

NHXX FE180/PH90/E90 MICA



Fire resistant, halogen free power cable



industrial application



internal application



EN 60332-1-2



EN 60332-3



halogen-free
EN 60754



low smoke emission
EN 61034



FE180
insulation
resistance
to fire 180 min.



PH90 fire
integrity function



E90 fire
integrity function



sprinkler
zones*

Technical data:

Thermal parameters:

Temperature range:

fixed installation: -30 °C up to 90 °C
min. installation temp: -5 °C

Electrical parameters:

Permissible conductor operating temperature: 90 °C

Permissible conductor temperature during short circuit: 250 °C

Operating voltage: $U_0/U = 0,6/1$ kV

Test voltage: 4 kV

Conductor resistance (at 20 °C): acc. to EN 60288 cl. 1 and 2, IEC 60288 cl. 1 and 2

Mechanical parameters:

Minimum bending radius:

single core cables: 15 x Ø
multi core cables: 12 x Ø

Design:

Cores: bare copper conductor, solid (cl. 1) or stranded (cl. 2) according to EN 60228 and IEC 60228

Insulation: mica tape wrapping and cross-linked polymer HX11 acc. to DIN VDE 0266

Core colors: acc. to information - chapter - Technical Data

Inner sheath: special halogen-free compound

Outer sheath: halogen-free polymer compound HM4 acc. to DIN VDE 207 p.24; colour: orange

Application:

Fire resistant power and control cables have E90 fire integrity function which means the assurance of power supply or control under fire conditions for 90 minutes. They are intended for use in buildings with increased fire safety requirements due to high concentration of people, material and cultural assets of high value (sky scrapers, hospitals, shopping centres, tunnels, museums, cinemas, theatres). Cables can be used for power supply or control (lighting, lifts, fire-fighting equipment, pumps). They can be used in fixed installations inside buildings. In case of outdoor application cables should be secured against UV radiation and the external factors. Cables with improved fire characteristic E90 must be installed on the supporting systems tested according to DIN 4102-12.

Tests:

Flame propagation test for a single insulated cable:

Flame propagation test for vertically-mounted bunched cables:

Test on corrosive gases emitted during burning:

Smoke density emission during burning:

Insulation resistance to long term fire exposure FE180:

Fire integrity function of cable support system E90:

Fire integrity function of cable installation (PH90):

*Water resistance under fire conditions:

EN 60332-1-2, IEC 60332-1-2, VDE 0482-332-1

EN 60332-3-24, IEC 60332-3-24, VDE 0482-332-3-24

EN 60754-2, IEC 60754-2, VDE 0482-754-2

EN 61034-2, IEC 61034-2, VDE 0482-1034-2

PN-IEC 60331-21, IEC 60331-21, VDE 0472-814

DIN 4102-12

EN 50200

EN 50200 Annex E (applies to cables with a diameter not exceeding 20 mm)

Cable characteristics:

- fire resistant (fire retardant, self extinguishing, flame retardant, without self-ignition properties)
- halogen-free
- flame retardant
- no corrosive gases
- low smoke emission
- increased insulation resistance (FE180)
- fire integrity function (E90)
- low fire load (calorific value)

NHXH FE180/PH90/E90 MICA

Fire resistant, halogen free power cable

cables without green-yellow core NHXH-O FE180/PH90/E90 MICA

Cat. no.	n x mm ²	Outer diameter** [mm]	Approximate cable weight [kg/km]	Cu [kg/km]
B61004	1x10 RE	8,9	188	96,0
B61005	1x16 RM	10,5	278	153,6
B61006	1x25 RM	12,1	391	240,0
B61007	1x35 RM	13,2	497	336,0
B61008	1x50 RM	15,5	674	480,0
B61009	1x70 RM	16,9	882	672,0
B61010	1x95 RM	19,0	1178	912,0
B61011	1x120 RM	20,7	1410	1152,0
B61012	1x150 RM	23,3	1789	1440,0
B61013	1x185 RM	25,0	2164	1776,0
B61014	1x240 RM	28,4	2739	2304,0
B61085	1x300 RM	30,9	3311	2880,0
B61177	1x400 RM	34,4	4169,0	3840,0
B61187	1x500 RM	39,3	5347,2	4800,0
B61084	3x1,5 RE	13,6	259	43,2
B61107	3x2,5 RE	14,4	308	72,0
B61108	3x4 RE	15,4	377	115,2
B61109	3x6 RE	16,5	461	172,8
B61110	3x10 RE	18,2	623	288,0
B61111	3x16 RM	21,6	921	460,8
B61112	3x25 RM	25,1	1318	720,0
B61113	3x35 RM	27,7	1693	1008,0
B61114	3x50 RM	32,8	2355	1440,0
B61115	3x70 RM	35,8	3032	2016,0
B61116	3x95 RM	40,2	4054	2736,0
B61117	3x120 RM	44,1	4905	3456,0
B61118	3x150 RM	49,7	6258	4320,0
B61119	3x185 RM	53,9	7565	5328,0
B61087	3x240 RM	61,1	9646	6912,0
B61080	4x1,5 RE	14,6	304	57,6
B61120	4x2,5 RE	15,5	365	96,0
B61121	4x4 RE	16,7	452	153,6
B61122	4x6 RE	17,9	559	230,4
B61083	4x10 RE	19,8	765	384,0
B61088	4x16 RM	23,6	1141	614,4
B61123	4x25 RM	27,6	1651	960,0
B61124	4x35 RM	30,6	2136	1344,0
B61082	4x50 RM	36,3	2974	1920,0
B61125	4x70 RM	39,6	3847	2688,0
B61126	4x95 RM	44,8	5192	3648,0
B61127	4x120 RM	49,0	6252	4608,0
B61081	4x150 RM	55,7	8053	5760,0
B61128	4x185 RM	59,8	9666	7104,0
B61129	4x240 RM	67,9	12332	9216,0

