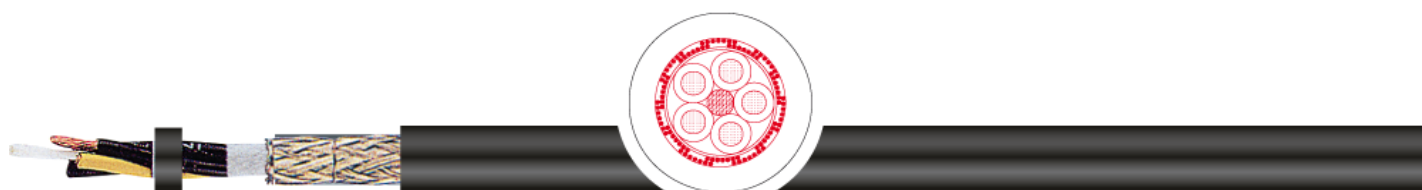


für hohe Anforderungen, reinraumtauglich

for high requirements, cleanliness-suited



## Anwendung

Als geschirmte Anschluss und Steuerleitung für hohe Anforderungen in Energieführungsketten, an beweglichen Antrieben und in der Robotertechnik in Reinräumen.

## Application

power and control cable for high requirements in drag chain applications, for motion drive systems and in the field of robotic technology in cleanrooms.

## Besonderheiten

- halogenfrei, flammwidrig und adhäsionsarm
- weitestgehend beständig gegen Fette, Kühlflüssigkeiten und Schmiermittel
- ölbeständig
- IPA Reinraumqualifizierungsurkunde
- frei von Talkum, Trennmittel und lackbenetzungshemmenden Stoffen

## Special features

- halogen-free, flame-retardant, low adhesion
- largely resistant to grease, coolant fluids and lubricants
- resistant to oil
- IPA cleanroom qualification certificate
- free from any kind of talcum and separating release agents!

## Hinweise

- RoHS-konform
- konform zur 2006/95/EG Richtlinie („Niederspannungsrichtlinie“) CE
- sehr lange Lebensdauer, optimales Kosten-Nutzen-Verhältnis
- Sonderausführungen, andere Abmessungen, Querschnitte, Ader- und Mantelfarben fertigen wir auf Anfrage.

## Remarks

- conform to RoHS
- conform to 2006/95/EC-Guideline
- very long lifetime, optimal cost-value ratio
- We are pleased to produce special versions, other dimensions, core and jacket colours on request.

## Aufbau & Technische Daten

|                              |                                                          |
|------------------------------|----------------------------------------------------------|
| Leiter Werkstoff             | Cu-Litze blank                                           |
| Leiterklasse                 | nach DIN VDE 0295 Kl. 6 bzw. IEC 60228 cl. 6             |
| Aderisolationswerkstoff      | PELON®                                                   |
| Aderkennung                  | schwarze Adern mit weissen Ziffern, 1 x GNGE             |
| Gesamtverseilung             | Adern in Lagen verseilt                                  |
| Gesamtschirm                 | Cu-Geflecht verzinkt, opt. Bedeckung ca. 85%             |
| Außenmantelwerkstoff         | PUR                                                      |
| Mantelfarbe                  | schwarz (RAL 9005)                                       |
| Aufdruck                     | ja                                                       |
| Nennspannung                 | bis 0,75 mm² Uo/U 300/500 V<br>ab 1 mm² Uo/U 500/750 V   |
| Prüfspannung                 | Ader/Ader 2000 V<br>Ader/Schirm: 1000 V                  |
| Leiterwiderstand             | bei +20 °C nach DIN VDE 0295 Kl. 6 bzw. IEC 60228 cl. 6  |
| Isolationswiderstand         | min. 20 MΩ x km                                          |
| Strombelastbarkeit           | nach DIN VDE 0100                                        |
| kleinster Biegeradius fest   | 5 x d                                                    |
| kleinster Biegeradius bewegt | 7,5 x d                                                  |
| Betriebstemp. fest min/max   | - 50 °C / + 80 °C                                        |
| Betriebstemp. bew. min/max   | - 30 °C / + 80 °C                                        |
| Brandverhalten               | nach VDE 0482-332-2-1 bzw. DIN EN 60332-2-1, flammwidrig |
| Standard                     | nach DIN VDE 0207, 0250, 0293, 0295 und 0472 bzw. IEC    |

## Structure & Specifications

|                             |                                                                  |
|-----------------------------|------------------------------------------------------------------|
| conductor material          | bare copper strand                                               |
| conductor class             | acc. to DIN VDE 0295 cl. 6 resp. IEC 60228 cl. 6                 |
| core insulation             | PELON®                                                           |
| core identification         | black cores with white numerals, 1 x GNGE                        |
| overall stranding           | stranded in layers                                               |
| overall shield              | copper braid tinned, opt. coverage appr. 85%                     |
| outer sheath                | PUR                                                              |
| sheath colour               | black (RAL 9005)                                                 |
| printing                    | yes                                                              |
| rated voltage               | up to 0,75 mm² Uo/U 300/500 V<br>from 1 mm² Uo/U 500/750 V       |
| testing voltage             | core/core: 2000 V<br>core/shield: 1000 V                         |
| conductor resistance        | at +20 °C acc. to DIN VDE 0295 cl. 6 resp. IEC 60228 cl. 6       |
| insulation resistance       | min. 20 MΩ x km                                                  |
| current carrying capacity   | acc. to DIN VDE 0100                                             |
| min. bending radius fixed   | 5 x d                                                            |
| min. bending radius moved   | 7,5 x d                                                          |
| operat. temp. fixed min/max | - 50 °C / + 80 °C                                                |
| operat. temp. moved min/max | - 30 °C / + 80 °C                                                |
| burning behavior            | acc. to VDE 0482-332-2-1 resp. DIN EN 60332-2-1, flame retardant |
| standard                    | acc. to DIN VDE 0207, 0250, 0293, 0295 and 0472 resp. IEC        |

