

# Signal processing unit for PSD module C10459, C10460

Specifically dedicated for PSD modules (C10442/C10443 series)



C10459 and C10460 are signal processing unit specifically design to convert the output from a PSD module (C10442/C10443 series) into position signals. C10459 is for PSD module C10442 series and C10460 is for C10443 series.

Position signals are output as both analog and digital signals. In case of analog output, connecting the output connector to a voltmeter shows an output voltage that directly represents the position information (The output voltage indicates a position from the center of the PSD, 1 V=1 mm). While, digital output allows serial connection (RS-232C) to a PC. Position information can be easily loaded into a PC via the sample software that comes with the unit.

## Features

- Both analog and digital outputs
  - Analog output: Output voltage directly represents the position information
  - Digital output: High-resolution digital output (16-bit)
- AC adapter (+12 V) operation
- Supplies power to PSD modules

## Applications

- Optical axis alignment
- Range finder
- 3-dimensional measurement
- Length measurement
- Liquid level sensors
- Distortion measurement

### ■ Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Value	Unit
Supply voltage	Vcc Max.	+18	V
Maximum input voltage	Vin Max.	±13	V
Maximum output voltage	Vout	±15	V
Operating temperature *1	Topr	0 to +40	°C
Storage temperature *1	Tstg	-10 to +60	°C

\*1: No condensation

### ■ Specifications (Vcc=+12 V, Ta=25 °C, unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	Vcc	+9	+12	+18	V
Input voltage	Vin	-12	-	0	V
Current consumption	Icc	-	200	-	mA

### Analog section

Parameter	Symbol	Min.	Typ.	Max.	Unit
Output amplitude voltage	Vout	-10	-	+10	V
Output noise voltage	Vn	-	5	-	mVp-p
Offset voltage	Vos	-5	-	+5	mV
Position detection error	E	-	±3	-	%
Position resolution *2	ΔR	-	5	-	μm
Cut-off frequency (-3 dB)	fc	-	13.5	-	kHz

\*2: Reference value. Values may vary depending on operating environment.

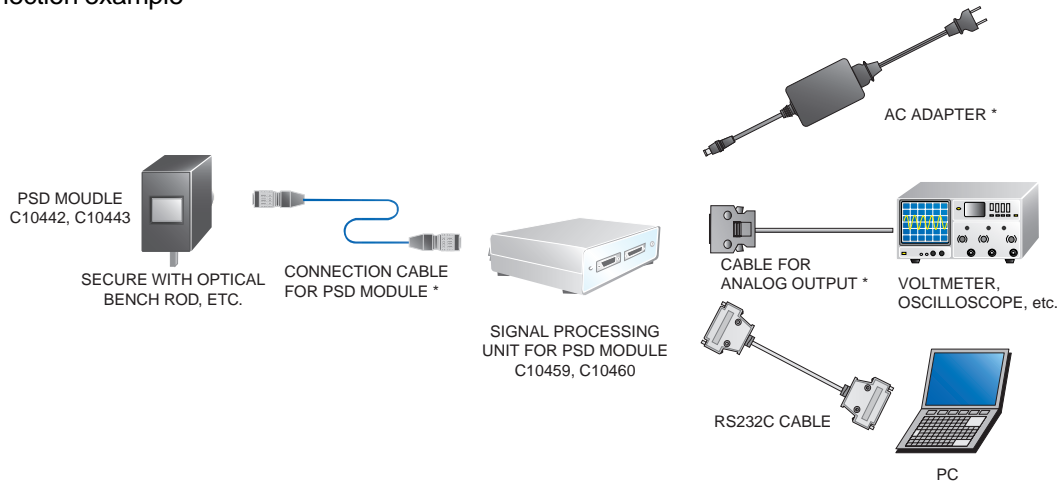
### Digital section

Parameter	Symbol	Min.	Typ.	Max.	Unit
Signal conversion time - mode 1 *3	Tr1	2	-	-	ms
Signal conversion time - mode 2 *4	Tr2	5	-	-	ms
Output form	-	Conforms to RS-232C (output position signals and light power)16-bit			-

