

NHXH-FE 180/E 30 security cable, halogen-free, 0,6/1 kV, with improved fire characteristics



Technical data

- Halogen-free security cable with improved characteristics in the case of fire to DIN VDE 0266
- **Insulation integrity**
180 minutes to DIN VDE 0472 part 814
- **Functionality**
30 minutes to DIN VDE 4102 part 12
- **Temperature range**
-30°C to +70°C
- Permissible **operating temperature** at conductor +90°C
- **Nominal voltage** U_0/U 0,6/1 kV
- **Test voltage** 4000 V
- **Minimum bending radius**
approx. 15xcable \emptyset
- **Radiation resistance**
up to 200×10^6 cJ/kg (up to 200 Mrad)
- **Caloric load values**
see Technical Informations

Cable construction

- Bare copper conductor, solid or stranded, to DIN VDE 0295 cl. 1 or cl. 2
- Double core insulation of mica tape and cross-linked polymer HI1, to DIN VDE 0207 part 23
- Colour coding of cores according to DIN VDE 0293-308
- Green-yellow earth-core, 3 cores and above
- Cores stranded in layer
- Core wrapping with glass-fibre tape as flame-protection
- Outer jacket orange, polymer-compound DIN VDE 0207 part 24, flame retardant

Tests

- Flame-test to VDE 0472 part 804, test method C, IEC 60332-3 cat. C and HD 405.3
- Corrosiveness of combustion gases to VDE 0472 part 813, IEC 60754-2 and HD 602
- Halogen-free to VDE 0472 part 815 and IEC 60754-1
- Smoke density according to DIN VDE 0482 part 1034-1+2, HD 606, DIN EN 61034-1+2/IEC 61034-1+2, BS 7622 part 1+2 (equivalent DIN VDE 0472 part 816)
- Insulation integrity under flame propagation to VDE 0472 part 814 IEC 60331
- Burning behaviour in fire (functionality) of the complete cable system to DIN 4102 part 12 (30 minutes)
- **LSOH** = Low Smoke Zero Halogen-free.

Properties

- Halogen-free; no evolution of corrosive and toxic gases
- Flame retardant
- Hardly flammable
- Self-extinguished and fire resistant
- No flame propagation, therefore security from fire
- Low smoke density, no darkening of emergency exits without hindering the fire extinguishing works
- Toxicological harmless
- No self-ignition
- Maintenance of functionality during the increased current load
- **FE 180: Insulation integrity** for 180 minutes. Tests to DIN VDE 0472 part 814 \triangle IEC 60331.
- **Insulation integrity** under direct flame propagation for the test period of 180 minutes.
- **E 30: Functionality** of electrical cable systems for minimum 30 minutes. Test to DIN 4102 part 12. This fulfils the demands of technical guide lines for fire protection (supplement 1 to DIN VDE 0108 part 1). The **functionality** for 30 minutes assures when persons and animals are to be saved from a burning building. 30 minutes secures the functional performance of the fire warning and alarm systems, safety and spare lighting, passenger lifts with evacuation circuits, except the cables which are installed within the ladder shafts and engine rooms.

Note

- rm = round conductor, multiple-wire;
re = round conductor, single-wire.

Application

Security cables are ideal for use everywhere, where in case of fire human life and material assets are to be protected and safety consciousness take a special significance, e.g. in industrial complexes, power stations, communal establishment, hotels, airports, underground railway networks, hospitals and outpatients clinic (DIN VDE 0107), department stores, data processing centres, theaters, cinemas, in multi-storey buildings, public gatherings, schools etc. (DIN VDE 0108), mining works, offshore plants, leading centres, traffic communication, emergency power supply and alarm systems. The cables are suitable for fixed installation in dry and moist rooms, in, above, on and beneath plaster as well as in masonry walls and in concrete. These cables are suitable for outdoor applications and in underground by using in conduits or tubes. Additionally valid also DIN VDE 0298 part 1 and 2.

For the installation in conduit all precautions must be taken that no accumulation of water can occur in the pipes. **CE** = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

Part No.	No. cores x cross-sec. mm ²	Outer \emptyset ca. mm	Cop. weight kg / km	Weight ca. kg / km	AWG-No.	Part No.	No. cores x cross-sec. mm ²	Outer \emptyset ca. mm	Cop. weight kg / km	Weight ca. kg / km	AWG-No.
52700	1 x 4 re	7,0	38,0	98,0	12	52707	1 x 70 rm	15,0	672,0	800,0	2/0
52701	1 x 6 re	7,5	58,0	125,0	10	52708	1 x 95 rm	16,5	912,0	1100,0	3/0
52702	1 x 10 re	8,0	96,0	165,0	8	52709	1 x 120 rm	18,5	1152,0	1350,0	4/0
52703	1 x 16 rm	9,0	154,0	230,0	6	52710	1 x 150 rm	20,5	1440,0	1650,0	300 kcmil
52704	1 x 25 rm	10,5	240,0	345,0	4	52711	1 x 185 rm	23,0	1776,0	2000,0	350 kcmil
52705	1 x 35 rm	11,5	336,0	450,0	2	52712	1 x 240 rm	25,5	2304,0	2650,0	500 kcmil
52706	1 x 50 rm	12,0	480,0	590,0	1	52713	1 x 300 rm	31,8	2880,0	3200,0	600 kcmil

Dimensions and specifications may be changed without prior notice.

