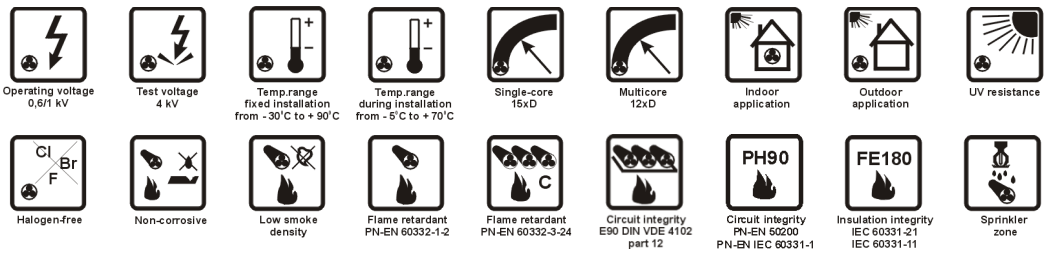
TECHNOFLAME
NHXH FE180 PH90/E90 0,6/1 kV, NHXH-J FE180 PH90/E90 0,6/1 kV



APPLICATIONS

NHXH FE180 PH90/E90 0,6/1 kV and **NHXH-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 are resistant to water in accordance with EN 50200 Annex E and can 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 direct 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,
- mica tape and halogen free cross-linked compound 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 **NHXH-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	70	95	120	150	185	240	300
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	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601

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 shall be used. Systems certified according to DIN 4102 part 12 are recommended.

Operating voltage Uo/U	0,6/1 kV
Voltage test	4 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
at short-circuit	+ 250°C
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
Corrosivity of emitted gases per	very low, halogen free PN-EN 60754-1, PN-EN 60754-2, IEC 60754-2
pH	>4.3
conductivity	<2.5 µS/mm

Smoke density	low smoke density, PN-EN 61034-2, IEC 61034-2
Light transmittance	min. 80% for s1a
Cable combustibillity	fire resistant
Combustibillity tests	PN-EN 60332-1-2, IEC 60332-1-2, PN-EN 60332-3-24, IEC 60332-3-24
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
Referance standards	CNBOP-PIB-KOT-2021/0311-3701 edition 3, WT-TK-44
Class reaction to fire (PN-EN 13501-6)	B2ca-s1a,d0,a1 or Cca-s1a,d0,a1 or Dca-s2,d0,a1
KDWU declarations are available at	technokabel.com.pl

