

Wiring Cables

Zero halogen, Flame retardant

Operating temperature 90°C upto 180°C

WIRING CABLES PRODUCTRANGE

zero halogen, flame retardant

List of contents

| | | | |
|---|---------------------|-------------|------------|
| H05Z-K | 90 °C | Page | 6-3 |
| H07Z-K | 90 °C | Page | 6-4 |
| 300/500 V Thinwall wiring cable KTW2 | 90 °C | Page | 6-5 |
| 300/500 V Thinwall wiring cable KTW1 | 105 °C | Page | 6-6 |
| 300/500 V Thinwall wiring cable KTW3 | 125 °C | Page | 6-7 |
| 450/750 V Thinwall wiring cable KTW3 | 125 °C | Page | 6-8 |
| 300/500 V SIF-K -k notch resistant | 180 °C | Page | 6-9 |

*While every care is taken to ensure that the information contained in this publication is correct, no legal responsibility can be accepted for any inaccuracy.
The company reserves the right to alter or modify the information contained herein at any time in the light of technical or other development.*

INSULATED WIRE

H05Z-K

300/500 V / +90 °C

GENELEC HD 22.9 S2 / DIN VDE 0282-9

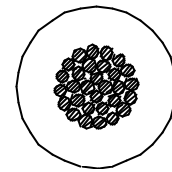
zero halogen, flame retardant

Application

Used as fixed or flexible wiring for electrical equipments and control units. For indoor use in dry and wet locations. With reduced smoke emission and corrosiveness of combustion gases.

Construction

- **Insulated Wire**
Conductor..... Tinned copper, flexible stranded
Insulation..... Cross-linked, zero halogen, flame retardant polymer
Colour Code.. Black
- **Wire Marking**
Printing..... Marking of Origin <HAR> H05Z-K



Technical Data

- **Flame retardancy:** HD405.1 or IEC60332-1
- **Grade of fire protection (1 - 4):** DIN 5510-1 and DIN 5510-2
- **Zero halogen:** HD602
- **Corrosiveness of combustion gases:** HD602: IEC60754-2, modified
- **Smoke density:** HD606
- **Ozone resistance:** HD22.2
- **Operating temperature range:** - 40 °C upto + 90 °C
- **Min. bending radius:**
 fixed wiring: 4 x Wire-Ø
 flexible wiring: 6 x Wire-Ø

Geometrical and Electrical Data

| Size mm ² | Conductor | | Wire | | | | Part Number | |
|-----------------------------|-----------------------------------|--|--|-------------------------------------|-----|--------|-------------|----------------------------------|
| | Single-wire-Æ (max.) mm | Conductor resistance at 20°C (max.) W/km | Insulation thickness (nom.) mm | Wire-Æ (min.) (max.) mm | | Colour | | Weight (approx.) kg/km |
| 0.5 | 0.21 | 40.1 | 0.6 | 2.1 | 2.6 | black | 10 | 3036 0002 |
| 0.75 | 0.21 | 26.7 | 0.6 | 2.2 | 2.8 | black | 12 | 3036 0001 |
| 1.0 | 0.21 | 20.0 | 0.6 | 2.4 | 2.9 | black | 15 | 3036 0000 |

Test Voltage

| | Character | Unit | Value |
|--------------|-----------|------|-------|
| Test Voltage | U_{ms} | V | 2500 |

INSULATED WIRE

H07Z-K

450/750 V / +90 °C

CENELEC HD 22.9 S2 / DIN VDE 0282-9

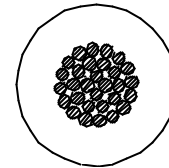
zero halogen, flame retardant

Application

Used as fixed (0,6/1 kV) or flexible (450/750 V) wiring for electrical equipments and control units. For indoor use in dry and wet locations. With reduced smoke emission and corrosiveness of combustion gases.

