SANYO

Digital Recording Camera with built-in Hard Disk Drive

DSR-C100P Colour

- 1.5 million pixel digital camera and a hard disk recorder in one
- High-speed recording of SXGA images at three frames/sec.
- Comes with two recording modes
- Video select for PAL / NTSC output

Equivalent to
900
TV line horizontal resolution
SXGA

Built-in
HDD
Recording

CE ISO 9001

DNV

ISO 9001 REGISTERED FIRM
DNA Certification B. V., THE NETHERLANDS

Accredited by the RvA

Digital Recording of High Definition **SXGA** Images

Digital camera and a hard disk recorder in one

DSR-C100P combines a 1.5 million pixel digital camera and a 10.2 GB hard disk recorder in one unit. This means that the task of making high quality recordings with digital-to-digital signal processing is completed within the unit without degradation associated with analog conversion.

1.5 million pixel CCD   10.2 GB hard disk drive

High definition SXGA images

Its 1360 x 1024 pixel high definition images (equivalent to 900 TV line horizontal resolution*) make it possible to record distinctive features of people's faces.

* Use a SXGA PC monitor for viewing.

An image taken by DSR-C100P

High-speed recording of three frames per second

Thanks to further improvements in SANYO's high-speed image processing circuit, already highly valued in consumer digital cameras, DSR-C100P is capable of recording SXGA images (JPEG compression) as fast as three frames/sec.

Up to 10x digital zoom function
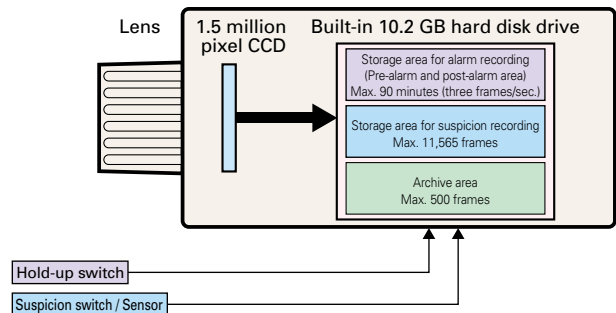### (with application software)

With SXGA image recording, it is possible to zoom in on small objects and examine details. An original image can be enlarged up to 1000% (10x) in increments of 10% (with application software). In addition, up to 21x digital zoom is available on the video output.

A 10x digital zoom image
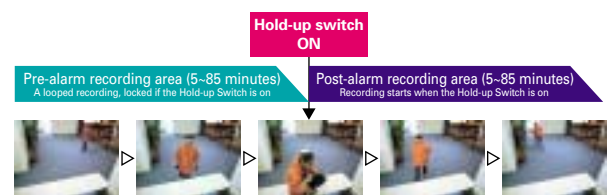
Images taken by DSR-C100P

Two pre-defined recording modes

DSR-C100P comes with two recording modes: alarm recording (pre-alarm / post-alarm) and suspicion recording. An exclusive recording area is created for each recording mode on the hard disk.

Lens   1.5 million pixel CCD   Built-in 10.2 GB hard disk drive

Storage area for alarm recording
(Pre-alarm and post-alarm area)
Max. 90 minutes (three frames/sec.)

Storage area for suspicion recording
Max. 11,565 frames

Archive area
Max. 500 frames

Hold-up switch

Suspicion switch / Sensor

Make a recording of "the past"
— Alarm recording

The alarm recording function enables user to have recordings of activity prior to an event as well as after an event. The maximum length of time is 90 minutes (three frames/sec.) for combined pre and post-alarm recording. The camera creates a pre-alarm recording area corresponding to the pre-set duration within the designated storage area for alarm recording and, when the Record Start Switch is turned on, it immediately starts a looped recording. When the Hold-up Switch is turned on, this pre-alarm recording area is locked and successive images are stored in the post-alarm recording area. This mechanism makes it possible to preserve recordings both prior to and after an event.

Hold-up switch ON

Pre-alarm recording area (5~85 minutes)
A looped recording, locked if the Hold-up Switch is on

Post-alarm recording area (5~85 minutes)
Recording starts when the Hold-up Switch is on

Images taken by DSR-C100P

More than 11,000 frames of SXGA images
— Suspicion recording

The suspicion recording function lets users make recordings as long as a manual switch is pressed. The maximum length is 11,565 frames and users can select between speeds of three frames/sec. and one frame/sec. Looped recording is possible. Also, instead of using the manual switch, suspicion recording can be activated by sensor input.

