





7, Autogennaya Str., Kharkov, 61099, Ukraine. Phone: (+38-057) 728-1244, 728-1241. Fax: (+38-057) 728-1243, (+38-0572) 946-830 E-mail: market@yuzhcable.com.ua

### ПвЭгПу-60 1х300 ТУ У 31.3-00214534-060:2011

Power cables with copper conductor, with XLPE, longitudinal screen sealing and strengthened polyethylene outer sheath

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

Π<sub>Β</sub>Πγ<sub>Γ</sub> (RU)

Technical cable requirements correspond to IEC 60840

Cables are used for laying:

- in soil (trenches)
- · on difficult route sections, according to the unique specification
- in the air, including cable structures, if provided the additional fire protection

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

Order entry example:

ПвЭгПу-П-60 1х300/95 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:

ПвЭгПу-60 1х300/95 (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:

ПвЭгПу-60 1х300/95 (г) ТУ У 31.3-00214534-060:2011









# ПвЭгПу-60 1х300 ТУ У 31.3-00214534-060:2011

Power cables with copper conductor, with XLPE, longitudinal screen sealing and strengthened polyethylene outer sheath

### **TECHNICAL SPECIFICATIONS**

Maximum voltage       kV       72.5         Conductor rated area       mm²       300         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       kA       5.1         Maximum permissible short-circuit current in core       kA       42.9         Permissible continious current rating by aerial laying *       *         • in trefoil formation with double-side screen earthing       A       659         • in trefoil formation with single-side screen earthing or cross screen earthing       A       678         • plane with double-side screen earthing or cross screen earthing or plane with single-side screen earthing       A       541         • in trefoil formation with double-side screen earthing or cross screen earthing       A       576         • in trefoil formation with single-side screen earthing or cross screen earthing       A       504         • plane with single-side screen earthing or cross screen       A       603         • plane with single-side screen earthing or cross screen       A       603         • plane with single-side screen earthing or cross screen       A       603         • plane with single-side screen earthing or cross screen       A       6	Rated voltage	kV	60
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       kA       5.1         Maximum permissible short-circuit current in core       kA       42.9         Permissible continious current rating by aerial laying *       *         • in trefoil formation with double-side screen earthing       A       659         • in trefoil formation with single-side screen earthing or cross screen earthing       A       695         cross screen earthing       A       678         • plane with double-side screen earthing or cross screen earthing       A       823         earthing       A       541         Permissible continious current rating by burial *       *       in trefoil formation with double-side screen earthing or cross screen earthing       A       541         • in trefoil formation with single-side screen earthing or cross screen earthing       A       566         • plane with double-side screen earthing or cross screen earthing       A       576         • plane with single-side screen earthing or cross screen earthing       A       504         • plane with single-side screen earthing or cross screen       A       603         • plane with single-side screen earthing or		kV	72.5
Partial discharge factor for rated voltage, not more than pC 6 Permissible short circuit current across the screen of kA 5.1 minimum cross-section  Maximum permissible short-circuit current in core kA 42.9  Permissible continious current rating by aerial laying *  · in trefoil formation with double-side screen earthing A 659  · in trefoil formation with single-side screen earthing or A 695  cross screen earthing  · plane with double-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 double-side screen earthing or cross screen earthing  · plane with double-side screen earthing or A 576  cross screen earthing  · plane with double-side screen earthing or A 504  · plane with single-side screen earthing or cross screen A 603  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  mm 928  Rated outer diameter of the cable (for reference) **  mm 58  Cable weight (approximate)  Rated factory cable length and gross weight of the delivery on the drums ***  # 25VД-90: 838 · 6.6  # 26VД-100: **** 1367 · 10.	Conductor rated area	mm²	300
