Translation

1 # EU-Type Examination Certificate

2 **Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014**

3 EU-Type Examination Certificate Number: **BVS 17 ATEX E 118 X** Issue: **01**

4 Equipment: **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**

5 Manufacturer: **Jacob GmbH Elektrotechnische Fabrik**

6 Address: **Gottlieb-Daimler-Straße 11, 71394 Kernen - Rommelshausen, Germany**

7 This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential Report No. BVS PP 17.2124 EU.
This issue of the EU-Type Examination Certificate replaces the previous issue of the EU-Type Examination Certificate BVS 17 ATEX E 118 X.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018	**General requirements**
EN IEC 60079-7:2015 + A1:2018	**Increased Safety "e"**
IEC 60079-31:2022	**Protection by Enclosure "t"**

Where additional criteria beyond those given here have been used, they are listed at item 18 in the Schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed under item 17 of this certificate.

11 This EU-Type Examination Certificate relates only to the technical design of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

II 2G Ex eb IIC Gb
II 2D Ex tb IIIC Db

DEKRA Testing and Certification GmbH
Bochum, 2022-10-06

Signed: Dr. Rolf Krökel

Managing Director

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13 **Appendix**

14 **EU-Type Examination Certificate**

BVS 17 ATEX E 118 X issue 01

15 **Product description**

15.1 **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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15.2 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.

Reason for this issue

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

15.3 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)

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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	$12^{+0,2}$
K100-1016-00-EX	M16x1.5	6 - 10	3	3	$16^{+0,2}$
K100-1020-00-EX	M20x1.5	8 - 13	3	3	$20^{+0,2}$
K100-1025-00-EX	M25x1.5	10 - 17	6	6	$25^{+0,2}$
K100-1032-00-EX	M32x1.5	11 - 21	12	12	$32^{+0,2}$
K100-1040-00-EX	M40x1.5	16 - 28	14	14	$40^{+0,2}$
K100-1050-00-EX	M50x1.5	21 - 35	20	20	$50^{+0,2}$
K100-1063-00-EX	M63x1.5	34 - 48	25	25	$63^{+0,2}$
K400-1012-00-EX	M12x1.5	3 - 7	3	3	$12^{+0,2}$
K400-1016-00-EX	M16x1.5	6 - 10	3	3	$16^{+0,2}$
K400-1020-00-EX	M20x1.5	8 - 13	3	3	$20^{+0,2}$
K400-1025-00-EX	M25x1.5	10 - 17	6	6	$25^{+0,2}$
K400-1032-00-EX	M32x1.5	11 - 21	12	12	$32^{+0,2}$
K400-1040-00-EX	M40x1.5	16 - 28	14	14	$40^{+0,2}$
K400-1050-00-EX	M50x1.5	21 - 35	20	20	$50^{+0,2}$
K400-1063-00-EX	M63x1.5	34 - 48	25	25	$63^{+0,2}$

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

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16 **Report Number**

BVS PP 18.2124 EU, as of 2022-10-06

17 **Specific Conditions of Use**

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 EN IEC 60079-0 and may only be used for fixed installation of Group II Gas and Group II Dust 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.

18 **Essential Health and Safety Requirements**

Met by compliance with the requirements mentioned in item 9.

The standard IEC 60079-31:2022 is equivalent in terms of safety to the harmonized standard EN 60079-31:2014 for this product.

19 **Remarks and additional information**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2022-10-06
BVS-Hn/Mu A 20220266 / 342686700

Managing Director

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