

Professional PTZ Camera

PTZ310 / PTZ330

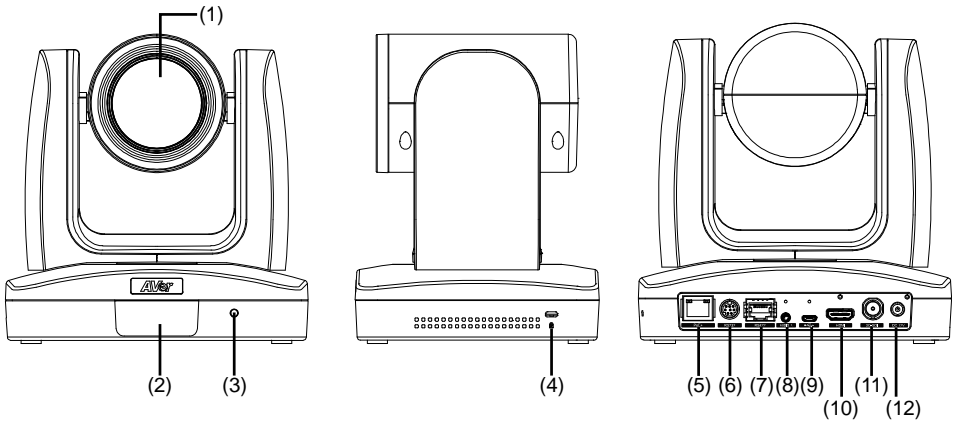
PTZ310N / PTZ330N

Control Codes

2023.12.8 v7

Product Introduction

Overview



(1) Camera lens	(5) PoE+ port	(9) mini-USB port
(2) IR sensor	(6) RS232 port	(10) HDMI port
(3) LED indicator	(7) RS422 port	(11) 3G-SDI port
(4) Kensington lock	(8) Audio in*	(12) DC Power jack

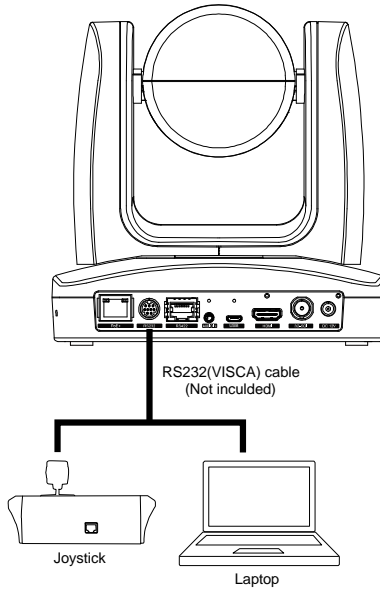
*Line input level: 1Vrms (max.).

*Mic input level: 50mVrms (max.); Supplied voltage:2.5V

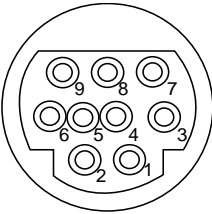
RS232 and RS422 Connection

Connect through the RS232 or RS422 for camera control.

