

SIGNAL AND BLOCKING CABLES

Flame-retardant, with water-blocking materials, in sheath of halogen-free polymeric compound

СБВБПнг(А)-HF, СБПВБПнг(А)-HF, СБВБэПнг(А)-HF, СБПВБэПнг(А)- HF,
SBVBPng(A)-HF, SBPVBPng(A)-HF, SBVBePng(A)-HF, SBPVBePng(A)- HF,

СБВБПБбПнг(А)- HF, СБПВБПБбПнг(А)- HF, СБВБэПБбПнг(А)- HF,
SBVBPBbPng(A)- HF, SBPVBPBbPng(A)- HF, SBVBePBbPng(A)- HF,

СБПВБэПБбПнг(А)- HF
SBPVBePBbPng(A)- HF

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Cable type	OKP codes	Fire safety Class
СБПВБПнг(А)-HF	35 6560 0500	П16.8.1.2.1
СБПВБэПнг(А)-HF	35 6560 0600	
СБПВБПБбПнг(А)-HF	35 6560 0700	
СБПВБэПБбПнг(А)-HF	35 6560 0800	П16.8.1.2.2
СБВБэПнг(А)-HF	35 6556 1300	
СБВБПБбПнг(А)-HF	35 6556 1400	
СБВБэПБбПнг(А)-HF	35 6556 1500	П16.8.1.2.3
СБВБПнг(А)-HF	35 6556 1200	

APPLICATION

The cables are intended for electrical installations of emergency systems, centralized control and blocking systems, fire alarm systems and automatic systems at nominal voltage 380 VAC with frequency 50 Hz or 700 VDC.

PE-insulated cables are intended for bunched laying in cable galleries, conduits, in constructions of ground and elevated lines of metro systems in conditions of high humidity.

Cables insulated with halogen-free polymeric compound are intended for bunched laying in the same places, as well as in constructions of underground lines of metro systems in conditions of high humidity.

The cables can be used in process rooms of nuclear power plants outside of containment area, Class 3 and 4 acc. to classification ОПБ 88/97 (ПНАЭ Г-01-011-97).

Climatic version: B, categories 3, 4 acc. to GOST 15150-69.

СБВБПнг(А)-HF – for bunched laying in supported technical rooms, in constructions of ground and elevated lines of metro systems, in cable conduits, tunnels, cable galleries, in plastic tubing, if the cable is not exposed to mechanical impact, in areas without electromagnetic effect on telecontrol systems and remote signal systems.

СБВБэПнг(А)-HF – the same, in areas with electromagnetic effect on telecontrol systems and remote signal systems.

СБВБПБбПнг(А)-HF и **СБВБэПБбПнг(А)-HF** – the same as СБВБэПнг(А)-HF, if mechanical impact on cable is possible.

СБПВБПнг(А)-HF - for bunched laying in supported technical rooms, in constructions of underground, ground and elevated lines of metro systems, in cable conduits, tunnels, cable galleries, in plastic tubing, if the cable is not exposed to mechanical impact, in areas without electromagnetic effect on telecontrol systems and remote signal systems.

СБПВБэПнг(А)-HF – the same, in areas with electromagnetic effect on telecontrol systems and remote signal systems.

СБПВБПБбПнг(А)-HF and **СБПВБэПБбПнг(А)-HF** – the same as СБПВБэПнг(А)-HF, if mechanical impact on cable is possible.

DESIGN

Conductor – made of soft round copper wire with nominal cross-sections 0,9 or 1,0 mm.

Conductor insulation:

- for cables СБВБПнг(A)-HF, СБВБэПнг(A)-HF, СБВБПБбПнг(A)-HF, СБВБэПБбПнг(A)-HF – insulating PE, for conductors dia. 0,9 and 1,0 mm – with nominal wall thickness 0,45 mm.
- for cables СБПВБПнг(A)-HF, СБПВБэПнг(A)-HF, СБПВБПБбПнг(A)-HF, СБПВБэПБбПнг(A)-HF – halogen-free polymeric compound, for conductors dia. 0,9 and 1,0 mm – with nominal wall thickness 0,50 mm.

Cable core - pairs together with water-blocking yarns are stranded into a cable core.

