

MTM-10 FILM THICKNESS MONITOR

The Economical Way to Assure Thickness Control



System Includes: MTM-10 Controller Box; BNC Cables/BNC Elbow; Oscillator Box; CS-108 Vacuum Feedthrough with BNC/SMB connector and Integrated O-Ring Seal; SMB Crystal Holder Cable 7" (108mm); Crystal Holder with M4 Screw

Accurate manual control of film thicknesses during deposition is difficult if not impossible. A white tile with a drop of oil is sometimes used for rough estimates of coating thicknesses of carbon but cannot be used when repetitious, reproducible coatings are required. Using instrumental settings is also not an accurate method because vacuum level (for sputtering) and time (for evaporation) are very critical parameters. The High Resolution Thickness Monitor offers repeatability of coating thicknesses, removes guesswork and is convenient. The use of a tooling factor allows for exact measurement of the thin films. The MTM-10 High Resolution Thickness Monitor works with many types of vacuum thin film coating equipment.

The MTM-10 High Resolution Thickness Monitor is based on the principle that the oscillating frequency of a quartz crystal is changed by the mass of a deposited film on its upper face. Electronically measuring this effect allows for a determination of the thickness of a deposited film. Once the density of the evaporated material is entered into the system, the thickness is measured to a resolution of 0.1nm on a four digit LED display having a range of 0-999.9 nanometers. The crystal and holder are mounted in the vacuum chamber and connected to the FTM Power Supply via the supplied vacuum feedthrough.

The MTM-10 High Resolution Thickness Monitor will fit any of the Cressington sputter and carbon coating systems as well as other thin film vacuum coating systems which allow for a vacuum feedthrough of 10mm diameter and a plate/flange thickness of up to 9mm.

TECHNICAL SPECIFICATIONS FOR MTM-10 HIGH RESOLUTION THICKNESS MONITOR

General Specifications	Microprocessor based, 4-digit display, push-button zero; 6MHz crystal with lifetime check; 5 times per second update rate
Thickness Range	0.0 - 999.9nm (pos/neg)
Resolution	0.1nm for gold or carbon
Density Range	0.50 - 30.00g/cm ³
Tooling Factor Range	0.25 - 8.0
Vacuum Feedthrough	CS-108; diameter 10mm up to a plate/flange thickness of 9mm
Crystal Holder	Stainless steel Ø19 x 20mm; M4 thread for mounting; 1/2" size crystals
Crystal Holder Cable	Mini-SMB; female/female between crystal holder and CS-108 vacuum feedthrough
Processor Function	Four sets of values can be stored in memory under <i>Density</i> and four under <i>Tooling</i>
Box Size (W x D x H)	210 x 160 x 77mm (8.27" x 6.3" x 3.03")

ORDERING INFORMATION

93004	MTM-10 High Resolution Thickness Monitor System* 110VAC, 50/60Hz	each
93004-220	MTM-10 High Resolution Thickness Monitor System* 220VAC, 50/60Hz	each
93005	MTM-10 High Resolution Thickness Monitor System for RPT or RT Stage** 110VAC, 50/60Hz	each
93005-220	MTM-10 High Resolution Thickness Monitor System for RTP or RT Stage** 220VAC, 50/60Hz	each
93009	Replacement Crystals.....	pkg/10

* The MTM-10 High Resolution Thickness Monitor System includes: MTM Controller Box; BNC Cable; Oscillator; Vacuum Feedthrough; Cables; Crystal Holder; Test Crystal; Instructions

** RPT: Rotary-Planetary-Tilting-Stage; RT: Rotary-Tilting-Stage

MTM-20 FILM THICKNESS CONTROLLER

The Economical Way to Assure Thickness Control



*MTM-20 High Resolution Thickness Controller System
Shown with Included Accessories*

The MTM-20 High Resolution Thickness Controller is specifically designed for the Cressington sputter coater systems and is fully compatible with the 108 Auto, 108 Auto/SE, 208HR sputter coater systems and with the DC-100 sputter supply for the 308R thin film coating system.

The MTM-20 High Resolution Thickness Controller is based on the principle that the oscillating frequency of a quartz crystal is changed by the mass of a deposited film on its upper face. Electronically measuring this effect allows for a determination of the thickness of a deposited film. Once the density of the evaporated material is entered into the system, the thickness is measured to a resolution of 0.1nm on a four digit LED display having a range of 0-999.9 nanometers. The crystal and holder are mounted in the vacuum chamber and connected to the FTM Power Supply via the supplied vacuum feedthrough.

TECHNICAL SPECIFICATIONS FOR MTM-20 HIGH RESOLUTION THICKNESS CONTROLLER

General Specifications	Programmable thickness termination function with termination interface cable on 108 auto, 208HR and DC-100; Microprocessor based, 4-digit display, push-button zero; 6MHz crystal with lifetime check; 5 times per second update rate
Thickness Range	0.0 - 999.9nm (pos/neg)
Resolution	0.1nm for gold or carbon
Termination Range	0-999.9nm
Density Range	0.50 - 30.00g/cm ³
Tooling Factor Range	0.25 - 8.0
Vacuum Feedthrough	CS-108; diameter 10mm up to a plate/flange thickness of 9mm
Crystal Holder	Stainless steel Ø19 x 20mm; M4 thread for mounting; 1/2" size crystals
Crystal Holder Cable	Mini-SMB; female/female between crystal holder and CS-108 vacuum feedthrough
Processor Function	Four sets of values can be stored in memory under <i>Density</i> and four under <i>Tooling</i>
Box Size (W x D x H)	210 x 160 x 77mm (8.27" x 6.3" x 3.03")

ORDERING INFORMATION

93006	MTM-20 High Resolution Thickness Controller System* 115VAC, 50/60Hz.....each
93006-220	MTM-20 High Resolution Thickness Controller System* 220VAC, 50/60Hz.....each
93007	MTM-20 High Resolution Thickness Controller System for RPT or RT Stage** 115VAC, 50/60Hzeach
93007-220	MTM-20 High Resolution Thickness Controller System for RTP or RT Stage** 220VAC, 50/60Hzeach
93009	Replacement Crystals..... pkg/10

* The MTM-20 High Resolution Thickness Controller System includes: MTM Controller Box; BNC Cable; Oscillator; Vacuum Feedthrough; Cables; Crystal Holder; Test Crystal; Instructions

** RPT: Rotary-Planetary-Tilting-Stage; RT: Rotary-Tilting-Stage