Construction

- **Insulated Wire**
Conductor Tinned copper, flexible stranded
Insulation Cross-linked, zero halogen, flame retardant polymer
Colour Code .. Black
- **Wire Marking**
Printing Marking of Origin <HAR> H07Z-K



Technical Data

- **Flame retardancy:** HD405.1 or IEC60332-1
- **Grade of fire protection (1 - 4):** DIN 5510-1 and DIN 5510-2
- **Zero halogen:** HD602
- **Corrosiveness of combustion gases:** HD602; IEC60754-2, modified
- **Smoke density:** HD606
- **Ozone resistance:** HD22.2
- **Operating temperature range:** - 40 °C upto + 90 °C
- **Min. bending radius:**
 fixed wiring: 4 x Wire-Ø
 flexible wiring: 6 x Wire-Ø

Geometrical and Electrical Data

| Size mm ² | Conductor | | Wire | | | | Weight (approx.) kg/km | Part Number |
|-----------------------------|---------------------------------------|--|---|--------------|--------------|--------|----------------------------------|----------------|
| | Single- wire-Æ (max.) mm | Conductor resistance at 20°C (max.) W/km | Insulation thickness (nom.) mm | Wire-Æ | | Colour | | |
| | | | | (min.) mm | (max.) mm | | | |
| 1.5 | 0.26 | 13.7 | 0.7 | 2.8 | 3.5 | black | 20 | 3029 0001 |
| 2.5 | 0.26 | 8.21 | 0.8 | 3.4 | 4.3 | black | 31 | 3029 0002 |
| 4 | 0.31 | 5.09 | 0.8 | 3.9 | 4.9 | black | 46 | 3029 0003 |
| 6 | 0.31 | 3.39 | 0.8 | 4.4 | 5.5 | black | 65 | 3029 0004 |
| 10 | 0.41 | 1.95 | 1.0 | 5.7 | 7.1 | black | 112 | 3029 0005 |
| 16 | 0.41 | 1.24 | 1.0 | 6.7 | 8.4 | black | 171 | 3029 0006 |
| 25 | 0.41 | 0.795 | 1.2 | 8.4 | 10.6 | black | 252 | 3029 0007 |
| 35 | 0.41 | 0.565 | 1.2 | 9.7 | 12.1 | black | 345 | 3029 0013 |
| 50 | 0.41 | 0.393 | 1.4 | 11.5 | 14.4 | black | 496 | 3029 0014 |
| 70 | 0.51 | 0.277 | 1.4 | 13.2 | 16.6 | black | 694 | 3029 0012 |
| 95 | 0.51 | 0.210 | 1.6 | 15.1 | 18.8 | black | 924 | 3029 0008 |
| 120 | 0.51 | 0.164 | 1.6 | 16.7 | 20.9 | black | 1169 | 3029 0000 |
| 150 | 0.51 | 0.132 | 1.8 | 18.6 | 23.3 | black | 1496 | 3029 0009 |
| 185 | 0.51 | 0.108 | 2.0 | 20.6 | 25.8 | black | 1784 | 3029 0010 |
| 240 | 0.51 | 0.0817 | 2.2 | 23.5 | 29.4 | black | 2336 | 3029 0011 |

Test Voltage

| | Character | Unit | Value |
|--------------|-----------|------|-------|
| Test Voltage | U_{ms} | V | 2500 |

THINWALL WIRING CABLE

KTW2

300/500 V (600 V)

90 °C

zero halogen, flame retardant

Application

Used as fixed or flexible installed wiring cable for electrical equipments and control units e.g. in railway rolling stock. Space-saving installation with decreased weight and for indoor use in dry and wet locations. With reduced smoke emission, corrosiveness and toxicity of combustion gases. During installation the wiring cables have to be protected against sharp corners to avoid damages or abrasion.

