

7496565/7

2

3

4

KP-M2A/M3A Specifications

1. General

The Hitachi KP-M2A and KP-M3A are monochrome (B/W) cameras respectively utilizing 1/2-inch and 1/3-inch size CCD image pickup elements.

High sensitivity and high resolution are featured by the 400,000 pixel class cameras. In addition to small and light physical size, the full complement of versatile functions includes multi-step electronic shutter, field on demand, external synchronization, selectable integration mode, non-interlace scanning and many more.

The cameras are excellent choices for both general-purpose and specialized applications such as in systems used for microscope and image data processing.

2. Main features

1) Very small and light

Despite small size and weight, a host of important functions and high performance are featured. A video signal is obtained by simply supplying 12 VDC power.

2) High resolution

Total picture elements are 410,000 (CCIR: 470,000) of which effective pixels are 768(H) × 494(V), CCIR: 752 (H) × 582 (V). Resolution is 580 TV lines horizontal (CCIR: 560 TV lines) and 485 TV lines vertical (CCIR: 575 TV lines).

3) Multi-step electronic shutter

Shutter speed can be selected in 8 steps from 1/100 (1/120 CCIR) to 1/1000 second.

4) Internal/external sync

The camera automatically detects internal/external sync, sync system and scanning system.

5) Field and frame integration modes

Integration can be selected for field or frame. In combination with the scanning system and electronic shutter functions, a wide range of applications can be accommodated.

6) Designed to withstand vibration

Die-cast aluminum components and the design offer excellent vibration performance.

DWN	J. Ohara	MAY-30 '02	KP-M2A/M3A Specifications	Hitachi Kokusai Electric Inc. Tokyo Japan	7496565/7
DSGN	M. Suzuki	MAY-30 '02			
CHK	M. Suzuki	MAY-30 '02			
APPD	N. Fujimura	MAY-30 '02			



1

2

3

7496565/7

A
B
C
D
E
F

7496565

2

3

4

3. Specifications

(1) Imaging device

KP-M2A 1/2-inch interline transfer CCD

KP-M3A 1/3-inch interline transfer CCD

total number of pixels.

EIA :811(H)×508(V)

CCIR:795(H)×596(V)

Pixel pitch

KP-M2A:EIA :8.4(H)×9.8(V) μm

CCIR:8.6(H)×8.3(V) μm

KP-M3A:EIA :6.35(H)×7.4(V) μm

CCIR:6.5(H)×6.25(V) μm

Number of effective pixels

EIA :768(H)×494(V)

CCIR:752(H)×582(V)

(2) Imaging area

KP-M2A:EIA :6.45(H)×4.84(V)mm(1/2-inch size)

CCIR:6.47(H)×4.83(V)mm(1/2-inch size)

KP-M3A:EIA :4.88(H)×3.66(V)mm(1/3-inch size)

CCIR:4.89(H)×3.64(V)mm(1/3-inch size)

(3) Signal system

Based on EIA or CCIR system.(at normal operation)

(4) Lens mount

C-mount

(5) Flange focal distance

17.526mm (Not adjustable)

(6) Hor. scanning frequency

EIA:15.734kHz CCIR:15.625kHz

(7) Vert. scanning frequency

EIA:59.94Hz CCIR:50Hz

(8) Sync system

Internal/external (automatic switching)

(9) Int. sync scanning system

2:1 interlaced

(10) Ext. sync input

HD/VD: 2 to 6Vp-p, negative

Input impedance : 1kΩ

Frequency deviation : ± 1 %

(11) Video output

1.0Vp-p/75Ω unbalanced

Video: 0.7Vp-p

Sync: 0.3Vp-p, negative

(12) Resolution

EIA: 570TVL (H) /485TVL (V)

CCIR: 560TVL (H) /575TVL (V)

(13) Sensitivity

400Lx, f8, 3200K

(14) Min. illumination

0.3Lx, fl.4, AGC:ON, GAMMA:ON,

w/o IR cut filter

(15) Signal-to-noise ratio

56dB

DWN	/	..	KP-M2A/M3A Specifications	Hitachi Kokusai Electric Inc. Tokyo Japan	7496565
DSGN	/	..			
CHK	/	..			
APPD	/	..			



