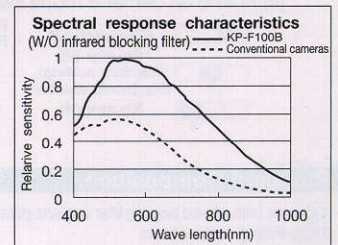


High-resolution Progressive scan Monochrome CCD Camera

KP-F100B/F100BCL/F100UV

RS-232C control, Effective picture elements number 1.45 million,
Progressive scan with full pixel independent readout



● **High resolution :**

High grade CCD with 1392(H)X1040(V) effective square lattice pixels.
UV : from 240 nm approx. ~ to 930 nm approx. sensitivity CCD with 1392(H)X1040(V) effective square lattice pixels

● **Digital output and analog output :**

An EIA-644 digital output is provided. Camera-Link (KP-F100BCL)

● **Frame on demand :**

An external trigger signal input can be used to capture an image at a

desired timing for instant view or processing. The capture time can be adjusted by the trigger and shutter.

● **RS-232C Control :**

The self-contained CPU permits using RS-232C control for setting each function, Frame on demand, Trigger input pulse invert, etc. The functions can also be set from rear panel switches.

● **Multi step electronic shutter up to 1/50000 second**

Specifications

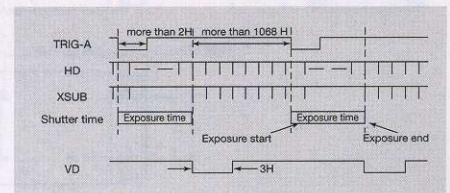
| | KP-F100B/F100BCL | KP-F100UV |
|-------------------------------|--|-------------------------------------|
| Pickup element | 2/3-inch interline CCD | 1/2-inch interline CCD |
| Effective pixels | 1392(H)X1040(V) | |
| Pixel pitch | 6.45(H)X6.45(V) μm (square lattice) | 4.65(H)X4.65(V) μm |
| Imaging area | 8.71(H)X6.90(V) mm | 6.47(H)X4.84(V) mm |
| Scanning system | Progressive | |
| Aspect ratio | 4 : 3 | |
| Frame rate | 15 frames/second (full pixel readout) 60 fps (quad speed mode) | 7.5 fps 30 fps (quad speed mode) |
| Horizontal scanning frequency | 16.035 kHz | 7.98 kHz |
| Synchronization | Internal/external (automatic switching) | |
| Lens mount | C-mount | |
| Flange focal distance | 17.526 mm | |
| Video output | Digital output or analog output for image checking Digital output Camera-Link or EIA-644 single channel | |
| External sync input | HD/VD TTL level negative Input impedance: 1 kΩ Frequency deviation: ±1 % | |
| Electronic shutter speed | Off (frame rate), 1/30, 1/125, 1/250, 1/1000, 1/2000, 1/4000, 1/10000, 1/50000 second. | |
| Frame on demand | External switch setting off, fixed shutter, two trigger and one trigger | |
| Sensitivity | 400 lx F4 3200 K | |
| Power supply voltage | 12 ± 1 VDC | |
| Current consumption | 330 mA approx. | 300 mA approx. |
| Ambient, operating | 0 to + 40 °C (+32 to ; 104 F), less than 90 % RH | |
| Ambient, storage | -10 to + 50°C (+14 to +122 F), less than 70 % RH | |
| Vibration endurance | 29 m/s ² , 10 to 55 Hz 30 minutes each on XYZ axes | |
| Shock endurance | 294 m/s ² (vertical, horizontal, once each face) | |
| External dimensions | 44(W)X44(H)X78(D) mm | |
| Mass | 180 g (6.3 oz) approx. | |

Frame-on-demand Function

With the Frame-on-demand function, moving objects can be captured at an optional or fixed exposure time by supplying a trigger pulse at an optional timing.

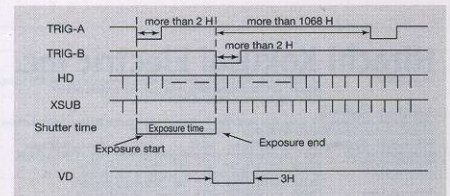
● **Fixed shutter mode**

When one trigger pulse (TRIG A) is supplied, exposure starts at the rising edge of the inputs pulse. Exposure time is fixed, and set by the electrical shutter switches on the camera.



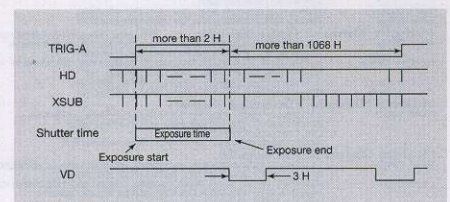
● **Two trigger mode**

When two trigger pulses (TRIG A and TRIG B) are supplied, exposure starts at the rising edge of the TRIG A pulse, and ends at the falling edge of TRIG B pulse. The period between the two pulses is exposure time.



