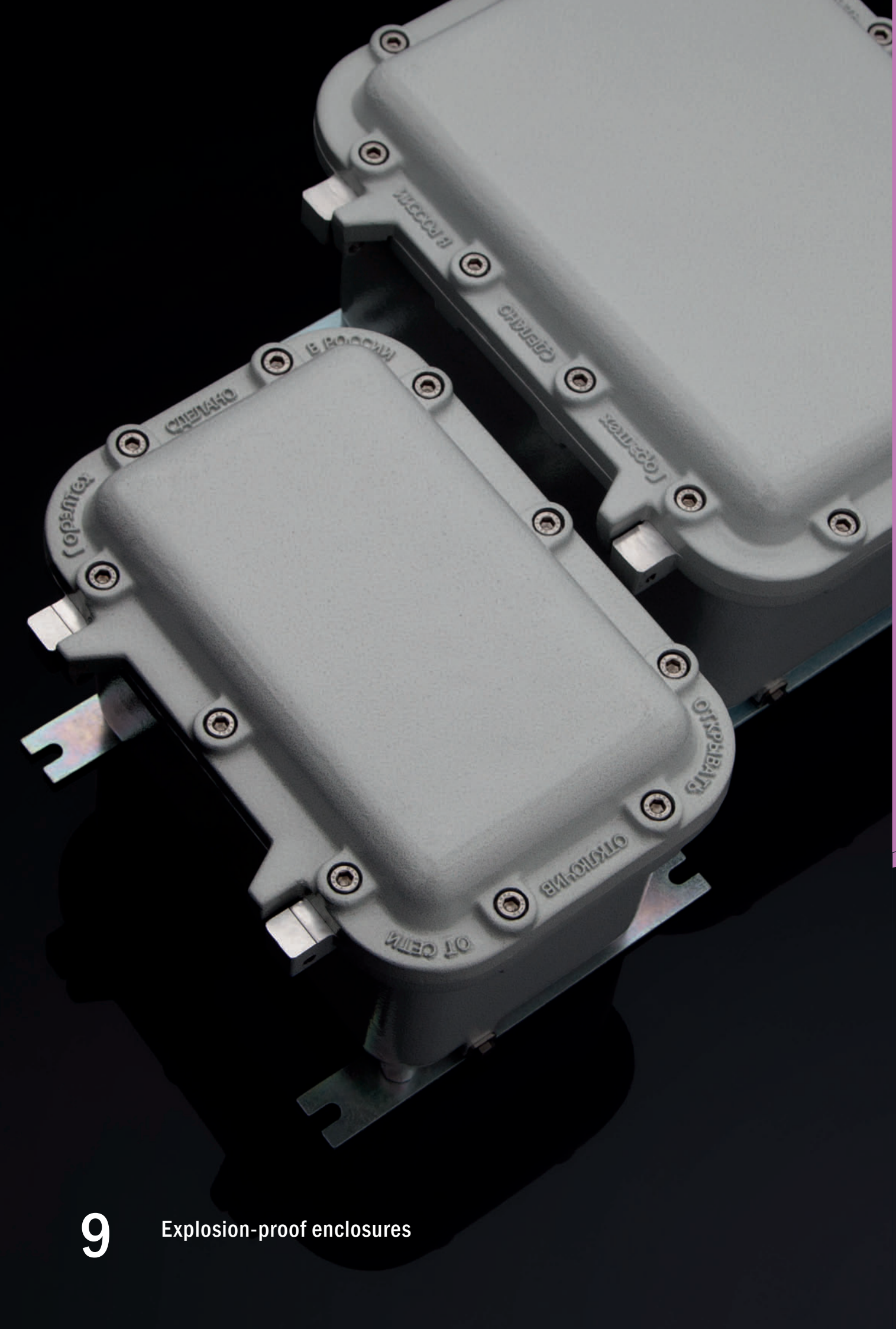


9 Explosion-proof enclosures

Explosion-proof enclosures

Flameproof enclosure Exd IIC, RV Exd

Aluminum alloy enclosures SHORV (CCFE)

p. 344

Stainless steel enclosures SHORV-N (CCFE/SS)

p. 350

Aluminum alloy enclosures SHORVA (CCA)

p. 353

Aluminum alloy enclosures SHORV...O

IIC

p. 356

Aluminum alloy enclosures SHORVA...O

p. 360

Aluminum alloy enclosures KV-KIP (CSC-H)

p. 362

Increased safety Exe, Exia, RP, RO

Aluminum alloy enclosures KSRV (SA/SAG)

p. 364

Stainless steel enclosures KSRV-N (KSRV-S)

p. 368

Polyester enclosures KSRV-P (KSRV-KP)

p. 372

Components

Control and indicating elements

p. 377

Cable glands, plugs, adapters

p. 392

ENCLOSURES AS PER CUSTOMER'S SPECIFICATION

Goreltex®

Create your own individual special design of the enclosure

The process of production of the enclosure of non-standard size:

– Receipt of the customer's specification.

– Creation of 3D model and its approval by foundry engineers and mechanical processing specialists.

– Mathematic modeling of an explosion inside the enclosure with confirmation of non-destructiveness of the structure.

– Production of patterns.

– Casting of samples.

– Testing of samples and certification procedure.

– Launching into manufacture.

The customer selects:

– Shape and dimensions of the enclosure;

– Material of the product – corrosion-resistant aluminum-silicon alloy or stainless steel;

– Version of the cover – flat or cylindrical;

– Color of the enclosure painting;

– Required type of explosion protections;

– **Customer's logo** and text on the enclosure.

DESCRIPTION

SHORV type boxes (hereinafter – the boxes) are stationary devices which are intended for arrangement of terminal blocks, control, signaling devices and other electrotechnical components for installation in hazardous areas[1].

SHORV type boxes are the fourth generation of Exd enclosures with more than 25 years service life of flameproof joints.

Application of the latest Russian scientific findings in the field of explosion protection, computer modeling and use of GORELTEX patented technology (patent No. 2486463) made the creation of the new fourth generation of Exd enclosures with improved properties of explosion protection possible.

New reinforced structure allows to extend the application range **of the equipment for subgroup IIC.**

High resistance of SHORV aluminum alloy enclosures to hydrogen sulfide exposure is confirmed in TR CU certificates. Goreltex equipment conforms to the requirements of NACE International (National Association of Corrosion Engineers), standard NACE MR0175/ISO 15156 (Petroleum and natural gas industries - Materials for use in H2S-containing environments in oil and gas production).

Scope of application – outdoor and indoor hazardous areas, mines and pits hazardous with gas or dust as per explosion protection marking, GOST 30852.13-2002 (IEC 60079-14:1996), Electrical Installation Code Ch. 7.3, Ch. 7.4, FS 05-618-03, FS 03-553-03 and other codes regulating application of electrical equipment in hazardous and non-hazardous areas at dangerous production facilities of I, II, III, IV hazard class supervised by Rostechnadzor and national technical supervision bodies of the CIS countries.

SHORV boxes with a window are applied for control and measuring equipment arrangement, as well as for any equipment for visual control (including monitors).

DESCRIPTION OF THE PRODUCT DESIGN AND MEANS OF EXPLOSION PROTECTION

The box consists of an enclosure and a cover manufactured from modified corrosion-resistant aluminum-silicon alloy resistant to salt spray and other chemical substances including hydrogen sulfide and hydrochloric acid vapors, frictionally intrinsically safe. The boxes can be manufactured from highly corrosion-resistant stainless steel upon request.

Cable glands are arranged on the side surfaces of the enclosure. Control boxes have inner and outer ground clamps.[2]

Explosion protection is reached by the type of protection “flameproof enclosure” as per GOST IEC 60079-1-2011 and by the design in accordance with the requirements of GOST R IEC 60079-0-2011. Explosion safety is reached by design features of the boxes with parameters of flameproof joints conforming to the requirements of GOST IEC 60079-1-2011. Flameproof enclosures withstand explosion pressure and make its distribution to hazardous atmosphere impossible, which is confirmed by test results.

MARKING

Marking applied to terminal boxes shall contain the following information:

- brand name of the manufacturing plant;
- type of the product;
- serial number and the year of production;
- explosion protection marking;
- warning sign “De-energize before opening”;
- ambient temperature range;

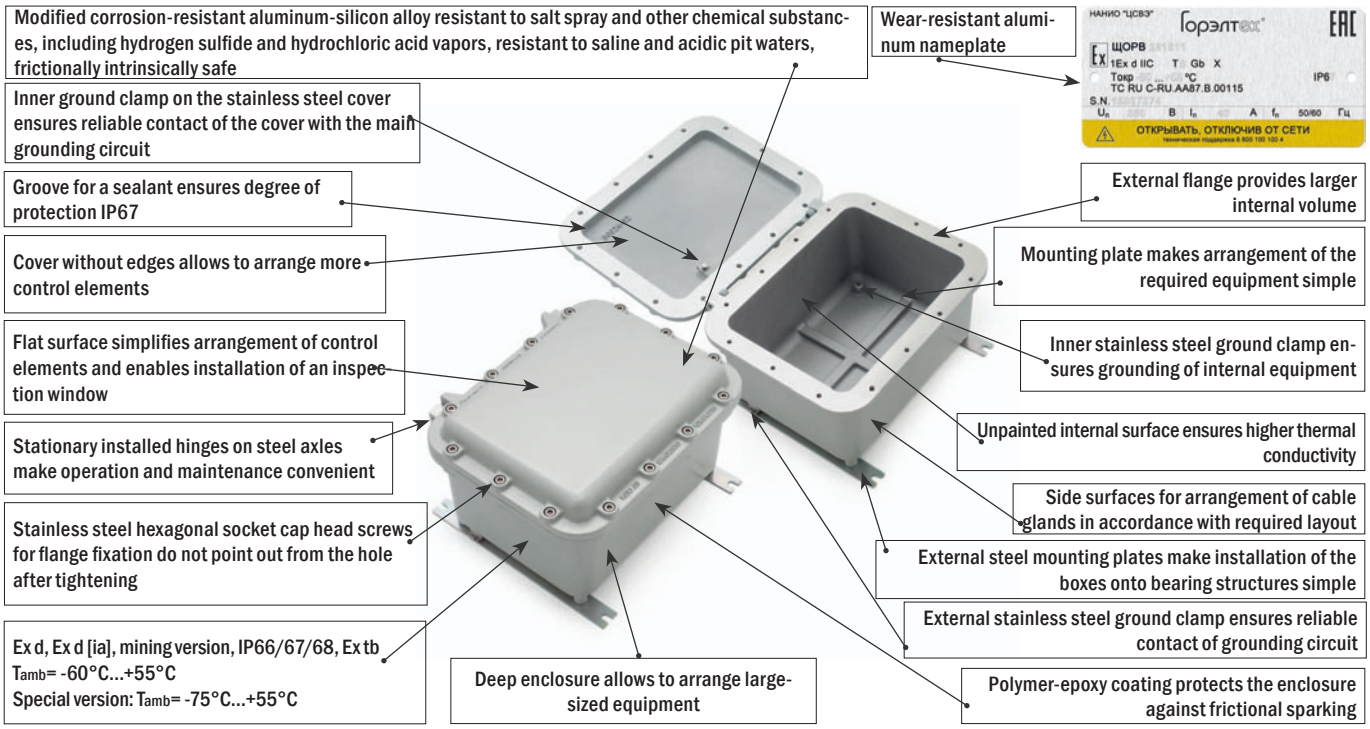
and other information which shall be indicated in the marking if this is required by technical documentation.

ADVANTAGES

- Application of modified corrosion-resistant aluminum-silicon alloy resistant to salt spray and other chemical substances including hydrogen sulfide and hydrochloric acid vapors, frictionally intrinsically safe, ensures relatively light weight of the enclosures which significantly simplifies installation on the site. This is especially noticeable on small or medium-sized enclosures.
- 26 dimension types of enclosures.
- Various combinations of cable glands are possible. Thickness of enclosure walls is sufficient for drilling threaded holes in enclosure walls for connection of cable glands of various types.
- Exd enclosures of the most part of manufacturers are intended for temperatures not lower than -20°C/-25°C, further lowering of the temperature requires installation of internal non-disconnecting thermostat, which makes the design of the product more complex and increases its cost (enlargement of enclosure size for the arrangement of a heater and a thermostat, provision of uninterruptible power supply and application of external protective safety switch). Goreltex SHORV enclosures are designed and tested in conditions to -60 °C (special version for -75 °C). This is especially important for terminal boxes.

[1] *SHORV series boxes are multifunctional and can be used for solving a wide range of tasks, including their application as terminal boxes in general industrial version or for installation in a hazardous area. Peculiarities of the design of these boxes allow to use them for various purposes: as terminal boxes, boxes for power clamps, boxes for arrangement of various equipment inside, as enclosures and control cabinets for potentially hazardous areas and conditions with aggressive atmosphere. It is necessary to point out the possibility of application of these products by integrated equipment manufacturers, where superior quality of mechanical processing of aluminum is put to the forefront.*

[2] *Outer and inner ground clamps are manufactured from stainless steel and can be connected to the mounting rail for terminals, mounting plate or a grounding bar. As aluminum is an excellent conductor, grounding for cable glands is provided by a contact with enclosure wall without necessity of taking additional measures for ensuring continuity of grounding circuit.*



• Conformity of Goreltex enclosures to the requirements of GOST IEC 60079-1-2011 is confirmed by TR CU certificates.

• Goreltex has a wide range of enclosures for arrangement of different equipment considering convenience of installation. It is possible to install modular circuit breakers, contactors as well as buttons and signal lamps on the cover of enclosures starting from type SHORV302021.

• Additional support of the cover on the enclosure by means of hinges (starting from SHORV302021) significantly simplifies installation.

• Goreltex control elements are small-sized, hence increasing of the enclosure depth is not necessary.

• External flange on SHORV enclosures provides more convenient access to internal components.

• Modified corrosion-resistant aluminum-silicon alloy has low copper content (less than 0,1%) and iron (less than 0,4%), which ensures its resistance to aggressive exposure to sea water and increases its anti-corrosion properties, as the alloy has a special form of material structure, which was reached in the process of enclosure manufacturing. The alloy is characterized by low contents of magnesium which improves anti-frictional properties of the enclosure. These advantages allow to use Goreltex enclosures made from modified corrosion-resistant aluminum-silicon alloy instead of stainless steel enclosures.

• Technology implemented during production of Goreltex enclosures prevents formation of cracks in the enclosure, hence the additional processing of internal surface of the enclosure is not required. This allows to increase the value of heat dissipated power of the enclosure (painting of the internal surface significantly reduces thermal conductivity of enclosure walls which can lead to overheating and malfunction of electrotechnical components). Goreltex enclosures can be operated for more than 30 years.

• Nameplate with the name and a serial number is made from an aluminum plate and has a specially designated installation area which conforms to GOST 30852.0-2002 (IEC 60079-0:1998).

• Reinforced enclosures of larger volumes – more than 50 dm^3.

• Hexagonal socket cap head mounting screws in all types of explosion-proof enclosures do not point out from the threaded hole after screw tightening in accordance with GOST IEC 60079-1-2011.

• 100% testing of each enclosure during production.

• TR CU certificate covers not only the enclosure but also entire assembly when control cabinets are ordered. Finished product is delivered to the customer. Goreltex installs all required Ex-components according to the customer's specification.

• Engineering support. Goreltex helps to select an enclosure in accordance with the requirements of the customer and provides AutoCad drawings.

• Fire resistance limit E45 (GOST R 53316-2009 "Cable lines. Circuit integrity under fire. Test method.")

• Full production cycle of enclosures from foundry patterns to finished products is carried out in the territory of the Russian Federation.

[3] *SHORV series boxes are approved for application in hazardous areas and are supplied with TR CU certificates – zone 1 and zone 2. SHORV series boxes can be supplied in different versions: with installation of terminals for various currents, with Ex-components as per customer's specification or empty as an Ex-component required in the customer's equipment during certification.*

- Service life of flameproof joints is more than 25 years.
- High resistance of aluminum alloy SHORV enclosures to hydrogen sulfide exposure.
- Enclosures are tested in conditions up to -60°C (special version to -75°C).
- Unpainted internal surface of the enclosure ensures increased thermal conductivity.
- Enclosure can be manufactured with a window.
- Enclosure can be manufactured from highly corrosion-resistant chrome-nickel casting steel.

