

DIGITAL SIGNAL PROCESS COLOR CAMERA

HITACHI

KP-D20/D21/D22



HITACHI
DIGITAL

These products are manufactured at a factory which has received quality control system certification in accordance with the ISO international standards.

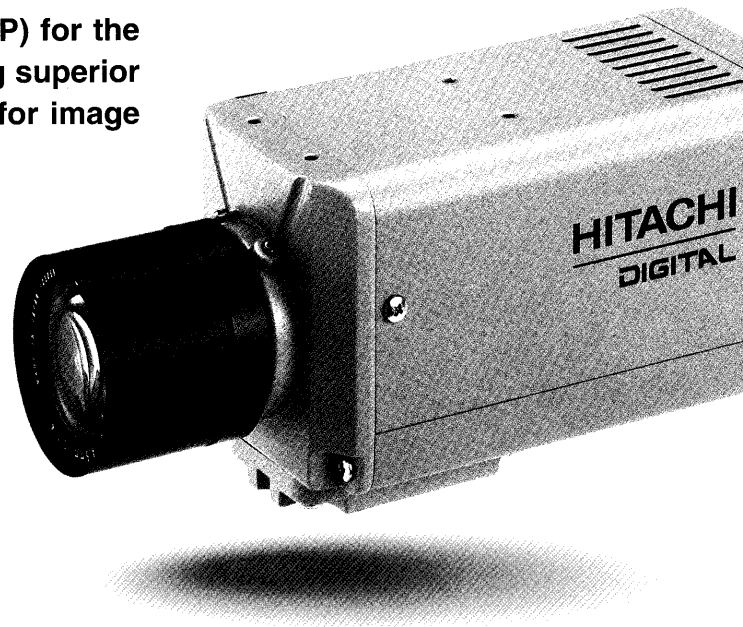


CERTIFICATE No.
JMI-0062
ISO 9001/BS 5750Pt1
EN 29001/JIS Z9901

DIGITAL SIGNAL PR

The KP-D20/21/22 is a single CCD color camera incorporating a digital signal processor (DSP) for the corrective functions appropriate to obtaining superior image quality. The high density CCD used for image pickup has a total of 410,000(PAL 480,000) picture elements (pixels) to deliver clear images even under low light conditions. Full latitude is provided for demonstrating the primary features of high sensitivity and high resolution.

Corrective functions include auto iris and auto white balance to make this an excellent choice for closed circuit television systems used for image processing, surveillance and an unlimited variety of other applications.



Feature

Digital for better quality picture

Clear backlighted images

Ordinarily, a subject of interest tends to be silhouetted when positioned near a source of backlighting such as a doorway or window. The digital signal processor compensates for this effect to enable clearly distinguishable backlighted images.

Background extraction

In cases where the subject is difficult to distinguish from the background because of low relative contrast, the 2H edge enhancer and contour compensator function to improve subject visibility.

High performance CCD

Sharp views in dark locations

The 1/3-inch CCD has 380,000(PAL 440,000) effective pixels and an on-chip lens. Clear images can be seen even in dark locations down to 1.5 lux. The AGC circuit compensates automatically according to the ambient lighting conditions.

Consistent color fidelity

Full time auto white balance

Color reproduction is strongly influenced by color temperature, which changes with morning, noon, evening, natural and artificial lighting. Full time auto white balance maintains optimum adjustment under changing conditions.

Switch ATW off for the automatic white balance



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control (AWC) mode. The ATW mode samples white color in the picture and adjusts white balance in the color temperature range from 2500 K to 8000 K. The AWC (off) mode holds the white balance adjustment.

Superd color rendition ensured for special light sources including sodium lamps and mercury lamps

Superd color rendition is ensured for sodium lamps or mercury lamps by setting the white balance control mode to OUT DOOR.

Good color with sodium and mercury lighting

Set the white balance mode to outdoor for good color reproduction under sodium and mercury lighting.

