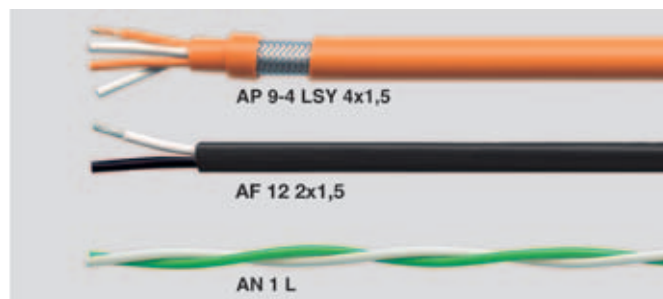
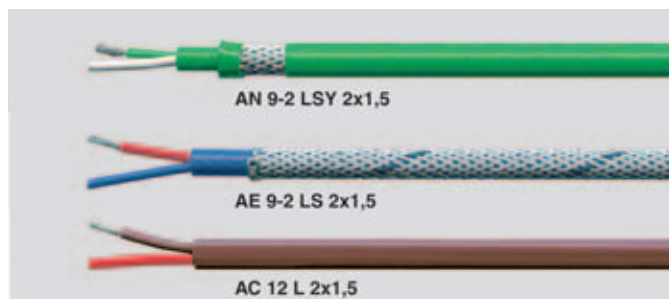


Photo: HELUKABEL®

Compensating Cables

Compensating Cables



Technical data

– Special insulation as per requirement of PVC, Silicone, Fluorinated polymeric or Glassfilament

– Conductor resistance

according DIN 43713

Fe: 0,080 Ohm/m

CuNi: 0,327 Ohm/m

NiCr: 0,07 Ohm/m

Ni: 0,3 Ohm/m

PtRh: 0,023 Ohm/m

Pt: 0,041 Ohm/m

– Test voltage

for PVC-, Fluorinated polymeric- and Silicone cables

core/core 500 V

core/screen 500 V

screen/screen 500 V

– Test voltage

Cables with Glassfilament

core/core 500 V

– Insulation resistance

for PVC, Silicone and Fluorinated polymeric

min. 10 MOhm \times km

– Capacitance

(approx. value) – nF/km

| | Stranded wire 1,5 mm ² | Solid wire 1,5 mm ² | Stranded wire 0,22mm ² |
|------------|--------------------------------------|-----------------------------------|--------------------------------------|
| • PVC | | | |
| core | 135 | 138 | 115 |
| pair | | | |
| screened | 240 | 245 | 180 |
| • FEP | | | |
| core | 60 | 60 | 45 |
| pair | | | |
| screened | 120 | 120 | 70 |
| • Silicone | | | |
| core | 80 | 70 | 45 |

– Induction

(guiding value)

for PVC, Fluorinated polymeric and Silicon cables < 1 mH/km

– Corrosiveness of combustion gases (free from halogen)

• Silicone + Glassfilament

Test method to VDE 0472 part 813 and IEC 60754-1

• no evolution of corrosive gases

– Behaviour in fire

PVC sheath self-extinguishing and flame retardant acc. to VDE 0482-322-1-2, DIN EN 60332-1-2/IEC 60332-1 (equals to DIN VDE 0472 part 804 test method B)

Cable structure

– Conductors of stranded wires or solid, insulated with special material

– Conductors: Fe/CuNi, Ni/Cr Ni or Pt Rh/Pt

– Insulations: PVC, Silicone, Fluorinated polymeric or Glassfilament

– Core identification:

 colour coded, single colour (see also colour-identification table)

– Colour code for pairs

 from 2 pairs and above the individual pairs number coded

– Jacketing materials are of PVC, Silicone, Fluorinated polymeric or Glassfilament-braiding

– Screened braiding of galvanized steel wire (type SV) or galvanized copper wire braided screen.

Measuring

For temperature measuring the temperature dependent upon the characteristics of materials are taken into consideration, for example the expansion thermometer of the thermocouples etc.

Temperature measuring appliances with a thermocouple as transmitter of the measured value consists generally of the thermocouple, the connection between the junction and a reference part, a comparative part where the temperature is known under a voltage measuring device.

The fitted connection line between the thermocouple and the comparative part must have the same thermoelectrical characteristics as the thermocouple.

The difference of temperature is measured between the measuring point and the comparative part of the cable. Tolerance of the meter resistance $\pm 10\%$.

For hazardous areas

The compensating cables for thermoelements with plastic insulation are permitted to imprint colour longitudinal stripe of the same belonging thermoelement types, and as:

Cu/Cu-Ni = brown, Fe/Cu-Ni = dark blue, NiCr/Ni = green, Pt-Rh/Pt = white

The compensating cables for thermoelements with mineral insulation or with metal braiding must be identified with a light blue coloured tape of sufficient width for intrinsic safe, which can be webbed in the braiding.

- Flame test to DIN VDE 0482 part 266-2/ HD 405.3, BS 4066 part 3/EN 50266-2/ IEC 60332-3 (equivalent DIN VDE 0472 part 804 test method C)

Application

Compensating cables are an essential part of exact and precise measuring capabilities. They are used as extension leads from the thermocoupling elements to the measure gauge.

Compensating cables are made up of a positive and a negative core which, at a thermocoupler temperature of up to +200°C, retain the same properties as a Thermopair according to DIN 43710.

Materials

(Compensating wires and strands) We distinguish between original raw materials and substitutes.

- Compensating wires and strands of **original raw materials** are made of the same material as the corresponding thermocouple and they are called **Thermocable** or **Thermocouplecable**.
- Compensating wires and strands of **substitute materials**, which consist of alloys and which are not identical with the corresponding thermocouple are called **Compensating Cable**.

– **Substitute materials** are used for the thermopairs Type **K** and Type **N**.

– **Precious metal thermopairs**

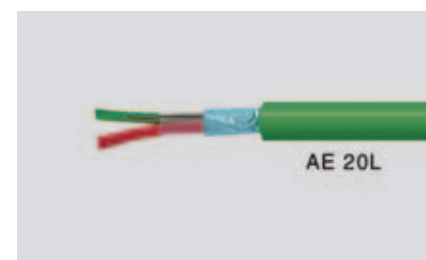
Type **R**, Type **S**, Type **B** consist of thermomaterials.

Thermocouple cables



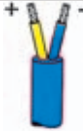





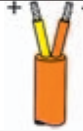


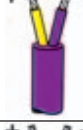






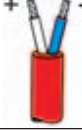
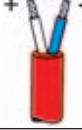
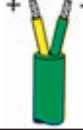

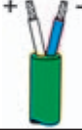
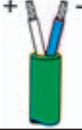


Thermocouple cables consist of the same element material as the thermocouple and are tested to the same temperatures. These cables are manufactured to customers request.

Note

Thermomaterials consist of very expensive materials while the substitutes are much cheaper.











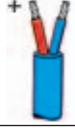






Colour identification and temperature ranges

| Identification letter of Thermopairs | Material combination | |  NF C 42-324 | |  BS 4937 | |
|--------------------------------------|----------------------------------|------------------------|---|---|---|---|
| | +(plus) | -(minus) | THL | AGL | THL | AGL |
| T | Cu | Cu Ni | TX -25°C to +100°C  | TC -25°C to +100°C  | TX 0°C to +100°C  | |
| U | Cu | Cu Ni | | | | |
| J | Fe | Cu Ni | JX -25°C to +200°C  | JC -25°C to +250°C  | JX 0°C to +200°C  | |
| L | Fe | Cu Ni | | | | |
| E | Ni Cr | Cu Ni | EX -25°C to +200°C  | EC -25°C to +250°C  | EX 0°C to +200°C  | |
| K | Ni Cr | Ni | KX -25°C to +200°C  | KC -25°C to +200°C  | KX 0°C to +200°C  | |
| | Ni Cr | Ni |  | WC 0°C to +150°C  | | |
| | Ni Cr | Ni |  | VC 0°C to +100°C  |  | VX 0°C to +100°C  |
| N | Ni Cr Si | Ni Si | | | | |
| R S | PtRh 13 PtRh 10 | Pt Pt |  | SC 0°C to +200°C  |  | SX 0°C to +200°C  |
| B | PtRh 30 | PtRh 6 |  | BC 0°C to +100°C  | | |

The highest application temperature of the insulating materials or the application temperature range of the conductor material is limited for the application temperature range of the cable. Valid with the corresponding lower value.

For intrinsically safe installation generally provides with a blue coloured jacket and an element with the associated identification stripe.

for Thermo- and Compensating Cables

|  ANSI MC 96.1 | |  DIN IEC 584 | |  DIN 43710* | |
|---|---|--|---|---|--|
| THL | AGL | THL | AGL | THL | AGL |
| TX 0°C to +100°C |  | TX -25°C to +100°C |  | | |
| | | | | UX 0°C to +200°C |  |
| JX 0°C to +200°C |  | JX -25°C to +200°C |  | | |
| | | | | LX 0°C to +200°C |  |
| EX 0°C to +200°C |  | EX -25°C to +200°C |  | | |
| KX 0°C to +200°C |  | KX -25°C to +200°C |  | | |
| | | | KCA 0°C to +150°C | | |
| | | | KCB 0°C to +100°C | | |
| | | NX -25°C to +200°C | NC 0°C to +150°C | | |
| | | | RCA/SCA 0°C to +100°C | | |
| | | | RCB/SCB 0°C to +200°C | | |
| | | | BC 0°C to +100°C | | |
| | | (adapted to DIN 43710/85) | | | |
| SX 0°C to +200°C |  | | | | |
| BX 0°C to +100°C |  | | | | |

L

Other Colour code on request.