■ RS232

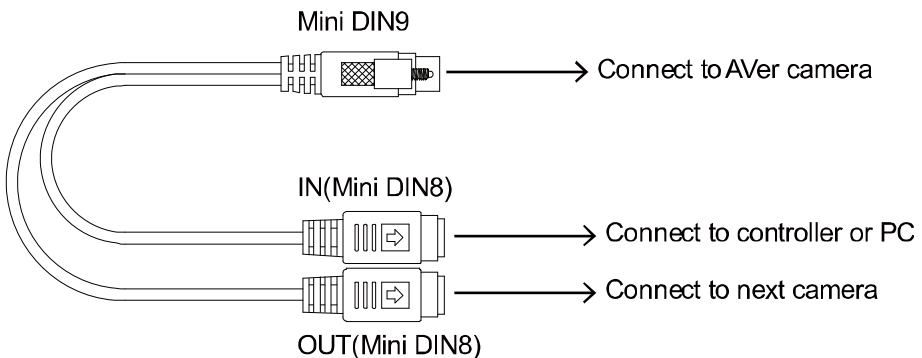


● RS232 Port Pin Definition

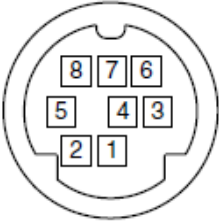


Function	Mini DIN9 PIN #	I/O Type	Signal	Description
VISCA IN	1	Output	DTR	Data Terminal Ready
	2	Input	DSR	Data Set Ready
	3	Output	TXD	Transmit Data
	6	Input	RXD	Receiver Data
VISCA OUT	7	Output	DTR	Data Terminal Ready
	4	Input	DSR	Data Set Ready
	8	Output	TXD	Transmit Data
	9	Input	RXD	Receiver Data
	5	---	---	Not connect

● RS232 mini DIN9 to mini DIN8 Cable Pin Definition

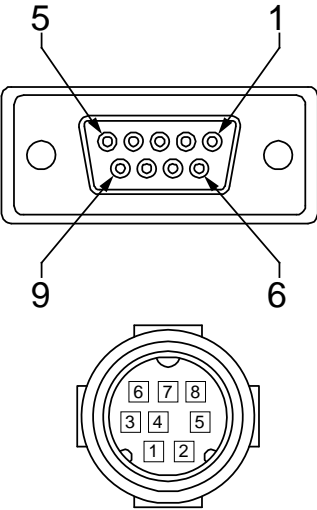


Mini DIN8 Cable Pin Definition

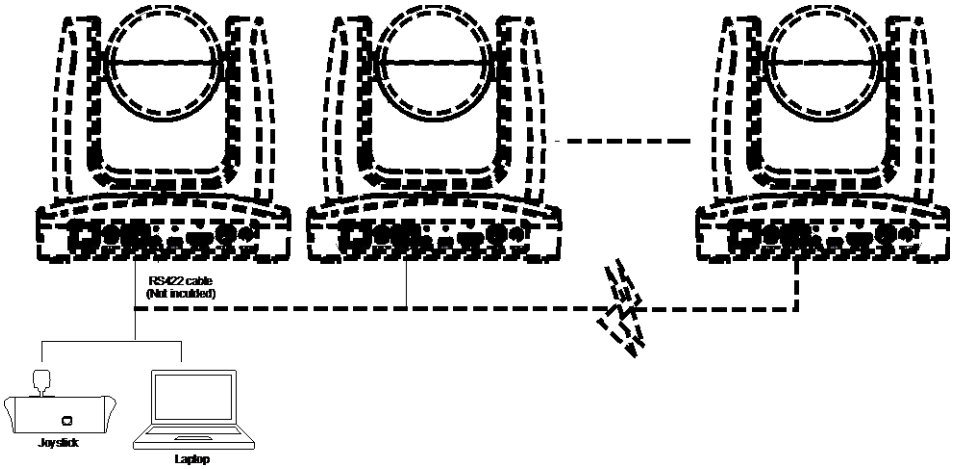


No.	Signal
1	DTR
2	DSR
3	TXD
4	GND
5	RXD
6	GND
7	NC
8	NC

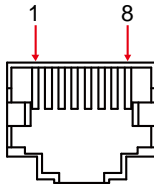
Din8 to D-Sub9 Cable Pin Definition



■ RS422

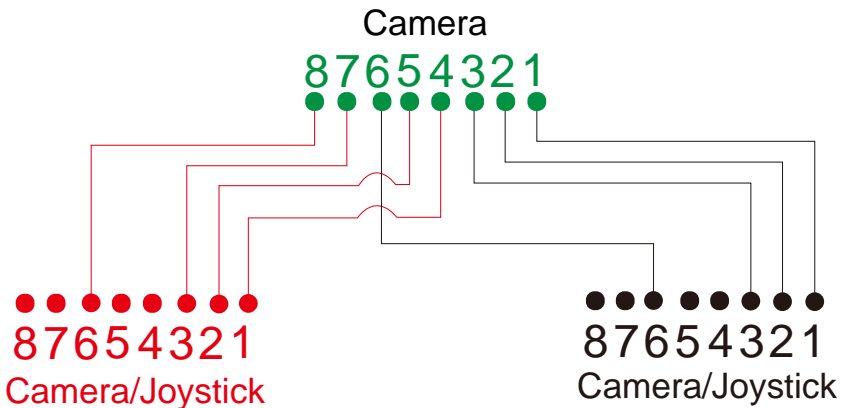


[Note] Use cat5e splitter for multi-camera connection.



