

(N)HXH FE180 E90

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



- 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.

Construction

Conductor	Bare copper, solid or stranded, IEC 60228 and EN 60228 (VDE 0295)
Insulation	Double insulation, cross-linked, high-performance Keram special compound, VDE 0266 "HX11"
Core colours	CENELEC HD 308 S2, VDE 0293
Filler	Flame retardant, halogen-free thermoplastic compound
Outer sheath material	Flame retardant Polyolefin compound, CENELEC HD 604 S1 and VDE 0276-604 "HM4"

General properties

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

Electrical properties

Nominal voltage	0.6/1kV
Test voltage at 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

Insulation Integrity (FE180)	IEC 60331-11/-21 (180 minutes), VDE 0472-814 (FE180), BS 6387 C/W/Z, IEC 60331-1 (120 minutes), IEC 60331-2 (120 minutes), EN 50200 (PH120 minutes), VDE 0482-200 (PH120), AREI-RGIE Art.104-FR1
System circuit integrity	DIN 4102-12, VdS 3423 (Single-core more than 16.0 mm ²), AREI-RGIE Art.104-FR2
Smoke density	IEC 61034-1/-2, EN 61034-1/-2, VDE 0482-1034-1/-2, AREI-RGIE Art.104-SD
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, EN 60332-3-22/-24, VDE 0482-332-3-22/-24, AREI-RGIE Art.104-F2

Note

System Circuit Integrity is dependent on installation method.

Versions

Material number	Product	Outer sheath diameter [mm]	CU rate [kg/km]	Weight [kg/km]	Fire load [kWh/m]	Conductor	Construction	GTIN / EAN
186141	(N)HXH-O FE180 E90 1 x 16	10.2	154	243	0.35	stranded	L	40393910076684
186142	(N)HXH-O FE180 E90 1 x 25	11.7	240	347	0.43	stranded	L	40393910076677
186143	(N)HXH-O FE180 E90 1 x 35	12.8	336	449	0.49	stranded	L	40393910076660
186144	(N)HXH-O FE180 E90 1 x 50	14.3	480	589	0.58	stranded	L	40393910076653
186145	(N)HXH-O FE180 E90 1 x 70	16.1	672	801	0.67	stranded	L	40393910076646
186146	(N)HXH-O FE180 E90 1 x 95	18.5	912	1,074	0.85	stranded	L	40393910076639
186147	(N)HXH-O FE180 E90 1 x 120	19.6	1,152	1,308	0.91	stranded	L	40393910076622
186148	(N)HXH-O FE180 E90 1 x 150	21.8	1,440	1,635	1.11	stranded	L	40393910076615
186149	(N)HXH-O FE180 E90 1 x 185	24	1,776	2,011	1.32	stranded	L	40393910015720
186150	(N)HXH-O FE180 E90 1 x 240	27.2	2,304	2,619	1.63	stranded	L	40393910076608
186151	(N)HXH-O FE180 E90 1 x 300	29.6	2,880	3,111	1.91	stranded	L	40393910076592
191561	(N)HXH-O FE180 E90 1 x 400	32.9	3,840	4,012	2.278	stranded	L	40393910069204
188359	(N)HXH-O FE180 E90 2 x 1.5	11	29	177	0.48	solid	LN	40393910072259
187247	(N)HXH-O FE180 E90 2 x 2.5	11.8	48	216	0.54	solid	LN	40393910074086
192563	(N)HXH-O FE180 E90 2 x 1.5	11	29	177	0.48	solid	2L	40393910067125

