### AMERICAN NATIONAL STANDARD

ANSI/ISA-61241-0 (12.10.02)-2006 (R2015)

Electrical Apparatus for Use in Zone 20, Zone 21 and Zone 22 Hazardous (Classified) Locations – General Requirements

Approved 29 September 2015

ANSI/ISA-61241-0 (12.10.02)-2006 (R2015), Electrical Apparatus for Use in Zone 20, Zone 21 and Zone 22 Hazardous (Classified) Locations – General Requirements

ISBN: 978-1-941546-37-6

Copyright © 2015 by IEC and ISA. Not for resale. Printed in the United States of America. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means (electronic mechanical, photocopying, recording, or otherwise), without the prior written permission of the Publisher. ISA

67 Alexander Drive P.O. Box 12277 Research Triangle Park, North Carolina 27709

# Preface

This preface, as well as all footnotes and annexes, is included for information purposes and is not part of ANSI/ISA-61241-0 (12.10.02)-2015.

This document has been prepared as part of the service of ISA toward a goal of uniformity in the field of instrumentation. To be of real value, this document should not be static but should be subject to periodic review. Toward this end, the Society welcomes all comments and criticisms and asks that they be addressed to the Secretary, Standards and Practices Board; ISA; 67 Alexander Drive; P. O. Box 12277; Research Triangle Park, NC 27709; Telephone (919) 549-8411; Fax (919) 549-8288; E-mail: standards@isa.org.

The ISA Standards and Practices Department is aware of the growing need for attention to the metric system of units in general, and the International System of Units (SI) in particular, in the preparation of instrumentation standards. The Department is further aware of the benefits to USA users of ISA standards of incorporating suitable references to the SI (and the metric system) in their business and professional dealings with other countries. Toward this end, this Department will endeavor to introduce SI-acceptable metric units in all new and revised standards, recommended practices, and technical reports to the greatest extent possible. *Standard for Use of the International System of Units (SI): The Modern Metric System*, published by the American Society for Testing & Materials as IEEE/ASTM SI 10-97, and future revisions, will be the reference guide for definitions, symbols, abbreviations, and conversion factors.

It is the policy of ISA to encourage and welcome the participation of all concerned individuals and interests in the development of ISA standards, recommended practices, and technical reports. Participation in the ISA standards-making process by an individual in no way constitutes endorsement by the employer of that individual, of ISA, or of any of the standards, recommended practices, and technical reports that ISA develops.

CAUTION — ISA DOES NOT TAKE ANY POSITION WITH RESPECT TO THE EXISTENCE OR VALIDITY OF ANY PATENT RIGHTS ASSERTED IN CONNECTION WITH THIS DOCUMENT, AND ISA DISCLAIMS LIABILITY FOR THE INFRINGEMENT OF ANY PATENT RESULTING FROM THE USE OF THIS DOCUMENT. USERS ARE ADVISED THAT DETERMINATION OF THE VALIDITY OF ANY PATENT RIGHTS, AND THE RISK OF INFRINGEMENT OF SUCH RIGHTS, IS ENTIRELY THEIR OWN RESPONSIBILITY.

PURSUANT TO ISA'S PATENT POLICY, ONE OR MORE PATENT HOLDERS OR PATENT APPLICANTS MAY HAVE DISCLOSED PATENTS THAT COULD BE INFRINGED BY USE OF THIS DOCUMENT AND EXECUTED A LETTER OF ASSURANCE COMMITTING TO THE GRANTING OF A LICENSE ON A WORLDWIDE, NON-DISCRIMINATORY BASIS, WITH A FAIR AND REASONABLE ROYALTY RATE AND FAIR AND REASONABLE TERMS AND CONDITIONS. FOR MORE INFORMATION ON SUCH DISCLOSURES AND LETTERS OF ASSURANCE, CONTACT ISA OR VISIT WWW.ISA.ORG/STANDARDSPATENTS.