Continuation ►

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Part No.	No. cores x cross-sec. mm ²	Outer ø ca. mm	Cop. weight kg / km	Weight ca. kg / km	AWG-No.
52714	2 x 2,5 re	12,5	48,0	290,0	14
52715	2 x 4 re	13,5	77,0	345,0	12
52716	2 x 6 re	14,5	115,0	410,0	10
52717	2 x 10 re	16,0	192,0	540,0	8
52718	2 x 16 re	18,0	307,0	720,0	6
52719	2 x 25 re	21,0	480,0	1100,0	4
52720	2 x 35 re	24,0	672,0	1120,0	2
52721	3 x 1,5 re	12,5	43,0	280,0	16
52722	3 G 2,5 re	13,5	72,0	330,0	14
52723	3 G 4 re	14,5	115,0	400,0	12
52724	3 G 6 re	15,5	173,0	480,0	10
52725	3 G 10 re	17,0	288,0	650,0	8
52726	3 G 16 re	19,0	461,0	850,0	6
52727	3 G 25 re	22,5	720,0	1300,0	4
52728	3 G 35 re	24,5	1080,0	1700,0	2
52729	3 G 50 re	27,5	1440,0	2200,0	1
52730	3 G 70 re	32,0	2016,0	3000,0	2/0
52731	3 G 95 re	35,5	2736,0	4000,0	3/0
52732	3 G 120 re	39,5	3456,0	4850,0	4/0
52733	3 G 150 re	44,0	4320,0	5950,0	300 kcmil
52734	3 G 185 re	49,5	5328,0	7450,0	350 kcmil
52735	3 G 240 re	60,0	6910,0	8600,0	500 kcmil
52736	4 G 1,5 re	13,5	58,0	325,0	16
52737	4 G 2,5 re	14,0	96,0	385,0	14
52738	4 G 4 re	15,5	154,0	470,0	12
52739	4 G 6 re	16,5	230,0	580,0	10
52740	4 G 10 re	18,5	384,0	790,0	8
52741	4 G 16 re	20,5	614,0	1100,0	6
52742	4 G 25 re	24,5	960,0	1650,0	4
52743	4 G 35 re	27,0	1344,0	2150,0	2
52744	4 G 50 re	30,0	1920,0	2800,0	1

Part No.	No. cores x cross-sec. mm ²	Outer ø ca. mm	Cop. weight kg / km	Weight ca. kg / km	AWG-No.
52745	4 G 70 re	35,0	2688,0	3800,0	2/0
52746	4 G 95 re	39,5	3648,0	5050,0	3/0
52747	4 G 120 re	43,5	4608,0	6150,0	4/0
52748	4 G 150 re	49,0	5760,0	7650,0	300 kcmil
52749	5 G 1,5 re	14,0	72,0	375,0	16
52750	5 G 2,5 re	15,0	120,0	445,0	14
52751	5 G 4 re	16,5	192,0	560,0	12
52752	5 G 6 re	18,0	288,0	690,0	10
52753	5 G 10 re	20,0	480,0	950,0	8
52754	5 G 16 re	22,5	768,0	1300,0	6
52755	5 G 25 re	26,5	1200,0	1980,0	4
52756	5 G 35 re	36,0	1680,0	2600,0	2
52757	7 G 1,5 re	15,0	101,0	365,0	16
52758	7 G 2,5 re	16,5	168,0	540,0	14
52759	10 G 1,5 re	18,0	144,0	580,0	16
52760	10 G 2,5 re	20,0	240,0	710,0	14
52761	12 G 1,5 re	19,0	173,0	640,0	16
52762	12 G 2,5 re	20,5	288,0	790,0	14
52763	14 G 1,5 re	20,0	202,0	740,0	16
52764	14 G 2,5 re	21,5	336,0	880,0	14
52765	19 G 1,5 re	21,5	274,0	880,0	16
52766	19 G 2,5 re	23,5	456,0	1150,0	14
52767	24 G 1,5 re	25,0	346,0	1100,0	16
52768	24 G 2,5 re	27,0	576,0	1400,0	14
52769	30 G 1,5 re	26,0	432,0	1300,0	16
52770	30 G 2,5 re	28,5	720,0	1650,0	14

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