

Crystal Oscillation Type Deposition Controller [CRTM-6000G]

CRTM-6000G is a Crystal oscillation type deposition controller who has an excellent basic performance and the cost performance.

It is possible to use it from the single layer film to the multilayer film for a wide deposition control.



Features

- ▶ Two sensors can be switched for deposition control.
- ▶ Low rate deposition process control is possible with high resolution of film thickness.
- ▶ Excellent response is obtained with a sampling rate of 125 ms.
- ▶ Up to 99 deposition programs can be stored with battery backup.
- ▶ Memory of the controller can record up to 30 process sequences.
- ▶ Host Communications
RS232C interface is included as standard. Control from a PC is therefore simple.
- ▶ Programmable Input/Output Signals
The 12ch digital input/output signals is programmable.

▶ 3ch Analog Output

The 3ch analog output signals (Power, Rate, Thickness) is programmable.

▶ Detailed Control

Up to 3 steps can be input for pre-heating and rate control for more precise control.

Applications

- ▶ Film thickness and deposition rate control during evaporation

Standard Configurations

- ▶ Main unit
- ▶ Power cable (3m)
- ▶ External cable (4m)
- ▶ Connectors (D-sub 25 pins, female and D-sub 9 pins, male)
- ▶ Instruction manual (CD-ROM)

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Specifications

Frequency	Measurement range *1	3.0 to 5.01MHz : 5MHz, 4.0 to 6.01MHz : 6MHz
	Measurement resolution	0.024Hz
	Display resolution	0.001 MHz
Film thickness	Measurement range	0 to 999.9kÅ
	Measurement resolution *2	0.041Å:5MHz 0.029Å:6MHz
	Display resolution	0.001kÅ:0 to 9.999kÅ 0.01kÅ:10 to 99.99kÅ 0.1kÅ:100 to 999.9kÅ
Deposition rate	Measurement range	0 to 999.9Å/s
	Measurement resolution *2	0.041Å/s:5MHz, 0.029Å/s:6MHz
	Display resolution	0.1Å/s
Sensor crystal frequency	5MHz, 6MHz	
Number of sensors (Single sensor)	2 (The simultaneous measurement cannot be done. It is a switch type.)	
Number of sensors (Multi sensor)	1	
Measurement simultaneously and control	1	
Data sampling rate	125ms	
Layer number	99 layers	
Process program number	30	
Deposition program number	99	
Display	LCD	
Digital input *3	12ch programmable (with in 4ch BCD input)	
Digital output	12ch programmable	
Analog output	3ch programmable (POWER, RATE, THK)	
Communication	RS232C	
Intermittent measurement	Yes	
Time-power control	Yes	
Multi hearth control	Yes	
Dimensions W×D×H	240mm×350mm×99mm	
Weight	Approx. 3.6kg	
Utility	AC85 to 230V 50/60Hz	
Consumed power	30W Max	
Operating environment	Temperature: 5°C to 40°C (41°F to 104°F),	
	Relative humidity: 5% to 95%RH (not condensing)	

*1 Controller is within possible frequency measurement range but crystal life span is different.

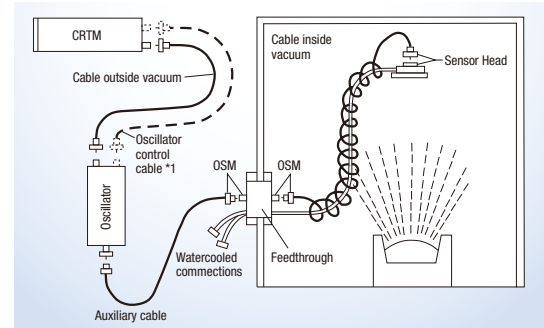
*2 Controller frequency resolution value calculated using tooling/material density.

*3 Selection of DEPO PRG by BCD input and operation by process program are changed using dipswitch.

Option

- ▶ **External cable**
For connecting CRTM to Oscillator. Optional length is 4m, 8m, 12m and 16m.
- ▶ **Oscillator Controlling Cable**
It is necessary for using CRTS-80 series sensor. Optional length is 4m, 8m, 12m and 16m.
- ▶ **CRTM Data Collection Software**
This software is for collecting measurement data through RS232C communication port. (CRTM doesn't include PC and cable)
- ▶ **Instruction Manual (Booklet)**
Japanese / English / Chinese (Simplified, Traditional)

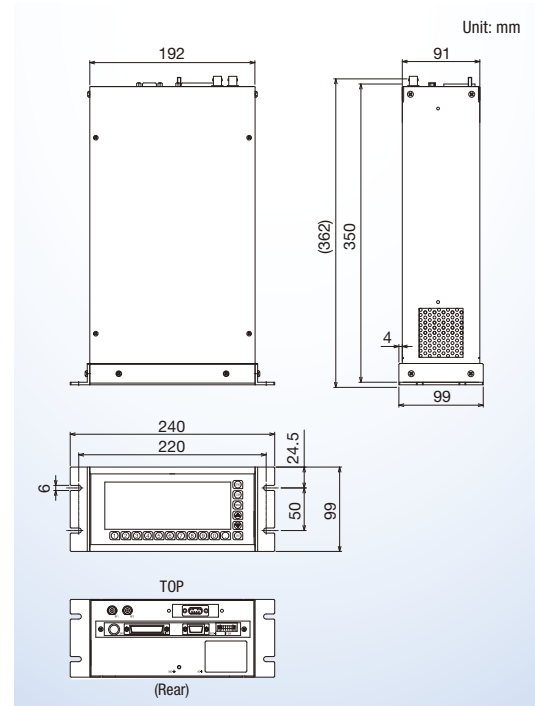
Sensor Connection Diagram



*1 When using CRTS-80 series sensor. (Option)

- ▶ The following 3 items are required to install and use the CRTM unit.
 - 1) CRTM unit
 - 2) CRTS (sensor)
 - 3) Vacuum feedthrough
- ▶ Refer to the CRTS series section for details regarding sensors.

Dimensions



ULVAC, Inc. Components Division

www.ulvac.co.jp/eng

Overseas Sales in Japan TEL +81-467-89-2261

USA : ULVAC Technologies, Inc. TEL +1-978-686-7550
 GERMANY : ULVAC GmbH TEL +49-89-960909-0
 CHINA : ULVAC (SHANGHAI) Trading Co.,Ltd. TEL +86-21-6127-6618
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PHILIPPINES : ULVAC Singapore Philippines Branch TEL +63-2-828-7700
 VIETNAM : ULVAC Singapore Vietnam Representative Office TEL +84-8-62556762
 THAILAND : ULVAC (THAILAND) LTD TEL +66-2-312-4447
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 INDIA : ULVAC, Inc., India Branch TEL +91-40-27007006

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