MARKING

1Ex d IIC T6...T4 Gb X
1Ex d IIB+H_2 T6...T4 Gb
1Ex d [ia] IIB+H_2 T6...T4 Gb
1Ex d [ib] IIB+H_2 T6...T4 Gb
1Ex d [ia] IIC T6...T4 Gb X
1Ex d [ib] IIC T6...T4 Gb X
Ex tb IIIC T70°C...T135°C Db

MINING EQUIPMENT MARKING

PB Ex d I Mb
PB Ex d [ib] I Mb
PB Ex d [ia] I Mb
PH2

CERTIFICATES AND PERMITS

VTT 17 ATEX 047U
GOST R ISO 9001-2015 (ISO 9001:2015)
TC RU C-RU.AA87.B.00244
POCC RU.EX01.B00004
Maritime Register Type Approval Certificate No. 17.12692.120
IECEx CCVE 16.0007U
TU 3400-005-72453807-07
GAZPROM OJSC No. Г000.RU.1131.H00666

CODES

GOST 14254-96 (IEC 529-89)
GOST 12.2.007.0-75
GOST R IEC 60079-0-2011
GOST IEC 60079-1-2011
GOST 30852.0-2002
GOST 30852.10-2002 (IEC 60079-11:1999)
GOST 30852.20-2002, TR CU 012/2011
GOST IEC 61241-1-1-2011
GOST 24754-2013
Electrical Installation Code Ch. 7.3, Ch. 7.4
OD 5.2-093-2004
GOST R IEC 60079-31-2010

TECHNICAL CHARACTERISTICS

Installation

Category I for firedamp and dust;
Category II for gas subgroup IIA, IIB+H2, IIC (except for acetylene); zones 1, 2;
Category III for dust, explosive dust atmospheres containing flying particles, conductive and non-conductive dust;
Underground mines non-hazardous with gas (methane) and coal dust;
Facilities under Russian Maritime Register of Shipping supervision;
Dangerous production facilities

Maximum voltage, V

~1000 / ⎓250, ~3300 (from SHORV423229)
~10000 (SHORV654533... SHORV1077740)

Maximum current, A

650, 1500 (for ~1000, ⎓250)

Sealant

Silicone rubber (in cover groove) for IP67, PG-FLANEC flange sealant for IP68, PG-SMAZKA silicone sealant for IP66

Cover fastening

Removable cover on hinges, fastening with stainless steel captive screws with cylindrical head and hexagonal socket for key

Installation inside enclosure

4 racks for mounting panel installation

Climatic category

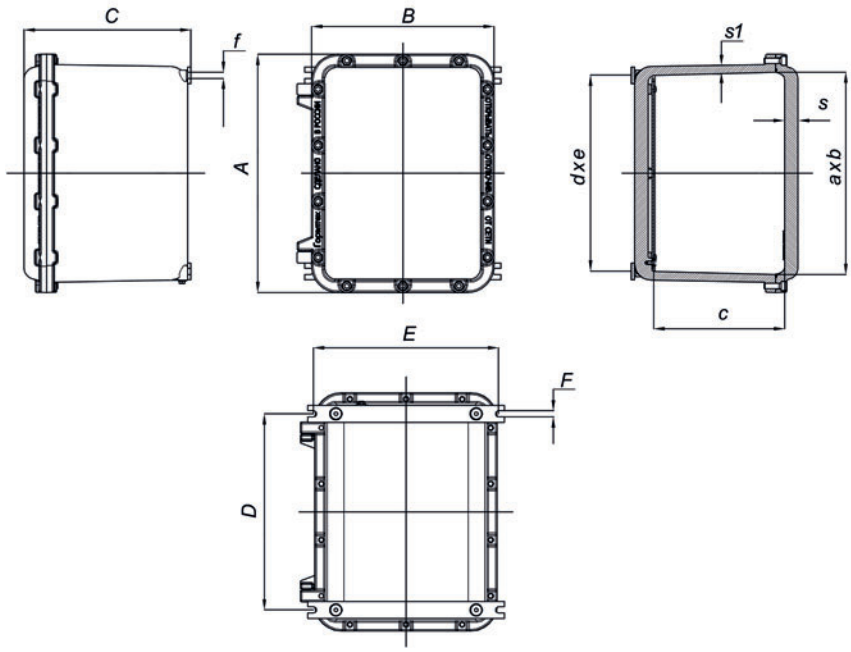
NF1 (upon request NF2, NF3, NF4, NF5, F1, F2, F3, F5, T1, T2, T3, T5, MU1, MU2, MU3, MU4, W2.13**, W5)

OPTIONS, ACCESSORIES AND VERSIONS

DESCRIPTION	MARKING
Hinges for cover fixation (for SHORV281811, for other types of SHORV boxes hinges are installed by default)	/PETLYA
Drain plug for condensate removal	/DKUV
Breather plug for moisture removal	/VKUV
Marine version	/MORE
Version for minimum operating temperature -75°C	/HOLOD
Version for tropics with protection against bugs	/TERMITY
Special version for nuclear facilities of nuclear power plants “Small leak”	/MALAYA TECH
Earthquake-resistant version	/MSK-64
Acceptance by customer	/PRIEMKA
Nameplate with inscription as per customer’s specification	/NADPIS «_»
Stainless steel mounting panel	/NP
Nameplates with light reflecting coating	/SVP
External surface coating as per customer’s specification	/RAL (code)

DESCRIPTION	MARKING
Bolt with seal	/PLOMBA
Device for connection of cable screens	/EKRAN
Neutral bus bar	/SHINA N
Internal ground bus bar	/SHINA Z
Phase bus bar	/SHINA PH
Terminal jumpers as per customer’s diagram	/SCHEMA
Marking of terminals as per customer’s diagram	/MARK
Aluminum alloy mounting panel	/ALP
Internal thermal insulation	/TEPLOISOLYATSIYA
Heating for automatic devices	/OBOGREV
Anti-condensation coating	/AP
Degree of protection IP67	/IP67
Captive bolts for cover fastening	/NBK
Radiator cooling system	/RADIATOR
Alignment pin (for SHORV896746 and larger)	/SHTIFT

OVERALL AND MOUNTING DIMENSIONS



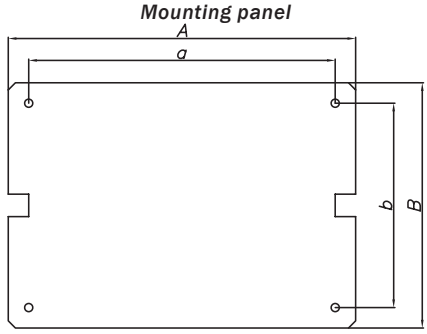
Dimensions of SHORV enclosures

Dimension type of enclosure	Dimensions, mm														Mass, kg
	Outer			Inner					Standard fastening			Bracket fastening			
	A	B	C	a	b	c	S	S1	d	e	f	D	E	F	
SHORV281811	282	182	118	212	112	74	14	14	160	124	M6	160	155	9	6,3
SHORV302021	304	204	211	240	140	163	14	14	230	130	M8	230	210	9	8,6
SHORV422221	424	224	213	359	159	165	15	14	350	150	M8	350	230	9	13,6
SHORV362827	364	284	275	300	220	217	20	14	290	210	M8	290	290	9	17,25
SHORV362821	364	284	215	300	220	157	20	14	290	210	M8	290	290	9	14.97
SHORV423229	425	325	297	361	261	233	24	14	350	250	M10	350	330	11	25,3
SHORV423222	425	325	226	361	261	163	24	14	350	250	M10	350	330	11	20,7
SHORV464621	461	461	213	391,5	391,5	150	22	16,5	310	310	M10	310	460	11	34,5
SHORV573931	576	396	318	506	326	247	26	20	360	236	M10	360	376	11	48.1
SHORV573926	576	396	268	506	326	197	26	20	360	236	M10	360	376	11	44.4
SHORV654533	650	450	337	570	370	222	16	17,5	550	350	M10	550	446	11	59.5
SHORV654526	650	450	265	570	370	150	16	16	550	350	M10	550	446	11	51,6
SHORV725235	723	523	359	639	439	246	23	18,5	600	400	M10	600	505	11	83,8
SHORV725224	723	523	249	639	439	136	23	17	600	400	M10	600	505	11	71,2

Dimension type of enclosure	Dimensions, mm														Mass, kg
	Outer			Inner					Standard fastening			Bracket fastening			
	A	B	C	a	b	c	S	S1	d	e	f	D	E	F	
SHORV896745	891	671	455	776	556	374	23	29	680	480	M16	680	640	14	173,9
SHORV896735	891	671	355	776	556	274	23	28	680	480	M16	680	640	14	150,0
SHORV1045839	1040	585	393	910	455	315	24	24	790	360	M16	790	530	16	144,2
SHORV1077740	1070	770	404	920	620	314	30	24	810	510	M16	810	700	16	229

Dimensions of mounting panels for SHORV enclosures

Mounting panel



Name	Dimensions, mm				Box type	Mass, kg
	A	B	a	b		
SH2818X	206	100	193	53	SHORV281811	–
SH3020X	220	120	180	80	SHORV302021	–
SH4222X	340	140	300	100	SHORV422221	–
SH3628X	280	200	240	160	SHORV362827 SHORV362821	0,435
SH4232X	340	240	300	200	SHORV423229 SHORV423222	0,660
SH4646X	360	315	360	210	SHORV464621	–
SH5739X	460	280	440	260	SHORV573931 SHORV573926	0,700
SH6545X	540	340	500	300	SHORV654533 SHORV654526	0,750
SH7252X	605	400	560	360	SHORV725235 SHORV725224	–
SH8967X	720	500	680	460	SHORV896745 SHORV896735	0,800
SH10458X	850	400	790	360	SHORV1045839	–
SH10777X	850	550	820	520	SHORV1077740	0,800

**X – material code: A – aluminum, H – stainless steel.*

*Maximum recommended number of cable glands on sides of SHORV enclosures**

Cable gland size code	G, GOST 6357	M, GOST 24705	SHORV 281811		SHORV 302021		SHORV 422221		SHORV 362827		SHORV 362821		SHORV 423229	
			A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M
01	3/8”	M16X1,5	4/4	2/2	12/12	6/6	20/20	8/8	21/21	16/16	15/15	11/11	31/31	23/23
1	1/2”	M20X1,5	4/4	2/2	11/11	6/6	18/20	8/8	20/21	14/14	14/15	11/11	30/30	21/21
2	3/4”	M25X1,5	4/4	2/2	8/8	4/4	14/14	5/5	16/16	12/12	10/10	7/7	22/22	16/16
3	1”	M32X1,5	3/3	2/2	6/6	4/4	10/10	4/4	12/12	9/9	8/8	6/6	15/16	10/12
4	1 1/4”	M40X1,5	–	–	5/5	2/2	7/7	3/3	8/9	6/6	6/6	4/4	12/12	8/9
5	1 1/2”	M50X1,5	–	–	2/2	1/1	5/5	2/2	6/6	5/5	3/3	2/2	9/9	6/6
6	2”	M63X1,5	–	–	2/2	1/1	3/3	1/1	6/6	4/4	3/3	2/2	6/6	5/5
7	2 1/2”	M75X1,5	–	–	2/2	1/1	3/3	1/1	3/3	2/2	2/2	1/1	5/5	4/4
8	3”	M90X1,5	–	–	1/1	1/1	2/2	1/1	2/2	1/1	2/2	1/1	3/3	2/2

Cable gland size code	G, GOST 6357	M, GOST 24705	SHORV 423222		SHORV 464621		SHORV 573931		SHORV 573926		SHORV 654533		SHORV 654526	
			A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M
01	3/8”	M16X1,5	20/20	15/15	16/16	16/16	40/40	25/25	30/30	18/18	48/48	30/30	32/32	20/20
1	1/2”	M20X1,5	20/20	14/15	15/15	15/15	39/40	25/25	28/30	18/18	46/48	29/30	32/32	20/20
2	3/4”	M25X1,5	14/14	11/11	14/14	14/14	32/32	20/20	23/23	15/15	38/38	22/22	23/23	14/14
3	1”	M32X1,5	10/10	6/6	10/10	10/10	21/21	13/13	14/14	9/9	25/25	15/16	16/16	10/10
4	1 1/4”	M40X1,5	8/8	5/6	6/6	6/6	16/17	11/11	12/12	8/8	20/21	12/12	14/14	8/8
5	1 1/2”	M50X1,5	6/5	4/4	4/4	4/4	11/11	8/8	9/9	6/6	14/14	9/9	8/8	5/5
6	2”	M63X1,5	4/3	2/2	4/4	4/4	10/10	6/6	6/6	4/3	11/11	6/6	6/6	4/4
7	2 1/2”	M75X1,5	3/3	2/2	3/3	3/3	6/6	4/4	4/4	2/2	8/8	5/5	5/5	3/3
8	3”	M90X1,5	2/2	1/1	–	–	4/4	2/2	3/4	2/2	5/5	3/3	4/4	2/2

Cable gland size code	G, GOST 6357	M, GOST 24705	SHORV 725235		SHORV 725224		SHORV 896745		SHORV 896735		SHORV 1045839		SHORV 1077740	
			A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A G/M	B G/M	A G/M	B G/M
01	3/8”	M16X1,5	60/60	40/40	28/29	19/19	84/84	61/61	56/56	40/40	70/70	32/32	70/70	46/46
1	1/2”	M20X1,5	58/58	38/38	27/28	18/18	84/84	60/60	54/55	38/38	70/70	32/32	70/70	46/46
2	3/4”	M25X1,5	44/44	28/28	22/22	14/14	68/68	48/51	39/39	30/30	60/60	28/28	60/60	38/38
3	1”	M32X1,5	34/34	22/22	17/17	12/12	50/50	33/33	30/30	21/21	39/39	18/18	39/39	25/25
4	1 1/4”	M40X1,5	24/24	15/15	10/11	7/7	36/36	24/25	20/20	15/15	33/33	15/15	33/33	21/21
5	1 1/2”	M50X1,5	20/20	14/12	8/8	5/5	26/26	20/20	16/16	11/11	21/21	10/10	21/21	14/14
6	2”	M63X1,5	14/14	9/8	6/6	4/4	21/21	15/15	14/14	10/10	18/18	8/8	18/18	12/12
7	2 1/2”	M75X1,5	10/10	6/6	5/5	3/3	14/14	10/10	8/8	6/6	13/13	6/6	13/13	8/8
8	3”	M90X1,5	6/6	4/4	4/4	3/3	10/10	6/6	5/5	4/4	7/7	3/3	7/7	4/4

Recommended number of control and indicating elements installed on the cover of SHORV enclosure

Type of the enclosure	Control and indicating elements	
	Circuit breakers operating handles	Control buttons and signal lamps
SHORV281811	0	8
SHORV302021	1	8
SHORV422221	4	12
SHORV362827	6	15
SHORV362821	6	15
SHORV423229	6	24
SHORV423222	6	24
SHORV464621	10	36
SHORV573931	11	38
SHORV573926	11	38
SHORV654533	12	35
SHORV654526	12	35
SHORV725235	20	54
SHORV725224	20	54
SHORV896735	42	87
SHORV896745	42	87
SHORV1045839	40	88
SHORV1077740	47	110

Table of names matching

Previous international name “ZAVOD GORELTEX” Co. Ltd. TU 3400-005-72453807-07	The Customs Union name “ZAVOD GORELTEX” Co. Ltd. TU 3400-005-72453807-07
CCFE	SHORV
CCFE-01P	SHORV281811
CCFE-1P	SHORV302021
CCFE-2P	SHORV422221
CCFE-3P	SHORV362827
CCFE-3BP	SHORV362821
CCFE-4P	SHORV423229
CCFE-4BP	SHORV423222
CCFE-45	SHORV573931
CCFE-45B	SHORV573926
CCFE-5	SHORV654533
CCFE-5B	SHORV654526
CCFE-55	SHORV725235
CCFE-55B	SHORV725224
CCFE-6	SHORV896745
CCFE-6B	SHORV896735
CCFE-7B	SHORV1077740

Control and indicating elements	refer to p.377
Recommended cable glands KNV, KOV, KNVTN, KNVTV, KNE, KNVZ	refer to p.393

- Shape of an explosion-proof enclosure ensures easy access for installation of equipment inside boxes. SHORV-N enclosures have external flange.
- Cover and walls of explosion-proof enclosures are made from corrosion-resistant chrome-nickel stainless casting steel.
- This type of steel is highly strong and resistant to high temperatures, corrosion and aggressive operating environment, including alkali and drops of hydrochloric acid and sulfuric acid. All these properties allow to use SHORV-N enclosures at the enterprises of chemical or food industry and in marine equipment.
- Seamless solid cast structure.

