

N2XH-FE 180/E 90 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**
90 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. 12x cable \varnothing
- **Radiation resistance**
up to 200×10^6 cJ/kg (up to 200 Mrad)
- **Caloric load values**
see Technical Informations
- **LSOH** = Low Smoke Zero Halogen-free.

Cable structure

- Bare copper conductor, solid or stranded, to DIN VDE 0295 cl. 1 or cl. 2, BS 6360 cl. 1 or 2, IEC 60228 cl. 1 or cl. 2, HD 383
- Core with double insulation: Flame retardant MICA-tapeover conductor
- Core insulation with cross-linked polyethylene, compound type 2XI1 to DIN VDE 0276 part 604
- Cores colour coding to DIN VDE 0293-308 and 0276 part 604
- Green-yellow earth-core, 3 cores and above
- Cores stranded in layers
- Overall core covering, halogen-free filling compound, pressed
- Outer jacket of thermoplastic halogen-free polyolefine, compound type HM4 to DIN VDE 0276 part 604, flame retardant, colour orange

Tests

- Flame test to VDE 0482 part 266-2, BS 4066 part 3/ DIN EN 50266-2/ IEC 60332-3 (equivalent DIN VDE 0472 part 804 test method C)
- Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- Halogen-free according to VDE 0482 part 267/ DIN EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- Smoke density according to VDE 0482 part 1034-1+2 / IEC 61034-1+2 / DIN EN 61034-1+2 / BS 7622 part 1+2 (equivalent DIN VDE 0472 part 816)
- Insulation integrity under flame propagation to VDE 0472 part 814 Δ IEC 60331
Burning behaviour in fire (functionality) of the complete cable system to DIN 4102 part 12 (90 minutes)

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 Δ IEC 60331.

Insulation integrity under direct flame propagation for the test period of 180 minutes.

- **E 90: Functionality** of electrical cable systems for minimum 90 minutes. Test method 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 90 minutes assures the functional performance of water-pressure-rising stations for the supply to avoid smoke and heat in safety-stairs and inner rooms, ladder shafts and engine rooms for fire brigade lifts, emergency lifts for sickbeds in hospitals and the fire brigade lifts.

Note

- rm = round conductor, multiple-wire;
- re = round conductor, single-wire.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².

Application

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. 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 \varnothing ca. mm	Cop. weight kg / km	Weight ca. kg / km	AWG-No.	Part No.	No. cores x cross-sec. mm ²	Outer \varnothing ca. mm	Cop. weight kg / km	Weight ca. kg / km	AWG-No.
52534	1 x 16 rm	11,5	154,0	250,0	6	52538	1 x 70 rm	17,5	672,0	840,0	2/0
52535	1 x 25 rm	13,0	240,0	360,0	4	52539	1 x 95 rm	19,5	912,0	1120,0	3/0
52536	1 x 35 rm	14,0	336,0	460,0	2	52540	1 x 120 rm	21,5	1152,0	1390,0	4/0
52537	1 x 50 rm	15,5	480,0	610,0	1	52541	1 x 150 rm	23,5	1440,0	1690,0	300 kcmil

