



THE MECHADEMIC COMPANY

CV-A50

Compact monochrome CCD camera

(preliminary)

Specification

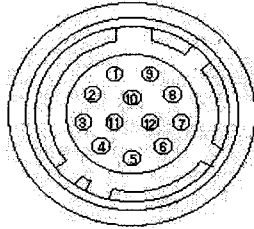
| TV standard | EIA | CCIR |
|------------------------|---|-----------------------------|
| CCD sensor | 1/2"Hyper HAD IT CCD | |
| Effective pixels | 768(h)×494(v) pixels | 752(h)×582(v) pixels |
| Cell size | 8.4 (h) × 9.8 (v) μm | 8.6 (h) × 8.3 (v) μm |
| Resolution | 570 TV lines | |
| Sensitivity | 0.5 Lux , F1.4 , AGC on | |
| S/N ratio | 60 dB (AGC off , Gamma 1) | 58 dB (AGC off , Gamma 1) |
| Scanning system | 2:1 Interlace / non-interlace | |
| Scanning frequency | 15.734 KHz(h) , 59.94 Hz(v) | 15.625 KHz(h) , 50 Hz (v) |
| Input/Output | HD/VD input : 4.0 Vpp ± 2.0 V , 75 Ω or TTL Trigger input : 4.0 Vpp ± 2.0 V , TTL HD/VD output : 4.0 Vpp ± 2.0 V , 75 Ω Pixel clock output(optional) : 4.0 Vpp ± 2.0 V , 75 Ω WEN out (Write Enable) : 4 Vpp ± 1.0 V , 75 Ω EEN out (Exposure Enable) : 4 Vpp ± 1.0 V , 75 Ω | |
| Video output | 1.0 Vpp , 75 Ω , VS | |
| Synchronization | INT. X-tal or EXT. HD/VD or EXT. Random trig | |
| Accumulation | Field / Frame | |
| Internal shutter | Off, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 sec. | |
| Trigger shutter | 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 sec. | |
| PWC(pulse width cont.) | 1.5H - 1000H | |
| Programmable exposure | Off - 1/10000 sec | |
| Gain | Auto / Manual | |
| Gamma | 1.0 / 0.45 | |
| Setup communication | RS232C | |
| Lens mount | C-mount | |
| Temperature | -5°C to + 45°C | |
| Humidity | 20 - 80 % non-condensing | |
| Power | 12 VDC ± 10 % | |
| Dimensions | 29 × 44 × 66 mm (H×W×D) | |



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Connection Description

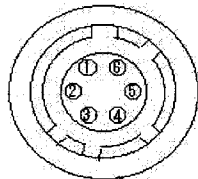
DC-IN/SYNC



12P HR10A-10R-12PB-01(HIROSE)

| | Input mode | Output mode |
|-------|----------------|----------------------|
| Pin 1 | | Ground |
| 2 | DC+12V in | - |
| 3 | | Ground |
| 4 | - | Video output |
| 5 | | Ground |
| 6 | EXT HD in | INT HD out |
| 7 | EXT VD in | INT VD out |
| 8 | | Ground |
| 9 | - | Pixel clock out / NC |
| 10 | - | WEN out |
| 11 | EXT Trigger in | - |
| 12 | | Ground |

TRIGGER



6P HR10A-7R-6PB(HIROSE)

| | | |
|-------|----------------|--------|
| Pin 1 | TXD | RS232C |
| 2 | RXD | |
| 3 | Ground | |
| 4 | Ground | |
| 5 | EXT Trigger in | |
| 6 | WEN/EEN out | |



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Functions

All function can be controlled by RS232C

Input/output of HD/VD signal

- a) Input of external HD/VD signal
- b) Output of internal HD/VD signal

Changing of Input/Output can be done only by DIP SW, not by RS-232C

Ext. trigger mode

1. Edge pre-select trigger mode

Asynchronous reset by ext. trigger pulse.

Exposure period cotrolled by 8-step fixed shutter speed.

2. Pulse-width control mode

Asynchronous reset by ext. trigger pulse.

Exposure period cotrolled by the pulse width of the Ext. tigger pulse.

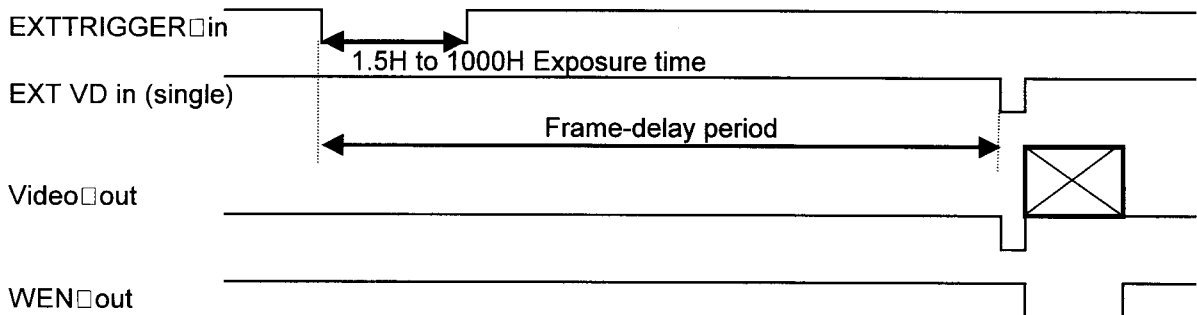
3. Frame-delay readout mode

Asynchronous reset by ext. trigger pulse and ext. VD.

Exposure period cotrolled by the pulse width of the Ext. tigger pulse.

Video readout timing controlled by rising edge of the Ext. VD signal.