MARKING

1Ex d IIC T6...T4 Gb X
1Ex d [ia] IIC T6...T4 Gb X
1Ex d [ib] IIC T6...T4 Gb X
1Ex d IIB+H_2 T6...T4 Gb
1Ex d [ia] IIB+H_2 T6...T4 Gb
1Ex d [ib] IIB+H_2 T6...T4 Gb
Ex tb IIIC T70°C...T135°C Db

MINING EQUIPMENT MARKING

PB Ex d I Mb
PH1, PH2

CERTIFICATES AND PERMITS

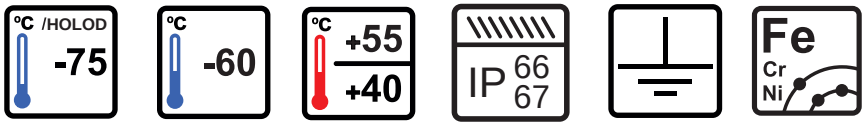
VTT 17 ATEX 047U
GOST R ISO 9001-2015 (ISO 9001:2015)
TC RU C-RU.AA87.B.00244
POCC RU.EX01.B00004
Maritime Register Type Approval Certificate No. 16.03662.315
IECEx CCVE 16.0007U
TU 3400-005-72453807-07
GAZPROM OJSC No. Г000.RU.1131.H00666

CODES

GOST 14254-96 (IEC 529-89)
GOST 12.2.007.0-75
GOST R IEC 60079-0-2011
GOST IEC 60079-1-2011
GOST 30852.10-2002 (GOST 60079-11:1999)
GOST 30852.20-2002
TR CU 012/2011
GOST IEC 61241-1-1-2011
Electrical Installation Code Ch. 7.3, Ch. 7.4
OD 5.2-093-2004
GOST 24754-2013
GOST R IEC 60079-31-2010

TECHNICAL CHARACTERISTICS

Installation	Category I for firedamp and dust; Category II for gas subgroup IIA, IIB+H2, IIC (except for acetylene); zones 1, 2; Category III for dust, explosive dust atmospheres containing flying particles, conductive and non-conductive dust; Underground mines non-hazardous with gas (methane) and coal dust; Facilities under Russian Maritime Register of Shipping supervision; Dangerous production facilities
Maximum voltage, V	~1000, ⎓250 ~/⎓7200 (for SHORV-N644433)
Maximum current, A	650 1500 (for ~1000V, ⎓250V)
Surface	Shot blasting (inside and outside)
Sealant	Silicone rubber (in cover groove) for IP67, silicone sealant
Grounding	2 stainless steel ground clamps (inner and outer)
Installation inside enclosure	4 racks for mounting panel installation
Climatic category	NF1 (upon request NF2, NF3, NF4, NF5, F1, F2, F3, F5, T1, T2, T3, T5, MU1, MU2, MU3, MU4, W2.13**, W5)

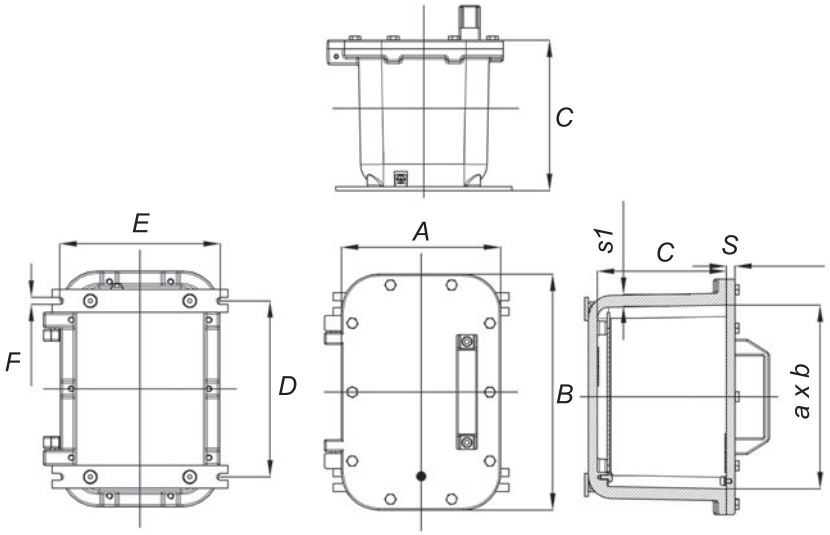


OPTIONS, ACCESSORIES AND VERSIONS

DESCRIPTION	MARKING
Drain plug for condensate removal	/DKUV
Breather plug for moisture removal	/VKU
Marine version	/MORE
Version for minimum operating temperature -75°C	/HOLOD
Version for tropics with protection against bugs	/TERMITY
Special version for nuclear facilities of nuclear power plants “Small leak”	/MALAYA TECH
Earthquake-resistant version	/MSK-64
Acceptance by customer	/PRIEMKA
Nameplate with inscription as per customer’s specification	/NADPIS «_»
Degree of protection	/IP67
Nameplates with light reflecting coating	/SVP
Bolt with seal	/PLOMBA

DESCRIPTION	MARKING
Device for connection of cable screens	/EKRAN
Neutral bus bar	/SHINA N
Internal ground bus bar	/SHINA Z
Phase bus bar	/SHINA PH
Terminal jumpers as per customer’s diagram	/SCHEMA
Marking of terminals as per customer’s diagram	/MARK
Aluminum alloy mounting panel	/ALP
Internal thermal insulation	/TEPLOISOLYATSIYA
Heating for automatic devices	/OBOGREV
Climatic category IP67	/IP67
Captive bolts for cover fastening	/NBK
Radiator cooling system	/RADIATOR
Alignment pin (for SHORV896746 and larger)	/SHTIFT

OVERALL AND MOUNTING DIMENSIONS

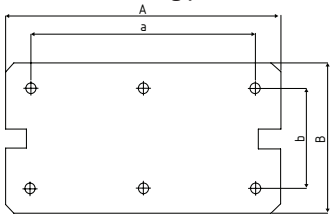


*Dimensions of SHORV-N enclosures**

Dimension type of enclosure	Dimensions, mm														Mass, kg
	Outer			Inner					Standard fastening			Bracket fastening			
	A	B	C	a	b	c	S	S1	d	e	f	D	E	F	
SHORV-N281811	286	185	118	214	114	79,5	12,5	15,5	160	123,5	M8	160	171	11	17,9
SHORV-N312120	308	208	197	240	140	153	11	15,5	230	130	M8	230	210	9	26,7
SHORV-N432221	430	229	215	365	164	168	12,5	15,5	350	150	M10	350	230	11	43,7
SHORV-N372920	370	289	208	305	224	161	12,5	15,5	290	210	M10	290	290	11	43,9
SHORV-N372926	370	289	268	305	224	221	12,5	15,5	290	210	M10	290	290	11	52,3
SHORV-N563823	568	387	237	495	315	184	15,5	15,5	360	236	M10	360	376	11	93,5
SHORV-N563828	568	387	287	495	315	234	15,5	15,5	360	236	M10	360	376	11	103,1
SHORV-N644433	641	441	339	565	364	273	20	16,5	400	280	M12	400	440	14	157,5

** Enclosures of non-standard sizes can be produced.*

Mounting panel



Dimensions of mounting panels for SHORV-N enclosures

Name	Dimensions, mm				Dimension type of enclosure	Material	Mass, kg
	A	B	a	b			
SHN2818H	220	120	180	80	SHORV-N281811	stainless steel	–
SHN3121H	220	120	180	80	SHORV-N312120	stainless steel	–
SHN3729H	460	280	440	260	SHORV-N372920	stainless steel	–
SHN4322H	340	140	300	100	SHORV-N432221	stainless steel	–
SHN3729H	280	200	240	160	SHORV-N372926	stainless steel	0,435
SHN5638H	460	280	440	260	SHORV-N563823	stainless steel	–
SHN5638H	460	280	440	260	SHORV-N563828	stainless steel	0,660
SHN6444H	540	340	500	300	SHORV-N644433	stainless steel	1,425

Maximum recommended number of cable glands on sides of SHORV-N enclosures

Dimension type of enclosure	Side A									Side B								
	Cable gland thread type									Cable gland thread type								
	1/2" 20x1,5	3/4" 25x1,5	1" 32x1,5	1 1/4" 40x1,5	1 1/2" 50x1,5	2" 63x1,5	2 1/2" 75x1,5	3" 90x1,5	4"	1/2" 20x1,5	3/4" 25x1,5	1" 32x1,5	1 1/4" 40x1,5	1 1/2" 50x1,5	2" 63x1,5	2 1/2" 75x1,5	3" 90x1,5	4"
SHORV-N281811	4	4	3	3	–	–	–	–	–	3	2	2	1	–	–	–	–	–
SHORV-N312120	12	8	7	6	3	2	2	1	1	8	5	4	3	2	1	1	1	–
SHORV-N372920	15	12	8	6	5	3	2	2	1	12	9	6	5	3	2	2	1	1
SHORV-N432221	21	18	12	10	7	5	3	3	2	9	8	5	4	3	2	1	1	1
SHORV-N372926	24	18	13	11	7	6	4	2	1	16	11	9	6	5	4	2	1	1
SHORV-N563823	28	24	17/15	12	10	7	4	3	3	18	15	10	8	6	4	2	2	1
SHORV-N563828	43	35	22	18	15	10	7	4	3	28	20	14	12	8	6	4	2	1
SHORV-N644433	55	45	32	23	18	14	9	7	-	36	28	18	14	12	8	6	4	-

Recommended number of control and indicating elements installed on the cover of SHORV-N enclosure

Type of the enclosure	Control and indicating elements	
	Circuit breakers operating handles	Control buttons and signal lamps
SHORV-N281811	0	8
SHORV-N312120	2	9
SHORV-N432221	4	16
SHORV-N372926	6	17
SHORV-N372920	6	17
SHORV-N563828	16	40
SHORV-N563823	16	40
SHORV-N644433	18	54

Table of names matching

Previous international name "ZAVOD GORELTEX" Co. Ltd. TU 3400-005-72453807-07	The Customs Union name "ZAVOD GORELTEX" Co. Ltd. TU 3400-005-72453807-07
CCFE-SS	SHORV-N
CCFE-1SS	SHORV-N312120
CCFE-2SS	SHORV-N432221
CCFE-3SS	SHORV-N372926
CCFE-3BSS	SHORV-N372920*
CCFE-4SS	SHORV-N433328*
CCFE-4BSS	SHORV-N433321*
CCFE-45SS	SHORV-N563828
CCFE-45BSS	SHORV-N563823*
CCFE-5SS	SHORV-N634332*
CCFE-5BSS	SHORV-N634325*
CCFE-55SS	SHORV-N715131*
CCFE-55BSS	SHORV-N715121*
CCFE-6SS	SHORV-N866440*
CCFE-6BSS	SHORV-N866430*
CCFE-7SS	SHORV-N1007035*

** Boxes are manufactured upon order, others are in stock.*

Control and indicating elements	refer to p.377
Recommended cable glands KNV, KOV, KNV-TN, KNV-TV, KNE, KNVZ	refer to p.393

• Enclosures ensure protection in explosive mixtures of acetylene and air of category IIC by means of threaded joint of the cover and enclosure.
• 10 dimension types of enclosure (including enclosure with window).
• SHORVA enclosures were tested in conditions to -60°C.
• Service life of flameproof joints is more than 25 years.
• High resistance of aluminum alloy SHORVA enclosures to hydrogen sulfide exposure.
• Unpainted internal surface of the enclosure ensures increased thermal conductivity.

MARKING

1Ex d IIC T6...T4 Gb
1Ex d [ia] IIC T6...T4 Gb
1Ex d [ib] IIC T6...T4 Gb
Ex tb IIIC T85°C...T135°C Db
1Ex d e mb IIC T6...T4 Gb

MINING EQUIPMENT MARKING

PB Ex d I Mb X
PB Ex d [ib] I Mb X
PH2

CERTIFICATES AND PERMITS

VTT 17 ATEX 048U
GOST R ISO 9001-2015 (ISO 9001:2015)
TC RU C-RU.AA87.B.00244
РОСС RU.EX01.B00004
Maritime Register Type Approval Certificate No. 16.03657.315
IECEx CCVE 16.0008U
TU 3400-005-72453807-07
GAZPROM OJSC No. Г000.RU.1131.H00666

CODES

GOST R IEC 60079-0-2011
GOST 14254-96 (IEC 529-89)
GOST 30852.0-2002 (IEC 60079-0:1998)
GOST 30852.1-2002 (IEC 60079-1:1998)
GOST 30852.10-2002 (IEC 60079-11:1999)
GOST 30852.20-2002
TR CU 012/2011
GOST IEC 61241-1-1-2011
GOST 24754-2013
Electrical Installation Code Ch. 7.3, Ch. 7.4
OD 5.2-093-2004
GOST 12.2.007.0-75
GOST R IEC 60079-31-2010

TECHNICAL CHARACTERISTICS

Installation
Category I for firedamp and dust; Category II for gas subgroup IIA, IIB, IIC; zones 1, 2; Category III for dust, explosive dust atmospheres containing flying particles, conductive and non-conductive dust; Underground mines non-hazardous with gas (methane) and coal dust; Facilities under Russian Maritime Register of Shipping supervision; Dangerous production facilities

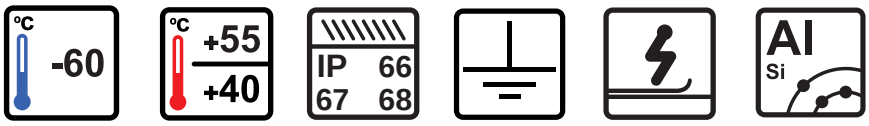
Maximum voltage, V
~1000 / ⎓250

Maximum current, A
400

Sealant
Silicone rubber (in cover groove), silicone sealant

Installation inside enclosure
2 or 4 racks for mounting panel installation

Climatic category
NF1 (upon request NF2, NF3, NF4, NF5, F1, F2, F3, F5, T1, T2, T3, T5, MU1, MU2, MU3, MU4, W2.13**, W5)

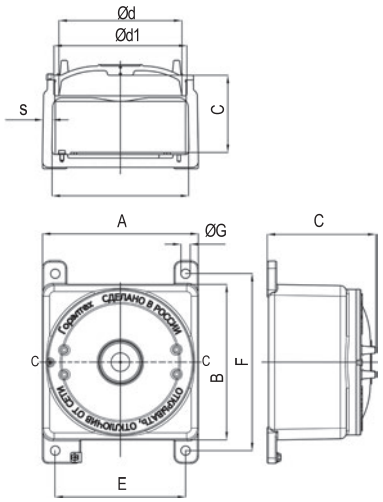


OPTIONS, ACCESSORIES AND VERSIONS

DESCRIPTION	MARKING
Drain plug for condensate removal	/DKUV
Breather plug for moisture removal	/VKU
Marine version	/MORE
Version for tropics with protection against bugs	/TERMITY
Special version for nuclear facilities of nuclear power plants “Small leak”	/MALAYA TECH
Earthquake-resistant version	/MSK-64
Acceptance by customer	/PRIEMKA
Nameplate with inscription as per customer’s specification	/NADPIS «_»
Stainless steel mounting panel	/NP
External surface coating as per customer’s specification	/RAL (code)
Nameplates with light reflecting coating	/SVP

DESCRIPTION	MARKING
Device for connection of cable screens	/EKRAN
Neutral bus bar	/SHINA N
Internal ground bus bar	/SHINA Z
Phase bus bar	/SHINA PH
Terminal jumpers as per customer’s diagram	/SCHEMA
Marking of terminals as per customer’s diagram	/MARK
Aluminum alloy mounting panel	/ALP
Internal thermal insulation	/TEPLOISOLYATSIYA
Heating for automatic devices	/OBOGREV
Anti-condensation coating	/AP
Degree of protection IP68	/IP68
Radiator cooling system	/RADIATOR

OVERALL AND MOUNTING DIMENSIONS

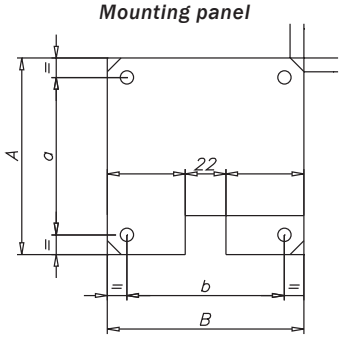


Dimensions of SHORVA enclosures

Box type	Dimensions, mm												Mass, kg
	Outer			Inner						Fastening			
	A	B	C	a	b	c	Ød	Ød1	s	E	F	ØG	
SHORVA121211	120	120	115	94	94	74	82	M95x2	13	100	145	10	1,9
SHORVA151512	151	151	125	124	124	84	116	M130x2	13	126	174	11	2,8
SHORVA171712	175	175	129,5	146	146	89	137	M150x2	14	150	195	11	3,6
SHORVA232316	235	235	164	203	203	117	185	M200x2	14	196	267	14	7,4
SHORVA272721	276.5	276.5	218	248	248	152	232	M250x3	14	236	316	14	11,4
SHORVA424229	429,5	429,5	291	395,5	395,5	216	330	M390x4	16,5	390	480	14	35,6

Several enclosures can be used when an enclosure of a larger size is required.

