

## Model: FS-HD4301VP

### Features

#### Single Channel HD Video & Power Balun (12V/24V, AC/DC)

- Real-time transmission over UTP cat5e/6
- No power required
- Compatible with all HD-TVI/CVI/AHD/CVBS analog cameras
- Please refer to "Video Distance Chart" Part to find out video distance of 720P/960P/1080P/3MP/4MP/5MP/4K cameras
- Please refer to "Power Distance Chart" Part to find out power distance of 720P/960P/1080P/3MP/4MP/5MP/4K cameras
- Male BNC connector with extended mini-coax pigtail
- RJ-45 Jack for UTP cable
- Built-in solid state TVS (Transient Voltage Suppressor) for surge protection
- Wave Filter Design, Anti-Static Design
  
- Lightning protection design Grade: III
  
- 60 dB crosstalk and noise immunity
- Exceptional interference rejection
- ABS engineering plastic housing



### Overview

The FS-HD4301VP is video & power transmitter and receiver that allows the transmission of real-time CCTV HD video and power signal via cost-effective Unshielded Twisted Paired (UTP) cable. The FS-HD4301VP is compatible with all HD-TVI, HD-CVI, AHD and CVBS analog cameras.

The FS-HD4301VP has a mini-coax pigtail lead which allows quick mounting onto fixed cameras, allows in-camera mounting in most dome cameras and allows flexible connection with DVR. Used in pairs, the FS-HD4301VP eliminates costly and bulky coaxial cable.

The superior interference rejection and low emissions of the FS-HD4301VP allow video & power signals to coexist in the same wire bundle as telephone, datacom, or low-voltage power circuits. This allows the use of a shared or existing cable plant. The FS-HD4301VP is built-in surge suppressor to protect video equipment against damaging voltage spikes. Its crosstalk and noise immunity ensure quality video signals.

## Video Distance Chart

Camera Type	HD-TVI	HD-CVI	HD-AHD
720P camera	250m(820ft)	440m(1443ft)	320m(1049ft)
960P camera	Not tested	Not tested	320m(1049ft)
1080P camera	250m(820ft)	250m(820ft)	250m(820ft)
3MP camera	250m(820ft)	Not tested	250m(820ft)
4MP camera	180m(590ft)	200m(656ft)	200m(656ft)
5MP camera	180m(590ft)	Not tested	180m(590ft)
4K camera	Not tested	200m(656ft)	Not tested
CVBS	400m(1312ft)		

### Note:

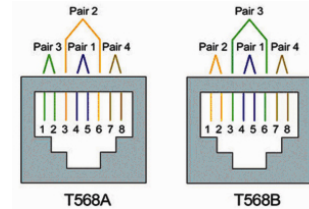
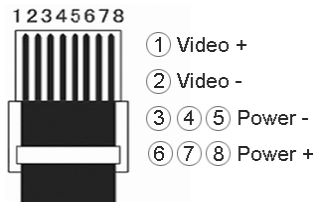
1. The actual transmission distance will vary according to the quality of the cable, specific camera, DVR and on-site environment.
2. Please make sure to install transmitter at camera side and receiver at DVR side to achieve best video quality.
3. If you adjust saturation of DVR, video transmission distance could be farther (HD-CVI 720P: max up to 470m (1541ft)).
4. If chromatic aberration occurs, please also adjust saturation, the picture will recover perfectly automatically.
5. The device is not waterproof and not to be used at outdoors.

## Wire and Cable Recommendations

The FS-HD4301VP is recommended to use with Unshielded Twisted Paired (UTP) wiring from 24AWG through 22AWG. Individually shielded pairs should

be avoided, as they reduce the operating range of the systems drastically. Multi-pair cable (25-pair or more) with an overall shield are acceptable. Video signals can coexist in the same wire bundle as telephone, data-com, or low-voltages power circuits. While video may be routed through telephone punch-down block terminals, any bridge-taps, also called T-taps and any resistive, capacity or inductive devices MUST BE removed from the pair.

For more specific information regarding wire types, gauges and proper installation techniques, please contact us for technical assistance.



