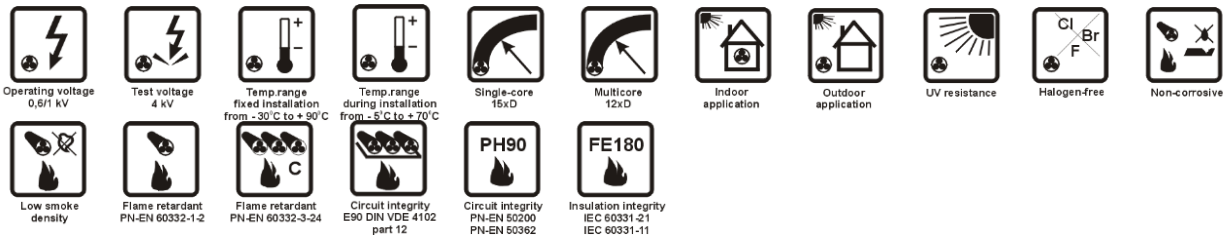
TECHNOFLAME (N)HXH FE180 PH90/E90 0,6/1 kV, TECHNOFLAME (N)HXH-J FE180 PH90/E90 0,6/1 kV

FIRE RESISTANT HALOGEN FREE POWER CABLES



APPLICATIONS

TECHNOFLAME (N)HXH FE180 PH90/E90 0,6/1 kV and **TECHNOFLAME (N)HXH-J FE180 PH90/E90 0,6/1 kV** fire resistant and halogen free power cables, are intended for power supply to fire protection equipment in objects of sharp fire protection requirements, particularly in fire alarm and fire automatic control systems.

The cables shall be applied in locations where, in case of fire, higher safety for human beings and expensive electronic equipment is required (subway tunnels, hospitals, shopping centres, supermarkets, cinemas, theatres, stadiums and other public buildings).

Functions of the cables are maintained for 90 minutes – power is supplied to equipment which must operate in fire conditions and during fire fighting (e.g. water pumps in fire extinguishing systems, smoke removing fans, emergency lighting and elevators).

The cables are certified by Scientific and Research Centre for Fire Protection - National Research Institute (Centrum Naukowo-Badawcze Ochrony Przeciwpożarowej - PIB) at Józefów.

The cables are flame retardant and their smoke emission is low, emitted fumes are non toxic and non corrosive.

The cables can not be used in fire protected rooms with fixed pressure water spraying fire extinguishing systems (**sprinkler zones**).

The cables are suitable for fixed indoor and outdoor installations. Sheathing is UV radiation resistant. Laying cables in water or earth burial are only permitted if additional protection is used.

CONSTRUCTION

- bare annealed copper conductors meeting requirements of PN-EN 60228 standard:
  RE - class 1 single wire round conductor,
  RM - class 2 multiwire round conductor,
- double special cross-linked silicone rubber insulation – colours:
  up to 5 wires in accordance with PN-HD 308,
  above 5 wires black and white conductor number printed on it,
  green-yellow protective conductor in the outer layer in **TECHNOFLAME (N)HXH-J FE180 PH90/E90 0,6/1 kV** cable,
- insulated conductors laid-up into a cable core,
- inner covering made of halogen free compound,
- orange cable sheath made of halogen free compound type HM4 according to HD 604 S1.

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CHARACTERISTICS

Conductor cross-section	mm²	1,5	2,5	4	6	10	16	25	35	50
DC conductor resistance at 20°C, maximum	Ω/km	12.1	7.41	4.61	3.08	1.83	1.15	0.727	0.524	0.387

Operating voltage	0.6/1 kV
Voltage test	4.0 kV rms
Insulation resistance at 90°C, minimum	10^{11} Ω·cm
Inductance, approximate	0.7 mH/km
Conductor temperature limit	
in work conditions	+ 90°C
in short-circuit	+ 250°C
Corrosivity of emitted gases per	PN-EN 60754-1, PN-EN 60754-2, IEC 60754-2
pH	>4.3
conductivity	<2.5 µS/mm
Smoke density per	PN-EN 61034-2, IEC 61034-2
light transmittance, minimum	80% for s1a, 60% for s1b

Operating temperature range	
during operation	from -30 to +90°C
during installation	from -5 to +70°C
Minimum bending radius:	
single core cables	15 x cable diameter
multi core cables	12 x cable diameter
Cable combustibility	fire resistant
Combustibility tests	PN-EN 60332-1-2, IEC 60332-1-2 PN-EN 60332-3-24, IEC 60332-3-24 (cat. C)
Circuit integrity *	
E90	DIN 4102-12
PH90	PN-EN 50200 or PN-EN IEC 60331-1
Insulation integrity FE180	IEC 60331-21, IEC 60331-11
Reference standards	CNBOP-PIB-KOT-2021/0311-3701 wyd.2, WT-TK-44
Class reaction to fire (according to PN-EN 13501-6)	B2ca-s1a,d0,a1 or B2ca-s1b,d0,a1 or Cca-s2,d0,a1

*Circuit integrity is dependent on installation method.

