JOINT-STOCK COMPANY «FACTORY «CHUVASHKABEL»

PRODUCT CATALOGUE

Vol. 1

Power cables for fixed laying for voltage up to 1 kV including

Uninsulated wires for overhead power lines

Self-supporting insulated wires (SSIWs) for overhead power lines

Power wires for electrical installations

2023

The history of the Cheboksary Plant of Cable Products “Chuvashkabel” begins on December 12, 1961, when the first product was produced - a coil of enameled wire ПЭВ-2. The company is known in the cable and wire products market as a manufacurer of high quality products. The enterprise specializes in the manufacture of products for the needs of the industrial complex, is one of the main suppliers of cable and wire products (in terms of miniature and subminiature cables and wires) for the Russian aerospace industry.

Today, JSC “Factory “Chuvashkabel” is a dynamically developing enterprise of the Russian Federation. Flexible pricing policy open to consumers, the desire to satisfy each client, continuous range expansion based on the demands and needs of the market, improvement of processes and quality of cable production are the principles of the enterprise, which steadily ensure an increase in production and expansion of the sales geography throughout the Russian Federation the CIS countries. As a result, more than 1000 companies from Russia and the CIS countries are regular customers of JSC “Factory “Chuvashkabel” today.

At present, JSC “Factory “Chuvashkabel” manufactures and sells cable and wire products in the following stock item groups:

- Onboard wires and cables (including those with insulation of radiation grafted (irradiated) polyethylene and fluorocopolymers).
- Heating cables and wires.
- Installation wires and cables (including those with insulation of radiation grafted (irradiated) fluorocopolymers).
- Signal-blocking cables (including for fire alarms).
- Radio-frequency (coaxial) cables.
- Wires for electric machines’ winding terminals
- Automotive wires (including for ABS systems).
- Uninsulated flexible wires.
- Power cables for fixed laying for voltage up to 1 kV including (including those with XLPE insulation).
- Control cables.
- High-frequency winding wires with enamel insulation.
- Ship cables.
- Self-supporting insulated wires (SSIWs) for overhead power lines.
- Uninsulated wires for overhead power lines.
- Lighting wires and cords.
- Wires with PVC insulation for washing machines.
- Power wires for electrical installations.
- Other cable products (including cables for security systems and video surveillance systems, lightweight metal braids, nickel-plated wire).

The company's products are used in energy, automotive, rocket and space, construction, electrical engineering and other industries.

JSC “Factory “Chuvashkabel” independently, as well as in close cooperation with the industry institute Russian Scientific and Research Institute of the Cable Industry (VNIIKP), is developing and putting into production new types of products. Thanks to this interaction, the company develops taking into account the advanced trends of the cable industry, aimed at better satisfying the needs of consumers. The plans of JSC “Factory “Chuvashkabel” is to continue work on the development and assimilation of new products that meet modern safety requirements and consumer needs.

When developing new products, the requirements of national and international standards are taken into account and used to the maximum. The enterprise has licenses for the development and manufacture of cable products for rocket and space equipment and special equipment (weapons and missiles), for the manufacture of cable products for nuclear power plants.

A perfect base, experienced personnel, certified for compliance with the requirements of ISO 9001:2015 in relation to the design, manufacture, supply of cable products, the quality management system enable to manage the quality process at the stages of manufacturing development, before shipping products to consumers and satisfy the needs of the most demanding customers.

The high quality of the products of JSC “Factory “Chuvashkabel” is confirmed, among other things, by the following:

- JSC “Factory “Chuvashkabel” has certificates of type approval of products from the Russian Maritime Register of Shipping, a license for the manufacture of equipment for a nuclear installation (NPP).

The enterprise is equipped with testing equipment that allows for testing and control of all manufactured products, including directly during the manufacture cycle.

The equipment of the enterprise is continuously updated. In recent years, new process and testing equipment from leading manufacturers such as Niehoff, Dunst, Wardewell, OTOMEC, WTM, Maileffer, etc. has been put into operation at many manufacturing sites and workshops.

Partners of JSC “Factory “Chuvashkabel” can always count on constant information support, fast and accurate order fulfillment, prompt processing of documents for the supply of products. Employees of JSC “Factory “Chuvashkabel” do their best to ensure that consumers are satisfied with the cooperation with the enterprise.

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Power cables for fixed laying for voltage up to 1 kV including

In December 2007, the plant completed the full upgrading of one of the production buildings and a workshop for the manufacture of power cables for fixed laying for voltages up to 1 kV including, with a cross section from 16 to 240 sq. mm with insulation and sheath of PVC plastic compound, cross-linked polyethylene, halogen-free compounds, PVC plastic compound with low smoke and gas emission (нг-LS) and self-supporting insulated wires (SSIWs) was put into operation. The workshop is equipped with the most modern equipment from the leading European manufacturers of cable and test equipment (Maileffer, LESMO, OTOMEC, WTM, etc.). Mastering and launching into manufacture of all grades of power cables and wires of SSIW wires were carried out jointly with the developer of these products — OJSC VNIIKP. All listed products have certificates of conformity and fire safety certificates.

Power cables for fixed laying for voltage up to 1 kV

with insulation of PVC plastic compound ВВГ and АВВГ

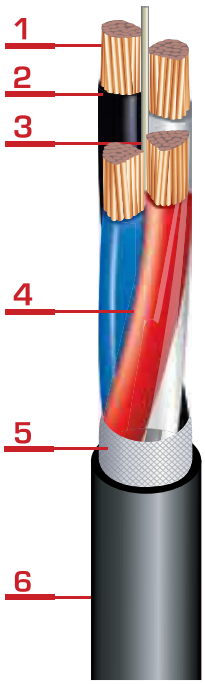
Cable grade	ВВГ	АВВГ
Regulatory documentation	GOST 31996–2012, TU 16-705.499–2010	GOST 31996–2012, TU 16-705.499–2010
National product classification code	35 3371	35 3771
Description	power cable with copper conductors, with PVC insulation and sheath	power cable with aluminum conductors, with PVC insulation and sheath
Application	• For the transmission and distribution of electricity in stationary installations for rated AC voltage of 1 kV with rated frequency of 50 Hz. • Cables ВВГ and АВВГ are designed for laying single cable lines in cable structures and premises. • For group laying, the use of fire protection means is mandatory.	
	Operating temperature range is from –50°C to +50°C	

Specifications

Relative air humidity at temperature up to +35°C is 98%
Type of cable climatic version is УХЛ and Т, placement categories are 1 and 5 according to GOST 15150–69
Laying and installation of cables without preheating
are carried out at temperature not lower than.....–15°C
Permissible bending radius when laying, min.:
single-core cables .....10 outer diameters
multi-core cables .....7.5 outer diameters
Test AC voltage with frequency of 50 Hz:
for voltage of 1 kV .....3.5 kV
Continuous permissible heating temperature of cable conductors during operation.....+70°C
The maximum allowable heating temperature of the conductors in case of a short circuit .....+160°C
Cable construction length is.....specified when ordering
Service life .....30 years
Note: item 5 of the design (wrapping with tapes) applies only to five-core cables with sectoral shaped conductors. See also help information on page 12

Design parameters

Number × nominal cross section, type of conductors, mm²	ВВГ		АВВГ	
	Design outer diameter, mm	Estimated weight of 1 km of cable, kg	Design outer diameter, mm	Estimated weight of 1 km of cable, kg
ROUND CONDUCTOR				
2-, 3-, 4-, 5-core with single-wire copper conductors with cross section of 1.5/10 mm²				
4x16 ((ок) for АВВГ)	20.2	964	19.5	551
4x25 мк	26.3	1553	26.3	945
SECTORAL SHAPED CONDUCTOR				
4x35 мс	26.1	1805	26.0	943
4x50 мс	29.3	2366	29.2	1186
4x70 мс	33.0	3247	32.5	1535
4x95 мс	37.9	4409	37.5	2038
4x120 мс	40.7	5383	40.4	2409
4x150 мс	45.0	6689	44.3	2930
4x185 мс	49.7	8284	49.0	3580
4x240 мс	56.5	10841	55.0	4632
ROUND CONDUCTOR				
5x16 ((ок) for АВВГ)	24.4	1387	21.4	609
5x25 мк	28.6	1851	28.8	1108
5x35 мк	31.8	2439	32.0	1394
SECTORAL SHAPED CONDUCTOR				
5x50 мс	31.5	2743	31.4	1268
5x70 мс	35.7	3800	35.2	1665
5x95 мс	40.7	5166	40.2	2200
5x120 мс	43.8	6356	43.3	2621
5x150 мс	48.2	7886	47.4	3194
5x185 мс	53.5	9824	53.1	3993
5x240 мс	60.6	12859	58.9	5046



Design

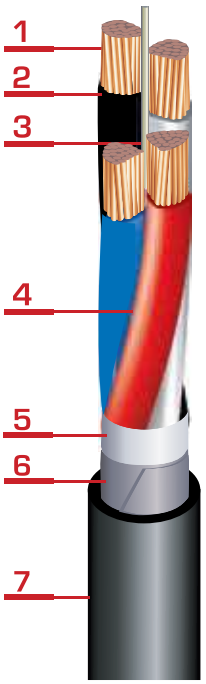
1 **Conductor** is copper (ВВГ) or aluminum (АВВГ), round or sector shaped, class 1 and 2 according to GOST 22483
2 **Insulation** is of PVC plastic compound (conductor color marking)
3 **Insulating cord** is of PVC plastic compound
4 **Cable core** is twisted insulated conductors
5 **Inner sheath** is of PVC plastic compound or chalk-filled non-vulcanized rubber / tape wrapping
6 **Outer sheath is** of PVC plastic compound

Examples of symbols

АВВГ 4х16ок(N)-1 is power cable with four single-wire round conductors with nominal cross section of 16 mm², with a neutral conductor, for a rated voltage of 1 kV
АВВГ 4х25мк(N)-1 is power cable with four multi-wire round conductors with nominal cross section of 25 mm², with a neutral conductor, for a rated voltage of 1 kV
АВВГ 4х35мс(N)-1 is power cable with four multi-wire sectoral shaped conductors with nominal cross section of 35 mm², with a neutral conductor, for a rated voltage of 1 kV
АВВГ 5х50мс(N, PE)-1 is power cable with five multi-wire sectoral shaped conductors with nominal cross section of 50 mm², with a neutral conductor and earth conductor, for a rated voltage of 1 kV

Power cables for fixed laying for voltage up to 1 kV

with insulation of PVC plastic compound, armored, with protective hose of PVC plastic compound ВБШв and АВБШв



