

Digital Video Recorder with Built-in Multiplexer

- HDD recorder complete with 16 / 9-ch multiplexer
- Clear picture with horizontal resolution of 520 TV lines
- Simultaneous recording and playback at 100 IPS.
- Live picture monitoring at 800 (50 x 16ch) IPS and 450 (50 x 9) IPS for DSR-5016P and DSR-5009P respectively
- Built-in SSP controller with telemetry control
- Networking capability
- Comes with VA-SW5000 DVR management software

DSR-5016P DSR-5009P 9-channel PAL

DIGITAL

NETWORK SOLUTIONS

l-in-one JPEG2000 recorder multaneous recording and playback at 100 IPS.



Made in Japan

The product introduced here is manufactured in Japan utilizing advanced technologies and quality control.

JPEG2000 Enables Clear, Flawless Video Recording! A Multifunctional Machine with Extended Recording Time and Superior Networking Capability



DSR-5016P

An all-new DVR with JPEG2000

A finer picture with a smaller file size* offers unprecedented recording capacity. Comes with ROI, Progressive Scan and handy, versatile search functions.

* Compared to SANYO's M-JPEG model

Major features:

JPEG2000

520 TV line horizontal resolution or higher

Simultaneous recording/playback at 100 IPS

ROI for clear recording of desired surveillance areas

Telemetry control (Camera control via coaxial cable)

All-in-one unit with built-in multiplexer

Further extension of recording time possible with an external HDD unit

Simple data backup to a disc with a disc writer

Network functions over a LAN

JPEG2000

A high compression rate is achieved while eliminating block noise and pixcelation associated with the JPEG format. The new, elaborate compression method assures better picture quality and longer recording time. By using the ROI (Region of Interest) feature, it is possible to record at a higher picture quality for defined areas on the screen. Additional advantages of using JPEG2000 over JPEG format are:

Smaller image file size, enabling more images to be transmitted Unique Progressive Scan method which allows higher refresh rate for multi-channel view at remote PCs.



Conventional picture



JPEG2000

Superior Video Recording with 520 TV line Horizontal Resolution or Higher

The DSR-5016P / DSR-5009P offers clear surveillance video recording even for a 720 x 288 pixel screen, with horizontal resolution of 520 TV lines or more and an S/N ratio of 50 dB or better.

Here's the Future of Surveillance!

Allin One



Superior functionality and expandability makes this machine the ideal choice for new installations and system updates.

An all-in-one Unit with Superior Expandability that Also Serves as a System Hub

The DSR-5016P / DSR-5009P processes a variety of signals — digital, SSP, network (LAN), RS-232C — and can play the role of a system hub. It offers clear picture recording and split-screen surveillance and comes with USB terminals. Its video terminals enable multi-screen real-time monitoring at 100 IPS. And it comes with a telemetry function that offers control over PTZ / zoom cameras, including those supplied by other manufacturers. It is an all-new unit that is capable of accommodating even the most sophisticated surveillance need.

Made in Japan

SANYO's expertise in surveillance systems has all come together in this machine. It is a made-in-Japan unit that includes the latest technology.

Extended Recording Time

JPEG2000 improves picture quality without increasing the size of the data file, or maintains current quality with a reduced file size. This means you get more recording time from the same HDD capacity.

Simultaneous Recording and Playback at 100 IPS (720 x 288 pixels)

SANYO's expertise in the field has made it possible to record and play-back simultaneously at a maximum speed of 100 IPS.

Exclusive Extension Units

The VA-EXH, an external HDD unit for further extending recording time, and the VA-EXD1B, a disc writer for backing-up or copying data to portable media, are both available for the DSR-5016P / DSR-5009P.





ROI (Region of Interest)

ROI is one of the new features included in the JPEG2000 compression method. By setting ROI, it is possible to apply better picture quality for particular areas preset on the screen. The user can set up to three different ROI areas.

Static ROI

Three ROI areas can be set with different user preferences. Enhancing the picture quality for particular areas and lowering it for unimportant areas leads to a reduction of the file size.

Active ROI

Using this function applies the ROI settings only if a motion is detected in the ROI areas.

BASIC mode (8KB)



Static ROI recoding (8KB)



the picture quality of regions of inter

or enhancing



The three colours indicate the settings for each area

data .



Camera Telemetry Control

The DSR-5016P / DSR-5009P are capable of controlling PTZ dome cameras and zoom cameras through coaxial cables, RS-485 or a LAN. It also allows this control from a PC or a controller. The unit also supports protocols of other major brands.

