Camera control command list

VISCA,Pelco-D,Pelco-P

Version:1106

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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)
	Down	FF 01 00 10 00 yy cc	yy:Tilt Speed(00h-3fh)
	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)
	Down	A0 0x 00 10 00 yy AF cc	yy:Tilt Speed(00h-3fh)
	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)
	Down	A0 01 00 10 00 yy AF cc	yy:Tilt Speed(00h-3fh)
	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	