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### АПвЭгПнг-HF-6 1x35 ТУ У 31.3-00214534-058:2007

Power cables with aluminium conductors, flame-retardant and halogen-free, with XLPE, longitudinal screen sealing and polymer compound outer sheath

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

NA2XSH (DE) · A2XSH (DE) · NUHAKXS (PL)

Technical cable requirements correspond to IEC 60502-2

Cables are used for laying:

- in premises, tunnels, ducts, mines, dry soil and outdoor under shelter
- at sites, where low smoke and corrosive gas emission are required (NPP, subway, large industrial facilities, high-rise buildings, etc.)
- · single laying

It is possible to manufacture cables with extruded semiconductor layer along outer sheath.

Order entry example:

АПвЭгПнг-HF-П-6 1x35/16 ТУ У 31.3-00214534-058:2007

An extruded semiconductor layer along outer sheath ensures the correct testing of cable line with sections of underground laying in polymer pipes.

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

Order entry example:

АПвЭгПнг-HF-6 1x35/16 (ОМ) ТУ У 31.3-00214534-058:2007

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

Order entry example:

АПвЭгПнг-НF-6 1х35/16 (ожк) ТУ У 31.3-00214534-058:2007

It is possible to manufacture cable with sealed conductor.

Order entry example:

АПвЭгПнг-НF-6 1х35/16 (г) ТУ У 31.3-00214534-058:2007

It is possible manufacturing of cables in versions (A) and (B), flame-retardant when laying in bunches

It is possible to supply of three stranded single-core cables.

Order entry example:

3хАПвЭгПнг-HF-6 1х35/16 ТУ У 31.3-00214534-058:2007

Fire safety code in accordance with ДСТУ 4809:2007: ПБ102122000

Products of this mark meet the requirements:

- single wire cable flame retardance
- toxicity class Tk2 of the combustion products of nonmetallic elements (toxicity index from 40 up to 120 g/m³)
- class  $\mu$ TK1 on smoke-forming ability by smouldering of non-metallic elements (coefficient of smoke formation from 50 to 500 m²/kg)
- class ДΠκ2 on smoke-forming ability by combustion (minimum luminous flux more than 60 %)
- corrosive class  $K\kappa 2$  of combustion products of non-metallic elements (the number of halogen hydrides less than 150 mg/g, pH more than 4.3, specific conductivity less than 10  $\mu$ S/mm)







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## АПвЭгПнг-HF-6 1x35 ТУ У 31.3-00214534-058:2007

Power cables with aluminium conductors, flame-retardant and halogen-free, with XLPE, longitudinal screen sealing and polymer compound outer sheath

