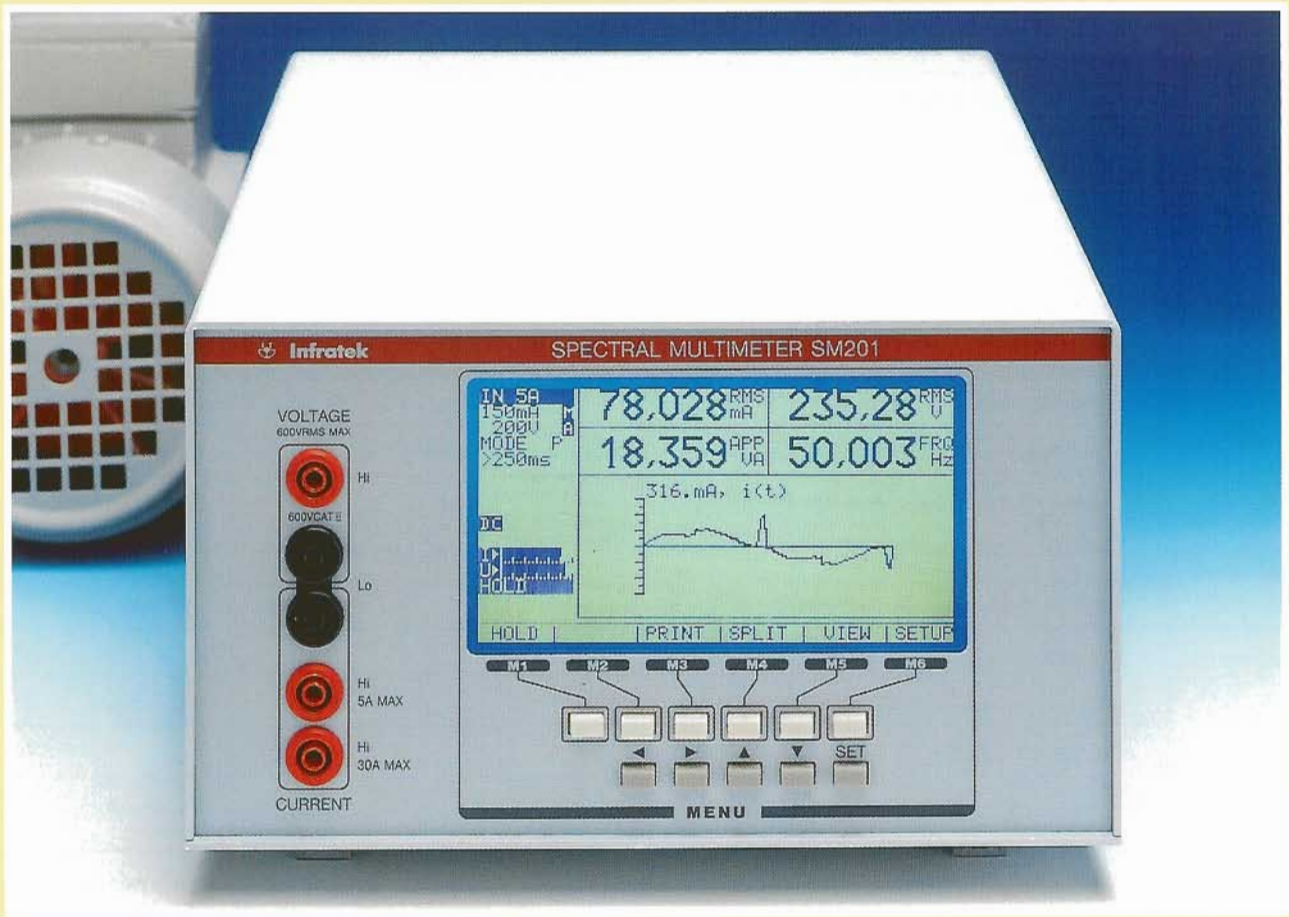
Infratek SM 201 SPECTRAL MULTIMETER



The **MODEL SM201 SPECTRAL MULTIMETER** is a totally new measurement tool designed to offer the scientist, engineer or technician more signal information than is normally found in one single instrument.

