

The C9945-13/-14 is counting unit with a USB interface and can be used as 16 ch photon counter. This unit uses the double-counter method that has two counter circuits to allow measurements with no dead time. C9945-13 model has TTL input for connecting multiple photon counting head. C9945-14 model has LVDS input for multichannel photon counting head.



SPECIFICATIONS

Parameter		C9945-13 SERIES	C9945-14 SERIES	Unit
Input	Number of input signals	16		—
	Signal input level	TTL	LVDS	—
	Signal pulse width	5 ns or longer		ns
	Input impedance	50	100	Ω
Counter	Counter method	Double counter method		—
	Max. count rate	100		MHz
	Max. counter capacity	2^{28} counts/counter gate ^①		—
	Internal counter gate time	500 ns to 1 s (1, 2, 5 step) ^②		—
Trigger	Trigger method	Software trigger / External start trigger		—
	External start trigger signal input level	TTL		—
I/O	Number of output	2		—
	Output level	TTL		—
	Number of input	2		—
	Input level	TTL		—
	Synchronous signal input level	LVTTTL		—
ID switch	0 to 7		—	
Buffer capacity	4096 (word) ^③		—	
Compatible OS	Windows® 10 pro ^④		—	
Interface	USB 2.0		—	
Supply voltage	DC 6.5 V to 8.0 V / 0.5 A		—	
Operating ambient temperature/humidity	+5 °C to +45 °C / 80 % or less (No condensation)		—	
Storage temperature/humidity	0 °C to +50 °C / 85 % or less (No condensation)		—	
AC adapter	AC input	AC 100 to 240		V
	Output	+7 V / 1.6 A		—

NOTE: ① possible to select bit numbers 28, 16, 8, 4 for count/counter gate.
 ② When transferring data continuously, Internal counter gate time depends on transfer speed of USB2.0 and counter capacity.
 ③ 1 (word) = 2 (byte) = 16 (bit)
 ④ Power save mode of a personal computer should be turned off
 * CD-ROM (Software), AC adapter & USB 2.0 cable are supplied

COUNTING UNIT C9945-13 SERIES/-14 SERIES

Guide of Type No. for power code

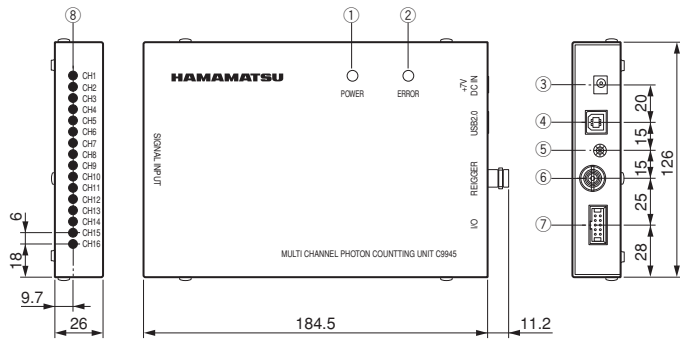
C9945-13-A□ / C9945-14-A□

"□" Type No.

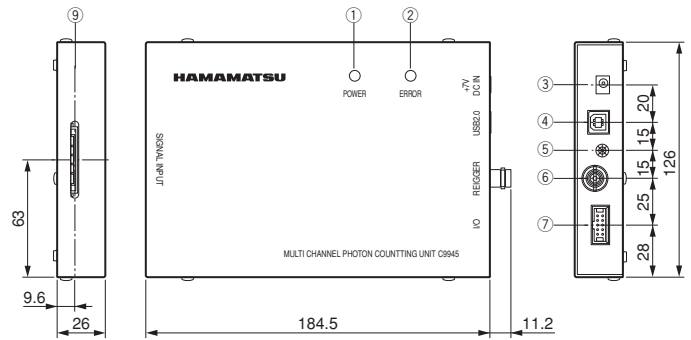
- 1: For Japan
- 2: For U.S.A.
- 3: For Europe
- 4: For China

Figure 1: Dimensional outline (Unit: mm)