Mounting panel



Dimensions of mounting panels

Name	Dimensions, mm				Dimension type of enclosure
	A	B	a	b	
SHA1212X	80	80	60	48	SHORVA121211
SHA1515X	100	100	80	60	SHORVA151512
SHA1717X	113	113	90	90	SHORVA171712
SHA2323X	150	150	130	130	SHORVA232316
SHA2727X	200	200	158	158	SHORVA272721
SHA4242X	315	315	230	230	SHORVA424229

** X — material code: A — aluminum, H — stainless steel.*

Maximum recommended number of cable glands on sides of SHORV-N enclosures

Enclosure size	Thread size								
	01	1	2	3	4	5	6	7	8
	Thread type, R as per GOST 6211, M as per GOST 24705								
	R/M	R/M	R/M	R/M	R/M	R/M	R/M	R/M	R/M
SHORVA121211	3/2	2/2	2/2	1/1	1/1	–	–	–	–
SHORVA151512	5/5	4/4	3/3	2/2	2/2	1/1	–	–	–
SHORVA171712	6/6	5/5	3/3	2/2	2/2	2/2	1/1	–	–
SHORVA232316	8/8	8/8	7/8	4/4	3/3	2/2	2/2	2/2	–
SHORVA272721	14/14	14/14	11/11	8/8	6/6	4/4	3/3	2/2	2/2
SHORVA424229	22/22	22/22	18/18	11/12	10/10	8/8	5/5	3/3	3/3

Table of names matching

Previous international name “ZAVOD GORELTEX” Co. Ltd. TU 3400-005-72453807-07	The Customs Union name “ZAVOD GORELTEX” Co. Ltd. TU 3400-005-72453807-07
CCA	SHORVA
CCA	SHORVA121211
CCA-0	SHORVA151512
CCA-01	SHORVA171712
CCA-02	SHORVA232316
CCA-03	SHORVA272721
CCA-04	SHORVA424229

Control and indicating elements	refer to p.377
Recommended cable glands KNV, KOV, KNVTN, KNVTV, KNE, KNVZ	refer to p.393

- Shape of an explosion-proof SHORV enclosure ensures easy access for installation of equipment inside boxes. SHORV enclosures with window have external flange.
- Service life of flameproof joints is more than 25 years.
- Cover and walls of explosion-proof SHORV enclosures with window have the highest strength characteristics.
- Windows of explosion-proof SHORV enclosures are made from impact-resistant heat-resistant glass.
- Windows in non-standard sizes can be produces.

MARKING

1Ex d IIC T6...T4 Gb X
1Ex d [ia] IIC T6...T4 Gb X
1Ex d [ib] IIC T6...T4 Gb X
1Ex d IIB+H_2 T6...T4 Gb
1Ex d [ia] IIB+H_2 T6...T4 Gb
1Ex d [ib] IIB+H_2 T6...T4 Gb
Ex tb IIIC T70°C...T135°C Db
1Ex d IIB+H_2 Gb U

MINING EQUIPMENT MARKING

PB Ex d I Mb
PB Ex d [ib] I Mb
Ex d I Mb U
PH2

CERTIFICATES AND PERMITS

GOST R ISO 9001-2015 (ISO 9001:2015)
TC RU C-RU.AA87.B.00244
POCC RU.EX01.B00004
Maritime Register Type Approval Certificate No. 17.12692.120
TU 3400-005-72453807-07
GAZPROM OJSC No. Г000.RU.1131.H00666

CODES

GOST 14254-96 (IEC 529-89)
GOST 12.2.007.0-75
GOST R IEC 60079-0-2011
GOST IEC 60079-1-2011
GOST 30852.0-2002
GOST 30852.10-2002 (IEC 60079-11:1999)
GOST 30852.20-2002
TR CU 012/2011,
GOST IEC 61241-1-1-2011
GOST 24754-2013
Electrical Installation Code Ch. 7.3, Ch. 7.4
OD 5.2-093-2004
GOST R IEC 60079-31-2010

TECHNICAL CHARACTERISTICS

Installation

Category I for firedamp and dust;
Category II for gas subgroup IIA, IIB+H2, IIC (except for acetylene); zones 1, 2;
Category III for dust, explosive dust atmospheres containing flying particles, conductive and non-conductive dust;
Underground mines non-hazardous with gas (methane) and coal dust;
Facilities under Russian Maritime Register of Shipping supervision;
Dangerous production facilities

Maximum voltage, V

~1000 / ⎓250
~3300 (SHORV423229...SHORV896735)
~10000 (SHORV654533...SHORV896735)

Maximum current, A

650
1500 (for ~1000 V , ⎓250 V)

Sealant

Silicone rubber (in cover groove) for IP67, PG-SMAZKA silicone sealant

Grounding

2 stainless steel ground clamps (inner and outer)

Cover fastening

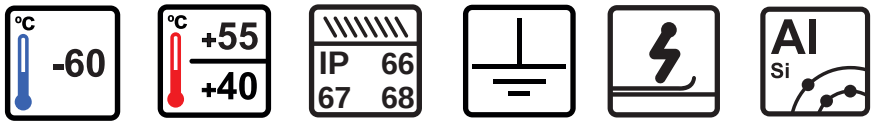
Removable cover on hinges, fastening with stainless steel screws with cylindrical head and hexagonal socket for key

Installation inside enclosure

4 racks for mounting panel installation

Climatic category

NF1 (upon request NF4, NF5, T1, T2, T3, T5, F5, MU1, MU2, MU3, MU4, W5)

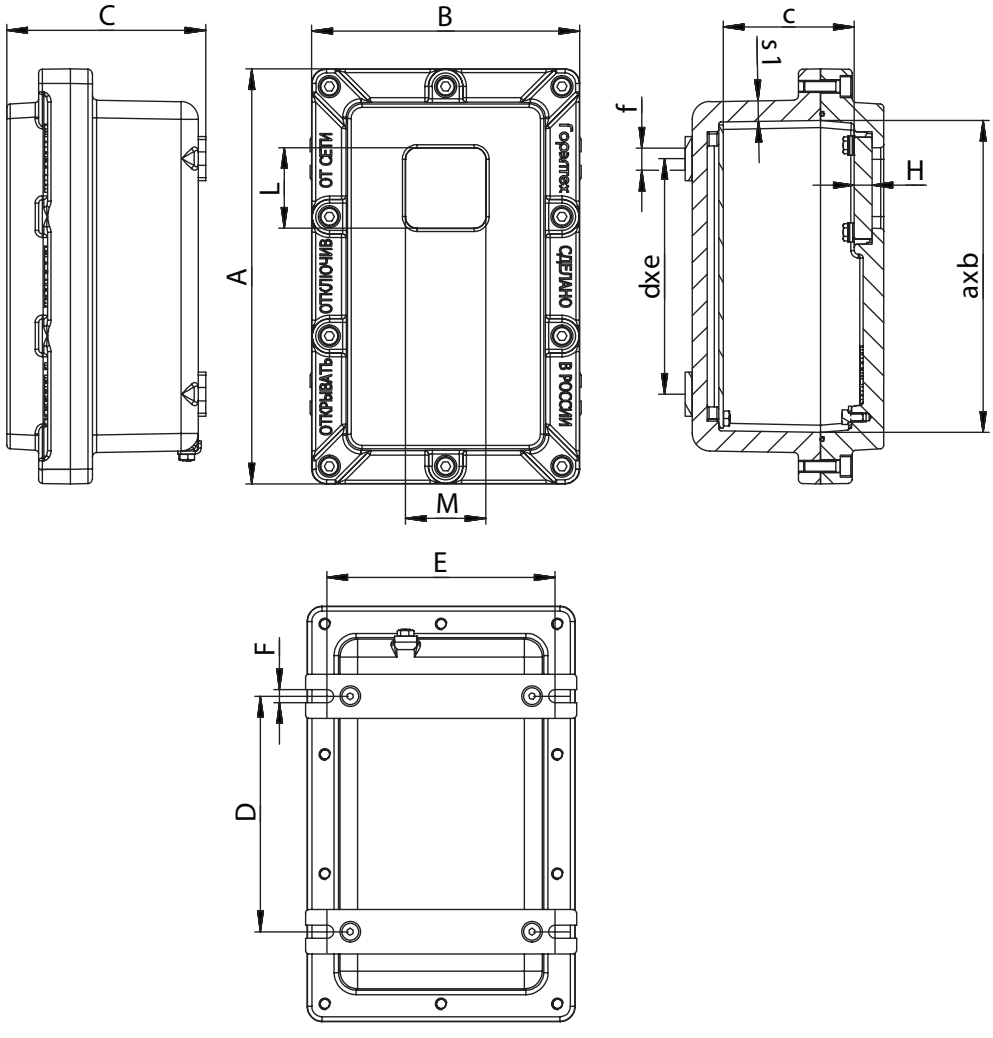


OPTIONS, ACCESSORIES AND VERSIONS

DESCRIPTION	MARKING
Cover fixation on hinges	/PETLYA
Drain plug for condensate removal	/DKUV
Breather plug for moisture removal	/VKU
Marine version	/MORE
Version for minimum operating temperature -75°C	/HOLOD
Version for tropics with protection against bugs	/TERMITY
Special version for nuclear facilities of nuclear power plants “Small leak”	/MALAYA TECH
Earthquake-resistant version	/MSK-64
Acceptance by customer	/PRIEMKA
Nameplate with inscription as per customer’s specification	/NADPIS «_»
Stainless steel mounting panel	/NP
Nameplates with light reflecting coating	/SVP
External surface coating as per customer’s specification	/RAL (code)

DESCRIPTION	MARKING
Bolt with seal	/PLOMBA
Device for connection of cable screens	/EKRAN
Neutral bus bar	/SHINA N
Internal ground bus bar	/SHINA Z
Phase bus bar	/SHINA PH
Terminal jumpers as per customer’s diagram	/SCHEMA
Marking of terminals as per customer’s diagram	/MARK
Aluminum alloy mounting panel	/ALP
Internal thermal insulation	/TEPLOISOLYATSIYA
Heating for automatic devices	/OBOGREV
Anti-condensation coating	/AP
Degree of protection IP67	/IP67
Captive bolts for cover fastening	/NBK
Radiator cooling system	/RADIATOR
Alignment pin (for SHORV896746 and larger)	/SHTIFT

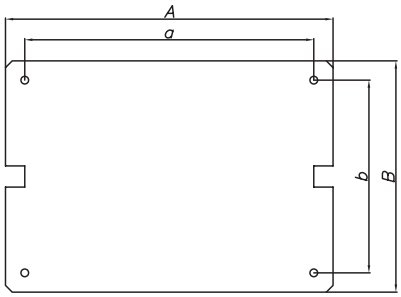
OVERALL AND MOUNTING DIMENSIONS



Dimensions of SHORV enclosures

Dimension type of enclosure	Dimensions, mm													Window standard sizes, mm	Mass, kg
	Outer			Inner				Standard fastening			Bracket fastening				
	A	B	C	A	B	C	S1	D	E	F	D	E	F	Lxmxh	
SHORV281813-00505	282	182	135	212	112	89	14	160	124	M6	160	155	9	50x50x12	6,7
SHORV302021-01508	304	204	211	240	140	150	14	230	130	M8	230	210	9	150x80x15	9,6
SHORV422221-02508	424	224	213	359	159	150	14	350	150	M8	350	230	9	250x80x15	14,7
SHORV362827-02515	364	284	275	300	220	203	14	290	210	M8	290	289	9	250x150x19	18,4
SHORV362821-02515	364	284	215	300	220	143	14	290	210	M8	290	290	9	250x150x19	16,1
SHORV423229-03020	425	325	297	361	261	223	14	350	250	M10	350	330	11	300x200x19	33,1
SHORV423222-03020	425	325	226	361	261	163	14	350	250	M10	350	330	11	300x200x19	28,6
SHORV573931-03020	576	396	318	506	326	234	20	360	236	M10	360	376	11	300x200x19	54.9
SHORV573926-01525	574	394	268	491	311	190	19	360	236	M10	360	376	11	150x250x19	41,8
SHORV573926-03020	576	396	268	506	326	184	20	360	236	M10	360	376	11	300x200x19	51.2
SHORV654533-03020	650	450	337	570	370	255	17	550	350	M10	550	446	11	300x200x19	66,1
SHORV654526-03020	650	450	265	570	370	183	16	550	350	M10	550	446	11	300x200x19	59,1
SHORV725235-03020	723	523	359	639	439	269	18,5	600	400	M10	600	505	11	300x200x19	91,5
SHORV725224-03020	723	523	249	639	439	159	17	600	400	M10	600	505	11	300x200x19	82,6
SHORV764323-02610	768	431	233	685	348	144	19	580	240	M10	580	410	11	260x100x19	65,1
SHORV896745-03020	891	671	455	776	556	355	29	680	480	M16	680	640	14	300x200x19	190,8
SHORV896735-03020	891	671	355	776	556	255	28	680	480	M16	680	640	14	300x200x19	166,9

Mounting panel



Dimensions of mounting panels for SHORV...-O enclosures with window

Name	Dimensions, mm				Box type	Mass, kg
	A	B	a	b		
SH2818X	206	100	193	53	SHORV281811	–
SH3020X	220	120	180	80	SHORV302021	–
SH4222X	340	140	300	100	SHORV422221	–
SH3628X	280	200	240	160	SHORV362827 SHORV362821	0,435
SH4232X	340	240	300	200	SHORV423229 SHORV423222	0,660
SH5739X	460	280	440	260	SHORV573931 SHORV573926	0,700
SH6545X	540	340	500	300	SHORV654533 SHORV654526	0,750
SH7252X	605	400	560	360	SHORV725235 SHORV725224	–
SH8967X	720	500	680	460	SHORV896745 SHORV896735	0,800

** X — material code:, A — aluminum, H — stainless steel.*

Maximum recommended number of cable glands on sides of SHORV...O

Cable gland size code	G, GOST 6357	M, GOST 24705	SHORV 281813		SHORV 302021		SHORV 422221		SHORV 362827		SHORV 362821		SHORV 423229		SHORV 423222		SHORV 573931	
			A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M
01	3/8”	M16X1,5	4/4	2/2	12/12	6/6	20/20	8/8	21/21	16/16	15/15	11/11	31/31	23/23	20/20	15/15	40/40	25/25
1	1/2”	M20X1,5	4/4	2/2	11/11	6/6	18/20	8/8	20/21	14/14	14/15	11/11	30/30	21/21	20/20	14/15	39/40	25/25
2	3/4”	M25X1,5	4/4	2/2	8/8	4/4	14/14	5/5	16/16	12/12	10/10	7/7	22/22	16/16	14/14	11/11	32/32	20/20
3	1”	M32X1,5	3/3	2/2	6/6	4/4	10/10	4/4	12/12	9/9	8/8	6/6	15/16	10/12	10/10	6/6	21/21	13/13
4	1 1/4”	M40X1,5	–	–	5/5	2/2	7/7	3/3	8/9	6/6	6/6	4/4	12/12	8/9	8/8	5/6	16/17	11/11
5	1 1/2”	M50X1,5	–	–	2/2	1/1	5/5	2/2	6/6	5/5	3/3	2/2	9/9	6/6	6/5	4/4	11/11	8/8
6	2”	M63X1,5	–	–	2/2	1/1	3/3	1/1	6/6	4/4	3/3	2/2	6/6	5/5	4/3	2/2	10/10	6/6
7	2 1/2”	M75X1,5	–	–	2/2	1/1	3/3	1/1	3/3	2/2	2/2	1/1	5/5	4/4	3/3	2/2	6/6	4/4
8	3”	M90X1,5	–	–	1/1	1/1	2/2	1/1	2/2	1/1	2/2	1/1	3/3	2/2	2/2	1/1	4/4	2/2

Cable gland size code	G, GOST 6357	M, GOST 24705	SHORV 573926		SHORV 654533		SHORV 654526		SHORV 725235		SHORV 725224		SHORV 896745		SHORV 896735	
			A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M	A R/M	B R/M
01	3/8”	M16X1,5	30/30	18/18	48/48	30/30	32/32	20/20	60/60	40/40	28/29	19/19	84/84	61/61	56/56	40/40
1	1/2”	M20X1,5	28/30	18/18	46/48	29/30	32/32	20/20	58/58	38/38	27/28	18/18	84/84	60/60	54/55	38/38
2	3/4”	M25X1,5	23/23	15/15	38/38	22/22	23/23	14/14	44/44	28/28	22/22	14/14	68/68	48/51	39/39	30/30
3	1”	M32X1,5	14/14	9/9	25/25	15/16	16/16	10/10	34/34	22/22	17/17	12/12	50/50	33/33	30/30	21/21
4	1 1/4”	M40X1,5	12/12	8/8	20/21	12/12	14/14	8/8	24/24	15/15	10/11	7/7	36/36	24/25	20/20	15/15
5	1 1/2”	M50X1,5	9/9	6/6	14/14	9/9	8/8	5/5	20/20	14/12	8/8	5/5	26/26	20/20	16/16	11/11
6	2”	M63X1,5	6/6	4/3	11/11	6/6	6/6	4/4	14/14	9/8	6/6	4/4	21/21	15/15	14/14	10/10
7	2 1/2”	M75X1,5	4/4	2/2	8/8	5/5	5/5	3/3	10/10	6/6	5/5	3/3	14/14	10/10	8/8	6/6
8	3”	M90X1,5	3/4	2/2	5/5	3/3	4/4	2/2	6/6	4/4	4/4	3/3	10/10	6/6	5/5	4/4

FORMATION OF MARKING

SHORV X – OX – X X (X) – X X (X) – X – TU 3400-005-72453807-07

- Product name
- Enclosure size code
- Window size code
- Number of cable glands
- Cable gland type
- Side of cable gland location
- Options, accessories and versions

Example of order: SHORV362821-02515-5KNV1N(B)-2KNV4N(D) – TU 3400-005-72453807-07.

