We Make Modern Life Possible.

SAFETY CABLES

# (N)HXH FE180/E90 (8310)




## Halogen-free energy cable with insulation integrity and circuit integrity VDE Reg. No. 8310

These cables are intended for the stationary distribution of electrical energy in dry or damp premises and for fixed installations in air or concrete. Suitable for hotels, hospitals, underground railways, airports etc. to protect people and technical building equipment in the event of fire if circuit integrity is required.

## TECHNICAL DATA

**Standard**
adapted to DIN VDE 0266

**Certificate**
VDE Germany
VDE Reg. No. 8310

**Test Voltage**
core/core 4 kV / 50 Hz

**Rated Voltage**
0,6/1 kV

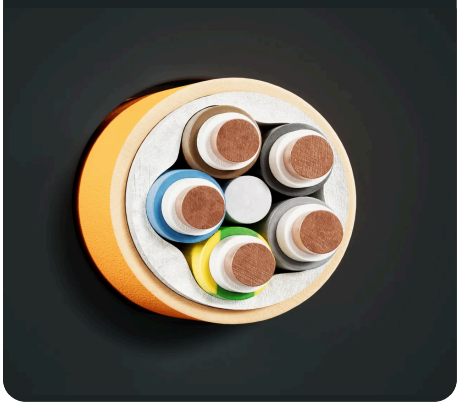
**Bending radius (min.)**
12 x Ø of cable (multi core)
15 x Ø of cable (single core)

**Fire properties**
EN 60332-1-2: flame retardant
EN 60754-2: halogen-free, non-corrosive combustion gases
EN IEC 60332-3-24: reduced flame propagation
EN 61034-2: low smoke emission
DIN VDE 0472-814: insulation integrity FE 180
DIN 4102-12: circuit integrity E90

**Core identification**
HD 308 S2

**Temperature range**
Laying temperature: min. -5°C
Operating temperature: -30°C up to 90°C
Conductor temperature: max. 90°C
Short circuit temperature: max. 250°C

## DESIGN



1. Copper conductor, round solid (RE) resp. round stranded (RM)
2. Primary core insulation (silicone rubber)
3. Secondary core insulation (silicone rubber)
4. Inner covering (halogen-free bedding compound)
5. Sheath (halogen-free polymer compound, orange)

| Number of cores x nominal cross-section (mm²) | Max. conductor resistance (Ω/km) | Current rating in the air (A) | Outer diameter appr. (mm) | Total weight appr. (kg/km) |
|---|---|---|---|---|
| 2 x 1.5 RE | 12.1 | 28 | 11.7 | 191 |
| 3 x 1.5 RE | 12.1 | 24 | 12.3 | 214 |
| 4 x 1.5 RE | 12.1 | 24 | 13.2 | 246 |
| 5 x 1.5 RE | 12.1 | 16 | 14.2 | 282 |
| 6 x 1.5 RE | 12.1 | 16 | 15.2 | 324 |
| 7 x 1.5 RE | 12.1 | 16 | 15.2 | 342 |
| 8 x 1.5 RE | 12.1 | 14 | 16.7 | 400 |
| 10 x 1.5 RE | 12.1 | 13 | 18.6 | 490 |
| 12 x 1.5 RE | 12.1 | 13 | 19.2 | 532 |
| 14 x 1.5 RE | 12.1 | 12 | 20.1 | 586 |
| 16 x 1.5 RE | 12.1 | 12 | 21.1 | 647 |
| 19 x 1.5 RE | 12.1 | 11 | 22.1 | 728 |
| 24 x 1.5 RE | 12.1 | 10 | 26.5 | 1009 |
| 30 x 1.5 RE | 12.1 | 9 | 28.0 | 1148 |
| 2 x 2.5 RE | 7.41 | 37 | 12.5 | 228 |
| 3 x 2.5 RE | 7.41 | 32 | 13.1 | 260 |
| 4 x 2.5 RE | 7.41 | 32 | 14.1 | 304 |
| 5 x 2.5 RE | 7.41 | 22 | 15.2 | 351 |
| 6 x 2.5 RE | 7.41 | 21 | 16.4 | 407 |
| 7 x 2.5 RE | 7.41 | 21 | 16.4 | 433 |
| 8 x 2.5 RE | 7.41 | 18 | 18.1 | 505 |
| 8 x 2.5 RE | 7.41 | 18 | 18.1 | 505 |
| 10 x 2.5 RE | 7.41 | 18 | 20.2 | 623 |
| 12 x 2.5 RE | 7.41 | 18 | 20.8 | 684 |
| 14 x 2.5 RE | 7.41 | 16 | 21.8 | 759 |
| 16 x 2.5 RE | 7.41 | 15 | 22.9 | 842 |
| 19 x 2.5 RE | 7.41 | 14 | 24.0 | 954 |
| 24 x 2.5 RE | 7.41 | 13 | 29.0 | 1315 |
| 2 x 4 RE | 4.61 | 49 | 13.4 | 275 |
| 3 x 4 RE | 4.61 | 42 | 14.0 | 320 |
| 4 x 4 RE | 4.61 | 42 | 15.1 | 377 |
| 5 x 4 RE | 4.61 | 28 | 16.3 | 440 |
| 7 x 4 RE | 4.61 | 27 | 17.6 | 550 |
| 12 x 4 RE | 4.61 | 22 | 22.6 | 883 |
| 19 x 4 RE | 4.61 | 19 | 27.1 | 1326 |
| 2 x 6 RE | 3.08 | 62 | 14.3 | 337 |
| 3 x 6 RE | 3.08 | 53 | 15.1 | 399 |
| 4 x 6 RE | 3.08 | 53 | 16.3 | 476 |
| 5 x 6 RE | 3.08 | 36 | 17.7 | 559 |
| 7 x 6 RE | 3.08 | 34 | 19.1 | 709 |
| 2 x 10 RE | 1.83 | 85 | 15.9 | 456 |
| 3 x 10 RE | 1.83 | 74 | 16.8 | 552 |
| 4 x 10 RE | 1.83 | 74 | 18.2 | 670 |
| 4 x 10 RM | 1.83 | 74 | 18.7 | 692 |

