B/W CCD Camera

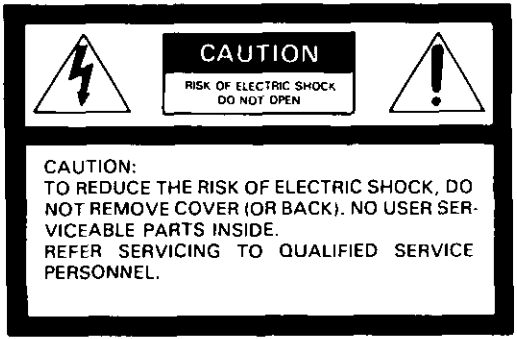
GP-MF552

Operating Instructions

Lens : option

Panasonic

Before attempting to connect or operate this product,
please read these instructions completely.



SA 1965

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

SA 1966

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For U.S.A

Warning:
This equipment generates and uses radio frequency energy and if not installed and used properly, i.e., in strict accordance with the instruction manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

For CANADA

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

The serial number of this product may be found on the bottom of the unit.
You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. GP-MF552

Serial No. _____

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CONTENTS

PREFACE

The Panasonic Industrial-use Solid State Camera GP-MF552 incorporates a ITL (Inter Line Transfer) type CCD image sensor.

The GP-MF552 further has an image sensor of 380,000 pixels and 570 lines of horizontal resolution, with smear reduced to a bare minimum.

FEATURES

1. Newly developed multi-function solid state image sensor 2/3" ITL CCD image sensor with 768 (H) × 493 (V) pixels.
2. Selectable scanning system :
   1-line interlace, 2-line interlace and 2-line sequential are available for the highest quality possible within video processing.
3. External synchronization :
   External HD and VD input enable system set-up with external video processors, etc.
4. Frame Reset :
   External HD and VD reset signals reset the scanning line to the line number 1.
5. Seven-step of Electronic Shutter or three-step of Electronic Shutter with trigger function selectable.

PRECAUTIONS

1. Do not attempt to disassemble the camera.
   To prevent electric shock, do not remove screws or cover. There are no user-serviceable parts inside. Refer servicing to qualified service personnel.

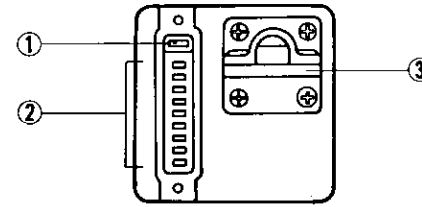
2. Do not expose the camera to rain or moisture, and avoid operation in wet areas.
   Take immediate action if the camera should become wet. Turn the power off and request servicing from qualified service personnel. Moisture can damage the camera and create danger of electric shock.

3. Do not drop anything inside the camera.
   Dropping metal for example inside the camera could permanently damage the unit. If anything is dropped inside the camera, turn off the power immediately and request service from qualified service personnel.

4. Never aim the camera at bright objects.
   Whether the camera is in use or not, never aim it at the sun, or other extremely bright objects as this could cause blooming.

5. Do not use the camera beyond its temperature, humidity or power source ratings. This camera is designed for indoor use.
   (a) The ambient temperature must not range beyond 14°F - 122°F (−10°C - +50°C).
   (b) Avoid using the camera when the humidity is above 90%.
   (c) The input power source must be DC 12V, 260 mA.

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS



1. **HD/VD Termination Switch (SW 1)**
   This switch terminates the HD/VD signals with 75 ohms when this switch is turned to the ON position.

2. **Mode Selection Switches (SW 2 9 pin)**
   These switches are used to select the camera operation mode.

