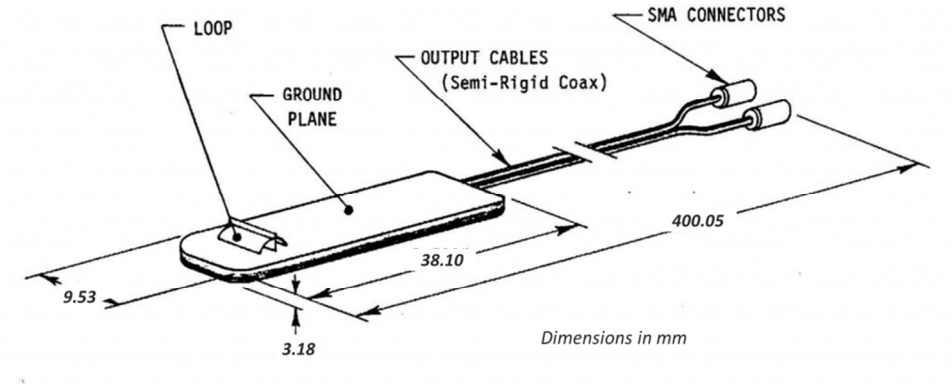
B-S25 surface current magnetic field sensor

PRODYN ground plane/surface current type magnetic field sensors can be used as a B-DOT sensor or to measure the time rate-of-change of surface current density. The sensor consists of a half-cylinder loop on a base plate that when mounted to a conducting surface produces a voltage output in response to a time variant B-field. Each sensor has a parallel-series wiring configuration that cancels the electric field induced signals and makes the sensor's output signal the result of only the magnetic field.



The PRODYN model BS25 is a half loop high frequency sensor. The loop area is encapsulated to provide breakdown resistance and protection from the environment.

SPECIFICATION

	B-S25
Equivalent Area (Aeq)	4.5 x 10^{-6} m^2
Freq. Resp.(3 db pt.)	11GHz
Maximum output (peak)	+ 500V rms
Risetime (tr 10-90)	<0.32ns
Output connector(s)	SMA (male)

EQUATION

$$V_0 = A_{eq}\mu_0 \frac{dJ_s}{dt} \sin\theta$$

Where V_o = sensor output (volts), A_{eq} = sensor equivalent area (m^2), μ_0 = permeability of free space (4π x10^{-7} H/m), sin θ = angle between axis and J_s vector