Construction

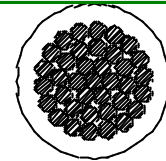
- Thinwall Wiring Cable**

Conductor..... Tinned copper, flexible stranded

Insulation..... Hightech plastics, double layer, zero halogen, flame retardant

Colour Code .. natural-coloured

Printing..... KERPENWERK



Technical Data

- Flame retardancy:** IEC 60332-1 (single core)
- Grade of fire protection (1 - 4):** DIN 5510-1 and DIN 5510-2
- Zero halogen:** IEC 60754- 1, EN 50305
- Corrosiveness of combustion gas:** IEC 60754- 2
- Smoke density:** IEC 61034
- Toxicity:** EN 50306-2
- Operating temperature range:** - 50 °C upto + 90 °C
- Min. bending radius:**
fixed installation: 3 x core-Ø
flexible installation: 5 x core-Ø

Geometrical and Electrical Data

| Size (nom.) mm ² | Conductor | | | | Wiring Cable | | | | | Part Number |
|---------------------------------------|------------------|--------------|--------------|----------------------------|------------------------------------|--------------|--------------|--------|--------------------|----------------|
| | Size | Diameter | | Resis- tance at 20°C | Insula- tion- thick- ness | Diameter | | Colour | Weight | |
| | (nom.) n X mm | (min.) mm | (max.) mm | (max.) W/km | (min.) mm | (min.) mm | (max.) mm | | (approx.) kg/km | |
| 0.50 | 19 x 0.18 | 0.80 | 0.90 | 40.1 | 0.18 | 1.15 | 1.40 | nature | 5 | 8001 0000 |
| 0.75 | 19 x 0.22 | 1.00 | 1.15 | 26.7 | 0.18 | 1.35 | 1.60 | nature | 7 | 8001 0001 |
| 1.0 | 19 x 0.25 | 1.10 | 1.30 | 20.0 | 0.18 | 1.45 | 1.80 | nature | 9 | 8001 0002 |
| 1.5 | 37 x 0.22 | 1.45 | 1.60 | 13.7 | 0.22 | 1.95 | 2.20 | nature | 15 | 8001 0003 |
| 2.5 | 37 x 0.30 | 1.85 | 2.05 | 8.21 | 0.28 | 2.50 | 2.85 | nature | 26 | 8001 0004 |

Test and Operating Voltages

| | Character | Unit | Values |
|-----------------------------|-----------|------|-----------|
| Test voltage core / core | U_{ms} | V | 2500 |
| Rated voltage U_0/U | U_{ms} | V | 300 / 500 |
| Max. System voltage U_m | U_{ms} | V | 600 |

THINWALL WIRING CABLE

KTW1

300/500 V (600 V)

105 °C

zero halogen, flame retardant

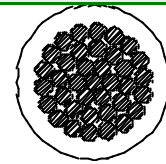
Application

Used as fixed or flexible installed wiring cable for electrical equipments and control units e.g. in railway rolling stock. Space-saving installation with decreased weight and for indoor use in dry locations only. With reduced smoke emission, corrosiveness and toxicity of combustion gases.

Construction

- Thinwall Wiring Cable**

ConductorTinned copper, flexible stranded
 InsulationHightech plastics, zero halogen, flame retardant
 Colour Codenatural-coloured
 PrintingKERPENWERK



Technical Data

- Flame retardancy:** IEC 60332-2 (single core)
- Grade of fire protection (1 - 4):** DIN 5510-1 and DIN 5510-2
- Zero halogen:** IEC 60754- 1
- Corrosiveness of combustion gas:** IEC 60754- 2
- Smoke density:** gen. to IEC 61034
- Operating temperature range:** - 50 °C upto + 105 °C
- Min. bending radius:**
 fixed installation: 3 x core-Ø
 flexible installation: 5 x core-Ø

