

## MV-4000 Series Datasheet

### 1. Specifications

#### Basic specifications

Temperature	0°C to 40°C
Humidity	30% to 90% (no condensation)
Power	100 VAC - 240VAC $\pm$ 10%, 50Hz/60Hz
Consumption	MV-4200/4210/4220: 499VA (499W) (at 100 to 120 VAC) 502VA (476W) (at 200 to 240 VAC)  MV-4300/4310/4320: 657VA (650W) (at 100 to 120 VAC) 680VA (618W) (at 200 to 240 VAC)
Dimensions	MV-4200/4210/4220: 430 (W) x 88 (H) x 470 (D)mm, EIA2RU MV-4300/4310/4320: 430 (W) x 132 (H) x 540 (D)mm, EIA3RU
Weight	MV-4200/4210/4220: 16kg MV-4300/4310/4320: 22kg
Consumables (at 24-hour operation)	Cooling fans (MV-4200 Series): Replace every 5 years P1505-1, P-1506-1, P-1515, P-1516, P-1517, P-1518, P-1519 Cooling fans (MV-4300 Series): Replace every 5 years P1568, P-1569 Backup battery CR2032: Replace every 5 years Power unit: Replace every 5 years

#### Technical specifications

Video format	
Single Link (12G-SDI) *1	2160/60p, 2160/59.94p, 2160/50p
(6G-SDI) *1	2160/30p, 2160/29.97p, 2160/25p, 2160/24p, 2160/23.98p
Dual Link (3G-SDI) *1	2160/30p, 2160/29.97p, 2160/25p, 2160/24p, 2160/23.98p * Supports Dual Link 3G-SDI Level-B-DS(2SI) 4:2:2 YCbCr 10-bit.
Single Link (3G-SDI)	1080/60p, 1080/59.94p, 1080/50p (Level-A/B) * MV-4220/4320 or MV-4220SDI only supports 2SI inputs.
(HD-SDI)	1080/60i, 1080/59.94i, 1080/50i, 720/60p, 720/59.94p, 720/50p, 1080/30p, 1080/29.97p, 1080/25p, 1080/24p, 1080/23.98p, 720/24p, 720/23.98p, 1080/30PsF, 1080/29.97PsF, 1080/25PsF, 1080/24PsF, 1080/23.98PsF, 1035/60i, 1035/59.94i
(SD-SDI)	525/60 (NTSC), 625/50 (PAL)

Video Input	Accepts the following signals (Mixed input, asynchronous acceptable) 75Ω BNC SDI/CVBS selectable
[12G/6G/3G/HD/ SD-SDI Input]	<p>12G-SDI: 12.0 Gbps (L-4.5CHD 50 m max.)          6G-SDI: 6.0 Gbps (L-4.5CHD 50m max.)          3G-SDI: 3.0 Gbps (5C-FB 70 m max.)          HD-SDI: 1.5 Gbps (5C-FB 100 m max.)          SD-SDI: 270 Mbps (5C-2V 200 m max.)          Quantization: Y: 10-bit, C: 10-bit          Number of inputs:  <b>MV-4200/4210/4300/4310</b>          •BNC x 8 (3G/HD/SD-SDI)</p> <p><b>MV-4220/4320</b>          •BNC x 2 (12G-SDI or 3G/6G/HD/SD-SDI)          •BNC x 6 (3G/HD/SD-SDI)</p> <p><b>MV-4200SDI</b>          •BNC x 20 (3G/HD/SD-SDI)</p> <p><b>MV-4220SDI</b>          •BNC x 5 (12G-SDI or 3G/6G/HD/SD-SDI)          •BNC x 15 (3G/HD/SD-SDI)</p>
[Analog Composite Input]	<p>Analog composite: 1.0(p-p)          Quantization: Y: 8-bit, C: 8-bit          Number of inputs:          MV-4200/4210/4300/4310 - BNC x 8,          MV-4200SDI - BNC x 20          * Not available on MV-4220/4320 or MV-4220SDI</p>
[HDMI / DVI Input card]	
DVI/HDMI Input	<p>Bit resolution: R: 8-bit, G: 8-bit, B: 8-bit          * Internal processing: sampling conversion from 4:4:4 to 4:2:2          Input resolution: <b>PC</b>          640 x 480, 800 x 600, 1024 x 768, 1280 x 1024, 1360 x 768,          1366 x 768, 1440 x 900, 1680 x 1050, 1600 x 1200, 1920 x 1200          Refresh rate: 60 Hz supported</p> <p>Input resolution: <b>VIDEO (SMPTE compliant)</b>          1920 x 1080i/p, 1280 x 720p          525/60i, 625/50i (HDMI only)          Refresh rate: 60/50 Hz          HDCP supported</p> <p>- Recommended cable length: 5m or less</p>
RGB input	<p>R/G/B: 0.7 Vp-p          H/V: TTL          Bit resolution: R: 8-bit, G: 8-bit, B: 8-bit          * Internal processing: sampling conversion from 4:4:4 to 4:2:2          Input resolution: <b>PC</b>          640 x 480, 800 x 600, 1024 x 768, 1280 x 1024, 1360 x 768,          1366 x 768, 1440 x 900, 1680 x 1050, 1600 x 1200, 1920 x 1200          Refresh rate: 60 Hz supported</p> <p>Input resolution: <b>VIDEO (SMPTE compliant)</b>          1920 x 1080i/p, 1280 x 720p, 525/60i, 625/50i          Refresh rate: 60/50 Hz</p>