Cable grade	ВБШв	АВБШв
Regulatory documentation	GOST 31996–2012, TU 16-705.499–2010	GOST 31996–2012, TU 16-705.499–2010
National product classification code	35 3371	35 3771
Description	power cable with copper conductors, with insulation of PVC plastic compound, with protective hose of PVC plastic compound	power cable with aluminum conductors, with insulation of PVC plastic compound, with protective hose of PVC plastic compound
Application	• For the transmission and distribution of electricity in stationary installations for rated AC voltage of 1 kV with rated frequency of 50 Hz. • Cables ВБШв, АВБШв are designed for laying single cable lines in cable structures and premises. For group laying, the use of fire protection means is mandatory. It is allowed to use cables for laying in the ground (trenches).	
	Operating temperature range is from –50°C to +50°C	

Specifications

Relative air humidity at temperature up to +35°C is 98%
Type of cable climatic version is УХЛ and Т, placement categories are 1 and 5 according to GOST 15150–69
Laying and installation of cables without preheating
are carried out at temperature not lower than ..... –15°C
Permissible bending radius when laying, min.:
- single-core cables ..... 10 outer diameters
- multi-core cables ..... 7.5 outer diameters

Rated frequency ..... 50 Hz
Test AC voltage with frequency of 50 Hz:
- for voltage of 1 kV ..... 3.5 kV

Continuous permissible heating temperature of cable conductors during operation ..... +70°C
The maximum allowable heating temperature of the conductors in case of a short circuit ..... +160°C
Cable construction length is ..... specified when ordering
Service life ..... 30 years
See also help information on page 12

Design

1. **Conductor** is copper (ВБШв) or aluminum (АВБШв), round or sectoral shaped, class 1 and 2 according to GOST 22483
2. **Insulation** is of PVC plastic compound
3. **Insulating cord** is of PVC plastic compound
4. **Cable core** is twisted insulated conductors
5. **Inner sheath** is of PVC plastic compound
6. **Armor** is of two steel galvanized strips
7. **Protective hose** is of PVC plastic compound

Examples of symbols

АВБШв 4х16ок(N)-1 is power cable with four single-wire round conductors with nominal cross section of 16 mm^2, with a neutral conductor, for a rated voltage of 1 kV
АВБШв 4х25мк(N)-1 is power cable with four multi-wire round conductors with nominal cross section of 25 mm^2, with a neutral conductor, for a rated voltage of 1 kV
АВБШв 4х50мс(N)-1 is power cable with four multi-wire sectoral shaped conductors with nominal cross section of 50 mm^2, with a neutral conductor, for a rated voltage of 1 kV
АВБШв 5х70мс(N, PE)-1 is power cable with five multi-wire sectoral shaped conductors with nominal cross section of 70 mm^2, with a neutral conductor and earth conductor, for a rated voltage of 1 kV

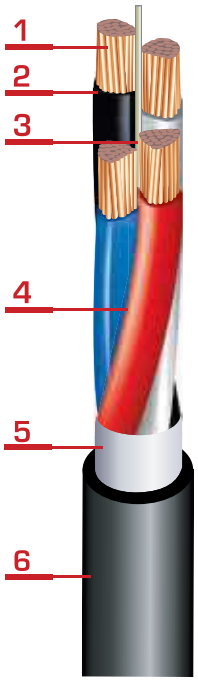
Design parameters

Number × nominal cross section, type of conductors, mm^2	ВБШв		АВБШв	
	Design outer diameter, mm	Estimated weight of 1 km of cable, kg	Design outer diameter, mm	Estimated weight of 1 km of cable, kg
ROUND CONDUCTOR				
2-, 3-, 4-, 5-core with single-wire copper conductors with cross section of 1.5/10 mm^2				
4х16 ((ок) for АВБШв)	23.6	1265	22.3	752
4х25 мк	27.8	1824	27.3	1115
SECTORAL SHAPED CONDUCTOR				
4х35 мс	27.6	2075	27.0	1111
4х50 мс	31.1	2726	30.2	1379
4х70 мс	35.4	3705	33.5	1745
4х95 мс	39.4	4820	38.9	2367
4х120 мс	42.2	5832	41.8	2770
4х150 мс	46.2	7047	45.7	3350
4х185 мс	50.9	8688	50.4	4054
4х240 мс	57.5	11243	56.4	5170
ROUND CONDUCTOR				
5х16 ((ок) for АВБШв)	25.4	1415	24.6	902
5х25 мк	29.8	2040	29.8	1274
5х35 мк	33.3	2686	33.0	1600
SECTORAL SHAPED CONDUCTOR				
5х50 мс	35.0	3317	33.8	1697
5х70 мс	39.0	4474	38.0	2227
5х95 мс	44.2	5940	43.4	2909
5х120 мс	47.8	7249	46.9	3435
5х150 мс	51.0	8696	50.6	4058
5х185 мс	57.2	10842	56.7	5029
5х240 мс	63.8	13877	62.5	6201

Power cables for fixed laying for voltage up to 1 kV

with cross-linked polyethylene insulation and sheath of PVC plastic compound ПвВГ and АПвВГ

Cable grade	ПвВГ	АПвВГ
Regulatory documentation	GOST 31996–2012, TU 16-705.499–2010	GOST 31996–2012, TU 16-705.499–2010
National product classification code	35 3381	35 3781
Description	power cable with copper conductors, with cross-linked polyethylene insulation and outer sheath of PVC plastic compound	power cable with aluminum conductors, with cross-linked polyethylene insulation and outer sheath of PVC plastic compound
Application	• For the transmission and distribution of electricity in stationary installations for rated AC voltage of 1 kV with rated frequency of 50 Hz. • Cables АПвВГ and ПвВГ are designed for laying single cable lines in cable structures and premises. • For group laying, the use of fire protection means is mandatory. • Cables are not recommended for laying in the ground (trench).	
Operating temperature range is from –50°C to +50°C		



Specifications

Relative air humidity at temperature up to +35°C is 98%
Type of cable climatic version is УХЛ and Т, placement categories are 1 and 5 according to GOST 15150–69
Laying and installation of cables without preheating
are carried out at temperature not lower than.....–15°C
Permissible bending radius when laying, min.:
single-core cables .....10 outer diameters
multi-core cables .....7.5 outer diameters
Rated frequency..... 50 Hz
Test AC voltage with frequency of 50 Hz:
for voltage of 1 kV .....3.5 kV
Continuous permissible heating temperature of cable conductors during operation.....+90°C
The maximum allowable heating temperature of the conductors in case of a short circuit .....+250°C
Cable construction length is.....specified when ordering
Service life .....30 years
Note: item 5 of the design (wrapping with tapes) applies only to five-core cables with sectoral shaped conductors. See also help information on page 12

Design parameters

Number × nominal cross section, type of conductors, mm²	ПвВГ		АПвВГ	
	Design outer diameter, mm	Estimated weight of 1 km of cable, kg	Design outer diameter, mm	Estimated weight of 1 km of cable, kg
ROUND CONDUCTOR				
4x16 ((ок) for АПвВГ)	18.8	870	18.0	465
4x25 мк	24.4	1390	25.0	820
SECTORAL SHAPED CONDUCTOR				
4x35 мс	24.6	1676	25.6	844
4x50 мс	27.3	2188	28.6	1045
4x70 мс	31.6	3068	32.1	1392
4x95 мс	35.5	4128	36.7	1809
4x120 мс	38.7	5110	39.8	2180
4x150 мс	42.7	6322	43.5	2638
4x185 мс	47.8	7901	48.4	3252
4x240 мс	53.6	10274	54.0	4123
ROUND CONDUCTOR				
5x16 ((ок) for АПвВГ)	20.6	888	19.8	546
5x25 мк	27.1	1703	27.3	958
5x35 мк	30.0	2239	30.2	1191
SECTORAL SHAPED CONDUCTOR				
5x50 мс	29.2	2536	30.8	1106
5x70 мс	33.5	3559	34.8	1499
5x95 мс	37.8	4842	39.4	1939
5x120 мс	41.5	6049	42.7	2357
5x150 мс	45.9	7525	46.8	2874
5x185 мс	51.2	9392	52.1	3554
5x240 мс	57.7	12287	58.2	4537

Design

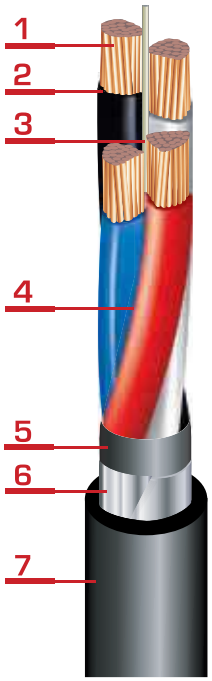
1 **Conductor** is copper (ПвВГ) or aluminum (АПвВГ), round or sectoral shaped. 1st and 2nd classes according to GOST 22483
2 **Insulation** is cross-linked polyethylene (conductor color marking)
3 **Insulating cord** is of PVC plastic compound
4 **Cable core** is twisted insulated conductors
5 **Inner sheath** is of PVC plastic compound or chalk-filled non-vulcanized rubber / tape wrapping
6 **Outer sheath is** of PVC plastic compound

Examples of symbols

АПвВГ 4х16ок(N)-1 is power cable with four single-wire round conductors with nominal cross section of 16 mm², with a neutral conductor, for a rated voltage of 1 kV
АПвВГ 4х25мк(N)-1 is power cable with four multi-wire round conductors with nominal cross section of 25 mm², with a neutral conductor, for a rated voltage of 1 kV
АПвВГ 4х50мс(N)-1 is power cable with four multi-wire sectoral shaped conductors with a nominal cross section of 50 mm², with a neutral conductor, for a rated voltage of 1 kV
АПвВГ 5х70 мс(N, PE)-1 is power cable with five multi-wire sectoral shaped conductors with a nominal cross section of 70 mm², with a neutral conductor and earth conductor, for a rated voltage of 1 kV

Power cables for fixed laying for voltage up to 1 kV

with cross-linked polyethylene insulation, armored, with a protective hose of PVC plastic compound ПвБШв and АПвБШв



Cable grade	ПвБШв	АПвБШв
Regulatory documentation	GOST 31996–2012, TU 16-705.499-2010	GOST 31996–2012, TU 16-705.499-2010
National product classification code	35 3381	35 3781
Description	power cable with copper conductors, with cross-linked polyethylene insulation, armored, with protective hose of PVC plastic compound	power cable with aluminum conductors, with cross-linked polyethylene insulation, armored, with protective hose of PVC plastic compound
Application	• For the transmission and distribution of electricity in stationary installations for rated AC voltage of 1 kV with rated frequency of 50 Hz. • Cables ПвБШв, АПвБШв are designed for laying single cable lines in cable structures and premises. For group laying, it is mandatory to use fire protection means. It is allowed to use cables for laying in the ground (trench)	
	Operating temperature range is from –50°C to +50°C	

Specifications

Relative air humidity at temperature up to +35°C is 98%
Type of cable climatic version is УХЛ and Т, placement categories are 1 and 5 according to GOST 15150–69
Laying and installation of cables without preheating
are carried out at temperature not lower than ..... –15°C
Permissible bending radius when laying, min.:
- single-core cables ..... 10 outer diameters
- multi-core cables ..... 7.5 outer diameters

