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Vogl

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(54) **INERTIAL MEASUREMENT UNIT AND
DIAGNOSTIC SYSTEM**

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(58) **Field of Classification Search**

CPC G01C 19/5712; G01P 15/18
See application file for complete search history.

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(57) **ABSTRACT**

A an inertial measurement unit determines performance
degradation of a linear axis and includes: an accelerometer
that, when disposed on a motion member of the linear axis
including the motion member and a base member: measures
acceleration of the motion member; and provides a displace-
ment of the motion member in response to movement of the
motion member; and a rate gyroscope that: measures an
angular rate of movement of the motion member; and
provides a yield angle for the motion member in response to
movement of the motion member, wherein the displacement
and yield angle determine performance degradation of the
linear axis based on an error in linear movement of the
motion member along the base member.

17 Claims, 29 Drawing Sheets

