The C10460 is a signal processing unit specifically designed to convert the output from a PSD module C10443 series (except for the C10443-06) into position signals. 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
- Two-dimensional measurement
- Three-dimensional measurement
- Length measurement
- Liquid level sensors
- Distortion measurement
- Displacement sensors

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Min.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>Vcc</td>
<td>-</td>
<td>+18</td>
<td>V</td>
</tr>
<tr>
<td>Input voltage</td>
<td>Vin</td>
<td>-13</td>
<td>+13</td>
<td>V</td>
</tr>
<tr>
<td>Output voltage</td>
<td>Vout</td>
<td>-15</td>
<td>+15</td>
<td>V</td>
</tr>
<tr>
<td>Operating temperature*1</td>
<td>Topr</td>
<td>0</td>
<td>+40</td>
<td>°C</td>
</tr>
<tr>
<td>Storage temperature*1</td>
<td>Tstg</td>
<td>-10</td>
<td>+60</td>
<td>°C</td>
</tr>
</tbody>
</table>

*1: No dew condensation

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.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>Vcc</td>
<td>+9</td>
<td>+12</td>
<td>+18</td>
<td>V</td>
</tr>
<tr>
<td>Input voltage</td>
<td>Vin</td>
<td>-12</td>
<td>-</td>
<td>0</td>
<td>V</td>
</tr>
<tr>
<td>Current consumption</td>
<td>Icc</td>
<td>-</td>
<td>200</td>
<td>-</td>
<td>mA</td>
</tr>
</tbody>
</table>
Signal processing unit for PSD module  
C10460

## Analog section

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output amplitude voltage</td>
<td>Vout</td>
<td>-10</td>
<td>-</td>
<td>+10</td>
<td>V</td>
</tr>
<tr>
<td>Output noise voltage</td>
<td>Vn</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>mVp-p</td>
</tr>
<tr>
<td>Offset voltage</td>
<td>Vos</td>
<td>-10</td>
<td>-</td>
<td>+10</td>
<td>mV</td>
</tr>
<tr>
<td>Position detection error</td>
<td>E</td>
<td>-</td>
<td>±3</td>
<td>-</td>
<td>%</td>
</tr>
<tr>
<td>Position resolution*2</td>
<td>ΔR</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>μm</td>
</tr>
<tr>
<td>Cutoff frequency (-3 dB)</td>
<td>fc</td>
<td>-</td>
<td>13.5</td>
<td>-</td>
<td>kHz</td>
</tr>
</tbody>
</table>

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

## Digital section

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal conversion time - mode 1*3</td>
<td>Tr1</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>ms</td>
</tr>
<tr>
<td>Signal conversion time - mode 2*4</td>
<td>Tr2</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>ms</td>
</tr>
</tbody>
</table>

*3: Communication parameter 115200 bps/8-bit/Non-parity/1 stop bit
*4: Communication parameter 38400 bps/8-bit/Non-parity/1 stop bit

## Applicable PSD modules

- C10443-01
- C10443-02
- C10443-03
- C10443-04*5

Note: The C10443-06 is not supported.
*5: When used in combination with C10460, the cutoff frequency is 13.5 kHz.

## Connection example

- PSD module C10443
- Secure with optical bench rod, etc.
- Connection cable for PSD module*
- AC adapter*
- Signal processing unit for PSD module C10460
- Cable for analog output*
- Voltmeter, oscilloscope, etc.
- RS232C cable
- PC

* Accessories of C10460
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)

Compatible OS:
- Microsoft® Windows® 7 Professional SP1 (32/64-bit)
- Microsoft Windows 8 Professional (32/64-bit)
- Microsoft Windows 10 Professional (32-bit, 64-bit)

Note: Microsoft Windows is either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Dimensional outline (unit: mm)

Connector for PSD module
HR10A-10R-10S
(Hirose Electric 10-pin, female)

Connector for analog output
DX10GM-20SE
(Hirose Electric 20-pin, female)

Connector for digital output
JEY-9S-1A3A90
(JST, 9-pin, female)
Accessories (unit: mm)

- Instruction manual
- Sample software CD-ROM
- AC adapter
- Cable for PSD module

Cable for analog output (no connector on one end)

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

Related information

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

Precautions

Disclaimer