● **One trigger mode**

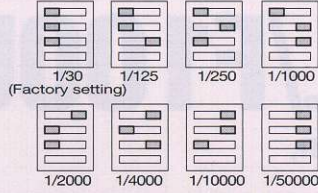
When one trigger pulse (TRIG A) is supplied, exposure starts at the rising edge of the inputs pulse, and ends at the falling edge of the inputs pulse. Then, the V-SYNC pulse is reset and picture are delivered immediately. The pulses width is the exposure time.



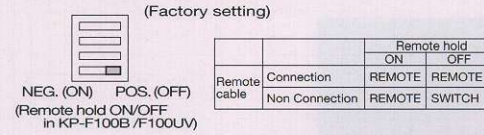
Rear panel switches

The rear panel includes switches for electronic shutter data, readout rate, and field on demand on/off and mode switches.

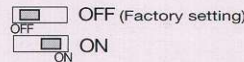
(1) Electronic shutter switches



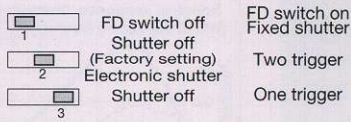
(2) Remote ON/OFF switch(KP-F100BCL)



(3) Frame on demand (FD) ON/OFF switch



(4) Frame on demand mode switch



Pin connections

Connections to DC IN and SYNC (12 pin)

| Pin No. | Int. sync | HD/VD | Ext. sync | | |
|---------|-----------|----------------|-----------------|-----------------|-----------------|
| | | | Frame on demand | | |
| | | | Fixed shutter | Two trigger | One trigger |
| 1 | GND | GND | - | GND | GND |
| 2 | +12 V | +12 V | GND | +12 V | +12 V |
| 3 | GND | GND | +12 V | GND | GND |
| 4 | VIDEO | VIDEO | VIDEO | VIDEO | VIDEO |
| 5 | GND | EXTHD (GND) | GND | GND | GND |
| 6 | - | EXTHD (SIGNAL) | GND | - | - |
| 7 | - | EXTVD (SIGNAL) | TRIG-A (SIGNAL) | TRIG-A (SIGNAL) | TRIG-A (SIGNAL) |
| 8 | GND | GND | GND | TRIG-B (GND) | GND |
| 9 | - | - | - | TRIG-B (SIGNAL) | - |
| 10 | GND | GND | GND | GND | GND |
| 11 | +12 V | +12 V | GND | +12 V | +12 V |
| 12 | GND | EXTVD (GND) | TRIG-A (GND) | TRIG-A (GND) | TRIG-A (GND) |

Not connect EXT. input signals in KP-F100BCL

Signal connections to D. OUT (26 pin)

| Pin No. | Signal | Pin No. | Signal | Pin No. | Signal |
|---------|---------|---------|---------|---------|---------|
| 1 | DATA0-H | 10 | DATA4-L | 19 | DATA9-H |
| 2 | DATA0-L | 11 | DATA5-H | 20 | DATA9-L |
| 3 | DATA1-H | 12 | DATA5-L | 21 | VD-H |
| 4 | DATA1-L | 13 | DATA6-H | 22 | VD-L |
| 5 | DATA2-H | 14 | DATA6-L | 23 | HD-H |
| 6 | DATA2-L | 15 | DATA7-H | 24 | HD-L |
| 7 | DATA3-H | 16 | DATA7-L | 25 | CLK-H |
| 8 | DATA3-L | 17 | DATA8-H | 26 | CLK-L |
| 9 | DATA4-H | 18 | DATA8-L | Shield | GND |

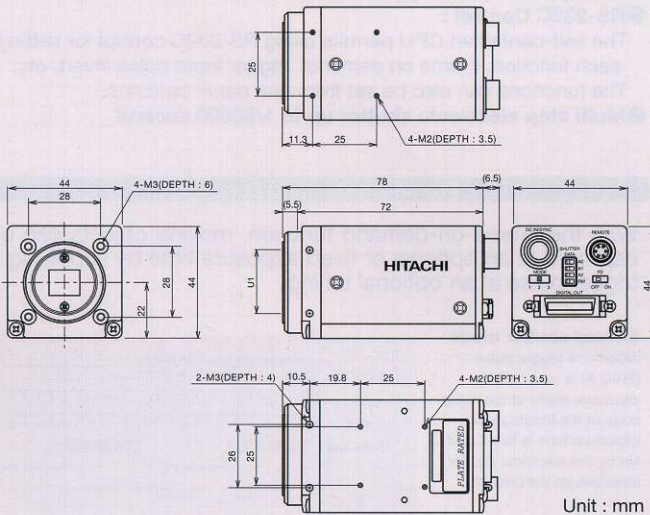
Remote (RS-232C control) cable pin connections (6pin)

| Pin No. | Signal name |
|---------|---------------|
| 1 | - |
| 2 | RD |
| 3 | TD |
| 4 | Manual/remote |
| 5 | Ground |
| 6 | - |

Standard Composition

- Camera (with infrared blocking filter or quartz glass(F100UV))
- Operating instructions