THL = Thermocouple wire
AGL = Compensating cable

Examples: KX Thermocouple wire KX (plus) △ positive core
 KX (minus) △ negative core
 KCA Compensating cable KCA (plus) △ positive core
 KCA (minus) △ negative core

for THL KX
for THL KX
for AGL KC
for AGL KC

Compensating Cables

Materials for compensating cables

| Standards | Art of thermocouple elements | | | Materials of compensating cables | | |
|-------------|------------------------------|--------------|---------------|----------------------------------|--------------|---------------|
| | Type | Plus-Pol (+) | Minus-Pol (-) | Code | Plus-Pol (+) | Minus-Pol (-) |
| DIN 43710 | U | Cu | CuNi | UX | Cu | CuNi |
| | L | Fe | CuNi | LX | Fe | CuNi |
| DIN IEC 584 | T | Cu | CuNi | TX | Cu | CuNi |
| | E | NiCr | CuNi | EX | NiCr | CuNi |
| | J | Fe | CuNi | JX | Fe | CuNi |
| | K | NiCr | Ni | KX | NiCr | Ni |
| | K | NiCr | Ni | KC 1 | Fe | CuNi |
| | K | NiCr | Ni | KC 2 | Cu | CuNi |
| | R/S | Pt 13/10 Rh | Pt | RC A/SC A | Cu | CuNi |
| | R/S | Pt 13/10 Rh | Pt | RC B/SC B | Cu | CuNi |
| NF | T | Cu | CuNi | TX | Cu | CuNi |
| | E | NiCr | CuNi | EX | NiCr | CuNi |
| | J | Fe | CuNi | JX | Fe | CuNi |
| | K | NiCr | Ni | KX | NiCr | Ni |
| | K | NiCr | Ni | VC | Cu | CuNi |
| | K | NiCr | Ni | WC | Fe | CuNi |
| | R/S | Pt 13/10 Rh | Pt | RC/SC | Cu | CuNi |
| | B | Pt 30 Rh | Pt 6 Rh | BC | Cu-Leg. | Cu |
| ANSI | T | Cu | CuNi | TX | Cu | CuNi |
| | E | NiCr | CuNi | EX | NiCr | CuNi |
| | J | Fe | CuNi | JX | Fe | CuNi |
| | K | NiCr | Ni | KX | NiCr | Ni |
| | R/S | Pt 13/10 Rh | Pt | RX/SX | Cu | CuNi |
| | B | Pt 30 Rh | Pt 6 Rh | BX | Cu | Cu |

Characteristics of the conductors for thermo-pairs and compensating cables

| Materials | Main components approx. % | | | | Density at 20°C $\frac{g}{cm^3}$ | Specific resistance at 20°C $\mu Ohm \cdot cm$ | Resistance value (nominal value) Ohm/m | |
|-----------|---------------------------|------|--------|--------|-------------------------------------|---|---|--------------------------|
| | Cu | Ni | Mn | Others | | | mm \varnothing 0,20 | mm \varnothing 1,38 |
| CuNi | 55 | 44 | 1 | - | 8,85 | 49 | 15,60 | 0,328 |
| SoNi | 51 | 45 | 2 | Fe2 | 8,85 | 51 | 16,26 | 0,341 |
| NiCr | - | Rest | - | Cr 10 | 8,7 | 72 | 22,90 | 0,481 |
| Ni | - | 95 | MnAlSi | 5 | 8,55 | 27 | 8,59 | 0,180 |
| SoPt | 95 | 3 | 2 | - | 8,9 | 12 | 3,82 | 0,0802 |
| ECu | according to DIN 46 431 | | | | 8,9 | 1,7 | 0,54 | 0,011 |
| Fe | - | - | - | - | 7,85 | 12 | 3,82 | 0,08 |
| BPX | 97 | - | 3 | - | 8,9 | 12,5 | 3,98 | 0,084 |

Compensating Cables

| Part No. | Thermo-pair materials to DIN 43713 | Thermo-pair Type | Type | Core insulation | Jacket/Armouring/Jacket | Outer ø ca. mm | Form | Temperature range of insulation °C | Temperature range at installation °C | Min. bending radius ..x cable ø | Weight ca. kg/km |
|--|------------------------------------|------------------|----------------------|-----------------|---|----------------|-------|------------------------------------|---|---------------------------------|------------------|
| Single pair: 2 x 1,5 mm² (L = stranded wires, conductor make-up 48 x 0,20 mm; M = solid conductor, diameter 1,38 mm) | | | | | | | | | | | |
| 48001 | Fe-CuNi (Ko) | L | AE 1 L stranded | PVC | - | 5,4 | round | | | 7,5 | 40 |
| 48002 | SoNiCr-SoNi | K | AN 1 L stranded | PVC | - | 5,4 | round | | | 7,5 | 40 |
| 48003 | SoPtRh-SoPt | S | AP 1 L stranded | PVC | - | 5,4 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 40 |
| 48230 | Cu-CuNi (Ko) | U | AC 1 L stranded | PVC | - | 5,4 | round | | | 7,5 | 40 |
| 48478 | Fe-CuNi | J | AF 1 L stranded | PVC | - | 5,4 | round | | | 7,5 | 40 |
| 48004 | Fe-CuNi (Ko) | L | AE 1 M stranded | PVC | - | 5,4 | round | | | 10 | 40 |
| 48005 | SoNiCr-SoNi | K | AN 1 M stranded | PVC | - | 5,4 | round | | | 10 | 40 |
| 48006 | SoPtRh-SoPt | S | AP 1 M stranded | PVC | - | 5,4 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 10 | 40 |
| 48231 | Cu-CuNi (Ko) | U | AC 1 M stranded | PVC | - | 5,4 | round | | | 10 | 40 |
| 48007 | Fe-CuNi (Ko) | L | AE 1 L-SIL stranded | Silicone | - | 5,4 | round | | | 7,5 | 40 |
| 48008 | SoNiCr-SoNi | K | AN 1 L-SIL stranded | Silicone | - | 5,4 | round | | | 7,5 | 40 |
| 48009 | SoPtRh-SoPt | S | AP 1 L-SIL stranded | Silicone | - | 5,4 | round | -60°C to +180°C | stationary: -25°C to +180°C flexing: -25°C to +180°C | 7,5 | 40 |
| 48232 | Cu-CuNi (Ko) | U | AC 1 L-SIL stranded | Silicone | - | 5,4 | round | | stationary: -25°C to +180°C (short time +200°C) | 7,5 | 40 |
| 48233 | Fe-CuNi (Ko) | L | AE 2 M-SIL stranded | Silicone | textile tape/lead sheath/ | 7,8 | round | | | 15 | 248 |
| 48234 | SoNiCr-SoNi | K | AN 2 M-SIL stranded | Silicone | tin. steel wire braiding | 7,8 | round | -60°C to +180°C | stationary: -25°C to +180°C flexing: -25°C to +180°C | 15 | 248 |
| 48235 | SoPtRh-SoPt | S | AP 2 M-SIL stranded | Silicone | | 7,8 | round | | stationary: -25°C to +180°C (short time +200°C) | 15 | 248 |
| 48236 | Cu-CuNi (Ko) | U | AC 2 M-SIL stranded | Silicone | | 7,8 | round | | | 15 | 248 |
| 48010 | Fe-CuNi (Ko) | L | AE 3 L parallel | glass filam. | glass filam. braid. | 5,0x7,2 | oval | | | 7,5 | 64 |
| 48011 | SoNiCr-SoNi | K | AN 3 L parallel | glass filam. | glass filam. braid. | 5,0x7,2 | oval | | | 7,5 | 64 |
| 48012 | SoPtRh-SoPt | S | AP 3 L parallel | glass filam. | glass filam. braid. | 5,0x7,2 | oval | -60°C to +200°C | stationary: -25°C to +200°C flexing: -25°C to +200°C | 7,5 | 64 |
| 48237 | Cu-CuNi (Ko) | U | AC 3 L parallel | glass filam. | glass filam. braid. | 5,0x7,2 | oval | | | 7,5 | 64 |
| 48238 | Fe-CuNi (Ko) | L | AE 3 Ln-SIL parallel | Silicone | Silicone | 5,2x7,4 | oval | | | 7,5 | 62 |
| 48239 | SoNiCr-SoNi | K | AN 3 Ln-SIL parallel | Silicone | Silicone | 5,2x7,4 | oval | | | 7,5 | 62 |
| 48240 | SoPtRh-SoPt | S | AP 3 Ln-SIL parallel | Silicone | Silicone | 5,2x7,4 | oval | -60°C to +180°C | stationary: -25°C to +180°C flexing: -25°C to +180°C | 7,5 | 62 |
| 48241 | Cu-CuNi (Ko) | U | AC 3 Ln-SIL parallel | Silicone | Silicone | 5,2x7,4 | oval | | stationary: -25°C to +180°C (short time +200°C) | 7,5 | 62 |
| 48013 | Fe-CuNi (Ko) | L | AE 4 L parallel | glass filam. | glass filam. braid./galv. steel wire-braiding | 5,8x8,0 | oval | | | 7,5 | 87 |
| 48014 | SoNiCr-SoNi | K | AN 4 L parallel | glass filam. | | 5,8x8,0 | oval | | | 7,5 | 87 |
| 48015 | SoPtRh-SoPt | S | AP 4 L parallel | glass filam. | | 5,8x8,0 | oval | -60°C to +200°C | stationary: -25°C to +200°C flexing: -25°C to +200°C | 7,5 | 87 |
| 48242 | Cu-CuNi (Ko) | U | AC 4 L parallel | glass filam. | | 5,8x8,0 | oval | | | 7,5 | 87 |
| 48016 | Fe-CuNi (Ko) | L | AE 4 Ln-SIL | Silicone | Silicone/galv. steel wire-braiding | 6,0x8,2 | oval | | | 7,5 | 85 |
| 48017 | SoNiCr-SoNi | K | AN 4 Ln-SIL | Silicone | | 6,0x8,2 | oval | | | 7,5 | 85 |
| 48018 | SoPtRh-SoPt | S | AP 4 Ln-SIL | Silicone | | 6,0x8,2 | oval | -60°C to +180°C | stationary: -25°C to +180°C flexing: -25°C to +180°C | 7,5 | 85 |
| 48243 | Cu-CuNi (Ko) | U | AC 4 Ln-SIL | Silicone | | 6,0x8,2 | oval | | stationary: -25°C to +180°C (short time +200°C) | 7,5 | 85 |
| 48244 | Fe-CuNi (Ko) | L | AE 5 L | PVC | PETP-tape/Cu-solid wire | 8,1 | round | | | 7,5 | 93 |
| 48245 | SoNiCr-SoNi | K | AN 5 L | PVC | braiding/tinned/PVC-jacket | 8,1 | round | | | 7,5 | 93 |
| 48246 | SoPtRh-SoPt | S | AP 5 L | PVC | | 8,1 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 93 |
| 48247 | Cu-CuNi (Ko) | U | AC 5 L | PVC | | 8,1 | round | | | 7,5 | 93 |
| 48248 | Fe-CuNi (Ko) | L | AE 6 L-SIL | Silicone | PETP-tape/Cu-ground wire | 8,0 | round | | | 7,5 | 94 |
| 48249 | SoNiCr-SoNi | K | AN 6 L-SIL | Silicone | 0,5 mm ø / Alu-tape/Silicone | 8,0 | round | | | 7,5 | 94 |
| 48250 | SoPtRh-SoPt | S | AP 6 L-SIL | Silicone | | 8,0 | round | -60°C to +180°C | stationary: -25°C to +180°C flexing: -25°C to +180°C | 7,5 | 94 |
| 48251 | Cu-CuNi (Ko) | U | AC 6 L-SIL | Silicone | | 8,0 | round | | stationary: -25°C to +180°C (short time +200°C) | 7,5 | 94 |
| 48252 | Fe-CuNi (Ko) | L | AE 6 M-SIL | Silicone | PETP-tape/Cu-ground wire | 7,8 | round | | | 12 | 92 |
| 48253 | SoNiCr-SoNi | K | AN 6 M-SIL | Silicone | 0,5 mm ø / Alu-tape/Silicone | 7,8 | round | | | 12 | 92 |
| 48254 | SoPtRh-SoPt | S | AP 6 M-SIL | Silicone | | 7,8 | round | -60°C to +180°C | stationary: -25°C to +180°C flexing: -25°C to +180°C | 12 | 92 |
| 48255 | Cu-CuNi (Ko) | U | AC 6 M-SIL | Silicone | | 7,8 | round | | stationary: -25°C to +180°C (short time +200°C) | 12 | 92 |
| 48019 | Fe-CuNi (Ko) | L | AE 7 L parallel | PVC | glass filament | 5,5x8,2 | oval | | | 7,5 | 60 |
| 48020 | SoNiCr-SoNi | K | AN 7 L parallel | PVC | glass filament | 5,5x8,2 | oval | | | 7,5 | 60 |
| 48021 | SoPtRh-SoPt | S | AP 7 L parallel | PVC | glass filament | 5,5x8,2 | oval | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 60 |
| 48256 | Cu-CuNi (Ko) | U | AC 7 L parallel | PVC | glass filament | 5,5x8,2 | oval | | | 7,5 | 60 |
| 48022 | Fe-CuNi (Ko) | L | AE 8 L | PVC | glass filament/galv. steel wire braiding | 6,3x9,0 | oval | | | 7,5 | 82 |
| 48023 | SoNiCr-SoNi | K | AN 8 L | PVC | | 6,3x9,0 | oval | | | 7,5 | 82 |
| 48024 | SoPtRh-SoPt | S | AP 8 L | PVC | | 6,3x9,0 | oval | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 82 |
| 48257 | Cu-CuNi (Ko) | U | AC 8 L | PVC | | 6,3x9,0 | oval | | | 7,5 | 82 |
| 48025 | Fe-CuNi (Ko) | L | AE 9 L | PVC | PVC | 7,0 | round | | | 7,5 | 79 |
| 48026 | SoNiCr-SoNi | K | AN 9 L | PVC | PVC | 7,0 | round | | | 7,5 | 79 |
| 48027 | SoPtRh-SoPt | S | AP 9 L | PVC | PVC | 7,0 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 79 |
| 48258 | Cu-CuNi (Ko) | U | AC 9 L | PVC | PVC | 7,0 | round | | | 7,5 | 79 |
| 48479 | Fe-CuNi | J | AF 9 L | PVC | PVC | 7,0 | round | | | 7,5 | 79 |
| 48028 | Fe-CuNi (Ko) | L | AE 9-2 LS | PVC | PVC/galv. steel wire braiding | 7,8 | round | | | 7,5 | 108 |
| 48029 | SoNiCr-SoNi | K | AN 9-2 LS | PVC | | 7,8 | round | | | 7,5 | 108 |
| 48030 | SoPtRh-SoPt | S | AP 9-2 LS | PVC | | 7,8 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 108 |
| 48259 | Cu-CuNi (Ko) | U | AC 9-2 LS | PVC | | 7,8 | round | | | 7,5 | 108 |
| 48480 | Fe-CuNi | J | AF 9-2 LS | PVC | | 7,8 | round | | | 7,5 | 108 |
| 48031 | Fe-CuNi (Ko) | L | AE 9-2 LSY | PVC | PVC/galv. steel wire braiding/PVC | 9,8 | round | | | 7,5 | 147 |
| 48032 | SoNiCr-SoNi | K | AN 9-2 LSY | PVC | | 9,8 | round | | | 7,5 | 147 |
| 48069 | SoPtRh-SoPt | S | AP 9-2 LSY | PVC | | 9,8 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 147 |
| 48260 | Cu-CuNi (Ko) | U | AC 9-2 LSY | PVC | | 9,8 | round | | | 7,5 | 147 |

