

# (N)HXH-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 adapted to DIN VDE 0266
- **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**  
12x cable Ø
- **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, to DIN VDE 0295 cl.1 or cl.2, single-wire or multi-wire, BS 6360 cl.1 or cl.2, IEC 60228 cl.1 or cl.2
- Core insulation of polymer
- Core identification to DIN VDE 0293-308
- GN-YE conductor, 3 cores and above
- Cores stranded in layer
- Core wrapping with glass-fibre tape as flame-protection
- Outer sheath of polyolefin-compound, flame retardant
- Sheath colour orange

## Tests

- Flame test acc. to DIN VDE 0482-332-3, BS 4066 part 3, DIN EN 60332-3, IEC 60332-3 (previously DIN VDE 0472 part 804 test method C)
- Corrosiveness of combustion gases acc. to DIN VDE 0482 part 267, DIN EN 50267-2-2, IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- Halogen-free acc. to DIN VDE 0482 part 267, DIN EN 50267-2-1, IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- Smoke density acc. to DIN VDE 0482 part 1034-1+2, DIN EN 61034-1+2, IEC 61034-1+2, BS 7622 part 1+2 (previously DIN VDE 0472 part 816)

## Properties

- Halogen-free; no evolution of corrosive and toxic gases
- Flame retardant and 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 acc. to DIN VDE 0472 part 814  $\Delta$  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 conductor, single-wire  
rm = round conductor, multi-wire
- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.
- **LSOH** = Low Smoke Zero Halogen

## 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. 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 Ø app. mm | Cop. weight kg / km | Weight app. kg / km | AWG-No.   |
|----------|--|-----------------|---------------------|---------------------|-----------|
| 53180    | 1 x 16 rm                              | 11,0            | 154,0               | 255,0               | 6         |
| 53181    | 1 x 25 rm                              | 12,5            | 240,0               | 375,0               | 4         |
| 53182    | 1 x 35 rm                              | 13,5            | 336,0               | 475,0               | 2         |
| 53183    | 1 x 50 rm                              | 15,0            | 480,0               | 625,0               | 1         |
| 53184    | 1 x 70 rm                              | 16,5            | 672,0               | 855,0               | 2/0       |
| 53185    | 1 x 95 rm                              | 18,0            | 912,0               | 1140,0              | 3/0       |
| 53186    | 1 x 120 rm                             | 20,5            | 1152,0              | 1410,0              | 4/0       |
| 53187    | 1 x 150 rm                             | 22,5            | 1440,0              | 1730,0              | 300 kcmil |

| Part no. | No. cores x cross-sec. mm <sup>2</sup> | Outer Ø app. mm | Cop. weight kg / km | Weight app. kg / km | AWG-No.   |
|----------|--|-----------------|---------------------|---------------------|-----------|
| 53188    | 1 x 185 rm                             | 24,5            | 1776,0              | 2140,0              | 350 kcmil |
| 53189    | 1 x 240 rm                             | 27,0            | 2304,0              | 2700,0              | 500 kcmil |
| 53190    | 1 x 300 rm                             | 30,0            | 2880,0              | 3420,0              | 600 kcmil |
| 53191    | 1 x 400 rm                             | 33,5            | 3840,0              | 4310,0              | 750 kcmil |
| 53000    | 3 x 1,5 re                             | 14,0            | 43,0                | 280,0               | 16        |
| 53001    | 3 x 2,5 re                             | 15,0            | 72,0                | 330,0               | 14        |
| 53002    | 3 x 4 re                               | 16,0            | 115,0               | 400,0               | 12        |
| 53003    | 3 x 6 re                               | 17,0            | 173,0               | 480,0               | 10        |