Cable installation - should be carried out on a certified cable fastening system, in accordance with the National Technical Assessments (KOT) issued for fastening manufacturers. Only certified cable fixing systems, tested according to DIN 4102 part 12, should be used.

The cable meets requirements of the low voltage directive 2014/35/EU

Product No.	Number of conductors x conductor cross-section	Cable outer diameter (appr.)	Copper index	Cable weight (appr.)	Fire load (appr.)	Class reaction to fire
	mm²	mm	kg/km	kg/km	kWh/m	
(N)HXH FE180 PH90/E90 0,6/1 kV						
1192 106	1 x 16 RE	8.7	154.0	206	0.32	B2ca-s1a,d0,a1
1192 107	1 x 25 RM	10.7	240.0	309	0.44	B2ca-s1a,d0,a1
1192 108	1 x 35 RM	11.7	336.0	404	0.49	B2ca-s1a,d0,a1
1192 051	1 x 50 RM	13.3	480.0	541	0.61	B2ca-s1a,d0,a1
1192 047	2 x 1,5 RE	9.5	28.8	144	0.55	B2ca-s1b,d0,a1
1192 048	2 x 2,5 RE	10.3	48.0	179	0.64	B2ca-s1b,d0,a1
1192 056	2 x 4 RE	11.2	77.0	230	0.74	B2ca-s1b,d0,a1
1192 072	2 x 6 RE	12.2	115.0	290	0.86	B2ca-s1b,d0,a1
1192 070	2 x 10 RE	13.8	192.0	405	1.07	B2ca-s1b,d0,a1
1192 110	2 x 16 RE	15.8	307.0	564	1.37	B2ca-s1b,d0,a1
1192 068	2 x 25 RM	20.1	480.0	890	2.17	B2ca-s1b,d0,a1
1192 137	2 x 35 RM	22.0	672.0	1129	2.54	B2ca-s1b,d0,a1
1192 121	2 x 50 RM	25.1	960.0	1507	3.33	B2ca-s1b,d0,a1
(N)HXH-J FE180 PH90/E90 0,6/1 kV						
1192 009	3 x 1,5 RE	10.0	43.2	195	0.59	B2ca-s1b,d0,a1
1192 010	3 x 2,5 RE	10.8	72.0	207	0.67	B2ca-s1b,d0,a1
1192 019	3 x 4 RE	11.8	115.0	268	0.78	B2ca-s1b,d0,a1
1192 024	3 x 6 RE	12.9	173.0	345	0.90	B2ca-s1b,d0,a1
1192 027	3 x 10 RE	14.6	288.0	493	1.11	B2ca-s1b,d0,a1
1192 028	3 x 16 RM	16.8	461.0	708	1.48	B2ca-s1b,d0,a1
1192 029	3 x 25 RM	21.2	720.0	1097	2.14	B2ca-s1b,d0,a1
1192 030	3 x 35 RM	23.5	1008.0	1432	2.54	B2ca-s1b,d0,a1
1192 031	3 x 50 RM	27.0	1440.0	1932	3.32	B2ca-s1b,d0,a1
1192 018	4 x 1,5 RE	10.9	58.0	198	0.68	B2ca-s1b,d0,a1
1192 026	4 x 2,5 RE	11.8	96.	251	0.77	B2ca-s1b,d0,a1
1192 049	4 x 4 RE	12.9	154.0	329	0.90	B2ca-s1b,d0,a1
1192 050	4 x 6 RE	14.1	230.0	426	1.04	B2ca-s1b,d0,a1
1192 034	4 x 10 RE	16.3	384.0	626	1.31	B2ca-s1b,d0,a1
1192 035	4 x 16 RE	18.5	614.0	891	1.70	B2ca-s1b,d0,a1
1192 036	4 x 25 RM	23.4	960.0	1382	2.45	B2ca-s1b,d0,a1