FEATURES AT A GLANCE

- **Main Features:**
  - Current 15mA-30A
  - Voltage 0.6-2000V
  - Current, voltage, power, energy
  - Burst of current or voltage
  - IEC555-2 current harmonics
  - Flicker
  - Harmonics 1-63, bar charts
  - Recovers AC signals in noise
  - *Stores 20 instrument settings*
  - Wide frequency range DC-300kHz
- **Display Features:**
  - User display configuration
  - Display of up to ten quantities
  - Combined numeric and graphics fields
  - Bar graph, wave forms
  - Menu driven operation
- **DSP Processing Power:**
  - On-line measurement of all average values and harmonics, 343 in total.
- **Signal Inputs/ Outputs, Interfaces**
  - Four ±5V analog outputs
  - Eight analog inputs (±1V, ±10V)
  - RS-232, IEEE-488.2, printer
  - Operating software under Windows

VERSATILE, EASY TO USE

The **MODEL SM201 SPECTRAL MULTIMETER** is a multipurpose instrument designed for laboratory and field use, and for production testing. The optional interfaces are supplied with operating software which lets you read data, tailored to your needs, from the **SM201.** High speed transfer to a computer and data storage in EXCEL are possible.

The **SM201** is a high performance, high accuracy multimeter that allows you to measure current and voltage simultaneously and power for current wave forms whose fundamental is in the frequency range 20Hz to 1kHz.

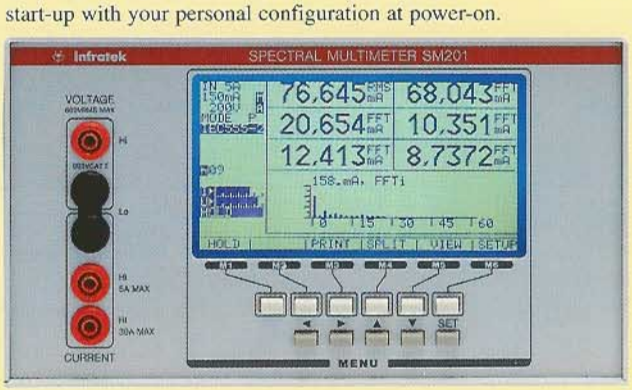
The **SM201** exhibits a wide current range up to 30A. It can be extended up to 20000A to measure the rms current of a current burst, for example.

For continuous signals, harmonics 1 to 63 are computed on-line. Pre-compliance testing for the main current harmonics is performed by selecting averaging time «IEC555-2». In the FLICKER operating mode the **SM201** will determine short time Flicker Pst and long time Flicker Plt.

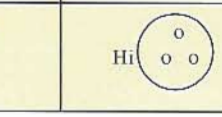
Trough the use of the analog inputs and outputs the capabilities of the Spectral Multimeter are further enhanced. The **SM201** reads eight signal inputs from transducers and controls up to four analog outputs to drive chart recorders.

The **SM201** is controlled by the menu soft keys M1 through M6 and the cursor soft keys. The operating procedure, to configure the display and the interfaces, to select the operating mode, to select the input, the ranges, and many more features is selfexplanatory.

You can save your personal instrument settings and have the unit start-up with your personal configuration at power-on.