Material number	Product	Outer sheath diameter [mm]	CU rate [kg/km]	Weight [kg/km]	Fire load [kWh/m]	Conductor	Construction	GTIN / EAN
193974	(N)HXH-O FE180 E90 2 x 2.5	11.8	48	216	0.54	solid	2L	40393910064896
186174	(N)HXH-J FE180 E90 3 x 1.5	11.5	43	199	0.53	solid	LNPE	40393910076431
186177	(N)HXH-J FE180 E90 3 x 2.5	12.4	72	248	0.60	solid	LNPE	40393910076400
186182	(N)HXH-J FE180 E90 3 x 4	13.5	115	319	0.68	solid	LNPE	40393910076356
186186	(N)HXH-J FE180 E90 3 x 6	14.6	173	400	0.77	solid	LNPE	40393910076318
186189	(N)HXH-J FE180 E90 3 x 10	16.3	288	554	0.91	solid	LNPE	40393910076288
186152	(N)HXH-J FE180 E90 3 x 16	20.2	461	878	1.29	stranded	LNPE	40393910076585
186153	(N)HXH-J FE180 E90 3 x 25	24	720	1,299	1.75	stranded	LNPE	40393910076578
186154	(N)HXH-J FE180 E90 3 x 35	26.4	1,008	1,664	2.02	stranded	LNPE	40393910076561
191069	(N)HXH-J FE180 E90 3 x 35+16	27.4	1,162	1,835	2.13	stranded	3LPE	40393910069969
186207	(N)HXH-J FE180 E90 3 x 50	29.8	1,440	2,183	2.51	stranded	LNPE	40393910076189
191002	(N)HXH-J FE180 E90 3 x 50+25	31.3	1,680	2,460	2.69	stranded	3LPE	40393910070170
191003	(N)HXH-J FE180 E90 3 x 70+35	35.6	2,352	3,339	3.34	stranded	3LPE	40393910070163
191004	(N)HXH-J FE180 E90 3 x 95+50	40.7	3,216	4,442	4.24	stranded	3LPE	40393910070156
191005	(N)HXH-J FE180 E90 3 x 120+70	44	4,128	5,492	4.82	stranded	3LPE	40393910070149
191006	(N)HXH-J FE180 E90 3 x 150+70	48	4,992	6,623	5.70	stranded	3LPE	40393910070132
191068	(N)HXH-J FE180 E90 3 x 185+95	53.4	6,240	8,244	7.00	stranded	3LPE	40393910069976
186175	(N)HXH-J FE180 E90 4 x 1.5	12.4	58	233	0.61	solid	3LPE	40393910076424
186178	(N)HXH-J FE180 E90 4 x 2.5	13.4	96	290	0.69	solid	3LPE	40393910076394
186183	(N)HXH-J FE180 E90 4 x 4	14.6	154	381	0.78	solid	3LPE	40393910076349
186187	(N)HXH-J FE180 E90 4 x 6	15.8	230	486	0.90	solid	3LPE	40393910076301
186190	(N)HXH-J FE180 E90 4 x 10	17.8	384	688	1.07	solid	3LPE	40393910076271
186155	(N)HXH-J FE180 E90 4 x 16	22.1	614	1,089	1.54	stranded	3LPE	40393910076554
186156	(N)HXH-J FE180 E90 4 x 25	26.3	960	1,618	2.05	stranded	3LPE	40393910076547
186157	(N)HXH-J FE180 E90 4 x 35	29	1,344	2,083	2.36	stranded	3LPE	40393910076530
186158	(N)HXH-J FE180 E90 4 x 50	32.8	1,920	2,745	2.97	stranded	3LPE	40393910076523
186159	(N)HXH-J FE180 E90 4 x 70	37.6	2,688	3,767	3.55	stranded	3LPE	40393910076516
186160	(N)HXH-J FE180 E90 4 x 95	43.1	3,648	5,033	4.75	stranded	3LPE	40393910076509
187274	(N)HXH-J FE180 E90 4 x 120	46	4,608	6,095	5.27	stranded	3LPE	40393910074062
186161	(N)HXH-J FE180 E90 4 x 150	51.2	5,760	7,617	6.49	stranded	3LPE	40393910076493
190493	(N)HXH-J FE180 E90 4 x 240	64.1	9,216	12,180	9.85	stranded	3LPE	40393910070866