Geometrical and Electrical Data

| Size | Conductor | | | | Wiring Cable | | | | Part Number | |
|------|---------------------------|------------------|--------------|----------------------------|------------------------------------|--------------|--------------|--------|-------------|--------------------|
| | Size | Diameter | | Resis- tance at 20°C | Insula- tion- thick- ness | Diameter | | Colour | | Weight |
| | (nom.) mm ² | (nom.) n X mm | (min.) mm | (max.) mm | (max.) W/km | (min.) mm | (max.) mm | | | (approx.) kg/km |
| 0.50 | 19 x 0.18 | 0.80 | 0.90 | 40.1 | 0.18 | 1.15 | 1.40 | nature | 5 | 8003 0000 |
| 0.75 | 19 x 0.22 | 1.00 | 1.15 | 26.7 | 0.18 | 1.35 | 1.60 | nature | 7 | 8003 0001 |
| 1.0 | 19 x 0.25 | 1.10 | 1.30 | 20.0 | 0.18 | 1.45 | 1.80 | nature | 9 | 8003 0002 |
| 1.5 | 37 x 0.22 | 1.45 | 1.60 | 13.7 | 0.22 | 1.95 | 2.20 | nature | 15 | 8003 0003 |
| 2.5 | 37 x 0.30 | 1.85 | 2.05 | 8.21 | 0.28 | 2.50 | 2.85 | nature | 26 | 8003 0004 |

Test and Operating Voltages

| | Character | Unit | Values |
|---|-----------|------|-----------|
| Test voltage | | | |
| core / core | U_{ms} | V | 2500 |
| Rated voltage U_0/U | U_{ms} | V | 300 / 500 |
| Max. System voltage U_m | U_{ms} | V | 600 |

THINWALL WIRING CABLE

KTW3

300/500 V (600 V)

125 °C

zero halogen, flame retardant

Application

Used as fixed or flexible installed wiring cable for electrical equipments and control units e.g. in railway rolling stock. Space-saving installation with decreased weight and for indoor use in dry and wet locations. With reduced smoke emission, corrosiveness and toxicity of combustion gases.

Construction

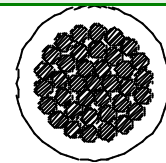
- Thinwall Wiring Cable**

Conductor Tinned copper, flexible stranded

Insulation Hightech plastics, double layer, zero halogen, flame retardant

Colour Code .. natural-coloured

Printing KERPENWERK



Technical Data

- Flame retardancy:** IEC 60332-1 (single core)
- Grade of fire protection (1 - 4):** DIN 5510-1 and DIN 5510-2
- Zero halogen:** IEC 60754- 1, EN 50305
- Corrosiveness of combustion gas:** IEC 60754- 2
- Smoke density:** IEC 61034
- Toxicity:** EN 50306-2
- Operating temperature range:** - 50 °C upto +125 °C (20.000 h)
- Min. bending radius:**
fixed installation: 3 x core-Ø
flexible installation: 5 x core-Ø

Geometrical and Electrical Data

| Size | Conductor | | | | Wiring Cable | | | | | Part Number |
|------|---------------------------|--------------|--------------|----------------------------|------------------------------------|--------------|--------------|--------|--------------------|--------------|
| | Size | Diameter | | Resis- tance at 20°C | Insula- tion- thick- ness | Diameter | | Colour | Weight | |
| | (nom.) mm ² | (min.) mm | (max.) mm | (max.) W/km | (min.) mm | (min.) mm | (max.) mm | | (approx.) kg/km | |
| 0.50 | 19 x 0.18 | 0.80 | 0.90 | 40.1 | 0.18 | 1.15 | 1.40 | nature | 5 | 8002 0000 |
| 0.75 | 19 x 0.22 | 1.00 | 1.15 | 26.7 | 0.18 | 1.35 | 1.60 | nature | 7 | 8002 0001 |
| 1.0 | 19 x 0.25 | 1.10 | 1.30 | 20.0 | 0.18 | 1.45 | 1.80 | nature | 9 | 8002 0002 |
| 1.5 | 37 x 0.22 | 1.45 | 1.60 | 13.7 | 0.22 | 1.95 | 2.20 | nature | 14 | 8002 0003 |
| 2.5 | 37 x 0.30 | 1.85 | 2.05 | 8.21 | 0.28 | 2.50 | 2.85 | nature | 26 | 8002 0004 |