Dimensions KP-F100B



Optional accessories

- Junction box.....JU-M1A (23831AX)
JU-F1 (23832AX)
- Camera cable
(Molded type) 2 m C-201KSM
5 m C-501KSM
10 m C-102KSM
- AC adaptor.....117 V:AP-130U(23805UX)
230 V:AP-130E(23805EX)
- Tripod adaptor.....TA-M1(23855AX)
- Quartz glass (KP-F100UV)
- Dummy glass (AR coated)...ARC1214(XMD0009)
- 6 pin Remote plug.....HR10A-7P-6P
- 12 pin plug.....HR10A-10P-12S(01)
(23810AX)
- D.OUT connector (26 pins).....EIA-644 DX30AM-26P
Camera-Link 10126-6000

Camera-Link Digital out connector (KP-F100BCL)

| Pin No. | Signal | Pin No. | Signal |
|---------|-------------------------|---------|-------------------------|
| 1 | GND | 14 | GND |
| 2 | TXOUT 0 (-) | 15 | TXOUT 0 (+) |
| 3 | TXOUT 1 (-) | 16 | TXOUT 1 (+) |
| 4 | TXOUT 2 (-) | 17 | TXOUT 2 (+) |
| 5 | TXCLKOUT (-) | 18 | TXCLKOUT (+) |
| 6 | TXOUT 3 (-) | 19 | TXOUT 3 (+) |
| 7 | RX (+) | 20 | RX (-) |
| 8 | TX (-) | 21 | TX (+) |
| 9 | TRIG-A/VD (-) [CC1 (-)] | 22 | TRIG-A/VD (+) [CC1 (+)] |
| 10 | TRIG-B (+) [CC2 (+)] | 23 | TRIG-B (-) [CC2 (-)] |
| 11 | EXT-HD (-) [CC3 (-)] | 24 | EXT-HD (+) [CC3 (+)] |
| 12 | NC [CC4 (+)] | 25 | NC [CC4 (-)] |
| 13 | GND | 26 | GND |

Hitachi Kokusai Electric Inc.

Head Office : 14-20, Higashi-Nakano 3-choume, Nakano-ku, Tokyo 164-8511, Japan
Phone : +81 (0) 3-3366-6111, Fax : +81 (0) 3-3365-9119
URL: <http://www.h-kokusai.com>

Beijing Office
Beijing Fortune Building 5, Dong San Huan Bei-lu, Chao Yang District, Beijing, 100004 China
Phone : +86 (0) 10-6590-8755/8756, Fax : +86 (0) 10-6590-8757

Hitachi Denshi America, Ltd. URL: <http://www.hitachi.com>
Headquarters and : 150 Crossways Park Drive, Woodbury, New York 11797, U. S. A.
Northeast Office : Phone : (+1) 516-921-7200, Fax : (+1) 516-496-3718

West Office : 371 Van Ness Way, Suite 120 Torrance, CA, 90501, U. S. A.
Phone : (+1) 310-328-6116, Fax : (+1) 310-328-6252

Midwest Sales : Phone : (+1) 330-334-4115, Fax : (+1) 516-496-3718

Service (+1) 234-721-6180

South Sales : Phone : (+1) 770-972-4724, Fax : (+1) 516-496-3718

Service (+1) 878-937-5201

Parts Center : Phone : (+1) 516-682-4426, Fax : (+1) 516-921-0993

Latin Sales : Phone : (+1) 516-682-4420, Fax : (+1) 516-496-3718

Hitachi Denshi Canada, Ltd. URL: <http://www.hitachidenshi.ca>

Head Office : 1 Select Avenue Unit#11, Scarborough, Ontario M1V 5A5, Canada
Phone : (+1) 416-299-5900, Fax : (+1) 416-299-9450

Eastern Office : 5795 Chemin St. Francois St. Laurent, Quebec H4S 1B6, Canada
Phone : (+1) 514-332-6687, Fax : (+1) 514-335-1664

Ottawa Office : 9 Antares Drive, Nepean, Ontario, K2E 7V5, Canada
Phone : (+1) 613-727-5930, Fax : (+1) 613-826-4253

Hitachi Denshi (Europa) GmbH

Head Office : Weskircher Straße 68, Jügesheim D-63110 Rodgau, Germany
Phone : +49 (0) 6109-69920, Fax : +49 (0) 6109-69990

URL : www.hitachi-denshi.de
General email address : webmaster@hitachi-denshi.de

Hitachi Denshi (U. K.) Ltd.

Head Office : 14 Garrick Industrial Centre, Irving Way, Hendon, London, NW9 6AQ, United Kingdom
Phone : +44 (0) 208-205-4311, Fax : +44 (0) 208-205-2451

Leeds Office : Brookfield House, Selby Road, Garforth, Leeds LS25 1NB United Kingdom
Phone : +44 (0) 113-287-4400, Fax : +44 (0) 113-287-4260

URL : www.hitachi-denshi-uk.com
General email address : sales@hitachi-denshi-uk.com

Specification are subject to change without notice.