

# AMM2 / MASTER MEASUREMENT MODULE

## SPECIFICATIONS:

PART NUMBER

SPEC-AMM2

### INPUT CHANNELS

Local: 8 differential inputs or 16 single ended inputs.

Global: 9 inputs from slots 2-10.

### LOCAL PGA

Programmable Gains: x1, x10.

Gain Accuracy:  $\pm 0.016\%$ , x1 gain;  
 $\pm 0.025\%$ , x10 gain.

Gain TC:  $\pm 0.001\%/^{\circ}\text{C}$ , x1 gain;  
 $\pm 0.0017\%/^{\circ}\text{C}$ , x10 gain.

Nonlinearity:  $\pm 0.01\%$ .

Input Offset:  $\pm 50\mu\text{V}$  initial, adjustable to zero.

Offset TC:  $\pm 20\mu\text{V}/^{\circ}\text{C}$ .

Input Resistance:  $> 100\text{M}\Omega$ .

Input Bias Current:  $< 1\text{nA}$ .

Input Noise:  $< 50\mu\text{V}$  rms, 0.1Hz to 100kHz.

CMRR:  $> 80\text{dB}$ , DC to 60Hz.

Input Protection (any terminal to chassis):  $\pm 30\text{V}$  max. (powered);  $\pm 15\text{V}$  max. (unpowered).

### 10.000 VOLT REFERENCE

Accuracy:  $\pm 0.02\%$ .

Accuracy TC:  $\pm 0.0012\%/^{\circ}\text{C}$ .

Noise:  $20\mu\text{V}$  p-p, 0.1Hz to 10Hz.

### POWER CONSUMPTION:

+5 Volt Supply: 125mA typical.

+15 Volt Supply: 65mA typical.

-15 Volt Supply: 65mA typical.

### GLOBAL AMP AND A/D CONVERTER

A/D Converter: Self-calibrating, successive approximation.

Resolution: 16 bits (1 part in 65,536).

A/D Ranges: Software selectable, 0 to +10V unipolar, and -10V to +10V bipolar.

Conversion Time: 20 $\mu\text{sec}$  (including acquisition time).

#### Software Trigger:

Oneshot Mode: A single reading is available 20 $\mu\text{sec}$  after trigger location in memory is addressed.

Continuous Mode: Conversions are continuously triggered every 20 $\mu\text{sec}$  by internal crystal controlled clock.

External Trigger: Continuous conversions begin with falling edge of EXT TRIG input and stop when input is high. TTL compatible.

Noise:  $< (0.005\%$  of full scale) rms on all ranges and gains,  $> 83\text{dB}$  signal to noise ratio (sinewave rms signal to rms noise).

Programmable Gains: x1, x2, x5, x10.

#### Gain Accuracy\*:

$\pm (0.02\% + 1 \text{ LSB})$ , x1 gain;

$\pm (0.03\% + 1 \text{ LSB})$ , x2, x5, x10 gain.

Gain TC\*:  $\pm 0.002\%/^{\circ}\text{C}$ .

Nonlinearity\*:  $\pm 0.0057\%$ .

Input Offset\*:  $\pm (50\mu\text{V} + 1 \text{ LSB})$  initial, adjustable to  $\pm 1 \text{ LSB}$ .

Offset TC\*:  $\pm 20\mu\text{V}/^{\circ}\text{C}$ .

Filter: Software selectable, 100kHz or 2kHz single pole filter.

Settling Time (to 0.003% of final reading): 16 $\mu\text{sec}$  with 100kHz filter, 800 $\mu\text{sec}$  with 2kHz filter.

\*Includes input MUX, amplifiers, and A/D errors.

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BRUNING 40-21 62198

LTR	REVISIONS	APP.	DATE	DRN.	DATE
A	REL. 127/60			7/7	4-19-88
				CKD.	DATE
				APP.	DATE

**KEITHLEY**

Keithley Instruments Inc.  
Cleveland, Ohio 44139

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## SYSTEM SPECIFICATIONS 500A MAINFRAME WITH AMM2 INSTALLED

### AMM2 DIRECT INPUTS (A/D in bipolar mode\*)

RANGE	RESOLUTION	ACCURACY (1 Year)**	TEMPERATURE
		18°-28°C ±(%rdg + mV)	COEFFICIENT ±(%rdg + mV)/°C
± 10 V	305 μV	0.065 + 0.7 mV	0.0026 + 0.03 mV
± 5 V	153 μV	0.065 + 0.57 mV	0.0029 + 0.03 mV
± 2 V	61 μV	0.065 + 0.52 mV	0.0029 + 0.03 mV
± 1 V	31 μV	0.065 + 0.32 mV	0.0023 + 0.02 mV
± 500 mV	15 μV	0.065 + 0.3 mV	0.0026 + 0.016 mV
± 200 mV	6 μV	0.065 + 0.3 mV	0.0026 + 0.016 mV
± 100 mV	3 μV	0.065 + 0.3 mV	0.0026 + 0.016 mV

CMRR: (DC to 60Hz): >80dB.

Wideband Noise: <(50μV + 0.005% of full scale) rms.

\*For unipolar A/D mode, divide resolution by 2. Other specifications are unchanged.

\*\*Exclusive of noise.

### AMM2 SLOT INPUTS (for internal use only)

RANGE	RESOLUTION	ACCURACY (1 Year)**	TEMPERATURE
		18°-28°C ±(%rdg + mV)	COEFFICIENT ±(%rdg + mV)/°C
± 10 V	305 μV	0.041 + 0.46 mV	0.0016 + 0.030 mV
± 5 V	153 μV	0.042 + 0.26 mV	0.0019 + 0.015 mV
± 2 V	61 μV	0.043 + 0.17 mV	0.0019 + 0.012 mV
± 1 V	31 μV	0.045 + 0.15 mV	0.0019 + 0.012 mV

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LTR	REVISIONS	APP.	DATE	DRN.	DATE
A	REL. 12760			7/11	4-1988
				CKD.	DATE
				APP.	DATE

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