



- High Resolution  
± 0.03 Hz at 10 readings/sec
- 2 or 4 channels
- Co-deposition option
- 3½" (2U) or 5¼" (3U) height
- ¼ VGA color LCD display
- RS232, USB standard
- Ethernet optional
- Windows® software included
- Low cost

*Sigma Instruments' SQC-300 Series Controllers continue our tradition of innovation, enhanced performance, and competitive pricing.*

## SQC-300 Series Thin Film Deposition Controllers



### Configurable

The standard SQC-300 Series controller monitors two quartz crystal sensors, with two PID control outputs, eight digital inputs, and eight relay outputs. An optional expansion card doubles capacity to 4 sensor inputs, 4 source outputs, and 16 digital inputs/outputs. Multi-layer deposition is standard, with co-deposition control of up to four materials optional. RS-232 and USB ports are standard, with Ethernet optional.

The SQC-300 Series is available in a 5¼" or 3½" high half-rack enclosure. Both use a bright active matrix color LCD display.

### Easy Setup & Operation

Front panel controls include six context-sensitive pushbuttons and a convenient parameter setting knob. A "Quick Setup" menu allows instant access to the most commonly needed parameters for the active film.

The Windows program included with the SQC-300 allows you to develop and test a process on your PC, then download it to the controller. You can also log instrument data to your PC for process analysis and quality control.

### Enhanced Performance

Accurate control of deposition rate and film thickness depends on how well a QCM-based instrument can measure the change in frequency caused by film growth on the crystal. Sigma's SQC-300 Series controllers achieve ± 0.03 Hz resolution at 10 readings per second, with ± 2ppm frequency stability over 0 to 50°C. This means better control of your process, especially for low deposition rates.

The SQC-300 Series stores up to 100 processes, 1000 layers, 50 films, and 2 rate ramps per film. Each source material can be monitored by a single sensor, or by multiple sensors, to provide accurate source distribution monitoring.

### We're here to help you.

The flexible, easy-to-use SQC-300 Series Controllers offer features you won't find on many competitive thin film controllers at twice the price.

We also have a broad selection of sensors, feedthroughs, and accessories to complement the SQC-300 Series controllers. We're ready to help you with your thin film deposition application.

# SQC-300Series Specifications

Measurement	
QCM Sensor Inputs	2 standard, (+2 optional)
Frequency Range	4 to 6 MHz
Frequency Resolution	± 0.03 Hz at 0.10 sec measurement period
Frequency Stability	± 2 ppm total, over 0 to 50°C
Measurement/Update Rate	1 to 10 Hz
Rate Display Resolution	0.01 Å/sec
Thickness Display Resolution	0.001 kÅ

Control	
Processes	100 processes, 1000 layers, 50 films, 4 co-deposited films
Source (or Recorder) Outputs	2 standard, (+2 optional)
Output Signal	± 0 to 10 VDC, 15 bit resolution
Digital Inputs/Outputs	8/8 standard, (+8/8 optional)
Inputs	5 VDC non-isolated
Output Relays	SPSTForm 1A, 30V, 2A max
Co-Deposition	Optional, up to 4 materials
Interface(s)	RS-232and USBstandard, Ethernet optional (replaces USB)
Remote / Manual Power Control	Optional

Display	
Type	¼ VGA 320 x 240 active matrix color LCD
Graphs	3: rate, rate deviation, output power
Full Screen Numeric Display	Yes

General	
Power	100-240 VAC, 50/60 Hz, 25 W
Compliance	CE
Windows Software	Included
Housing / Mounting	SQC-310:½-rack cabinet, 5¼" high SQC-330:½-rack cabinet, 3½" high

## Ordering Information

SQC-300Series Controller	SQC-3xx-x-x-x
<b>Base Controller</b>	
standard display, 1/2-rack x 5 1/4" high	310
compact display, 1/2-rack x 3 1/2" high	330
<b>Number of Channels</b>	
2 QCM channels	2
4 QCM channels	4
<b>Interface</b>	
RS-232& USB	R
RS-232& Ethernet	E
<b>Control Mode</b>	
standard	D
co-deposition	C

### Example of a complete system:

Consists of a controller, at least one sensor, one feedthrough, and one sensor kit for each sensor. A sensor kit contains a standard oscillator, a 10-pack of crystals, and the cables required to connect everything together.

SQC-330-2-R-D	SQC-330Controller with compact display & 3 1/2" high 1/2-rack housing, 2 channels, RS232& USB, standard deposition control.
930-000	Feedthrough, 1 inch bolt, one electrical and two cooling lines
932-000	Single standard sensor
934-003	Sensor kit, includes one 900-010 oscillator, one 934-000 10-pack of gold crystals, on 902-011 8" (150mm) BNC cable, one 902-012 10ft (3m) BNC cable, and one 902-014 30" (0.7m) vacuum cable.

Additional information, such as instruction manuals and pricing, is available on our website: [www.sig-inst.com](http://www.sig-inst.com)

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### Want to Know More?

We've only touched on the possibilities. Contact Sigma Instruments with your application. We're ready to help.

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