Rated frequency ..... 50 Hz
Test AC voltage with frequency of 50 Hz:
- for voltage of 1 kV ..... 3.5 kV

Continuous permissible heating temperature of cable conductors during operation ..... +90°C
The maximum allowable heating temperature of the conductors in case of a short circuit ..... +250°C
Cable construction length is ..... specified when ordering
Service life ..... 30 years
See also help information on page 12

Design

1 **Conductor** is copper (ПвБШв) or aluminum (АПвБШв), round or sectoral shaped, class 1 and 2 according to GOST 22483
2 **Insulation** is cross-linked polyethylene (conductor color marking)
3 **Insulating cord** is of PVC plastic compound
4 **Cable core** is twisted insulated conductors
5 **Inner sheath** is of PVC plastic compound
6 **Armor** is of two steel galvanized strips
7 **Protective hose** is of PVC plastic compound

Examples of symbols

АПвБШв 4х16ок(N)-1 is power cable with four single-wire round conductors with nominal cross section of 16 mm^2, with a neutral conductor, for a rated voltage of 1 kV
АПвБШв 4х25 мк(N)-1 is power cable with four multi-wire round conductors with nominal cross section of 25 mm^2, with a neutral conductor, for a rated voltage of 1 kV
АПвБШв 4х50мс(N)-1 is power cable with four multi-wire sectoral shaped conductors with nominal cross section of 50 mm^2, with a neutral conductor, for a rated voltage of 1 kV
АПвБШв 5х70мс(N, PE)-1 is power cable with five multi-wire sectoral shaped conductors with nominal cross section of 70 mm^2, with a neutral conductor and earth conductor, for a rated voltage of 1 kV

Design parameters

Number × nominal cross section, type of conductors, mm^2	ПвБШв		АПвБШв	
	Design outer diameter, mm	Estimated weight of 1 km of cable, kg	Design outer diameter, mm	Estimated weight of 1 km of cable, kg
ROUND CONDUCTOR				
4х16 ((ок) for АПвБШв)	21.6	1030	20.8	650
4х25 мк	25.8	1573	25.8	971
SECTORAL SHAPED CONDUCTOR				
4х35 мс	26.5	1857	26.4	995
4х50 мс	29.5	2397	29.4	1218
4х70 мс	33.4	3291	33.3	1613
4х95 мс	38.3	4478	37.9	2110
4х120 мс	41.3	5486	41.0	2514
4х150 мс	45.6	6784	44.9	3031
4х185 мс	50.3	8371	49.6	3673
4х240 мс	56.8	10863	55.4	4625
ROUND CONDUCTOR				
5х16 ((ок) for АПвБШв)	23.4	1224	22.6	751
5х25 мк	28.1	1871	28.1	1114
5х35 мк	31.0	2429	31.0	1368
SECTORAL SHAPED CONDUCTOR				
5х50 мс	33.1	2985	33.0	1510
5х70 мс	37.9	4202	37.4	2067
5х95 мс	42.5	5478	42.0	2513
5х120 мс	46.6	6871	46.1	3136
5х150 мс	49.8	8353	50.0	3703
5х185 мс	55.6	10426	56.0	4604
5х240 мс	62.0	13382	61.7	5660

Power cables for fixed laying for voltage up to 1 kV

with cross-linked polyethylene insulation, armored, with a protective hose of polyethylene ПвБШп and АПвБШп

Cable grade	ПвБШп	АПвБШп
Regulatory documentation	GOST 31996–2012, TU 16-705.499–2010	GOST 31996–2012, TU 16-705.499–2010
National product classification code	35 3381	35 3781
Description	power cable with copper conductors, with cross-linked polyethylene insulation, armored, with protective hose of polyethylene	power cable with aluminum conductors, with cross-linked polyethylene insulation, armored, with protective hose of polyethylene
Application	• For the transmission and distribution of electricity in stationary installations for rated AC voltage of 1 kV with rated frequency of 50 Hz. • Cables ПвБШп, АПвБШп are designed for laying single cable lines in cable structures and premises. For group laying, the use of fire protection means is mandatory. It is allowed to use them for laying through non-navigable rivers and water bodies, provided that the it is buried to soil.	
Operating temperature range is from –60°C to +50°C		

Specifications

Relative air humidity at temperature up to +35°C is 98%
Type of cable climatic version is УХЛ and Т, placement categories are 1 and 5 according to GOST 15150–69
Laying and installation of cables without preheating
are carried out at temperature not lower than ..... –20°C
Permissible bending radius when laying, min.:
single-core cables ..... 10 outer diameters
multi-core cables ..... 7.5 outer diameters
Rated frequency ..... 50 Hz
Test AC voltage with frequency of 50 Hz:
for voltage of 1 kV ..... 3.5 kV
Continuous permissible heating temperature of cable conductors during operation ..... +90°C
The maximum allowable heating temperature of the conductors in case of a short circuit ..... +250°C
Cable construction length is ..... specified when ordering
Service life ..... 30 years
See also help information on page 12

Design parameters

Number × nominal cross section, type of conductors, mm²	ПвБШп		АПвБШп	
	Design outer diameter, mm	Estimated weight of 1 km of cable, kg	Design outer diameter, mm	Estimated weight of 1 km of cable, kg
ROUND CONDUCTOR				
4x16 ((ок) for АПвБШп)	21.6	976	20.8	597
4x25 мк	25.4	1484	25.4	878
SECTORAL SHAPED CONDUCTOR				
4x35 мс	26.1	1676	26.0	904
4x50 мс	29.1	2294	29.0	1116
4x70 мс	33.0	3194	33.1	1498
4x95 мс	33.1	4344	37.7	1978
4x120 мс	41.1	5342	40.8	2371
4x150 мс	44.9	6531	45.1	2895
4x185 мс	49.7	8095	49.8	3521
4x240 мс	55.4	10449	55.4	4422
ROUND CONDUCTOR				
5x16 ((ок) for АПвБШп)	23.1	1164	22.6	693
5x25 мк	27.7	1773	27.7	1017
5x35 мк	30.6	2322	30.6	1260
SECTORAL SHAPED CONDUCTOR				
5x50 мс	32.7	2869	33.0	1415
5x70 мс	37.7	4070	37.4	1948
5x95 мс	42.3	5329	42.0	2379
5x120 мс	46.6	6708	46.1	2975
5x150 мс	49.1	8185	49.8	3526
5x185 мс	55.0	10213	55.9	4390
5x240 мс	61.1	13145	61.5	5423

Design

1 **Conductor** is copper (ПвБШп) or aluminum (АПвБШп), round or sectoral shaped. 1st and 2nd classes according to GOST 22483
2 **Insulation** is cross-linked polyethylene (conductor color marking)
3 **Insulating cord** is of PVC plastic compound
4 **Cable core** is twisted insulated conductors
5 **Inner sheath** is of polyethylene or PVC plastic compound
6 **Armor** is of two steel galvanized strips
7 **Protective hose** is of polyethylene

Examples of symbols

АПвБШп 4х16ок(N)-1 is power cable with four single-wire round conductors with nominal cross section of 16 mm², with a neutral conductor, for a rated voltage of 1 kV
АПвБШп 4х25мк(N)-1 is power cable with four multi-wire round conductors with nominal cross section of 25 mm², with a neutral conductor, for a rated voltage of 1 kV
АПвБШп 4х50мс(N)-1 is power cable with four multi-wire sectoral shaped conductors with nominal cross section of 50 mm², with a neutral conductor, for a rated voltage of 1 kV
АПвБШп 5х70мс(N, PE)-1 is power cable with five multi-wire sectoral shaped conductors with nominal cross section of 70 mm², with a neutral conductor and earth conductor, for a rated voltage of 1 kV

Power cables for fixed laying for rated AC voltage up to 1 kV

with insulation of PVC plastic compound and sheath of PVC plastic compound of low flammability ВВГнг(А) and АВВГнг(А)

Cable grade	ВВГнг(А)	АВВГнг(А)
Regulatory documentation	GOST 31996–2012, TU 16-705.499–2010	GOST 31996–2012, TU 16-705.499–2010
National product classification code	35 3371	35 3771
Description	power cable with copper conductors, with insulation of PVC plastic compound and sheath of PVC plastic compound of low flammability	power cable with aluminum conductors, with insulation of PVC plastic compound and sheath of PVC plastic compound of low flammability
Application	• For the transmission and distribution of electricity in stationary installations for rated AC voltage of 1 kV with rated frequency of 50 Hz. • For group laying in cable structures of outdoor (hidden) electrical installations (cable racks, galleries). • Cables ВВГнг(А), АВВГнг(А) are flame retardant when laid in bundles	
	Operating temperature range is from -50°C to +50°C	

Specifications

Relative air humidity at temperature up to +35 °C is 98%
Type of cable climatic version is УХЛ and Т, placement categories are 1 and 5 according to GOST 15150-69
Laying and installation of cables without preheating
are carried out at temperature not lower than ..... –15°C
Permissible bending radius when laying, min.:
single-core cables ..... 10 outer diameters
multi-core cables ..... 7.5 outer diameters
Test AC voltage with frequency of 50 Hz:
for voltage of 1 kV ..... 3.5 kV
Continuous permissible heating temperature of cable conductors during operation ..... +70°C
The maximum allowable heating temperature of the conductors in case of a short circuit ..... +160°C
Cable construction length is ..... specified when ordering
Service life ..... 30 years
See also help information on page 12

Design

1 **Conductor** is copper (ВВГнг(А)) or aluminum (АВВГнг(А)), round or sector shaped, class 1 and 2 according to GOST 22483
2 **Insulation** is of PVC plastic compound (conductor color marking)
3 **Insulating cord** is of PVC plastic compound
4 **Cable core** is twisted insulated conductors
5 **Inner sheath** is of PVC plastic compound of low flammability

Examples of symbols

АВВГнг(А) 4х16ок(N)-1 is power cable with four single-wire round conductors with nominal cross section of 16 mm^2, with a neutral conductor, for a rated voltage of 1 kV
АВВГнг(А) 4х25мк(N)-1 is power cable with four multi-wire round conductors with a nominal cross section of 25 mm^2, with a neutral conductor, for a rated voltage of 1 kV
АВВГнг(А) 4х50мс(N)-1 is power cable with four multi-wire sectoral shaped conductors with a nominal cross section of 50 mm^2, with a neutral conductor, for a rated voltage of 1 kV
АВВГнг(А) 5х70мс(N, PE)-1 is power cable with five multi-wire sectoral shaped conductors with a nominal section of 70 mm^2, with a neutral conductor and earth conductor, for rated voltage of 1 kV

