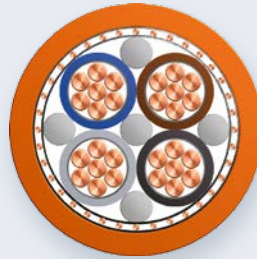


# BETAflam® Safety cables

DIN VDE 0266



## Advantages

- Very high safety standards
- System circuit integrity acc. to DIN 4102 part 12
- DIN approved with LEONI BETAfixs® cable support system
- Halogen-free
- In compliance with RoHS directive

## BETAflam® NHXCH FE180 / E90

### Applications

Power cable 0,6 / 1 kV with concentric conductor for fixed installation in cable systems with improved fire performance and system circuit integrity acc. to DIN 4102 Teil 12, e.g. for:

- water pumps for fire fighting
- smoke exhaust systems etc.
- recommended in areas where people gather and for protection of valuables

### Construction

|                       |   |
|-----------------------|---|
| ■ Conductors          | Bare annealed copper                    |
| ■ Flame barrier       | MICA tape                               |
| ■ Insulation          | BETAflam® cross-linked                  |
| ■ Inner covering      | Tape or filler                          |
| ■ conc. conductor     | Copper wires, with helix of copper tape |
| ■ Sheath              | BETAflam® copolymer                     |
| ■ Core identification | acc. to VDE 0266 resp. HD 308 S2        |
| ■ Sheath colour       | Orange                                  |

### Electrical characteristics

|               |                    |
|---------------|--------------------|
| Rated voltage | $U_0/U$ 0.6 / 1 kV |
| Test voltage  | 4 kV with 50 Hz    |

### Thermal characteristics

|   |                     |
|---|---------------------|
| Operation temperature                                 | -30 °C up to +90 °C |
| Laying temperature                                    | -5 °C up to +70 °C  |
| Short circuit temperature<br>(temperature peak < 5 s) | up to +250 °C       |

### Bending radius

| cable design  | single core                             | multiple core                           |
|---------------|---|---|
| during laying | $> 15 \times \text{outer } \varnothing$ | $> 12 \times \text{outer } \varnothing$ |
| fixed         | $> 8 \times \text{outer } \varnothing$  | $> 7 \times \text{outer } \varnothing$  |

### Laying conditions

- Fixed installation indoor, in air or concrete
- Laying in earth or water only in water-proof dry tubes
- Outdoor laying only when protected from direct sunlight and other external impacts

### Standards / Material properties

- Halogen-free: IEC 60754-1, EN 50267-2-1, VDE 0482-267-2-1
- No corrosive gases: IEC 60754-2, EN 50267-2-2, VDE 0482-267-2-2
- No toxic gases: NF X 70-100
- Low smoke density: IEC 61034-1 and -2, EN 61034-1 and -2, VDE 0482-1034-1 and -2
- Flame retardant: IEC 60332-1, EN 60332-1, VDE 0482-332-1
- No flame propagation: IEC 60332-3-10 and -3-24, EN 60332-3-10, -24, VDE 0482-332-3-24
- Circuit integrity FE180: IEC 60331-11 and -21, VDE 0472-814
- Circuit integrity with shock: EN 50200 PH90 (up to  $\varnothing$  20 mm)
- System circuit integrity: DIN 4102-12 E90, depending on laying system
- Water extinguishing systems:  $VdS \geq 2.5 \text{ mm}^2$

