



Woodruff Scientific Inc

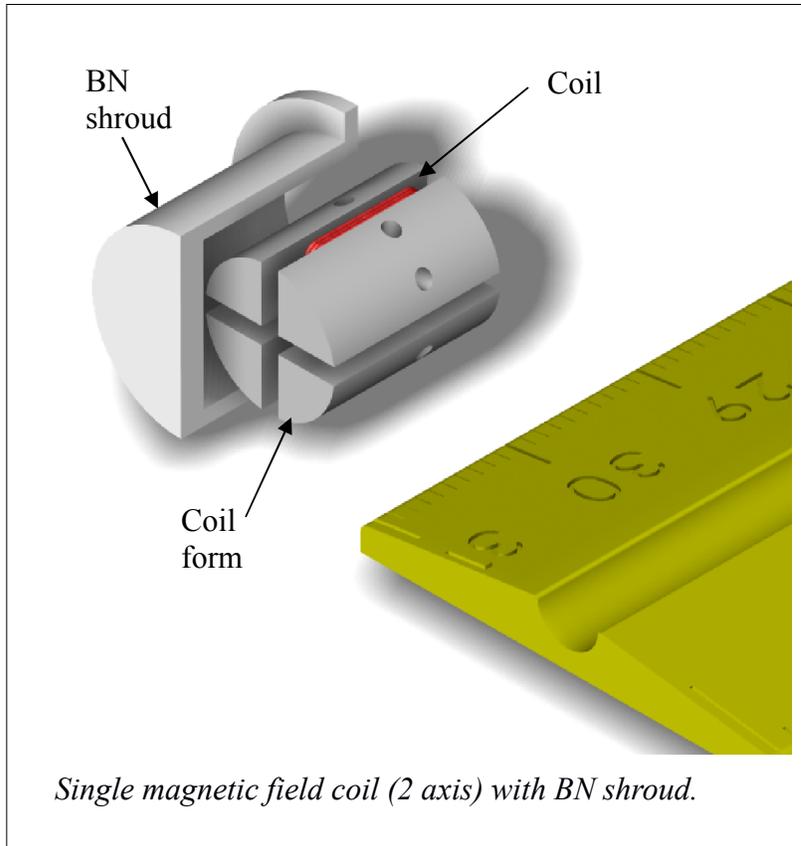
4000 Aurora Ave N,
 Suites 5 & 6, Seattle, WA 98103
 (206) 905 9477 8am to 5pm Pacific
sales@woodruffscientific.com
<http://www.woodruffscientific.com>

Model number(s): M1-B-Single

Descriptive name: Single B-dot coils two directions on plastic form

Features:

- Measure Magnetic Field Strength (dB/dt)
- Single piece construction
- Slotted for windings in 2 or 3 directions
- Electrostatic shielding standard
- Wound with low errors (custom tolerance)
- Options for wire (e.g. polyimide clad copper)
- Options for form material (inc 3D printed)
- Harnessing lengths custom
- Custom sizing/configurations available
- Shrouds (thin wall SS / alumina / boron nitride)
- Reciprocating (bellows inserter / static installation /)
- Operating environment (air / low vacuum / UHV)



