

(N)HXH FE180 E90 B2_{ca}

Safety cable, 0.6/1kV, Keram

halogen-free, with improved fire characteristics,
with reference to VDE 0266 and CENELEC HD 604 S1,
circuit integrity (FE180) in accordance with VDE 0472-814, IEC 60331,
System Circuit Integrity E90* in accordance with DIN 4102-12
Reaction to fire according to EN 13501-6



- 1 Conductor: solid/stranded
- 2 Fire barrier: high-performance Keram compound
- 3 Insulation: cross-linked polymer, zero halogen
- 4 Filler: flame retardant, zero halogen
- 5 Sheath: FRNC/LSZH



Description

Cables with intrinsic fire resistance are installed in all areas that require special protection of people and equipment against fire and fire damages and where strict security requirements must be fulfilled. Suitable for indoor applications. For outdoor applications, protection must be provided against exposure to direct sunlight. The cable should only be laid directly in earth or water if a protective conduit is used. These cables correspond to the demands of System Circuit Integrity E90* in accordance with DIN 4102-12. System Circuit Integrity is guaranteed at an operating voltage up to 400V. Permitted operating temperature at conductor of +90°C.

Application

For use in critical fire safety infrastructure (in compliance with VKF, ASTRA, Tunnels Directive, etc.), particularly in escape routes and emergency lines.

Construction

Conductor	Bare copper, solid or stranded, IEC 60228 and EN 60228 (VDE 0295)
Core colours	CENELEC HD 308 S2, VDE 0293
Filler	Flame retardant, halogen-free thermoplastic compound
Insulation	Double insulation, cross-linked, high-performance Keram special compound, VDE 0266 "HXI1"
Outer sheath colour	orange
Outer sheath material	Flame retardant Polyolefin compound, CENELEC HD 604 S1 and VDE 0276-604 "HM4"

General Properties

Circuit Integrity	E90
Installation temperature	-5 °C - +50 °C
Insulation integrity	FE 180
Operating temperature	-45 °C - +90 °C

Electrical properties

Nominal voltage	0,6/1kV
Test voltage 50Hz	4,000 V

Mechanical properties

Minimum bending during installation (multi core)	12 x D
Minimum bending during installation (single core)	15 x D
Minimum bending radius permanent (multi core)	12 x D
Minimum bending radius permanent (single core)	15 x D
Remarks bending radius	50% reduction if installation at 30°C and with a template

Standards

Circuit Integrity (FE180)	IEC 60331-11/-21 (180 minutes),VDE 0472-814 (FE180),IEC 60331-1 (120 minutes),IEC 60331-2 (120 minutes),EN 50200 (PH120 minutes),VDE 0482-200 (PH120),VDE 0482-362,AREI-RGIE Art.104-FR1
Reaction to fire (Euroclasses)	EN 13501-6: B2 _{ca}
Zero halogen no corrosive gases	IEC 60754-1/-2, EN 60754-1/-2, VDE 0482-754-1/-2, AREI-RGIE Art.104-SA
Flame Propagation	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2, AREI-RGIE Art.104-F1
Flame Spread	IEC 60332-3-22/-24 Cat. A/C, EN 60332-3-22/-24 Cat. A/C, VDE 0482-332-3-22/-24 Cat. A/C, AREI-RGIE Art.104-F2
Smoke Density	IEC 61034-1/-2, EN 61034-1/-2, VDE 0482-1034-1/-2, AREI-RGIE Art.104-SD
System circuit integrity	DIN 4102-12, VdS 3423 (Single-core more than 16.0 mm ²), AREI-RGIE Art.104-FR2

Note

System Circuit Integrity is dependent on installation method.