Continuation ▶

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|----------|--|-----------------|---------------------|---------------------|-----------|
| 53004    | 3 x 10 re                              | 19,0            | 288,0               | 650,0               | 8         |
| 53005    | 3 x 16 re                              | 21,0            | 461,0               | 850,0               | 6         |
| 52990    | 3 x 25 rm                              | 25,0            | 720,0               | 1300,0              | 4         |
| 52991    | 3 x 35 rm                              | 28,0            | 1008,0              | 1700,0              | 2         |
| 52992    | 3 x 35 / 16 rm                         | 28,0            | 1162,0              | 1850,0              | 2         |
| 52993    | 3 x 50 / 25 rm                         | 32,0            | 1680,0              | 2500,0              | 1         |
| 52994    | 3 x 70 / 35 rm                         | 36,0            | 2352,0              | 3350,0              | 2/0       |
| 52995    | 3 x 95 / 50 rm                         | 42,0            | 3216,0              | 4500,0              | 3/0       |
| 52996    | 3 x 120 / 70 rm                        | 45,0            | 4128,0              | 5600,0              | 4/0       |
| 52997    | 3 x 150 / 70 rm                        | 49,0            | 4992,0              | 6700,0              | 300 kcmil |
| 52998    | 3 x 185 / 95 rm                        | 55,0            | 6240,0              | 8350,0              | 350 kcmil |
| 52999    | 3 x 240 / 120 rm                       | 63,0            | 8064,0              | 10000,0             | 500 kcmil |
| 53006    | 4 x 1,5 re                             | 15,0            | 58,0                | 325,0               | 16        |
| 53007    | 4 x 2,5 re                             | 16,0            | 96,0                | 385,0               | 14        |
| 53008    | 4 x 4 re                               | 17,0            | 154,0               | 470,0               | 12        |
| 53009    | 4 x 6 re                               | 18,0            | 230,0               | 580,0               | 10        |
| 53010    | 4 x 10 re                              | 20,0            | 384,0               | 790,0               | 8         |
| 53011    | 4 x 16 re                              | 22,0            | 614,0               | 1100,0              | 6         |
| 53012    | 4 x 25 rm                              | 27,0            | 960,0               | 1650,0              | 4         |
| 53013    | 4 x 35 rm                              | 30,0            | 1344,0              | 2150,0              | 2         |
| 53014    | 4 x 50 rm                              | 34,0            | 1920,0              | 2800,0              | 1         |
| 53030    | 4 x 70 rm                              | 39,0            | 2688,0              | 3800,0              | 2/0       |
| 53031    | 4 x 95 rm                              | 44,0            | 3648,0              | 5050,0              | 3/0       |

| Part no. | No. cores x cross-sec. mm <sup>2</sup> | Outer Ø app. mm | Cop. weight kg / km | Weight app. kg / km | AWG-No. |
|----------|--|-----------------|---------------------|---------------------|---------|
| 53070    | 4 x 120 rm                             | 47,0            | 4608,0              | 6150,0              | 4/0     |
| 53390    | 4 x 150 rm                             | 51,2            | 5760,0              | 7662,0              | 4/0     |
| 53015    | 5 x 1,5 re                             | 16,0            | 72,0                | 375,0               | 16      |
| 53016    | 5 x 2,5 re                             | 17,0            | 120,0               | 445,0               | 14      |
| 53017    | 5 x 4 re                               | 18,0            | 192,0               | 560,0               | 12      |
| 53018    | 5 x 6 re                               | 20,0            | 288,0               | 690,0               | 10      |
| 53019    | 5 x 10 re                              | 22,0            | 480,0               | 950,0               | 8       |
| 53020    | 5 x 16 rm                              | 24,0            | 768,0               | 1300,0              | 6       |
| 53021    | 5 x 25 rm                              | 29,0            | 1200,0              | 1980,0              | 4       |
| 53028    | 5 x 35 rm                              | 33,0            | 1680,0              | 2350,0              | 2       |
| 53029    | 5 x 50 rm                              | 38,0            | 2500,0              | 3100,0              | 1       |
| 53022    | 7 x 1,5 re                             | 19,0            | 101,0               | 560,0               | 16      |
| 53027    | 7 x 2,5 re                             | 21,0            | 168,0               | 650,0               | 14      |
| 53025    | 10 x 1,5 re                            | 23,0            | 144,0               | 750,0               | 16      |
| 53026    | 10 x 2,5 re                            | 25,0            | 240,0               | 910,0               | 14      |
| 53023    | 12 x 1,5 re                            | 25,0            | 173,0               | 850,0               | 16      |
| 53024    | 12 x 2,5 re                            | 26,0            | 288,0               | 1000,0              | 14      |

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