The cable meets requirements of the low voltage direction 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	
NHXH FE180 PH90/E90 0,6/1 kV						
0699 100	1 x 1,5 RE	6.3	14.4	59	0.22	Cca-s1a,d0,a1
0699 199	1 x 2,5 RE	6.6	24.0	71	0.24	Cca-s1a,d0,a1
0699 200	1 x 4 RE	7.1	38.4	89	0.26	Cca-s1a,d0,a1
0699 076	1 x 6 RE	7.6	57.6	111	0.29	Cca-s1a,d0,a1
0699 104	1 x 10 RE	8.4	96.0	155	0.34	Cca-s1a,d0,a1
0699 174	1 x 16 RE	8.9	154.0	215	0.30	B2ca-s1a,d0,a1
0699 070	1 x 25 RM	10.9	240.0	325	0.41	B2ca-s1a,d0,a1
0699 045	1 x 35 RM	11.9	336.0	425	0.46	B2ca-s1a,d0,a1
0699 046	1 x 50 RM	13.3	480.0	560	0.55	B2ca-s1a,d0,a1
0699 047	1 x 70 RM	15.3	672.0	780	0.69	B2ca-s1a,d0,a1
0699 048	1 x 95 RM	17.0	912.0	1090	0.78	B2ca-s1a,d0,a1
0699 049	1 x 120 RM	18.7	1152.0	1290	0.90	B2ca-s1a,d0,a1
0699 050	1 x 150 RM	20.8	1440.0	1620	1.12	B2ca-s1a,d0,a1
0699 051	1 x 185 RM	23.0	1776.0	2000	1.31	B2ca-s1a,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	
0699 052	1 x 240 RM	25.6	2304.0	2480	1.59	B2ca-s1a,d0,a1
0699 135	1 x 300 RM	27.6	2880.0	3010	1.80	B2ca-s1a,d0,a1
0699 013	2 x 1,5 RE	9.9	28.8	157	0.58	B2ca-s1a,d0,a1
0699 002	2 x 2,5 RE	10.7	48.0	193	0.66	B2ca-s1a,d0,a1
0699 176	2 x 4 RE	11.6	77.0	245	0.76	B2ca-s1a,d0,a1
0699 177	2 x 6 RE	12.6	115.0	305	0.88	B2ca-s1a,d0,a1
0699 129	2 x 10 RE	14.2	192.0	425	1.08	B2ca-s1a,d0,a1
0699 130	2 x 16 RE	16.2	307.0	595	1.37	B2ca-s1a,d0,a1
0699 132	2 x 25 RM	20.1	480.0	920	2.12	B2ca-s1a,d0,a1
0699 220	2 x 35 RM	22.4	672.0	1143	2.48	B2ca-s1a,d0,a1
0699 144	2 x 50 RM	25.1	960.0	1495	3.07	B2ca-s1a,d0,a1
0699 221	2 x 70 RM	29.0	1344.0	2069	4.05	B2ca-s1a,d0,a1
0699 145	2 x 95 RM	32.7	1824.0	2820	5.04	B2ca-s1a,d0,a1
0699 222	2 x 120 RM	36.3	2304.0	3420	6.22	B2ca-s1a,d0,a1
0699 223	2 x 150 RM	40.4	2880.0	4268	7.69	B2ca-s1a,d0,a1
0699 224	2 x 185 RM	45.0	3552.0	5306	9.50	B2ca-s1a,d0,a1
0699 183	2 x 240 RM	50.0	4608.0	6781	11.53	B2ca-s1a,d0,a1
	NHXH-J FE180 PH90/E90 0,6/1 kV					
0699 014	3 x 1,5 RE	10.5	43.2	178	0.60	B2ca-s1a,d0,a1
0699 015	3 x 2,5 RE	11.3	72.0	225	0.68	B2ca-s1a,d0,a1
0699 053	3 x 4 RE	12.3	115.0	290	0.78	B2ca-s1a,d0,a1
0699 054	3 x 6 RE	13.5	173.0	370	0.90	B2ca-s1a,d0,a1
0699 090	3 x 10 RE	15.1	288.0	530	1.13	B2ca-s1a,d0,a1
0699 215	3 x 16 RE	17.2	461.0	720	1.50	B2ca-s1a,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	
0699 091	3 x 25 RM	21.6	720.0	1150	2.10	B2ca-s1a,d0,a1
0699 072	3 x 35 RM	23.9	1008.0	1500	2.48	B2ca-s1a,d0,a1
0699 073	3 x 50 RM	27.0	1440.0	1990	3.12	B2ca-s1a,d0,a1
0699 074	3 x 70 RM	31.2	2016.0	2760	4.05	B2ca-s1a,d0,a1
0699 134	3 x 95 RM	35.3	2736.0	3800	4.89	B2ca-s1a,d0,a1
0699 149	3 x120 RM	39.0	3456.0	4550	5.92	B2ca-s1a,d0,a1
0699 201	3 x 150 RM	43.4	4320.0	5538	7.94	B2ca-s1a,d0,a1
0699 202	3 x 185 RM	48.3	5328.0	6886	9.64	B2ca-s1a,d0,a1
0699 203	3 x 240 RM	53.7	6912.0	8851	11.56	B2ca-s1a,d0,a1
0699 001	4 x 1,5 RE	11.4	58.0	215	0.69	B2ca-s1a,d0,a1
0699 055	4 x 2,5 RE	12.3	96.0	270	0.78	B2ca-s1a,d0,a1
0699 056	4 x 4 RE	13.4	154.0	355	0.89	B2ca-s1a,d0,a1
0699 020	4 x 6 RE	14.6	230.0	455	1.02	B2ca-s1a,d0,a1
0699 057	4 x 10 RE	16.7	384.0	660	1.28	B2ca-s1a,d0,a1