RS422 Pin			
No.	Pin	No.	Pin
1	TX-	5	TX+
2	TX+	6	RX+
3	RX-	7	RX-
4	TX-	8	RX+

Cat5e splitter pin assignment:



OSD Tree

Camera

Go to Advanced Setting -> Control. Make sure the Camera Address, Baud Rate setting is correct.

Advanced Setting

Advanced Setting	Audio	
	Input Type	Mic in/Line in
	Auto Gain Control	Off/On
	Noise Suppression	Off/On
	Audio Volume	0 ~ 10
	Control	
	Protocol	VISCA/Pelco D/Pelco-P/AW
	Camera Address	1~7
	Baud Rate	2400/4800/9600/38400
	Smart Framing	Off/On
	Smart Shoot	Off/On
	Number of block	2/3/4
	Initial Position	Preset 6/Preset 7/Preset 8/Preset 9
	Time to back initial position	5s/10s/15s/20s/25s/30s/35s/40s

RS232/422 Visca Command Table

Command Set	Command	Command Packet	Comments
IF_Clear	Broadcast	88 01 00 01 FF	I/F Clear (Clear Visca connection)
CAM_Power	On	8x 01 04 00 02 FF	Power ON/OFF (Power On supported in Standby mode only)
	Off	8x 01 04 00 03 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) to 7 (High)
	Wide (Variable)	8x 01 04 07 3p FF	
CAM_Zoom	Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position · PTZ310: 0x0000-0x6f20 PTZ330: 0x1010-0x5490
CAM_DZoom	On	8x 01 04 06 02 FF	Digital zoom ON/OFF
CAM_DZoom	Off	8x 01 04 06 03 FF	
CAM_Focus	Stop	8x 01 04 08 00 FF	
	Far (Variable)	8x 01 04 08 2P FF	p=0 (Low) to 7 (High)
	Near (Variable)	8x 01 04 08 3P FF	
	Far (Standard)	8x 01 04 08 02 FF	
	Near (Standard)	8x 01 04 08 03 FF	
	Direct	8x 01 04 48 0p 0q 0r 0s FF	pqrs: Focus Position · 0x0000(wide) - 0x4000(tele) ·
	Auto Focus	8x 01 04 38 02 FF	
	Manual Focus	8x 01 04 38 03 FF	
CAM_Focus	One Push	8x 01 04 18 01 FF	
CAM_Focus	Auto/Manual	8x 01 04 38 10 FF	
AF_Sensitivity	Normal	8x 01 04 58 02 FF	AF Sensitivity Normal/Low
AF_Sensitivity	Low	8x 01 04 58 03 FF	
CAM_AFMode	Normal AF	8x 01 04 57 00 FF	Continuous AF ON
CAM_AFMode	Zoom Trigger AF	8x 01 04 57 02 FF	Continuous AF OFF, only trigger AF after zoom in/out
CAM_ZoomFocus	Direct	8x 01 04 47 0p 0q 0r 0s 0t 0u 0v 0w FF	pqrs: Zoom Position tuwv: Focus Position
CAM_WB	Auto	8x 01 04 35 00 FF	Normal Auto
	Indoor	8x 01 04 35 01 FF	Indoor mode
	Outdoor	8x 01 04 35 02 FF	Out door mode
	One Push WB	8x 01 04 35 03 FF	One Push WB mode
	Manual	8x 01 04 35 05 FF	Manual Control mode
	One Push	8x 01 04 10 05 FF	One Push WB Trigger
CAM_RGain	Up	8x 01 04 03 02 FF	Manual Control of R Gain
	Down	8x 01 04 03 03 FF	
CAM_Bgain	Up	8x 01 04 04 02 FF	Manual Control of B Gain
	Down	8x 01 04 04 03 FF	
CAM_AE	Full Auto	8x 01 04 39 00 FF	Automatic Exposure mode
	Manual	8x 01 04 39 03 FF	Manual Control mode
	Shutter Priority	8x 01 04 39 0A FF	Shutter Priority Automatic Exposure mode
	Iris Priority	8x 01 04 39 0B FF	Iris Priority Automatic Exposure mode
CAM_SlowShutter	Auto	8x 01 04 5A 02 FF	Auto Slow Shutter ON
	Manual	8x 01 04 5A 03 FF	Auto Slow Shutter OFF
CAM_Shutter	Down	8x 01 04 0A 02 FF	Shutter Setting
	Up	8x 01 04 0A 03 FF	
CAM_Shutter	Reset	8x 01 04 0A 00 FF	
CAM_Shutter	Direct	8x 01 04 4A 00 00 0p 0q FF	pq: Shutter Position
CAM_Iris	Reset	8x 01 04 0B 00 FF	
CAM_Iris	Up	8x 01 04 0B 02 FF	Iris Setting
	Down	8x 01 04 0B 03 FF	
CAM_Iris	Direct	8x 01 04 4B 00 00 0p 0q FF	pq: Iris Position ·
CAM_Gain	Reset	8x 01 04 0C 00 FF	
CAM_Gain	Up	8x 01 04 0C 02 FF	Gain Setting
	Down	8x 01 04 0C 03 FF	
CAM_Gain	Direct	8x 01 04 4C 00 00 0p 0q FF	pq: Gain Position ·
CAM_Gain	AE Gain Limit (Direct)	8x 01 04 2C 0p FF	p: Gain Position (4 to F) ·
CAM_ExpComp	Reset	8x 01 04 0E 00 FF	
CAM_ExpComp	Up	8x 01 04 0E 02 FF	Exposure Compensation Amount Setting
	Down	8x 01 04 0E 03 FF	
CAM_ExpComp	Direct	8x 01 04 4E 00 00 0p 0q FF	pq: ExpComp (pq: 0x01-0x09 , Value: -4~ +4 , Each value = 0.3EV)
CAM_Backlight	On	8x 01 04 33 02 FF	Back Light Compensation ON/OFF, only supported in Auto Mode
	Off	8x 01 04 33 03 FF	
CAM_LR_Reverse	On	8x 01 04 61 02 FF	Mirror Image ON/OFF
CAM_LR_Reverse	Off	8x 01 04 61 03 FF	

