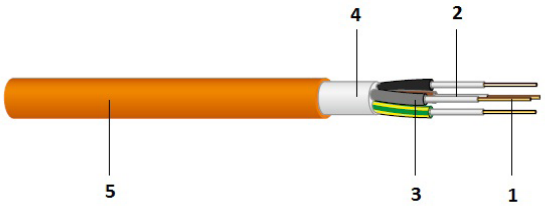
(N)HXH FE180 E30-E60

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 E30-E60* in accordance with DIN 4102-12



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



Description

Safety cables 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.
System Circuit Integrity is provided up to 400 V operating voltage.
Permitted operating temperature at conductor of +90˚C.

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

Installation temperature	-5 °C - +50 °C
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/PH120)	IEC 60331-11/-21 (180 minutes),VDE 0472-814 (FE180),BS 6387 C/W/Z,IEC 60331-1 (PH120),IEC 60331-2 (120 minutes),EN 50200 (PH120),NBN 713-020 (Rf1),VDE 0482-200 (PH120),VDE 0482-362,AREI-RGIE Art.104-FR1
Zero halogen no corrosive gases	IEC 60754-1/-2, EN 60754-1/-2, VDE 0482-754-1/-2, AREI-RGIE Art.104-SA, SEV TPV11
Flame Propagation	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2, AREI-RGIE Art.104-F1, SEV TP 20B/3C 3.4.1.1
Flame Spread	IEC 60332-3-24 Cat. C, EN 60332-3-24 Cat. C, VDE 0482-332-3-24 Cat. C, AREI-RGIE Art.104-F2, SEV TP 20B/3C 3.4.1.3
Smoke Density	IEC 61034-1/-2, EN 61034-1/-2, VDE 0482-1034-1/-2, AREI-RGIE Art.104-SD, SEV TP 20B/3C 3.4.3
System circuit integrity	DIN 4102-12, AREI-RGIE Art.104-FR2, NBN 713-020 (Rf1)

Note

* System Circuit Integrity is dependent on installation method

Versions

Material number	Product	Outer sheath colour	Diameter mm²	Outer sheath diameter [mm]	CU rate [kg\km]	Weight [kg\km]	Fire load [kWh\m]	Conductor	Construction	Packing unit
171290	(N)HXH-0 FE180 E30-E60 1 x 6	orange	6	7.6	58.6	113	0.23	solid	L	by the metre
171291	(N)HXH-0 FE180 E30-E60 1 x 10	orange	10	8.4	96	158	0.27	solid	L	by the metre
171370	(N)HXH-0 FE180 E30-E60 1 x 16	orange	16	9.8	154	227	0.34	stranded	L	by the metre
171377	(N)HXH-0 FE180 E30-E60 1 x 25	orange	25	11.3	240	329	0.43	stranded	L	by the metre
171386	(N)HXH-0 FE180 E30-E60 1 x 35	orange	35	12.4	336	428	0.48	stranded	L	by the metre
171394	(N)HXH-0 FE180 E30-E60 1 x 50	orange	50	13.9	480	565	0.58	stranded	L	by the metre
171429	(N)HXH-0 FE180 E30-E60 1 x 70	orange	70	15.7	672	773	0.68	stranded	L	by the metre
170842	(N)HXH-0 FE180 E30-E60 1 x 95	orange	95	18.1	912	1,035	0.91	stranded	L	by the metre
170845	(N)HXH-0 FE180 E30-E60 1 x 120	orange	120	19.2	1,152	1,270	0.97	stranded	L	by the metre
170850	(N)HXH FE180 E30-E60 1 x 150	orange	150	21.4	1,440	1,590	1.20	stranded	L	by the metre
170855	(N)HXH-0 FE180 E30-E60 1 x 185	orange	185	23.6	1,776	1,961	1.46	stranded	L	by the metre
170858	(N)HXH-0 FE180 E30-E60 1 x 240	orange	240	26.8	2,304	2,563	1.81	stranded	L	by the metre
170860	(N)HXH FE180 E30-E60 1x300	orange	300	29.2	2,880	3,051	2.13	stranded	L	by the metre
186280	(N)HXH FE180 E30-E60 2 x 1.5	orange	1.5	11	29	178	0.48	solid	LN	by the metre

