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# АПвЭгПнг-HF-132 1x800 ТУ У 31.3-00214534-060:2011

Power cables with aluminium conductor, 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 60840

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.)

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

Order entry example:

АПвЭгПнг-HF-П-132 1x800/95 ТУ У 31.3-00214534-060:2011

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-132 1x800/95 (ОМ) ТУ У 31.3-00214534-060:2011

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 conductor.

Order entry example:

АПвЭгПнг-HF-132 1х800/95 (г) ТУ У 31.3-00214534-060:2011

Fire safety code in accordance with ДСТУ 4809:2007: ΠБ102122000

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  $\Delta T \kappa 1$  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  $K\kappa 2$  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)









# АПвЭгПнг-HF-132 1x800 ТУ У 31.3-00214534-060:2011

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

### **TECHNICAL SPECIFICATIONS**

Maximum voltage kV 145 Conductor rated area mm² 800 Minimum screen cross-section mm³ 35 Partial discharge factor for rated voltage, not more than pC 6 Permissible short circuit current across the screen of kA 10.2 minimum cross-section Maximum permissible short-circuit current in core kA 75.2 Permissible continious current rating by aerial laying * · in trefoil formation with double-side screen earthing or A 970 cross screen earthing · plane with double-side screen earthing or cross screen earthing or plane with single-side screen earthing or cross screen earthing Permissible continious current rating by burial * · in trefoil formation with double-side screen earthing or cross screen earthing Permissible continious current rating by burial * · in trefoil formation with single-side screen earthing or cross screen earthing Permissible continious current rating by burial * · in trefoil formation with single-side screen earthing or A 757 cross screen earthing · plane with double-side screen earthing or A 757 cross screen earthing · plane with single-side screen earthing or cross screen A 799 earthing 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 Mated outer diameter of the cable (for reference) ** mm 89 Cable weight (approximate)	Rated voltage	kV	132
Conductor rated area mm² 800  Minimum screen cross-section mm² 35  Partial discharge factor for rated voltage, not more than pC 6  Permissible short circuit current across the screen of kA 10.2  minimum cross-section  Maximum permissible short-circuit current in core kA 75.2  Permissible continious current rating by aerial laying *  in trefoil formation with double-side screen earthing A 905  in trefoil formation with single-side screen earthing or cross screen earthing  plane with double-side screen earthing or cross screen and 1126  earthing  Permissible continious current rating by burial *  in trefoil formation with single-side screen earthing or cross screen arthing or cross screen earthing are in trefoil formation with double-side screen earthing or cross screen earthing or cross screen earthing or and 757  cross screen earthing  in trefoil formation with double-side screen earthing or and 757  cross screen earthing  plane with double-side screen earthing or cross screen earthing or and 757  cross screen earthing  A 623  plane with double-side screen earthing or cross screen and 799  earthing  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  Mated outer diameter of the cable (for reference) **  mm 89  Cable weight (approximate)			
Minimum screen cross-section mm² 35 Partial discharge factor for rated voltage, not more than pC 6 Permissible short circuit current across the screen of minimum cross-section  Maximum permissible short-circuit current in core kA 75.2  Permissible continious current rating by aerial laying *  in trefoil formation with double-side screen earthing A 905  in trefoil formation with single-side screen earthing or cross screen earthing  plane with double-side screen earthing A 1126  aerthing  Permissible continious current rating by burial *  in trefoil formation with single-side screen earthing or cross screen  in trefoil formation with double-side screen earthing or cross screen arthing  Permissible continious current rating by burial *  in trefoil formation with double-side screen earthing or A 757  cross screen earthing  plane with double-side screen earthing or A 757  cross screen earthing  plane with double-side screen earthing or cross screen earthing  in the foil formation with single-side screen earthing or A 759  earthing  A 623  plane with double-side screen earthing or cross screen A 799  earthing  Maximum permissible conductor temperature  Continious  c C +90  in emergency operation  c C +130  at short circuit  c C +250  Operating temperature range  c C -60+50  Minimum bending radius by laying  mm 1424  Mated outer diameter of the cable (for reference) **  mm 89  Cable weight (approximate)		mm²	800
