

Photosensor amplifier

C6386-01



Light-to-voltage conversion amplifier with optical fiber

Features

→ Easy handling

Built-in photodiode allows easy detection of light just by connecting to a voltmeter.

→ Optical fiber light input

Measures light at a narrow detection point. Separating the amplifier from the detection point allows measurement in unusual environments and achieves low noise.

→ Three sensitivity ranges

Range	Conversion impedance (V/A)	Cutoff frequency (MHz)
H	10^5	1
M	10^4	3
L	10^3	10

→ High-speed response

Applications

→ Optical power meters

→ Laser monitors

→ Precision photometry

→ Various light detection (sparks inside equipment, etc.)

Absolute maximum ratings (Ta=25 °C unless otherwise noted)

Parameter	Symbol	Conditions	Rated value	Unit
Supply voltage	Vs Max		±18	V
Incident light level	Pin Max		10	mW
Operating temperature (main unit)*1	Topr	No dew condensation*2	0 to +40	°C
Storage temperature (main unit)*1	Tstg	No dew condensation*2	-10 to +50	°C
Optical fiber operating temperature	-	No dew condensation*2	0 to +60	°C
Minimum bending radius for optical fiber	-		R15	mm

*1: When using with dry batteries, check the temperature range of the dry batteries before use

*2: When there is a temperature difference between a product and the surrounding area in high humidity environment, dew condensation may occur on the product surface. Dew condensation on the product may cause deterioration in characteristics and reliability.

Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

Recommended operating range (Ta=25 °C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating supply voltage*3	Vs	±6	±15	±17	V

*3: When external power supply is used, use a regulated DC power supply.

Use a regulated DC power supply with ripple less than 3 mVp-p. Recommended power supply :PW18-1.8AQ (TEXIO)

Optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Photosensitive area opening diameter	-		-	φ2.0	-	mm
Numerical aperture (N.A)	-		-	0.56	-	-
Spectral response range	λ		-	400 to 1060	-	nm
Photosensitivity*4	S	λ=830 nm Measured when light is input to optical fiber.	H	30	-	mV/μW
			M	3	-	
			L	0.3	-	

*4: Refer to spectral response.

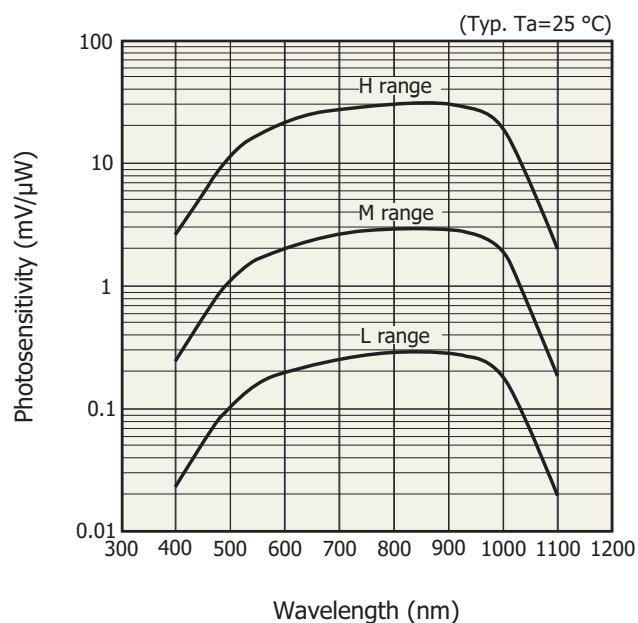
Electrical characteristics (Ta=25 °C, Vs=±15 V)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Cutoff frequency*5	fc	-3dB	H	Lower	-	MHz
			H	Upper	1	
			M	Lower	DC	
			M	Upper	3	
			L	Lower	DC	
			L	Upper	10	
Maximum output amplitude voltage*6	Vfs	RL=2 kΩ	10	-	-	V
Output noise voltage	Vn	Within each frequency bandwidth	-	-	10	mVp-p
Output resistance	Ro		-	200	-	Ω
Capacitive load	CL	RL=1 kΩ	-	-	1000	pF
Current consumption	Is	Dark state	-	-	±7	mA

*5: Refer to frequency response.

