HELUWIND® WK 137-EMV-D-TORSION-FT4-TP

for offshore applications, extremely abrasion-resistant, EMC-preferred type



TECHNICAL DATA

Torsion resistant cable acc. to UL-Std. 758 (AWM) Style 20234, CSA-Std. C22.2 No. 210 - AWM I/II A/B

Temperature range	flexible -40°C to +90°C fixed -40°C to +90°C UL (AWM) to +80°C
Permissible operating temperature of the conductor	+90°C
Nominal voltage	VDE AC U_0/U 600/1000 V UL (AWM) AC 1000 V
Max. permissible operating voltage	alternating current (AC) conductor/earth 700 V three-phase alternating current (AC) conductor/conductor 1200 V direct current (DC) conductor/earth 900 V direct current (DC) conductor/conductor 1800 V
Test voltage core/core	4000 V
Test voltage core/screen	2000 V
Minimum bending radius	flexible 10x Outer-Ø fixed 5x Outer-Ø

CABLE STRUCTURE

- Copper wire bare acc. to DIN VDE 0295 / IEC 60228
- Core insulation: special compound
- Core identification: see table
- x = without protective conductor
- Cores stranded in pairs with optimal lay lengths, Pairs stranded with optimal lay lengths
- Foil wrapping
- Screen: helically wound tinned copper wires
- Outer sheath: special compound
- Sheath colour: black

PROPERTIES

- resistant to: oil, UV radiation
- extremely abrasion-resistant, low adhesion
- Torsion tested
- halogen-free
- highly flame-retardant
- Suitable for use in multiple climates
- Designed for CCV applications
- Suitable for offshore applications
- Torsion angle: +/- 150°/m

TESTS

- halogen-free acc. to DIN VDE 0482-754-1 / DIN EN 60754-1 / IEC 60754-1
- flame-retardant acc. to CSA FT1
- bundle fire test acc. to DIN VDE 0482-332-3-24 / DIN EN 60332-3-24 / IEC 60332-3-24
- smoke density acc. to DIN VDE 0482-1034-1+2 / DIN EN 61034-1+2 / IEC 61034-1+2
- oil-resistant acc. to DIN VDE 0473-811-404 / DIN EN 60811-404 / IEC 60811-404, UL Std 1277 Tab. 12.2, Oil Res I / Oil Res II
- Cable Flame Test acc. to UL Std. 1581 Sec. 1061

APPLICATION

Designed for flexible use, especially for torsional stress in the cable loop of a wind turbine. Thanks to its halogen-free composition, the CSA FT4 flame test and an extremely abrasion-resistant sheath, it is ideal for use in offshore wind turbines. The voltage level for all dimensions is designed for 0.6/1 kV. This means that the cable can also be laid in parallel in accordance with UL standards; spatial separation of the cable routes is not necessary. The HELU WK series has been successfully tested with over 18,000 torsion cycles and therefore offers optimum functional reliability far beyond the service life of a wind turbine. Advantages of the WK 137 torsion compared to H07BN4-F: Fire behaviour according to IEC 60332-3-24, higher abrasion resistance. 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
- Further details, as well as information regarding custom solutions and suitable connection technology, can be found at wind@helukabel.de

Core identification acc. to DIN 47100, colour coded

Part no.	No. cores x cross-sec. mm²	AWG, approx.	Outer Ø mm, approx.	Cu factor per km	Weight kg/km, approx.
706515	2 x 2 x 0.5	20	8.5	39.0	115.0
712426	3 x 2 x 0.5	20	8.8	48.0	113.0
706518	4 x 2 x 0.5	20	11.8	72.0	192.0
706519	2 x 2 x 0.75	19	10.4	62.0	130.0
706520	4 x 2 x 0.75	19	12.7	91.0	220.0
706522	8 x 2 x 0.75	19	17.1	170.0	410.0
706523	12 x 2 x 0.75	19	17.6	223.0	520.0
706529	2 x 2 x 1.5	16	12.1	90.0	180.0
706530	3 x 2 x 1.5	16	12.8	120.0	235.0

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Core identification acc. to DIN VDE 0293-334, black cores with consecutive labeling in white digits

Part no.	No. cores x cross-sec. mm²	AWG, approx.	Outer Ø mm, approx.	Cu factor per km	Weight kg/km, approx.
706464	4 x 2 x 0.5	20	11.8	72.0	192.0
706471	4 x 2 x 0.75	19	12.7	91.0	220.0

Part no.	No. cores x cross-sec. mm²	AWG, approx.	Outer Ø mm, approx.	Cu factor per km	Weight kg/km, approx.
706475	12 x 2 x 0.75	19	17.6	223.0	520.0

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