* SSP (SANYO Security Serial Protocol) is a communication protocol for security devices proposed by SANYO.







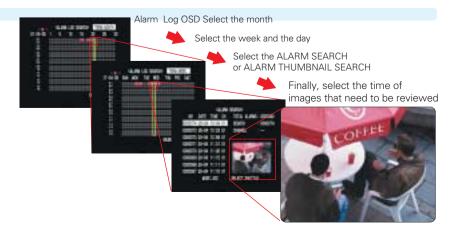
Camera control (PTZ cameras & zoom cameras only) available from the front panel, PC or a controller





Alarm Log Search

Recordings made during a particular period are shown in a user-friendly GUI. By designating the hour, minute, month, or day of the week of alarm events, a search is performed on a log file to narrow the search and bring up the desired scene.



Large Capacity, Convenient Recording, and the Possibility of Upgrading through Expansion

Supports up to 2TB HDD

The unit has two HDD bays, each supporting up to 2TB HDD to make the unit the right choice in today's trend for bigger drives. Selecting a drive of the same capacity will allow the use of the mirroring* function for data backup. For the latest available range of optional drives, contact the place of purchase.

* Mirror Recording

DSR-5016P / DSR-5009P each comes with two HDD bays. With two HDDs of the same capacity installed, it is possible to record the same video on two HDDs, thus allowing for a backup.

Longer Recording Time with an Expansion Unit

The DSR-5016P or DSR-5009P with two 300 GB HDD units (600 GB total capacity) can, for example, be connected to external HDD unit VA-EXH with 1.6 TB capacity (400 GB x 4, using Serial ATA HDD units) to further increase its storage capacity to a stunning 2.2 TB. This enables unprecedented uninterrupted recording. Adding HDD units also allows extensive storage of recorded data or data backup with mirror recording.





A Variety of Recording Methods

Seven different recording modes are available: Normal, Motion, Static ROI, Active ROI, Alarm, Timer, and External Timer Recording.

Multiple Backup Methods Depending on Data Size

CD-R/RW, DVD+R/+RW

The unit comes with two USB terminals located on both the front and rear panels. Using one of these terminals, it is possible to back-up data to CD-R/RW discs (Max. 640MB), DVD+R/+RW (Max. 4.6GB). The use of discs ensures secure storage of necessary video and audio data.



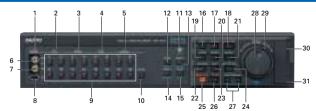
CompactFlash or Microdrive

DSR-5016P / DSR-5009P comes with a CF Type II expansion slot. It allows the user to export video data to a CompactFlash or Microdrive, and provides an easy way to store data or transfer it to a PC. Downloading and uploading of setup menus by use of a CF card offer an easy option for setting up additional DSR-5016P / DSR-5009P recorders.

* Recommended products only

As for the recommended products, visit our website **www.sanyosecurity.com** or contact the place of purchase.

LOCATIONS OF CONTROLS AND INDICATORS



- 1. POWER indicator 2. FULL indicator
- 3. ERROR indicator 4. LOCK indicator
- 5. ALARM indicator
- 6. AUDIO OUT (RCA) terminal 7. VIDEO OUT (RCA) terminal

- 9. [CAMERA SELECT] button
- 12. [QUAD] button
- 10. [AUDIO] button 11. [FUNC.] button
- 13. [MULTI] button
- 14. [MON2] button

- 15. [PLUS] button 16. [MENU] button 17. [EXIT/OSD] button 18. [PLAY/STOP] button
- 20. [SEARCH] button 21. [STILL] button
 - 22. [SEQUENCE] button 23. [COPY] button
 - 24. [SHUTTLE HOLD] button 25. [REC/STOP] button

19. [ZOOM] button

- 26. [TIMER] button 27. [ALARM] button
- 28. Jog dial (inside)
- 29. Shuttle dial (outside)
- 30. CompactFlash card slot 31. [MENU RESET] button
- 1. SCSI terminal VIDEO IN terminals
 VIDEO OUT terminals

7. AUDIO1 IN terminal

8. AUDIO2 IN terminal

- 4. MAIN MONITOR output terminal
- 5. MON2 output terminal (digital output) 6. S-VIDEO output terminal
- 9. AUDIO OUT terminal 10. MIC IN terminal
 - 11. ALARM IN terminals
 12. SENSOR ALARM OUT

 - 14. [ALL RESET] button 15. Expansion unit connection
- 16. USB terminal

THE REAL PROPERTY.