Preserving crucial images
— Archive function

The archive function lets users make copies of crucial images from an alarm recording or suspicion recording and stores up to 500 frames in the archive area. The archive area can not be overwritten during alarm recording or suspicion recording.

High Degree of Compatibility with PCs

Direct access to the built-in HDD from a PC

By installing the included application software on a PC, it is possible to directly access the built-in HDD of the DSR-C100P. This enables the user to set up the DSR-C100P and look for images, as well as download recorded images. A USB, RS-232C, or Ethernet (10Base-T) connection can be selected.
See **Fig.1** **Fig.2** **Fig.3**

Thumbnails of recorded images

CD-ROM with software included

System requirements:
OS: Windows 98 Second Edition (SE), Windows Me, Windows 2000 • CPU: At least a Pentium II 233MHz or compatible CPU • Memory: At least 64MB (128MB or more recommended) • Available space on HDD: At least 100MB (200MB or more recommended) • Monitor: 640 x 480 pixels (1024 x 768 pixels or higher recommended), 256 colour or 16-bit colour display required • Drive: CD-ROM drive • Communications ports: USB connector, RS-232C connector (transmission speed 9600 bps or more)
USB connections are only possible with computers that have a USB port as standard equipment and which have Windows 98 SE or later pre-installed (correct operation is not guaranteed if the system has been upgraded from Windows 3.1 or Windows 95 to Windows 98 SE or later).

Print recorded images using an existing printer

Using the included application software, it is easy to print a high quality image on a printer attached to a PC.
See **Fig.1** **Fig.2**

Attach images to an E-mail

Because all images are recorded in JPEG format, it is easy to attach images to an electronic document, such as an E-mail or a word-processor document, and to distribute them quickly to multiple numbers of people.
See **Fig.1** **Fig.2**

Verify function

DSR-C100P verifies by itself whether or not an electronic alteration was made to the original image.

Connection to existing LAN (Ethernet 10Base-T)

It is possible to connect the DSR-C100P to an existing LAN by using an optional CF LAN kit.[1] Users can access any number of DSR-C100Ps connected to the LAN from a single PC.[2] They can set up multiple DSR-C100Ps and look for images, as well as download recorded images. With a LAN connection, the user can install cameras in remote locations outside the effective limit of a USB or RS-232C connection.
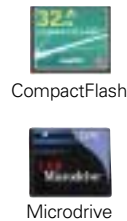See **Fig.2** **Fig.3**

[1] Available on Sept. 2001
[2] It is also possible to control DSR-C100Ps from multiple PCs.

CF-type extension slot

DSR-C100P comes with a CF-type extension slot. By using a CompactFlash or a Microdrive, it is easy to store and transport recorded images on a portable medium.
See **Fig.5**

CompactFlash

Microdrive

CF-type extension slot

Built-in VIDEO OUT terminal

With this composite video output, the user can select either PAL or NTSC format. It enables the user to watch the live images (three frames/sec.) using an ordinary video monitor.
See **Fig.3** **Fig.4**

Remote control without a PC

By connecting an optional camera control unit and a video monitor to the VIDEO OUT terminal, users can set up the DSR-C100P and look for images, as well as copy recorded images to a portable medium without a PC.
See **Fig.4**

The set-up screen

Thumbnails of recorded images

Camera Control Unit
**VAC-70** (sold separately)

Other features

• Multi-spot photometry (64-section) backlight compensation
• Automatic white-balance
• Secure information management with a password of up to eight characters
• Up to five character camera ID display on the screen
• Max. 36 character comment input to any image data
• User can turn off the date & time display for a closer look, even with a recorded image
• 30-day memory backup
• Automatic daylight saving time / Summer time adjustment
• A built-in Ni-Cd battery to protect the HDD against power failure by terminating a write operation before switching off the unit

Replacing film-based cameras at banks

With its SXGA high definition picture equivalent to that of 35mm film, and the added features that come from digital solution, the DSR-C100P is not a mere replacement for conventional film-based cameras commonly employed in banks. It is the key to incorporating a surveillance system into an IT network.

- Because of its capability to record images prior to an event, more information is obtained for a particular event.
- Recording onto a hard disk drive eliminates the manpower involved in replacing film.
- Repeated recordings on the same hard disk save on maintenance costs.
- Ceiling-mounted cameras can be controlled from a PC with a USB connection.
- Multiple cameras can be controlled from a PC with a LAN connection.
- A built-in VIDEO OUT terminal makes it possible to see images on an ordinary video monitor.
- The JPEG recording format makes it possible to distribute images via E-mail for quick information gathering.
- A pilot lamp near the lens gives a warning that the location is under surveillance. (It is possible to turn off the pilot lamp.)

