



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX BVS 17.0101X** Page 1 of 4 Certificate history:  
Status: **Current** Issue No: 1 Issue 0 (2018-08-01)  
Date of Issue: 2022-10-25  
Applicant: **Jacob GmbH Elektrotechnische Fabrik**  
Gottlieb-Daimler-Straße 11  
71394 Kernen  
Germany  
Equipment: **Ex Equipment cable gland type PERFECT plus Ex-cable gland K100-1xxx-zz-EX, K400-1xxx-zz-EX, PERFECT plus EMC-Ex-cable gland K102-1xxx-zz-EX, K402-1xxx-zz-EX**  
Optional accessory:  
Type of Protection: **Protection by Enclosure "t", Increased Safety "e"**  
Marking: Ex eb IIC Gb  
Ex tb IIIC Db

Approved for issue on behalf of the IECEx  
Certification Body:

**Dr Franz Eickhoff**

Position:

**Senior Lead Auditor, Certification Manager and officially  
recognised expert**

Signature:  
(for printed version)



2022-10-25

Date:  
(for printed version)

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**DEKRA Testing and Certification GmbH**  
Certification Body  
Dinnendahlstrasse 9  
44809 Bochum  
Germany



**DEKRA**  
On the safe side.



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Date of issue: 2022-10-25

Issue No: 1

Manufacturer: **Jacob GmbH Elektrotechnische Fabrik**  
Gottlieb-Daimler-Straße 11  
71394 Kernen  
**Germany**

Manufacturing locations: **Jacob GmbH Elektrotechnische Fabrik**  
Gottlieb-Daimler-Straße 11  
71394 Kernen  
**Germany**

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

#### STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

[IEC 60079-31:2022-01](#) Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:3.0

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

#### TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[DE/BVS/ExTR18.0052/01](#)

Quality Assessment Report:

[DE/BVS/QAR08.0013/11](#)



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## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

### Subject and Type

See Annex

### Description

The Ex Equipment cable gland type PERFECT plus Ex-cable gland and type PERFECT plus EMC-Ex-cable gland are made of brass or brass lead-free.

The type PERFECT plus Ex-cable gland consists of dome nut, lamellar insert, sealing ring, gland body with connecting thread and O-ring sealing. The type PERFECT plus EMC-Ex-cable gland consists of the parts of the PERFECT plus Ex-cable gland and is additionally equipped with a contact spring.

The Ex Equipment cable gland type PERFECT plus Ex-cable gland and type PERFECT plus EMC-Ex-cable gland are used for fixed cable entry in electrical equipment with type of protection Increased Safety "eb" and Protection by enclosure "tb". They are installed in equipment with threaded holes and clearance holes.

The type PERFECT plus EMC-Ex-cable gland is also applicable for the installation of cables with EMC shielding.

Common accessory: Hexagonal locknuts made of brass or brass lead-free.

### Parameters

See Annex

### SPECIFIC CONDITIONS OF USE: YES as shown below:

The cable gland type PERFECT plus EMC-Ex-cable gland is only usable for EMC shielding connection and not for any equipotential bonding conductor connection.

The cable glands are tested with a reduced tensile force (25 %) in accordance with clause A.3.1 of IEC 60079-0 and may only be used for fixed installation of Group II and Group III apparatus. The user shall ensure adequate clamping of the cable.

The cable glands size M12, types K100-1012-zz-EX and K102-1012-zz-EX, are only usable for low risk of mechanical danger (drop height 0.4 m with 1 kg mass) and shall be mechanically protected against higher impact energy levels.



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## **DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

- Updating to the current version of standards.
- Version made of brass lead-free included.

### **Annex:**

[BVS\\_17\\_0101X\\_Jacob\\_Annex\\_issue1.pdf](#)



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**Annex**  
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**Subject and Type**

Ex Equipment cable gland

type PERFECT plus Ex-cable gland	K100-1xxx-zz-EX	and
	K400-1xxx-zz-EX	and
type PERFECT plus EMC-Ex-cable gland	K102-1xxx-zz-EX	and
	K402-1xxx-zz-EX	

Subject	K	*	**	-	*	xxx	-	zz	-	EX
1	2	3	4	5	6	7	8	9	10	11

**Number Description**

- 1:            General type designation  
The names of series in different languages  
PERFECT plus Ex-cable gland  
PERFECT plus EMC-Ex-cable gland
- 2: Component  
    K = Cable gland
- 3: Material  
    1 = Brass, nickel-plated  
    4 = Brass lead-free, nickel-plated
- 4: Series designation  
    00 = PERFECT plus Ex-cable gland  
    02 = PERFECT plus EMC-Ex-cable gland
- 5: Hyphen
- 6: Connecting Thread  
    1 = metric thread according IEC EN 60423
- 7: Connecting thread size xxx, for example  
    020 = metric thread M20x1.5
- 8: Hyphen
- 9: Variants zz, for example  
    00 = Connecting thread standard length (6.5 mm to 10 mm)  
    50 = Connecting thread long (> 10 mm)
- 10: Hyphen
- 11: Application area  
    EX = Explosive atmospheres