Permissible short circuit current across the screen of minimum cross-section  Maximum permissible short-circuit current in core kA 75.2  Permissible continious current rating by aerial laying *  - in trefoil formation with double-side screen earthing or cross screen earthing  - plane with double-side screen earthing or cross screen earthing  - plane with single-side screen earthing or cross screen earthing  - plane with single-side screen earthing or cross screen earthing  - plane with single-side screen earthing or cross screen earthing  - in trefoil formation with double-side screen earthing or earthing  - in trefoil formation with double-side screen earthing or earthing  - in trefoil formation with single-side screen earthing or earthing  - plane with double-side screen earthing or earthing  - plane with double-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - continious	Minimum screen cross-section		35
minimum cross-section  Maximum permissible short-circuit current in core  RA 75.2  Permissible continious current rating by aerial laying *  in trefoil formation with double-side screen earthing  in trefoil formation with single-side screen earthing or  cross screen earthing  plane with double-side screen earthing or cross screen  plane with single-side screen earthing or cross screen  plane with single-side screen earthing or cross screen  at 1126  earthing  Permissible continious current rating by burial *  in trefoil formation with double-side screen earthing or cross screen earthing  in trefoil formation with single-side screen earthing or cross screen earthing  plane with double-side screen earthing or cross screen earthing  plane with single-side screen earthing or cross screen  plane with single-side screen earthing or cross screen  plane with single-side screen earthing or cross screen  arthing  Maximum permissible conductor temperature  Continious  c C +90  in emergency operation  c C +130  at short circuit  c C +250  Operating temperature range  c -60 +50  Minimum bending radius by laying  mm 1424  Rated outer diameter of the cable (for reference) **  mm 89  Cable weight (approximate)	Partial discharge factor for rated voltage, not more than	pC	6
Maximum permissible short-circuit current in core kA 75.2  Permissible continious current rating by aerial laying *  in trefoil formation with double-side screen earthing A 905  in trefoil formation with single-side screen earthing A 970  cross screen earthing  plane with double-side screen earthing A 873  plane with single-side screen earthing or cross screen A 1126  earthing  Permissible continious current rating by burial *  in trefoil formation with double-side screen earthing A 694  in trefoil formation with single-side screen earthing A 757  cross screen earthing  plane with double-side screen earthing A 623  plane with double-side screen earthing A 799  earthing  Maximum permissible conductor temperature  Continious  "C +90  in emergency operation  at short circuit  "C +250  Operating temperature range  "C -60 +50  Minimum bending radius by laying  mm 1424  Rated outer diameter of the cable (for reference) **  mm 89  Cable weight (approximate)	Permissible short circuit current across the screen of	kA	10.2
Permissible continious current rating by aerial laying *  in trefoil formation with double-side screen earthing	minimum cross-section		
<ul> <li>in trefoil formation with double-side screen earthing</li> <li>in trefoil formation with single-side screen earthing or cross screen earthing</li> <li>plane with double-side screen earthing or cross screen</li> <li>plane with single-side screen earthing or cross screen</li> <li>plane with single-side screen earthing or cross screen</li> <li>earthing</li> <li>Permissible continious current rating by burial *</li> <li>in trefoil formation with double-side screen earthing or cross screen earthing</li> <li>plane with double-side screen earthing or cross screen earthing</li> <li>plane with single-side screen earthing or cross screen</li> <li>plane with single-side screen earthing or cross screen</li> <li>continious</li> <li>C +90</li> <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 1424</li> <li>Rated outer diameter of the cable (for reference) ** mm 89</li> <li>Cable weight (approximate)</li> </ul>	Maximum permissible short-circuit current in core	kA	75.2
<ul> <li>in trefoil formation with single-side screen earthing or cross screen earthing</li> <li>plane with double-side screen earthing or cross screen</li> <li>plane with single-side screen earthing or cross screen</li> <li>plane with single-side screen earthing or cross screen</li> <li>permissible continious current rating by burial *</li> <li>in trefoil formation with double-side screen earthing</li> <li>in trefoil formation with single-side screen earthing or cross screen earthing</li> <li>plane with double-side screen earthing</li> <li>plane with double-side screen earthing or cross screen</li> <li>plane with single-side scre</li></ul>	Permissible continious current rating by aerial laying *		