A troublesome film exchange → Easy access to recorded images with a PC
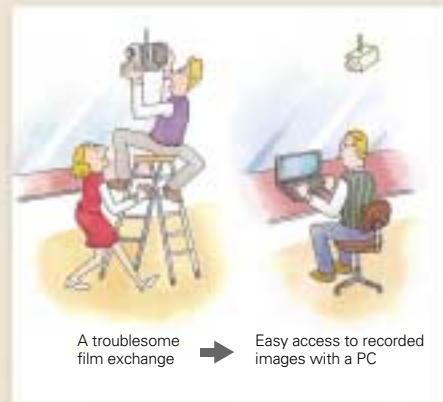
The stand-alone camera / recording system offers a new option in surveillance systems

By combining a camera and a hard disk recorder, the DSR-C100P offers a complete package as a surveillance system. To save space and manpower, connect a PC only when it is necessary to review images.

In conjunction with an ATM
When used an ATM application, the DSR-C100P can be triggered by a sensor to record images only when someone is standing in front of the ATM. Since DSR-C100P packages camera and recorder in one unit, it is especially advantageous for off-site ATMs with limited space and no close-by maintenance.

In conjunction with a cash-register drawer at retail shops
With recording triggered by the cash-register drawer, it is possible to record every transaction. The high definition images allow you to distinguish the types of bills. The suspicion recording function is capable of storing up to 11,565 frames and, in looped recording mode, recording will continue indefinitely without the need to change recording media.

For access control of various facilities
With recording triggered by entrance doors of public facilities, apartment houses, parking spaces, etc., it is possible to record people going in and out of such places. In addition to keeping an eye on unauthorized personnel, the time stamp function can be utilized as a verification tool in an access control system at hospitals and research institutes.

DSR-C100P in Various System Configurations

Digital output via USB serial connection

Fig.1 **An example of a USB serial connection with a PC**

USB
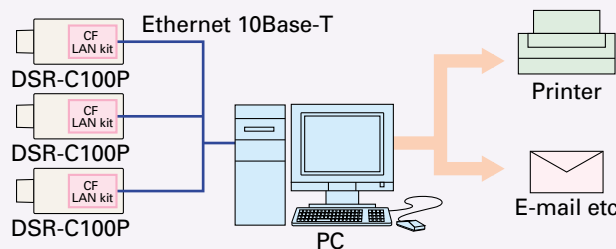
DSR-C100P

PC

Printer

E-mail etc
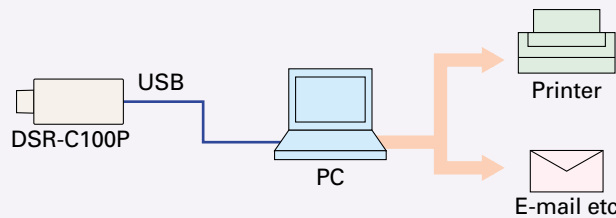
The DSR-C100P can easily be connected to a PC with a USB serial connection. Users can set up the DSR-C100P and look for images, as well as download recorded images.

* When DSR-C100P is connected with a PC through the USB or RS-232C port, recording is not possible.

* A serial connection through an RS-232C port is also possible.

Digital output via Ethernet LAN connection

Fig.2 **An example of an Ethernet LAN connection with a PC**

CF LAN kit
DSR-C100P

CF LAN kit
DSR-C100P

CF LAN kit
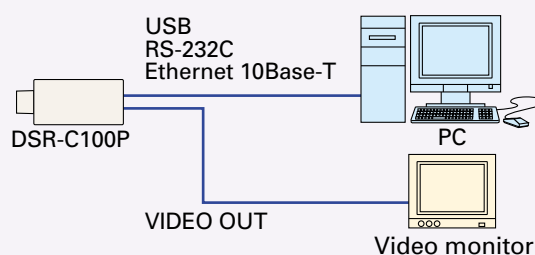DSR-C100P

Ethernet 10Base-T

PC

Printer

E-mail etc

With the use of an optional CF LAN kit,* the camera can be connected to an existing LAN (Ethernet 10Base-T). Users can set up multiple DSR-C100Ps and look for images, as well as download recorded images.

