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ILNAS-EN 50402:2017

Electrical apparatus for the detection and measurement of combustible or toxic gases or vapours or of oxygen - Requirements on the functional safety

Matériel électrique pour la détection et la mesure des gaz ou vapeurs combustibles ou toxiques ou de l'oxygène - Exigences relatives à la sécurité fonctionnelle des

Elektrische Geräte für die Detektion und Messung von brennbaren oder toxischen Gasen und Dämpfen oder Sauerstoff - Anforderungen an die funktionale

03/2017

National Foreword

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ILNAS-EN 50402:2017

EUROPEAN STANDARD EN 50402

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English Version

Electrical apparatus for the detection and measurement of combustible or toxic gases or vapours or of oxygen - Requirements on the functional safety of gas detection systems

Matériel électrique pour la détection et la mesure des gaz ou vapeurs combustibles ou toxiques, ou de l'oxygène - Exigences relatives à la fonction de sécurité des systèmes de détection de gaz

Elektrische Geräte für die Detektion und Messung von brennbaren oder toxischen Gasen und Dämpfen oder Sauerstoff - Anforderungen an die funktionale Sicherheit von Gaswarnsystemen

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 50402:2017) has been prepared by CLC/SC 31-9 “Electrical apparatus for the detection and measurement of combustible gases to be used in industrial and commercial potentially explosive atmospheres” of CLC/TC 31 “Electrical apparatus for potentially explosive atmospheres” and by CLC/TC 216 “Gas detectors”.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2018-02-04
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2020-02-04

This document supersedes EN 50402:2005.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

EN 50402:2017 includes the following significant technical changes with respect to EN 50402:2005:

— In general, the standard is updated to consider the modifications in the second edition of EN 61508 for hardware and software. Route 2 of the second edition of EN 61508 will not be permitted for gas detection equipment.

— The standard is updated for the SIL 1 requirements to be in line with the second edition of EN 50271 specifying the minimum requirements for functional safety for performance approved gas detectors, gas detection apparatus and complete gas detection systems.

— The latest revisions of the metrological standards have been considered.

— SIL 4 has been deleted as being not appropriate to gas detection.

— Clauses 4 and 5 have been updated for more detailed specification.

— Clause 6 for software is new.

— Clauses 7 to 11 are restructured for clarification of requirements and relation to EN 61508.

— Clause 10 is specifying more details for the customer information.

— The former normative Annex D is now Clause 12.

— The former informative Annex A has been deleted. Relevant text was moved to Clauses 7 to 9.

— The new informative Annex D is providing information on failure modes of sensing elements.