# Camera control command list

# VISCA,Pelco-D,Pelco-P

# Version:1106

# The release date：2019-05-31

# VISCA

##### Instruction format

|  |  |  |  |
| --- | --- | --- | --- |
| Command | Format | Reply | Comments |
| Control Command | 8x 01 04 38 02 FF | y0 41 FF  y0 51 FF | Returns ACK when a command has been accepted,and Completion when a command has been executed |
| Inquiry Command | 8x 09 04 38 FF | y0 50 02 FF | ACK is not returned for the inquiry command |

x:device address

y: device address +8

##### Reply

|  |  |  |
| --- | --- | --- |
| Type | Format | Comments |
| ACK | Z0 4y FF | Returned when the command is accepted |
| Completion | Z0 5y FF | Returned when the command is executed |
| Error | Z0 60 02 FF | Returned when the command format is different or when a command with illegal command parameters is accepted |

Z= device address +8

##### control command:

|  |  |  |  |
| --- | --- | --- | --- |
| Type | Function | Command Packet | Comments |
| Address | Address Set | 88 30 0p FF | p: device address |
| Address Clear | 88 01 00 01 FF |  |
| CAM\_Power | On | 8x 01 04 00 02 FF |  |
| Off | 8x 01 04 00 03 FF |
| CAM\_Initialize | Lens | 8x 01 04 19 01 FF |  |
| CAM\_Zoom | Stop | 8x 01 04 07 00 FF |  |
| Tele(Standard) | 8x 01 04 07 02 FF |
| Wide(standard) | 8x 01 04 07 03 FF |
| Tele(Variable) | 8x 01 04 07 2p FF | P=0(Low)~7(High) |
| Tele( Variable ) | 8x 01 04 07 3p FF |
| Direct | 8x 01 04 47 0p 0q 0r 0s FF | pqrs:Zoom Position |
| CAM\_DZoom | On | 8x 01 04 06 02 FF |  |
| Off | 8x 01 04 06 03 FF |
| CAM\_Focus | Auto Focus | 8x 01 04 38 02 FF |  |
| Manual Foucs | 8x 01 04 38 03 FF |
| Stop | 8x 01 04 08 00 FF |
| Far(Standard) | 8x 01 04 08 02 FF |
| Near(Standard) | 8x 01 04 08 03 FF |
| Far(Variable) | 8x 01 04 08 2p FF | P=0(Low)~7(High) |
| Near( Variable ) | 8x 01 04 08 3p FF |
| Direct | 8x 01 04 48 0p 0q 0r 0s FF | pqrs:Focus Position |
| AF Sensitivity | Normal | 8x 01 04 58 02 FF |  |
| Low | 8x 01 04 58 03 FF |
| CAM\_WB | Auto | 8x 01 04 35 00 FF |  |
| Indoor | 8x 01 04 35 01 FF |
| Outdoor | 8x 01 04 35 02 FF |
| One Push WB | 8x 01 04 35 03 FF |
| ATW | 8x 01 04 35 04 FF |
| Manual | 8x 01 04 35 05 FF |
| One Push Trigger | 8x 01 04 10 05 FF | One Push WB Trigger |
| CAM\_RGain | Reset | 8x 01 04 03 00 FF | Manual Control of R Gain |
| Up | 8x 01 04 03 02 FF |
| Down | 8x 01 04 03 03 FF |
| Direct | 8x 01 04 43 00 00 0p 0q FF | pq:R Gain |
| CAM\_BGain | Reset | 8x 01 04 04 00 FF | Manual Control of B Gain |
| Up | 8x 01 04 04 02 FF |
| Down | 8x 01 04 04 03 FF |
| Direct | 8x 01 04 44 00 00 0p 0q FF | pq:B Gain |
| CAM\_AE | Full Auto | 8x 01 04 39 00 FF |  |
| Manual | 8x 01 04 39 03 FF |
| Shutter Priority | 8x 01 04 39 0A FF |
| Iris Priority | 8x 01 04 39 0B FF |
| Bright | 8x 01 04 39 0D FF |
| CAM\_Shutter | Reset | 8x 01 04 0A 00 FF |  |
| Up | 8x 01 04 0A 02 FF |
| Down | 8x 01 04 0A 03 FF |
| Direct | 8x 01 04 4A 00 00 0p 0q FF | pq:Shutter Position |
| CAM\_Iris | Reset | 8x 01 04 0B 00 FF |  |
| Up | 8x 01 04 0B 02 FF |
| Down | 8x 01 04 0B 03 FF |
| Direct | 8x 01 04 4b 00 00 0p 0q FF | pq:Iris Position |
| CAM\_Gain | Reset | 8x 01 04 0C 00 FF |  |
| Up | 8x 01 04 0C 02 FF |
| Down | 8x 01 04 0C 03 FF |
