

HELUDATA® ROBOFLEX®-PAIR-D PUR UL/CSA

Data cable, EMC-preferred type



HELUDATA® ROBOFLEX®-PAIR-D PUR UL/CSA 4x2x0,25 QMM E170315 AWM STYLE 21209 CE

TECHNICAL DATA

PUR robot cable acc. to UL-Std. 758 (AWM) Style 21209, CSA-Std. C22.2 No. 210 - AWM I/II A/B

Temperature range	flexible -30°C to +90°C fixed -40°C to +90°C
Nominal voltage	VDE AC U ₀ /U 300/300 V UL (AWM) AC 300 V
Test voltage core/core	2000 V
Minimum bending radius	fixed 5x Outer-Ø flexible: see properties

CABLE STRUCTURE

- Copper wire bare, extra finely stranded, 0.5 mm²: extra finely stranded acc. to DIN VDE 0295 Class 6 / IEC 60228 Class 6
- Wire structure:
0.14 mm²: approx. 18 x 0.1 mm
0.25 mm²: approx. 32 x 0.1 mm
0.34 mm²: approx. 42 x 0.1 mm
- Core insulation: PP
- Core identification acc. to DIN 47100 (paired stranding), colour coded
- x = without protective conductor
- Cores stranded in pairs with optimal lay lengths
- Fleece wrapping of the pairs
- Pairs stranded in layers with optimal lay lengths
- Fleece wrapping
- Screen: helically wound tinned copper wires, approx. coverage 90%
- Fleece wrapping
- Outer sheath: Special grade of full polyurethane acc. to DIN VDE 0207-363-10-2 / DIN EN 50363-10-2 (compound type TMPU)
- Sheath colour: black (RAL 9005)
- Length marking: in metres

PROPERTIES

- resistant to: oil, UV radiation, ozone, oxygen, weathering effects, hydrolysis, microbes, coolants, hydraulic fluids, acids, alkalis, greases, seawater and wastewater
- highly abrasion-resistant, notch-resistant, tear-resistant, cut-resistant, wear-resistant, low adhesion
- smooth, high-quality core insulation for eased sliding and optimized core stranding ensure long service-life within applications that request combined bending and torsion movements
- for outdoor use

- torsion rated
- suitable for use in drag chains
- Torsion parameters
Acceleration (max.): 60 °/s²
Velocity (max.): 180 °/s
Minimum bending radius: 10x Outer-Ø
Torsional stress up to 180 °/m: 5 Mio. Cycles (max.)
- Drag chain parameters
Acceleration (max.): 10 m/s²
Velocity (max.), unsupported: 3 m/s
Velocity (max.), gliding: 2 m/s
Traverse path (max.): 10 m
Minimum bending radius (Traverse path ≤ 3m): 10x Outer-Ø
Minimum bending radius (Traverse path > 3m): 12.5x Outer-Ø
Bending cycles (max.): 5 Mio.
- halogen-free
- the materials used during manufacturing are cadmium-free, contain no silicone and are free from substances harmful to the wetting properties of lacquers

TESTS

- halogen-free acc. to DIN VDE 0482-754-1 / DIN EN 60754-1 / IEC 60754-1
- flame-retardant acc. to DIN VDE 0482-332-1-2 / DIN EN 60332-1-2 / IEC 60332-1-2, UL VW-1, CSA FT1
- oil-resistant acc. to DIN VDE 0473-811-404 / DIN EN 60811-404 / IEC 60811-404
- UV-resistant acc. to DIN EN ISO 4892-2
- weather-resistant acc. to DIN EN ISO 4892-2

APPLICATION

Data cable to transmit data and monitoring signals specifically designed for combined torsion and bending movements; for use in assembly and welding robots, in material handlings and automation centres, in transport and conveyor systems, on rotary and swivel tables and wherever a defined cable routing with only alternating bending movements is not applicable, but 3D-movements and torsional load have an impact on the cable; for applications with the highest requirements on mechanical, chemical and thermal resilience. EMC = Electromagnetic Compatibility; in order to optimise EMC properties, we recommend a double-sided and all-round large contact area of the D-screen.

NOTES

- the conductor is metrically (mm²) constructed, AWG numbers are approximated, and are for reference only
- for use in energy supply systems:
1) the assembly instructions must be observed
2) for special applications, we recommend contacting us and using our data entry form for energy supply systems

Part no.	No. cores x cross-sec. mm ²	AWG, approx.	Outer Ø mm, approx.	Cu-weight kg/km	Weight kg/km, approx.
11022463	3 x 2 x 0.14	26	6.8	25.6	58.0
11022464	4 x 2 x 0.14	26	6.9	31.7	62.0

Part no.	No. cores x cross-sec. mm ²	AWG, approx.	Outer Ø mm, approx.	Cu-weight kg/km	Weight kg/km, approx.
11022465	3 x 2 x 0.25	24	7.8	34.0	77.0
11022466	4 x 2 x 0.25	24	8.1	42.1	85.0

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Part no.	No. cores x cross-sec. mm ²	AWG, approx.	Outer Ø mm, approx.	Cu-weight kg/km	Weight kg/km, approx.
11022467	6 x 2 x 0.25	24	9.8	55.7	120.0
11022468	8 x 2 x 0.25	24	11.3	74.3	160.0
11022469	10 x 2 x 0.25	24	13.1	91.7	188.0
11022470	3 x 2 x 0.34	22	8.2	41.5	87.0

Part no.	No. cores x cross-sec. mm ²	AWG, approx.	Outer Ø mm, approx.	Cu-weight kg/km	Weight kg/km, approx.
11022471	4 x 2 x 0.34	22	8.8	51.5	103.0
11022472	5 x 2 x 0.34	22	9.6	60.9	122.0
11022473	8 x 2 x 0.34	22	12.0	87.8	180.0
11022474	5 x 2 x 0.5	20	11.4	90.1	177.0