Permissible short circuit current across the screen of minimum cross-section  Maximum permissible short-circuit current in core  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 with double-side screen earthing or plane with double-side screen earthing or cross screen earthing or cross screen earthing or cross screen earthing  permissible continious current rating by burial *  in trefoil formation with double-side screen earthing or cross screen  in trefoil formation with double-side screen earthing or cross screen earthing or cross screen earthing  permissible continious current rating by burial *  in trefoil formation with single-side screen earthing or cross screen earthing or cross screen earthing  plane with double-side screen earthing or cross screen earthing or cross screen earthing or cross screen earthing earthing  Maximum permissible conductor temperature  Continious  Con	Minimum screen cross-section	mm²	35
minimum cross-section  Maximum permissible short-circuit current in core  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  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 double-side screen earthing or cross screen earthing  • plane 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  Maximum permissible conductor temperature  • Continious  • C +90  • in emergency operation • C +130  • in emergency operation • C +250  Operating temperature range  • C -60+50  Minimum bending radius by laying  Rated outer diameter of the cable (for reference) **  Cable weight (approximate)  Rated factory cable length and gross weight of the delivery on the drums ***  # 22VД-60: 499 • 3.9  # 25VД-90: 838 • 6.6  # 26VД-100: **** 1367 • 10.	Partial discharge factor for rated voltage, not more than	рС	6
Maximum permissible short-circuit current in core 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 double-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 double-side screen earthing or cross screen earthing  in trefoil formation with single-side screen earthing or A 576  cross screen earthing  plane with double-side screen earthing or cross screen earthing  Maximum permissible conductor temperature  continious  "C +90  in emergency operation "C +130  in emergency operation "C +250  Operating temperature range "C -60+50  Minimum bending radius by laying  mm 928  Rated outer diameter of the cable (for reference) **  mm 58  Cable weight (approximate)  Rated factory cable length and gross weight of the delivery on the drums ***  # 22YД-60: 499 • 3.9  # 25YД-90: 838 • 6.6  # 26YД-100: **** 1367 • 10.	Permissible short circuit current across the screen of	kA	5.1
Permissible continious current rating by aerial laying * • in trefoil formation with double-side screen earthing A 659 • in trefoil formation with single-side screen earthing or cross screen earthing • plane with double-side screen earthing A 678 • 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 • 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 • plane with single-side screen earthing or cross screen • continious • plane with single-side screen earthing or cross screen • continious • continio	minimum cross-section		
• in trefoil formation with double-side screen earthingA659• in trefoil formation with single-side screen earthing or cross screen earthingA695• plane with double-side screen earthing or cross screen earthingA678• plane with single-side screen earthing or cross screen earthingA823Permissible continious current rating by burial * • in trefoil formation with double-side screen earthing or cross screen earthingA541• in trefoil formation with single-side screen earthing or plane with double-side screen earthingA504• plane with single-side screen earthing or cross screen earthingA603Maximum permissible conductor temperature• Continious° C+90• in emergency operation° C+130• at short circuit° C+250Operating temperature range° C-60 +50Minimum bending radius by layingmm928Rated outer diameter of the cable (for reference) **mm58Cable weight (approximate)kg/km5980Rated factory cable length and gross weight of the delivery on the drums ***m, t# 22УД-60: 499 • 3.9• Test of the cable (for reference) **# 25УД-90: 838 • 6.6# 25УД-90: 838 • 6.6# 26УД-100: **** 1367 • 10.	Maximum permissible short-circuit current in core	kA	42.9
• in trefoil formation with single-side screen earthing or cross screen earthing A 695   • plane with double-side screen earthing A 678   • plane with single-side screen earthing or cross screen A 823   earthing Permissible continious current rating by burial *   • in trefoil formation with double-side screen earthing A 541   • in trefoil formation with single-side screen earthing or cross screen earthing A 576   cross screen earthing A 504   • plane with double-side screen earthing or cross screen A 603   earthing A 603   Maximum permissible conductor temperature * C +90   • in emergency operation * C +90   • in emergency operation * C +250   • Operating temperature range * C -60 +50   Minimum bending radius by laying mm 928   Rated outer diameter of the cable (for reference) ** mm 58   Cable weight (approximate) kg/km 5980   Rated factory cable length and gross weight of the delivery on the drums *** # 25УД-60: 499 * 3.9   • # 25УД-90: 838 * 6.6 # 25УД-100: **** 1367 * 10.	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 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  • plane with single-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) **  Cable weight (approximate)  Rated factory cable length and gross weight of the delivery on the drums ***  # 25УД-90: 838 • 6.6  # 26УД-100: ***** 1367 • 10.	in trefoil formation with double-side screen earthing	Α	659