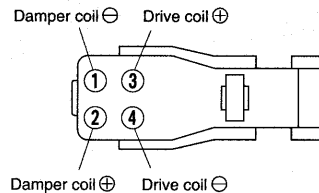
Convenient menu guided settings

Adjustments and control functions can be set by rear panel buttons with reference to on-screen menus. These include the following.

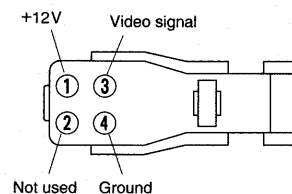
- Backlight compensation on/off
- Auto iris lens DC/Video
- Iris level
- White balance ATW indoor/outdoor/off
- Auto electronic shutter on/off

■ Lens iris connector pin assignments

DC control voltage type



Video signal input type



■ Dimensions

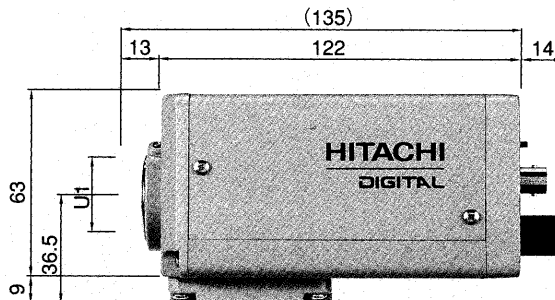
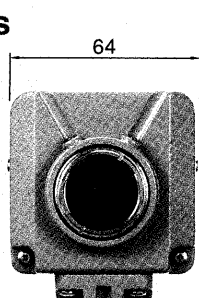
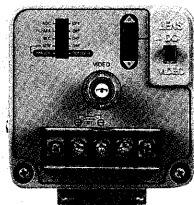


Figure shows KP-D20/D21/D22

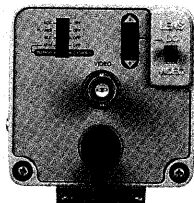
(Units: mm)

■ Function

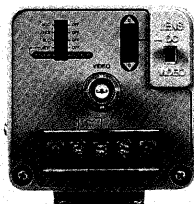
12 VDC type
KP-D20



AC drive type
KP-D21



24 VAC type
KP-D22



Mode switches

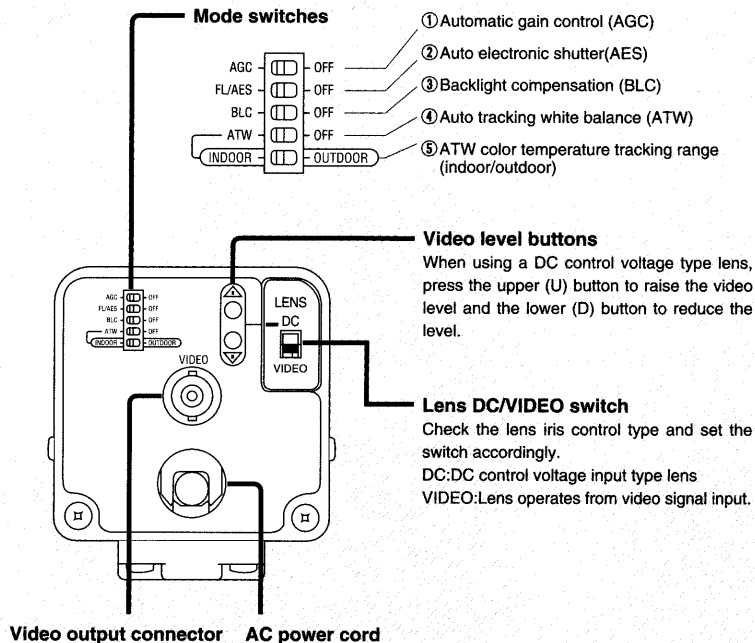
- | | | | |
|--------|--------------------------|---------|---|
| AGC | <input type="checkbox"/> | OFF | ① Automatic gain control (AGC) |
| FL/AES | <input type="checkbox"/> | OFF | ② Auto electronic shutter(AES) |
| BLC | <input type="checkbox"/> | OFF | ③ Backlight compensation (BLC) |
| ATW | <input type="checkbox"/> | OFF | ④ Auto tracking white balance (ATW) |
| INDOOR | <input type="checkbox"/> | INDOOR | ⑤ ATW color temperature tracking range (indoor/outdoor) |
| | <input type="checkbox"/> | OUTDOOR | |

Video level buttons

When using a DC control voltage type lens, press the upper (U) button to raise the video level and the lower (D) button to reduce the level.

