MODEL FD-5 SERIES D-DOT SENSORS

Prodyn model FD-5 sensors are small high frequency D-Dot sensors designed to measure time rate of change of electric displacement from near DC to > 50 GHz. Model FD-5A is designed to be used in a ground plane measurement, however, it can be used in a free-field application if the electric field direction is known. Model FD-5C was designed to be used for point by point measurements and other free-field applications. This model has an output tube with internal ferrite for dampening extraneous noise. Please refer to Prodyn Application Note 895 or supplement dated September 2012 for additional technical information.

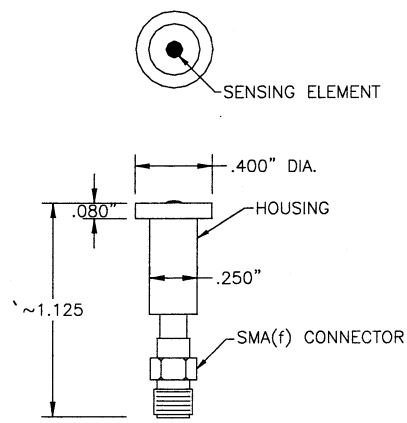
The equation pertinent to these devices is:

$$V_o = R\ Aeq \frac{dD}{dt} \quad \text{or} \quad V_o = R\ Aeq \frac{dqs}{dt}$$

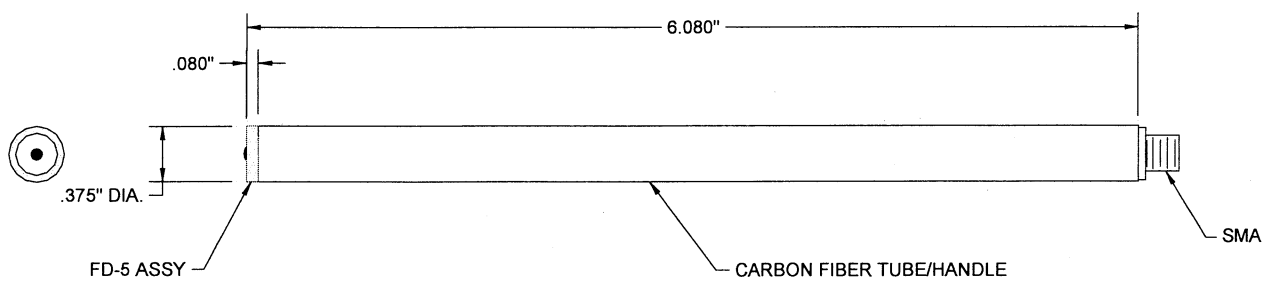
Where: V_o = sensor output (Volts)
R = sensor characteristic load impedance (50 ohms)
Aeq = sensor equivalent area (m^2)
D = Magnitude of electric displacement vector ($\vec{D} = \varepsilon_o \vec{E}$ in Coul/m^2)
qs = surface current density (Coul/m^2)

Electrical Specifications

Equivalent Area (Aeq): $1.54 \times 10^{-5}\ m^2$
Frequency Response (3db point): > 50 GHz
Risetime (t_r 10-90): .007ns
Max Output: +/- 500V
Output Connector: SMA female



Model FD-5A



Model FD-5C