



## **ПвББВнгд-20 3х70 ТУ У 31.3-00214534-017-2003**

Three-core power cables with copper conductors, flame-retardant, with XLPE, steel-tape armoured, with PVC compound outer sheath and with low smoke and gas emission

For the cable of this mark correspond the foreign-made analogues:

ПвББВнг(В)-LS (RU) • ПвББВнг(А)-LS (RU)

Technical cable requirements correspond to IEC 60502-2

Cables are used for laying:

- *in places, where mechanical impacts on cable are possible, except tensile forces*
- *in premises, tunnels, ducts, mines, dry soil and outdoor under shelter*
- *in bunches*
- *at sites, where low smoke and gas emission are required (NPP, subway, large industrial facilities, high-rise buildings, etc.)*

It is possible to manufacture cables with an integrated fiber-optic module.

Order entry example:

ПвББВнгд-20 3х70/16 (ОМ) ТУ У 31.3-00214534-017-2003

In conjunction with the DTS system, the integrated fiber-optic module can act as a distributed cable line temperature sensor.

It is possible to manufacture cable with sealed conductors.

Order entry example:

ПвББВнгд-20 3х70/16 (г) ТУ У 31.3-00214534-017-2003

Fire safety code in accordance with ДСТУ 4809:2007: ПБ122121000

Products of this mark meet the requirements:

- *single wire cable flame retardance*
- *bunched cable flame retardance category A*
- *toxicity class Tk2 of the combustion products of nonmetallic elements (toxicity index from 40 up to 120 g/m<sup>3</sup>)*
- *class ДТк1 on smoke-forming ability by smouldering of non-metallic elements (coefficient of smoke formation from 50 to 500 m<sup>2</sup>/kg)*
- *class ДПк2 on smoke-forming ability by combustion (minimum luminous flux more than 60 %)*
- *corrosive class Кк1 of combustion products of non-metallic elements (the number of halogen hydrides less than 150 mg/g, pH less than 4.3, specific conductivity more than 10 μS/mm)*



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### TECHNICAL SPECIFICATIONS

|                                                                              |                 |                                              |
|------------------------------------------------------------------------------|-----------------|----------------------------------------------|
| Rated voltage                                                                | kV              | 20                                           |
| Maximum voltage                                                              | kV              | 24                                           |
| Number and rated area of conductors                                          | mm <sup>2</sup> | 3 x 70                                       |
| Insulation thickness                                                         | mm              | 5.5                                          |
| Minimum screen cross-section                                                 | mm <sup>2</sup> | 16                                           |
| Permissible short circuit current across the screen of minimum cross-section | kA              | 3.3                                          |
| Maximum permissible short-circuit current in core                            | kA              | 10                                           |
| Permissible continuous current rating *                                      |                 |                                              |
| • by aerial laying                                                           | A               | 253                                          |
| • by burial                                                                  | A               | 220                                          |
| Partial discharge factor for rated voltage, not more than                    | pC              | 6                                            |
| Maximum permissible conductor temperature                                    |                 |                                              |
| • Continuous                                                                 | °C              | +90                                          |
| • in emergency operation                                                     | °C              | +130                                         |
| • at short circuit                                                           | °C              | +250                                         |
| Operating temperature range (in climate version NF)                          | °C              | -50 ... +50                                  |
| Operating temperature range (in climate version T)                           | °C              | -25 ... +65                                  |
| Minimum bending radius by laying                                             | mm              | 1040                                         |
| Rated outer diameter of the cable (for reference) **                         | mm              | 65                                           |
| Cable weight (approximate)                                                   | kg/km           | 6360                                         |
| Rated factory cable length and gross weight of the delivery on the drums *** | m, t            | # 22УД-60: 363 • 3.2<br># 25УД-90: 643 • 5.7 |

#### Notes:

When ordering it is necessary to agree the factory length of the product with the manufacturer

\* Long permissible current loads are calculated for the following conditions: conductor temperature 90 °C, air temperature 30 °C, soil temperature 20 °C, load factor 1.0, thermal resistivity of soil 1.5 °K·m/W, laying depth in the ground 0.8 m, shields are grounded at both ends of the line

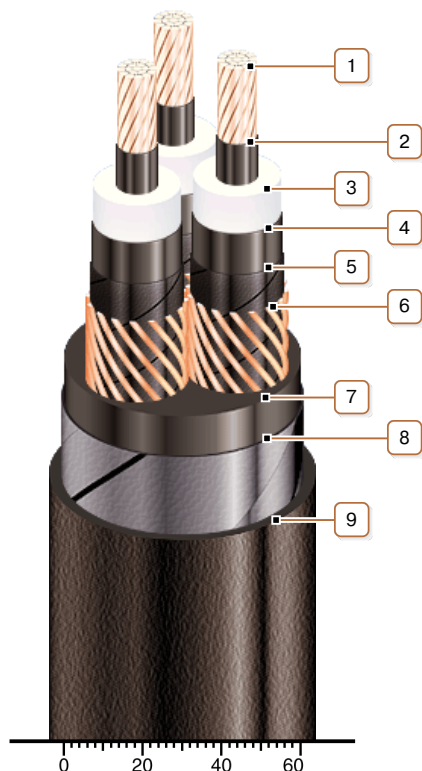
\*\* The external diameter may differ from the rated up to ± 10 %

\*\*\* Отклонение фактической массы брутто от указанного значения может составлять ± 7 %



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### CONSTRUCTION

#### 1. Copper multiwire compact conductor

*Note: It is possible to manufacture cable with sealed conductors.*

#### 2. Inner extruded semiconducting layer

#### 3. XLPE insulation

#### 4. Outer extruded semiconducting layer

#### 5. Lapping layer of semiconductive swellable tape

#### 6. Copper screen

#### 7. Extruded filling of low fire-risk PVC compound

#### 8. Double galvanized steel-tape armour

#### 9. Low fire-risk PVC compound outer sheath

*Note: Conductor twisting is not illustrated*