CAM_Memory	Reset	8x 01 04 3F 00 pp FF	
	Set	8x 01 04 3F 01 pp FF	pp: 0x00 To 0xFF pp: 0x5A => SmartFrame Enable pp: 0x5B => SmartFrame Disable pp: 0x5C => SmartFrame Trigger pp: 0x5D => SmartShoot Enable pp: 0x5E => SmartShoot Disable pp: 0x5F => Trun on OSD menu
	Recall	8x 01 04 3F 02 pp FF	
SYS_Menu	On	8x 01 06 06 02 FF	turn on the menu screen
SYS_Menu	Off	8x 01 06 06 03 FF	Erasing menu display(turn off the menu screen/VC-A70H)
CAM_Menu	On/Off	8x 01 06 06 10 FF	Display ON/OFF
SYS_Menu	Menu Enter	8x 01 7E 01 02 00 01 FF	menu enter
Pan-tilt Drive	Up	8x 01 06 01 VV WW 03 01 FF	VV: Pan speed setting 0x01 (low speed) to 0x18 (high speed) WW: Tilt speed setting 0x01 (low speed) to 0x18 (high speed)
	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	
	UpLeft	8x 01 06 01 VV WW 01 01 FF	
	UpRight	8x 01 06 01 VV WW 02 01 FF	
	DownLeft	8x 01 06 01 VV WW 01 02 FF	
	DownRight	8x 01 06 01 VV WW 02 02 FF	
	Stop	8x 01 06 01 VV WW 03 03 FF	
	Home	8x 01 06 04 FF	
	Reset	8x 01 06 05 FF	
Absolute Position		8x 01 06 02 VV WW 0Y 0Y 0Y 0Z 0Z	VV: Pan speed setting 0x01 (low speed) to 0x18 (high speed) WW: Tilt speed setting 0x01 (low speed) to 0x18 (high speed) YYYY: Pan Position 8A14 to 762C (CENTER 0000) ZZZZ: Tilt Position 468B to E898 (Image Flip: OFF) (CENTER 0000)
Pan-tiltSet SlowPanTilt	On	8x 01 06 44 02 FF	Pan/Tilt Slow Mode On/Off
Pan-tiltSet SlowPanTilt	Off	8x 01 06 44 03 FF	
Firmware	Firmware version	8x 01 02 03 FF	
Factory Reset	System Factory Reset	8x 01 04 3F 03 00 FF	
Preset Speed	Set Preset Speed	8x 01 06 20 0p FF	p:1 to 6

