

# Crystal Oscillation Type Deposition Controller Sensor [CRTS Series]

The CRTS series sensors are used with ULVAC crystal oscillation type deposition controllers (Quartz Crystal Monitors). The sensors come in many different types and configurations for compatibility with most any type of deposition equipment.



## Features

### [Single-sensor]

- ▶ Single crystal sensors can be supplied with or without water cooling which is useful in systems that are baked at high temperatures.
- ▶ The small single sensors can be easily positioned inside the chamber, and are available either with or without vacuum feedthrough.
- ▶ Long life external oscillators are available for use with these sensors.

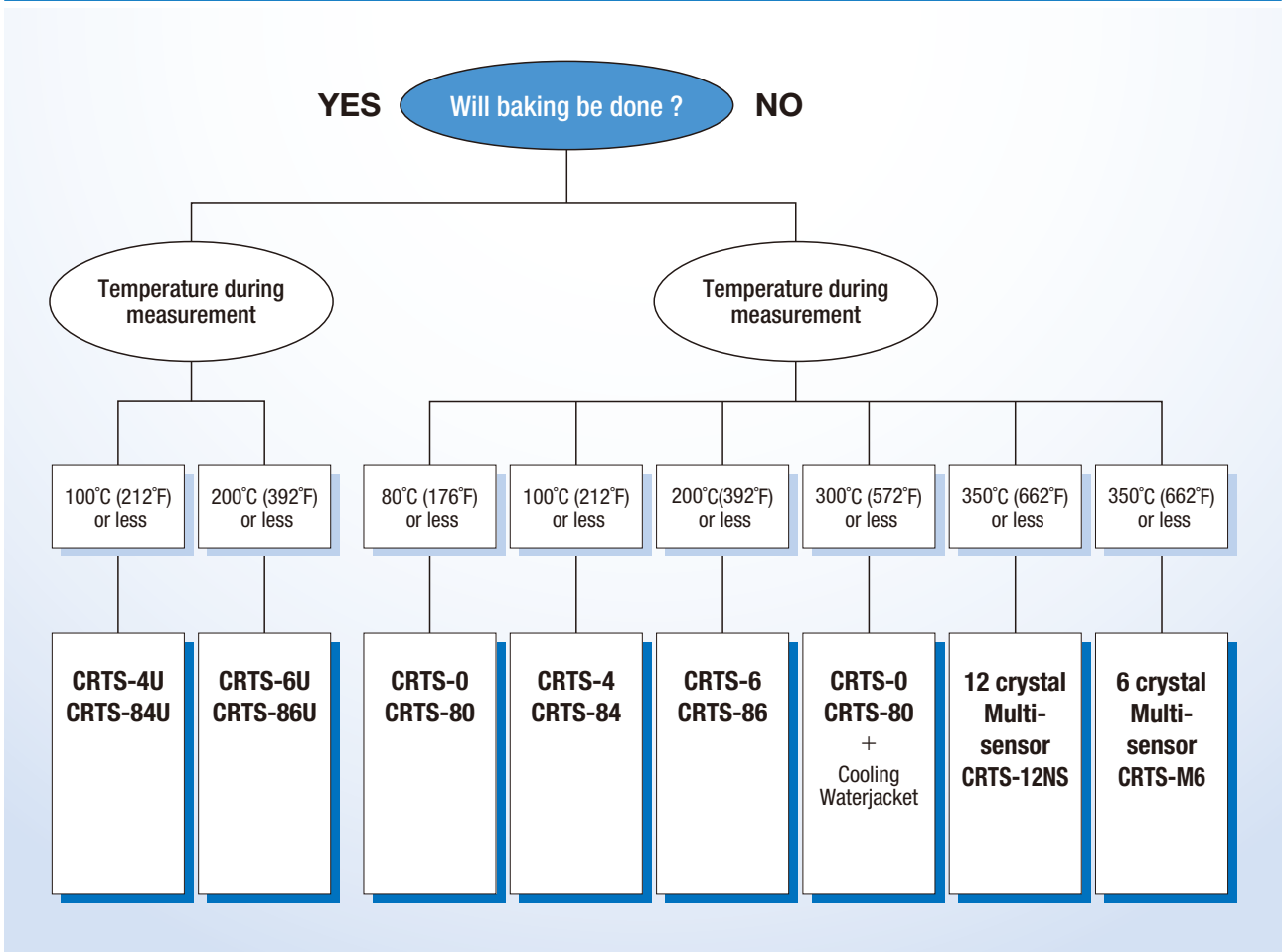
### [Multi-sensor]

- ▶ Multi crystal sensors are available that hold 6 or 12 crystals.
- ▶ A vacuum motor inside the sensor head indexes the crystals with high reliability.
- ▶ The sensor head can be removed from the system for reloading with fresh crystals.
- ▶ If the CRTM controller detects an abnormal crystal, or one that has reached its end of life, it sends a signal to the sensor which automatically switches to the next crystal.

