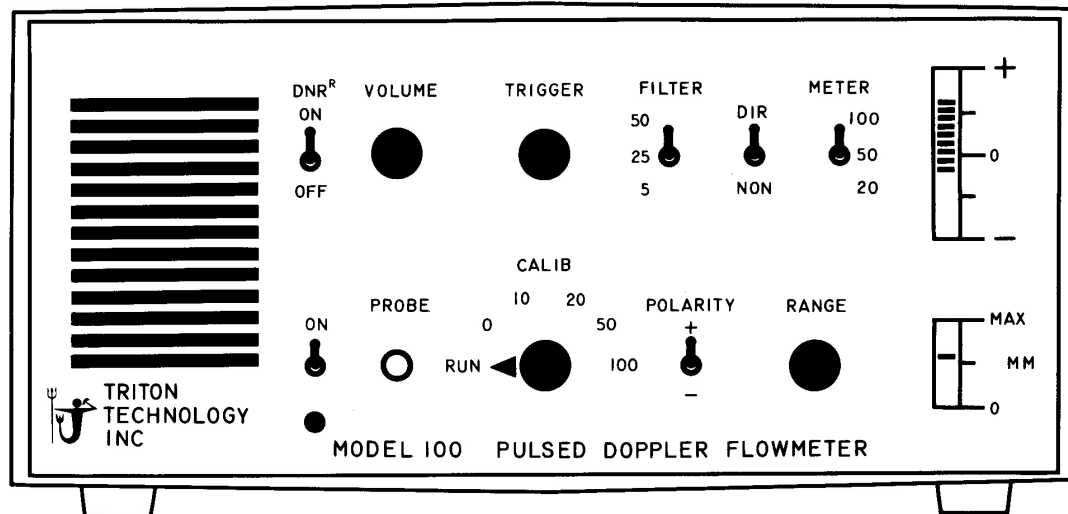


Doppler Flowmeter



Specifications

Model 100-20 (20 MHz)

Model 100-10 (10 MHz)

Model 100-5 (5 MHz)

The Model 100 is a state-of-the-art Pulsed Doppler Flowmeter. Designed by a cardiovascular research group, this flowmeter is made to satisfy the most exacting requirements of researchers. Models are available in 20, 10 and 5 MHz for small, medium and large vessels. Each functional block of the electronic circuitry has been refined to provide optimal performance. The units function with implanted flow cuffs, transcutaneous flow probes and the 20 MHz system can be used with commercially available Doppler flow catheters. The Model 100 will function as a stand-alone unit, and will also synchronize with other pulsed Doppler flowmeters and with Sonomicrometers.

Important Features:

- Patented noise reduction circuitry for optimal signal-to-noise ratios
- Pulse repetition frequency internally by switch selectable to 125 KHz, 100 KHz, 62.5 KHz and other rates
- Front panel range gate adjustment; range position is indicated on front panel LED bargraph display; DC voltage proportional to range is available at back panel
- Simultaneous phasic and mean output signals
- Audio output to front panel speaker is combined toward and away signals (up & down Doppler); back panel stereo phone jack provides directional flow signals separated for up Doppler to one ear and down Doppler to other ear; inserting phone jack breaks speaker connection
- Internal calibration is derived from quartz crystal oscillator; normal factory calibration frequency steps to velocities of 100, 50, 20 and 10cm/sec respectively, using 45-degree transducer; the angle coefficient is switch selectable internally for use with different transducer geometries.



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Typical Specifications (10 MHz)

Ultrasonic Frequency:	10 MHz crystal-controlled
Pulse Repetition Frequency:	62.5 KHz
Transmitter Burst:	8 cycles
Range Gate:	1-12mm
Audio Bandwidth:	200 Hz-15 KHz
High Pass and Low Pass Filters are 4-Pole Butterworth response	200 Hz-75 KHz 200 Hz-3 KHz

Data Filter:	DC- 5 Hz
Switch Selectable	DC-25 Hz
Butterworth-Thompson	DC-50 Hz

Meter Scale (Full Scale)AAA:	100 (8928 Hz)
(cm/sec) 45-degree Transducer	50 (4464 Hz) 20 (1786 Hz)

Front Panel Controls

RANGE:	Controls sample gate RANGE
VOLUME:	Controls speaker or stereo headphone volume
TRIGGER:	Sets TRIGGER threshold for flow discriminators
Data FILTER Switch:	5-25-50 Hz
METER Scale Switch:	100-50-20cm/sec
RUN/CALIBRATE Selector:	Selects RUN, ZERO or CALIBRATION steps
POLARITY Switch:	Selects direction of positive flow
DIR/NON Switch:	Selects operating mode: directional or non-directional
Flow Display:	LED bar display indicating direction and frequency shift of flow;
Over Range LED:	Positive flow is UP (green); Negative
Range LED Display:	flow is DOWN (red)
DNR®:	Indicates when flow is exceeding value set on METER scale switch Indicates range of sample gate Enables/disables Dynamic Noise Reduction circuit

Outputs

Audio Out:	Quadrature line outputs for external amplifier and/or stereo tape recording
External Flow:	Stereo phone jack allows audio quadrature signals from stereo tape to be demodulated
Stereo Headphones:	Stereo phone jack provided to drive low impedance headphones with true directional audio signals; inserting phone plug disconnects the internal speaker
Pulsatile Flow:	05V/KHz low impedance output from phone jack
Mean Flow:	0.5V/KHz low impedance output from phone jack
RF and PRF:	RF and PRF signals are provided to synchronize 2 or more pulsed Doppler flowmeters together (BNC) PRF signal provided for slave synchronizing a Sonomicrometer (phone)
Sonomicrometer Sync:	DC output proportional to RANGE for recording
DC Range (100mv/mm):	

Physical

Loudspeaker:	3x5-inch oval speaker built-in
Power Requirements:	100, 120, 220 94 240 VAC; 50 or 60 Hz; 60 VA
Size:	Black case with tiltstand; 32cm wide x 15cm high x 30cm deep
Weight:	3.5 kilograms

* Internally Selected

** Determined by meter full scale

*** Values shown for a 45-degree transducer; correct scale factors for other angles are internally selectable

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