

SONY®

NTSC/PAL

Digital Hard Disk Recorders

HSR-X Series



HSR-X200
HSR-X200P
HSR-X209P
HSR-X216
HSR-X216P



HSR-X Series

Digital Hard Disk Recorders

HSR-X200

Single Channel Recorder (with 80 GB or 160 GB HDD)

HSR-X200P

Single Channel Recorder (with 80 GB HDD)

HSR-X209P

Multi Channel Recorder (with 320 GB HDD, 9 Camera Inputs)

HSR-X216/X216P

Multi Channel Recorder (with 320 GB HDD, 16 Camera Inputs)

The Sony HSR-X Series of digital hard-disk time-lapse recorders delivers superb-quality images, outstanding reliability, and greater flexibility to your surveillance systems. Incorporating the Motion-JPEG compression format, these recorders provide high-quality, high-resolution images with high refresh rates. Each recorder offers all the benefits associated with digital HDD recordings – clear, crisp, undistorted images, and quick access to images. And since there are no tape transport and/or head service costs, the HSR-X Series recorders also reduce maintenance costs compared to analog time-lapse recorders.

The HSR-X Series consists of five recorders to suit a variety of surveillance applications and systems. The HSR-X200 and HSR-X200P are single-channel digital recorders, which can be easily installed into existing surveillance systems as a powerful alternative to analog time-lapse VCRs. The HSR-X209P, HSR-X216, and HSR-X216P are multi-channel recorders that combine the functions of a recorder and a multiplexer in one compact unit. Using the built-in multiplexing capability, up to 16 camera pictures (HSR-X216/X216P) or up to 9 camera pictures (HSR-X209P) can be recorded and monitored independently. With the larger capacity 320-GB HDD, these recorders can also dramatically extend recording times.

An added advantage of the HSR-X Series is its network capability. Users can remotely access, review, and control the recorded information via a network, using an optional LAN PC card.

With this broad-reaching, feature-rich lineup, the Sony HSR-X Series offers choice and flexibility – making it ideal for a wide variety of surveillance applications.

FEATURES

High-Capacity HDDs (ATA/ATAPI-5 Standard)

The high-capacity HDDs in the HSR-X Series enable long recording times. Two optional HDDs (HSBK-X201: 80 GB, HSBK-X201/16:160 GB) can be installed to increase the record time or provide a mirroring function for the HSR-X200/X200P recorders.

Maximum recording time in field recording mode*

	HSR-X200		HSR-X200P
	Built-in HDD capacity	80 GB	160 GB
with the HSBK-X201	160 GB	240 GB	160 GB
with the HSBK-X201/16	240 GB	320 GB	240 GB
High mode			
with the built-in HDD	671 hours, 28 days	1343 hours, 56 days	671 hours, 28 days
with the HSBK-X201	1343 hours, 56 days	2014 hours, 84 days	1343 hours, 56 days
with the HSBK-X201/16	2014 hours, 84 days	2686 hours, 112 days	2014 hours, 84 days
Hyper mode			
with the built-in HDD	413 hours, 17 days	826 hours, 34 days	413 hours, 17 days
with the HSBK-X201	826 hours, 34 days	1239 hours, 52 days	826 hours, 34 days
with the HSBK-X201/16	1239 hours, 52 days	1652 hours, 69 days	1239 hours, 52 days
	HSR-X209P	HSR-X216	HSR-X216P
Built-in HDD capacity	320 GB		
High mode	2686 hours, 112 days		
Hyper mode	1653 hours, 69 days		

* 1-channel input, 1 picture/s

High Resolution and Picture Quality

The HSR-X Series of recorders delivers high-resolution, high-quality images using the Motion-JPEG compression format. These recorders capture high-resolution pictures of 720 x 240 pixels (NTSC)/720 x 288 pixels (PAL) in field recording mode. In addition, the HSR-X200/X200P can acquire higher-resolution images of 720 x 480 pixels (NTSC)/720 x 576 pixels (PAL) in frame recording mode. These recorders also give you the flexibility to select a balance between picture quality and recording time to meet your application requirements. You can select from five levels of picture-quality recording mode*: Hyper, Super, High, Middle, and Low.