#### EIA/TIA-568A Wiring Specifications

Wire	Pin #	Configuration
Green White	1	Video (+)
Green	2	Video (-)
Orange White	3	Power (-)
Blue	4	Power (-)
Blue White	5	Power (-)
Orange	6	Power (+)
Brown White	7	Power (+)
Brown	8	Power (+)

#### EIA/TIA -568B Wiring Specifications

Wire	Pin #	Configuration
Orange White	1	Video (+)
Orange	2	Video (-)
Green White	3	Power (-)
Blue	4	Power (-)
Blue White	5	Power (-)
Green	6	Power (+)
Brown White	7	Power (+)
Brown	8	Power (+)

**Power Distance Chart ( over one UTP cat 5e/6, one pair for video, 3 pairs for power)**

Camera Type	HD-CVI 720P			
Power Supply Voltage	12V DC	15V DC	18V DC	24V DC
100mA camera	500m	>450m	>475m	>450m
200mA camera	450m	>450m	>475m	>450m
300mA camera	315m	450m	>475m	>450m
400mA camera	230m	350m	475m	>450m
500mA camera	180m	270m	370m	>450m
600mA camera	140m	215m	295m	450m
800mA camera	110m	160m	215m	345m
1000mA camera	85m	125m	170m	265m

Camera Type	HD-CVI 1080P/4MP/4K			
Power Supply Voltage	12V DC	15V DC	18V DC	24V DC
100mA camera	>180m	>250m	>250m	>250m
200mA camera	>180m	>250m	>250m	>250m
300mA camera	150m	250m	>250m	>250m
400mA camera	115m	220m	>250m	>250m
500mA camera	90m	170m	250m	>250m
600mA camera	60m	140m	210m	>250m
800mA camera	40m	110m	160m	>250m
1000mA camera	30m	85m	130m	220m

Camera Type	AHD 720P/960P/1080P/3MP/4MP/5MP			
Power Supply Voltage	12V DC	15V DC	18V DC	24V DC
50mA camera	350m	>350m	>360m	>350m
100mA camera	250m	>350m	>360m	>350m
200mA camera	120m	350m	>360m	>350m
300mA camera	80m	200m	360m	>350m
400mA camera	50m	160m	250m	>350m
500mA camera	40m	130m	200m	>350m
600mA camera	30m	100m	160m	350m
800mA camera	<30m	80m	125m	240m
1000mA camera	<30m	55m	100m	195m

Camera Type	HD-TVI 720P/1080P/3MP/5MP			
Power Supply Voltage	12V DC	15V DC	18V DC	24V DC
100mA camera	>270m	>270m	>270m	>270m
200mA camera	150m	270m	>270m	>270m
300mA camera	100m	220m	>270m	>270m
400mA camera	75m	180m	>270m	>270m
500mA camera	50m	130m	240m	>270m
600mA camera	40m	120m	200m	>270m
800mA camera	30m	90m	150m	260m
1000mA camera	20m	60m	128m	220m

## Technical Specifications

Model		FS-HD4301VP	
Product Name		Single Channel HD Video & Power Transmitter & Receiver	
Applied Devices		CCTV cameras, monitors, DVR, switchers, IP encoders, and other CCTV equipment	
Video	Video Format	HD-TVI/CVI/AHD/CVBS	
	Operating Frequency	DC to 71MHz	
	Common-mode/Differential-mode rejection	15KHz to 71MHz 60 dB typ	
	Impedance	Coax: Male BNC	75Ω unbalanced
		UTP:RJ45	100Ω balanced
Attenuation	1.5 dB typ Max		
Wire Type	Network Wiring	One Unshielded Twisted Pair (for each video signal) 24-16 AWG (0.5-1.31mm)	
	Category Type	UTP cat 5e/6	
	Impedance	100 ± 20 ohms	
	DC Loop Resistance	52 ohms per 1,000ft (18 ohms per 100m)	
	Differential Capacitance	19 pF/ft max (62 pF/m max)	
Power	Power Input	12V/24V,DC/AC	
	Power transmission	12V/24V,DC/AC, via UTP cat5e/6. please refer to “power distance chart”	
Connector	Video input/output	Male BNC connector	
	Video input/output	RJ45 Jack	
Protection	Surge Protection	renewable solid state surge protection	
	Video Input	2KV(common mode), 10/700us IEC61000-4-5/1955(GB/T 1726, 5-1999)	
	Video Output	2KV(differential mode), 10/700us IEC61000-4-5/1955(GB/T 1726, 5-1999)	
Mechanical	Housing	ABS engineering plastic	
	Body Color	Black	
	Dimensions(L*W*H)	60.4*29*20.4mm (BNC connector & cable excluded)	
	Net Weight	60g	
Environmental	Operating Temperature	-20° ~ 70° C	
	Relative Humidity	0~95% (non-condensing)	
	Storage Temperature	-40° ~ 150° C	

## Applications

- Security Monitoring System
- Multimedia Network Teaching System
- Medical Monitoring Display System
- Industrial Automation Control System
- Banking, securities, financial information display system
- Remote Network Server Monitoring
- Department Store Security
- Casino Security
- Hospitals, Airports and banks
- School Campuses

## Application Diagram

