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Part 8-1: Pressure measurement - Pressure sensors based on fibre Bragg gratings

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Fibre optic sensors - Part 8-1: Pressure measurement - Pressure sensors based on fibre Bragg gratings

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IEC 61757-7-1 has been prepared by subcommittee 86C: Fibre optic systems, sensing and active devices, of IEC technical committee 86: Fibre optics. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
86C/1970/CDV	86C/1993/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 61757 series, published under the general title *Fibre optic sensors*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

– reconfirmed,

– withdrawn, or

– revised.

INTRODUCTION

Generic specifications for fibre optic sensors are defined in IEC 61757.

The individual parts of the IEC 61757 series are numbered as IEC 61757-M-T, where M denotes the measurand and T the technology. The IEC 61757-8-T series deals with pressure measurements.

1 Scope

This part of IEC 61757 defines the terminology, structure, and measurement methods of optical pressure sensors for gases or liquids based on a diaphragm in combination with fibre Bragg gratings (FBGs) as the sensing element. This document also specifies the most important features and characteristics of these fibre optic pressure sensors and defines procedures for measuring these features and characteristics.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2 (all parts), *Environmental testing - Part 2: Tests*

IEC 61300-2 (all parts), *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2: Tests*

IEC 61754 (all parts), *Fibre optic interconnecting devices and passive components - Fibre optic connector interfaces*

IEC 61757, *Fibre optic sensors - Generic specification*

IEC 61757-1-1:2020, *Fibre optic sensors - Part 1-1: Strain measurement - Strain sensors based on fibre Bragg gratings*

IEC 62129-1, *Calibration of wavelength/optical frequency measurement instruments - Part 1: Optical spectrum analyzers*

IEC 62129-2, *Calibration of wavelength/optical frequency measurement instruments - Part 2: Michelson interferometer single wavelength meters*

ISO/IEC GUIDE 98-3, *Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

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IEC 60050-113:2011, *International Electrotechnical Vocabulary - Part 113: Physics for electrotechnology,* available at https://www.electropedia.org

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