SW No.	Description
1	AGC ON/OFF
2	Gain Up ON/OFF
3	Gamma ON/OFF
4	Accumulation Field/Frame
5	Shutter Trigger ON/OFF
6	Latch ON/OFF
7	Data-2
8	Data-1
9	Data-0

Contents of the switches

1. AGC :
   The AGC does not functions accurately under the Shutter Trigger and Gate Sensor Control modes.
2. Gain Up :
   Switch ON → 6 dB up at AGC OFF
3. Gamma :
   Switch ON → 0.6
   Switch OFF → 1.0
4. Accumulation Field/Frame :
   Switch ON → Field Accumulation
   Switch OFF → Frame Accumulation
5. Shutter Trigger :
   (1) Shutter Trigger-A Mode
   - Shutter Trigger Switch → ON
   - Accumulation Field/Frame Switch → ON (Field)
   - Supply frame reset signal to the pin-7 of the Camera Cable Connector (12 pin)
   - Set the Data-2 (Switch 7), Data-1 (Switch 8) and Data-0 (Switch 8) as follows to obtain 3 kind of Shutter Speeds.

Switch 7	Switch 8	Switch 9	Shutter Speed (seconds)
ON	OFF	ON	1/2000
ON	ON	OFF	1/4000
ON	ON	ON	1/10000
Others			Not specified

(2) Shutter Trigger-B Mode
- Shutter Trigger Switch → ON
- Accumulation Field/Frame → OFF (Frame)
  Approximately 1/2000 sec regardless of Switch -7, -8, -9.

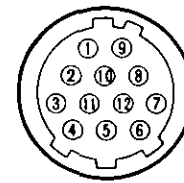
6. Latch :
   Switch ON → The frame reset signal is latched by internal HD signal.
7. (Data-2), 8 (Data-1), 9 (Data-0) :
   The Electronic Shutter Speed can be set as follows.

Switch 7	Switch 8	Switch 9	Shutter Speed (seconds)
OFF	OFF	OFF	NORMAL
OFF	OFF	ON	1/125
OFF	ON	OFF	1/250
OFF	ON	ON	1/500
ON	OFF	OFF	1/1000
ON	OFF	ON	1/2000
ON	ON	OFF	1/4000
ON	ON	ON	1/10000

The Shutter Speed does not functions accurately under non-interlaced synchronization.

3. Camera Cable Connector (12-pin)
This connector is used for connection of the optional Camera Cable GP-CA34 or GP-CA33.

Pin No.	Description
1	Ground
2	+12V IN*
3	Ground for Video Out
4	Video Out
5	Ground for HD
6	HD In/Out
7	VD In/Out or frame reset in
8	Ground
9	No connection
10	Ground for Read out/Inhibit
11	Read out/Inhibit
12	Ground for VD



Front View

CAUTION :
CONNECT THIS TO A DC 12V CLASS 2 POWER SUPPLY ONLY.

EXTERNAL SYNCHRONIZATION

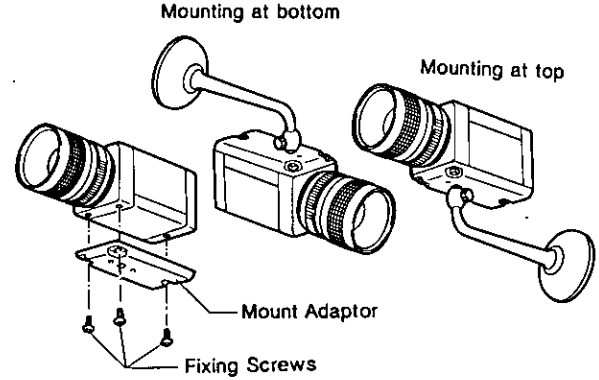
1. 2 : 1 interlace
   The GP-MF552 operates in the 2 : 1 interlace mode when the external 2 : 1 interlaced HD and VD signals are supplied to the pin-6 and pin-7 of the Camera Cable Connector (12 pin).
2. Non-interlace
   The GP-MF552 operates in the non-interlace mode when the external non-interlaced HD and VD signals are supplied to the pin-6 and pin-7 of the Camera Cable Connector (12 pin)

   Note :

   If the phase of the falling edges of the external HD and VD are not matched, the picture will be disturbed. In this case, set the Latch Switch of the Mode Selection Switches (SW 2) to the ON position.

