Applied Test Resources

PM2010

Four Quadrant Power Source

The PM2010 is a four-quadrant power source capable of supplying up to 20 V/10 Amps to a load. The maximum power that may be safely generated is 50 Watts on a continuous basis and 200 Watts peak on a pulsed mode for no more than 100 ms, and a duty cycle of less than 10%.

The PM2010 uses an onboard controller, which relieves the system CPU of performing many functions necessary for the module operation. The result is higher efficiency of the CPU and faster execution of the module commands. All measurements use the "Zero Time Average" (ZTA) circuit (patent pending) that allows for a measurement time of less then 250 us to the full 16-bit resolution. ZTA enables the PM2010 to obtain the repeatability of using 20 to 50 measurements and averaging the results, with a single measurement.

The PM2010 implements a calibration method called Hardware Error Correction (HEC) (patent pending). This method performs a full calibration, correcting errors for ev ery code, as opposed to the more traditional two-point calibration of offset and gain correction. This method uses no CPU time, which accelerates the forcing and measurement functions.

SPECIFICATIONS

Force Mode Specifications*		**Measure Mode Specifications***	
Maximum Output Voltage	±20 V	Maximum Voltage	±20 V
Maximum Output Current	10 Amps	Maximum Current	10 Amps
Maximum Power Dissipation	50 W Continuous/200 W Pulsed	Input Impedance	1 Meg Minimum
Programming Resolution	14 Bits	Measure Resolution	16 Bits
Current Ranges	100 nA	Current Ranges	100 nA
	1 uA		1 uA
	10 uA		10 uA
	100 uA		100 uA
	1 mA		1 mA
	10 mA		10 mA
	100 mA		100 mA
	1 A		1 A
	10 A		10 A
Voltage Ranges	1 V	Voltage Ranges	1 V
	2 V		2 V
	5 V		5 V
	10 V		10 V
	20 V		20 V
Accuracy		**Accuracy**	
Current	±(0.1% of Range + 50 nA) for 100 nA to 100 uA Ranges ±(0.1% of Range + 300 nA) for 1 mA to 100 mA Ranges ±(0.5% of Range + 30 uA) for 1 A to 10 A Ranges	Current	±(0.1% of Range + 50 nA) for 100 nA to 100 uA Ranges ±(0.1% of Range + 300 nA) for 1 mA to 100 mA Ranges ±(0.5% of Range + 30 uA) for 1 A to 10 A Ranges
Voltage	±(0.05% of Range + 500 uV)	Voltage	±(0.05% of Range +500 uV)
Settling Time	<1 ms	Acquisition Time	250 us
Range Change Time	15 ms	Range Change Time	15 ms
Programming Time	20 us	Programming Time	20 us
Connect Time	15 ms	Connect Time	15 ms

*All specifications are subject to change without notice.
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2003 E. 5th St. Ste. 15, Tempe, AZ., USA 85281 Tel.- (480) 829-8488, Fax.- (480) 829-8898