1. # EU-TYPE EXAMINATION CERTIFICATE

2. **Equipment or Protective System Intended for use in Potentially explosive atmospheres**
Directive 2014/34/EU

3. EU-Type Examination Certificate Number: **EESF 19 ATEX 023X**

4. Product: **Cable glands types K...**

   Certified types: **KNV and KOV, KOVTV, KOVTN, KNVTV, KNVTN**

5. Manufacturer: **ZAVOD GORELTEX Co. Ltd.**

6. Address: **195176, Saint Petersburg, Revolutsii road, 18, lit. A**

   Russian Federation

7. This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8. Eurofins Expert Services Oy, Notified Body number 0537, 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 confidential report No. RU/CCVE/ExTR17.0006/01.

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

   EN 60079-0:2012/A11:2013 **EN 60079-1:2014** **EN 60079-7:2015**
   EN 60079-15:2010 **EN 60079-31:2014**

10. If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

11. This EU-Type Examination Certificate relates only to the design and construction of the specified product. 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 2 G Ex db IIC Gb
II 2 G Ex eb IIC Gb
II 2 D Ex tb IIIC Db
II 3 G Ex nR IIC Gc
IP66/IP67

Espoo, 07.03.2019
Eurofins Expert Services Oy

Kari Koskela
Expert

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This document is digitally signed.

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13. **Schedule**

14. **EU-Type Examination Certificate EESF 19 ATEX 023X**

15. **Description of Product**

Equipment and systems covered by this certificate are as follows:

The following types of the cable glands were considered: KOV and KNV.

KNV cable glands are intended for insertion of round non-armored cables. KNV cable gland has one sealing ring for cable crimping, which prevents transfer of forces to the cores and contact clamps caused by pulling and twisting loads, and ensures explosion protection of the cable gland.

KOV cable glands are intended for insertion of round armored cables. KOV cable gland has two sealing rings. Sealing ring at the entry of the cable into the cable gland is used for armor crimping and ensures ingress protection. Internal sealing ring is used for cable crimping and prevents transfer of forces to the cores and contact clamps caused by pulling and twisting loads, and ensures explosion protection of the cable gland.

Additionally the following types of the cable glands were considered: KOVTV, KOVTN, KNVTV and KNVTN.

KNVTV, KNVTN cable glands are intended for insertion of non-armored cables in hoses, pipes and metal hoses: N - external thread, V - internal thread. KNVTV and KNVTN cable gland has one sealing ring for cable crimping, which prevents transfer of forces to the cores and contact clamps caused by pulling and twisting loads, and ensures explosion protection of the cable gland.

KOVTV, KOVTN cable glands are intended for insertion of armored cables in hoses, pipes and metal hoses: N - external thread, V - internal thread. KOVTV and KOVTN cable gland has two sealing rings. Sealing ring at the entry of the cable into the cable gland is used for armor crimping and ensures ingress protection. Internal sealing ring is used for cable crimping and prevents transfer of forces to the cores and contact clamps caused by pulling and twisting loads, and ensures explosion protection of the cable gland.

Cable glands may be used in enclosures and equipment with the following types of explosion protection: «d», «e», «i», «n», and dust ignition protection type «t» taking into account the specific conditions of use listed below.

Degree of protection (IP Code according to IEC 60529) is IP66/IP67. Degree of protection is ensured when cable glands are installed in accordance with operating, safety and maintenance manual.

Cable gland can be applied for input and output of intrinsically safe circuits “i”, and it can be marked blue.

Connecting thread of the cable gland can be metric (M), cylindrical British Standard Pipe Parallel Thread (G) or National Standard Taper Pipe Thread (NPT).

The cable glands characteristics are further described in the Annex to this certificate.

16. **Report Number**

RU/CCVE/ExTR17.0006/01

17. **Specific Conditions of Use**

1. British Standard Pipe Parallel Thread G is not applicable for explosion protection type "flameproof enclosures "d" cable glands.

2. For the cable gland sizes 7 and above additional clamping of the cable shall be provided to ensure that pulling is not transmittered to the terminations, because the clamping tests were performed with the values reduced to 25 % of the required values.

18. **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are covered by the standards listed at item 9.

19. **Drawings and Documents**

Drawings and documents are listed in the confidential report RU/CCVE/ExTR17.0006/01.

20. **Certificate History**

Issue	Date	Report No.	Change
VTT 18 ATEX 013	15.02.2018	RU/CCVE/ExTR17.0006/00	Prime certificate.
EESF 19 ATEX 023X	07.03.2019	RU/CCVE/ExTR17.0006/01	NB name changed from VTT Expert Services to Eurofins Expert Services. New certificate template. New sizes of the cable glands KNV and KOV and new types of cable glands KNVTV, KNVTN, KOVTN and KOVTV were added. Specific conditions of use for the cable glands with G threads added.