### **TECHNICAL SPECIFICATIONS**

Maximum voltagekV7.2Number and rated area of conductorsmm²1 x 35Insulation thiknessmm2.5Minimum screen cross-sectionmm²16Permissible short circuit current across the screen of minimum cross-sectionkA3.3Maximum permissible short-circuit current in corekA3.3Permissible continious current rating *• by aerial laying in trefoil formationA154• by aerial flat layingA185• by burial in trefoil formationA129• by burial flatA134Partial discharge factor for rated voltage, not more thanpC6Maximum permissible conductor temperature• Continious° C+90• in emergency operation° C+90• in emergency operation° C+250Operating temperature range° C-60 +50Minimum bending radius by layingmm416Rated outer diameter of the cable (for reference) **mm26Cable weight (approximate)kg/km700	Rated voltage	kV	6
Insulation thikness mm 2.5  Minimum screen cross-section mm² 16  Permissible short circuit current across the screen of kA 3.3  minimum cross-section  Maximum permissible short-circuit current in core kA 3.3  Permissible continious current rating *  · by aerial laying in trefoil formation A 154  · by aerial flat laying A 185  · by burial in trefoil formation A 129  · by burial flat A 134  Partial discharge factor for rated voltage, not more than pC 6  Maximum permissible conductor temperature  · Continious ° C +90  · in emergency operation ° C +130  · at short circuit ° C -60 +50  Minimum bending radius by laying mm 416  Rated outer diameter of the cable (for reference) ** mm 26  Cable weight (approximate) kg/km 700	Maximum voltage	kV	7.2
Minimum screen cross-section mm² 16  Permissible short circuit current across the screen of kA 3.3  minimum cross-section  Maximum permissible short-circuit current in core kA 3.3  Permissible continious current rating *  • by aerial laying in trefoil formation A 154  • by aerial flat laying A 185  • by burial in trefoil formation A 129  • by burial flat A 134  Partial discharge factor for rated voltage, not more than pC 6  Maximum permissible conductor temperature  • Continious ° C +90  • in emergency operation ° C +130  • at short circuit ° C -60 +50  Minimum bending radius by laying mm 416  Rated outer diameter of the cable (for reference) ** mm 26  Cable weight (approximate) kg/km 700	Number and rated area of conductors	mm²	1 x 35
Permissible short circuit current across the screen of minimum cross-section  Maximum permissible short-circuit current in core kA 3.3  Permissible continious current rating *  • by aerial laying in trefoil formation A 154  • by aerial flat laying A 185  • by burial in trefoil formation A 129  • by burial flat A 134  Partial discharge factor for rated voltage, not more than pC 6  Maximum permissible conductor temperature  • Continious ° C +90  • in emergency operation ° C +130  • at short circuit ° C +250  Operating temperature range ° C -60 +50  Minimum bending radius by laying mm 416  Rated outer diameter of the cable (for reference) ** mm 26  Cable weight (approximate) kg/km 700	Insulation thikness	mm	2.5
minimum cross-section  Maximum permissible short-circuit current in core kA 3.3  Permissible continious current rating *  • by aerial laying in trefoil formation A 154  • by aerial flat laying A 185  • by burial in trefoil formation A 129  • by burial flat A 134  Partial discharge factor for rated voltage, not more than pC 6  Maximum permissible conductor temperature  • Continious ° C +90  • in emergency operation ° C +130  • at short circuit ° C +250  Operating temperature range ° C -60 +50  Minimum bending radius by laying mm 416  Rated outer diameter of the cable (for reference) ** mm 26  Cable weight (approximate) kg/km 700	Minimum screen cross-section	mm²	16
Maximum permissible short-circuit current in core kA 3.3  Permissible continious current rating *  • by aerial laying in trefoil formation A 154  • by aerial flat laying A 185  • by burial in trefoil formation A 129  • by burial flat A 134  Partial discharge factor for rated voltage, not more than pC 6  Maximum permissible conductor temperature  • Continious °C +90  • in emergency operation °C +130  • at short circuit °C +250  Operating temperature range °C -60 +50  Minimum bending radius by laying mm 416  Rated outer diameter of the cable (for reference) ** mm 26  Cable weight (approximate) kg/km 700	Permissible short circuit current across the screen of	kA	3.3
Permissible continious current rating *  • by aerial laying in trefoil formation  • by aerial flat laying  • by aerial flat laying  • by burial in trefoil formation  • by burial flat  • by burial flat  A 134  Partial discharge factor for rated voltage, not more than  pC 6  Maximum permissible conductor temperature  • Continious  • C +90  • in emergency operation  • C +130  • at short circuit  ° C +250  Operating temperature range  Minimum bending radius by laying  Rated outer diameter of the cable (for reference) **  mm 26  Cable weight (approximate)  kg/km 700	minimum cross-section		
<ul> <li>by aerial laying in trefoil formation</li> <li>by aerial flat laying</li> <li>by by burial in trefoil formation</li> <li>by burial flat</li> <li>by burial flat</li> <li>A 134</li> <li>Partial discharge factor for rated voltage, not more than</li> <li>PC 6</li> <li>Maximum permissible conductor temperature</li> <li>Continious</li> <li>C +90</li> <li>in emergency operation</li> <li>c +130</li> <li>at short circuit</li> <li>C +250</li> <li>Operating temperature range</li> <li>C -60 +50</li> <li>Minimum bending radius by laying</li> <li>mm 416</li> <li>Rated outer diameter of the cable (for reference) **</li> <li>mm 26</li> <li>Cable weight (approximate)</li> <li>kg/km 700</li> </ul>	Maximum permissible short-circuit current in core	kA	3.3
<ul> <li>by aerial flat laying</li> <li>by burial in trefoil formation</li> <li>by burial flat</li> <li>by burial flat</li> <li>A 134</li> <li>Partial discharge factor for rated voltage, not more than</li> <li>C 6</li> <li>Maximum permissible conductor temperature</li> <li>Continious</li> <li>C +90</li> <li>in emergency operation</li> <li>C +130</li> <li>at short circuit</li> <li>C +250</li> <li>Operating temperature range</li> <li>C -60 +50</li> <li>Minimum bending radius by laying</li> <li>mm 416</li> <li>Rated outer diameter of the cable (for reference) **</li> <li>mm 26</li> <li>Cable weight (approximate)</li> <li>kg/km 700</li> </ul>	Permissible continious current rating *		
<ul> <li>by burial in trefoil formation</li> <li>by burial flat</li> <li>Partial discharge factor for rated voltage, not more than</li> <li>Maximum permissible conductor temperature</li> <li>Continious</li> <li>in emergency operation</li> <li>c +130</li> <li>at short circuit</li> <li>C +250</li> <li>Operating temperature range</li> <li>C -60 +50</li> <li>Minimum bending radius by laying</li> <li>mm 416</li> <li>Rated outer diameter of the cable (for reference) **</li> <li>mm 26</li> <li>Cable weight (approximate)</li> <li>kg/km 700</li> </ul>	by aerial laying in trefoil formation	Α	154
<ul> <li>by burial flat</li> <li>Partial discharge factor for rated voltage, not more than</li> <li>Maximum permissible conductor temperature</li> <li>Continious</li> <li>in emergency operation</li> <li>c +130</li> <li>at short circuit</li> <li>C +250</li> <li>Operating temperature range</li> <li>C -60 +50</li> <li>Minimum bending radius by laying</li> <li>mm 416</li> <li>Rated outer diameter of the cable (for reference) **</li> <li>mm 26</li> <li>Cable weight (approximate)</li> <li>kg/km 700</li> </ul>	• by aerial flat laying	Α	185
Partial discharge factor for rated voltage, not more than pC 6  Maximum permissible conductor temperature  • Continious  • in emergency operation  • at short circuit  Coperating temperature range  Minimum bending radius by laying  Rated outer diameter of the cable (for reference) ** mm  26  Cable weight (approximate)  Kg/km	by burial in trefoil formation	Α	129
Maximum permissible conductor temperature  • Continious  • in emergency operation  • at short circuit  C +250  Operating temperature range  C -60 +50  Minimum bending radius by laying  Rated outer diameter of the cable (for reference) **  Cable weight (approximate)  kg/km  C +260  H130  C +250  C -60 +50  mm  416  Mm  26  Cable weight (approximate)	• by burial flat	Α	134
<ul> <li>Continious</li> <li>in emergency operation</li> <li>C +130</li> <li>at short circuit</li> <li>C +250</li> <li>Operating temperature range</li> <li>C -60 +50</li> <li>Minimum bending radius by laying</li> <li>mm 416</li> <li>Rated outer diameter of the cable (for reference) **</li> <li>mm 26</li> <li>Cable weight (approximate)</li> <li>kg/km 700</li> </ul>	Partial discharge factor for rated voltage, not more than	рС	6
<ul> <li>in emergency operation</li> <li>at short circuit</li> <li>C +250</li> <li>Operating temperature range</li> <li>C -60 +50</li> <li>Minimum bending radius by laying</li> <li>mm 416</li> <li>Rated outer diameter of the cable (for reference) **</li> <li>mm 26</li> <li>Cable weight (approximate)</li> <li>kg/km 700</li> </ul>	Maximum permissible conductor temperature		
<ul> <li>at short circuit</li> <li>C +250</li> <li>Operating temperature range</li> <li>C -60 +50</li> <li>Minimum bending radius by laying</li> <li>mm 416</li> <li>Rated outer diameter of the cable (for reference) ** mm 26</li> <li>Cable weight (approximate)</li> <li>kg/km 700</li> </ul>	Continious	°C	+90
Operating temperature range °C -60 +50  Minimum bending radius by laying mm 416  Rated outer diameter of the cable (for reference) ** mm 26  Cable weight (approximate) kg/km 700	· in emergency operation	°C	+130
Minimum bending radius by laying mm 416 Rated outer diameter of the cable (for reference) ** mm 26 Cable weight (approximate) kg/km 700	• at short circuit	°C	+250
Rated outer diameter of the cable (for reference) ** mm 26 Cable weight (approximate) kg/km 700	Operating temperature range	°C	-60 +50
Cable weight (approximate) kg/km 700	Minimum bending radius by laying	mm	416
<u> </u>	Rated outer diameter of the cable (for reference) **	mm	26
	Cable weight (approximate)	kg/km	700
Rated factory cable length and gross weight of the delivery m, t # 18УД-40: 1603 • 1.7 on the drums ***	Rated factory cable length and gross weight of the delivery on the drums ***	m, t	# 18УД-40: 1603 • 1.7