Inquiry Command	Command Packet	Reply Packet	Comments
PT_Pos_Inq	8x 09 06 12 FF	y0 50 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	YYYY: Pan Position 8A14 to 762C (CENTER 0000) ZZZZ: Tilt Position 468B to E898 (Image Flip: OFF) (CENTER 0000)
Zoom_Pos_Inq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
CAM_WBModelInq	8x 09 04 35 FF	y0 50 03 FF	Off (not for Hardware version C)
		y0 50 00 FF	Auto
CAM_AEModelInq	8x 09 04 39 FF	y0 50 05 FF	Manual
		y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
		y0 50 0A FF	Shutter Priority
CAM_AutoFocusInq	8x 09 04 38 FF	y0 50 0B FF	Iris Priority
		y0 50 02 FF	On
		y0 50 03 FF	Off

The x value = VISCA Camera ID: 1 to 7 for RS232/RS422 connection.

Visca-over-IP Settings

VISCA over IP

PORT

Internet protocol	IPv4
Transport protocol	UDP
Port address	52381

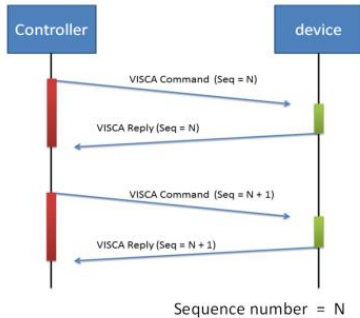
FORMAT

	byte 0	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7	byte8 ~~~	byte23	
func	Payload type		Payload length		Sequence number				Payload (1 to 16 bytes)		
data	Value1	Value2	1~16 (0x0001~0x0010)		0X00000000 ~ 0XFFFFFFF				VISCA Packet (see page VISCA)		

Payload type

Name	Value1	Value2	Description
VISCA command	0x01	0x00	Stores the VISCA command.
VISCA inquiry	0x01	0x10	Stores the VISCA inquiry.
VISCA reply	0x01	0x11	Stores the reply for the VISCA command or VISCA inquiry

Sequence number



The x value should be 1 for Visca-over-IP string, e.g. 01 00 00 09 00 00 00 01 81 01 06 01 07 07 01 03 FF