* For the data size of each recording mode, please refer to the specifications.

Picture resolution

	HSR-X200	HSR-X200P	HSR-X209P	HSR-X216	HSR-X216P
Field recording mode (H x V pixels)	720 x 240	720 x 288	720 x 288	720 x 240	720 x 288
Frame recording mode (H x V pixels)	720 x 480	720 x 576	NA	NA	NA

High Refresh Rate

By incorporating the Motion-JPEG compression format, the HSR-X Series can record images at high refresh rates so crucial moments are not missed.

- Max. 60 fields/s (NTSC), 50 fields/s (PAL) real-time recording and playback
- 27-level recording cycle: 60 fields/s to 1 field/30 s (NTSC), 50 fields/s to 1 field/30 s (PAL)

Recording time

HSR-X200 (80-GB HDD)													
Field Recording Mode		Frame Recording Mode		Picture Quality									
				LOW 17 KB/field		MID 24 KB/field		HIGH 32 KB/field		SUPER 44 KB/field		HYPER 52 KB/field	
Compression ratio				1/22.5		1/15.3		1/11.3		1/8.0		1/6.0	
Recording Speed (field/sec)	Recording Interval (sec)	Recording Speed (frame/sec)	Recording Interval (sec)	Hours	Days	Hours	Days	Hours	Days	Hours	Days	Hours	Days
60.00	0.02	30.0	0.03	21	0.9	15	0.6	11	0.5	8	0.3	7	0.3
30.00	0.03	15.0	0.07	42	1.8	30	1.3	22	0.9	16	0.7	14	0.6
15.00	0.07	7.5	0.13	84	3.5	60	2.5	45	1.9	33	1.4	28	1.2
7.50	0.13	3.8	0.27	169	7.0	119	5.0	90	3.8	65	2.7	55	2.3
1.00	1	0.50	2	1,264	52.7	895	37.3	671	28.0	488	20.3	413	17.2
0.03	30	0.02	60	37,914	1579.8	26,855	1119.0	20,142	839.3	14,648	610.3	12,395	516.4

HSR-X200 (160-GB HDD)													
Field Recording Mode		Frame Recording Mode		Picture Quality									
				LOW 17 KB/field		MID 24 KB/field		HIGH 32 KB/field		SUPER 44 KB/field		HYPER 52 KB/field	
Compression ratio				1/22.5		1/15.3		1/11.3		1/8.0		1/6.0	
Recording Speed (field/sec)	Recording Interval (sec)	Recording Speed (frame/sec)	Recording Interval (sec)	Hours	Days	Hours	Days	Hours	Days	Hours	Days	Hours	Days
60.00	0.02	30.0	0.03	42	1.8	30	1.3	22	0.9	16	0.7	14	0.6
30.00	0.03	15.0	0.07	84	3.5	60	2.5	45	1.9	33	1.4	28	1.2
15.00	0.07	7.5	0.13	169	7.0	119	5.0	90	3.8	65	2.7	55	2.3
7.50	0.13	3.8	0.27	337	14.0	239	10.0	179	7.5	130	5.4	110	4.6
1.00	1	0.50	2	2,528	105.3	1,790	74.6	1,343	56.0	977	40.7	826	34.4
0.03	30	0.02	60	75,827	3159.5	53,711	2238.0	40,283	1678.5	29,297	1220.7	24,790	1032.9

HSR-X200P (80-GB HDD)													
Field Recording Mode		Frame Recording Mode		Picture Quality									
				LOW 17 KB/field		MID 24 KB/field		HIGH 32 KB/field		SUPER 44 KB/field		HYPER 52 KB/field	
Compression ratio				1/22.5		1/15.3		1/11.3		1/8.0		1/6.0	
Recording Speed (field/sec)	Recording Interval (sec)	Recording Speed (frame/sec)	Recording Interval (sec)	Hours	Days	Hours	Days	Hours	Days	Hours	Days	Hours	Days
50.0	0.02	25.0	0.04	25	1.0	18	0.8	13	0.5	10	0.4	8	0.3
25.0	0.04	12.5	0.08	51	2.1	36	1.5	27	1.1	20	0.8	17	0.7
12.5	0.08	6.3	0.16	101	4.2	72	3.0	54	2.3	39	1.6	33	1.4
6.3	0.16	3.1	0.32	202	8.4	143	6.0	107	4.5	78	3.3	66	2.8
1.0	1	0.50	2	1,264	52.7	895	37.3	671	28.0	488	20.3	413	17.2
0.03	30	0.02	60	37,914	1579.8	26,855	1119.0	20,142	839.3	14,648	610.3	12,395	516.4