Annex

Cable glands types K… are used in mobile and stationary electrical installations inside production facilities and in outdoor facilities, ensuring explosion-proof cable sealing and additional ingress protection for cable armor.
Cable glands can be made from:

- brass;
- nickel-plated brass;
- stainless steel;
- galvanized steel.

Sealing ring material – silicone.

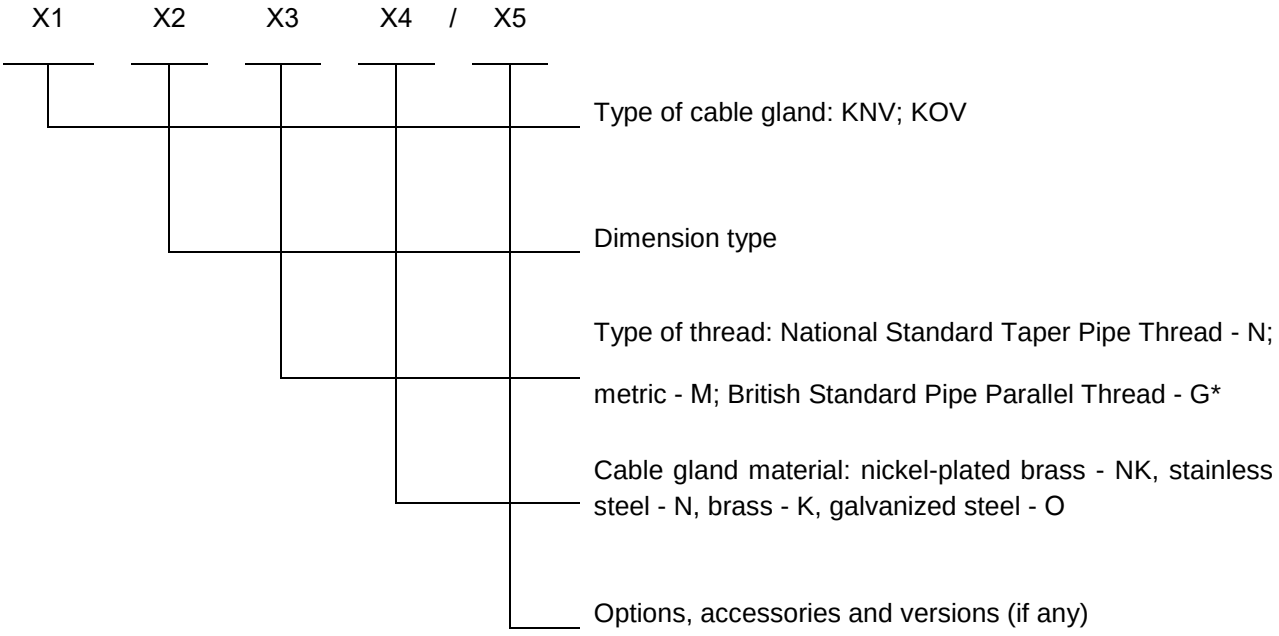
Service temperature: minus 60 °C…+130 °C.

Type of cable gland connecting thread:

- metric (M);
- British Standard Pipe Parallel Thread (G)*;
- National Standard Taper Pipe Thread (NPT).

*G thread is not applicable for explosion protection type "flameproof enclosures "d".
Cable gland shall be used only with round cables, diameters of which match the crimping range of cable gland.
For fixation of cable gland with metric or pipe cylindrical thread in the equipment, the following additional items shall be used: KG locknut or special lubricant, UKF sealant. Also ground A-ring may be applied. Locknut shall be used for thin-walled enclosures. For thin-walled plastic enclosures ground A-ring shall additionally be used.

Formation of marking



*G thread is not applicable for explosion protection type "flameproof enclosures "d".
Dimension types of KNV cable glands are given in Table 1 in accordance with types of connecting thread and diameters of crimped cables:

Table 1

Dimension type of cable gland	Thread		Diameter of crimped cable (d), mm
	M	G, NPT	
KNV01	M16x1,5	3/8"	3 – 8
KNV1	M20x1,5	1/2"	6 – 12
KNV2	M25x1,5	3/4"	12 – 18
KNV2…/P	M25x1,5	3/4"	6 – 18
KNV3	M32x1,5	1"	18 – 25
KNV3…/P	M32x1,5	1"	12 – 25
KNV4	M40x1,5	1 1/4"	25 – 31
KNV5	M50x1,5	1 1/2"	31 – 39
KNV6	M63x1,5	2"	39 – 47
KNV7	M75x1,5	2 1/2"	47 – 55
KNV71	M75x1,5	2 1/2"	55 – 63
KNV8	M90x1,5	3"	63 – 71
KNV81	M90x1,5	3"	71 – 79
KNV10	M100x1,5	4"	79 – 87
KNV101	M100x1,5	4"	84 – 92