Material number	Product	Outer sheath colour	Diameter mm²	Outer sheath diameter [mm]	CU rate [kg\km]	Weight [kg\km]	Fire load [kWh\m]	Conductor	Construction	Packing unit
186921	(N)HXH FE180 E30-E60 2 x 2.5	orange	2.5	11.8	48	217	0.54	solid	LN	by the metre
186922	(N)HXH FE180 E30-E60 2 x 4	orange	4	12.8	77	271	0.62	solid	LN	by the metre
186923	(N)HXH FE180 E30-E60 2 x 6	orange	6	13.8	115	337	0.70	solid	LN	by the metre
186924	(N)HXH FE180 E30-E60 2 x 10	orange	10	15.4	192	459	0.83	solid	LN	by the metre
186952	(N)HXH FE180 E30-E60 2 x 16	orange	16	18.2	307	660	1.09	solid	LN	by the metre
190404	(N)HXH FE180 E30-E60 2 x 25	orange	25	21.2	480	950	1.42	stranded	LN	by the metre
18692500ZZ	(N)HXH-J FE180 E30-E60 3 x 1.5	orange	1.5	11.5	43	200	0.53	solid	LNPE	by the metre
18692500ZL	(N)HXH-J FE180 E30-E60 3 x 1.5	orange	1.5	11.5	43	200	0.53	solid	LNPE	500 m drum
18692500ZK	(N)HXH-J FE180 E30-E60 3 x 1.5	orange	1.5	11.5	43	200	0.53	solid	LNPE	1000 m drum
18692600ZZ	(N)HXH-J FE180 E30-E60 3 x 2.5	orange	2.5	12.4	72	250	0.60	solid	LNPE	by the metre
18692600ZL	(N)HXH-J FE180 E30-E60 3 x 2.5	orange	2.5	12.4	72	250	0.60	solid	LNPE	500 m drum
18692600ZK	(N)HXH-J FE180 E30-E60 3 x 2.5	orange	2.5	12.4	72	250	0.60	solid	LNPE	1000 m drum
186927	(N)HXH-J FE180 E30-E60 3 x 4	orange	4	13.5	115	319	0.68	solid	LNPE	by the metre
186928	(N)HXH-J FE180 E30-E60 3 x 6	orange	6	14.6	173	403	0.77	solid	LNPE	by the metre
186929	(N)HXH-J FE180 E30-E60 3 x 10	orange	10	16.3	288	560	0.91	solid	LNPE	by the metre
186953	(N)HXH FE180 E30-E60 3 x 16	orange	16	19.3	461	809	1.19	stranded	LNPE	by the metre
186955	(N)HXH FE180 E30-E60 3 x 25	orange	25	22.6	720	1,182	1.56	stranded	LNPE	by the metre
186954	(N)HXH FE180 E30-E60 3 x 25 + 1 x 16	orange	25+16	23.9	874	1,357	1.73	stranded	3LPE	by the metre
186957	(N)HXH FE180 E30-E60 3 x 35	orange	35	24.9	1,008	1,529	1.80	stranded	LNPE	by the metre
186956	(N)HXH FE180 E30-E60 3 x 35 + 1 x 16	orange	35+16	25.9	1,162	1,693	1.93	stranded	3LPE	by the metre
186959	(N)HXH FE180 E30-E60 3 x 50	orange	50	28.2	1,440	2,026	2.24	stranded	LNPE	by the metre
186958	(N)HXH FE180 E30-E60 3 x 50 + 1 x 25	orange	50+25	29.9	1,680	2,311	2.52	stranded	3LPE	by the metre
186961	(N)HXH FE180 E30-E60 3 x 70	orange	70	32.7	2,016	2,814	32.7	stranded	LNPE	by the metre
186960	(N)HXH FE180 E30-E60 3 x 70 + 1 x 35	orange	70+35	34	2,352	3,146	3.07	stranded	3LPE	by the metre
186962	(N)HXH FE180 E30-E60 3 x 95 + 1 x 20	orange	95+50	39.3	3,216	4,222	4.18	stranded	3LPE	by the metre
186963	(N)HXH FE180 E30-E60 3 x 120 + 1 x 70	orange	120+70	42.6	4,098.28	5,255	4.74	stranded	3LPE	by the metre
186964	(N)HXH FE180 E30-E60 3 x 150 + 1 x 70	orange	150+70	46.6	4,992	6,361	5.63	stranded	3LPE	by the metre
186965	(N)HXH FE180 E30-E60 3 x 185 + 1 x 90	orange	185+95	52	6,240	7,954	6.99	stranded	3LPE	by the metre