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**Parameters**

Connecting thread size according EN / IEC 60423	Metric: M12x1.5 to M63x1.5
Connecting thread length	Standard length: 6.5 mm to 10 mm, long: > 10 mm Connecting threads which are longer than the standard length or the variant long are also approved, see instruction.
Minimum wall thickness	Threaded holes 4 mm
Suited for cable diameters	Subject to nominal size, 3 mm to 48 mm
Suited for equipment with risk of mechanical danger	Subject to nominal size and type, 4 J: M12x1.5 types K100-1012-zz-EX, K102-1012-zz-EX 7J: M12x1.5 types K400-1012-zz-EX, K402-1012-zz-EX 7 J: M16x1.5 to M63x1.5 all types
Service temperature range	-40 °C to +85 °C
Degree of protection according EN / IEC 60529	IP66 / IP68 (10 bar, 30 min)

Type / Series	Size	Sealing and anchorage range	Installation torque		Clearance hole
			Gland body	Dome nut	
		[mm]	[Nm]	[Nm]	[mm]
K100-1012-00-EX	M12x1.5	3 - 7	3	3	12 <sup>+0,2</sup>
K100-1016-00-EX	M16x1.5	6 - 10	3	3	16 <sup>+0,2</sup>
K100-1020-00-EX	M20x1.5	8 - 13	3	3	20 <sup>+0,2</sup>
K100-1025-00-EX	M25x1.5	10 - 17	6	6	25 <sup>+0,2</sup>
K100-1032-00-EX	M32x1.5	11 - 21	12	12	32 <sup>+0,2</sup>
K100-1040-00-EX	M40x1.5	16 - 28	14	14	40 <sup>+0,2</sup>
K100-1050-00-EX	M50x1.5	21 - 35	20	20	50 <sup>+0,2</sup>
K100-1063-00-EX	M63x1.5	34 - 48	25	25	63 <sup>+0,2</sup>

K400-1012-00-EX	M12x1.5	3 - 7	3	3	12 <sup>+0,2</sup>
K400-1016-00-EX	M16x1.5	6 - 10	3	3	16 <sup>+0,2</sup>
K400-1020-00-EX	M20x1.5	8 - 13	3	3	20 <sup>+0,2</sup>
K400-1025-00-EX	M25x1.5	10 - 17	6	6	25 <sup>+0,2</sup>
K400-1032-00-EX	M32x1.5	11 - 21	12	12	32 <sup>+0,2</sup>
K400-1040-00-EX	M40x1.5	16 - 28	14	14	40 <sup>+0,2</sup>
K400-1050-00-EX	M50x1.5	21 - 35	20	20	50 <sup>+0,2</sup>
K400-1063-00-EX	M63x1.5	34 - 48	25	25	63 <sup>+0,2</sup>

Type / Series	Size		Installation torque	
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		Sealing and anchorage range	Gland body	Dome nut	Clearance hole
		[mm]	[Nm]	[Nm]	[mm]
K102-1012-00-EX	M12x1.5	3 - 7	3	3	12 <sup>+0,2</sup>
K102-1016-00-EX	M16x1.5	6 - 10	3	3	16 <sup>+0,2</sup>
K102-1020-00-EX	M20x1.5	8 - 13	3	3	20 <sup>+0,2</sup>
K102-1025-00-EX	M25x1.5	10 - 17	6	6	25 <sup>+0,2</sup>
K102-1032-00-EX	M32x1.5	11 - 21	12	12	32 <sup>+0,2</sup>
K102-1040-00-EX	M40x1.5	16 - 28	14	14	40 <sup>+0,2</sup>
K102-1050-00-EX	M50x1.5	21 - 35	20	20	50 <sup>+0,2</sup>
K102-1063-00-EX	M63x1.5	34 - 48	25	25	63 <sup>+0,2</sup>
K402-1012-00-EX	M12x1.5	3 - 7	3	3	12 <sup>+0,2</sup>
K402-1016-00-EX	M16x1.5	6 - 10	3	3	16 <sup>+0,2</sup>
K402-1020-00-EX	M20x1.5	8 - 13	3	3	20 <sup>+0,2</sup>
K402-1025-00-EX	M25x1.5	10 - 17	6	6	25 <sup>+0,2</sup>
K402-1032-00-EX	M32x1.5	11 - 21	12	12	32 <sup>+0,2</sup>
K402-1040-00-EX	M40x1.5	16 - 28	14	14	40 <sup>+0,2</sup>
K402-1050-00-EX	M50x1.5	21 - 35	20	20	50 <sup>+0,2</sup>
K402-1063-00-EX	M63x1.5	34 - 48	25	25	63 <sup>+0,2</sup>