1

2

3

7496565

- (16) Electronic shutter
1/10000,1/4000,1/2000,1/1000,1/500,1/250,1/125,
1/120(CCIR),1/100(EIA) sec
OFF: Normal exposure
(Settable by external switch .)
Set to OFF at the factory.
- (17) Integration mode
Field or frame
(Settable by external switch .)
Set to frame integration mode at the factory.
- (18) Gamma correction
Gamma = 1.0 or correction
(Settable by internal switch.)
Set. to 1.0 at the factory.
- (19) AGC
Fixedgain or AGC
(Settable by internal switch.)
Set to fixed gain at the factory.
- (20) Field-on-demand
ON or OFF
(Settable by internal switch.)
Set to OFF at the factory.
- (21) Restart·Reset
ON or OFF
(Settable by chip components)
Set to OFF at factory.
- (22) Power requirement
12V DC ±1V
- (23) Power consumption
180mA approx.
- (24) Ambient conditions
Operating :-10 to 50°C,90%RH or less
Storage :-20 to 60°C,70%RH or less

Caution : For continued stable operation, the camera should be used under 40°C or less when it is used continuously for extended period of time.

- (25) Anti-vibration
98m/s² (10 to 60Hz,amplitude:0.98mm constant
60 to 200Hz amplitude : variable)
(10 to 200Hz sweep: 1min, XYZ , 30min.)
- (26)Resistance to shock
686 m/s² (Drop test, once each top, bottom, left and right)
- (27) Dimensions
44(W)×29(H)×72(D)mm
- (28) Mass
120g approx. .



7496565 3/

DWN	/	..	KP-M2A/M3A Specifications	Hitachi Kokusai Electric Inc. Tokyo Japan	7496565 3/
DSGN	/	..			
CHK	/	..			
APPD	/	..			

7496565

2

3

4

4. Composition

- 1) Camera (W/IR cut filter)
- 2) Operation manual

5. Optional accessories

- 1) Tripod adapter, TA-M1
- 2) 12-pin plug, HR10A-10P-12S (01)
- 3) AC adaptor, AP-I30
- 4) Junction box JU-M1A
- 5) Dummy glass ARC1214
- 6) Camera cables

	Mould type	Assy type	Shielded type
2m	C-201KSM	C-201KS	C-201KSS
5m	C-501KSM	C-501KS	C-501KSS
10m	C-102KSM	C-102KS	C-102KSS

Specify assembly or shielded type at time of order

DWN	/	.	.
DSGN	/	.	.
CHK	/	.	.
APPD	/	.	.

KP-M2A/M3A Specifications

Hitachi Kokusai Electric Inc. Tokyo Japan

7496565



1

2

3

4

A

B

C

D

F

F



7496565/5

2

3

4

Caution

The specifications of this equipment are subject to change without notice for improvement. Prior to placing your order, be sure to confirm that these specifications are the latest ones.

Hitachi Kokusai Electric guarantee that the equipment shipped from our factory conforms to the Hitachi Kokusai Electric's standard warranty conditions and perform quality control within the range necessary to perform the warranty.

Warranty and After-sales Service

- 1) The guarantee period is one year after the date of purchase. However, the defects due to erroneous use or intentional act are excluded.
- 2) As the defect after expiration of the guarantee period, Hitachi Kokusai Electric will repair the equipment if the intended function is restored by the repair work, and the cost is charged to a customer.
- 3) Hitachi Kokusai Electric is not liable for the losses caused when the equipment is used in a system used for business trades, production process, medical fields, crime prevention applications, etc.
- 4) The parts used in the equipment have their respective lives. The lives of such parts will be shortened under the environments of high temperature or high humidity.
When the stable operation is required for a long time, it is recommended to perform periodical maintenance and inspection every year or every two years.

A

B

C

D

F

F



DWN	/	..	KP-M2A/M3A Specifications	Hitachi Kokusai Electric Inc. Tokyo Japan	7496565/5
DSGN		..			
CHK		..			
APPD		..			

1

2

3

5/