Design parameters

Number × nominal cross section, type of conductors, mm^2	ВВГнг(А)		АВВГнг(А)	
	Design outer diameter, mm	Estimated weight of 1 km of cable, kg	Design outer diameter, mm	Estimated weight of 1 km of cable, kg
ROUND CONDUCTOR				
4х16 ((ок) for АВВГнг(А))	20.2	989	19.5	571
4х25 мк	26.5	1602	26.5	994
SECTORAL SHAPED CONDUCTOR				
4х35 мс	26.3	1842	26.2	981
4х50 мс	29.8	2456	29.4	1229
4х70 мс	33.6	3364	32.7	1585
4х95 мс	38.1	4469	37.7	2099
4х120 мс	40.9	5448	40.6	2475
4х150 мс	44.6	6634	44.3	2984
4х185 мс	49.5	8263	49.2	3665
4х240 мс	56.1	10817	55.2	4736
ROUND CONDUCTOR				
5х16 ((ок) for АВВГнг(А))	22.2	1064	21.4	627
5х25 мк	29.0	1917	29.0	1161
5х35 мк	32.2	2496	32.2	1456
SECTORAL SHAPED CONDUCTOR				
5х50 мс	31.9	2800	31.6	1303
5х70 мс	36.3	3917	35.4	1705
5х95 мс	41.1	5256	40.4	2246
5х120 мс	44.2	6460	43.5	2672
5х150 мс	48.0	7817	47.6	3250
5х185 мс	53.5	9774	53.1	4033
5х240 мс	60.2	12707	59.1	5120

Power cables for fixed laying for voltage up to 1 kV

flame retardant, with low smoke and gas emission, unarmored, ВВГнг(А)-LS and АВВГнг(А)-LS

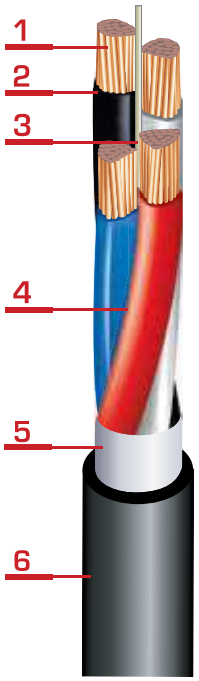
Cable grade	ВВГнг(А)-LS	АВВГнг(А)-LS
Regulatory documentation	GOST 31996–2012, TU 16.K71-310–2001	GOST 31996–2012, TU 16.K71-310–2001
National product classification code	35 3371	35 3771
Description	power cable with copper conductors, with insulation of PVC plastic compound and sheath of PVC plastic compound of low fire hazard	power cable with aluminum conductors, with insulation of PVC plastic compound and sheath of PVC plastic compound of low fire hazard
Application	• Flame retardant cables with low smoke and gas emission of media are designed for the transmission and distribution of electricity in stationary installations for rated AC voltage of 1 kV with rated frequency of 50 Hz. • The cables are designed for operation in cable structures and premises, including for use in systems of nuclear power plants of classes 3 and 4 according to the classification of OPB-88 (PNAE G01-011-97). • Cables ВВГнг(А)-LS, АВВГнг(А)-LS are flame retardant when laid in bundles. • For group laying of cable products in cable structures and premises of internal electrical installations, including for nuclear energy facilities in systems of nuclear power plants of classes 3 and 4 according to the classification of OPB-88 (PNAE G-01-011-97).	
Operating temperature range is from –50°C to +50°C		

Specifications

Relative air humidity at temperature up to +35°C is 98%
Type of cable climatic version is УХЛ and Т, placement categories are 1 and 5 according to GOST 15150–69
Laying and installation of cables without preheating
are carried out at temperature not lower than.....–15°C
Permissible bending radius when laying, min.:
single-core cables .....10 outer diameters
multi-core cables .....7.5 outer diameters
Test AC voltage with frequency of 50 Hz:
for voltage of 1 kV .....3.5 kV
Continuous permissible heating temperature of cable conductors during operation.....+70°C
The maximum allowable heating temperature of the conductors in case of a short circuit .....+160°C
Cable construction length is.....specified when ordering
Service life .....30 years
See also help information on page 12

Design parameters

Number × nominal cross section, type of conductors, mm²	ВВГнг(А)-LS		АВВГнг(А)-LS	
	Design outer diameter, mm	Estimated weight of 1 km of cable, kg	Design outer diameter, mm	Estimated weight of 1 km of cable, kg
ROUND CONDUCTOR				
4x16 ((ок) for АВВГнг(А)-LS	22.2	1180	21.5	761
4x25 мк	26.3	1746	26.3	1141
SECTORAL SHAPED CONDUCTOR				
4x35 мс	26.1	1933	26.0	1071
4x50 мс	29.6	2522	29.2	1342
4x70 мс	33.0	3434	32.5	1718
4x95 мс	37.9	4647	37.5	2273
4x120 мс	40.7	5643	40.4	266/
4x150 мс	45.2	7026	44.1	3217
4x185 мс	49.9	8688	49.2	3976
4x240 мс	56.7	11347	55.2	5066
ROUND CONDUCTOR				
5x16 ((ок) for АВВГнг(А)-LS	24.4	1564	23.4	1111
5x25 мк	28.8	2084	28.8	1329
5x35 мк	32.3	2743	32.0	1663
SECTORAL SHAPED CONDUCTOR				
5x50 мс	32.9	3155	32.8	1678
5x70 мс	37.1	4276	36.6	2134
5x95 мс	41.5	5678	42.0	2821
5x120 мс	45.5	7025	45.5	3348
5x150 мс	50.2	8688	49.4	3982
5x185 мс	56.3	10886	55.5	4989
5x240 мс	63.0	14039	61.3	6192



Design

1 **Conductor** is copper (ВВГнг(А)-LS) or aluminum (АВВГнг(А)-LS), round or sector shaped, class 1 and 2 according to GOST 22483
2 **Insulation** is of PVC plastic compound of low fire hazard (conductor color marking)
3 **Insulating cord** is of PVC plastic compound of low fire hazard
4 **Cable core** is twisted insulated conductors
5 **Inner sheath** is of PVC plastic compound of low fire hazard
6 **Outer sheath** is of PVC plastic compound of low fire hazard

Examples of symbols

АВВГнг(А)-LS 4x16ок(N)-1 is power cable with four single-wire round conductors with nominal cross section of 16 mm², with a neutral conductor, for a rated voltage of 1 kV
АВВГнг(А)-LS 4x25 мк (N)-1 is power cable with four multi-wire round conductors with nominal cross section of 25 mm², with a neutral conductor, for a rated voltage of 1 kV
АВВГнг(А)-LS 4x50 мс(N)-1 is power cable with four multi-wire sectoral shaped conductors with nominal cross section of 50 mm², with a neutral conductor, for a rated voltage of 1 kV
АВВГнг(А)-LS 5x70 мс(N, PE)-1 is power cable with five multi-wire sectoral shaped conductors with nominal cross section of 70 mm², with a neutral conductor and earth conductor, for a rated voltage of 1 kV

Sealed power cables with silanol-crosslinked polyethylene insulation for voltage up to 1 kV including

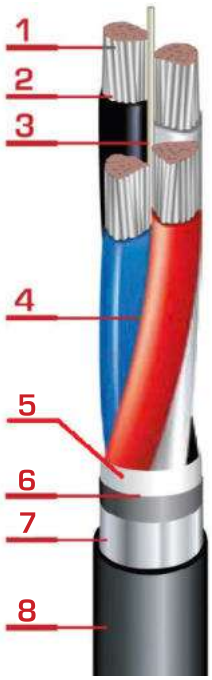
	АПвБШп(г)
Regulatory documentation	GOST 31996–2012 TU 16.K71-277–98
National product classification code 2	27.32.13.112
Description	Cable with aluminum conductors, with silanol cross-linked polyethylene insulation, sealed with water-blocking elements, armored with galvanized steel tapes, with protective hose of polyethylene
Application	• For transmission and distribution of electricity in fixed installations for a rated AC voltage up to 1 kV inclusive with rated frequency of 50 Hz in networks with isolated or grounded neutral; • Cables АПвБШп(г) are intended for laying in the ground (trenches), regardless of the corrosive activity of soils and groundwater. It is allowed to lay them in cable structures, provided that additional fire protection measures are provided, for example, fire-retardant coatings are applied; • Cables АПвБШп(г) can be laid in water through non-navigable water bodies, provided they are buried in the soil, as well as in partially flooded cable structures
Operating temperature range	–60°C to +50°C

Specifications

Relative air humidity at temperature up to +35°C is 98%
Type of cable climatic version is УХЛ, placement categories are 1 and 5 according to GOST 15150
Laying and installation of cables without preheating is carried out at a temperature not lower than.....–20°C
Permissible bending radius when laying, min.:.....15 outer diameters
- using a special template, min. .....7.5 outer diameters
Rated frequency..... 50 Hz
Test AC voltage with frequency of 50 Hz:
for voltage of 1 kV .....3.5 kV
Continuous permissible heating temperature of cable conductors during operation, max. .....+90°C
The maximum allowable heating temperature of the conductors in case of a short circuit, max. .....+250°C
Cable construction length is.....specified when ordering
Service life .....30 years
See also help information on page 12

Design parameters

Number and design cross section of conductor, mm^2	АПвБШп(г)	
	Design outer diameter, mm	Estimated weight of 1 km of cable, kg
	Round conductor	
4x16	22.1	716
4x25	26.7	1017
	Sectoral shaped conductor	
4x35	26.5	949
4x50	29.2	1167
4x70	33.0	1541
4x95	37.1	1953
4x120	40.4	2348
4x150	44.7	2862
4x185	49.4	3480
4x240	54.7	4362



Design

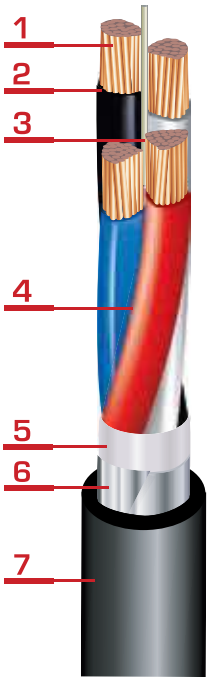
1 **Conductor** is aluminum, round or sector shaped, class 1 and 2 according to GOST 22483
2 **Insulation** is cross-linked polyethylene (conductor color marking)
3 **Harness** is of water-blocking threads
4 **Cable core** is twisted insulated conductors
5 **Wrapping** is of water-blocking tape
6 **Inner sheath** is of PVC material
7 **Armor** is of two galvanized steel strips overlapped so that the top strip covers the gaps between the turns of the bottom strip
8 **Protective hose** is of polyethylene

Examples of symbols

АПвБШп(г) 4х16ок(N)-1 is single-wire round conductor, with the neutral conductor, up to 1 kV including
АПвБШп(г) 4х25мк(N)-1 is multi-wire round conductor, with the neutral conductor, up to 1 kV including
АПвБШп(г) 4х70мс(N)-1 is multi-wire sectoral shaped conductor, with the neutral conductor, up to 1 kV including

