

**H05Z-K 90°C (X05Z-K 90°C)****DB4725001EN**

valid from: 2011-06-06

**APPLICATION** (HD 516/VDE 0298-300 & HD 22.9/VDE 0282-9)

High-power current low voltage cable according to the cable type standard HD 22.9 (=VDE 0282-9)

Fix, protected installation and use

Inside of devices and control cabinets

On luminaire

Places/applications with high concentration of human beings and material assets, where low smoke density and low emission of corrosive gases are required at in case of fire

Suitability for the laying inside of conduits installed on or under plaster in case of signal and control current circuits only

Lifted conductor temperature range compared to standard unprotected single-core single-layer PVC-insulated hook-up cables, thanks to higher maximum conductor temperature of +90°C

Permitted permanent operation/system voltages:

(Rated IEC voltage class H05) (HD 22.1/VDE 0282-1, HD 22.9/VDE 0282-9):

- Phase/conductor to ground/PE (U<sub>0</sub>) 330 VAC, 495 VDC
- Phase/conductor (not PE) to phase/conductor (not PE) (U) 550 VAC, 825 VDC

**DESIGN** (HD 22.9/VDE 0282-9)

|                 |   |
|-----------------|---|
| Conductor       | Copper strands  |
| Conductor class | Conductor class 5 according to IEC 60228/VDE 0295: Fine-wired and flexible for fix laying/static use                              |
| Core insulation | Extruded, cross-linked, halogen-free Polyolefin-based compound EI 5 in line with EN 50363-5/VDE 0207-363-5 and HD 22.1/VDE 0282-1 |

**CABLE MARKING / CABLE TYPE CERTIFICATION** (HD 22.9/VDE 0282-9)

In case of harmonised versions according to HD 22.9/VDE 0282-9:

- Cable type mark according to HD 22.9/VDE 0282-9: "H05Z-K"
- H05Z-K ◀HAR▶ cable type certification according to HD 22.9/VDE 0282-9
- ◀HAR▶ testing and certification mark according to HD 22.1/VDE 0282-1 and HD 22.9/VDE 0282-9



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Harmonised/ ◀HAR▶ cable type certifiable core insulation colours acc. to HD 22.1/VDE 0282-1:

- Single-coloured:
  - Black (BK)
  - Blue (BU)
  - Dark-blue (DBU)
  - Brown (BN)
  - Grey (GY)
  - Orange (OG)
  - Pink (PK)
  - Red (RD)
  - Turquoise (-)
  - Purple/Violet (VT)
  - White (WH)
  - Green (GN)
  - Yellow (YE)
  - HINT according to HD 22.1/VDE 0282-1: At application in the final application country, possible national regulations and laws regarding the single-coloured core insulation colours green and yellow have to be respected depending on the country
- Double-coloured:
  - All double-coloured combinations of the allowed single-coloured core insulation colours mentioned above

Harmonised/ ◀HAR▶ cable type certifiable nominal IEC conductor cross sections according to the H05Z-K cable type standard HD 22.9/VDE 0282-9:

- 0.50 mm<sup>2</sup>
- 0.75 mm<sup>2</sup>
- 1.00 mm<sup>2</sup>

**ELECTRICAL PROPERTIES (at +20°C)** (HD 22.9/VDE 0282-9)Rated H05 voltage  $U_0/U$ 300/500 VAC  
450/750 VDC

Test voltage at the finished cable

2000 V according to HD 22.9/VDE  
0282-9 and EN 50395/VDE 0481-  
-395, 6

Maximum, ohmic conductor DC resistance

IEC 60228/VDE 0295: depending on  
strand state and nominal conductor  
cross section and in line with conduc-  
tor class 5 according to IEC 60228/  
VDE 0295



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**MECHANICAL, THERMAL AND CHEMICAL PROPERTIES**

|   |   |
|---|---|
| Conductor temperature range (HD 516/VDE 0298-300)           | -15°C to +90°C  |
| Maximum cable surface temperature (HD 516/VDE 0298-300)     | +90°C   |
| Minimum handling temperature (HD 516/VDE 0298-300)          | +5°C  |
| Max. ambient storage temperature (HD 516/VDE 0298-300)      | +40°C (max. +60°C at direct sun irradiation)  |
| Minimum bending radii (HD 516/VDE 0298-300):                |   |
| ○ At intended use   | 4 x outer cable diameter  |
| ○ At cautious bending                                       | 2 x outer cable diameter  |
| Flame resistance  | IEC 60332-1-2<br>IEC 60332-2-2  |
| Low smoke density (LS)                                      | EN 61034-2/VDE 0482-1034-2 &<br>HD 22.9/VDE 0282-9  |
| Halogen content ("Halogen-free cable" according to HD 22.9) | HD 22.9/VDE 0282-9, appendix B:<br>- EN 50267-2-2 in conjunction with<br>HD 22.9/VDE 0282-9, appendix B,<br>& EN 50363-5/VDE 0207-363-5<br>- EN 50267-2-1 in conjunction with<br>HD 22.9/VDE 0282-9, appendix B,<br>& EN 50363-5/VDE 0207-363-5<br>- HD 22.9/VDE 0282-9, appendix C,<br>in conjunction with HD 22.9/VDE<br>0282-9, appendix B<br>- EN 60684-2 in conjunction with HD<br>22.9/VDE 0282-9, appendix B, & EN<br>50363-5/VDE 0207-363-5 |
| Low corrosivity of the fire gases                           | EN 50267-2-2/VDE 0482-267-2-2 &<br>HD 22.1/VDE 0282-1   |
| Ozone resistance of the core insulation compound EI 5       | EN 60811-2-1/VDE 0473-811-2-1, 8<br>& VDE 0473-396 & HD 22.1/VDE<br>0282-1 & EN 50363-5/VDE 0207-<br>-363-5   |
| Heat strain of the core insulation compound EI 5            | EN 60811-2-1/VDE 0473-811-2-1, 9<br>& HD 22.1/VDE 0282-1 & EN 50363-<br>-5/VDE 0207-363-5   |



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| Heat pressure resistance of the core insulation compound EI 5 | EN 60811-3-1/VDE 0473-811-3-1,<br>8.1 & HD 22.1/VDE 0282-1 & EN<br>50363-5/VDE 0207-363-5 |
| Cold bending of the core insulation compound EI 5             | EN 60811-1-4/VDE 0473-811-1-4,<br>8.1 & HD 22.1/VDE 0282-1                                |
| Cold elongation of the core insulation compound EI 5          | EN 60811-1-4/VDE 0473-811-1-4,<br>8.3 & HD 22.1/VDE 0282-1 & EN<br>50363-5/VDE 0207-363-5 |
| Cold impact resistance of the core insulation compound EI 5   | EN 60811-1-4/VDE 0473-811-1-4,<br>8.5 & HD 22.1/VDE 0282-1                                |
| Cold wrapping test of the core insulation compound EI 5       | EN 60811-1-4/VDE 0473-811-1-4,<br>8.1 & EN 50363-5/VDE 0207-363-5                         |

Due to the **rated** voltage class of this cable within the low voltage range (50 Vac to 1000 Vac), this cable is categorised as low voltage cable according to the European low voltage directive 2006/95/EC (LVD) and, thus, must be and is evaluated as EC compliant for the European domestic market placement. This means it corresponds to the European low voltage directive 2006/95/EC and the German Equipment and Product Safety Act as a consequence.