Material number	Product	Outer sheath colour	Diameter mm²	Outer sheath diameter [mm]	CU rate [kg\km]	Weight [kg\km]	Fire load [kWh\m]	Conductor	Construction	Packing unit
186930	(N)HXH-J FE180 E30-E60 4 x 1.5	orange	1.5	12.4	58	234	0.61	solid	3LPE	by the metre
186931	(N)HXH-J FE180 E30-E60 4 x 2.5	orange	2.5	13.4	96	296	0.69	solid	3LPE	by the metre
186932	(N)HXH-J FE180 E30-E60 4 x 4	orange	4	14.6	154	381	0.78	solid	3LPE	by the metre
186933	(N)HXH-J FE180 E30-E60 4 x 6	orange	6	15.8	230	492	0.90	solid	3LPE	by the metre
186934	(N)HXH-J FE180 E30-E60 4 x 10	orange	10	17.8	384	695	1.07	solid	3LPE	by the metre
186967	(N)HXH FE180 E30-E60 4 x 16	orange	16	21.1	614	1,005	1.40	stranded	3LPE	by the metre
186968	(N)HXH FE180 E30-E60 4 x 25	orange	25	24.8	960	1,479	1.86	stranded	3LPE	by the metre
186969	(N)HXH FE180 E30-E60 4 x 35	orange	35	27.4	1,344	1,929	2.15	stranded	3LPE	by the metre
186970	(N)HXH FE180 E30-E60 4 x 50	orange	50	31.5	1,920	2,598	2.79	stranded	3LPE	by the metre
186971	(N)HXH FE180 E30-E60 4 x 70	orange	70	36.2	2,688	3,578	3.38	stranded	3LPE	by the metre
186972	(N)HXH FE180 E30-E60 4 x 95	orange	95	41.7	3,648	4,785	4.68	stranded	3LPE	by the metre
186973	(N)HXH FE180 E30-E60 4 x 120	orange	120	44.6	4,608	5,837	5.19	stranded	3LPE	by the metre
186974	(N)HXH FE180 E30-E60 4 x 150	orange	150	50	5,760	7,361	6.52	stranded	3LPE	by the metre
187548	(N)HXH-J FE180 E30-E60 4 x 185	orange	185	55.3	7,104	9,066	7.98	stranded	3LPE	by the metre
187077	(N)HXH FE180 E30-E60 4 x 240	orange	240	62.9	9,216	11,863	10.05	stranded	3LPE	by the metre
186935	(N)HXH-J FE180 E30-E60 5 x 1.5	orange	1.5	13.4	72	277	0.71	solid	3LNPE	by the metre
186936	(N)HXH-J FE180 E30-E60 5 x 2.5	orange	2.5	14.5	120	352	0.81	solid	3LNPE	by the metre
186937	(N)HXH-J FE180 E30-E60 5 x 4	orange	4	15.8	192	457	0.93	solid	3LNPE	by the metre
186938	(N)HXH-J FE180 E30-E60 5 x 6	orange	6	17.2	288	589	1.05	solid	3LNPE	by the metre
186939	(N)HXH-J FE180 E30-E60 5 x 10	orange	10	19.3	480	833	1.25	solid	3LNPE	by the metre
186975	(N)HXH FE180 E30-E60 5 x 16	orange	16	23.1	768	1,220	1.67	stranded	3LNPE	by the metre
186976	(N)HXH FE180 E30-E60 5 x 25	orange	25	27.2	1,200	1,803	2.22	stranded	3LNPE	by the metre
186977	(N)HXH FE180 E30-E60 5 x 35	orange	35	30.5	1,680	2,385	2.66	stranded	3LNPE	by the metre
186978	(N)HXH FE180 E30-E60 5 x 50	orange	50	34.8	2,400	3,191	3.41	stranded	3LNPE	by the metre
186979	(N)HXH FE180 E30-E60 5 x 70	orange	70	40	3,360	4,391	4.26	stranded	3LNPE	by the metre
190587	(N)HXH FE180 E30-E60 5 x 95	orange	95	46.6	4,560	5,925	5.89	stranded	3LNPE	by the metre
171272	(N)HXH-J FE180 E30-E60 7 x 1.5	orange	1.5	14.4	101	330	0.81	solid	6LPE	by the metre
171273	(N)HXH-J FE180 E30-E60 7 x 2.5	orange	2.5	15.6	168	445	0.92	solid	6LPE	by the metre
191080	(N)HXH-J FE180 E30-E60 7 x 6	orange	6	18.6	403	730	1.17	solid	5LNPE	by the metre
171279	(N)HXH-J FE180 E30-E60 12 x 1.5	orange	1.5	18.3	173	513	1.20	solid	11LPE	by the metre
171280	(N)HXH-J FE180 E30-E60 12 x 2.5	orange	2.5	20	288	672	1.37	solid	11LPE	by the metre

Material number	Product	Outer sheath colour	Diameter mm²	Outer sheath diameter [mm]	CU rate [kg\km]	Weight [kg\km]	Fire load [kWh\m]	Conductor	Construction	Packing unit
171283	(N)HXH-J FE180 E30-E60 19 x 1.5	orange	1.5	21.2	274	715	1.63	solid	18LPE	by the metre
171284	(N)HXH-J FE180 E30-E60 19 x 2.5	orange	2.5	23.2	456	948	1.83	solid	18LPE	by the metre
171285	(N)HXH-J FE180 E30-E60 24 x 1.5	orange	1.5	24.6	346	901	1.99	solid	23LPE	by the metre
171286	(N)HXH-J FE180 E30-E60 24 x 2.5	orange	2.5	27	576	1,198	2.27	solid	23LPE	by the metre
171287	(N)HXH-J FE180 E30-E60 30 x 1.5	orange	1.5	26	432	1,052	2.28	solid	29LPE	by the metre
171288	(N)HXH-J FE180 E30-E60 30 x 2.5	orange	2.5	28.8	720	1,438	2.68	solid	29LPE	by the metre