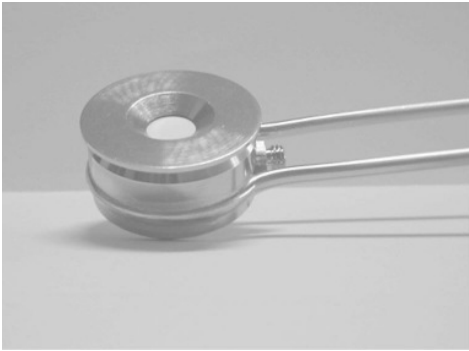




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We offer a full and established range of components for thin film thickness measurements. The heart of the sensing system is an industrial 6-MHz gold plated quartz crystal oscillator which is embedded into a sensor and feedthrough system. Besides 2 standard designs for the sensors we supply customized packages as well. Combined with our controllers or rate monitors that are available as rack housing or as electronic board you can easily build up an accurate system for thickness measurements of thin films.

We supply different mounting options for the sensing feedthrough, single or dual sensing heads, bakeable designs and sensing shutters.

Please contact the sales office to discuss the special needs of your application.

Description

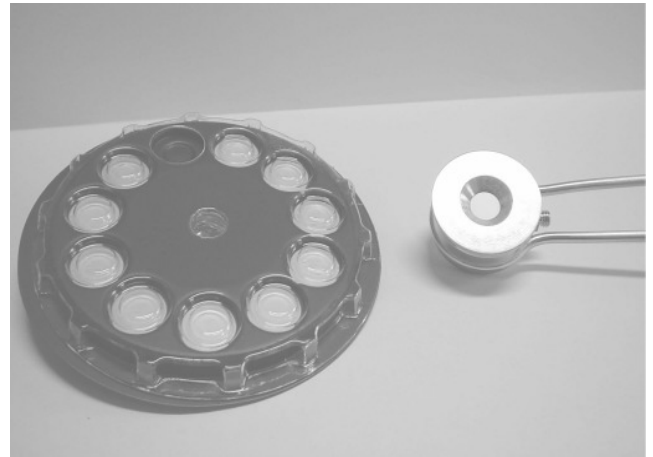
We supply 2 different easy-to-use sensor head kits that covers all necessary parts starting from the sensor and ending with the connector to controller or display (besides controller and feedthrough). We differ between 2 construction sets: The Low Profile kit with the oscillator plane lying parallel to the cooling lines and the Right Angle kit with the oscillator plane perpendicular to the cooling lines.

Both kits contain a sensor head that is mounted on 2 water cooling tubes out of stainless steel. Standard length of the tubing lines is 760mm and can easily be shortened to the individual length for your application. The kit covers all necessary cables like the coaxial in-vacuum cable and 2 air side BNC cables. It comes up with the oscillator itself, a pack of 10 gold plated oscillator crystals and 2 swagelok adaptors to connect water cooling lines to the feedthrough. Please note that the feedthrough itself is supplied separately as you can choose between different styles and numbers for cooling lines and electrical connections.

All bespoke components can be provided separately.

Low Profile Sensing Kit:

- Low profile sensing head, bakeable up to 175°C
- 2 in-vacuum tubes for cooling (760mm)
- Coaxial in-vacuum cable (760mm)
- Coaxial air side BNC cable (150mm)
- Oscillator (air)
- Coaxial air side BNC cable (3m)
- 1 box of 10 gold plated oscillator crystals
- 2 in-vacuum Swagelok connectors

**Right Angle Sensor Kit:**

- Right Angle sensing head, bakeable up to 175°C
- 2 in-vacuum tubes for cooling (760mm)
- Coaxial in-vacuum cable (760mm)
- Coaxial air side BNC cable (150mm)
- Oscillator (air)
- Coaxial air side BNC cable (3m)
- 1 box of 10 gold plated oscillator crystals
- 2 in-vacuum Swagelok connectors

Description	Part Number
Low Profile Sensor Kit	6-BH-0010
Right Angle Sensor Kit	6-BH-1010

Oscillator Kit

- Oscillator
- BNC cable (air) 150mm long
- BNC cable (air) 3m long
- 1 box of 10 gold coated crystals

Description	Part Number
Oscillator Kit	6-SA-1020
Remote sensor oscillator only	6-SA-9020

In-Vacuum cables

- In-vacuum sensor cable 250mm long
- In-vacuum sensor cable 760mm long



Description	Part Number
In-Vacuum sensor cable 250mm long BAKEABLE 175 °C	6-SA-0120
In-Vacuum sensor cable 750mm long BAKEABLE 175 °C	6-SA-1120

BNC cables (air) from oscillator to feedthrough

- BNC cable 150mm long
- BNC cable 3m long
- BNC cable 10m long

Description	Part Number
BNC cable 150mm long	6-SA-2120
BNC cable 3m long	6-SA-3120
BNC cable 10m long	6-SA-4120

Accessories

- Box of 10 gold coated sensing crystals
- Swagelok adaptors (pack of 2) from 3.2mm to 4.0mm



Description	Part Number
Box of 10 gold coated sensing crystals	6-SA-0020
Swagelok adaptors (pack of 2) from 3,2mm to 4,0mm	6-SA-5120

Crystal Sensing Feedthroughs

Description

We supply several versions of electrical feedthroughs for use with the sensing heads for thin film measurements. Standard versions are available on DN40CF and DN40KF flanges, assembled with 2 tubes and 1 coaxial feedthrough BNC-to-Microdot with included air side connector. Baseplate versions or customized versions with a different number of tubes or feedthroughs are available on request. Please call the sales office if you prefer the sensing head already welded onto a feedthrough.