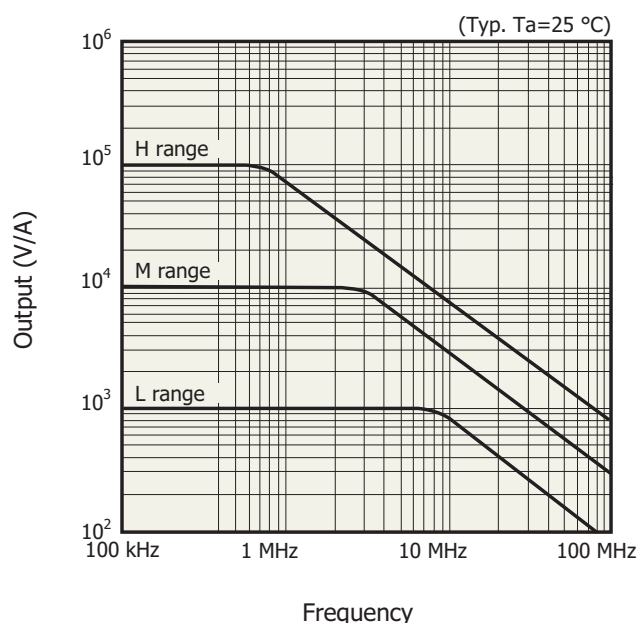
*6: When using dry batteries (Vs=±9 V), this item is 5 V Min.

Spectral response



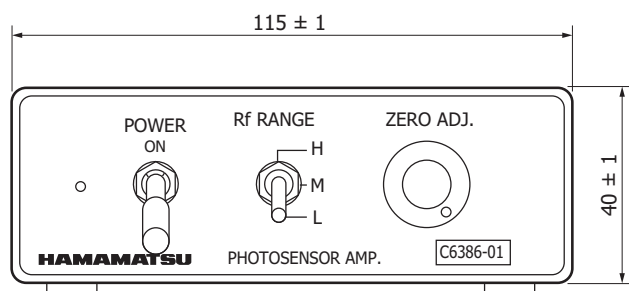
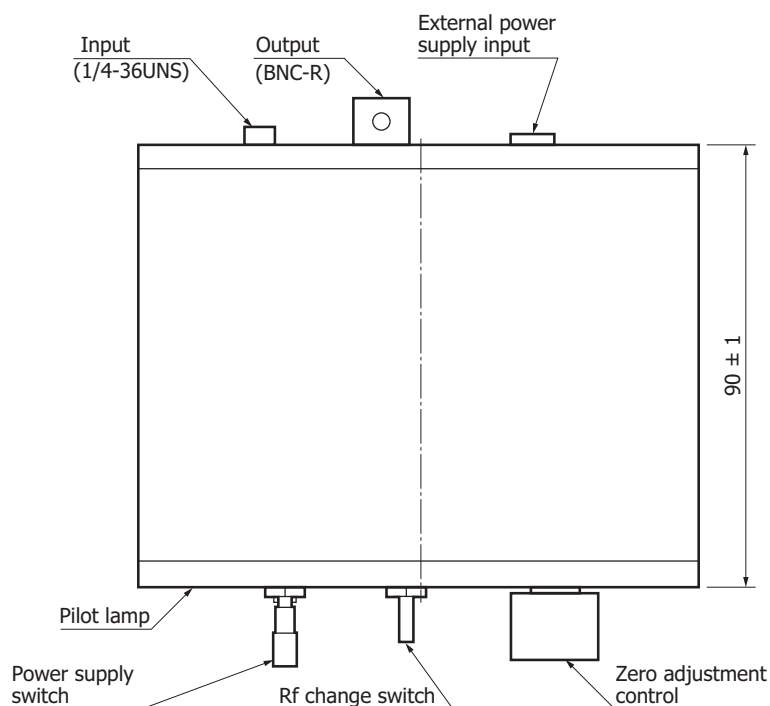
KACCB0041EC