●C9945-13 SERIES

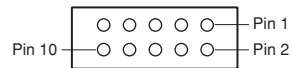


●C9945-14 SERIES

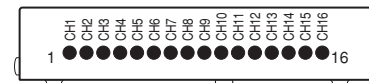


No.	Name	Description
①	Power LED	LED for power display
②	Error LED	LED for error display
③	Power supply input	Connect the supplied AC adapter
④	USB 2.0 port	Connect the supplied USB 2.0 cable
⑤	Rotary switch	Numbering. Use to connect multiple C9945s
⑥	External trigger input	BNC-R, Input the TTL signal when external trigger input is performed
⑦	I/O	I/O connector
⑧, ⑨	TTL signal input	Input the counting pulse

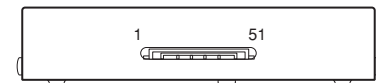
⑦ I/O port pin assignment connector:
HIF3F-10PA-1.27DSA
(HIROSE ELECTRIC Co.,Ltd)



⑧ Signal input (C9945-13 SERIES)
Connector: MMCX



⑨ Signal input (C9945-14 SERIES)
Connector: FI-RE51S-HF (JAE)

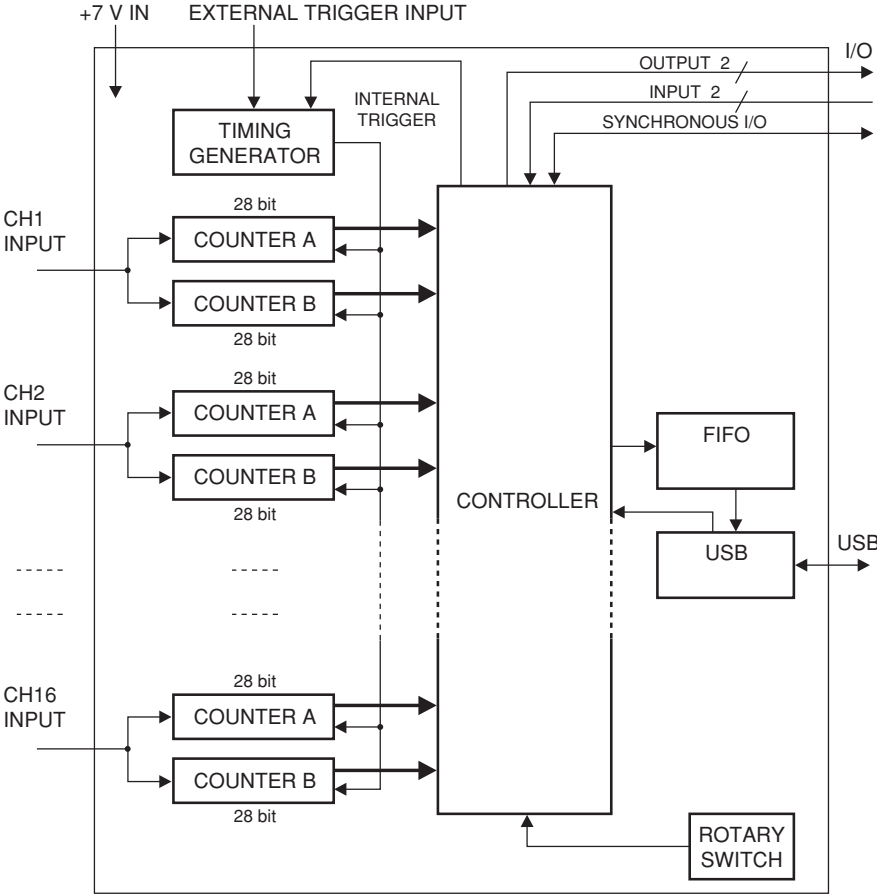


No.	Name	Function
1	OUT A	TTL output
2	GND	
3	OUT B	TTL output
4	GND	
5	IN A	TTL input
6	GND	
7	IN B	TTL input
8	GND	
9	SYNC	Sync input
10	GND	

No.	Name	No.	Name
1	CH1	9	CH9
2	CH2	10	CH10
3	CH3	11	CH11
4	CH4	12	CH12
5	CH5	13	CH13
6	CH6	14	CH14
7	CH7	15	CH15
8	CH8	16	CH16