Test and Operating Voltages

| | Character | Unit | Values |
|---|-----------|------|-----------|
| Test voltage | | | |
| core / core | U_{ms} | V | 2500 |
| Rated voltage U_0/U | U_{ms} | V | 300 / 500 |
| Max. System voltage U_m | U_{ms} | V | 600 |

THINWALL WIRING CABLE

KTW3

450/750 V / 125 °C

zero halogen, flame retardant

Application

Mechanical robust wiring cable for electrical equipments and control units. Space-saving installation with decreased weight and for indoor use in dry and wet locations. With reduced smoke emission, corrosiveness of combustion gases. Operating acc. to DIN VDE 0298-300 at **450/750 V for flexible** or **0.6/1 kV for fixed installed** wiring cable.

Construction

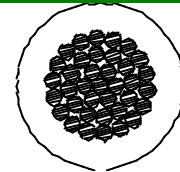
- Thinwall Wiring Cable**

Conductor Tinned copper, flexible stranded

Insulation Hightech plastics, double layer, zero halogen, flame retardant

Colour Code .. natural-coloured

Printing..... KERPENWERK KTW3 450/750V Size



Technical Data

- Flame retardancy:** IEC 60332-1 (single core)
- Grade of fire protection (1 - 4):** DIN 5510-1 and DIN 5510-2
- Zero halogen:** IEC 60754- 1, EN 50267-2-1
- Corrosiveness of combustion gas:** IEC 60754- 2
- Smoke density:** IEC 61034
- Toxicity:** EN 50306-2
- Current ratings:** DIN VDE 0298-4, table 8 and 9
- Operating temperature range:** - 50 °C upto + 125 °C
max. +260°C (under short circuit, 5s)
- Min. bending radius:**
fixed installation: 3 x core-Ø
flexible installation: 5 x core-Ø

Geometrical and Electrical Data

| Size | Conductor | | | | Wiring Cable | | | | | Part Number |
|------|------------------------|---------------|-----------|--------------------|--------------------------------|-------------|-----------|---------|------------------------|--------------|
| | Size | Diameter | | Resistance at 20°C | Insulation-thickness (min.) mm | Diameter | | Colour | Weight (approx.) kg/km | |
| | (nom.) mm ² | (nom.) n X mm | (min.) mm | (max.) mm | | (max.) W/km | (min.) mm | | | |
| 0.50 | 19 x 0.18 | 0.80 | 0.90 | 40.1 | 0.30 | 1.50 | 1.70 | natural | 5 | 8002 1005 |
| 0.75 | 19 x 0.22 | 1.00 | 1.15 | 26.7 | 0.30 | 1.65 | 1.85 | natural | 8 | 8002 1001 |
| 1.0 | 19 x 0.25 | 1.10 | 1.30 | 20.0 | 0.30 | 1.85 | 2.05 | natural | 10 | 8002 1002 |
| 1.5 | 37 x 0.22 | 1.45 | 1.60 | 13.7 | 0.34 | 2.20 | 2.40 | natural | 15 | 8002 1003 |
| 2.5 | 37 x 0.30 | 1.85 | 2.05 | 8.21 | 0.40 | 2.90 | 3.10 | natural | 27 | 8002 1004 |
| 4.0 | 56 x 0.30 | 2.50 | 2.70 | 5.09 | 0.40 | 3.50 | 3.70 | natural | 40 | 8002 1006 |

Test and Operating voltage

| | Character | Unit | Values | |
|---|-----------|------|-----------------------|--------------------|
| | | | flexible installation | fixed installation |
| Test voltage (5 minutes) | U_{m5} | V | 3500 | |
| Rated voltage U_0 / U | U_{m5} | V | 450/750 | 600/1000 |
| max. System voltage U_m | U_{m5} | V | 900 | 1200 |

WIRING CABLE OF SILICONE RUBBER

SIF-K -K

NOTCH RESISTANT

300/500 V / +180 °C

zero halogen, flame retardant

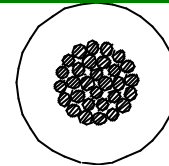
Application

Used as fixed or flexible installed wiring cable for electrical equipments and control units at increased operating temperatures. During installation the wiring cables have to be protected against sharp corners to avoid damages or abrasion.