Recommended number of control and indicating elements installed on the cover of SHORV enclosure

Type of the enclosure	Control and indicating elements	
	Circuit breakers operating handles	Control buttons and signal lamps
SHORV281813-00505	–	4
SHORV302021-01508	–	no
SHORV422221-02508	–	no
SHORV362827-02515	–	no
SHORV362821-02515	–	no
SHORV423229-03020	–	no
SHORV423222-03020	–	no
SHORV573931-03020	–	10
SHORV573926-03020	–	10
SHORV573926-01525	–	19
SHORV654533-03020	–	20
SHORV654526-03020	–	20
SHORV725235-03020	–	24
SHORV725224-03020	–	24
SHORV896745-03020	–	56
SHORV896735-03020	–	56

Table of names matching

Previous international name “ZAVOD GORELTEX” Co. Ltd. TU 3400-005-72453807-07	The Customs Union name “ZAVOD GORELTEX” Co. Ltd. TU 3400-005-72453807-07
CCFE with window	SHORV
CCFE-01-0505	SHORV281813-00505
CCFE-1-1508	SHORV302021-01508
CCFE-2-2508	SHORV422221-02508
CCFE-3-2515	SHORV362827-02515
CCFE-3B-2515	SHORV362821-02515
CCFE-4-3020	SHORV423229-03020
CCFE-4B-3020	SHORV423222-03020
CCFE-45-3020	SHORV573931-03020
CCFE-45B-3020	SHORV573926-03020
CCFE-5-3020	SHORV654533-03020
CCFE-5B-3020	SHORV654526-03020
CCFE-55B-3020	SHORV725235-03020
CCFE-55-3020	SHORV725224-03020
CCFE-6-3020	SHORV896745-03020
CCFE-6B-3020	SHORV896735-03020

Control and indicating elements	refer to p.377
Recommended cable glands KNV, KOV, KNVTN, KNVTV, KNE, KNVZ	refer to p.393

• Explosion-proof SHORVA...O enclosures with window are intended for arrangement of control and measuring instruments as well as of any apparatuses for visual control.

• Casting technology used for production of explosion-proof SHORVA...O enclosures with window allows to produce explosion-proof boxes with the highest strength characteristics, excluding formation of micro-cracks. Hence additional processing of internal surface of enclosure is not necessary, which allows to increase heat dissipated power of the enclosure.

• Windows of explosion-proof SHORVA...O enclosures are made from impact-resistant and heat-resistant glass. Heat-resistant glass of explosion-proof SHORVA...O boxes has sodium and calcium in its composition, which makes it more resistant to aggressive atmospheres and heat shock due to low coefficient of expansion.

• Service life of flameproof joints is more than 25 years.

MARKING

1Ex d IIC T6...T4 Gb
1Ex d [ia] IIC T6...T4 Gb
1 Ex d [ib] IIC T6...T4 Gb
Ex tb IIIC T85°C...T135°C Db

MINING EQUIPMENT MARKING

PB Ex d I Mb X
PB Ex d [ib] I Mb X
Ex d IIC Gb U
PH2

CERTIFICATES AND PERMITS

GOST R ISO 9001-2015 (ISO 9001:2015)
TC RU C-RU.AA87.B.00244
POCC RU.EX01.B00004
Maritime Register Type Approval Certificate No. 16.03657.315
TU 3400-005-72453807-07
GAZPROM OJSC No. Г000.RU.1131.H00666

CODES

GOST R IEC 60079-0-2011
GOST 14254-96 (IEC 529-89)
GOST 30852.0-2002 (IEC 60079-0:1998)
GOST 30852.1-2002 (IEC 60079-1:1998)
GOST 30852.10-2002 (IEC 60079-11:1999)
GOST 30852.20-2002
TR CU 012/2011
GOST IEC 61241-1-1-2011
GOST 24754-2013
Electrical Installation Code Ch. 7.3, Ch. 7.4
OD 5.2-093-2004
GOST 12.2.007.0-75
GOST R IEC 60079-31-2010

TECHNICAL CHARACTERISTICS

Installation
Category I for firedamp and dust; Category II for gas subgroup IIA, IIB, IIC; zones 1, 2; Category III for dust, explosive dust atmospheres containing flying particles, conductive and non-conductive dust; Underground mines non-hazardous with gas (methane) and coal dust; Facilities under Russian Maritime Register of Shipping supervision; Dangerous production facilities

Maximum voltage, V
~1000, ⎓250

Maximum current, A
400

Sealant
Silicone rubber (in cover groove), silicone sealant

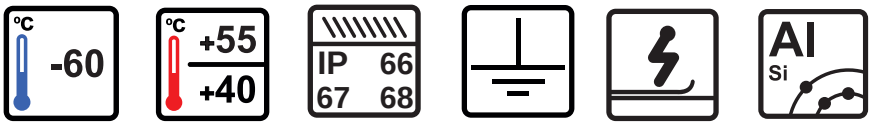
Grounding
2 stainless steel ground clamps (inner and outer)

Cover fastening
Threaded joint

Enclosure fastening
2 or 4 external mounting points

Installation inside enclosure
2 or 4 racks for mounting panel installation

Climatic category
NF1 (upon request NF2, NF3, NF4, NF5, F1, F2, F3, F5, T1, T2, T3, T5, MU1, MU2, MU3, MU4, W2.13**, W5)

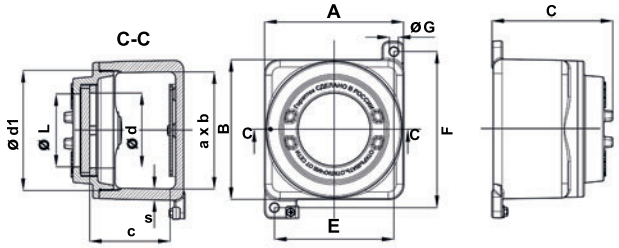


OPTIONS, ACCESSORIES AND VERSIONS

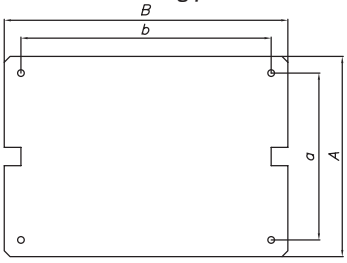
DESCRIPTION	MARKING
Drain plug for condensate removal	/DKUV
Breather plug for moisture removal	/VKU
Marine version	/MORE
Version for tropics with protection against bugs	/TERMITY
Special version for nuclear facilities of nuclear power plants “Small leak”	/MALAYA TECH
Earthquake-resistant version	/MSK-64
Acceptance by customer	/PRIEMKA
Nameplate with inscription as per customer’s specification	/NADPIS «_»
Stainless steel mounting panel	/NP
External surface coating as per customer’s specification	/RAL (code)
Nameplates with light reflecting coating	/SVP

DESCRIPTION	MARKING
Device for connection of cable screens	/EKRAN
Neutral bus bar	/SHINA N
Internal ground bus bar	/SHINA Z
Phase bus bar	/SHINA PH
Terminal jumpers as per customer’s diagram	/SCHEMA
Marking of terminals as per customer’s diagram	/MARK
Aluminum alloy mounting panel	/ALP
Internal thermal insulation	/TEPLOISOLYATSIYA
Heating for automatic devices	/OBOGREV
Anti-condensation coating	/AP
Degree of protection IP68	/IP68
Radiator cooling system	/RADIATOR

OVERALL AND MOUNTING DIMENSIONS SHORVA-O WITH WINDOW



Mounting panel



Dimensions of mounting panels for SHORVA...-O enclosures with window

DESCRIPTION	Dimension type of enclosure	Dimensions, mm			
		A	B	a	b
SHA1515X	SHORVA151512-009	100	100	80	60
SHA1717X	SHORVA171712-009	113	113	90	90
SHA2323X	SHORVA232316-014	150	150	130	130
SHA2727X	SHORVA272721-018	200	200	158	158

X — material code: A — aluminum, N — stainless steel

Dimensions of SHORVA...-O enclosure

Box type	Dimensions, mm														Mass, kg
	Outer			Inner							Window	Fastening			
	A	B	C	a	b	c	Ød	Ød1	s	v	ØL	E	F	ØG	
SHORVA151512-009	151	151	125	124	124	76	93	M130x2	13	12	90	126	174	11	3,1
SHORVA171712-009	175	175	129,5	146	146	101	137	M150x2	14	12	90	150	195	11	4,1
SHORVA232316-014	235	235	164	203	203	100	161	M200x3	14	12	140	196	267	14	8,3
SHORVA272721-018	276.5	276.5	218	248	248	146.5	203	M250x3	14	15	180	236	316	14	13

FORMATION OF MARKING

SHORVA X – OX – X X (X) – X X (X) / X – TU 3400-005-72453807-07

- Product name
- Enclosure size code
- Window size code
- Number of cable glands
- Cable gland type
- Side of cable gland location
- Options, accessories and versions

Example of order: SHORVA171712-009-3KNV1N(B)-2KNV4N(D) – TU 3400-005-72453807-07.

Control and indicating elements	refer to p.377
Recommended cable glands KNV, KOV, KNVTN, KNVTV, KNE, KNVZ	refer to p.393

• KV-KIP enclosures are intended for installation of instruments: ammeters, voltmeters, video cameras, photo relays and any visual control apparatuses including screens and displays if their installation in hazardous areas or in conditions with aggressive atmospheres is required or if they are intended for general industrial application. Various completing options are available.
• Windows of KV-KIP explosion-proof enclosures are made from impact-resistant heat-resistant borosilicate glass.

MARKING

Ex 1Ex d IIC T6...T5 Gb
Ex Ex tb IIIC T85°C ...T100°C Db

CERTIFICATES AND PERMITS

GOST R ISO 9001-2015 (ISO 9001:2015)
TC RU C-RU.AA87.B.00244
POCC RU.EX01.B00004
TU 3400-005-72453807-07
GAZPROM OJSC No. Г000.RU.1131.H00666

CODES

GOST 14254-96 (IEC 529-89)
GOST R IEC 60079-0-2011
GOST 30852.0-2002 (IEC 60079-0:1998)
GOST 30852.1-2002 (IEC 60079-1:1998)
GOST 30852.10-2002 (IEC 60079-11:1999)
TR CU 012/2011
GOST IEC 61241-1-1-2011
GOST 24754-2013
Electrical Installation Code Ch. 7.3, Ch. 7.4
OD 5.2-093-2004
GOST 12.2.007.0-75
GOST R IEC 60079-31-2010

TECHNICAL CHARACTERISTICS

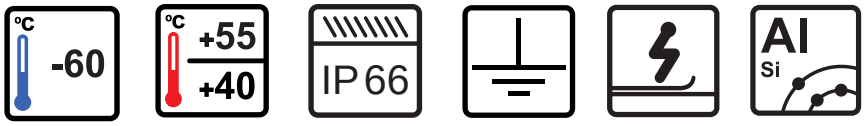
Installation
Category II for gas subgroup IIA, IIB, IIC; zones 1, 2; Category III for dust, explosive dust atmospheres containing flying particles, conductive and non-conductive dust; Facilities under Russian Maritime Register of Shipping supervision; Dangerous production facilities

Maximum voltage, V
~690, ⎓250

Maximum current, A
63

Mass, kg
2

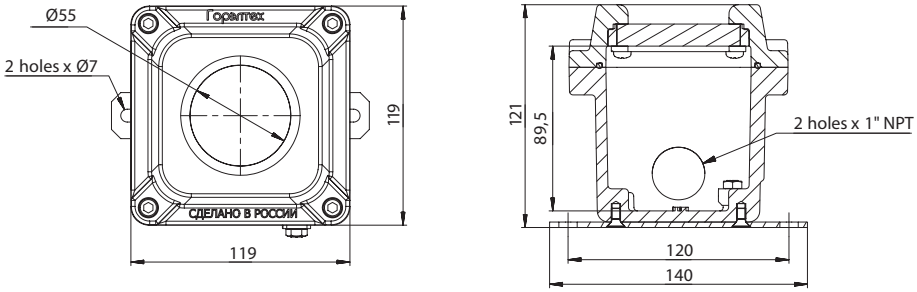
Climatic category
NF1 (upon request NF2, NF3, NF4, NF5, F1, F2, F3, F5, T1, T2, T3, T5, MU1, MU2, MU3, MU4, W2.13**, W5)



OPTIONS, ACCESSORIES AND VERSIONS

DESCRIPTION	MARKING
Electrical heating	/OBOGREV

DESIGN PARAMETERS OF KV-KIP 111112-005



FORMATION OF MARKING

KV-KIP – X – O X – X / X – TU 3400-005-72453807-07

- Device type
- Enclosure size code
- Window size code
- Number of cable glands
- Options, accessories and versions

Example of order: KV-KIP111112-O05-KNV1N – TU 3400-005-72453807-07.

Control and indicating elements	refer to p.377
Recommended cable glands KNV, KOV, KNVTN, KNVTV, KNE, KNVZ	refer to p.393

- Increased mechanical resistance to impact and vibrations.
- Increased wall thickness.
- Increased area of side surfaces for cable glands installation.
- External brackets for convenient installation.
- 10 dimension types.
- Sealing system in a shape of continuous labyrinth for provision of degree of protection IP66.