L = conductor of stranded wires
M = solid conductor
tin. = tinned
galv. = galvanized

Continuation ▶

Compensating Cables

| Part No. | Thermo-pair materials to DIN 43713 | Thermo-pair Type | Type | Core insulation | Jacket/Armouring/Jacket | Outer ø ca. mm | Form | Temperature range of insulation °C | Temperature range at installation °C | Min. bending radius .x cable ø | Weight ca. kg/km |
|--|------------------------------------|------------------|----------------------|---------------------------|--|----------------|-------|------------------------------------|--|--------------------------------|------------------|
| Single pair: 2 x 1,5 mm² (L = stranded wires, conductor make-up 48 x 0,20 mm; M = solid conductor, diameter 1,38 mm) | | | | | | | | | | | |
| 48033 | FE-CuNi (Ko) | L | AE 9 M | PVC | PVC | 7,0 | round | -10°C to +80°C | stationary: -25°C to +70°C | 12 | 79 |
| 48034 | SoNiCr-SoNi | K | AN 9 M | PVC | PVC | 7,0 | round | | flexing: -25°C to +70°C | 12 | 79 |
| 48035 | SoPtRh-SoPt | S | AP 9 M | PVC | PVC | 7,0 | round | | flexing: -5°C to +70°C | 12 | 79 |
| 48261 | Cu-CuNi (Ko) | U | AC 9 M | PVC | PVC | 7,0 | round | | flexing: -5°C to +70°C | 12 | 79 |
| 48262 | Fe-CuNi (Ko) | L | AE 9-2 MSY | PVC | PVC/galv. steel wire braiding/ PVC | 9,6 | round | -10°C to +80°C | stationary: -25°C to +70°C | 12 | 144 |
| 48263 | SoNiCr-SoNi | K | AN 9-2 MSY | PVC | | 9,6 | round | | flexing: -25°C to +70°C | 12 | 144 |
| 48264 | SoPtRh-SoPt | S | AP 9-2 MSY | PVC | | 9,6 | round | | flexing: -5°C to +70°C | 12 | 144 |
| 48265 | Cu-CuNi (Ko) | U | AC 9-2 MSY | PVC | | 9,6 | round | | flexing: -5°C to +70°C | 12 | 144 |
| 48036 | Fe-CuNi (Ko) | L | AE 10 L-SIL parallel | Silicone | glass filament | 5,5x8,2 | oval | -60°C to +180°C | stationary: -25°C to +180°C | 7,5 | 59 |
| 48037 | SoNiCr-SoNi | K | AN 10 L-SIL parallel | Silicone | glass filament | 5,5x8,2 | oval | | flexing: -25°C to +180°C | 7,5 | 59 |
| 48038 | SoPtRh-SoPt | S | AP 10 L-SIL parallel | Silicone | glass filament | 5,5x8,2 | oval | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 59 |
| 48266 | Cu-CuNi (Ko) | U | AC 10 L-SIL parallel | Silicone | glass filament | 5,5x8,2 | oval | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 59 |
| 48039 | Fe-CuNi (Ko) | L | AE 11 L | Silicone | glass filament/ galv. steel wire braiding | 6,3x9,0 | oval | -60°C to +180°C | stationary: -25°C to +180°C | 7,5 | 82 |
| 48040 | SoNiCr-SoNi | K | AN 11 L | Silicone | | 6,3x9,0 | oval | | flexing: -25°C to +180°C | 7,5 | 82 |
| 48041 | SoPtRh-SoPt | S | AP 11 L | Silicone | | 6,3x9,0 | oval | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 82 |
| 48267 | Cu-CuNi (Ko) | U | AC 11 L | Silicone | | 6,3x9,0 | oval | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 82 |
| 48042 | Fe-CuNi (Ko) | L | AE 11 Lr | Silicone | glass filament/ galv. steel wire braiding | 6,7 | round | -60°C to +180°C | stationary: -25°C to +180°C | 7,5 | 83 |
| 48043 | SoNiCr-SoNi | K | AN 11 Lr | Silicone | | 6,7 | round | | flexing: -25°C to +180°C | 7,5 | 83 |
| 48044 | SoPtRh-SoPt | S | AP 11 Lr | Silicone | | 6,7 | round | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 83 |
| 48268 | Cu-CuNi (Ko) | U | AC 11 Lr | Silicone | | 6,7 | round | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 83 |
| 48045 | Fe-CuNi (Ko) | L | AE 11 Mr | Silicone | glass filament/ galv. steel wire braiding | 6,5 | round | -60°C to +180°C | stationary: -25°C to +180°C | 12 | 83 |
| 48046 | SoNiCr-SoNi | K | AN 11 Mr | Silicone | | 6,5 | round | | flexing: -25°C to +180°C | 12 | 83 |
| 48047 | SoPtRh-SoPt | S | AP 11 Mr | Silicone | | 6,5 | round | | flexing: -25°C to +180°C (short time +200°C) | 12 | 83 |
| 48269 | Cu-CuNi (Ko) | U | AC 11 Mr | Silicone | | 6,5 | round | | flexing: -25°C to +180°C (short time +200°C) | 12 | 83 |
| 48048 | Fe-CuNi (Ko) | L | AE 12 L parallel | PVC | PVC | 4,3x7,0 | oval | -10°C to +80°C | stationary: -25°C to +70°C | 7,5 | 69 |
| 48049 | SoNiCr-SoNi | K | AN 12 L parallel | PVC | PVC | 4,3x7,0 | oval | | flexing: -25°C to +70°C | 7,5 | 69 |
| 48050 | SoPtRh-SoPt | S | AP 12 L parallel | PVC | PVC | 4,3x7,0 | oval | | flexing: -5°C to +70°C | 7,5 | 69 |
| 48270 | Cu-CuNi (Ko) | U | AC 12 L parallel | PVC | PVC | 4,3x7,0 | oval | | flexing: -5°C to +70°C | 7,5 | 69 |
| 48481 | Fe-CuNi | J | AF 12 L parallel | PVC | PVC | 4,3x7,0 | oval | | | 7,5 | 69 |
| 48051 | Fe-CuNi (Ko) | L | AE 12 M parallel | PVC | PVC | 4,2x6,8 | oval | -10°C to +80°C | stationary: -25°C to +70°C | 12 | 61 |
| 48052 | SoNiCr-SoNi | K | AN 12 M parallel | PVC | PVC | 4,2x6,8 | oval | | flexing: -25°C to +70°C | 12 | 61 |
| 48053 | SoPtRh-SoPt | S | AP 12 M parallel | PVC | PVC | 4,2x6,8 | oval | | flexing: -5°C to +70°C | 12 | 61 |
| 48271 | Cu-CuNi (Ko) | U | AC 12 M parallel | PVC | PVC | 4,2x6,8 | oval | | flexing: -5°C to +70°C | 12 | 61 |
| 48054 | Fe-CuNi (Ko) | L | AE 13 L parallel | Silicone | glass filament | 3,2x5,9 | oval | -60°C to +180°C | stationary: -25°C to +180°C | 7,5 | 45 |
| 48055 | SoNiCr-SoNi | K | AN 13 L parallel | Silicone | glass filament | 3,2x5,9 | oval | | flexing: -25°C to +180°C | 7,5 | 45 |
| 48056 | SoPtRh-SoPt | S | AP 13 L parallel | Silicone | glass filament | 3,2x5,9 | oval | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 45 |
| 48272 | Cu-CuNi (Ko) | U | AC 13 L parallel | Silicone | glass filament | 3,2x5,9 | oval | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 45 |
| 48057 | Fe-CuNi (Ko) | L | AE 13 M | Silicone | glass filament | 3,5x6,0 | oval | -60°C to +180°C | stationary: -25°C to +180°C | 12 | 45 |
| 48058 | SoNiCr-SoNi | K | AN 13 M | Silicone | glass filament | 3,5x6,0 | oval | | flexing: -25°C to +180°C | 12 | 45 |
| 48059 | SoPtRh-SoPt | S | AP 13 M | Silicone | glass filament | 3,5x6,0 | oval | | flexing: -25°C to +180°C (short time +200°C) | 12 | 45 |
| 48273 | Cu-CuNi (Ko) | U | AC 13 M | Silicone | glass filament | 3,5x6,0 | oval | | flexing: -25°C to +180°C (short time +200°C) | 12 | 45 |
| 48060 | Fe-CuNi (Ko) | L | AE 14 L | Silicone | special Silicone compound, foamed/ galv. steel tubing | 11,7 | round | -60°C to +180°C | stationary: -25°C to +180°C | 7,5 | 196 |
| 48061 | SoNiCr-SoNi | K | AN 14 L | Silicone | | 11,7 | round | | flexing: -25°C to +180°C | 7,5 | 196 |
| 48062 | SoPtRh-SoPt | S | AP 14 L | Silicone | | 11,7 | round | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 196 |
| 48274 | Cu-CuNi (Ko) | U | AC 14 L | Silicone | | 11,7 | round | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 196 |
| 48063 | Fe-CuNi (Ko) | L | AE 15 L | Silicone | Silicone | 7,7 | round | -60°C to +180°C | stationary: -25°C to +180°C | 7,5 | 76 |
| 48064 | SoNiCr-SoNi | K | AN 15 L | Silicone | Silicone | 7,7 | round | | flexing: -25°C to +180°C | 7,5 | 76 |
| 48065 | SoPtRh-SoPt | S | AP 15 L | Silicone | Silicone | 7,7 | round | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 76 |
| 48275 | Cu-CuNi (Ko) | U | AC 15 L | Silicone | Silicone | 7,7 | round | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 76 |
| 48482 | Fe-CuNi | J | AF 15 L | Silicone | Silicone | 7,7 | round | | | 7,5 | 76 |
| 48066 | Fe-CuNi (Ko) | L | AE 15 LS | Silicone | Silicone/ galv. steel wire braiding | 7,8 | round | -10°C to +180°C | stationary: -25°C to +180°C | 7,5 | 105 |
| 48067 | SoNiCr-SoNi | K | AN 15 LS | Silicone | | 7,8 | round | | flexing: -25°C to +180°C | 7,5 | 105 |
| 48068 | SoPtRh-SoPt | S | AP 15 LS | Silicone | | 7,8 | round | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 105 |
| 48276 | Cu-CuNi (Ko) | U | AC 15 LS | Silicone | | 7,8 | round | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 105 |
| 48277 | Fe-CuNi (Ko) | L | AE 16 L-SIL parallel | Silicone | - | 2,8x5,6 | oval | -10°C to +180°C | stationary: -25°C to +180°C | 7,5 | 38 |
| 48278 | SoNiCr-SoNi | K | AN 16 L-SIL parallel | Silicone | - | 2,8x5,6 | oval | | flexing: -25°C to +180°C | 7,5 | 38 |
| 48279 | SoPtRh-SoPt | S | AP 16 L-SIL parallel | Silicone | - | 2,8x5,6 | oval | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 38 |
| 48280 | Cu-CuNi (Ko) | U | AC 16 L-SIL parallel | Silicone | - | 2,8x5,6 | oval | | flexing: -25°C to +180°C (short time +200°C) | 7,5 | 38 |
| 48281 | Fe-CuNi (Ko) | L | AE 18 L | HELUFLO [®] -FEP | HELUFLO [®] -FEP | 4,4 | round | -100°C to +200°C | stationary: -25°C to +205°C | 7,5 | 37 |
| 48282 | SoNiCr-SoNi | K | AN 18 L | HELUFLO [®] -FEP | HELUFLO [®] -FEP | 4,4 | round | | flexing: -25°C to +205°C | 7,5 | 37 |
| 48283 | SoPtRh-SoPt | S | AP 18 L | HELUFLO [®] -FEP | HELUFLO [®] -FEP | 4,4 | round | | flexing: -25°C to +205°C | 7,5 | 37 |
| 48284 | Cu-CuNi (Ko) | U | AC 18 L | HELUFLO [®] -FEP | HELUFLO [®] -FEP | 4,4 | round | | flexing: -25°C to +205°C | 7,5 | 37 |
| 48285 | Fe-CuNi (Ko) | L | AE 19 L | HELUFLO [®] -FEP | PETP-tape/ Cu-solid wire braiding | 5,6 | round | -100°C to +200°C | stationary: -25°C to +205°C | 7,5 | 60 |
| 48286 | SoNiCr-SoNi | K | AN 19 L | HELUFLO [®] -FEP | | 5,6 | round | | flexing: -25°C to +205°C | 7,5 | 60 |
| 48287 | SoPtRh-SoPt | S | AP 19 L | HELUFLO [®] -FEP | | 5,6 | round | | flexing: -25°C to +205°C | 7,5 | 60 |
| 48288 | Cu-CuNi (Ko) | U | AC 19 L | HELUFLO [®] -FEP | | 5,6 | round | | flexing: -25°C to +205°C | 7,5 | 60 |