Power cables for fixed laying for voltage up to 1 kV

with insulation of PVC plastic compound, armored, with protective hose of PVC plastic compound of low flammability ВБШвнг(А) and АВБШвнг(А)



Cable grade	ВБШвнг(А)	АВБШвнг(А)
Regulatory documentation	GOST 31996–2012, TU 16-705.499–2010	GOST 31996–2012, TU 16-705.499–2010
National product classification code	35 3371	35 3771
Description	power cable with copper conductors, with insulation of PVC plastic compound, armored, with protective hose of PVC plastic compound of low flammability	power cable with aluminum conductors, with insulation of PVC plastic compound, armored, with protective hose of PVC plastic compound of low flammability
Application	• For the transmission and distribution of electricity in stationary installations for rated AC voltage of 1 kV with rated frequency of 50 Hz. • For group laying in cable structures of outdoor (open) electrical installations (cable racks, galleries). • Cables ВБШвнг(А), АВБШвнг(А) are flame retardant when laid in bundles.	
	Operating temperature range is from –50°C to +50°C	

Specifications

Relative air humidity at temperature up to +35°C is 98%
Type of cable climatic version is УХЛ and Т, placement categories are 1 and 5 according to GOST 15150–69
Laying and installation of cables without preheating
are carried out at temperature not lower than ..... –15°C
Permissible bending radius when laying, min.:
single-core cables ..... 10 outer diameters
multi-core cables ..... 7.5 outer diameters
Rated frequency ..... 50 Hz
Test AC voltage with frequency of 50 Hz:
for voltage of 1 kV ..... 3.5 kV
Continuous permissible heating temperature of cable conductors during operation ..... +70°C
The maximum allowable heating temperature of the conductors in case of a short circuit ..... +160°C
Cable construction length is ..... specified when ordering
Service life ..... 30 years
See also help information on page 12

Design parameters

Number × nominal cross section, type of conductors, mm²	ВБШвнг(А)		АВБШвнг(А)	
	Design outer diameter, mm	Estimated weight of 1 km of cable, kg	Design outer diameter, mm	Estimated weight of 1 km of cable, kg
ROUND CONDUCTOR				
4x16 ((ок) for АВБШвнг(А))	23.4	1281	22.3	778
4x25 мк	27.7	2055	27.3	1152
SECTORAL SHAPED CONDUCTOR				
4x35 мс	27.5	2085	27.0	1137
4x50 мс	30.7	2684	30.2	1408
4x70 мс	34.8	3646	33.5	1781
4x95 мс	39.3	4831	38.9	2411
4x120 мс	42.1	5838	41.8	2818
4x150 мс	46.4	7198	45.7	3407
4x185 мс	51.1	8837	50.4	4117
4x240 мс	57.8	11438	56.4	5250
ROUND CONDUCTOR				
5x16 ((ок) for АВБШвнг(А))	25.4	1446	24.6	931
5x25 мк	29.8	2070	29.8	1314
5x35 мк	33.0	2709	33.0	1649
SECTORAL SHAPED CONDUCTOR				
5x50 мс	34.8	3332	33.8	1733
5x70 мс	38.5	4435	38.0	2270
5x95 мс	44.0	5955	43.3	2962
5x120 мс	47.5	7264	46.9	3496
5x150 мс	51.4	8872	50.6	4124
5x185 мс	57.5	11048	56.7	5110
5x240 мс	64.2	14181	62.5	6292

Design

1 **Conductor** is copper (ВБШвнг(А)) or aluminum (АВБШвнг(А)), round or sector shaped, class 1 and 2 according to GOST 22483
2 **Insulation** is of PVC plastic compound
3 **Insulating cord** is of PVC plastic compound
4 **Cable core** is twisted insulated conductors
5 **Inner sheath** is of PVC plastic compound of low flammability
6 **Armor** is of two steel galvanized strips
7 **Protective hose** is of PVC plastic compound of low flammability

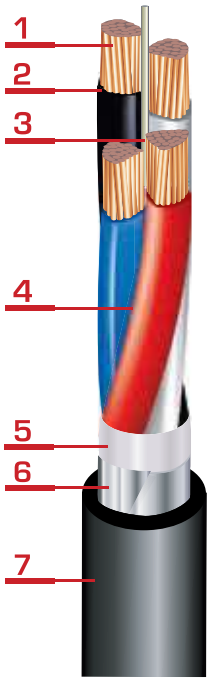
Examples of symbols

АВБШвнг(А) 4х16ок(N)-1 is power cable with four single-wire round conductors with nominal cross section of 16 mm², with a neutral conductor, for a rated voltage of 1 kV
АВБШвнг(А) 4х25мк(N)-1 is power cable with four multi-wire round conductors with nominal cross section of 25 mm², with a neutral conductor, for a rated voltage of 1 kV
АВБШвнг(А) 4х50мс(N)-1 is power cable with four multi-wire sectoral shaped conductors with nominal cross section of 50 mm², with a neutral conductor, for a rated voltage of 1 kV
АВБШвнг(А) 5х70мс(N, PE)-1 is power cable with five multi-wire sectoral shaped conductors with nominal cross section of 70 mm², with a neutral conductor and earth conductor, for a rated voltage of 1 kV

Power cables for fixed laying for voltage up to 1 kV

flame retardant, with low smoke and gas emission, armored, ВБШвнг(А)-LS and АВБШвнг(А)-LS

Cable grade	ВБШвнг(А)-LS	АВБШвнг(А)-LS
Regulatory documentation	GOST 31996–2012 TU 16.K71-310–2001	GOST 31996–2012 TU 16.K71-310–2001
National product classification code	35 3371	35 3771
Description	power cable with copper conductors, armored, with insulation of PVC plastic compound, with protective hose of PVC plastic compound of low fire hazard	power cable with aluminum conductors, armored, with insulation of PVC plastic compound, with protective hose of PVC plastic compound of low fire hazard
Application	• Flame retardant cables with low smoke and gas emission of media are designed for the transmission of electricity in stationary installations for rated voltage of 1 kV with rated frequency of 50 Hz. • Cables are manufactured for general industrial use and for nuclear power plants when supplied to the domestic market and for export. • The cables are designed for operation in cable structures and premises, including for use in systems of nuclear power plants of classes 2, 3 and 4 according to the classification of OPB-88/97 (PNAE G-01-011-97). • Cables ВБШвнг(А)-LS, АВБШвнг(А)-LS are flame retardant when laid in bundles.	
	Operating temperature range is from –50°C to +50°C	



Specifications

Relative air humidity at temperature up to +35°C is 98%
Type of cable climatic version is УХЛ and Т, placement categories are 1 and 5 according to GOST 15150–69
Laying and installation of cables without preheating
are carried out at temperature not lower than ..... –15°C
Permissible bending radius when laying, min.:
single-core cables ..... 10 outer diameters
multi-core cables ..... 7.5 outer diameters
Rated frequency ..... 50 Hz
Test AC voltage with frequency of 50 Hz:
for voltage of 1 kV ..... 3.5 kV
Continuous permissible heating temperature of cable conductors during operation ..... +70°C
The maximum allowable heating temperature of the conductors in case of a short circuit ..... +160°C
Cable construction length is ..... specified when ordering
Service life ..... 30 years
See also help information on page 12

Design parameters

Number × nominal cross section, type of conductors, mm²	ВБШвнг(А)-LS		АВБШвнг(А)-LS	
	Design outer diameter, mm	Estimated weight of 1 km of cable, kg	Design outer diameter, mm	Estimated weight of 1 km of cable, kg
ROUND CONDUCTOR				
4x16 ((ок) for АВБШвнг(А)-LS)	23.0	1309	22.3	886
4x25 мк	27.3	1919	27.3	1315
SECTORAL SHAPED CONDUCTOR				
4x35 мс	27.1	2105	27.0	1243
4x50 мс	30.3	2719	30.2	1539
4x70 мс	34.4	3688	33.5	1934
4x95 мс	39.3	4983	38.9	2609
4x120 мс	42.1	6011	41.8	3035
4x150 мс	46.2	7348	45.9	3695
4x185 мс	50.9	9060	50.6	4459
4x240 мс	57.1	11667	56.6	5613
ROUND CONDUCTOR				
5x16 ((ок) for АВБШвнг(А)-LS)	25.4	1580	24.6	1058
5x25 мк	29.8	2278	39.8	1522
5x35 мк	33.0	2934	33.0	1874
SECTORAL SHAPED CONDUCTOR				
5x50 мс	33.9	3406	33.8	1930
5x70 мс	38.5	4641	38.0	2498
5x95 мс	43.9	6232	43.4	3257
5x120 мс	47.4	7568	46.9	3825
5x150 мс	52.0	9120	50.8	4536
5x185 мс	57.3	11370	56.9	5620
5x240 мс	63.8	14500	62.7	6888

Design

1 **Conductor** is copper (ВБШвнг(А)-LS) or aluminum (АВБШвнг(А)-LS), round or sector shaped, class 1 and 2 according to GOST 22483
2 **Insulation** is of PVC plastic compound of low fire hazard (conductor color marking)
3 **Insulating cord** is of PVC plastic compound of low fire hazard
4 **Cable core** is twisted insulated conductors
5 **Inner sheath** is of PVC plastic compound of low fire hazard
6 **Armor** is of two steel galvanized strips
7 **Protective hose** is of PVC plastic compound of low fire hazard

Examples of symbols

АВБШвнг(А)-LS 4x16 ок(N)-1 is power cable with four single-wire round conductors with nominal cross section of 16 mm², with a neutral conductor, for a rated voltage of 1 kV
АВБШвнг(А)-LS 4x25 мк(N)-1 is power cable with four multi-wire round conductors with nominal cross section of 25 mm², with a neutral conductor, for a rated voltage of 1 kV
АВБШвнг(А)-LS 4x50 мс(N)-1 is power cable with four multi-wire sectoral shaped conductors with nominal cross section of 50 mm², with a neutral conductor, for a rated voltage of 1 kV
АВБШвнг(А)-LS 5x70 мс(N, PE)-1 is power cable with five multi-wire sectoral shaped conductors with nominal cross section of 70 mm², with a neutral conductor and earth conductor, for a rated voltage of 1 kV

REFERENCE INFORMATION

In accordance with GOST 31996–2012, the symbol for the cable indicates:
When using single-wire conductors instead of "(ок)"
"ок" — for single-wire round conductors.