MARKING

1Ex e II T6...T4 Gb,
1Ex e [ia] IIC T6... T4 Gb,
0Ex ia IIC T6...T4 Ga,
Ex ia IIIC T70°C...T135°C Da,
Ex tb IIIC T70°C ...T135°C Db

MINING EQUIPMENT MARKING

РО Ex ia I Ma
РР Ex e I Mc
Ex e I Mc U
Ex e II Gb U
PH2

CERTIFICATES AND PERMITS

GOST R ISO 9001-2015 (ISO 9001:2015)
TC RU C-RU.AA87.B.00244
TC RU C -RU.МЛ02.B.00626
RU.ОС ВССТ 047-08.2017
РОСС RU.EX01.B00004
Maritime Register Type Approval Certificate No. 17.12692.120
TU 3400-005-72453807-07
НСОПБ.RU.ПР 207.Н.00069
GAZPROM OJSC No.Г000.RU.1131.H00666

CODES

GOST R IEC 60079-0-201
GOST 14254-96 (IEC 529-89)
GOST 12.2.007.0-75
GOST 30852.0-2002 (IEC 60079-0:1998)
GOST 30852.8-2002
GOST 30852.10-2002 (IEC 60079-11:1999)
GOST 30852.20-2002
GOST IEC 61241-1-1-2011
TR CU 012/2011, TR CU 004/2011
GOST 24754-2013
Electrical Installation Code Ch. 7.3, Ch. 7.4
OD 5.2-093-2004
GOST R IEC 60079-31-2010

TECHNICAL CHARACTERISTICS

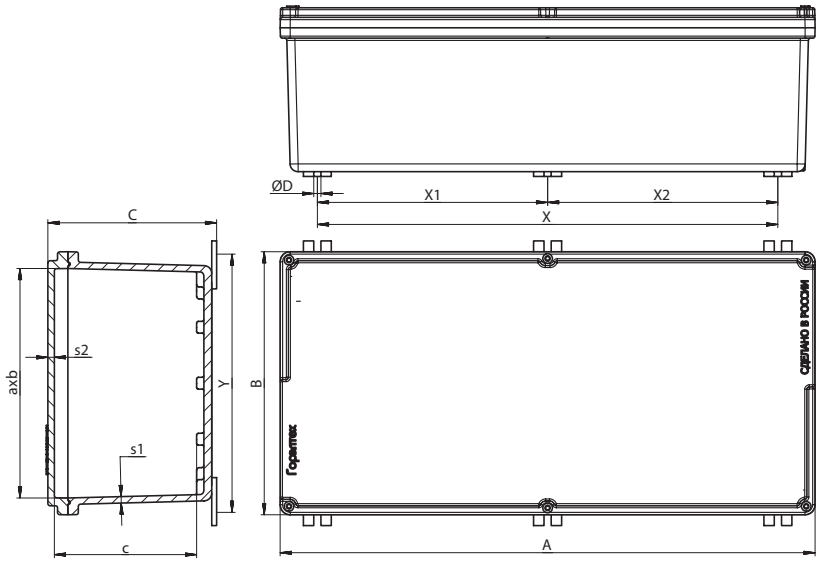
Installation	Category I for firedamp and dust; Category II for gas subgroup IIA, IIB, IIC; zones 0, 1, 2; Category III for dust, explosive dust atmospheres containing flying particles, conductive and non-conductive dust; Underground mines non-hazardous with gas (methane) and coal dust; Non-hazardous areas of ground facilities and open sites; Facilities under Russian Maritime Register of Shipping supervision; Dangerous production facilities
Maximum voltage, V	10 000
Maximum current, A	800
Sealant	Silicone rubber (in cover groove)
Cover fastening	Removable cover with stainless steel screws with cylindrical head and hexagonal socket for key
Enclosure fastening	4 external mounting points
Installation inside enclosure	2 or 4 racks for mounting panel installation
Climatic category	NF1 (upon request NF2, NF3, NF4, NF5, F1, F2, F3, F5, T1, T2, T3, T5, MU1, MU2, MU3, MU4, W2.13**, W5)

OPTIONS, ACCESSORIES AND VERSIONS

DESCRIPTION	MARKING
Cover fixation on hinges	/PETLYA
Drain plug for condensate removal	/DKUV
Breather plug for moisture removal	/VKUV
Marine version	/MORE
Version for minimum operating temperature -75°C	/HOLOD
Version for tropics with protection against bugs	/TERMITY
Special version for nuclear facilities of nuclear power plants “Small leak”	/MALAYA TECH
Earthquake-resistant version	/MSK-64
Acceptance by customer	/PRIEMKA
Nameplates with light reflecting coating	/SVP
Nameplate with inscription as per customer’s specification	/NADPIS «_»
External surface coating as per customer’s specification	/RAL (code)

DESCRIPTION	MARKING
Bolt with seal	/PLOMBA
Device for connection of cable screens	/EKRAN
Neutral bus bar	/SHINA N
Internal ground bus bar	/SHINA Z
Terminal jumpers as per customer’s diagram	/SCHEMA
Marking of terminals as per customer’s diagram	/MARK
Special input device for heating cables pair	/OKT
Aluminum alloy mounting panel	/ALP
Non-explosion-proof version	/PROM
Internal thermal insulation	/TEPLOISOLYATSIYA
Heating for automatic devices	/OBOGREV
Stainless steel mounting panel	/NP
Anti-condensation coating	/AP

OVERALL AND MOUNTING DIMENSIONS

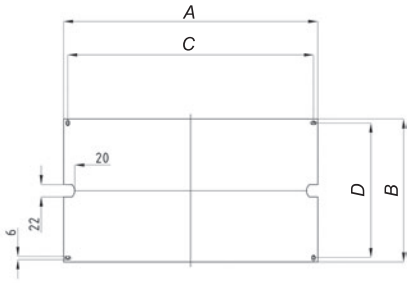


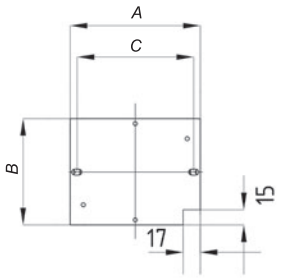
Dimensions of SHORVA...-O enclosure

Box type	Dimensions, mm												Mass, kg
	Outer			Inner					Mounting				
	A	B	C	a	b	c	s1	s2	X	X1	Y	ØD	
KSRV111109	112	112	91	102	102	72	5	6	94	–	94	6,3	0,8
KSRV171109	172	112	91	162	102	72	5	6	154	–	94	6,3	1,1
KSRV141410	149,5	149,5	107	139,5	139,5	88	5	6	131	–	131	6,3	1,4
KSRV202012	200	200	120	188	188	101	4	3	180	–	180	6,5	1,9
KSRV301410	304,5	149,5	109	294,5	139,5	88	5	6	285	–	131	6,3	2,4
KSRV302314	305	231	140	293	221	117	5	6	285	–	211	6,3	3,9
KSRV342421	348	243	212	312	211	180	8	8	255	–	250	9	8,9
KSRV513321	511	336	207	479	294	178	8	8	418	–	330	9	15
KSRV663221	669	329	207	637	287	178	8	8	576	288	332	9	18,7
KSRV626221	622	622	208	580	580	178	8	8	530	265	616	9	29,5

Several enclosures can be used when an enclosure of a larger size is required.

MOUNTING PANEL





Mounting panel type	Dimensions, mm				Mass, kg
	A	B	C	D	
K1111X	90	68	87	–	0,05
K1711X	160	68	67	–	0,09
K1414X	130	105	124	–	0,1
K2020X	185	142	172	–	0,20
K3014X	285	97	271	84	0,23
K3023X	285	180	271	167	0,41
K5133X	450	254	438	239	0,77
K6632X	598	250	586	231	1,21
K6262X	532	532	520	520	2

X – material code: A – aluminum, N – stainless steel

*Maximum recommended number of cable glands installed on sides of enclosures (A – long, B – short)**

Cable gland size code	NPT,	M, GOST 24705	KSRV111109		KSRV141410		KSRV171109		KSRV202012		KSRV301410	
			A NPT/M	B NPT/M	A NPT/M	B NPT/M	A NPT/M	B NPT/M	A NPT/M	B NPT/M	A NPT/M	B NPT/M
01	3/8”	M16X1,5	4/4	4/3	8/8	8/6	8/8	4/3	15/13	15/12	18/18	6/6
1	1/2”	M20X1,5	3/3	2/2	6/6	6/6	7/6	2/2	12/12	11/10	14/14	6/4
2	3/4”	M25X1,5	2/1	1/1	4/4	3/3	3/3	1/1	6/6	6/6	9/9	3/2
3	1”	M32X1,5	1/1	1/1	2/2	2/2	2/2	1/1	5/5	5/4	6/5	2/2
4	1 1/4”	M40X1,5	1/1	1/–	2/1	2/1	2/2	1/-	3/3	3/2	4/4	1/1
5	1 1/2”	M50X1,5	–	–	1/1	1/–	–	–	2/2	2/2	3/3	1/-
6	2”	M63X1,5	–	–	1/1	–	–	–	2/1	2/1	–	-
7	2 1/2”	M75X1,5	–	–	–	–	–	–	1/1	–	–	-
8	3”	M90X1,5	–	–	–	–	–	–	–	–	–	-

Cable gland size code	NPT,	M, GOST 24705	KSRV302314		KSRV342421		KSRV513321		KSRV663221		KSRV626221	
			A NPT/M	B NPT/M	A NPT/M	B NPT/M	A NPT/M	B NPT/M	A NPT/M	B NPT/M	A NPT/M	B NPT/M
01	3/8”	M16X1,5	27/24	18/15	45/45	32/28	75/73	43/39	96/96	37/36	90/83	84/82
1	1/2”	M20X1,5	21/21	15/13	40/38	24/22	65/63	36/32	75/76	30/28	67/65	64/63
2	3/4”	M25X1,5	12/12	8/8	26/24	15/15	38/40	21/21	48/50	18/18	43/43	39/38
3	1”	M32X1,5	10/10	6/6	18/15	10/9	27/27	15/14	36/36	13/13	33/32	31/29
4	1 1/4”	M40X1,5	5/5	3/3	11/11	6/6	14/17	8/8	20/20	8/8	18/18	18/18
5	1 1/2”	M50X1,5	4/3	3/2	8/8	5/3	12/12	8/5	16/16	6/5	16/13	14/12
6	2”	M63X1,5	3/3	2/2	6/6	3/2	10/9	5/3	13/11	4/3	11/8	9/7
7	2 1/2”	M75X1,5	2/2	2/1	3/3	2/2	5/5	3/3	6/6	2/2	5/5	6/6
8	3”	M90X1,5	-	-	2/2	1/1	4/4	2/2	5/5	2/2	5/5	5/5

Recommended number of control and indicating elements installed on the cover of KSRV enclosure

Dimension type of enclosure	Control and indicating elements, pcs.
KSRV111109	1
KSRV171109	3
KSRV141410	4
KSRV202012	6
KSRV301410	8
KSRV302314	15
KSRV342421	16
KSRV513321	35
KSRV663221	45
KSRV626221	95

Table of names matching

Previous international name "ZAVOD GORELTEX" Co. Ltd. TU 3400-005-72453807-07	The Customs Union name "ZAVOD GORELTEX" Co. Ltd. TU 3400-005-72453807-07
SA, KSRV	KSRV
SA111108, KSRV111108	KSRV111109
SA171108, KSRV171108	KSRV171109
SA141410, KSRV141410	KSRV141410
SA202012, KSRV202012	KSRV202012
SA301410, KSRV301410	KSRV301410
SA302310, KSRV302310	KSRV302314
SAG302310, KSRV-У302310	
SA302318, KSRV302310	KSRV342421
SAG302318, KSRV-У302318	
SA473018, KSRV473018	KSRV513321
SAG473018, KSRV-У473018	
SAG623018, KSRV623018	KSRV663221
SAG606018, KSRV-У606018	KSRV626221

Control and indicating elements	refer to p.377
Recommended cable glands KNV, KOV, KNVTN, KNVTV, KNE, KNVZ	refer to p.393

- Option of installation of a lock on the cover.
- Option of application of removable plates for cable glands installation.
- Increased drilling area for cable glands installation.
- Fastening bolts have special sealants for ingress protection.

MARKING

1Ex e II T6...T4 Gb
1Ex e [ia] IIC T6...T4 Gb
0Ex ia IIC T6...T4 Ga
1Ex d e IIB T5 Gb
1Ex d e IIC T5 Gb
1Ex e II T3...T2 Gb X (for version /TERMO)
1Ex e [ia] IIC T3...T2 Gb X (for version /TERMO)
0Ex ia IIC T3...T2 Ga X (for version /TERMO)
Ex ia IIIC T85°C... T135°C Da
Ex tb IIIC T85°C... T135°C Db

MINING EQUIPMENT MARKING

PO Ex ia I Ma
PP Ex e I Mc
Ex e I Mc U,
Ex e II Gb U,
PH2

CERTIFICATES AND PERMITS

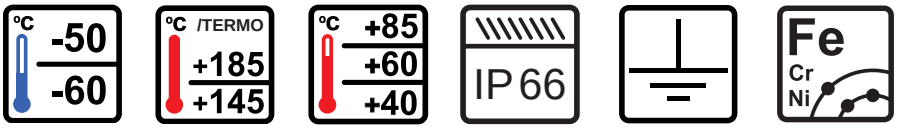
TC RU C-RU.AA87.B.00244
TC RU C -RU.МЛ02.B.00626
РОСС RU.ЕХ01.В00004
RU.ОС ВССТ 047-08.2017
НСОПБ.RU.ПР 207.Н.00069
Maritime Register Type Approval Certificate No. 16.03662.315
TU 3400-005-72453807-07
GAZPROM OJSC No. Г000.RU.1131.H00666

CODES

GOST R IEC 60079-0-2011
GOST 12.2.007.0-75
GOST 14254-96 (IEC 529-89)
GOST 30852.0-2002 (IEC 60079-0:1998)
GOST 30852.10-2002 (IEC 60079-11:1999)
GOST 30852.8-2002
GOST 30852.13-2002 (IEC 60079-14:1996)
GOST 30852.20-2002
TR CU 012/2011, TR CU 004/2011
GOST IEC 61241-1-1-2011
GOST 24754-2013
Electrical Installation Code Ch. 7.3, Ch. 7.4, OD 5.2-093-2004
GOST R IEC 60079-31-2010

TECHNICAL CHARACTERISTICS

Installation	Category I for firedamp and dust; Category II for gas subgroup IIA, IIB, IIC; zones 0, 1, 2; Category III for dust, explosive dust atmospheres containing flying particles, conductive and non-conductive dust; Underground mines non-hazardous with gas (methane) and coal dust; Non-hazardous areas of ground facilities and open sites; Facilities under Russian Maritime Register of Shipping supervision; Dangerous production facilities
Maximum voltage, V	10 000 ~1000 / ⎓250
Maximum current, A	800/400
Sealant	Silicone rubber (in cover groove)
Grounding	2 stainless steel ground clamps (inner and outer), frictionally intrinsically safe
Cover fastening	On hinges, fixation with bolts (for KSRV-N111109 and KSRV-N17110 hinges are optional)
Installation inside enclosure	4 racks for mounting panel installation
Climatic category	NF1 (upon request NF2, NF3, NF4, NF5, F1, F2, F3, F5, T1, T2, T3, T5, MU1, MU2, MU3, MU4, W2.13**, W5)

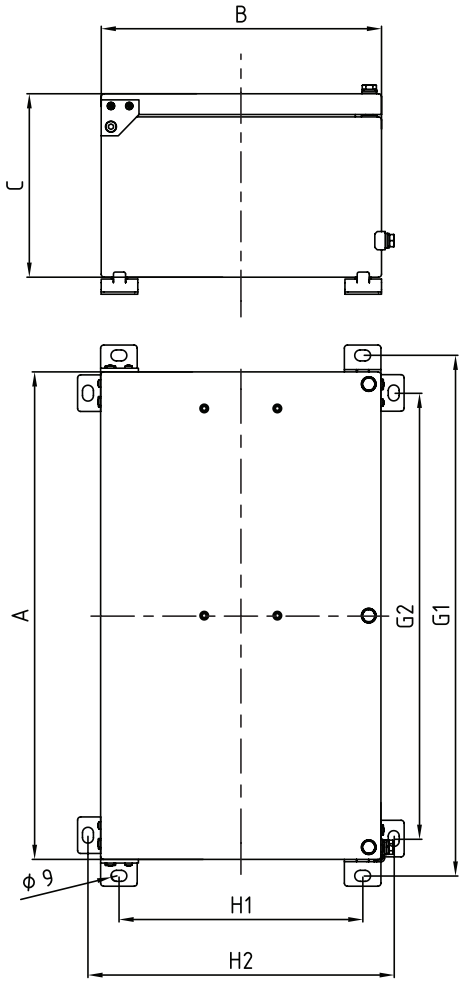


OPTIONS, ACCESSORIES AND VERSIONS

DESCRIPTION	MARKING
Drain plugs	/DKUV
Version for high temperatures up to +185°C	/TERMO
Marine version	/MORE
Version for tropics with protection against bugs	/TERMITY
Special version for nuclear facilities of nuclear power plants “Small leak”	/MALAYA TECH
Earthquake-resistant version	/MSK-64
Acceptance by customer	/PRIEMKA
Stainless steel mounting panel	/NP
Nameplates with light reflecting coating	/SVP
Cover fixation on hinges	/PETLYA
Cover lock	/LOCK
Nameplate with inscription as per customer’s specification	/NADPIS «_»

