The classical Gauss-Bonnet Theorem identifies the global integral of Gauss curvature $G$ on a surface $M$ with a topological invariant. K.P. Grotemeyer (1963) gave a moment variant of Gauss-Bonnet for a closed surface in $\mathbb{R}^3$: $\int_M (\vec{a} \cdot \vec{n})^2 G \, dv = \frac{2\pi}{3} \chi(M)$. Here $\vec{n}$ is the normal vector field and $\vec{a}$ is a constant unit vector. We give an extension of this result to even-dimensional hypersurfaces in space forms. (Received September 05, 2006)