* Available on Sept. 2001

Digital output and Video output

Fig.3 **An example of simultaneous use of a PC and a video monitor**

USB
RS-232C
Ethernet 10Base-T

DSR-C100P

PC

VIDEO OUT

Video monitor

With the VIDEO OUT terminal built-in, users can monitor live images (three frames/sec.) on a video monitor.

* When DSR-C100P is connected with a PC through the USB or RS-232C port, recording is not possible.

Video output

Fig.4 **An example of connection with a video monitor via VAC-70**

VIDEO OUT

DSR-C100P

Camera Control Unit
VAC-70
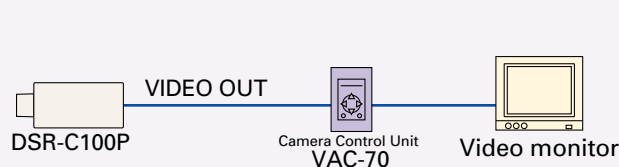
Video monitor

By connecting a camera control unit and a video monitor, users can set up the DSR-C100P and look for images, as well as copy recorded images to a portable medium. All these operations can be performed remotely and without a PC.

* When a video monitor is connected, users can set up the DSR-C100P and look for images, as well as copy recorded images to a portable medium by operating buttons on the side the unit without the help of a PC or a camera control unit.

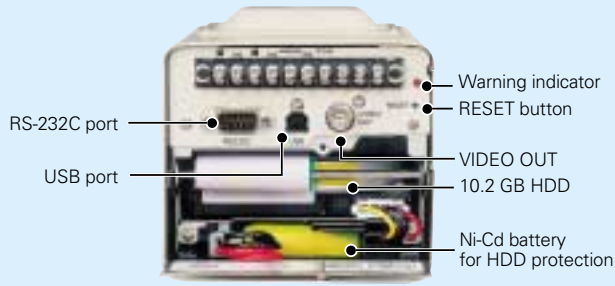## Output to portable media
CompactFlash
Microdrive

Fig.5 **Copying images from a DSR-C100P to a portable medium**

DSR-C100P

CompactFlash
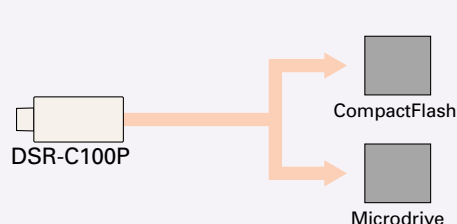
Microdrive

By inserting a CompactFlash or a Microdrive into the built-in CF-type extension slot, it is possible to copy recorded images to a portable medium, making them easy to store and transport.

All equipment and recording media shown above, other than the DSR-C100P unit itself, are sold separately.

DSR-C100P

DSR-C100P rear panel
(when rear cover is opened)

- Warning indicator
- RESET button
- VIDEO OUT
- 10.2 GB HDD
- Ni-Cd battery for HDD protection
- RS-232C port
- USB port

* The built-in hard disk drive can easily be taken out, making it possible to access recorded data even if the unit is inoperable.

DSR-C100P

1/4"–20UNC threaded hole
(top / bottom selectable)

122
120

242
237

11.6

117

Pilot Lamp

Cooling fan

(Unit: mm)

