CCD COLOR VIDEO CAMERA SPECIFICATIONS

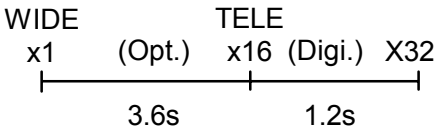
VK-S934 :NTSC (w/DSS)

A. GENERAL SPECIFICATIONS

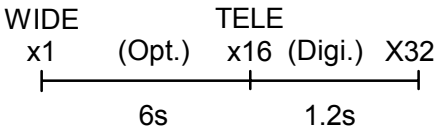
" * " mark : default mode

(1) Signal Format	NTSC	
(2) Scanning System	2 : 1 interlacing	
(3) Scanning Frequency	Horizontal	: 15.734 kHz
	Vertical	: 59.94 Hz
(4) Image Sensor	1/4 type solid state interline CCD	
	Effective Pixels: 768(H)×494(V) 380k	
	Total Pixels	: 811(H)×508(V) 410k
(5) Lens	F1.4～2.8 , f=4～64mm , ×16 Zoom Video Auto Focus	
	Angle of View H : 47° (wide) , 3° (tele)	
	High Durability Zoom Lens	
a) Zoom Durability	More than 500k Cycles at room temperature (See Page.6.)	
b) Focus Durability	More than 500k Cycles at room temperature (See Page.6.)	
c) Iris Durability	More than 500k Cycles at room temperature (See Page.6.)	
(6) Focus Length	∞～1.0m(tele) ～0.01m(wide)*	
(7) Signal Process	Digital Signal Processor DSP-5 system	
(8) Sync System	Internal* / External Sync.(Line Lock : AC-Line Pulse Signal)	
(9) Camera Function	Control through RS-232C Signal	
a) Optical Zoom	TELE～WIDE* (Zoom Speed : 3.6s* / 6s)	
b) Digital Zoom	OFF* / ON (～2*～8 times)	

[1] 3.9s Zoom Mode : AF



[2] 6.3s Zoom Mode : AF



c) Video Focus Auto* / Manu.(NEAR～FAR)

d) White Balance Auto* / Manu.(R.B.Gain Level:UP～DOWN)

e) Shutter Speed Auto : Pro.AE (1/60～1/4k s) / Pro.AE+* (1/2～1/4*～1/4k s)

Manu. : Shutter Priority (1/2～1/30k s) / Exposure Priority (F1.4～F32)

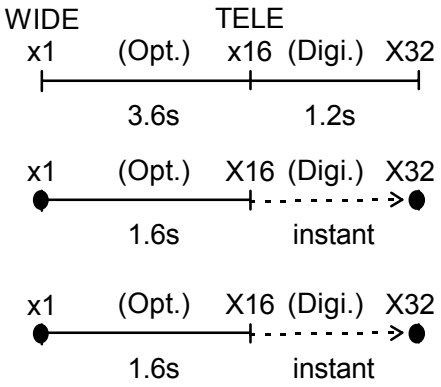
f) Iris Control Auto* / Manu.(Manu.Iris Level:UP～DOWN , Auto Iris Cont.Level:UP～DOWN)

g) Gain Control Auto* / Manu.(Auto Gain Cont.Level:UP～DOWN)

h) Position Preset [1] Zoom Trace Preset Mode : MF, Trace

・in case of memory
(Ex. Memory Point :)

・ in case of preset



[2] Preset Mode : MF,No-Trace
・in case of preset

(10) Video Output Level

Video level	0.714±0.07 V (100±10 IRE)
Sync level	0.286±0.035 V (40± 5 IRE)
Burst level	0.286±0.035 V (40± 5 IRE)

(11) Color Reproduction

	Red	Yellow	Cyan	Burst
Phase	102±20°	160±20°	280±20°	180° (Base)
Level	220±25%	105±35%	165±35%	100% (Base)

(12) Horizontal Resolution More than 470 TVL

(13) Luminance S/N More than 50 dB

(14) Sensitivity Less than 3 lx (typ. 2 lx) [Pro-AE :1/60s , F1.4(wide) , AGC-Gain:25 dB*]

Less than 0.2 lx (typ. 0.1 lx) [Pro-AE+:1/4s* , F1.4(wide) , AGC-Gain:25 dB*]

……at signal level : 40 IRE

(15) Supplied Voltage	9.0 V±0.5 V (See Page.7 for restriction.)
(16) Supplied Current	280 mA (steady-state)
	380 mA (max.) ……under the zooming and focusing operation
(17) Power Consumptions	3.3 W (max.)
(18) Dimensions	50(W)×60(H)×86(D) mm (except connector)
(19) Weight	220 g (approx.)
(20) Appearance/Dimensions	See attached Page.8.
(21) Body Color	Black
(22) Packing Ass'ys	See attached Page.9.
(23) Labeling	See attached Page.10.
(24) Optional Accessories	704CONCT118 (connector with 118mm length flat-flex cables)
	704CONCT200 (connector with 200mm length flat-flex cables)

B. MEASUREMENT SPECIFICATIONS

・Standard measurement condition and measurement procedure

See an annexed document.