# Crystal Oscillation Type Deposition Controller Sensor [CRTS Series]

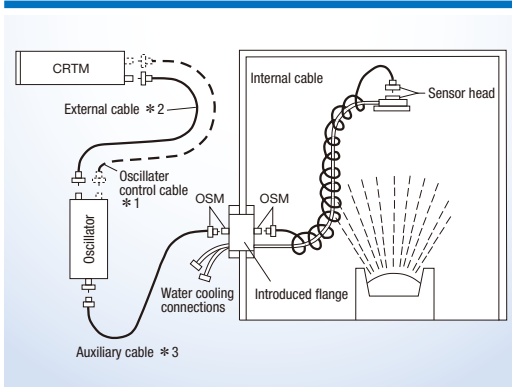
## Selection Guide

### CRTS Series Selection



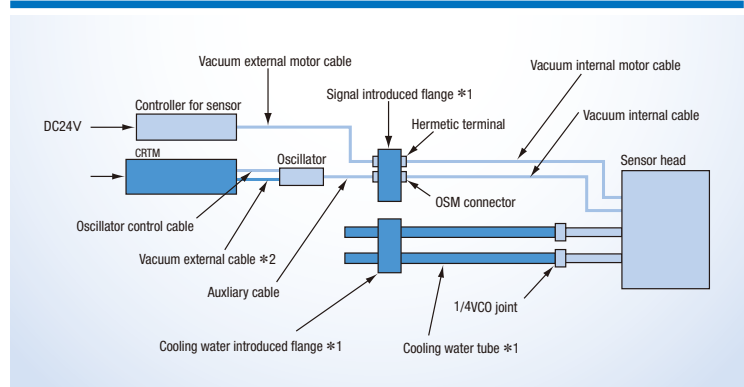
## Sensor Connection Diagram

### Single Sensor



- \*1 When using CRTS-80 series (Option).
- \*2 Part attached to a thing of CRTM.
- \*3 Not use in Bakeable sensor.

### Multi Sensor



- \*1 Introduced flange set (Option).
- \*2 Part attached to a thing of CRTM.

► Specifications

Specifications and Accessoris: Single Sensor

Model  (Long life span type)	Evaporation sensor		Evaporation sensor without water cooling pipe		Bakeable evaporation sensor	
	CRTS-4 (CRTS-84)	CRTS-6 (CRTS-86)	CRTS-0 (CRTS-80)	with Water-cooled jacket	CRTS-4U (CRTS-84U)	CRTS-6U (CRTS-86U)
Application *1	Evaporation at 100°C (212°F) or less	Evaporation at 200°C (392°F) or less	Evaporation at 80°C (176°F) or less	Evaporation at 300°C (572°F) or less	Evaporation at 100°C (212°F) or less using ultra high vacuum	Evaporation at 200°C (392°F) or less using ultra high vacuum
Capacity of crystal	5MHz (6MHz *2)					
Baking temperature (Max.)	150°C (302°F)	150°C (302°F)	150°C (302°F)	150°C (302°F)	300°C (572°F)	300°C (572°F)
Cooling water pipe	Pipe length *3	100 to 800mm	100 to 800mm	-	100 to 800mm	100 to 800mm
	Pipe out diameter	4mm	6mm	-	6mm	6mm
	Water capacity	200cc/min	400cc/min	-	400cc/min	200cc/min
	Tube connection *4	1/4inch	3/8inch	-	3/8inch	1/4inch
Senser head dimensions	φ31×H19mm	φ34×H19mm	φ28×H19mm	φ45×H30mm	φ31×H20mm	φ34×H20mm
Accessoris (○:Standard accessories, △:Options, —:N/A)						
Oscillator *5	○	○	○	○	○	○
Oscillator control cable *5	△	△	△	△	△	△
Internal cable *6	○	○	○	○	—	—
Auxiliary cable (150mm)	○	○	○	○	—	—
OSM connector *7	○	○	△	△	—	—
Crystal (5MHz,5pcs)	○	○	○	○	○	○
Flange:UFC070 (company standard, Conflat compatible)	△	△	△	△	○	○
Flange:Dia.30mm boss type(company standard)	△	△	△	△	—	—
Other flange	△	△	△	△	—	—

