MAGNETIC FIELD SENSOR ($\dot{B}$)
(Free Field)

MODEL B-24

DESCRIPTION

The PRODYN Model B-24 is a full loop magnetic sensor that measures the time rate-of-change of a magnetic field . This very small portable device was designed specifically for making high frequency free field measurements. For this type of measurement and because the sensor is fragile due to its size, it should be supported by dielectric materials and placed a minimum of two sensor diameters from conducting surface. The sensing area is encapsulated to provide breakdown resistance and protection from the environment. The sensor is a passive device, therefore, an external power source is not required.

The equation relating to the sensor is:

$$V_o = \overrightarrow{A_{eq}} \cdot \frac{\overrightarrow{dB}}{dt} = \text{sensor output (in volts)}$$

where

$\overrightarrow{A_{eq}}$ = sensor equivalent area (m^2)

$\vec{B}$ = magnetic flux density vector (teslas)

ELECTRICAL SPECIFICATIONS

Equivalent Area (A_{eq}, Differential)	9×10^{-6}
Frequency Response (3dB point)	$\sim 8.5 GH_z$
Risetime (t_r 10-90)	$\sim .041$ NS
Maximum Output (peak)	±500v
Output Connectors	SMA (Male)

PHYSICAL SPECIFICATIONS