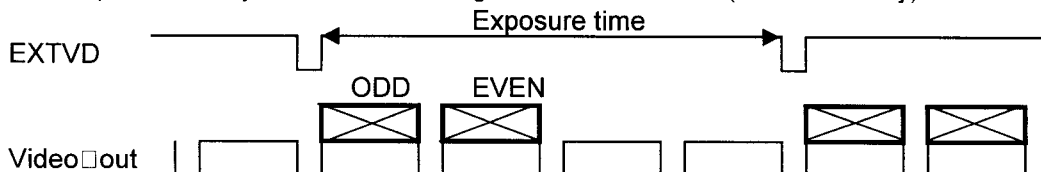
This is possible only when the scanning format is full frame (interlaced or non-interlaced)



4. Long time exposure mode

In Long Time Exposure mode , the exposure time of shutter can be controlled by a duration of Ext. VD.

This is possible only when the scanning format is full frame (interlaced only)





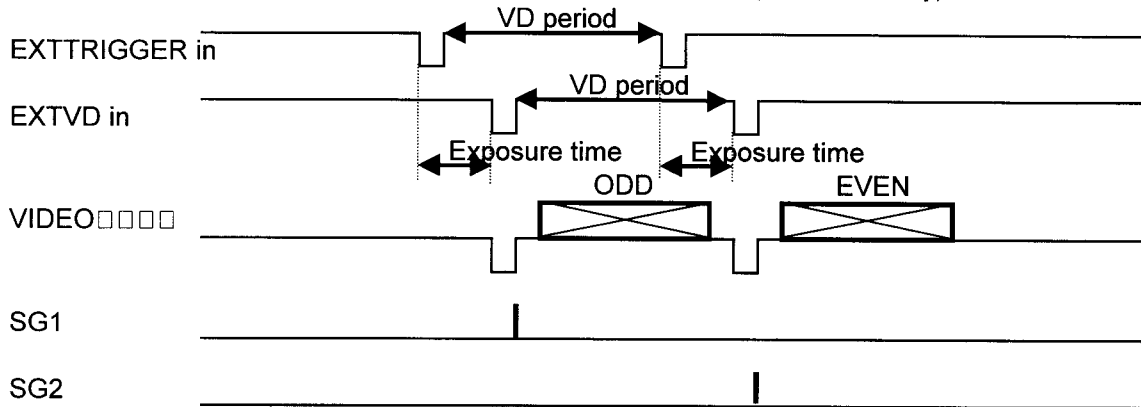
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5. Start-stop mode (A tentative function)

Asynchronous reset by ext. trigger pulse and ext. VD.

Exposure period controlled by a duration between ext. trigger pulse and ext. VD signal.

This is possible only when the scanning format is full frame (interlaced only).



Scanning system

2:1 interlace / Non-interlace

Gamma correction

1.0 / 0.45

Gain

AGC / Manual

Partial scanning (Option)

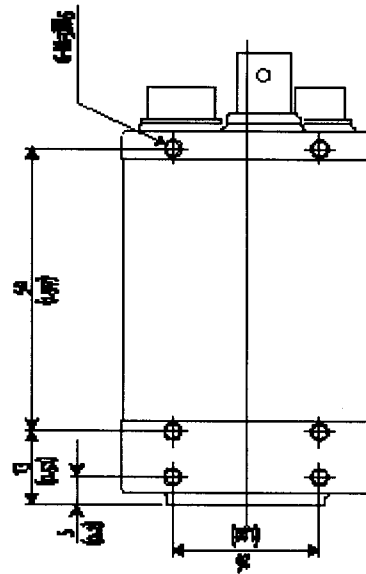
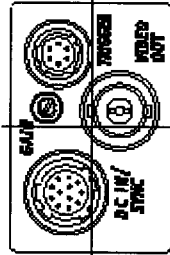
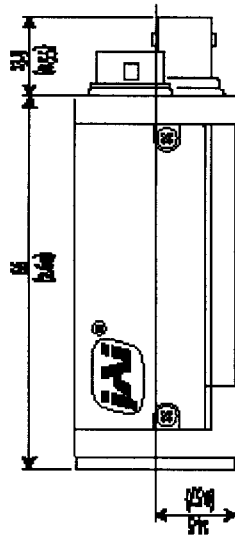
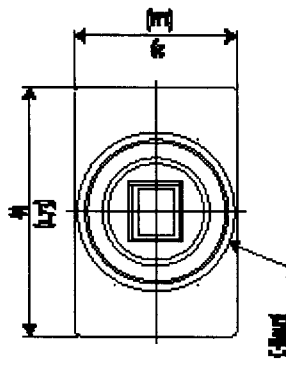
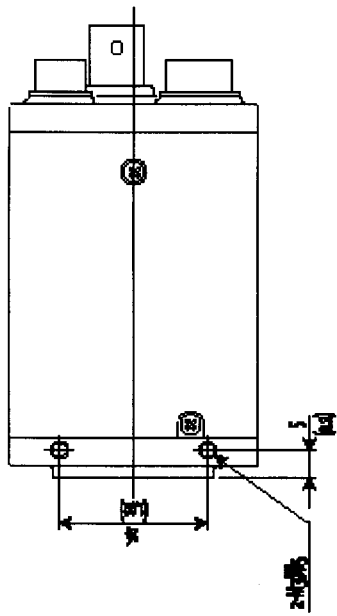
| | Scanning line | |
|---------------|---------------|------|
| | EIA | CCIR |
| Interlace | 525 | 625 |
| Non-Interlace | 262 | 312 |
| Partial 1/2 | ? | ? |
| Partial 1/3 | ? | ? |

These scanning lines have not been finalized yet.

Due to Blanking Line, the figures will be smaller.

The description of programmable exposure is not made.

The shutter speed can be varied by 1H unit.



CV-A50
IAI CORPORATION