When using multi-wire conductors:
"мк" — for multi-wire round conductors,
"мс" — for multi-wire sectoral shaped conductors
The presence of a neutral conductor — "(N)"; earth conductor — "(PE)"

Permissible current loads

Continuous permissible current loads for cables АПвВГ, ПвВг, АПвБШв, ПвБШв, АПвБШп, ПвБШп (as per TU 16-705.499–2010)

Nominal cross section of conductor, mm^2	Permissible current loads of cables, A			
	with aluminum conductor, multi-core* on alternating current		with copper conductor, multi-core* on alternating current	
	on air	in ground	on air	in ground
16	78	87	104	112
25	108	112	141	144
35	134	135	172	173
50	158	157	209	205
70	203	195	265	253
95	248	233	327	304
120	290	267	381	347
150	330	299	437	391
185	382	341	504	442
240	453	397	598	515

* To determine the current loads of four-core cables with conductors of equal cross section in four-wire networks with load in all conductors in normal mode, as well as for five-core cables, these values should be multiplied by a factor of 0.93.

Continuous permissible current loads for cables АВВГ, ВВГ, АВБШв, ВБШв (as per TU 16-705.499–2010)

Nominal cross section of conductor, mm^2	Permissible current loads of cables, A			
	with aluminum conductor, multi-core* on alternating current		with copper conductor, multi-core* on alternating current	
	on air	in ground	on air	in ground
16	67	77	84	102
25	87	102	112	133
35	106	123	137	158
50	126	143	167	187
70	161	178	211	231
95	197	214	261	279
120	229	244	302	317
150	261	274	346	358
185	302	312	397	405
240	359	363	472	471

Continuous permissible current loads for flame retardant cables with low smoke and gas emission АВВГнг(А)-LS, ВВГнг(А)-LS, АВБШвнг(А)-LS, ВБШвнг(А)-LS (as per TU 16.К71-310–2001)

Nominal cross section of conductor, mm^2	Permissible current loads of cables, A	
	with aluminum conductor	with copper conductor
	on air	
16	67	87
25	88	115
35	109	141
50	136	177
70	167	226
95	204	274
120	236	321
150	273	370
185	313	421
240	369	499

UNINSULATED WIRES for OHPL

Uninsulated wires for OHPL

A and AC

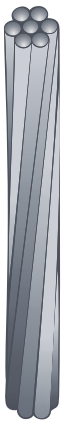
Wire grade	A	AC
Regulatory documentation	GOST 839–80	GOST 839–80
National product classification code	351 141	351 151
Description	Wire twisted of aluminum wires	Wire consisting of a steel core and aluminum wires
Application	• For the transmission of electrical energy in overhead electrical networks in air atmosphere of types 1 and 2, provided that the content of sulfur dioxide in the atmosphere is not more than 150 mg/m^2 per day (1.5 mg/m^2) on land in all macroclimatic regions in accordance with GOST 15150, УХЛ version, except for ТВ and ТС.	

Specifications

Continuous permissible heating temperature of cable conductors during operation ..... +90°C
The maximum allowable heating temperature of the conductors in case of a short circuit ..... +160°C
Cable construction length is ..... specified when ordering
Wire service life, min. ..... 45 years
Guaranteed service life ..... 4 years from the date of putting the wires into operation

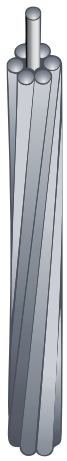
Design parameters

Nominal cross section, mm^2	Cross section, mm^2	Wire diameter, mm	Direct current electrical resistance of 1 km of wire at 20°C, Ω, max.	Wire breaking force, N, min.	Weight of 1 km of wire, kg	Construction length, min., m
Design parameters of wire A						
10	10.0	4.05	2.8631	1950	27.4	–
16	15.9	5.10	1.8007	3021	43.0	4500
25	24.9	6.40	1.1498	4500	68.0	4000
35	34.3	7.50	0.8347	5913	94.0	4000
40	40.0	8.09	0.7157	6800	109.4	–
50	49.5	9.00	0.5784	8198	135.0	3500
63	63.0	10.16	0.4544	10390	172.3	–
70	69.3	10.70	0.4131	11288	189.0	2500
95	92.4	12.30	0.3114	14784	252.0	2000
100	100.0	12.94	0.2877	17000	274.9	–
120	117.0	14.00	0.2459	19890	321.0	1500
125	125.0	14.47	0.2301	21250	343.6	–
150	148.0	15.80	0.1944	24420	406.0	1250
160	160.0	16.37	0.1/98	26400	439.8	–
185	182.8	17.50	0.1574	29832	502.0	1000
200	200.0	18.30	0.1438	32000	549.7	–
240	238.7	20.00	0.1205	38192	655.0	1000
Design parameters of wire AC						
16/2.7	16/2.69	5.6	1.7818	6220	64.9	3000
25/4.2	24.9/4.16	6.9	1.1521	9296	100.3	3000
35/6.2	36.9/6.15	8.4	0.7774	13524	148.0	3000
40/6.7	40/6.7	8.74	0.7172	14400	161.3	3000
50/8.0	48.2/8.04	9.6	0.5951	17112	195.0	3000
63/10.5	63/10.5	10.97	0.4553	21630	254.0	2000
70/11	6811.3	11.4	0.4128	24130	276.0	2000
95/16	95.4/15.9	13.5	0.3007	33369	385.0	1500



Design A

The wire consists of aluminum wires, twisted in a regular twist with the opposite direction of adjacent layers twisting, and the outer layer has a right twist direction.



Design AC

The wire consists of steel core and aluminum wires, twisted in a regular twist with the opposite direction of adjacent layers twisting, and the outer layer has a right twist direction.

INSULATED WIRES for OVERHEAD POWER LINES

SSIW is self-supporting insulated wire, designed to transmit electricity in overhead electrical networks.
This technology is designed to significantly improve the reliability of power supply.

SSIW advantages

- Theft of wires is excluded, as they are hardly recyclable;
- Reduced voltage drop due to significantly lower reactance;
- Reducing the cost of installing OHPL (OTLI);
- Simplification of the process of laying a new SSIW line;
- Reduction of safe distances to buildings and engineering structures when laying SSIWs;
- Possibility to install additional SSIW wires in parallel with the existing ones to double the power of the network;
- The possibility of joint laying of SSIW wires on the same supports with uninsulated or protected wires of 6–35 kV high-voltage overhead lines;
- Possibility of simultaneous installation on the same supports of telephone lines;
- A sharp reduction (up to 80%) of operating costs in the operation of the SSIW line;
- Ease of installation work on the SSIW line, the possibility to connect new subscribers under voltage;
- High safety of maintenance of SSIW line wires;
- Wires are protected against whipping;
- Reducing the risk of fires when the SSIW wire falls to the ground;
- Uninterrupted power supply in case of separation of the SSIW from the supports;
- Absence or slight accumulation of ice and wet snow on the insulated surface of SSIW:
- Increased reliability of SSIW lines in areas of intense icing, reduction of icing and wind loads on supports;

Self-supporting insulated and protected wires for power lines

Wire grade	СИП-1	СИП-2	СИП-3	СИП-4
Regulatory documentation	GOST 31946–2012, TU 16-705.500–2006	GOST 31946–2012, TU 16-705.500–2006	GOST 31946–2012, TU 16-705.500–2006	GOST 31946–2012, TU 16-705.500–2006
National product classification code	35 5332	35 5332	35 5522	35 5332
Description	Self-supporting wire with aluminum conductors, with light-stabilized cross-linked polyethylene (PE) insulation, with neutral carrier uninsulated conductor of aluminum alloy	The same, with neutral carrier conductor of aluminum alloy, insulated with light-stabilized cross-linked PE	Protected self-supporting wire with a conductor of aluminum alloy, with protective insulation of light-stabilized cross-linked PE	Self-supporting insulated wire without carrier conductor, with aluminum conductors, with light-stabilized cross-linked PE insulation
Application	For mains of overhead power lines (OHL) and linear branches from OHL in an air atmosphere of types I and II according to GOST 15150–69	For OHL and linear branches from OHL in atmosphere of types I and III according to GOST 15150–69, including on the coasts of the seas, salt lakes, in industrial areas and areas of saline sands	For OHL with rated voltage of 20 kV (for networks with voltage of 10, 15 and 20 kV) with rated frequency of 50 Hz in air atmosphere of types II and III according to GOST 15150–69, including on the coasts of the seas, salt lakes, in industrial areas and areas of saline sands	For branches from overhead lines to the bushing and for laying along the walls of buildings and engineering structures in an atmosphere of types I and III as per GOST 15150–69

Specifications

Operating temperature range ..... –60°C to +50°C
Linear expansion factor of aluminum alloy, max. ..... $23*10^{-6}$ 1/°C
The modulus of elasticity of the conductor, min. ..... 62 500 N/mm^2
Tensile strength of aluminum alloy wires, min. ..... 295 N/mm^2
Breaking elongation, min. 4%
Volume resistivity of insulation and protective insulation at
continuous allowable heating temperature of conductors must be at least ..... 1×10^{12} Ω*cm
It is recommended to install wires
at ambient temperature not lower than ..... –20°C
Suspension of wires in overhead power lines must comply with the requirements of the “Electrical Installation Code”

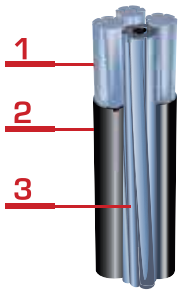
Permissible current loads of wires

calculated at ambient temperature of 25°C, wind speed of 0.6 m/s and solar radiation intensity of 1000 W/m^2 and permissible one-second short circuit currents:

Nominal cross section of main conductors, mm^2	Permissible load current A, max.	Permissible one-second short circuit current, kA, max.
16	100	1.5
25	130	2.3
35	160	3.2
50	195	4.6
70	240	6.5
95	300	8.8
120	340	10.9

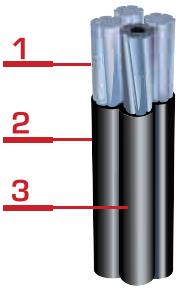
At design ambient temperatures, different from +25°C, correction factors should be applied:

Conductor temperature, °C	Correction factors at ambient temperature, °C											
	–5 and lower	0	5	10	15	20	25	30	35	40	45	50
+90	1.21	1.18	1.1	1.11	1.07	1.04	1	0.96	0.92	0.88	0.83	0.78



СИП-1 design

1 **Main conductors** are aluminum conductors with a cross section from 16 to 120 mm^2
2 **Insulation** is light stabilized cross-linked polyethylene (PE)
3 **Carrier conductor** is aluminum alloy conductor with a cross section of 25 to 95 mm^2
4 **Wire** is insulated main conductors twisted around an uninsulated carrier conductor. The twisting of the insulated conductors has the right direction.



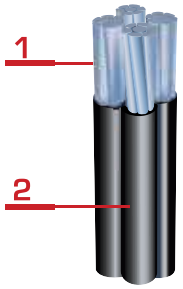
СИП-2 design

1 **Main conductors** are aluminum conductors with a cross section from 16 to 120 mm^2
2 **Insulation** is light stabilized cross-linked polyethylene (PE)
3 **Carrier conductor** is aluminum alloy conductor with a cross section of 25 to 95 mm^2
4 **Wire** is insulated main conductors twisted around an insulated carrier conductor. The twisting of the insulated conductors has the right direction.