| Direct | 8x 01 04 4C 00 00 0p 0q FF | pq:Gain Position |
| CAM\_Bright | Reset | 8x 01 04 0D 00 FF |  |
| Up | 8x 01 04 0D 02 FF |
| Down | 8x 01 04 0D 03 FF |
| Direct | 8x 01 04 4D 00 00 0p 0q FF | pq:Bright Position |
| CAM\_ExpComp | On | 8x 01 04 3E 02 FF |  |
| Off | 8x 01 04 3E 03 FF |
| Up | 8x 01 04 0E 02 FF |  |
| Down | 8x 01 04 0E 03 FF |
| Direct | 8x 01 04 4E 00 00 0p 0q FF | pq:ExpComp Position |
| CAM\_Bcaklight | On | 8x 01 04 33 02 FF |  |
| Off | 8x 01 04 33 03 FF |
| CAM\_NR | 3D Noise Reduction | 8x 01 04 53 0p FF | p:0:off ,1:Auto,2~5:level |
| CAM\_Aperture | Reset | 8x 01 04 02 00 FF | pq:Aperture Position |
| Up | 8x 01 04 02 02 FF |
| Down | 8x 01 04 02 03 FF |
| Direct | 8x 01 04 42 00 00 0p 0q FF |
| CAM\_Gamma | Type | 8x 01 04 5B 0p FF | p:0~4 |
| Offset | 8x 01 04 1E 00 00 00 0s 0t 0u FF | s:0 plus,1minus tu:00h~40h |
| CAM\_ColorGain | Direct | 8x 01 04 49 00 00 00 0p FF | p:0h~Eh |
| CAM\_ImageStabilizer | On | 8x 01 04 34 04 FF |  |
| Off | 8x 01 04 34 03 FF |  |
| CAM\_ColorHue | Direct | 8x 01 04 4F 00 00 00 0p FF | P:0h~Eh |
| CAM\_Defog | On | 8x 01 04 37 02 0p FF | p:0h~Fh |
| Off | 8x 01 04 37 03 00 FF |
| CAM\_PictureFlip | On | 8x 01 04 66 02 FF |  |
| Off | 8x 01 04 66 03 FF |
| CAM\_LR\_Reverse | On | 8x 01 04 61 02 FF |  |
| Off | 8x 01 04 61 03 FF |
| CAM\_Mute | On | 8x 01 04 75 02 FF |  |
| Off | 8x 01 04 75 03 FF |
| CAM\_Freeze | On | 8x 01 04 62 02 FF |  |
| Off | 8x 01 04 62 03 FF |
| CAM\_Display | On | 8x 01 04 15 02 FF |  |
| Off | 8x 01 04 15 03 FF |
| CAM\_Memory | Reset | 8x 01 04 3F 00 pq FF | pq:0h~7Fh |
| Set | 8x 01 04 3F 01 pq FF |
| Recall | 8x 01 04 3F 02 pq FF |
| CAM\_Register Value |  | 8x 01 04 24 mm 0p 0q FF | mm: Register NO.(00h~7fh)  pq: Register Value(00h~ffh) |
| CAM\_Saturation | Direct | 8x 01 04 A1 00 00 0p 0q FF | pq:00h-0Fh |
| CAM\_Contrast | Direct | 8x 01 04 A2 00 00 0p 0q FF | pq:00h-0Fh |
| CAM\_NewBright | Direct | 8x 01 04 A4 00 00 0p 0q FF | pq:00h-0Fh |
| Pan\_Tilt Driver | Up | 8x 01 06 01 vv ww 03 01 FF | vv:Pan Speed 01~18h  ww:Tilt Speed01~18h  pqrs:Pan Position  tuxy:Tilt Position |
| Down | 8x 01 06 01 vv ww 03 02 FF |
| Left | 8x 01 06 01 vv ww 01 03 FF |
| Right | 8x 01 06 01 vv ww 02 03 FF |
| Absolute Position | 8x 01 06 02 vv ww 0p 0q 0r 0s 0t 0u 0x 0y FF |
| Relative Position | 8x 01 06 03 vv ww 0p 0q 0r 0s 0t 0u 0x 0y FF |
| Home | 8x 01 06 04 FF |
| Reset | 8x 01 06 05 FF |
| Menu | Open | 8x 01 06 06 02 FF |  |
| Exit | 8x 01 06 06 03 FF |
| Open/Back | 8x 01 06 06 10 FF |
| Enter | 81 01 7E 01 02 00 01 FF |
| Display Battery | On | 8x 01 07 11 02 FF |  |
| Off | 8x 01 07 11 03 FF |
| Auto Trace | On | 8x 01 07 12 02 FF |  |
| Off | 8x 01 07 12 03 FF |
| human body mark | On | 8x 01 07 13 02 FF |  |
| Off | 8x 01 07 13 03 FF |  |
| Pan Reverse | On | 8x 01 07 21 02 FF |  |
| Off | 8x 01 07 21 03 FF |
| Tilt Reverse | On | 8x 01 07 22 02 FF |  |
| Off | 8x 01 07 22 03 FF |
| DHCP | On | 8x 01 07 23 00 02 FF |  |
| Off | 8x 01 07 23 00 03 FF |
| IP | IP Address | 8x 01 07 23 01 0p 0q 0r 0s 0t 0u 0v 0w FF | pq rs tu vw : IP Address/ Mask/Gateway |
| Mask | 8x 01 07 23 02 0p 0q 0r 0s 0t 0u 0v 0w FF |
| Gateway | 8x 01 07 23 03 0p 0q 0r 0s 0t 0u 0v 0w FF |