Reference conductor - multi-wire conductor of soft copper wire with nominal cross-section 0,12-0,40 mm² insulated with foamed PE.

Belt wrapping:

- for cables СБВБПнг(A)-HF - PETF tape; water-blocking tape, glass tape or mica tape, water-blocking tape;
- for other cables – PETF tape, water-blocking tape, PETF tape, water-blocking tape.

Shield:

- for cables СБВБэПнг(A)-HF, СБПВБэПнг(A)-HF, СБВБэПБбПнг(A)-HF, СБПВБэПБбПнг(A)-HF – Al or Al-polymeric tape applied with overlapping, a contact tinned copper wire with nominal diameter 0,4 or 0,5 mm is laid longitudinally under shield.

Sheath – halogen-free polymeric compound.

Armour:

- for cables СБВБПБбПнг(A)-HF, СБПВБПБбПнг(A)-HF, СБВБэПБбПнг(A)-HF, СБПВБэПБбПнг(A)-HF - two galvanized steel tapes.

Outer covering:

- for cables СБВБПБбПнг(A)-HF, СБПВБПБбПнг(A)-HF, СБВБэПБбПнг(A)-HF, СБПВБэПБбПнг(A)-HF – halogen-free polymeric compound.

TECHNICAL PROPERTIES

Property	Current frequency, kHz	Standard value
Conductor resistance per 1000 m and temperature 20°C, Ohm, max.: - for conductor dia. 0,9 mm - for conductor dia. 1,0 mm	DC	28,8 23,3
Insulation resistance per 1000 m and 20°C, MOhm, min.: - of conductors: insulated with PE insulated with halogen-free polymeric compound - between reference conductor and shield* - between reference conductor and all conductors connected together**	DC	5000 12 5 5
Conductors resistance unbalance in working pair per 1000 m, Ohm, max.: - for conductor dia. 0,9 mm - for conductor dia. 1,0 mm	DC	0,8 0,5
Test voltage during 1 minute, V - between conductors - between all conductors connected together and shield*	0,05	2500 3000
Mutual capacitance per 1000 m, nF, max:	0,8	100
Attenuation factor per temperature 20°C, dB/km, max., for cables: - for conductor dia. 0,9 mm - for conductor dia. 1,0 mm	0,8	1,04 0,94
NEXT per 300 m, dB, min.: - for 100 % values - for 90 % values	0,8	68,0 72,0
Ideal protective action factor of cable metallic coverings at direct-axis internal voltage 30 V/km, max., for cables: - СБВБэПнг(A)-HF, СБПВБэПнг(A)-HF - СБВБПБбПнг(A)-HF, СБПВБПБбПнг(A)-HF - СБВБэПБбПнг(A)-HF, СБПВБэПБбПнг(A)-HF	0,05	0,99 0,98 0,95

Resistance of sheath and protective jacket per 1000 m and temperature 20°C, MOhm, min.:	DC	5
* - for shielded cables ** - for unshielded cables		
Cable transportation conditions considering climatic factors shall comply with storage conditions 8 acc. to GOST 15150-69.		
Cable storage conditions considering climatic factors shall comply with conditions 5 acc. to GOST 15150-69.		
Laying temperature:	from -15°C	
Operation temperature by fixed installation: - relative air humidity at temperature up to +35°C	from -40°C to +50°C up to 98 %	
Bending radius by laying and installation: a) for armoured cables (shielded and unshielded) - not less than 12 max. cable outer diameters; b) for shielded cables – not less than 10 max. cable outer diameters; - for other cables – not less than 7 max. cable outer diameters		
Warranty operation period	4,5 years	
Service life of cables: Manufacturer guarantees the cable compliance with requirements of above specification if user observes the transportation, storage, laying, installation and operation conditions.	min. 30 years	
Cable factory length – min. 600 m.		
Cable delivery performed on wooden drums acc. to GOST 5151-79.		
Upon agreement with Customer: - cables СБВБПнг(A)-HF, СБВБэПнг(A)-HF, СБПВБПнг(A)-HF, СБПВБэПнг(A)-HF can be manufactured with conductor diameter 0,8 mm.		

Cables are manufactured with following number of pairs – 1, 2, 3, 4, 7, 10, 12, 14, 16, 19, 21, 24, 27, 30.