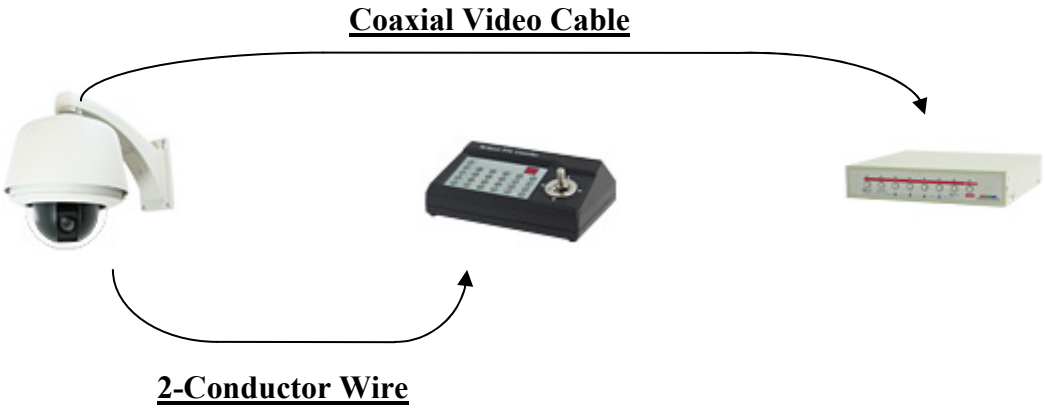
To connect the EZ-TRACK camera to an Armor Pro Standalone DVR, you will need to connect two wires from the camera (The RS485 Positive and Negative wires) to the joystick controller. The wires will need to be run directly from the joystick to the RS485 Positive and Negative ports on the back of the joystick. Always match positive to positive and negative to negative.

Run another pair of wires from the Positive and Negative RS485 ports on the joystick to the RS485 ports located on the back of the Armor Pro unit. The wire from the positive port on the joystick needs to run to the RS485 + port, and the negative port on the joystick needs to run to the RS485 – port. If you have a 16-channel Armor Pro unit, the ports are labeled A (positive) and B (negative).

Equipment Needed :

- P/T/Z Camera
- P/T/Z Joystick (Optional, but highly recommended)
- Armor Pro Standalone 4-channel or 16-channel DVR
- 2-Conductor twisted pair wire used to run communication from the camera to the joystick, and to run from the joystick to the Standalone DVR.

Multiplexer or DVR without P/T/Z Control :



To connect the EZ-TRACK camera to a recorder or multiplexer that does not provide its own Pan/Tilt/Zoom control, a P/T/Z joystick is required. Connect the video cable from the camera to the recorder/multiplexer, then connect two wires from the camera (The RS485 Positive and Negative wires) to the joystick controller. The wires will need to be run directly from the joystick to the RS485 Positive and Negative ports on the back of the joystick. Always match positive to positive and negative to negative.

Equipment Needed :

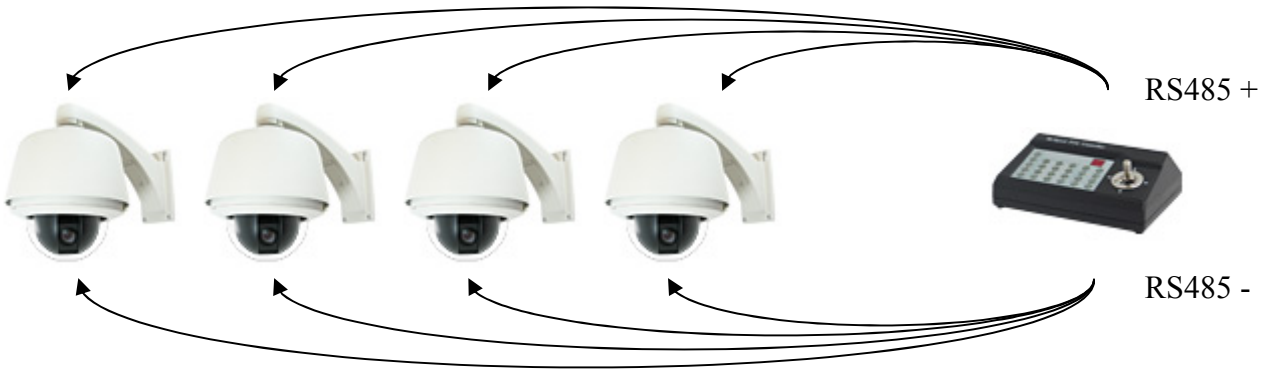
- P/T/Z Camera
- P/T/Z Joystick
- Multiplexer or recording/monitoring device
- 2-Conductor twisted pair wire used to run communication from the camera to the joystick.

Connecting Multiple P/T/Z cameras to a single joystick/DVR :

Daisy Chain Communication :

Run a cable from the RS485 +/- ports on the joystick to the corresponding wires on the first camera. Then run a cable from the RS485 +/- wires on the first camera to the second, and from the second to the third, etc. This is ideal for cameras that are spaced close together to each other, but may be far away from the joystick individually.

Star Communication :



Run a cable individually from the RS485 + / - ports on the joystick to the corresponding wire on each of the cameras. This is ideal for cameras that are placed far apart from one another but are near the joystick.

Camera Wiring FAQ :

Q. If I am using an EZ Watch Pro or Armor Pro DVR Kit, why do I need a joystick?

A: The EZ Watch Pro and Armor Pro DVR units have full P/T/Z functionality but limited preset functionality. They can call any preset at all, however setting presets and using Iris Open/Close functions require a joystick to use. This means that without the joystick, you cannot enter the menu or perform functions within the menu.

By connecting wires to both the Joystick and the DVR controller, you gain the most amount of control possibly, by allowing yourself to use the joystick for configuration and local control, but still allowing remote control using the DVR system (From the DVR or over the internet).

Q. Can I use the EZ Track dome with another brand of DVR?

A: So long as the DVR supports the PELCO-P communication protocol and the 9600 baud rate, it should function. To be able to fully control the camera it also needs to have the ability to both set and recall presets above 64 (Many DVR units call 1-32 or 1-64), as well as have full iris control for menu configuration.

Q. What are the maximum lengths of cable which can be used with the EZ-TRACK?

Video Cable :

RG59 Coaxial	RG6 Coaxial	Twisted Pair Balun (Unpowered)	Twisted Pair Balun (Powered)	Fibre Optic
~500 Feet	~1000 feet	1500-2000 feet	3000-3500 feet	5000+ feet

Power Cable :

12-Gauge Wire	14-Gauge Wire	16-Gauge Wire	18-Gauge Wire
~320 Feet	~225 Feet	~150 Feet	~90 Feet

Control Cable :

24-Gauge	22-Gauge	Fiber Optic
~5000 Feet	~4500 Feet	5000 + Feet