Material number	Product	Outer sheath diameter [mm]	CU rate [kg/km]	Weight [kg/km]	Fire load [kWh/m]	Conductor	Construction	GTIN / EAN
196337	(N)HXH-O FE180 E90 4x6	15.8	230	485	0.90	solid	3LN	40393910061307
196338	(N)HXH-O FE180 E90 4x10	17.8	384	688	1.07	solid	3LN	40393910061291
196331	(N)HXH-O FE180 E90 4x16	22.1	614	1,092	1.54	solid	3LN	40393910061369
196332	(N)HXH-O FE180 E90 4x25	26.3	960	1,618	2.05	stranded	3LN	40393910061352
196333	(N)HXH-O FE180 E90 4x35	29	1,344	2,086	2.36	stranded	3LN	40393910061345
196334	(N)HXH-O FE180 E90 4x50	32.8	1,920	2,756	2.97	stranded	3LN	40393910061338
196335	(N)HXH-O FE180 E90 4x70	37.6	2,688	3,767	3.55	stranded	3LN	40393910061321
196336	(N)HXH-O FE180 E90 4x95	43.1	3,648	5,033	4.75	stranded	3LN	40393910061314
196330	(N)HXH-O FE180 E90 4x120	46	4,608	6,100	5.27	stranded	3LN	40393910061376
186176	(N)HXH-J FE180 E90 5 x 1.5	13.4	72	276	0.71	solid	3LNPE	40393910076417
186179	(N)HXH-J FE180 E90 5 x 2.5	14.5	120	346	0.81	solid	3LNPE	40393910076387
186184	(N)HXH-J FE180 E90 5 x 4	15.8	192	457	0.93	solid	3LNPE	40393910076332
186188	(N)HXH-J FE180 E90 5 x 6	17.2	288	584	1.05	solid	3LNPE	40393910076295
186191	(N)HXH-J FE180 E90 5 x 10	19.3	480	824	1.25	solid	3LNPE	40393910076264
186162	(N)HXH-J FE180 E90 5 x 16	24.8	768	1,361	1.86	stranded	3LNPE	40393910076486
186163	(N)HXH-J FE180 E90 5 x 25	28.8	1,200	1,960	2.42	stranded	3LNPE	40393910076479
186164	(N)HXH-J FE180 E90 5 x 35	32	1,680	2,547	2.86	stranded	3LNPE	40393910076462
186165	(N)HXH-J FE180 E90 5 x 50	36.5	2,400	3,377	3.68	stranded	3LNPE	40393910076455
187277	(N)HXH-J FE180 E90 5 x 70	41.5	3,360	4,614	4.51	stranded	3LNPE	40393910074055
195847	(N)HXH-J FE180 E90 5 x 95	47.9	4,560	6,178	5.88	stranded	3LNPE	40393910062038
185271	(N)HXH-J FE180 E90 7 x 1.5	14.4	101	329	0.81	solid	6LPE	40393910077186
186180	(N)HXH-J FE180 E90 7 x 2.5	15.6	168	419	0.92	solid	6LPE	40393910076370
186185	(N)HXH-J FE180 E90 7 x 4	17.1	269	562	1.05	solid	6LPE	40393910076325
186999	(N)HXH-J FE180 E90 7 x 6	18.6	403	725	1.17	solid	6LPE	40393910074819
187253	(N)HXH-J FE180 E90 10 x 2.5	19.4	240	590	1.24	solid	9LPE	40393910074079
185272	(N)HXH-J FE180 E90 12 x 1.5	18.3	173	512	1.20	solid	11LPE	40393910077179
186181	(N)HXH-J FE180 E90 12 x 2.5	20	288	671	1.37	solid	11LPE	40393910076363
185273	(N)HXH-J FE180 E90 24 x 1.5	24.6	346	900	1.99	solid	23LPE	40393910077162

Additional dimensions available on request.

Subject to technical modification

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