| Number of cores x nominal cross-section (mm²) | Max. conductor resistance (Ω/km) | Current rating in the air (A) | Outer diameter appr. (mm) | Total weight appr. (kg/km) |
|---|---|---|---|---|
| 5 x 10 RE | 1.83 | 49 | 19.8 | 800 |
| 5 x 10 RM | 1.83 | 49 | 20.4 | 827 |
| 7 x 10 RE | 1.83 | 48 | 21.5 | 1023 |
| 1 x 16 RE | 1.15 | 131 | 11.5 | 271 |
| 1 x 16 RM | 1.15 | 131 | 11.7 | 278 |
| 2 x 16 RE | 1.15 | 113 | 17.8 | 616 |
| 2 x 16 RM | 1.15 | 113 | 18.2 | 639 |
| 3 x 16 RE | 1.15 | 98 | 18.8 | 761 |
| 3 x 16 RM | 1.15 | 98 | 19.3 | 788 |
| 4 x 16 RE | 1.15 | 98 | 20.4 | 934 |
| 4 x 16 RM | 1.15 | 98 | 21.0 | 965 |
| 5 x 16 RE | 1.15 | 65 | 22.3 | 1128 |
| 5 x 16 RM | 1.15 | 65 | 22.9 | 1164 |
| 1 x 25 RM | 0.727 | 177 | 13.4 | 392 |
| 1 x 25 RM | 0.727 | 177 | 13.4 | 392 |
| 2 x 25 RM | 0.727 | 152 | 21.5 | 935 |
| 3 x 25 RM | 0.727 | 133 | 22.9 | 1165 |
| 3 x 25 + 16 RM/RM | 0.727 | 133 | 24.1 | 1326 |
| 4 x 25 RM | 0.727 | 133 | 26.0 | 1509 |
| 5 x 25 RM | 0.727 | 90 | 28.4 | 1819 |
| 1 x 35 RM | 0.524 | 217 | 14.4 | 494 |
| 2 x 35 RM | 0.524 | 186 | 23.6 | 1192 |
| 3 x 35 RM | 0.524 | 162 | 26.1 | 1575 |
| 3 x 35 + 16 RM/RM | 0.524 | 162 | 27.1 | 1721 |
| 4 x 35 RM | 0.524 | 162 | 28.5 | 1945 |
| 5 x 35 RM | 0.524 | 109 | 31.4 | 2373 |
| 1 x 50 RM | 0.387 | 265 | 16.2 | 642 |
| 3 x 50 RM | 0.387 | 197 | 29.9 | 2082 |
| 3 x 50 + 25 RM/RM | 0.387 | 197 | 31.4 | 2329 |
| 4 x 50 RM | 0.387 | 197 | 33.3 | 2630 |
| 5 x 50 RM | 0.387 | 133 | 36.7 | 3203 |
| 1 x 70 RM | 0.268 | 336 | 18.0 | 858 |
| 3 x 70 RM | 0.268 | 250 | 34.2 | 2858 |
| 3 x 70 + 35 RM/RM | 0.268 | 250 | 35.7 | 3183 |
| 4 x 70 RM | 0.268 | 250 | 37.7 | 3578 |
| 5 x 70 RM | 0.268 | 180 | 41.6 | 4368 |
| 1 x 95 RM | 0.193 | 415 | 20.2 | 1140 |
| 3 x 95 RM | 0.193 | 308 | 39.0 | 3845 |
| 3 x 95 + 50 RM/RM | 0.193 | 308 | 41.0 | 4296 |
| 4 x 95 RM | 0.193 | 308 | 43.1 | 4827 |
| 4 x 95 RM | 0.193 | 308 | 43.1 | 4826 |
| 5 x 95 RM | 0.193 | 215 | 48.1 | 5960 |
| 1 x 120 RM | 0.153 | 485 | 21.6 | 1384 |
| 3 x 120 RM | 0.153 | 359 | 42.1 | 4683 |