\*3: Communication parameter 115200 bps/8-bit/Non-parity/1 stop bit

\*4: Communication parameter 38400 bps/8-bit/Non-parity/1 stop bit

## ■ Connection example



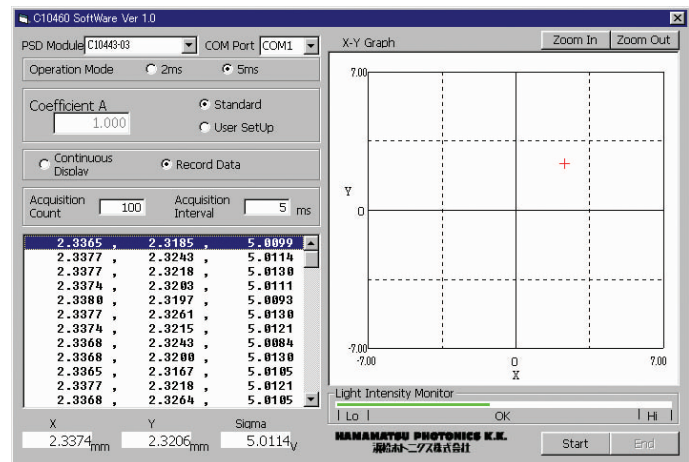
\* Accessory of a signal processing unit for PSD module C10459, C10460

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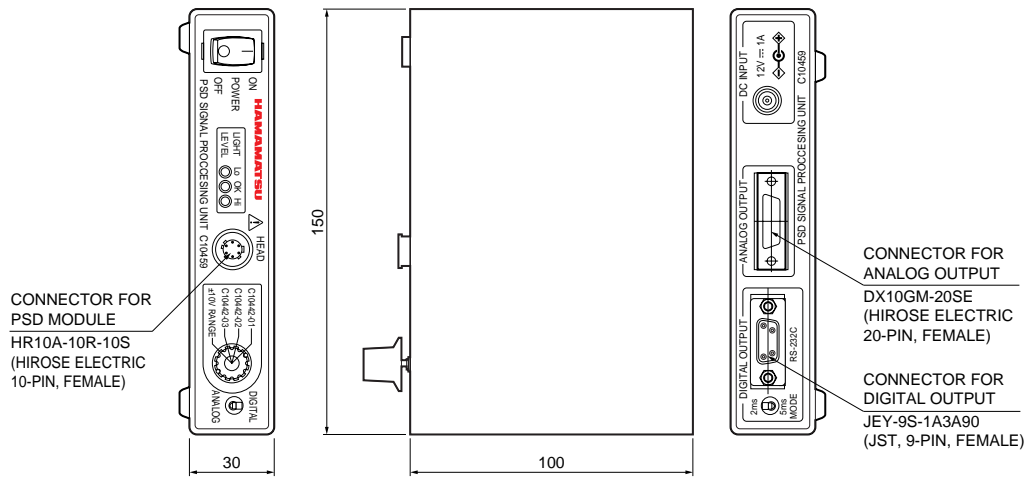
## ■ Sample software (accessory)

Sample software acquires and displays position data as numerical values and on an XY graph, as well as recording the data.

- Acquisition count: 1 to 300000
- Acquisition interval
  - Mode 1: 2 ms to 120000 ms (in 2 ms intervals)
  - Mode 2: 5 ms to 300000 ms (in 5 ms intervals)



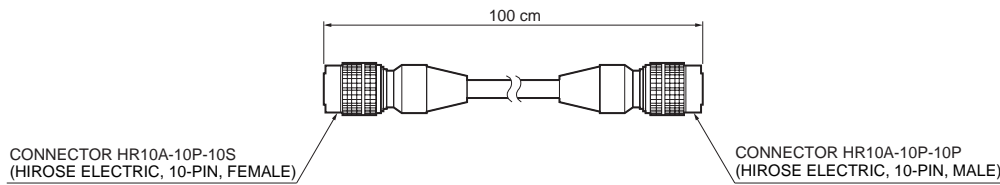
## ■ Dimensional outline (unit: mm)



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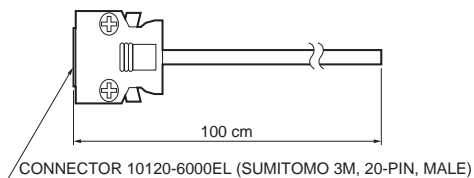
## ■ Accessories

- AC adapter
- Cable for PSD module



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- Cable for analog output (No connector on one end)



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- Sample software CD-ROM (compatible OS: Windows2000/XP/7 \*4)

\*4: Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Note: RS232C cable is not supplied with C10459 and C10460. Use a commercially available cable with 9-pin D-sub connectors. (male - female, straight)

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Cat. No. KACC1135E04  
Aug. 2010 DN