Construction

- Wiring Cable**

Conductor.....Tinned copper, flexible stranded
 Insulation.....Silicone rubber, type EI2, notch resistant
 Colour Codenach Kundenwunsch



- Cable Marking**

Printing.....Marking of Origin SIF-K

Technical Data

- Notch resistance:** approx. 50 N DIN VDE 0472-619
- Flame retardancy:** IEC 60332-1
- Grade of fire protection (1-4):** DIN 5510-1 and -2
- Zero halogen:** IEC 60754-1
- Corrosiveness of combustion gases:** IEC 60754-2
- Operating temperature range:**
 - 40 °C upto + 180 °C
 +350 °C (under short circuit)
- Min. bending radius:**
 fixed installation: 3 x core-Ø
 flexible installation: 4 x core-Ø

Geometrical and Electrical Data

| Size mm ² | Conductor | | Insulation thickness (nom.) mm | Wire | | Colour | Weight (approx.) kg/km |
|-----------------------------|------------------|------------------------------------|---|--------------|--------------|------------|----------------------------------|
| | Single wire-Æ | Conductor resistance at 20°C | | Wire-Æ | | | |
| | (max.) mm | (max.) W/km | | (min.) mm | (max.) mm | | |
| 0.5 | 0.21 | 40.1 | 0.6 | 2.0 | 2.2 | on request | 10 |
| 0.75 | 0.21 | 26.7 | 0.6 | 2.3 | 2.5 | on request | 13 |
| 1.0 | 0.21 | 20.0 | 0.6 | 2.4 | 2.6 | on request | 16 |
| 1.5 | 0.26 | 13.7 | 0.6 | 2.7 | 2.9 | on request | 21 |
| 2.5 | 0.26 | 8.21 | 0.7 | 3.3 | 3.5 | on request | 34 |
| 4 | 0.31 | 5.09 | 0.8 | 4.0 | 4.4 | on request | 52 |
| 6 | 0.31 | 3.39 | 0.9 | 4.8 | 5.2 | on request | 76 |
| 10 | 0.41 | 1.95 | 1.0 | 6.4 | 6.8 | on request | 125 |
| 16 | 0.41 | 1.24 | 1.0 | 7.4 | 7.8 | on request | 187 |
| 25 | 0.41 | 0.795 | 1.2 | 9.5 | 9.9 | on request | 292 |
| 35 | 0.41 | 0.565 | 1.2 | 10.6 | 11.2 | on request | 395 |
| 50 | 0.41 | 0.393 | 1.4 | 12.3 | 12.9 | on request | 560 |
| 70 | 0.41 | 0.277 | 1.4 | 14.3 | 14.9 | on request | 766 |
| 95 | 0.41 | 0.210 | 1.6 | 16.9 | 17.7 | on request | 1040 |
| 120 | 0.41 | 0.164 | 1.6 | 18.3 | 19.1 | on request | 1291 |
| 150 | 0.41 | 0.132 | 1.8 | 20.3 | 21.3 | on request | 1614 |
| 185 | 0.41 | 0.108 | 2.0 | 23.2 | 24.2 | on request | 1996 |
| 240 | 0.41 | 0.0817 | 2.1 | 26.1 | 27.1 | on request | 2565 |

Test voltage

| | Character | Unit | Value |
|--------------|-----------|------|-------|
| Test voltage | U_{rms} | V | 2000 |