Machinery Protection Systems

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Suggested revisions are invited and should be submitted to the Standards Department, API, 1220 L Street, NW, Washington, DC 20005, standards@api.org.

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1 Scope

1.1 General

This standard covers the minimum requirements for a machinery protection system (MPS) measuring radial shaft vibration, casing vibration, shaft axial position, shaft rotational speed, piston rod drop, phase reference, overspeed, surge detection, and critical machinery temperatures (such as bearing metal and motor windings). It covers requirements for hardware (transducer and monitor systems), installation, documentation, and testing.

NOTE A bullet (●) at the beginning of a subsection or paragraph indicates that either a decision is required or further information is to be provided by the purchaser. This information should be indicated on the datasheets (see Annex A); otherwise, it should be stated in the quotation request or in the order.

1.2 Alternative Designs

The MPS vendor may offer alternative designs. Equivalent metric dimensions and fasteners may be substituted as mutually agreed upon by the purchaser and the vendor.

1.3 Conflicting Requirements

In case of conflict between this standard and the inquiry or order, the information included in the order shall govern.

2 Normative References

2.1 The editions of the following standards, codes, and specifications that are in effect at the time of publication of this standard shall, to the extent specified herein, form a part of this standard. The applicability of changes in standards, codes, and specifications that occur after the inquiry shall be mutually agreed upon by the purchaser and the MPS vendor.

API Recommended Practice 552, *Transmission Systems*

API Standard 610, *Centrifugal Pumps for Petroleum, Petrochemical and Natural Gas Industries*

API Standard 611, *General Purpose Steam Turbines for Petroleum, Chemical, and Gas Industry Systems*

API Standard 612, *Petroleum Petrochemical and Natural Gas Industries—Steam Turbines—Special-Purpose Applications*

ANSI MC96.1 [1], *Temperature Measurement Thermocouples*

ASME Y14.2M [2], *Line Conventions and Lettering*

EN 61000-6-2:2005 [3], *Electromagnetic Compatibility Generic Immunity Standard; Part 2: Industrial Environment*

ICEA S-61-402 [4], *Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy*

IEC 60079 [5], (all parts) *Explosive atmospheres*

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1 American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, New York 10036, www.ansi.org.
2 ASME International, 3 Park Avenue, New York, New York 10016-5990, www.asme.org.
3 European Committee for Standardization, Rue de Stassart 36, B-1050 Brussels, Belgium, www.cenorm.be.
4 Insulated Cable Engineers Association, P.O. Box 1568, Carrollton, Georgia 30112, www.icea.net.