Continuation ▶

L = conductor of stranded wires
M = solid conductor
tin. = tinned
galv. = galvanized

Compensating Cables

| Part No. | Thermo-pair materials to DIN 43713 | Thermo-pair Type | Type | Core insulation | Jacket/ Armouring/ Jacket | Outer ø ca. mm | Form | Temperature range of insulation °C | Temperature range at installation °C | Min. bending radius ..x cable ø | Weight ca. kg/km | | | | |
|---|------------------------------------|------------------|------------|-----------------|------------------------------------|----------------|-------|------------------------------------|--|---------------------------------|------------------|----------------|--|-----|-----|
| Single pair: 2 x 1,5 mm² (L = stranded wires, conductor make-up 48 x 0,20 mm; M = solid conductor, diameter 1,38 mm) | | | | | | | | | | | | | | | |
| 48289 | FE-CuNi (Ko) | L | AE 20 L | PVC | PETP-tape/ | 8,0 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 75 | | | | |
| 48290 | SoNiCr-SoNi | K | AN 20 L | PVC | Cu-ground wire | 8,0 | round | | | | | | | | |
| 48291 | SoPtRh-SoPt | S | AP 20 L | PVC | bare 0,5 mm ø / | 8,0 | round | | | | | | | | |
| 48292 | Cu-CuNi (Ko) | U | AC 20 L | PVC | Alu-tape/PVC | 8,0 | round | | | | | | | | |
| 48293 | Fe-CuNi (Ko) | L | AE 20 M | PVC | PETP-tape/ | 8,2 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 82 | | | | |
| 48294 | SoNiCr-SoNi | K | AN 20 M | PVC | Cu-ground wire | 8,2 | round | | | | | | | | |
| 48295 | SoPtRh-SoPt | S | AP 20 M | PVC | bare 0,5 mm ø / | 8,2 | round | | | | | | | | |
| 48296 | Cu-CuNi (Ko) | U | AC 20 M | PVC | Alu-tape/PVC | 8,2 | round | | | | | | | | |
| Multi-paired: 2 pairs (4 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm; M = solid conductor, diameter 1,38 mm) | | | | | | | | | | | | | | | |
| 48100 | Fe-CuNi (Ko) | L | AE 9-4 L | PVC | PVC | 8,3 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 125 | | | | |
| 48101 | SoNiCr-SoNi | K | AN 9-4 L | PVC | PVC | 8,3 | round | | | | | | | | |
| 48102 | SoPtRh-SoPt | S | AP 9-4 L | PVC | PVC | 8,3 | round | | | | | | | | |
| 48297 | Cu-CuNi (Ko) | U | AC 9-4 L | PVC | PVC | 8,3 | round | | | | | | | | |
| 48483 | Fe-CuNi | J | AF 9-4 L | PVC | PVC | 8,3 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 155 | | | | |
| 48298 | Fe-CuNi (Ko) | L | AE 9-4 LS | PVC | PVC/galv. steel wire braiding | 8,9 | round | | | | | | | | |
| 48299 | SoNiCr-SoNi | K | AN 9-4 LS | PVC | PVC/galv. steel wire braiding | 8,9 | round | | | | | | | | |
| 48300 | SoPtRh-SoPt | S | AP 9-4 LS | PVC | PVC/galv. steel wire braiding | 8,9 | round | | | | | | | | |
| 48301 | Cu-CuNi (Ko) | U | AC 9-4 LS | PVC | PVC/galv. steel wire braiding/ PVC | 8,9 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 220 | | | | |
| 48137 | Fe-CuNi (Ko) | L | AE 9-4 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 11,4 | round | | | | | | | | |
| 48138 | SoNiCr-SoNi | K | AN 9-4 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 11,4 | round | | | | | | | | |
| 48139 | SoPtRh-SoPt | S | AP 9-4 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 11,4 | round | | | | | | | | |
| 48302 | Cu-CuNi (Ko) | U | AC 9-4 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 11,4 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 210 | | | | |
| 48303 | Fe-CuNi (Ko) | L | AE 9-4 MSY | PVC | PVC/galv. steel wire braiding/ PVC | 11,0 | round | | | | | | | | |
| 48304 | SoNiCr-SoNi | K | AN 9-4 MSY | PVC | PVC/galv. steel wire braiding/ PVC | 11,0 | round | | | | | | | | |
| 48305 | SoPtRh-SoPt | S | AP 9-4 MSY | PVC | PVC/galv. steel wire braiding/ PVC | 11,0 | round | | | | | | | | |
| 48306 | Cu-CuNi (Ko) | U | AC 9-4 MSY | PVC | PVC/galv. steel wire braiding/ PVC | 11,0 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 137 | | | | |
| 48307 | Fe-CuNi (Ko) | L | AE 20-4 M | PVC | PETP-tape/ | 10,8 | round | | | | | | | | |
| 48308 | SoNiCr-SoNi | K | AN 20-4 M | PVC | Cu-ground wire | 10,8 | round | | | | | | | | |
| 48309 | SoPtRh-SoPt | S | AP 20-4 M | PVC | bare 0,5 mm ø / | 10,8 | round | | | | | | | | |
| 48310 | Cu-CuNi (Ko) | U | AC 20-4 M | PVC | Alu-tape/PVC | 10,8 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 137 | | | | |
| Multi-paired: 3 pairs (6 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm; M = solid conductor, diameter 1,38 mm) | | | | | | | | | | | | | | | |
| 48103 | Fe-CuNi (Ko) | L | AE 9-6 L | PVC | PVC | 10,3 | round | | | | | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 190 |
| 48104 | SoNiCr-SoNi | K | AN 9-6 L | PVC | PVC | 10,3 | round | | | | | | | | |
| 48105 | SoPtRh-SoPt | S | AP 9-6 L | PVC | PVC | 10,3 | round | | | | | | | | |
| 48311 | Cu-CuNi (Ko) | U | AC 9-6 L | PVC | PVC | 10,3 | round | | | | | | | | |
| 48484 | Fe-CuNi | J | AF 9-6 L | PVC | PVC | 10,3 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 226 | | | | |
| 48312 | Fe-CuNi (Ko) | L | AE 9-6 LS | PVC | PVC/galv. steel wire braiding | 10,9 | round | | | | | | | | |
| 48313 | SoNiCr-SoNi | K | AN 9-6 LS | PVC | PVC/galv. steel wire braiding | 10,9 | round | | | | | | | | |
| 48314 | SoPtRh-SoPt | S | AP 9-6 LS | PVC | PVC/galv. steel wire braiding | 10,9 | round | | | | | | | | |
| 48315 | Cu-CuNi (Ko) | U | AC 9-6 LS | PVC | PVC/galv. steel wire braiding/ PVC | 10,9 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 292 | | | | |
| 48140 | Fe-CuNi (Ko) | L | AE 9-6 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 13,4 | round | | | | | | | | |
| 48141 | SoNiCr-SoNi | K | AN 9-6 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 13,4 | round | | | | | | | | |
| 48142 | SoPtRh-SoPt | S | AP 9-6 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 13,4 | round | | | | | | | | |
| 48316 | Cu-CuNi (Ko) | U | AC 9-6 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 13,4 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 272 | | | | |
| 48317 | Fe-CuNi (Ko) | L | AE 9-6 MSY | PVC | PVC/galv. steel wire braiding/ PVC | 12,5 | round | | | | | | | | |
| 48318 | SoNiCr-SoNi | K | AN 9-6 MSY | PVC | PVC/galv. steel wire braiding/ PVC | 12,5 | round | | | | | | | | |
| 48319 | SoPtRh-SoPt | S | AP 9-6 MSY | PVC | PVC/galv. steel wire braiding/ PVC | 12,5 | round | | | | | | | | |
| 48320 | Cu-CuNi (Ko) | U | AC 9-6 MSY | PVC | PVC/galv. steel wire braiding/ PVC | 12,5 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 186 | | | | |
| 48321 | Fe-CuNi (Ko) | L | AE 20-6 M | PVC | PETP-tape/ | 12,4 | round | | | | | | | | |
| 48322 | SoNiCr-SoNi | K | AN 20-6 M | PVC | Cu-ground wire | 12,4 | round | | | | | | | | |
| 48323 | SoPtRh-SoPt | S | AP 20-6 M | PVC | bare 0,5 mm ø / | 12,4 | round | | | | | | | | |
| 48324 | Cu-CuNi (Ko) | U | AC 20-6 M | PVC | Alu-tape/PVC | 12,4 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 238 | | | | |
| Multi-paired: 4 pairs (8 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm) | | | | | | | | | | | | | | | |
| 48106 | Fe-CuNi (Ko) | L | AE 9-8 L | PVC | PVC | 11,0 | round | | | | | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 410 |
| 48107 | SoNiCr-SoNi | K | AN 9-8 L | PVC | PVC | 11,0 | round | | | | | | | | |
| 48108 | SoPtRh-SoPt | S | AP 9-8 L | PVC | PVC | 11,0 | round | | | | | | | | |
| 48325 | Cu-CuNi (Ko) | U | AC 9-8 L | PVC | PVC | 11,0 | round | | | | | | | | |
| 48485 | Fe-CuNi | J | AF 9-8 L | PVC | PVC | 11,0 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 410 | | | | |
| 48143 | Fe-CuNi (Ko) | L | AE 9-8 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 14,0 | round | | | | | | | | |
| 48144 | SoNiCr-SoNi | K | AN 9-8 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 14,0 | round | | | | | | | | |
| 48145 | SoPtRh-SoPt | S | AP 9-8 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 14,0 | round | | | | | | | | |
| 48326 | Cu-CuNi (Ko) | U | AC 9-8 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 14,0 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 410 | | | | |