HSR-X209P (320-GB HDD)													
1 Channel Input		9 Channel Input		Picture Quality									
Field Recording Mode		Frame Recording Mode		LOW 17 KB/field		MID 24 KB/field		HIGH 32 KB/field		SUPER 44 KB/field		HYPER 52 KB/field	
				Compression ratio		1/22.5		1/15.3		1/11.3		1/8.0	
Recording Speed (field/sec)	Recording Interval (sec)	Recording Speed (field/sec)	Recording Interval (sec)	Hours	Days	Hours	Days	Hours	Days	Hours	Days	Hours	Days
50.00	0.02	5.556	0.18	101	4.2	72	3.0	54	2.3	39	1.6	33	1.4
25.00	0.04	2.778	0.36	202	8.4	143	6.0	107	4.5	78	3.3	66	2.8
12.50	0.08	1.389	0.72	404	16.8	286	11.9	215	9.0	156	6.5	132	5.5
6.25	0.16	0.694	1.44	809	33.7	573	23.9	430	17.9	313	13.0	264	11.0
1.00	1	0.111	9	5,055	210.6	3,581	149.2	2,686	111.9	1,953	81.4	1,653	68.9
0.03	30	0.004	270	151,654	6318.9	107,422	4475.9	80,566	3356.9	58,594	2441.4	49,579	2065.8

HSR-X216 (320-GB HDD)													
1 Channel Input		16 Channel Input		Picture Quality									
Field Recording Mode		Frame Recording Mode		LOW 17 KB/field		MID 24 KB/field		HIGH 32 KB/field		SUPER 44 KB/field		HYPER 52 KB/field	
				Compression ratio				1/22.5		1/15.3		1/11.3	
Recording Speed (field/sec)	Recording Interval (sec)	Recording Speed (field/sec)	Recording Interval (sec)	Hours	Days	Hours	Days	Hours	Days	Hours	Days	Hours	Days
60.00	0.02	3.750	0.27	84	3.5	60	2.5	45	1.9	33	1.4	28	1.2
30.00	0.03	1.875	0.53	169	7.0	119	5.0	90	3.8	65	2.7	55	2.3
15.00	0.07	0.938	1.07	337	14.0	239	10.0	179	7.5	130	5.4	110	4.6
7.50	0.13	0.469	2.13	674	28.1	477	19.9	358	14.9	260	10.8	220	9.2
1.00	1	0.063	16	5,055	210.6	3,581	149.2	2,686	111.9	1,953	81.4	1,653	68.9
0.03	30	0.002	480	151,654	6318.9	107,422	4475.9	80,566	3356.9	58,594	2441.4	49,579	2065.8

HSR-X216P (320-GB HDD)													
1 Channel Input		16 Channel Input		Picture Quality									
Field Recording Mode		Frame Recording Mode		LOW 17 KB/field		MID 24 KB/field		HIGH 32 KB/field		SUPER 44 KB/field		HYPER 52 KB/field	
				Compression ratio				1/22.5		1/15.3		1/11.3	
Recording Speed (field/sec)	Recording Interval (sec)	Recording Speed (field/sec)	Recording Interval (sec)	Hours	Days	Hours	Days	Hours	Days	Hours	Days	Hours	Days
50.00	0.02	3.125	0.32	101	4.2	72	3.0	54	2.3	39	1.6	33	1.4
25.00	0.04	1.563	0.64	202	8.4	143	6.0	107	4.5	78	3.3	66	2.8
12.50	0.08	0.781	1.28	404	16.8	286	11.9	215	9.0	156	6.5	132	5.5
6.25	0.16	0.391	2.56	809	33.7	573	23.9	430	17.9	313	13.0	264	11.0
1.00	1	0.063	16	5,055	210.6	3,581	149.2	2,686	111.9	1,953	81.4	1,653	68.9
0.03	30	0.002	480	151,654	6318.9	107,422	4475.9	80,566	3356.9	58,594	2441.4	49,579	2065.8