Specification

- Voltage: 500VDC
- Current: 1 Amp
- Impedance: Non constant
- max. bake out temperature: 150 to 400 °C

Description	Part Number
Crystal sensor feedthrough on CF40 with 2 water lines 4mm OD & 1 BNC to Microdot	6-CF-0040
Crystal sensor feedthrough on KF40 with 2 water lines 4mm OD & 1 BNC to Microdot	6-CF-2040

As an option we supply complete sensing head feedthroughs with a shutter as well. Dual sensing heads can be provided on request.

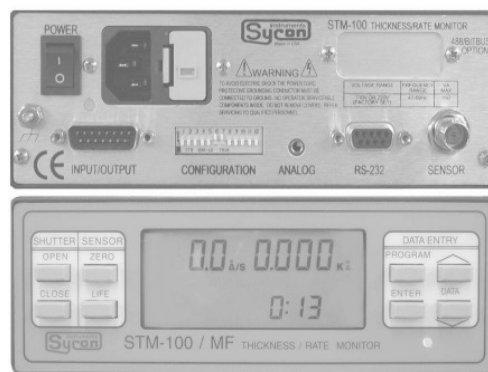
Please call the sales office if you prefer the sensing head already welded onto a feedthrough.

Description

For film thickness measurements we supply the easy-to-use rate monitor STM-100/MF. With a compact design it provides a multi-film program storage with the possibility of high-resolution and high speed measurements using a 6 Mhz oscillator sensing crystal.

Specification

- Resolution: 1 Å Thickness
- Rate resolution: 0.1 Å/s
- 4 measurements per second
- High accuracy: ±0.5% thickness ±1 count
- Shutter and Limit I/O Relay Outputs
- Analog Output of Rate or Thickness ±0 to 10V 12 bit resolution
- RS-232 Interface
- Relay Output:
 - 1) Shutter Control
 - 2) Thickness Set point
 - 3) Timer Set point
 - 4) Crystal Failure
- Remote Input: Four TTL Compatible inputs
 - 1) Open Shutter
 - 2) Close Shutter
 - 3) Zero Thickness
 - 4) Zero Time



Description	Part Number
STM-100/MF thickness rate monitor CE with RS-232 port	6-TM-2030

Description

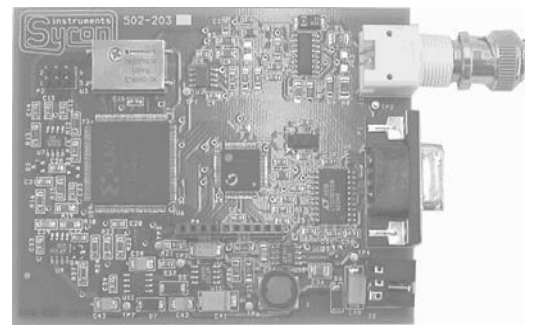
As an alternative to the rate monitor we supply this compact single board for thin film thickness measurements.

Including all necessary software the compact board allows via the RS232 interface a direct monitoring with a lab PC.

2 versions can be supplied: The compact set top box STM-1 with the oscillator already on board that shows a competitive cost-performance ratio. Please keep in mind that the distance from sensing head to the board can have a maximum of 762mm (30"). When greater distances should be achieved the STM-1X can be used with a remote oscillator..

Specification

- 10 Measurements per seconds
- 0.01 Å/s Rate display
- Single +5v Supply required optional wall power supply module available
- RS232 / RS485 interface available
- Software application included
- Optional mounting case available
- Optional USB interface available



Description	Part Number
STM-1X for use with remote oscillator	6-TM-0030
STM mounting case	6-TM-1030

The STC-2000A is a high end product in thin film measurement technology. An advanced direct microprocessor system allows a manifold spectra of application: Programmable input and output structure, storage of 50 film programs and 9 process controls.

The STC-2000A allows 10 measurements per second with a rate resolution of 0.0088 Å/Measurement on each input channel.

Specification:

- Multi Sequence Multi-Film Process Control
- High Resolution
- High Speed Measurement
- 10 Measurements per second @ 0.0088 Å / s Rate resolution
- RS232 (optional RS485) interface for serial communications
- Manifold in- and output programming possibilities

vaqtec-scientific

Thulestr. 18b

D-13189 Berlin

Germany

Tel. +49 (0)30 7871 3158

Fax: +49 (0)30 787 13159

sales@vaqtec-scientific.com