SPECIFICATIONS

Voltage	Ranges, 8 ranges 2-6-20-sequence; 0.6V, 2V, 6V, 20V, 60V, 200V, 600V, 2000V.		
	Frequency range		DC, 2Hz-300kHz
	Crest Factor 4:1 at 50 % full scale (fs)	Common Mode 50Hz/100kHz	155dB/95dB
	Input Impedance		>2.3MΩ
	Standard accuracy 23° ±3°K; rms, mean, rectified mean; for 0.6V range, input >50 % fs. 1Hz-1kHz ±(0.1 % rdg + 0.1 % range) DC, 1kHz-10kHz ±(0.2 % rdg + 0.2 % range), DC typical 10kHz-100kHz, ±(0.3 % range +0.04 %/kHz rdg) * 100kHz-300kHz ±(0.3 % range + 0.04 %/kHz rdg), typical		improved acc., 1Hz-400Hz ±(0.05 % rdg + 0.07 % range) *0.6V range typical
Current	Ranges, 10 ranges 1-3-10-sequence; 15mA, 50mA, 150mA, 500mA, 1.5, 5, 15A, 1, 3, 10, 30, 100A.		
	Frequency range		DC, 2Hz-300kHz
	Crest Factor 4:1 at 50 % full scale (fs)	Common Mode 50Hz/100kHz	160dB/120dB
	Standard accuracy 23° ±3°K — 5A-/Shunt input[1] — 30A input[1] 1Hz-1kHz ±(0.1 % rdg + 0.1 % range) ±(0.1 % rdg + 0.1 % range) DC, 1kHz-10kHz ±(0.2 % rdg + 0.2 % range) ±(0.9 % rdg + 0.2 % range) 10kHz-100kHz ±(0.3 % range + 0.04 %/kHz rdg) ±(0.3 % range + 0.5 %/kHz rdg) 100kHz-300kHz ±(0.3 % range + 0.04 %/kHz rdg), typical		improved acc. 1Hz-400Hz ±(0.05 % rdg + 0.07 % range) DC typical [1] For 2 lowest ranges, input >50 % fs
Power	80 ranges corresponding to the products V x A .		
	Frequency range of fundamental frequency		20Hz-1kHz
	Accuracy 23° ±3°K 20Hz-100Hz 0.3 % rdg + (0.3 % + 1 % sinφ) range 100Hz-200Hz 0.5 % rdg + (0.5 % + 2 % sinφ) range 200Hz-1kHz 0.5 % rdg + (0.5 % + 0.2 %/100Hz) range		 -80° < φ <80° -80° < φ <80° PF=1
Frequency	2Hz-100kHz, A or V triggered; Accuracy ±0.1 %.		100 % full scale
Computed Values	Accuracy; Reactive Power, Var = $\pm(VA^2 - W^2)^{1/2}$; Apparent Power: VA = Arms Vrms; Power Factor: PF = W/VA ;Crest Factor: CF = Ap/Arms, Vp/Vrms; Form Factor: FF =Arms/At, Vrms/Vt; Impedance: Z = Vrms/Arms; Total Harm Dist: THD = $(Irms^2 - IFund^2)^{1/2}$/Irms, Flicker Pst, Plt		Add accuracy percentage figures of values involved in computation.
Integrator	Energy, Accuracy Wh, VAh, Varh,; Basic accuracy of integrated quantity.		
Harmonic Analysis	Frequency range of fundamental 5Hz-60kHz		
	Range of harmonic		1-63
	Accuracy, Harmonic current and voltage 5Hz-1kHz ±(0.2 % rdg + 0.1 % range) 1kHz-10kHz ±(0.5 % rdg + 0.5 % range) 10kHz-60kHz ±(0.7 % range + 0.1 %/kHz rdg), typical		Computed values: Harmonic power, Harmonic phase angle (power factor) Harmonic impedance
Burst	Measures current- or voltage burst of an intermittent signal.		Minimum burst duration 1ms
Flicker	Determines short time flicker Pst and long time flicker Plt.		
Display	Blue liquid crystal graphic display with FL backlight 64 x 120mm; 128 x 240 pixels		
Power	AC, 50-400Hz; Fuse: Power		85V-240V; 2AF/20VA
Dielectric Strength	Inputs to case or power supply Line input to case		2.5kV/50Hz/1 minute 1.5kV/50Hz/1 minute
Dimension	H x W x D; Weight		150 x 235 x 320mm; 4kg
Options	IEEE-488-2, RS232, Centronics printer output 4 Analog outputs, Output impedance 100Ω; accuracy 0.2 % 4 Analog inputs, low range, input impedance 200kΩ; accuracy 0.4 % typical 4 Analog inputs, high range, input impedance 200kΩ; accuracy 0.4 % typical Rack mounting kit; Humidity: KYG according to DIN 40040, max. 85 % RH non-condensing.		 0 - ±5V 0 - ±1V 0 - ±10V
Shunt Input	 open circuit Ranges in mV: 60, 60√10, 600, 600√10, 6000, 6000√10 Accuracy: Same as 5A-input Input impedance: 200k; input of 60mV corresponds to 1.0000A display.		

INFRATEK

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