Continuation ▶

L = conductor of stranded wires
M = solid conductor
tin. = tinned
galv. = galvanized

Compensating Cables

| Part No. | Thermo-pair materials to DIN 43713 | Thermo-pair Type | Type | Core insulation | Jacket/Armouring/Jacket | Outer ø ca. mm | Form | Temperature range of insulation °C | Temperature range at installation °C | Min. bending radius .x cable ø | Weight ca. kg/km |
|--|------------------------------------|------------------|-------------|-----------------|---|----------------|-------|------------------------------------|--|--------------------------------|------------------|
| Multi-paired: 5 pairs (10 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm) | | | | | | | | | | | |
| 48109 | Fe-CuNi (Ko) | L | AE 9-10 L | PVC | PVC | 13,0 | round | | | 7,5 | 284 |
| 48110 | SoNiCr-SoNi | K | AN 9-10 L | PVC | PVC | 13,0 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 284 |
| 48111 | SoPtRh-SoPt | S | AP 9-10 L | PVC | PVC | 13,0 | round | | | 7,5 | 284 |
| 48327 | Cu-CuNi (Ko) | U | AC 9-10 L | PVC | PVC | 13,0 | round | | | 7,5 | 284 |
| 48486 | Fe-CuNi | J | AF 9-10 L | PVC | PVC | 13,0 | round | | | 7,5 | 284 |
| 48146 | Fe-CuNi (Ko) | L | AE 9-10 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 16,5 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 475 |
| 48147 | SoNiCr-SoNi | K | AN 9-10 LSY | PVC | | 16,5 | round | | | 7,5 | 475 |
| 48148 | SoPtRh-SoPt | S | AP 9-10 LSY | PVC | | 16,5 | round | | | 7,5 | 475 |
| 48328 | Cu-CuNi (Ko) | U | AC 9-10 LSY | PVC | | 16,5 | round | | | 7,5 | 475 |
| Multi-paired: 6 pairs (12 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm; M = solid conductor, diameter 1,38 mm) | | | | | | | | | | | |
| 48112 | Fe-CuNi (Ko) | L | AE 9-12 L | PVC | PVC | 13,5 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 320 |
| 48113 | SoNiCr-SoNi | K | AN 9-12 L | PVC | PVC | 13,5 | round | | | 7,5 | 320 |
| 48114 | SoPtRh-SoPt | S | AP 9-12 L | PVC | PVC | 13,5 | round | | | 7,5 | 320 |
| 48329 | Cu-CuNi (Ko) | U | AC 9-12 L | PVC | PVC | 13,5 | round | | | 7,5 | 320 |
| 48487 | Fe-CuNi | J | AF 9-12 L | PVC | PVC | 13,5 | round | | | 7,5 | 320 |
| 48330 | Fe-CuNi (Ko) | L | AE 9-12 LS | PVC | PVC/galv. steel wire braiding | 14,2 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 384 |
| 48331 | SoNiCr-SoNi | K | AN 9-12 LS | PVC | | 14,2 | round | | | 7,5 | 384 |
| 48332 | SoPtRh-SoPt | S | AP 9-12 LS | PVC | | 14,2 | round | | | 7,5 | 384 |
| 48333 | Cu-CuNi (Ko) | U | AC 9-12 LS | PVC | | 14,2 | round | | | 7,5 | 384 |
| 48149 | Fe-CuNi (Ko) | L | AE 9-12 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 17,5 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 483 |
| 48150 | SoNiCr-SoNi | K | AN 9-12 LSY | PVC | | 17,5 | round | | | 7,5 | 483 |
| 48151 | SoPtRh-SoPt | S | AP 9-12 LSY | PVC | | 17,5 | round | | | 7,5 | 483 |
| 48334 | Cu-CuNi (Ko) | U | AC 9-12 LSY | PVC | | 17,5 | round | | | 7,5 | 483 |
| 48335 | Fe-CuNi (Ko) | L | AE 9-12 MSY | PVC | PVC/galv. steel wire braiding/ PVC | 16,5 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 478 |
| 48336 | SoNiCr-SoNi | K | AN 9-12 MSY | PVC | | 16,5 | round | | | 12 | 478 |
| 48337 | SoPtRh-SoPt | S | AP 9-12 MSY | PVC | | 16,5 | round | | | 12 | 478 |
| 48338 | Cu-CuNi (Ko) | U | AC 9-12 MSY | PVC | | 16,5 | round | | | 12 | 478 |
| 48339 | Fe-CuNi (Ko) | L | AE 20-12 M | PVC | PETP-tape/ Cu-ground wire bare 0,5 mm ø/ Alu-tape/ PVC | 16,3 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 362 |
| 48340 | SoNiCr-SoNi | K | AN 20-12 M | PVC | | 16,3 | round | | | 12 | 362 |
| 48341 | SoPtRh-SoPt | S | AP 20-12 M | PVC | | 16,3 | round | | | 12 | 362 |
| 48342 | Cu-CuNi (Ko) | U | AC 20-12 M | PVC | | 16,3 | round | | | 12 | 362 |
| Multi-paired: 7 pairs (14 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm) | | | | | | | | | | | |
| 48115 | Fe-CuNi (Ko) | L | AE 9-14 L | PVC | PVC | 14,5 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 396 |
| 48116 | SoNiCr-SoNi | K | AN 9-14 L | PVC | PVC | 14,5 | round | | | 7,5 | 396 |
| 48117 | SoPtRh-SoPt | S | AP 9-14 L | PVC | PVC | 14,5 | round | | | 7,5 | 396 |
| 48343 | Cu-CuNi (Ko) | U | AC 9-14 L | PVC | PVC | 14,5 | round | | | 7,5 | 396 |
| 48488 | Fe-CuNi | J | AF 9-14 L | PVC | PVC | 14,5 | round | | | 7,5 | 396 |
| 48152 | Fe-CuNi (Ko) | L | AE 9-14 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 18,5 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 640 |
| 48153 | SoNiCr-SoNi | K | AN 9-14 LSY | PVC | | 18,5 | round | | | 7,5 | 640 |
| 48154 | SoPtRh-SoPt | S | AP 9-14 LSY | PVC | | 18,5 | round | | | 7,5 | 640 |
| 48344 | Cu-CuNi (Ko) | U | AC 9-14 LSY | PVC | | 18,5 | round | | | 7,5 | 640 |
| Multi-paired: 8 pairs (16 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm; M = solid conductor, diameter 1,38 mm) | | | | | | | | | | | |
| 48118 | Fe-CuNi (Ko) | L | AE 9-16 L | PVC | PVC | 15,1 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 419 |
| 48119 | SoNiCr-SoNi | K | AN 9-16 L | PVC | PVC | 15,1 | round | | | 7,5 | 419 |
| 48120 | SoPtRh-SoPt | S | AP 9-16 L | PVC | PVC | 15,1 | round | | | 7,5 | 419 |
| 48345 | Cu-CuNi (Ko) | U | AC 9-16 L | PVC | PVC | 15,1 | round | | | 7,5 | 419 |
| 48489 | Fe-CuNi | J | AF 9-16 L | PVC | PVC | 15,1 | round | | | 7,5 | 419 |
| 48346 | Fe-CuNi (Ko) | L | AE 9-16 LS | PVC | PVC/galv. steel wire braiding | 16,1 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 495 |
| 48347 | SoNiCr-SoNi | K | AN 9-16 LS | PVC | | 16,1 | round | | | 7,5 | 495 |
| 48348 | SoPtRh-SoPt | S | AP 9-16 LS | PVC | | 16,1 | round | | | 7,5 | 495 |
| 48349 | Cu-CuNi (Ko) | U | AC 9-16 LS | PVC | | 16,1 | round | | | 7,5 | 495 |
| 48155 | Fe-CuNi (Ko) | L | AE 9-16 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 19,3 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 623 |
| 48156 | SoNiCr-SoNi | K | AN 9-16 LSY | PVC | | 19,3 | round | | | 7,5 | 623 |
| 48157 | SoPtRh-SoPt | S | AP 9-16 LSY | PVC | | 19,3 | round | | | 7,5 | 623 |
| 48350 | Cu-CuNi (Ko) | U | AC 9-16 LSY | PVC | | 19,3 | round | | | 7,5 | 623 |
| 48351 | Fe-CuNi (Ko) | L | AE 9-16 MSY | PVC | PVC/galv. steel wire braiding/ PVC | 18,7 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 616 |
| 48352 | SoNiCr-SoNi | K | AN 9-16 MSY | PVC | | 18,7 | round | | | 12 | 616 |
| 48353 | SoPtRh-SoPt | S | AP 9-16 MSY | PVC | | 18,7 | round | | | 12 | 616 |
| 48354 | Cu-CuNi (Ko) | U | AC 9-16 MSY | PVC | | 18,7 | round | | | 12 | 616 |
| 48355 | Fe-CuNi (Ko) | L | AE 20-16 M | PVC | PETP-tape/ Cu-ground wire bare 0,5 mm ø/ Alu-tape/ PVC | 16,8 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 423 |
| 48356 | SoNiCr-SoNi | K | AN 20-16 M | PVC | | 16,8 | round | | | 12 | 423 |
| 48357 | SoPtRh-SoPt | S | AP 20-16 M | PVC | | 16,8 | round | | | 12 | 423 |
| 48358 | Cu-CuNi (Ko) | U | AC 20-16 M | PVC | | 16,8 | round | | | 12 | 423 |

