Maxtek TM-400

Multi-Film Deposition Monitor

RELIABLE, EASY TO USE IN SIMPLE OR COMPLEX APPLICATIONS

The TM-400 Thin Film Deposition Monitor is designed for reliability and ease of use yet still provides all of the capabilities necessary for manual control of the deposition process. This multi-film monitor offers a long list of features making it suitable for all but the most demanding applications.

The TM-400 includes high measurement resolution for critical applications requiring greater accuracy. Automatic crystal switching assures continued performance upon crystal failure. The TM-400's dual sensors also allow the use of one crystal for one material further improving its accuracy for multi-layer applications.

The unit's memory can store programmed parameters for up to 100 films and can run in either deposit or etch mode. The TM-400 can be configured for full rack, half rack or desktop installation. For maximum efficiency, the unit comes with a large, easy to read LED display. The optional data logging software provides easy programming and log and store run data.

Optional Data Logging Software for the TM-400 Monitor allows for remote control using a personal computer. It also provides data logging of the rate, thickness, frequency, active sensor number, the current time from the host computer and the elapsed time in a tab delimited format at the rate specified by the user. The logged data is saved in a text file format that can easily be imported into an Excel® spreadsheet and graphed. This is beneficial when doing initial calibration of your vacuum system and/or for documenting the progress of the deposition process.

FEATURES AT A GLANCE

- Compact housing available in either full rack, half rack or desk top configuration
- Large, easy to read LED displays
- 100 programmable films
- Rate measurement displayed to a resolution of 0.1Å
- Thickness measurement displayed to a resolution of 1Å
- RS-232 serial interface
- Dual analog outputs to record rate and thickness
- Supports various frequency sensor crystals

SPECIFICATIONS

TM-400 Deposition Monitor

MEASUREMENT	
Frequency Resolution	0.03 Hz @ 6.0 MHz
Mass Resolution	0.375 ng/cm^2, (0.014 Å Al)
Measurement Update Rate	Variable from 0.5 to 10 updates/sec
Display Update Rate	10Hz
DISPLAY	
Rate Display	Autoranging: -999. to 999.9 Å/sec
Thickness Display	Autoranging: -999. to 999.9 kÅ
Frequency	0,000,000.0 to 9,999,999.9 Hz
PROGRAM PARAMETERS	
Film Number	100 programmable films
Thickness Endpoint	0.000 to 999.9 kÅ
Density	0.10 to 99.99 gm/cm^3
Acoustic Impedance	0.50 to 59.99X10^{-5} gm/cm^2/sec
Tooling Factor # 1	10.0 to 999.9%
Tooling Factor # 2	10.0 to 999.9%
Sensor Number	1 to 2
DAC OUTPUTS	
Rate and Thickness	0 to 5V, 11 bit resolution, 2 or 3 Decade range, 0.2% resolution

DUAL CRYSTAL SHUTTER RELAY	One single pole double throw relay, 120 VA, 2A Max
SOURCE SHUTTER RELAY	One single pole double throw relay, 120 VA, 2A Max
COMPUTER INTERFACE	RS-232 Serial port standard, RS-485 or IEEE-488 ports optional
DISCRETE INPUTS	
Electrical	TTL, level, ground true with internal 4.7kohm pull up resistor to 5V
Functions	Start, Stop, Film Number, Increase, Decrease
CRYSTAL TYPE	2.5, 3.0, 5.0, 6.0, 9.0, or 10.0 MHz
POWER REQUIREMENTS	100, 120, 220, 240 VAC; 50/60 Hz, 25 watts
PHYSICAL	
Shipping Weight	Desktop - 5 lbs., Rack Mounts - 9 lbs.
Size	Desktop Case 3.47"H x 8.4"W x 9.7"D 19" Rack Mount Case 3.47"H x 19"W x 9.7"D

ORDERING INFORMATION

TM-400 Deposition Monitor

TM-400-____

Base Unit

- TM-400 Table Top Case 1
- TM-400 Half-Rack Mount Case 2
- TM-400 Full-Rack Mount Case 3
- TM-400 Mounted Side-by-Side in a Full-Rack Mount 4

Base Unit Voltage

- 100V 0
- 120V 1
- 220V 2
- 240V 3

IEEE-488 Communications Board

- No 0
- Yes 1

RS232 to RS483 Conversion Kit

- No 0
- Yes 1

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