#### Notes:

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

<sup>\*</sup> Long permissible current loads are calculated for the following conditions: conductor temperature 90 °C, air temperature 30 °C, soil temperature 20 °C, thermal resistivity of soil 1.5 °K • m/W, laying depth in the soil 0.8 m, while laying in flat formation the distance between cables in clear is equal to the cable diameter, while laying in trefoil formation cables are laid side by side, shields are earthed on both ends of the line

<sup>\*\*</sup> The external diameter may differ from the rated up to  $\pm$  10 %

<sup>\*\*\*</sup> Отклонение фактической массы брутто от указанного значения может составлять ± 7 %



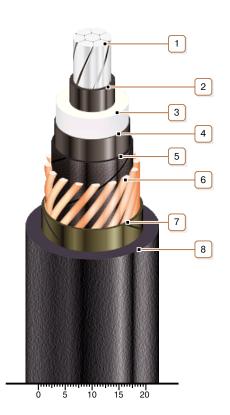




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### **CONSTRUCTION**

- 1. Aluminium multiwire compacted conductor
  Note: It is possible to manufacture cable with sealed conductor.
- 2. Inner extruded semiconducting layer
- 3. XLPE insulation
- 4. Outer extruded semiconducting layer
- 5. Lapping layer of semiconductive swellable tape
- 6. Copper screen
- 7. Lapping layer of glass tape
- 8. Polymer compound outer sheath:flame-retardant and halogen-free Note: It is possible to manufacture cable with extruded semiconductor layer along outer sheath