HELUCONTROL® ROBOFLEX®-D PUR UL/CSA

Control cable, EMC-preferred type

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 300/500 V UL (AWM) AC 600 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 acc. to DIN VDE 0295 Class 6 / IEC 60228 Class 6
- Core insulation: PP
- Core identification acc. to DIN VDE 0293-334, black cores with consecutive labeling in white digits
- G = with protective conductor GN-YE
- Stranding:
  3 - 7 core(s): cores stranded into one layer with an optimally matched lay length
  12 - 25 core(s): cores stranded into bundles with optimally matched lay lengths; bundles stranded together around a tensile core
- 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

Control cable to transmit control 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; to optimize the EMC features we recommend a large round contact of the D-screen on both ends.

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. mm²	AWG, approx.	Outer Ø mm, approx.	Cu-weight kg/km	Weight kg/km, approx.
11022437	12 G 0.5	20	11.5	94.0	184.0
11022438	18 G 0.5	20	13.6	131.4	255.0
11022439	25 G 0.5	20	15.7	173.7	331.0

Part no.	No. cores x cross-sec. mm²	AWG, approx.	Outer Ø mm, approx.	Cu-weight kg/km	Weight kg/km, approx.
11022440	4 G 0.75	19	7.4	46.0	86.0
11022441	5 G 0.75	19	8.0	54.0	102.0
11022442	7 G 0.75	19	9.1	75.6	133.0

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Part no.	No. cores x cross-sec. mm²	AWG, approx.	Outer Ø mm, approx.	Cu-weight kg/km	Weight kg/km, approx.
11022443	12 G 0.75	19	12.5	126.6	228.0
11022444	18 G 0.75	19	15.0	185.1	320.0
11022445	25 G 0.75	19	17.4	243.7	417.0
11022446	3 G 1	18	7.3	45.9	84.0
11022447	12 G 1	18	13.5	164.0	271.0
11022448	18 G 1	18	16.2	233.1	386.0
11022449	25 G 1	18	19.0	310.6	509.0
11022450	12 G 1.5	16	15.2	226.8	358.0
11022451	18 G 1.5	16	19.0	335.2	550.0
11022452	25 G 1.5	16	22.0	495.0	763.0