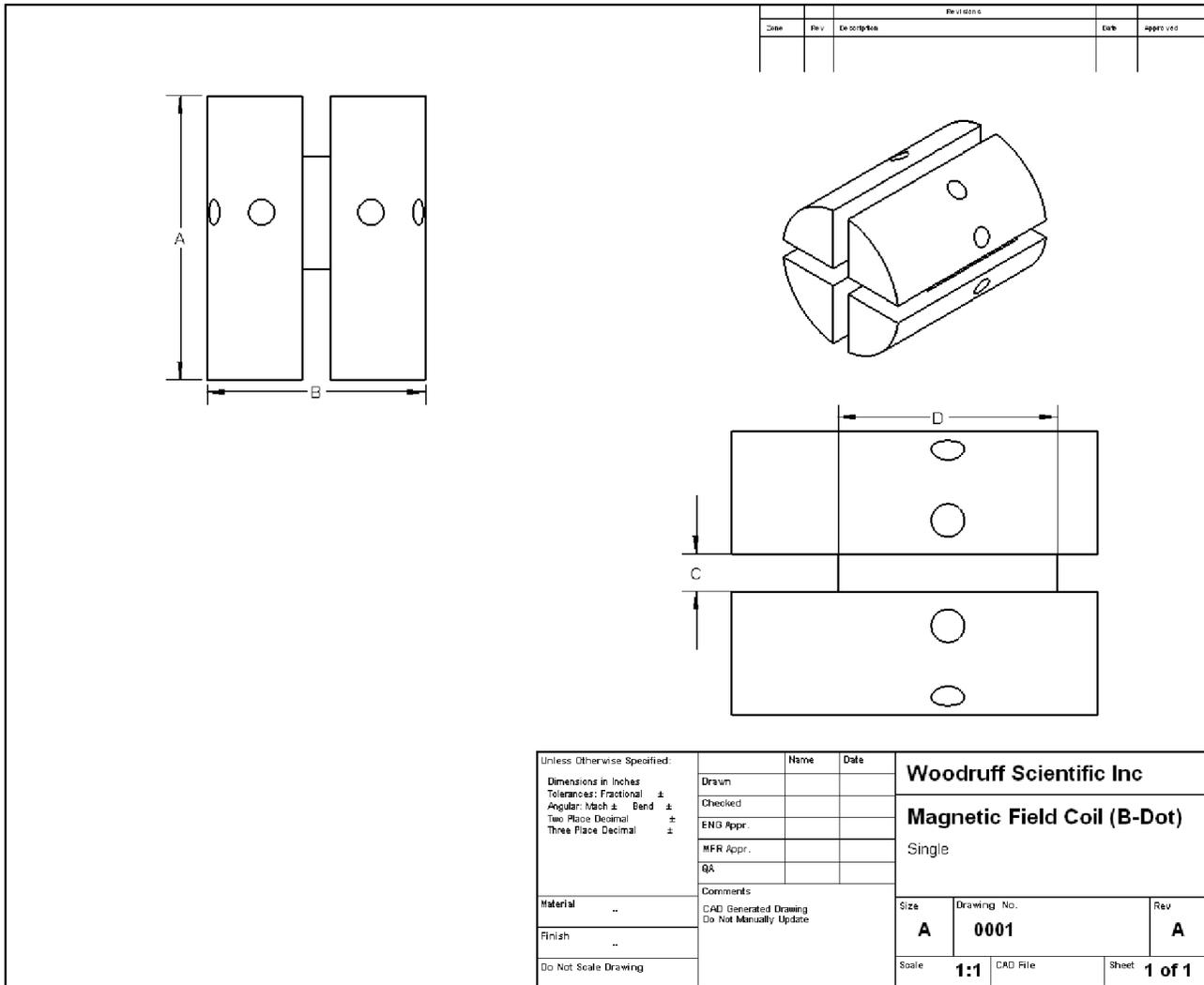
Operational characteristics:

Coil length	L	m	0.003	0.01	0.01	0.1	0.001
Wire thickness	dr	m	0.00001	0.0001	0.0001	0.0001	0.0001
Coil Area	A	m ²	0.0001	0.001	0.001	0.001	0.00002
Number of turns	N		20	5	5	5	5
Active area	nA	m ²	0.002	0.005	0.005	0.005	0.0001
Inductance	L_coil	H	0.16	0.003	0.003	0.0003	0.03
Resistance	R		3.592759042	0.028403	0.028403	0.028403	0.004017



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Engineering Drawing

Notes:

1. Mounting holes are sized as a clearance fit for a 1/4-20 screw
2. For higher power operation in steady state, attach coils to suitable heat sink