Continuation ►

L = conductor of stranded wires
M = solid conductor
tin. = tinned
galv. = galvanized

Compensating Cables

| Part No. | Thermo-pair materials to DIN 43713 | Thermo-pair Type | Type | Core insulation | Jacket/Armouring/Jacket | Outer ø ca. mm | Form | Temperature range of insulation °C | Temperature range at installation °C | Min. bending radius .x cable ø | Weight ca. kg/km |
|---|------------------------------------|------------------|-------------|-----------------|---|----------------|-------|------------------------------------|--------------------------------------|--------------------------------|------------------|
| Multi-paired: 9 pairs (18 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm) | | | | | | | | | | | |
| 48121 | Fe-CuNi (Ko) | L | AE 9-18 L | PVC | PVC | 16,5 | round | | | 7,5 | 480 |
| 48122 | SoNiCr-SoNi | K | AN 9-18 L | PVC | PVC | 16,5 | round | -10°C to +80°C | stationary: -25°C to +70°C | 7,5 | 480 |
| 48123 | SoPtRh-SoPt | S | AP 9-18 L | PVC | PVC | 16,5 | round | | flexing: -5°C to +70°C | 7,5 | 480 |
| 48359 | Cu-CuNi (Ko) | U | AC 9-18 L | PVC | PVC | 16,5 | round | | | 7,5 | 480 |
| 48490 | Fe-CuNi | J | AF 9-18 L | PVC | PVC | 16,5 | round | | | 7,5 | 480 |
| 48158 | Fe-CuNi (Ko) | L | AE 9-18 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 20,5 | round | -10°C to +80°C | stationary: -25°C to +70°C | 7,5 | 758 |
| 48159 | SoNiCr-SoNi | K | AN 9-18 LSY | PVC | | 20,5 | round | | flexing: -5°C to +70°C | 7,5 | 758 |
| 48160 | SoPtRh-SoPt | S | AP 9-18 LSY | PVC | | 20,5 | round | | | 7,5 | 758 |
| 48360 | Cu-CuNi (Ko) | U | AC 9-18 LSY | PVC | | 20,5 | round | | | 7,5 | 758 |
| Multi-paired: 10 pairs (20 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm; M = solid conductor, diameter 1,38 mm) | | | | | | | | | | | |
| 48124 | Fe-CuNi (Ko) | L | AE 9-20 L | PVC | PVC | 16,7 | round | | | 7,5 | 520 |
| 48125 | SoNiCr-SoNi | K | AN 9-20 L | PVC | PVC | 16,7 | round | -10°C to +80°C | stationary: -25°C to +70°C | 7,5 | 520 |
| 48126 | SoPtRh-SoPt | S | AP 9-20 L | PVC | PVC | 16,7 | round | | flexing: -5°C to +70°C | 7,5 | 520 |
| 48361 | Cu-CuNi (Ko) | U | AC 9-20 L | PVC | PVC | 16,7 | round | | | 7,5 | 520 |
| 48491 | Fe-CuNi | J | AF 9-20 L | PVC | PVC | 16,7 | round | | | 7,5 | 520 |
| 48362 | Fe-CuNi (Ko) | L | AE 9-20 LS | PVC | PVC/galv. steel wire braiding | 17,7 | round | -10°C to +80°C | stationary: -25°C to +70°C | 7,5 | 613 |
| 48363 | SoNiCr-SoNi | K | AN 9-20 LS | PVC | | 17,7 | round | | flexing: -5°C to +70°C | 7,5 | 613 |
| 48364 | SoPtRh-SoPt | S | AP 9-20 LS | PVC | | 17,7 | round | | | 7,5 | 613 |
| 48365 | Cu-CuNi (Ko) | U | AC 9-20 LS | PVC | | 17,7 | round | | | 7,5 | 613 |
| 48161 | Fe-CuNi (Ko) | L | AE 9-20 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 20,9 | round | -10°C to +80°C | stationary: -25°C to +70°C | 7,5 | 752 |
| 48162 | SoNiCr-SoNi | K | AN 9-20 LSY | PVC | | 20,9 | round | | flexing: -5°C to +70°C | 7,5 | 752 |
| 48163 | SoPtRh-SoPt | S | AP 9-20 LSY | PVC | | 20,9 | round | | | 7,5 | 752 |
| 48366 | Cu-CuNi (Ko) | U | AC 9-20 LSY | PVC | | 20,9 | round | | | 7,5 | 752 |
| 48367 | Fe-CuNi (Ko) | L | AE 9-20 MSY | PVC | PVC/galv. steel wire braiding/ PVC | 20,3 | round | -10°C to +80°C | stationary: -25°C to +70°C | 12 | 744 |
| 48368 | SoNiCr-SoNi | K | AN 9-20 MSY | PVC | | 20,3 | round | | flexing: -5°C to +70°C | 12 | 744 |
| 48369 | SoPtRh-SoPt | S | AP 9-20 MSY | PVC | | 20,3 | round | | | 12 | 744 |
| 48370 | Cu-CuNi (Ko) | U | AC 9-20 MSY | PVC | | 20,3 | round | | | 12 | 744 |
| 48371 | Fe-CuNi (Ko) | L | AE 20-20 M | PVC | PETP-tape/ Cu-ground wire bare 0,5 mm ø/ Alu-tape/ PVC | 20,3 | round | -10°C to +80°C | stationary: -25°C to +70°C | 12 | 542 |
| 48372 | SoNiCr-SoNi | K | AN 20-20 M | PVC | | 20,3 | round | | flexing: -5°C to +70°C | 12 | 542 |
| 48373 | SoPtRh-SoPt | S | AP 20-20 M | PVC | | 20,3 | round | | | 12 | 542 |
| 48374 | Cu-CuNi (Ko) | U | AC 20-20 M | PVC | | 20,3 | round | | | 12 | 542 |
| Multi-paired: 12 pairs (24 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm; M = solid conductor, diameter 1,38 mm) | | | | | | | | | | | |
| 48127 | Fe-CuNi (Ko) | L | AE 9-24 L | PVC | PVC | 19,0 | round | | | 7,5 | 614 |
| 48128 | SoNiCr-SoNi | K | AN 9-24 L | PVC | PVC | 19,0 | round | -10°C to +80°C | stationary: -25°C to +70°C | 7,5 | 614 |
| 48129 | SoPtRh-SoPt | S | AP 9-24 L | PVC | PVC | 19,0 | round | | flexing: -5°C to +70°C | 7,5 | 614 |
| 48375 | Cu-CuNi (Ko) | U | AC 9-24 L | PVC | PVC | 19,0 | round | | | 7,5 | 614 |
| 48492 | Fe-CuNi | J | AF 9-24 L | PVC | PVC | 19,0 | round | | | 7,5 | 614 |
| 48376 | Fe-CuNi (Ko) | L | AE 9-24 LS | PVC | PVC/galv. steel wire braiding | 20,2 | round | -10°C to +80°C | stationary: -25°C to +70°C | 7,5 | 738 |
| 48377 | SoNiCr-SoNi | K | AN 9-24 LS | PVC | | 20,2 | round | | flexing: -5°C to +70°C | 7,5 | 738 |
| 48378 | SoPtRh-SoPt | S | AP 9-24 LS | PVC | | 20,2 | round | | | 7,5 | 738 |
| 48379 | Cu-CuNi (Ko) | U | AC 9-24 LS | PVC | | 20,2 | round | | | 7,5 | 738 |
| 48164 | Fe-CuNi (Ko) | L | AE 9-24 LSY | PVC | PVC/galv. steel wire braiding/ PVC | 24,2 | round | -10°C to +80°C | stationary: -25°C to +70°C | 7,5 | 938 |
| 48165 | SoNiCr-SoNi | K | AN 9-24 LSY | PVC | | 24,2 | round | | flexing: -5°C to +70°C | 7,5 | 938 |
| 48166 | SoPtRh-SoPt | S | AP 9-24 LSY | PVC | | 24,2 | round | | | 7,5 | 938 |
| 48380 | Cu-CuNi (Ko) | U | AC 9-24 LSY | PVC | | 24,2 | round | | | 7,5 | 938 |
| 48381 | Fe-CuNi (Ko) | L | AE 9-24 MSY | PVC | PVC/galv. steel wire braiding/ PVC | 23,1 | round | -10°C to +80°C | stationary: -25°C to +70°C | 12 | 907 |
| 48382 | SoNiCr-SoNi | K | AN 9-24 MSY | PVC | | 23,1 | round | | flexing: -5°C to +70°C | 12 | 907 |
| 48383 | SoPtRh-SoPt | S | AP 9-24 MSY | PVC | | 23,1 | round | | | 12 | 907 |
| 48384 | Cu-CuNi (Ko) | U | AC 9-24 MSY | PVC | | 23,1 | round | | | 12 | 907 |
| 48385 | Fe-CuNi (Ko) | L | AE 20-24 M | PVC | PETP-tape/ Cu-ground wire bare 0,5 mm ø/ Alu-tape/ PVC | 22,5 | round | -10°C to +80°C | stationary: -25°C to +70°C | 12 | 638 |
| 48386 | SoNiCr-SoNi | K | AN 20-24 M | PVC | | 22,5 | round | | flexing: -5°C to +70°C | 12 | 638 |
| 48387 | SoPtRh-SoPt | S | AP 20-24 M | PVC | | 22,5 | round | | | 12 | 638 |
| 48388 | Cu-CuNi (Ko) | U | AC 20-24 M | PVC | | 22,5 | round | | | 12 | 638 |
| Multi-paired: 16 pairs (32 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm; M = solid conductor, diameter 1,38 mm) | | | | | | | | | | | |
| 48389 | Fe-CuNi (Ko) | L | AE 9-32 L | PVC | PVC | 20,9 | round | | | 7,5 | 793 |
| 48390 | SoNiCr-SoNi | K | AN 9-32 L | PVC | PVC | 20,9 | round | -10°C to +80°C | stationary: -25°C to +70°C | 7,5 | 793 |
| 48391 | SoPtRh-SoPt | S | AP 9-32 L | PVC | PVC | 20,9 | round | | flexing: -5°C to +70°C | 7,5 | 793 |
| 48392 | Cu-CuNi (Ko) | U | AC 9-32 L | PVC | PVC | 20,9 | round | | | 7,5 | 793 |
| 48493 | Fe-CuNi | J | AF 9-32 L | PVC | PVC | 20,9 | round | | | 7,5 | 793 |
| 48393 | Fe-CuNi (Ko) | L | AE 9-32 LS | PVC | PVC/galv. steel wire braiding | 22,1 | round | -10°C to +80°C | stationary: -25°C to +70°C | 7,5 | 923 |
| 48394 | SoNiCr-SoNi | K | AN 9-32 LS | PVC | | 22,1 | round | | flexing: -5°C to +70°C | 7,5 | 923 |
| 48395 | SoPtRh-SoPt | S | AP 9-32 LS | PVC | | 22,1 | round | | | 7,5 | 923 |
| 48396 | Cu-CuNi (Ko) | U | AC 9-32 LS | PVC | | 22,1 | round | | | 7,5 | 923 |