für hohe Anforderungen, reinraumtauglich



Fraunhofer  
TESTED  
DEVICE  
TKD Kabel GmbH  
KAWEFLEX 3231 CLEANLINE  
Report No. KA 0409-308

for high requirements, cleanliness-suited

| Abmessung<br>n x mm <sup>2</sup><br>dimension<br>n x mm <sup>2</sup> | Außen-Ø<br>mm<br>outer Ø<br>mm | Cu-Zahl<br>kg/km<br>copper weight<br>kg/km | Gewicht<br>kg/km<br>weight<br>kg/km |
|----------------------------------------------------------------------|--------------------------------|--------------------------------------------|-------------------------------------|
| 3 G 0,5                                                              | 6,0                            | 28,0                                       | 79,0                                |
| 4 G 0,5                                                              | 6,7                            | 33,0                                       | 93,0                                |
| 5 G 0,5                                                              | 7,2                            | 40,0                                       | 107,0                               |
| 7 G 0,5                                                              | 8,6                            | 56,0                                       | 132,0                               |
| 12 G 0,5                                                             | 10,4                           | 81,0                                       | 190,0                               |
| 18 G 0,5                                                             | 12,2                           | 120,0                                      | 245,0                               |
| 25 G 0,5                                                             | 15,0                           | 181,0                                      | 281,0                               |
| 3 G 0,75                                                             | 6,5                            | 36,0                                       | 96,0                                |
| 4 G 0,75                                                             | 7,1                            | 45,0                                       | 112,0                               |
| 5 G 0,75                                                             | 7,8                            | 54,0                                       | 126,0                               |
| 7 G 0,75                                                             | 9,0                            | 78,0                                       | 165,0                               |
| 12 G 0,75                                                            | 10,4                           | 112,0                                      | 231,0                               |
| 18 G 0,75                                                            | 13,6                           | 182,0                                      | 330,0                               |
| 25 G 0,75                                                            | 16,4                           | 250,0                                      | 459,0                               |
| 3 G 1                                                                | 7,3                            | 45,0                                       | 109,0                               |
| 4 G 1                                                                | 8,2                            | 58,0                                       | 126,0                               |
| 5 G 1                                                                | 8,5                            | 68,0                                       | 147,0                               |
| 7 G 1                                                                | 10,4                           | 102,0                                      | 196,0                               |
| 12 G 1                                                               | 12,8                           | 145,0                                      | 292,0                               |
| 18 G 1                                                               | 15,3                           | 235,0                                      | 418,0                               |
| 25 G 1                                                               | 18,6                           | 325,0                                      | 575,0                               |
| 3 G 1,5                                                              | 7,2                            | 66,0                                       | 139,0                               |
| 4 G 1,5                                                              | 8,0                            | 80,0                                       | 156,0                               |
| 5 G 1,5                                                              | 10,3                           | 95,0                                       | 198,0                               |
| 7 G 1,5                                                              | 12,0                           | 145,0                                      | 254,0                               |
| 12 G 1,5                                                             | 15,4                           | 228,0                                      | 416,0                               |
| 18 G 1,5                                                             | 18,2                           | 395,0                                      | 564,0                               |
| 25 G 1,5                                                             | 22,4                           | 534,0                                      | 811,0                               |

| Abmessung<br>n x mm <sup>2</sup><br>dimension<br>n x mm <sup>2</sup> | Außen-Ø<br>mm<br>outer Ø<br>mm | Cu-Zahl<br>kg/km<br>copper weight<br>kg/km | Gewicht<br>kg/km<br>weight<br>kg/km |
|----------------------------------------------------------------------|--------------------------------|--------------------------------------------|-------------------------------------|
| 4 G 2,5                                                              | 9,7                            | 143,0                                      | 234,0                               |
| 5 G 2,5                                                              | 10,6                           | 167,0                                      | 293,0                               |
| 7 G 2,5                                                              | 11,6                           | 201,0                                      | 418,0                               |
| 12 G 2,5                                                             | 15,5                           | 351,0                                      | 629,0                               |
| 18 G 2,5                                                             | 18,3                           | 539,0                                      | 912,0                               |
| 25 G 2,5                                                             | 22,3                           | 778,0                                      | 1.266,0                             |
| 4 G 4                                                                | 13,5                           | 186,0                                      | 349,0                               |
| 5 G 4                                                                | 14,9                           | 249,0                                      | 423,0                               |
| 7 G 4                                                                | 16,1                           | 343,0                                      | 592,0                               |
| 4 G 6                                                                | 15,7                           | 293,0                                      | 499,0                               |
| 5 G 6                                                                | 17,1                           | 382,0                                      | 645,0                               |
| 7 G 6                                                                | 18,5                           | 485,0                                      | 874,0                               |
| 4 G 10                                                               | 20,1                           | 473,0                                      | 842,0                               |
| 5 G 10                                                               | 26,1                           | 672,0                                      | 1.473,0                             |
| 4 G 16                                                               | 25,1                           | 759,0                                      | 1.252,0                             |
| 5 G 16                                                               | 27,2                           | 905,0                                      | 1.465,0                             |
| 7 G 16                                                               | 29,9                           | 1.265,0                                    | 2.052,0                             |
| 4 G 25                                                               | 28,9                           | 1.140,0                                    | 1.510,0                             |