



Power, control, instrumentation, signaling and communication cables of pair twisting in insulation and sheath of halogen-free polymer compound of PPGng-HF (-FRHF), PPGEng-HF (-FRHF), PBbPng-HF (-FRHF), PvPng(A)-HF (-FRHF), PvPEng(A)-HF (-FRHF), KPPGng-HF (-FRHF), KPPGEng-HF (-FRHF), KPoPEng-HF (-FRHF), KPoEPEng-HF (-FRHF), KPEPng-HF (-FRHF), KPeEPng-HF (-FRHF), KUGPPng-HF (-FRHF), KUGPEPng-HF (-FRHF), KUGPPEng-HF (-FRHF)



### Application

Cables are intended for the individual and group laying of cable lines in cable constructions and rooms of inner electric plants, including operation inside and out of nuclear power plants' (NPP) containment area.

### Design

#### Current-carrying conductors

- copper, of 1<sup>st</sup> class for power and control cables up to 10 mm<sup>2</sup> in cross-sections, of 2<sup>nd</sup> class from 16 to 240 mm<sup>2</sup> in cross-section.
- copper stranded of 4<sup>th</sup> class for the instrumentation and control flexible cables.
- for the cables of KPoPEng-HF, KPoPEng-FRHF, KPoEPEng-HF and KPoEPEng-FRHF, of 1<sup>st</sup> class copper (single-wired) or of 2<sup>nd</sup> class (stranded conductors).
- copper stranded of 4<sup>th</sup> class for the cables of KPEPng-HF, KPEPng-FRHF, KPeEPng-HF, KPeEPng-FRHF types

#### Insulation:

- halogen-free polymer compound, for all cable types except cables of PvPng(A)-HF, PvPng(A)-FRHF, PvPEng(A)-HF, PvPEng(A)-FRHF, KPoPEng-HF, KPoPEng-FRHF, KPoEPEng-HF, KPoEPEng-FRHF;
- cross-linked halogen-free polymer composition, for the cables of KPoPEng-HF, KPoPEng-FRHF, KPoEPEng-HF, KPoEPEng-FRHF;
- cross-linked polyethylene for the cables of PvPng(A)-HF, PvPEng(A)-HF, PvPEng(A)-FRHF, PvPEng(A)-FRHF.

### Product range

Number of the conductors (pairs) and nominal cross-section, cables' operating voltage correspond to the specified in the table:

| Cable group                 | Type of cable  | Number of the conductors (pairs)  | Nominal cross-section of the conductors mm <sup>2</sup> | Operating voltage kV U <sub>o</sub> /U (Um) |
|-----------------------------|--|---|---|---|
| Power cables                | PPGng-HF, PPGng-FRHF, PPGEng-HF, PPGEng-FRHF, PBbPng-HF, PBbPng-FRHF, PvPng(A)-HF, PvPng(A)-FRHF, PvPEng(A)-HF, PvPEng(A)-FRHF | 1 - 5   | 1,5 - 240   | 0,6/1,0 (1,2)                               |
|                             | KPPGng-HF, KPPGng-FRHF, KPPGEng-HF, KPPGEng-FRHF   | 4, 5, 7, 10, 14, 19, 27, 37, 52<br>4, 7, 10                                   | 0,75 - 2,5<br>4, 6                                      | 0,38/0,66                                   |
| Control cables              | KPoPEng-HF, KPoPEng-FRHF, KPoEPEng-HF, KPoEPEng-FRHF   | 4, 5, 7, 10, 14, 19, 24, 27, 37<br>4, 7, 10                                   | 0,75 - 2,5<br>4, 6                                      | 0,38/0,66                                   |
|                             | KPEPng-HF, KPEPng-FRHF, KPeEPng-HF, KPeEPng-FRHF   | (1), (2), (4), (6), (8), (10), (12), (14), (16), (20), (24), (30), (37), (48) | (0,5), (0,6), (0,8), (1,13), (1,38)<br>0,35-1,5         | 0,15/0,25                                   |
| Managing and control cables | KUGPPng-HF, KUGPPng-FRHF, KUGPEPng-HF, KUGPEPng-FRHF, KUGPPEng-HF, KUGPPEng-FRHF   | 1, 2, 3, 4, 7, 10, 12, 14, 19, 24, 27, 30, 37, 52                             | 0,35-1,5  | 0,22/0,38                                   |

By agreement between the customer and the manufacturer it is possible to manufacture cables with the number of conductors (pairs), of nominal cross-section and an operating voltage, not shown in the table.

#### Screen

- braid of copper wires for the cables of KPoEPEng-HF and KPoEPEng-FRHF types, KUGPEPng-HF, KUGPEPng-FRHF
- as lapping with synthetic tape foil-coated with aluminium for the cables of KPeEPng-HF and KPeEPng-FRHF types
- aluminium foil for the cables of KPEPng-HF, KPEPng-FRHF, KPeEPng-HF, KPeEPng-FRHF, KUGPPEng-HF, KUGPPEng-FRHF types
- as lapping of copper foil or copper tape for cables of PPGEng-HF, PPGEng-FRHF, PvPEng(A)-HF, PvPEng(A)-FRHF, KPoPEng-HF, KPoPEng-FRHF, KPoEPEng-HF, KPoEPEng-FRHF, KPPGEng-HF, KPPGEng-FRHF types.

#### Armour

cables of PBbPng-HF, PBbPng-FRHF types are armoured with steel zinc-coated wires.

#### Sheath:

- for the cables of PPGng-HF (FRHF), PPGEng-HF (FRHF), PBbPng-HF(FRHF), KPPGng-HF (FRHF), KPPGEng-HF (FRHF), KPEPng-HF (FRHF), KPeEPng-HF (FRHF), KUGPPng-HF (FRHF), KUGPEPng-HF (FRHF), KUGPPEng-HF (FRHF)- of polymer compositions;
- for the cables of PvPng(A)-HF (FRHF), PvPEng(A)-HF (FRHF), KPoPEng-HF (FRHF), KPoEPEng-HF(FRHF) of cross-linked polymer composition.

Service life of the cables is not less than 40 years.