MODEL	DSR-C100P
Image sensor	1/2" 1.5 million pixel CCD, progressive-scan
Picture elements	Total: 1434 (H) x 1050 (V), Effective: 1360 (H) x 1024 (V)
Shooting number	Alarm mode: 3 fps (for both Pre-alarm / Post-alarm) Suspicion mode: 1 or 3 fps (selectable)
Minimum illumination	Approx. 15 Lux
Backlight compensation	ON: Multi-spot photometry (64-section) / OFF —— (on screen)
Flicker less	ON / OFF —— (on screen)
White balance	Automatic
Exposure	Automatic
Gain control	Automatic (ISO level 100 ~ 800)
Electronic shutter speed	Automatic (1/50 ~ 1/10000), (1/50, 1/100 fixed in flicker less mode)
Built-in Lens — Structure	Five elements in five groups
Built-in Lens — Focus	Fixed focus
Built-in Lens — Focal length	f = 7.0 mm (equivalent to f = 38 mm lens on 35 mm camera)
Built-in Lens — Focal range	2.3 m ~ ∞
Recording media	3.5" 10.2 GB HDD (Proprietary format)
Resolution of digital image	SXGA: 1360 (H) x 1024 (V) pixels
Image file format	JPEG compliant (Exif Ver. 2.1 compliant)
Recording capacity — Alarm mode	Alarm recording time: 10 ~ 90 min. (Variable, and allocatable to Pre / Post) Pre-alarm recording time: 5 ~ 85 min. Post-alarm recording time: 5 ~ 85 min.
Recording capacity — Suspicion mode	502 ~ 11,565 frames (variable according to alarm recording time and suspicion recording rate)
Recording capacity — Archive mode	Max. 500 frames
Playback functions (Video output) — Split-screen	Alarm playback: 4 / 9 screen Suspicion playback: 6 / 9 screen Archive / Extension playback: 6 screen
Playback functions (Video output) — Normal playback	3 fps
Playback functions (Video output) — Searching	Skip search (forward and reverse at 5 / 15 / 30 sec. interval)
Playback functions (Video output) — Digital zoom	1x to 20x (7 steps)
Hold-Up input	Low level active (0 V, 1 sec, or more)
Suspicion input	Low level active (0 V, 100 msec, or more)
Video output	VBS 1.0 V (p-p) (75 ohms, composite), PAL / NTSC selectable
Warning output	High level active (DC 3 V, ±0.3 V)
Interface — USB	Type B connector (rear)
Interface — RS-232C	D-Sub 9-pin (rear)
Interface — Video signal	BNC (rear)
Interface — Power supply	2-pin terminal (rear)
Extension slot	CF type II (side), for a CompactFlash or a Microdrive (3.3V)
Operating conditions	Temperature: 5°C to 40°C [41°F to 104°F] Humidity: 10% to 80%, no condensation
Power requirement	12 V ~ 16 V DC, 0.9 A ~ 0.7 A
Power consumption	Approx. 10.5 W
Camera mount	1/4"– 20 UNC (top / bottom selectable)
Dimensions (approx.)	122(W) x 117(H) x 237(D) mm [4.8(W) x 4.61(H) x 9.33(D) in.] (w/o camera mount)
Weight (approx.)	2,550 g [89.9 oz.]

AC Adaptor

|	
Power requirement	100 ~ 240 V AC, 60 / 50 Hz
Input current	1.3 A or less (Vin = AC 100 V)
Dimensions (approx.)	49.5 (W) x 27 (H) x 114.5 (D) mm [1.95(W) x 1.06(H) x 4.51(D) in.]
Weight (approx.)	270 g [9.5 oz.] (without power cable)

* Specifications subject to change without notice

* Windows is a registered trademark of Microsoft inc.
* All other company and product names are registered trademarks and/or trademarks of their respective owners.
* Product design, product release date, etc. may change without prior notice.
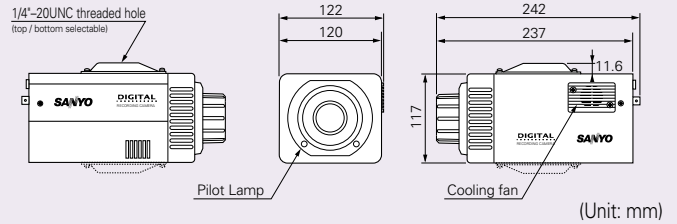
Optional accessories

0.7x Wide Conversion Lens
VCL-W07D (sold separately)

When mounted onto the built-in lens, a wide angle picture is obtained (Horizontal angle of 67.5 degrees)
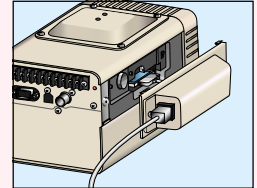
Standard picture   With VCL-W07D

CF LAN Kit
VA-LANC100 (sold separately)

By installing this board into the CF-type extension slot of DSR-C100P, the camera can be connected to a LAN (Ethernet 10Base-T). It comes with a side panel with an opening for the LAN cable.
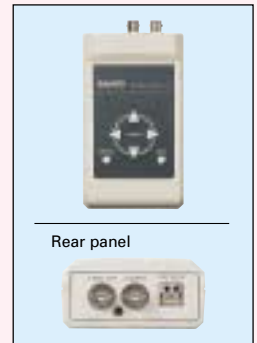
* Available on Sept. 2001

Camera Control Unit
VAC-70 (sold separately)

When connected to the VIDEO OUT terminal of DSR-C100P, it allows users to set up the DSR-C100P and look for images, as well as copy recorded images to a portable medium. Requires two Alkali type AA batteries or DC 3 V power supply.

Rear panel

Camera Mount Base
VA-VCT100 (sold separately)
* Available soon

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

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