

## **Evaluation circuit for optics module**



C13390

# Dedicated evaluation circuit for the optics module (C13398 series)

The C13390 is a dedicated evaluation circuit for the optics module (C13398 series). When the C13390 is connected to the PC through USB, the analog output signals of each channel of the C13398 series can be converted into digital signals, and the results can be acquired into the PC.

Both the C13398 series and the C13390 can be driven off of USB bus power. There is no need to prepare a separate power supply or the like. You can simply connect it to the PC through USB and perform evaluation and measurement.

### Features

High-resolution digital output (16-bit)

- ➡ Up to 10 channels of output signals can be acquired into a PC.
- USB bus powered
- Built-in power supply circuit for driving the C13398 series

### - Applications

- Blood analysis device
- Absorbance analyzer

### Absolute maximum ratings

Parameter	Symbol	Value	Unit
Operating temperature*1	Topr	0 to +50	°C
Storage temperature*1	Tstg	-10 to +50	°C

\*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.

### Electrical characteristics (Ta=25 °C unless otherwise noted)

Parameter	Symbol	Condition	Min.	Тур.	Max.	Unit
Number of channels	-	Single-ended input	-	-	10	ch
Resolution	RES		-	-	16	bit
Input impedance	Zin		-	1	-	MΩ
Input voltage	Vin		-	-	±10	V
Full scale error	FSE		-	-	±32	LSB
Output voltage*2	Vo		-	±10	-	V
Current consumption*3	Is		-	-	170	mA

\*2: Supply voltage to the C13398 series

\*3: When connected to the C13398 series and used

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# Connection example

### Sample software

The supplied sample software can be used to acquire and save measurement data.

### Compatible OS

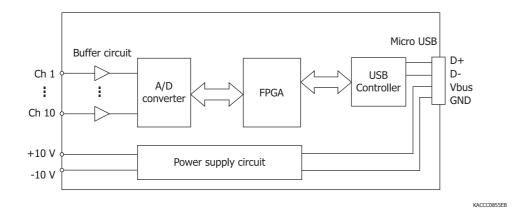
Microsoft® Windows® 7 (32-bit, 64-bit) 7 SP1 (32-bit, 64-bit)

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

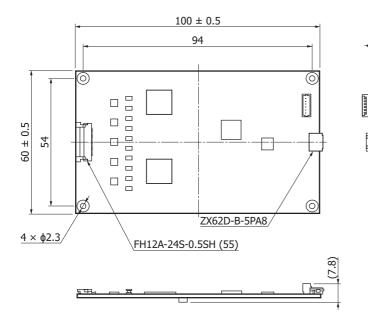
et	Output CH1: CH6:	1	nV		42 m\	СН			CH4:		CH5:	
,	CH6:		mV		42 m\							
					42 m\	1	3366					
		1880	C				0000	mV	1357	mV	1784	mV
		880		CH7:		CH	8:		CHD.		CH10:	
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			nV	10	02 m\	/	000	mν	340	mν	120	mV
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1 CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	Comment			
		1621	2096	2203	1201	660	401	148				
42	3366	1357	1784	1880	1032	566	346	128				
	42 42	53 4555	53 4555 1621	53 4555 1621 2096	53 4555 1621 2096 2203	53 4555 1621 2096 2203 1201	53 4555 1621 2096 2203 1201 660	53 4555 1621 2096 2203 1201 660 401	53 4555 1621 2096 2203 1201 660 401 148	53 4555 1621 2096 2203 1201 660 401 148	53 4555 1621 2096 2203 1201 660 401 148	53 4555 1621 2096 2203 1201 660 401 148



### Block diagram



### Dimensional outline (unit: mm)



Tolerance unless otherwise noted: ±0.3

1.6

KACCA0389EA

### - Accessories

· Instruction manual

· Sample software (CD-ROM)

 $\cdot$  USB cable (Micro-B–Type A, length: 100 cm)



### Related information

www.hamamatsu.com/sp/ssd/doc en.html

Precautions

· Disclaimer

Information described in this material is current as of July 2019.

Product specifications are subject to change without prior notice due to improvements or other reasons. This document has been carefully prepared and the information contained is believed to be accurate. In rare cases, however, there may be inaccuracies such as text errors. Before using these products, always contact us for the delivery specification sheet to check the latest specifications.

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