CGI Command Table

CGI List for Video Transmission						
CGI item name	URL	Command	Parameter Name	Parameter value	Description	
Get JPEG	/image/shot					640x360 jpg
Get RTSP stream	/rtsp://live1.st					
CGI List for Camera Control						
up start	/storks?cmd=	up_start				
up end	/storks?cmd=	up_end				
down start	/storks?cmd=	down_start				
down end	/storks?cmd=	down_end				
left start	/storks?cmd=	left_start				
left end	/storks?cmd=	left_end				
right start	/storks?cmd=	right_start				
right end	/storks?cmd=	right_end				
go home	/storks?cmd=	go_home				
zoom in start	/storks?cmd=	zoom_in_start				
zoom in end	/storks?cmd=	zoom_in_end				
zoom out start	/storks?cmd=	zoom_out_start				
zoom out end	/storks?cmd=	zoom_out_end				
near start	/storks?cmd=	near_start				
near end	/storks?cmd=	near_end				
far start	/storks?cmd=	far_start				
far end	/storks?cmd=	far_end				
set preset:	/storks?cmd=	set preset:	position	1-255		
load preset:	/storks?cmd=	load preset:	position	1-255		
set gain_sbscp:	/storks?cmd=	set gain_sbscp:	gain_sbscp:	1-24		
set fill_speed:	/storks?cmd=	set fill_speed:	fill_speed:	1-24		
set zoom_speed:	/storks?cmd=	set zoom_speed:	zoom_speed:	0-6		
set preset_speed:	/storks?cmd=	set preset_speed:	preset_speed:	1-6	1/2/3/4/5/6	
Enable AF	/storks?cmd=	enable af:	enable/disable	0/1		
AF control	/storks?cmd=	af:	Near/Far	0/1		
Set PTZ Slow mode	/storks?cmd=	set pt_slow:	on/off	0/1		
flip off	/storks?cmd=	set flip:0				
flip on	/storks?cmd=	set flip:1				
CGI List for Various Settings						
set freeze	/storks?cmd=					
trigger focus	/storks?cmd=	focus_trigger				
3A mode switch	/storks?cmd=	set expmode:	mode	0/1/2/3	0/1/2/3	
image setting default	/storks?cmd=	set img_default				
exposure value	/storks?cmd=	set expval:	value	0-15	0/1/2/3/4/5/6/7/8/9/10/11/12/13/14/15	
shutter value	/storks?cmd=	set shutter:	value	0-13	0/1/2/3/4/5/6/7/8/9/10/11/12/13	
iris value	/storks?cmd=	set iris:	value	0-16	Value*3_db (0-48db)	
gain	/storks?cmd=	set gain:	value	0-8	24-48db (value*3+24)	
gain limit	/storks?cmd=	set gain_limit:	value	0/1		
slow shutter	/storks?cmd=	set slow_shutter:	on/off			
back light compensation	/storks?cmd=	set blc:	value	0/1/2	0/1/2 off/low/high	
set white balance mode	/storks?cmd=	set wb:	value	0/2/3/4/5	Auto/Indoor/Outdoor/One Push/Manual	
color temperature	/storks?cmd=	set colorTemp:	value	2800-10000		
one push white balance	/storks?cmd=	set one_push_wb:	value			
noise filter	/storks?cmd=	set nf:	value	0-3	0/1/2/3	
Power frequency	/storks?cmd=	set freq:	value	1-3	1/2/3	
saturation	/storks?cmd=	set saturation:	value	0-10		
contrast	/storks?cmd=	set contrast:	value	0-4		
sharpness	/storks?cmd=	set sharpness:	value	0-3		
mirror	/storks?cmd=	set mirror:	on/off	0/1		
flip	/storks?cmd=	set flip:	on/off	0/1		
mirror-flip	/storks?cmd=	mirror_flip:	value	0/1/2/3	0/1/2/3	
Enable SmartShot	/storks?cmd=	set smartshot:	on/off	0/1		
Enable SmartFrame	/storks?cmd=	set smartframe:	on/off	0/1		
Reboot	PTZ_ (S310/S330)		GET(Basic Authentication)	/storks?cmd=sys_reboot		
Factory Reset	PTZ_ (S310/S330)		POST(Basic Authentication)	/storks?cmd=set_factory_default		
StartRTMP	/storks?cmd=	set_rtmp_start(server="+server+"&key="+key+"");				Example: http://192.168.1.168/stork?cmd=set_rtmp_s&rtsp_server=rtmp://a.tmp.youku.com/live/2?key=69c-123a-b1xx-9988-878k
StopRTMP	/storks?cmd=	set_rtmp_stop				
Status get (Mode name & mac & FW_VER)	/storks?cmd=	get_sys_stat				Example: http://10.100.105.155/storks?cmd=get_sys_stat Reply: stat_display=0;end_status=1;motion_mode=0;power_saving=0;web_lang=0;mac=00:18:1A:04:AC:80;ipaddr=10.100.105.155;fw_ver=0.0.0003.7.2;sp_ver=0;model_name=PTZ330;sn=5309112400007;ispine=0;