These charts show only 6 levels of the 27-level recording cycle. Audio recording can be performed in colored modes. Condition: 1% of the HDD is set as archive area and the remaining 99% is set as normal recording area.

FEATURES

Built-in Multiplexing Capability (HSR-X209P/X216/X216P)

Using the built-in multiplexing capability, up to 16 camera images (HSR-X216/X216P) or up to 9 camera images (HSR-X209P) can be recorded and monitored independently. By combining the functions of a digital recorder and multiplexer into one unit, the need for an external multiplexer or switcher is eliminated. With these recorders, multiple monitoring patterns such as full screen, 4-division split screen, 9-division split screen, and 16-division split screen are available, and camera live images can be sequentially switched at intervals of 1 to 30 seconds. In addition to these four monitoring patterns, Option Screen* on the lower right corner can display a camera live image at the rate of 60 field/s (NTSC)/50 field/s (PAL) for secure monitoring. Monitoring patterns in each view can be freely assigned, allowing you to create your optimum monitoring environment.

* Monitoring a camera live image in Option Screen is not available when you playback images in split screens.

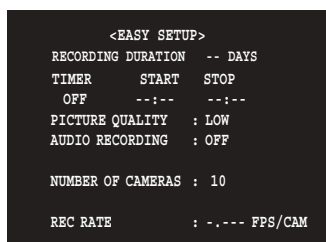
Compatible with Existing Sony Multiplexers (HSR-X200/X200P)

The HSR-X200/X200P can easily be installed in an existing surveillance system as an alternative to analog time-lapse VCRs that are typically used with Sony multiplexers (e.g., YS-DX516/DX516P or YS-DX504/DX504P).

Easy Setup* (HSR-X209P/X216/X216P)

The HSR-X209 and HSR-X216 offer an Easy Setup menu, which gives users quick access to settings such as recording time, picture quality, and timer recordings on a single menu page. The number of connected cameras is automatically detected and displayed on this menu page. Once necessary items have been input, the recording frame rate is automatically calculated and also displayed.

* Ver. 1.05 or later (Main and Sub firmware) is required.



Network Capability*¹

By inserting an optional network card (10BASE-T or 100BASE-TX Ethernet)*² into any one of the HSR-X Series of recorders, you can remotely monitor and control your surveillance system over a TCP/IP network using networked PCs running a web browser.*³ Image data can also be transferred and downloaded via a network. With HSR-X recorders, up to four users can simultaneously monitor or control camera images.*⁴ There are three levels of password protection to qualify the controllable functions: one for only browsing images, one for both browsing and downloading images, and one for all controls and settings. In addition, with the HSR-X209P/X216/X216P, users can view 2 x 2, 3 x 3, as well as 4 x 4*⁵ displays via the web browser.

*¹ With the HSR-X200/X200P, the system must be configured with Sony multiplexers (e.g., YS-DX516/DX516P or YS-DX504/DX504P).

*² Please contact your nearest Sony office or authorized dealer for compatible network cards.

*³ Internet Explorer 5.0 or later recommended.

*⁴ Ver. 1.07 or later (Main firmware) and ver. 1.02 or later (Sub firmware) are required for the HSR-X200/X200P.

*⁵ HSR-X216/X216P only



Comprehensive Recording and Playback Features

Pre-reverse Play (Playback-during-recording)

The Pre-reverse Play function of HSR-X recorders allows you to view previously recorded images

without having to stop recording. By setting the pre-reverse time (1 to 99 minutes) on the setup menu in advance, these recorders instantly playback images at the touch of a button, while continuing to record.