##### Inquiry Command

|  |  |  |  |
| --- | --- | --- | --- |
| Function | Command | Reply | Comments |
| CAM\_PowerInq | 8x 09 04 00 FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| CAM\_ZoomPosInq | 8x 09 04 47 FF | y0 50 0p 0q 0r 0s FF | pqrs:Zoom Position |
| CAM\_DZoomModeInq | 8x 09 04 06 FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| CAM\_FocusModeInq | 8x 09 04 38 FF | y0 50 02 FF | Auto Focus |
| y0 50 03 FF | Manual Focus |
| AF SensitivityInq | 8x 09 04 58 FF | y0 50 02 FF | AF Sensitivity Normal |
| y0 50 03 FF | AF Sensitivity Low |
| CAM\_WBModeInq | 8x 09 04 35 FF | y0 50 00 FF | Auto |
| y0 50 01 FF | Indoor |
| y0 50 02 FF | Outdoor |
| y0 50 03 FF | One Push WB |
| y0 50 04 FF | ATW |
| y0 50 05 FF | Manual |
| CAM\_RGainInq | 8x 09 04 43 FF | y0 50 00 00 0p 0q FF | pq: R Gain |
| CAM\_BGainInq | 8x 09 04 44 FF | y0 50 00 00 0p 0q FF | pq:B Gain |
| CAM\_AEModeInq | 8x 09 04 39 FF | y0 50 00 FF | Full Auto |
| y0 50 03 FF | Manual |
| y0 50 0A FF | Shutter Priority |
| y0 50 0B FF | Iris Priority |
| y0 50 0D FF | Bright |
| CAM\_ShutterPosInq | 8x 09 04 4A FF | y0 50 00 00 0p 0q FF | pq:Shutter Position |
| CAM\_IrisPosInq | 8x 09 04 4B FF | y0 50 00 00 0p 0q FF | pq:Iris Position |
| CAM\_GainPosInq | 8x 09 04 4C FF | y0 50 00 00 0p 0q FF | pq:Gain Position |
| CAM\_BrightPosInq | 8x 09 04 4D FF | y0 50 00 00 0p 0q FF | pq:Bright Position |
| CAM\_ApertureInq | 8x 09 04 42 FF | y0 50 00 00 0p 0q FF | pq:Aperture Gain |
| CAM\_ExpCompModeInq | 8x 09 04 3E FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| CAM\_ExpCompPosInq | 8x 09 04 4E FF | y0 50 00 00 0p 0q FF | pq:ExpComp Position |
| CAM\_BackLightModeInq | 8x 09 04 33 FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| CAM\_GammaInq | 8x 09 04 5B FF | y0 50 0p FF | p:0~4 |
| CAM\_GammaOffsetInq | 8x 09 04 1E FF | y0 50 00 00 00 0s 0t 0u FF | s:0 plus,1minus  tu:00h~40h |
| CAM\_ColorGainInq | 8x 09 04 49 FF | y0 50 00 00 00 0p FF | p:0h~Eh |
| CAM\_ColorHueInq | 8x 09 04 4F FF | y0 50 00 00 00 0p FF | P:0h~Eh |
| CAM\_NRInq | 8x 09 04 53 FF | y0 50 0p FF | p: 00h~05h,7fh |
| CAM\_DefogInq | 8x 09 04 37 FF | y0 50 02 0p FF | p:0~4 |
| y0 50 03 00 FF |