cross screen earthing  • plane with double-side screen earthing or cross screen  • plane with single-side screen earthing or cross screen  earthing  Permissible continious current rating by burial *  • in trefoil formation with double-side screen earthing  • in trefoil formation with single-side screen earthing or cross screen earthing  • plane with double-side screen earthing  • plane with double-side screen earthing or cross screen  earthing  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 89  Cable weight (approximate)  kg/km 9800	in trefoil formation with double-side screen earthing	А	905
<ul> <li>plane with double-side screen earthing</li> <li>plane with single-side screen earthing or cross screen</li> <li>earthing</li> <li>Permissible continious current rating by burial *</li> <li>in trefoil formation with double-side screen earthing</li> <li>in trefoil formation with single-side screen earthing or cross screen earthing</li> <li>plane with double-side screen earthing</li> <li>plane with double-side screen earthing or cross screen</li> <li>plane with single-side screen earthing or cross screen</li> <li>plane with single-side screen earthing or cross screen</li> <li>plane with single-side screen earthing or cross screen</li> <li>continious</li> <li>*C</li> <li>+90</li> <li>in emergency operation</li> <li>*C</li> <li>+130</li> <li>at short circuit</li> <li>*C</li> <li>+250</li> <li>Operating temperature range</li> <li>*C</li> <li>-60 +50</li> <li>Minimum bending radius by laying</li> <li>mm</li> <li>1424</li> <li>Rated outer diameter of the cable (for reference) **</li> <li>mm</li> <li>89</li> <li>Cable weight (approximate)</li> <li>kg/km</li> <li>9800</li> </ul>	in trefoil formation with single-side screen earthing or	Α	970
<ul> <li>plane with single-side screen earthing or cross screen earthing</li> <li>Permissible continious current rating by burial *</li> <li>in trefoil formation with double-side screen earthing</li> <li>in trefoil formation with single-side screen earthing or cross screen earthing</li> <li>plane with double-side screen earthing</li> <li>plane with double-side screen earthing or cross screen</li> <li>plane with single-side screen earthing or cross screen</li> <li>plane with single-side screen earthing or cross screen</li> <li>plane with single-side screen earthing or cross screen</li> <li>continious</li> <li>C</li> <li>in emergency operation</li> <li>c</li> <li>tin emergency operation</li> <li>c</li> <li>ta short circuit</li> <li>C</li> <li>c-60 +50</li> <li>Minimum bending radius by laying</li> <li>mm</li> <li>mm</li> <li>mm</li> <li>1424</li> <li>Rated outer diameter of the cable (for reference) **</li> <li>mm</li> <li>89</li> <li>Cable weight (approximate)</li> <li>kg/km</li> <li>9800</li> </ul>	cross screen earthing		
earthing  Permissible continious current rating by burial *  • in trefoil formation with double-side screen earthing	plane with double-side screen earthing	Α	873
Permissible continious current rating by burial *  • in trefoil formation with double-side screen earthing A 694  • in trefoil formation with single-side screen earthing or Cross screen earthing  • plane with double-side screen earthing A 623  • plane with single-side screen earthing or cross screen A 799  earthing  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 1424  Rated outer diameter of the cable (for reference) ** mm 89  Cable weight (approximate) kg/km 9800	plane with single-side screen earthing or cross screen	Α	1126
<ul> <li>in trefoil formation with double-side screen earthing</li> <li>in trefoil formation with single-side screen earthing or cross screen earthing</li> <li>plane with double-side screen earthing</li> <li>plane with single-side screen earthing or cross screen</li> <li>Contining</li> <li>Maximum permissible conductor temperature</li> <li>Continious</li> <li>°C</li> <li>+90</li> <li>in emergency operation</li> <li>°C</li> <li>+130</li> <li>at short circuit</li> <li>°C</li> <li>+250</li> <li>Operating temperature range</li> <li>°C</li> <li>-60 +50</li> <li>Minimum bending radius by laying</li> <li>mm</li> <li>1424</li> <li>Rated outer diameter of the cable (for reference) **</li> <li>mm</li> <li>89</li> <li>Cable weight (approximate)</li> <li>kg/km</li> <li>9800</li> </ul>	earthing		
<ul> <li>in trefoil formation with single-side screen earthing or cross screen earthing</li> <li>plane with double-side screen earthing</li> <li>plane with single-side screen earthing or cross screen</li> <li>A 799</li> <li>earthing</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 1424</li> <li>Rated outer diameter of the cable (for reference) **</li> <li>mm 89</li> <li>Cable weight (approximate)</li> <li>kg/km 9800</li> </ul>	Permissible continious current rating by burial *		