<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 or cross 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>c +90</li> <li>+90</li> <li>-10</li> <li>+90</li> <li>-10</li> <li>+90</li> <li>-10</li> <li>+90</li> <li>-10</li> <li>+90</li> <li>-10</li> <li>+90</li> <li>-10</li> <li< td=""><td>in trefoil formation with single-side screen earthing or</td><td>Α</td><td>695</td></li<></ul>	in trefoil formation with single-side screen earthing or	Α	695
<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 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 +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 928</li> <li>Rated outer diameter of the cable (for reference) **</li> <li>mm 58</li> <li>Cable weight (approximate)</li> <li>kg/km 5980</li> <li>Rated factory cable length and gross weight of the delivery on the drums ***</li> <li># 25yД-90: 838 • 6.6</li> <li># 26yД-100: **** 1367 • 10.</li> </ul>	cross screen earthing		
earthingPermissible continious current rating by burial *• in trefoil formation with double-side screen earthingA541• in trefoil formation with single-side screen earthing or cross screen earthingA576• plane with double-side screen earthingA504• plane with single-side screen earthing or cross screenA603earthingMaximum permissible conductor temperature• Continious° C+90• in emergency operation° C+130• at short circuit° C+250Operating temperature range° C-60 +50Minimum bending radius by layingmm928Rated outer diameter of the cable (for reference) **mm58Cable weight (approximate)kg/km5980Rated factory cable length and gross weight of the delivery on the drums ***m, t# 22УД-60: 499 • 3.9on the drums ***# 25УД-90: 838 • 6.6# 26УД-100: **** 1367 • 10.	plane with double-side screen earthing	Α	678
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 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     · C     +90     · in emergency operation     · C     +130     · 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)  Rated factory cable length and gross weight of the delivery on the drums ***  # 22УД-60: 499 · 3.9 # 25УД-90: 838 · 6.6 # 26УД-100: **** 1367 · 10.	plane with single-side screen earthing or cross screen	Α	823
<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>continious</li> <li>C</li> <li>in emergency operation</li> <li>c</li> <li>ta short circuit</li> <li>C</li> <li>c</li> <li>c</li> <li>c</li> <li>d</li> <li>c</li> <li>c</li> <li>d</li> <li>c</li> <li>e</li> <li>d</li> <li>e</li> <li>d</li> <li>e</li> <li>e</li></ul>	earthing		
• in trefoil formation with single-side screen earthing or cross screen earthingA576• plane with double-side screen earthingA504• plane with single-side screen earthing or cross screen earthingA603Maximum permissible conductor temperature° C+90• in emergency operation° C+130• at short circuit° C+250Operating temperature range° C-60 +50Minimum bending radius by layingmm928Rated outer diameter of the cable (for reference) **mm58Cable weight (approximate)kg/km5980Rated factory cable length and gross weight of the delivery on the drums ***# 22УД-60: 499 • 3.9# 25УД-90: 838 • 6.6 # 26УД-100: **** 1367 • 10.	Permissible continious current rating by burial *		
cross screen earthing  • plane with double-side 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  • contining  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  Rated outer diameter of the cable (for reference) **  Cable weight (approximate)  Rated factory cable length and gross weight of the delivery on the drums ***  # 22УД-60: 499 • 3.9  # 25УД-90: 838 • 6.6  # 26УД-100: ***** 1367 • 10.	in trefoil formation with double-side screen earthing	Α	541
• plane with double-side screen earthingA504• plane with single-side screen earthing or cross screen earthingA603Maximum permissible conductor temperature° C+90• Continious° C+130• in emergency operation° C+250• at short circuit° C-60 +50Minimum bending radius by layingmm928Rated outer diameter of the cable (for reference) **mm58Cable weight (approximate)kg/km5980Rated factory cable length and gross weight of the delivery on the drums ***# 22УД-60: 499 • 3.9* 25УД-90: 838 • 6.6 # 26УД-100: **** 1367 • 10.	in trefoil formation with single-side screen earthing or	Α	576