\*1 The sensor head temperature should be kept within the range of 0°C to 80°C (32°F to 176°F) during measurement. The temperature limitation for the internal cable is 150°C (302°F). If the temperature is higher than this limitation, wind the cable around the water cooling pipe, and use aluminum foil to protect it.

\*2 Please specify 6MHz crystals when ordering.

\*3 Appoint from 100mm to 800mm

\*4 Synflex tube joint.

\*5 CRTS-8\* series sensors use long life span oscillators, it is necessary to use optional oscillator control cable (CRTM series catalog).

\*6 Internal cable length varies with the length of cooling water tube (Max.900mm).When CRTS-0 (CRTS-80), length of Internal cable are selectable from 200mm, 500mm, 900mm.

\*7 When CRTS-0 (CRTS-80), optional feedthrough flange include OSM connector.

Specifications and Accessoris: Multi Sensor

Model	CRTS-12NS	CRTS-M6
Application	High rate or long time continuous evaporation at 350°C (662°F) or less *1	
Equipped crystal number	12pcs	6pcs
Capacity of crystal	5MHz (6MHz *2)	
Baking temperature	N/A	
Cooling water pipe	Pipe out diameter	1/4inch
	Water capacity	1L/min
	Tube connection	1/4VOC
Mass	Approx.2kg	Approx.1kg
Senser head dimensions (without cooling water pipe)	φ104mm×H61mm (Approx.)	φ50mm×H89mm (Approx.)
Controller	Internal status indication (LED)	BUSY, ERROR, RETRYEND
	Digital input	INT, CNT, STOP
	Digital output	Sensor No., BUSY, ERROR, RETRYEND
	Utility	DC24V, 3.0A
	Mass	Approx.2kg
	Dimension	W 100mm×D 250mm×H 99mm
Accessories (○:Standard accessories, △:Options)		
Oscillator		○
Oscillator control cable (4m)		○*3
Internal motor cable (900mm)		○
Internal cable (900mm)		○
Auxiliary cable (150mm)		○
External motor cable (5m)		○*3
OSM connector		○
Hermetic terminal		○
Connector (Male 15 pins D-sub)		○
Crystal (5MHz)	○ (12pcs)	○ (6pcs)
Instruction manual (CD)		○
Feedthrough flange set *4 :JFC070 (company standard, Conflat compatible)		△
Oscillator control cable (8m, 12m, 16m)		△
External motor cable (8m, 12m, 16m)		△

\*1 The sensor head temperature should be kept within the range of 0°C to 80°C (32°F to 176°F) during measurement. The temperature limitation for the internal cable is 150°C (302°F). If the temperature is higher than this limitation, wind the cable around the water cooling pipe, and use aluminum foil to protect it.

\*2 Please specify 6MHz crystal when ordering.

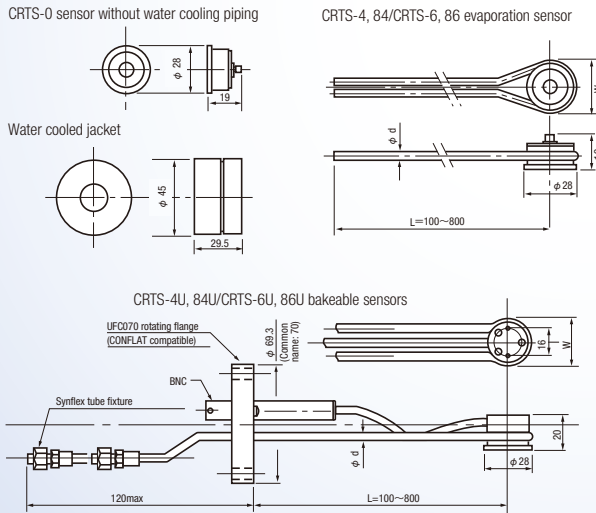
\*3 Optional length cables are shipped separately and need to be attached to the sensor.