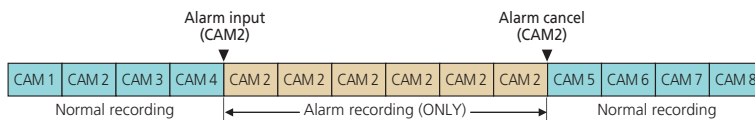
Alarm Recording*

With their flexible alarm recording settings, the HSR-X recorders provide a high level of functionality during alarm incidents. When the recorder detects an alarm – internally generated by the built-in Activity Detection sensor, or an external alarm input, or both – it automatically switches to alarm recording mode.

* Alarm recording mode supports a maximum of 30 fields/s (NTSC) or 25 fields/s (PAL) recording rate.

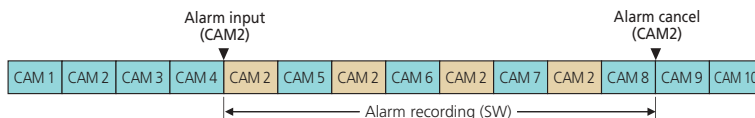
• ONLY mode

When an alarm signal is received, the HSR-X recorders continuously record the specific camera image that detected the alarm event.



• SW mode

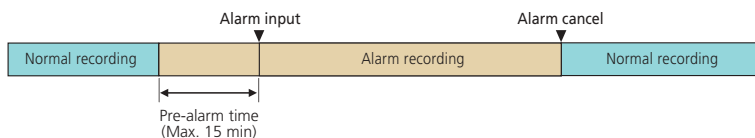
This mode prioritizes the recording cycle of the camera that detected the alarm event.



• Pre-alarm mode*

Images recorded prior to an alarm input are stored on the hard disk and can be played back when in pre-alarm mode. This mode helps to verify how alarm incidents have occurred. You can set the pre-alarm time within the range of 5 seconds to 15 minutes.

* When pre-alarm mode is set to ON, the recording rate is fixed to 15 fields/s (NTSC)/12.5 fields/s (PAL) in normal/pre-alarm recording.



Timer Recording

Timer recording can be activated on a weekly or daily basis, with a maximum of eight timer settings.

Four Preset Program Recording Modes (HSR-X209P/X216/X216P)

With four types of program recording modes to choose from, these recorders allow you the user flexibility to select the preferred camera inputs and record rate.* By saving these program recording modes, the user can easily select the desired combination of camera inputs & record rates. These modes can also be used in conjunction with timer and alarm recording.

* Program recording mode supports a maximum of 30 fields/s (NTSC) or 25 fields/s (PAL) recording rate.

Activity Detection Function

The HSR-X Series is equipped with an activity detection sensor that is designed to recognize changes in luminance. The sensor is based on a 10 x 16 grid (HSR-X209P/X216/X216P) or 8 x 10 grid (HSR-X200/X200P) on the monitor, and ten levels of sensitivity are selectable. If a change in luminance is detected in the assigned area of the grid, an alarm is triggered. The system allows the user to set the alarm to begin recording upon activation. In addition, the HSR-X recorders have an activity detection search function that allows the user to search recorded material for scenes in which a change in luminance was detected.

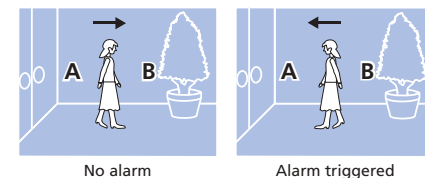
• A and B mode (HSR-X209P/X216/X216P only)

The alarm is triggered when a moving object is detected at both the A point and the B point.



• B to A mode (HSR-X209P/X216/X216P only)

The alarm is triggered when an object is detected moving from the B point to the A point.



Audio Single-Channel Recording and Playback

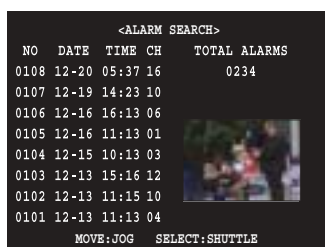
One-channel audio recording and playback is available within the range of 10 to 60 fields/s (NTSC) or 8.3 to 50 fields/s (PAL).