<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>mm 928</li> <li>Rated outer diameter of the cable (for reference) **</li> <li>mm 58</li> <li>Cable weight (approximate)</li> <li>kg/km 5980</li> <li>Rated factory cable length and gross weight of the delivery on the drums ***</li> <li># 22УД-60: 499 · 3.9</li> <li># 25УД-90: 838 · 6.6</li> <li># 26УД-100: **** 1367 · 10.</li> </ul>	cross screen earthing		
earthingMaximum permissible conductor temperature• Continious° C+90• in emergency operation° C+130• at short circuit° C+250Operating temperature range° C-60 +50Minimum bending radius by layingmm928Rated outer diameter of the cable (for reference) **mm58Cable weight (approximate)kg/km5980Rated factory cable length and gross weight of the delivery on the drums ***m, t# 22УД-60: 499 • 3.9on the drums ***# 25УД-90: 838 • 6.6# 25УД-100: ***** 1367 • 10.	plane with double-side screen earthing	Α	504
Maximum permissible conductor temperature°C+90• Continious°C+90• in emergency operation°C+130• at short circuit°C+250Operating temperature range°C-60 +50Minimum bending radius by layingmm928Rated outer diameter of the cable (for reference) **mm58Cable weight (approximate)kg/km5980Rated factory cable length and gross weight of the delivery on the drums ***m, t# 22УД-60: 499 • 3.9on the drums ***# 25УД-90: 838 • 6.6# 25УД-100: **** 1367 • 10.	plane with single-side screen earthing or cross screen	Α	603
· Continious° C+90• in emergency operation° C+130• at short circuit° C+250Operating temperature range° C-60 +50Minimum bending radius by layingmm928Rated outer diameter of the cable (for reference) **mm58Cable weight (approximate)kg/km5980Rated factory cable length and gross weight of the delivery on the drums ***m, t# 22УД-60: 499 • 3.9• # 25УД-90: 838 • 6.6# 26УД-100: ***** 1367 • 10.	earthing		
• in emergency operation°C+130• at short circuit°C+250Operating temperature range°C-60 +50Minimum bending radius by layingmm928Rated outer diameter of the cable (for reference) **mm58Cable weight (approximate)kg/km5980Rated factory cable length and gross weight of the delivery on the drums ***m, t# 22УД-60: 499 • 3.9which is a short circuitm, t# 25УД-90: 838 • 6.6# 25УД-90: 838 • 6.6# 26УД-100: **** 1367 • 10.	Maximum permissible conductor temperature		
• at short circuit° C+250Operating temperature range° C-60 +50Minimum bending radius by layingmm928Rated outer diameter of the cable (for reference) **mm58Cable weight (approximate)kg/km5980Rated factory cable length and gross weight of the deliverym, t# 22УД-60: 499 • 3.9on the drums ***# 25УД-90: 838 • 6.6# 26УД-100: **** 1367 • 10.	Continious		+90
Operating temperature range°C-60 +50Minimum bending radius by layingmm928Rated outer diameter of the cable (for reference) **mm58Cable weight (approximate)kg/km5980Rated factory cable length and gross weight of the delivery on the drums ***m, t# 22УД-60: 499 • 3.9**** # 25УД-90: 838 • 6.6# 26УД-100: **** 1367 • 10.	in emergency operation	° C	+130
Minimum bending radius by laying mm 928 Rated outer diameter of the cable (for reference) ** mm 58 Cable weight (approximate) kg/km 5980 Rated factory cable length and gross weight of the delivery on the drums *** # 22УД-60: 499 • 3.9  ## 25УД-90: 838 • 6.6 ## 26УД-100: **** 1367 • 10.	at short circuit		+250
Rated outer diameter of the cable (for reference) ** mm 58 Cable weight (approximate) kg/km 5980 Rated factory cable length and gross weight of the delivery on the drums *** # 22УД-60: 499 • 3.9 # 25УД-90: 838 • 6.6 # 26УД-100: **** 1367 • 10.		° C	-60 +50
Cable weight (approximate)kg/km5980Rated factory cable length and gross weight of the delivery on the drums ***m, t# 22УД-60: 499 • 3.9# 25УД-90: 838 • 6.6 # 26УД-100: **** 1367 • 10.		mm	928
Rated factory cable length and gross weight of the delivery on the drums ***       m, t       # 22УД-60: 499 • 3.9         # 25УД-90: 838 • 6.6       # 26УД-100: **** 1367 • 10.	Rated outer diameter of the cable (for reference) **	mm	58
on the drums *** # 25УД-90: 838 • 6.6 # 26УД-100: **** 1367 • 10.	Cable weight (approximate)	kg/km	5980
# 26УД-100: **** 1367 • 10.	Rated factory cable length and gross weight of the delivery	m, t	# 22УД-60: 499 • 3.9
• •	on the drums ***		# 25УД-90: 838 • 6.6
0			# 26УД-100: **** 1367 • 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









# ПвЭгПу-60 1х300 ТУ У 31.3-00214534-060:2011

Power cables with copper conductor, with XLPE, longitudinal screen sealing and strengthened polyethylene outer sheath



#### **CONSTRUCTION**

1. Copper multiwire compact 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 nonwoven cloth tape
- 8. Strengthened polyethylene outer sheath

Note: It is possible to manufacture cable with extruded semiconductor layer along outer sheath