



Standard Specification for Transducers, Pressure and Differential, Pressure, Electrical and Fiber-Optic¹

This standard is issued under the fixed designation F2070; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers the requirements for pressure and differential pressure transducers for general applications.

1.2 Special requirements for naval shipboard applications are included in Supplementary Requirements S1, S2, and S3.

1.3 The values stated in SI units are to be regarded as standard. The values given in parentheses are mathematical conversions to inch-pound units that are provided for information only and are not considered standard. Where information is to be specified, it shall be stated in SI units.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

D3951 Practice for Commercial Packaging

2.2 ANSI/ISA Standards:³

ANSI/ISA S37.1 Electrical Transducer Nomenclature and Terminology

¹ This specification is under the jurisdiction of ASTM Committee F25 on Ships and Marine Technology and is the direct responsibility of Subcommittee F25.10 on Electrical.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

2.3 ISO Standards:⁴

ISO 9001 Quality System—Model for Quality Assurance in Design/Development, Production, Installation, and Servicing

3. Terminology

3.1 Terms marked with “ANSI/ISA S37.1” are taken directly from ANSI/ISA S37.1 (R-1982) and are included for the convenience of the user.

3.2 Definitions:

3.2.1 Terminology consistent with ANSI/ISA S37.1 shall apply, except as modified by the definitions listed as follows:

3.2.2 *absolute pressure, n*—pressure measured relative to zero pressure (vacuum). **ANSI/ISA S37.1**

3.2.3 *ambient conditions, n*—conditions such as pressure and temperature of the medium surrounding the case of the transducer. **ANSI/ISA S37.1**

3.2.4 *burst pressure, n*—the maximum pressure applied to the transducer sensing element without rupture of the sensing element or transducer case as specified.

3.2.5 *calibration, n*—the test during which known values of measurands are applied to the transducer and corresponding output readings are recorded under specified conditions. **ANSI/ISA S37.1**

3.2.6 *common mode pressure, n*—the common mode pressure is static line pressure applied simultaneously to both pressure sides of the transducer for the differential pressure transducer only.

3.2.7 *differential pressure, n*—the difference in pressure between two points of measurement. **ANSI/ISA S37.1**

3.2.8 *environmental conditions, n*—specified external conditions, such as shock, vibration, and temperature, to which a transducer may be exposed during shipping, storage, handling, and operation. **ANSI/ISA S37.1**

3.2.9 *error, n*—the algebraic difference between the indicated value and the true value of the measurand. **ANSI/ISA S37.1**

⁴ Available from International Organization for Standardization (ISO), ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland, <http://www.iso.org>.