\*1 MV-4220/4320 or MV-4220SDI only supports.

Audio Input	
[12G/6G/3G/HD/SD-SDI]	<p>&lt;Embedded audio signal&gt;          Sampling frequency: 48 kHz (sync to input video signals)          Quantization: 16 to 24-bit          16 channels per 3G/HD/SD-SDI input signal (4 groups, 8 stereo pairs)          * 3G-SDI (Level-B) audio support for Link A only. Link B unsupported.          * 12G-SDI input supported on Link 1-4 (Ch01-64).          * Single Link 6G-SDI or Dual Link 3G-SDI input supported on Link1, STREAM1 or Link2, STREAM3 only.</p>
[Analog Audio input]	<p>25-pin, D-sub female, inch screws x 2          Balanced or unbalanced          * The circuit between COLD and SHIELD pins must be shorted outside the unit for an unbalanced input.          Input impedance: 600Ω or Hi-Z          Input level: -10dBV/-3dBu/0dBu/+4dBu          Maximum input level (with +4dBu input level): +24dBu (balanced), +18dBu (unbalanced)          Rated input power (with 600Ω termination): +24dBm          Sampling frequency: 48 kHz          Quantization: 24-bit          Number of inputs: 8 channels (MV-4200IF)</p>
[AES Audio input]	<p>75Ω unbalanced, BNC x 4          Sampling frequency: 32/44.1/48 kHz          Quantization: 16 to 24-bit          Number of inputs: 8 channels (MV-4200IF)</p>
[HDMI Audio input] (MV-4200/4220/4300/4320)	<p>Sampling frequency: 48 kHz          Bit resolution: 16 to 24-bit          8 channels per an HDMI input</p>
LTC Input	<p>1 input, SMPTE time code 1.0 Vp-p within ±6 dB</p>
Video Output	
[HDMI Output] (MV-4200/4220/4300/4320)	<p>HDMI connector (TYPE A)          &lt;If HDMI2.0 LevelB mode OFF&gt;          4 outputs (Allows 4K output, 3840 x 2160, in Square Division format.)          Quantization: Y: 10-bit, C: 10-bit (4:4:4) / R: 10-bit, G: 10-bit, B: 10-bit (4:4:4)          Resolution: 1920 x 1080, 1280 x 720          &lt;If HDMI2.0 LevelB mode ON&gt;          One 4K output, 3840 x 2160          Quantization: Y: 8-bit, C:8-bit, (4:2:0)          Resolution: 3840 x 2160          Frequency: 59.94 Hz, 50 Hz          Range: Limited Range            - Recommended cable length: 5m or less</p>