| CAM\_PictureFlipModeInq | 8x 09 04 66FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| CAM\_LR\_ReverseModeInq | 8x 09 04 61 FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| CAM\_MuteModeInq | 8x 09 04 75 FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| CMA\_FreezeModeInq | 8x 09 04 62 FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| CAM\_DisplayModeInq | 8x 09 04 15 FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| CAM\_ImageStabilizer | 8x 09 04 34 FF | y0 50 04 FF | On |
| y0 50 03 FF | Off |
| CAM\_MemoryInq | 8x 09 04 3F FF | y0 50 pq FF | pp:Memory Number recalled last |
| CAM\_RegisterValueInq | 8x 09 04 24 mm FF | y0 50 0p 0q FF | mm:Register NO.(00h~7Fh)  pq: RegisterValue(00h~FFh) |
| CAM\_Saturation | 8x 09 04 A1 FF | y0 50 00 00 0p 0q FF | pq:Saturation Position |
| CAM\_Contrast | 8x 09 04 A2 FF | y0 50 00 00 0p 0q FF | pq:Constrast Position |
| CAM\_NewBright | 8x 09 04 A4 FF | y0 50 00 00 0p 0q FF | pq:Brightness Position |
| Pan\_TiltPosInq | 8x 09 06 12 FF | y0 50 0p 0q 0r 0s 0t 0u 0v 0w FF | pqrs:Pan Position  tuvw:Tilt Position |
| Menu | 8x 09 06 06 FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| CAM\_VersionInq | 8x 09 07 00 FF | y0 50 pq rs FF | pqrs:Version |
| Power\_Battery | 8x 09 07 10 FF | y0 50 0p 0q FF | pq:00h-64h |
| Display Battery | 8x 09 07 11 FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| Auto Trace | 8x 09 07 12 FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| human body mark | 8x 09 07 13 FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| CAM\_MemoryUsed | 8x 09 07 20 FF | y0 50 0p(0) 0p(1) …0p(31) FF | p:0h-Fh  when NO.n 0p was selected  p:1 the Memory Number 0+4\*n was used  p:2 the MN 1+4\*n was used  p:4 the MN 2+4\*n was used  p:8 the MN 3+4\*n was used |
| Tilt Reverse | 8x 09 07 21 FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| Pan Reverse | 8x 09 07 22 FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| DHCP | 8x 09 07 23 00 FF | y0 50 02 FF | On |
| y0 50 03 FF | Off |
| Ip Address | 8x 09 07 23 01 FF | y0 50 0p 0q 0r 0s 0t 0u 0v 0w FF | pq rs tu vw :ip Address/Mask /Gateway |
| Mask | 8x 09 07 23 02 FF | y0 50 0p 0q 0r 0s 0u 0v 0w 0x FF |
| Gateway | 8x 09 07 23 03 FF | y0 50 0p 0q 0r 0s 0u 0v 0w 0x FF |