FEATURES

Intelligent Search Function

The HSR-X Series features five types of search functions to allow you to quickly locate and review required segments: alarm search, alarm thumbnail search, time/date search, archive area search, and activity detection search.

For example, in alarm search mode, data on the latest eight alarm events can be displayed on the monitor. This data includes alarm number, date, time, and the corresponding camera number. In addition, a thumbnail image of a specified alarm event can be displayed in the preview zone. With the activity search function, users can search for activity on previously recorded images on the hard disk.



NO	DATE	TIME	CH	TOTAL ALARMS
0108	12-20	05:37	16	0234
0107	12-19	14:23	10	
0106	12-16	16:13	06	
0105	12-16	11:13	01	
0104	12-15	10:13	03	
0103	12-13	15:16	12	
0102	12-13	11:15	10	
0101	12-13	11:13	04	

MOVE: JOG SELECT: SHUTTLE

Variable-Speed Picture Search

The HSR-X recorders are equipped with a "no noise" variable-speed picture-search function. Simply use the jog/shuttle dial on the front panel to perform search operations.

Multiple Data Storage and Backup

Three Storage Areas on the HDD

The HDD of the HSR-X Series of recorders is divided into three areas – a normal recording area, an alarm recording area, and an archive area. The recording capacity for the normal recording and alarm recording areas can be freely allocated depending on your preferences, and images recorded in these areas can be copied to the archive recording area. A maximum of 9999 images can be stored in the archive recording area.

Various Backup Features

Data copied to the archive area on the HDD can be easily backed up to various media. A built-in PC card slot on the front panel of HSR-X recorders enables you to download images onto a Memory Stick or Memory Stick PRO using a PC card adaptor. Furthermore, data can be backed up to DDS-2/3 or CD-R with an optional SCSI card via the PC card slot on the rear panel.*

* Please contact your nearest Sony office or authorized dealer for compatible DDS-2/3, CD-R, or SCSI cards.

Other Convenient Features

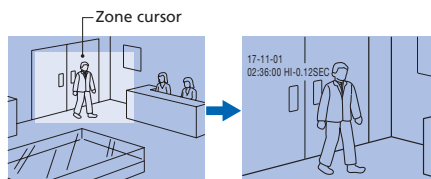
Auto Masking* (HSR-X209P/X216/X216P only)

The HSR-X209P, HSR-X216, and HSR-X216P incorporate a convenient Auto Masking function to comply with privacy laws related to the security applications in various countries. These recorders can automatically mask image data stored in the normal recording area or alarm recording area of the HDD after a designated period of time has elapsed. Users can designate the storage life within the range of one to 99 days. Once the designated number of days has passed, the image data are masked and cannot be played back.

* Ver. 1.05 or later (Main and Sub firmware) is required.

2x Digital Zoom

The 2x digital zoom function enlarges a specific area of a picture, allowing you to check the image in greater detail.



RS-232C/RS-485 Interface

The HSR-X recorders are equipped with a RS-232C/RS-485 interface. This enables communication from the recorder to personal computers, facilitating remote monitoring, playback, status settings, and parameter presets.

Series Recording (HSR-X200/X200P)

Multiple recorders can be cascaded to extend the total recording time. The series recording function allows sequential recording from deck to deck without interruption. As soon as the hard disk of one unit reaches capacity, the next unit is automatically activated.

Video Loss Alarm (HSR-X209P/X216/X216P)

A "video loss" message can be displayed on the monitor when the signal from a camera is lost during recording or monitoring, as well as when playing back recorded images.

Power-Failure Protection

In the event of a power failure, a built-in lithium battery supplies backup power to the HSR-X recorders to retain time and mode settings in memory for up to 30 days.

