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





APPLICATIONS

NHXHRHX FE180 PH90/E90 0,6/1 kV and **NHXHRHX-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**).

Galvanized steel wire armour provides carrying an axial load of the cable during installation and exploitation. It also offers enhanced protection against mechanical damages and rodent attack, as well as shielding properties.

The cables are oil-resistant and designed for frequent contact with petroleum products, as in petrol stations and stores, where engine fuels and lubricants are pumped or handled.

The cables are suitable for fixed indoor and outdoor installations also for direct earth burial. Cables are UV radiation resistant.

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 **NHXHRHX-J FE180 PH90/E90 0,6/1 kV** cable,
- insulated conductors laid-up into a cable core,
- inner covering made of halogen free compound,
- cable sheath made of halogen free compound,
- galvanized steel wire armour,
- orange cable covering made of cross-linked halogen free compound.

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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
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

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 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, minimum	60-80 %
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-s1b,d2,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 conductors 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	
NHXHRHX FE180 PH90/E90 0,6/1 kV						
1611 006	2 x 1,5 RE	15.2	28.8	458	1.12	B2ca-s1b,d2,a1
1611 001	2 x 2,5 RE	16.0	48.0	515	1.24	B2ca-s1b,d2,a1
1611 003	2 x 4 RE	16.9	76.8	586	1.37	B2ca-s1b,d2,a1
1611 004	2 x 6 RE	17.9	115.2	670	1.53	B2ca-s1b,d2,a1
1611 005	2 x 10 RE	19.5	192.0	825	1.80	B2ca-s1b,d2,a1
1611 007	2 x 16 RM	22.9	307.2	1232	2.33	B2ca-s1b,d2,a1
1611 008	2 x 25 RM	26.1	480.0	1621	3.04	B2ca-s1b,d2,a1
1611 061	2 x 35 RM	29.2	672.0	2120	3.79	B2ca-s1b,d2,a1
1611 062	2 x 50 RM	32.1	960.0	2591	4.59	B2ca-s1b,d2,a1
1611 063	2 x 70 RM	36.2	1344	3345	5.68	B2ca-s1b,d2,a1
1611 064	2 x 95 RM	41.1	1824	4580	7.41	B2ca-s1b,d2,a1
1611 065	2 x 120 RM	44.9	2304	5391	8.71	B2ca-s1b,d2,a1

Product No.	Number of conductors x conductors 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	
1611 066	2 x 150 RM	50.5	2880	6988	10.48	B2ca-s1b,d2,a1
1611 067	2 x 185 RM	55.5	3552	8347	12.99	B2ca-s1b,d2,a1
1611 043	2 x 240 RM	60.7	4608	10137	15.74	B2ca-s1b,d2,a1
	NHXHRHX-J FE180 PH90/E90 0,6/1 kV					
1611 012	3 x 1,5 RE	15.8	43.2	495	1.17	B2ca-s1b,d2,a1
1611 009	3 x 2,5 RE	16.6	72.0	559	1.28	B2ca-s1b,d2,a1
1611 013	3 x 4 RE	17.6	115.2	645	1.52	B2ca-s1b,d2,a1
1611 014	3 x 6 RE	18.6	172.8	744	1.64	B2ca-s1b,d2,a1
1611 015	3 x 10 RE	21.1	288.0	1078	1.88	B2ca-s1b,d2,a1
1611 016	3 x 16 RM	24.0	460.8	1417	2.37	B2ca-s1b,d2,a1
1611 017	3 x 25 RM	28.4	720.0	2060	3.20	B2ca-s1b,d2,a1
1611 018	3 x 35 RM	30.7	1008	2479	3.68	B2ca-s1b,d2,a1
1611 019	3 x 50 RM	34.2	1440	3107	4.59	B2ca-s1b,d2,a1
1611 020	3 x 70 RM	39.4	2016	4336	5.85	B2ca-s1b,d2,a1
1611 021	3 x 95 RM	43.9	2736	5600	7.48	B2ca-s1b,d2,a1
1611 068	3 x 120 RM	47.8	3456	6558	8.73	B2ca-s1b,d2,a1
1611 069	3 x 150 RM	53.7	4320	8488	10.98	B2ca-s1b,d2,a1
1611 070	3 x 185 RM	59.0	5328	10164	13.36	B2ca-s1b,d2,a1
1611 071	3 x 240 RM	64.8	6912	12557	16.05	B2ca-s1b,d2,a1
1611 022	4 x 1,5 RE	16.7	57.6	550	1.29	B2ca-s1b,d2,a1
1611 023	4 x 2,5 RE	17.6	96.0	627	1.41	B2ca-s1b,d2,a1
1611 010	4 x 4 RE	18.7	153.6	735	1.69	B2ca-s1b,d2,a1
1611 024	4 x 6 RE	19.9	230.4	863	1.75	B2ca-s1b,d2,a1