C. EXTERNAL CONTROL SPECIFICATIONS

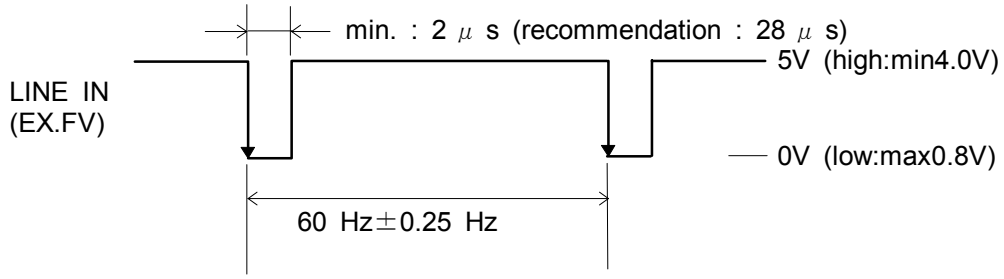
・External control using RS-232C (command list)

See an annexed document.

D. INTERFACE

・9pin-FPC (ELCO : PG-FPC9SM-T) Connecting Condition

Pin No.	Name	I/O	Level
1	RD (for RS-232C)	input	CMOS 5V (low:max0.8V , high:min2.0V)
2	SD (for RS-232C)	output	CMOS 5V (low:max0.1V , high:min4.4V)
3	GND (for RD&SD)		
4	DC IN	input	9.0 V±0.5 V
5	GND (for power)		
6	VIDEO OUT	output	1.0 V±0.2 V
7	GND (for video)		
8	LINE IN	input	External V-sync (EX.FV : Negative , 5Vp-p)
9	GND (for line)		



Signal Spec. of AC-Line Pulse (EX.FV)

E. ENVIRONMENT CONDITION AND TEST

(1) Operating condition Temperature 0 ～ 60 ℃ (recommendation : 0 ～ 40 ℃)
Humidity 10 ～ 90 %

(2) Storage condition Temperature -10 ～ 60 ℃
Humidity 0 ～ 95 %
[Note] Condensation should not occur.

(3) High temperature storage test

Leaving the packed sample at temperature of 60 ℃ for 72 hours, and then after leaving it at normal temperature for 8 hours, there should be no problem in performance.

(4) Low temperature storage test

Leaving the packed sample at temperature of -10 ℃ for 72 hours, and then after moving it at normal temperature for 8 hours, there should be no problem in performance.

[Note] Condensation should not occur.

(5) Temperature characteristics test

When it is operated at temperature of 0～60 ℃ ,there should be no problem in performance.

F. INDUSTRIAL PROPERTY

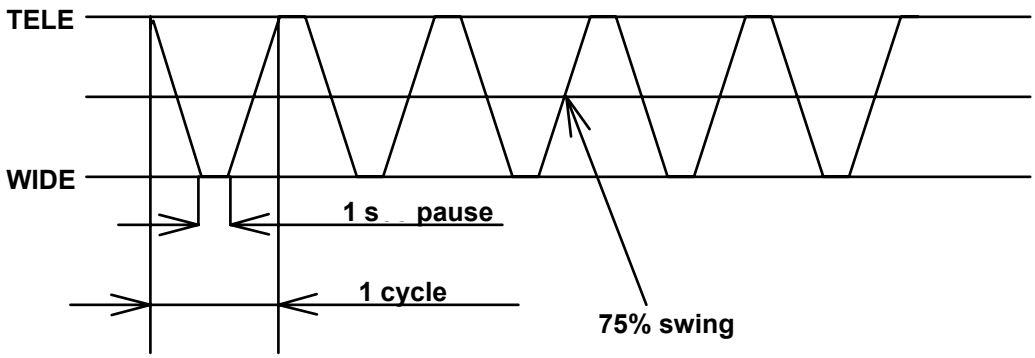
Hitachi,Ltd.should be responsible for the problem of industrial property.

Hitachi is not responsible for the unit which is modified.

