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Lighting systems - Electro-mechanical interfaces -
Part 2-1: Four-pin extra-low-voltage twist-lock interface Type ZB18

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CONTENTS

FOREWORD 4
INTRODUCTION 6
1 Scope 7
2 Normative references 7
3 Terms and definitions 7
4 General 8
5 Marking 8
5.1 Product identification 8
5.2 Product characteristics 8
5.3 Durability and legibility 8
6 Electro-mechanical interface overview and dimensions 9
6.1 Overview 9
6.2 Mechanical interface dimensions 9
6.2.1 Luminaire extension base plate 9
6.2.2 Luminaire extension cap 12
6.2.3 Luminaire extension module 12
6.2.4 Luminaire extension receptacle 12
7 Mechanical safety 13
7.1 Physical protection during insertion and removal of lighting system devices 13
7.1.1 General 13
7.1.2 Withstand torque test 14
7.2 Physical safety in latching release mechanisms 14
7.3 Protection against damaging pins during insertion 14
7.4 Mechanical strength 14
7.4.1 General 14
7.4.2 Base plate tests 14
7.4.3 Receptacle tests 14
7.5 Retention force and torque 14
7.5.1 General requirements 14
7.5.2 Receptacle tests 14
7.5.3 Base plate tests 15
7.6 Bending moment 15
7.6.1 Base plate bending moment 15
7.6.2 Receptacle bending moment 15
7.6.3 Compliance 15
8 Electrical safety 15
8.1 Electric shock protection 15
8.2 Electric insulation 15
8.2.1 General 15
8.2.2 Insulation classification 15
8.2.3 Electric strength 15
8.2.4 Creepage and clearance distances 16
8.2.5 Live insertion and disconnection 16
8.3 Electrical interchangeability 16
8.4 Endurance tests 16
8.4.1 Heat aging 16

8.4.2 Contact resistance 16
9 Ambient condition safety 17
9.1 Ingress protection – IP rating 17
9.1.1 General 17
9.1.2 IP test – Receptacles 17
9.1.3 IP test – Base plate or protective cover 17
9.2 Rough service 17
10 Construction 17
10.1 Current carrying parts 17
10.2 Resistance to heat, fire and tracking 17
10.3 Polarisation 17
10.4 Protection against corrosion 17
Annex A (normative) Test sequence and gauges 18
A.1 General 18
A.2 Luminaire extension module base plate (LEX-BP) gauges 19
A.2.1 Mechanical stop gauge 19
A.2.2 Gauge receptacle 20
A.3 Luminaire extension receptacle (LEX-R) gauges 20
A.3.1 Retention gauge 20
A.3.2 Reference luminaire extension module 21
A.3.3 Contact making 21
A.3.4 Aging module 22
Annex B (informative) Information for luminaire and luminaire extension module design 23
B.1 General 23
B.2 Luminaire extension receptacle exclusion limit zone 23
B.3 Electrical and communication interface 23
B.3.1 General 23
B.3.2 General specifications 24
B.3.3 Pin assignment 24
B.3.4 Auxiliary power supply at the LEX-R 25
B.3.5 Auxiliary power consumption for the LEX-M 25
B.3.6 Communication 25
Bibliography 27

Figure 1 – Luminaire extension module, cap and receptacle in a system 9
Figure 2 – Mechanical interface of the LEX-BP: View 1 10
Figure 3 – Mechanical interface of the LEX-BP: View 2 10
Figure 4 – Details of the mechanical interface of the LEX-BP: section B-B 11
Figure 5 – Details of the mechanical interface of LEX-BP: sections C-C and D-D 11
Figure 6 – Details of the mechanical interface of the LEX-BP: section E-E 12
Figure 7 – Mechanical interface of the LEX-R 13
Figure 8 – Detail of the mechanical interface of the LEX-R 13
Figure A.1 – Dimensions of the mechanical stop gauge 19
Figure A.2 – Mechanical drawing of the retention gauge 20
Figure A.3 – Inclusion limit zone of the LEX-M 21