No.	Name	No.	Name	No.	Name	No.	Name
1	GND	14	GND	27	CH9+	40	CH13-
2	GND	15	CH5+	28	CH9-	41	GND
3	CH1+	16	CH5-	29	GND	42	CH14+
4	CH1-	17	GND	30	CH10+	43	CH14-
5	GND	18	CH6+	31	CH10-	44	GND
6	CH2+	19	CH6-	32	GND	45	CH15+
7	CH2-	20	GND	33	CH11+	46	CH15-
8	GND	21	CH7+	34	CH11-	47	GND
9	CH3+	22	CH7-	35	GND	48	CH16+
10	CH3-	23	GND	36	CH12+	49	CH16-
11	GND	24	CH8+	37	CH12-	50	GND
12	CH4+	25	CH8-	38	GND	51	GND
13	CH4-	26	GND	39	CH13+		

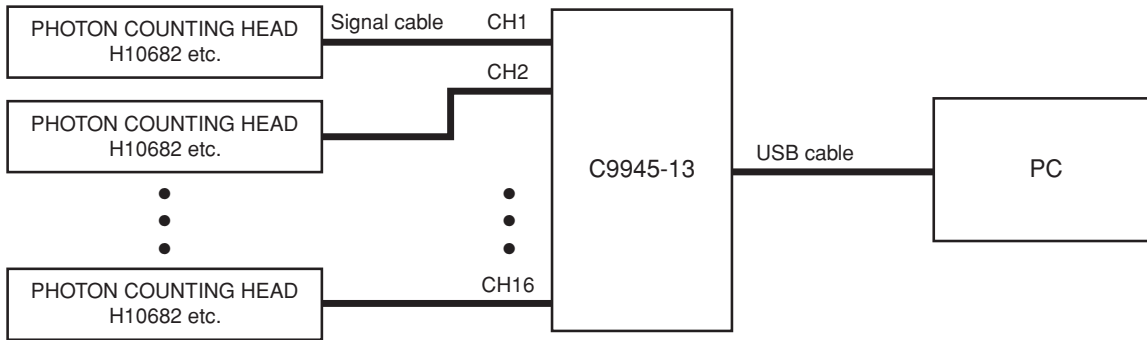
Figure 2: Block diagram



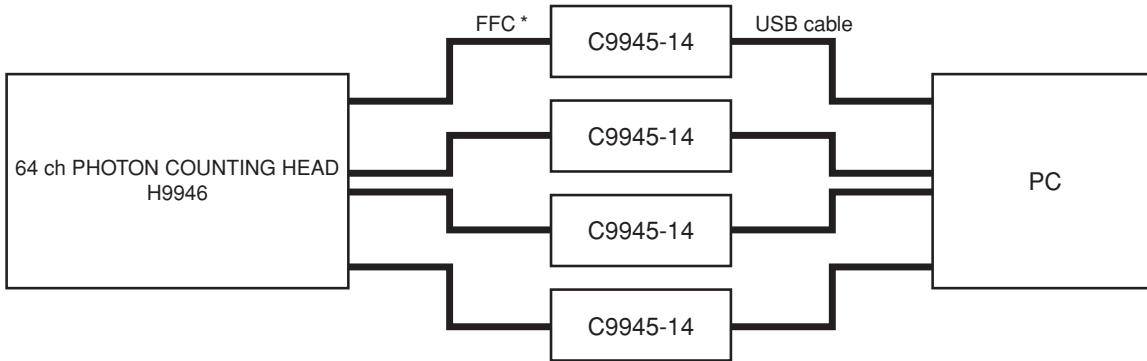
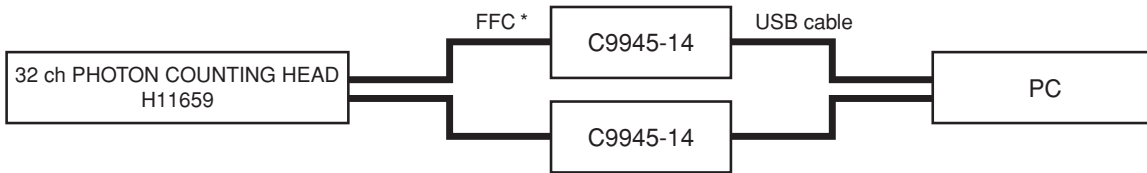
COUNTING UNIT C9945-13 SERIES/-14 SERIES

Figure 3: Connection example

●C9945-13 SERIES



●C9945-14 SERIES



* Supplied with the Photon Counting Head

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