Continuation ▶

L = conductor of stranded wires
M = solid conductor
tin. = tinned
galv. = galvanized

Compensating Cables

| Part No. | Thermo-pair materials to DIN 43713 | Thermo-pair Type | Type | Core insulation | Jacket/Armouring/Jacket | Outer ø ca. mm | Form | Temperature range of insulation °C | Temperature range at installation °C | Min. bending radius .x cable ø | Weight ca. kg/km |
|---|------------------------------------|------------------|-------------|-----------------|------------------------------------|----------------|-------|------------------------------------|--|--------------------------------|------------------|
| Multi-paired: 16 pairs (32 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm; M = solid conductor, diameter 1,38 mm) | | | | | | | | | | | |
| 48397 | Fe-CuNi (Ko) | L | AE 9-32 LSY | PVC | | 26,1 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 1141 |
| 48398 | SoNiCr-SoNi | K | AN 9-32 LSY | PVC | PVC/galv. steel wire braiding/ | 26,1 | round | | | 7,5 | 1141 |
| 48399 | SoPtRh-SoPt | S | AP 9-32 LSY | PVC | PVC | 26,1 | round | | | 7,5 | 1141 |
| 48400 | Cu-CuNi (Ko) | U | AC 9-32 LSY | PVC | | 26,1 | round | | | 7,5 | 1141 |
| 48401 | Fe-CuNi (Ko) | L | AE 9-32 MSY | PVC | | 25,3 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 1130 |
| 48402 | SoNiCr-SoNi | K | AN 9-32 MSY | PVC | PVC/galv. steel wire braiding/ | 25,3 | round | | | 12 | 1130 |
| 48403 | SoPtRh-SoPt | S | AP 9-32 MSY | PVC | PVC | 25,3 | round | | | 12 | 1130 |
| 48404 | Cu-CuNi (Ko) | U | AC 9-32 MSY | PVC | | 25,3 | round | | | 12 | 1130 |
| 48405 | Fe-CuNi (Ko) | L | AE 20-32 M | PVC | PETP-tape/ Cu-ground wire | 25,1 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 847 |
| 48406 | SoNiCr-SoNi | K | AN 20-32 M | PVC | bare 0,5 mm ø/ Alu-tape/ PVC | 25,1 | round | | | 12 | 847 |
| 48407 | SoPtRh-SoPt | S | AP 20-32 M | PVC | | 25,1 | round | | | 12 | 847 |
| 48408 | Cu-CuNi (Ko) | U | AC 20-32 M | PVC | | 25,1 | round | | | 12 | 847 |
| Multi-paired: 18 pairs (36 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm; M = solid conductor, diameter 1,38 mm) | | | | | | | | | | | |
| 48130 | Fe-CuNi (Ko) | L | AE 9-36 L | PVC | | 22,1 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 904 |
| 48132 | SoNiCr-SoNi | K | AN 9-36 L | PVC | PVC | 22,1 | round | | | 7,5 | 904 |
| 48133 | SoPtRh-SoPt | S | AP 9-36 L | PVC | PVC | 22,1 | round | | | 7,5 | 904 |
| 48409 | Cu-CuNi (Ko) | U | AC 9-36 L | PVC | PVC | 22,1 | round | | | 7,5 | 904 |
| 48494 | Fe-CuNi | J | AF 9-36 L | PVC | PVC | 22,1 | round | | | 7,5 | 904 |
| 48410 | Fe-CuNi (Ko) | L | AE 9-36 LS | PVC | | 23,3 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 1040 |
| 48411 | SoNiCr-SoNi | K | AN 9-36 LS | PVC | PVC/galv. steel wire braiding | 23,3 | round | | | 7,5 | 1040 |
| 48412 | SoPtRh-SoPt | S | AP 9-36 LS | PVC | | 23,3 | round | | | 7,5 | 1040 |
| 48413 | Cu-CuNi (Ko) | U | AC 9-36 LS | PVC | | 23,3 | round | | | 7,5 | 1040 |
| 48167 | Fe-CuNi (Ko) | L | AE 9-36 LSY | PVC | | 27,3 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 1268 |
| 48169 | SoNiCr-SoNi | K | AN 9-36 LSY | PVC | PVC/galv. steel wire braiding/ | 27,3 | round | | | 7,5 | 1268 |
| 48170 | SoPtRh-SoPt | S | AP 9-36 LSY | PVC | PVC | 27,3 | round | | | 7,5 | 1268 |
| 48414 | Cu-CuNi (Ko) | U | AC 9-36 LSY | PVC | | 27,3 | round | | | 7,5 | 1268 |
| 48415 | Fe-CuNi (Ko) | L | AE 9-36 MSY | PVC | | 26,1 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 1232 |
| 48416 | SoNiCr-SoNi | K | AN 9-36 MSY | PVC | PVC/galv. steel wire braiding/ | 26,1 | round | | | 12 | 1232 |
| 48417 | SoPtRh-SoPt | S | AP 9-36 MSY | PVC | PVC | 26,1 | round | | | 12 | 1232 |
| 48418 | Cu-CuNi (Ko) | U | AC 9-36 MSY | PVC | | 26,1 | round | | | 12 | 1232 |
| 48419 | Fe-CuNi (Ko) | L | AE 20-36 M | PVC | PETP-tape/ Cu-ground wire | 26,0 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 944 |
| 48420 | SoNiCr-SoNi | K | AN 20-36 M | PVC | bare 0,5 mm ø/ Alu-tape/ PVC | 26,0 | round | | | 12 | 944 |
| 48421 | SoPtRh-SoPt | S | AP 20-36 M | PVC | | 26,0 | round | | | 12 | 944 |
| 48422 | Cu-CuNi (Ko) | U | AC 20-36 M | PVC | | 26,0 | round | | | 12 | 944 |
| Multi-paired: 19 pairs (38 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm) | | | | | | | | | | | |
| 48134 | Fe-CuNi (Ko) | L | AE 9-38 L | PVC | | 22,5 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 937 |
| 48135 | SoNiCr-SoNi | K | AN 9-38 L | PVC | PVC | 22,5 | round | | | 7,5 | 937 |
| 48136 | SoPtRh-SoPt | S | AP 9-38 L | PVC | PVC | 22,5 | round | | | 7,5 | 937 |
| 48423 | Cu-CuNi (Ko) | U | AC 9-38 L | PVC | PVC | 22,5 | round | | | 7,5 | 937 |
| 48171 | Fe-CuNi (Ko) | L | AE 9-38 LSY | PVC | | 26,5 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 1340 |
| 48172 | SoNiCr-SoNi | K | AN 9-38 LSY | PVC | PVC/galv. steel wire braiding/ | 26,5 | round | | | 7,5 | 1340 |
| 48173 | SoPtRh-SoPt | S | AP 9-38 LSY | PVC | PVC | 26,5 | round | | | 7,5 | 1340 |
| 48424 | Cu-CuNi (Ko) | U | AC 9-38 LSY | PVC | | 26,5 | round | | | 7,5 | 1340 |
| Multi-paired: 20 pairs (40 x 1,5 mm²) (L = stranded wires, conductor make-up 48 x 0,20 mm; M = solid conductor, diameter 1,38 mm) | | | | | | | | | | | |
| 48425 | Fe-CuNi (Ko) | L | AE 9-40 L | PVC | | 24,1 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 1032 |
| 48426 | SoNiCr-SoNi | K | AN 9-40 L | PVC | PVC | 24,1 | round | | | 7,5 | 1032 |
| 48427 | SoPtRh-SoPt | S | AP 9-40 L | PVC | PVC | 24,1 | round | | | 7,5 | 1032 |
| 48428 | Cu-CuNi (Ko) | U | AC 9-40 L | PVC | PVC | 24,1 | round | | | 7,5 | 1032 |
| 48429 | Fe-CuNi (Ko) | L | AE 9-40 LS | PVC | | 25,3 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 1200 |
| 48430 | SoNiCr-SoNi | K | AN 9-40 LS | PVC | PVC/galv. steel wire braiding | 25,3 | round | | | 7,5 | 1200 |
| 48431 | SoPtRh-SoPt | S | AP 9-40 LS | PVC | | 25,3 | round | | | 7,5 | 1200 |
| 48432 | Cu-CuNi (Ko) | U | AC 9-40 LS | PVC | | 25,3 | round | | | 7,5 | 1200 |
| 48433 | Fe-CuNi (Ko) | L | AE 9-40 LSY | PVC | | 29,3 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 1446 |
| 48434 | SoNiCr-SoNi | K | AN 9-40 LSY | PVC | PVC/galv. steel wire braiding/ | 29,3 | round | | | 7,5 | 1446 |
| 48435 | SoPtRh-SoPt | S | AP 9-40 LSY | PVC | PVC | 29,3 | round | | | 7,5 | 1446 |
| 48436 | Cu-CuNi (Ko) | U | AC 9-40 LSY | PVC | | 29,3 | round | | | 7,5 | 1446 |
| 48437 | Fe-CuNi (Ko) | L | AE 9-40 MSY | PVC | | 28,0 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 1381 |
| 48438 | SoNiCr-SoNi | K | AN 9-40 MSY | PVC | PVC/galv. steel wire braiding/ | 28,0 | round | | | 12 | 1381 |
| 48439 | SoPtRh-SoPt | S | AP 9-40 MSY | PVC | PVC | 28,0 | round | | | 12 | 1381 |
| 48440 | Cu-CuNi (Ko) | U | AC 9-40 MSY | PVC | | 28,0 | round | | | 12 | 1381 |
| 48441 | Fe-CuNi (Ko) | L | AE 20-40 M | PVC | PETP-tape/ Cu-ground wire | 26,0 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 12 | 1001 |
| 48442 | SoNiCr-SoNi | K | AN 20-40 M | PVC | bare 0,5 mm ø/ Alu-tape/ PVC | 26,0 | round | | | 12 | 1001 |
| 48443 | SoPtRh-SoPt | S | AP 20-40 M | PVC | | 26,0 | round | | | 12 | 1001 |
| 48444 | Cu-CuNi (Ko) | U | AC 20-40 M | PVC | | 26,0 | round | | | 12 | 1001 |