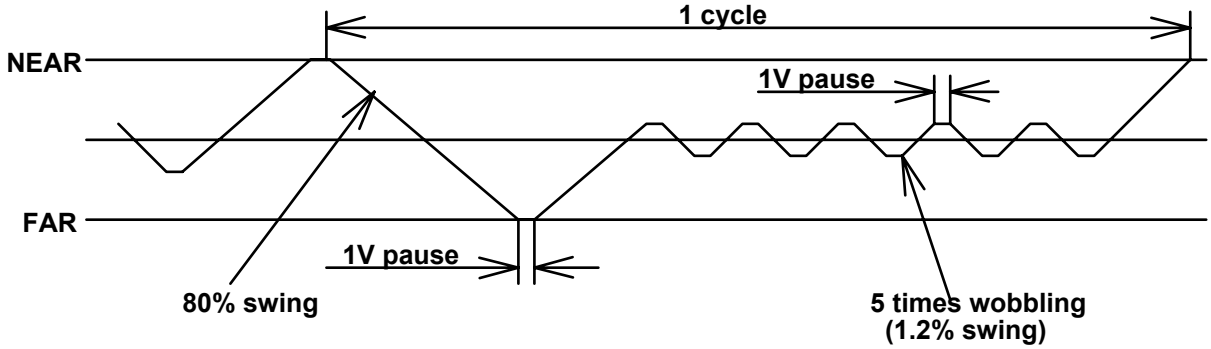
Hitachi's responsibility is limited to product itself,not to the system installed.

DURABILITY TEST PATTERN

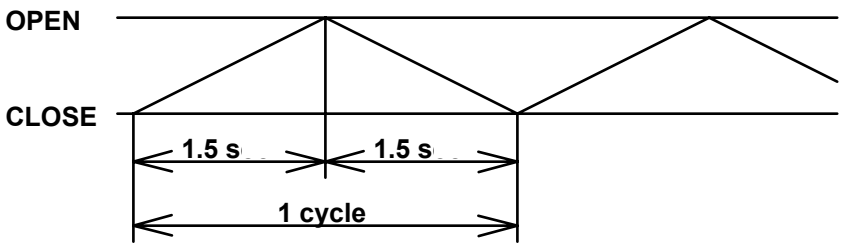
1.ZOOM :



2.FOCUS : (V=1/60s)

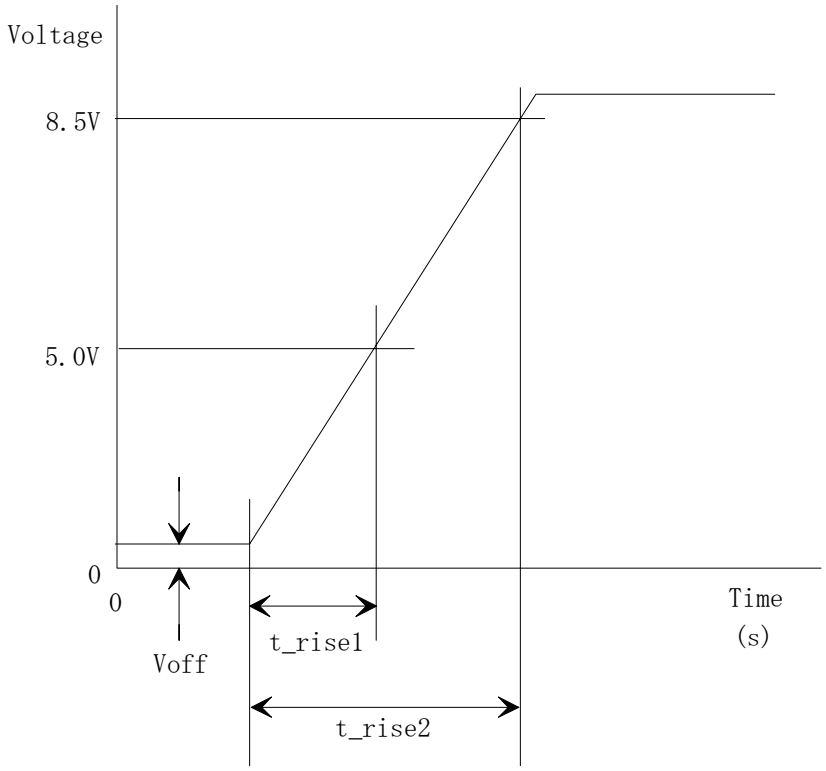


3.IRIS :



POWER SUPPLY RISE-UP CONDITION

The rise-up of power supply to camera should be under following condition.



Voff ≦ 0.2V
t_rise1 ≦ 65ms
t_rise2 ≦ 115ms