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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.
52542	1 x 185 rm	25,5	1776,0	2090,0	350 kcmil
52899	1 x 240 rm	28,5	2304,0	2660,0	500 kcmil
52543	1 x 300 rm	31,0	2880,0	3350,0	600 kcmil
52544	1 x 400 rm	34,5	3840,0	4230,0	750 kcmil
52545	2 x 1,5 re	14,5	29,0	270,0	16
52546	2 x 2,5 re	15,5	48,0	310,0	14
52547	2 x 4 re	16,5	77,0	370,0	12
52548	2 x 6 re	17,5	115,0	440,0	10
52549	2 x 10 rm	19,5	192,0	600,0	8
52550	2 x 16 rm	21,0	307,0	780,0	6
52551	2 x 25 rm	23,5	480,0	1100,0	4
52552	2 x 35 rm	26,5	672,0	1400,0	2
52553	2 x 50 rm	30,0	960,0	1830,0	1
52554	2 x 70 rm	33,0	1344,0	2420,0	2/0
52555	2 x 95 rm	37,5	1824,0	3240,0	3/0
52556	2 x 120 rm	41,0	2304,0	3940,0	4/0
52557	3 x 1,5 re	15,0	43,0	260,0	16
52558	3 x 2,5 re	16,0	72,0	350,0	14
52559	3 x 4 re	17,0	115,0	420,0	12
52560	3 x 6 re	18,0	173,0	520,0	10
52561	3 x 10 rm	20,5	288,0	710,0	8
52562	3 x 16 rm	22,5	461,0	950,0	6
52563	3 x 25 rm	26,0	720,0	1370,0	4
52564	3 x 35 rm	28,0	1008,0	1750,0	2
52572	3 x 35 / 16 rm	29,5	1162,0	1950,0	2
52573	3 x 50 / 25 rm	33,5	1680,0	2640,0	1
52565	3 x 50 rm	32,0	1440,0	2310,0	1
52566	3 x 70 rm	35,5	2016,0	3100,0	2/0
52574	3 x 70 / 35 rm	37,0	2352,0	3520,0	2/0
52575	3 x 95 / 50 rm	42,0	3216,0	4710,0	3/0
52567	3 x 95 rm	40,5	2736,0	4180,0	3/0
52576	3 x 120 / 70 rm	46,5	4128,0	5910,0	4/0
52568	3 x 120 rm	44,0	3456,0	5130,0	4/0
52569	3 x 150 rm	48,5	4320,0	6260,0	300 kcmil
52577	3 x 150 / 70 rm	50,0	4992,0	6970,0	300 kcmil
52578	3 x 185 / 95 rm	55,5	6240,0	8750,0	350 kcmil
52570	3 x 185 rm	53,0	5328,0	7720,0	350 kcmil
52579	3 x 240 / 120 rm	61,5	8064,0	11180,0	500 kcmil
52571	3 x 240 rm	59,5	6912,0	9990,0	500 kcmil

Part No.	No. cores x cross-sec. mm ²	Outer ø ca. mm	Cop. weight kg / km	Weight ca. kg / km	AWG-No.
52580	4 x 1,5 re	16,5	58,0	350,0	16
52581	4 x 2,5 re	17,5	96,0	420,0	14
52582	4 x 4 re	18,5	154,0	510,0	12
52583	4 x 6 re	19,5	230,0	630,0	10
52584	4 x 10 rm	22,5	384,0	880,0	8
52585	4 x 16 rm	24,5	614,0	1180,0	6
52586	4 x 25 rm	28,5	960,0	1730,0	4
52587	4 x 35 rm	31,0	1344,0	2220,0	2
52588	4 x 50 rm	35,0	1920,0	2940,0	1
52589	4 x 70 rm	39,0	2688,0	3960,0	2/0
52590	4 x 95 rm	45,0	3648,0	5360,0	3/0
52591	4 x 120 rm	48,5	4608,0	6550,0	4/0
52592	4 x 150 rm	54,0	5760,0	8070,0	300 kcmil
52593	4 x 185 rm	59,0	7104,0	9970,0	350 kcmil
52594	4 x 240 rm	66,0	9216,0	12830,0	500 kcmil
52595	5 x 1,5 re	18,0	72,0	420,0	16
52596	5 x 2,5 re	19,0	120,0	500,0	14
52597	5 x 4 re	20,0	192,0	610,0	12
52598	5 x 6 re	21,5	288,0	760,0	10
52599	5 x 10 rm	24,5	480,0	1070,0	8
52600	5 x 16 rm	27,0	768,0	1450,0	6
52601	5 x 25 rm	31,0	1200,0	2120,0	4
52602	5 x 35 rm	34,0	1680,0	2730,0	2
52603	5 x 50 rm	38,5	2400,0	3620,0	1
52604	5 x 70 rm	43,5	3360,0	4940,0	2/0
52605	7 x 1,5 re	19,5	101,0	480,0	16
52606	7 x 2,5 re	20,5	168,0	580,0	14
52607	7 x 4 re	22,0	269,0	730,0	12
52608	10 x 1,5 re	24,0	144,0	650,0	16
52609	10 x 2,5 re	25,5	240,0	790,0	14
52610	12 x 1,5 re	24,5	173,0	720,0	16
52611	12 x 2,5 re	26,0	288,0	890,0	14
52612	24 x 1,5 re	33,0	346,0	1270,0	16

Dimensions and specifications may be changed without prior notice. (RQ02)