Figure A.4 – Mechanical drawings of the contact making gauge minimum and maximum 22
Figure B.1 – Gasket area and luminaire exclusion limit zone 23
Figure B.2 – Overview of the luminaire with LEX-Rs and LEX-Ms 24

Table 1 – Elemental composition in plating of contacts for LEX-BP and LEX-R 12
Table A.1 – Test groups and gauges 18
Table B.1 – Characteristics of the type A LEX-M and the type B LEX-M 24
Table B.2 – Assignments of contacts in the LEX-M and the LEX-R 25

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Lighting systems - Electro-mechanical interfaces - Part 2-1: Four-pin extra-low-voltage twist-lock interface Type ZB18

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IEC 63494-2-1 has been prepared by IEC technical committee 34: Lighting. It is an International Standard.

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

Draft	Report on voting
34/1412/FDIS	34/1426/RVD

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.

A list of all parts in the IEC 63494 series, published under the general title *Lighting systems - Electro-mechanical interfaces*, can be found on the IEC website.

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.

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

The IEC 63494-2 series of standards are intended to provide detailed specifications, requirements, information and any useful gauges for particular electro-mechanical interfaces used in lighting systems. The parts of the IEC 63494-2 series augment and refer to IEC 63494-1, the safety standard for general electro-mechanical interfaces used in lighting systems. Detailed specifications for both luminaire-side and device-side interfaces are included. The structure of each document in the IEC 63494-2 series parallels that of IEC 63494-1 for ease of reference. A testing sequence and useful gauges are provided in Annex A of each document. Information useful for luminaire and device design can be found in subsequent annexes.

1 Scope

This part of IEC 63494-2 specifies the interchangeability requirements of an electro-mechanical interface with four-pin extra-low-voltage (ELV) twist-lock interface – type ZB18 for use in lighting systems. This twist-lock interface has four electrical contacts that are suitable for ELV voltages. Two connections are intended for supply power and two are intended for digital communication. This document specifies interchangeability related requirements for mechanical, electrical, ambient conditions, positional orientation, communication protocol and pin assignments for the interface. Specific requirements for the devices that can utilize the interface such as sensors, communication modules, cameras, etc., are not within the scope of this document. This document does not specify the following aspects:

– the lighting technology,

– the illumination performance,

– electromagnetic compatibility (EMC).

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 60050-845, *International Electrotechnical Vocabulary (IEV) - Part 845: Lighting*, available at https://www.electropedia.org

IEC 60598-1:2024*, Luminaires - Part 1: General requirements and tests*

IEC 60664-1:2020, *Insulation coordination for equipment within low-voltage supply systems - Part 1: Principles, requirements and tests*
IEC 60664-1:2020/AMD1:2025

IEC 62504, *General lighting - Light emitting diode (LED) products and related equipment - Terms and definitions*

IEC TS 63105, *Lighting systems and related equipment - Vocabulary*

IEC 63494-1:2026, *Lighting systems - Electro-mechanical interfaces - Part 1: Safety*

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IEC 62262:2002, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*
IEC 62262:2002/AMD1:2021

IEC 62386-101, *Digital addressable lighting interface - Part 101: General requirements - System components*

IEC 62386-103, *Digital addressable lighting interface - Part 103: General requirements - Control devices*

IEC 62386-150, *Digital addressable lighting interface - Part 150: Particular requirements - Auxiliary power supply*

IEC 62386-250, *Digital addressable lighting interface - Part 250: Particular requirements - Integrated power supply (device type 49)*

IEC 62386-251, *Digital addressable lighting interface - Part 251: Particular requirements - Memory bank 1 extension (device type 50)*

IEC 62386-252, *Digital addressable lighting interface - Part 252: Particular requirements - Energy reporting (device type 51)*

IEC 62386-253, *Digital addressable lighting interface - Part 253: Particular requirements - Diagnostics and maintenance (device type 52)*

IEC 62386-351, *Digital addressable lighting interface - Part 351: Particular requirements - Control devices – Luminaire-mounted control devices*

Zhaga Book 18, Ed 2.0 (2019) *Outdoor Luminaire Extension Interface*

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