Square-Wave Electromagnetic Blood Flowmeters

CME 500 Series

Model 501 with multi-range analog panel meter
Model 501D with digital readout

This CME 500 Series is excellent for the critical requirements of research and laboratory applications.

All models provide reliable operations in accurately measuring a wide spectrum of blood flow. A panel meter indicates a mean volumetric flow in milliliters per minute.

These flowmeters have set the Standard of Excellence throughout the world for over thirty-five years.

- Choice of panel meter or digital readout.
- Provides non-occlusive zero flow reference.
- Automatic protective circuits are designed to detect system malfunction or deviation from normal operating procedures.
- Low noise – high resolution pulsatile flow data.
- Adaptable for multiple flows by connecting to additional units.
- Extensive use of highly visible, lighted signal indicators.
- Frequency response selectable up to 100Hz.
- Separate recorder outputs provide mean and pulsatile data simultaneously.
- Industry's widest range of precalibrated and uncalibrated probes.

RESEARCH ONLY

SPECIFICATIONS

ACCURACY

Electrical Zero	Non-occlusive zero reference.
Calibrate Signal	-1.0V±5mV and 0.1V±2mV on mean and pulsatile outputs, toggle switch operated to calibrate external recorders and indicators.
Flowmeter Calibration Accuracy	±5% after 30 minute warm-up. (Includes the effect to gain and excitation variation.)
DC Drift	±5% after 30 minute warm-up, cold start ±10mV.
Linearity	±1% maximum full scale.

SAFETY

Probe Leakage	Protection Probe current is removed if more than 200 µA leakage to ground occurs. (The CME Model 701D CLINIFLOW II is recommended for use on human subjects since its leakage is less than 20 µA.)

INPUT CHARACTERISTICS

Probe Excitation	500 Hz square-wave, 0.5 Ampere ±2%. Limited to ±15V open circuit. 50% duty cycle on 20mm and smaller probes.
Amplifier Input	Differential 20MΩ plus 300pf. Maximum input voltage 2V p-p. Common mode signals lower than 350Hz produce an output 20dB below that produced by carrier reference. Signals in the range of 250Hz are approximately 40dB below carrier reference.

OUTPUT CHARACTERISTICS

Flow Range	5 milliliters/min to 19.99 liters/min depending on probe selected.
Gain	Analog Model – 500K (at P.F. 500) .2µV p-p input produces 1.0VDC output, mean and pulsatile channels (Digital Model – 50K).
Flow Indicator	Model 501D – Digital Readout. Model 501 – Panel Meter. Both calibrated in milliliters/min and liters/min.
Outputs	Simultaneous mean and pulsatile single-ended analog outputs capable of ±5V swing. Normal full-scale mean output +1.0, -0.2VDC for analog model; ±1.999VDC for digital model. 75Ω output impedance, short circuit protected. Minimum load impedance 1kΩ.
Frequency Response	DC – 100Hz, ±3dB.
Output Noise	50mV typical (0.1µV RMS referenced to shortened input @ 25K overall gain).

GENERAL

Power Requirements	115V±10V, 50-60Hz, (501, 40 Watts) (501D, 42 Watts). Optional 100VAC, 230VAC.
Operating Temperature	15ºC to 27ºC (60ºF to 80ºF) Ambient
Size & Weight	21 x 21 x 28 cm HWD (8.25 x 8.25 x 11 in. HWD). 5.5kg (12 lbs.).
Colors	Burgundy with gray trim.

Specifications subject to change without notice.

LIMITED WARRANTY

The CME 500 Series is only sold subject to the terms of a Limited Warranty. This Limited Warranty contains important provisions restricting and limiting the seller's responsibilities and liabilities. The Limited warranty in its entirety appears within the preface of the Operation and Maintenance Instruction Manual. The Limited Warranty may also be obtained from our sales representatives or at our home office.

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