

Industrial communication networks - High availability
automation networks - Part 5: Beacon Redundancy
Protocol (BRP)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 62439-5:2018 sisaldab Euroopa standardi EN IEC 62439-5:2018 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 62439-5:2018 consists of the English text of the European standard EN IEC 62439-5:2018.
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ICS 25.040, 35.040

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English Version

**Industrial communication networks - High availability automation
networks - Part 5: Beacon Redundancy Protocol (BRP)
(IEC 62439-5:2016)**

Réseaux de communication industrielle - Réseaux
d'automatisme à haute disponibilité - Partie 5: Protocole de
redondance à balise (BRP)
(IEC 62439-5:2016)

Industrielle Kommunikationsnetze - Hochverfügbare
Automatisierungsnetze - Teil 5: Funkbaken-Redundanz-
Protokoll (BRP)
(IEC 62439-5:2016)

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

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European foreword

The text of document 65C/834/FDIS, future edition 2 of IEC 62439-5:2016, prepared by subcommittee 65C: Industrial networks, of IEC technical committee 65: Industrial-process measurement, control and automation was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62439-5:2017.

The following dates are fixed:

- latest date by which the document has to be (dop) 2018-08-02
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publication of an identical national
standard or by endorsement
- latest date by which the national (dow) 2021-02-02
standards conflicting with the
document have to be withdrawn

This document supersedes EN 62439-5:2010.

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Endorsement notice

The text of the International Standard IEC 62439-5:2016 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61158 (all parts)	NOTE	Harmonized as EN 61158 (all parts).
IEC 62439-2	NOTE	Harmonized as EN 62439-4 (not modified).
IEC 62439-3	NOTE	Harmonized as EN 62439-6 (not modified).
IEC 62439-4	NOTE	Harmonized as EN 62439-4 (not modified).
IEC 62439-6	NOTE	Harmonized as EN 62439-4 (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-191	-	International Electrotechnical Vocabulary - Chapter 191: Dependability and quality of service	-	-
IEC 62439-1	-	Industrial communication networks - High availability automation networks -- Part 1: General concepts and calculation methods	EN 62439-1	-
ISO/IEC 10164-1	-	Information technology; Open Systems Interconnection; systems management: object management function	-	-
ISO/IEC/TR 8802-1	-	Information technology -- Telecommunications and information exchange between systems -- Local and metropolitan area networks -- Specific requirements -- Part 1: Overview of Local Area Network Standards	-	-
ISO/IEC/IEEE 8802-3	2014	Standard for Ethernet	-	-
IEEE 802.1D	-	IEEE Standard for local and metropolitan area networks - Media Access Control (MAC) Bridges	-	-
IEEE 802.1Q	-	IEEE Standard for Local and metropolitan area networks - Media Access Control (MAC) Bridges and Virtual Bridges	-	-

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INTRODUCTION

The IEC 62439 series specifies relevant principles for high availability networks that meet the requirements for industrial automation networks.

In the fault-free state of the network, the protocols of the IEC 62439 series provide ISO/IEC/IEEE 8802-3 (IEEE 802.3) compatible, reliable data communication, and preserve determinism of real-time data communication. In cases of fault, removal, and insertion of a component, they provide deterministic recovery times.

These protocols retain fully the typical Ethernet communication capabilities as used in the office world, so that the software involved remains applicable.

The market is in need of several network solutions, each with different performance characteristics and functional capabilities, matching diverse application requirements. These solutions support different redundancy topologies and mechanisms which are introduced in IEC 62439-1 and specified in the other parts of the IEC 62439 series. IEC 62439-1 also distinguishes between the different solutions, giving guidance to the user.

The IEC 62439 series follows the general structure and terms of the IEC 61158 series.

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of patents concerning fault-tolerant Ethernet provided through the use of special interfaces providing duplicate ports that may be alternatively enabled with the same network address. Switching between the ports corrects single faults in a two-way redundant system. This is given in Clauses 5 and 6.

These patents are listed in the table below, where the [xx] notation indicates the holder of the patent rights:

US 7,817,538 B2	[RA]	Fault-tolerant Ethernet network
US 8,493,840	[RA]	Fault-tolerant Ethernet network

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[RA] Rockwell Automation Technologies, Inc.
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 Mayfield Heights
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