Versions

Material number	Product	Reaction To Fire	Outer sheath colour	Number of Cores	Diameter mm ²	Outer sheath diameter [mm]	CU rate [kg\ km]	Weight [kg\ km]	Fire load [kWh\m]	Conductor	Construction	Packing unit
18614100BZ	(N)HXH-O FE180 E90 1 x 16	B2ca- s1a,d1,a1	orange	1	16	10.2	154	244	0.326	stranded	L	by the metre
18614200BZ	(N)HXH-O FE180 E90 1 x 25	B2ca- s1a,d1,a1	orange	1	25	11.7	240	348	0.406	stranded	L	by the metre
18614300BZ	(N)HXH-O FE180 E90 1 x 35	B2ca- s1a,d1,a1	orange	1	35	12.8	336	450	0.457	stranded	L	by the metre
18614400BZ	(N)HXH-O FE180 E90 1 x 50	B2ca- s1a,d1,a1	orange	1	50	14.3	480	590	0.545	stranded	L	by the metre
18614500BZ	(N)HXH-O FE180 E90 1 x 70	B2ca- s1a,d1,a1	orange	1	70	16.1	672	802	0.633	stranded	L	by the metre
18614600BZ	(N)HXH-O FE180 E90 1 x 95	B2ca- s1a,d1,a1	orange	1	95	18.5	912	1,075	0.801	stranded	L	by the metre
18614700BZ	(N)HXH-O FE180 E90 1 x 120	B2ca- s1a,d1,a1	orange	1	120	19.6	1,152	1,310	0.854	stranded	L	by the metre
18614800BZ	(N)HXH-O FE180 E90 1 x 150	B2ca- s1a,d1,a1	orange	1	150	21.8	1,440	1,637	1.043	stranded	L	by the metre
18614900BZ	(N)HXH-O FE180 E90 1 x 185	B2ca- s1a,d1,a1	orange	1	185	24	1,776	2,013	1.252	stranded	L	by the metre

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18615000BZ	(N)HXH-O FE180 E90 1 x 240	B2ca- s1a,d1,a1	orange	1	240	27.2	2,304	2,622	1.539	stranded	L	by the metre
18615100BZ	(N)HXH-O FE180 E90 1 x 300	B2ca- s1a,d1,a1	orange	1	300	29.6	2,880	3,115	1.802	stranded	L	by the metre
18835900BZ	(N)HXH-O FE180 E90 2 x 1.5	B2ca- s1a,d1,a1	orange	2	1.5	11	29	176	0.441	solid	LN	by the metre
18724700BZ	(N)HXH-O FE180 E90 2 x 2.5	B2ca- s1a,d1,a1	orange	2	2.5	11.8	48	214	0.495	solid	LN	by the metre
18617400BZ	(N)HXH-J FE180 E90 3 x 1.5	B2ca- s1a,d1,a1	orange	3	1.5	11.5	43	198	0.488	solid	LNPE	by the metre
18617700BZ	(N)HXH-J FE180 E90 3 x 2.5	B2ca- s1a,d1,a1	orange	3	2.5	12.4	72	247	0.551	solid	LNPE	by the metre
18618200BZ	(N)HXH-J FE180 E90 3 x 4	B2ca- s1a,d1,a1	orange	3	4	13.5	115	317	0.63	solid	LNPE	by the metre
18618600BZ	(N)HXH-J FE180 E90 3 x 6	B2ca- s1a,d1,a1	orange	3	6	14.6	173	400	0.71	solid	LNPE	by the metre
18618900BZ	(N)HXH-J FE180 E90 3 x 10	B2ca- s1a,d1,a1	orange	3	10	16.3	288	556	0.836	solid	LNPE	by the metre
18615200BZ	(N)HXH-J FE180 E90 3 x 16	B2ca- s1a,d1,a1	orange	3	16	20.2	461	872	1.155	stranded	LNPE	by the metre
18615300BZ	(N)HXH-J FE180 E90 3 x 25	B2ca- s1a,d1,a1	orange	3	25	24	720	1,289	1.556	stranded	LNPE	by the metre
18615400BZ	(N)HXH-J FE180 E90 3 x 35	B2ca- s1a,d1,a1	orange	3	35	26.4	1,008	1,651	1.791	stranded	LNPE	by the metre
19106900BZ	(N)HXH-J FE180 E90 3 x 35+16	B2ca- s1a,d1,a1	orange	3	35+16	27.4	1,162	1,823	1.92	stranded	3LPE	by the metre
18620700BZ	(N)HXH-J FE180 E90 3 x 50	B2ca- s1a,d1,a1	orange	3	50	29.8	1,440	2,172	2.234	stranded	LNPE	by the metre
19100200BZ	(N)HXH-J FE180 E90 3 x 50+25	B2ca- s1a,d1,a1	orange	3	50+25	31.3	1,680	2,444	2.436	stranded	3LPE	by the metre
19100300BZ	(N)HXH-J FE180 E90 3 x 70+35	B2ca- s1a,d1,a1	orange	3	70+35	35.6	2,352	3,318	3.02	stranded	3LPE	by the metre
19100400BZ	(N)HXH-J FE180 E90 3 x 95+50	B2ca- s1a,d1,a1	orange	3	95+50	40.7	3,216	4,414	3.787	stranded	3LPE	by the metre
19100500BZ	(N)HXH-J FE180 E90 3 x 120+70	B2ca- s1a,d1,a1	orange	3	120+70	44	4,128	5,460	4.283	stranded	3LPE	by the metre
19100600BZ	(N)HXH-J FE180 E90 3 x 150+70	B2ca- s1a,d1,a1	orange	3	150+70	48	4,992	6,584	5.088	stranded	3LPE	by the metre
19106800BZ	(N)HXH-J FE180 E90 3 x 185+95	B2ca- s1a,d1,a1	orange	3	185+95	53.4	6,240	8,197	6.236	stranded	3LPE	by the metre
18617500BZ	(N)HXH-J FE180 E90 4 x 1.5	B2ca- s1a,d1,a1	orange	4	1.5	12.4	58	232	0.572	solid	3LPE	by the metre
18617800BZ	(N)HXH-J FE180 E90 4 x 2.5	B2ca- s1a,d1,a1	orange	4	2.5	13.4	96	289	0.634	solid	3LPE	by the metre

