IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx CCVE 19.0007X

Issue No: 0

Certificate history:
Issue No. 0 (2019-02-22)

Status: **Current**

Date of Issue: **2019-02-22**

Applicant: **"ZAVOD GORELTEX" Co. Ltd.**
195176, Saint Petersburg, Revolutsii road, 18, lit. A
Russian Federation

Equipment: **Explosion-proof control, command and signaling units SHGV … series**
Optional accessory:

Type of Protection: **increased safety "e", encapsulation "m", intrinsic safety "i", flameproof enclosures "d", dust ignition protection by enclosure "t"**

Marking:

Ex db IIB T6…T4 Gb or Ex db eb mb IIB T6…T4 Gb or

Ex db IIC T6…T4 Gb or Ex db eb mb IIC T6…T4 Gb or

Ex db IIB+H_2 T6…T4 Gb or Ex db eb mb IIB+H_2 T6…T4 Gb or

Ex db [ia Ga] IIB T6…T4 Gb or Ex db eb mb [ia Ga] IIB T6…T4 Gb or

Ex db [ia Ga] IIC T6…T4 Gb or Ex db eb mb [ia Ga] IIC T6…T4 Gb or

Ex db [ia Ga] IIB+H_2 T6…T4 Gb or Ex db eb mb [ia Ga] IIB+H_2 T6…T4 Gb or

Ex tb IIIC T51˚C… T130˚C Db

IP54/IP66/IP67

Approved for issue on behalf of the IECEx Certification Body: Alexander Zalogin

Position: Head of CB CCVE

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

NANIO CCVE
Zavod ECOMASH, VUGI Settlement
Lyubertsy, Moscow region
140004
Russian Federation

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Manufacturer: **"ZAVOD GORELTEX" Co. Ltd.**
193149, Novosaratovka township area, liter A, Vsevolozhsky district, Leningrad region
Russian Federation

Additional Manufacturing location(s):

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 apparatus 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 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-18 : 2014 Edition:4.0	Explosive atmospheres – Part 18: Equipment protection by encapsulation "m"
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2015 Edition:5.0	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

*This Certificate **does not** indicate compliance with electrical 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:

RU/CCVE/ExTR19.0010/00

Quality Assessment Report:

RU/CCVE/QAR16.0004/00 RU/CCVE/QAR16.0004/01

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Explosion-proof control, command and signaling unit SHGV… series (hereinafter referred to as "equipment") are produced on the basis of certified Ex d enclosures with or without tempered glass window in the cover of the enclosure.

Certified Ex-components, listed in the Annex to this certificate, can be installed into the enclosure and the cover of the equipment. Electrical and non-electrical devices, listed in the operation, safety and maintenance manual LGSA.1.024.2019, can be used inside the equipment.

The enclosures can be fitted with Ex-component for separation of internal volume of the explosion-proof enclosure in order to assembly two flameproof enclosures separated.

For the input of the cables any separately certified cable glands which can be used not invalidating the type of protection, IP degree of protection and having the appropriate connecting thread.

Equipment can incorporate associated apparatus for interface with intrinsically safe circuits. These associated apparatus are subject to separate certification with type of protection [Ex ia] IIB, IIB+H_2 or IIC.

Electrical characteristics for associated apparatus max voltage $U_m \leq 250$ V for intrinsically safe barrier.

The temperature class and the maximum surface temperature of equipment are specified by the manufacturer at the nameplate depending on the actual rated current and the actual ambient temperature range.

Configuration of the equipment depends on dissipated power of the enclosure. The maximum values of the maximum dissipated power of the equipment, temperature class and ambient temperature are given in tables 1 and 2 in Annex to this certificate and shall not be exceeded.

Structure of designation of control, command and signaling units SHGV… technical characteristics are given in the operating, safety and maintenance manual LGSA.1.024.2019

SPECIFIC CONDITIONS OF USE: YES as shown below:

1) It is prohibited to use control, command and signaling units series SHGV... stainless steel with Ex markings Ex db IIC T6…T4 Gb, Ex db eb mb IIC T6…T4 Gb, Ex db [ia Ga] IIC T6…T4 Gb, Ex db eb mb [ia Ga] IIC T6…T4 Gb in explosive mixture of acetylene with air.