- 17. LAN terminals 18. RS-485 termination switch
- 19. RS-485 control connectors
- 20. RS-232C terminal
- . AC power socket 22. Power cord holder



Introduction of New Technologies and Essential Features Facilitate Consistent Surveillance

Audio Recording Available

Audio recording is available for recording speeds from 100 IPS to 1 IPS. (A 2ch audio input is provided.)

Pre-alarm Recording • • •

The pre-alarm recording mode allows the user to save up to 15 minutes of video prior to an alarm input, offering a great advantage when analysing a situation.

Timer Recording • • •

The timer recording mode allows the user to set eight different settings. Different settings for each day of the week and multiple settings for the same day are possible. It is also possible to specify the start / stop time or use a different recording speed.

Programmed Recording • • •

For each of four available programs (P1 to P4), the user can specify particular cameras for recording. In addition, different recording speeds can be set for each program. These programs can also be used when making a timer recording or a pre-alarm recording.

Five Different Picture Qualities and 28 Recording Speeds Enable Flexible Settings

The picture quality is selectable from BASIC, NORMAL, ENHANCED, FINE and SUPER FINE. Together with the 28

300 GB

Recording Speed		Picture Quality					Audio
IPS	Recording Interval	Basic 8kB	Normal 16kB	Enhanced 24kB	Fine 32kB	Super Fine 40kB	Recording
	(sec.)	Recording Time					
100.00	0.01	78	41	28	21	17	
50.00	0.02	156	82	56	43	34	
25.00	0.04	311	165	112	85	68	
16.67	0.06	467	247	168	127	103	
12.50	0.08	623	330	224	170	137	
8.33	0.12	935	495	336	255	205	
6.25	0.16	1,246	659	448	340	273	
5.00	0.20	1,557	824	561	425	342	
4.17	0.24	1,867	988	672	509	410	
3.57	0.28	2,181	1,154	785	595	479	
3.13	0.32	2,487	1,317	895	678	546	Available
2.78	0.36	2,800	1,483	1,008	764	615	Available
2.50	0.40	3,114	1,649	1,121	849	684	
2.27	0.44	3,429	1,816	1,235	935	753	
1.92	0.52	4,055	2,147	1,460	1,106	890	
1.67	0.60	4,662	2,468	1,678	1,271	1,023	
1.47	0.68	5,296	2,804	1,907	1,444	1,163	
1.32	0.76	5,898	3,122	2,123	1,608	1,295	
1.19	0.84	6,542	3,463	2,355	1,784	1,436	
1.09	0.92	7,142	3,781	2,571	1,948	1,568	
1.00	1	7,785	4,121	2,803	2,123	1,709	
0.50	2	15,570	8,243	5,605	4,246	3,418	
0.33	3	23,590	12,489	8,493	6,434	5,178	
0.25	4	31,139	16,486	11,210	8,493	6,835	N
0.20	5	38,924	20,607	14,013	10,616	8,544	Not available
0.10	10	77,848	41,214	28,025	21,231	17,089	available
0.05	20	155,696	82,427	56,051	42,463	34,177	
0.03	30	259 494	137 379	93 418	70 771	56 962	

<sup>0.03 30 259,494 137,379 93,418 70,771 56,962

*</sup> The recording time may vary slightly depending on the complexity of the images and the presence of an audio signal.
*The recording time will change depending on the settings for the storage area, and the availability of an optional HDD.
Contact the place of purchase for details on increasing the capacity by adding a HDD.

Reference: 24H = 1 day, 168H = 1 week, 720H = 1 month, 8760H = 1 year

different recording speeds, the user can select the most suitable recording mode for each situation.

Motion Sensor

DSR-5016P / DSR-5009P comes with a built-in motion sensor. Different settings can be made for each channel independently. The sensor can detect moving objects within the screen by picking up changes in brightness. The user can use this feature to trigger an alarm recording.

Alarm Functions

Using the built-in motion sensor and external sensors, the following alarm functions are available.

(1) Monitor Display Switching

An alarm signal causes the monitor to switch to the designated mode of display (16-, 9-, or full-screen). It also causes letters "SA" (for a Sensor Alarm) or "EA" (for an External Alarm) to be displayed alternately with the camera title. The user can also set each spot monitor to switch to the image from the camera from which the alarm was triggered.