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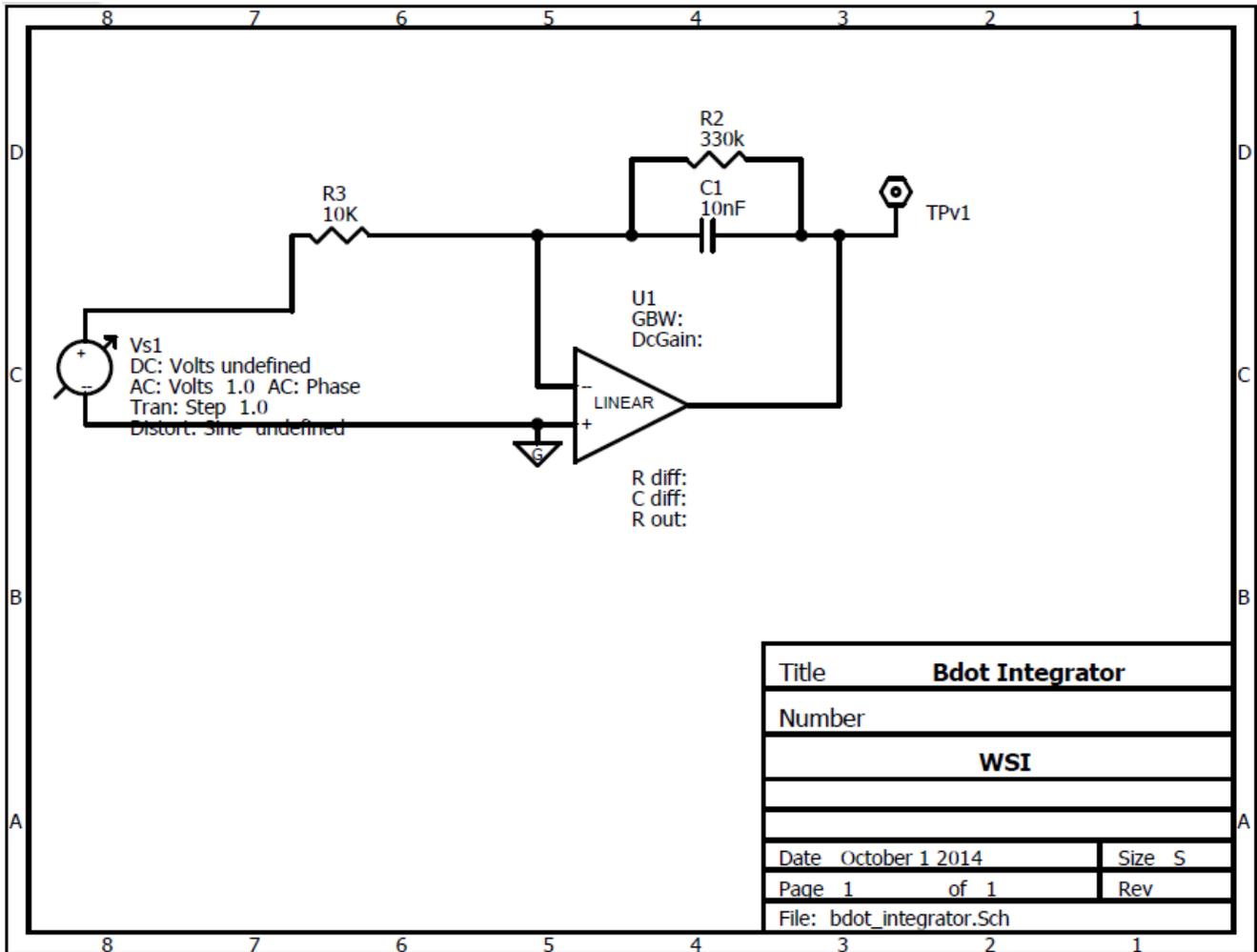
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- Electrical connections to the coil are made with 1/4" lugs, soldered to coil winding



Circuit - Integrator



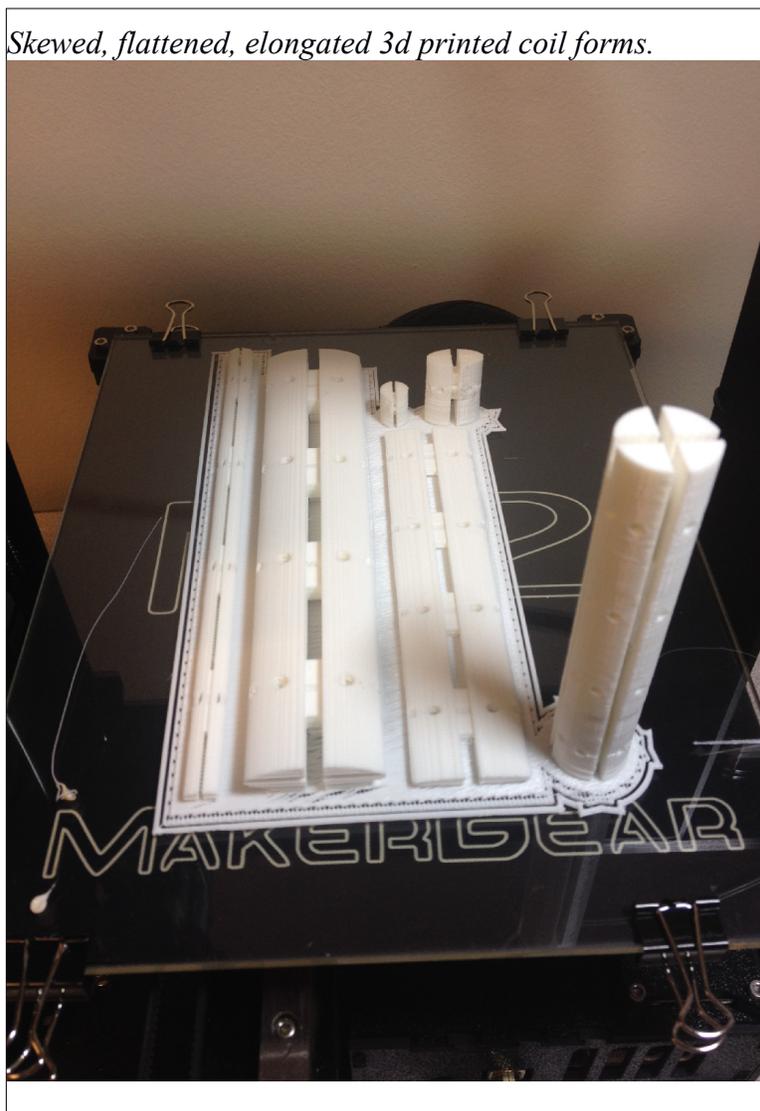
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Skewed, flattened, elongated 3d printed coil forms.