2) Cable glands and other devices which can be installed on control, command and signaling units are subject to a separate certification as Ex-equipment and they shall not invalidate the type of protection and IP degree of protection and shall correspond to the connecting thread, its size and type of inserted cable.

3) Unused entries shall be plugged with certified plugs with the corresponding connecting thread, tyep of protection and IP degree of protection which do not invalidate the type of explosion protection.

4) The temperature under rated conditions can be higher than 70 °C at the entry point or 80 °C at the branching point of the conductors. The information to provide guidance to the user on the proper selection of cable and cable gland or conductors in conduit is marked on the equipment and given in the operating, safety and maintenance manual LGSA.1.024.2019.

5) British Standard Pipe Parallel Thread G is not applicable to control, command and signaling units SHGV... series with explosion protection type "flameproof enclosures "d".

6) Oil-filled circuit-breakers and contactors shall not be used.

7) The content of enclosure equipment for IIB may be placed in any arrangement provided that at least 20% of cross-sectional area of the enclosure remains free.

8) The content of enclosure equipment for IIC may be placed in any arrangement provided that at least 40% of cross-sectional area of the enclosure remains free.

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9) Separate relief areas may be aggregated provided that each area has a minimum dimension in each direction of 12.5 mm.

10) For the provision of required level of explosion protection of intrinsically safe circuit “i”, electrical parameters and construction of explosion-proof control, command and signaling unit SHGV… series shall conform to the requirements of IEC 60079-11.

11) Electrical parameters of intrinsically safe equipment for connection shall not exceed values of electrical parameters of intrinsically safe circuit of explosion-proof control, command and signaling unit SHGV… series.

Annex:

Annex IECEx CCVE 19.0007X.pdf

NANIO CCVE
Zavod ECOMASH, VUGI Settlement
Lyubertsy, Moscow region
140004
Russian Federation

Annex to IECEx CCVE 19.0007X **Issue No. 0**

Technical characteristics:

Maximum supply voltage: 1500 V AC or 500 V DC.

Maximum current: 630 A.

Rated frequency: 50/60 Hz.

Maximum dissipated power of control, command and signaling units SHGV… series with or without window, depending on the design of the enclosure, W:

Table 1

ENCLOSURE	Temperature class								
	T6			T5			T4		
	+40°C	+50°C	+60°C	+40°C	+50°C	+60°C	+40°C	+50°C	+60°C
SHORV281811	118	84	56	165	132	103	264	234	207
SHORV-N281811	118	84	56	165	132	103	264	234	207
SHORV281813*	123	88	59	173	138	108	276	244	216
SHORV302021	148	106	70	207	166	129	331	293	259
SHORV-N312120	173	123	82	242	193	151	386	342	303
SHORV422221	234	162	103	326	261	202	533	469	426
SHORV362827	193	138	92	270	216	169	432	383	339
SHORV362821	181	160	102	330	263	202	533	468	427
SHORV-N372920	207	148	99	290	232	181	464	410	363
SHORV-N372926	211	151	100	295	236	185	473	418	370
SHORV423229	251	179	120	351	281	220	562	498	440
SHORV423222	246	176	117	344	276	215	551	488	432
SHORV-N432221	246	176	117	344	276	215	551	488	432
SHORV-N563823	270	193	129	360	288	225	643	569	503
SHORV-N563828	270	193	129	360	288	225	643	569	503
SHORV573931	307	219	146	467	373	292	667	590	522
SHORV573926	307	219	146	467	373	292	667	590	522
SHORV-N644433	385	275	183	533	427	333	782	692	613
SHORV654533	490	350	233	640	512	400	912	807	714
SHORV654526	475	339	226	508	406	317	729	645	571
SHORV725235	747	533	356	975	780	610	1626	1439	1273
SHORV725224	705	504	336	922	738	576	1600	1416	1253
SHORV764323	858	613	408	1128	902	705	1664	1472	1303
SHORV896745	1400	1000	667	1849	1479	1156	2644	2340	2070
SHORV896735	1143	817	544	1463	1170	914	2112	1869	1654
SHORV1045839	1400	1000	667	1849	1479	1156	2644	2340	2070
SHORV1077740	1400	1000	667	1849	1479	1156	2644	2340	2070

*Used only as empty enclosure with window.