Lens DC/VIDEO switch

Check the lens iris control type and set the switch accordingly.
DC:DC control voltage input type lens
VIDEO: Lens operates from video signal input.



Video output connector AC power cord

Specifications

| Item | KP-D20 | KP-D21 | KP-D22 |
|---|---|--|---|
| Color system | Based on NTSC/PAL | | |
| Imaging | Interline type CCD with on-chip lens Total pixels : NTSC 811 (H) × 508 (V) PAL 809(h) × 597(V) Effective pixels : NTSC 768 (H) × 492 (V) PAL 752(H) × 582(V) | | |
| Scanning area | NTSC 4.88 (H) × 3.66 (V) mm PAL 4.89 (H) × 3.64 (V) mm | | |
| Pixel size | 6NTSC 6.35 (H) × 7.4 (V) μm PAL 6.50 (H) × 6.25 (V) μm (corresponds to 1/3-inch pickup tube) | | |
| Scanning system | 2:1 interlace | | |
| Scanning frequency | NTSC H: 15.735 kHz, V: 59.94 Hz PAL H: 15.625 kHz, V: 50 Hz | | |
| Sync system | Internal | | Line lock |
| Video signal output | VBS 1.0 Vp-p (volts peak-to-peak) Video component 0.7 Vp-p positive Sync component 0.3 Vp-p negative Burst 0.3 Vp-p more than 8 cycles | Color subcarrier Impedance Connector | NTSC 3.579545 MHz PAL 4.433618MHz 75 ohms unbalanced BNC |
| Signal to noise ratio | More than 50 dB (luminance signal, standard gain, contour compensation on, gamma correction on) | | |
| Resolution (center) | H:480(PAL 470) TV lines, V: 350 TV lines | | |
| Scene illumination | 1.5 to 100,000 lux (with F 1.2 autoiris lens) | | |
| Minimum illumination | 1.5 lux (F1.2 3200 K AGC maximum) | | |
| AGC | Switchable on/off | | |
| Electronic shutter speed | Automatically controlled from standard(NTSC 1/60, PAL 1/50) to 1/10,000 second, Switchable on/off | | |
| Backlight correction(BLC) | Switchable on/off | | |
| Auto iris lens outputs | Video input type lens Video signal 1.0 Vp-p high impedance Power supply 2 VDC 60 mA DC control voltage input type lens Damper impedance 1150 ohms +10 % Drive impedance 190 ohms ±10 % | | |
| White balance | ATW (indoor) 3000 to 6000 K ATW (outdoor) 2500 to 8000 K Off (AWC) White balance hold Set to outdoor for sodium and mercury lighting | | |
| Lens fixture | C/CS mount (C mount ring supplied) | | |
| Camera mount | 1/4-inch 20 UNC, Top and bottom tripod adapter | | |
| Ambient (operating) | -10 to 50 °C, below 80 % RH If used continuously, the ambient temperature should be below 40 °C for long term stability. | | |
| Ambient (storage) | -20 to 60 °C, below 90 % RH | | |
| Vibration endurance | Tested at 3 G, 10 to 55 Hz 30 minutes each X, Y and Z axes Avoid strong vibration over long periods of time. | | |
| Dimensions | 64 (W) × 63 (H) × 122 (D) mm (less lens and protrusions) | | |
| Power supply | 12 VDC ±10 % | 100 VAC ±10 % | 24 VAC ±10 % |
| Power consumption (approximate, less autoiris lens) | 170 mA | | 3 W |
| Mass (approximate, less lens) | 400 grams | | 580 grams |
| Composition (1 each) | Camera, operation manual, C mount adapter | | |
| Optional | Selection of lenses, lens plug (E4-191J-100) | | |

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● Specifications are subject to change without notice.