

Dial-A-Source

VOLTAGE/CURRENT SOURCES

**RUGGEDLY DESIGNED
FOR ACCURACY,
STABILITY,
PORTABILITY
AND EASE OF USE.**

Easy-to-use voltage and current reference sources designed for ultra-precision performance as field and laboratory standards, transducer simulators and instrument calibrators.



ADVANTAGES

- Accuracy to .0015%, resolution to 0.1µV/10nA.
- Compact design. Easy to use.
- Virtual zero output impedance.
- Remote sensing for the absolute ultimate in performance.

MANY UNITS STILL PERFORMING RELIABLY AFTER 20 YEARS OF SERVICE.

- Ultra-precise voltage and current sources.
- Transducer simulation, instrument calibration and component evaluation.
- Calibration of 4-20 and 10-50 mA transmitters.

These easy-to-use dialable reference/calibration sources are available with accuracy of $\pm 0.005\%$ or $\pm 0.0015\%$. ALL models have been specifically engineered for extremely stable, highly accurate performance as well as ruggedly designed for use in the plant.

Special battery-operated units are ideal for field usage. **Whatever your application, there is a GR model engineered to do the job.**

MODELS/CAPABILITIES:

- Constant voltage and constant current capability is offered by all models.

LOW NOISE ATTENUATION IN CONSTANT VOLTAGE OPERATION:

At outputs of 1V or less, the inaccuracy contributed by a possible $\pm 5\mu\text{V}$ offset may become the determining element of output voltage accuracy. Where output current is not a consideration, the use of the appropriate LNA Low Noise Attenuator will reduce the offset by a factor of 100 or 1000 (see below) to the nanovolt level. LNA accuracy is $\pm 0.005\%$. LNAs are available for all DAS models.

Accessories

Models

LNA-100 Low Noise AttenuatorDAS 50

RMA-50 Rack Mount Adaptor50 Series and all battery-operated models

Constant Current Adaptors (not required)

Model	Adaptor	Scale Factor	Sensing Resistor
DAS-50s	Built-in	10mA/V	100Ω



Innovators and manufacturers of ultra-precision test instruments used as laboratory standards and for critical process monitoring.

SPECIFICATIONS

Constant Voltage & Current Sources

	DAS-56A	DAS-57AL
Battery/line operated models available	Yes (Change "A" in model number suffix to "B")	
Output EMF, F.S., ranges, dc	$\pm 1V$ & $10V$	
Resolution, EMF, per step (LSD):		
1.0V range	$1\mu V$	$0.1\mu V$
10.0V range	$10\mu V$	$1\mu V$
Accuracy ⁽¹⁾ , EMF, %, \pm	0.005	0.0015
Output current, max. load, \pm	50mA all battery operated; line-only models, 30mA	
Resolution ⁽³⁾ , as constant current source, per step (LSD):		
1V range	$10nA^*$	$1nA^*$
10V range	$100nA^*$	$10nA^*$
Accuracy ⁽²⁾ , as a constant current source, %, \pm	0.008*	0.0045*
T.C., output EMF (20°C-45°C):	Typ., ppm/°C, \pm Max., ppm/°C, \pm	
	2 5	0.7 1.5
Output stability ⁽⁴⁾ , EMF:	ppm/24 hrs., \pm ppm/year, \pm	
	10 25	5 15
Noise & Ripple ⁽⁵⁾	ppm Or μV peak	
	10 30	2 15
Output Z, voltage mode, typ., dc	$50\mu\Omega$	
Input voltage, line operation/recharge	115V or $230V\pm 10\%$, 50Hz to 440 Hz, specify voltage	
Line reg. ⁽⁶⁾ , 105-125V, ppm \pm	1.0	0.5
Load reg., no load to full load, peak (ppm)	1 ppm \pm $1\mu V$ peak	
Isolation	Floating output. Either terminal may be grounded. Leakage $10^4 M\Omega$ typ. @ 25°C, 50% R.H. Either terminal may be guarded up to 500V with respect to ground.	
Warm-up time ⁽⁷⁾ (1 hr. for max. stability)	60 sec. minimum (45 mins. for max. stability)	

(1) Of actual setting: $\pm 5\mu V$ max. possible offset @ 25°C, nom. line voltage or battery condition, no load, after warm-up ($\pm \mu V$ on 10V range of DAS-45/45CC).

(2) Of actual setting: plus the effect of $-5\mu V$ max. possible offset across the integral sensing resistor @ 25°C, nom. line voltage or battery condition, after warm-up.

(3) Use only on 1V range. Compliance voltage is 12V.

(4) After 60 minute warm-up at constant room temperature.

(5) Whichever (ppm or μV) is greater. Exclusive of random transients. DC to 10kHz.

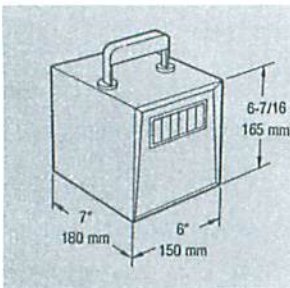
(6) Not applicable to battery operation.

(7) For utmost stability these instruments should be left "ON" all the time.

DIMENSIONS/WEIGHTS

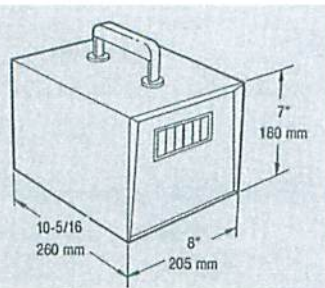
DAS 56, 57 (non-battery)

(Use with RMA-40 Rack Adaptor)



DAS 56, 57 (battery op.)

(Use with RMA-60 Rack Adaptor)



Unit weights:

DAS 56, 57 10 lbs. (4.5 kg)

DAS 56, 57 (battery op.) 15 lbs. (6.8 kg)



General Resistance
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