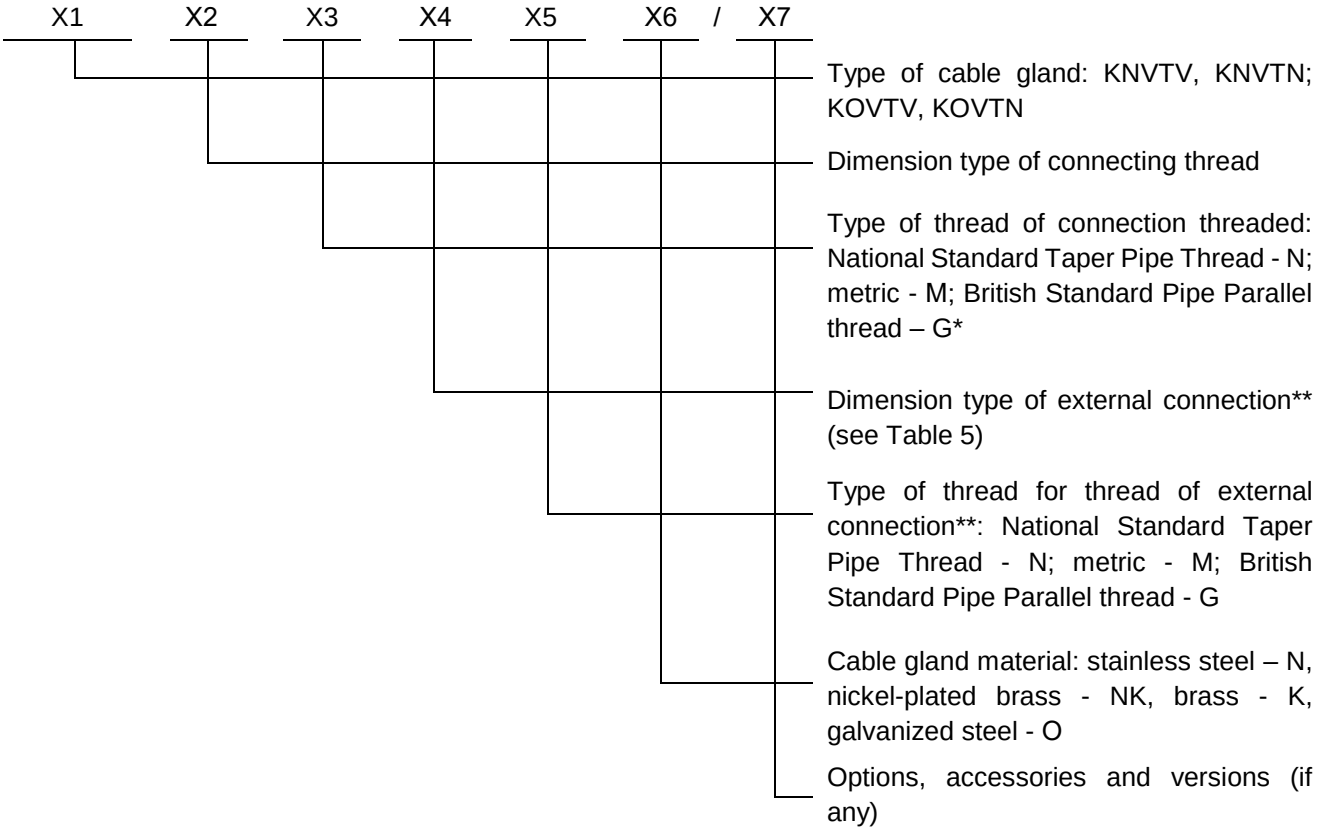
Dimension types of KOV cable glands are given in Table 2 in accordance with types of connecting thread and diameters of crimped cables with armor (D) and with removed armor (d):