(2) Buzzer and Indicator Lamp Warnings

An alarm signal triggers a buzzer sound as well as the blinking of the camera selection indicator light for the relevant camera.

AV Output Terminal on the Front Panel • • •

These terminal can be used for supplying signals to a consumer VCR or DVD recorder, thus enabling the use of analogue video tapes and DVDs as recording media.

Live, full-motion video monitoring with split-screens

Live video images from multiple cameras can be simultaneously displayed on one monitor without interrupting motion, at the speed of 50 IPS. 16-screen, 9-screen, 4-screen, and full-screen display are all available.









Extensive Display Options • • •

For both live picture monitoring (during multiplex recording) and playback of pictures, the user can select from 16-screen display, 9-screen display, 4-screen display, and full-screen (1-screen) display.

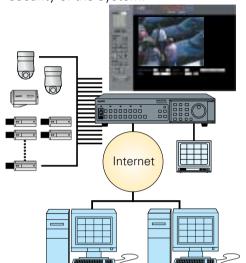
- Plus display
- Playback during Live Surveillance 4-screen display
- Full-screen display Screen position assignment
- · Monitor masking



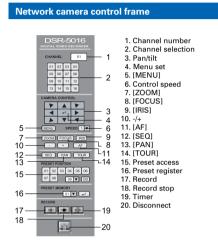
Networking Expands the World of Surveillance

Remote Control by a PC

The built-in LAN terminal enables remote control of the DSR-5016P / DSR-5009P through a PC that is connected to the network (by using Internet Explorer Version 5.0 or higher, without the need for exclusive software). It is also possible to monitor live video, playback recorded pictures, control PTZ dome camera systems, and download video/audio recordings to the PC. Limiting user access to certain functions of the machine by the use of passwords ensures the security of the system.



Network operation frame Channel number Channel selection 3. Multi 9/16 screen display 4. Quad-screen display Previous event 6. Next event 7. Slower 9. Reverse playback 10. Stop 12. Previous image 8 13. Still 14. Next image 15. Search 16. Copy (by setting) 13 17. Download (by setting) 18. Menu settings 16 20 19. Disconnect 21 20. Record 18



Other Features

- •Triplex recording with 1-field switching •Four-level password security lock (Level 1 to 4) •Video loss alarm •30-day memory back-up
- •Resume function •Disk full alarm •On-screen mode setting, menu languages built in: English / French / German / Spanish
- •Built-in time date generator •Six different search functions •Alarm counter •Auto delete •Jog shuttle •Forward / reverse field advance •Automatic summer time adjustment •Lifetime counter •Through output of video •Position adjustable camera titles (10-character) •One push adjustable clock •Push-lock terminals for easy installation

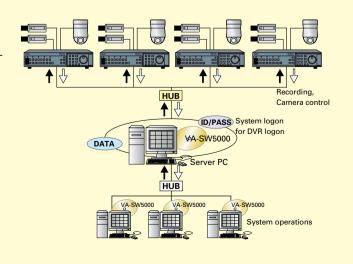
CCTV system Management Software VA-SW5000

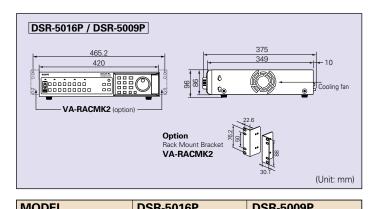
By installing the VA-SW5000 software bundled with the unit, remote surveillance of a large-scale system can be easily accomplished from a local PC. System setup and DVR operation is also possible. In addition, it allows simultaneous access of up to eight users. The four-level security feature effectively prevents hacking and maintains the system integrity. Each user is allowed to sign-on independently and can access a maximum of 256

DVR units. Also included in the features is e-mailing any alarm event to a predefined mail address. The user-friendly GUI, which is customised the way only possible with exclusive software, ensures easy operation of the surveillance system.