СИП-3 design

1 **Conductor** is of aluminum alloy with a cross section of 35 to 95 mm^2

2 **Insulation** is light stabilized cross-linked polyethylene (PE)



СИП-4 design

1 **Conductor** is aluminum conductors with a cross section of 16 to 25 mm^2 (from 35 to 120 mm^2 — as agreed with the consumer)

2 **Insulation** is light stabilized cross-linked polyethylene (PE)

3 **Wire** is insulated main conductors twisted together. The twisting of the insulated conductors has the right direction.

Active resistance of conductors of wires at +90°C at a frequency of 50 Hz:

Conductor	Conductor electrical resistance at length of 1 km, Ω, max. With normal section of conductors, mm^2									
	16	25	35	50	70	95	120	150	185	240
Of aluminum wires	2.448	1.54	1.111	0.822	0.568	0.411	0.325	0.265	0.211	0.162
Of aluminum alloy wire	–	1.77	1.262	0.923	0.632	0.466	0.369	0.303	0.241	0.188

Design parameters

Nominal cross section of main conductor, mm^2	Number of wires in the core, pcs., min.	Conductor outer diameter, mm		Direct current electrical resistance of 1 km of wire at 20°C, Ω, max.
		min.	max.	
16	7	4.60	5.10	1.910
25	7	5.70	6.10	1.200
35	7	6.70	7.10	0.868
50	7	7.85	8.35	0.641
70	7	9.45	9.95	0.443
95	7	11.10	11.70	0.320
120	19	12.50	13.10	0.253

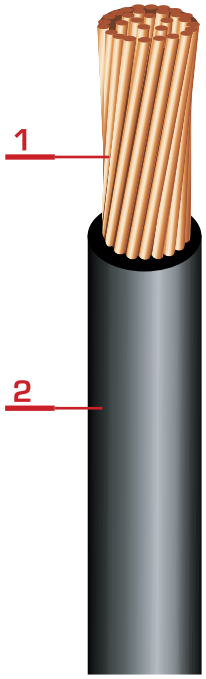
Nominal cross section of neutral conductor, mm^2	Number of wires in the core, pcs., min.	Conductor outer diameter, mm		Tensile strength of the conductor, kN, min.	Direct current electrical resistance of 1 km of wire at 20°C, Ω, max.
		min.	max.		
25	7	5.70	6.10	7.4	1.380
35	7	6.70	7.10	10.3	0.986
50	7	7.85	8.35	14.2	0.720
54.6	7	9.20	9.60	16.6	0.630
70	7	9.45	9.95	20.6	0.493
95	7	11.10	11.70	27.9	0.363

Grade and rated voltage of the wire	Number and nominal cross section of phase and neutral conductors, pcs. × mm^2	Design wire outer diameter, mm	Estimated weight of 1 km of wire, kg
СИП-1-0.6/ 1 kV	1×16+1×25	15	135
	3×16+1×25	22	270
	3×25+1×35	26	390
	3×35+1×50	30	530
	3×50+1×50	32	685
	3×50+1×70	35	740
	3×70+1×70	37	930
	3×70+1×95	41	990
	3×95+1×70	41	1190
	3×95+1×95	43	1255
	3×120+1×95	46	1480

Grade and rated voltage of the wire	Number and nominal cross section of phase and neutral conductors, pcs. × mm^2	Design wire outer diameter, mm	Estimated weight of 1 km of wire, kg
СИП-2-0.6/ 1 kV	3×16+1×25	24	308
	3×16+1×54.6	28	427
	3×25+1×35	27	424
	3×25+1×54.6	30	512
	3×35+1×50	31	571
	3×35+1×54.6	32	606
	3×50+1×50	34	727
	3×50+1×54.6	35	762
	3×50+1×70	36	798
	3×70+1×54.6	39	973
	3×70+1×70	40	1010
	3×70+1×95	41	1087
	3×95+1×70	43	1240
	3×95+1×95	45	1319
	3×120+1×95	48	1553
	3×25+1×54.6+1×16	27	552
	3×35+1×35+1×25	24	588
	3×35+1×50+1×16	25	607
	3×35+1×50+1×25	27	636
	3×35+1×54.6+1×16	27	641
	3×35+1×54.6+1×25	28	670
	3×50+1×50+1×16	25	735
	3×50+1×50+1×25	27	764
	3×50+1×54.6+1×16	27	768
	3×50+1×54.6+1×25	28	798
	3×50+1×70+1×16	28	814
	3×70+1×54.6+1×16	27	976
	3×70+1×54.6+1×25	28	1005
	3×70+1×70+1×16	28	1021
	3×70+1×70+1×25	29	1050
	3×70+1×70+1×35	31	1080
	3×70+1×95+1×16	31	1100
	3×70+1×95+1×25	31	1115
	3×70+1×95+1×35	36	1252
	3×95+1×95+1×16	39	1381
	3×95+1×95+1×25	39	1422
	3×120+1×95+1×25	34	1595
СИП-3-20 kV	1×35	12	165
	1×50	13	215
	1×70	15	282
	1×95	16	364
СИП-4-0.6/ 1 kV	2×16	15	139
	4×16	18	278
	2×25	17	196
	4×25	21	392
	4×35	23	494
	4×50	27	665
	4×70	32	942
	4×95	36	1245
	4×120	40	1583

Power cables for electrical installations for voltage up to 450/750 V

(Wires with copper conductor and insulation of PVC plastic compound)



Cable grade	ПуГВ	ПуВ
Regulatory documentation	GOST 31947–2012, TU 16-705.501–2010	GOST 31947–2012, TU 16-705.501–2010
National product classification code	35 3381	35 3371
Description	single-core wire with a flexible copper conductor, with insulation of PVC plastic compound, w/o sheath	single-core wire with a copper conductor, with insulation of PVC plastic compound, w/o sheath
Application	• Wires are used for electrical installations for fixed laying in lighting and power networks, and for the installation of electrical equipment, machines, mechanisms and machine tools, internal electrical installations for rated AC voltage up to 450/750 V including with rated frequency up to 400 Hz or DC voltage up to 1000 V including. • Wire ПуВ is used for laying in steel pipes, boxes, trays, etc., for installation of electrical circuits. • Wire ПуВ is used for laying in steel pipes, boxes, trays, etc., for installation of electrical circuits, where increased flexibility is required during laying and installation.	
	Operating temperature range is from –50°C to +50°C	

Design

1 **Conductor** is of annealed copper wire of class 1.2 (ПуВ) or class 5 (ПуГВ) according to GOST 22483–77

2 **Insulation** is of PVC plastic compound

Specifications

Type of climatic version is УХЛ, placement category is 2 according to GOST 15150–69
Requirements for resistance to external influencing factors:
- wires are resistant to elevated ambient temperatures ..... up to +65°C
- wires are resistant to low ambient temperatures ..... down to -50°C
- ПуГВ wires are resistant to high relative humidity up to 98% at ambient temperature ..... up to +35°C

Installation of wires is carried out at temperature not lower than ..... –15°C
Bending radius during installation:
- for wires ПуВ ..... min. 10 outer diameters
- for wires ПуГВ ..... min. 5 outer diameters

Continuous permissible heating temperature of conductors during operation, max. ..... +70°C
Guaranteed service life ..... 3 years
Construction length ..... min. 100 m

Design parameters

Design conductor cross section, mm^2	Nominal insulation thickness, mm		Maximum wire outer diameter, mm		Estimated weight of 1 km of wire, kg	
	ПуВ	ПуГВ	ПуВ	ПуГВ	ПуВ	ПуГВ
0.5	0.6	0.6	2.3	2.5	8.0	8.4
0.75	0.6	0.6	2.5	2.7	11.1	11.3
1	0.6	0.6	2.7	3	14.3	13.9
1.5	0.7	0.7	3.2	3.5	19.5	19.9
2.5	0.8	0.8	3.9	4.6	30.9	32.4
4.0	0.8	0.8	4.4	5.2	45.3	46.9
6.0	0.8	0.8	5	6.1	65.3	69.4
10.0	1	1	6.4	7.8	108.4	114.1
16.0	–	1	–	9.1	–	172.2
25.0	–	1.2	–	10.9	–	263.9
35.0	–	1.2	–	11.7	–	365.3
50.0	–	1.4	–	15.2	–	510.4
70.0	–	1.4	–	17.3	–	710.6
95.0	–	1.6	–	19.9	–	925.0
120.0	–	1.6	–	21.9	–	1168.6

Power wires of low fire hazard for electrical installations for voltage up to 450/750 V

(Wires with copper conductor and insulation of PVC plastic compound, flame retardant, with low smoke and gas emission, suitable for supply to nuclear power plants)

Cable grade	ПуГВнг(А)-LS	ПуВнг(А)-LS
Regulatory documentation	GOST 31947–2012, TU 16-705.502–2011	GOST 31947–2012, TU 16-705.502–2011
National product classification code	35 5113 4400	35 5113 1900
Description	single-core wire with a flexible copper conductor of class 5 GOST 22483, with insulation of PVC plastic compound, flame retardant, with low smoke and gas emission, w/o sheath	single-core wire with a copper conductor of class 1.2 GOST 22483, with insulation of PVC plastic compound, flame retardant, with low smoke and gas emission, w/o sheath
Application	Wires are used for electrical installations for fixed laying in lighting and power networks, and for the installation of electrical equipment, machines, mechanisms and machine tools, internal electrical installations for rated AC voltage up to 450/750 V including with rated frequency up to 400 Hz or DC voltage up to 1000 V including Wire ПуВнг(А)-LS is used for laying in steel pipes, boxes, trays, etc., for installation of electrical circuits Wire ПуГВнг(А)-LS is used for laying in steel pipes, boxes, trays, etc., for installation of electrical circuits, where increased flexibility is required during laying and installation.	
	Operating temperature range is from –40°C to +65°C	
Notes:	1 Index LS in grades means low smoke and gas emission (Low Smoke); 2 Index (A) in grades means that the wires in terms of flame retardence correspond to category A according to GOST IEC 60332–22–2011/	

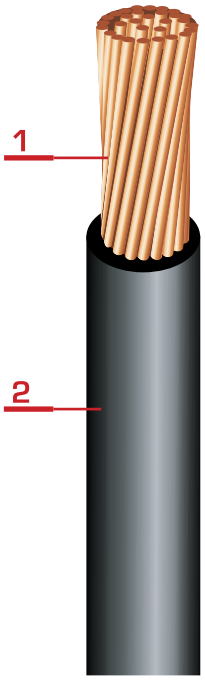
Specifications

Type of climatic version is УХЛ, placement category is 2 according to GOST 15150
Requirements for resistance to external influencing factors:
- wires are resistant to elevated ambient temperatures ..... up to +65°C
- wires are resistant to low ambient temperatures ..... up to +40°C
- ПуГВ wires are resistant to high relative humidity up to 98% at ambient temperature ..... up to +35°C

