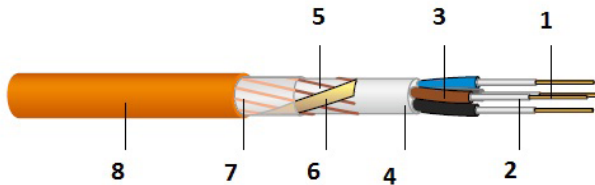


## (N)HXCH FE180 E90

### 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 Concentric conductor: bare copper wire
- 6 Reinforcing helix: bare copper tape
- 7 Separator: plastic tape
- 8 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

Concentric conductor	Bare copper wires with reinforced helix
Conductor	Bare copper, solid or stranded, IEC 60228 and EN 60228 (VDE 0295)
Core colours	CENELEC HD 308 S2, VDE 0293
Filler	Halogen-free compound or plastic tape
Insulation	Double insulation, cross-linked, high-performance Keram special compound, VDE 0266 "HX11"
Outer sheath colour	orange
Outer sheath material	Flame retardant Polyolefin compound, CENELEC HD 604 S1 and VDE 0276-604 "HM4"
Separator	Plastic tape

### 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 radius permanent (multi core)	12 x D

## 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),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
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 (more than 16.0 mm <sup>2</sup> ), AREI-RGIE Art.104-FR2

## Note

System Circuit Integrity is dependent on installation method.

## Versions

Material number	Product	Outer sheath colour	Diameter mm <sup>2</sup>	Outer sheath diameter [mm]	CU rate [kg/km]	Weight [kg/km]	Fire load [kWh/m]	Conductor	Construction	Weight [kg]
186071	(N)HXCH FE180 E90 3 x 1.5/1.5	orange	1.5/1.5	13.2	66	249	0.65	solid	3L	
186195	(N)HXCH FE180 E90 3 x 2.5/2.5	orange	2.5/2.5	14.1	104	309	0.72	solid	3L	
186197	(N)HXCH FE180 E90 3 x 4/4	orange	4/4	15.6	161	403	0.84	solid	3L	
187278	(N)HXCH FE180 E90 3 x 6/6	orange	6/6	16.9	240	527	0.94	solid	3L	
187279	(N)HXCH FE180 E90 3 x 10/10	orange	10/10	18.6	408	727	1.15	solid	3L	0
196386	(N)HXCH FE180 E90 3 x 16/16	orange	16/16	24.4	643	1,144	1.64	stranded	3L	
187406	(N)HXCH FE180 E90 3 x 25/16	orange	25/16	25.8	902	1,496	1.95	stranded	3L	0 kg
172417	(N)HXCH FE180 E90 3 x 35/16	orange	35/16	29	1,190	1,946	2.25	stranded	3L	
187408	(N)HXCH FE180 E90 3 x 50/25	orange	50/25	32.5	1,723	2,556	2.90	stranded	3L	
187409	(N)HXCH FE180 E90 3 x 70/35	orange	70/35	37.6	2,410	3,539	3.42	stranded	3L	
187410	(N)HXCH FE180 E90 3 x 95/50	orange	95/50	41.9	3,296	4,612	4.50	stranded	3L	
187411	(N)HXCH FE180 E90 3 x 120/70	orange	120/70	45.3	4,236	5,703	5.02	stranded	3L	
187412	(N)HXCH FE180 E90 3 x 150/70	orange	150/70	50	5,100	6,931	6.00	stranded	3L	
187414	(N)HXCH FE180 E90 3 x 240/120	orange	240/120	62.4	8,242	11,183	9.08	stranded	3L	
186072	(N)HXCH FE180 E90 4 x 1.5/1.5	orange	1.5/1.5	14.1	81	284	0.73	solid	3LN	
186196	(N)HXCH FE180 E90 4 x 2.5/2.5	orange	2.5/2.5	15.1	128	356	0.82	solid	3LN	
186198	(N)HXCH FE180 E90 4 x 4/4	orange	4/4	16.7	200	467	0.96	solid	3LN	
186199	(N)HXCH FE180 E90 4 x 6/6	orange	6/6	18.1	297	625	1.13	solid	3LN	

Material number	Product	Outer sheath colour	Diameter mm <sup>2</sup>	Outer sheath diameter [mm]	CU rate [kg/km]	Weight [kg/km]	Fire load [kWh/m]	Conductor	Construction	Weight [kg]
186200	(N)HXCH FE180 E90 4 x 10/10	orange	10/10	20.1	504	868	1.33	solid	3LN	
186131	(N)HXCH FE180 E90 4 x 16/16	orange	16/16	25.3	796	1,400	1.81	stranded	3LN	
186132	(N)HXCH FE180 E90 4 x 25/16	orange	25/16	28.9	1,142	1,898	2.28	stranded	3LN	
186133	(N)HXCH FE180 E90 4 x 35/16	orange	35/16	31.6	1,526	2,380	2.60	stranded	3LN	
186134	(N)HXCH FE180 E90 4 x 50/25	orange	50/25	36.7	2,203	3,247	3.49	stranded	3LN	
186135	(N)HXCH FE180 E90 4 x 70/35	orange	70/35	41.3	3,082	4,375	4.25	stranded	3LN	
186136	(N)HXCH FE180 E90 4 x 95/50	orange	95/50	46.4	4,208	5,746	5.53	stranded	3LN	
186137	(N)HXCH FE180 E90 4 x 120/70	orange	120/70	50.1	5,388	7,094	6.25	stranded	3LN	
186138	(N)HXCH FE180 E90 4 x 150/70	orange	150/70	55.3	6,540	8,651	7.58	stranded	3LN	
186139	(N)HXCH FE180 E90 4 x 185/95	orange	185/95	60.8	8,159	10,751	9.18	stranded	3LN	
186140	(N)HXCH FE180 E90 4 x 240/120	orange	240/120	69.2	10,546	13,980	11.60	stranded	3LN	
186073	(N)HXCH FE180 E90 7 x 1.5/2.5	orange	1.5/2.5	16.1	133	394	0.94	solid	7L	
191096	(N)HXCH FE180 E90 7 x 2.5/2.5	orange	2.5/2.5	17.3	200	493	1.05	solid	7L	
187415	(N)HXCH FE180 E90 12 x 1.5/2.5	orange	1.5/2.5	20.2	205.8	597	1.38	solid	12L	
187402	(N)HXCH FE180 E90 24 x 1.5/6	orange	1.5/6	27	413	1,078	2.32	solid	24L	
187403	(N)HXCH FE180 E90 24 x 2.5/10	orange	2.5/10	29.6	696	1,442	2.69	solid	24L	
187404	(N)HXCH FE180 E90 30 x 1.5/6	orange	1.5/6	28.4	499	1,250	2.67	solid	30L	

Additional dimensions available on request.

Subject to technical modification

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