DESCRIPTION	MARKING
Bolt with seal	/PLOMBA
Device for connection of cable screens	/EKRAN
Neutral bus bar	/SHINA N
Internal ground bus bar	/SHINA Z
Removable plates for cable glands	/SPKV
Terminal jumpers as per customer’s diagram	/SCHEMA
Marking of terminals as per customer’s diagram	/MARK
Special input device for heating cables pair	/OKT
Window size as per customer’s specification	/O(RAZMER)
Non-explosion-proof version	/PROM
Internal thermal insulation	/TEPLOISOLYATSIYA
Heating for automatic devices	/OBOGREV
Stainless steel grade 03X17H13M2 as per GOST 5949-75 (316L)	/316

OVERALL AND MOUNTING DIMENSIONS

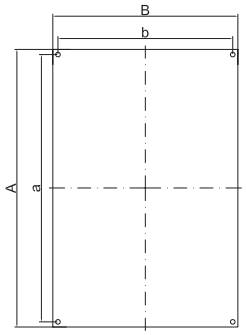


KSRV-N... explosion-proof enclosures range

Box type	Outer dimensions, mm			Fastening, mm				Mass, kg
				Method 1		Method 2		
	A	B	C	G1	H1	G2	H2	
KSRV-N111109	110	110	90	80	137	137	80	1,5
KSRV-N151512	150	150	120	120	174	174	120	2,00
KSRV-N202012	200	200	120	227	170	170	227	2,60
KSRV-N171109	176	116	95	146	143	203	86	1,90
KSRV-N231815	230	180	150	200	204	254	150	3,39
KSRV-N232315	230	230	150	200	254	254	200	4,04
KSRV-N303012	300	300	120	327	270	270	327	4,60
KSRV-N322312	320	230	120	260	262	352	170	4,99
KSRV-N342315	340	230	150	280	262	372	170	5,60
KSRV-N343415	340	340	150	280	372	372	280	7,56
KSRV-N402315	400	230	150	340	262	432	170	6,43
KSRV-N453415	450	340	150	390	372	482	280	9,56
KSRV-N534315	530	430	150	470	462	562	370	13,27
KSRV-N606025	600	600	250	627	570	570	627	22,2
KSRV-N806030	800	600	300	827	570	770	627	29,9
KSRV-N1008030	1000	800	300	1027	770	970	827	44,1

**Enclosures of non-standard sizes can be manufactured upon customer's request, maximum dimensions are 1000x1200x400 mm. Optional installation of hinges and locks on enclosure's cover. Minimal order of enclosures of non-standard sizes is from 20 pcs.*

Mounting panel



Mounting panel dimensions

Mounting panel according to the type of an enclosure	Dimensions, mm			
	A	B	a	b
KSRV-N111109	60	60	50	50
KSRV-N151512	100	100	90	90
KSRV-N171109	126	66	116	56
KSRV-N202012	150	150	140	140
KSRV-N231815	180	130	170	120
KSRV-N232315	180	180	170	170
KSRV-N303012	250	250	230	230
KSRV-N322312	270	180	160	250
KSRV-N342315	290	180	270	160
KSRV-N343415	290	290	270	270
KSRV-N402315	350	180	330	160
KSRV-N453415	400	290	390	280
KSRV-N534315	480	380	470	370
KSRV-N606025	540	540	530	530
KSRV-N806030	540	740	520	720
KSRV-N1008030	740	940	920	720

Maximum permitted number of cable glands installed on sides of KSRV-N enclosures

Cable gland size code	G, GOST 6357	M, GOST 24705	KSRV-N111109		KSRV-N151512		KSRV-N202012		KSRV-N171109		KSRV-N231815		KSRV-N232315	
			A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M
01	3/8"	M16X1,5	2/2	2/2	6/6	7/7	8/8	8/8	4/4	2/2	16/16	13/13	17/17	16/16
1	1/2"	M20X1,5	2/2	2/2	6/6	6/6	8/8	8/8	4/4	2/2	14/14	12/12	15/15	15/15
2	3/4"	M25X1,5	2/2	2/2	4/4	5/5	6/6	6/6	3/3	2/2	10/12	8/8	11/12	10/11
3	1"	M32X1,5	1/1	1/1	2/3	3/3	5/5	5/5	3/3	1/1	7/7	5/5	7/7	7/7
4	1 1/4"	M40X1,5	1/1	1/1	1/1	2/2	3/3	3/3	2/2	1/1	5/5	4/4	5/5	5/5
5	1 1/2"	M50X1,5	–	–	1/1	1/1	2/2	2/2	–	–	3/3	2/2	2/2	2/2
6	2"	M63X1,5	–	–	1/1	1/1	2/2	2/2	–	–	1/1	2/2	1/1	1/1
7	2 1/2"	M75X1,5	–	–	–	–	1/1	1/1	–	–	1/1	1/1	1/1	1/1

Cable gland size code	G, GOST 6357	M, GOST 24705	KSRV-N303012		KSRV- H322312		KSRV-N342315		KSRV-N343415		KSRV-N402315		KSRV-N453415	
			A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M
01	3/8"	M16X1,5	14/14	13/13	19/19	14/14	28/28	19/19	27/27	27/27	34/34	19/19	38/38	31/31
1	1/2"	M20X1,5	14/14	13/13	15/15	12/12	24/24	16/16	24/24	24/24	30/30	16/16	33/33	27/27
2	3/4"	M25X1,5	11/11	11/11	10/11	8/8	17/17	12/12	18/18	18/18	21/22	12/12	22/23	19/19
3	1"	M32X1,5	8/8	8/8	7/7	5/5	11/11	7/7	10/10	10/10	13/13	7/7	14/14	12/12
4	1 1/4"	M40X1,5	4/4	4/4	4/4	3/3	7/7	5/5	7/7	7/7	9/9	5/5	10/10	8/8
5	1 1/2"	M50X1,5	3/3	3/3	2/2	1/1	4/4	2/2	5/5	5/5	5/5	2/2	7/7	5/5
6	2"	M63X1,5	3/3	3/3	2/2	1/1	3/3	2/2	2/2	2/2	4/4	2/2	4/4	3/3
7	2 1/2"	M75X1,5	2/2	2/2	1/1	1/1	2/2	1/1	1/1	1/1	2/2	1/1	2/2	2/2

Cable gland size code	G, GOST 6357	M, GOST 24705	KSRV-N534315		KSRV-N606025		KSRV-N806030		KSRV-N1008030	
			A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M
01	3/8"	M16X1,5	46/46	39/39	84/84	83/83	135/135	100/100	170/170	133/133
1	1/2"	M20X1,5	41/41	34/34	81/81	82/82	135/135	100/100	169/169	132/132
2	3/4"	M25X1,5	29/30	25/25	60/60	61/61	99/99	73/73	125/125	98/98
3	1"	M32X1,5	17/17	15/15	40/40	40/40	69/69	49/49	86/86	67/67
4	1 1/4"	M40X1,5	12/12	10/10	26/26	26/26	44/44	35/35	60/60	47/47
5	1 1/2"	M50X1,5	8/7	7/7	21/21	20/20	38/38	24/24	49/49	33/33
6	2"	M63X1,5	5/5	4/4	12/12	14/14	27/27	19/19	33/33	26/26
7	2 1/2"	M75X1,5	3/3	1/1	10/10	10/10	14/14	10/10	18/18	14/14

*Maximum number of control and indicating elements on the cover of an enclosure**

Dimension type of enclosure	Components with Exe type of protection
KSRV-N111109	1
KSRV-N151512	3
KSRV-N171109	3
KSRV-N202012	6
KSRV-N231815	7
KSRV-N232315	10
KSRV-N322312	12
KSRV-N342315	12
KSRV-N303012	16
KSRV-N343415	18
KSRV-N402315	13
KSRV-N453415	27
KSRV-N534315	39
KSRV-N606025	93
KSRV-N806030	127
KSRV-N1008030	206

**Number of installed elements depends on their dimensions and dimension types of contact blocks. Exact number of elements and dimension type of an enclosure for a specific solution shall be specified when ordering.*

Table of names matching

Previous international name "ZAVOD GORELTEX" Co. Ltd. TU 3400-005-72453807-07	The Customs Union name "ZAVOD GORELTEX" Co. Ltd. TU 3400-005-72453807-07
KSRV-C	KSRV-N
KSRV-S151512	KSRV-N151512
KSRV-S231815	KSRV-N231815
KSRV-S232315	KSRV-N232315
KSRV-S322312	KSRV-N322312
KSRV-S342315	KSRV-N342315
KSRV-S343415	KSRV-N343415
KSRV-S402315	KSRV-N402315
KSRV-S453415	KSRV-N453415
KSRV-S534315	KSRV-N544315

Previous international name "ZAVOD GORELTEX" Co. Ltd. TU 3400-005-72453807-07	The Customs Union name "ZAVOD GORELTEX" Co. Ltd. TU 3400-005-72453807-07
KSRV-N, SA/SS	KSRV-N
SA/SS111108, KSRV-N 111108	KSRV-N111109, KSRV-N151512
SA/SS141410, KSRV-N 141410	
SA/SS161610, KSRV-N 161610	
SA/SS171108, KSRV-N 171108	KSRV-N171109, KSRV-N231815
SA/SS202020, KSRV-N 202020	KSRV-N232315
SA/SS302310, KSRV-N 302310	KSRV-N322312
SA/SS302318, KSRV-N 302318	KSRV-N342315
SA/SS361614, KSRV-N 361614	
SA/SS362614, KSRV-N 362614	KSRV-N343415
SA/SS303020, KSRV-N 303020	
SA/SS303030, KSRV-N 303030	KSRV-N402315
SA/SS402618, KSRV-N 402618	KSRV-N453415
SA/SS403618, KSRV-N 403618	
SA/SS404020, KSRV-N 404020	KSRV-N534315
SA/SS473018, KSRV-N 473018	
SA/SS623018, SA/SS601614, KSRV-N 601614, SA/SS1007030, KSRV-N 1007030, SA/SS505020, KSRV-N 505020, SA/SS505030, KSRV-N 505030, SA/SS505040, KSRV-N 505040, SA/SS602618, KSRV-N 602618, SA/SS606020, KSRV-N 606020, SA/SS606030, KSRV-N 606030, SA/SS606040, KSRV-N 606040, SA/SS404040, KSRV-N 404040, KSRV-N 404030, SA/SS10010030, KSRV-N 10010030	Are manufactured on the special order

Control and indicating elements	refer to p.377
Recommended cable glands KNV, KOV, KNVTN, KNVTV, KNE, KNVZ	refer to p.393

- Increased area of side surfaces for installation of cable glands.
- Anti-static impact-resistant armored polyester, resistant to UV and operating environment.
- 21 dimension type.
- Sealing system in a shape of continuous labyrinth for provision of degree of protection IP66.

MARKING

1Ex e II T6...T5 Gb
1Ex e [ia] IIC T6...T5 Gb
0Ex ia IIC T6...T5 Ga
Ex ia IIIC T85°C... T100°C Da
Ex tb IIIC T85°C... T100°C Db

MINING EQUIPMENT MARKING

PO Ex ia I Ma
PH1, PH2

CERTIFICATES AND PERMITS

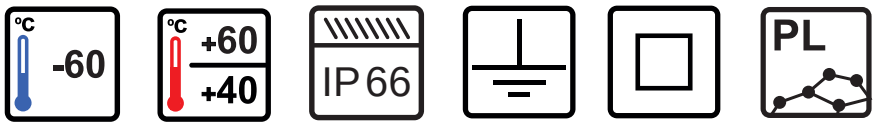
TC RU C-RU.AA87.B.00244
TC RU C -RU.МЛ02.B.00626
НСОПБ.RU.ПР 207.Н.00069
РОСС RU.ЕХ01.В00004
RU.ОС ВССТ 050-10.2017
Maritime Register Type Approval Certificate No. 16.03661.315
TU 3400-005-72453807-07
GAZPROM OJSC No. Г000.RU.1131.Н00666

CODES

GOST R IEC 60079-0-2011
GOST 12.2.007.0-75
GOST 30852.0-2002 (IEC 60079-0:1998)
GOST 30852.10-2002 (IEC 60079-11:1999)
GOST 30852.8-2002
GOST 30852.13-2002 (IEC 60079-14:1996)
TR CU 012/2011, TR CU 004/2011
GOST IEC 61241-1-1-2011
GOST 24754-2013
Electrical Installation Code Ch. 7.3, Ch. 7.4
OD 5.2-093-2004
GOST 30852.20-2002
GOST R IEC 60079-31-2010

TECHNICAL CHARACTERISTICS

Installation	Category I for firedamp and dust; Category II for gas subgroup IIA, IIB, IIC; zones 0, 1, 2; Category III for dust, explosive dust atmospheres containing flying particles, conductive and non-conductive dust; Underground mines non-hazardous with gas (methane) and coal dust; Non-hazardous areas of ground facilities and open sites; Facilities under Russian Maritime Register of Shipping supervision; Dangerous production facilities
Maximum voltage, V	~1000 / ⎓250
Maximum current, A	400
Sealant	Silicone rubber (in cover groove)
Cover fastening	Removable cover on hinges with stainless steel captive screws with cylindrical head and hexagonal socket for key or with special stainless steel captive screws with cross recess
Installation inside enclosure	2 or 4 racks for mounting panel installation
Climatic category	NF1 (upon request NF4, NF5, T1, T2, T3, T5, F5, MU1, MU2, MU3, MU4, W5)

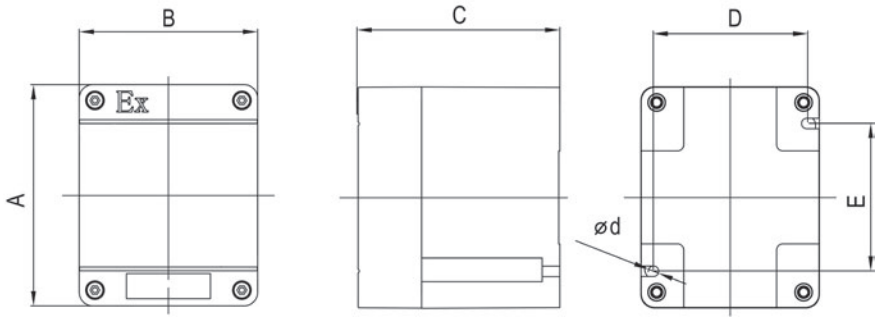


OPTIONS, ACCESSORIES AND VERSIONS

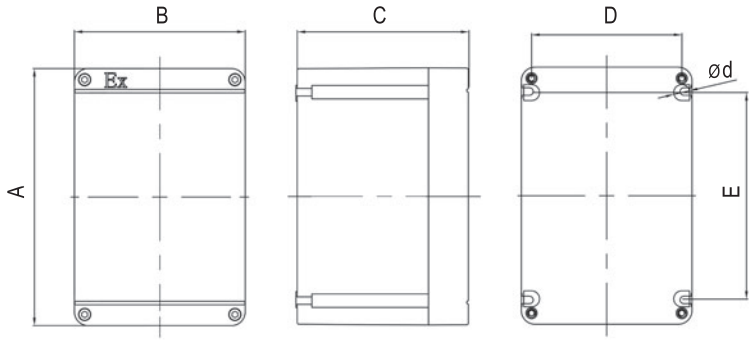
DESCRIPTION	MARKING
Cover fixation on hinges	/PETLYA
Drain plugs	/DKUE
Marine version	/MORE
Version for tropics with protection against bugs	/TERMITY
Earthquake-resistant version	/MSK-64
Acceptance by customer	/PRIEMKA
Nameplate with inscription as per customer's specification	/NADPIS «_»
Nameplates with light reflecting coating	/SVP
Device for connection of cable screens	/EKRAN
Terminal jumpers as per customer's diagram	/SCHEMA
Neutral bus bar	/SHINA N
Internal ground bus bar	/SHINA Z

DESCRIPTION	MARKING
Marking of terminals as per customer's diagram	/MARK
Special input device for heating cables pair	/OKT
Mounting rail with holes	/REIKA
Mounting plate	/PLANKA
Window size as per customer's specification	/O (SIZE)
Non-explosion-proof version	/PROM
Internal thermal insulation	/TEPLOISOLYATSIYA
Heating for automatic devices	/OBOGREV
Bolt with seal	/PLOMBA
Internal plate for reinforcement of cable glands fastening and continuity of ground circuit	/PCZ
Box material color upon customer's request (recommended order from 100 pcs.)	/RAL (code)

