

ÖLFLEX® TORSION FRNC

DB 1150100
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Application

ÖLFLEX® TORSION FRNC cables are halogen-free, oil resistant and highly flame retardant signal and control cables for use in wind turbines (nacelle, tower) under torsion load conditions. Outdoors they may only be installed in observation of the temperature range. Continuous working in flexible applications is not allowed. Compulsory guidance respectively usage on cable drums or pulleys or under a strain of more than 15 N / mm² is not allowed.

This cable is suitable for torsion application in wind turbines (WTG). The torsional load is limited to applications, as they typically occur in the loop of a wind turbine.

Design

Design	in support to HD 21.14 S1 resp. VDE 0281-14, UL/CSA AWM Style 21288
Conductor	superfine wire strands of bare copper acc. to IEC 60228 resp. VDE 0295, class 6
Core insulation	halogen-free special compound
Core identification	Control cables: acc. to VDE 0293-1, with or without GN/YE ground conductor up to 5 cores coloured in acc. to HD 308 S2 that is VDE 0293-308 6 and more cores: Black cores with white numbers in acc. to DIN EN 50334 resp. VDE 0293-334 Signal cables: DIN 47100
Screen optional	layer of tinned copper wires on slip-wrapping
Outer sheath	highly flame retardant halogen-free special compound colour: Black

Electrical properties at 20 °C

Nominal voltage	IEC: 600 / 1000 V UL: 1000 V
Test voltage	A/A: 4000 V AC A/S: 2000 V AC

Mechanical and thermal properties

Min. bending radius	occasional flexing: 10 x cable diameter fixed installation: 6 x cable diameter
Temperature range	occasional flexing / fixed installation: -40 °C up to +90 °C max. conductor temperature UL: -40 °C up to +80 °C max. conductor temperature
Torsion movement in WTG	TW-0 (5000 cycles at ≥ +5°C) TW-2 (2000 cycles at ≥ -40°C) ± 150 °/m at 1 revolution per minute
Flammability	flame retardant in acc. to IEC 60332-1-2 resp. VDE 0482-332-1-2 no flame propagation in acc. to IEC 60332-3-24 resp. EN 50266-2-4 resp. VDE 0482 part 266-2-4 or in acc. to IEC 60332-3-25 resp. EN 50266-2-5 resp. VDE 0482 part 266-2-5
Halogen-free	acc. to IEC 60754-1
Corrosivity	acc. to IEC 60754-2
Toxicity	acc. to NES 02-713 part 3
Smoke density	acc. to IEC 61034-2
Oil resistance	acc. to IEC 60811-2-1 resp. VDE 0473 part 811-2-1 UL OIL RES I and OIL RES II
Tests	acc. to IEC 60811 resp. VDE 0473-811 and VDE 0472 as well as UL 1581
Approval	UL/CSA AWM Style 21288 (File No. E 63634)
EC-Directives	This cable is conform to the EC-Directives 2006/95/EC (Low Voltage Directive) and ECD 2002/95/EC (RoHS, Restriction of the use of certain hazardous substances).