

Polymer Modulator™ Microrheometers

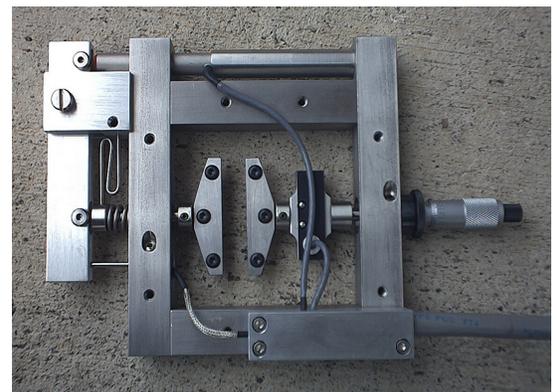
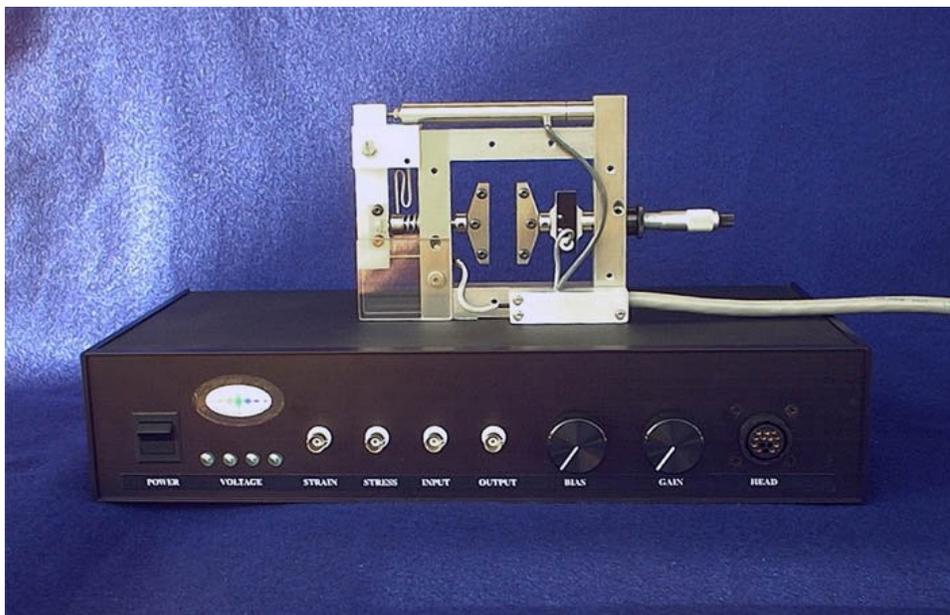
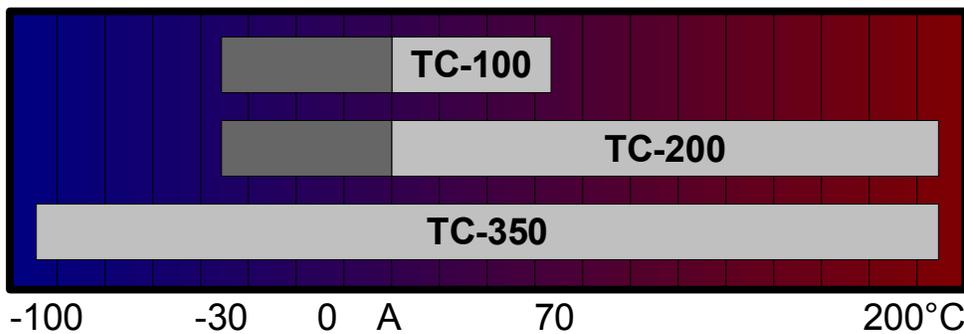


MAT's Polymer Modulator™ Microrheometers are convenient tools for combining spectroscopic measurements with rheological perturbations. The molecular origins of macroscopic properties are probed using the time dependence of spectral changes in polymer samples.



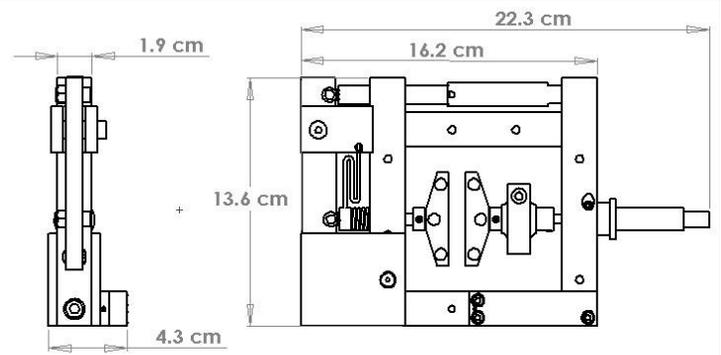
- Variable waveforms
- Quartz timing accuracy
- Time- or phase-resolved data
- Rack mountable electronics
- Thermal stability
- Compact size
- Standard BNC connectors
- Limited lifetime warranty

Each model includes an electromechanical head, to hold and modulate the sample, and an electronic power unit to amplify the input signal, to amplify the stress and strain output signals. In addition, the TC- series includes insulated shells and temperature control units to maintain sample temperatures between -100 and 200°C.