System environment

			Recommended	Minimum	
OS			Windows® 2000 Professional (SP3), Windows® XP Professional		
CPU			Pentium®4 3GHz		
Memory			1 GB		
Display			XGA (1,024 x 768 pixel), 16-bit colour		
			ATI®RADEON9000 series or above		
HDD	System setup area		100 MB		
	Data save	area	2 GB or above		
LAN p	ort		100 Gbps x 1or above	100 Gbps x 1or above	
Net	PC side	LAN	1 Gbps	100 Mbps	
work		Internet	5 Mbps	1.5 Mbps	
	DVR side	LAN	100 Mbps	10 Mbps	
		Internet	5 Mbps	5 Mbps	





MOD	EL	DSR-5016P	DSR-5009P	
General	Hard disk capacity	Max HDD Capacity (Te	chnically) per bay 2TB	
	Picture resolution	720 x 288 (pixels)		
	Compression	JPEG2000		
	Picture quality	5 levels (Basic, Normal, Enhanced, Fine, Super Fine)		
	Recording speed	28 levels.		
	Recording area	Recording Area		
	Number of cameras	16 9		
	Menu language	English / French / German / Spanish		
	Clock setup	Day / Month / Year / H	our / Minute / Second	
Search Mode		Day / Month / Year / Hour / Minute / Second Time/Date Search, Alarm Search, Alarm Thumbnail Search,		
Ocal Cil IV	noue	Archive Area Search, M		
		Alarm lo	The state of the s	
Video	Signal format			
viueo	Signal Ionnat	PAL standard (Colour) / CCIR standard (B/W) auto select, 625 lines, 50 IPS		
	Video input	VBS / VS 1.0 V (p-p) 75 Ω VBS / VS 1.0 V (p-p) 75 Ω		
	video input			
	Video entru	BNC x 16	BNC x 9	
	Video output	BNC x 16	BNC x 9	
	Main monitor output	VS 1.0 V (p-p)		
	Monitor 2 output	VBS / VS 1.0 V (p		
Audio	Audio input	-8 dBs 27 kΩ unbalanced RCA x 2		
	Audio output	-8 dBs 600 Ω unb		
	Microphone input	-60 dBs 10 kΩ unbalanced 3.5 mm mini jack x 1		
Front AV	Video output 1.0 V (p-p) 75 Ω unbalanced RCA x 1			
	Audio output	-8 dBs 600 Ω unb		
	CompactFlash slot	CF ty		
Control	LAN	10BASE-T / 100BA	ASE-TX, RJ-45 x 1	
signal		Compatible protocol: UDP, TCP/IP, HTTP, DHCP, SMTP,		
		NTP, PP	P server	
	RS-485	RJ-11 x 2, (With a t	ermination switch)	
	RS-232C	D-SUE	39 pin	
	USB	USB2.0 Series terminal	x 2 (Front x 1, Rear x 1)	
	Alarm input	No-volt contacts	No-volt contacts	
	•	1100		
		(100ms or more) x 16	(100ms or more) x 9	
	Sensor alarm	Open collector, Low level	(100ms or more) x 9 Open collector, Low level	
		Open collector, Low level	Open collector, Low level	
	output	Open collector, Low level active (Max. 25 mA) x 16	Open collector, Low level active (Max. 25 mA) x 9	
	output Remote control input	Open collector, Low level	Open collector, Low level active (Max. 25 mA) x 9 ge control x 2	
	output Remote control input Clock set input	Open collector, Low level active (Max. 25 mA) x 16 Two-wire volta No-volt contacts (1	Open collector, Low level active (Max. 25 mA) x 9 ge control x 2 00ms or more) x 1	
	Remote control input Clock set input Clock set output	Open collector, Low level active (Max. 25 mA) x 16 Two-wire volta No-volt contacts (1 Normal 5 V Low	Open collector, Low level active (Max. 25 mA) x 9 ge control x 2 00ms or more) x 1 level active x 1	
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	output Remote control input Clock set input Clock set output Alarm output Alarm reset	Open collector, Low level active (Max. 25 mA) x 16 Two-wire volta No-volt contacts (1 Normal 5 V Low Active low, Open colle No-volt contacts (1	Open collector, Low level active (Max. 25 mA) x 9 gge control x 2 00ms or more) x 1 level active x 1 ctor Max. 500 mA x 1 00ms or more) x 1	
	output Remote control input Clock set input Clock set output Alarm output Alarm reset Warning output	Open collector, Low level active (Max. 25 mA) x 16 Two-wire volta No-volt contacts (1 Normal 5 V Low Active low, Open colle No-volt contacts (1 Normal DC 5 V Low	Open collector, Low level active (Max. 25 mA) x 9 ge control x 2 00ms or more) x 1 level active x 1 ctor Max. 500 mA x 1 00ms or more) x 1 w level active x 1	
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- Warnings regarding HDDs

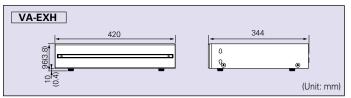
 Do not attempt to install or replace a HDD on your own. You cannot use these HDDs on PCs.