| Cable type        | Construction<br>n × mm <sup>2</sup> | Core function | Outer Ø<br>mm | Weight<br>kg / km | Cu factor<br>kg / km | Order no.          |             |
|-------------------|-------------------------------------|---------------|---------------|-------------------|----------------------|--------------------|-------------|
|                   |                                     |               |               |                   |                      | Germany            | Switzerland |
| NHXCH FE180 / E90 | 2 × 1.5 RE/1.5                      | LN            | 15.0          | 268               | 52                   | LKI 8003 6100 0000 | 306934      |
| NHXCH FE180 / E90 | 2 × 2.5 RE/2.5                      | LN            | 15.8          | 312               | 80                   | LKI 8003 6200 0000 | 306935      |
| NHXCH FE180 / E90 | 2 × 4 RE/4                          | LN            | 17.9          | 451               | 123                  | LKI 8003 6400 0000 |             |
| NHXCH FE180 / E90 | 2 × 6 RE/6                          | LN            | 18.6          | 539               | 182                  | LKI 8003 6500 0000 |             |
| NHXCH FE180 / E90 | 2 × 10 RE/10                        | LN            | 20.4          | 679               | 312                  | LKI 8003 6600 0000 |             |
| NHXCH FE180 / E90 | 3 × 1.5 RE/1.5                      | 3L            | 15.7          | 394               | 66                   | LKI 30322200 0000  | 303222      |
| NHXCH FE180 / E90 | 3 × 2.5 RE/2.5                      | 3L            | 17.4          | 423               | 104                  | LKI 8003 7000 0000 | 303928      |
| NHXCH FE180 / E90 | 3 × 4 RE/4                          | 3L            | 18.7          | 511               | 161                  | LKI 8003 7200 0000 |             |
| NHXCH FE180 / E90 | 3 × 6 RE/6                          | 3L            | 19.7          | 601               | 240                  | LKI 8003 7300 0000 |             |
| NHXCH FE180 / E90 | 3 × 10 RE/10                        | 3L            | 21.3          | 916               | 408                  | LKI 2255 5900 0000 | 225559      |
| NHXCH FE180 / E90 | 3 × 16 RM/16                        | 3L            | 24.9          | 1201              | 643                  | LKI 3033 3700 0000 | 303337      |
| NHXCH FE180 / E90 | 3 × 25 RM/16                        | 3L            | 28.3          | 1484              | 902                  | LKI 3033 3800 0000 | 303338      |
| NHXCH FE180 / E90 | 3 × 35 RM/16                        | 3L            | 30.9          | 1848              | 1190                 | LKI 8003 7600 0000 | 307071      |
| NHXCH FE180 / E90 | 3 × 50 RM/25                        | 3L            | 35.4          | 2358              | 1728                 | LKI 8003 7800 0000 | 304194      |
| NHXCH FE180 / E90 | 3 × 70 RM/35                        | 3L            | 38.5          | 3161              | 2415                 | LKI 8003 8000 0000 |             |
| NHXCH FE180 / E90 | 3 × 95 RM/50                        | 3L            | 44.3          | 4427              | 3311                 | LKI 8003 8200 0000 | 307072      |
| NHXCH FE180 / E90 | 3 × 120 RM/70                       | 3L            | 48.2          | 5323              | 4261                 | LKI 8003 8400 0000 |             |
| NHXCH FE180 / E90 | 3 × 150 RM/70                       | 3L            | 52.9          | 6286              | 5100                 | LKI 3032 3900 0000 | 303239      |
| NHXCH FE180 / E90 | 3 × 185 RM/95                       | 3L            | 58.4          | 7636              | 6383                 | LKI 8003 8500 0000 |             |
| NHXCH FE180 / E90 | 3 × 240 RM/120                      | 3L            | 65.3          | 9714              | 8242                 | LKI 8003 8600 0000 |             |
| NHXCH FE180 / E90 | 4 × 1.5 RE/1.5                      | 3LN           | 17.2          | 332               | 81                   | LKI 2255 5400 0000 | 225554      |
| NHXCH FE180 / E90 | 4 × 2.5 RE/2.5                      | 3LN           | 18.2          | 481               | 128                  | LKI 2255 5600 0000 | 225556      |
| NHXCH FE180 / E90 | 4 × 4 RE/4                          | 3LN           | 18.4          | 601               | 200                  | LKI 2255 5700 0000 |             |
| NHXCH FE180 / E90 | 4 × 6 RE/6                          | 3LN           | 18.5          | 841               | 297                  | LKI 2255 5800 0000 | 225558      |
| NHXCH FE180 / E90 | 4 × 10 RE/10                        | 3LN           | 22.0          | 879               | 504                  | LKI 2255 2400 0000 | 225524      |
| NHXCH FE180 / E90 | 4 × 16 RM/16                        | 3LN           | 25.2          | 1262              | 796                  | LKI 2255 2500 0000 | 225525      |
| NHXCH FE180 / E90 | 4 × 25 RM/16                        | 3LN           | 29.0          | 1786              | 1142                 | LKI 2255 2600 0000 | 225526      |
| NHXCH FE180 / E90 | 4 × 35 RM/16                        | 3LN           | 31.9          | 2375              | 1526                 | LKI 2255 2700 0000 | 225527      |
| NHXCH FE180 / E90 | 4 × 50 RM/25                        | 3LN           | 36.6          | 3122              | 2203                 | LKI 2255 2800 0000 | 225528      |
| NHXCH FE180 / E90 | 4 × 70 RM/35                        | 3LN           | 40.6          | 4129              | 3082                 | LKI 2255 2900 0000 | 225529      |
| NHXCH FE180 / E90 | 4 × 95 RM/50                        | 3LN           | 47.0          | 5447              | 4208                 | LKI 2255 3000 0000 | 225530      |
| NHXCH FE180 / E90 | 4 × 120 RM/70                       | 3LN           | 51.5          | 6657              | 5388                 | LKI 2255 3100 0000 | 225531      |
| NHXCH FE180 / E90 | 4 × 150 RM/70                       | 3LN           | 56.5          | 8039              | 6540                 | LKI 2255 3200 0000 | 225532      |
| NHXCH FE180 / E90 | 4 × 185 RM/95                       | 3LN           | 63.6          | 10157             | 8159                 | LKI 2255 3300 0000 | 225533      |
| NHXCH FE180 / E90 | 4 × 240 RM/120                      | 3LN           | 70.8          | 12989             | 10546                | LKI 2255 3400 0000 | 225534      |
| NHXCH FE180 / E90 | 7 × 1.5 RE/2.5                      | NR            | 18.3          | 488               | 133                  | LKI 8003 9200 0000 |             |
| NHXCH FE180 / E90 | 7 × 2.5 RE/2.5                      | NR            | 21.3          | 576               | 200                  | LKI 8003 9300 0000 |             |
| NHXCH FE180 / E90 | 12 × 1.5 RE/2.5                     | NR            | 23.8          | 702               | 205                  | LKI 3006 7600 0000 | 300676      |
| NHXCH FE180 / E90 | 12 × 2.5 RE/4                       | NR            | 25.4          | 901               | 334                  | LKI 8003 9700 0000 | 304512      |
| NHXCH FE180 / E90 | 24 × 1.5 RE/6                       | NR            | 32.7          | 1335              | 413                  | LKI 8004 0300 0000 | 305185      |
| NHXCH FE180 / E90 | 24 × 2.5 RE/10                      | NR            | 32.9          | 1655              | 696                  | LKI 2261 4300 0000 | 226143      |
| NHXCH FE180 / E90 | 30 × 1.5 RE/6                       | NR            | 34.8          | 1596              | 499                  | LKI 8004 0400 0000 |             |
| NHXCH FE180 / E90 | 30 × 2.5 RE/10                      | NR            | 38.0          | 2263              | 840                  | LKI 8004 0500 0000 |             |

RE = round solid, class 1  
RM = round stranded, class 2

L = colour phase conductor br/bk/gr ● ● ●  
N = colour neutral conductor bl ●  
NR = colour phase conductors bk ● / numbered