| Number of cores x nominal cross-section (mm²) | Max. conductor resistance (Ω/km) | Current rating in the air (A) | Outer diameter appr. (mm) | Total weight appr. (kg/km) |
|---|---|---|---|---|
| 3 x 120 + 70 RM/RM | 0.153 | 359 | 44.9 | 5380 |
| 4 x 120 RM | 0.153 | 359 | 46.8 | 5935 |
| 5 x 120 RM | 0.153 | 247 | 51.9 | 7278 |
| 1 x 150 RM | 0.124 | 557 | 23.6 | 1680 |
| 3 x 150 RM | 0.124 | 412 | 46.8 | 5778 |
| 3 x 150 + 70 RM/RM | 0.124 | 412 | 48.7 | 6370 |
| 4 x 150 RM | 0.124 | 412 | 51.8 | 7279 |
| 5 x 150 RM | 0.124 | 279 | 57.7 | 8976 |
| 1 x 185 RM | 0.099 | 646 | 25.8 | 2061 |
| 3 x 185 + 95 RM/RM | 0.099 | 475 | 54.1 | 7991 |
| 4 x 185 RM | 0.099 | 475 | 57.5 | 9058 |
| 1 x 240 RM | 0.075 | 774 | 28.8 | 2650 |
| 3 x 240 + 120 RM/RM | 0.075 | 564 | 60.9 | 10297 |
| 4 x 240 RM | 0.075 | 564 | 64.7 | 11689 |

| System / System Manufacturer | System identification | Classification | Range | Distance (a) /Width (b) / Load (g) | AbP number | AbP part no. |
|---|---|---|---|---|---|---|
| Normtrag | Leiter | E90 | n x ≥ 1.5 | a ≤ 1200 mm<br>b = 400 mm<br>g ≤ 20 kg/m | P-MPA-E-09-016 | 2.2.2 -1 |
| Normtrag | Rinne | E90 | n x ≥ 1.5 | a ≤ 1200 mm<br>b = 300 mm<br>g ≤ 10 kg/m | P-MPA-E-09-016 | 2.2.2 -2 |
| Normtrag | Abstandschelle | E90 | n x ≥ 1.5 | a ≤ 300 mm | P-MPA-E-09-016 | 2.2.2 - 3 |
| Normtrag | Bügeschelle mit LW | E90 | n x ≥ 1.5 | a ≤ 600 mm | P-MPA-E-09-016 | 2.2.2 - 4 |
| OBO Bettermann | 2031-M/15 | E90 | n x ≥ 1.5 | a ≤ 600 mm<br>g ≤ 1.1 kg/m | P-MPA-E-09-016 | 2.2.15 - 7 |
| Niedax | RLVC 60.300 S + KTA300 | E90 | n x ≥ 1.5 | a ≤ 1500 mm<br>b = 300 mm<br>g ≤ 20 kg/m | P-1016 DMT DO | I |
| Niedax | RLVC 60.400 S + KTA400 | E90 | n x ≥ 1.5 | a ≤ 1500 mm<br>b = 400 mm<br>g ≤ 30 kg/m | P-1016 DMT DO | II |
| Lanz | G-Kanal 100x150 | E90 | n x = 1.5 | a ≤ 1500 mm<br>g ≤ 10 kg/m | P-1016 DMT DO | III |
| Lanz | G-Kanal 50x100 | E90 | n x = 1.5 | a ≤ 1500 mm<br>g ≤ 10 kg/m | P-1016 DMT DO | IV |
| Lanz | G-Kanal 100x150 (decke) | E90 | n x ≥ 1.5 - n x ≤ 10 | a ≤ 1500 mm<br>g ≤ 10 kg/m | P-1016 DMT DO | V |
| Lanz | C-Kanal (decke) | E90 | n x ≥ 1.5 - n x ≤ 2.5 | a ≤ 800 mm<br>g ≤ 0.85 kg/m | P-1016 DMT DO | VIII |

Technical changes reserved. All figures are therefore without guarantee.



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