

# PRECISION TRANSIENT THERMAL FLUX ANALYZERS

## (A.C./D.C./PULSE)

### Introduction:

MHFA range of precision heat/radiation flux analyzers /controllers are available in 4 different regular models apart from tailor made solutions virtually covering all industrial and research applications relating to heat/radiation flux measurement from 100 kilo watt/mm<sup>2</sup> to 100 microwatt/mm<sup>2</sup>. These analyzers finds applications in detecting heat/radiation source and related phenomenon's in the field of electricity generation, transmission/distribution, avionics, machine tool, defense, electrical/mechanical m/c testing instrument, industrial electronics, railway, and avionics and solid state physical application like dielectrics characterization, switch gears, MEMS and many research and development activities. These precision analyzers are compatible to any standard thermopile based sensor and display with very high degree of accuracy/repeatability/reliability and are available in different thermally insulating material meeting all electrical, thermal, mechanical, and environmental specifications.

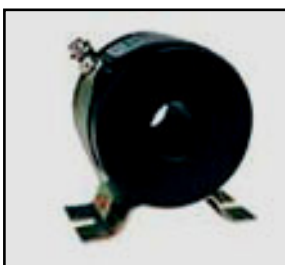
**Operating Principle:** Radiation falling on a thermopile generates output voltage proportional to heat flux falling on it. This voltage is sensed and calibrated by precision electronic to display reading proportional to Radiation flux falling on it. Proper filter mounted before thermopile helped to measure the thermal flux of a specific band wavelength of radiation range. These are offered for variety of application/geometary.

### Benefits:

- High input impedance/Low input biased current /higher accuracy.
- 5-1/2 & 6-1/2 digit display /consistent performance.
- large thermal/radiation flux range .
- Scaled directly in desired scale of measurement with repeatable accuracy.
- Auto/manual zero offset without drift.
- Auto drift tracking
- RS-32 interface/high sample rate – 10,000 sample/second.
- Feed back current measurement technique.



MHFA-0009991



MHFA-0099991



MHFA-9999992

### Thermal analyzers static/dynamic.

Range <999999 micro kelvin-999999 kelvin

Model	Range Watt/mm <sup>2</sup>	Resolution	Pulse/D.C./Pulse Frequency Range	Thermal Burden	Accuracy Restricted to Resolution level	Resolution Quantified	Thermal source	interface
MHFA-9999990101	05.0/02.0 -999999 x 10 <sup>3</sup>	1 :999999	0.0-20 cycle	<0.1 k. watt/mm <sup>2</sup>	99.99999%	2/5/10	Infrared/optical	RS-232USB
MHFA-9999990401	05.0/01.0 -999999 x 10 <sup>0</sup>	1 :999999	0.0-20 cycle	< 0.1 watt/mm <sup>2</sup>	99.99999%	2/5/10	Infrared/optical	RS-232/USB
MHFA-9999990102	05.0/01.0 -999999 x 10 <sup>-3</sup>	1 :999999	0.0-20 cycle	< 0.1.milli-watt/mm <sup>2</sup>	99.99999%	2/5/10	Infrared/optical	RS-232/USB
MHFA-9999990402	05.0/01.0 -999999 x 10 <sup>-6</sup>	1 :999999	0.0-20 cycle	< 0.1 mu.watt /mm <sup>2</sup>	99.99999%	2/5/10	Infrared/optical	RS-232/USB

Six digit after product code indicate count, next, Two digit indicate watt/mm<sup>2</sup>,/next two digit indicate least count/last digit indicate Static-01/dynamic-02.

### General electrical/mechanical specifications:

Operating voltage: 220 volt A.C. (50-20,000 Hz) / 12 volts D.C.  
 Measurement range (full scale): as above in different model.  
 Thermal flux range: 10<sup>+6</sup>/10<sup>+3</sup>/10<sup>0</sup>/10<sup>-3</sup> / 10<sup>-6</sup>watt/m<sup>2</sup> static/dynamic (optional) (differential/point mode)  
 Thermal source potential: 0-500 degree cel-static/dynamic (pulse mode H.T)-optional  
 Input thermal capacitance: 100 cal.sec/kg/degree k 10<sup>-6</sup>  
 Response time: 1000 sample/sec  
 Burden: less than 1% of heat flux source of full scales current or better  
 Accuracy Error: 0.5/1.0/2.0 % reading  
 Repeatability: 100 of reading  
 Resolution: 1/2/5/10 count of F.S.R./Range may be altered based on time behaviour of  
 Range (watt/mm<sup>2</sup>): as above or optional resolution/accuracy  
 Linearity adjustment: upto 100 count  
 Input thermal impedance: ultra high (<0.01000 micro °C /watt),  
 Filtering: low pass (adjustable)  
 Offset: variable upto 10,000 count (manual/auto)  
 CMMR: >80 db at 10-15 thermal Hz  
 Isolation: > 100 giga ohm  
 Connector: BNC-9 pinx2 and BNC-25 pinx2  
 Size: 5X8X8 inches/rack mounted or portable  
 Interface: RS-232  
 Option: ADDITIONAL SOFTWARE to plot V/I OR ANY DESIRED INFERENTIAL PARAMETER.  
 THESE SPECIFICATIONS OR PART THERE OF MAY BE MODIFIED TO MEET ANY TAILOR MADE SOLUTIONS.

NOTES: The numeral after product code indicates the (ampere meter) range and last digit corresponds to size (5x5x8, 8x8x12)



MHFA-9999990402

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