##### Appendix

|  |  |  |
| --- | --- | --- |
| **Register NO.** | **Value** | **Video Format** |
| 72 | 0x11 | 1280x720 25p |
| 0x0E | 1280x720 29p |
| 0x0F | 1280x720 30p |
| 0x0C | 1280x720 50p |
| 0x09 | 1280x720 59p |
| 0x0A | 1280x720 60p |
| 0x08 | 1920x1080 25p |
| 0x06 | 1920x1080 29p |
| 0x07 | 1920x1080 30p |
| 0x14 | 1920x1080 50p |
| 0x13 | 1920x1080 59p |
| 0x15 | 1920x1080 60p |
| 0x04 | 1920x1080 50i |
| 0x01 | 1920x1080 59i |
| 0x02 | 1920x1080 60i |
| 0x1E | 3840x2160 25p |
| 0x1D | 3840x2160 30p |

The NO.72 register is used to adjust the resolution, and the register value corresponds to the blank above, Some models only support partial resolution

# Pelco-D

##### Instruction format

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Byte1 | Byte2 | Byte3 | Byte4 | Byte5 | Byte6 | Byte7 |
| Synch Byte | Address | Command 1 | Command 2 | Data 1 | Data 2 | Check |

1. Synch Byte:FF

2.Address:camera logical address number, address range: 00H - FFH

3. The instruction code shows different actions

4. The data code table indicates the corresponding parameters

5.Check Code =（Byte2+Byte3+Byte4+Byte5+Byte6）/100H

##### Control Instruction

|  |  |  |  |
| --- | --- | --- | --- |
| Type | Function | Instruction | Comments |
| PanTtilt Driver | Up | FF 01 00 08 00 yy cc | xx:Pan Speed(00h-3fh)  yy:Tilt Speed(00h-3fh) |
| Down | FF 01 00 10 00 yy cc |
| Left | FF 01 00 04 xx 00 cc |
| Right | FF 01 00 02 xx 00 cc |
| CAM\_Zoom | Wide | FF 01 00 40 00 00 41 |  |
| Tele | FF 01 00 20 00 00 21 |
| CAM\_Focus | Near | FF 01 01 00 00 00 02 |  |
| Far | FF 01 00 80 00 00 81 |
| CAM\_Iris | Down | FF 01 04 00 00 00 03 |  |
| Up | FF 01 02 00 00 00 05 |
| CAM\_Memory | Recall | FF 01 00 07 00 pq cc | pq:position |
| Set | FF 01 00 03 00 pq cc |
| Reset | FF 01 00 05 00 pq cc |
| Stop | Stop | FF 01 00 00 00 00 01 |  |
| CAM\_Power | Open | FF 01 88 00 00 00 89 |  |
| Close | FF 01 08 00 00 00 09 |

# Pelco-P

##### Instruction format

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Byte1 | Byte2 | Byte3 | Byte4 | Byte5 | Byte6 | Byte7 | Byte8 |
| Start | Address | Command 1 | Command 2 | Data 1 | Data 2 | Stop | Check |

1.Start:A0

2. Address:camera logical address number, address range: 00H - 1FH

3. The instruction code shows different actions

4. The data code table indicates the corresponding parameters

5.Stop:AF

6.Check(XOR of Bytes 2~6)= Byte2 ^ Byte3 ^ Byte4 ^ Byte5 ^ Byte6

7.Byte2(Address) is the value of the device address -1.

##### Control Instruction

|  |  |  |  |
| --- | --- | --- | --- |
| Type | Function | Instruction | Comments |
| Pan\_Tilt Driver | Up | A0 0x 00 08 00 yy AF cc | xx:Pan Speed(00h-3fh)  yy:Tilt Speed(00h-3fh) |
| Down | A0 0x 00 10 00 yy AF cc |
| Left | A0 0x 00 04 xx 00 AF cc |
| Right | A0 0x 00 02 xx 00 AF cc |
| CAM\_Zoom | Wide | A0 0x 00 40 00 00 AF 41 |  |
| Tele | A0 0x 00 20 00 00 AF 21 |
| CAM\_Focus | Near | A0 0x 02 00 00 00 AF 03 |  |
| Far | A0 0x 01 00 00 00 AF 00 |
| CAM\_Iris | Down | A0 0x 08 00 00 00 AF 09 |  |
| Up | A0 0x 04 00 00 00 AF 05 |
| CAM\_Memory | Recall | A0 0x 00 07 00 pp AF cc | pq:position |
| Set | A0 0x 00 03 00 pp AF cc |
| Reset | A0 0x 00 05 00 pp AF cc |
| Stop | Stop | A0 0x 00 00 00 00 AF 07 |  |
| CAM\_Power | Open | A0 0x 88 00 00 00 AF 89 |  |
| Close | A0 0x 08 00 00 00 AF 09 |

Such as the device address is 1,

|  |  |  |  |
| --- | --- | --- | --- |
| Type | Function | Instruction | Comments |
| Pan\_tiltDriver | Up | A0 01 00 08 00 yy AF cc | xx:Pan Speed(00h-3fh)  yy:Tilt Speed(00h-3fh) |
| Down | A0 01 00 10 00 yy AF cc |
| Left | A0 01 00 04 xx 00 AF cc |
| Right | A0 01 00 02 xx 00 AF cc |
| CAM\_Zoom | Wide | A0 01 00 40 00 00 AF 41 |  |
| Tele | A0 01 00 20 00 00 AF 21 |
| CAM\_Focus | Near | A0 01 02 00 00 00 AF 03 |  |
| Far | A0 01 01 00 00 00 AF 00 |
| CAM\_Iris | Down | A0 01 08 00 00 00 AF 09 |  |
| Up | A0 01 04 00 00 00 AF 05 |
| CAM\_Memory | Recall | A0 01 00 07 00 pp AF cc | pq:position |
| Set | A0 01 00 03 00 pp AF cc |
| Reset | A0 01 00 05 00 pp AF cc |
| Stop | Stop | A0 01 00 00 00 00 AF 07 |  |
| CAM\_Power | Open | A0 01 88 00 00 00 AF 89 |  |
| Close | A0 01 08 00 00 00 AF 09 |