Cat. no.	n x mm ²	Outer diameter** [mm]	Approximate cable weight [kg/km]	Cu [kg/km]
B61130	5x1,5 RE	15,8	354	72,0
B61131	5x2,5 RE	16,8	430	120,0
B61132	5x4 RE	18,0	536	192,0
B61133	5x6 RE	19,4	667	288,0
B61134	5x10 RE	21,6	920	480,0
B61135	5x16 RM	25,8	1382	768,0
B61136	5x25 RM	30,4	2023	1200,0
B61137	5x35 RM	34,0	2644	1680,0
B61138	5x50 RM	40,1	3658	2400,0
B61139	5x70 RM	44,2	4769	3360,0
B61140	5x95 RM	49,7	6409	4560,0
B61141	5x120 RM	54,8	7790	5760,0
B61142	5x150 RM	61,8	9951	7200,0
B61143	5x185 RM	66,5	11955	8880,0
B61144	7x1,5 RE	16,9	417	100,8
B61145	7x2,5 RE	18,1	513	168,0
B61146	7x4 RE	19,5	649	268,8
B60992	7x6 RE	20,7	818,0	403,2
B60993	7x10 RE	23,1	1147,2	672,0
B60994	7x16 RM	27,9	1731,7	1075,2
B60995	7x25 RM	33,6	2615,4	1680,0
B61147	10x1,5 RE	20,8	557	144,0
B61148	10x2,5 RE	22,3	690	240,0
B61149	10x4 RE	24,2	881	384,0
B61150	12x1,5 RE	21,4	625	172,8
B61151	12x2,5 RE	23,0	781	288,0
B61152	12x4 RE	24,9	1005	460,8
B61153	14x1,5 RE	22,4	701	201,6
B60996	16x1,5 RE	23,5	787,1	230,4
B61154	14x2,5 RE	24,1	882	336,0
B61191	16x2,5 RE	25,3	990,3	384,0
B61155	14x4 RE	26,1	1140	537,6
B61156	19x1,5 RE	24,7	874	273,6
B61157	19x2,5 RE	26,6	1111	456,0
B61159	24x1,5 RE	28,7	1079	345,6
B61160	24x2,5 RE	31,4	1405	576,0
B60997	26x2,5 RE	31,5	1525,9	624,0
B61161	30x1,5 RE	30,4	1283	432,0
B60998	48x1,5 RE	37,5	1964,3	691,2
B61162	30x2,5 RE	33,2	1679	720,0
B60999	48x2,5 RE	40,8	2551,7	1152,0

