

OptiView System

Slow or freeze viewing of periodic motion

Real-time viewing using standard NTSC video monitors and recorders



- ✓ Lets you view periodic motion in real time
- ✓ Supports external triggering & sync output
- ✓ Measures phase shift or delay
- ✓ Measures RPM or frequency
- ✓ Enlarges or enhances view of subject
- ✓ For use indoors or outdoors in sunlight
- ✓ Interfaces with vibration test systems
- ✓ Permits or supports or allows permanent record of tests

The Model 300 OptiView system is an innovative instrument that lets you view and record any periodic process in slow or stop motion and in real time. The OptiView is

suitable for a variety of industries and applications, such as: vibration testing, modal analysis, valve train studies, rotary blade balancing, quality control, preventative maintenance, engineering experiments, and production line monitoring. Useable in high ambient light environments including bright sunlight.

The OptiView uses a special video camera system employing **Differential Synchronized Photo Sampling (DSPS)**. This process allows you to view an object in periodic motion at speeds of up to 60,000 RPM or 1000Hz, at an apparent speed between zero to 300 RPM (5Hz). Once you set the apparent speed it will remain the same regardless of the actual speed. For example, if you are studying a valve spring and you set the apparent speed to 1Hz, you will see the spring compress and extend once per second, *independent* of the engine speed. In Phase Measurement mode, the OptiView sets the apparent speed to zero while allowing you to adjust the phase (difference between the sync signal and the video image) from 0° to 360°.

Since the output of the OptiView is a standard NTSC video signal, you can use an ordinary VCR to document your test permanently. The system adds a date/time stamp to the video along with the frequency of operation and an ASCII message supplied from your test station.



Actual photo through OptiView camera showing a ridged steel bar vibrating at 78 Hz

Specifications

Power	90 to 240VAC, 50/60 Hz at 1 amp
Display	4½ digits LCD with backlight Accuracy: +/- 0.01% of reading Frequency: 0.5Hz to 1000Hz RPM: 30 RPM to 60,000 RPM Phase: 0° to 360°
Camera	460 lines, interlaced, color, 12:1 zoom, NTSC Video Output
Inputs	Sync Input: 3 to 30Vdc or close to ground Isolated Sync Input: 3 to 30Vdc
Outputs	Sync Out: 0 to 5V signal, open collector, 20ma sink. +12Vdc @ 500ma to power Sync sensor
Comm Port	RS-232 for inputting text to video from test station
Controls	Select Internal/External timing source Select Hz (cycles per second) or RPM (revolutions per minute) on LCD display Clear: Clears apparent speed to zero in External Mode, Multiplies/Divides rate by 2 in Internal mode Rate Adj: Very Coarse (VC) after quarter turn of pressed knob. Coarse (C) before quarter turn of pressed knob. Fine (F) knob unpressed. Absolute internal: Hz: 00.50 -> 99.99 VC:10, C:0.5, F:0.01 100.0 -> 999.9 VC:100, C:5, F:0.1 RPM: 30.0 -> 999.9 VC:100, C:5, F:0.1 1000 -> 9999 VC:1000, C:50, F:1 10.00 -> 60.00 VC:10, C:0.5, F:0.0 Phase: 5°
Controller	Dimensions: (W 5.5" x L 4.5" x D 8.5")

The OptiView is ideal for:

R&D: Live viewing of subject parts during vibration testing to see the effects of resonance points.

Automotive Analysis: Valve train motion studies, timing-belt adjustments, spring surge and other engine functions that can be monitored while the engine is running.

Production: Monitor machinery in motion while on line. No unnecessary down time.

Printing Quality Control: Continuously control printing accuracy without stopping the press.

Preventive Maintenance: Inspect rotating belts, pulleys, gears and other moving parts while in operation.