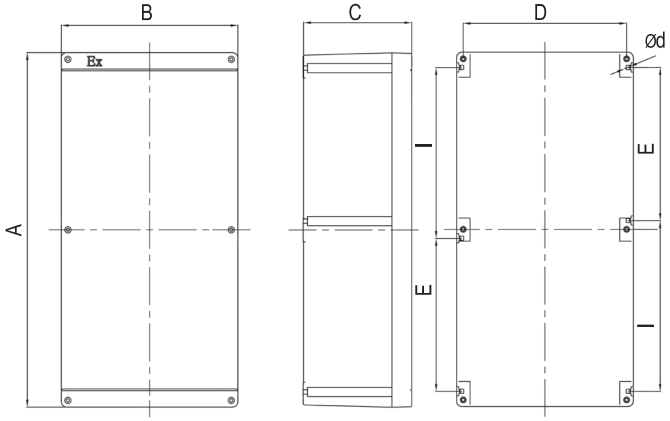
OVERALL DIMENSIONS AND FASTENING OPTIONS



KSRV-P100809, KSRV-P141210, KSRV-P161609

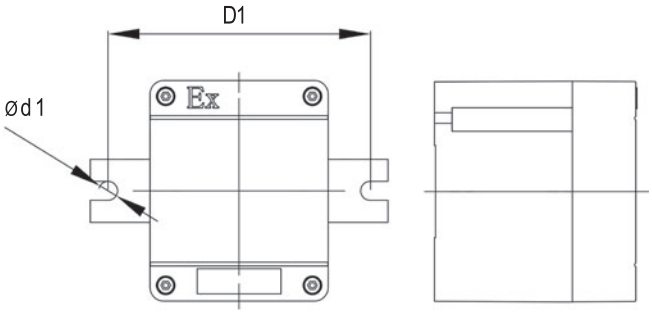


KSRV-P170807, KSRV-P170809, KSRV-P221512, KSRV-P221515, KSRV-P261812, KSRV-P302113, KSRV-P332212, KSRV-P332215, KSRV-P362216, KSRV-P363616, KSRV-P423019

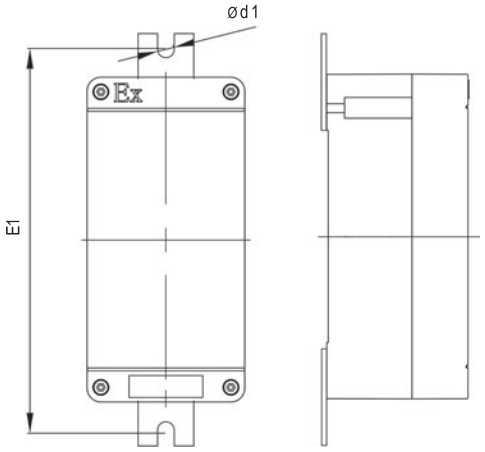


KSRV-P723616, KSRV-P723622, KSRV-P723624

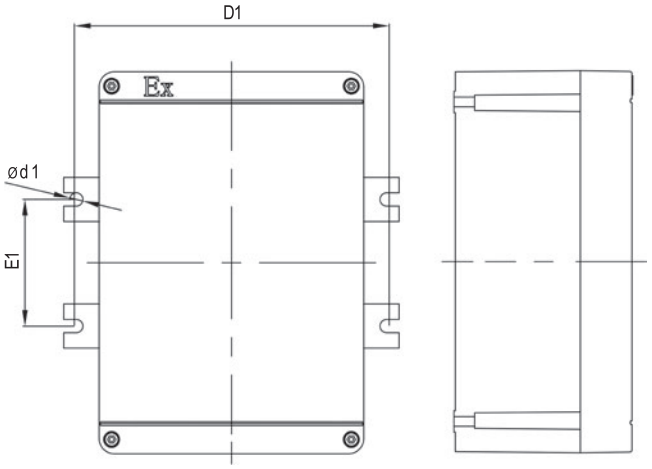
FASTENING WITH MOUNTING PLATES /PLANKA



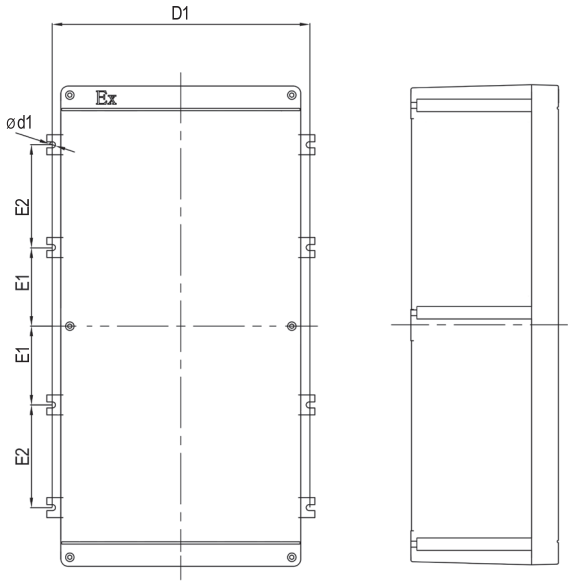
KSRV-P100809, KSRV-P141210, KSRV-P161609



KSRV-P170807, KSRV-P170809, KSRV-P211311



KSRV-P211311, KSRV-P221515, KSRV-P261812, KSRV-P302113, KSRV-P332212, KSRV-P332215, KSRV-P362216, KSRV-P363616, KSRV-P423019



KSRV-P723616, KSRV-P723622, KSRV-P723624

Range of dimension types of KSRV-P explosion-proof boxes

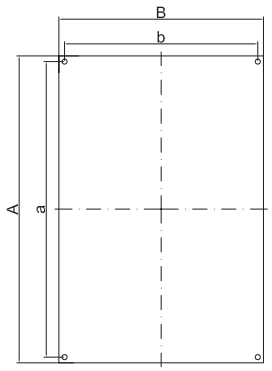
Enclosure marking	A	B	C	D	d	E	I	D1	d1	E1	E2	Mass, kg
KSRV-P100809	105	85	96	73	6	70	–	125	9	–	–	0,6
KSRV-P141210	148,5	129,5	109	118	8	105,5	–	165	9	–	–	1,2
KSRV-P161609	160	160	92,5	148	8	19	–	195	9	–	–	1,8
KSRV-P170807	175	85	76	73	4,8	138	–	–	9	205	–	0,6
KSRV-P170809	175	85	95	73	4.8	138	–	–	9	205	–	0,7
KSRV-P211311	210	129,5	106,5	116	7	166	–	–	9	235	–	1,5
KSRV-P221512	224,5	149,5	121	135	6,6	182	–	175	9	64	–	1,7
KSRV-P221515	224,5	149,5	151	135	6,6	182	–	175	9	64	–	1,8
KSRV-P261812	259,5	180	121	163,5	6,6	217	–	211	9	86	–	2
KSRV-P302111	299	209	107	195	6,6	254	–	245	9	60	–	2,4
KSRV-P302113	299	209	134	195	6,6	254	–	245	9	60	–	2,9
KSRV-P332212	329,5	224	123	210	6,6	286	–	245	9	164	–	3,0
KSRV-P332215	329,5	224	153	210	6,6	285	–	245	9	164	–	3,1
KSRV-P362216	360	220	160,5	203	8,8	300	–	245	9	114	–	4,5
KSRV-P363616	360	360	161,5	342	8,8	297	–	385	9	124	–	6,0
KSRV-P423019	420	300	187,5	287,5	8,8	362	–	315	9	184	–	6,5
KSRV-P723616	720	360	162	335	8,8	311	347	385	9	102	104	12,5
KSRV-P723622	720	360	221	331	8,8	311	347	385	9	118	154	13,5
KSRV-P723624	720	360	243	332	8,8	311	347	385	9	118	154	13,5

Option of completing of KSRV-P boxes with mounting panels and mounting rails

Enclosure marking	Mounting panel	Mounting rail /REIKA	
		Item	Number per box, pcs.
KSRV-P100809	KP1008X	–	–
KSRV-P141210	KP1412X	–	–
KSRV-P161609	KP1616X	–	–
KSRV-P170807	KP1708X	A0154-01	2
KSRV-P170809	KP1708X	–	–
KSRV-P221512	KP2215X	A0154-02	2
KSRV-P221515	KP2215X	A0154-02	2
KSRV-P261812	KP2618X	A0154-03	2
KSRV-P302113	KP3021X	A0154-04	2
KSRV-P332212	KP3322X	A0154-05	2
KSRV-P332215	KP3322X	A0154-05	2
KSRV-P362216	KP3622X	A0154-06	2
KSRV-P363616	KP3636X	A0154-07	2
KSRV-P423019	KP4230X	A0154-08	2
KSRV-P723616	KP7236X	A0154-08	2
KSRV-P723622	KP7236X	A0154-08	2
KSRV-P723624	KP7236X	A0154-08	2

**X – material code: A – aluminum, N – stainless steel.*

Dimensions of mounting panels



Name	Dimensions, mm				Box type
	A	B	a	b	
KP1008X	90	66	38	46	KSRV-P100809
KP1412X	125	107	100	–	KSRV-P141210
KP1616X	137	140	114	–	KSRV-P161609
KP1708X	157	70	151	41	KSRV-P170807 KSRV-P170809
KP2215X	200	130	114	115	KSRV-P221512 KSRV-P221515
KP2618X	237	160	149	145	KSRV-P261812
KP3021X	270	193	190	180	KSRV-P302113
KP3322X	300	203	220	190	KSRV-P332212 KSRV-P332215
KP3622X	310	188	280	130	KSRV-P362216
KP3636X	320	280	330	270	KSRV-P363616
KP4230X	380	270	250	246	KSRV-P423019
KP7236X	680	290	560	250	KSRV-P723616 KSRV-P723622 KSRV-P723624

**X – material code: A – aluminum, N – stainless steel.*

Maximum permitted number of cable glands in KSRV-P

Cable gland size code	G, GOST 6357	M, GOST 24705	KSRV-P 100809		KSRV-P141210		KSRV-P161609		KSRV-P170807		KSRV-P 170809		KSRV-P221512		KSRV-P221515		KSRV-P261812	
			A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M
01	3/8”	M16X1,5	1/1	2/2	5/5	5/5	5/5	4/4	3/3	1/1	5/5	2/2	10/10	6/6	15/15	10/10	12/12	9/9
1	1/2”	M20X1,5	1/1	1/1	4/4	3/3	3/3	3/3	3/3	0/1	3/4	1/1	8/8	6/6	12/12	9/9	10/10	8/8
2	3/4”	M25X1,5	1/1	1/1	2/2	2/2	2/2	2/2	–	–	2/2	1/1	5/5	3/3	6/6	5/5	5/5	4/4
3	1”	M32X1,5	–	1/1	1/1	1/1	2/2	1/1	–	–	2/2	1/1	3/3	2/2	6/6	4/4	4/4	3/3
4	1 1/4”	M40X1,5	–	–	1/1	–	–	–	–	–	–	–	2/2	1/1	2/3	2/2	3/3	2/2
5	1 1/2”	M50X1,5	–	–	–	–	–	–	–	–	–	–	1/1	1/1	2/2	1/1	1/1	1/1
6	2”	M63X1,5	–	–	–	–	–	–	–	–	–	–	–	–	1/1	1/1	–	–
7	2 1/2”	M75X1,5	–	–	–	–	–	–	–	–	–	–	–	–	1/1	1/1	–	–
8	3”	M90X1,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Cable gland size code	G, GOST 6357	M, GOST 24705	KSRV-P302113		KSRV-P332212		KSRV-P332215		KSRV-P362216		KSRV-P363616		KSRV-P423019		KSRV-P723616	
			A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M	A G/M	B G/M
01	3/8”	M16X1,5	12/12	10/10	16/16	12/12	27/27	18/18	24/24	15/15	27/27	33/33	37/38	30/30	48/48	30/30
1	1/2”	M20X1,5	9/9	8/8	13/13	10/10	21/21	15/15	21/21	13/13	21/21	27/27	29/29	22/22	39/39	27/27
2	3/4”	M25X1,5	6/6	4/4	7/8	5/5	12/12	9/9	12/12	8/8	12/14	16/16	18/18	15/15	24/24	15/16
3	1”	M32X1,5	4/4	3/3	5/5	4/4	10/10	6/6	10/10	6/6	10/10	12/12	12/12	10/10	18/18	12/12
4	1 1/4”	M40X1,5	2/2	2/2	4/4	3/3	5/5	3/4	5/5	3/3	6/6	7/7	8/8	7/7	9/11	6/7
5	1 1/2”	M50X1,5	–	–	2/2	2/2	3/3	2/2	3/3	2/2	4/3	4/4	5/5	4/4	6/6	4/4
6	2”	M63X1,5	–	–	–	–	3/3	2/2	3/3	2/1	3/3	3/3	4/4	3/3	5/5	3/3
7	2 1/2”	M75X1,5	–	–	–	–	2/2	1/1	2/2	1/1	2/2	3/3	3/3	2/2	4/4	3/3
8	3”	M90X1,5	–	–	–	–	–	–	–	–	–	–	–/2	–/2	–	–

Maximum permitted number of cable glands in KSRV-P

Cable gland size code	G, GOST 6357	M, GOST 24705	KSRV-P723622		KSRV-P723624	
			A G/M	B G/M	A G/M	B G/M
01	3/8”	M16X1,5	92/92	51/51	92/92	51/51
1	1/2”	M20X1,5	72/72	40/40	72/75	40/43
2	3/4”	M25X1,5	46/46	26/26	46/46	26/26
3	1”	M32X1,5	30/30	18/18	30/30	18/18
4	1 1/4”	M40X1,5	22/22	12/12	22/22	12/12
5	1 1/2”	M50X1,5	14/14	8/8	14/14	8/8
6	2”	M63X1,5	12/10	6/6	12/11	6/6
7	2 1/2”	M75X1,5	6/6	3/3	6/6	3/3
8	3”	M90X1,5	–/4	–/2	–/4	–/2

*Maximum number of control and indicating elements on the cover of an enclosure**

Dimension type of enclosure	Components with ExedIICU type of protection
KSRV-P100809	1
KSRV-P141210	3
KSRV-P170809	3
KSRV-P161609	4
KSRV-P211311	5
KSRV-P221512	6
KSRV-P221515	6
KSRV-P261812	9
KSRV-P302111	10
KSRV-P302113	10
KSRV-P332212	16
KSRV-P332215	16
KSRV-P362216	16
KSRV-P363616	28
KSRV-P423019	25
KSRV-P723616	45
KSRV-P723622	45
KSRV-P723624	45

** Number of installed elements depends on their dimensions and dimension types of contact blocks. Exact number of elements and dimension type of an enclosure for a specific solution shall be specified when ordering.*

Table of names matching

Previous international name “ZAVOD GORELTEX” Co. Ltd. TU 3400-005-72453807-07	The Customs Union name “ZAVOD GORELTEX” Co. Ltd. TU 3400-005-72453807-07
KSRV-KP	KSRV-P
KSRV-KP 100807	KSRV-P100809
KSRV-KP 141210	KSRV-P141210
KSRV-KP 161609	KSRV-P161609
KSRV-KP 170807	KSRV-P170807, KSRV-P170809
KSRV-KP 211311	KSRV-P211311
KSRV-KP 221512	KSRV-P221512
KSRV-KP 221515	KSRV-P221515
KSRV-KP 261812	KSRV-P261812
KSRV-KP 302111	KSRV-P302111
KSRV-KP 302113	KSRV-P302113
KSRV-KP 332212	KSRV-P332212
KSRV-KP 332215	KSRV-P332215
KSRV-KP 362216	KSRV-P362216
KSRV-KP 363616	KSRV-P363616
KSRV-KP 423019	KSRV-P423019
KSRV-KP 723616	KSRV-P723616
KSRV-KP 723622	KSRV-P723622
KSRV-KP 723624	KSRV-P723624

Previous international name “ZAVOD GORELTEX” Co. Ltd. TU 3400-005-72453807-07	The Customs Union name “ZAVOD GORELTEX” Co. Ltd. TU 3400-005-72453807-07
SA/P	KSRV-P
SA/P090907	KSRV-P100809
SA/P111108	KSRV-P141210
SA/P171108	KSRV-P221512
SA/P141410	KSRV-P221515
SA/P301410	KSRV-P302113
SA/P302310	KSRV-P332212
SA/P302318	KSRV-P362216
SA/P473018	KSRV-P423019
SA/P623018	KSRV-P723616

Control and indicating elements	refer to p.377
Recommended cable glands KNV, KOV, KNVTN, KNVTV, KNE, KNVZ	refer to p.393