

# NHXCH-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  $200 \times 10^6$  cJ/kg (up to 200 Mrad)
- **Caloric load values**  
see Technical Informations

## Cable structure

- Bare copper conductor, solid or stranded, to DIN VDE 0295 cl. 1 and cl. 2, BS 6360 cl. 1 or 2, IEC 60228 cl. 1 or cl. 2, HD 383
- Double core insulation of mica tape and cross-linked polymer HI1, to DIN VDE 0207 part 23
- Each single core covering with flame resistant glass-fibre tape
- Colour coding of cores according to DIN VDE 0293-308
- Cores stranded in layer
- Core wire screening with helix of copper tape
- Bare copper wire screening with helix of copper tape
- Outer jacket orange, polyolefin compound HM4, to DIN VDE 0207 part 24

## 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  $\pm$  IEC 60331
- 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 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

- re = round solid core;  
rm = stranded core.

## 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. 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 2006/95/EC.

Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
53032	3 x 1,5 / 1,5 re	16,9	66,0	380,0	16
53033	3 x 2,5 / 2,5 re	18,0	104,0	430,0	14
53034	3 x 4 / 4 re	19,0	161,0	530,0	12
53035	3 x 6 / 6 re	20,1	240,0	640,0	10
53036	3 x 10 / 10 re	22,0	408,0	850,0	8
53037	3 x 16 / 16 re	24,0	643,0	1150,0	6
53038	3 x 25 / 16 rm	28,0	902,0	1700,0	4
53039	3 x 35 / 16 rm	30,0	1190,0	2150,0	2
53040	3 x 50 / 25 rm	34,0	1723,0	2800,0	1
53041	3 x 70 / 35 rm	38,0	2410,0	3800,0	2/0

Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
53042	3 x 95 / 50 rm	44,0	3296,0	5100,0	3/0
53043	3 x 120 / 70 rm	47,0	4236,0	6250,0	4/0
53044	3 x 150 / 70 rm	51,0	4992,0	6900,0	300 kcmil
53045	3 x 185 / 95 rm	56,0	6383,0	8550,0	350 kcmil
53046	3 x 240 / 120 rm	65,0	8242,0	11150,0	500 kcmil
53047	4 x 1,5 / 1,5 re	18,0	81,0	435,0	16

Continuation ▶

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Part no.	No. cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
53048	4 x 2,5 / 2,5 re	18,9	128,0	500,0	14
53049	4 x 4 / 4 re	20,0	200,0	610,0	12
53050	4 x 6 / 6 re	21,0	297,0	740,0	10
53051	4 x 10 / 10 re	23,0	504,0	1050,0	8
53052	4 x 16 / 16 rm	25,0	796,0	1350,0	6
53053	4 x 25 / 16 rm	30,0	1142,0	1950,0	4
53054	4 x 35 / 16 rm	33,0	1526,0	2400,0	2
53055	4 x 50 / 25 rm	37,0	2203,0	3200,0	1
53056	4 x 70 / 35 rm	42,0	3082,0	4300,0	2/0
53057	4 x 95 / 50 rm	47,0	4208,0	5750,0	3/0
53058	4 x 120 / 70 rm	51,0	5388,0	7100,0	4/0
53059	4 x 150 / 70 rm	56,0	6540,0	8550,0	300 kcmil
53060	4 x 185 / 95 rm	68,0	8159,0	10700,0	350 kcmil
53061	4 x 240 / 120 rm	70,0	10546,0	13930,0	500 kcmil
53062	7 x 1,5 / 2,5 re	21,0	133,0	680,0	16
53066	7 x 2,5 / 2,5 re	21,0	200,0	680,0	14

Part no.	No. cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
53063	12 x 1,5 / 2,5 re	27,0	205,0	1050,0	16
53067	12 x 2,5 / 4 re	28,0	334,0	1050,0	14
53064	24 x 1,5 / 6 re	37,0	413,0	1900,0	16
53068	24 x 2,5 / 10 re	37,5	696,0	1900,0	14
53065	30 x 1,5 / 6 re	39,0	499,0	2200,0	16
53069	30 x 2,5 / 10 re	39,5	840,0	2200,0	14

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

## Marking

Marking rings  
Cable marker  
Indian pen



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