[SDI Output]	<p>75Ω BNC Allows 4K output, 3840 x 2160 in Square Division or 2SI format.</p> <p><b>MV-4200/4300</b> •BNC x 4 (3G/HD-SDI)</p> <p><b>MV-4210/4310</b> •BNC x 8 (3G/HD-SDI)</p> <p><b>MV-4220/4320</b> •BNC x 2 (12G-SDI or 3G/HD-SDI) •BNC x 2 (3G/HD-SDI)</p> <p>12G-SDI: 12 Gbps 2160/59.94p, 2160/50p *MV-4220/4320only</p> <p>3G-SDI: 3 Gbps 1080/59.94p, 1080/50p(Level-A)</p> <p>HD-SDI: 1.5 Gbps 1080/59.94i, 1080/50i, 720/59.94p, 720/50p</p>
Audio Output	
Analog Audio	<p>Mini stereo jack x 1(1 stereo pair, or 2 mono channels), unbalanced Output impedance: 100Ω or below Output level: -10dBV Maximum output level: +5dBV Sampling frequency: 48 kHz Quantization: 24-bit</p>
Embedded Audio (SDI)	<p>Group x 4 (8 stereo pairs) Sampling frequency: 48 kHz Quantization: 24-bit</p>
Embedded Audio (HDMI)	<p>4 stereo pairs Sampling frequency: 48 kHz Quantization: 24-bit</p>
Alarm Output (Relay)	
3 outputs	POWER1, POWER2, FAN alarm outputs
Genlock Input (MV-4200IF Option)	BB: 0.429 V (p-p) (NTSC), 0.45 V (p-p) (PAL), Tri: 0.6 V(p-p)
Input lock (Standard 1-8 inputs)	2160/59.94p, 2160/50p, 1080/59.94p, 1080/50p (Level-A/B), 1080/59.94i, 1080/50i, 720/59.94p, 720/50p, 525/60, 625/50G
I/O delay	
[HDMI/SDI Output]	<p>Standard: 1 - 1.5 frames (Delay Reduction Mode ON): 1 frame * Interlaced inputs</p>
Video Window	Maximum number of windows displayed differs depending on the card configuration.
Main unit (8 inputs)	<p>MV-4200/4210/4300/4310: Up to 12 windows MV-4220/4320: Up to 8 windows Up to 12 or 8 signals input to the main card can be displayed.</p>
SDI 20 input option	<p>MV-4200SDI: Up to 34 windows MV-4220SDI: Up to 20 windows Up to 34 or 20 signals input to the SDI input option card can be displayed.</p>
HDMI 8 input option	<p>Up to 11 windows Up to 11 signals input to the HDMI input option card can be displayed.</p>

Information Window	Up to 8 windows Internal clock or LTC time code selectable. Time correction via GPI or SNTP Accuracy of the internal clock within $\pm 15$ seconds per month (at 25°C)
Clock, Timer and Information display	Clock, Count up/down timer (internal crystal oscillator base), remaining timer (internal clock or LTC base) and/or information display available in information window Internal crystal oscillator: Temperature characteristic within $\pm 50$ PPM (0 - 40°C)
Background Display (Enabled with the input option card)	Two 4K or eight 2K background images can be saved and displayed. Two 4K or eight 2K images can be saved to the SDI/HDMI input card. Max. image size: 3840 x 2160 pixels
Logo Display	Eight logos can be saved and displayed. Eight logo images can be saved to the MAIN card. Max. image size: 1024 x 512 pixels
Screen layout	User customized layout Up to 68 layouts can be saved for each output.
Title Display	Character limit: Max. 16 characters x 2 lines for each video window. Character types: Alphanumeric characters, symbols, Japanese Kana, Kanji (JIS 1 and 2)
Tally Indication	Frame (red, green or amber) and square indicator (red, green or amber) for each input.
Audio Level Metering	Up to 16 channels of audio level meters can be displayed for each input.
Time Code Display	12G/6G/3G-SDI/HD-SDI/SD-SDI ancillary time code (ATC) reader * Ancillary Time Codes (ATC) are not passed through. * Time code input in LTC connector is not displayed.
Video Monitoring	Video signal loss, freeze, black level, luminance level, CRC error, HDCP error, 2SI link and 2SI format alarm detection
Audio Monitoring	Audio signal loss, silence, and over level alarm detection
Interface	* RS-232C/RS-422/RS-485 and GPIO are optional.
RS-232C/RS-422/ RS-485	9-pin D-sub male x 1 Baud rate: 9,600/19,200/38,400/57,600/115,200 bps, data length 8-bit, stop bit 1-bit, parity NONE/ODD/EVEN
GPIO:	80-pin, female x 2 Up to 144 inputs/144 outputs (input/output compatible, selectable) 5 alarm outputs (Power1/2 normal states, FAN alarms, Power1/2 alarms)
LAN:	100Base-TX/1000Base-T, RJ-45(Category 5) x 1
Layout Manager	Window size and position editing, layout switchover, and background image logo, text logo data registration. (Windows software)
Live Viewer	For video transmission (Windows software)
Data Backup	Stores the setting data to memory (Rewrite capacity: approx. 100,000) *Frequent changes of display settings may result in being unable to retain data.

### Options

MV-4200PS	Redundant power supply unit for MV-4200/4210/4220 (Including AC cord retaining clip)
MV-4300PS	Redundant power supply unit for MV-4300/4310/4320 (Including AC cord retaining clip)
MV-4200IF	Interface card
8840S-080-174ADF-150S5H	GPIO cable for MV-4200IF (80-pin high-density, breakout, 1.5m)
8840S-080-174ADF-300S5H	GPIO cable for MV-4200IF (80-pin high-density, breakout, 3.0m)
MV-4200SDI	3G/HD/SD-SDI, COMPOSITE 20 input card
MV-4220SDI	12G/6G/3G/HD/SD-SDI 20input card
MV-4200PCI	HDMI/DVI and RGBHV 8 input card
MV-4200SNMP	SNMP support software

### Other Option

HVS-AUX16A/16B/32A/64A (*)	Auxiliary unit (Ethernet LAN Connection)
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(\*) Up to 8 units can be connected.