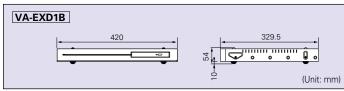
 The unit may be damaged if it is exposed to an impact or vibration, or the power plug is disconnected during operation.

 Sanyo will not be held liable for any data loss due to an HDD error or a failure during recording.

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MODEL	VA-EXH
Product name	External storage unit
EMC standard	CE
Safety standard	CE
Mirroring	Available
Hard disk bay	3.5-inch (x4)
Terminal	7-pin external storage unit connection terminal (x4)
Power supply voltage	120 V to 240V AC, 50 / 60 Hz
Power consumption	680 mA
Operating conditions	Temperature: 5°C to 40°C [41°F to 104°F], Humidity: 80% or less
Dimensions	420 (W) x 96 (H) x 344 (D) mm [16.5(W) x 3.8(H) x 13.5(D) in.]
Weight (Approx.)	6 kg [13.0 lbs.] (without HDD), 6.6 kg [14.0 lbs.] (with a HDD),
	7.2 kg [15.0 lbs.] (with 2 HDDs)

MODEL	VA-EXD1B
Product name	External disc unit
Disk drive	Slim type
Recording format	ISO9660
Supported media	DVD+R/+RW and CD-R/RW
Terminals	USB terminal (USB2.0, series B terminal) (x1)
Power supply	120 V to 240 V AC, 50 / 60 Hz
Power consumption	1000 mA
Operating conditions	Temperature: 5°C to 40°C [41°F to 104°F], Humidity: 80% or less
Dimensions	420 (W) x 54 (H) x 329.5 (D) mm [16.5(W) x 2.1(H) x 13.0(D) in.]
Weight	3.9 kg [8.0 lbs.]

Compatible devices with horizontal resolution of 520 TVL

Camera

Standard

olour CCD DSP High-resolution Camera

VCC-6585P (12 V DC / 24 V AC dual type) 1/3" Colour CCD DSP High-resolution Camera VCC-5885P (12 V DC / 24 V AC dual type)

1/3" Colour CCD DSP High-resolution Camera

VCC-6580P (220 to 230 V AC type)

Day/Night -

CD DSP High-resolution Day/Night Camera (Colour + B/W)

VCC-4592P DAY NIGHT (12 V DC type) VCC-4594P DAY NIGHT (24 V AC type)

Pan Tilt Zoom

1/4" Colour CCD DSP High-resolution Speed Dome Camera

VCC-9000P (24 V AC type)

1/4" Colour CCD DSP High-resolution Day/Night Speed Dome Camera (Colour + B/W) VCC-9100P DAY NIGHT (24V AC type)

1/4" Colour CCD DSP High-resolution Speed Dome Camera

VCC-9300P (24 V AC type)

Recorder

1ch Digital Video Recorder DSR-300P 6ch Digital Video Recorder DSR-3506P

9ch Digital Video Recorder DSR-3709P

16ch Digital Video Recorder DSR-3716P

1/4" Colour CCD DSP High-resolution Day/Night Speed Dome Camera (Colour + B/W)

VCC-9400P DAY NIGHT (24 V AC type)

Zoom -

1/4" Colour CCD DSP High-resolution Auto Focus Zoom Camera

VCC-ZM300PA (12 V DC / 24 V AC dual type)

1/4* Colour CCD DSP High-resolution Day/Night Auto Focus Zoom Camera (Colour + B/W)

VCC-ZM400P DAY NIGHT

Vandal Resistant Dome Camera -

VDC-D1185VP DAY NIGHT

1/4" Colour CCD DSP High-resolution nt Dome Camera (Colour + B/W)

VDC-D2185VP DAY NIGHT (12 V DC / 24 V AC dual type)

Weatherproof —

1/4" Colour CCD High-resolution Weatherproof Day/Night Auto Focus Zoom Camera (Colour + B/W)

VCC-XZ400P DAY NIGHT (12 V DC / 24 V AC dual type)

Monitor

15" High-resolution Colour Video Monitor VMC-8415FP 15" High-resolution Colour Video Monitor VMC-8615FP

19" High-resolution Colour Video Monitor VMC-8619PA

*Caution: Please consult the instruction manual to ensure safe and proper operation of the product.









DI Company of SANYO Electric Co., Ltd. obtained Quality Management System ISO9001 and Environmental Management System ISO14001 certifications.

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