Installation of wires is carried out at temperature not lower than ..... –15°C
Bending radius during installation:
- for wires ПуВ ..... min. 10 outer diameters
- for wires ПуГВ ..... min. 5 outer diameters

Continuous permissible heating temperature of conductors during operation, max. ..... +70°C
Guaranteed service life ..... 3 years
Construction length ..... min. 100 m
The service life of the wires during operation is at least 20 years, provided that the consumer observes the requirements for transportation, storage, installation and operation

Design conductor cross section, mm^2	Nominal insulation thickness, mm		Maximum wire outer diameter, mm		Estimated weight of 1 km of wire, kg	
	ПуВнг(А)-LS	ПуГВнг(А)-LS	ПуВнг(А)-LS	ПуГВнг(А)-LS	ПуВнг(А)-LS	ПуГВнг(А)-LS
0.5	0.6	0.6	2.3	2.4	8.5	9.4
0.75	0.6	0.6	2.5	2.6	11.1	12.6
1	0.6	0.6	2.7	2.8	13.9	15.4
1.5	0.7	0.7	3.2	3.4	20.2	22.0
2.5	0.8	0.8	3.9	4.1	32.0	34.9
4.0	0.8	0.8	4.4	4.8	47.0	51.1
6.0	0.8	0.8	5.0	5.3	66.8	74.2
10.0	1.0	1.0	6.4	6.8	111.0	122.0
16.0	1.0	1.0	7.8	8.1	180.0	184.0
25.0	1.2	1.2	9.7	10.2	283.0	280.0
35.0	1.2	1.2	10.9	11.2	381.0	397.0



Design

1 **Conductor** is of annealed copper wire of class 1.2 (ПуВ) or class 5 (ПуГВ) according to GOST 22483
2 **Insulation** is of PVC plastic compound

Control cables with plastic insulation

КВВГ and КВВГЭ

Cable grade	КВВГ	КВВГЭ
Regulatory documentation	GOST 1508–78	
National product classification code	35 6314 3200	35 6314 3300
Description	cable with copper conductors, insulation and sheath of PVC plastic compound	cable with copper conductors, insulation and sheath of PVC plastic compound in a collective shield under the sheath
Application	• For fixed connection to electrical devices, apparatus, terminal assemblies of electrical switchgear with rated AC voltage up to 660 V, frequency up to 100 Hz or DC voltage up to 1000 V • Cables КВВГ are designed for laying in rooms, ditches, tunnels, in aggressive environments, in the absence of mechanical influences on the cable • Cables КВВГ are designed for laying in rooms, channels, tunnels in the absence of mechanical influences on the cable under conditions of aggressive environment and the need to protect electrical circuits against the influence of external electric fields	
	Operating temperature range is from –50°C to +50°C	

Specifications

Relative air humidity at temperature up to +35 °C is 98%
Type of cable climatic version is УХЛ and Т, placement categories are 1 and 5 according to GOST 15150-69
Laying and installation of cables without preheating is carried out at a temperature not lower than .....–15°C
Permissible bending radius when installing, min.:
- for cables with outer diameter up to 10 mm including .....3 outer diameters
- for cables with outer diameter over 10 mm to 25 mm including .....4 outer diameters

Rated frequency .....50 Hz
Test AC voltage with frequency of 50 Hz, V 2500
Continuous permissible heating temperature of cable conductors during operation.....+70°C
Cable construction length is.....specified when ordering
Service life:
- when laying in the ground (trenches) and on racks ..... 15 years
- when laying in rooms, channels, tunnels ..... 25 years

See also help information on page 23

Examples of symbols

КВВГ 4×1,5 — control cable with four conductors with nominal cross section of 1.5 mm^2
КВВГЭ 7×4 — control cable with seven conductors with nominal cross section of 4 mm^2, shielded under the sheath

КВВГ	КВВГЭ
Conductor is single-wire copper round, class 1 according to GOST 22483 **Insulation** is of PVC plastic compound (digital or color marking of the conductor) **Cable core** is twisted insulated conductors **Sheath** is of PVC plastic compound	**Conductor** is single-wire copper round, class 1 according to GOST 22483 **Insulation** is of PVC plastic compound (digital or color marking of the conductor) **Cable core** is twisted insulated conductors **Separation layer** is of PVC plastic compound **Shield is** copper foil **Sheath** is of PVC plastic compound

Number and design cross section of conductor, mm^2	КВВГ		КВВГЭ	
	Design outer diameter, mm	Estimated weight of 1 km of cable, kg	Design outer diameter, mm	Estimated weight of 1 km of cable, kg
4×0.75	7.70	86	7.94	89
4×1.0	7.99	94	8.23	101
4×1.5	9.22	134	9.46	139
4×2.5	10.18	184	10.42	186
4×4	11.77	264	12.01	263
4×6	13.03	359	13.27	356
5×0.75	8.34	105	9.18	118
5×1	9.26	130	9.50	131
5×1.5	9.97	164	10.21	164
5×2.5	11.05	227	11.29	222
7×0.75	9.60	138	9.84	146
7×1.0	9.96	156	10.20	164
7×1.5	10.74	200	10.98	207

Number and design cross section of conductor, mm^2	КВВГ		КВВГЭ	
	Design outer diameter, mm	Estimated weight of 1 km of cable, kg	Design outer diameter, mm	Estimated weight of 1 km of cable, kg
7×2.5	11.94	281	12.18	187
7×4	13.92	413	14.16	414
7×6	15.48	569	15.72	566
10×0.75	11.80	205	12.04	198
10×1.0	12.28	232	12.52	224
10×1.5	13.32	299	13.56	285
10×2.5	14.92	422	15.16	398
10×4	17.56	623	17.80	578
10×6	19.64	859	19.88	795
14×0.75	12.70	253	12.94	251
14×1	13.23	288	13.47	285
14×1.5	14.38	376	14.62	368
14×2.5	16.14	538	16.38	522

REFERENCE INFORMATION

Approximate placement of drums with cable products in containers and vehicles

Options for placing cable and wire products in containers

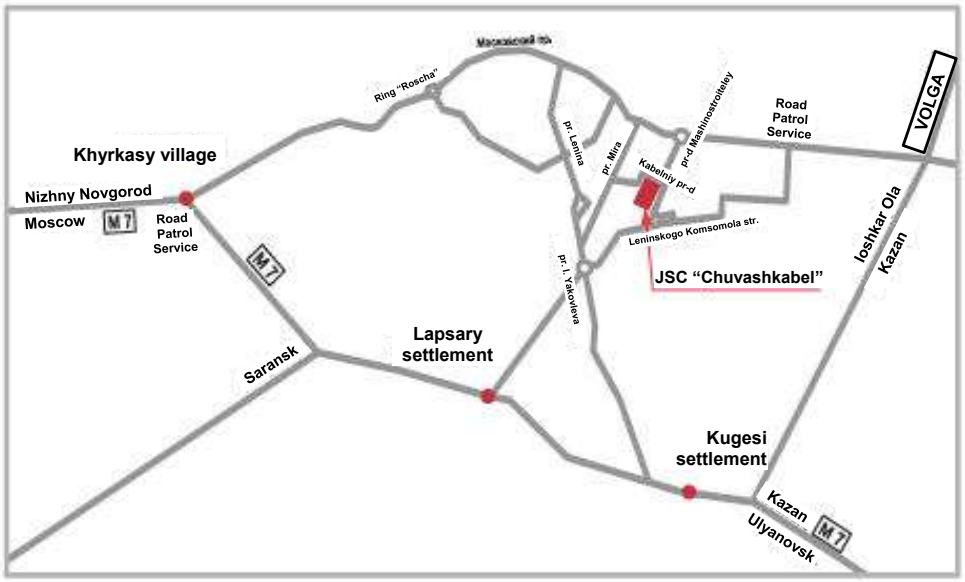
Container type		3 t	5 t	24 t
Internal dimensions		L1930 × W1225 × H2128	L2515 × W1950 × H2128	L5867 × W2330 × H2197
Volume		5.6 m	10.4 m	30.6 m
Loading rate		2.4 t	3.8 t	18 t
Drum No.	drum dimensions	Drum qty.		
8	800×450	7 pcs.	12 pcs.	36 pcs.
10	1000×545	3 pcs.	6 pcs. or 3 pcs. + No. 8 6 pcs.	15 pcs.
10A	1000×500	2 pcs.	4 pcs. or 2 pcs. + No.8 6 pcs.	10 pcs.
12	1220×650	1 pc. + No. 10	4 pcs. or 3 pcs. + No. 8 4 pcs. (No. 10 3 pcs.)	12 pcs.
12A	1220×650		3 pcs. or 2 pcs. + No. 8 4 pcs. (No. 10 3 pcs.)	8 pcs.
14	1400×750	1 pc.	3 pcs. or 2 pcs. + No. 8 4 pcs. (No. 10 3 pcs., No. 12+No. 10)	8 pcs.
16	1600×1200		2 pcs.	6 pcs.
17	1700×900		2 pcs.	6 pcs.
18	1800×1120		2 pcs. Or 1 pc. + No. 12 3 pcs. (No. 10 3 pcs., No. 8 6 pcs.)	6 pcs.
20	2000×1220		1 pc.	4 pcs.
22	2200×1320		1 pc.	4 pcs.

Options for placing cable and wire products in vehicles

Vehicles and their modifications		GAZ 3302	GAZ 3307	ZiL 5301 (bull calf)	ZiL 433180	KamAZ 5320	KamAZ 53212A	MaZ 630300	Semitrailers	Semitrailers
Tonnage		1.5 t	3.5 t	3 t	8 t	8 t	10 t	12.7 t	14 t	20 t
Overall dimensions		3056×1943	3490×2170	3850×2254	4692×2356	5200×2356	6000×2356	7700×2356	9000×2440	13600×2440
Drum No.	drum dimensions	Drum qty., pcs.								
8	800×450	15	24	24	32	38	44	54	66	102
10	1000×545	9	9	11	14	15	18	23	27	39
10A	1000×500	–	–	–	8	10	12	14	18	26
12	1220×650	4	6	9	10	12	15	18	21	33
12A	1220×650	–	5	6	7	8	10	12	14	22
14	1400×750	3	4	5	6	6	8	10	12	18
16	1600×1200		3	3	4	5	5	8	10	16
17	1700×900	–	3	4 (not a canvas cover) 3 (canvas cover)	5		6	8	10	16
18	1800×1120	–	3	3	4	5	6	8	10	14
20	2000×1220	–	–	3	–	–	–	–	–	–

Notes

Location map



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