



Halogen-free cables are dedicated to nuclear power plant VVER 440



* VUKI a.s. * CHKE-V J3x1,5 / LOCA *1234 m

Application:

Power cables in LOCA execution are used in nuclear power plant of type VVER 440 (STN IEC 60780, IEEE323, IEEE 383), they are with resistance to flame propagation according to STN EN 60332-3... (STN EN 50266-2-...), halogen-free, with low density of smoke according to STN EN 61034-2 and low corrosivity of combustion gases according to STN EN 50267-2-3. These are used for nominal voltage of 0,6/1 kV for fixed installation both in normal and moist environments (STN 33 2000-5-51). Cables can be used in the fire hazard conditions and can be installed on flammable material. Cables type -V are functional in fire for time period 180 min. according to IEC 60331-21.

Cable construction:

- **Number of cores:** 2 - 37
- **Cable cores:** Cu or CuSn, conductor cl. 1, cl. 2 or cl.5
- **Nominal cross-section:** cl. 1 - (1 mm² - 6 mm²), cl. 2 or cl. 5 - (1,5 mm² - 10 mm²)
- **Insulation:** special EPR and combinations (-V type in combination with mica-glass tape)
- halogen-free, flame-retarding filler is placed above the coiled cores
- **Shield construction:** K- unshielded cable
 F - AlPET foil + enclosed CuSn wire
 O - Cu braiding with min. covering 75 %
 S - CuSn braiding with min. covering 75 %
 J - longitudinal AlPET foil + CuSn braiding with min. covering 45 %
- **Filler:** halogen-free, flame-retardant material + glass tape
- **Sheath cable:** halogen-free, flame-retardant material
- **Colour of sheath:** type -V orange, type -R green

Technical data:

- **Nominal voltage U₀/U (kV):** 0,6/1
- **Test voltage [kV]:** 4
- **Max. short-circuit temperature:** 90 °C
- **Operating temperature:** -40 °C to +70 °C
- **Min. temperature for laying:** -5 °C
- **Min. bending radius:** conductors cl. 1 - 15 x cable diamete,
 conductors cl. 2 or cl. 5 - 12 x cable diameter

Marking:

- **Core identification:** Acc. to STN EN 60446

- **Letter code:**

position	letter	meaning
1.	C	copper conductor cl. 1
	L	copper conductor cl. 2 or cl.5
2.	H	mica-glass tape + EPR and combinations
	X	mica-glass tape + cross-linked polyethylene
3.	K	unshielded cable
	F, O, S, J	shielded cable
4.	E	homo- / copolymer ethylene, HFFR
5.	R	cable is flame-retardant
	V	cable is flame-retardant with maintaining its functionality at fire
	LOCA	cable is dedicated to nuclear power plant VVER 440



Application table:

Number of cores	Nominal cross-section	Current carrying capacity in air	Effective resistance of conductors cl. 1 and cl. 2	Effective resistance of conductors cl. 5	Outer diameter (appr.)
	mm ²	A	Ω/km		
2	1	19	18,1	19,5	10,5
	1,5	29	12,1	13,3	11,5
	2,5	38	7,41	7,98	12,5
	4	51	4,61	4,95	13,5
	6	62	3,08	3,30	17,5
	10	86	1,83	1,91	20
3	1	16	18,1	19,5	11
	1,5	24	12,1	13,3	12
	2,5	32	7,41	7,98	13
	4	42	4,61	4,95	14,5
	6	52	3,08	3,30	17
	10	72	1,83	1,91	20
4	1	16	18,1	19,5	12
	1,5	24	12,1	13,3	13
	2,5	32	7,41	7,98	14
	4	42	4,61	4,95	16
	6	53	3,08	3,30	17,5
	10	74	1,83	1,91	20,5
5	1	14	18,1	19,5	13
	1,5	22	12,1	13,3	15
	2,5	30	7,41	7,98	16
	4	39	4,61	4,95	18
	6	53	3,08	3,30	20
	10	74	1,83	1,91	22,0
7	1	11	18,1	19,5	14,5
	1,5	15	12,1	13,3	16
	2,5	21	7,41	7,98	17
	4	29	4,61	4,95	20
	6	38	3,08	3,30	22
	10	57	1,83	1,91	24,5
12	1	9	18,1	19,5	18
	1,5	13	12,1	13,3	20
	2,5	18	7,41	7,98	22
	4	24	4,61	4,95	24
	6	30	3,08	3,30	25,5
	10	39	1,83	1,91	28
19	1	7	18,1	19,5	21
	1,5	12	12,1	13,3	23
	2,5	16	7,41	7,98	25
24	1	7	18,1	19,5	22,5
	1,5	10	12,1	13,3	25
	2,5	13	7,41	7,98	27,5
37	1	6	18,1	19,5	26,5
	1,5	9	12,1	13,3	29
	2,5	12	7,41	7,98	32