NHXX FE180/PH90/E90 MICA

Fire resistant, halogen free power cable

cables with green-yellow core NHXX-J FE180/PH90/E90 MICA

Cat. no.	n x mm ²	Outer diameter** [mm]	Approximate cable weight [kg/km]	Cu [kg/km]
B60985	1x10 RE	8,9	188	96,0
B61178	1x16 RM	10,5	278	153,6
B60986	1x25 RM	12,1	391	240,0
B60987	1x35 RM	13,2	497	336,0
B60988	1x50 RM	15,5	674	480,0
B60989	1x70 RM	16,9	882	672,0
B60990	1x95 RM	19,0	1178	912,0
B61086	1x120 RM	20,7	1410	1152,0
B61189	1x150 RM	23,3	1789	1440,0
B60991	1x185 RM	25,0	2164	1776,0
B61179	1x240 RM	28,4	2739	2304,0
B61180	1x300 RM	30,9	3311	2880,0
B61186	1x400 RM	34,4	4169,0	3840,0
B61192	1x500 RM	39,3	5347,2	4800,0
B61022	3x1,5 RE	13,6	259	43,2
B61023	3x2,5 RE	14,4	308	72,0
B61024	3x4 RE	15,4	377	115,2
B61025	3x6 RE	16,5	461	172,8
B61026	3x10 RE	18,2	623	288,0
B61027	3x16 RM	21,6	921	460,8
B61028	3x25 RM	25,1	1318	720,0
B61029	3x35 RM	27,7	1693	1008,0
B61030	3x50 RM	32,8	2355	1440,0
B61031	3x70 RM	35,8	3032	2016,0
B61032	3x95 RM	40,2	4054	2736,0
B61033	3x120 RM	44,1	4905	3456,0
B61034	3x150 RM	49,7	6258	4320,0
B61035	3x185 RM	53,9	7565	5328,0
B61036	3x240 RM	61,1	9646	6912,0
B61037	4x1,5 RE	14,6	304	57,6
B61038	4x2,5 RE	15,5	365	96,0
B61039	4x4 RE	16,7	452	153,6
B61040	4x6 RE	17,9	559	230,4
B61041	4x10 RE	19,8	765	384,0
B61042	4x16 RM	23,6	1141	614,4
B61043	4x25 RM	27,6	1651	960,0
B61044	4x35 RM	30,6	2136	1344,0
B61045	4x50 RM	36,3	2974	1920,0
B61046	4x70 RM	39,6	3847	2688,0
B61047	4x95 RM	44,8	5192	3648,0
B61048	4x120 RM	49,0	6252	4608,0
B61049	4x150 RM	55,7	8053	5760,0
B61050	4x185 RM	59,8	9666	7104,0
B61051	4x240 RM	67,9	12332	9216,0
B61052	5x1,5 RE	15,8	354	72,0
B61053	5x2,5 RE	16,8	430	120,0
B61054	5x4 RE	18,0	536	192,0

Cat. no.	n x mm ²	Outer diameter** [mm]	Approximate cable weight [kg/km]	Cu [kg/km]
B61055	5x6 RE	19,4	667	288,0
B61056	5x10 RE	21,6	920	480,0
B61057	5x16 RM	25,8	1382	788,0
B61058	5x25 RM	30,4	2023	1200,0
B61059	5x35 RM	34,0	2644	1680,0
B61060	5x50 RM	40,1	3658	2400,0
B61061	5x70 RM	44,2	4769	3360,0
B61062	5x95 RM	49,7	6409	4560,0
B61063	5x120 RM	54,8	7790	5760,0
B61064	5x150 RM	61,8	9951	7200,0
B61065	5x185 RM	66,5	11955	8880,0
B61066	7x1,5 RE	16,9	417	100,8
B61067	7x2,5 RE	18,1	513	168,0
B61092	7x4 RE	19,5	649	268,8
B61176	7x6 RE	20,7	818,0	403,2
B61193	7x10 RE	23,1	1147,2	672,0
B61194	7x16 RM	27,9	1731,7	1075,2
B61195	7x25 RM	33,6	2615,4	1680,0
B61068	10x1,5 RE	20,8	557	144,0
B61069	10x2,5 RE	22,3	690	240,0
B61093	10x4 RE	24,2	881	384,0
B61070	12x1,5 RE	21,4	625	172,8
B61071	12x2,5 RE	23,0	781	288,0
B61094	12x4 RE	24,9	1005	460,8
B61072	14x1,5 RE	22,4	701	201,6
B61196	16x1,5 RE	23,5	787,1	230,4
B61073	14x2,5 RE	24,1	882	336,0
B61190	16x2,5 RE	25,3	990,3	384,0
B61095	14x4 RE	26,1	1140	537,6
B61074	19x1,5 RE	24,7	874	273,6
B61075	19x2,5 RE	26,6	1111	456,0
B61096	24x1,5 RE	28,7	1079	345,6
B61076	24x2,5 RE	31,4	1405	576,0
B61197	26x2,5 RE	31,5	1525,9	624,0
B61078	30x1,5 RE	30,4	1283	432,0
B61198	48x1,5 RE	37,5	1964,3	691,2
B61079	30x2,5 RE	33,2	1679	720,0
B61199	48x2,5 RE	40,8	2551,7	1152,0
B61097	3x25+1x16RM	27,6	1583	873,6
B61098	3x35+1x16RM	30,6	1999	1161,6
B61099	3x50+1x25RM	36,3	2811	1680,0
B61100	3x70+1x35RM	39,6	3613	2352,0
B61101	3x95+1x50RM	44,8	4844	3216,0
B61102	3x120+1x70RM	49,0	5897	4128,0
B61103	3x150+1x70RM	55,7	7461	4992,0
B61104	3x185+1x95RM	59,8	9017	6240,0
B61105	3x240+1x120RM	67,9	11474	8064,0

RE - round conductor, single-wire

RM - round conductor, multi-wire

**Outer diameter tolerance: +/- 5%

Cable Factory BITNER reserves the right to modify specifications without prior notification

Note: On customer's request other cross sections or number of cores can be produced