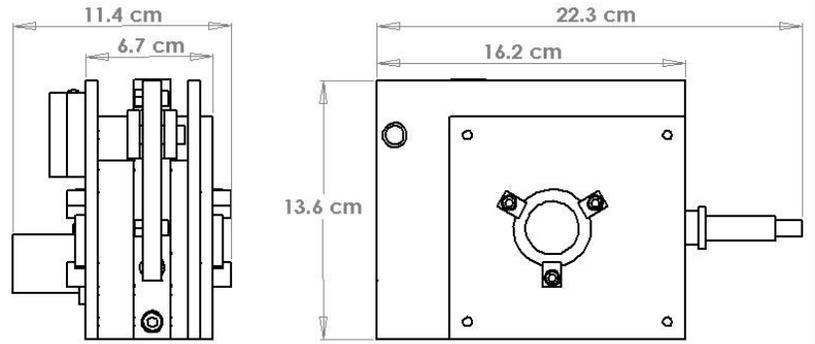
PM-100

The basic PM-100 model incorporates stress and strain measurements with arbitrary waveform input. Sample temperature tracks the ambient environment of the spectrometer or experiment box in which the Polymer Modulator™ instrument is located.



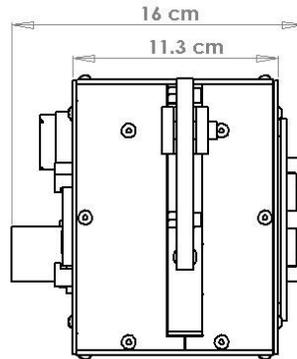
TC-100

Temperature control unit with insulated head (ambient to 70°C). Ambient to -30°C or high-humidity by special order.



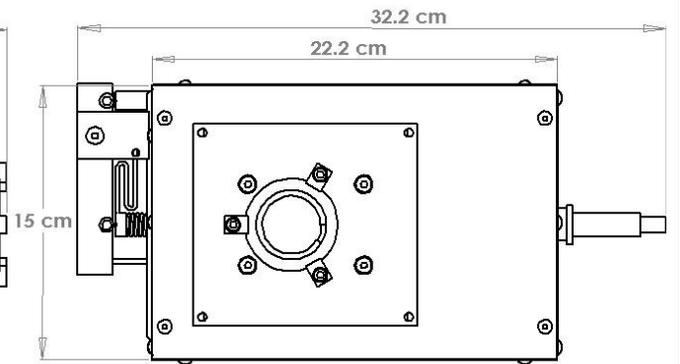
TC-200

Temperature control unit with insulated head (ambient to 200°C).



TC-350

Temperature control unit with insulated head (-100 to 200°C).



Custom
Engineered
Solutions
Available

Strain amplitude:
0-0.6% (0-120 microns)

Frequency range:
0 - 70 Hz
greater range optional

Impulse rise/fall time:
5 milliseconds

Static strain:
0-1.25 cm

Input signal:
5 volts p-p for full
amplitude

Strain sensitivity:

0.05 microns

Stress sensitivity:

0.005 Newtons

Strain output:

-10 to +10 volts (20 microns/V)

Stress output:

0 to +10 volts (10 N/V)

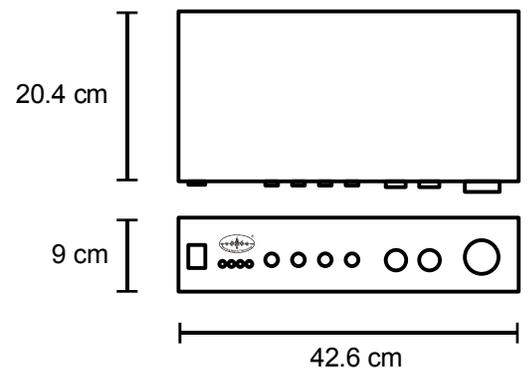
Sample dimensions:

6 cm (w) x 2.6 cm (l)

Power:

120/240 V 50/60 Hz 20 W

Electronics



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