

SQC-122 Thin Film Deposition Controller

- Low cost deposition controller
- Perfect for multi-layer optical films
- Stores up to 25 films and 250 layers
- Monitor 2 sensors and control 2 sources
- Simple setup and operation



The SQC-122 controls deposition rate and thickness in multi-layer thin film processes. It is a low-cost solution for more reliable and accurate deposition than is possible with manual control.

Ease of use was a primary goal in designing the SQC-122. The six context sensitive Softkeys provide rapid access to frequently used data. The detented setting knob provides a quick and flexible way to set values and navigate menus. And the main operating menu is always a button push away.

Up to 25 processes, consisting of 250 layers and 25 materials can be stored. Cut/copy/paste capabilities make it easy to modify or duplicate processes, or layers in a process.

The two 6MHz quartz crystal sensor inputs can be configured for alternate materials, rate averaging, or as dual sensors. Two 0 to $\pm 10V$ outputs are available to control evaporation source supplies.

Eight process control relays, eight digital inputs, RS-232, and a handheld power control module are standard. A Windows program for computer setup and data acquisition is also included.

The SQC-122 is the newest addition to Sigma's line of thin film deposition monitor and control products. At \$2495, it is the most economical and easy-to-use deposition controller available.



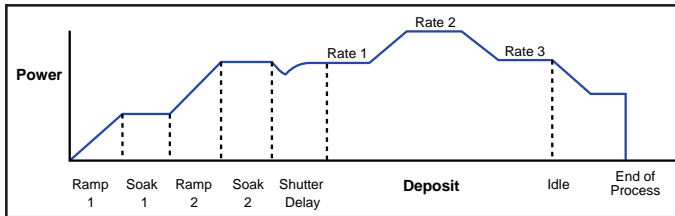


Fig. 1: Thin Film Deposition Cycle

In a typical deposition cycle, power is ramped slowly, to pre-condition the source material for deposition. Then a shutter delay period allows the process to achieve a stable state before exposing the film substrate. During deposition, the SQC-122 measures the sensors and adjusts the source supply voltage to maintain the desired deposition rate (or rates). Once the final thickness setpoint is reached, power is reduced to an idle state. The entire cycle may be repeated to deposit additional films. Or, a single film may be deposited without shutter delay or multiple rates.

In either case, the SQC-122 controls the entire process. The eight output relays control source and sensor shutters, and provide information about the progress of deposition to external systems. Digital inputs allow external control of the SQC-122 to duplicate basic user operations such as process Start/Stop.

Through the entire cycle, the SQC-122 displays information about the progress of deposition on the main screen. Graphs of rate, rate deviation, or power can be easily selected. The Quick Setup key provides instant access to commonly adjusted settings, with easy return to the main screen. And the Manual/Auto key allows the user to take manual control at any time.

If you have any questions, please contact a Sigma application engineer to learn how the SQC-122 can help put your process in control!

SQC-122 Specifications

Measurement (1 Hz measurement rate, 6MHz crystal, Aluminum)
 Number of Sensors 2
 Crystal Frequency Range 4MHz to 6MHz
 Thickness and Rate Resolution .02Å
 Update Rate .5 to 8Hz (selectable)

Source
 Number of Sources 2
 Control Voltage 0 to ±10V into 2K load
 Resolution 15 bits

Input/Output

Inputs
 Start/Stop Process Start/Stop Film Xtal Switch
 Zero Thick Zero Time Final Thick

Outputs
 Src1/Src2 Shutter Sns1/Sns2 Shutter Xtal Fail
 Deposit Time SetPt Thick SetPt

Process Parameters

Processes 25
 Films 25
 Layers 250
 Rate Ramps 2

General

Display Type 1/4 VGA Backlit Monochrome LCD
 Display Size 4.72" (diagonal)
 Power Requirements 120/240VAC, 50/60Hz, 25VA
 Size 5.23" (H) x 8.38" (W) x 8.77" (D)

Note: Specifications and pricing are subject to change. Contact Sigma Instruments for the latest pricing, options, and custom configuration information.

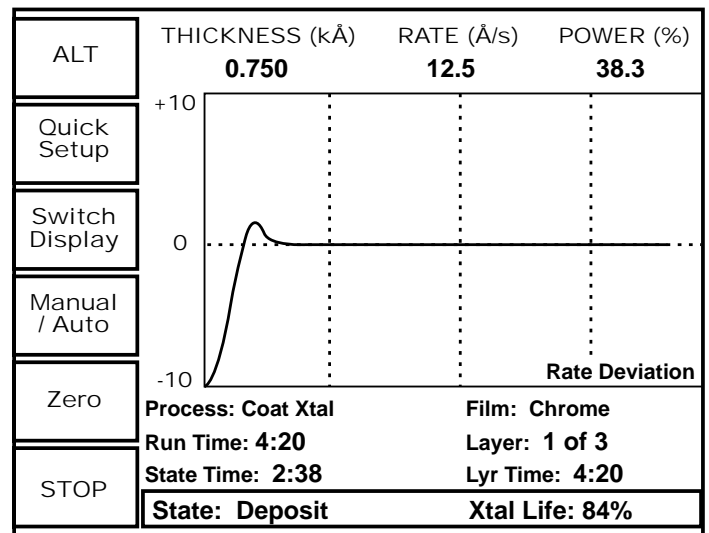


Fig. 2: Main operating screen during deposition

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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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