

Fire-resistant control and communicating cables in rubber insulation and in rubber sheath with separately screened pairs

KNpERng-FRHF, KNpEREng-FRHF, KNpERPng-FRHF, KNpEREPng-FRHF types



Design

Current-carrying conductor	Copper multi-wired
Fire-resistant barrier	Mica tape
Insulation	Ethylene propylene rubber of HF EPR type
Group of the conductors	Insulated conductors are twisted in pair, triad, quad
Screen of group	- Of copper wires - Of tape foiled with aluminum
Filling material	Halogen-free composition
Taping	Synthetic tape
Collective screen	Of copper wires for cables of KNpEREng-FRHF, KNpEREPng-FRHF types
Intermediate sheath	Oil-resistant halogen-free rubber of SHF2 type for cable of KNpEREPng-FRHF type
Armour	Of steel galvanized wires for the cables of KNpERPng-FRHF, KNpEREPng-FRHF types
Taping	Synthetic tape
Sheath	Oil-resistant halogen-free rubber of SHF2 type

Standards IEC 60092-350, IEC 60092-376

Materials	IEC 60228 2 nd class (conductor) IEC 60092-351 (insulation) IEC 60092-359 (sheath)
Fire-resistance (operability in the flame)	IEC 60331-21 IEC 60331-31
Flame retardant	IEC 60332-3-22 (A category) and IEC 60332-1
Absence of halogens	IEC 60754-2
Small smoke emission	IEC 61034-2
Current-carrying conductor's heating temperature	+90 °C
Service life	35 years

Cables with «FRLS» index are mud-resistant.

Nominal outer diameter and weight of cables of KNpERng-FRLS type equal to nominal outer diameter and weight of cables of KNpERng-FRHF type, nominal outer diameter and weight of cables of KNpEREng-FRLS type equal to nominal outer diameter and weight of cables of KNpEREng-FRHF type, nominal outer diameter and weight of cables of KNpERPng-FRLS type equal to nominal outer diameter and weight of cables of KNpERPng-FRHF type.

Engineering parameters and reference data of the samples (selective cross-section):

Number and nominal cross-section of the conductors, mm ²	Nominal outer diameter, mm				Weight of 1 km cable, kg			
	KNpERng-FRHF	KNpEREng-FRHF	KNpERPng-FRHF	KNpEREpng-FRHF	KNpERng-FRHF	KNpEREng-FRHF	KNpERPng-FRHF	KNpEREpng-FRHF
1x2x 1,0	9,8	10,5	11,3	13,2	160	195	215	318
2x2x 1,0	14,9	15,7	16,1	18,6	313	385	387	584
3x2 x 1,0	15,8	16,8	17,2	19,9	363	449	451	671
4x2 x 1,0	17,5	18,4	18,8	21,5	442	528	530	771
5x2 x 1,0	19,5	20,3	20,7	23,6	557	652	653	932
7x2 x 1,0	21,3	22,3	22,7	25,8	673	789	790	1109
8x2 x 1,0	23,3	24,1	24,7	27,8	763	878	892	1238
10x2 x 1,0	27,8	28,7	29,1	32,8	1012	1150	1151	1611
12x2 x 1,0	28,7	29,6	30,2	33,7	1130	1273	1289	1747
14x2 x 1,0	30,5	31,8	31,8	35,7	1285	1514	1437	2030
19x2 x 1,0	34,2	35,7	35,7	39,8	1662	1938	1851	2537
24x2 x 1,0	40,6	42,1	42,1	46,8	2148	2476	2372	3254
1x2x 1,5	10,4	11,3	11,9	14,0	184	227	242	358
2x2x 1,5	15,9	16,9	17,3	20,0	362	448	449	671
3x2 x 1,5	17,0	17,9	18,3	21,0	430	514	515	750
4x2 x 1,5	18,7	19,8	20,2	23,1	514	617	618	889
5x2 x 1,5	20,8	21,6	22,2	25,1	650	752	764	1063
7x2 x 1,5	22,9	23,8	24,2	27,5	798	912	913	1267
8x2 x 1,5	25,1	25,9	26,3	29,6	906	1030	1031	1416
10x2 x 1,5	29,8	31,3	31,3	35,0	1183	1424	1348	1914
12x2 x 1,5	31,0	32,2	32,2	36,1	1341	1573	1495	2097
14x2 x 1,5	32,9	34,1	34,1	38,2	1525	1771	1688	2345
19x2 x 1,5	36,9	38,3	38,3	42,6	1975	2271	2178	2937
24x2 x 1,5	44,0	45,2	45,2	50,1	2572	2901	2790	3763