0699 216	4 x 16 RE	18.9	614.0	900	1.68	B2ca-s1a,d0,a1
0699 071	4 x 25 RM	23.9	960.0	1450	2.39	B2ca-s1a,d0,a1
0699 084	4 x 35 RM	26.6	1344.0	1910	2.88	B2ca-s1a,d0,a1
0699 068	4 x 50 RM	29.9	1920.0	2520	3.54	B2ca-s1a,d0,a1
0699 085	4 x 70 RM	34.9	2688.0	3550	4.59	B2ca-s1a,d0,a1
0699 123	4 x 95 RM	39.3	3648.0	4900	5.62	B2ca-s1a,d0,a1
0699 110	4 x 120 RM	43.4	4608.0	5669	6.80	B2ca-s1a,d0,a1
0699 146	4 x 150 RM	48.3	5760.0	7084	8.73	B2ca-s1a,d0,a1
0699 181	4 x 185 RM	53.8	7104.0	8816	10.6	B2ca-s1a,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
	mm²	mm	kg/km	kg/km	kWh/m	
0699 204	4 x 240 RM	59.8	9216.0	11352	12.7	B2ca-s1a,d0,a1
0699 058	5 x 1,5 RE	12.4	72.0	255	0.79	B2ca-s1a,d0,a1
0699 081	5 x 2,5 RE	13.4	120.0	325	0.90	B2ca-s1a,d0,a1
0699 059	5 x 4 RE	14.7	192.0	425	1.04	B2ca-s1a,d0,a1
0699 060	5 x 6 RE	16.2	288.0	555	1.22	B2ca-s1a,d0,a1
0699 021	5 x 10 RE	18.4	480.0	800	1.49	B2ca-s1a,d0,a1
0699 196	5 x 16 RE	21.0	768.0	1110	1.99	B2ca-s1a,d0,a1
0699 061	5 x 25 RM	26.5	1200.0	1780	2.87	B2ca-s1a,d0,a1
0699 017	5 x 35 RM	29.4	1680.0	2330	3.37	B2ca-s1a,d0,a1
0699 018	5 x 50 RM	33.2	2400.0	3150	4.23	B2ca-s1a,d0,a1
0699 075	5 x 70 RM	38.7	3360.0	4350	5.48	B2ca-s1a,d0,a1
0699 088	5 x 95 RM	43.7	4560.0	6000	6.70	B2ca-s1a,d0,a1
0699 141	5 x 120 RM	48.3	5760.0	7010	9.74	B2ca-s1a,d0,a1
0699 152	5 x 150 RM	53.7	7200.0	8755	11.6	B2ca-s1a,d0,a1
0699 147	5 x 185 RM	59.8	8880.0	10897	13.9	B2ca-s1a,d0,a1
0699 148	5 x 240 RM	66.5	11520.0	14037	16.45	B2ca-s1a,d0,a1
0699 003	7 x 1,5 RE	13.5	101.0	310	0.89	B2ca-s1a,d0,a1
0699 004	7 x 2,5 RE	14.6	168.0	400	1.01	B2ca-s1a,d0,a1
0699 133	7 x 4 RE	16.2	269.0	535	1.19	B2ca-s1a,d0,a1
0699 197	7 x 6 RE	17.7	403.2	672	1.54	B2ca-s1a,d0,a1
0699 131	7 x 10 RE	20.1	672.0	982	1.91	B2ca-s1a,d0,a1
0699 219	7 x 16 RE	23.0	1075.0	1430	2.30	Dca-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
	mm²	mm	kg/km	kg/km	kWh/m	
0699 206	7 x 25 RM	29.1	1680.0	2209	3.50	Dca-s2,d0,a1
0699 097	10 x 1,5 RE	17.2	144.0	426	1.45	Dca-s2,d0,a1
0699 096	10 x 2,5 RE	18.7	240.0	550	1.66	B2ca-s1a,d0,a1
0699 217	10 x 4 RE	20.8	384.0	743	1.97	B2ca-s1a,d0,a1
0699 119	12 x 1,5 RE	17.8	173.0	474	1.39	Dca-s2,d0,a1
0699 150	12 x 2,5 RE	19.3	288.0	616	1.57	Dca-s2,d0,a1
0699 218	12 x 4 RE	21.5	461.0	840	2.11	B2ca-s1a,d0,a1
0699 098	14 x 1,5 RE	18.7	201.6	529	1.46	Dca-s2,d0,a1
0699 117	14 x 2,5 RE	20.4	336.0	693	1.65	Dca-s2,d0,a1
0699 207	14 x 4 RE	22.6	537.6	946	1.94	Dca-s2,d0,a1
0699 109	16 x 1,5 RE	19.7	230.4	594	1.87	Dca-s2,d0,a1
0699 208	16 x 2,5 RE	21.7	384.0	792	2.18	Dca-s2,d0,a1
0699 211	16 x 4 RE	23.9	614.4	1070	2.52	Dca-s2,d0,a1
0699 128	19 x 1,5 RE	21.0	274.0	681	1.87	Dca-s2,d0,a1
0699 143	19 x 2,5 RE	22.9	456.0	898	2.11	Dca-s2,d0,a1
0699 212	19 x 4 RE	25.2	729.6	1219	2.87	Dca-s2,d0,a1
0699 118	24 x 1,5 RE	24.5	346.0	853	2.34	Dca-s2,d0,a1
0699 178	24 x 2,5 RE	27.0	576.0	1141	2.71	Dca-s2,d0,a1
0699 213	24 x 4 RE	29.8	921.6	1551	3.62	Dca-s2,d0,a1
0699 179	30 x 1,5 RE	26.2	432.0	1019	2.70	Dca-s2,d0,a1
0699 180	30 x 2,5 RE	28.6	720.0	1353	3.06	Dca-s2,d0,a1
0699 214	30 x 4 RE	31.8	1152.0	1870	4.20	Dca-s2,d0,a1