\*4 Feedthrough flange (with OSM connector and Hermetic terminal)×1, Cooling water feedthrough flange×1 (with cooling water pipe)×1 Cooling water tube length is selectable from 50mm to 800mm. Please refer for the flange except UFC070.

# Crystal Oscillation Type Deposition Controller Sensor [CRTS Series]

## Dimensions

### Single Sensor

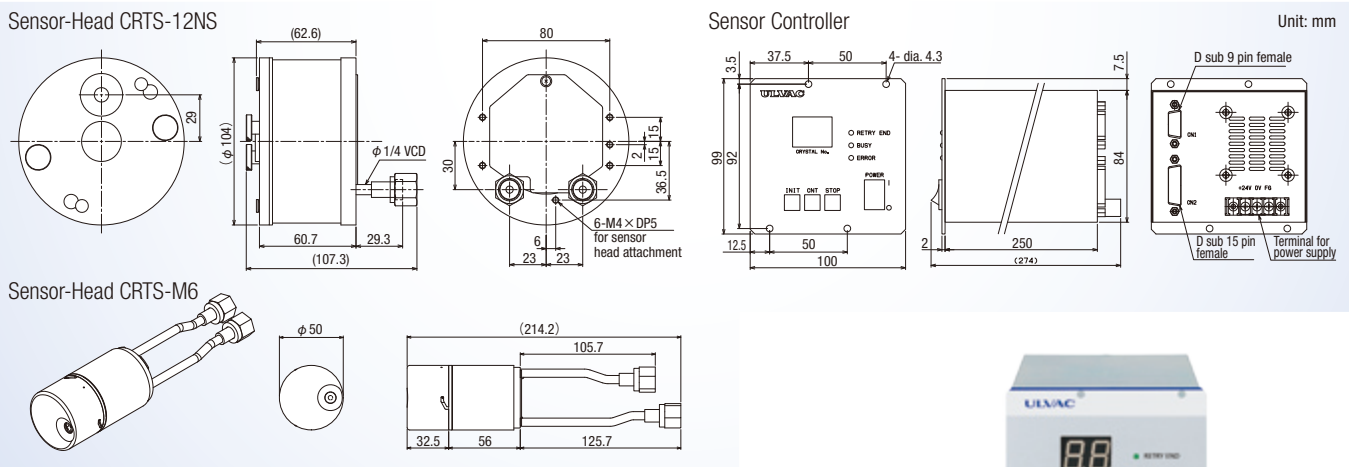


Unit: mm

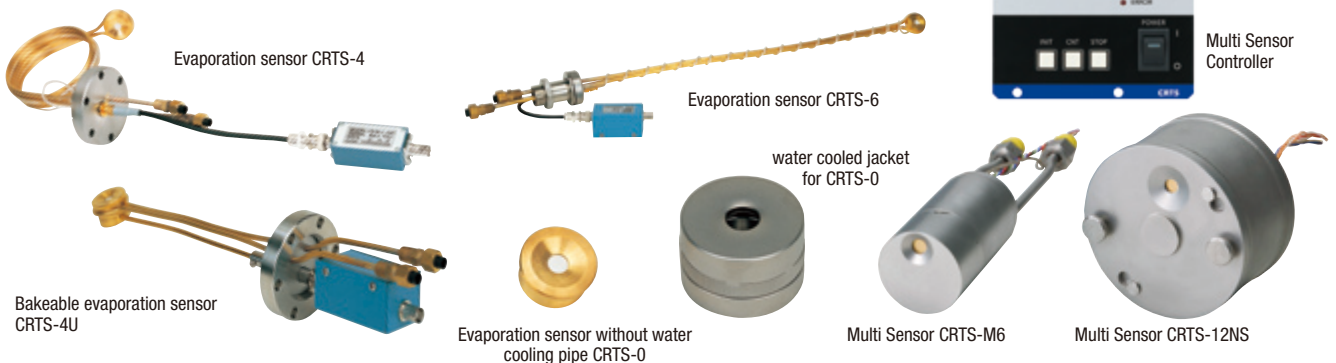
evaporation sensor	W	φd
CRTS-4	31	φ4
CRTS-6	34	φ6

bakeable sensors	W	φd
CRTS-4U	31	φ4
CRTS-6U	34	φ6

### Multi Sensor



Unit: mm



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