Maximum dissipated power of control, command and signaling units SHGVA… series with or without window, depending on the design of the enclosure, W:

Table 2

ENCLOSURE	Temperature class											
	T6				T5				T4			
	+40°C	+50°C	+60°C	+85°C	+40°C	+50°C	+60°C	+85°C	+40°C	+50°C	+60°C	+85°C
SHORVA121211	34	22	18	13	51	35	32	27	80	71	66	60
SHORVA151512	55	33	25	20	71	55	45	40	121	104	92	87
SHORVA171712	73	54	36	31	100	80	61	56	165	150	130	125
SHORVA232316	130	85	67	61	185	131	118	113	305	271	241	236
SHORVA272721	159	109	81	75	223	157	140	136	362	322	290	285

Control, command and signaling units SHGV… series produced on the base of the certified enclosures SHORV…:

Table 3

Ex marking	Ambient temperature range
Ex db IIB T6…T4 Gb	-60 °C ≤ T_{amb} ≤ +60 °C
Ex db eb mb IIB T6…T4 Gb	
Ex db IIB+H_2 T6…T4 Gb	
Ex db eb mb IIB+H_2 T6…T4 Gb	
Ex db [ia Ga] IIB T6…T4 Gb	
Ex db eb mb [ia Ga] IIB T6…T4 Gb	
Ex db [ia Ga] IIB+H_2 T6…T4 Gb	
Ex db eb mb [ia Ga] IIB+H_2 T6…T4 Gb	
Ex tb IIIC T51˚C… T130˚C Db	

Control, command and signaling units SHGV… series produced on the base of the certified enclosures SHORV-N… of stainless steel:

Table 4

Ex marking	Ambient temperature range
Ex db IIC T6…T4 Gb	-60 °C ≤ T_{amb} ≤ +60 °C
Ex db eb mb IIC T6…T4 Gb	
Ex db [ia Ga] IIC T6…T4 Gb	
Ex db eb mb [ia Ga] IIC T6…T4 Gb	
Ex tb IIIC T51˚C… T130˚C Db	

Control, command and signaling units SHGVA… series produced on the base of the certified enclosures SHORVA… of various materials without a window:

Table 5

Ex marking	Ambient temperature range
Ex db IIB T6…T4 Gb	-60 °C ≤ T_{amb} ≤ +85 °C
Ex db eb mb IIB T6…T4 Gb	
Ex db IIC T6…T4 Gb	
Ex db eb mb IIC T6…T4 Gb	
Ex db [ia Ga] IIB T6…T4 Gb	
Ex db eb mb [ia Ga] IIB T6…T4 Gb	
Ex db [ia Ga] IIC T6…T4 Gb	
Ex db eb mb [ia Ga] IIC T6…T4 Gb	
Ex tb IIIC T51˚C… T130˚C Db	

Control, command and signaling units SHGVA…series produced on the base of the certified enclosures SHORVA… of various materials with a window:

Table 6

Ex marking	Ambient temperature range
Ex db IIB T6…T5 Gb	-60 °C ≤ T_{amb} ≤ +65 °C
Ex db eb mb IIB T6…T5 Gb	
Ex db IIC T6…T5 Gb	
Ex db eb mb IIC T6…T5 Gb	
Ex db [ia Ga] IIB T6…T5 Gb	
Ex db eb mb [ia Ga] IIB T6…T5 Gb	
Ex db [ia Ga] IIC T6…T5 Gb	
Ex db eb mb [ia Ga] IIC T6…T5 Gb	
Ex tb IIIC T51˚C… T100˚C Db	

List of certified Ex equipment and Ex Components permitted to be used with control, command and signaling units SHGV… series: IECEx CCVE 16.0007U, IECEx CCVE 16.0008U, IECEx CCVE 17.0005U, IECEx CCVE 18.0015U; IECEx CCVE 18.0016U, IECEx CCVE 18.0014X.

Indicated values of technical characteristics are maximum values. It is permitted to install heaters in the product considering operating temperature of the components applied in the enclosure which do not influence explosion protection and specified ambient temperature range. Actual values of technical characteristics will depend on the installed equipment and on the operating temperature of the equipment. Actual characteristics are specified by the manufacturer on the nameplate of the product. Actual characteristics cannot exceed values specified above.

All equipment can have additional designation “QFM…” or “UVG…” in accordance with “ZAVOD GORELTEX” Co. Ltd. classifier.