Continuation ▶

L = conductor of stranded wires
M = solid conductor
tin. = tinned
galv. = galvanized

Compensating Cables

| Part No. | Thermo-pair materials to DIN 43713 | Thermo-pair Type | Type | Core insulation | Jacket/Armouring/Jacket | Outer ø ca. mm | Form | Temperature range of insulation °C | Temperature range at installation °C | Min. bending radius .x cable ø | Weight ca. kg/km |
|--|------------------------------------|------------------|------------------|-----------------|--|----------------|-------|------------------------------------|--|--------------------------------|------------------|
| Single pair: 2 x 0,22 mm² (stranded wires, conductor make-up 7 x 0,20 mm) | | | | | | | | | | | |
| 48200 | FE-CuNi (Ko) | L | AE 1 L | PVC | | 1,0 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 10 |
| 48201 | SoNiCr-SoNi | K | AN 1 L | PVC | | 1,0 | round | | | 7,5 | 10 |
| 48202 | SoPtRh-SoPt | S | AP 1 L | PVC | | 1,0 | round | | | 7,5 | 10 |
| 48460 | Cu-CuNi (Ko) | U | AC 1 L | PVC | | 1,0 | round | | | 7,5 | 10 |
| Single pair: 2 x 0,22 mm² (stranded wires, conductor make-up 7 x 0,20 mm) | | | | | | | | | | | |
| 48203 | Fe-CuNi (Ko) | L | AE 9-022 | PVC | PVC | 4,0 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 22 |
| 48204 | SoNiCr-SoNi | K | AN 9-022 | PVC | PVC | 4,0 | round | | | 7,5 | 22 |
| 48205 | SoPtRh-SoPt | S | AP 9-022 | PVC | PVC | 4,0 | round | | | 7,5 | 22 |
| 48461 | Cu-CuNi (Ko) | U | AC 9-022 | PVC | PVC | 4,0 | round | | | 7,5 | 22 |
| 48206 | Fe-CuNi (Ko) | L | AE 5-022 | PVC | PETP-tape/ Cu-solid wire braid. | 4,9 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 31 |
| 48207 | SoNiCr-SoNi | K | AN 5-022 | PVC | | 4,9 | round | | | 7,5 | 31 |
| 48208 | SoPtRh-SoPt | S | AP 5-022 | PVC | tinned/ PVC | 4,9 | round | | | 7,5 | 31 |
| 48462 | Cu-CuNi (Ko) | U | AC 5-022 | PVC | | 4,9 | round | | | 7,5 | 31 |
| 48463 | Fe-CuNi (Ko) | L | AE 15-022 | glass filam. | Silicone | 3,4 | round | -40°C to +200°C | stationary: -25°C to +180°C flexing: -25°C to +180°C (short time +200°C) | 7,5 | 16 |
| 48464 | SoNiCr-SoNi | K | AN 15-022 | glass filam. | Silicone | 3,4 | round | | | 7,5 | 16 |
| 48465 | SoPtRh-SoPt | S | AP 15-022 | glass filam. | Silicone | 3,4 | round | | | 7,5 | 16 |
| 48466 | Cu-CuNi (Ko) | U | AC 15-022 | glass filam. | Silicone | 3,4 | round | | | 7,5 | 16 |
| 48209 | Fe-CuNi (Ko) | L | AE 15-G 022 | glass filam. | | 3,9 | round | -40°C to +200°C | stationary: -25°C to +180°C flexing: -25°C to +180°C (short time +200°C) | 7,5 | 22 |
| 48210 | SoNiCr-SoNi | K | AN 15-G 022 | glass filam. | Silicone/ glass filam. | 3,9 | round | | | 7,5 | 22 |
| 48211 | SoPtRh-SoPt | S | AP 15-G 022 | glass filam. | | 3,9 | round | | | 7,5 | 22 |
| 48467 | Cu-CuNi (Ko) | U | AC 15-G 022 | glass filam. | | 3,9 | round | | | 7,5 | 22 |
| 48212 | Fe-CuNi (Ko) | L | AE (GI-SIL-GI-S) | glass filam. | Silicone/ glass filament/ galv. steel wire braiding | 5,0 | round | -40°C to +200°C | stationary: -25°C to +180°C flexing: -25°C to +180°C (short time +200°C) | 7,5 | 25 |
| 48213 | SoNiCr-SoNi | K | AN (GI-SIL-GI-S) | glass filam. | | 5,0 | round | | | 7,5 | 25 |
| 48214 | SoPtRh-SoPt | S | AP (GI-SIL-GI-S) | glass filam. | | 5,0 | round | | | 7,5 | 25 |
| 48468 | Cu-CuNi (Ko) | U | AC (GI-SIL-GI-S) | glass filam. | | 5,0 | round | | | 7,5 | 25 |
| Single pair: 2 x 0,5 mm² (stranded wires, conductor make-up 16 x 0,20 mm) | | | | | | | | | | | |
| 48215 | Fe-CuNi (Ko) | L | AE (GI-SIL) | glass filam. | Silicone | 4,6 | round | -40°C to +200°C | stationary: -25°C to +200°C flexing: -25°C to +200°C | 7,5 | 18 |
| 48216 | SoNiCr-SoNi | K | AN (GI-SIL) | glass filam. | Silicone | 4,6 | round | | | 7,5 | 18 |
| 48217 | SoPtRh-SoPt | S | AP (GI-SIL) | glass filam. | Silicone | 4,6 | round | | | 7,5 | 18 |
| 48469 | Cu-CuNi (Ko) | U | AC (GI-SIL) | glass filam. | Silicone | 4,6 | round | | | 7,5 | 18 |
| Single pair: 2 x 0,75 mm² (stranded wires, conductor make-up 24 x 0,20 mm) | | | | | | | | | | | |
| 48218 | Fe-CuNi (Ko) | L | AE (PVC-PVC) | PVC | PVC | 6,0 | round | -10°C to +80°C | stationary: -25°C to +70°C flexing: -5°C to +70°C | 7,5 | 25 |
| 48219 | SoNiCr-SoNi | K | AN (PVC-PVC) | PVC | PVC | 6,0 | round | | | 7,5 | 25 |
| 48220 | SoPtRh-SoPt | S | AP (PVC-PVC) | PVC | PVC | 6,0 | round | | | 7,5 | 25 |
| 48470 | Cu-CuNi (Ko) | U | AC (PVC-PVC) | PVC | PVC | 6,0 | round | | | 7,5 | 25 |
| Multi-paired: 4 x 0,22 mm² (stranded wires, conductor make-up 7 x 0,20 mm) | | | | | | | | | | | |
| 48221 | Fe-CuNi (Ko) | L | AE (PVC-PVC) | PVC | PVC | 6,0 | round | -10°C to +80°C | stationary: -20°C to +80°C flexing: -5°C to +80°C | 7,5 | 33 |
| 48222 | SoNiCr-SoNi | K | AN (PVC-PVC) | PVC | PVC | 6,0 | round | | | 7,5 | 33 |
| 48223 | SoPtRh-SoPt | S | AP (PVC-PVC) | PVC | PVC | 6,0 | round | | | 7,5 | 33 |
| 48471 | Cu-CuNi (Ko) | U | AC (PVC-PVC) | PVC | PVC | 6,0 | round | | | 7,5 | 33 |
| 48224 | Fe-CuNi (Ko) | L | AE (PVC-C-PVC) | PVC | | 6,0 | round | -10°C to +80°C | stationary: -20°C to +80°C flexing: -5°C to +80°C | 7,5 | 37 |
| 48225 | SoNiCr-SoNi | K | AN (PVC-C-PVC) | PVC | galv. Cu-braiding/ PVC-jacket | 6,0 | round | | | 7,5 | 37 |
| 48226 | SoPtRh-SoPt | S | AP (PVC-C-PVC) | PVC | | 6,0 | round | | | 7,5 | 37 |
| 48472 | Cu-CuNi (Ko) | U | AC (PVC-C-PVC) | PVC | | 6,0 | round | | | 7,5 | 37 |
| 48227 | Fe-CuNi (Ko) | L | AE (GI-SIL) | glass filam. | Silicone | 6,0 | round | -40°C to +200°C | stationary: -25°C to +180°C flexing: -25°C to +180°C | 7,5 | 35 |
| 48228 | SoNiCr-SoNi | K | AN (GI-SIL) | glass filam. | Silicone | 6,0 | round | | | 7,5 | 35 |
| 48229 | SoPtRh-SoPt | S | AP (GI-SIL) | glass filam. | Silicone | 6,0 | round | | | 7,5 | 35 |
| 48473 | Cu-CuNi (Ko) | U | AC (GI-SIL) | glass filam. | Silicone | 6,0 | round | | | 7,5 | 35 |
| Multi-paired: 4 x 1,5 mm² (stranded wires, conductor make-up 48 x 0,20 mm) | | | | | | | | | | | |
| 48474 | Fe-CuNi (Ko) | L | AE 11-4 Lr | Silicone | | 7,8 | round | -60°C to +180°C | stationary: -25°C to +180°C flexing: -25°C to +180°C (short time +200°C) | 7,5 | 11,8 |
| 48475 | SoNiCr-SoNi | K | AN 11-4 Lr | Silicone | glass filament/ galv. steel wire braiding | 7,8 | round | | | 7,5 | 11,8 |
| 48476 | SoPtRh-SoPt | S | AP 11-4 Lr | Silicone | | 7,8 | round | | | 7,5 | 11,8 |
| 48477 | Cu-CuNi (Ko) | U | AC 11-4 Lr | Silicone | | 7,8 | round | | | 7,5 | 11,8 |

L = conductor of stranded wires
M = solid conductor
tin. = tinned
galv. = galvanized