

CABLE PRODUCTS

TS 3581-006-76960731-2006

МКЭКИВ (нг, нг-LS) (armored) and МКЭВ (нг, нг-LS) (unarmored) universal cable (installation, control, telecommunication) for industrial data networks

ООО «Donkabel»

Products are manufactured in accordance with the requirements of ISO 9001 quality system

Fire Safety Certificates №№ C-RU.ПБ11.B00138, C-RU.ПБ11.B00139

Compliance Certificate № ПОСС RU.AE81.H02791

Certificates of compliance with the fire safety requirements №BY/112 03.1.1 BM 1021 and №BY/112 03.1.1 BM 1022, issued by National Certification System of the Republic of Belarus (BelST)

Application

МКЭКИВ, МКЭКИВнг, МКЭКИВнг-LS and МКЭВ, МКЭВнг, МКЭВнг-LS cable series is designed according to special requirements and used for building information fieldbuses, connecting frequency-modulated digital sensors, and 4-20 mA sensors through HART or RS-485 interfaces. Cable series include twisted pair cabling that features color marked conductors with collective or paired shielding. Wire armor is available only for МКЭКИВ (нг, нг-LS) cables. The cables are designed for fixed installation indoors and outdoors, in cable ducts and in the ground, as well as in IIVT4 explosion-hazardous areas. The cables are optimized for a rated AC voltage of up to 500V (400Hz), and DC voltage of up to 750V, with operation temperature ranging from -50°C to 50°C. They also can be used in any climatic region, including tropics.

Cable design

Twisted pair lay – maximum 80 mm

Conductor -

stranded copper, tin-plated,
Class 3 flexibility according to
ГОСТ 22483-77 standard

Conductor insulation -

Color marked PVC plastic

Shield -

paired (tinned copper wire braid) or
collective ((tinned - on request) copper
wire braid)

Aarmor -

The armor (МКЭКИВ (нг, нг-LS)) is
made of galvanized steel wire, which
provides enhanced flexibility if compared
to the tape armored cables
(Cable bend radius – 10D, where D is
outside cable diameter)

Outer sheath -

PVC

Electrical characteristics*	Parameter value depending on conductor cross-section		
	0,5 mm ²	0,75 mm ²	1,0 mm ²
DC conductor resistance, (Ω/km)	≤ 40,7	≤ 26,0	≤ 22,3
Twisted pair capacity, (nF/km) at 1 kHz at 256 kHz	108 108	120 120	130 104
Attenuation rate (dB/km) at 4 kHz at 0,1 MHz at 1 MHz	 8,10 35,0	 8,00 34,0	 1,66 6,70 33,0
Wave resistance (Ω/km) in the range of 0.1-100 MHz	78-83	71-75	55-68

* According to these parameters the cable meets characteristics of the foreign counterparts

МКЭКШВ, МКЭКШВнг, МКЭКШВнг-LS Cable

Outer diameter, (mm) / Weight (1 km), (kg) * Volume of combustible materials in 1 m of cable, (l)										
Cross-section, (mm ²)	Number of twisted pairs									
	2x2		4x2		5x2		7x2		10x2	
	ОЭ	ПЭ	ОЭ	ПЭ	ОЭ	ПЭ	ОЭ	ПЭ	ОЭ	ПЭ
0,5	13,8/230 0,104	15,1/261 0,115	14,8/277 0,123	16,5/348 0,140	16,3/331 0,142	17,5/399 0,156	17,3/386 0,161	19,0/500 0,190	20,8/520 0,220	22,7/664 0,245
0,75	14,5/257 0,111	15,6/287 0,123	16,1/325 0,133	17,5/376 0,151	17,1/381 0,153	19,0/466 0,181	18,7/470 0,189	20,0/562 0,206	22,1/610 0,241	24,4/778 0,284
1,0	15,1/283 0,119	16,6/310 0,131	16,3/364 0,143	18,8/419 0,162	18,4/447 0,178	20,0/518 0,194	19,7/530 0,204	21,5/629 0,222	23,3/699 0,260	25,9/939 0,318
1,2	17,6/362 0,155	18,0/393 0,168	19,2/481 0,193	19,5/550 0,210	20,7/547 0,215	21,5/640 0,237	22,0/653 0,248	22,9/786 0,272	25,1/802 0,289	28,0/1061 0,362
1,5	17,9/381 0,162	18,3/409 0,173	19,7/513 0,202	20,0/578 0,218	21,1/587 0,225	21,9/678 0,247	22,9/729 0,276	23,8/836 0,287	27,0/941 0,328	29,5/1193 0,388

МКЭШВ, МКЭШВнг, МКЭШВнг-LS

Outer diameter, (mm) / Weight (1 km), (kg) * Volume of combustible materials in 1 m of cable, (l)													
Cross-section, (mm ²)	Number of twisted pairs												
	1x2	2x2		4x2		5x2		7x2		10x2		14x2	
		ОЭ	ПЭ	ОЭ	ПЭ	ОЭ	ПЭ	ОЭ	ПЭ	ОЭ	ПЭ	ОЭ	ПЭ
0,5	8,2/66 0,030	11,2/132 0,048	12,2/149 0,052	12,2/179 0,062	13,7/222 0,070	13,6/213 0,074	14,8/262 0,080	14,6/257 0,089	15,9/331 0,106	17,7/346 0,130	19,6/456 0,142	19,0/420 0,157	21,1/588 0,171
0,75	8,6/75 0,033	11,8/155 0,052	12,9/167 0,057	12,9/210 0,069	14,5/254 0,077	14,4/252 0,082	15,6/301 0,098	15,6/314 0,109	16,9/383 0,117	19,0/422 0,145	20,9/530 0,157	20,4/519 0,175	22,5/687 0,190
1,0	9,0/84 0,035	12,4/173 0,057	13,5/187 0,061	13,6/245 0,075	15,3/288 0,093	15,3/295 0,099	16,6/343 0,106	16,6/365 0,119	17,9/439 0,127	20,2/496 0,159	22,5/609 0,171	21,8/618 0,192	24,0/794 0,208
1,2	10,4/117 0,045	14,5/219 0,072	15,0/228 0,082	16,2/319 0,110	17,0/360 0,113	17,5/372 0,126	18,5/430 0,130	18,8/464 0,152	19,9/557 0,158	23,4/637 0,205	25,4/761 0,240	24,8/819 0,249	27,4/1004 0,288
1,5	10,6/124 0,047	14,8/233 0,076	15,3/242 0,086	16,7/345 0,116	17,3/386 0,119	18,1/405 0,134	18,9/462 0,138	19,5/510 0,162	20,4/600 0,168	24,1/723 0,220	26,0/822 0,254	25,5/902 0,288	28,1/1087 0,311

* This parameter is required for design calculations of buildings, structures, and premises that are equipped with counter ceilings.