Two Security Lock Levels (User/Administrator Level)

Two levels of security protection can be activated by setting passwords:

- User level for image playback only
- Administrator level for both recording and playback

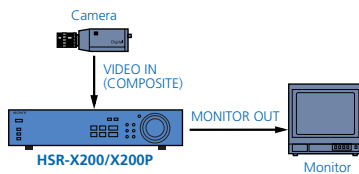
HDD Mirroring Function

The HSR-X209P/X216/X216P is equipped with two built-in hard disks (160 GB x 2). The mirroring function allows the same data to be recorded on both disks. By installing an optional HSBK-X201 or HSBK-X201/16 hard disk, you can activate the same mirroring function for the HSR-X200/X200P.*

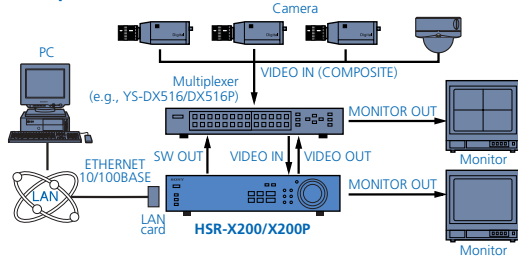
* The maximum HDD mirroring capacity is qualified by the capacity of the built-in HDD. When the HDD mirroring function is set to ON, it supports a maximum of 30 fields/s (NTSC) or 25 fields/s (PAL) recording rate.