Product No.	Number of conductors x conductor cross-section	Cable outer diameter (appr.)	Copper index	Cable weight (appr.)	Fire load (appr.)	Class reaction to fire
	mm²	mm	kg/km	kg/km	kWh/m	
1192 037	4 x 35 RM	26.1	1344.0	1819	2.95	B2ca-s1b,d0,a1
1192 006	4 x 50 RM	29.9	1920.0	2450	3.79	B2ca-s1b,d0,a1
1192 043	5 x 1,5 RE	11.9	72.0	235	0.79	B2ca-s1b,d0,a1
1192 012	5 x 2,5 RE	12.9	120.0	301	0.90	B2ca-s1b,d0,a1
1192 025	5 x 4 RE	14.1	192.0	395	1.05	B2ca-s1b,d0,a1
1192 013	5 x 6 RE	15.7	288.0	524	1.24	B2ca-s1b,d0,a1
1192 011	5 x 10 RE	17.8	480.0	757	1.53	B2ca-s1b,d0,a1
1192 014	5 x 16 RE	20.3	768.0	1086	2.04	B2ca-s1b,d0,a1
1192 020	5 x 25 RM	26.0	1200.0	1703	2.94	B2ca-s1b,d0,a1
1192 021	5 x 35 RM	28.8	1680.0	2232	3.47	B2ca-s1b,d0,a1
1192 022	5 x 50 RM	33.2	2400.0	3023	4.54	B2ca-s1b,d0,a1
1192 017	7 x 1,5 RE	12.9	101.0	285	0.90	B2ca-s1b,d0,a1
1192 044	7 x 2,5 RE	14.0	168.0	370	1.03	B2ca-s1b,d0,a1
1192 122	7 x 4 RE	15.6	268.8	503	1.23	B2ca-s1b,d0,a1
1192 138	7 x 6 RE	17.1	403.2	661	1.41	B2ca-s1b,d0,a1
1192 139	7 x 10 RE	19.5	672.0	971	1.71	B2ca-s1b,d0,a1
1192 069	10 x 1,5 RE	16.4	144.0	410	1.31	B2ca-s1b,d0,a1
1192 126	10 x 2,5 RE	17.9	240.0	533	1.50	B2ca-s1b,d0,a1
1192 140	10 x 4 RE	19.8	384.0	716	1.75	B2ca-s1b,d0,a1
1192 060	12 x 1,5 RE	16.9	172.8	457	1.40	Cca-s2,d0,a1
1192 065	12 x 2,5 RE	18.5	288.0	600	1.61	B2ca-s1b,d0,a1
1192 141	12 x 4 RE	20.4	460.8	810	1.91	B2ca-s1b,d0,a1
1192 059	14 x 1,5 RE	17.8	201.6	512	1.53	Cca-s2,d0,a1
1192 132	14 x 2,5 RE	19.5	336.0	676	1.76	Cca-s2,d0,a1
1192 142	14 x 4 RE	21.7	537.6	927	2.09	B2ca-s1b,d0,a1
1192 129	16 x 1,5 RE	18.8	230.4	577	1.70	Cca-s2,d0,a1
1192 143	16 x 2,5 RE	20.8	384.0	774	2.00	Cca-s2,d0,a1
1192 144	16 x 4 RE	22.9	614.4	1048	2.33	Cca-s2,d0,a1
1192 055	19 x 1,5 RE	20.2	273.6	666	1.92	Cca-s2,d0,a1
1192 145	19 x 2,5 RE	21.9	456.0	878	2.19	Cca-s2,d0,a1
1192 146	19 x 4 RE	24,2	729,6	1198	2,54	Cca-s2,d0,a1

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Product No.	Number of conductors x conductor cross-section	Cable outer diameter (appr.)	Copper index	Cable weight (appr.)	Fire load (appr.)	Class reaction to fire
	mm^2	mm	kg/km	kg/km	kWh/m	
1192 133	24 x 1,5 RE	23.3	345.6	827	2.87	Cca-s2,d0,a1
1192 063	24 x 2.5 RE	25.6	576.0	1102	3.33	Cca-s2,d0,a1
1192 147	24 x 4 RE	28.6	921.6	1523	4.08	Cca-s2,d0,a1
1192 127	30 x 1,5 RE	24.7	432.0	979	3.29	Cca-s2,d0,a1

Product No.	Number of conductors x conductor cross-section	Cable outer diameter (appr.)	Copper index	Cable weight (appr.)	Fire load (appr.)	Class reaction to fire
	mm^2	mm	kg/km	kg/km	kWh/m	
1192 134	30 x 2,5 RE	27.4	720.0	1328	3.75	Cca-s2,d0,a1
1192 148	30 x 4 RE	30.3	1152.0	1824	4.58	Cca-s2,d0,a1

TECHNOKABEL S.A. reserves the right to change specifications without prior notice.