Frequency response



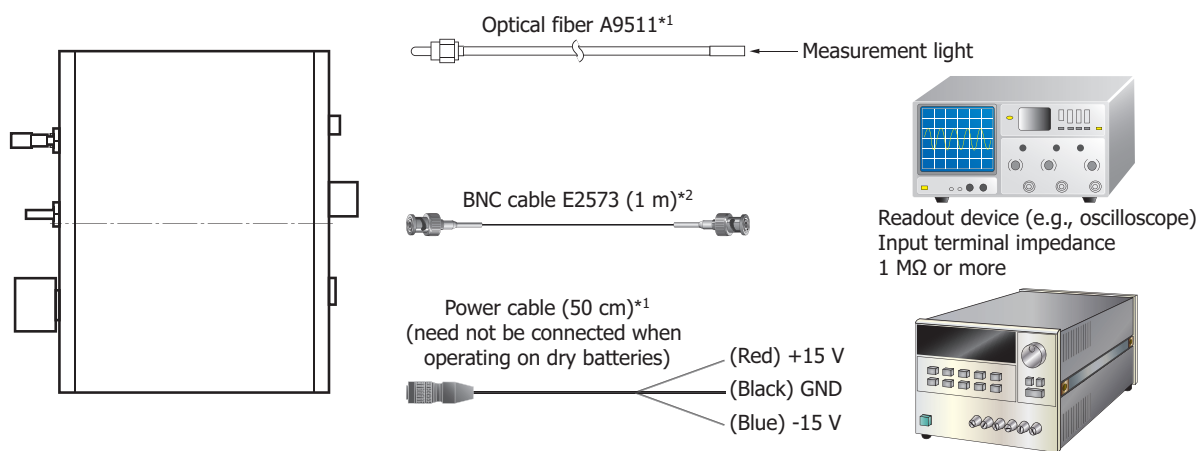
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Dimensional outline (unit: mm)



KACCA0020EC

Connection example



*1: Accessories

*2: Sold separately.

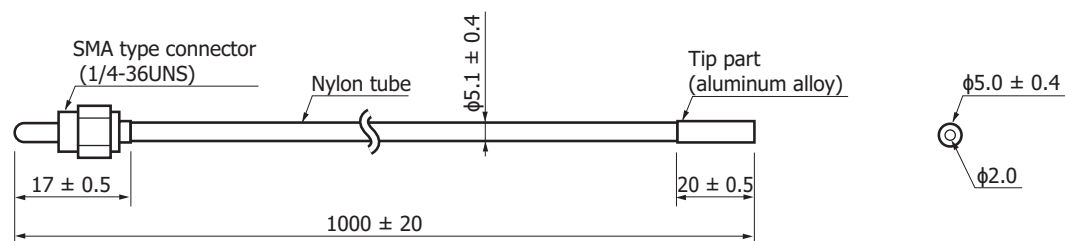
If you are using an off-the-shelf cable, make sure that it is within 5 m in length.

Dual power supply (± 6 to ± 17 V, 0.1 A or more)
Be sure to use a dual power supply.
Not required when operating on dry batteries.
Please refer to the instruction manual for dry batteries installation and replacement.

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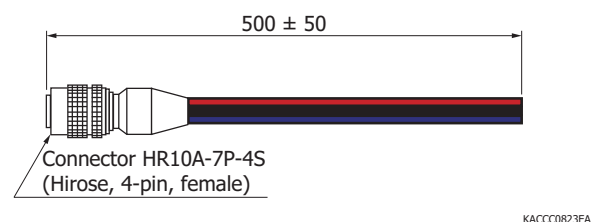
Accessories (unit: mm)

- Instruction manual
- Optical fiber A9511 (provided also as a replacement accessory)



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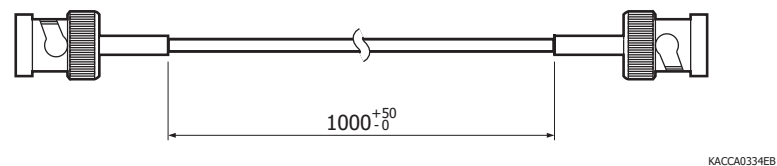
- Power cable



Note: Coaxial cable with BNC-BNC plug and dry batteries are not supplied with C6386-01

Options (unit: mm)

- BNC cable E2573
- Cable: 1.5D-QEV



Related information

www.hamamatsu.com/sp/ssd/doc_en.html

■ Precaution

· Disclaimer

■ Catalog

· Technical note / Photosensor amplifiers, Photodiode modules

Information described in this material is current as of February 2025.

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