cross screen earthing  • plane with double-side screen earthing  • plane with single-side screen earthing or cross screen earthing  Maximum permissible conductor temperature  • Continious  • in emergency operation • at short circuit  Operating temperature range  Minimum bending radius by laying  Rated outer diameter of the cable (for reference) **  mm  89  Cable weight (approximate)  A 623  A 799  C +90  C +90  C +90  C +130  C +250  Minimum bending radius by laying mm  1424  Rated outer diameter of the cable (for reference) ** mm  89	in trefoil formation with double-side screen earthing	Α	694
<ul> <li>plane with double-side screen earthing</li> <li>plane with single-side screen earthing or cross screen</li> <li>plane with double-side screen earthing</li> <li>plane with single-side screen earthing</li> <li>C</li> <li>P99</li> <li>C</li> <li>+90</li> <li>in emergency operation</li> <li>°C</li> <li>+130</li> <li>at short circuit</li> <li>°C</li> <li>+250</li> <li>Operating temperature range</li> <li>°C</li> <li>-60 +50</li> <li>Minimum bending radius by laying</li> <li>mm</li> <li>1424</li> <li>Rated outer diameter of the cable (for reference) **</li> <li>mm</li> <li>89</li> <li>Cable weight (approximate)</li> <li>kg/km</li> <li>9800</li> </ul>	<ul> <li>in trefoil formation with single-side screen earthing or</li> </ul>	Α	757
<ul> <li>plane with single-side screen earthing or cross screen earthing</li> <li>Maximum permissible conductor temperature</li> <li>Continious</li> <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>Rated outer diameter of the cable (for reference) **</li> <li>mm 89</li> <li>Cable weight (approximate)</li> <li>kg/km 9800</li> </ul>	cross screen earthing		
earthing  Maximum permissible conductor temperature  • Continious  • in emergency operation  • at short circuit  • C +250  Operating temperature range  Minimum bending radius by laying  Rated outer diameter of the cable (for reference) **  Cable weight (approximate)  **C +90  • C +130  • C +250  C -60 +50  **Mm 1424  **Rated outer diameter of the cable (for reference) **  **mm 89  Cable weight (approximate)	<ul> <li>plane with double-side screen earthing</li> </ul>	Α	623
Maximum permissible conductor temperature  • Continious  • in emergency operation  • at short circuit  • C  Operating temperature range  Minimum bending radius by laying  Rated outer diameter of the cable (for reference) **  Cable weight (approximate)  • C  +90  • C  +130  • C  +250  • C  -60 +50  mm  1424  mm  89  Cable weight (approximate)	<ul> <li>plane with single-side screen earthing or cross screen</li> </ul>	Α	799
<ul> <li>Continious</li> <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>Rated outer diameter of the cable (for reference) **</li> <li>mm 89</li> <li>Cable weight (approximate)</li> <li>kg/km 9800</li> </ul>	earthing		
<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 1424</li> <li>Rated outer diameter of the cable (for reference) ** mm 89</li> <li>Cable weight (approximate)</li> <li>kg/km 9800</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 1424</li> <li>Rated outer diameter of the cable (for reference) ** mm 89</li> <li>Cable weight (approximate)</li> <li>kg/km 9800</li> </ul>	Continious		+90
Operating temperature range °C -60 +50  Minimum bending radius by laying mm 1424  Rated outer diameter of the cable (for reference) ** mm 89  Cable weight (approximate) kg/km 9800	in emergency operation	° C	+130
Minimum bending radius by laying mm 1424 Rated outer diameter of the cable (for reference) ** mm 89 Cable weight (approximate) kg/km 9800	at short circuit		
Rated outer diameter of the cable (for reference) ** mm 89 Cable weight (approximate) kg/km 9800	Operating temperature range	°C	-60 +50
Cable weight (approximate) kg/km 9800		mm	1424
<u> </u>	Rated outer diameter of the cable (for reference) **	mm	89
Rated factory cable length and gross weight of the delivery m, t # 25УД-90: 396 • 5.5	Cable weight (approximate)	kg/km	9800
	Rated factory cable length and gross weight of the delivery	m, t	# 25УД-90: 396 • 5.5
on the drums *** # 26УД-100: 457 • 6.3	on the drums ***		
# 30УД-130: **** 729 • 10.0			# 30УД-130: **** 729 · 10.0

#### 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, load factor 1.0, thermal resistivity of soil 1.0 °K•m/W, laying depth in the ground 1.5 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

<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 %

<sup>\*\*\*\*</sup> Option delivery on not full drum



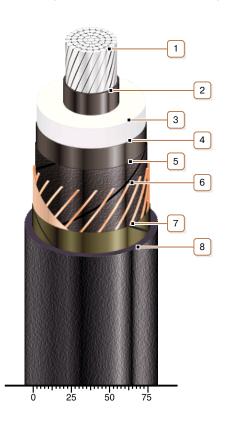




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# АПвЭгПнг-HF-132 1x800 ТУ У 31.3-00214534-060:2011

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



### 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

Note: It is possible to manufacture a cable with a fiber optic module built into the screen, including as a DTS system sensor

- 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