Product No.	Number of conductors x conductors 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	
1611 025	4 x 10 RE	22.7	384.0	1262	2.11	B2ca-s1b,d2,a1
1611 026	4 x 16 RM	25.8	614.4	1661	2.63	B2ca-s1b,d2,a1
1611 027	4 x 25 RM	30.7	960.0	2432	3.61	B2ca-s1b,d2,a1
1611 028	4 x 35 RM	33.6	1344	2990	4.26	B2ca-s1b,d2,a1
1611 029	4 x 50 RM	37.3	1920	3761	5.24	B2ca-s1b,d2,a1
1611 030	4 x 70 RM	43.5	2688	5300	6.95	B2ca-s1b,d2,a1
1611 031	4 x 95 RM	48.1	3648	6854	8.33	B2ca-s1b,d2,a1
1611 072	4 x 120 RM	53.7	4608	8621	10.25	B2ca-s1b,d2,a1
1611 073	4 x 150 RM	59.0	5760	10366	12.44	B2ca-s1b,d2,a1
1611 074	4 x 185 RM	64.9	7104	12529	15.10	B2ca-s1b,d2,a1
1611 075	4 x 240 RM	71.3	9216	15510	17.89	B2ca-s1b,d2,a1
1611 032	5 x 1,5 RE	17.7	72.0	612	1.43	B2ca-s1b,d2,a1
1611 033	5 x 2,5 RE	18.7	120.0	707	1.58	B2ca-s1b,d2,a1
1611 011	5 x 4 RE	20.0	192.0	836	1.98	B2ca-s1b,d2,a1
1611 034	5 x 6 RE	22.2	288.0	1138	2.14	B2ca-s1b,d2,a1
1611 035	5 x 10 RE	24.4	480.0	1456	2.40	B2ca-s1b,d2,a1
1611 036	5 x 16 RM	28.7	768.0	2100	3.12	B2ca-s1b,d2,a1
1611 037	5 x 25 RM	33.5	1200	2872	4.25	B2ca-s1b,d2,a1
1611 038	5 x 35 RM	36.6	1680	3545	4.97	B2ca-s1b,d2,a1
1611 039	5 x 50 RM	41.6	2400	4783	6.21	B2ca-s1b,d2,a1
1611 040	5 x 70 RM	47.5	3360	6313	8.15	B2ca-s1b,d2,a1
1611 041	5 x 95 RM	54.0	4560	8795	10.0	B2ca-s1b,d2,a1
1611 076	5 x 120 RM	59.0	5760	10292	11.62	B2ca-s1b,d2,a1

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Product No.	Number of conductors x conductors 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	
1611 077	5 x 150 RM	64.8	7200	12468	14.10	B2ca-s1b,d2,a1
1611 078	5 x 185 RM	71.3	8880	15062	17.25	B2ca-s1b,d2,a1
1611 079	5 x 240 RM	79.7	11520	19684	20.87	B2ca-s1b,d2,a1
1611 092	6 x 1,5 RE	18.8	86.4	680	1.58	B2ca-s1b,d2,a1
1611 091	6 x 2,5 RE	19.9	144.0	789	1.75	B2ca-s1b,d2,a1
1611 093	6 x 4 RE	22.2	230.4	1087	2.03	B2ca-s1b,d2,a1
1611 094	6 x 6 RE	23.7	345.6	1286	2.28	B2ca-s1b,d2,a1
1611 095	6x10 RE	26.1	576.0	1651	2.68	B2ca-s1b,d2,a1
1611 096	6 x 16 RM	30.8	921.6	2395	3.51	B2ca-s1b,d2,a1
1611 042	7 x 1,5 RE	18.8	100.8	693	1.67	B2ca-s1b,d2,a1
1611 059	7 x 2,5 RE	19.9	168.0	808	1.85	B2ca-s1b,d2,a1
1611 060	7 x 4 RE	22.2	268.8	1118	2.12	B2ca-s1b,d2,a1
1611 098	7 x 6 RE	23.7	403.2	1324	2.19	B2ca-s1b,d2,a1
1611 097	7 x 10 RE	26.1	672.0	1717	2.56	B2ca-s1b,d2,a1
1611 099	7 x 16 RM	30.8	1075.2	2498	3.31	B2ca-s1b,d2,a1
1611 048	10 x 1,5 RE	23.2	144.0	1070	2.28	B2ca-s1b,d2,a1
1611 058	10 x 2,5 RE	24.7	240.0	1238	2.48	B2ca-s1b,d2,a1
1611 100	10 x 4 RE	26.8	384.0	1494	2.69	B2ca-s1b,d2,a1
1611 101	10 x 6 RE	29.6	576.0	1959	3.11	B2ca-s1b,d2,a1
1611 102	10 x 10 RE	33.2	960.0	2578	3.80	B2ca-s1b,d2,a1
1611 103	10 x 16 RM	39.6	1536	3806	5.03	B2ca-s1b,d2,a1
1611 080	12 x 1,5 RE	23.8	172.8	1134	2.36	B2ca-s1b,d2,a1
1611 081	12 x 2,5 RE	25.3	288.0	1330	2.63	B2ca-s1b,d2,a1
1611 105	12 x 4 RE	28.3	460.8	1769	2.90	B2ca-s1b,d2,a1
1611 106	12 x 6 RE	30.3	691.2	2112	3.22	B2ca-s1b,d2,a1
1611 104	12 x 10 RE	34.2	1152.0	2821	4.01	B2ca-s1b,d2,a1
1611 107	12 x 16 RM	40.8	1843.2	4200	5.27	B2ca-s1b,d2,a1
1611 083	14 x 2,5 RE	26.4	336.0	1438	2.84	B2ca-s1b,d2,a1
1611 084	15 x 1,5 RE	25.7	216.0	1314	2.68	B2ca-s1b,d2,a1
1611 085	15 x 2,5 RE	28.5	360.0	1733	3.09	B2ca-s1b,d2,a1
1611 055	16 x 1,5 RE	25.7	230.4	1322	2.74	B2ca-s1b,d2,a1
1611 108	16 x 2,5 RE	28.5	384.0	1739	3.14	B2ca-s1b,d2,a1

TECHNOKABEL SA reserves the right to change specifications without prior notice.