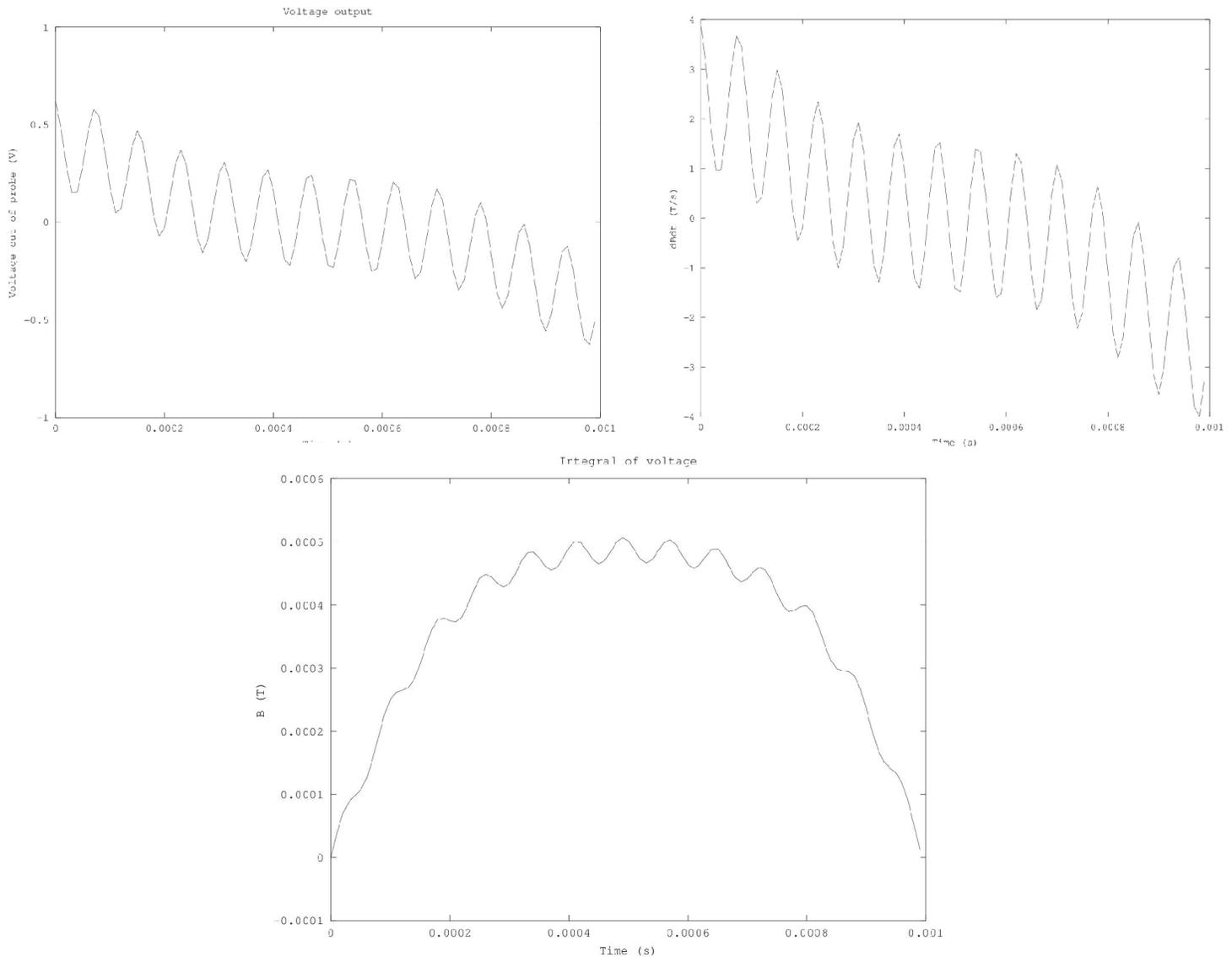
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Examples of data acquisition – voltages $V(t)$ converted to dB/dt by dividing through by nA , then integrated to recover $B(t)$.



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