Table 2

Dimension type of cable gland	Thread		Diameter of crimped cable, mm	
	M	G, NPT	d	D
KOV01	M16x1,5	3/8"	3 – 8	8 – 12
KOV011	M16x1,5	3/8"	6 – 11	9 – 17
KOV1	M20x1,5	1/2"	6 – 12	9 – 17
KOV12	M20x1,5	1/2"	6 – 12	15 – 25
KOV12…/P	M20x1,5	1/2"	6 – 12	9 – 25
KOV11	M20x1,5	1/2"	12 – 15	15 – 25
KOV11…/P	M20x1,5	1/2"	3 – 15	9 – 25
KOV2	M25x1,5	3/4"	12 – 18	15 – 25
KOV2…/P	M25x1,5	3/4"	6 – 18	9 – 25
KOV22	M25x1,5	3/4"	12 – 18	21 – 31
KOV22…/P	M25x1,5	3/4"	6 – 18	15 – 31
KOV21	M25x1,5	3/4"	18 – 20	21 – 31
KOV21…/P	M25x1,5	3/4"	7 – 20	15 – 31
KOV3	M32x1,5	1"	18 – 25	21 – 31
KOV3…/P	M32x1,5	1"	12 – 25	15 – 31
KOV32	M32x1,5	1"	18 – 25	27 – 37
KOV32…/P	M32x1,5	1"	12 – 25	27 – 32
KOV31	M32x1,5	1"	25 – 27	27 – 37
KOV4	M40x1,5	1 1/4"	25 – 31	27 – 37

Dimension type of cable gland	Thread		Diameter of crimped cable, mm	
	M	G, NPT	d	D
KOV42	M40x1,5	1 1/4"	25 – 31	36 – 46
KOV41	M40x1,5	1 1/4"	31 – 34	36 – 46
KOV5	M50x1,5	1 1/2"	31 – 39	36 – 46
KOV52	M50x1,5	1 1/2"	31 – 39	45 – 53
KOV51	M50x1,5	1 1/2"	39 – 42	45 – 53
KOV6	M63x1,5	2"	39 – 47	45 – 53
KOV62	M63x1,5	2"	39 – 47	52 – 65
KOV61	M63x1,5	2"	47 – 54	52 – 65
KOV7	M75x1,5	2 1/2"	47 – 55	52 – 65
KOV71	M75x1,5	2 1/2"	55 – 63	65 – 75
KOV8	M90x1,5	3"	63 – 71	71 – 81
KOV81	M90x1,5	3"	71 – 79	81 – 91

Formation of marking



*G thread is not applicable for explosion protection type "flameproof enclosures "d".

**Code of dimension type of external thread is not indicated if it coincides with connecting thread. Code of type of external thread is not indicated if the type and dimension type of external thread coincide with connecting thread.

Parameters of thread and diameters of crimped cables for KNVTV, KNVTN type cable glands are given in Table 3.

Table 3

Dimension type of connecting thread	Thread		Diameter of crimped cable (d), mm
	M	G, NPT	
01	M16x1,5	3/8"	3 – 8
1	M20x1,5	1/2"	6 – 12
2	M25x1,5	3/4"	12 – 18
2…/P	M25x1,5	3/4"	6 – 18
3	M32x1,5	1"	18 – 25
3…/P	M32x1,5	1"	12 – 25
4	M40x1,5	1 1/4"	25 – 31
5	M50x1,5	1 1/2"	31 – 39
6	M63x1,5	2"	39 – 47
7	M75x1,5	2 1/2"	47 – 55
71	M75x1,5	2 1/2"	55 – 63
8	M90x1,5	3"	63 – 71
81	M90x1,5	3"	71 – 79

Parameters of thread and diameters of crimped cables with armor (D) and with removed armor (d) for KOVTV, KOVTN type cable gland are given in Table 4.

Table 4

Dimension type of connecting thread	Thread		Diameter of crimped cable, mm	
	M	G, NPT	d	D
01	M16x1,5	3/8"	3 – 8	8 – 12
1	M20x1,5	1/2"	6 – 12	9 – 17
2	M25x1,5	3/4"	12 – 18	15 – 25
2…/P	M25x1,5	3/4"	6 – 18	9 – 25
3	M32x1,5	1"	18 – 25	21 – 31
3…/P	M32x1,5	1"	12 – 25	15 – 31
4	M40x1,5	1 1/4"	25 – 31	27 – 37
5	M50x1,5	1 1/2"	31 – 39	36 – 46
6	M63x1,5	2"	39 – 47	45 – 53

Dimension types of external connection are given in Table 5.

Table 5

Dimension type of external connection	Thread	
	M	G, NPT
01	M16x1,5	3/8"
1	M20x1,5	1/2"
2	M25x1,5	3/4"
3	M32x1,5	1"
4	M40x1,5	1 1/4"
5	M50x1,5	1 1/2"
6	M63x1,5	2"
7	M75x1,5	2 1/2"
71	M75x1,5	2 1/2"
8	M90x1,5	3"
81	M90x1,5	3"