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18618300BZ	(N)HXH-J FE180 E90 4 x 4	B2ca- s1a,d1,a1	orange	4	4	14.6	154	379	0.724	solid	3LPE	by the metre
18618700BZ	(N)HXH-J FE180 E90 4 x 6	B2ca- s1a,d1,a1	orange	4	6	15.8	230	488	0.831	solid	3LPE	by the metre
18615500BZ	(N)HXH-J FE180 E90 4 x 16	B2ca- s1a,d1,a1	orange	4	16	22.1	614	1,086	1.367	stranded	3LPE	by the metre
18615600BZ	(N)HXH-J FE180 E90 4 x 25	B2ca- s1a,d1,a1	orange	4	25	26.3	960	1,606	1.843	stranded	3LPE	by the metre
18615700BZ	(N)HXH-J FE180 E90 4 x 35	B2ca- s1a,d1,a1	orange	4	35	29	1,344	2,071	2.131	stranded	3LPE	by the metre
18615800BZ	(N)HXH-J FE180 E90 4 x 50	B2ca- s1a,d1,a1	orange	4	50	32.8	1,920	2,738	2.679	stranded	3LPE	by the metre
18615900BZ	(N)HXH-J FE180 E90 4 x 70	B2ca- s1a,d1,a1	orange	4	70	37.6	2,688	3,743	3.169	stranded	3LPE	by the metre
18616000BZ	(N)HXH-J FE180 E90 4 x 95	B2ca- s1a,d1,a1	orange	4	95	43.1	3,648	5,002	4.241	stranded	3LPE	by the metre
18727400BZ	(N)HXH-J FE180 E90 4 x 120	B2ca- s1a,d1,a1	orange	4	120	46	4,608	6,060	4.691	stranded	3LPE	by the metre
18616100BZ	(N)HXH-J FE180 E90 4 x 150	B2ca- s1a,d1,a1	orange	4	150	51.2	5,760	7,573	5.787	stranded	3LPE	by the metre
19049300BZ	(N)HXH-J FE180 E90 4 x 240	B2ca- s1a,d1,a1	orange	4	240	64.1	9,216	12,112	8.784	stranded	3LPE	by the metre
19633700BZ	(N)HXH-O FE180 E90 4x6	B2ca- s1a,d1,a1	orange	4	6	15.8	230	488	0.831	solid	3LN	by the metre
19633800BZ	(N)HXH-O FE180 E90 4x10	B2ca- s1a,d1,a1	orange	4	10	17.8	384	691	0.992	solid	3LN	by the metre
19633100BZ	(N)HXH-O FE180 E90 4x16	B2ca- s1a,d1,a1	orange	4	16	22.1	614	1,086	1.367	solid	3LN	by the metre
19633200BZ	(N)HXH-O FE180 E90 4x25	B2ca- s1a,d1,a1	orange	4	25	26.3	960	1,606	1.843	stranded	3LN	by the metre
19633300BZ	(N)HXH-O FE180 E90 4x35	B2ca- s1a,d1,a1	orange	4	35	29	1,344	2,071	2.131	stranded	3LN	by the metre
19633400BZ	(N)HXH-O FE180 E90 4x50	B2ca- s1a,d1,a1	orange	4	50	32.8	1,920	2,738	2.679	stranded	3LN	by the metre
19633500BZ	(N)HXH-O FE180 E90 4x70	B2ca- s1a,d1,a1	orange	4	70	37.6	2,688	3,743	3.169	stranded	3LN	by the metre
19633600BZ	(N)HXH-O FE180 E90 4x95	B2ca- s1a,d1,a1	orange	4	95	43.1	3,648	5,002	4.241	stranded	3LN	by the metre
19633000BZ	(N)HXH-O FE180 E90 4x120	B2ca- s1a,d1,a1	orange	4	120	46	4,608	6,060	4.691	stranded	3LN	by the metre
18617600BZ	(N)HXH-J FE180 E90 5 x 1.5	B2ca- s1a,d1,a1	orange	5	1.5	13.4	72	275	0.665	solid	3LNPE	by the metre
18617900BZ	(N)HXH-J FE180 E90 5 x 2.5	B2ca- s1a,d1,a1	orange	5	2.5	14.5	120	345	0.754	solid	3LNPE	by the metre