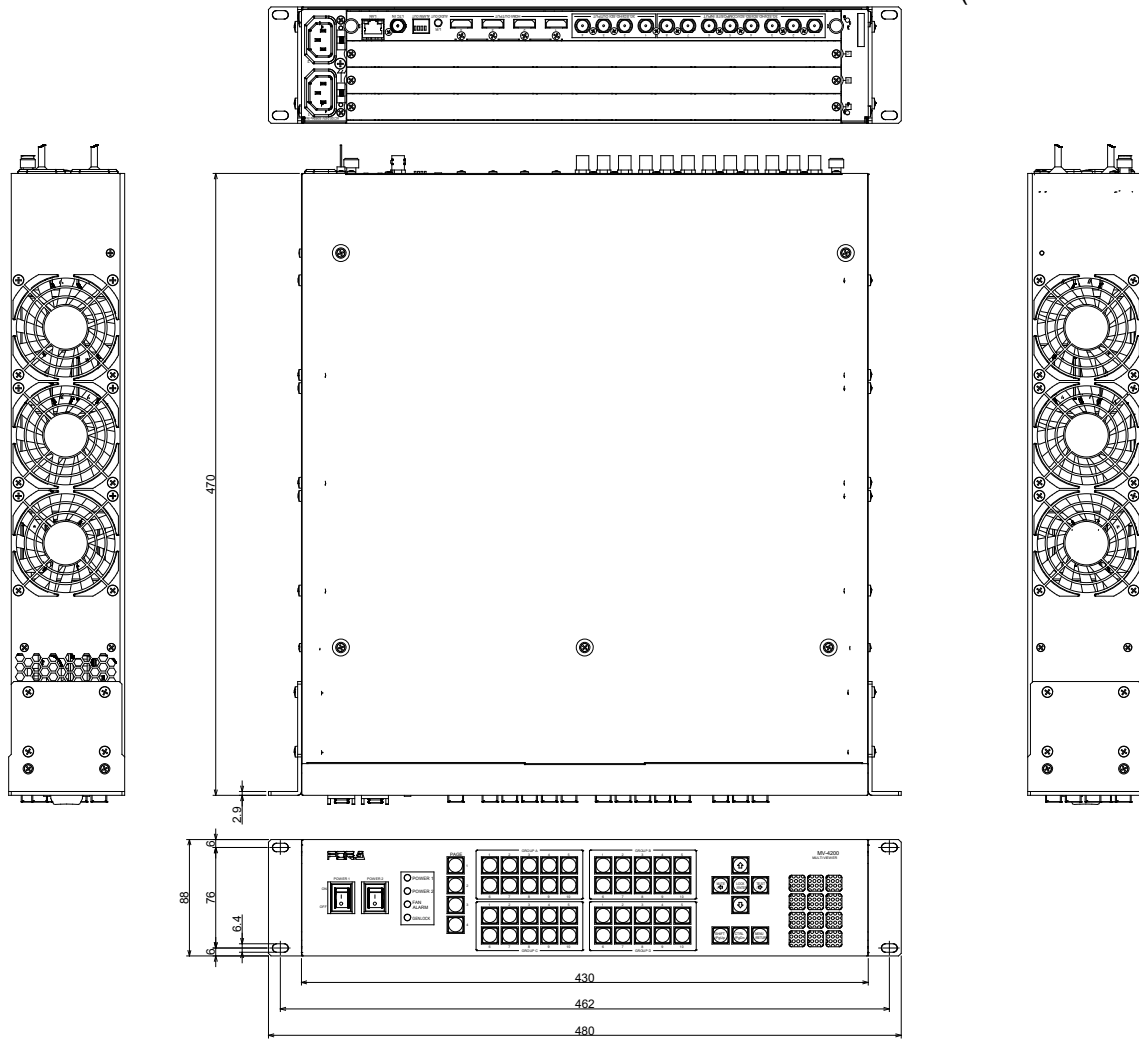
### Accessories

Rack Mount Brackets, AC Cord, Rubber Feet, HDMI Cable Lacing Bracket, USB flash drive, Quick Setup Guide

**2. External Dimensions**

◆ **MV-4200 Series**

(All dimensions in mm.)



◆ **MV-4300 Series**

(All dimensions in mm.)