SYSTEM CONFIGURATIONS

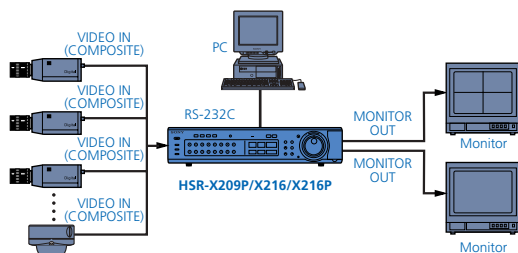
Example 1



Example 2

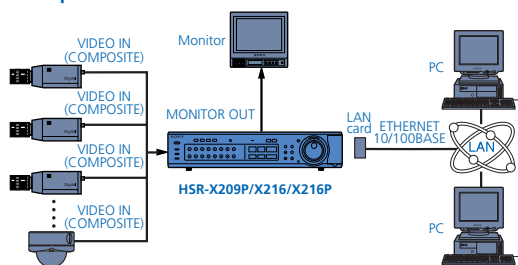


Example 3



Max. 16 cameras

Example 4



Max. 16 cameras

PANEL LAYOUT

HSR-X200/X200P



HSR-X209P

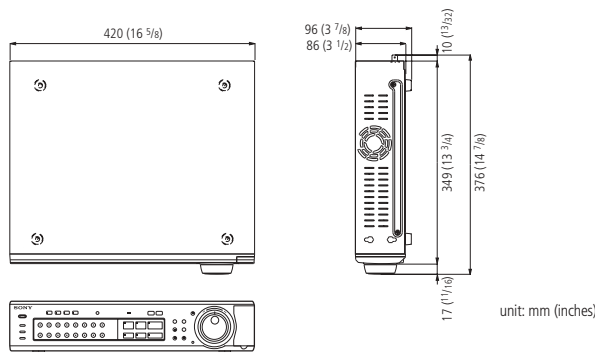


HSR-X216/X216P



SPECIFICATIONS

	HSR-X200	HSR-X200P	HSR-X209P	HSR-X216	HSR-X216P
General					
Mass	5.5 kg (12 lb 2 oz)		7.0 kg (15 lb 7 oz)		
Dimensions (W x H x D)	420 x 96 x 376 mm (16 5/8 x 3 7/8 x 14 7/8 inches)				
Power requirements	AC 120 V ±10%, 60 Hz	AC 220 to 240 V ±10%, 50/60 Hz		AC 120 V ±10%, 60 Hz	AC 220 to 240 V ±10%, 50/60 Hz
Power consumption	30 W		37 W	38 W	
Operating temperature	5 to 40 °C (41 to 104 °F)				
Operating humidity	Less than 80%				
Built-in HDD capacity with the HSBK-X201 or the HSBK-X201/16	80 or 160 GB 160 or 240 GB 240 or 320 GB	80 GB 160 GB 240 GB	320 GB — —		
Video					
Input	1 channel, VBS, VS (BNC), 1.0 Vp-p, 75 Ω, unbalanced 1 channel, S-VIDEO (Mini DIN 4-pin) Loop-out connector: BNC (1)/S-VIDEO (1)		9 channels, VBS, VS (BNC), 1.0 Vp-p, 75 Ω, unbalanced	16 channels, VBS, VS (BNC), 1.0 Vp-p, 75 Ω, unbalanced	
Output	1 channel, VBS, VS (BNC), 1.0 Vp-p, 75 Ω, unbalanced 1 channel, S-VIDEO (Mini DIN 4-pin)		9 channels, VBS, VS (BNC), 1.0 Vp-p, 75 Ω, unbalanced	16 channels, VBS, VS (BNC), 1.0 Vp-p, 75 Ω, unbalanced	
Monitor output	—		2 channels, VBS, VS (BNC), 1.0 Vp-p, 75 Ω, unbalanced 1 channel, S-VIDEO (Mini DIN 4-pin)		
Video compression	Motion-JPEG				
Picture quality mode	Hyper: 52 KB/picture, Super: 44 KB/picture, High: 32 KB/picture, Mid: 24 KB/picture, Low: 17 KB/picture				
Picture resolution	720 x 240 pixels (Field mode) 720 x 480 pixels (Frame mode)	720 x 288 pixels (Field mode) 720 x 576 pixels (Frame mode)	720 x 288 pixels (Field mode)	720 x 240 pixels (Field mode)	720 x 288 pixels (Field mode)
Horizontal resolution	More than 500 TV lines (Hyper mode)				
Signal-to-noise ratio	48 dB (typical, Hyper mode)				
Audio					
MIC input	1 channel Monaural (Mini jack), -60 dBs, 10 kΩ, unbalanced				
Line input	1 channel Monaural (Phono Jack), -8 dBs, 27 kΩ, unbalanced				
Line output	1 channel Monaural (Phono Jack), -8 dBs, 600 Ω, unbalanced				
Signal-to-noise ratio	40 dB (typical)				
Distortion	Less than 4% at 1 kHz				
Alarm and control inputs/outputs					
	RS-232C: D-sub 9-pin RS-485 (A, B, GND): Push-lock terminals Alarm in: Normal open (Low active) Alarm reset in: Normal open (Low active) Alarm out: 5 V, 5.7 kΩ (Low active) Non rec out: 5 V, 5.7 kΩ (Low active) Clock set out: 5 V, 5.7 kΩ (Low active) Clock set in: Normal open (Low active) Warning out: 5 V, 5.7 kΩ (Low active) Disk full out: 5 V, 5.7 kΩ (Low active) Alarm full out: 5 V, 5.7 kΩ (Low active) Remote control input: Push-lock terminals Series out: 5 V, 5.7 kΩ (Low active) Series in: Low level Switch out: 5 V, 4.8 kΩ (Low active)		RS-232C: D-sub 9-pin RS-485 (A, B): RJ-11 Alarm in: Normal open (Low active), x9 (HSR-X209P), x16 (HSR-X216/X216P) Sensor alarm out: 5 V, 5.7 kΩ (Low active), x9 (HSR-X209P), x16 (HSR-X216/X216P) R1/R2: Push-lock terminal All: 5 V, 5.7 kΩ (Low active) Alarm out: 5 V, 5.7 kΩ (Low active) Alarm reset out: Normal open (Low active) Non rec out: 5 V, 5.7 kΩ (Low active) Warning out: 5 V, 5.7 kΩ (Low active) Disk full out: 5 V, 5.7 kΩ (Low active) Alarm full out: 5 V, 5.7 kΩ (Low active)		
Supplied accessories					
	AC power cord (1), Power cord tie (1), Ferrite core (1) (HSR-X200P/X209P/X216P only), Rack mount kit (1), Operation manual (1)				
Optional accessories					
	HSBK-X201 80-GB HDD (HSR-X200/X200P only), HSBK-X201/16 160-GB HDD (HSR-X200/X200P only) MSA-8A/16A/32A/64A/128A Memory Stick, MSX-256/512/1G Memory Stick PRO MSAC-PC2 Memory Stick Adaptor, MSAC-PC3 Memory Stick/Memory Stick PRO Adaptor				
Dimensions					



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