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18618400BZ	(N)HXH-J FE180 E90 5 x 4	B2ca- s1a,d1,a1	orange	5	4	15.8	192	454	0.863	solid	3LNPE	by the metre
18618800BZ	(N)HXH-J FE180 E90 5 x 6	B2ca- s1a,d1,a1	orange	5	6	17.2	288	586	0.983	solid	3LNPE	by the metre
18619100BZ	(N)HXH-J FE180 E90 5 x 10	B2ca- s1a,d1,a1	orange	5	10	19.3	480	829	1.164	solid	3LNPE	by the metre
18616200BZ	(N)HXH-J FE180 E90 5 x 16	B2ca- s1a,d1,a1	orange	5	16	24.8	768	1,360	1.717	stranded	3LNPE	by the metre
18616300BZ	(N)HXH-J FE180 E90 5 x 25	B2ca- s1a,d1,a1	orange	5	25	28.8	1,200	1,953	2.216	stranded	3LNPE	by the metre
18616400BZ	(N)HXH-J FE180 E90 5 x 35	B2ca- s1a,d1,a1	orange	5	35	32	1,680	2,542	2.63	stranded	3LNPE	by the metre
18616500BZ	(N)HXH-J FE180 E90 5 x 50	B2ca- s1a,d1,a1	orange	5	50	36.5	2,400	3,375	3.347	stranded	3LNPE	by the metre
18727700BZ	(N)HXH-J FE180 E90 5 x 70	B2ca- s1a,d1,a1	orange	5	70	41.5	3,360	4,590	4.08	stranded	3LNPE	by the metre
19584700BZ	(N)HXH-J FE180 E90 5 x 95	B2ca- s1a,d1,a1	orange	5	95	47.9	4,560	6,147	5.228	stranded	3LNPE	by the metre
18527100BZ	(N)HXH-J FE180 E90 7 x 1.5	B2ca- s1a,d1,a1	orange	7	1.5	14.4	101	328	0.758	solid	6LPE	by the metre
18618000BZ	(N)HXH-J FE180 E90 7 x 2.5	B2ca- s1a,d1,a1	orange	7	2.5	15.6	168	422	0.857	solid	6LPE	by the metre
18618500BZ	(N)HXH-J FE180 E90 7 x 4	B2ca- s1a,d1,a1	orange	7	4	17.1	269	561	0.986	solid	6LPE	by the metre
18699900BZ	(N)HXH-J FE180 E90 7 x 6	B2ca- s1a,d1,a1	orange	7	6	18.6	403	730	1.112	solid	6LPE	by the metre
18725300BZ	(N)HXH-J FE180 E90 10 x 2.5	B2ca- s1a,d1,a1	orange	10	2.5	19.4	240	587	1.163	solid	9LPE	by the metre
18527200BZ	(N)HXH-J FE180 E90 12 x 1.5	B2ca- s1a,d1,a1	orange	12	1.5	18.3	173	510	1.128	solid	11LPE	by the metre
18618100BZ	(N)HXH-J FE180 E90 12 x 2.5	B2ca- s1a,d1,a1	orange	12	2.5	20	288	668	1.288	solid	11LPE	by the metre

Additional dimensions available on request.

Subject to technical modification

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