OTHER PATENTS OR PATENT CLAIMS MAY EXIST FOR WHICH A DISCLOSURE OR LETTER OF ASSURANCE HAS NOT BEEN RECEIVED. ISA IS NOT RESPONSIBLE FOR IDENTIFYING PATENTS OR PATENT APPLICATIONS FOR WHICH A LICENSE MAY BE REQUIRED, FOR CONDUCTING INQUIRIES INTO THE LEGAL VALIDITY OR SCOPE OF PATENTS, OR DETERMINING WHETHER ANY LICENSING TERMS OR CONDITIONS PROVIDED IN CONNECTION WITH SUBMISSION OF A LETTER OF ASSURANCE, IF ANY, OR IN ANY LICENSING AGREEMENTS ARE REASONABLE OR NON-DISCRIMINATORY.

ISA REQUESTS THAT ANYONE REVIEWING THIS DOCUMENT WHO IS AWARE OF ANY PATENTS THAT MAY IMPACT IMPLEMENTATION OF THE DOCUMENT NOTIFY THE ISA STANDARDS AND PRACTICES DEPARTMENT OF THE PATENT AND ITS OWNER.

ADDITIONALLY, THE USE OF THIS DOCUMENT MAY INVOLVE HAZARDOUS MATERIALS, OPERATIONS OR EQUIPMENT. THE DOCUMENT CANNOT ANTICIPATE ALL POSSIBLE APPLICATIONS OR ADDRESS ALL POSSIBLE SAFETY ISSUES ASSOCIATED WITH USE IN HAZARDOUS CONDITIONS. THE USER OF THIS DOCUMENT MUST EXERCISE SOUND PROFESSIONAL JUDGMENT CONCERNING ITS USE AND APPLICABILITY UNDER THE USER'S PARTICULAR CIRCUMSTANCES. THE USER MUST ALSO CONSIDER THE APPLICABILITY OF ANY GOVERNMENTAL REGULATORY LIMITATIONS AND ESTABLISHED SAFETY AND HEALTH PRACTICES BEFORE IMPLEMENTING THIS DOCUMENT.

THE USER OF THIS DOCUMENT SHOULD BE AWARE THAT THIS DOCUMENT MAY BE IMPACTED BY ELECTRONIC SECURITY ISSUES. THE COMMITTEE HAS NOT YET ADDRESSED THE POTENTIAL ISSUES IN THIS VERSION.

The following people served as members of ISA12.10:

## NAME

NAME	COMPANY
A. Engler, Chair	Det Norske Veritas DNV
M. Coppler,* Managing Director	Ametek Inc.
S. Arnold*	Ametek Drexelbrook
D. Bishop	David N Bishop Consultant
E. Briesch	Underwriters Laboratories Inc.
R. Buschart	Cable Tray Institute
R. Fontaine	FM Approvals
J. Kuczka	Killark
E. Massey	Rockwell Automation
A. Page	MSHA Approval & Certification Center
P. Schimmoeller	CSA International
•	
T. Schnaare	Rosemount Inc.
D. Wechsler	Dow Chemical Company
R. Wigg	E-x Solutions International Pty. Ltd.

\* One vote per company.

The following people served as members of ISA12:

NAME	COMPANY
T. Schnaare, Chair	Rosemount Inc.
W. Lawrence, Vice Chair	FM Approvals
M. Coppler, Managing Director	Ametek Inc.
N. Abbatiello	Optimation Technology
D. Ankele	Underwriters Laboratories Inc.
A. Ballard	Crouse Hinds Division of Cooper Industries
D. Bishop	David N Bishop Consultant
H. Bockle	R. Stahl Inc.
K. Boegli	Phoenix Contact Inc.
D. Burns	Shell Exploration & Production Company
R. Buschart	Cable Tray Institute
R. Cardinal	Bently Nevada LLC
C. Casso	Nabors Industries
J. Cospolich	Waldemar S Nelson & Company Inc.
S. Czaniecki	Intrinsic Safety Concepts Inc.

J. Dolphin	PSC Solutions
T. Dubaniewicz	NIOSH
U. Dugar	Mobil Chemical Company
A. Engler	Det Norske Veritas DNV
W. Fiske	Intertek Testing Services
G. Garcha	GE Energy
D. Hohenstein	Pepperl + Fuchs Inc.
D. Jagger	Bifold-Fluid Power
P. Jonscher	Adalet PLM
F. Kent	Honeywell Inc.
J. Kovscek	Industrial Scientific Corporation
J. Kuczka	Killark
B. Larson	Turck Inc.
E. Massey	Rockwell Automation
A. Mobley	3M Company
S. Nguyen	Siemens Milltronics Ltd.
A. Page	MSHA Approval & Certification Center
P. Schimmoeller	CSA International
R. Seitz	Artech Engineering
D. Wechsler	Dow Chemical Company
R. Wigg	E-x Solutions International Pty. Ltd.