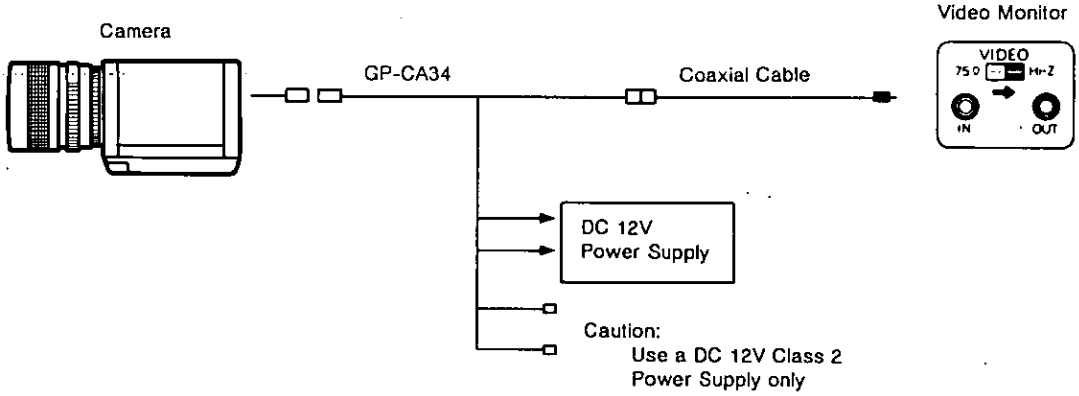
INSTALLATION OF CAMERA

1. Mounting at top
   This camera is originally designed to be mounted from the top, as shown. The hole is the standard photographic pan-head screw size (1/4" - 20).
2. Mounting at bottom
   Remove the mount adaptor on the top of the camera by removing 3 fixing screws. Attach the mount adaptor to the bottom as shown in the diagram, then mount the camera on the mounting bracket.
   Make sure that the 3 original screws are used when mounting the mount adaptor ; longer type screws will break the inner component.



EXAMPLE OF CONNECTION

1. Connect the optional Camera Cable GP-CA34 between the Camera Cable Connector (3) and the DC 12V Class 2 Power Supply (sold separately).
2. Connect the Video Connector of the GP-CA34 to the Video Monitor.



SPECIFICATIONS

Pick-up Device :	Inter Line Transfer type CCD with 768 (H) × 493 (V) pixels
Image Size :	2/3" (8.8(H) × 6.6 (V) mm)
Scanning :	2 : 1 interlace 1-line interlace (Frame accumulation) 2 : 1 interlace 2-line interlace (Field accumulation) 2-line sequential (at non-interlaced external sync)
Synchronization :	Internal or External (Selectable Automatically) Internal : Built-in sync generator External : 4.0 Vp-p/75 ohms Horizontal drive and Vertical drive pulses for 2 : 1 interlace or sequential scanning
External Reset :	External signal (4.0 Vp-p/75 ohms, negative) supplied to EXT VD IN connector can be used as reset signal
Horizontal Resolution :	570 lines at center
Minimum Illumination :	0.05 footcandles (0.5 lux), (F1.4, +6 dB, 2 : 1 interlace)
Signal-to-noise Ratio :	More than 59 dB typical, (0 dB, 2 : 1 interlace, without shutter)
Gamma :	1.0 or 0.6 selectable internally
Gain Selection :	0 dB, +6 dB selectable internally
Electronic Shutter :	7-step (1/125 to 1/10,000) at normal. 3-step (1/2,000 to 1/10,000) at Shutter Trigger-A. Approx. 1/2,000 at Shutter Trigger-B.
Lens Mount :	C-mount
Vibration Resistance :	8 G (10 Hz - 150 Hz) (2 hours each for three axes)
Shock Resistance :	80 G (IEC 68) * IEC = International Electronical Technical Commission.
Power Source :	DC + 12V, 260 mA

Ambient Temperature :	14°F - 122°F (−10°C - +50°C)
Dimensions :	1-5/8" (W) × 1-5/8" (H) × 3-1/8" (D), (41 (W) × 41 (H) × 80 (D) mm)
Weight :	0.46 lbs, (210 g) (Camera Head Only)

Dimensions and weight indicated are approximate values.
Specifications are subject to change without notice.

Panasonic

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