This standard was approved for publication by the ISA Standards and Practices Board on 18 May 2006.

NAME	COMPANY
I. Verhappen, Vice President	Syncrude Canada Limited
F. Amir	E I Du Pont Company
D. Bishop	David N Bishop Consultant
M. Coppler	Ametek Inc.
B. Dumortier	Schneider Electric
W. Holland	Consultant
E. Icayan	ACES Inc.
A. Iverson	Ivy Optiks
R. Jones	Consultant
K. Lindner	Endress + Hauser Process Solutions AG
V. Maggioli	Feltronics Corporation
T. McAvinew	Jacobs Engineering Group
A. McCauley	Chagrin Valley Controls Inc.
G. McFarland	Emerson Process Mgmt. Pwr & Water Solutions
R. Reimer	Rockwell Automation
N. Sands	E I du Pont
H. Sasajima	Yamatake Corporation
T. Schnaare	Rosemount Inc.
J. Tatera	Tatera & Associates Inc.
R. Webb	Robert C Webb PE
W. Weidman	Worley Parsons
J. Weiss	KEMA Inc.
M. Widmeyer	Stanford Linear Accelerator Center
M. Zielinski	Emerson Process Management

The following members of ISA12 reaffirmed this standard in 2015.

### NAME

NAME
T. Schnaare, Chair
W. Lawrence, Vice Chair
M. Coppler, Managing Director
R. Allen
D. Ankele
K. Boegli
D. Burns
M. Dona
T. Dubaniewicz
D. El Tawy
W. Fiske
G. Garcha
R. Holub
P. Kovscek
E. Leubner
N. Ludlam
E. Massey
J. Miller
A. Page
R. Seitz
R. Sierra
M. Spencer
•
R. Wigg

## COMPANY

Rosemount Inc. FM Approvals LLC Det Norske Veritas Certification Inc. Honeywell Inc. UL LLC Consultant Shell P&T - Innovation / R&D Santos Ltd. NIOSH Solar Turbines Incorporated Intertek GE Water and Power The DuPont Company Inc. Industrial Scientific Corporation Eaton's Crouse-Hinds Business FM Approvals Ltd. Baldor Electric Company Detector Electronics Corporation Consultant Artech Engineering USCG Columbia Gas Transmission E-x Solutions International Pty. Ltd.

This standard was reaffirmed by the Standards and Practices Board on 7 September 2015.

<ul> <li>NAME</li> <li>N. Sands, Vice President</li> <li>D. Bartusiak</li> <li>P. Brett</li> <li>E. Cosman</li> <li>D. Dunn</li> <li>J. Federlein</li> <li>B. Fitzpatrick</li> <li>J. Gilsinn</li> <li>J. Hauet</li> <li>J. Jamison</li> <li>K. P. Lindner</li> <li>V. Maggioli</li> <li>T. McAvinew</li> <li>V. Mezzano</li> <li>C. Monchinski</li> <li>H. Sasajima</li> <li>T. Schnaare</li> <li>J. Tatera</li> <li>K. Unger</li> <li>I. Verhappen</li> <li>W. Weidman</li> <li>J. Weiss</li> <li>M. Wilkins</li> </ul>	COMPANY DuPont ExxonMobil Research & Engineering Honeywell Inc. OIT Concepts, LLC Phillips 66 Federlein & Assoc. Inc. Wood Group Mustang Kenexis Consulting KB Intelligence Encana Corp. Endress + Hauser Process Solutions AG Feltronics Corp. Instrumentation and Control Engineering, LLC Fluor Corporation Automated Control Concepts Inc. Azbil Corp. Rosemount Inc. Tatera & Associates Inc. Stone Technologies Inc. Orbis Engineering Field Services WCW Consulting Applied Control Solutions LLC Yokogawa IA Global Marketing (USMK)
M. Wilkins D. Zetterberg	
20.0.00.9	

This page intentionally left blank.